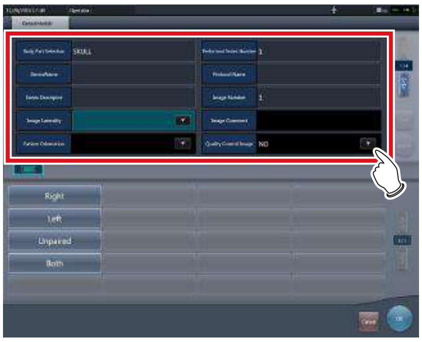
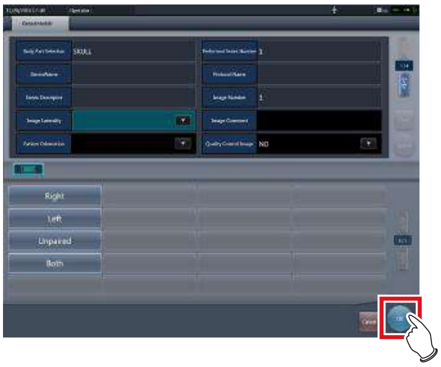
3 **Edit the image supplemental information.**



4 **Press [OK].**



- The supplemental information is added and the exposure screen is displayed.

IMPORTANT

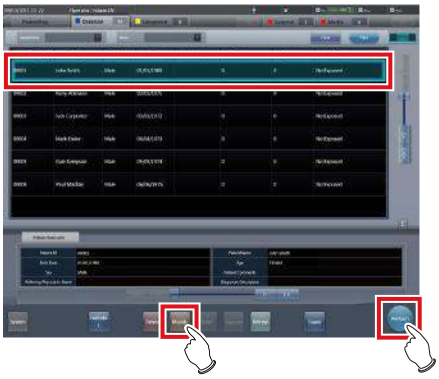
- Input the patient orientation in the form of Row orientation / Line orientation.
- For the values available for the Row orientation and Line orientation, refer to the options of the Patient orientation (Row) and Patient orientation (Line) on the Exam. Tag edit tool screen.
- To display the Patient orientation (Row) and Patient orientation (Line), select the property edit tab on the Exam. Tag edit tool screen, and select the Exam. Tag master for the master/sub master selection.
- For the details of the Patient orientation (Row) and Patient orientation (Line), refer to the DICOM Standard.

6.4.14 Edit of patient information

Patient information can be modified.

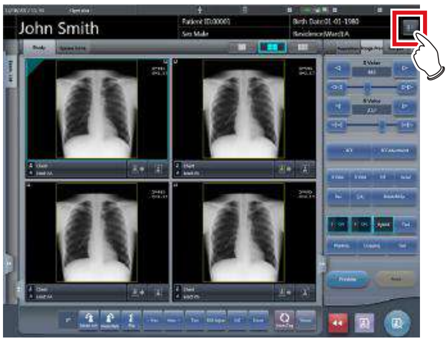
1 **Select the patient whose patient information is to be modified on the list screen, and press [Perform] or [Modify].**

- When [Modify] is pressed
  → Go to step 3



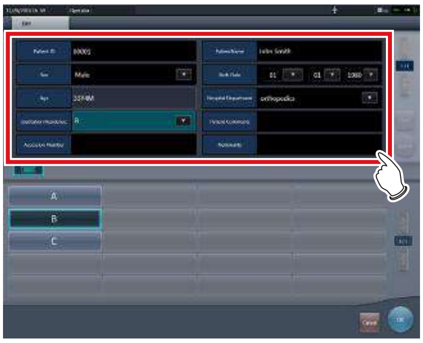
- The exposure screen is displayed.

2 **Press [▤].**

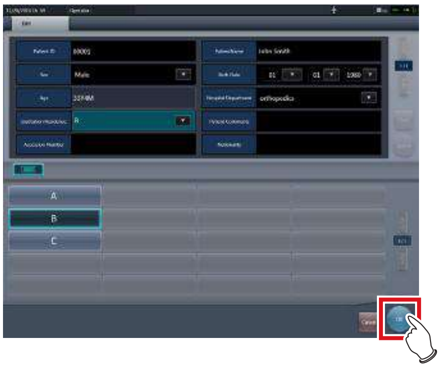


- The patient information editing screen is displayed.

3 **Edit the patient information.**



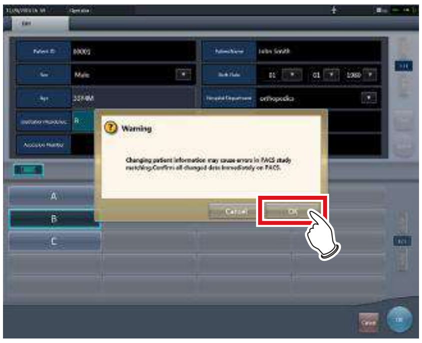
4 **Press [OK].**



- A confirmation screen is displayed.

5 **Press [OK].**

- Press [Cancel] to return to the previous screen.



Warning

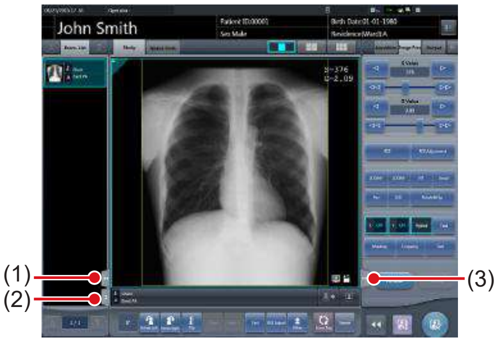
Changing patient information may cause errors in PACS study matching.Confirm all changed data immediately on PACS.

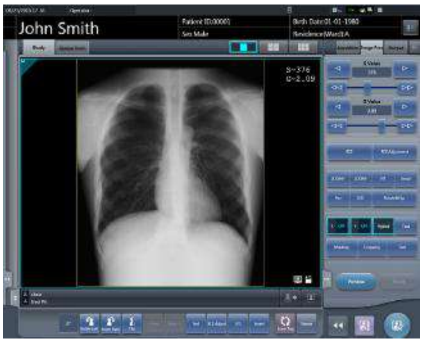
- The edited content is reflected, and the exposure screen is displayed.

6.4.15 Switch of screen display of the exposure screen

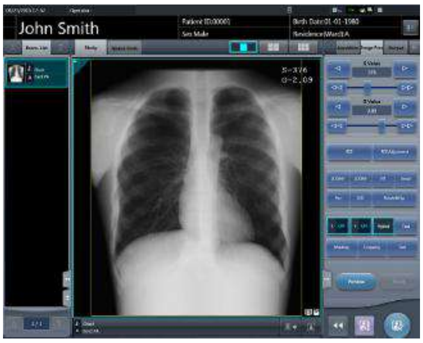
On the exposure screen, the screen display format can be changed.

1 **Press any of the (1) to (3) work area zoom tabs.**

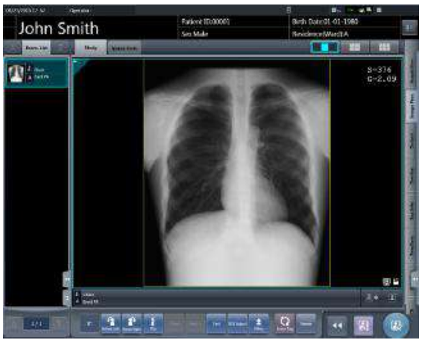




- When the (1) work area zoom tab is pressed, the examination display area is hidden and the work area is enlarged. You can press the tab again to display the examination display area.



- When the (2) work area zoom tab is pressed, the tool bar is hidden and the work area is enlarged. You can press the tab again to display the tool bar.

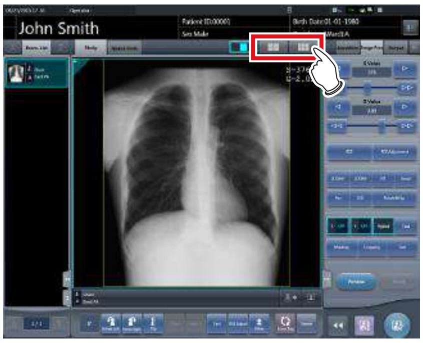


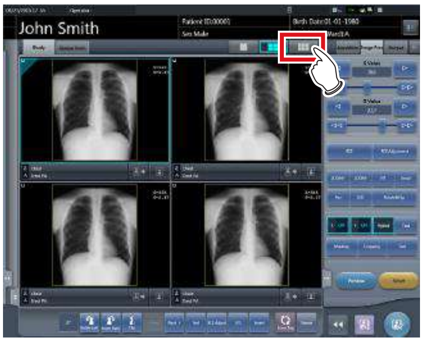
- When the (3) work area zoom tab is pressed, the control panel is hidden and the work area is enlarged. You can press the tab again to display the control panel.

6.4.16 Switch of screen display format

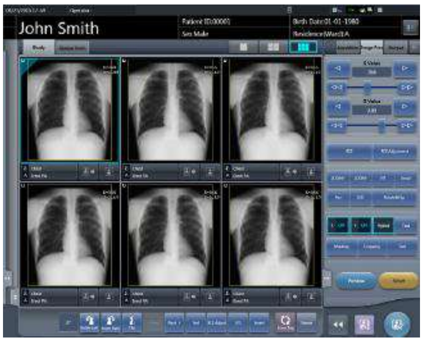
The display format of the exposure screen can be switched to "2×2 display" or "3×2 display" as necessary for the examination.

1 Press [⊞] or [▦].





- Pressing [⊞] switches the display format to 2×2.



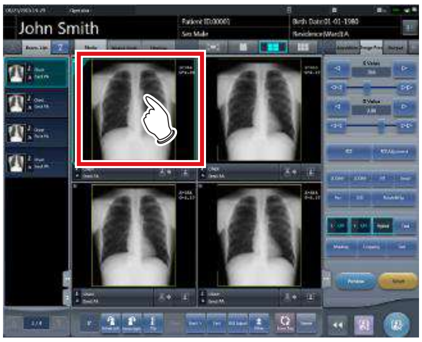
- Pressing [▦] switches the display format to 3×2.
- Press [■] to return the display format to 1×1.

6.4.17 Full-screen image display

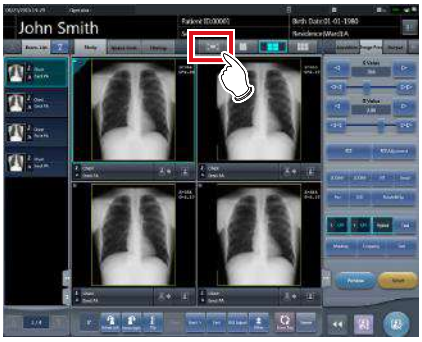
Captured images can be displayed on the full screen.

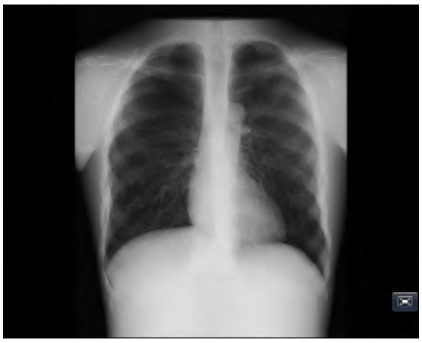
●Full-screen display

1 Select the image to be displayed on the full screen.



2 Press the [ ] icon.

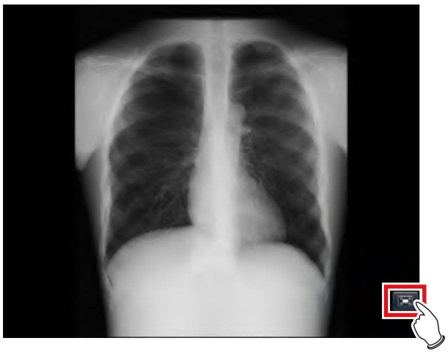


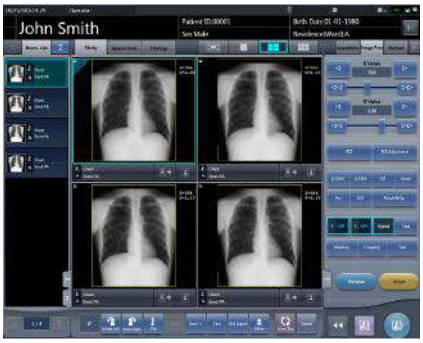


- The image is displayed on the full screen.

●Canceling full-screen display

1 Press [ ].





- The display returns to the normal image.

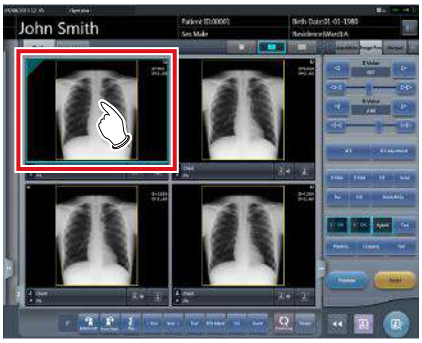
HINT

- You can operate the Full-Screen Display using [ ] depending on settings. The display of [ ] is disabled by default. If you want to use this function, contact Konica Minolta technical representatives.
- While the Show Full Screen View is displayed, an oblong image can be rotated to display it. However, the image will not be able to be rotated if its height and width are the same.
- You can enable Full-Screen Display or return to the original display by double-clicking the image display area using the mouse.
- You can double-click only by using a mouse in the image display area.
- Double click can be substituted with double touch in the Exam. Tags display area.

6.4.18 Rotation and flip of display

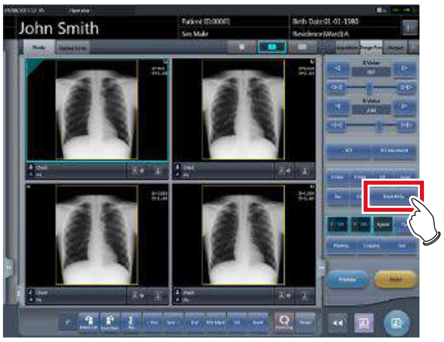
Exposed images can be rotated and flipped.

1 Select an image to rotate and flip.



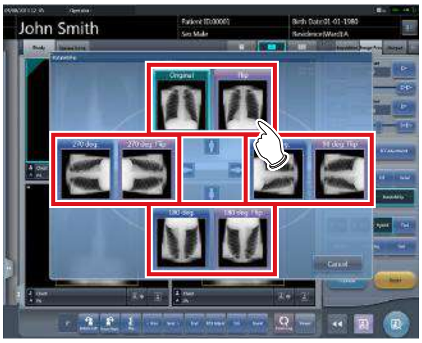
- The control panel automatically switches to the [Image Proc] tab. If it does not switch, select the [Image Proc] tab manually.

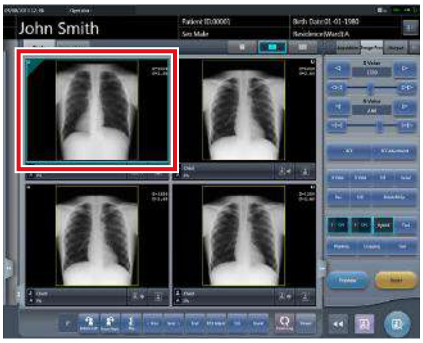
2 Press [Rotate&Flip].



- The selection screen is displayed.

3 Select the item to apply.

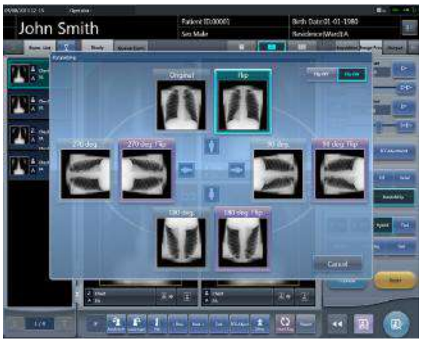




- The rotation/flip is reflected in the image.

HINT

- When [Flip OFF] and [Flip ON] are displayed on the upper right portion of the selection screen, select the rotating image after pressing [Flip ON] when flipping and rotating 1 image.
- Set to hide/unhide [Flip OFF] and [Flip ON] during installation.



- If rotate and flip is used on an images rotated by free rotation, the rotation and status is reset.

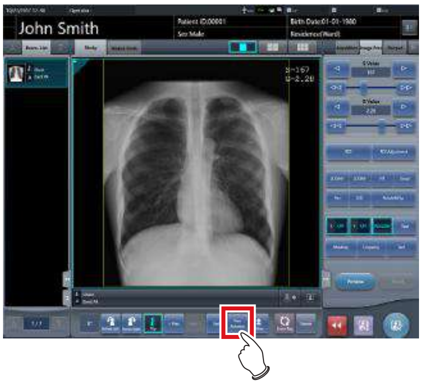
6.4.19 Free Rotation

Images can be rotated freely.

IMPORTANT

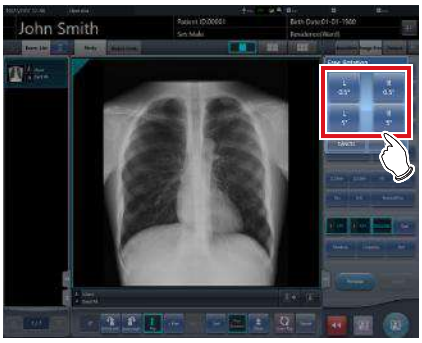
- Stitching exposure pre-combining images and mammogram images cannot be rotated freely.

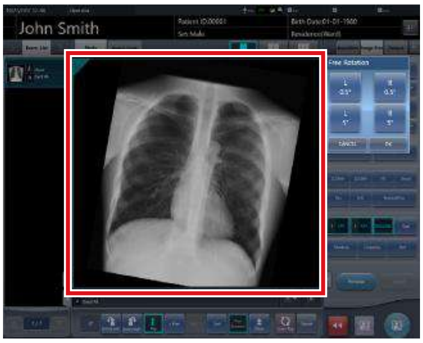
1 Press [Free Rotation].



- The [Free Rotation] screen is displayed.

2 On the [Free Rotation] dialog, press the rotation button corresponding to the desired direction of rotation.



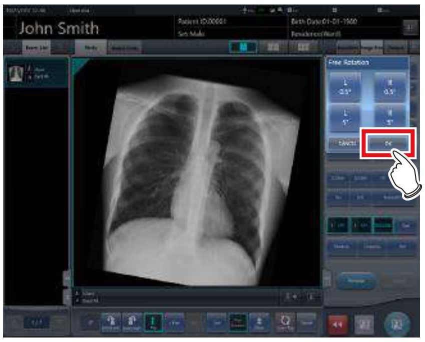


- The image rotates either right or left by 0.5° each time [R 0.5°] or [L 0.5°] is pressed.
- The image rotates either right or left by 5° each time [R 5°] or [L 5°] is pressed.

HINT

- Images can also be rotated with drag operation of the mouse or with mouse wheel operation.
- Rotating the mouse wheel forward rotates the image to the left by 0.5°. Rotating the mouse wheel rearward rotates the image to the right by 0.5°.
- Angle of rotation settings can be changed. For more details, refer to "CS-7 Operation Manual for User Tool".

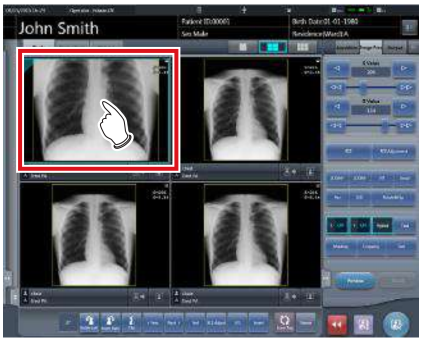
3 Press [OK].



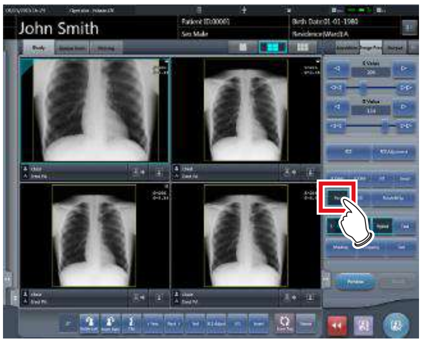
6.4.20 Panning of an image

When an image that is larger than the size of the image display area is displayed, the image can be panned.

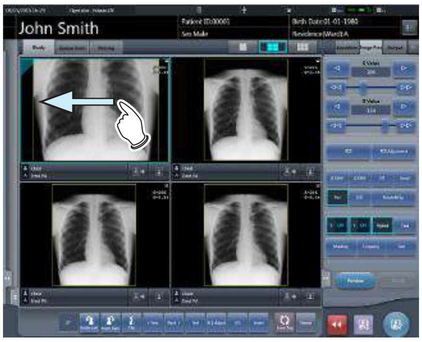
1 Select an image to pan.

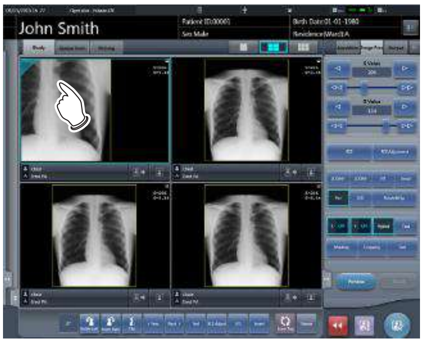


2 Press [Pan].



3 Drag the image to pan.





- The image can be panned by dragging it.

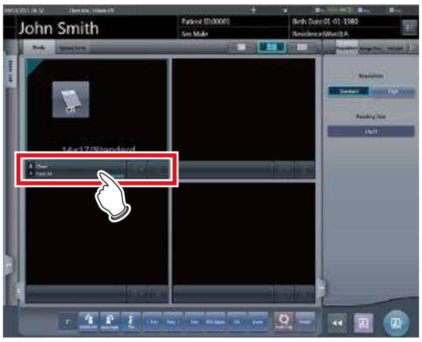
HINT

- You can also select the setting that can move an image by simply dragging the image or dragging it while simultaneously operating both buttons without pressing [Pan].

6.4.21 Deletion of registration of CR cassette registered with bar code

When exposing with CR cassette, the registration of a CR cassette registered with bar code can be cancelled.

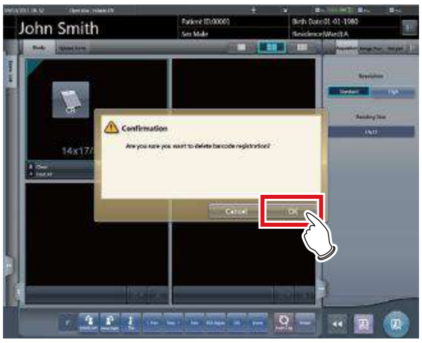
1 Press the Exam. Tag display area of the CR cassette registration to be deleted.



- A confirmation screen is displayed.

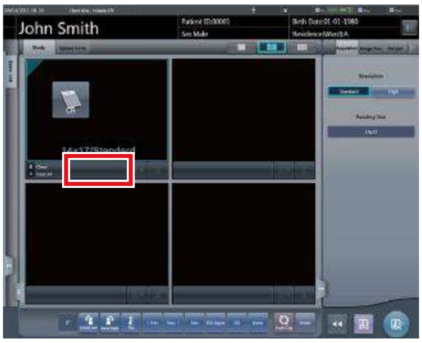
2 Press [OK].

- Press [Cancel] to return to the previous screen.



Are you sure you want to delete barcode registration?

⇩

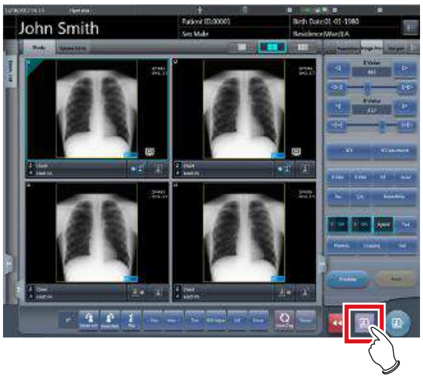


- The bar code registration is deleted.

6.4.22 Hold of the examination

In the course of exposure, an examination can be paused.

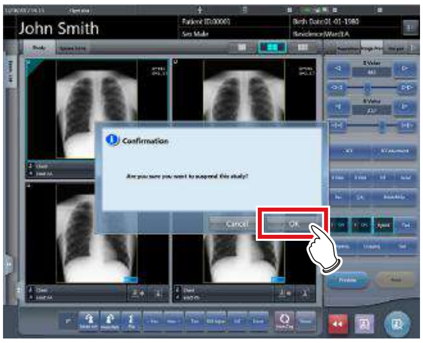
1 Press [▨].



- A confirmation screen is displayed.

2 Press [OK].

- Press [Cancel] to return to the previous screen.



Are you sure you want to suspend this study?

- Returns to the list screen.

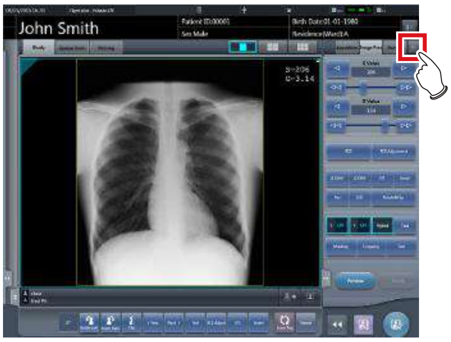
HINT

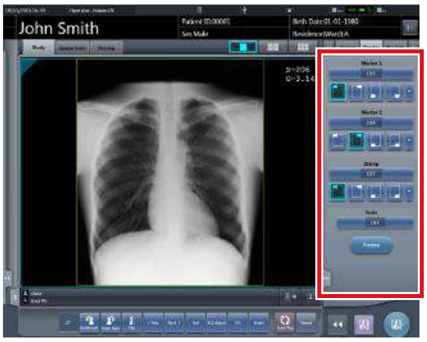
- [▨] cannot be pressed until this image is displayed.
- For the examinations on hold, "Suspend" is displayed in the status field of the list screen.
- The Exam. Tags for the examination on hold cannot be deleted, in order to prevent incorrect operations.

6.4.23 Overlay

"Marker 1", "Marker 2", "Stamp", and "Grid/Scale" can be overlaid on the exposed image.

1 Select the [Overlay] tab.



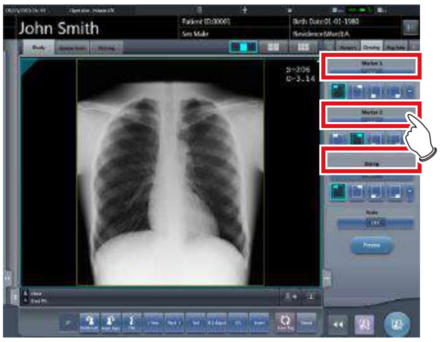


- The screen switches to the control panel of overlay.

2 Input the overlay by operating the control panel.

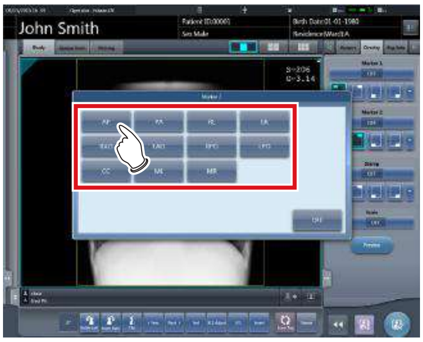
- When inputting a marker, or stamp
  → Go to step 3
- When inputting a grid/scale
  → Go to step 6

3 Press either [Marker 1], [Marker 2] or [Stamp].



- The screen corresponding to the pressed button will be displayed.

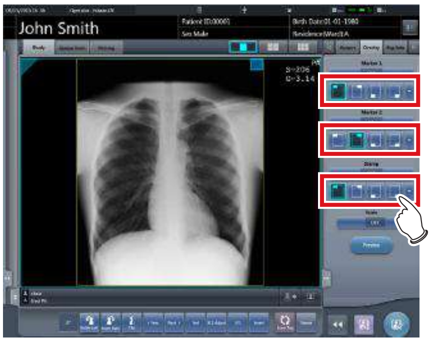
4 Press an item to display.



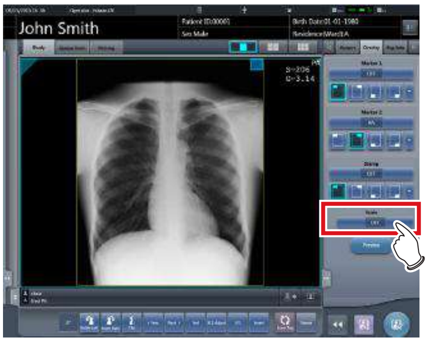
- The overlay is displayed.

5 Select the display position for marker, or stamp.

- For both marker and stamp select 1 of the 4 corners.
  → Go to step 8



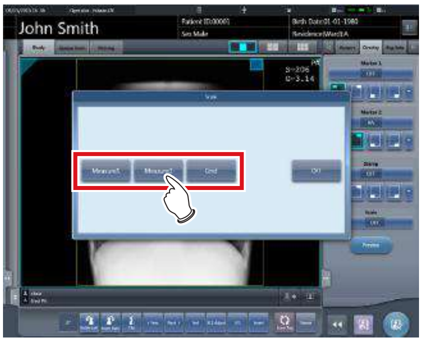
6 Press [Scale].



- The selection screen is displayed.

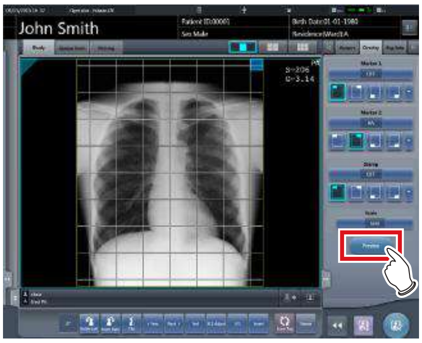
7 Press either [Measure1], [Measure2] or [Grid].

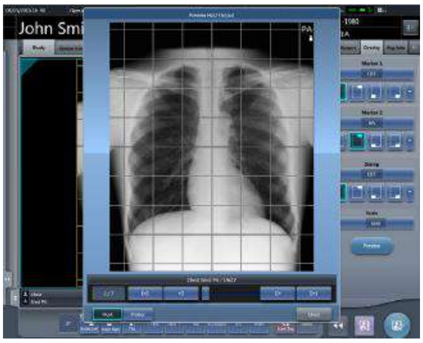
- Press [OFF] to quit the display.



- A grid or scale is displayed.

8 Press [Preview].





- The preview is displayed.
- Press [OK], and the preview disappears.

IMPORTANT

- Confirm that the overlay is reflected at the output destination.
- The gird/scale markings (Grid/Measure 1/Measure 2) are not measurement functions. Do not use them to measure images.

HINT

- The set characters and stamp are as follows.

Marker type	Characters
Marker 1	R, L
Marker 2	A→P, P→A, R→L, L→R, RAO, LAO, RPO, LPO, C→C, M→L, M→R

Stamp
Set at installation.

Grid/scale type	Details
Grid	Displays approx. 50mm square grid
Measure 1	Displays a scale around an image. The scale interval at life size output is approx. 10mm. Based on this, the scale interval also reduces according to the zoom out ratio when zooming out.
Measure 2	Displays a scale on the right center and bottom center of an image. The scale interval at life size output is approx. 10mm. Based on this, the scale interval also reduces according to the zoom out ratio when zooming out.

* Grid and scale cannot be displayed at the same time.

6.4.24 Highlight function for the tube/gauze

This function highlights the tube and/or gauze in captured images.

IMPORTANT

- The highlight function for the tube/gauze is available for the images of the following body parts.

Skull PA/AP/LAT	Skull Towne	Temporal Bone
T-Spine AP	T-Spine LAT	Abdomen PA/AP
Abdomen LAT	Ped. Chest PA/AP	Ped. Chest LAT
Chest-ABD PA/AP	Infant Chest/Abd	Neck AP
Neck LAT	Neck OB	UBL
C-Spine AP	C-Spine LAT	C-Spine OB
T-Spine AP	T-Spine LAT	L-Spine AP
L-Spine LAT	L-Spine OB	Latitude Hand
Ankle AP/LAT	Toes AP/LAT	Latitude Foot

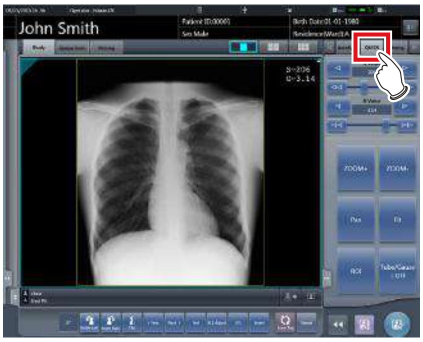
- When the highlight function for the tube/gauze is not OFF, the [E process], [F process], [Hybrid], [Tool], and [IG] buttons cannot be operated on the [Image Proc] or [QUICK] tabs on the control panel. Also, the E, F, and HS parameters cannot be changed on the viewer screen.
- In the case where the S/G value etc. were changed after the level of the highlight function for the tube/gauze has been changed, when the function is turned off after that, the image returns to that before the level was changed, and consequently the S/G value etc. return to the former values.

HINT

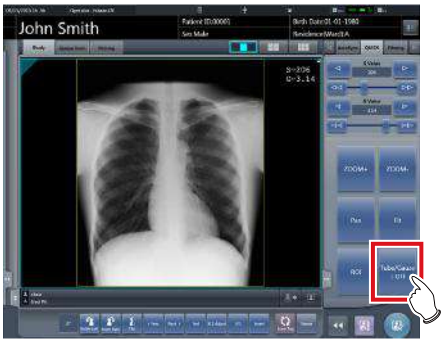
- When an image with a highlighted tube/gauze is shared with this device which is not licensed for the highlight function, the image will be displayed with the highlighted tube/gauze, but you cannot change the highlight level or deactivate the highlight function with this unlicensed device.

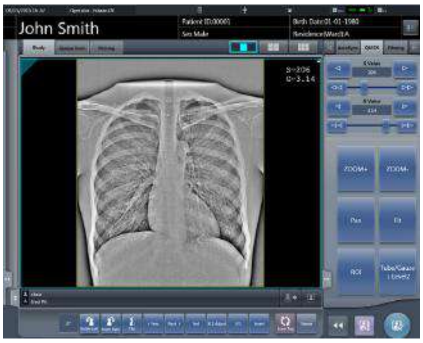
● Highlight display of the tube/gauze

1 **Select the [QUICK] tab.**



2 **Press the [Tube/Gauze] button.**





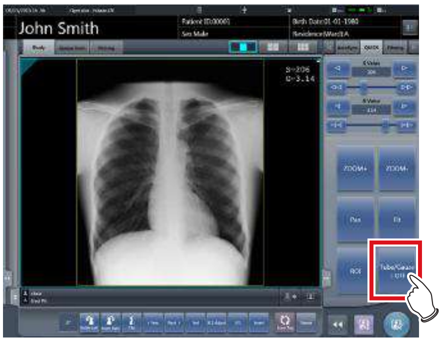
HINT

- The highlight function for the tube/gauze is turned on and off every time you press the [Tube/Gauze] button.

Tube/Gauze: OFF ⇔ Tube/Gauze: Level 2

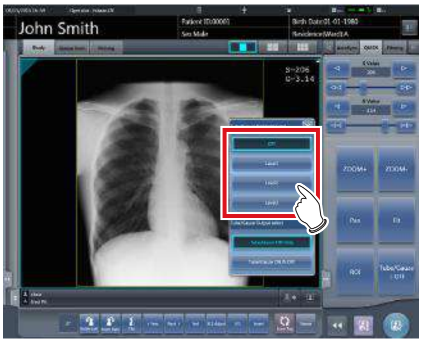
●Changing the highlight level

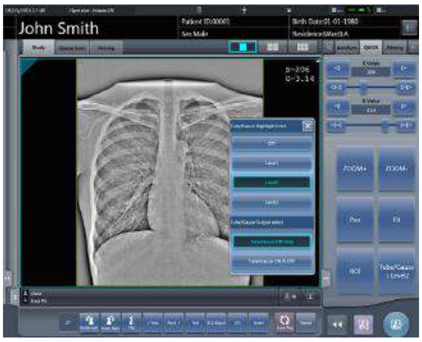
1 Press the [Tube/Gauze] button for 1 second or more.



- The highlight level change dialog box is displayed.

2 Press [OFF] or the button of the level to be changed on the highlight level change dialog box.





- The highlight level is changed.

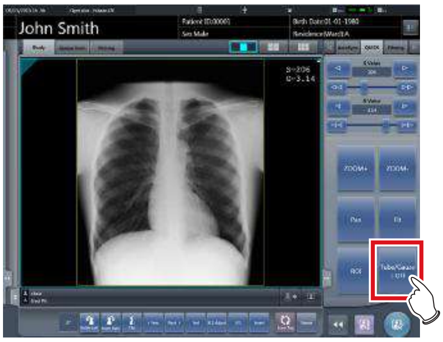
●Select the output of highlighted tube/gauze image

Switch the output settings of highlighted tube/gauze image.

IMPORTANT

- This function is available for the host output only.

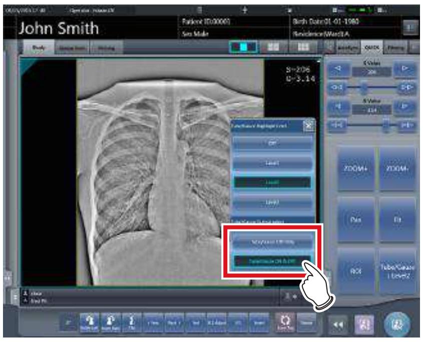
1 Long press the [Tube/Gauze] button more than 1 second.



- The highlighting level change dialog is displayed.

2 Change the image output settings on the highlighting level change dialog.

- When the [Tube/Gauze ON & OFF] is pressed, both the normal and highlighted images are output during host output.
- When the [Tube/Gauze ON Only] is pressed, only the highlighted image is output during host output.

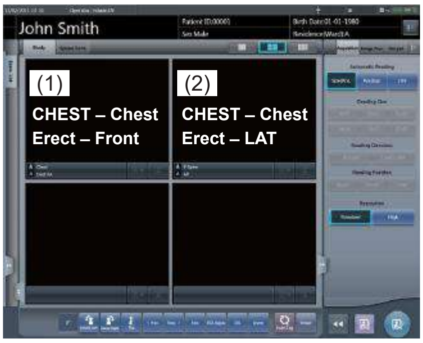


HINT

- The order of normal and highlighted image output can be changed. For more details, contact Konica Minolta technical representatives.

6.4.25 Automatic 1×1 display function

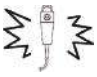
When examining with a 2×2 display screen or a 3×2 display screen, they can be changed to a 1×1 display screen automatically when the exposed image is received.
The following procedure describes an example of what happens when, while having the screen display set to 2×2, exposure is carried out with the automatic 1×1 display function enabled. The exposure order and body parts are as follows.

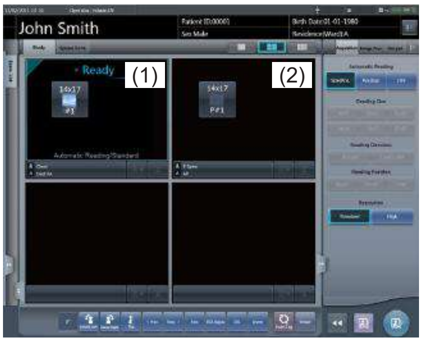


* Numbers (1), (2) displayed on the screen are shown for ease of explanation, and not displayed on the actual screen.

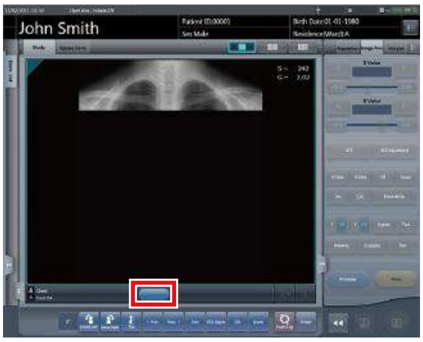
1 Perform exposure (1).

- Set up the X-ray device before exposure. Perform exposure after checking the exposure settings.

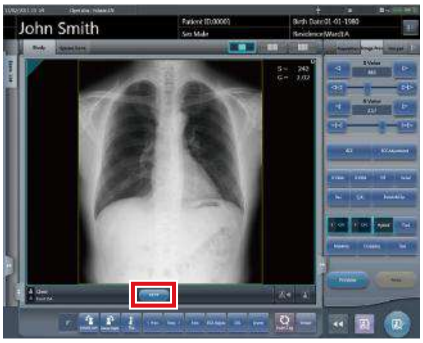

Press the exposure switch



- Changes to 1×1 display and begins reception.

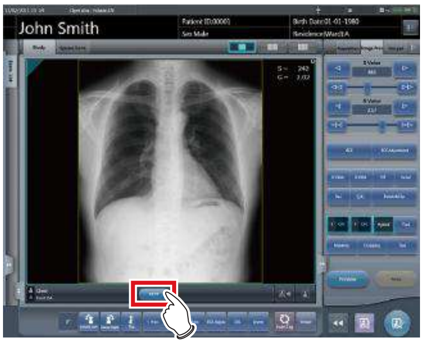


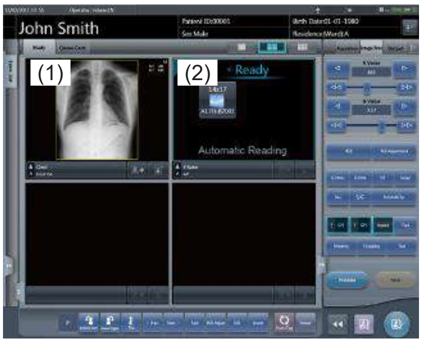
- The button is displayed in the Exam. Tags display area.



- When reception of exposed images is finished (images are displayed), the button displays a countdown in seconds.
- Before the countdown reaches 0, if any operation is performed on the image, the countdown is stopped, and the button changes to display "NEXT".

2 Press [NEXT].





- Returns to the 2×2 display screen and the focus moves to the next unexposed frame.

HINT

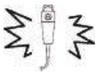
- When the button countdown reaches 0, the previous screen will be displayed and the focus will move to the next Exam. Tags.

6.4.26 Image preview

When an image is being received, a preview image is displayed in the image display area. Appropriate gradient processing is automatically performed for each exposed image, and density and contrast are automatically adjusted to be suitable for checking.

Flow of time

Appearance of the image display area


Exposure

While an exposed image is being received, the image is displayed.

After reception is completed, the preview screen is displayed. S value/G value are displayed and image adjustment can be performed.

The actual image is displayed.

HINT

- When the actual image is displayed, focus automatically moves to the next exposure frame. When that exposure is the final one, the focus does not move.
- Even during image preview, image adjustment can be performed. While the preview image is displayed, select the [Image Proc] tab on the control panel, and adjust the image. During image adjustment, focus does not move to another frame.

6.4.27 Scattered Radiation Correction (IG)

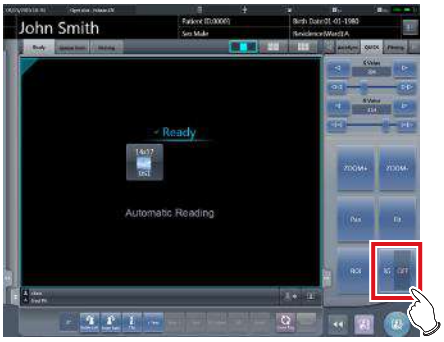
Scattered radiation can be corrected automatically when an exposed image is received.

IMPORTANT

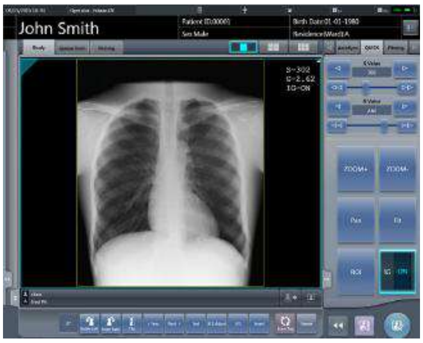
- This function can be used only when Scattered Radiation Correction is set to ON in the Exam. Tag.
- The S value after scattered radiation correction is calculated for the image whose scattered radiation was corrected. Therefore, it is larger than the S value of the image before scattered radiation correction.
- Use scattered radiation correction with a tube voltage within the range of 50 to 130 kV.
- Before performing scattered radiation correction, verify that the tube voltage for the Exam. Tag matches the actual exposure conditions. If the actual tube voltage is lower, the contrast may be weaker. If the actual tube voltage is higher, the contrast may be stronger.
- The available scattered radiation correction grid ratios include 3:1, 6:1, 8:1, 10:1, 12:1, 3:1 → 6:1, and 3:1 → 8:1.
- Use scattered radiation correction under the same exposure conditions as when using grids. When using exposure conditions without grids, contrast may improve, but image quality may be different than when correction is performed under exposure conditions using grids.
- Scattered radiation correction cannot be used when highlight function for the tube/gauze is turned on. After performing scattered radiation correction, turn on the catheter end/gauze enhancement function.

● Scattered Radiation Correction

1 Set the [IG] button to [ON].



2 Perform exposure.



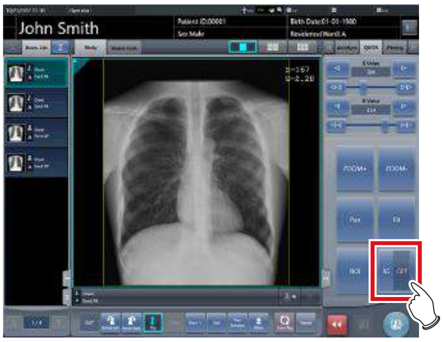
- The exposed image whose scattered radiation has been corrected is displayed in the image display area.

IMPORTANT

- Turning off the [IG] button will turn off image scattered radiation correction. S/G and other values will return to the values calculated for the image before scattered radiation correction.

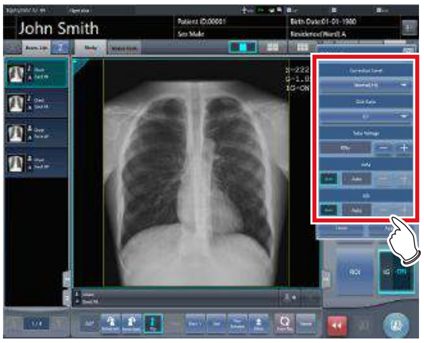
● Adjustment of the scattered radiation correction parameter

1 **Press and hold the [IG] button.**



- The scattered radiation correction parameter dialog is displayed.

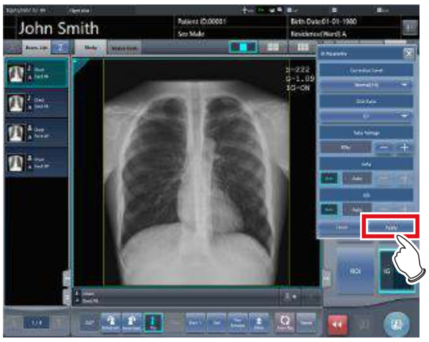
2 **Select the correction level.**



- Setting items are as follows.

Name	Description
Correction Level	Setting the scattered radiation correction level.
Grid Ratio	Setting the grid ratio.
Tube Voltage	Setting the tube voltage.
mAs	Configures the mAs value. To set the mAs value manually, press the [Auto/Manual] button to turn [Manual] mode on.
SID	Configures the SID value. To set the SID value manually, press the [Auto/Manual] button to turn [Manual] mode on.

3 **Press [Apply].**



- The scattered radiation correction level is changed.

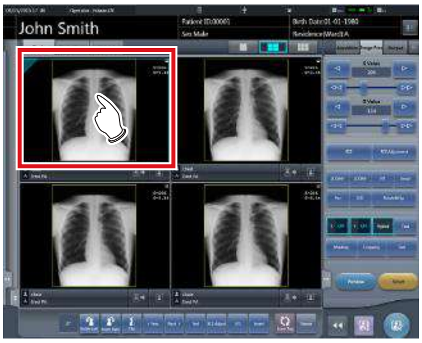
6.5 Exposure Screen ([Output] Tab) Functions

This section describes the procedure for outputting images from the exposure screen and the operation performed when the [Output] tab is selected on the control panel of the exposure screen.

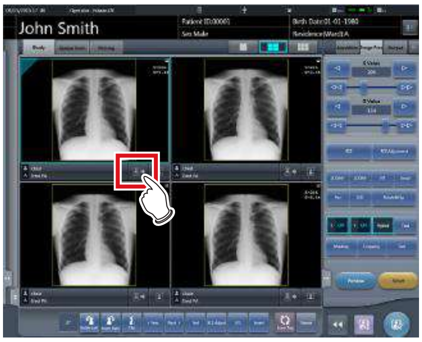
6.5.1 Individual output

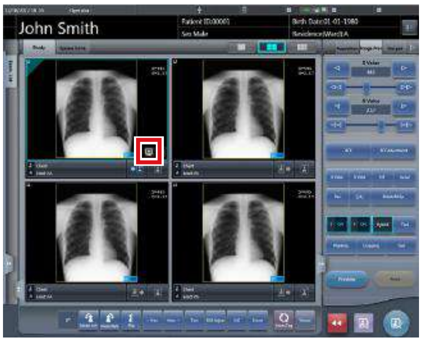
Once examination is finished, exposed images can be not only batch output, but also output individually.

1 **Select an image to output.**



2 **Press [ ].**





- The device icon of the output destination (host (electronic medical record)/printer) is displayed.
- [ ] changes to [ ] indicating that output is done.

HINT

- The output destination device icon is lit in green during output.
- When an error occurs during output, the output destination device icon is lit in red. Output is resumed when the cause of error is solved.
- During output, when adjustment is performed on the image being output, the results of image adjustment during output are not reflected.
- The device icon of the host is displayed also when the electronic medical record is specified as the output destination.
- The display of the output device icon changes depending on the device status as shown below:

Image output

■	H	H	H ✗
Output	Not output/ Waitng to output	Output in process	Output failed

Storage Commitment output

■	SC	SC	SC ✗
Storage Commitment completed	Not output/ Waiting to output	Storage Commitment requesting	Storage Commitment failed

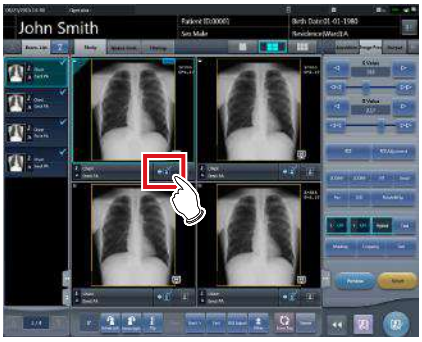
PRINT output

■	🖨	🖨	🖨 ✗
Output	Not output/ Waiting to output	Output in process	Output failed

6.5.2 Additional output

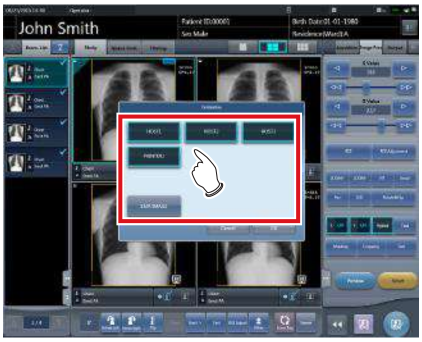
Images already output can be output again.

1 **Press [ ] after displaying the image to output again.**



- The output destination selection screen is displayed.
- The output destination selection screen is displayed with the previously transmitted destination selected.

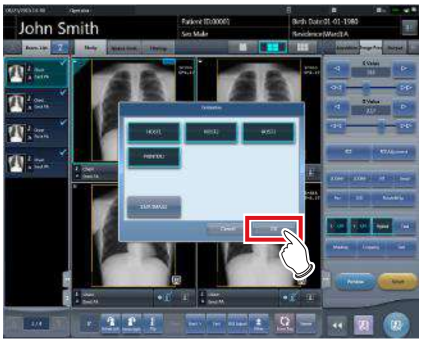
2 **Select the output destination.**



- It is possible to select multiple transmission destinations.

3 **Press [OK].**

- When not outputting, press [Cancel].

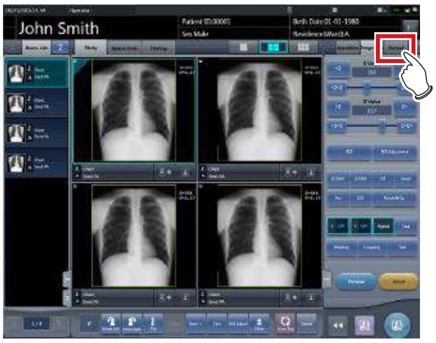


- Images are re-output.

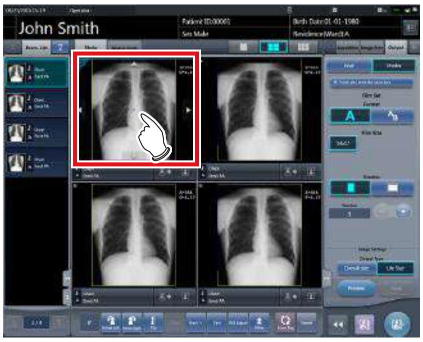
6.5.3 Change of host (electronic medical record) output conditions

The conditions of images output to a host (electronic medical record) can be changed.

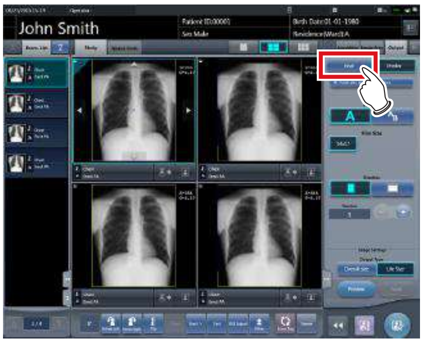
1 **Select the [Output] tab.**



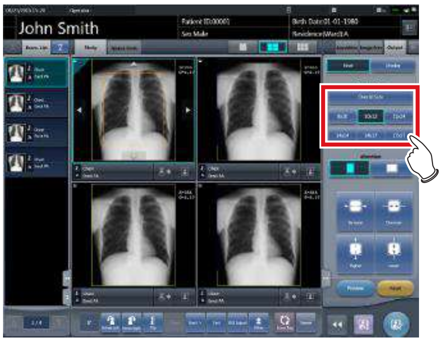
2 **Select an image to output.**



3 **Press [Host].**



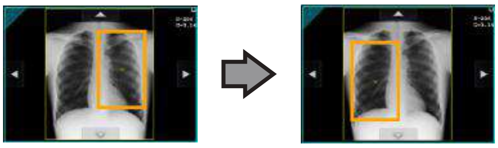
4 Change the trimming size.



Icon/Function name	Functions
TrimmingSize	Select the cropping size. Set the trimming size type during installation.
▮ ▭	Select the direction (portrait or landscape) of the output.
Increase Decrease	Adjust the cropping width. The width changes every time the button is pressed.
Higher Lower	Adjust the cropping height. The height changes every time the button is pressed.
Reset	Returns to the state when image was displayed.

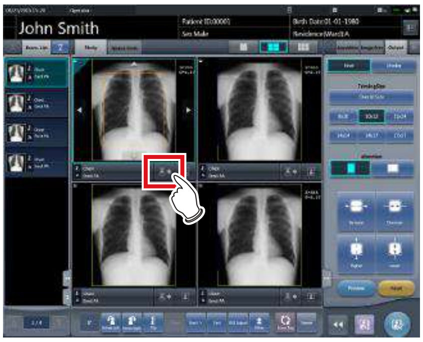
HINT

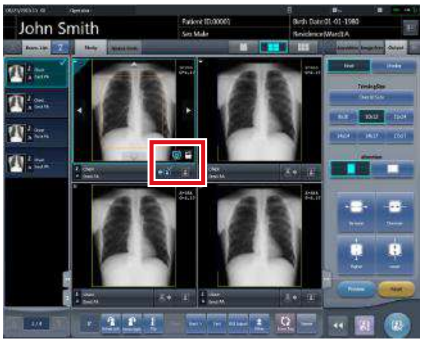
- You can long press and drag the trimming frame. The trimming frame is highlighted when selected, and the original position is shown by dotted lines.



- If the trimming frame is set as the entire image for image rotated by free rotation, the area enclosing the image becomes the trimming frame.

5 Press [ ].





- While transmitting to the host (electronic medical record), image display area displays [H].
- [ ] changes to [ ] indicating that output is done.

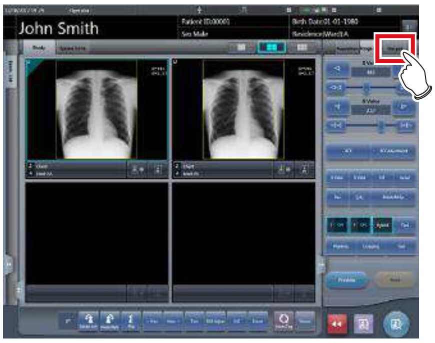
HINT

- The same procedure applies when outputting to an electronic medical record.

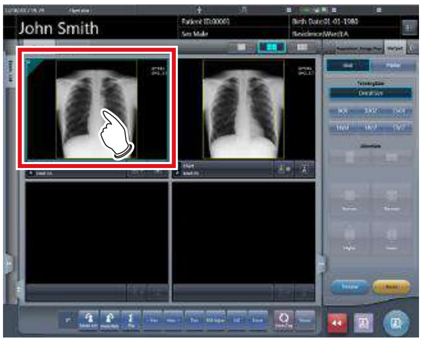
6.5.4 Change of printer output conditions

The conditions of images output to a printer can be changed.

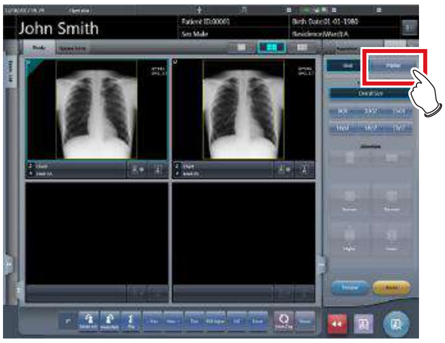
1 Select the [Output] tab.



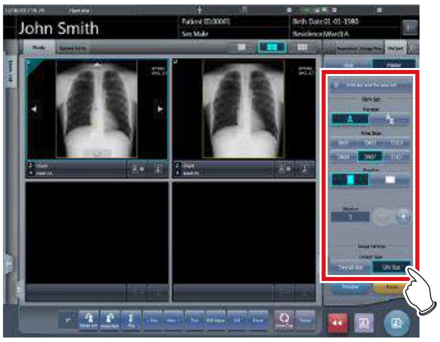
2 Select an image to output.



3 Press [Printer].



4 Change the output conditions.



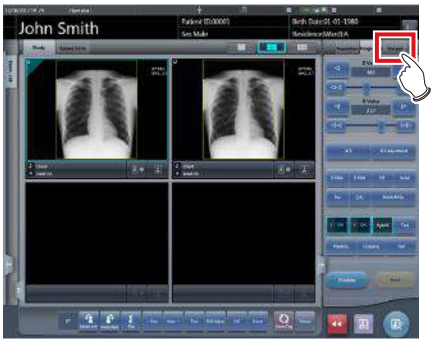
- Setting items are as follows.

Item	Options
Format	**A format** Outputs 1 image on 1 sheet. **AB format** Outputs 2 images in alignment left-right or top-bottom 1 by 1.
Film size	Only sizes that can be set in the printer such as 8×10, 10×12, 11×14, 14×14, and 14×17 can be displayed.
Direction	**Horizontal output** ▭ **A format** Only 1 image can be output. ⊟ **AB format** The A image is displayed on top and the B image is on the bottom. ◫ The A image is displayed on the left and the B image is on the right. **Vertical output** ▯ **A format** Only 1 image can be output. ⊟ **AB format** The A image is displayed on top and the B image is on the bottom. ◫ The A image is displayed on the left and the B image is on the right.
Number	1-9
Output type	**Overall size** Print an image after reducing the size so that the image size is full size for the film to be printed. When the film size is larger than the image, print the image at the same magnification. **Life size** Print the image at the same magnification. When the read image is larger than the output area of the film, parts outside the output area are cut off.
Reset	Returns to the state when image was displayed.

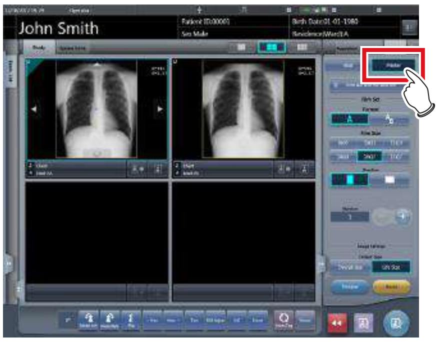
6.5.5 Printer output in A format

1 image can be output in 1 sheet of film.

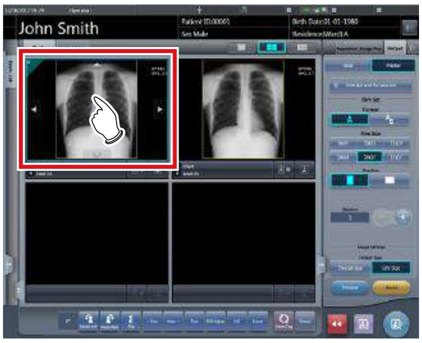
1 **Select the [Output] tab.**



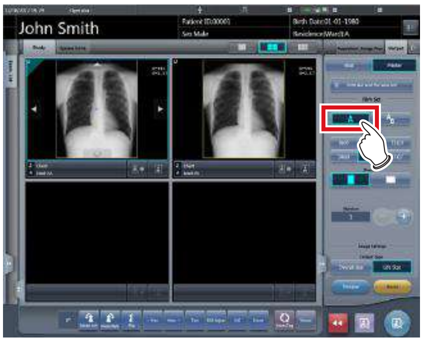
2 **Press [Printer].**



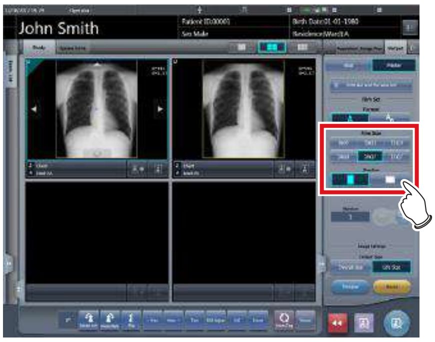
3 **Select an image to output.**



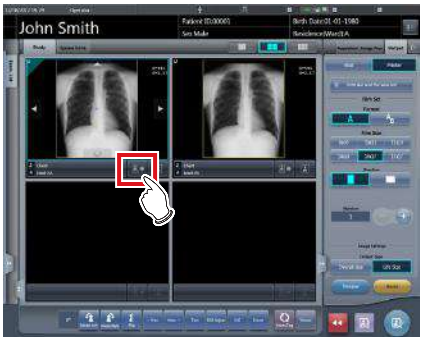
4 **Select [A] in [Format].**

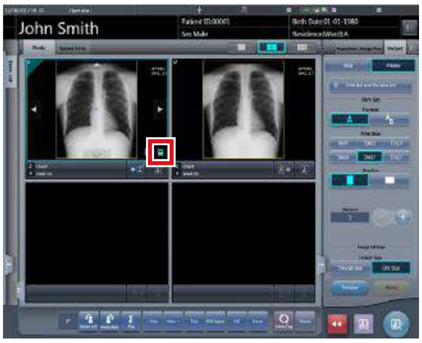


5 **Change [Film Size], [Direction], etc.**



6 **Press [ ].**



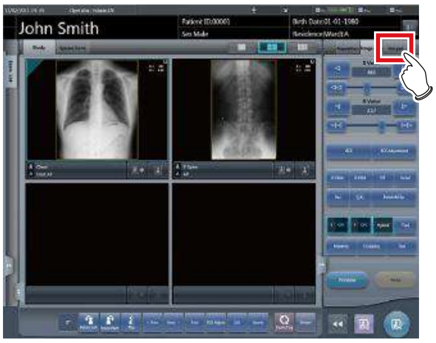


- While transmitting to the printer, the image display area displays [ ].
- [ ] changes to [ ] indicating that output is done.

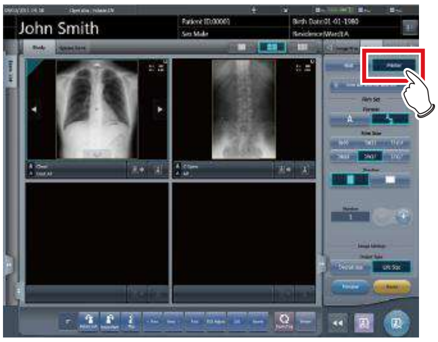
6.5.6 Printer output in AB format

2 different images can be output in 1 sheet of film.

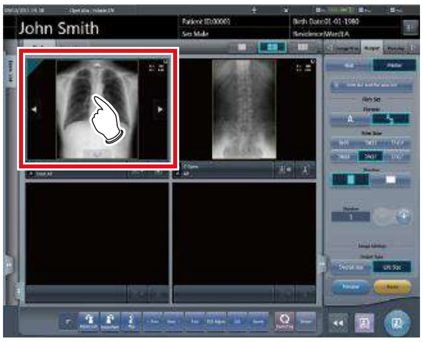
1 Select the [Output] tab.



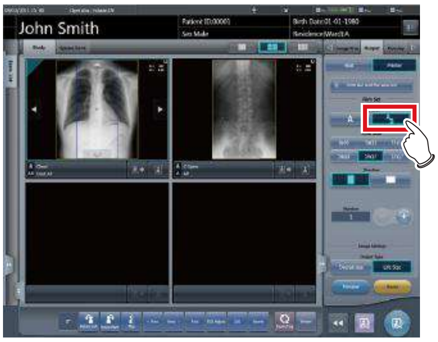
2 Press [Printer].



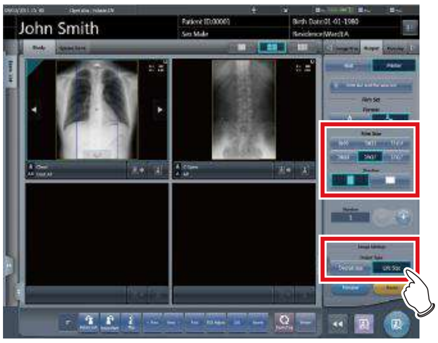
3 Select an image (first one) to output.



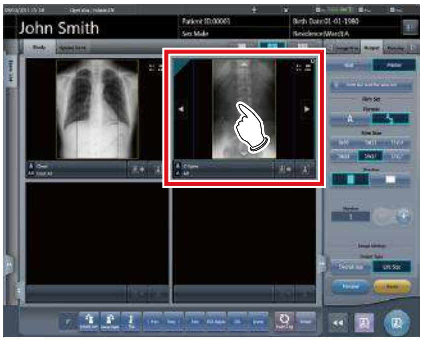
4 Select [AB] from [Format].



5 Change [Film Size], [Direction], [Output Type], etc.

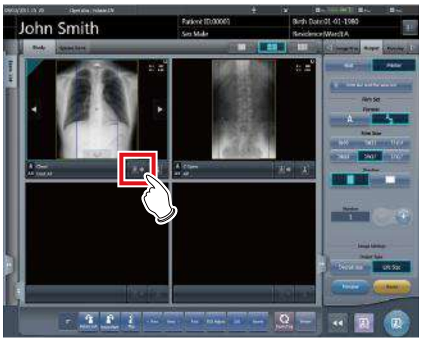


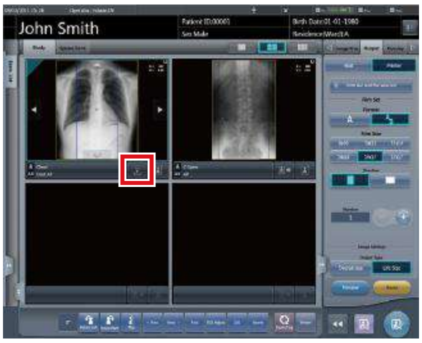
6 Select an image (2nd one) to output.



- After selecting the images, select [AB] from [Format] following Steps 4 to 5, and change the [Film Size], [Direction], and [Output Type].
- Set the [Film Size], [Direction], and [Output Type] the same as the selected image in the first sheet.

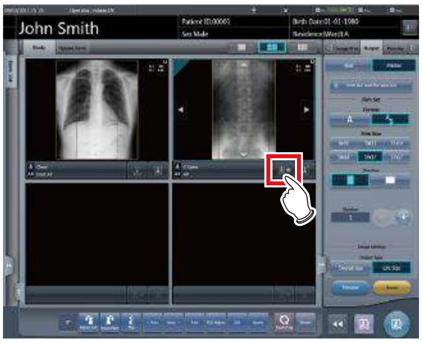
7 **Press [ ] of the first image to be output.**





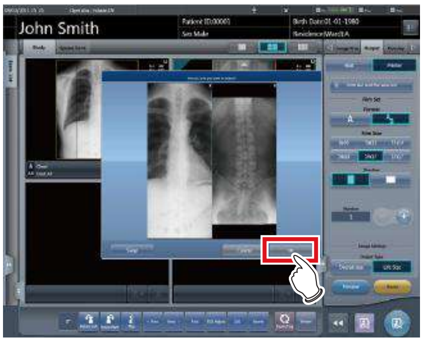
- The icon will change to [ ] which denotes pair waiting status.

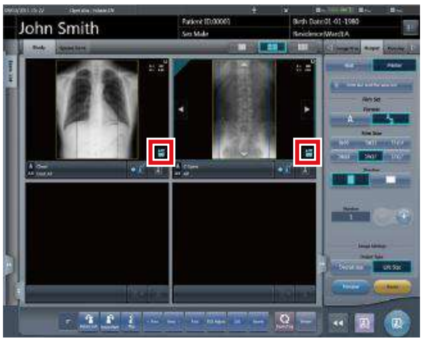
8 **Press [ ] of the 2nd image to be output.**



- A confirmation screen is displayed.

9 **Press [OK].**



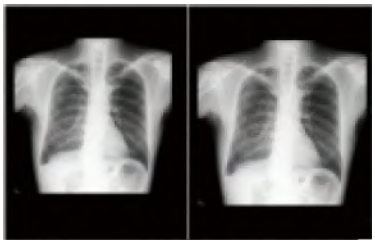


- While transmitting to the printer, the image display area displays [ ].
- [ ] changes to [ ] indicating that output is done.

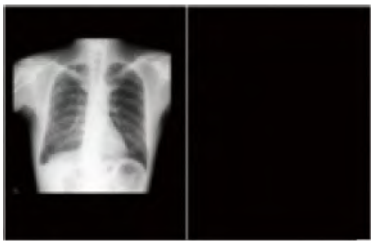
IMPORTANT

- When outputting in AB format, be careful of the following.
  - Images are outputting as a pair only when the format, film size, and film orientation of the 2 images to be output are the same. If there is no matching image, then only 1 image is output.

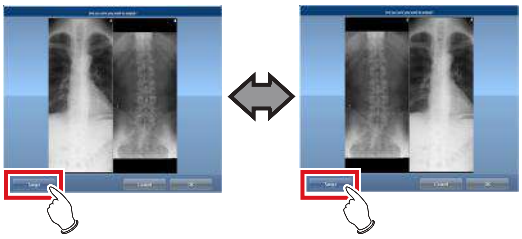
When there is a matching pair



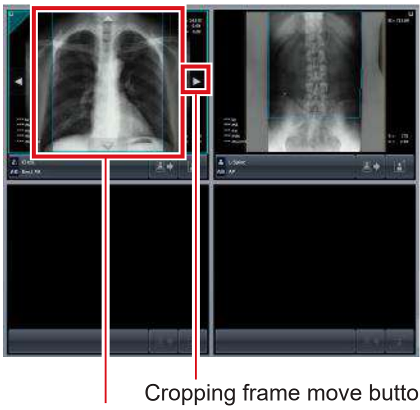
When there is no matching pair



- Images are assigned to a film in the order in which [ ] is pressed.
- While waiting for a pair, if the format, film size, or film orientation is changed, the waiting for a pair state is released.
- The confirmation screen displayed when outputting displays [Swap]. Pressing [Swap] replaces image positions left and right, or top and bottom.



- When [Cancel] is pressed on the confirmation screen displayed during output, pairing of the images is released.
- When [Life Size] is selected as [Output Type], a cropping frame is displayed on the image. The size of cropping frame changes automatically according to the film size, length, and width and height of the film output area. The cropping frame can be moved by pressing the cropping frame move button [△ ▽ ◁ ▷], or by selecting the destination of the cropping frame.

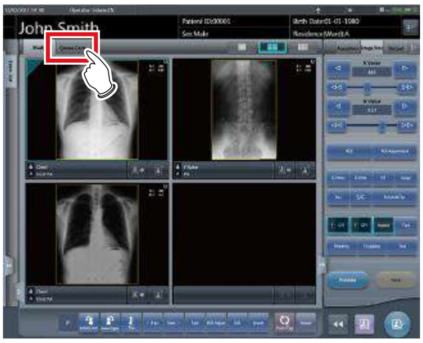


……

6.5.7 Sort of preview images (each image) for host output

Each preview image for host output can be sorted by image.

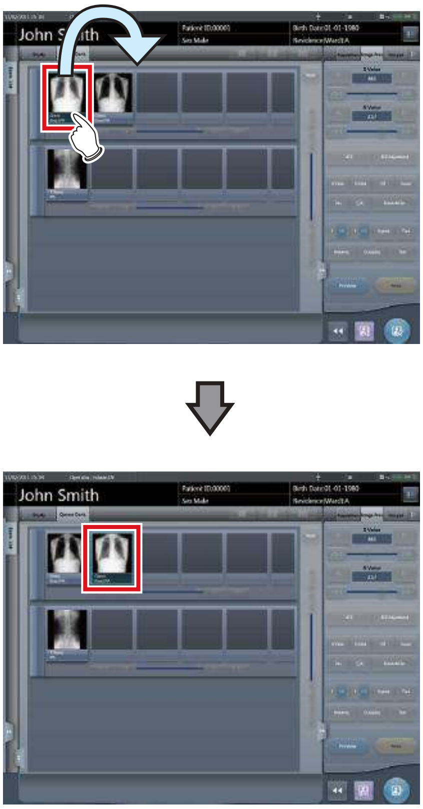
1 Select the [Queue Cont.] tab.



- Images are previewed in sequence according to the series number and image number assigned when transmitting images to hosts.
- A preview is displayed as 1 series per body part.

2 Drag and drop the image at a desired position to rearrange the image.

- A white line is displayed at a position where the order can be changed.



- The order is changed.

IMPORTANT

- If there is an image already sent to the host, then the order of images of the series cannot be changed.
- The order of images in another examination or across series cannot be changed.

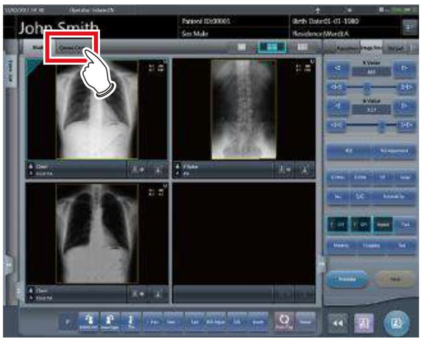
HINT

- If there is an unexposed Exam. Tag, the device icon is displayed.

6.5.8 Sort of preview images (each series) for host output

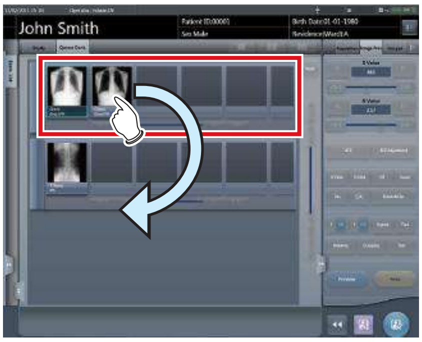
Exposed images can be arranged in 1 series by exposure body part. Preview images for host output can be sorted by series.

1 Select the [Queue Cont.] tab.

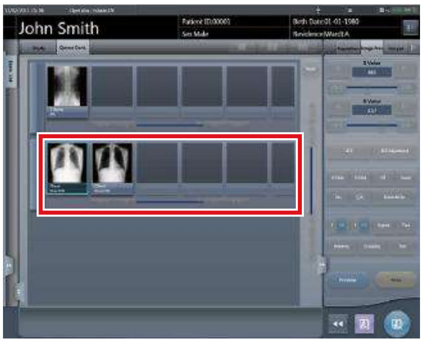


- Images are previewed in sequence according to the series number and image number assigned when transmitting images to hosts.
- A preview is displayed as 1 series per body part.

2 Drag the series to be changed and drop it into a desired position to rearrange the series.



- A white line is displayed at a position where the order can be changed.



- The order is replaced.

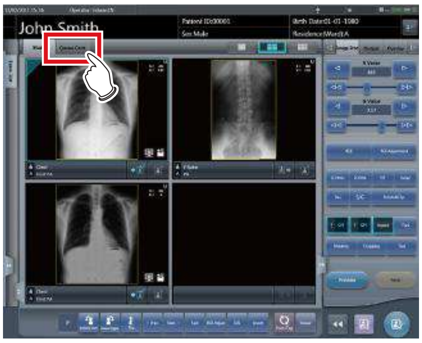
HINT

- If there is an unexposed Exam. Tag, the device icon is displayed.

6.5.9 Sort of preview images (transmitted) for host output

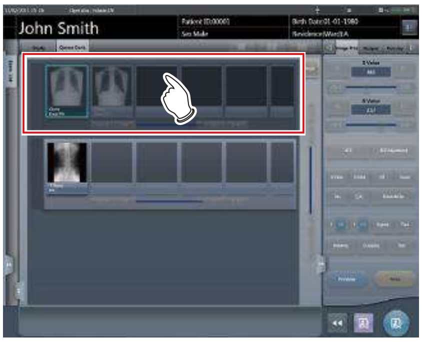
Preview images sent to the host are normally in a state that cannot be sorted. When it is necessary to sort preview images already sent to the host, they can be sorted with the following procedure.

1 Select the [Queue Cont.] tab.

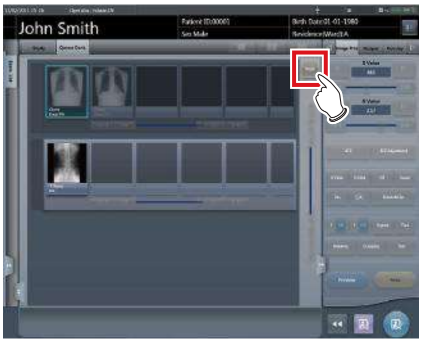


- Images are previewed in sequence according to the series number and image number assigned when transmitting images to hosts.
- Transmitted series are displayed in gray.
- A preview is displayed as 1 series per body part.

2 Select a series already sent to the host.



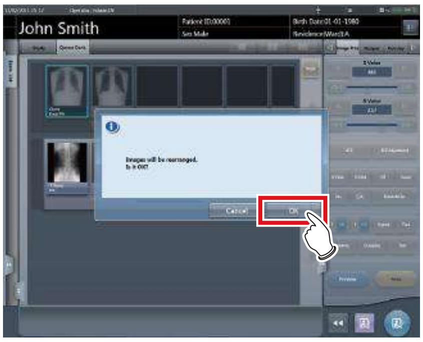
3 Press [Reset].

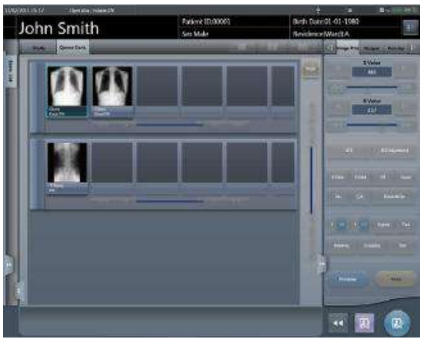


- A confirmation screen is displayed.

4 Press [OK].

- Press [Cancel] to return to the previous screen.


Images will be rearranged.
Is it OK?



- The order of images can be changed in this state.

IMPORTANT

- Series that include unexposed images cannot be sorted.

HINT

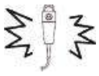
- If there is an unexposed Exam. Tag, the device icon is displayed.

6.5.10 Automatic output

Depending on settings, the examination results can be automatically output at the completion of the examination.

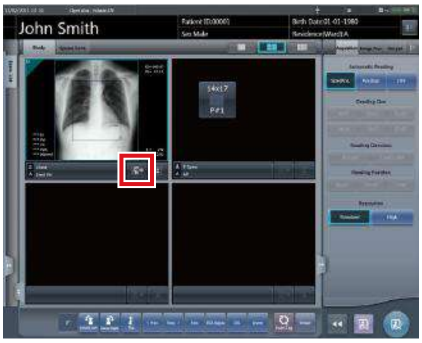
1 Perform exposure.

- Configure the X-ray device settings and check the exposure setting before making an exposure.



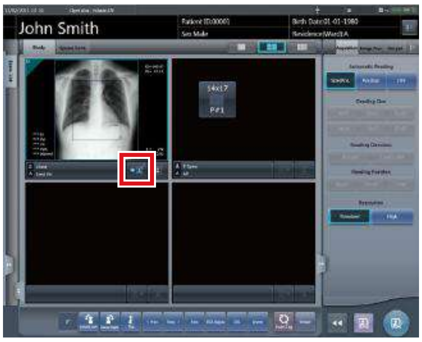
Press the exposure switch

⇩



- After reading the images, the remaining seconds for automatic output will be displayed on the output button.
- When the focus is moved, a countdown will begin.

⇩



- When the countdown reaches 0, the icon will change to [ ] and output will begin.

HINT ··································

- Before the countdown reaches 0, if any operation is performed on the image, or when transitioned to a different screen, the number of seconds is reset to the initial value and the countdown is stopped.

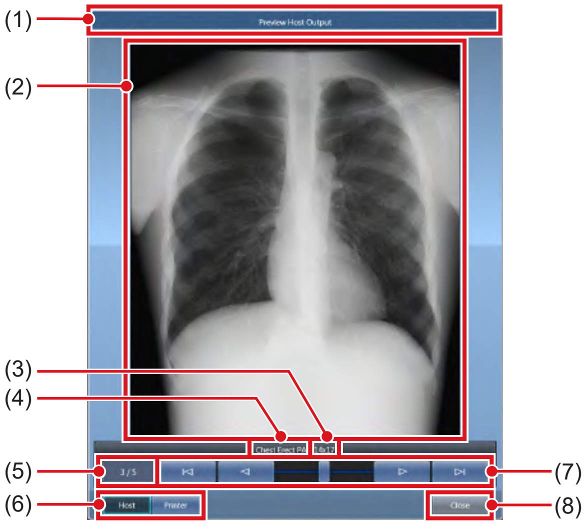
··

6.5.11 Preview

You can preview the images to be output by pressing [Preview] on the [Image Proc], [Output], or other tabs.

● Screen structure

This screen is used for checking preview images.



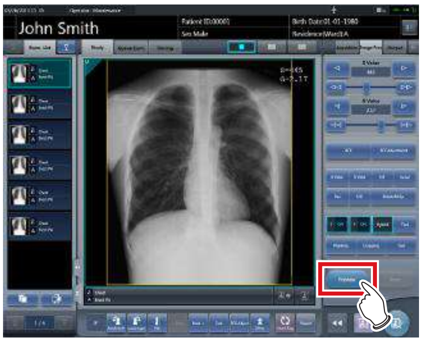
Number	Name	Functions
(1)	Title bar	Displays [Preview Host Output] when a preview image for the host is shown. Displays [Preview Printer Output] when a preview image for the printer is shown.
(2)	Output preview image	Displays a preview of the image to be output.
(3)	Output size	Displays the output size of the preview image currently shown.
(4)	Exam. Tag	Displays the Exam. Tag of the preview image currently shown.
(5)	Number of images	Displays the number of images currently shown and the total number of images.
(6)	Host/Printer switch button	Press [Host] to display a preview image for host output, or [Printer] to display a preview image for printer output.
(7)	Scroll bar/scroll buttons	Drag the scroll bar to switch output preview images. Press [◁ ▷] to switch images one by one. Press and hold it to scroll an image. Press [|◁ ▷|] to display the first or last image.
(8)	Close button	Closes the preview screen.

HINT

- If the image has been trimmed, the actual output size is displayed in [Size].

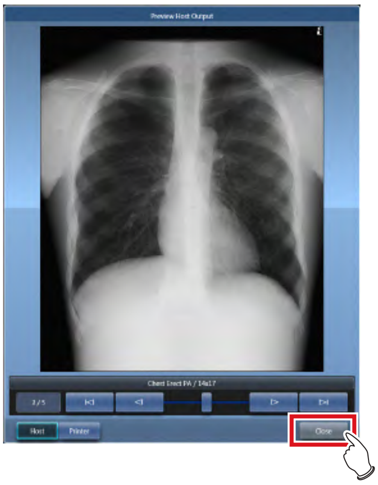
●Procedure for displaying previews

1 Press [Preview].



- The image is displayed on the preview screen.

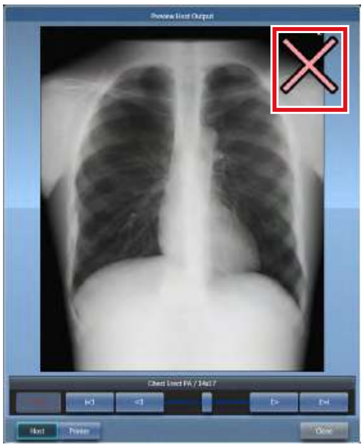
2 Press [Close].



- The preview screen is closed.

HINT

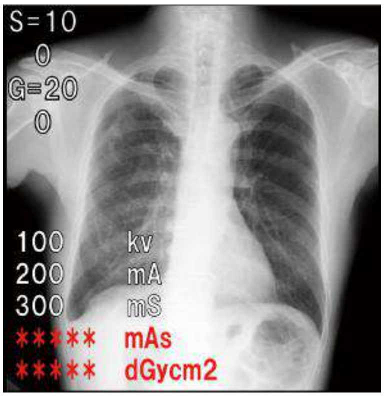
- When a rejected image is displayed, a reject icon appears in the image display area.



- A life-size stitched image with two or more combined output pages cannot be displayed on the preview screen.

6.6 Exposure Screen ([Exp.Info] Tab) Functions

This section describes the operation performed when the [Exp.Info] tab is selected on the control panel of the exposure screen. X-ray irradiation information can be displayed on the image by the setting.



IMPORTANT

- When linked to the X-ray device, editing can only be made when X-ray irradiation results cannot be acquired from the X-ray device.
- Risk of misidentification of patients may occur if modifications to patient information are made. Be sure to read "Chapter 1 Safety Precautions & Warnings".

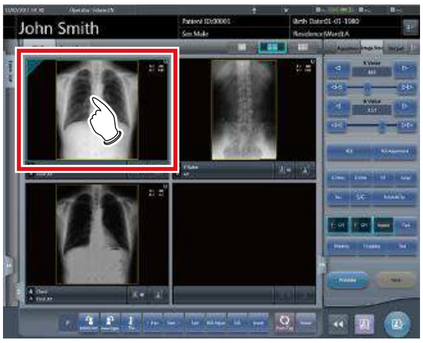
HINT

- When there are no X-ray irradiation results associated with an exposed image, result values are not displayed.
- Editing of X-ray irradiation results can be performed regardless of the existence of links to the X-ray device.
- Even if results were input before acquiring X-ray irradiation results, they are overwritten with the irradiation results acquired from the X-ray device when the image is read. If irradiation results could not be acquired from the X-ray device, then the values are not overwritten.

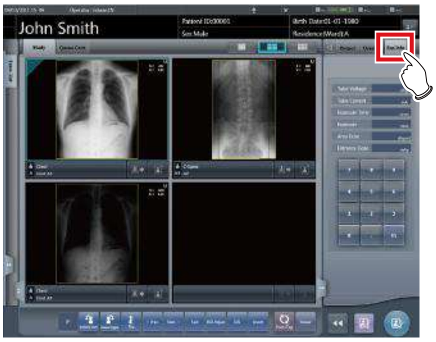
6.6.1 Change of X-ray irradiation information (results)

When it is necessary to change irradiation information (results) after exposure, irradiation information (results) can be changed with the following procedure.

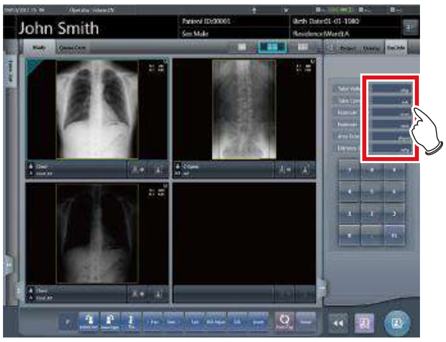
1 Select an image to edit.



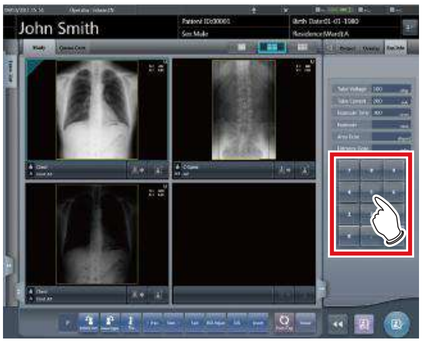
2 Press the [Exp.Info] tab.



3 Press the number part of the item you want to edit.



4 **Input numerical values with the number pad.**



- The input value is reflected.

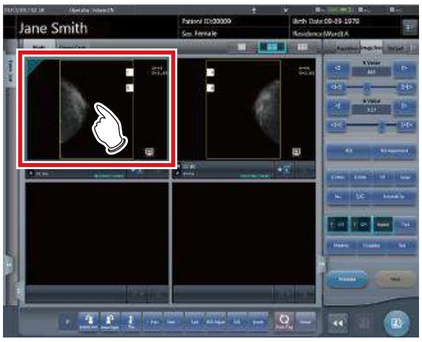
6.6.2 Change of mammogram image X-ray irradiation information (results)

When it is necessary to change irradiation information (results) after mammography exposure, irradiation information (results) can be changed with the following procedure.

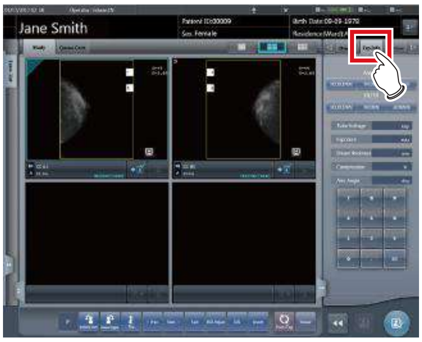
IMPORTANT

- For United States of America, this device is not intended to use for Mammography.

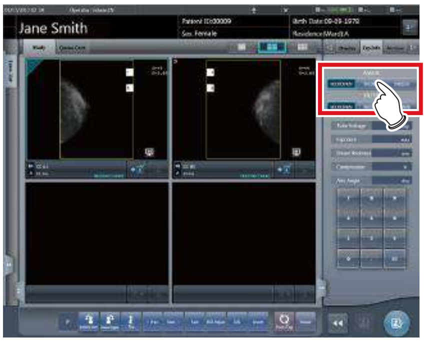
1 **Select an image to edit.**



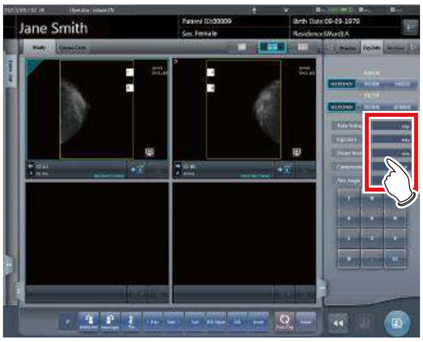
2 **Press the [Exp.Info] tab.**



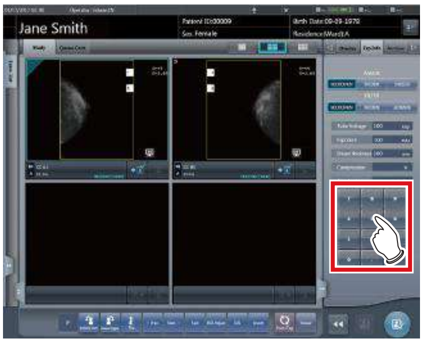
3 **Select anode and filter.**



4 **Press the number part of the item you want to edit.**



5 **Input numerical values with the number pad.**

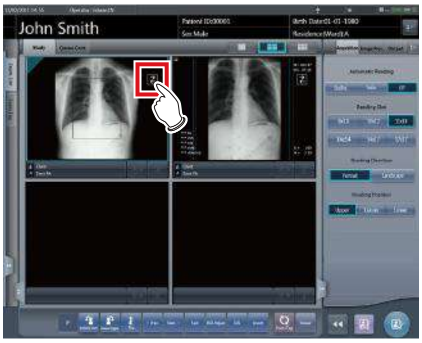


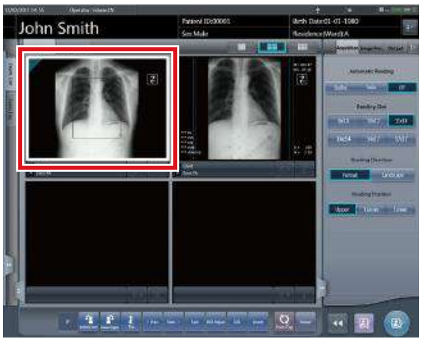
- The input value is reflected.

6.6.3 Replacement of X-ray irradiation information (results)

X-ray irradiation information (results) of the image exposed with the CR cassette can be replaced.

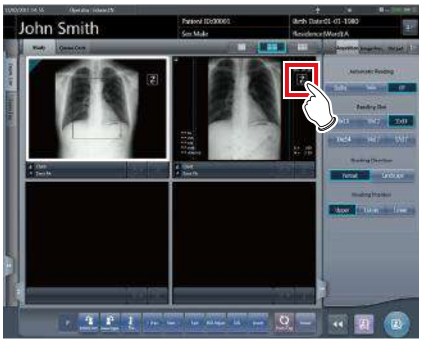
1 Press [⇄] of the image to be replaced.





- The image display area is surrounded by a white frame.

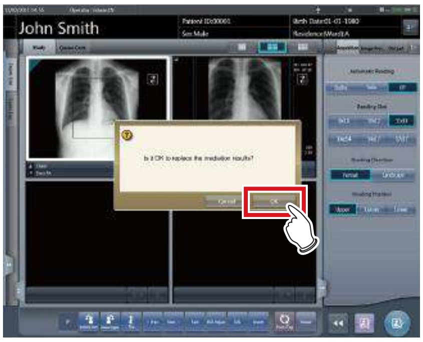
2 Press [⇄] of the image to be replaced.

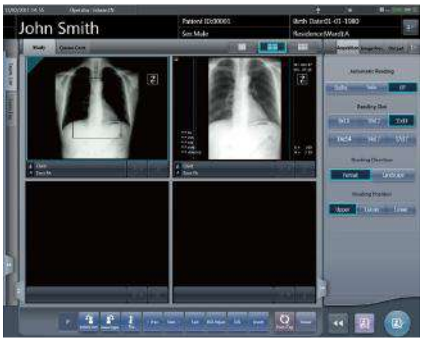


- A confirmation screen is displayed.

3 Press [OK].

- Press [Cancel] to return to the previous screen.





- The X-ray irradiation information (results) is replaced.

HINT

- To quit replacement, press [⇄] of the same frame again, or press any position other than [⇄].

6.7 Functions of the viewer screen

Before each operation, select the image to adjust and select the [Image Proc] tab on the control panel.

Image adjustment performed on the viewer screen
Changing E/F/HS/RS/RT parameters
Changing ROI area
Changing effective image area
Changing masking area
Modifying the S value/G value
Zooming in and out
Moving an image
Rotate&Flip display
Free rotation
Grid removal/Scattered radiation correction
Positioning of annotation
Adjusting an annotation
Creating/editing annotation characters

6.7.1 Change of E/F/HS/RT parameters

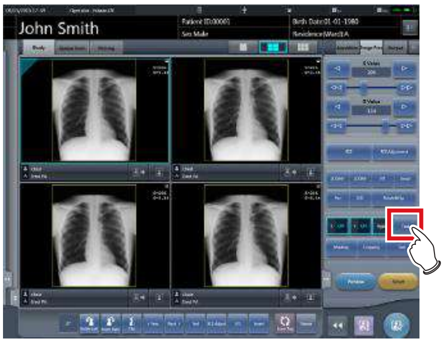
The parameters can be changed.

IMPORTANT

- In the settings, RS processing can be used instead of HS processing. For more details, contact Konica Minolta technical representatives.
- RS processing cannot be used in mammogram exposure.
- RS processing can be used when the image processing method is set to [REALISM].
- RT processing can be used when RE-T processing is enabled in the exposure conditions.

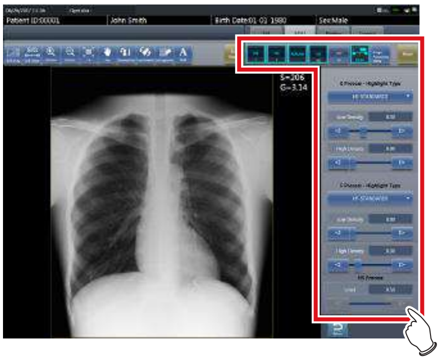
1 Press [Tool].

- There are 4 types of processing: E process, F process, HS process or RS process and RT process.



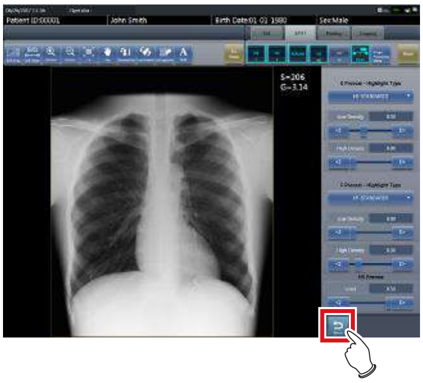
- The viewer screen is displayed.

2 Select the process and change the parameter.



Icon	Functions
ON E	Switches the E process [ON] and [OFF].
ON F	Switches the F process [ON] and [OFF].
Hybrid	Change the image processing method. Select the image processing from [Standard], [Hybrid], and [REALISM].
OFF HS	Switches the HS process or RS process [ON] and [OFF].
OFF RT	Switches the RT process [ON] and [OFF].
Param	Performs fine adjustments.
Image Processing Menu	Change the image processing condition.
Reset	Resets operations performed in the tab.

3 Press [Return] after the change.



- Returns to the exposure screen.

HINT

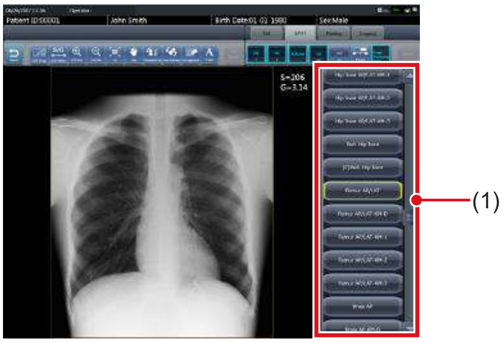
- E/F/HS/RS/RT parameters can be changed individually.
- The results of the changed parameter, such as E/F/HS/RS/RT, are automatically stored, and can also be reflected in following exposures.

●Changing the image processing condition

To change image processing conditions, press [▤] to display the following screen.

IMPORTANT

- When image processing conditions are changed for images that have undergone scattered radiation correction processing, the new image processing condition will not apply to the scattered radiation correction processing.
- Image processing conditions cannot be changed when the highlight function for the tube/gauze is enabled. The highlight function for the tube/gauze is not available for examination images when the selected image processing condition cannot be used with the highlight function for the tube/gauze.
- Image processing conditions cannot be changed for stitching images.
- When the REALISM mode is selected in the image processing condition list, change image processing to [REALISM].

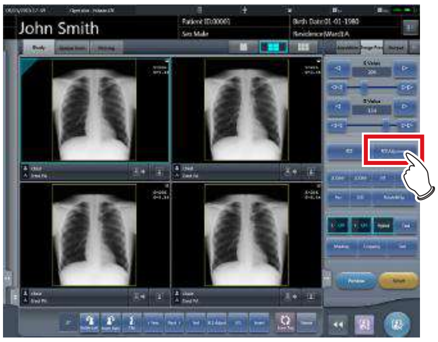


Number	Name	Functions
(1)	image processing condition list	Displays a list of image processing conditions. The button of the currently selected image processing condition is highlighted with a yellow border.

6.7.2 Change of the ROI area

This device will automatically recognize the ROI and display in the image area. The ROI area can be changed manually as necessary.

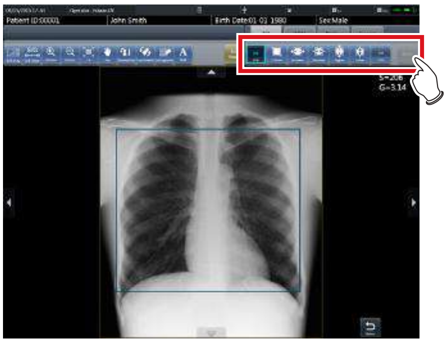
1 **Press [ROI Adjustment].**



- The viewer screen is displayed.

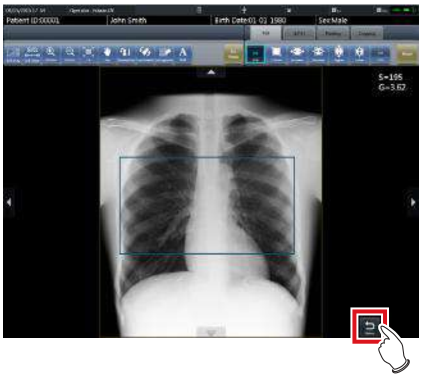
2 **Change the ROI area.**

- When an image is pressed in any location, ROI moves with the pressed part as the center.



Icon	Functions
OFF ROI	Switch between [ON] and [OFF] of ROI mode.
2-Point	Press any 2 points to specify the square with a diagonal line that connects the 2 points as the size of the ROI area.
Increase Decrease	Adjust the width of the ROI area. The width changes every time you press these buttons.
Higher Lower	Adjust the height of the ROI area. The height changes every time you press these buttons.
THX TYPE	Switch between the displays of 2 ROIs when the image processing parameter has 2 ROIs.
Reset	Resets operations performed in the tab.

3 **Press [Return] after change.**



- Returns to the exposure screen.

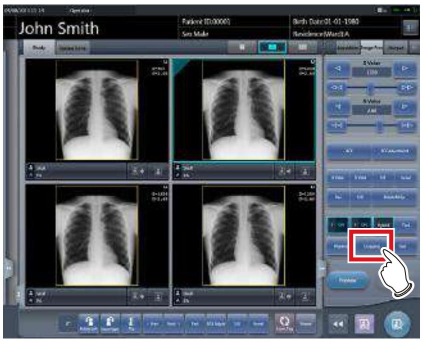
IMPORTANT

- When the ROI area is changed, the auto gradient process is performed again, and the optimized image is displayed.

6.7.3 Change of the effective image area

Although this device automatically recognizes the effective image area and displays it within the image area, the effective image area can be adjusted manually as necessary.

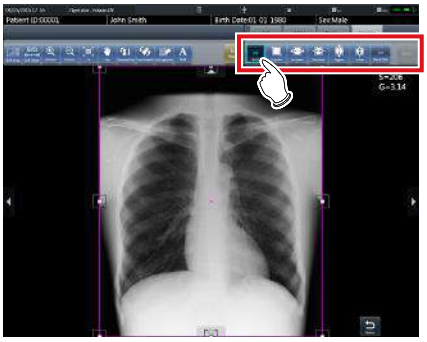
1 **Press [Cropping].**



- The viewer screen is displayed.

2 **Change the effective image area.**

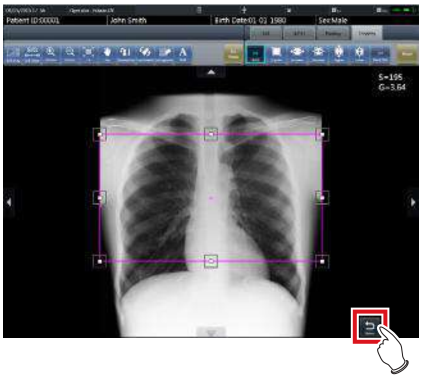
- When an image is pressed in any location, the effective image area moves with the pressed part as the center.



Icon	Functions
OFF Auto	Switch between [ON] and [OFF] of the image processing temporarily.
2-point	Press any 2 points to specify the square with a diagonal line that connects the 2 points as the size of the effective image area.
Increase Decrease	Adjust the width of the effective image area. The width changes every time you press these buttons.
Higher Lower	Adjust the height of the effective image area. The height changes every time you press these buttons.

Icon	Functions
OFF Fixed Size	To use a fixed size effective image area, set this option to [ON].
Reset	Resets operations performed in the tab.

3 Press [Return] after change.



- Returns to the exposure screen.

IMPORTANT

- If image recognition fails and an inappropriate effective image area is set during automatic reading, the image may become white or black all over. When this happens, temporarily set the image processing to [OFF] and set the appropriate effective image area.
- Depending on the image information status, automatic reading may not be carried out properly, and part of the image may be missing. In this case, please change the effective image area manually.
- The rotation and status is reset when editing the effective image area of images rotated by free rotation.

HINT

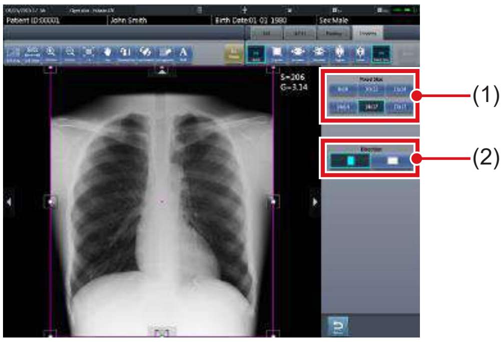
- Depending on the printer, the output may be smaller than the effective image area. When this type of printer is used, specify the effective image area in advance assuming a smaller output.
- The effective image area can be changed by directly dragging the square mark on the frame border of the effective image area or its perimeter.

● Using a fixed size effective image area

If you want to use a fixed size effective image area, press [OFF Fixed Size]. Then the following buttons are displayed.

IMPORTANT

- This function does not support the stitching and mammogram images.



Number	Name	Functions
(1)	Fixed Size	Fixes the size of the effective image area. Select [8x10], [10x12], [11x14], [14x14], [14x17], or [17x17].
(2)	Direction	Switches the orientation of the effective image area between portrait and landscape.

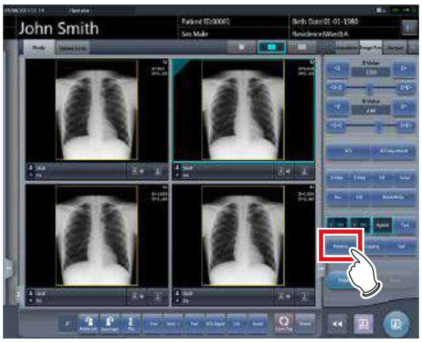
HINT

- The fixed size effective image area can be moved by changing the position of the center point. If any part of the effective image area is moved outside the image display area, the position of the center point is adjusted automatically so that the effective image area is included in the display area.
- If the effective image area is not included in the image display area after the orientation has been changed, the size-fixing setting is cleared and the size of the effective image area is reduced until it is included in the display area.
- If the effective image area is manually resized, the size-fixing setting is cleared.

6.7.4 Change of the masking area

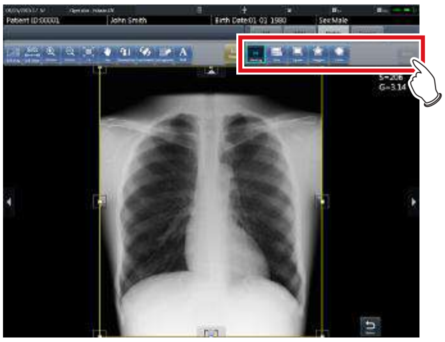
Although this device automatically recognizes the exposure field area and performs masking to display within the image area, the masking area can be changed manually when necessary.

1 Press [Masking].



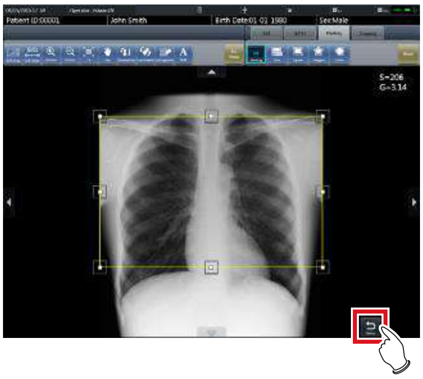
- The viewer screen is displayed.

2 Change the masking area.



Icon	Functions
OFF Masking	Switch between [ON] and [OFF] of the masking area display.
Auto	Specify a masking area by automatically recognizing the effective image area.
Square	Press any 2 points to specify a square with a diagonal line that connects the 2 points as the size of the masking area.
Polygon	Press any 4 points or more to specify a polygonal masking area.
Circle	Press any 3 points to specify a round masking area.
OFF Chest wall	Switch between [ON] and [OFF] of the chest wall blackening process.
Reset	Resets operations performed in the tab.
▮	This is displayed in the specified masking area. Drag to adjust the size of the masking area.
▲ ▼ ◀ ▶	Move the masking frame up, down, left and right.

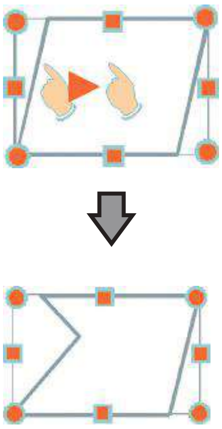
3 Press [Return] after change.



- Returns to the exposure screen.

HINT

- The masking area can be changed by directly dragging the square mark on the frame border of the masking area or its perimeter.
- After specifying a masking area, drag any point of the masking area to change the shape of the masking area.

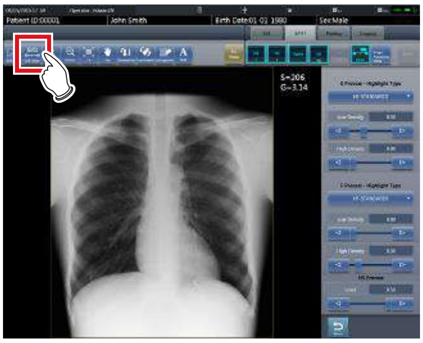


- The results of masking recognition outside the exposure field can be confirmed on the viewer screen or the image display area of the exposure screen.
- Depending on the image information status, automatic recognition of the exposure field area may not be carried out properly. In this case, please change the effective image area manually.
- The accuracy of masking can be increased by paying attention to the following at exposure.
  - Place protective equipment as parallel to the edge of the exposure field as possible or place it so it does not overlap the exposure field edge.
  - Make sure that objects (clothes or subject area other than the target) other than the target body part for exposure are not included in the image.
  - Place the exposure target body part at the center of the exposure field as much as possible.
  - When split exposure is performed, provide an interval of at least 1cm between exposure fields before exposure.
- When the fractional masking function is used on REGIUS SIGMA/SIGMA2, the masking area may occasionally be moved to the inside of the image.
- The masking area rotates in accordance with the angle of rotation used when performing free rotation.

6.7.5 Modifying the S value/G value

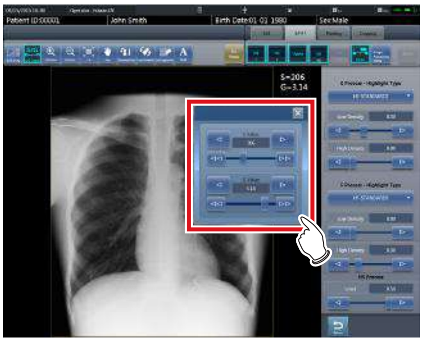
You can modify the S value/G value from the Viewer screen.

1 **Press [S/G Value].**



- The control panel for adjusting the S value/G value is displayed.

2 **Adjusts the image.**



- Pressing [◁ ▷] increases or decreases the value step by step.

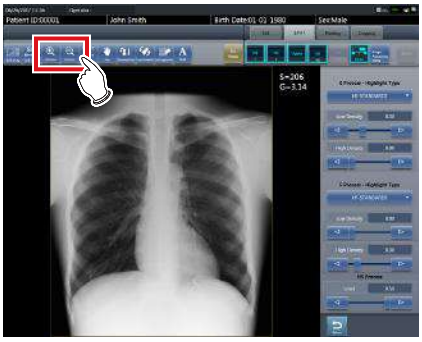
HINT

- Dragging the control panel slider or pressing [◁◁ ▷▷] increases or decreases the S value/G value in multiples of the preset value. In addition, when you press the [S/G] button on the control panel, the S value/G value can be adjusted by dragging the image.
- Use the user tool to set the drag operation to increase or decrease the S/G values and specify the degree of change that can be obtained from [◁◁ ▷▷]. You can also select the setting so that the S/G values can be adjusted by simply dragging the image or dragging it using both mouse buttons without pressing the [S/G] button.

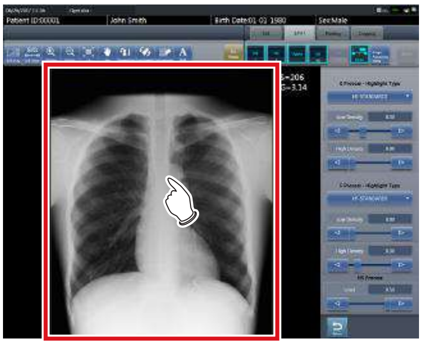
6.7.6 Zooming in and out

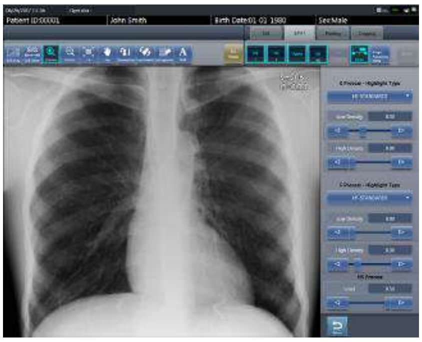
Zoom in or out from/to an image according to the following procedure.

1 **Press [ZOOM+] or [ZOOM-].**



2 **Press any part of the image.**





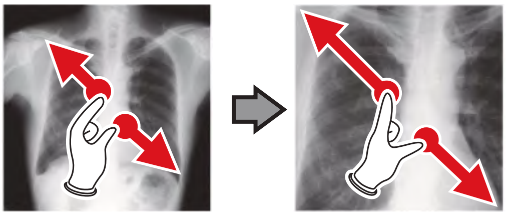
- Zooming in/out is displayed, centering on the pressed part.
- Every time you press a part of the image, the image is gradually zoomed in/out.

HINT

- When a multi-touch monitor is used, zoom in/out can be performed with the following operations. In this case [ZOOM+] or [ZOOM-] do not need to be pressed.

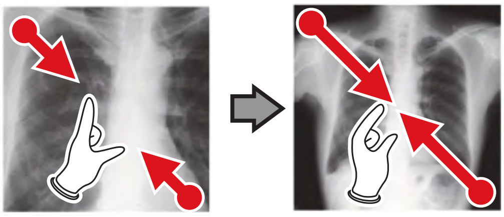
Zoom in

Simultaneously press 2 points with the thumb and index finger and spread the 2 points (spread the fingertips) to zoom in on the image.



Zoom out

Simultaneously press 2 points with the thumb and index finger and move to close the 2 points (close the fingertips) to zoom out on the image.

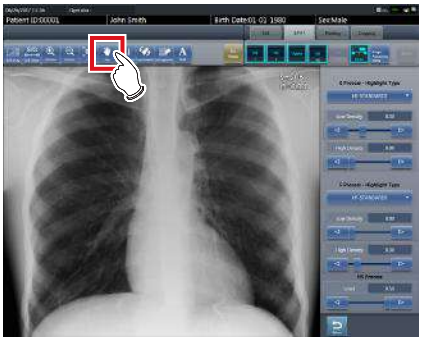


- You can also zoom in or out from/to an image by rotating the mouse wheel up and down on the image.
- Use the user tool to set the amount of change associated with rotating the mouse wheel.

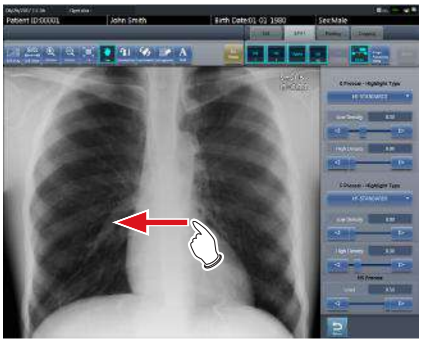
6.7.7 Moving images

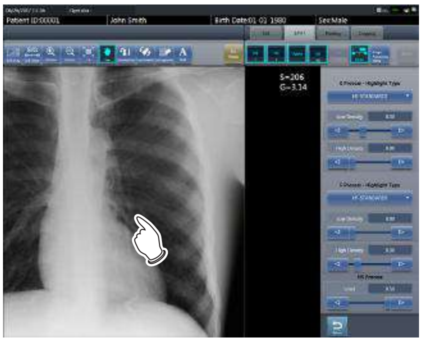
Move an image according to the following procedure.

1 Press [Pan].



2 Drag the image.





- The image moves following the drag operation.

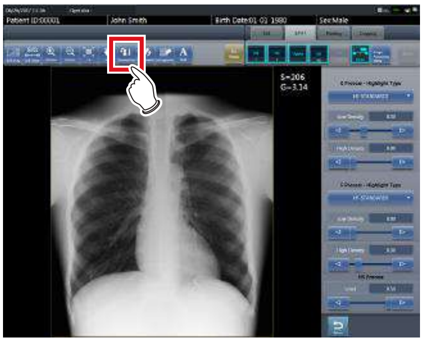
HINT

- You can also select the setting that can move an image by simply dragging the image or dragging it while simultaneously operating both buttons without pressing [Pan].

6.7.8 Rotate&Flip display

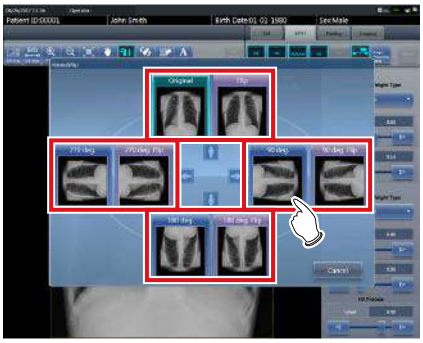
Rotate or flip image according to the following procedure.

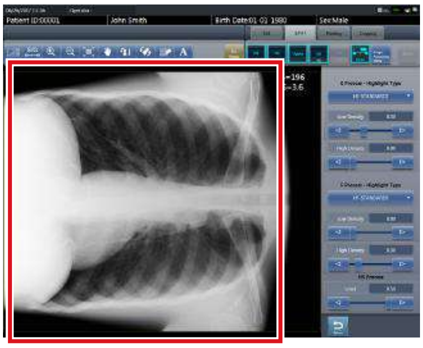
1 Press [Rotate&Flip].



- The selection screen is displayed.

2 Select the target item to be changed.

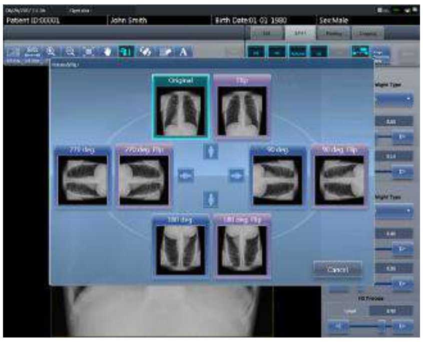




- The rotation/flip is reflected in the image.

HINT

- To simultaneously rotate and flip an image, when [Flip OFF] and [Flip ON] are displayed on the selection screen at the top right, press [Flip ON] and then select an image to be rotated.
- You can select whether to display [Flip OFF] and [Flip ON] when installing the device.



- Only the options [Original], [180 deg.], [Flip], and [180 deg. Flip] can be selected for images composed of combined stitching images.
- If rotate and flip is used on an images rotated by free rotation, the rotation and status is reset.

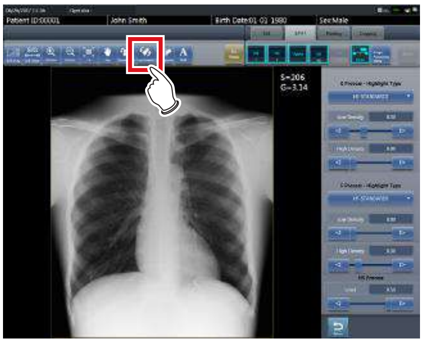
6.7.9 Free Rotation

Images can be rotated freely.

IMPORTANT

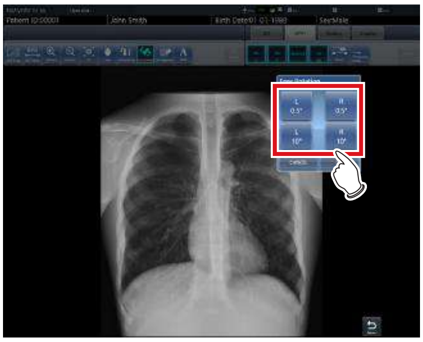
- Stitching exposure pre-combining images and mammogram images cannot be rotated freely.

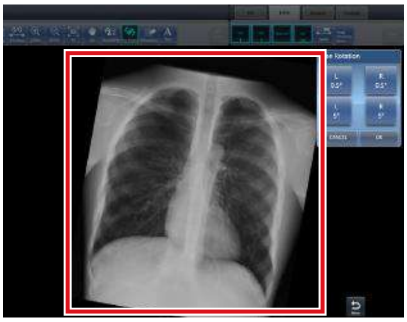
1 Press [Free Rotation].



- The [Free Rotation] screen is displayed.

2 On the [Free Rotation] dialog, press the rotation button corresponding to the desired direction of rotation.



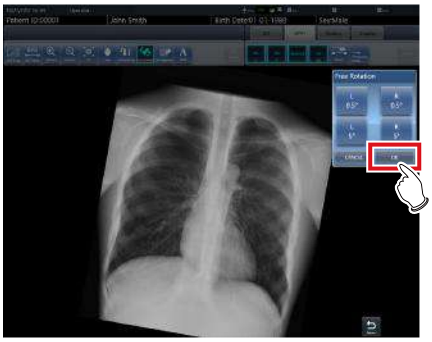


- The image rotates either right or left by 0.5° each time [R 0.5°] or [L 0.5°] is pressed.
- The image rotates either right or left by 5° each time [R 5°] or [L 5°] is pressed.

HINT

- Images can also be rotated with drag operation of the mouse or with mouse wheel operation.
- Rotating the mouse wheel forward rotates the image to the left by 0.5°. Rotating the mouse wheel rearward rotates the image to the right by 0.5°.
- Angle of rotation settings can be changed. For more details, refer to "CS-7 Operation Manual for User Tool".

3 Press [OK].



6.7.10 Grid removal/Scattered radiation correction

This device performs the automatic removal process of the grid, but the grid can be removed again manually as necessary.
Scattered radiation can also be corrected manually.

HINT

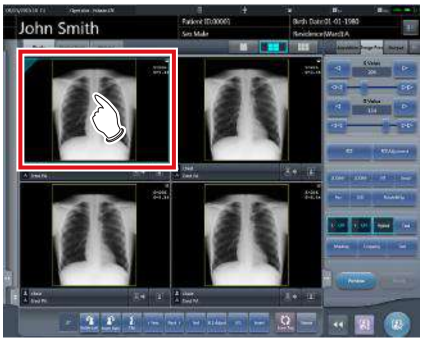
- Set the irradiation field size to at least 10x10 cm to use the grid. If the area is less than 10x10cm, automatic grid recognition may fail during the grid removal process.

● Grid removal

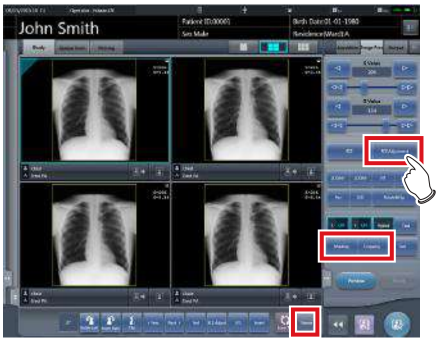
IMPORTANT

- This function is only available for images that are exposed on the DR Detector.
- If performing the grid removal process, do so within 1 week of exposing the image.
- To remove grid on serial exposure images, press the [Grid] on the exposure screen.

1 Select the image to remove the grid again.

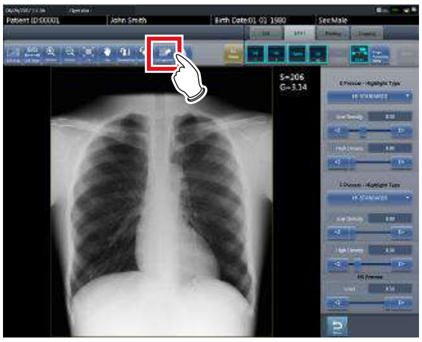


2 Press one of [ROI Adjustment], [Masking], [Cropping], or [Viewer].



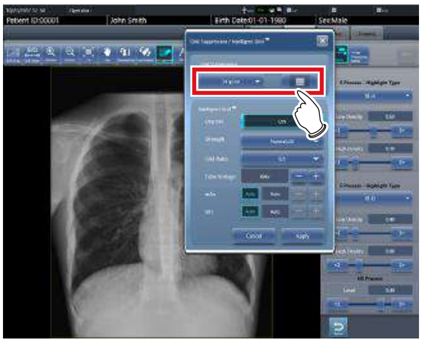
- The viewer screen is displayed.

3 Press [Grid Suppress].



- Control panel to adjust the parameters is displayed.

4 Remove the grid again.



- Setting items are as follows.

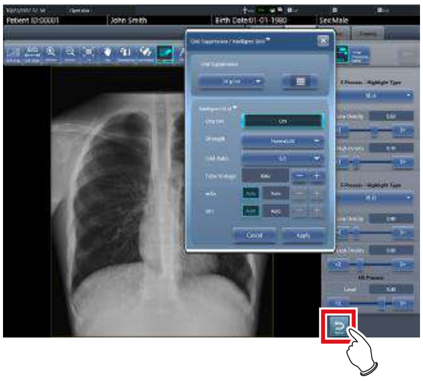
Name	Description
Grid density	Select the grid density. Select [34 lp/cm], [40 lp/cm], or [60 lp/cm]. The default setting is [34 lp/cm].
Grid direction	The grid direction can be changed between vertical and horizontal. Switches between vertical and horizontal every time the button is pressed.

HINT

- You can also remove the grid when correcting scattered radiation.
- After grid is removed from One Shot stitching images, the system automatically returns to the exposure screen.

5 Press [Apply] after the grid is removed again.

6 Press [Return].



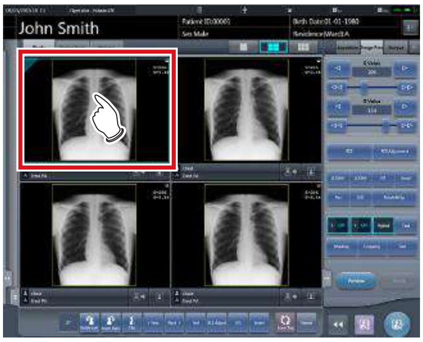
- Returns to the exposure screen.

●Scattered radiation correction

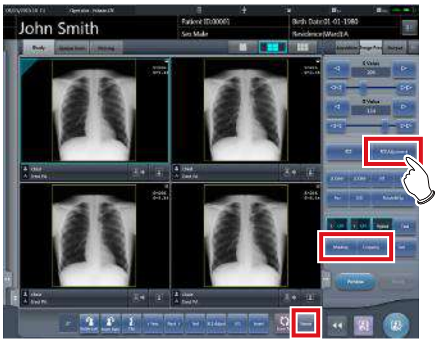
IMPORTANT

- This function is only available for images that are exposed on the DR Detector.
- Scattered radiation correction cannot be applied to stitching images.
- Scattered radiation correction is not available when the highlighted tube/gauze function is turned on. In this case, first turn the highlighted tube/gauze function off to apply scattered radiation correction, then turn the highlighted tube/gauze function on.

1 Select an image whose scattered radiation you want to correct.

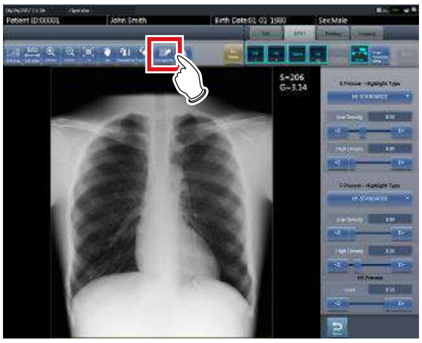


2 **Press one of [ROI Adjustment], [Masking], [Cropping], or [Viewer].**



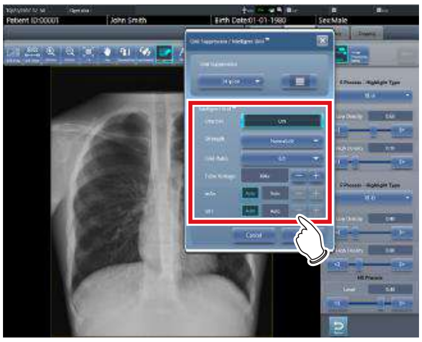
- The viewer screen is displayed.

3 **Press [Grid Suppress].**



- Control panel to adjust the parameters is displayed.

4 **Perform scattered radiation correction.**



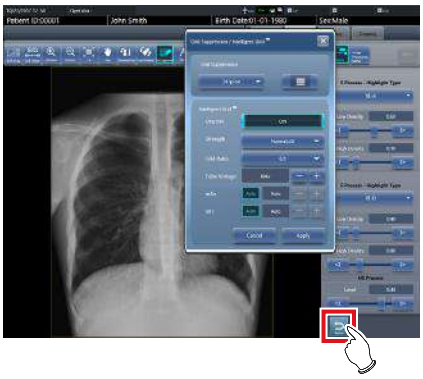
- Setting items are as follows.

Name	Description
ON/OFF	Switches the scattered radiation correction [ON] and [OFF]. Switches between [ON] and [OFF] every time the button is pressed.
Correction Level	Setting the scattered radiation correction level.
Grid Ratio	Setting the grid ratio.
Tube Voltage	Setting the tube voltage.
mAs	Configures the mAs value. To set the mAs value manually, press the [Auto/Manual] button to turn [Manual] mode on.
SID	Configures the SID value. To set the SID value manually, press the [Auto/Manual] button to turn [Manual] mode on.

5 **Press [Apply] when the chenge setting is complete.**

- The scattered radiation correction level is changed.

6 **Press [Return].**

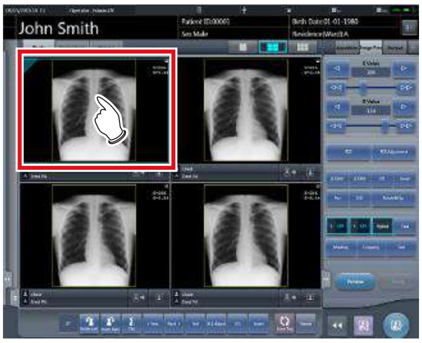


- Returns to the exposure screen.

6.7.11 Positioning of annotation

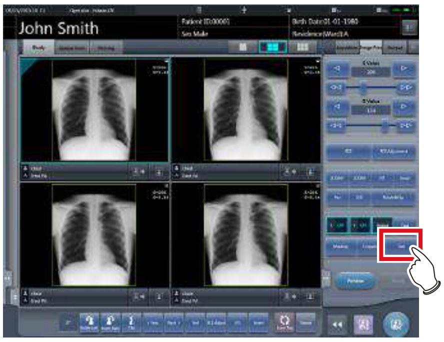
Using the annotation function, arbitrary characters can be placed on an image.

1 **Select an image on which you want to position an annotation.**



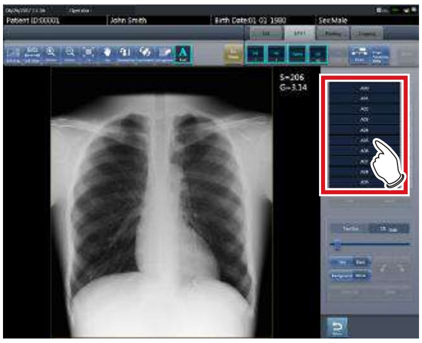
- The control panel automatically switches to the [Image Proc] tab. If it does not switch, select the [Image Proc] tab manually.

2 **Press [Text].**

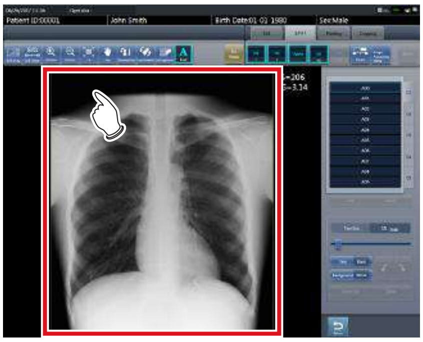


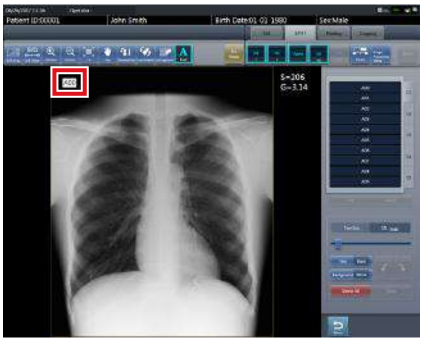
- The viewer screen is displayed.

3 **Select the annotation to be positioned.**



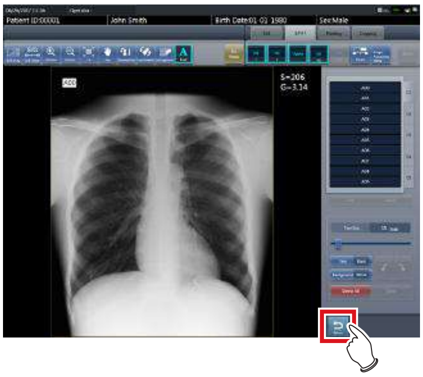
4 **Select the place to position the annotation.**





- Annotation is added.

5 **Press [Return] after the placement of annotation is completed.**

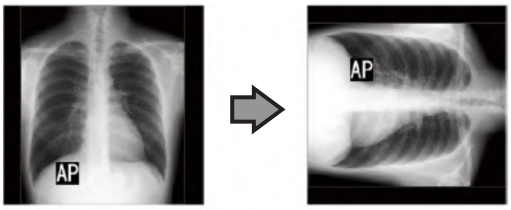


- Returns to the exposure screen.

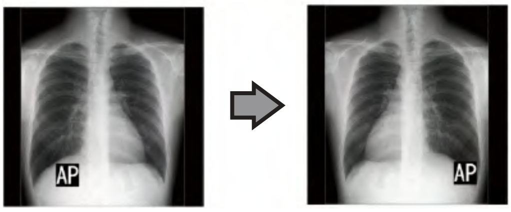
HINT

- You can also position an annotation by pressing either [ROI Adjustment], [Masking], [Cropping], or [Viewer], displaying the viewer screen, and pressing [Text].
- When you rotate or flip an image after positioning an annotation, the following operation is performed. The position of the annotation textbox is linked to the rotation or flip of the image, but the characters themselves do not rotate or flip.

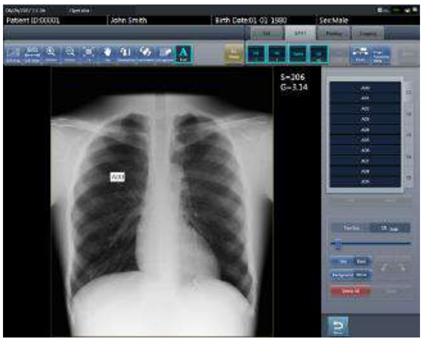
Rotation example (90 degree rotation)



Flip example (left right flip)



- If you display the text box using any of the following methods, you can freely enter an annotation. Enter the annotation text using the keyboard.
  - Click anywhere on the image.
  - When you select an annotation in Step 3, click where characters are not registered.

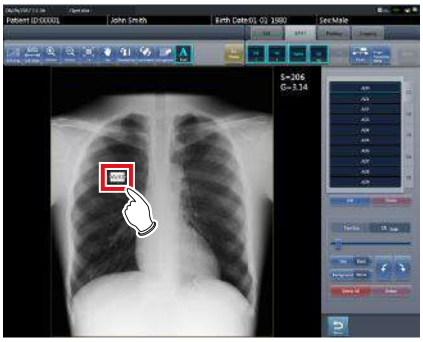


- You can move the annotation you placed using the mouse.

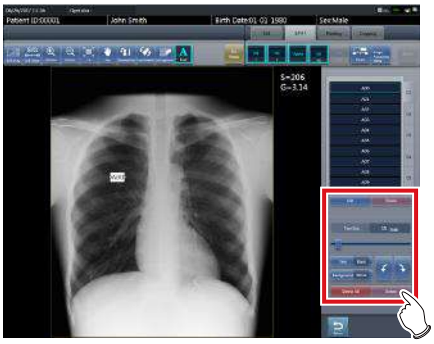
6.7.12 Adjustment of annotation

Annotations placed can be adjusted.

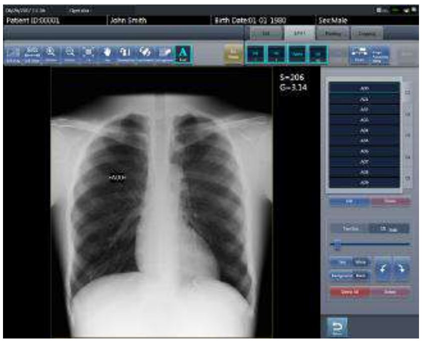
1 Select an annotation to adjust.



2 Adjust the annotation.



Icon	Functions
Text size adjustment	Adjust the size of characters by moving the slider.
Text Color Black	Character color switches between black and white every time the button is pressed.
Background White	Background color switches between white, black, and transparent every time the button is pressed.
↶ ↷	The character is rotated 15 degrees in the clockwise or counter-clockwise direction centering at the top left of the character every time each button is pressed.
Delete All	All positioned annotations are deleted.
Delete	Selected annotations are deleted. **HINT** • The keyboard Delete key can also be used in the same way to delete annotations.



- The adjustment details are reflected.

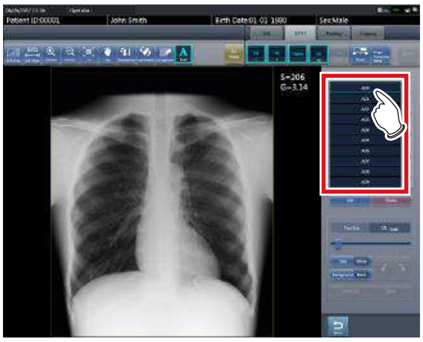
HINT

- When placed annotations are double clicked, the annotation characters can be edited. An annotation can have up to 256 characters and can also contain line feeds.
- Character content of a rotated annotation cannot be modified. Return the character to the unrotated state (0 degrees) once before modifying the character content.
- When [Overall size] is selected as the output method after an annotation is positioned, the entire image and the character size of annotation are reduced together. When setting [Overall size] for outputting a large size image with a small film, you need to be careful by making the character size of the annotation larger. Also, even with the film with the same character size and output method, the character size will differ slightly depending on the setting of resolution.
- Character color and background color are linked. When setting character color to "White", background color can be selected from either "Black" or "None". When setting character color to "Black", background color can be selected from either "White" or "None".
- Settings of the font size, font color, and background color are saved even after the device is restarted.

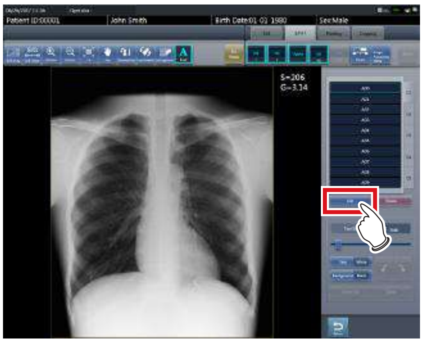
6.7.13 Creating/editing of annotation characters

Characters to place in annotations can be created and edited.

1 Select a row with no annotation or select a row with characters to edit.



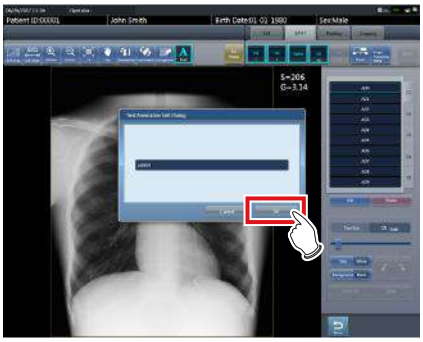
2 Press [Edit].

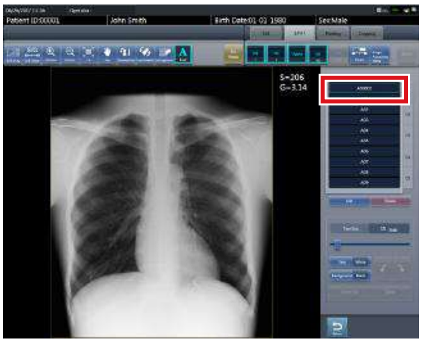


- The input screen is displayed.

3 Create or edit characters, and press [OK].

- Press [Cancel] to quit creation or editing.

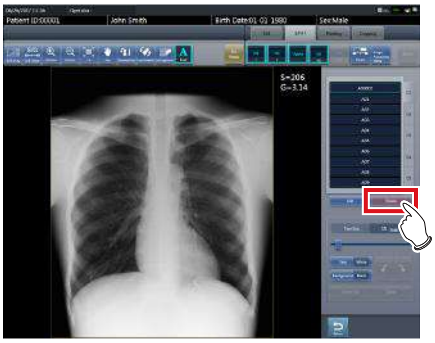




- Content is reflected in the row selected in step 1.

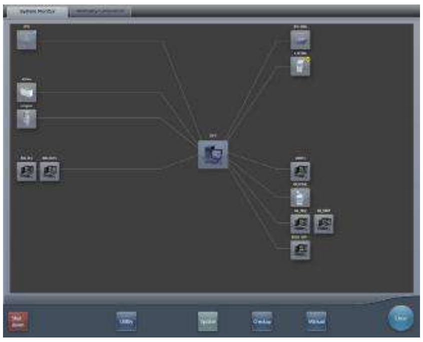
HINT

- Up to 10 annotations can be created per tab.
- Annotations registered in each tab can have up to 14 characters.
- To delete the selected characters, press [Delete] during step 2.



6.8 Functions of the system monitor screen

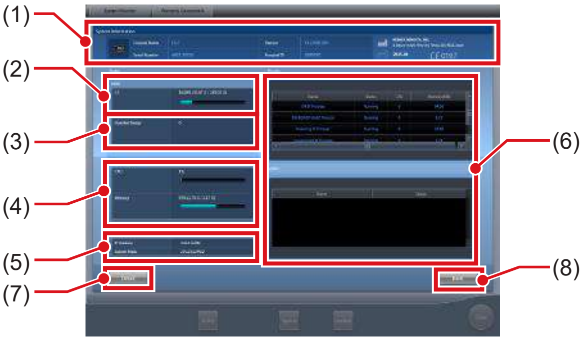
Status of this device and connected devices can be confirmed in the [System Monitor] tab of the system monitor screen.



- The system monitor screen is displayed when [System] is pressed on the initial screen or in the tool bar on the body part selection screen.
- If the network status is not displayed, press the [System Monitor] tab on the function switching tabs.
- The status of the selected device is displayed by selecting the icon on the screen.

6.8.1 System status

The status of this device can be confirmed.

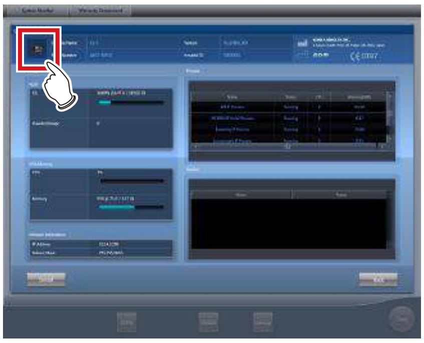


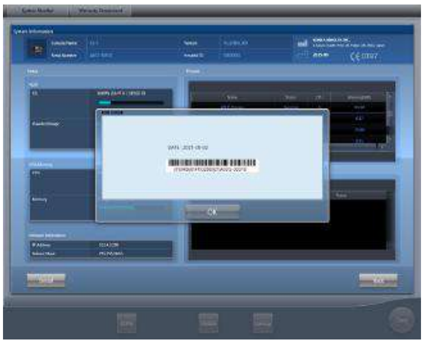
Number	Name	Functions
(1)	System Information	Displays the name, serial number, version, and hospital ID of this device.
(2)	HDD	Displays maximum capacity of the hard disk and space in use.
(3)	Guarded Image	Displays the total number of guarded images.
(4)	CPU/Memory	Displays utilization for the CPU and memory. The extent of utilization is displayed in %.
(5)	Network Information	Displays the IP address and subnet mask.
(6)	Process, Service	Displays processes and services.
(7)	Detail button	Displays details of the network environment of this device.
(8)	Back button	Closes the screen.

●Displays the UDI barcode.

Use the following sequence to display the Unique Device Identification System (UDI) barcode used to identify CS-7 devices.

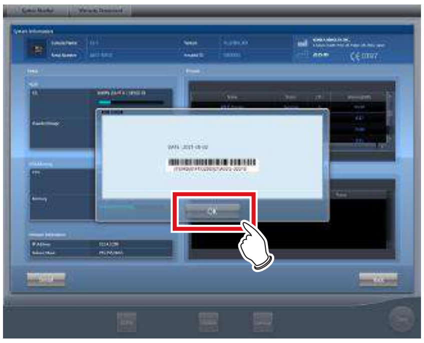
1 Press the image of this device in the CS-7 system information.





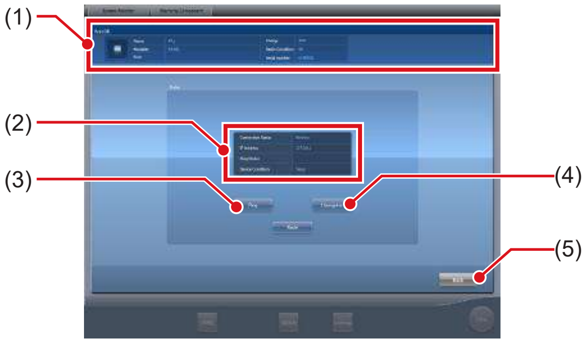
- The UDI CODE screen appears.
- The date, UDI barcode, and serial number appear.

2 Press the [OK] button to close the screen.



6.8.2 Device status

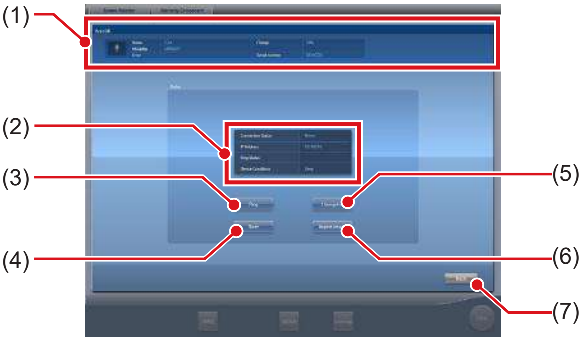
The status of REGIUS, REGIUS SIGMA/SIGMA2, X-ray device, AeroDR Generator Interface Unit, AeroDR Generator Interface Unit2, Generator Interface Unit 3, AeroDR Portable RF Unit, AeroDR Portable RF Unit2, sub monitor, and other devices connected to this device can be confirmed.



Number	Name	Functions
(1)	Device name Information	The device name, device type, error description are displayed.
(2)	Status	The IP address of a device, port number, ping status and device condition are displayed.
(3)	Ping button	Press to confirm the ping status.
(4)	Route button	Press to confirm Route information.
(5)	Back button	Closes the screen.

6.8.3 Status of the DR Detector

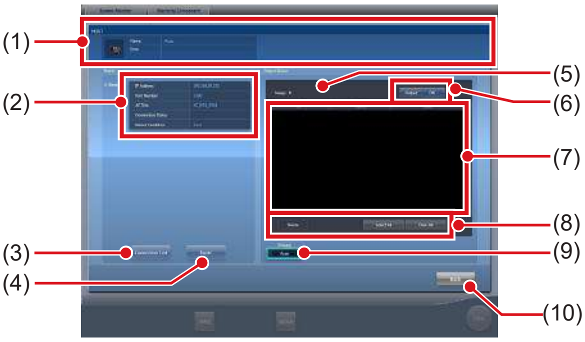
The status of the DR Detector can be confirmed.



Number	Name	Functions
(1)	Status of AeroDR	The name of the DR Detector, modality, error description, battery status, signal strength, and serial number are displayed.
(2)	Status	Status of wired or wireless connection for DR Detector, IP address, Ping status, and device status are displayed.
(3)	Ping button	Press to confirm the ping status.
(4)	Route button	Press to confirm Route information.
(5)	Unregister button	Releases the registration of the DR Detector.
(6)	Import Image	Images exposed in Aero Storage mode are retrieved to this device.
(7)	Back button	Closes the screen.

6.8.4 Host status

The status of hosts connected to this device can be confirmed.



Number	Name	Functions
(1)	HOST	The host name and error description are displayed.
(2)	Status	Host IP address, port number, AE title, connection status, and device condition are displayed.
(3)	Connection Test button	Press to confirm the connection status.
(4)	Route button	Press to confirm Route information.
(5)	Number of reserved images	The number of images not sent to the host is displayed.
(6)	Output switch button	Switches between [ON] and [OFF] of host output. Outputs when set to [ON], and does not output to the host when set to [OFF] and the output reservation (queue) remains in this device. Switches between [ON] and [OFF] every time the button is pressed.
(7)	Output reservation list	Output reservations (queues) remaining in this device are displayed.
(8)	Delete button, Select All button, Clear All button	Deletes output reservations being displayed in the output reservation list. Select an output reservation displayed in the output reservation list and press [Delete] to delete. To delete all output reservations, press [Select All] and then press [Delete]. When [Clear All] is pressed, the selection is released.
(9)	Primary/Secondary button	To switch the output destination to backup, select [Secondary]. [Secondary] is displayed only for the number of connected devices.
(10)	Back button	Closes the screen.

IMPORTANT

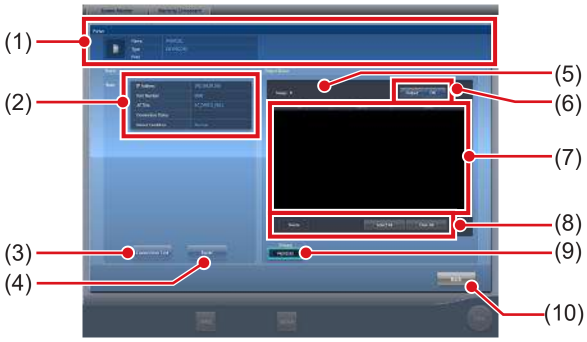
- Change the output destination only after fully understanding the operation status of the system. It may cause output of an image to the same host twice, or may disable output to the image diagnosis host.

HINT

- To keep output reservations (queues) intentionally in this device, set the output reservation to [OFF]. Delete unwanted queues among the accumulated queues, then switch the setting to [ON] so that only necessary queues can be sent to the host.
- When Storage Commitment function is used, [Status] displays Storage Commitment connection destination information as well.
  In addition, [Number of reserved images] - [Primary/Secondary] buttons are available by switching HOST output and Storage Commitment output using the tabs.

6.8.5 Printer status

The status of printers connected to this device can be confirmed.



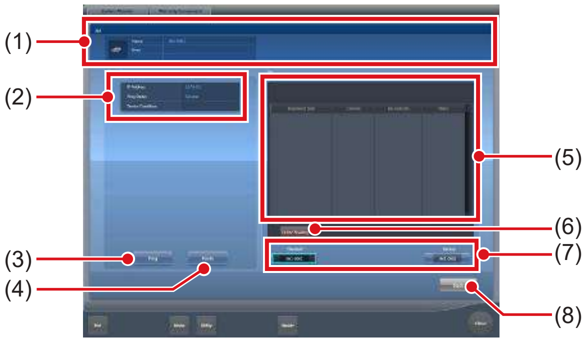
Number	Name	Functions
(1)	Printer	The printer name, printer type and error description are displayed.
(2)	Status	Printer IP address, port number, AE title, connection status, and device condition are displayed.
(3)	Connection Test button	Press to confirm the connection status.
(4)	Route button	Press to confirm Route information.
(5)	Number of reserved images	The number of images not sent to the printer is displayed.
(6)	Output switch button	Switches between [ON] and [OFF] of printer output. Outputs when set to [ON], and does not output to printer when set to [OFF] and the output reservation (queue) will remain in this device. Switches between [ON] and [OFF] every time the button is pressed.
(7)	Output reservation list	Output reservations (queues) remaining in this device are displayed.
(8)	Delete button, Select All button, Clear All button	Deletes output reservations being displayed in the output reservation list. Select a displayed output reservation and press [Delete] to delete. To delete all output reservations, press [Select All] and then press [Delete]. When [Clear All] is pressed, the selection is released.
(9)	Primary/Secondary button	To switch the output destination to backup, select [Secondary]. [Secondary] is displayed only for the number of connected devices.
(10)	Back button	Closes the screen.

HINT

- To keep output reservations (queues) intentionally in this device, set the output reservation to [OFF]. Delete unwanted queues among the accumulated queues, then switch the setting to [ON] so that only necessary queues can be printed.

6.8.6 Status of JM

The status of the JM connected to this device can be confirmed.



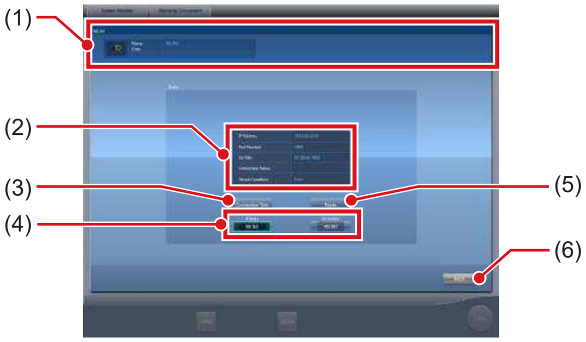
Number	Name	Functions
(1)	JM information	The JM name and error description are displayed.
(2)	Status	IP address, ping status of JM, and device status are displayed.
(3)	Ping button	Press to confirm the ping status.
(4)	Route button	Press to confirm Route information.
(5)	Job	In the case of bar code registration operation, displays the status of registered bar code (CR cassette). Displays registration date and time, REGIUS or REGIUS SIGMA/SIGMA2, bar code, and status.
(6)	Delete Reading button	Stops read status.
(7)	Standard/ Backup button	Switches between standard JM and backup JM. When the standard JM is working normally, it is not possible to switch to the backup JM.
(8)	Back button	Closes the screen.

IMPORTANT

- Normally [Delete Reading] is not used. Use this when although an image is not being read, the message "This image is being prepared for reading, and cannot be viewed. View after reading is completed or cancelled." is displayed, and you cannot move to another screen.

6.8.7 Status of RIS-IN

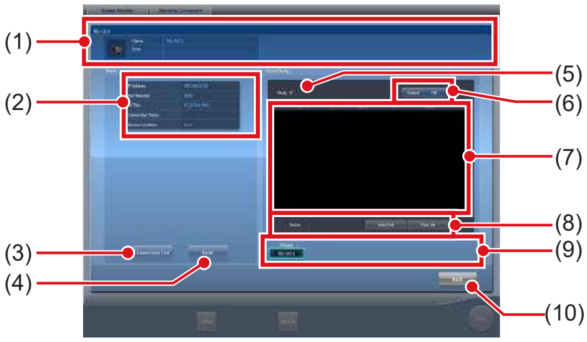
The status of higher systems connected to this device can be confirmed.



Number	Name	Functions
(1)	RIS-IN information	The higher system name and error description are displayed.
(2)	Status	Higher system IP address, port number, AE title, connection status, and device condition are displayed.
(3)	Connection Test button	Press to confirm the connection status.
(4)	Primary/Secondary button	Switches between standard RIS-IN and backup RIS-IN when used normally.
(5)	Route button	Press to confirm Route information.
(6)	Back button	Closes the screen.

6.8.8 Status of RIS-OUT

The status of higher systems connected to this device can be confirmed.



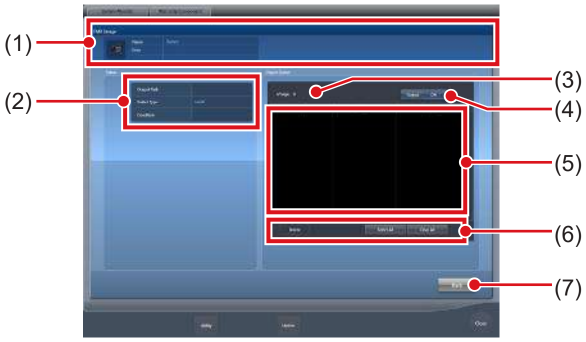
Number	Name	Functions
(1)	RIS-OUT information	The higher system name and error description are displayed.
(2)	Status	Higher system IP address, port number, AE title, connection status, and device condition are displayed.
(3)	Connection Test button	Press to confirm the connection status.
(4)	Route button	Press to confirm Route information.
(5)	Untransmitted examinations	The number of untransmitted examinations is displayed.
(6)	Output switch button	Switches between [ON] and [OFF] of output to a higher system. Outputs when set to [ON], and does not output to a higher system when set to [OFF] and the output reservation (queue) remains in this device. Switches between [ON] and [OFF] every time the button is pressed.
(7)	Output reservation list	Output reservations (queues) remaining in this device are displayed.
(8)	Delete button, Select All button, Clear All button	Deletes output reservations being displayed in the output reservation list. Select a displayed output reservation and press [Delete] to delete. To delete all output reservations, press [Select All] and then press [Delete]. When [Clear All] is pressed, the selected state is released.
(9)	Primary/Secondary button	Switches between standard RIS-OUT and backup RIS-OUT when used normally.
(10)	Back button	Closes the screen.

IMPORTANT

- Because examination status is not output to a higher system when the switch of output is [OFF], the higher system cannot manage examination status, and completed examinations may remain in a list. Do not set the switch of output to [OFF] except at the time of a higher system problem.

6.8.9 EMR Image

The information (image) of electronic medical records connected to this device can be confirmed.



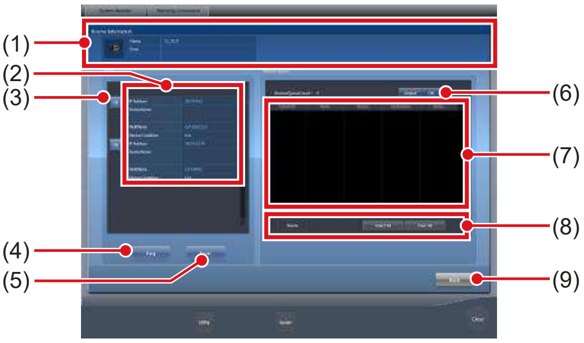
Number	Name	Functions
(1)	EMR Image	The electronic medical record name, type, and error description are displayed.
(2)	Status	Higher system output path, folder type, and device condition are displayed.
(3)	Image	The number of untransmitted images is displayed.
(4)	Output switch button	Switches between [ON] and [OFF] of output to an electronic medical record. Outputs when set to [ON], and does not output to an electronic medical record when set to [OFF] and the output reservation (queue) remains in this device. Switches between [ON] and [OFF] every time the button is pressed.
(5)	Output reservation list	Output reservations (queues) remaining in this device are displayed.
(6)	Delete button, Select All button, Clear All button	Deletes output reservations being displayed in the output reservation list. Select a displayed output reservation and press [Delete] to delete. To delete all output reservations, press [Select All] and then press [Delete]. When [Clear All] is pressed, the selected state is released.
(7)	Back button	Closes the screen.

IMPORTANT

- Because exposed images information is not output to a higher system when the switch of output is [OFF], the higher system cannot display the exposed images. Do not set the switch of output to [OFF] except at the time of a higher system problem.

6.8.10 Status of examination sharing (reception)

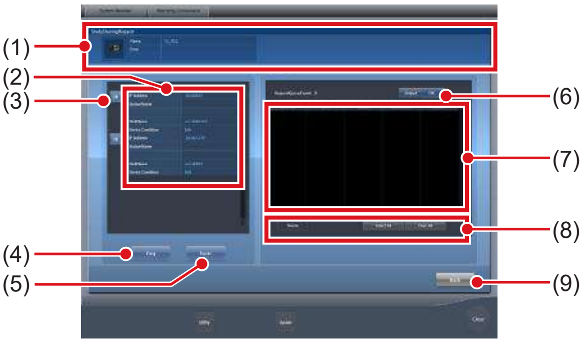
The status of examination sharing (reception) can be confirmed.



Number	Name	Functions
(1)	Study Sharing Request	Examination signal and error contents are displayed.
(2)	Terminal list	This device and terminals conducting examination sharing are displayed. IP address, host name and device condition are displayed.
(3)	Reception queue button	This is displayed for each terminal. If [ON], reception queue processing is conducted; if [OFF], it is not.
(4)	Ping button	Press to confirm the ping status.
(5)	Route button	Press to confirm Route information.
(6)	Queue switch button	Switches between [ON] and [OFF] of reception queue for all terminals. If [ON] is set, reception queue processing is conducted; if [OFF] is set, it is not. The device switches between [ON] and [OFF] every time the button is pressed.
(7)	Reception queue list	Reception queues for all terminals including this device are displayed.
(8)	Delete button, Select All button, Clear All button	Deletes queues displayed in the reception queue list. Select a displayed reception queue and press [Delete] to delete. To delete all reception queues, press [Select All] and then press [Delete]. Pressing [Clear All] cancels the selection.
(9)	Back button	Closes the screen.

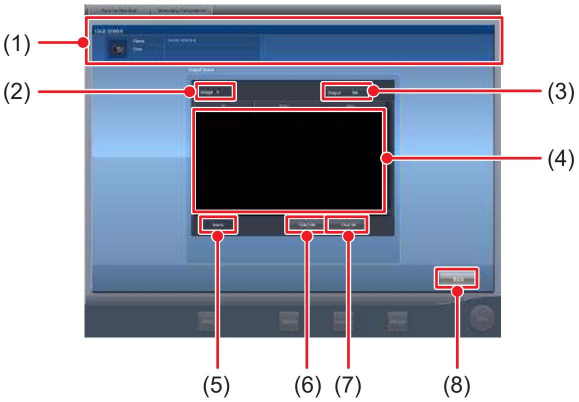
6.8.11 Status of examination sharing (transmission)

The status of examination sharing (transmission) can be confirmed.



Number	Name	Functions
(1)	Study Sharing Request	Examination signal transmission and error contents are displayed.
(2)	Terminal list	This device and terminals conducting examination sharing are displayed. IP address, host name and device condition are displayed.
(3)	Transmission queue button	This is displayed for each terminal. If [ON], transmission queue processing is conducted; if [OFF], it is not.
(4)	Ping button	Press to confirm the ping status.
(5)	Route button	Press to confirm Route information.
(6)	Queue switch button	Switches between [ON] and [OFF] of transmission queue for all terminals. If [ON] is set, transmission queue processing is conducted; if [OFF] is set, it is not. The device switches between [ON] and [OFF] every time the button is pressed.
(7)	Transmission queue list	Transmission queues for all terminals including this device are displayed.
(8)	Delete button, Select All button, Clear All button	Deletes queues displayed in the transmission queue list. Select a displayed transmission queue and press [Delete] to delete. To delete all transmission queues, press [Select All] and then press [Delete]. Pressing [Clear All] cancels the selection.
(9)	Back button	Closes the screen.

6.8.12 Edge Server status



Number	Name	Functions
(1)	EDGE-SERVER	The Edge Server name, error details, and other information are displayed.
(2)	Image	The number of untransmitted images is displayed.
(3)	Output	The AeroRemote image output status is displayed: [ON] or [OFF]. The output status of AeroRemote images ([ON]/[OFF]) cannot be manipulated. When the free space of the hard disk is low, it is automatically set to [OFF].
(4)	Output Queue list	Output reservations (queue) in this device is displayed.
(5)	Delete button	Select this button to delete the reservations selected in the output reservation list. Select [Select All], then select [Delete] to delete all output reservations.
(6)	Select All button	Select this button to select all reservations displayed in the output reservation list.
(7)	Clear All button	Select this button to deselect the output reservations.
(8)	Back button	Closes the screen.

Chapter 7

Various Functions

This chapter describes the functions of this device.

7.1 Exposure with AeroDR Portable RF Unit

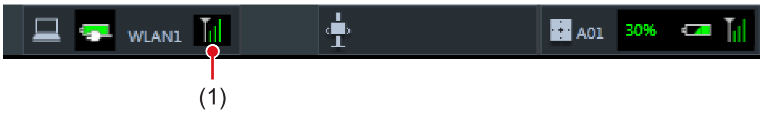
IMPORTANT

- When you restart this device, also restart the AeroDR Portable RF Unit.

7.1.1 Screen structure

●Detailed description of the application bar

The wireless LAN adapter can be reset using the radio wave status icon on the application bar.



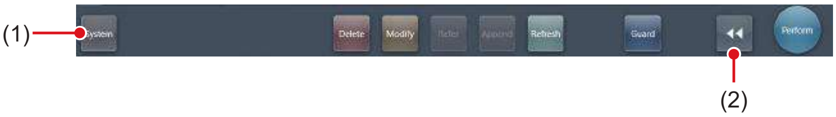
Number	Name	Functions
(1)	Radio wave status	Resets the wireless LAN adapter. Press the radio wave status icon to display the dialog. Press [OK] to reset the wireless LAN adapter.

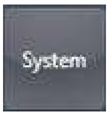
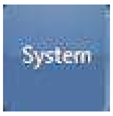
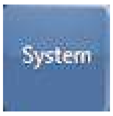
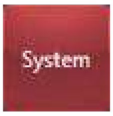
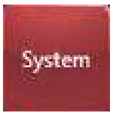
IMPORTANT

- Do not turn off the wireless LAN adapter while it is resetting.
- If you are using an external wireless LAN adapter, do not remove it while it is resetting.

● Detailed description of tool bar

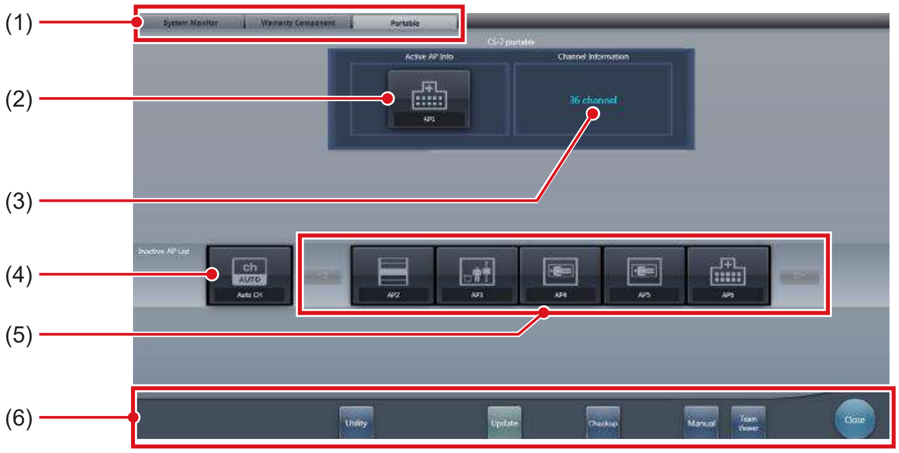
The display of following buttons in the tool bar area changes depending on the status of communication with the host.



Number	Name	Button display	State of the network and connected devices	Precautionary items
(1)	System button	 (Gray)	The network is disconnected or the output control of all RIS/HOST has been turned [OFF] manually. It is possible to continue exposures, but the data is not sent to RIS/HOST, it is stored in this device as data waiting to be sent.	• After a study is completed, connect to the network, and send data waiting to be sent (it is sent automatically by connecting to the network).
		 (Blue)	The network is connected and there is no data waiting to be sent.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button.
		 (Blue: rotating white point)	The network is connected and there is data waiting to be sent.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF].
		 (Red)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, but without data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
		 (Red: rotating white point)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, and with data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF]. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
(2)	Display/hide button	Switches between display and hide of the tool bar. When the tool bar is hidden, the state of the network and connected devices is shown instead of the system button.		

● System monitor screen (Portable)

This is the screen for switching the AP information and channels built into the AeroDR Portable RF Unit.



Number	Name	Functions
(1)	Function switching tab	Switches between the [System Monitor], [Warranty Component], and [Portable] tabs.
(2)	Active AP Info	Displays the AP information selected through the AeroDR Portable RF Unit.
(3)	Channel Information	Displays the channel of the AP information selected through the AeroDR Portable RF Unit. If multiple pieces of channel information are displayed, DFS has been set and one of the channels is in use.
(4)	Auto CH button	Automatically selects the optimum channel.
(5)	Inactive AP List	AP information list registered in this device. Select an icon to switch to an AP information. If there are more than 7 AP information registered, press [◁ ▷] to scroll sideways.
(6)	System menu	Starts a utility or shuts down the system. This is displayed regardless of tabs being selected. [Utility]: Starts utilities. This button is not displayed if the user authorization of the logged in operator is "Technologist". [Update]: Refreshes information. [Checkup]: Displays the checkup setting screen. [Manual]: The "CS-7 Operation Manual" is displayed. This button is not displayed if the manual file is not deployed. [TeamViewer]: Displays the TeamViewer startup button. [Close]: Exits the system monitor screen, and the previous screen is displayed.

HINT

- The [Portable] tab is displayed only when operating the AeroDR Portable RF Unit.

7.1.2 Exposure preparations

The exposure using the AeroDR Portable RF Unit is performed with the following procedure. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

IMPORTANT

- When this device is being used in the AeroDR Portable RF Unit, charge it when a notification that the battery level is low is displayed.

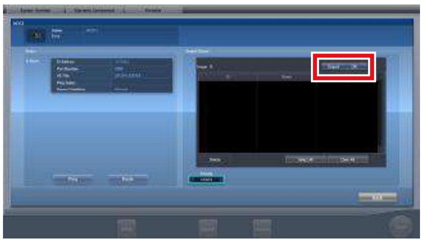
1 Register the DR Detector in this device that is to be used in AeroDR Portable RF Unit.

- For operation of the DR Detector, refer to "AeroDR Operation Manual".

HINT

- Confirm that the outputs of host, RIS-OUT and printer are [ON] on the system monitor screen ([System Monitor] tab).

In case of the host

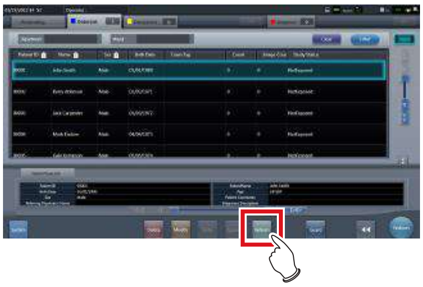


The device switches between [ON] and [OFF] every time [Output] is pressed.

- When using a RIS-OUT or printer, confirm the output is set to [ON] using the same procedure.

2 Import the examination information to be used for the exposure using the portable X-ray device.

- Confirm that an Ethernet cable is connected to this device.
- Press [Refresh] on the list screen on this device.



- The latest examination information is imported from the higher system by pressing the [Refresh] button.

HINT

- To input examination information manually, change the screen to the patient registration screen.

3 Remove the Ethernet cable that is connected to the DR Detector registration hub from the portable X-ray device hub.

HINT

- When the AeroDR Portable RF Unit is connected to this device through a wireless connection, remove the Ethernet cable from this device.

4 Unplug the power cable from the outlet when charging this device.

5 Complete the exposure preparations.

- Confirm that the AeroDR Portable RF Unit is shut down to complete the exposure and movement preparations.

HINT

- It is all right to keep power of this device and the DR Detector on.

7.1.3 Exposure

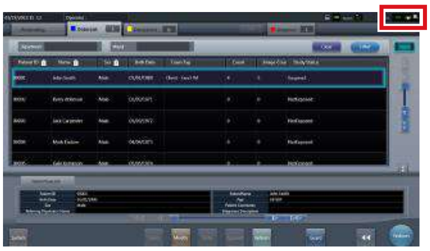
Prepare for exposure using the AeroDR Portable RF Unit according to the following procedure.

IMPORTANT

- Always check the patient information and exposure conditions before exposure.
- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.1.1 Screen structure".

1 When you arrive at the exposure location, turn on the power of the AeroDR Portable RF Unit.

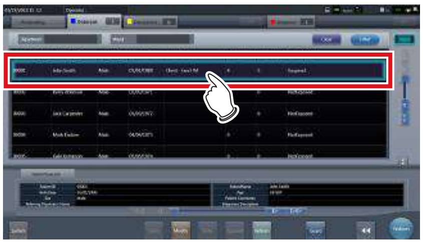
- Turn on the power switch of the AeroDR Portable RF Unit, and check that the power LED (green) is on.
- For startup operation of the AeroDR Portable RF Unit, refer to "AeroDR Portable RF Unit Operation Manual".
- Confirm that the icon of the DR Detector to be used in exposure is displayed on the application bar.



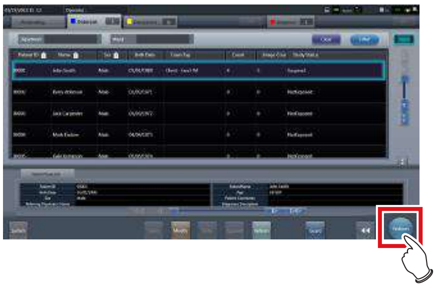
IMPORTANT

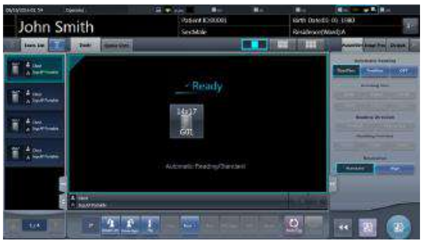
- When the AP information channel is set to [Auto CH], press [Auto CH] on the system monitor screen (portable) and check the channel.
- Wireless connection may take several minutes after the AeroDR Portable RF Unit is turned on.

2 Select the examination.



3 Press [Perform].





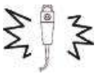
- The exposure screen is displayed.

HINT

- When importing examination information from the higher system and when exposure body part information is not imported, select the exposure body part. When pressing [Perform] on the body part selection screen, the exposure screen is displayed.

4 Perform exposure.

- Configure the portable X-ray device settings and check the exposure setting before making an exposure.


Press the exposure switch

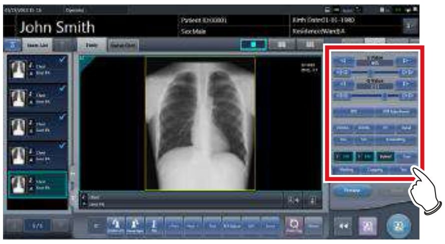
- The exposed image is displayed in the image display area.

IMPORTANT

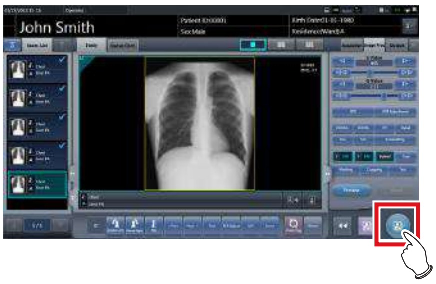
- When performing an exposure, stay away from the patient as far as possible before pressing the exposure switch.
- Do not let the DR Detector vibrate or receive shock until the exposed image is displayed.
- If an image is displayed when an exposure is not performed, this may be a detection error due to noises, etc. Perform rejected image (deletion of images) and repeat exposure.
- If you have performed an exposure when "Ready" was not displayed, repeat an exposure after approximately one minute.

5 Adjust the image.

- After exposure, adjust the image as required.



6 Press [ ].



- The exposure is completed, and the display returns to the initial screen.

IMPORTANT

- When consolidating image adjustment, press [ ] to pause the examination and return to the initial screen.

7 When exposure is finished, turn the AeroDR Portable RF Unit off.

- Turn off the power switch of the AeroDR Portable RF Unit, and check that the power LED (green/orange) is off.
- For shutdown operation of the AeroDR Portable RF Unit, refer to the "AeroDR Portable RF Unit Operation Manual".

HINT

- Image adjustment can be done on the exposure screen. However, if a more advanced image adjustment is required, perform image adjustment on the viewer screen. For details on the viewer screen, refer to "6.7 Functions of the viewer screen".
- When moving the exposure location, turn off the AeroDR Portable RF Unit. After moving the exposure location, perform the procedure again from step 1.
- It is all right to keep power of this device and the DR Detector on.

7.1.4 Change of the AP information

When the AP information needs to be changed because the exposure location has been moved, perform the following procedure.
The following procedure shows an example of a channel change from institution (1) to institution (2).

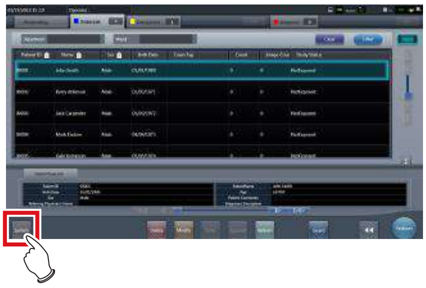
* The numbers ((1) and (2)) on the screen indicate AP information and AP information icons for institution (1) and (2). These are shown for ease of explanation, and not displayed on the actual screen.

IMPORTANT

- Make sure to check the following before changing the channel of the AP information.
  - The AeroDR Portable RF Unit is turned on.
  - The AeroDR Portable RF Unit has been turned on for 1 minute or more.

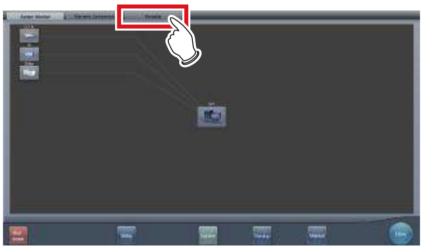
1 Press [System] to display the system monitor screen.

- [System] is displayed in the toolbar display area of the patient registration screen, list screen, body part selection screen, and exposure screen.



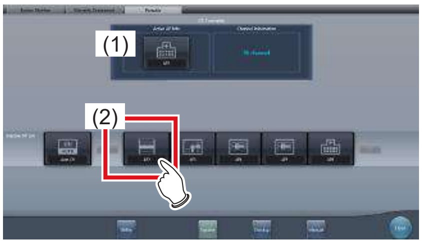
- The system monitor screen is displayed.

2 Press the [Portable] tab.



- The portable screen is displayed.

3 Select the icon of the AP information to be changed from the [Inactive AP List] icons.



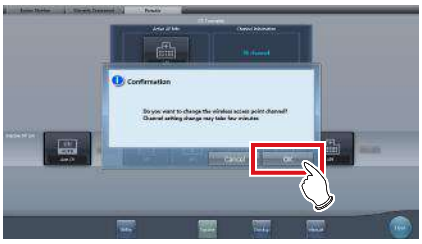
- A confirmation screen is displayed.

HINT

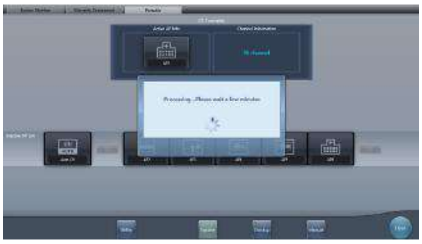
- When automatic channel selection is set, pressing [Auto CH] sets the optimum channel automatically.

4 Press [OK].

- Press [Cancel] to return to the previous screen.

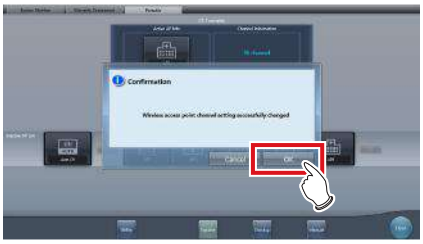


⇩



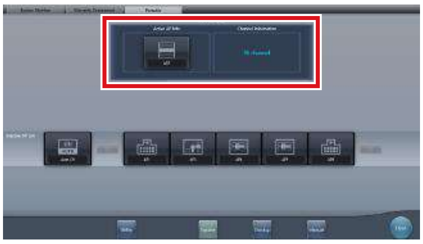
- The AP information change process begins.
- The change process takes several minutes.

⇩



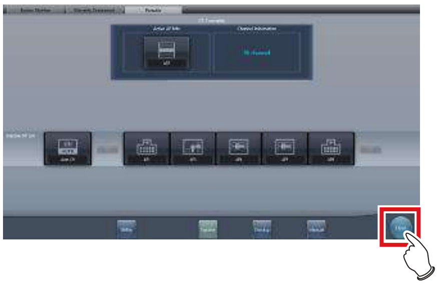
- When the change process is completed, a confirmation screen is displayed. Press [OK].

⇩



- Confirm that the icons and channels of the [Active AP Info] and [Channel Information] have changed.
- If multiple pieces of channel information are displayed, DFS has been set and one of the channels is in use.

5 Press [Close].



- The display returns to the initial screen.

IMPORTANT

- Do not turn off the AeroDR Portable RF Unit during the channel change process.

HINT

- Set the icon type and name of the information icon during installation.

7.1.5 Operations after exposure

When the exposure is completed, move the portable X-ray device and send the image data, etc. saved in this device to the higher system. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

1 Connect the Ethernet cable that is connected to the DR Detector registration hub, to the portable X-ray device hub.

- On connection, the icon of [System] will change.

IMPORTANT

- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.1.1 Screen structure".

HINT

- When the AeroDR Portable RF Unit is connected to this device through a wireless connection, connect the Ethernet cable to this device.

2 Plug the power cable into the outlet to charge this device.

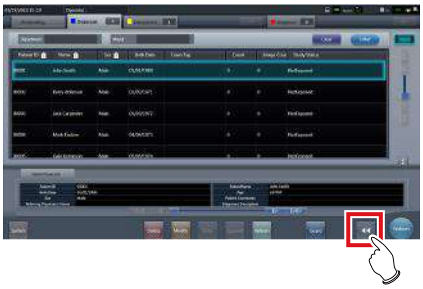
HINT

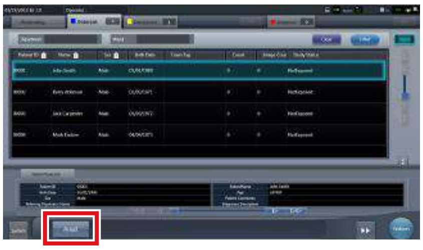
- Also charge the DR Detector, AeroDR Portable RF Unit, and portable X-ray device as required.

7.1.6 Change of the IP address of the connected institution network

The procedure to change the IP address of the institution network to which you are connecting is as follows. The procedure for switching from [Area1] to [Area2] is described below as an example.

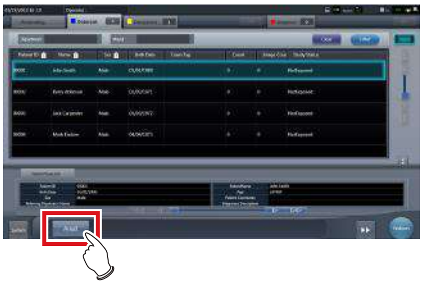
1 Press [◀◀] on the list screen.





- The area selection button is displayed.

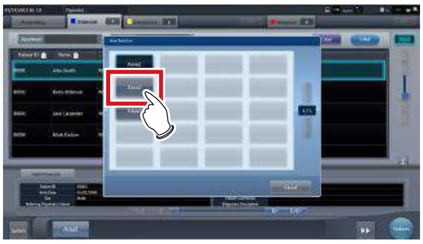
2 Press the area selection button.

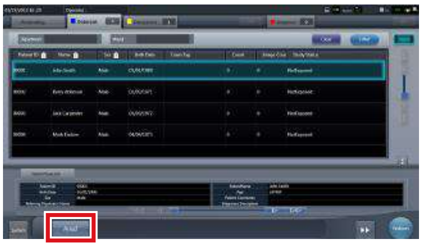


- The area selection screen is displayed.

3 Press the button corresponding to the desired area name.

- Press [Cancel] to return to the previous screen.

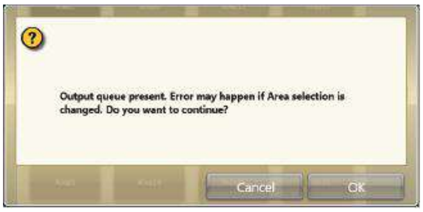




- The area is switched, and the display returns to the list screen.

IMPORTANT

- When there is data which has not yet been transmitted, a confirmation screen appears.



Output queue present. Error may happen if Area selection is changed. Do you want to continue?

→Press [OK] to execute the change in IP address.

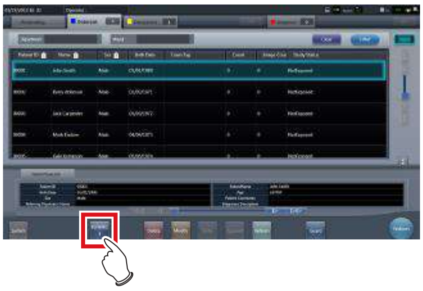
→Press [Cancel] to close the area selection screen and return to the list screen. After transmitting the data, please change the IP address.

- When selecting areas using an external wired LAN adapter, make sure the external wired LAN adapter is attached before pressing the area selection button.

7.1.7 Other functions of AeroDR Portable RF Unit

Depending on the settings, RIS details can be checked by starting Internet Explorer. The procedure is explained using the list screen as an example.

1 Press [Web/Remote Desktop Linkup] on the patient registration screen or the list screen.



- Internet Explorer starts.

HINT

- URLs that can be displayed in Internet Explorer are only those beginning with http or https.

7.2 Exposure with AeroDR Portable RF Unit2

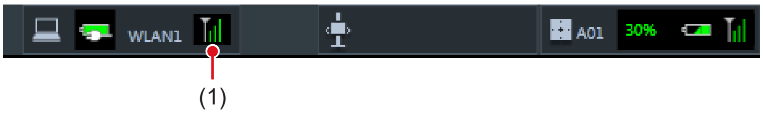
IMPORTANT

- When you restart this device, also restart the access point.

7.2.1 Screen structure

● Detailed description of the application bar

The wireless LAN adapter can be reset using the radio wave status icon on the application bar.



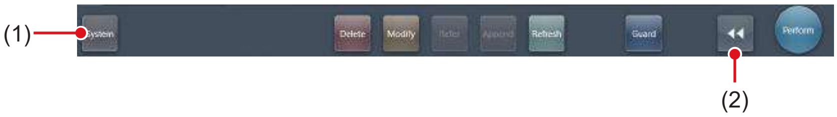
Number	Name	Functions
(1)	Radio wave status	Resets the wireless LAN adapter. Press the radio wave status icon to display the dialog. Press [OK] to reset the wireless LAN adapter.

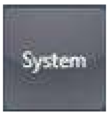
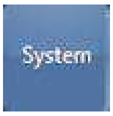
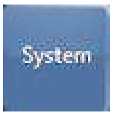
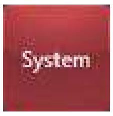
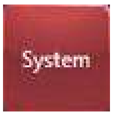
IMPORTANT

- Do not turn off the wireless LAN adapter while it is resetting.
- If you are using an external wireless LAN adapter, do not remove it while it is resetting.

●Detailed description of tool bar

The display of following buttons in the tool bar area changes depending on the status of communication with the host.



Number	Name	Button display	State of the network and connected devices	Precautionary items
(1)	System button	 (Gray)	The network is disconnected or the output control of all RIS/HOST has been turned [OFF] manually. It is possible to continue exposures, but the data is not sent to RIS/HOST, it is stored in this device as data waiting to be sent.	• After a study is completed, connect to the network, and send data waiting to be sent (it is sent automatically by connecting to the network).
		 (Blue)	The network is connected and there is no data waiting to be sent.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button.
		 (Blue: rotating white point)	The network is connected and there is data waiting to be sent.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF].
		 (Red)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, but without data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
		 (Red: rotating white point)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, and with data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF]. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
(2)	Display/hide button	Switches between display and hide of the tool bar. When the tool bar is hidden, the state of the network and connected devices is shown instead of the system button.		

7.2.2 Exposure preparations

The exposure preparation of the AeroDR Portable RF Unit2 is performed according to the following procedure.

1 Prepare each device to perform exposure.

- For information on how to prepare each device to perform exposure, refer to "AeroDR Portable RF Unit2 Operation Manual".

2 Turn each device on.

IMPORTANT

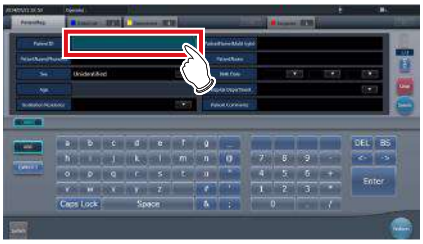
- After the access point has started, it may take some time to establish a wireless connection.
- To register the DR Detector, connect this device to the AeroDR Portable RF Unit2 in wired mode.

3 Turn the mobile X-ray device on.

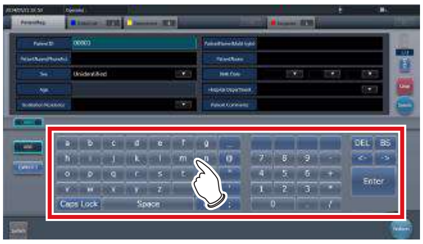
7.2.3 New registration of patient information

New registration of patient information is performed with the patient registration screen. Select the [PatientReg.] tab on the initial screen to display the patient registration screen.

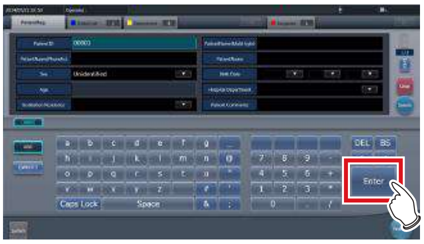
1 Press the column for the patient ID.



2 Press the input panel, and input the patient ID.



3 Press [Enter].



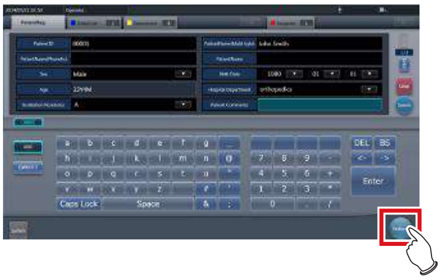
4 Input patient name, sex and date of birth.

- After each inputting item, press [Enter].
- If you press [Enter], the cursor will move to the next item.

HINT

- If the length of an entry exceeds the dimensions of the display pane of the item or if the entry spreads across multiple lines, the long-sentence comment pop-up button […] is displayed.

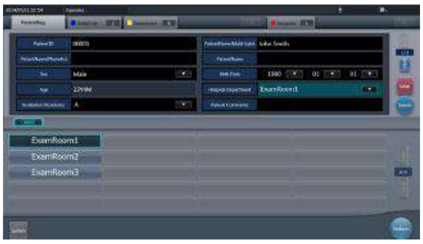
5 Press [Perform].



- Registration is performed in the patient database of this device, and the exposure screen or the body part selection screen is displayed.

HINT

- Because input of "Sex", "Pregnancy" are displayed with selection buttons instead of the input panel, press the selection buttons.
- When entering "Institution Residence", "Hospital Department" and "Requesting Physician", select the names from the pull-down menu or selection button, or input them directly with the keyboard.

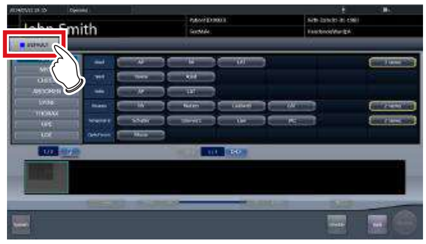


- With the input item as a search key, search the patient database for this device, or a higher system.
- When there is a patient ID that matches, name, sex and age are displayed.
  When there is no patient ID that matches, the cursor moves to the following input field.

7.2.4 Manual body part selection

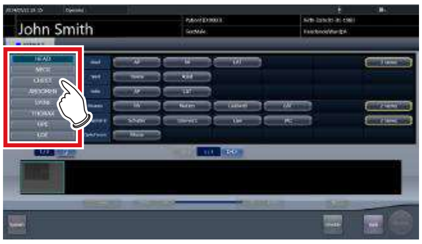
When making advanced settings of exposure body part and exposure method for each exposure, select body part manually with the following procedure.

1 Select the tab.



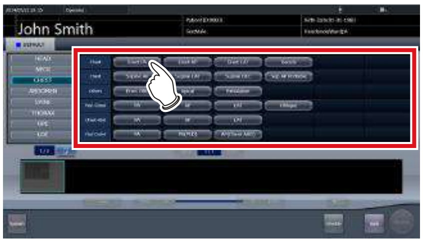
- Linking to the selected tab, the exposure body part available with the tab are displayed automatically.

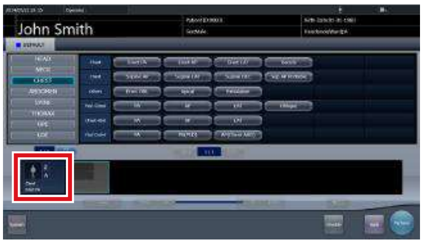
2 Select the exposure body part.



- The Exam. Tags corresponding to the selected exposure body part will be displayed.

3 Select an Exam. Tag.

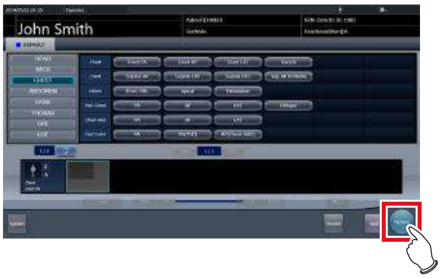




John Smith

- The selected Exam. Tag is added to the Exam. Tags display area. By repeating from step 1, Exam. Tags can be added.

4 **When finished selecting/adding the Exam. Tags, press [Perform].**



John Smith

- The exposure screen is displayed.

HINT

- When only reserving an examination, after adding the Exam. Tag, press [Schedule]. After reservation is performed, the initial screen is displayed.
- Returning to the initial screen by pressing [Schedule] does not set study date and time of image supplemental information automatically.
- It is also possible to register multiple exposure methods in 1 Exam. Tag. Register these methods when installing.
- If you have set to register the Exam. Tags automatically, the body part selection screen is not displayed. The display transitions to the exposure screen.

7.2.5 Exposure

Prepare for exposure with the AeroDR Portable RF Unit2 according to the following procedure.

IMPORTANT

- Always check the patient information and exposure conditions before exposure.

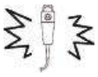
1 **Confirm that each device is ready for exposure.**

IMPORTANT

- Check the wireless connection.
- If a wired connection is established between this device and the AeroDR Portable RF Unit2, disconnect the Ethernet cable that connects this device and the hub.

2 **Perform exposure.**

- Configure the mobile X-ray device settings and check the exposure setting before making an exposure.



Press the exposure switch

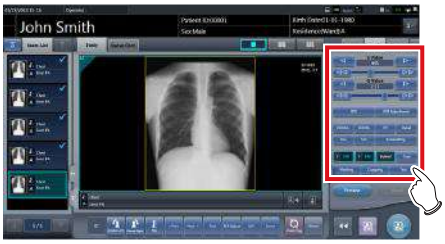
- The exposed image is displayed in the image display area.

IMPORTANT

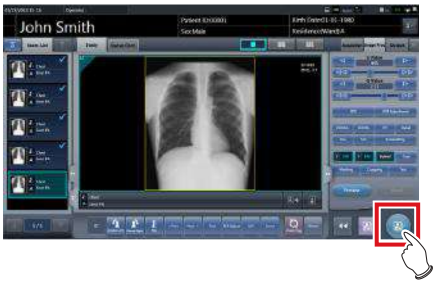
- When performing an exposure, stay away from the patient as far as possible before pressing the exposure switch.
- Do not let the DR Detector vibrate or receive shock until the exposed image is displayed.
- If an image is displayed when an exposure is not performed, this may be a detection error due to noises, etc. Perform rejected image (deletion of images) and repeat exposure.
- If you have performed an exposure when "Ready" was not displayed, repeat an exposure after approximately one minute.

3 Adjust the image.

- After exposure, adjust the image as required.



4 Press [ ].



- The exposure is completed, and the display returns to the initial screen.

IMPORTANT

- When consolidating image adjustment, press [ ] to pause the examination and return to the initial screen.

7.2.6 Operations after exposure

Operations after an exposure has been completed is performed according to the following procedure. After returning to the institution, output image data saved on this device to the host system. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

1 Turn all the devices off.

- For information on how to shut down each device, refer to "AeroDR Portable RF Unit2 Operation Manual".

2 Place each device in the carrying case.

- For information on how to store each device, refer to "AeroDR Portable RF Unit2 Operation Manual".

3 Return to the institution.

4 Connect this device to the institution network using an Ethernet cable.

- On connection, the icon of [System] will change.

IMPORTANT

- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.2.1 Screen structure".

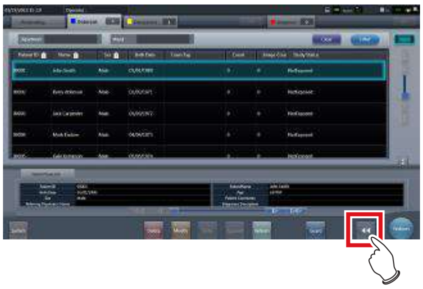
5 Charge this device and the DR Detector.

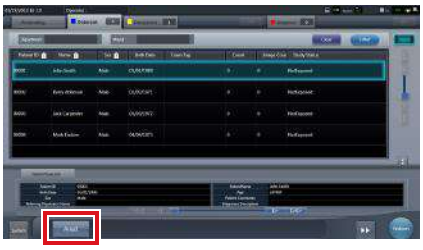
- For information about the operations of the DR Detector, refer to "AeroDR Operation Manual".

7.2.7 Change of the IP address of the connected institution network

Follow the steps below to obtain information from RIS in advance, or to switch the IP address when connecting to the institution network and outputting data to RIS after you return to the institution.
The procedure for switching from [Area1] to [Area2] is described below as an example.

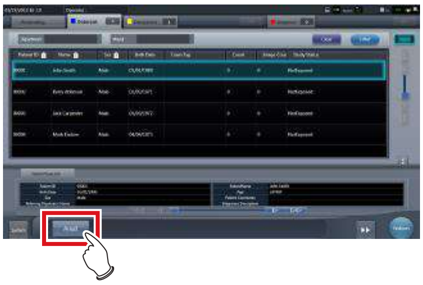
1 Press [◀◀] on the list screen.





- The area selection button is displayed.

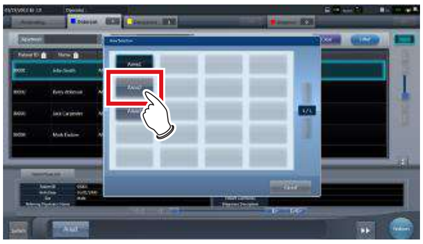
2 Press the area selection button.

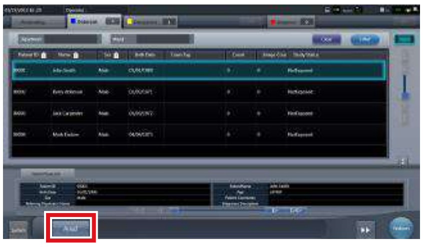


- The area selection screen is displayed.

3 Press the button corresponding to the desired area name.

- Press [Cancel] to return to the previous screen.

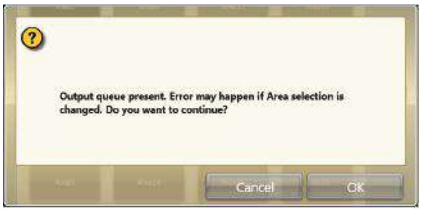




- The area is switched, and the display returns to the list screen.

IMPORTANT

- When there is data which has not yet been transmitted, a confirmation screen appears.



Output queue present. Error may happen if Area selection is changed. Do you want to continue?

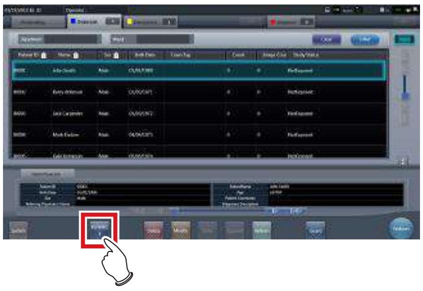
→Press [OK] to execute the change in IP address.
→Press [Cancel] to close the area selection screen and return to the list screen. After transmitting the data, please change the IP address.

- When selecting areas using an external wired LAN adapter, make sure the external wired LAN adapter is attached before pressing the area selection button.

7.2.8 Other functions of AeroDR Portable RF Unit2

After returning to the institution, you can check details of RIS by starting Internet Explorer depending on settings. The procedure is explained using the list screen as an example.

1 Press [Web/Remote Desktop Linkup] on the patient registration screen or the list screen.



- Internet Explorer starts.

HINT

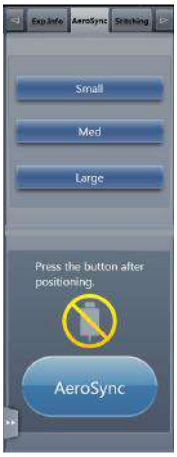
- URLs that can be displayed in Internet Explorer are only those beginning with http or https.

7.3 Exposure with AeroDR Portable UF Unit

IMPORTANT

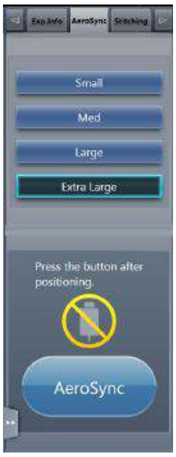
- When you restart this device, also restart the AeroDR Portable UF Unit.
- With Aero Sync mode exposure, X-rays with default intensity that reached the DR Detector are detected, and image acquisition is started. Select any one of the following X-ray detection levels during exposure according to the model or conditions of the DR Detector to be used.
  - Small
    Used for general imaging such as that of the chest and limb bones.
  - Med
    This is effective for imaging of the abdomen or lumbar front of patients with thick bodies as well as in the case where the direct X-ray region does not enter the DR Detector due to the narrowed exposure field. Be careful not to subject the DR Detector to strong shocks during exposure.
  - Large
    This is more effective than the medium detectionlevel for imaging of the abdomen or lumbar front of patients with thick bodies as well as in the case where the direct X-ray region does not enter the DR Detector due to the narrowed exposure field. Request that the patient stands still for as long as possible during exposure.
  - Extra Large
    Exposures can be performed at a level higher than [Large]. This is effective for imaging of the abdomen or lumbar front of patients with thick bodies as well as in the case where the direct X-ray region does not enter the DR Detector due to the narrowed exposure field. Be careful not to subject the DR Detector to strong shocks during exposure.
- [Extra Large] is displayed when using either the AeroDR 2 1417HQ or AeroDR 2 1417S.
- The control panel display [AeroSync] and items that can be selected differ depending on the type of DR Detector.

AeroDR 1417HQ/
AeroDR 1717HQ/
AeroDR 1012HQ:



Press the button after positioning.

AeroDR 2 1417HQ/
AeroDR 2 1417S:



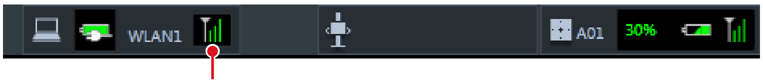
Press the button after positioning.

- If there are any radioactive substances remaining in the patient's body after nuclear medicine testing or some other reason, the AeroDR 2 1417HQ and the AeroDR 2 1417S may recognize that X-rays were emitted and start image transfer. When the image is transferred, change the X-ray sensitive setting of the image processing controller to "Large" before performing exposure. If you change the X-ray sensitivity to "Large", make sure that all of the following conditions are met before performing exposure. If you perform exposure under other conditions, you may not be able to get an image.
  - On the DR Detector, set up an area (2 cm x 2 cm or larger) on which the X-rays are emitted directly.
  - Emit the X-rays onto the entire DR Detector.
  - Emit the X-rays by using a tube current of 140 mA or higher or a tube voltage of 90 kV or higher.
- Once the X-ray detection level is selected, it is kept until an examination is completed if it is not changed. If you want to return it to the initial detection level for each exposure, contact Konica Minolta technical representatives.

7.3.1 Screen structure

● Detailed description of the application bar

The wireless LAN adapter can be reset using the radio wave status icon on the application bar.



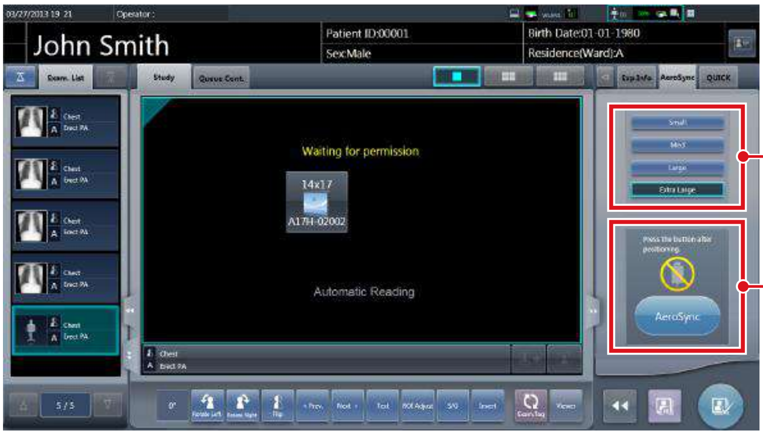
Number	Name	Functions
(1)	Radio wave status	Resets the wireless LAN adapter. Press the radio wave status icon to display the dialog. Press [OK] to reset the wireless LAN adapter.

IMPORTANT

- Do not turn off the wireless LAN adapter while it is resetting.
- If you are using an external wireless LAN adapter, do not remove it while it is resetting.

●Exposure screen

This is the control panel for performing exposure using the AeroDR Portable UF Unit.



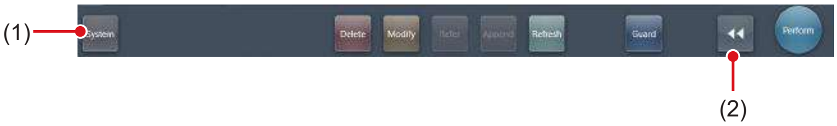
John Smith
Patient ID:00001
Sex:Male
Birth Date:01-01-1980
Residence(Ward):A

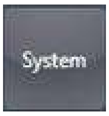
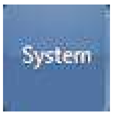
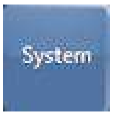
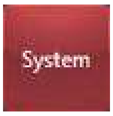
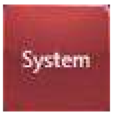
Waiting for permission
14x17
A17H-02002
Automatic Reading
Press the button after positioning.

Number	Name	Functions
(1)	X-ray detection level switching area	Select the X-ray detection level during exposure.
(2)	Message/Button area	Messages and buttons are displayed in this area depending on the operation status. **When the [AeroSync Button] is set to ON on the system monitor screen** **Exposure permission waiting screen** The device is waiting for permission for exposure. The screen changes to the ready-to-expose screen if you press [AeroSync]. **Ready-to-expose screen** The screen is locked as it is ready to be captured. To cancel exposure, press [Cancel], then the screen returns to the exposure permission waiting screen. **When the [AeroSync Button] is set to OFF on the system monitor screen** **Ready-to-expose screen** The screen is locked as it is ready to be captured. To suspend exposure, press [Pause], then the screen returns to the exposure permission waiting screen. **Exposure resumption waiting screen** The device is waiting for exposure to be resumed. The screen changes to the ready-to-expose screen if you press [Restart].

●Detailed description of tool bar

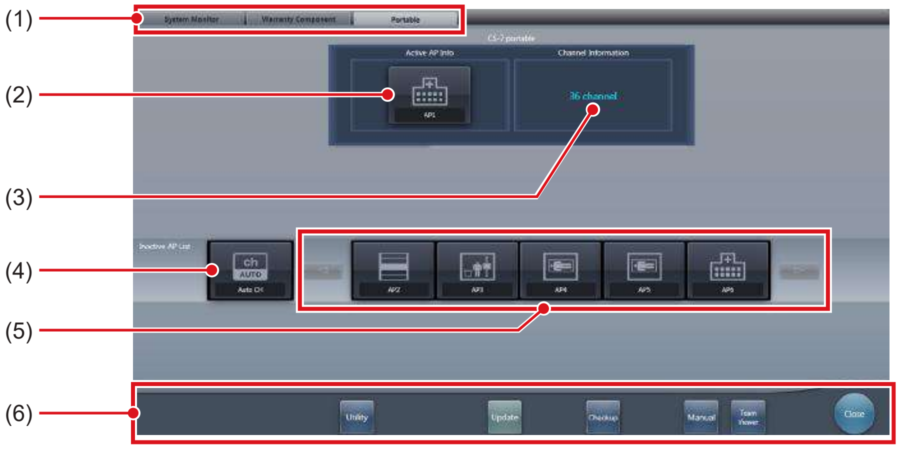
The display of following buttons in the tool bar area changes depending on the status of communication with the host.



Number	Name	Button display	State of the network and connected devices	Precautionary items
(1)	System button	 (Gray)	The network is disconnected or the output control of all RIS/HOST has been turned [OFF] manually. It is possible to continue exposures, but the data is not sent to RIS/HOST, it is stored in this device as data waiting to be sent.	• After a study is completed, connect to the network, and send data waiting to be sent (it is sent automatically by connecting to the network).
		 (Blue)	The network is connected and there is no data waiting to be sent.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button.
		 (Blue: rotating white point)	The network is connected and there is data waiting to be sent.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF].
		 (Red)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, but without data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
		 (Red: rotating white point)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, and with data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF]. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
(2)	Display/hide button	Switches between display and hide of the tool bar. When the tool bar is hidden, the state of the network and connected devices is shown instead of the system button.		

●System monitor screen (Portable)

This is the screen for switching the AP information and channels built into the AeroDR Portable UF Unit.



Number	Name	Functions
(1)	Function switching tab	Switches between the [System Monitor], [Warranty Component], and [Portable] tabs.
(2)	Active AP Info	Displays the AP information selected through the AeroDR Portable UF Unit.
(3)	Channel Information	Displays the channel of the AP information selected through the AeroDR Portable UF Unit. If multiple pieces of channel information are displayed, DFS has been set and one of the channels is in use.
(4)	Auto CH button	Automatically selects the optimum channel.
(5)	Inactive AP List	AP information list registered in this device. Select an icon to switch to an AP information. If there are more than 7 AP information registered, press [◀ ▶] to scroll sideways.
(6)	System menu	Starts a utility or shuts down the system. This is displayed regardless of tabs being selected. [Utility]: Starts utilities. This button is not displayed if the user authorization of the logged in operator is "Technologist". [Update]: Refreshes information. [Checkup]: Displays the checkup setting screen. [Manual]: The "CS-7 Operation Manual" is displayed. This button is not displayed if the manual file is not deployed. [TeamViewer]: Displays the TeamViewer startup button. [Close]: Exits the system monitor screen, and the previous screen is displayed.

HINT

- The [Portable] tab is displayed when operating the AeroDR Portable UF Unit.

7.3.2 Exposure preparations

Make the following preparations when exposing using the AeroDR Portable UF Unit. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

IMPORTANT

- When this device is being used in the AeroDR Portable UF Unit, charge it when a notification that the battery level is low is displayed.
- Check the settings for the AeroSync button, and initial detection level on the system monitor screen.

1 Register the DR Detector in this device that is to be used in AeroDR Portable UF Unit.

- For operation of the DR Detector, refer to "AeroDR Operation Manual".

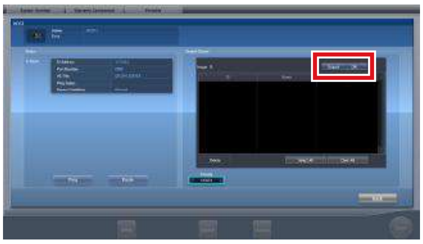
IMPORTANT

- When a DR Detector which does not support Aero Sync mode is used, an error message appears and registration will not be permitted.

HINT

- Confirm that the outputs of host, RIS-OUT and printer are [ON] on the system monitor screen ([System Monitor] tab).

In case of the host

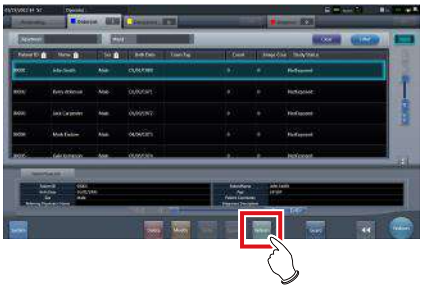


The device switches between [ON] and [OFF] every time [Output] is pressed.

- When using a RIS-OUT or printer, confirm the output is set to [ON] using the same procedure.

2 Import the examination information to be used for the exposure using the portable X-ray device.

- Confirm that an Ethernet cable is connected to this device.
- Press [Refresh] on the list screen on this device.



- The latest examination information is imported from the higher system by pressing the [Refresh] button.

HINT

- To input examination information manually, change the screen to the patient registration screen.

3 Remove the Ethernet cable connected to the DR Detector registration side hub from this device.

HINT

- When this device is connected to the AeroDR Portable UF Unit through wired connection, remove the Ethernet cable connected to the DR Detector registration side hub from the portable X-ray device side hub.

4 Unplug the power cable from the outlet when charging this device.

5 Complete the exposure preparations.

- Confirm that the AeroDR Portable UF Unit is shut down to complete the exposure and movement preparations.

HINT

- It is all right to keep power of this device and the DR Detector on.

7.3.3 Exposure

Prepare for exposure using the AeroDR Portable UF Unit according to the following procedure. The procedure varies depending on the setting of the [AeroSync Button] on the system monitor screen.

IMPORTANT

- Always check the patient information and exposure conditions before exposure.
- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.3.1 Screen structure".
- Available X-ray detection level varies depending on the DR Detector model.

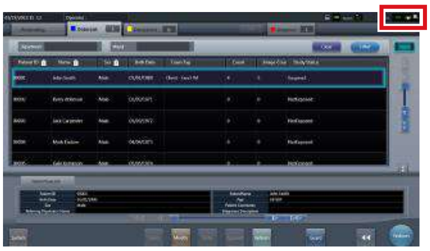
HINT

- This example shows a case in which the AeroDR 2 1417HQ or AeroDR 2 1417S is used.

●When the [AeroSync Button] is OFF

1 When you arrive at the exposure location, turn on the power of the AeroDR Portable UF Unit.

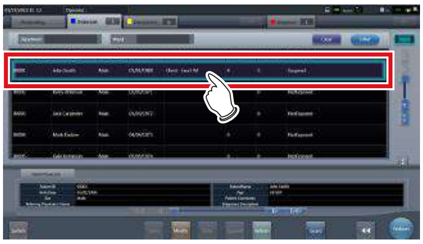
- Turn on the power switch of the AeroDR Portable UF Unit and confirm that the (green) power LED is ON.
- For startup operation of the AeroDR Portable UF Unit, refer to "AeroDR Portable UF Unit Operation Manual".
- Confirm that the icon of the DR Detector to be used in exposure is displayed on the application bar.



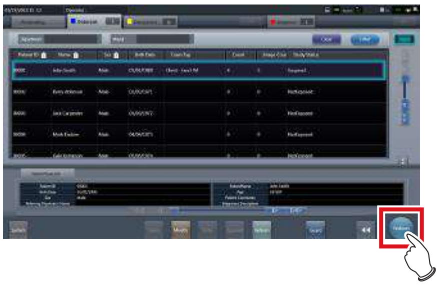
IMPORTANT

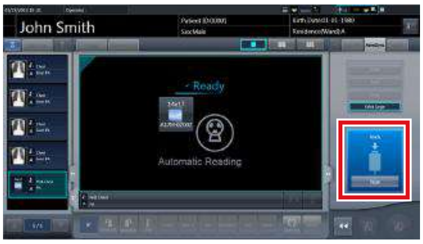
- When the AP information channel is set to [Auto CH], press [Auto CH] on the system monitor screen (portable) and check the channel.
- It may take several minutes for wireless connection to start after turning on the AeroDR Portable UF Unit.

2 Select the examination.



3 Press [Perform].





- The exposure screen is displayed.
- A message "Ready" is displayed in the message/button area, then the screen is locked.
- To change the X-ray detection level, press [Pause] to enable modification. After changing the detection level, press [Restart], then the message "Ready" is displayed.

IMPORTANT

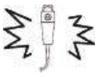
- A malfunction may be caused by a shock to the DR Detector. In such cases, set [AeroSync Button] to ON on the system monitor screen.
- To prevent incorrect operations, always check that "Ready" is displayed.
- Conditions for changing the detection level vary depending on the X-ray device being used. If a survey has been carried out when the system was installed, follow the survey results.

HINT

- When importing examination information from the higher system and when exposure body part information is not imported, select the exposure body part. When pressing [Perform] on the body part selection screen, the exposure screen is displayed.
- When you move the focus in the image display area on the exposure resumption waiting screen to capture an image of another body part, not the ready-to-expose screen but the exposure resumption waiting screen is displayed.
- Refer to "7.3 Exposure with AeroDR Portable UF Unit" for information on the X-ray detection levels that can be set for exposures.

4 Perform exposure.

- Configure the portable X-ray device settings and check the exposure setting before making an exposure.



Press the exposure switch

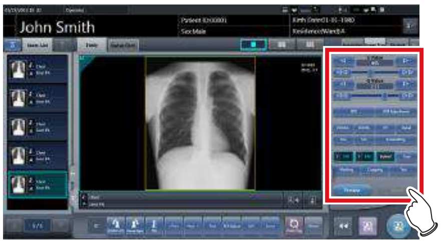
- As soon as the exposed image is transferred, the image is displayed in the image display area.

IMPORTANT

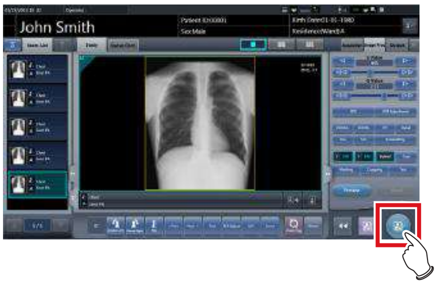
- When performing an exposure, stay away from the patient as far as possible before pressing the exposure switch.
- When the "Ready" is displayed, immediately perform exposure.
- Do not let the DR Detector vibrate or receive shock until the exposed image is displayed.
- If image acquisition started without performing exposure, this may result in incorrect detection due to noise, etc. Perform reject (image deletion) and repeat exposure.
- If image acquisition does not start after exposure, the voltage may not be enough. Check the exposure conditions and repeat exposure.
- When exposure is done while "Ready" is not displayed, have an interval of 1 minute or more before repeating exposure.

5 Adjust the image.

- After exposure, adjust the image as required.



6 Press [ ].



- The exposure is completed, and the display returns to the initial screen.

IMPORTANT

- When consolidating image adjustment, press [ ] to pause the examination and return to the initial screen.

7 When exposure is finished, turn the AeroDR Portable UF Unit off.

- Turn off the power switch of the AeroDR Portable UF Unit and confirm that the power LED (green/orange) is OFF.
- For shutdown operation of the AeroDR Portable UF Unit, refer to the "AeroDR Portable UF Unit Operation Manual".

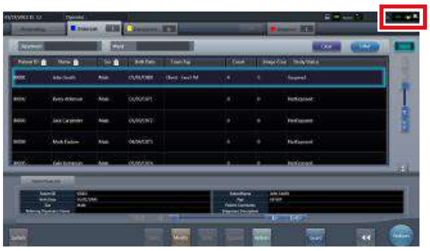
HINT

- Image adjustment can be done on the portable device's [Image Proc] tab. However, if a more advanced image adjustment is required, perform image adjustment on the [Image Proc] tab or the viewer screen. For details on the viewer screen, refer to "6.7 Functions of the viewer screen".
- When moving the exposure location, turn off the AeroDR Portable UF Unit. After moving the exposure location, perform the procedure again from step 1.
- It is all right to keep power of this device and the DR Detector on.

● When the [AeroSync Button] is ON

1 When you arrive at the exposure location, turn on the power of the AeroDR Portable UF Unit.

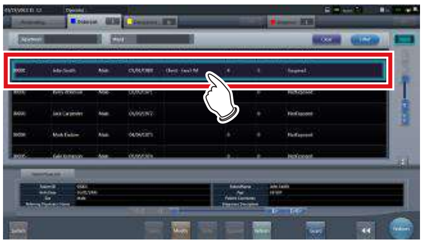
- Turn on the power switch of the AeroDR Portable UF Unit and confirm that the (green) power LED is ON.
- For startup operation of the AeroDR Portable UF Unit, refer to "AeroDR Portable UF Unit Operation Manual".
- Confirm that the icon of the DR Detector to be used in exposure is displayed on the application bar.



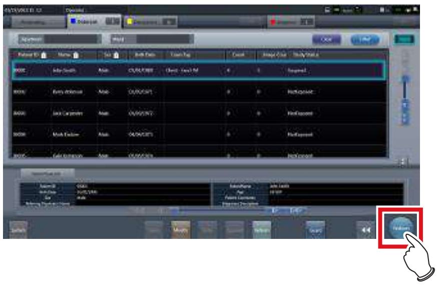
IMPORTANT

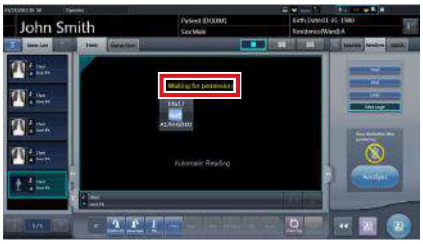
- When the AP information channel is set to [Auto CH], press [Auto CH] on the system monitor screen (portable) and check the channel.
- It may take several minutes for wireless connection to start after turning on the AeroDR Portable UF Unit.

2 Select the examination.



3 Press [Perform].





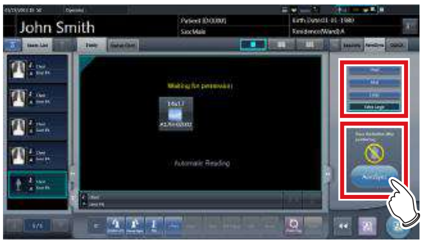
- The exposure screen is displayed.
- A message "Waiting for permission" is displayed in the image display area.

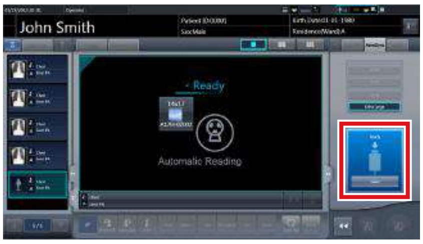
HINT

- If the information about the body part is not imported while importing examination information from the higher system, select the body part to be imaged. Then press [Perform] on the body part selection screen to display the exposure screen.
- When the AeroDR power management level is set to [3], [4] or [5], "Waiting to start shooting" is displayed instead of "Waiting for permission".

4 After positioning the patient, check the X-ray detection level, then press [AeroSync].

- If the control panel does not switch to [AeroSync], press the [AeroSync] tab.
- Change the X-ray detection level as needed.
- After checking the X-ray detection level, press [AeroSync].





- A message "Ready" is displayed in the message/button area. The screen is locked.
- The screen is locked. To return to the previous screen to change the position of the patient, etc., press [Cancel].

IMPORTANT

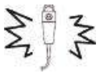
- To prevent incorrect operations, always press [AeroSync] and check that "Ready" is displayed.
- Conditions for changing the detection level vary depending on the X-ray device being used. If a survey has been carried out when the system was installed, follow the survey results.
- When the AeroDR power management level is set to [3], [4] or [5], it may take some time until the exposure becomes ready after you have pressed [Aero Sync]. In this case, [Standby] button instead of [Cancel] button is displayed in the message/button area.

HINT

- Refer to "7.3 Exposure with AeroDR Portable UF Unit" for information on the X-ray detection levels that can be set for exposures.

5 Perform exposure.

- Configure the portable X-ray device settings and check the exposure setting before making an exposure.



Press the exposure switch

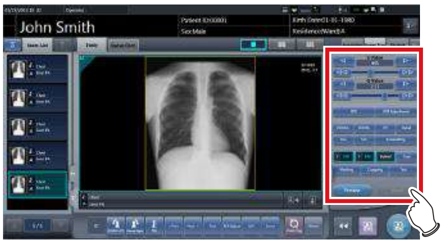
- As soon as the exposed image is transferred, the image is displayed in the image display area.

IMPORTANT

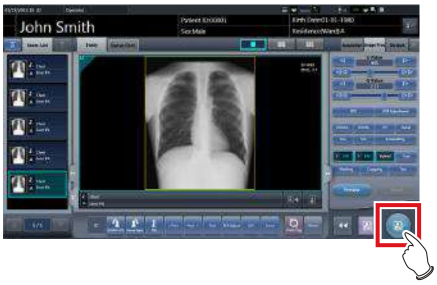
- When performing an exposure, stay away from the patient as far as possible before pressing the exposure switch.
- When the "Ready" is displayed, immediately perform exposure.
- Do not let the DR Detector vibrate or receive shock until the exposed image is displayed.
- If image acquisition started without performing exposure, this may result in incorrect detection due to noise, etc. Perform reject (image deletion) and repeat exposure.
- If image acquisition does not start after exposure, the voltage may not be enough. Check the exposure conditions and repeat exposure.
- When exposure is done while "Ready" is not displayed, have an interval of 1 minute or more before repeating exposure.

6 Adjust the image.

- After exposure, adjust the image as required.



7 Press [ ].



- The exposure is completed, and the display returns to the initial screen.

IMPORTANT

- When consolidating image adjustment, press [ ] to pause the examination and return to the initial screen.

8 When exposure is finished, turn the AeroDR Portable UF Unit off.

- Turn off the power switch of the AeroDR Portable UF Unit and confirm that the power LED (green/orange) is OFF.
- For shutdown operation of the AeroDR Portable UF Unit, refer to the "AeroDR Portable UF Unit Operation Manual".

HINT

- Image adjustment can be done on the portable device's [Image Proc] tab. However, if a more advanced image adjustment is required, perform image adjustment on the [Image Proc] tab or the viewer screen. For details on the viewer screen, refer to "6.7 Functions of the viewer screen".
- When moving the exposure location, turn off the AeroDR Portable UF Unit. After moving the exposure location, perform the procedure again from step 1.
- It is all right to keep power of this device and the DR Detector on.

7.3.4 Change of the AP information

When the AP information needs to be changed because the exposure location has been moved, perform the following procedure.

The following procedure shows an example of a channel change from institution (1) to institution (2).

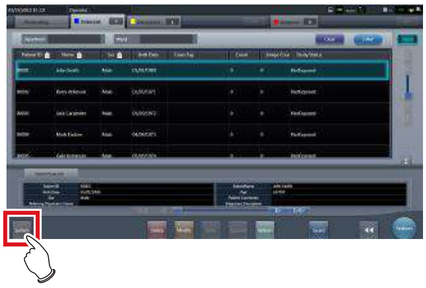
* The numbers ((1) and (2)) on the screen indicate AP information and AP information icons for institution (1) and (2). These are shown for ease of explanation, and not displayed on the actual screen.

IMPORTANT

- Make sure to check the following before changing the channel of the AP information.
  - – The AeroDR Portable UF Unit is turned on.
  - – The AeroDR Portable UF Unit has been turned on for 1 minute or more.

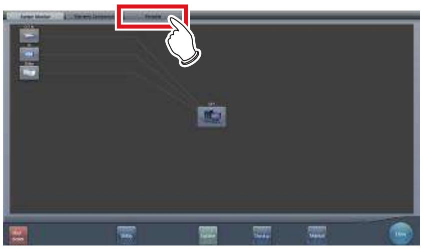
1 Press [System] to display the system monitor screen.

- [System] is displayed in the toolbar display area of the patient registration screen, list screen, body part selection screen, and exposure screen.



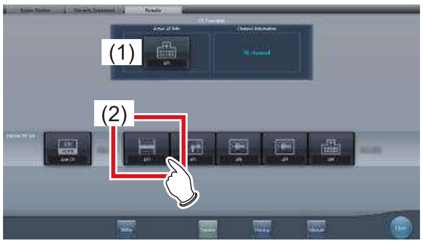
- The system monitor screen is displayed.

2 Press the [Portable] tab.



- The portable screen is displayed.

3 Select the icon of the AP information to be changed from the [Inactive AP List] icons.



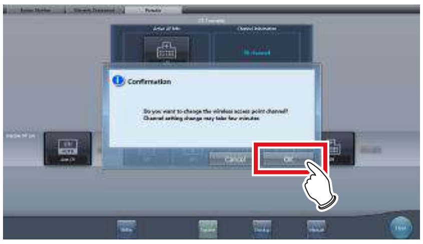
- A confirmation screen is displayed.

HINT

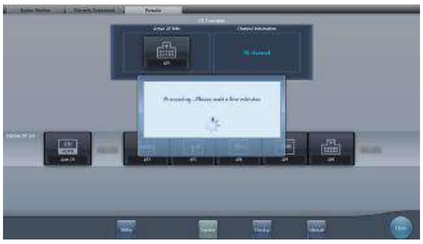
- When automatic channel selection is set, pressing [Auto CH] sets the optimum channel automatically.

4 Press [OK].

- Press [Cancel] to return to the previous screen.

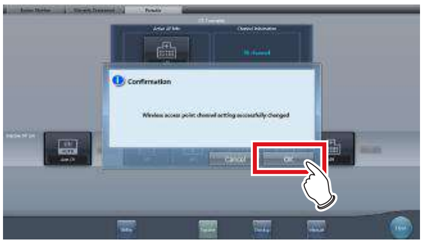


⇩



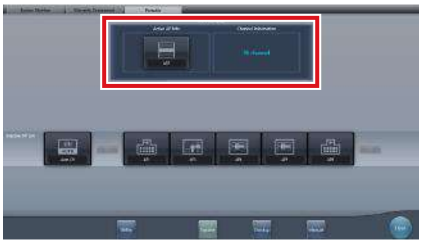
- The AP information change process begins.
- The change process takes several minutes.

⇩



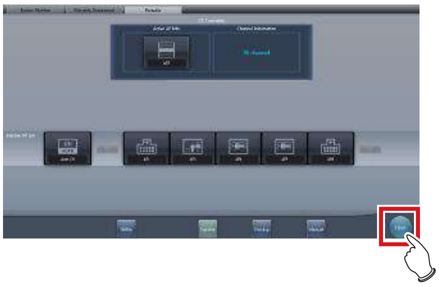
Wireless access point channel setting successfully changed

- When the change process is completed, a confirmation screen is displayed. Press [OK].



- Confirm that the icons and channels of the [Active AP Info] and [Channel Information] have changed.
- If multiple pieces of channel information are displayed, DFS has been set and one of the channels is in use.

5 **Press [Close].**



- The display returns to the initial screen.

IMPORTANT

- Do not turn off the AeroDR Portable UF Unit during the channel change process.

HINT

- Set the icon type and name of the information icon during installation.

7.3.5 Operations after exposure

When the exposure is completed, move the portable X-ray device and send the image data, etc. saved in this device to the higher system. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

1 **Connect the Ethernet cable connected to the DR Detector registration side hub to this device.**

- On connection, the icon of [System] will change.

IMPORTANT

- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.3.1 Screen structure".

HINT

- When this device is connected to the AeroDR Portable UF Unit through wired connection, connect the Ethernet cable connected to the DR Detector registration side hub to the portable X-ray device side hub.

2 **Plug the power cable into the outlet to charge this device.**

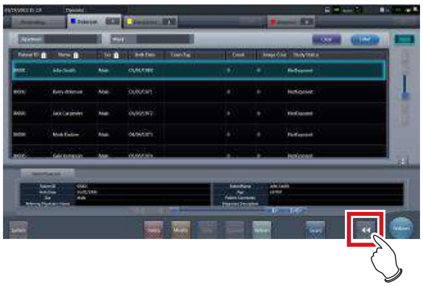
HINT

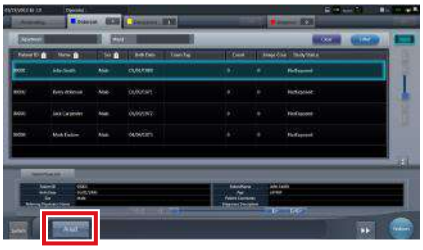
- Also charge the DR Detector, AeroDR Portable UF Unit, and portable X-ray device as required.

7.3.6 Change of the IP address of the connected institution network

The procedure to change the IP address of the institution network to which you are connecting is as follows. The procedure for switching from [Area1] to [Area2] is described below as an example.

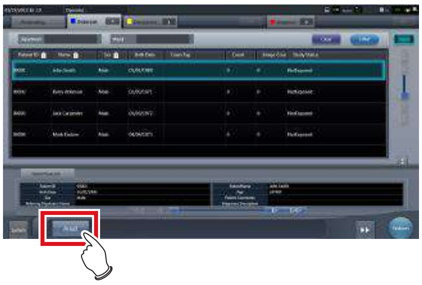
1 Press [◂◂] on the list screen.





- The area selection button is displayed.

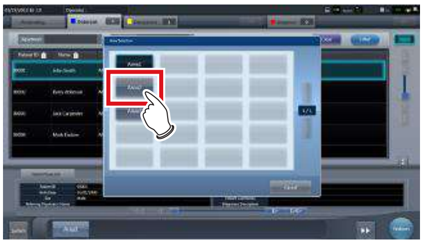
2 Press the area selection button.

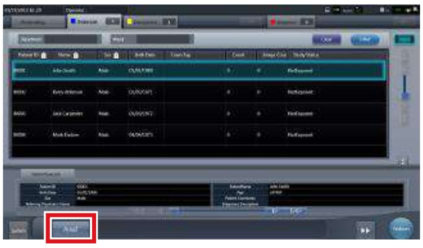


- The area selection screen is displayed.

3 Press the button corresponding to the desired area name.

- Press [Cancel] to return to the previous screen.

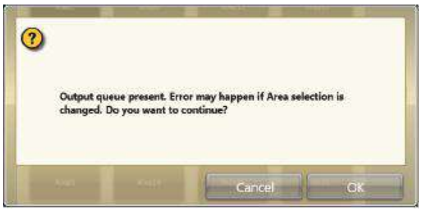




- The area is switched, and the display returns to the list screen.

IMPORTANT

- When there is data which has not yet been transmitted, a confirmation screen appears.



Output queue present. Error may happen if Area selection is changed. Do you want to continue?

→Press [OK] to execute the change in IP address.

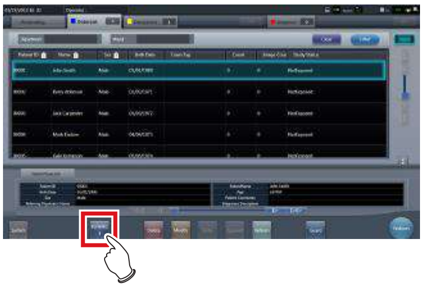
→Press [Cancel] to close the area selection screen and return to the list screen. After transmitting the data, please change the IP address.

- When selecting areas using an external wired LAN adapter, make sure the external wired LAN adapter is attached before pressing the area selection button.

7.3.7 Other functions of AeroDR Portable UF Unit

Depending on the settings, RIS details can be checked by starting Internet Explorer. The procedure is explained using the list screen as an example.

1 **Press [Web/Remote Desktop Linkup] on the patient registration screen or the list screen.**



- Internet Explorer starts.

HINT

- URLs that can be displayed in Internet Explorer are only those beginning with http or https.

7.4 Exposure with Unitless

IMPORTANT

- With Aero Sync mode exposure, X-rays with default intensity that reached the DR Detector are detected, and image acquisition is started. Select any one of the following X-ray detection levels during exposure according to the model or conditions of the DR Detector to be used.
  - Small

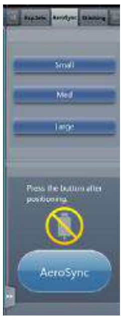
    Used for general imaging such as that of the chest and limb bones.
  - Med

    This is effective for imaging of the abdomen or lumbar front of patients with thick bodies as well as in the case where the direct X-ray region does not enter the DR Detector due to the narrowed exposure field. Be careful not to subject the DR Detector to strong shocks during exposure.
  - Large

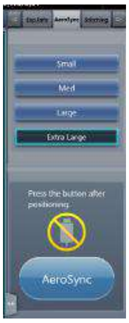
    This is more effective than the medium detectionlevel for imaging of the abdomen or lumbar front of patients with thick bodies as well as in the case where the direct X-ray region does not enter the DR Detector due to the narrowed exposure field. Request that the patient stands still for as long as possible during exposure.
  - Extra Large

    Exposures can be performed at a level higher than [Large]. This is effective for imaging of the abdomen or lumbar front of patients with thick bodies as well as in the case where the direct X-ray region does not enter the DR Detector due to the narrowed exposure field. Be careful not to subject the DR Detector to strong shocks during exposure.
- [Extra Large] is displayed when using either the AeroDR 3 1417HD, AeroDR 3 1717HD, AeroDR 3 1012HQ, AeroDR 2 1417HQ or AeroDR 2 1417S.
- The control panel display [AeroSync] and items that can be selected differ depending on the type of DR Detector.

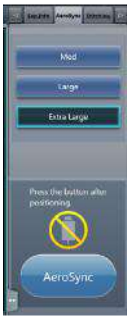
AeroDR 1417HQ/
AeroDR 1717HQ/
AeroDR 1012HQ:



AeroDR 2 1417HQ/
AeroDR 2 1417S:



AeroDR 3 1417HD/
AeroDR 3 1717HD/
AeroDR 3 1012HQ:



- If there are any radioactive substances remaining in the patient's body after nuclear medicine testing or some other reason, the AeroDR 2 1417HQ and the AeroDR 2 1417S may recognize that X-rays were emitted and start image transfer. When the image is transferred, change the X-ray sensitive setting of the image processing controller to "Large" before performing exposure.

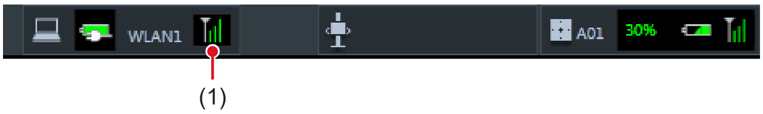
  If you change the X-ray sensitivity to "Large", make sure that all of the following conditions are met before performing exposure. If you perform exposure under other conditions, you may not be able to get an image.
  - On the DR Detector, set up an area (2 cm x 2 cm or larger) on which the X-rays are emitted directly.
  - Emit the X-rays onto the entire DR Detector.
  - Emit the X-rays by using a tube current of 140 mA or higher or a tube voltage of 90 kV or higher.
- If there are any radioactive substances remaining in the patient's body after nuclear medicine testing or some other reason, the AeroDR 3 1417HD, AeroDR 3 1717HD, AeroDR 3 1012HQ may recognize that X-rays were emitted and start image transfer. When the image is transferred, change the X-ray sensitive setting of the image processing controller to "Large" or "Med" before performing exposure.

  If you change the X-ray sensitivity to "Large", make sure that all of the following conditions are met before performing exposure. If you perform exposure under other conditions, you may not be able to get an image.
  - Emit the X-rays onto the entire DR Detector.
  - Emit the X-rays by using a tube current of 140 mA or higher or a tube voltage of 90 kV or higher.
- Once the X-ray detection level is selected, it is kept until an examination is completed if it is not changed. If you want to return it to the initial detection level for each exposure, contact Konica Minolta technical representatives.
- DR Detectors compatible with Aero Link include the AeroDR 3 1417HD, AeroDR 3 1717HD, and AeroDR 3 1012HQ.
- Only one DR Detector can be used to configure Aero Link. Delete configurations in other DR Detectors as necessary.
- Unitless exposure is normally performed with a wireless connection with a DR Detector, but the Detector Interface Unit Ethernet cable can be used when the wireless connection is poor. Make sure to disconnect the Detector Interface Unit's DI Unit AC adapter in this case.
- The USB port connectable to the AeroDR access point 2 is set to the fixed state on delivery. To change the USB port, contact Konica Minolta technical representatives.

7.4.1 Screen structure

●Detailed description of the application bar

The wireless LAN adapter can be reset using the radio wave status icon on the application bar.



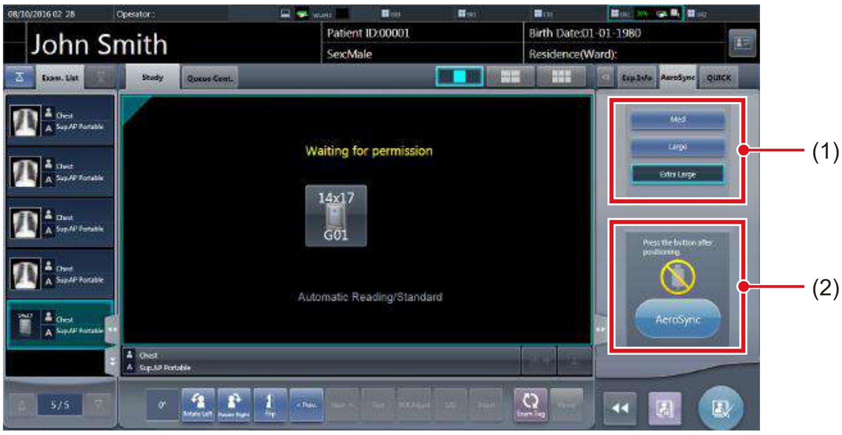
Number	Name	Functions
(1)	Radio wave status	Resets the wireless LAN adapter. Press the radio wave status icon to display the dialog. Press [OK] to reset the wireless LAN adapter.

IMPORTANT

- Do not turn off the wireless LAN adapter while it is resetting.
- If you are using an external wireless LAN adapter, do not remove it while it is resetting.

● Exposure screen

This is the control panel used for exposing with unitless.



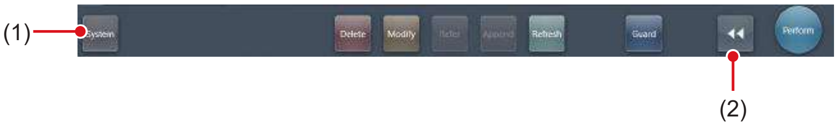
Number	Name	Functions
(1)	X-ray detection level switching area	Select the X-ray detection level during exposure.
(2)	Message/Button area	Messages and buttons are displayed in this area depending on the operation status. **When the [AeroSync Button] is set to ON on the system monitor screen** **Exposure permission waiting screen** The device is waiting for permission for exposure. The screen changes to the ready-to-expose screen if you press [AeroSync]. **Ready-to-expose screen** The screen is locked as it is ready to be captured. To cancel exposure, press [Cancel], then the screen returns to the exposure permission waiting screen. **When the [AeroSync Button] is set to OFF on the system monitor screen** **Ready-to-expose screen** The screen is locked as it is ready to be captured. To suspend exposure, press [Pause], then the screen returns to the exposure permission waiting screen. **Exposure resumption waiting screen** The device is waiting for exposure to be resumed. The screen changes to the ready-to-expose screen if you press [Restart].

IMPORTANT

- If the icon indicating that unitless imaging is not available appears, restart the operating system (OS) for this device. Imaging cannot be performed until the OS is restarted.

●Detailed description of tool bar

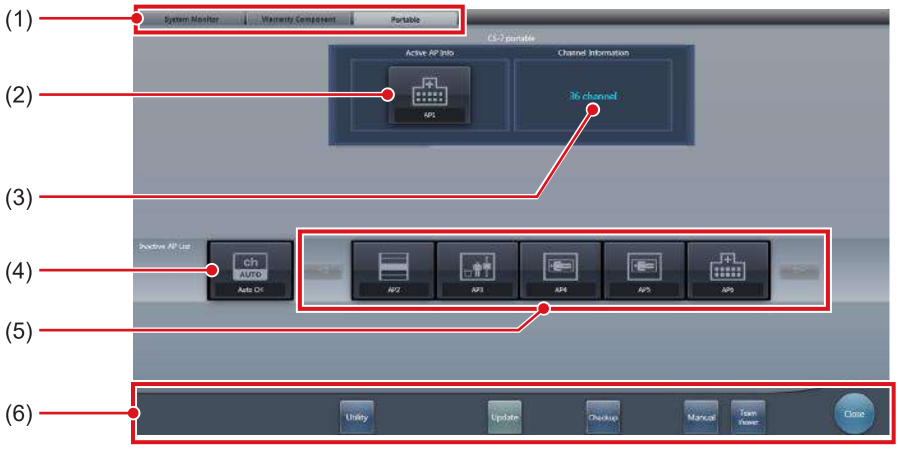
The display of following buttons in the tool bar area changes depending on the status of communication with the host.



Number	Name	Button display	State of the network and connected devices	Precautionary items
(1)	System button	(Gray)	The network is disconnected or the output control of all RIS/HOST has been turned [OFF] manually. It is possible to continue exposures, but the data is not sent to RIS/HOST, it is stored in this device as data waiting to be sent.	• After a study is completed, connect to the network, and send data waiting to be sent (it is sent automatically by connecting to the network).
		(Blue)	The network is connected and there is no data waiting to be sent.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button.
		(Blue: rotating white point)	The network is connected and there is data waiting to be sent.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF].
		(Red)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, but without data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• The network can be disconnected and the IP address can be switched. • Sometimes a maximum 10 seconds elapses before the state of the button changes. When disconnecting the network and switching the IP address, stand by 10 seconds, and make sure that no white point is rotating around the button. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
		(Red: rotating white point)	A network connection error or data transmission error occurs in a connected device such as RIS/HOST in a state connected to the network, and with data waiting to be sent. Exposure can be continued but there will be a data transmission error.	• Do not disconnect the network or switch the IP address. • When data waiting to be sent is in a device whose output is [ON], a white point is displayed rotating around the button, and is not displayed when the output is [OFF]. • A device with a network connection error cannot send until the error is cleared. After the error is cleared, turn [OFF]/[ON] the output.
(2)	Display/hide button	Switches between display and hide of the tool bar. When the tool bar is hidden, the state of the network and connected devices is shown instead of the system button.		

● System monitor screen (Portable)

This is the screen for switching the AP information and channels built into the AeroDR Access Point 2.



Number	Name	Functions
(1)	Function switching tab	Switches between the [System Monitor], [Warranty Component], and [Portable] tabs.
(2)	Active AP Info	Displays the AP information selected through the AeroDR Access Point 2.
(3)	Channel Information	Displays the channel of the AP information selected through the AeroDR Access Point 2. If multiple pieces of channel information are displayed, DFS has been set and one of the channels is in use.
(4)	Auto CH button	Automatically selects the optimum channel.
(5)	Inactive AP List	AP information list registered in this device. Select an icon to switch to an AP information. If there are more than 7 AP information registered, press [◀ ▶] to scroll sideways.
(6)	System menu	Starts a utility or shuts down the system. This is displayed regardless of tabs being selected. [Utility]: Starts utilities. This button is not displayed if the user authorization of the logged in operator is "Technologist". [Update]: Refreshes information. [Checkup]: Displays the checkup setting screen. [Manual]: The "CS-7 Operation Manual" is displayed. This button is not displayed if the manual file is not deployed. [TeamViewer]: Displays the TeamViewer startup button. [Close]: Exits the system monitor screen, and the previous screen is displayed.

IMPORTANT

- AP information and channels cannot be changed when exposing with Aero Link.

HINT

- The [Portable] tab is displayed when operating the AeroDR Access Point 2.

7.4.2 Exposure preparations

Make the following preparations when exposing using unitless. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

IMPORTANT

- When this device is being used in unitless, charge it when a notification that the battery level is low is displayed.
- Check the settings for the AeroSync button, and initial detection level on the system monitor screen.

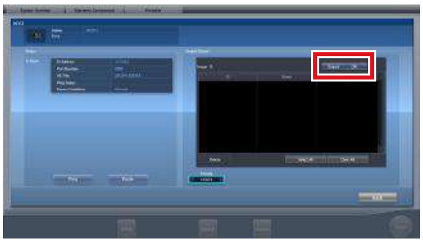
1 Register the DR Detector in this device that is to be used in unitless.

- For operation of the DR Detector, refer to "AeroDR Operation Manual".

IMPORTANT

- When a DR Detector which does not support Aero Sync mode is used, an error message appears and registration will not be permitted.
- The communication speed may be reduced when DR Detector images are transmitted simultaneously with host output.

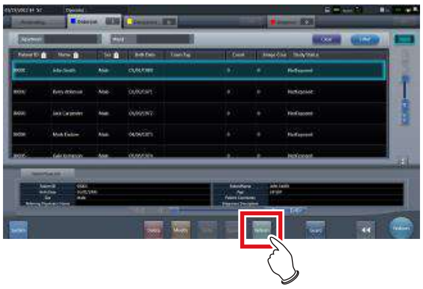
  If the communication speed is reduced, make sure there are no output reservations on the system monitor screen (system monitor tab) and then turn off host output. After all examinations are complete, turn host output back on.



The device switches between [ON] and [OFF] every time [Output] is pressed.

2 Import the examination information to be used for the exposure using the portable X-ray device.

- Confirm that an Ethernet cable is connected to this device.
- Press [Refresh] on the list screen on this device.



- The latest examination information is imported from the higher system by pressing the [Refresh] button.

HINT

- To input examination information manually, change the screen to the patient registration screen.

3 Remove the Ethernet cable connected to the DR Detector registration side hub from this device.

4 Unplug the power cable from the outlet when charging this device.

5 Complete the exposure preparations.

HINT

- It is all right to keep power of this device and the DR Detector on.

7.4.3 Exposure

Prepare for exposure using unitless according to the following procedure. The procedure varies depending on the setting of the [AeroSync Button] on the system monitor screen.

IMPORTANT

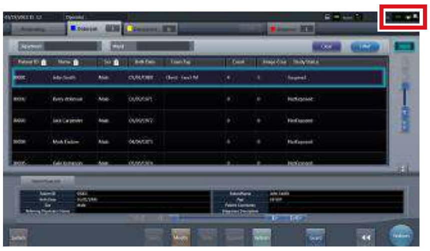
- Always check the patient information and exposure conditions before exposure.
- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.4.1 Screen structure".
- Available X-ray detection level varies depending on the DR Detector model.
- Use the PDA at a distance within 10 m of this device and the DR Detector.

HINT

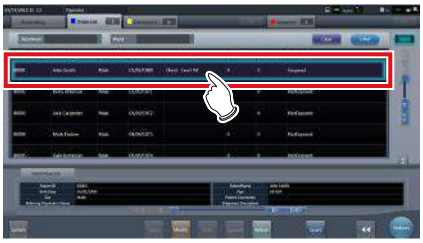
- The procedure is explained with the use of the Aero-DR 3 1417HD as an example.

●When the [AeroSync Button] is OFF

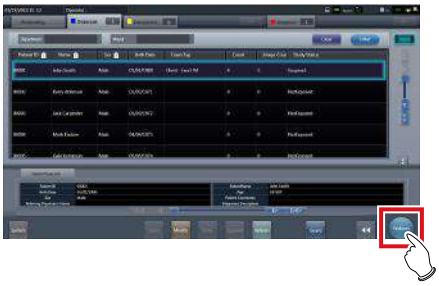
1 **After arriving to the imaging location, confirm that the icon for the DR Detector used for imaging appears in the application bar.**

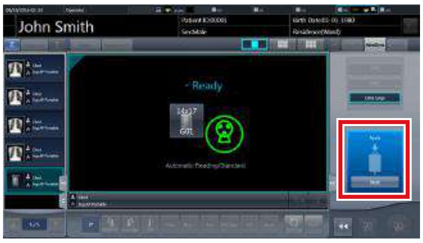


2 **Select the examination.**



3 **Press [Perform].**





- The exposure screen is displayed.
- A message "Ready" is displayed in the message/button area, then the screen is locked.
- To change the X-ray detection level, press [Pause] to enable modification. After changing the detection level, press [Restart], then the message "Ready" is displayed.

IMPORTANT

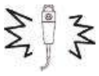
- A malfunction may be caused by a shock to the DR Detector. In such cases, set [AeroSync Button] to ON on the system monitor screen.
- To prevent incorrect operations, always check that "Ready" is displayed.
- Conditions for changing the detection level vary depending on the X-ray device being used. If a survey has been carried out when the system was installed, follow the survey results.

HINT

- When importing examination information from the higher system and when exposure body part information is not imported, select the exposure body part. When pressing [Perform] on the body part selection screen, the exposure screen is displayed.
- When you move the focus in the image display area on the exposure resumption waiting screen to capture an image of another body part, not the ready-to-expose screen but the exposure resumption waiting screen is displayed.
- Refer to "7.4 Exposure with Unitless" for information on the X-ray detection levels that can be set for exposures.

4 Perform exposure.

- Configure the portable X-ray device settings and check the exposure setting before making an exposure.


Press the exposure switch

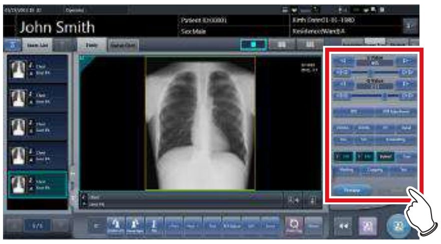
- As soon as the exposed image is transferred, the image is displayed in the image display area.

IMPORTANT

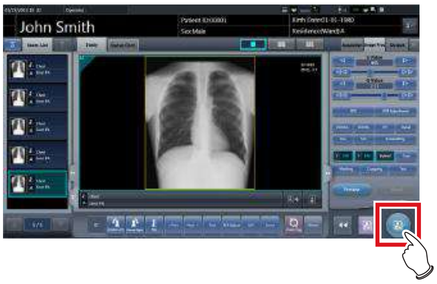
- When performing an exposure, stay away from the patient as far as possible before pressing the exposure switch.
- When the "Ready" is displayed, immediately perform exposure.
- Do not let the DR Detector vibrate or receive shock until the exposed image is displayed.
- If image acquisition started without performing exposure, this may result in incorrect detection due to noise, etc. Perform reject (image deletion) and repeat exposure.
- If image acquisition does not start after exposure, the voltage may not be enough. Check the exposure conditions and repeat exposure.
- When exposure is done while "Ready" is not displayed, have an interval of 1 minute or more before repeating exposure.

5 Adjust the image.

- After exposure, adjust the image as required.



6 Press [ ].



- The exposure is completed, and the display returns to the initial screen.

IMPORTANT

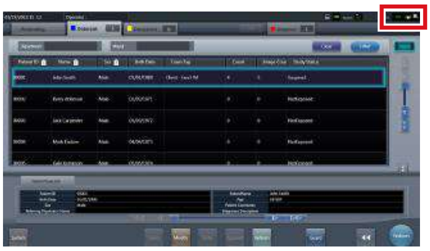
- When consolidating image adjustment, press [ ] to pause the examination and return to the initial screen.

HINT

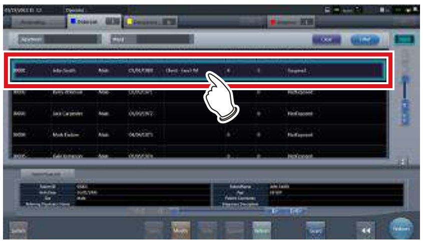
- Image adjustment can be done on the portable device's [Image Proc] tab. However, if a more advanced image adjustment is required, perform image adjustment on the [Image Proc] tab or the viewer screen. For details on the viewer screen, refer to "6.7 Functions of the viewer screen".
- If you have to move to the imaging location, perform the procedure again from step 1 after arriving to the imaging location.
- It is all right to keep power of this device and the DR Detector on.

●When the [AeroSync Button] is ON

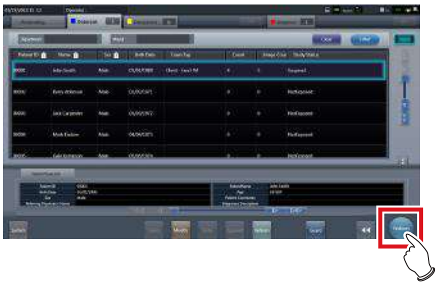
1 After arriving to the imaging location, confirm that the icon for the DR Detector used for imaging appears in the application bar.



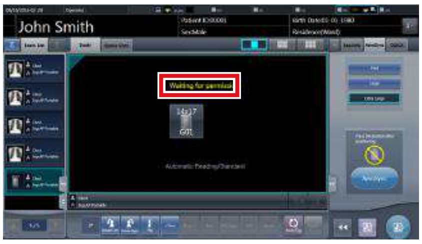
2 Select the examination.



3 Press [Perform].



⇩



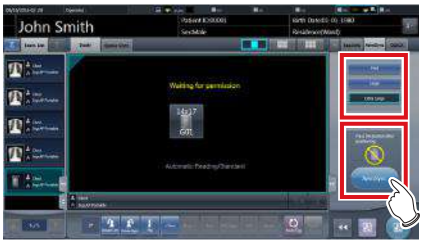
- The exposure screen is displayed.
- A message "Waiting for permission" is displayed in the image display area.

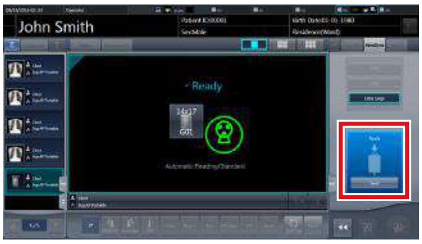
HINT

- If the information about the body part is not imported while importing examination information from the higher system, select the body part to be imaged. Then press [Perform] on the body part selection screen to display the exposure screen.
- When the AeroDR power management level is set to [3], [4] or [5], "Waiting to start shooting" is displayed instead of "Waiting for permission".

4 After positioning the patient, check the X-ray detection level, then press [AeroSync].

- If the control panel does not switch to [AeroSync], press the [AeroSync] tab.
- Change the X-ray detection level as needed.
- After checking the X-ray detection level, press [AeroSync].





- A message "Ready" is displayed in the message/button area. The screen is locked.
- The screen is locked. To return to the previous screen to change the position of the patient, etc., press [Cancel].

IMPORTANT

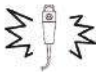
- To prevent incorrect operations, always press [AeroSync] and check that "Ready" is displayed.
- Conditions for changing the detection level vary depending on the X-ray device being used. If a survey has been carried out when the system was installed, follow the survey results.
- When the AeroDR power management level is set to [3], [4] or [5], it may take some time until the exposure becomes ready after you have pressed [Aero Sync]. In this case, [Standby] button instead of [Cancel] button is displayed in the message/button area.

HINT

- Refer to "7.4 Exposure with Unitless" for information on the X-ray detection levels that can be set for exposures.

5 Perform exposure.

- Configure the portable X-ray device settings and check the exposure setting before making an exposure.



Press the exposure switch

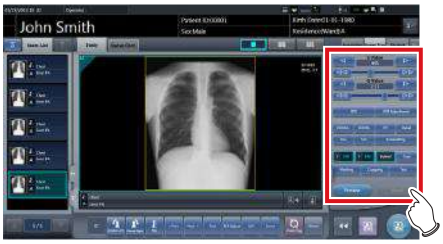
- As soon as the exposed image is transferred, the image is displayed in the image display area.

IMPORTANT

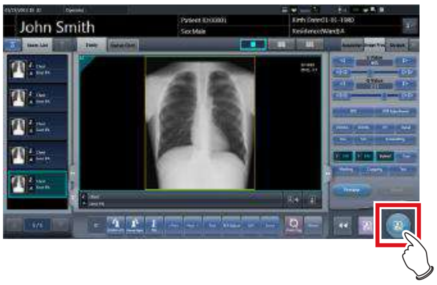
- When performing an exposure, stay away from the patient as far as possible before pressing the exposure switch.
- When the "Ready" is displayed, immediately perform exposure.
- Do not let the DR Detector vibrate or receive shock until the exposed image is displayed.
- If image acquisition started without performing exposure, this may result in incorrect detection due to noise, etc. Perform reject (image deletion) and repeat exposure.
- If image acquisition does not start after exposure, the voltage may not be enough. Check the exposure conditions and repeat exposure.
- When exposure is done while "Ready" is not displayed, have an interval of 1 minute or more before repeating exposure.

6 **Adjust the image.**

- After exposure, adjust the image as required.



7 **Press [ ].**



- The exposure is completed, and the display returns to the initial screen.

IMPORTANT

- When consolidating image adjustment, press [ ] to pause the examination and return to the initial screen.

HINT

- Image adjustment can be done on the portable device's [Image Proc] tab. However, if a more advanced image adjustment is required, perform image adjustment on the [Image Proc] tab or the viewer screen. For details on the viewer screen, refer to "6.7 Functions of the viewer screen".
- When moving the exposure location, after moving the exposure location, perform the procedure again from step 1.
- It is all right to keep power of this device and the DR Detector on.

7.4.4 Operations after exposure

When the exposure is completed, move the portable X-ray device and send the image data, etc. saved in this device to the higher system. The following procedure is for an example in which a wired connection is in operation between this device and a higher system.

1 **Connect the Ethernet cable connected to the DR Detector registration side hub to this device.**

- On connection, the icon of [System] will change.

IMPORTANT

- When a small access point is connected to this device, connect this device to the institution network after disconnecting the Ethernet cable connected to the small access point from this device.
- Do not disconnect the Ethernet cable while the data is being transmitted.
- The status of communication with the host is displayed on the [System] button. For detail, refer to "7.4.1 Screen structure".

2 **Plug the power cable into the outlet to charge this device.**

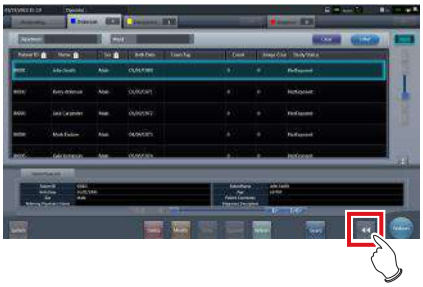
HINT

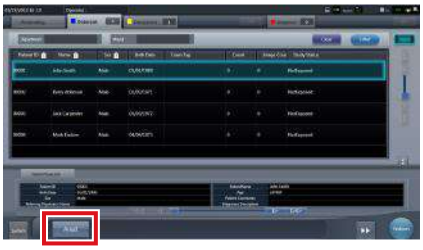
- Also charge the DR Detector, AeroDR Portable UF Unit, and portable X-ray device as required.

7.4.5 Change of the IP address of the connected institution network

Follow the steps below to obtain information from RIS in advance, or to switch the IP address when connecting to the institution network and outputting data to RIS after you return to the institution.
The procedure for switching from [Area1] to [Area2] is described below as an example.

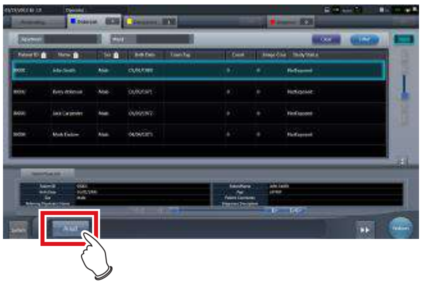
1 Press [◀◀] on the list screen.





- The area selection button is displayed.

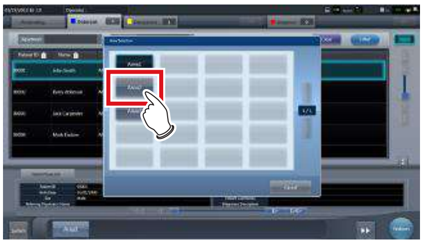
2 Press the area selection button.

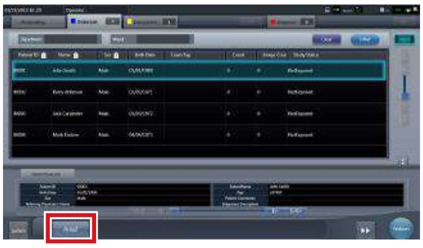


- The area selection screen is displayed.

3 Press the button corresponding to the desired area name.

- Press [Cancel] to return to the previous screen.

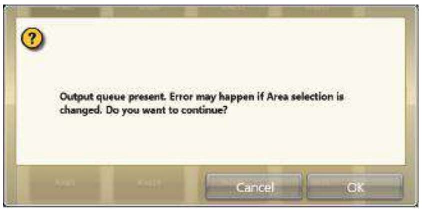




- The area is switched, and the display returns to the list screen.

IMPORTANT

- When there is data which has not yet been transmitted, a confirmation screen appears.



Output queue present. Error may happen if Area selection is changed. Do you want to continue?

→Press [OK] to execute the change in IP address.
→Press [Cancel] to close the area selection screen and return to the list screen. After transmitting the data, please change the IP address.

- When selecting areas using an external wired LAN adapter, make sure the external wired LAN adapter is attached before pressing the area selection button.

7.4.6 Change of the AP information

When the AP information needs to be changed because the exposure location has been moved, perform the following procedure.

The following procedure shows an example of a channel change from institution (1) to institution (2).

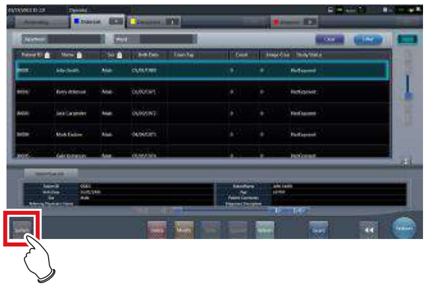
* The numbers ((1) and (2)) on the screen indicate AP information and AP information icons for institution (1) and (2). These are shown for ease of explanation, and not displayed on the actual screen.

IMPORTANT

- Make sure to check the following before changing the channel of the AP information.
  - The AeroDR Access Point 2 is turned on.
  - The AeroDR Access Point 2 has been turned on for 1 minute or more.

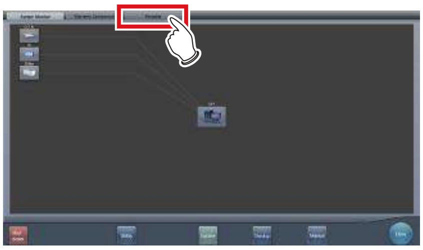
1 Press [System] to display the system monitor screen.

- [System] is displayed in the toolbar display area of the patient registration screen, list screen, body part selection screen, and exposure screen.



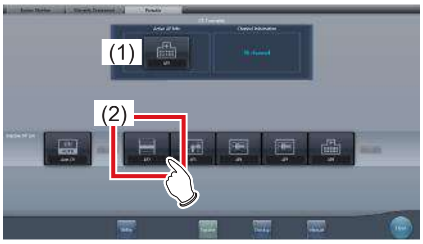
- The system monitor screen is displayed.

2 Press the [Portable] tab.



- The portable screen is displayed.

3 Select the icon of the AP information to be changed from the [Inactive AP List] icons.



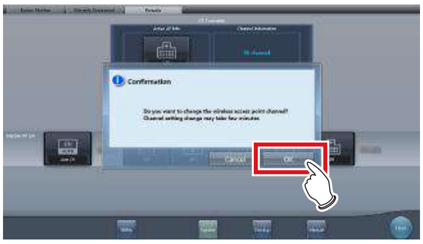
- A confirmation screen is displayed.

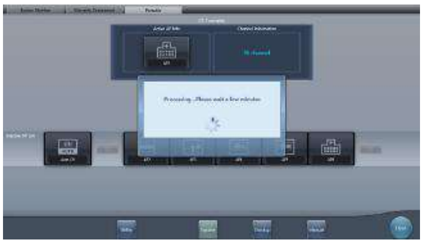
HINT

- When automatic channel selection is set, pressing [Auto CH] sets the optimum channel automatically.

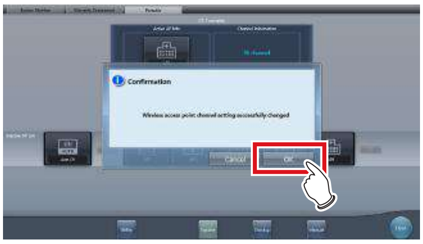
4 Press [OK].

- Press [Cancel] to return to the previous screen.





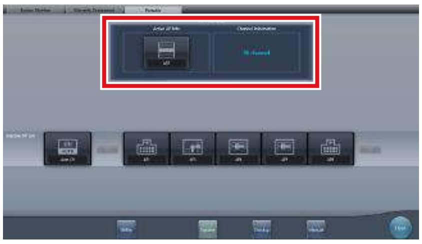
- The AP information change process begins.
- The change process takes several minutes.



Confirmation

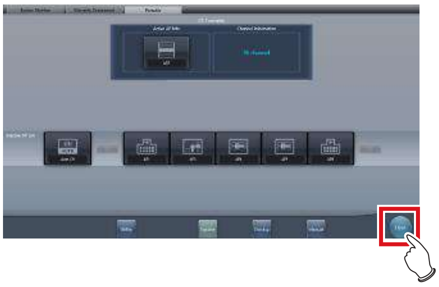
Wireless access point channel setting successfully changed

- When the change process is completed, a confirmation screen is displayed. Press [OK].



- Confirm that the icons and channels of the [Active AP Info] and [Channel Information] have changed.
- If multiple pieces of channel information are displayed, DFS has been set and one of the channels is in use.

5 **Press [Close].**



- The display returns to the initial screen.

IMPORTANT

- Do not turn off the AeroDR Access Point 2 during the channel change process.

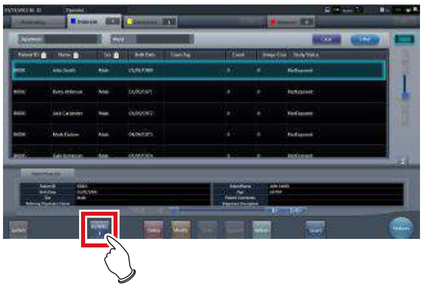
HINT

- Set the icon type and name of the information icon during installation.

7.4.7 Other functions of unitless

After returning to the institution, you can check details of RIS by starting Internet Explorer depending on settings. The procedure is explained using the list screen as an example.

1 **Press [Web/Remote Desktop Linkup] on the patient registration screen or the list screen.**



- Internet Explorer starts.

HINT

- URLs that can be displayed in Internet Explorer are only those beginning with http or https.

7.5 Serial exposure

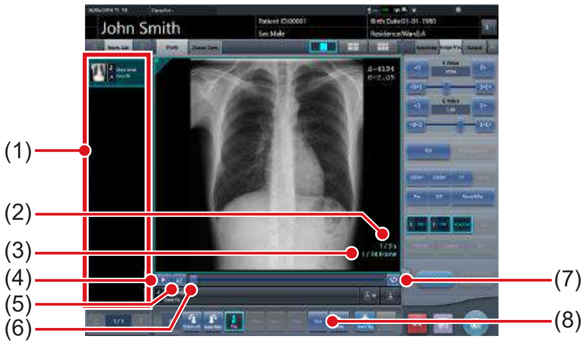
IMPORTANT

- DR Detectors capable of serial exposure are: AeroDR 3 1417HD and AeroDR 3 1717HD.
- The scattered radiation collection cannot be used.
- Please use an X-ray generator and a wall stand/table dedicated for serial exposure.

7.5.1 Screen structure

● Exposure screen

This screen is used to perform serial exposure and to view serial exposure images.



Number	Name	Functions
(1)	Order list	List of exposures.
(2)	Recording time information	Represents the elapsed time/total recording time for the currently displayed serial exposure image set.
(3)	Recording frame information	Represents the frame number/total number of frames for the currently display serial exposure image set.
(4)	Play/Stop button	Plays and stops serial exposure images. The button switches between [Play] and [Stop] every time the button is pressed. ▶ : Stopping ❚❚ : Playing
(5)	Fast Play button	Switches between fast playback and normal playback of serial exposure images. Turning on this feature starts fast playback of serial images. Turning off this feature plays images at normal speed.
(6)	Slider bar	Displays the frame position of the currently displayed serial exposure image. Drag the slider bar to change the displayed frame. Click on some position of the slider bar to move to the frame corresponding to the clicked position.
(7)	Repeat playback button	Turns repeat playback of serial exposure image sets on and off. Turning on this feature enables repeat playback of serial exposure image sets. Turning off this feature causes playback to stop once the current playback finishes.
(8)	[Grid]	Remove the grid again.

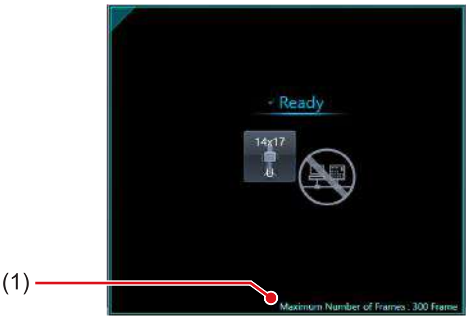
IMPORTANT

- The following functions cannot be used when displaying non-serial exposure images.
  - Play/Stop button
  - Fast play button
  - Slider bar
  - Repeat playback button

HINT

- The color of serial exposure Exam. Tag displayed in the order list is different than non-serial exposure Exam. Tag.

● Work area (not during exposure)



Number	Name	Functions
(1)	Maximum Number of Frames	Displays the maximum number of frames recorded when performing serial exposure.

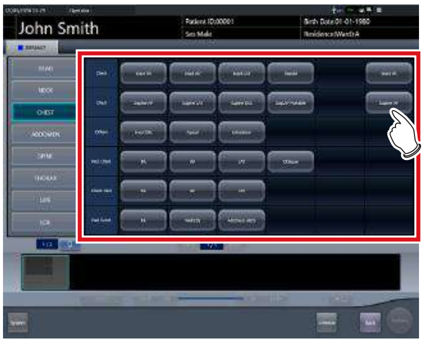
7.5.2 Exposure

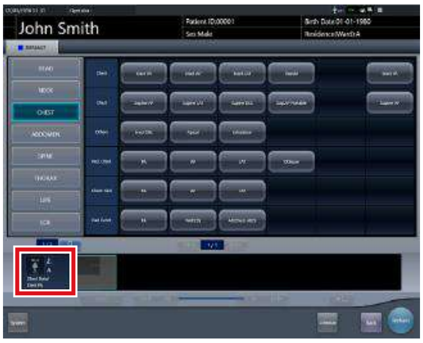
The serial exposure method is as follows.

IMPORTANT

- Always check the patient information, exposure conditions and exposure setting for X-ray device console before exposure.
- If serial exposure is carried out, please be careful of the following items.
  - Print composer is not possible.
  - Printer output is not possible.
  - Media output is not possible.
  - Real-time back up is not possible.
  - Auto backup is not possible.
  - Raw image output function is not possible.
  - Electronic medical records linkup is not possible.
  - Examination sharing is not possible.
  - Image copying is not possible.
  - Reject (return to unexposed status when reject) is not possible.
  - Automatic 1 x 1 display function is not possible.
  - High precision monitor cannot be used.
  - PDAs can only display patient information. (Images cannot be displayed)
  - Full-screen image display is not possible.
  - Viewer screen cannot be used.
  - Serial exposure cannot be performed while the CR cassette is being read. The CR cassette cannot be read while the serial exposure process is in progress.
  - Highlight function for the tube/gauze function is not possible.
  - Contrast Invert function is not possible.

1 After transitioning from the initial screen to the exposure body part selection screen, select the Exam. Tag for serial exposure.



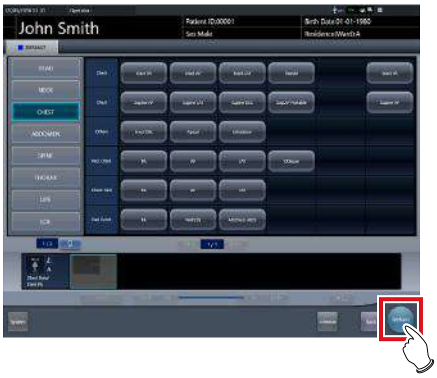


- The selected Exam. Tags are displayed on the Exam. Tags display area. By selecting the Exam. Tags again, further Exam tags can be added.

IMPORTANT

- Still exposure Exam. Tag and serial exposure Exam. Tag cannot be changed.
- Up to 10 serial Exam. Tags can be selected.

2 When finished selecting/adding the Exam. Tags, press [Perform].

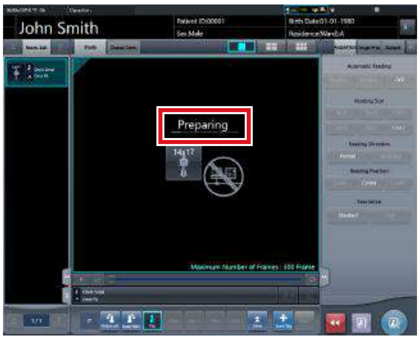


- The exposure screen is displayed.

3 Confirm that the X-ray device is ready for exposing.

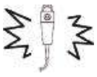
4 Confirm that the status of the work area displays as "Ready".

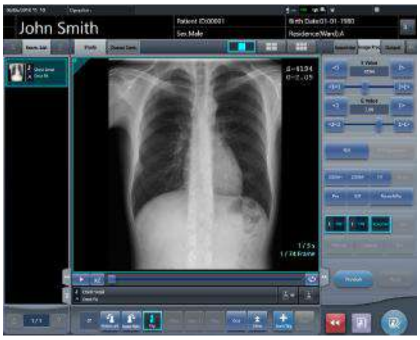
- The following progress bar appears in the work area until the system is ready to start the serial exposure process.



5 Perform exposure.

- Confirm the serial exposure settings on the X-ray device console before starting the exposure process.

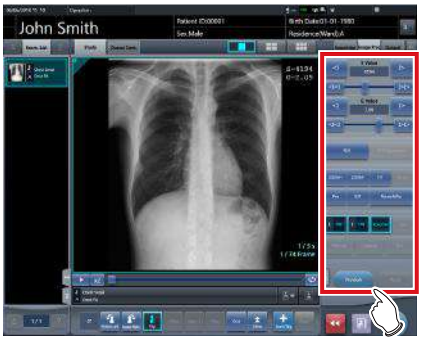

Press the exposure switch



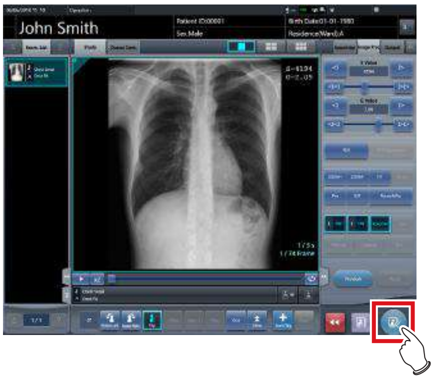
- The exposed image is displayed in the image display area.
- Images are continuously displayed as they are exposed during the serial exposure process.

6 Adjust the image.

- After exposure, adjust the image as required.



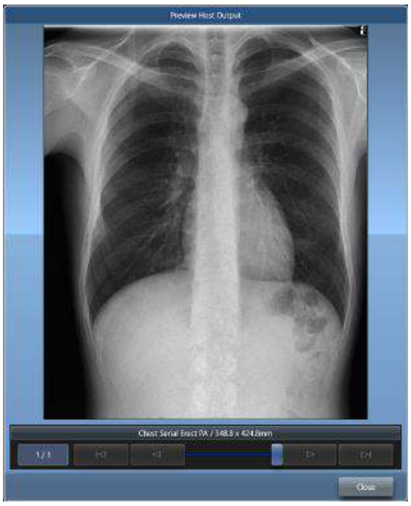
7 Press [ ].



- When the examination is finished, exposed images are batch output to a preset output destination.
- The display returns to the initial screen.

IMPORTANT

- Serial exposure images can only be output to hosts.
- The serial exposure images can be output to KONICAMINOLTA DI-X1 or PACS that supports the serial exposure images.
- For details on the host output destination of serial exposure images, contact Konica Minolta technical representatives.
- Press the [Preview] on the [Image Proc] or [Output] tab, the [Preview host output] screen is displayed.



  - Only the image displayed in the current image screen appears in the serial exposure image output preview.
    Playback of serial exposure images cannot be performed on the host output preview screen.
  - Serial exposure images for which image adjustments have not been made are output to hosts. As such, the images that appear on the host output preview screen are different from the images actually output because they are images for which image adjustments have been made.

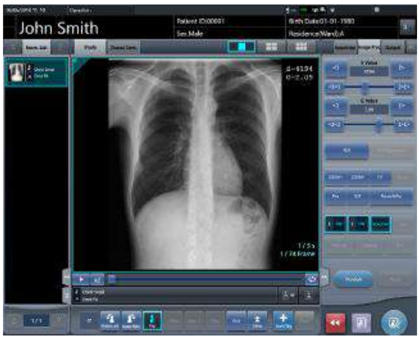
7.5.3 Playback of serial exposure image

Use the following procedure to view serial exposure images consecutively (playback).

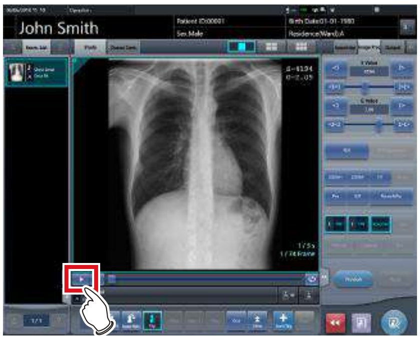
IMPORTANT

- Image adjustment, except adjustment of the S and G values, cannot be performed while playing serial exposure images. To make other image adjustments, stop playback of serial exposure images.
- Selecting other Exam. Tags in the Order List while viewing serial exposure images causes playback to jump from the current frame position back to the beginning of the current set of serial exposure images.

1 Display the serial exposure image to be play.



2 Press [▶].



- Playback of serial exposure images starts. The [▶] changes to the [II] during playback of serial exposure images.
- Press the [II] to pause playback of serial exposure images.
- Press the [x2] to start fast playback of serial exposure images.
- Press the [⟲] to enable repeat playback of serial exposure images.

7.5.4 Grid removal

The automatic removal process of the grid is performed after serial exposure, but the grid can be removed again manually as necessary.

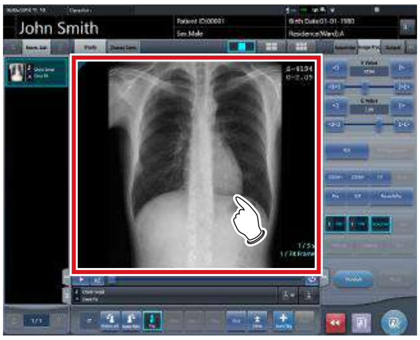
IMPORTANT

- This function is only available for images that are exposed on the DR Detector.
- If performing the grid removal process, do so within 1 week of exposing the image.
- When grid have been removed, pressing the selection switch for DR Detector has no effect.

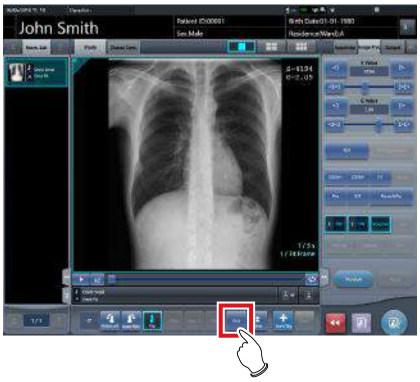
HINT

- Set the irradiation field size to at least 10x10 cm to use the grid. If the area is less than 10x10 cm, automatic grid recognition may fail during the grid removal process.

1 Select the image to remove the grid again.

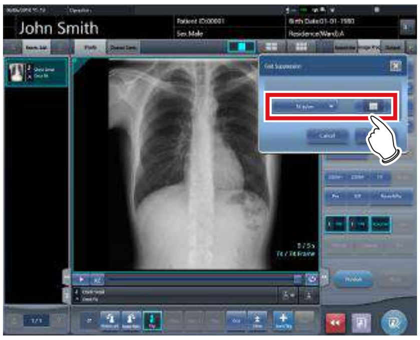


2 Press [Grid].



- Control panel to adjust the parameters is displayed.

3 Remove the grid again.



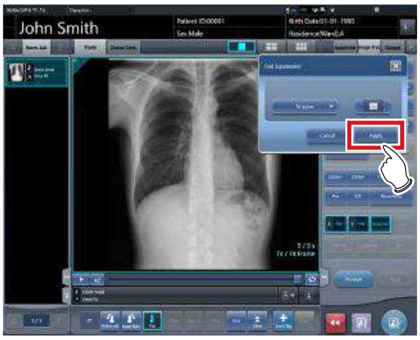
- Setting items are as follows.

Name	Description
Grid density	Select the grid density. Select [34 lp/cm], [40 lp/cm], or [60 lp/cm]. The default setting is [34 lp/cm].
Grid direction	The grid direction can be changed between vertical and horizontal. Switches between vertical and horizontal every time the button is pressed.

HINT

- When removing grid of images exposed without inserting the grid plate, select [60 lp/cm] for grid density.

4 Press [Apply] after the grid is removed again.

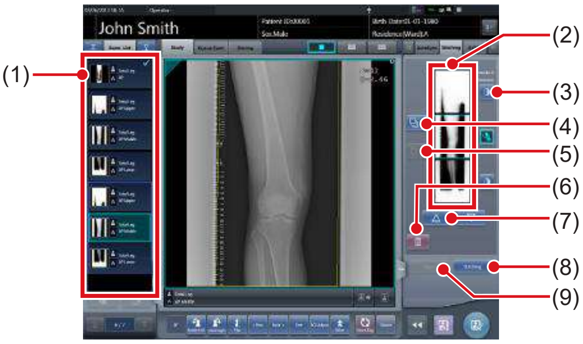


7.6 Manual stitching exposure

7.6.1 Screen structure

●Exposure screen

This is the screen for manual stitching exposure.



Number	Name	Functions
(1)	Order list	List of exposures.
(2)	Combined image display area	The images for combination are displayed. Focus is displayed on selected images.
(3)	Standard gradation button	This button is for selecting the image which will be the image shade standard among the images displayed in the combined image display area. You can only select 1 image. ◑ : Not selected ◐ : Selected
(4)	Selection button (batch selection)	Gathers multiple exposure images associated with the images selected in the order list and displays them in the combined image display area.
(5)	Selection button (individual selection)	Displays the selected images in the order list in the combined image display area.
(6)	Delete button	Deletes the images selected in the combined image display area.
(7)	Combination sequence switch button	Moves the position of images selected in the combined image display area.
(8)	Stitching button	Combines the images displayed in the combined image display area. Press this button to display the stitching combination position adjustment screen.

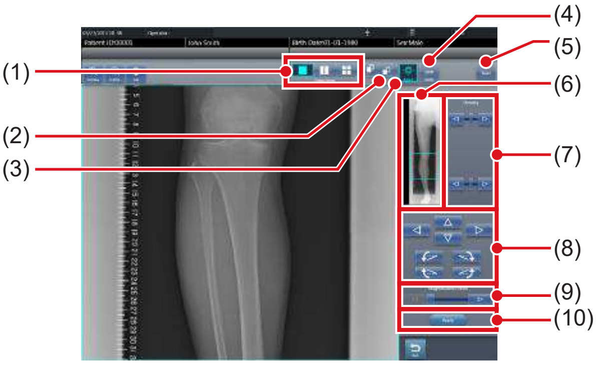
Number	Name	Functions
(9)	Adjust button	Performs re-adjustment of the combination position. This button cannot be pressed when combined images are not displayed.

HINT

- Adjustments to the combination position of images that underwent stitching exposure are performed on the viewer screen (for stitching combination position adjustment). For details, refer to "7.6.3 Image combination".

●Viewer screen (for stitching combination position adjustment)

This is the screen for adjusting combined position of images taken manually with stitching exposure.



Number	Name	Functions
(1)	Display layout toggle button	Selects the screen display format from 1×1, 2×1, and 2×2 display options.
(2)	Overlap button	Changes the plate overlap sequence. Every time you press the button, the plate overlap sequence is sequentially changed and the display of the overlap button is changed. The changed overlap sequence is also reflected in the output image. ⧉ : Interchanges the plate overlap sequence (middle and bottom). ⧉ : Interchanges the plate overlap sequence (top and middle). When two plates are used, only [⧉] is displayed.

Number	Name	Functions
(3)	Adjust button	Displays and hides the stitching adjustment panel.
(4)	Proportion button	Changes the displayed transmittance of the overlapped portion. Pressing this button sequentially changes the transmittance. A changed transmittance is not reflected in the output image.
(5)	Reset button	Resets the position of the moved image and the changed density to return them to their initial states.
(6)	Full preview	All images to be combined are displayed.
(7)	Part correction button	Adjust the density of the images by pressing [◁ ▷] or dragging the bar.
(8)	Move/rotate button	Moves the position of selected images and adjusts their angles. △ ▽ ◁ ▷ : image position is moved toward each direction. ↶ ↺ ↻ ↷ : image angles are adjusted.
(9)	Magnification Ratio button/ Magnification Ratio bar	Display images are magnified/shrunk by pressing [◁ ▷] or dragging the bar.
(10)	Apply button	Applies the adjusted image combination position.

IMPORTANT

- For details on the overlap button when carrying out exposure using the CR Stitching cassette, refer to "7.9.1 Screen structure".

HINT

●Moving/rotating an image during image combination

- For image movement/rotation, the lower image becomes the work image. The movement/rotation action is as follows.

Moving

[△][▽][◁][▷]: Moves the image to direction pressed

The image can also be moved by dragging the center of the image (horizontal stripe portion).

Rotating

[↶]: Lowers the upper left edge of the image

[↺]: Raises the upper left edge of the image

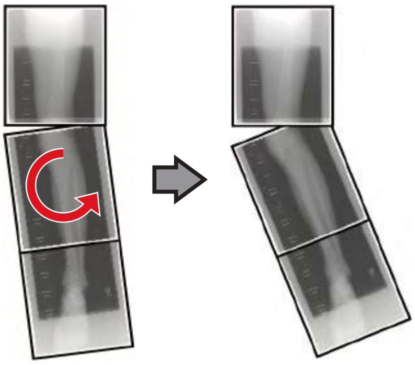
[↻]: Lowers the upper right edge of the image

[↷]: Raises the upper right edge of the image

If you drag the left or right area of the image (horizontal stripe portion) vertically, you can move the upper edge up or down in the direction you are dragging it. If you drag it horizontally, you can move the image horizontally.

●Linking 3 images

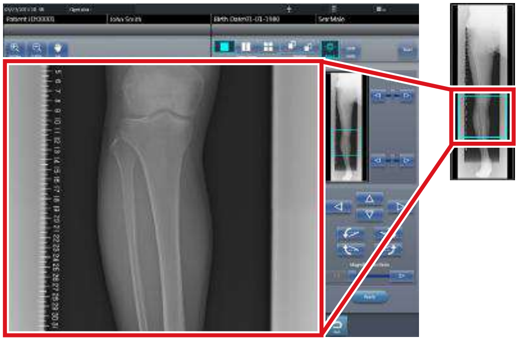
- When combining 3 images, the lower image will also move/rotate if the central image is moved/rotated.



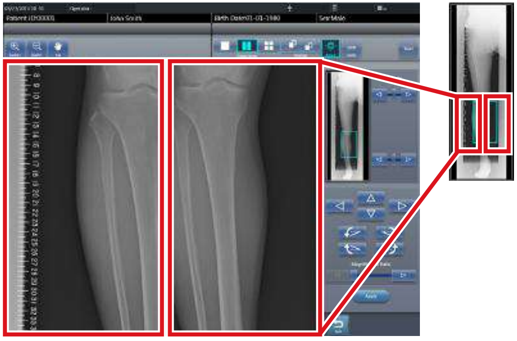
● About image display

- During the image combination, the combined parts (frame parts) displayed in the full preview are magnified and displayed in the image display area as frames.
- The display format and magnified displayed part are as follows:

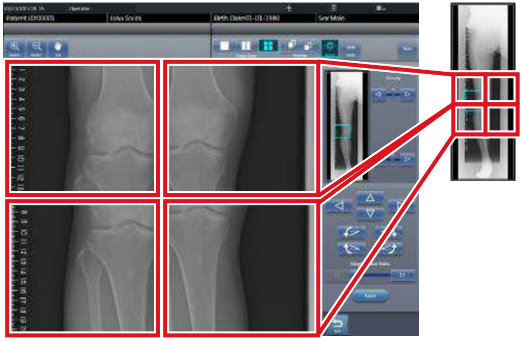
1×1 display



2×1 display



2×2 display

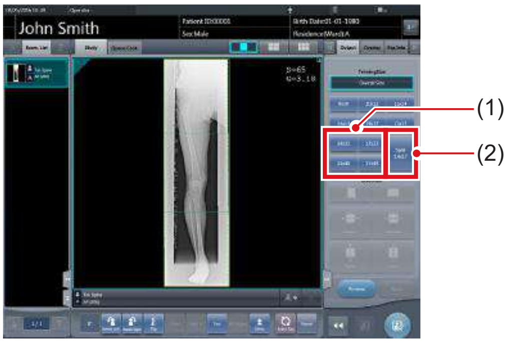


- A 2×2 display can only be selected when combining 3 images.
- Set the plate overlap sequence during installation.

……

● Control panel (Output - for host)

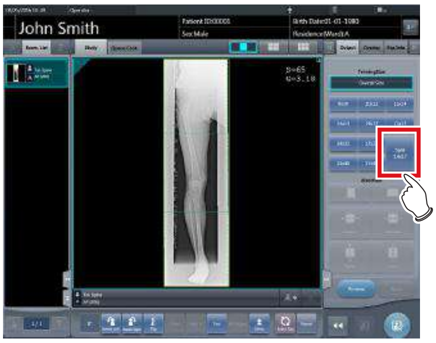
This is the control panel to perform setting of host output conditions for combined stitching images.



Number	Name	Functions
(1)	Trimming size button	This button is used to select the trimming size. Set to hide/unhide trimming size button during installation.
(2)	[Split] button	This button is used to split combined images and output these images to hosts. The device switches between ON and OFF every time the button is pressed. Press and hold the button to select the size of each section.

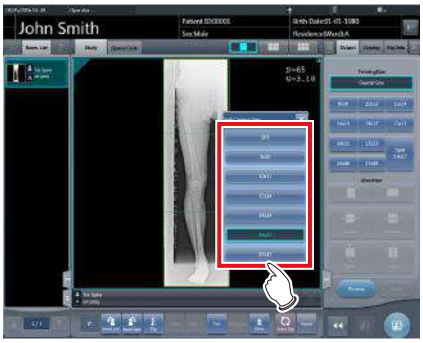
● Procedure to change the output size of split images

1 Press the [Split] button for 1 second or more.



- The Split Output Size dialog box is displayed.

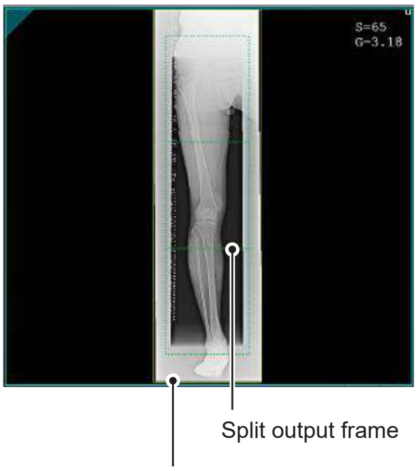
2 **Press [OFF] or the button of the output size to be changed on the Split Output Size dialog box.**



- The output size is changed.

HINT

- When output of split images is enabled, a frame appears on the image to indicate the area of the split image that will be output.



- The size of the trimming frame changes in accordance with changes to the size of the image frame so that images are automatically split into the selected section size. Images can be split into a maximum of 3 sections.
- If the split image is smaller than the trimming region, the entire combined image may not completely fit within the selected region.
- If the configuration of the split images results in one image, the split processing is not applied, and the split output frame does not appear.

7.6.2 Exposure

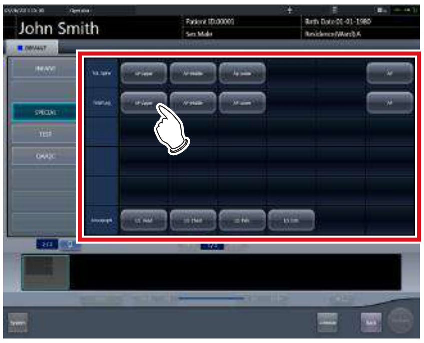
The manual stitching exposure method is as follows.

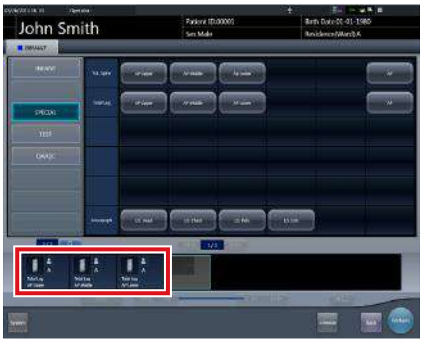
IMPORTANT

- For the stitching exposure images, make sure that the combined parts are combined in the correct positions.
- If there is gap between combined images, manually adjust the image position of the combined parts using the viewer screen (for stitching combination position adjustment). It is also recommended that you arrange a measure in the combined image part during exposure to confirm the combined parts easier.
- In stitching exposure, images can be combined when all the following conditions are met.
  - All exposures are done using DR Detectors (CR cassettes) of the same size
  - All exposures are done using a DR Detector or a CR cassette
  - Perform exposure after standardizing the read resolution
- When performing the manual stitching exposure in AeroDR 3 1417 HD and AeroDR 3 1717HD, only "Standard" (200µm) can be selected for "Resolution".

1 **After transitioning from the initial screen to the exposure body part selection screen, select the Exam. Tag for stitching exposure.**

- Select 2 or 3 Exam. Tags for stitching exposure.



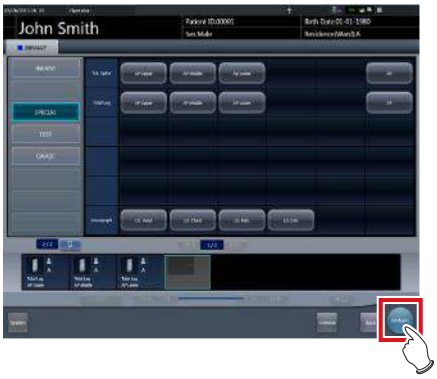


- The selected Exam. Tags are displayed on the Exam. Tags display area.

HINT

- It is also possible to register multiple exposure body parts in 1 Exam. Tag.

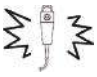
2 Press [Perform].

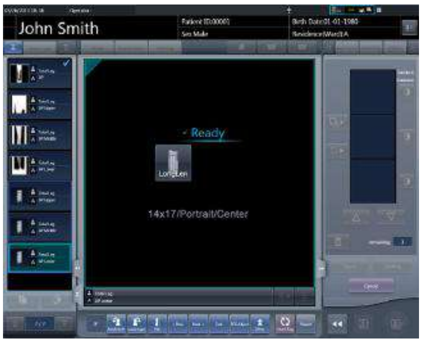


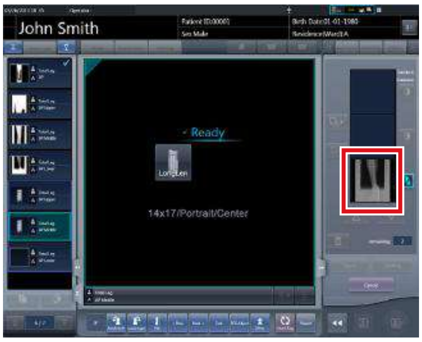
- The exposure screen is displayed.

3 Perform exposure.

- Configure the X-ray device settings and check the exposure setting before making an exposure.


Press the exposure switch





- Exposed image is displayed.
- Perform the subsequent exposures with same procedure.

7.6.3 Image combination

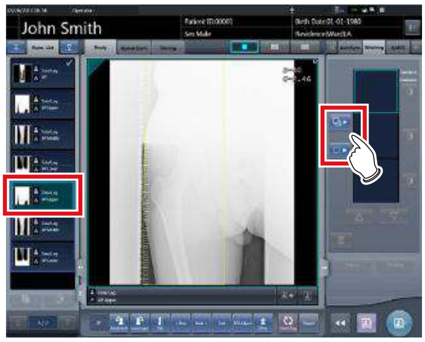
Combine the exposed images. The following procedure describes an example of combining 3 images.

IMPORTANT

- Adjust the combination position by using the markers as supplementary standards in addition to body parts of the subject.
  It is also recommended that you arrange the measure in the combined image part during exposure to simplify the confirmation of the combined parts.
- In stitching exposure, when plates overlap and are arranged so that there is no image loss in each plate's boundaries, there might be a slight gap in the marker position because of a minute difference in magnification. After taking this into account, confirm the combination position through the marker.

1 Select the images to be combined.

- Select the images to be combined from the order list and press [⧉▸] or [□▸].

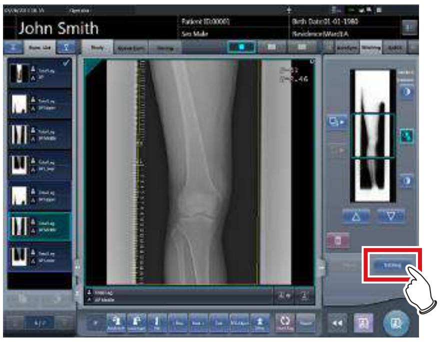


- The selected images are displayed in the combined image display area.
- If you pressed [□▸], continuously select the associated images (second and third).

HINT

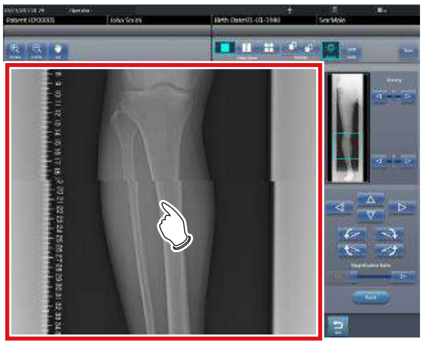
- [⧉▸] and [□▸] can be pressed only when the Exam. Tag for stitching exposure is selected.

2 **Press [Stitching].**



- The viewer screen (for stitching combination position adjustment) is displayed.

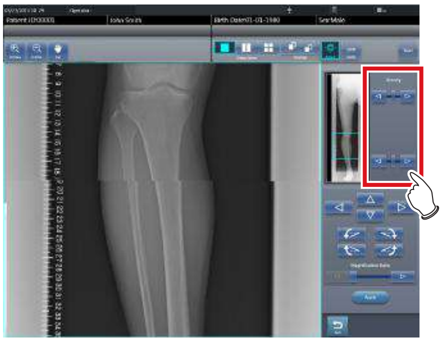
3 **Select the frame which will adjust the image combination position.**



- Focus is applicable to the frame so you will be able to make adjustments.

IMPORTANT

- Adjust the density of each image in this step.

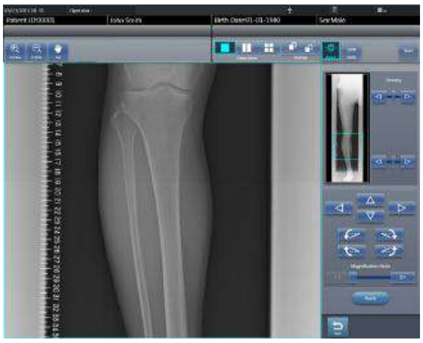


- If there are three images, adjust the density of the upper and lower images to that of the center image. If an image used as the density standard is changed, adjust the density so that it suits the changed image.
- If there are two images, adjust the density of the upper image to that of the lower image. If the upper image is used as the density standard, adjust the density of the lower image based on the upper image.

HINT

- For the frame display format, 1×1, 2×1, and 2×2 display options can be selected.
- A 2×2 frame display can only be selected when combining 3 images.

4 **Adjust the image combination position.**

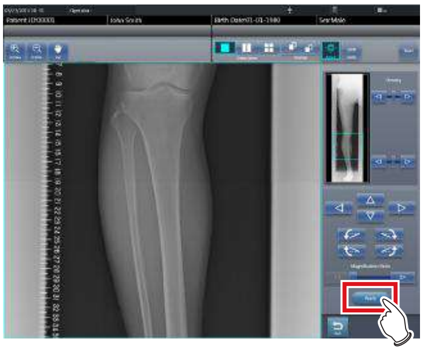


- For details on how to operate the viewer screen (for stitching combination position adjustment), refer to "7.6.1 Screen structure".
- Select another frame and adjust the combination position as needed.

IMPORTANT

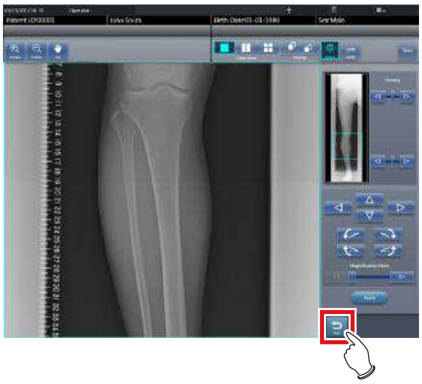
- Even if the displayed transmittance of the overlap portion is modified during the adjustment, it will not be reflected in the output image.

5 **Once all combination positions are adjusted, press [Apply].**



- The image combination position is confirmed.

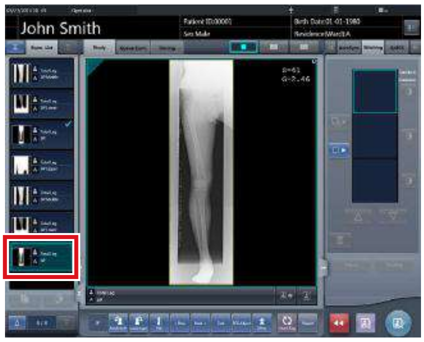
6 Press [Back].



- The display returns to the exposure screen, and the combined image is added to the order list.

HINT

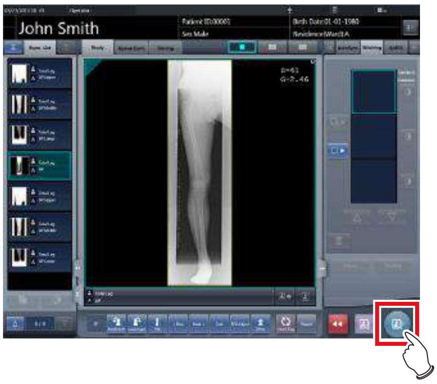
- A merged image can also be displayed after the pre-merged images in the order list. For more details, contact Konica Minolta technical representatives.


John Smith

- If the trimming frame is set as the entire image for merged images rotated by free rotation, the area enclosing the merged image becomes the trimming frame.

7 Press [ ].

- If you press [Adjust], the viewer screen (for stitching combination position adjustment) will be displayed. The combination position can then be readjusted.


John Smith

- The combined image is output, and the display returns to the initial screen.

IMPORTANT

- The stitching image is output first, then non-stitching images are output.
- If images are output before stitching, the stitching image is output last.
- Press the [Adjust] button after rotating combined images on the exposure screen to reset the image rotation.

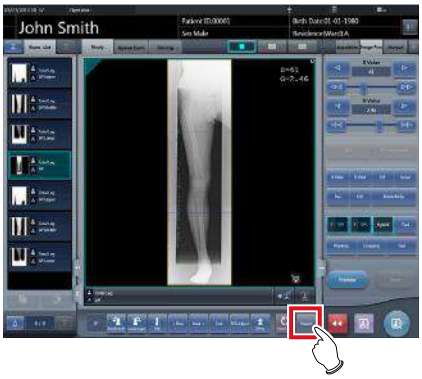
HINT

- If outputting the combined image in sections, set the number of sections by [Split].
- The order of combined image output can be changed. For more details, contact Konica Minolta technical representatives.

7.6.4 Image adjustment

The adjustment method for the combined image is as follows.

1 Display the combined image and press [Viewer].

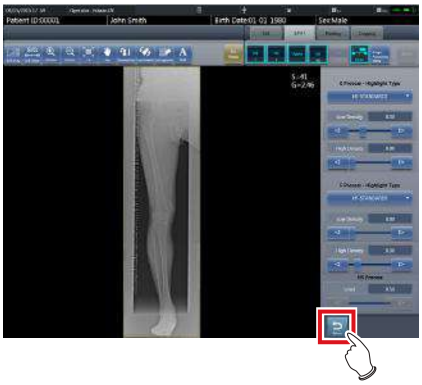


- The viewer screen is displayed.
- Perform various image adjustments. For details on how to operate the viewer screen, refer to "3.6 Viewer screen".

IMPORTANT

- Note the following when adjusting images created by stitching exposure.
  - ROI adjustment is not possible.
  - Automatic recognition of the exposure field is not possible (manual adjustment is possible).
  - If the effective image area is changed, only the image size will change.
  - Automatic calculation of masking is not possible.

2 Press [Return] when image adjustment is completed.



- Returns to the exposure screen.

7.7 Auto stitching exposure with AeroDR Detector

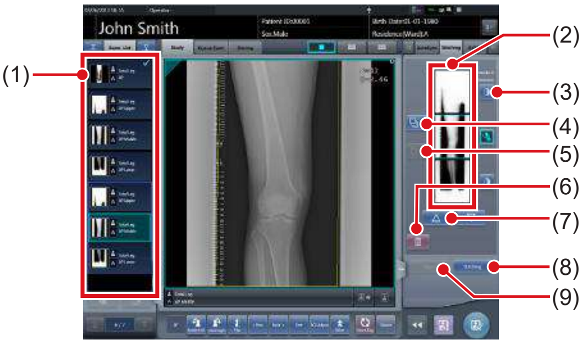
IMPORTANT

- The following DR Detector cannot be used for auto stitching exposure with AeroDR Detector.
  - AeroDR 3 1417HD
  - AeroDR 3 1717HD
  - AeroDR 3 1012HQ

7.7.1 Screen structure

● Exposure screen

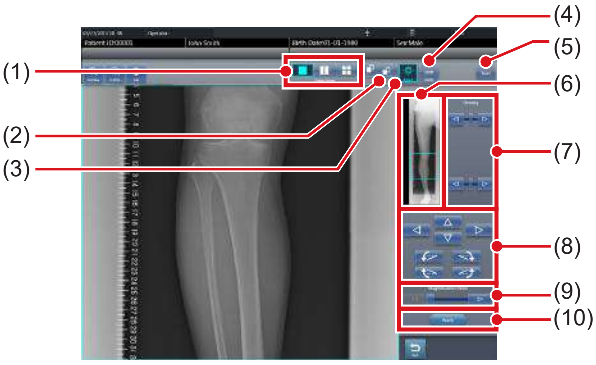
This is the screen for auto stitching exposure with DR Detector.



Number	Name	Functions
(1)	Order list	List of exposures. Exam. Tags are grouped for each examination.
(2)	Combined image display area	The images for combination are displayed. Focus is displayed on selected images. In the case of 2 exposures, "x" is displayed in the area at the top.
(3)	Standard gradation button	This button is for selecting the image which will be the image shade standard among the images displayed in the combined image display area. You can only select 1 image. ◑ : Not selected ◑ : Selected
(4)	Selection button (batch selection)	Gathers multiple exposure images associated with the images selected in the order list and displays them in the combined image display area.
(5)	Selection button (individual selection)	Displays the selected images in the order list in the combined image display area.
(6)	Delete button	Deletes the images selected in the combined image display area.
(7)	Combination sequence switch button	Moves the position of images selected in the combined image display area.
(8)	Stitching button	Combines the images displayed in the combined image display area. Press this button to display the stitching combination position adjustment confirmation screen.
(9)	Adjust button	Performs re-adjustment of the combination position. This button cannot be pressed when combined images are not displayed.

● Viewer screen (for stitching combination position adjustment)

This is the screen for adjusting combined position of images taken with stitching exposure with the DR Detector.



Number	Name	Functions
(1)	Display layout toggle button	Selects the screen display format from 1×1, 2×1, and 2×2 display options.

Number	Name	Functions
(2)	Overlap button	Changes the plate overlap sequence. Every time you press the button, the plate overlap sequence is sequentially changed and the display of the overlap button is changed. The changed overlap sequence is also reflected in the output image. ⧉ : Interchanges the plate overlap sequence (middle and bottom). ⧉ : Interchanges the plate overlap sequence (top and middle). When two plates are used, only [⧉] is displayed.
(3)	Adjust button	Displays and hides the stitching adjustment panel.
(4)	Proportion button	Changes the displayed transmittance of the overlapped portion. Pressing this button sequentially changes the transmittance. A modified transmittance is not reflected in the output image.
(5)	Reset button	Resets the position of the moved image and the changed density to return them to their initial states.
(6)	Full preview	All images to be combined are displayed.
(7)	Part correction button	Adjust the density of the images by pressing [◁ ▷] or dragging the bar.
(8)	Move/rotate button	Moves the position of selected images and adjusts their angles. △ ▽ ◁ ▷ : image position is moved toward each direction. ↶ ↷ ↷ ↶ : image angles are adjusted.
(9)	Magnification Ratio button/Magnification Ratio bar	Display images are magnified/shrunk by pressing [◁ ▷] or dragging the bar.
(10)	Apply button	Applies the adjusted image combination position.

HINT

●Moving/rotating an image during image combination

- For image movement/rotation, the lower image becomes the work image. The movement/rotation action is as follows.

Moving

[△][▽][◁][▷]: Moves the image to direction pressed

The image can also be moved by dragging the center of the image (horizontal stripe portion).

Rotating

[↶]: Lowers the upper left edge of the image

[↷]: Raises the upper left edge of the image

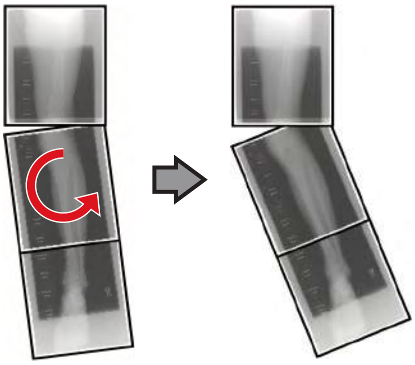
[↷]: Lowers the upper right edge of the image

[↶]: Raises the upper right edge of the image

If you drag the left or right area of the image (horizontal stripe portion) vertically, you can move the upper edge up or down in the direction you are dragging it. If you drag it horizontally, you can move the image horizontally.

●Linking 3 images

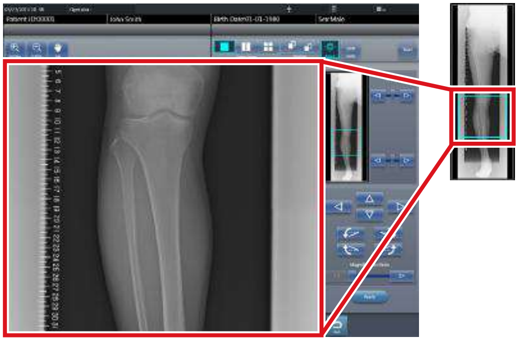
- When combining 3 images, the lower image will also move/rotate if the central image is moved/rotated.



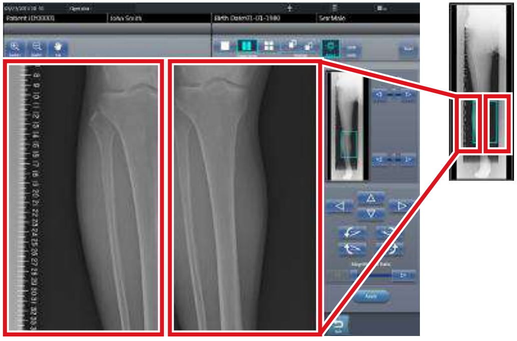
● About image display

- During the image combination, the combined parts (frame parts) displayed in the full preview are magnified and displayed in the image display area as frames.
- The display format and magnified displayed part are as follows:

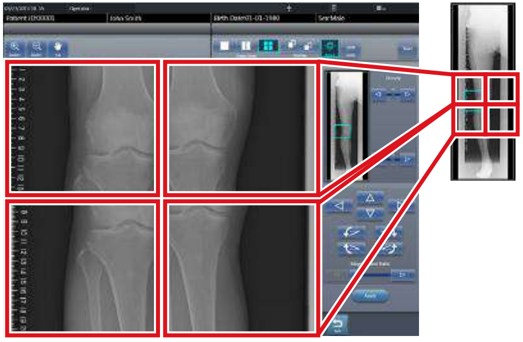
1×1 display



2×1 display



2×2 display

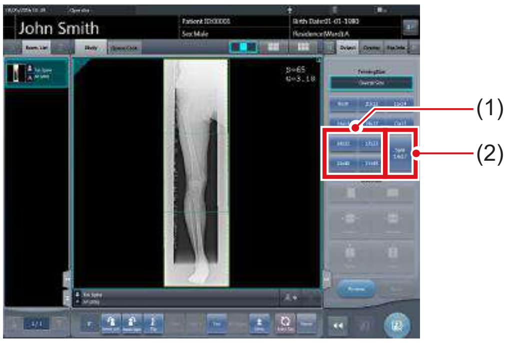


- 2×2 display can only be selected when combining 3 images.
- Set the plate overlap sequence during installation.

……

● Control panel (Output - for host)

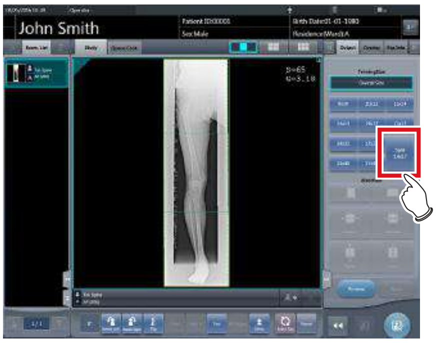
This is the control panel to perform setting of host output conditions for combined stitching images.



Number	Name	Functions
(1)	Trimming size button	This button is used to select the trimming size. Set to hide/unhide trimming size button during installation.
(2)	[Split] button	This button is used to split combined images and output these images to hosts. The device switches between ON and OFF every time the button is pressed. Press and hold the button to select the size of each section.

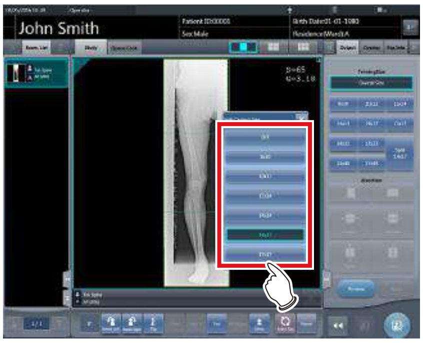
● Procedure to change the output size of split images

1 **Press the [Split] button for 1 second or more.**



- The Split Output Size dialog box is displayed.

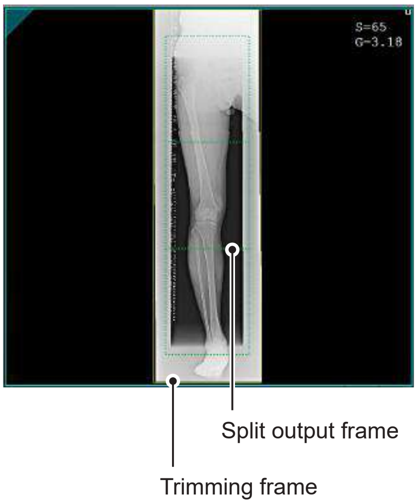
2 Press [OFF] or the button of the output size to be changed on the Split Output Size dialog box.



- The output size is changed.

HINT

- When output of split images is enabled, a frame appears on the image to indicate the area of the split image that will be output.



- The size of the trimming frame changes in accordance with changes to the size of the image frame so that images are automatically split into the selected section size. Images can be split into a maximum of 3 sections.
- If the split image is smaller than the trimming region, the entire combined image may not completely fit within the selected region.
- If the configuration of the split images results in one image, the split processing is not applied, and the split output frame does not appear.

7.7.2 Exposure

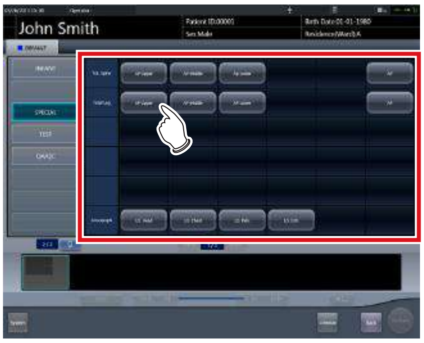
The auto stitching exposure method using DR Detector is as follows.

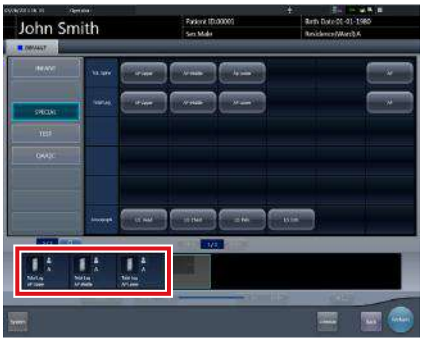
1 Perform exposure preparations for AeroDR Stitching System.

- For details, refer to the "AeroDR Stitching System Manual".

2 After transitioning from the initial screen to the exposure body part selection screen, select the Exam. Tag for stitching exposure.

- Select 2 or 3 Exam. Tags for stitching exposure.



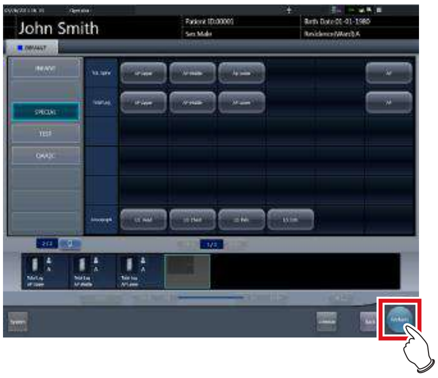


- The selected Exam. Tags are displayed on the Exam. Tags display area.

HINT

- It is also possible to register multiple exposure body parts in 1 Exam. Tag.

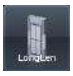
3 Press [Perform].



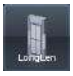
- The exposure screen is displayed.

HINT

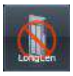
- Display of the device icon and message changes according to the device status. The meaning of the statuses to be displayed are listed below.



"Please do the height detection."
AeroDR Stitching Unit is in preparation.



"Please detect radiation field."
Condition of undetected exposure. Detect exposure field detection.



"Please check a panel"
DR Detector is not set (ready) for modality to be used for exposure. Set (prepare) the DR Detector.

4 Patients are led before the AeroDR Stitching Unit and the X-ray exposure range is set.

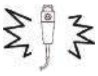
IMPORTANT

- If Exam. Tag and exposure field confirmation results do not match, the following action is performed.
  - – If exposure field confirmation results are less than the Exam. Tag, the confirmation screen is displayed. The Exam. Tag is maintained as is and exposure is enabled.
  - – If exposure field confirmation results exceed the Exam. Tag, an error is displayed. Either reset the exposure field or add an Exam. Tag on the body part selection screen.

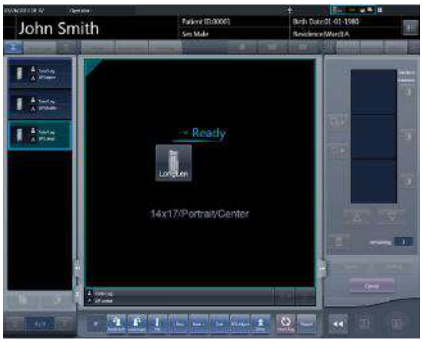
5 The exposure ready LED (blue) of the AeroDR Stitching Unit lights to let you know exposure is enabled.

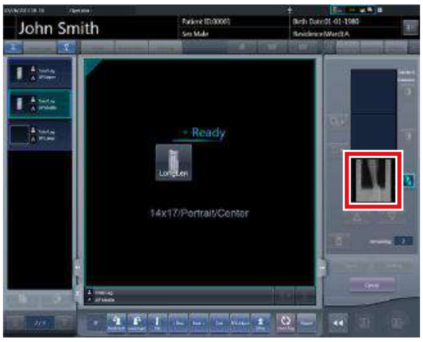
6 Exposes the first.

- Set up the X-ray device before exposure. Perform exposure after checking the exposure settings.



Press the exposure switch





- Exposed preview image is displayed.

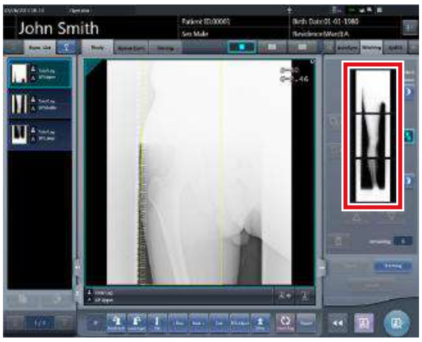
IMPORTANT

- Make sure the focus matches stitching Exam. Tags.
- Always ensure the exposure ready LED (blue) of the AeroDR Stitching Unit is lit before performing an exposure. Additionally, do not press the first stage of the exposure switch until the exposure ready LED (blue) is lit.

7 Expose the second and third.

- Repeat from step 5 to perform exposure.
- Set up the X-ray device before exposure just like for the first exposure. Perform exposure after checking the exposure settings.

⇩



- Exposed preview image is displayed.

IMPORTANT

- Preview images is first displayed on the exposure screen. Because signal reception does not start until all exposure is complete, it may take a while before the image is displayed.
- If [Cancel] is pressed during a single examination, re-exposure or additional exposure cannot be performed for that examination.
- If you want to reject an image during exposure, press [Cancel] followed by [▣].
- You can perform reject even after all images have been exposed. The target of reject is the image before and after combination.
- Rejecting any image within a single examination makes other images also the target for rejecting.

7.7.3 Image combination

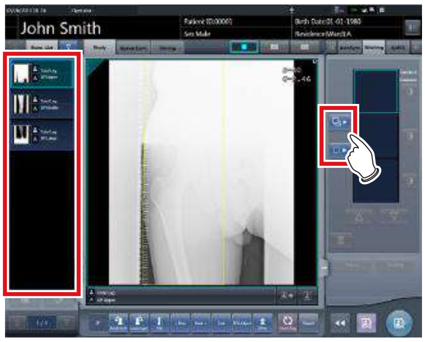
Images exposed by auto stitching using the DR Detector are combined automatically. The following procedure describes an example of combining 3 images.

IMPORTANT

- Automatic combination may fail depending on the condition of the exposed image. Always check the combination position visually, and adjust manually when necessary.

1 Select the images to be combined.

- Select images only if not already selected.
- Select the images to be combined from the order list and press [⧉▸] or [□▸].

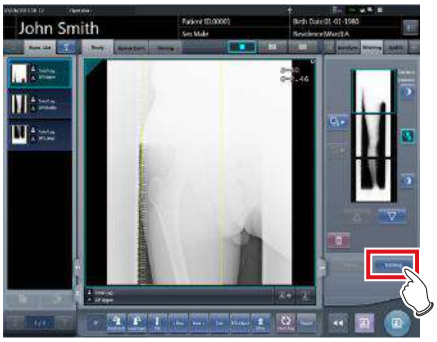


- The selected images are displayed in the combined image display area.
- If you pressed [□▸], continuously select the associated images (second and third).

HINT

- [⧉▸] and [□▸] can be pressed only when the Exam. Tag for stitching exposure is selected.

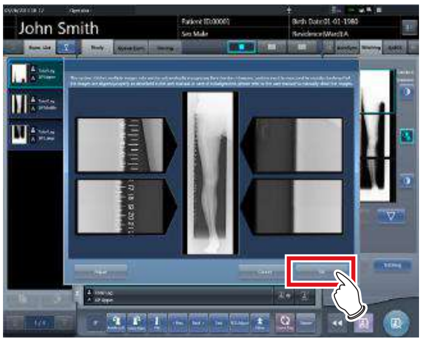
2 Press [Stitching].

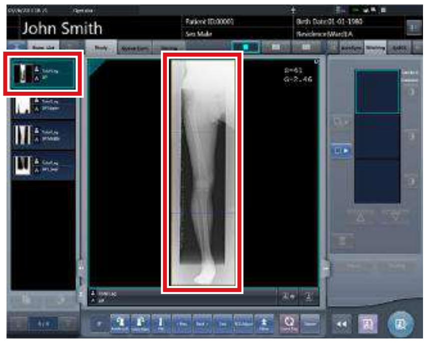


- The combination position confirmation screen is displayed.

3 Press [OK].

- To adjust combination position manually, press [Adjust] and display the viewer screen (for stitching combination position adjustment). For information concerning the method of manually adjusting the combination position, refer to "7.7.1 Screen structure".
- Press [Cancel] to return to the previous screen.





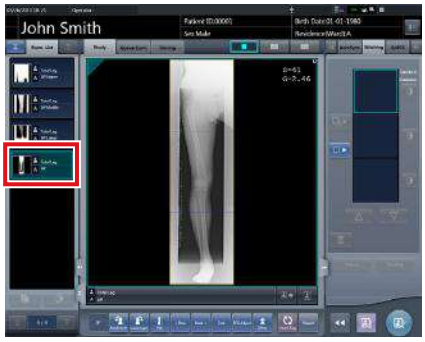
- The combined image is displayed.
- The combined image is added to the order list.

IMPORTANT

- Press the [Adjust] button after rotating combined images on the exposure screen to reset the image rotation.

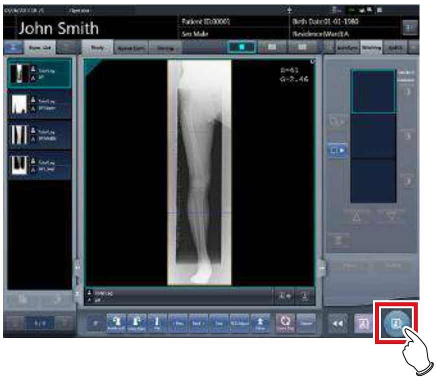
HINT

- A merged image can also be displayed after the pre-merged images in the order list. For more details, contact Konica Minolta technical representatives.



- If the trimming frame is set as the entire image for merged images rotated by free rotation, the area enclosing the merged image becomes the trimming frame.

4 Press [ ].



- The combined image is output, and the display returns to the initial screen.

IMPORTANT

- The stitching image is output first, then non-stitching images are output.
- If images are output before stitching, the stitching image is output last.

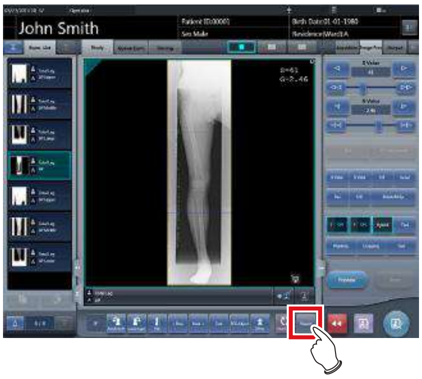
HINT

- If outputting the combined image in sections, set the number of sections by [Split].
- The order of combined image output can be changed. For more details, contact Konica Minolta technical representatives.

7.7.4 Image adjustment

The adjustment method for the combined image is as follows.

1 **Display the combined image and press [Viewer].**

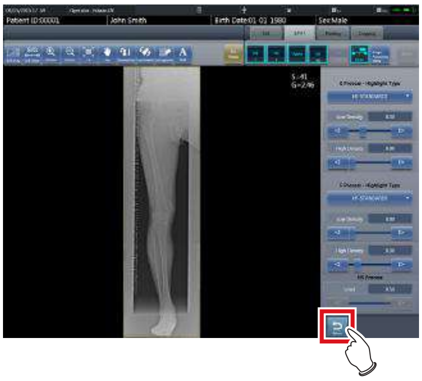


- The viewer screen is displayed.
- Perform various image adjustments. For details on how to operate the viewer screen, refer to "3.6 Viewer screen".

IMPORTANT

- Note the following when adjusting images created by stitching exposure.
  - ROI adjustment is not possible.
  - The exposure field automatic recognition function cannot be performed (manual adjustment is possible).
  - If the effective image area is changed, only the image size will change.

2 **Press [Return] when image adjustment is completed.**



- Returns to the exposure screen.

7.8 One Shot stitching exposure

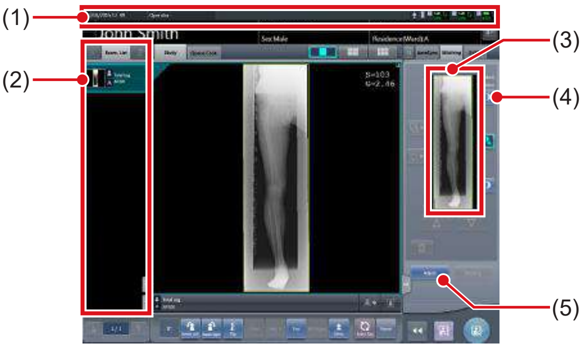
IMPORTANT

- This function can only be used in some countries.
  - This function cannot be used in the United States or Canada.
  - This function cannot be used in the EU, EFTA member countries, Switzerland or Turkey.
  - For details of countries where this function can be used, contact Konica Minolta technical representatives.
- The following DR Detector cannot be used for One Shot stitching exposure.
  - AeroDR 1417S in which it is not possible to use a grid having a grid density of 40lp/cm
  - AeroDR 1012HQ
  - AeroDR 3 1012HQ

7.8.1 Screen structure

●Exposure screen

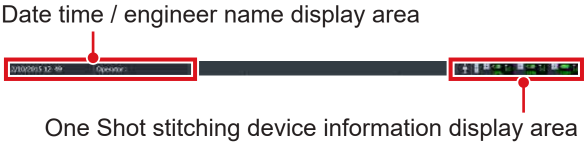
This is the screen for One Shot stitching exposure.



Number	Name	Functions
(1)	Application bar	Date and time, operator name, exposure room name, icons of devices connected to this device, and the state of the DR detector loaded into the stitching holder are displayed.
(2)	Order List	List of exposures. Exam. Tags displays the conditions of the combined image.
(3)	Combined image display area	The images for combination are displayed. Focus is displayed on selected images.
(4)	Reference gradation button	This button is for selecting the image which will be the image shade standard among the images displayed in the combined image display area. You can only select 1 image. ◐ : Not selected ◑ : Selected
(5)	Adjust button	Performs re-adjustment of the combination image.

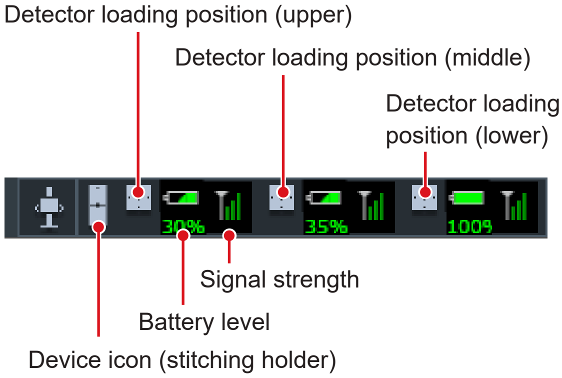
●Details of application bar

The date and time, operator name, exposure room name, icons of devices connected to this device, and so on are displayed in the application bar.

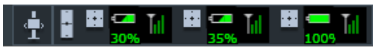
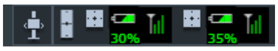
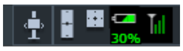

Date time / engineer name display area
One Shot stitching device information display area

One Shot stitching device information display area

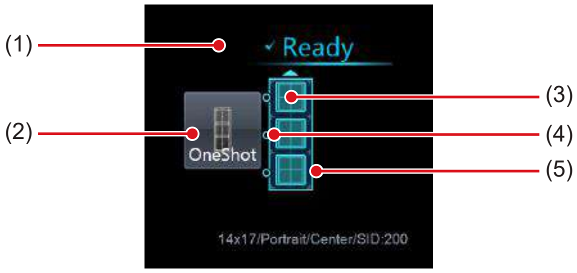
The device information display area of the application bar displays the loading position and the states (battery level and signal strength) of the DR Detectors registered in this device.


Detector loading position (upper)
Detector loading position (middle)
Detector loading position (lower)
30%
35%
100%
Signal strength
Battery level
Device icon (stitching holder)

Number of loading detectors and One Shot stitching device information display area display content

Number of loading detectors	Display content
3 detectors	
2 detectors	
1 detector	

● Work area (not during exposure)



Number	Name	Functions
(1)	Status	The exposure status appears.
(2)	Device icon	The stitching holder icon or name is displayed.
(3)	Detector status display	The status of the DR detector loaded in the stitching holder is displayed. The AeroDR UF cable or AeroDR Registration key that are not connected to the DR detector are not displayed.
(4)	Combination display	The combination identification mark of the DR detector loaded into the stitching holder is displayed.
(5)	Stitching holder state display	Confirm the combination and status of the DR detector loaded into the stitching holder, and the status of the One Shot stitching exposure will be displayed.

HINT

- The display of the detector status display will change through the state of the DR detector. The display meaning is as follows.

  🟦 The DR detector is ready for exposure.

  🟥 An error has occurred in the DR detector.

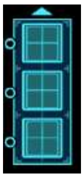
  🟨 An unsent image remains in the DR detector.

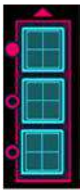
- The combination display will display in an icon whether or not the connection status and type of DR detector loaded into the upper section or lower section, based on the DR detector that is loaded into the middle section of a stitching holder. The display meaning is as follows.

  ○ For DR detector loaded at the middle section, the DR Detector capable of One Shot Stitching exposure loaded.

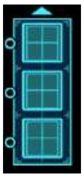
  ● For DR detector loaded at the middle section, the DR Detector incapable of One Shot Stitching exposure loaded.

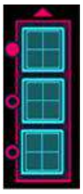
  – Combination display example

  
  The DR detector has been loaded in the correct combination.

  
  The kind of DR detector that is loaded into the upper part of the stitching holder is different.

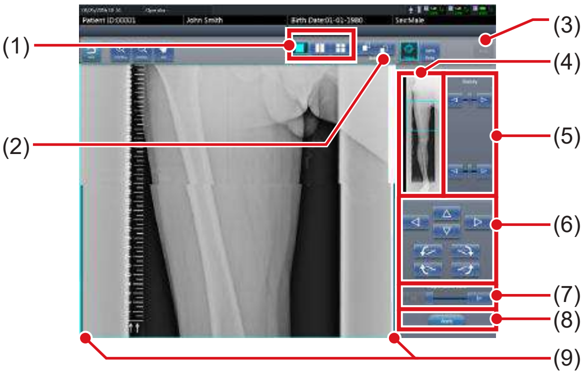
- In the stitching holder status display, the color of the frame will change in whether or not is possible to do One Shot stitching exposure. The display meaning is as follows.

  
  Frame color: Blue
  One Shot stitching exposure can be done.

  
  Frame color: Red
  One Shot stitching exposure can not be done.

●Viewer screen

This is the screen for adjusting images taken with One shot stitching exposure with the DR Detector.



Number	Name	Functions
(1)	Display layout toggle button	Selects the screen display format from 1×1, 2×1, and 2×2 display options.
(2)	Adjust button	Displays and hides the stitching adjustment detector.
(3)	Reset button	Resets the position of the moved image and the changed density to return them to their initial states.
(4)	Full preview	The entire image will be displayed.
(5)	Part correction button	Adjust the density of the images by pressing [◁ ▷] or dragging the bar.
(6)	Move/rotate button	Moves the position of selected images and adjusts their angles. △ ▽ ◁ ▷: image position is moved toward each direction. ↶ ↶ ↷ ↷: image angles are adjusted.
(7)	Magnification Ratio button/ Magnification Ratio bar	Display images are magnified/ shrunk by pressing [◁ ▷] or dragging the bar.
(8)	Apply button	Applies the adjusted image combination position.
(9)	Adjust image guide	The adjusted target image is displayed.

HINT

●Moving/rotating an image during image combination

- For image movement/rotation, the lower image becomes the work image. The movement/rotation action is as follows.

Moving

[△][▽][◁][▷]:
Moves the image to direction pressed

The image can also be moved by dragging the center of the image (horizontal stripe portion).

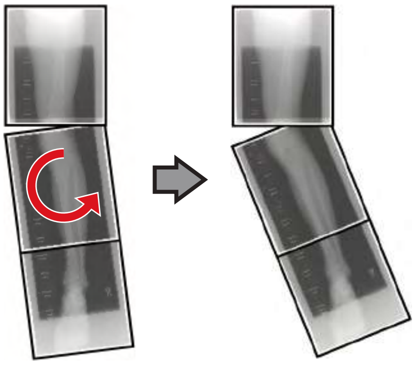
Rotating

[↶]: Lowers the upper left edge of the image
[↶]: Raises the upper left edge of the image
[↷]: Lowers the upper right edge of the image
[↷]: Raises the upper right edge of the image

If you drag the left or right area of the image (horizontal stripe portion) vertically, you can move the upper edge up or down in the direction you are dragging it. If you drag it horizontally, you can move the image horizontally.

●Linking 3 images

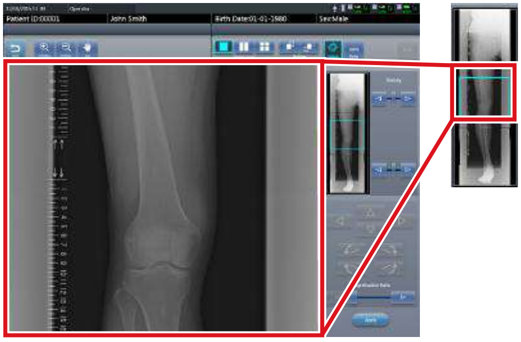
- When combining 3 images, the lower image will also move/rotate if the central image is moved/rotated.



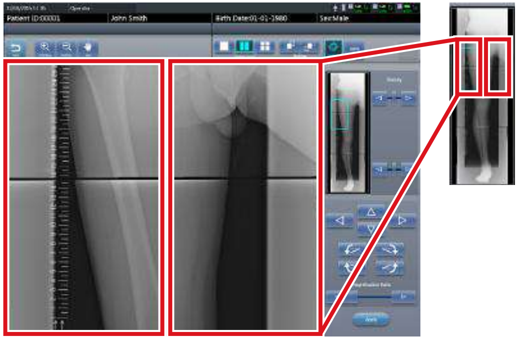
● About image display

- During the image combination, the combined parts (frame parts) displayed in the full preview are magnified and displayed in the image display area as frames.
- The display format and magnified displayed part are as follows:

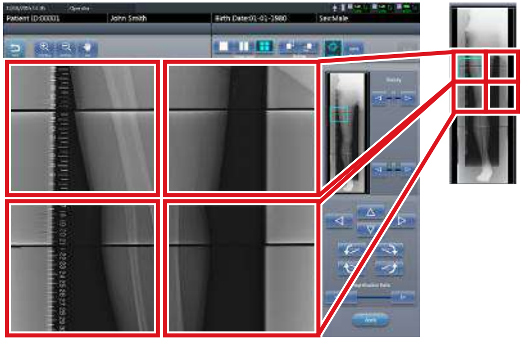
1x1 display



2x1 display



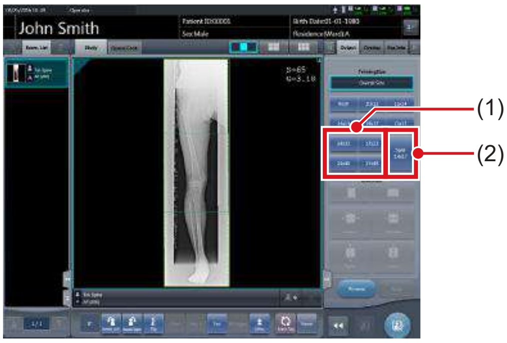
2x2 display



- 2×2 display can only be selected when combining 3 images.

● Control panel (Output - for host)

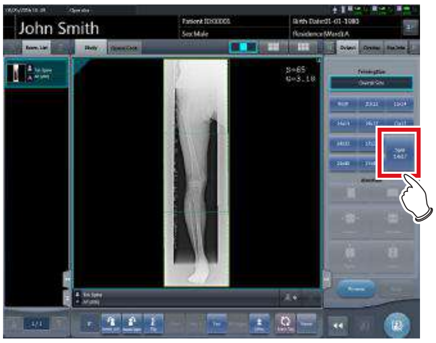
This is the control panel to perform setting of host output conditions for combined stitching images.



Number	Name	Functions
(1)	Trimming size button	This button is used to select the trimming size. Set to hide/unhide trimming size button during installation.
(2)	[Split] button	This button is used to split combined images and output these images to hosts. The device switches between ON and OFF every time the button is pressed. Press and hold the button to select the size of each section.

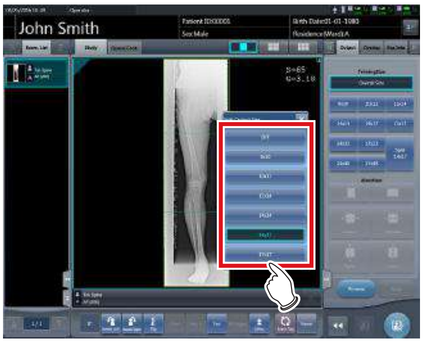
● Procedure to change the output size of split images

1 Press the [Split] button for 1 second or more.



- The Split Output Size dialog box is displayed.

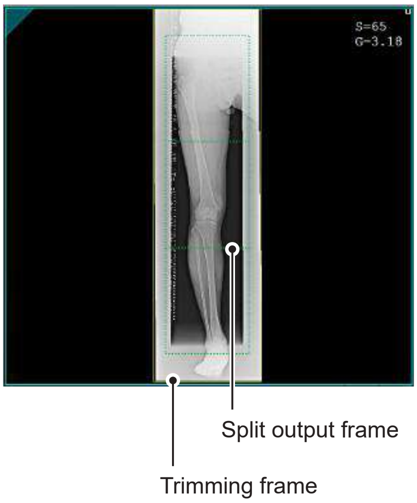
2 **Press [OFF] or the button of the output size to be changed on the Split Output Size dialog box.**



- The output size is changed.

HINT

- When output of split images is enabled, a frame appears on the image to indicate the area of the split image that will be output.



- The size of the trimming frame changes in accordance with changes to the size of the image frame so that images are automatically split into the selected section size. Images can be split into a maximum of 3 sections.
- If the split image is smaller than the trimming region, the entire combined image may not completely fit within the selected region.
- If the configuration of the split images results in one image, the split processing is not applied, and the split output frame does not appear.

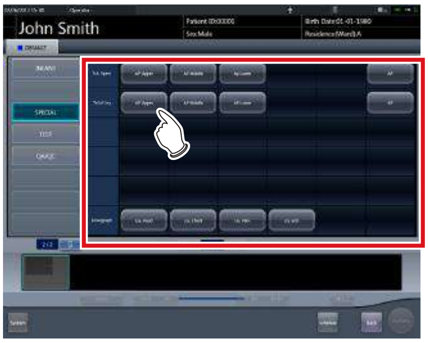
7.8.2 Exposure

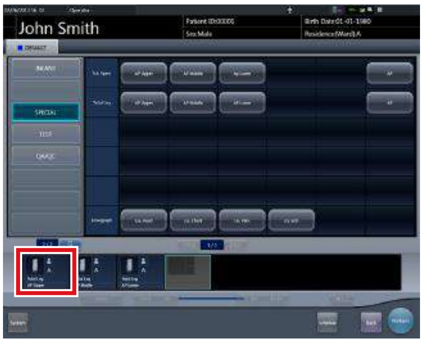
The One shot stitching exposure method using DR Detector is as follows.

IMPORTANT

- If One Shot stitching exposure is carried out, please be careful of the following items.
  - Image copying is not possible.
  - Image replacing is not possible.
  - Exposure condition copying is not possible.
  - Automatic sorting of the order of exposures is not possible.
  - The reading conditions can not be specified.
  - The scattered radiation collection is not possible.
  - Lung lack/body motion blur detection is not possible.
  - Examination sharing is not possible.
  - Merging and separation of studies is not possible.
- When performing the manual stitching exposure in AeroDR 3 1417 HD and AeroDR 3 1717 HD, only "Standard" (200µm) can be selected for "Resolution".

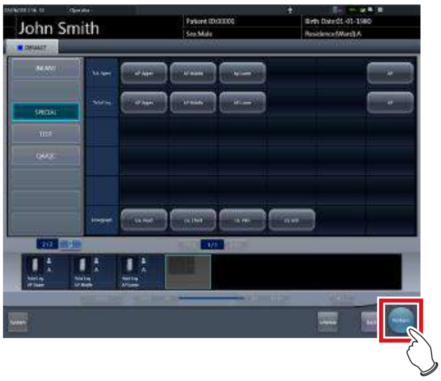
1 **After transitioning from the initial screen to the exposure body part selection screen, select the Exam. Tag for One shot stitching exposure.**





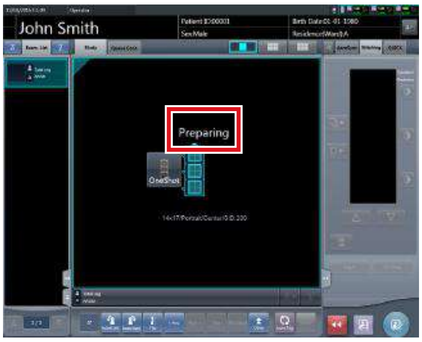
- The selected Exam. Tags are displayed on the Exam. Tags display area. By selecting the Exam. Tags again, further Exam tags can be added.

2 Press [Perform].

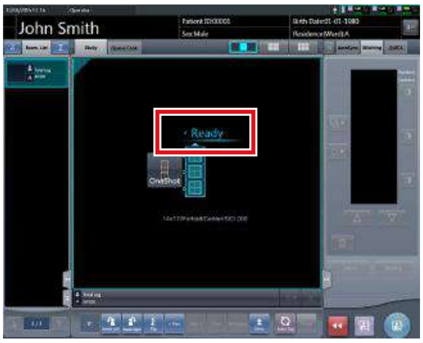


- The exposure screen is displayed.

3 Load 2 or more detectors of the DR detector into the stitching holder.



- "Preparing" will be displayed in the work area until exposure preparation and loading the DR detector in a stitching holder is complete.



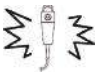
- When the exposure preparation of the DR detector loaded into the stitching holder is complete, the work area detector status will be lit blue, and "Ready" will be displayed.

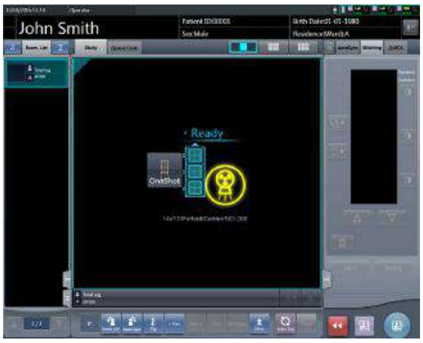
IMPORTANT

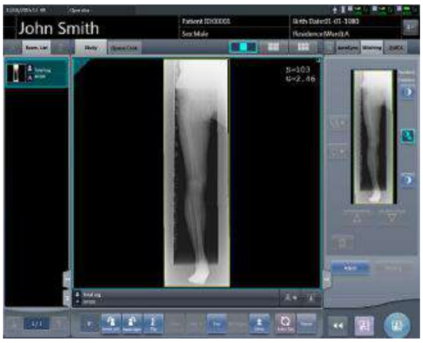
- When the DR detector with power off has been loaded on the front side, since the overlapping portion may not be able to be corrected, please make sure to turn on the power of the DR detector loaded into the stitching holder.
- When carrying out table position exposure in 2 DR detectors, the dummy detector is loaded in the upper slot. In addition, please make sure to always load this in the upper slot since reflection of the dummy detector will occur.
- One Shot stitching exposure outputs the merged images by correcting the overlapping portions of the captured image in the DR detector. Through the exposure conditions, since lowering of the horizontal streaks and contrast in the correction area may occur, please carry out exposure so the diagnostic site does not overlap the correction area.
- Please confirm whether the size of the DR detector loaded in the stitching holder fits or not.
- The AeroDR 1417HQ, AeroDR 1717HQ, and AeroDR 2 1417HQ cannot be used together with the AeroDR 1417S and AeroDR 2 1417S.
- The AeroDR 3 1417HD and AeroDR 3 1717HD cannot be used together with other DR Detectors.
- Before exposure, always confirm the position and number of DR detectors loaded in the stitching holder in the exposure screen.

4 Exposure.

- Set up the X-ray device before exposure. Perform exposure after checking the exposure settings.


Press the exposure switch



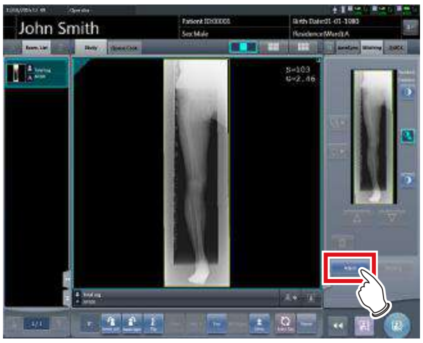


- When transfer of the exposed image is completed, the image is displayed in the image display area.

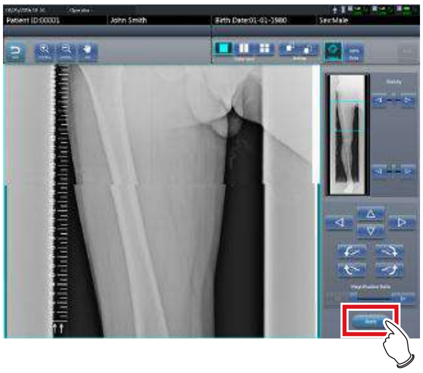
IMPORTANT

- Please confirm that the focus hits the Exam. Tag for One Shot stitching exposure.

5 Confirm the image combination position.



- If you want to adjust the combination position, press [Adjust].

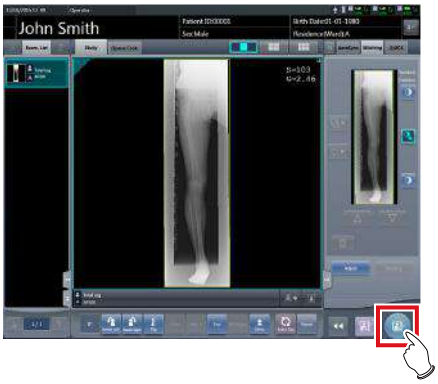


- This displays the viewer screen.
- Refer to "7.8.1 Screen structure" for the method to manually adjust the merging position.
- Press [Enter] after adjusting the binding position, and return to the exposure screen.

IMPORTANT

- Adjust the combination position by using the markers as supplementary standards in addition to body parts of the subject.
  It is also recommended that you arrange the measure in the combined image part during exposure to simplify the confirmation of the combined parts.

6 Press [ ].



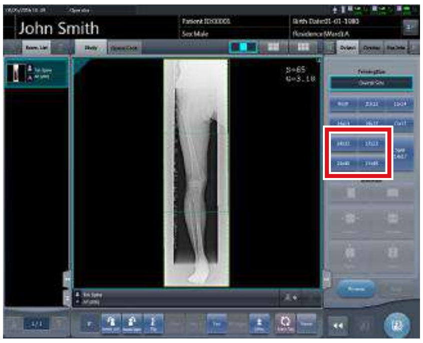
- The combined image is output, and the display returns to the initial screen.

IMPORTANT

- Please be sure to confirm that the overlapping portion of the image is combined in a normal position towards the image subjected to One Shot stitching exposure.

HINT

- If you want to change the trimming size when the host is output, from the trimming setting for stitching, press the trimming size button that corresponds to the size and number of loaded DR detectors.

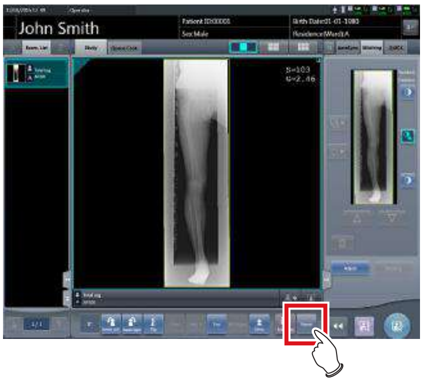


- If the trimming frame is set as the entire image for merged images rotated by free rotation, the area enclosing the merged image becomes the trimming frame.

7.8.3 Image adjustment

The adjustment method for One shot stitching exposure image is as follows.

1 Display the image after exposure, and press [Viewer].

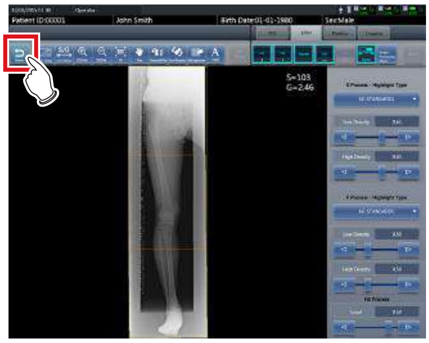


- The viewer screen is displayed.
- Perform various image adjustments. For details on how to operate the viewer screen, refer to "3.6 Viewer screen".

IMPORTANT

- Note the following when adjusting images created by stitching exposure.
  - ROI adjustment is not possible.
  - The exposure field automatic recognition function cannot be performed (manual adjustment is possible).
  - If the effective image area is changed, only the image size will change.

2 Press [Return] when image adjustment is completed.



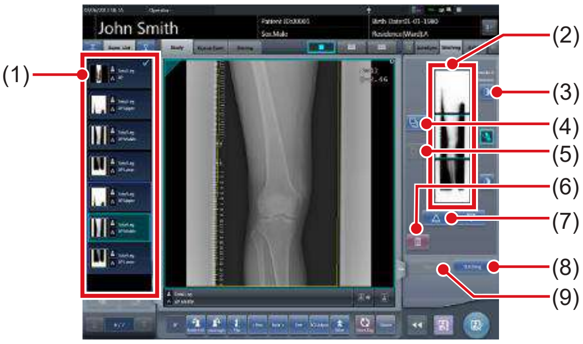
- Returns to the exposure screen.

7.9 CR stitching cassette exposure

7.9.1 Screen structure

● Exposure screen

This is the screen for stitching exposure with CR stitching cassette.



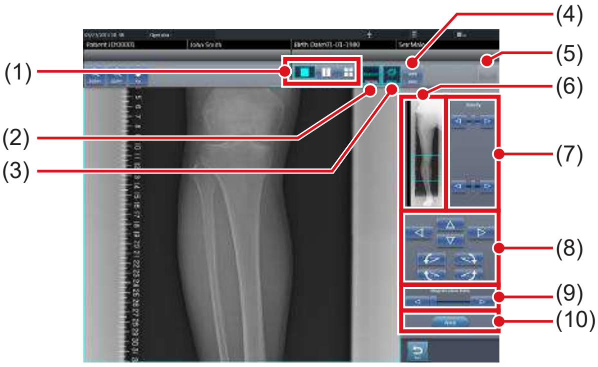
Number	Name	Functions
(1)	Order list	List of exposures
(2)	Combined image display area	The images for combination are displayed. Focus is displayed on selected images.
(3)	Standard gradation button	This button is for selecting the image which will be the image shade standard among the images displayed in the combined image display area. You can only select 1 image. ◐ : Not selected ◑ : Selected
(4)	Selection button (batch selection)	Gathers multiple exposure images associated with the images selected in the order list and displays them in the combined image display area.
(5)	Selection button (individual selection)	Displays the selected images in the order list in the combined image display area.
(6)	Delete button	Deletes the images selected in the combined image display area.
(7)	Combination sequence switch button	Moves the position of the images selected in the combined image display area.
(8)	Stitching button	Combines the images displayed in the combined image display area. Press this button to display the stitching combination position adjustment screen.
(9)	Adjust button	Performs re-adjustment of the combination position. This button cannot be pressed when combined images are not displayed.

HINT

- Adjustments to the combination position of the stitching exposure images are performed on the viewer screen (for stitching combination position adjustment). For details, refer to "7.9.3 Image combination".

● Viewer screen (for stitching combination position adjustment)

This is the screen for adjusting combined position of images taken with stitching exposure with CR stitching cassette.



Number	Name	Functions
(1)	Display layout toggle button	Selects the screen display format from 1×1, 2×1, and 2×2 display options.
(2)	Overlap button (Standard/ Inversion)	Switches and displays the plate overlap sequence when checking the combination position. Switches to standard or reversed every time it is pressed. The switching is for display only and does not affect the overlapping sequence during combination.
(3)	Adjust button	Displays and hides the stitching adjustment panel.

Number	Name	Functions
(4)	Proportion button	Changes the displayed transmittance of the overlapped portion. Pressing this button sequentially changes the transmittance. A modified transmittance is not reflected in the output image.
(5)	Reset button	Resets the position of the moved image and the changed density to return them to their initial states.
(6)	Full preview	All images to be combined are displayed.
(7)	Part correction button	Adjusts the density of the image by pressing [◁ ▷] or dragging the bar.
(8)	Move/rotate button	Moves the position of selected images and adjusts their angles. △ ▽ ◁ ▷: image position is moved toward each direction. ↶ ↷ ↷ ↶: image angles are adjusted.
(9)	Magnification Ratio button/Magnification Ratio bar	Display images are magnified/shrunk by pressing [◁ ▷] or dragging the bar.
(10)	Apply button	Applies the adjusted image combination position.

HINT

● Moving/rotating an image during image combination

- For image movement/rotation, the lower image is the operational object. The movement/rotation action is as follows.

Moving

[△][▽][◁][▷]: Moves the image to direction pressed.

The image can also be moved by dragging the center of the image (horizontal stripe portion).

Rotating

[↶]: Lowers the upper left edge of the image

[↷]: Raises the upper left edge of the image

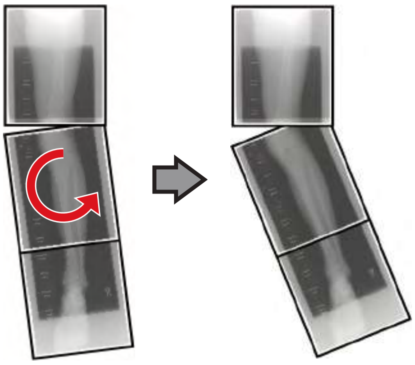
[↷]: Lowers the upper right edge of the image

[↶]: Raises the upper right edge of the image

If you drag the left or right area of the image (horizontal stripe portion) vertically, you can move the upper edge up or down in the direction you are dragging it. If you drag it horizontally, you can move the image horizontally.

● Linking 3 images

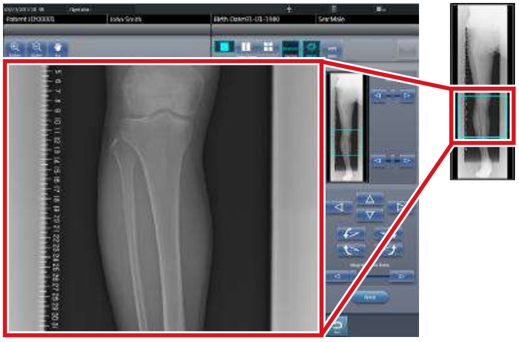
- When combining 3 images, the lower image will also move/rotate if the central image is moved/rotated.



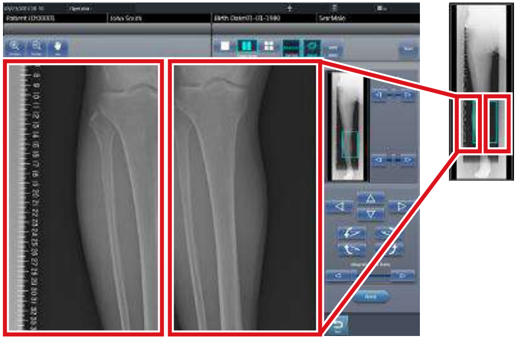
●About image display

- During the image combination, the combined parts (frame parts) displayed in the full preview are magnified and displayed in the image display area as frames.
- The display format and magnified displayed part are as follows:

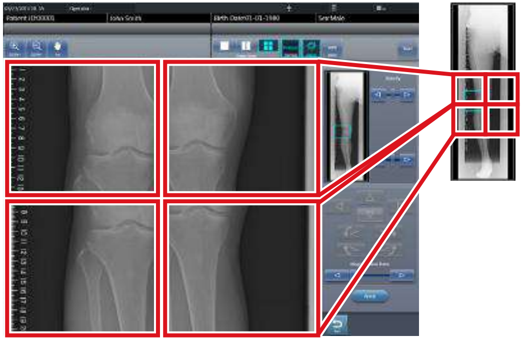
1×1 display



2×1 display



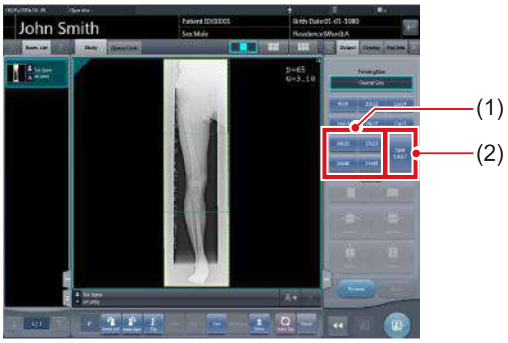
2×2 display



- 2×2 display can only be selected when combining 3 images.
- Set the plate overlap sequence during installation.

●Control panel (Output - for host)

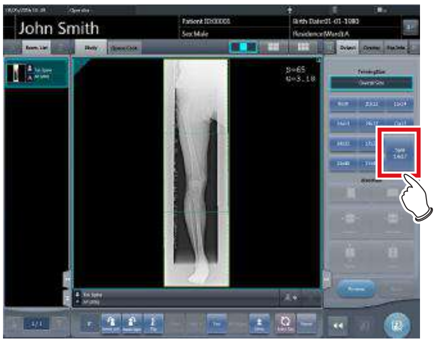
This is the control panel to perform setting of host output conditions for combined stitching images.



Number	Name	Functions
(1)	Trimming size button	This button is used to select the trimming size. Set to hide/unhide trimming size button during installation.
(2)	[Split] button	This button is used to split combined images and output these images to hosts. The device switches between ON and OFF every time the button is pressed. Press and hold the button to select the size of each section.

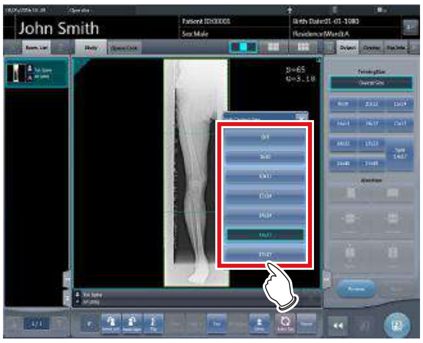
●Procedure to change the output size of split images

1 **Press the [Split] button for 1 second or more.**



- The Split Output Size dialog box is displayed.

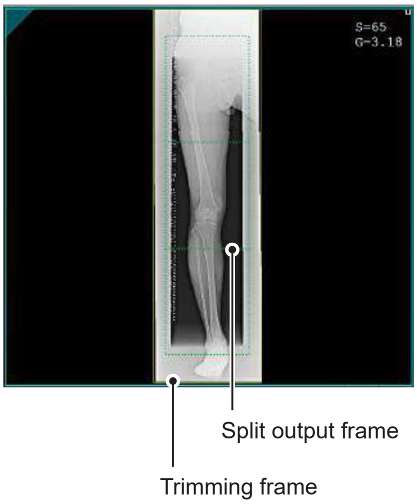
2 Press [OFF] or the button of the output size to be changed on the Split Output Size dialog box.



- The output size is changed.

HINT

- When output of split images is enabled, a frame appears on the image to indicate the area of the split image that will be output.



- The size of the trimming frame changes in accordance with changes to the size of the image frame so that images are automatically split into the selected section size. Images can be split into a maximum of 3 sections.
- If the split image is smaller than the trimming region, the entire combined image may not completely fit within the selected region.
- If the configuration of the split images results in one image, the split processing is not applied, and the split output frame does not appear.

7.9.2 Exposure

The exposure method for CR stitching cassette is as follows.

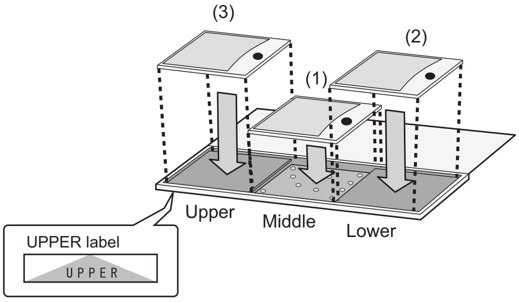
IMPORTANT

- For the stitching exposure images, make sure that the combined parts are combined in the correct positions.
- If there is gap between the combined images, manually adjust the image position of the combined parts using the viewer screen (for stitching combination position adjustment). It is also recommended that you arrange a measure in the combined image part during exposure to confirm the combined parts easier.
- When performing the stitching exposure with CR stitching cassette, only "Standard" (175µm) can be selected for "Resolution".

HINT

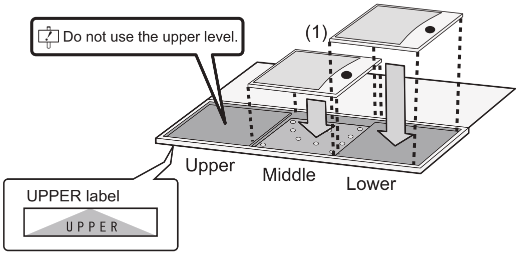
- The sequence by which the CR cassette is mounted on the CR stitching cassette is as follows (The UPPER label indicates the top).

If exposing with 3 REGIUS plates

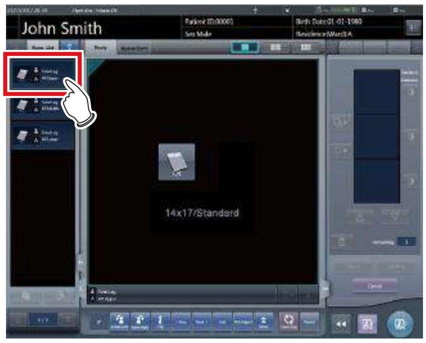


- To expose by mounting 2 CR cassettes on stitching dedicated cassettes for 3 images, use the middle and lower mounting positions only to mount the CR cassette (the UPPER label indicated the top).

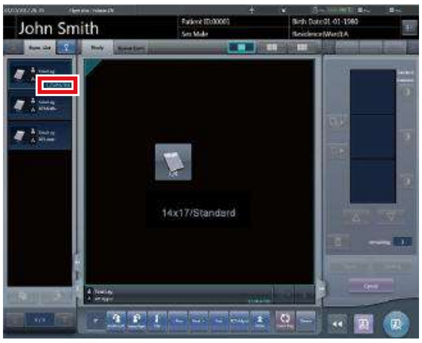
If exposing with 2 REGIUS plates



1 Focus on Exam. Tags to register the CR stitching cassette.



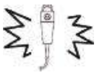
2 Read the barcode of the CR stitching cassette with a barcode reader.



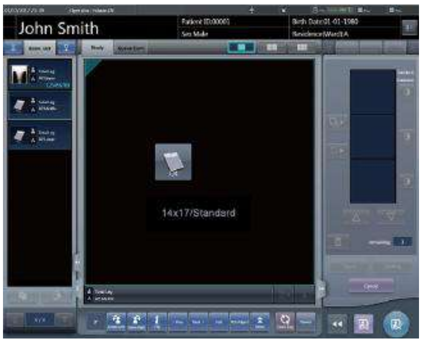
- The barcode number read is displayed in the Exam. Tag display area. This completes the read preparation for REGIUS.

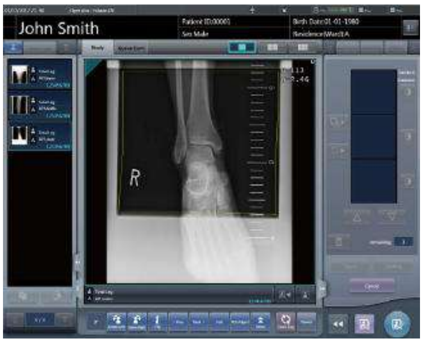
3 Perform exposure with the registered CR stitching cassette.

- Configure the X-ray device settings and check the exposure setting before making an exposure.


Press the exposure switch

4 Set the REGIUS plate on the read cassette and read by REGIUS.





- The image read from the barcode on the CR stitching cassette will be displayed.

7.9.3 Image combination

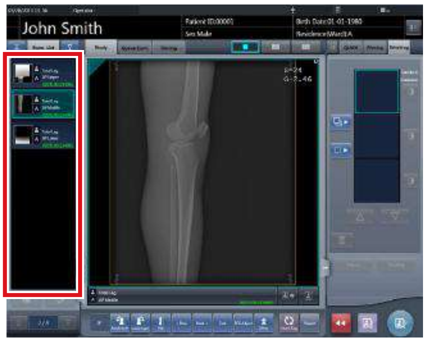
Images exposed by CR stitching cassette can be combined automatically or manually. The procedure below explains an example of combining 3 images.

IMPORTANT

- Adjust the combination position by using the markers as supplementary standards in addition to body parts of the subject.
  It is also recommended that you arrange the measure in the combined image part during exposure to simplify the confirmation of the combined parts.
- In stitching exposure, when plates overlap and are arranged so that there is no image loss in each plate's boundaries, there might be a slight gap in the marker position because of a minute difference in magnification. After taking this into account, confirm the combination position through the marker.

1 Select the images to be combined.

- Select the images to be combined from the order list and press [⧉▶] or [□▶].

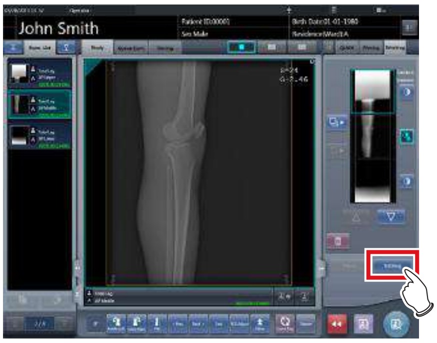


- The selected images are displayed in the combined image display area.
- If you pressed [□▶], continuously select the associated images (second and third).

HINT

- [⧉▶] and [□▶] can be pressed only when the Exam. Tag for stitching exposure has been selected.

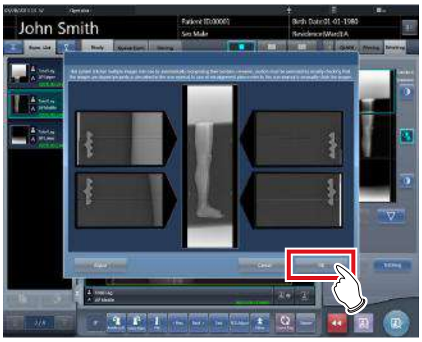
2 Press [Stitching].

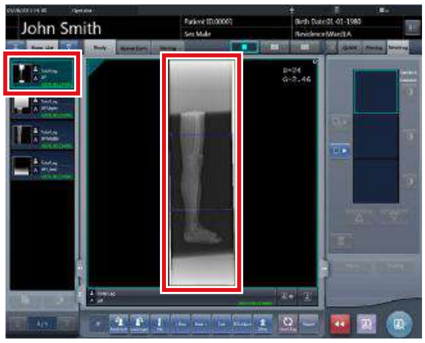


- The combination position confirmation screen is displayed.

3 Press [OK].

- To adjust the combination position manually, press [Adjust] and display the viewer screen (for stitching combination position adjustment). For information concerning the method of manually adjusting the combination position, refer to "7.9.1 Screen structure".
- Press [Cancel] to return to the previous screen.





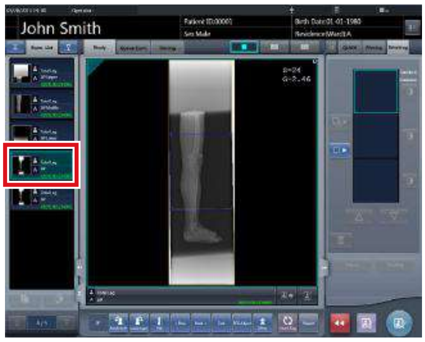
- The combined image is displayed.
- The combined image is added to the order list.

IMPORTANT

- Press the [Adjust] button after rotating combined images on the exposure screen to reset the image rotation.

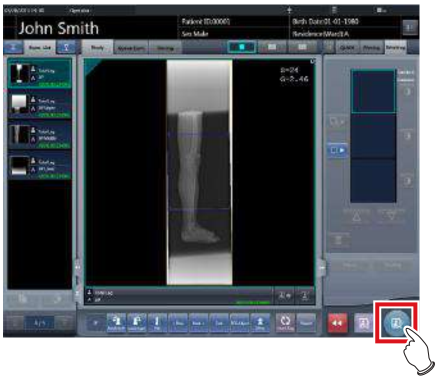
HINT

- A merged image can also be displayed after the pre-merged images in the order list. For more details, contact Konica Minolta technical representatives.



- If the trimming frame is set as the entire image for merged images rotated by free rotation, the area enclosing the merged image becomes the trimming frame.

4 Press [◉].



- The combined image is output, and the display returns to the initial screen.

IMPORTANT

- The stitching image is output first, then non-stitching images are output.
- If images are output before stitching, the stitching image is output last.

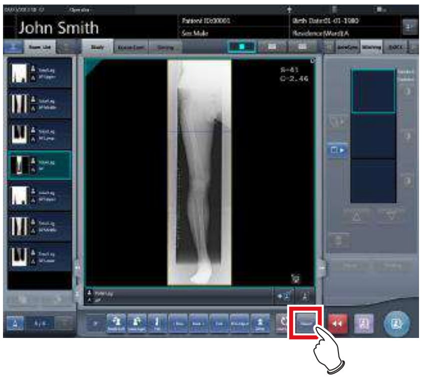
HINT

- If outputting the combined image in sections, set the number of sections by [Split].
- The order of combined image output can be changed. For more details, contact Konica Minolta technical representatives.

7.9.4 Image adjustment

The adjustment method for the combined image is as follows.

1 Display the combined image and press [Viewer].

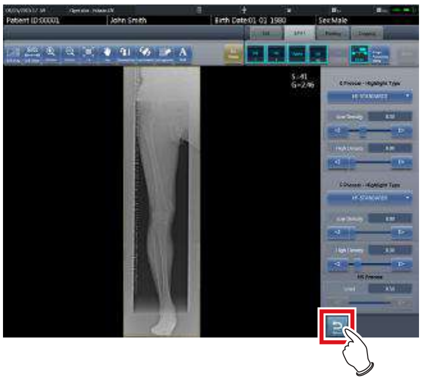


- The viewer screen is displayed.
- Perform various image adjustments. For details on how to operate the viewer screen, refer to "3.6 Viewer screen".

IMPORTANT

- Note the following when adjusting images created by stitching exposure.
  - ROI adjustment is not possible.
  - The exposure field automatic recognition function cannot be performed (manual adjustment is possible).
  - If the effective image area is changed, only the image size will change.

2 Press [Return] when image adjustment is completed.



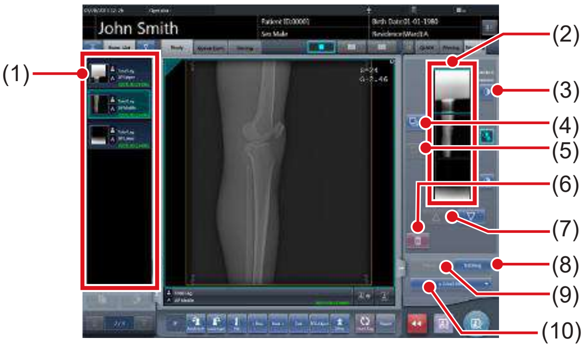
- Returns to the exposure screen.

7.10 SIGMA stitching exposure

7.10.1 Screen structure

● Exposure screen

This is the screen for SIGMA stitching exposure using Reina buckies.



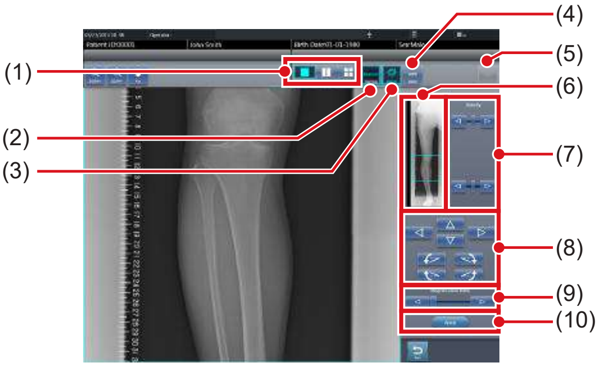
Number	Name	Functions
(1)	Order list	List of exposures
(2)	Combined image display area	The images for combination are displayed. Focus is displayed on selected images.
(3)	Standard gradation button	This button is for selecting the image which will be the image shade standard among the images displayed in the combined image display area. You can only select 1 image. ◑ : Not selected ◑ : Selected
(4)	Selection button (batch selection)	Gathers multiple exposure images associated with the images selected in the order list and displays them in the combined image display area.
(5)	Selection button (individual selection)	Displays the selected images in the order list in the combined image display area.
(6)	Delete button	Deletes the images selected in the combined image display area.
(7)	Combination sequence switch button	Moves the position of the images selected in the combined image display area.
(8)	Stitching button	Combines the images displayed in the combined image display area. Press this button to display the stitching combination position adjustment screen.
(9)	Adjust button	Performs re-adjustment of the combination position. This button cannot be pressed when combined images are not displayed.
(10)	SID setting	Select the SID value.

HINT

- Adjustments to the combination position of the stitching exposure images are performed on the viewer screen (for stitching combination position adjustment). For details, refer to "7.9.3 Image combination".

● Viewer screen (for stitching combination position adjustment)

This is the screen for adjusting combined position of images taken using Reina buckies with stitching exposure.



Number	Name	Functions
(1)	Display layout toggle button	Selects the screen display format from 1×1, 2×1, and 2×2 display options.
(2)	Overlap button	Switches and displays the plate overlap sequence when checking the combination position. Switches to standard or reversed every time it is pressed. The switching is for display only and does not affect the overlapping sequence during combination.
(3)	Adjust button	Displays and hides the stitching adjustment panel.

Number	Name	Functions
(4)	Proportion button	Changes the displayed transmittance of the overlapped portion. Pressing this button sequentially changes the transmittance. A modified transmittance is not reflected in the output image.
(5)	Reset button	Resets the position of the moved image and the changed density to return them to their initial states.
(6)	Full preview	All images to be combined are displayed.
(7)	Part correction button	Adjusts the density of the image by pressing [◁ ▷] or dragging the bar.
(8)	Move/rotate button	Moves the position of selected images and adjusts their angles. △ ▽ ◁ ▷: image position is moved toward each direction. ↶ ↷ ↷ ↶: image angles are adjusted.
(9)	Magnification Ratio button/Magnification Ratio bar	Display images are magnified/shrunk by pressing [◁ ▷] or dragging the bar.
(10)	Apply button	Applies the adjusted image combination position.

HINT

●Moving/rotating an image during image combination

- For image movement/rotation, the lower image is the operational object. The movement/rotation action is as follows.

Moving

[△][▽][◁][▷]: Moves the image to direction pressed.

The image can also be moved by dragging the center of the image (horizontal stripe portion).

Rotating

[↶]: Lowers the upper left edge of the image

[↷]: Raises the upper left edge of the image

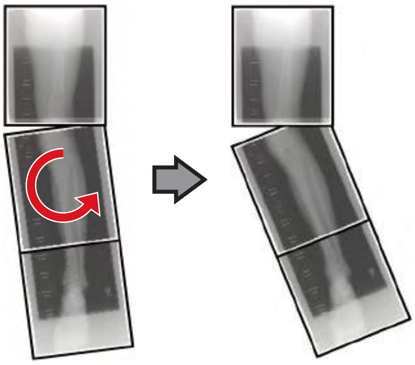
[↷]: Lowers the upper right edge of the image

[↶]: Raises the upper right edge of the image

If you drag the left or right area of the image (horizontal stripe portion) vertically, you can move the upper edge up or down in the direction you are dragging it. If you drag it horizontally, you can move the image horizontally.

●Linking 3 images

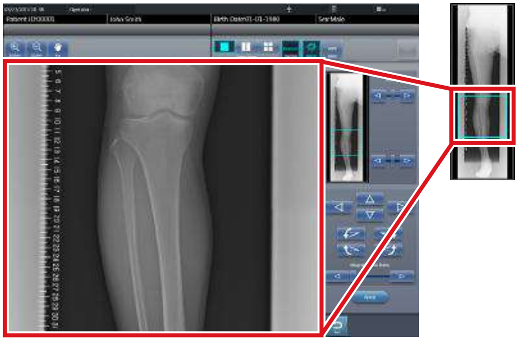
- When combining 3 images, the lower image will also move/rotate if the central image is moved/rotated.



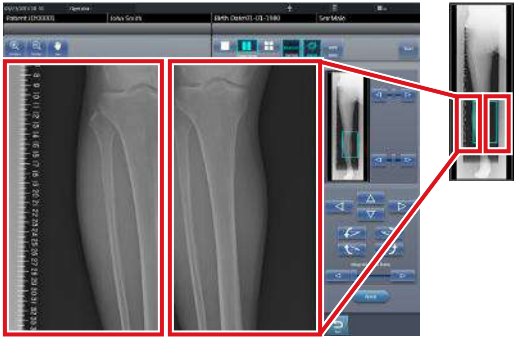
●About image display

- During the image combination, the combined parts (frame parts) displayed in the full preview are magnified and displayed in the image display area as frames.
- The display format and magnified displayed part are as follows:

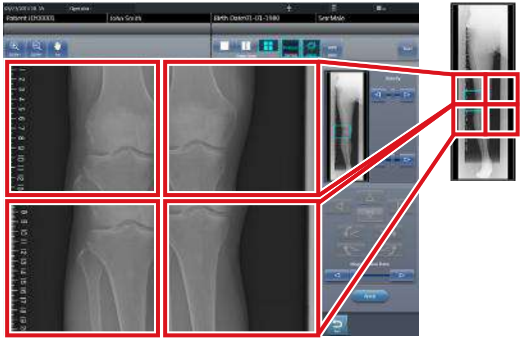
1×1 display



2×1 display



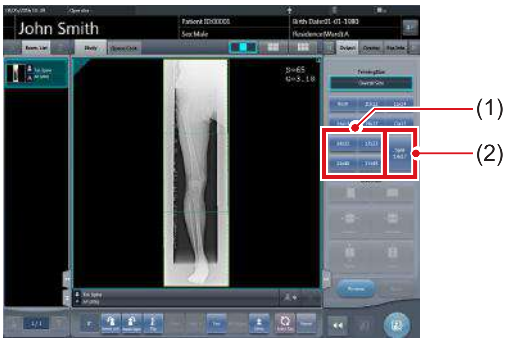
2×2 display



- 2×2 display can only be selected when combining 3 images.
- Set the plate overlap sequence during installation.

●Control panel (Output - for host)

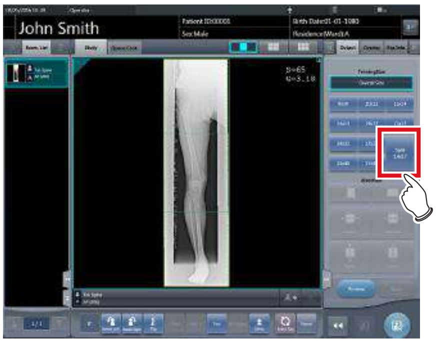
This is the control panel to perform setting of host output conditions for combined stitching images.



Number	Name	Functions
(1)	Trimming size button	This button is used to select the trimming size. Set to hide/unhide trimming size button during installation.
(2)	[Split] button	This button is used to split combined images and output these images to hosts. The device switches between ON and OFF every time the button is pressed. Press and hold the button to select the size of each section.

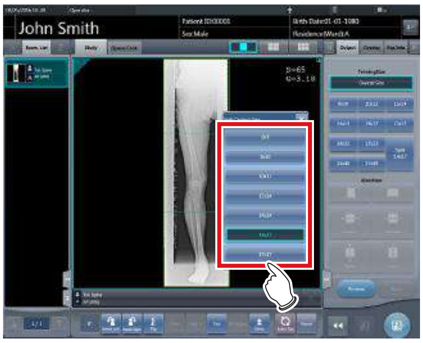
●Procedure to change the output size of split images

1 Press the [Split] button for 1 second or more.



- The Split Output Size dialog box is displayed.

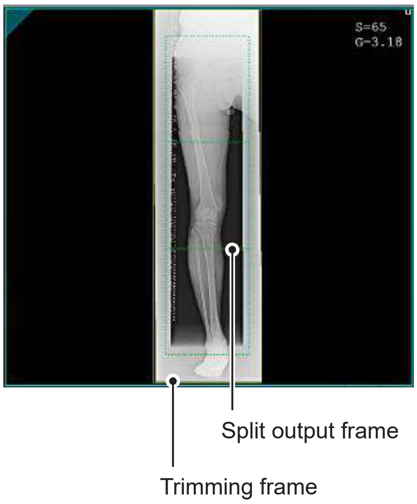
2 **Press [OFF] or the button of the output size to be changed on the Split Output Size dialog box.**



- The output size is changed.

HINT

- When output of split images is enabled, a frame appears on the image to indicate the area of the split image that will be output.



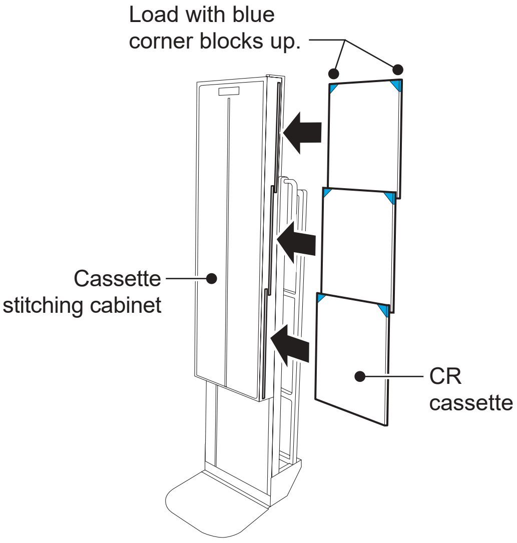
- The size of the trimming frame changes in accordance with changes to the size of the image frame so that images are automatically split into the selected section size. Images can be split into a maximum of 3 sections.
- If the split image is smaller than the trimming region, the entire combined image may not completely fit within the selected region.
- If the configuration of the split images results in one image, the split processing is not applied, and the split output frame does not appear.

7.10.2 Exposure

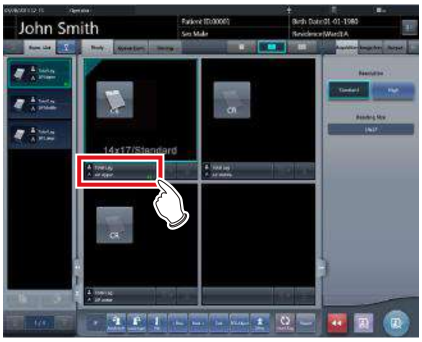
The Reina bucky-based exposure method is as follows. This is an example using three images.

IMPORTANT

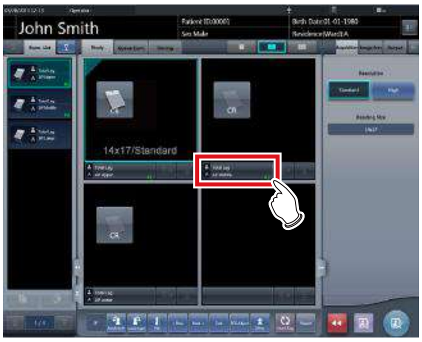
- For the stitching exposure images, make sure that the combined parts are combined in the correct positions.
- If there is gap between combined images, manually adjust the image position of the combined parts using the viewer screen (for stitching combination position adjustment). It is also recommended that you arrange a measure in the combined image part during exposure to confirm the combined parts easier.
- When loading a CR cassette into a cassette stitching cabinet, be careful of the following points.
  - – Load the CR cassette so that the black side of the plate (the front) is facing towards the patient.
  - – Load the CR cassette so that the blue corner blocks are up.
  - – Check that the whole CR cassette is completely loaded.



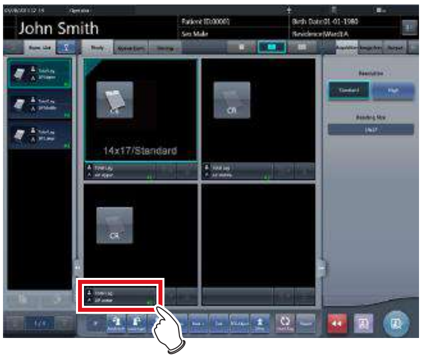
1 **Set the upper row of the Reina buckies for the first exposure, and then set the reading sequence by pressing the exposure conditions display areas sequentially.**



- The first exposure is registered.



- The second exposure is registered.



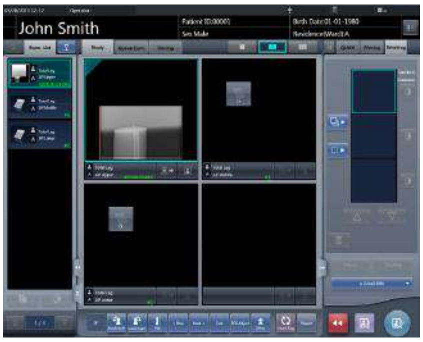
- The third exposure is registered.

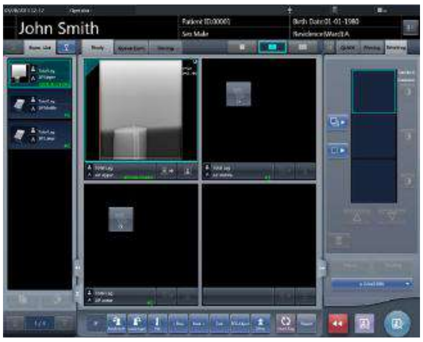
2 **Perform exposure using Reina buckies.**

- Configure the X-ray device and check the exposure conditions before making an exposure.

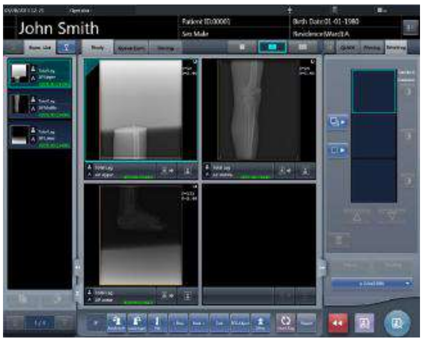
Press the exposure switch

3 **Read CR cassette.**





- After the first image is displayed, the indication "First" disappears. "First" is indicated for the thus far "Second" image, and "Second" for the thus far "Third" image (the numbering changes in order).
- Repeat Step 3 to read the remaining CR cassette.



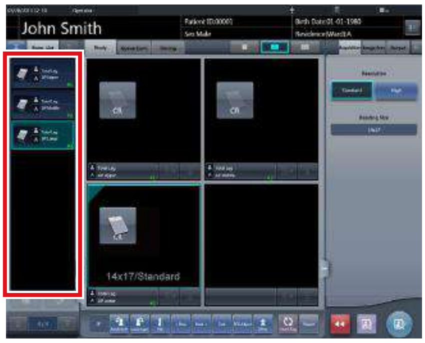
- After every CR cassette is read, the numbers disappears.

IMPORTANT

- If the image rotation settings have not been specified with the SIGMA stitching Exam. Tags, rotate the images before combining them.

HINT

- You can also specify the reading sequence in the order list. Set the upper stage of the Reina buckies for the first exposure, and then press the exposures sequentially.



- If you press the exposure conditions display area where the reading sequence of the examinations is specified, the specified reading sequence is cancelled.

7.10.3 Image combination

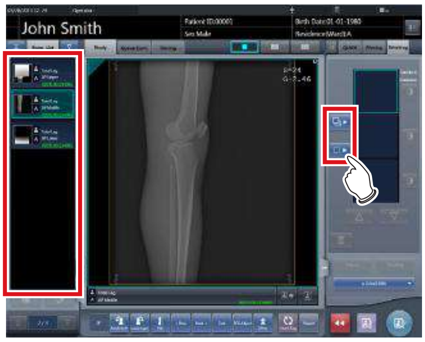
You can automatically or manually combine the stitching images exposed using the Reina buckies. The following procedure describes an example of combining 3 images.

IMPORTANT

- If SID is 1.7m or less, it may be necessary to adjust the combination positions manually.
- Adjust the combination position by using the markers as supplementary standards in addition to body parts of the subject.
  It is also recommended that you arrange the measure in the combined image part during exposure to simplify the confirmation of the combined parts.
- In stitching exposure, when plates overlap and are arranged so that there is no image loss in each plate's boundaries, there might be a slight gap in the marker position because of a minute difference in magnification. After taking this into account, confirm the combination position through the marker.

1 Select the images to be combined.

- Select the images to be combined from the order list and press [⧉▸] or [□▸].

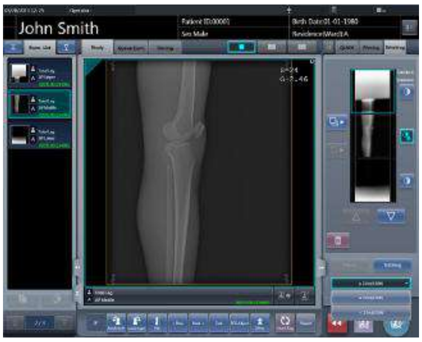


- The selected images are displayed in the combined image display area.
- If you pressed [□▸], continuously select the associated images (second and third).

HINT

- [⧉▸] and [□▸] can be pressed only when the set key for stitching exposure has been selected.

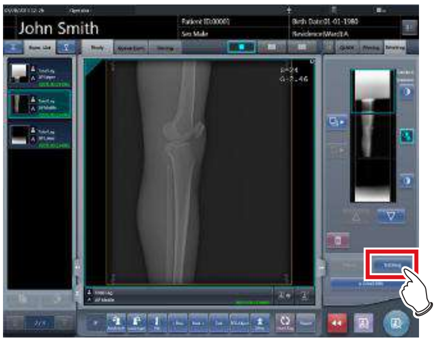
2 Check the SID value.



HINT

- The last specified SID value is displayed.
- You can display the SID value by setting it using the service tool. When the SID value is not displayed, contact Konica Minolta technical representatives.

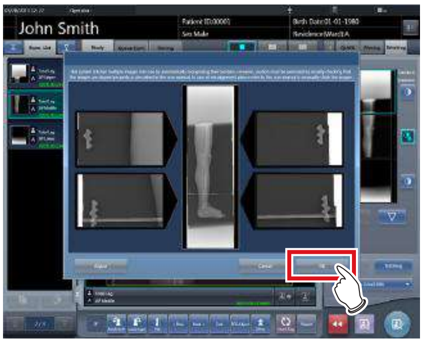
3 Press [Stitching].

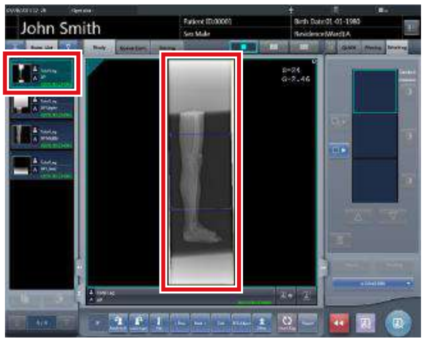


- The combination position confirmation screen is displayed.

4 Press [OK].

- To adjust the combination position manually, press [Adjust] and display the viewer screen (for stitching combination position adjustment). For information concerning the method of manually adjusting the combination position, refer to "7.10.1 Screen structure".
- Press [Cancel] to return to the previous screen.





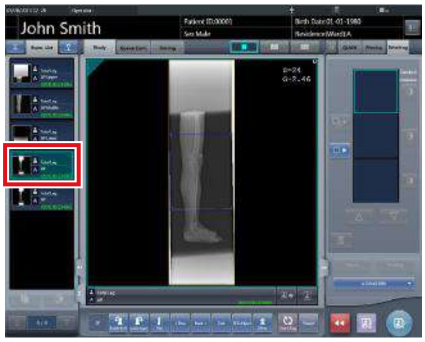
- The combined image is displayed.
- The combined image is added to the order list.

IMPORTANT

- Press the [Adjust] button after rotating combined images on the exposure screen to reset the image rotation.

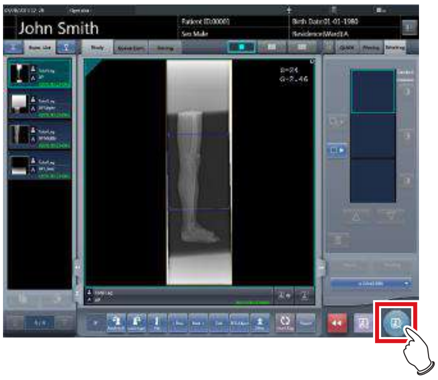
HINT

- A merged image can also be displayed after the pre-merged images in the order list. For more details, contact Konica Minolta technical representatives.



- If the trimming frame is set as the entire image for merged images rotated by free rotation, the area enclosing the merged image becomes the trimming frame.

5 **Press [ ].**



- The combined image is output, and the display returns to the initial screen.

IMPORTANT

- The stitching image is output first, then non-stitching images are output.
- If images are output before stitching, the stitching image is output last.

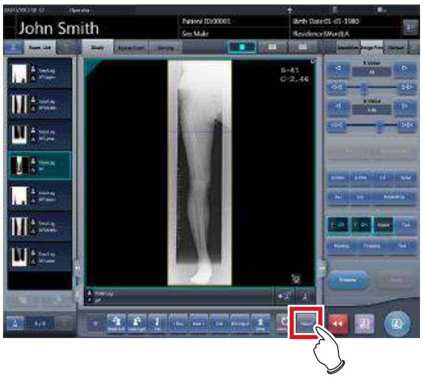
HINT

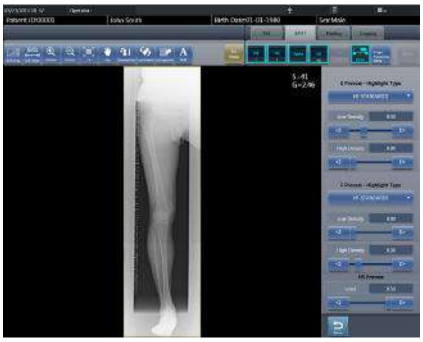
- If outputting the combined image in sections, set the number of sections by [Split].
- The order of combined image output can be changed. For more details, contact Konica Minolta technical representatives.

7.10.4 Image adjustment

The adjustment method for the combined image is as follows.

1 **Display the combined image and press [Viewer].**



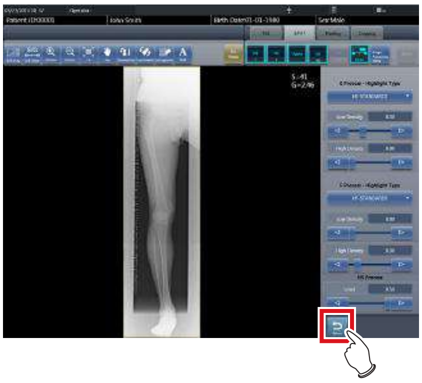


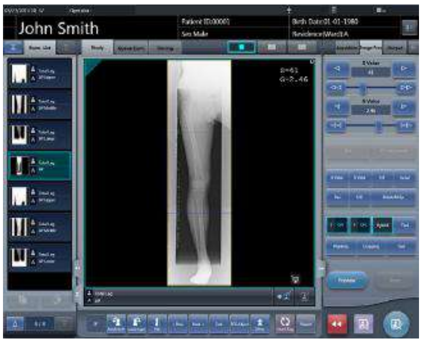
- The viewer screen is displayed.
- Perform various image adjustments. For details on how to operate the viewer screen, refer to "3.6 Viewer screen".

IMPORTANT

- Note the following when adjusting images created by stitching exposure.
  - ROI adjustment is not possible.
  - The exposure field automatic recognition function cannot be performed (manual adjustment is possible).
  - If the effective image area is changed, only the image size will change.

2 **Press [Return] when image adjustment is completed.**





- The exposure screen is displayed.

7.11 RAPID Stitching exposure

IMPORTANT

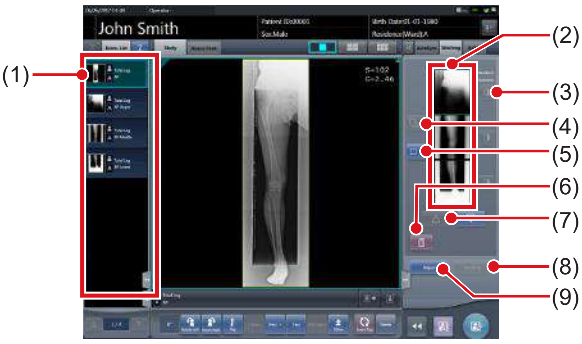
- The following DR Detector cannot be used for RAPID stitching exposure.
  - AeroDR 1012HQ
  - AeroDR 3 1012HQ
- With RAPID stitching, 4 images can be stitched together. For more details, contact Konica Minolta technical representatives.

7.11.1 Screen structure

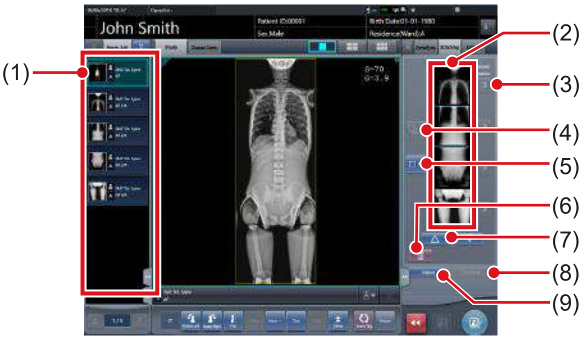
● Exposure screen

This is the screen for RAPID stitching exposure using RAPID stitching device.

When combining 2 or 3 images



When combining 4 images

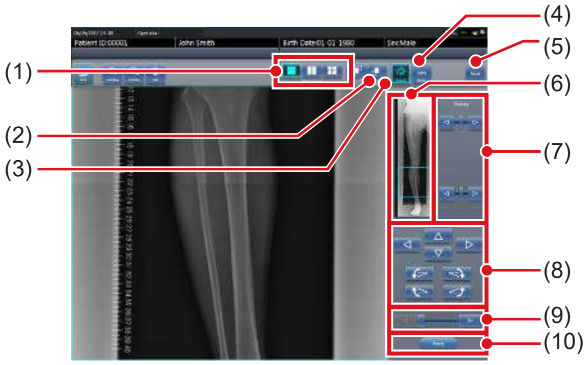


Number	Name	Functions
(1)	Order list	List of exposures. Exam. Tags are grouped for each examination.
(2)	Combined image display area	The images for combination are displayed. Focus is displayed on selected images. In the case of 2 exposures, "x" is displayed in the area at the bottom.
(3)	Standard gradation button	This button is for selecting the image which will be the image shade standard among the images displayed in the combined image display area. You can only select 1 image. ◑ : Not selected ◐ : Selected
(4)	Selection button (batch selection)	Gathers multiple exposure images associated with the images selected in the order list and displays them in the combined image display area.
(5)	Selection button (individual selection)	Displays the selected images in the order list in the combined image display area.
(6)	Delete button	Deletes the images selected in the combined image display area.
(7)	Combination sequence switch button	Moves the position of images selected in the combined image display area.
(8)	Stitching button	Combines the images displayed in the combined image display area. Press this button to display the stitching combination position adjustment confirmation screen.
(9)	Adjust button	Performs re-adjustment of the combination position. This button cannot be pressed when combined images are not displayed.

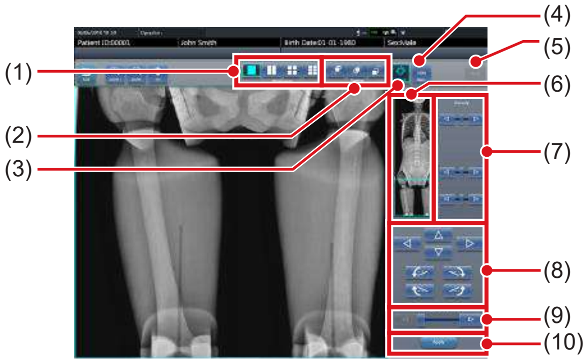
●Viewer screen (for stitching combination position adjustment)

This is the screen for adjusting combined position of images taken with RAPID stitching device.

When combining 2 or 3 images



When combining 4 images



Number	Name	Functions
(1)	Display layout toggle button	Selects the screen display format from 1×1, 2×1, 2×2 and 2×3 display options. 2×3 display is displayed only when combining 4 images.
(2)	Overlap button	Changes the plate overlap sequence. Every time you press the button, the plate overlap sequence is sequentially changed and the display of the overlap button is changed. The changed overlap sequence is also reflected in the output image. **When combining 2 or 3 images** ▣ : Interchanges the plate overlap sequence (middle and bottom). ▣ : Interchanges the plate overlap sequence (top and middle). When two plates are used, only [▣] is displayed. **When combining 4 images** ▣ : Interchanges the plate overlap sequence (first image and second image). ▣ : Interchanges the plate overlap sequence (second image and third image). ▣ : Interchanges the plate overlap sequence (third image and fourth image).
(3)	Adjust button	Displays and hides the stitching adjustment panel.
(4)	Proportion button	Changes the displayed transmittance of the overlapped portion. Pressing this button sequentially changes the transmittance. A modified transmittance is not reflected in the output image.
(5)	Reset button	Resets the position of the moved image and the changed density to return them to their initial states.
(6)	Full preview	All images to be combined are displayed.

Number	Name	Functions
(7)	Part correction button	Adjust the density of the images by pressing [◁ ▷] or dragging the bar.
(8)	Move/rotate button	Moves the position of selected images and adjusts their angles. △ ▽ ◁ ▷: image position is moved toward each direction. ↶ ↷ ↷ ↶: image angles are adjusted.
(9)	Magnification Ratio button/Magnification Ratio bar	Display images are magnified/shrunk by pressing [◁ ▷] or dragging the bar.
(10)	Apply button	Applies the adjusted image combination position.

HINT

●Moving/rotating an image during image combination

- For image movement/rotation, the lower image becomes the work image. The movement/rotation action is as follows.

Moving

[△][▽][◁][▷]: Moves the image to direction pressed

The image can also be moved by dragging the center of the image (horizontal stripe portion).

Rotating

[↶]: Lowers the upper left edge of the image

[↷]: Raises the upper left edge of the image

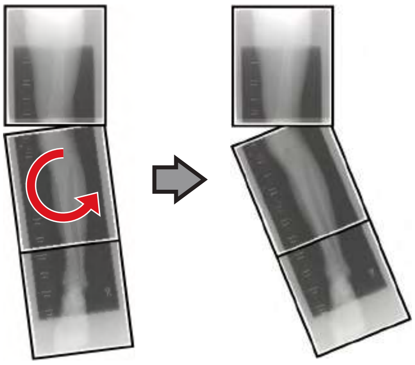
[↷]: Lowers the upper right edge of the image

[↶]: Raises the upper right edge of the image

If you drag the left or right area of the image (horizontal stripe portion) vertically, you can move the upper edge up or down in the direction you are dragging it. If you drag it horizontally, you can move the image horizontally.

●Linking 3 images

- When combining 3 images, the lower image will also move/rotate if the central image is moved/rotated.

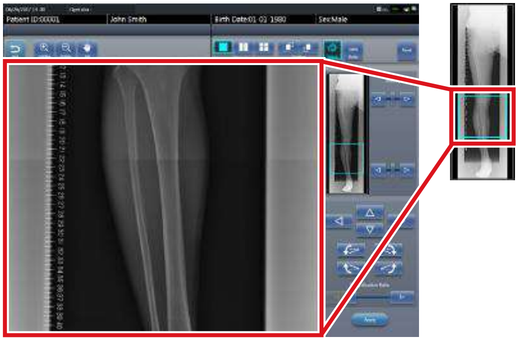


●About image display

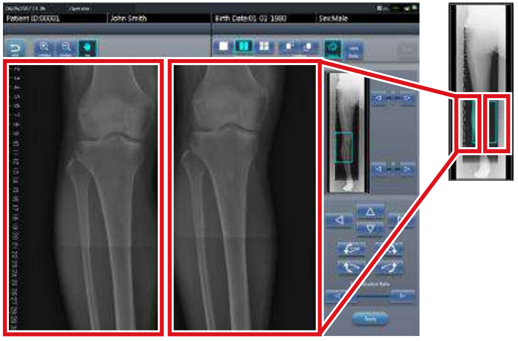
- During the image combination, the combined parts (frame parts) displayed in the full preview are magnified and displayed in the image display area as frames.

- The display format and magnified displayed part are as follows:

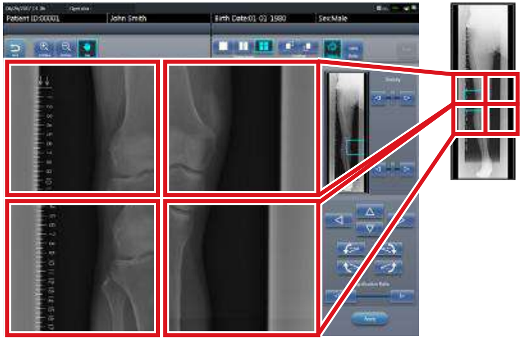
1×1 display



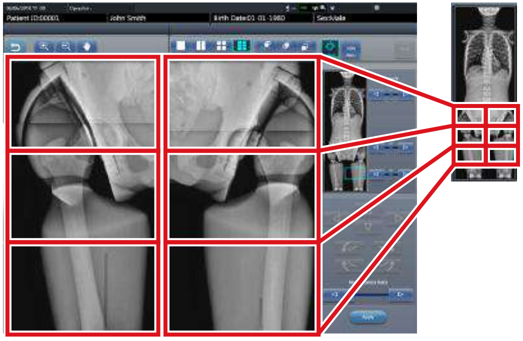
2×1 display



2×2 display



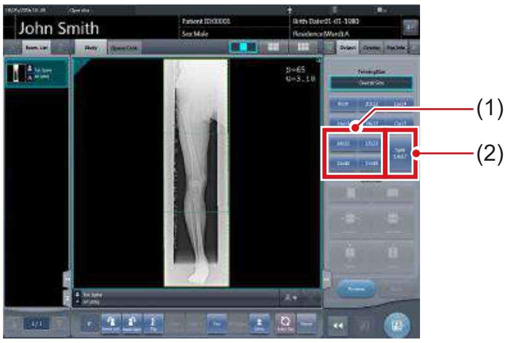
2×3 display



- 2×2 display can only be selected when combining 3 or 4 images.
- 2×3 display can only be selected when combining 4 images.
- Set the plate overlap sequence during installation.

● Control panel (Output - for host)

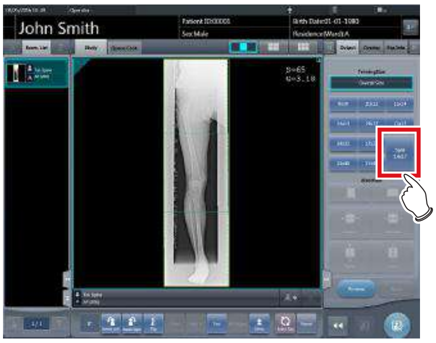
This is the control panel to perform setting of host output conditions for combined stitching images.



Number	Name	Functions
(1)	Trimming size button	This button is used to select the trimming size. Set to hide/unhide trimming size button during installation.
(2)	[Split] button	This button is used to split combined images and output these images to hosts. The device switches between ON and OFF every time the button is pressed. Press and hold the button to select the size of each section.

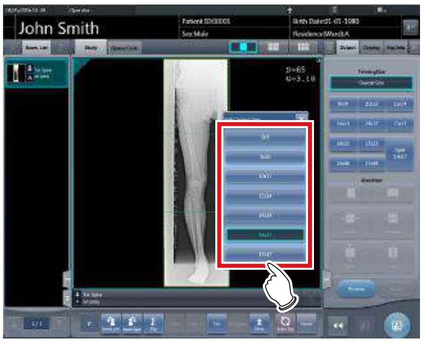
● Procedure to change the output size of split images

1 Press the [Split] button for 1 second or more.



- The Split Output Size dialog box is displayed.

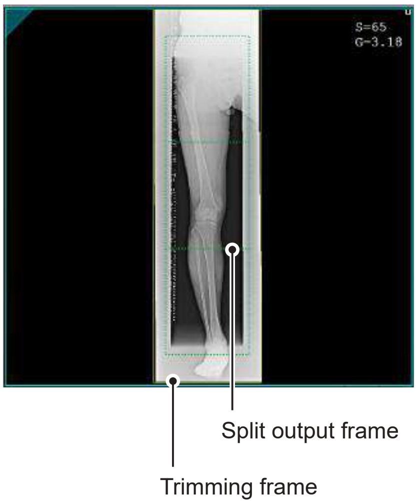
2 Press [OFF] or the button of the output size to be changed on the Split Output Size dialog box.



- The output size is changed.

HINT

- When output of split images is enabled, a frame appears on the image to indicate the area of the split image that will be output.



- The size of the trimming frame changes in accordance with changes to the size of the image frame so that images are automatically split into the selected section size. Images can be split into a maximum of 3 sections.
- If the split image is smaller than the trimming region, the entire combined image may not completely fit within the selected region.
- If the configuration of the split images results in one image, the split processing is not applied, and the split output frame does not appear.

7.11.2 Exposure

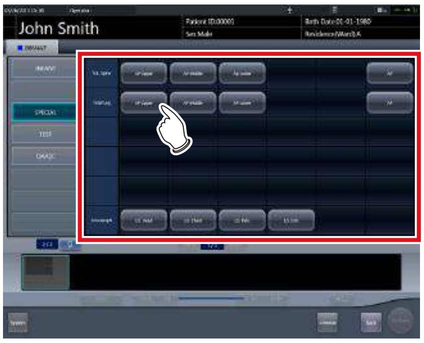
The RAPID stitching exposure method using DR Detector is as follows.

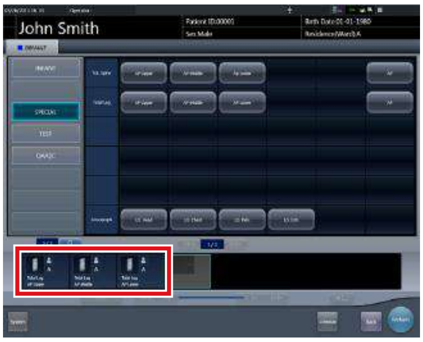
IMPORTANT

- For the stitching exposure images, make sure that the combined parts are combined in the correct positions.
- If seems do not line up correctly, manually adjust the positions of image seems in the viewer screen (for stitching combination position adjustment) used to adjust combine positions.
- When performing the RAPID stitching exposure in AeroDR 3 1417 HD and AeroDR 3 1717 HD, select "Standard" (200µm) from "Resolution". To be exposed with resolution of [Standard] even if selected [High].

1 After transitioning from the initial screen to the exposure body part selection screen, select the Exam. Tag for stitching exposure.

- Select 2 to 4 Exam. Tags for stitching exposure.





- The selected Exam. Tags are displayed on the Exam. Tags display area.

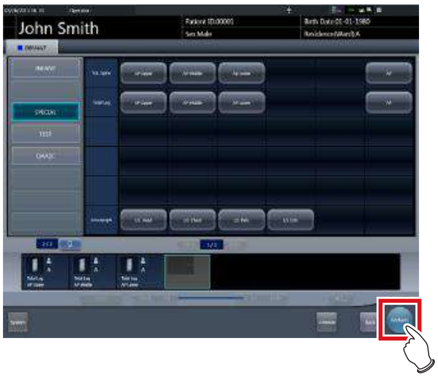
IMPORTANT

- To stitch 4 images, select the 4 images Exam. Tags.

HINT

- It is also possible to register multiple exposure body parts in 1 Exam. Tag.

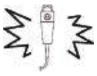
2 Press [Perform].

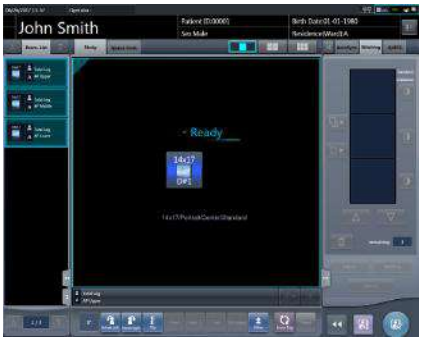


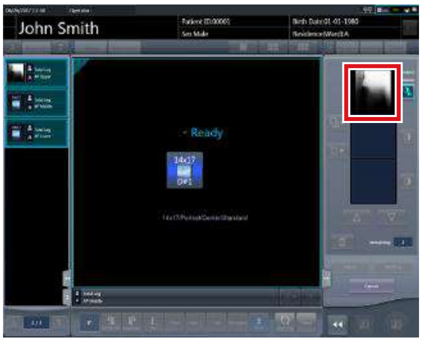
- The exposure screen is displayed.

3 Exposes the first.

- Set up the X-ray device before exposure. Perform exposure after checking the exposure settings.


Press the exposure switch





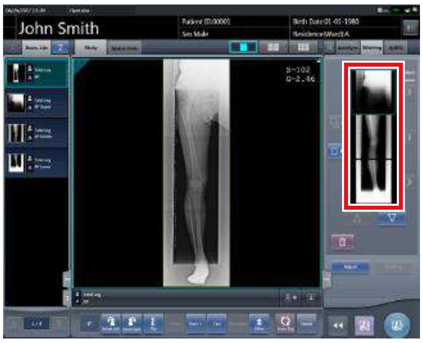
- Exposed preview image is displayed.

IMPORTANT

- Make sure the focus matches stitching Exam. Tags.
- Before exposing images, make sure that the setting of the number of images matches between this device and the X-ray device. The "The number of exposure is difference between CS-7 and X-ray device. Please match the number of exposure between CS-7 and X-ray device." message appears if this setting does not match.
- If the number of images has been reduced on the rapid stitching device, the image processing condition will be automatically deleted on this device.

4 Expose the second to fourth.

- Repeat from step 3 to perform exposure.
- Set up the X-ray device before exposure just like for the first exposure. Perform exposure after checking the exposure settings.



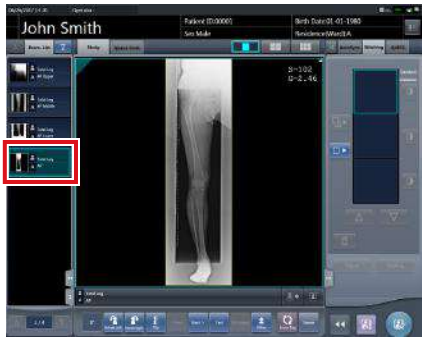
- Exposed preview image is displayed.
- Images are automatically combined once successfully exposed. The resulting combined image appears once the combining process completes.

IMPORTANT

- If [Cancel] is pressed during the examination, re-exposure or additional exposure cannot be performed for that examination.
- If you want to reject an image during exposure, press [Cancel] followed by [ ].
- You can perform reject even after all images have been exposed. The target of reject is the image before and after combination.
- Rejecting any image within a single examination makes other images also the target for rejecting.
- The areas of focus for diagnosis should not overlap at combine positions.

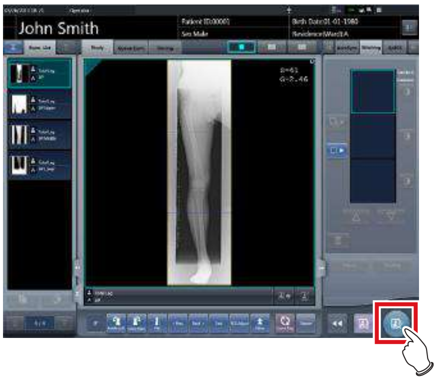
HINT

- A merged image can also be displayed after the pre-merged images in the order list. For more details, contact Konica Minolta technical representatives.



- If the trimming frame is set as the entire image for merged images rotated by free rotation, the area enclosing the merged image becomes the trimming frame.

5 Press [ ].



- The combined image is output, and the display returns to the initial screen.

IMPORTANT

- The stitching image is output first, then non-stitching images are output.
- If images are output before stitching, the stitching image is output last.
- Press the [Adjust] button after rotating combined images on the exposure screen to reset the image rotation.
- Images must be combined manually if the "Unable to create the stitched image. Please create the stitched image at the viewer screen for stitching." message appears. For more details, refer to "7.11.3 Image combination".

HINT

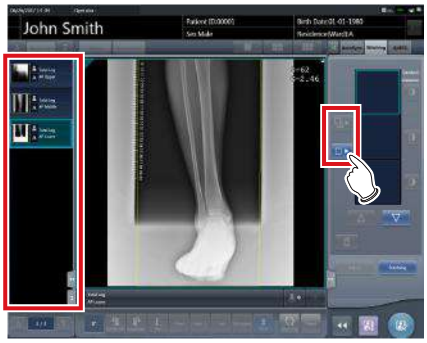
- If outputting the combined image in sections, set the number of sections by [Split].
- The order of combined image output can be changed. For more details, contact Konica Minolta technical representatives.

7.11.3 Image combination

Combine the exposed images. The following procedure describes an example of combining 3 images.

1 Select the images to be combined.

- Select images only if not already selected.
- Select the images to be combined from the order list and press [⧉▸] or [□▸].

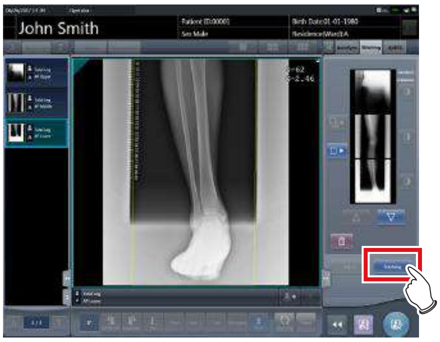


- The selected images are displayed in the combined image display area.
- If you pressed [□▸], continuously select the associated images (second and third).

HINT

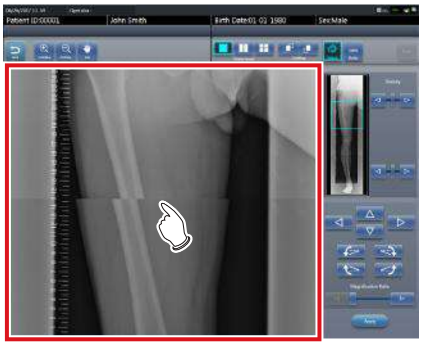
- [⧉▸] and [□▸] can be pressed only when the Exam. Tag for stitching exposure is selected.

2 Press [Stitching].



- The viewer screen (for stitching combination position adjustment) is displayed.

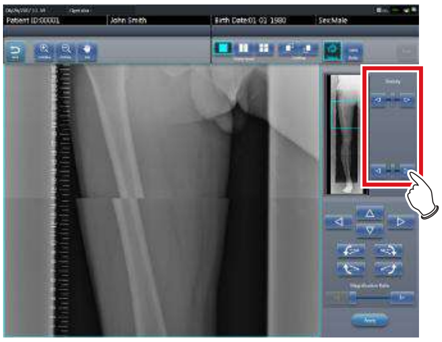
3 Select the frame which will adjust the image combination position.



- Focus is applicable to the frame so you will be able to make adjustments.

IMPORTANT

- Adjust the density of each image in this step.

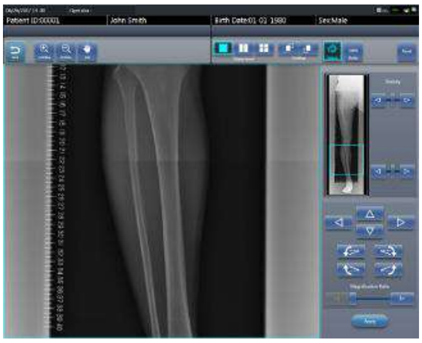


- If there are four images, adjust the density of the upper and lower images to that of the third image. If an image used as the density standard is changed, adjust the density so that it suits the changed image.
- If there are three images, adjust the density of the upper and lower images to that of the center image. If an image used as the density standard is changed, adjust the density so that it suits the changed image.
- If there are two images, adjust the density of the upper image to that of the lower image. If the upper image is used as the density standard, adjust the density of the lower image based on the upper image.

HINT

- For the frame display format, 1×1, 2×1, 2×2 and 2×3 display options can be selected.
- A 2×2 frame display can only be selected when combining 3 or 4 images.
- A 2×3 frame display can only be selected when combining 4 images.

4 Adjust the image combination position.

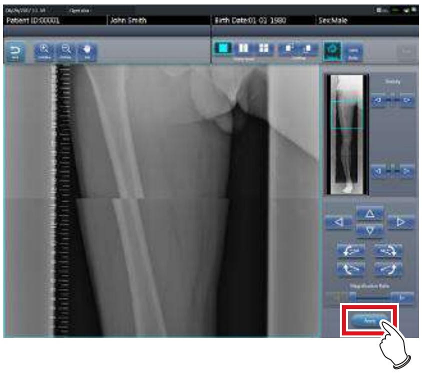


- For details on how to operate the viewer screen (for stitching combination position adjustment), refer to "7.11.1 Screen structure".
- Select another frame and adjust the combination position as needed.

IMPORTANT

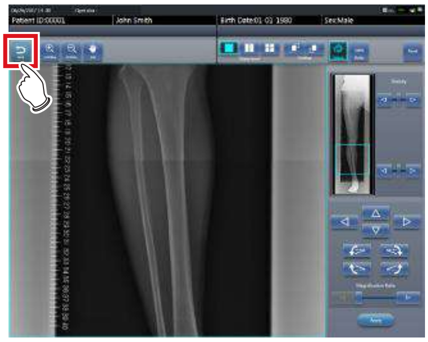
- Even if the displayed transmittance of the overlap portion is modified during the adjustment, it will not be reflected in the output image.

5 Once all combination positions are adjusted, press [Apply].



- The image combination position is confirmed.

6 Press [Back].

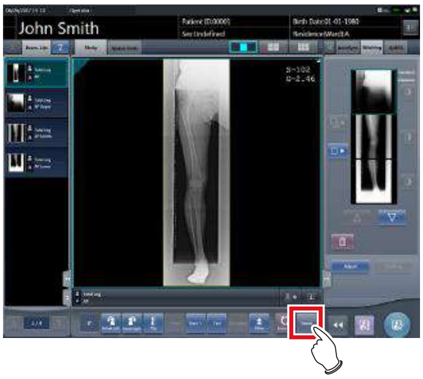


- The display returns to the exposure screen, and the combined image is added to the order list.

7.11.4 Image adjustment

The adjustment method for the combined image is as follows.

1 Display the combined image and press [Viewer].

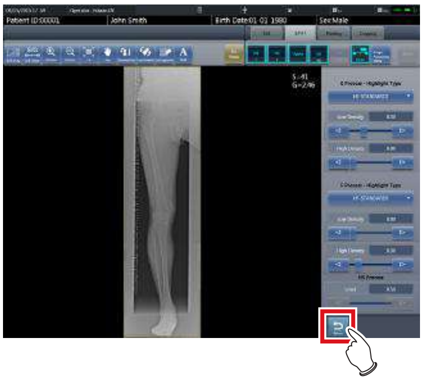


- The viewer screen is displayed.
- Perform various image adjustments. For details on how to operate the viewer screen, refer to "3.6 Viewer screen".

IMPORTANT

- Note the following when adjusting images created by stitching exposure.
  - ROI adjustment is not possible.
  - The exposure field automatic recognition function cannot be performed (manual adjustment is possible).
  - If the effective image area is changed, only the image size will change.
  - Automatic calculation of masking is not possible.

2 Press [Return] when image adjustment is completed.



- Returns to the exposure screen.

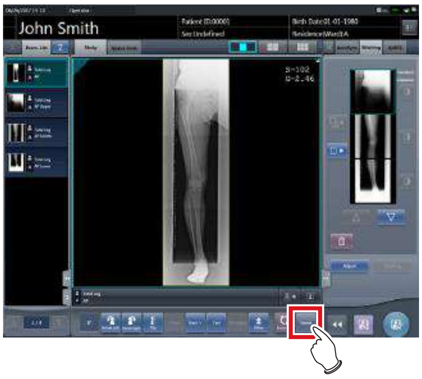
7.11.5 Trouble Shooting

Perform the corresponding troubleshooting procedure if any of the following errors occur when performing RAPID stitching exposure.

●Exposure area is not included in the combined image

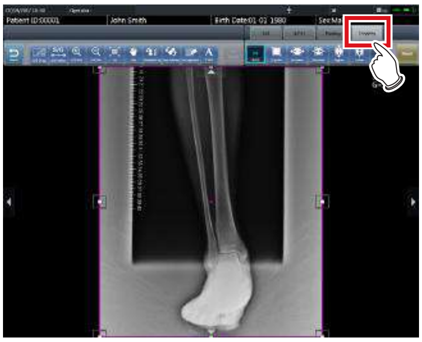
If the exposure area is not included in the combined image, perform the following procedure to manually adjust the effective image area and then perform the recombining process.

1 Display the pre-combining images to be combined image and press [Viewer].

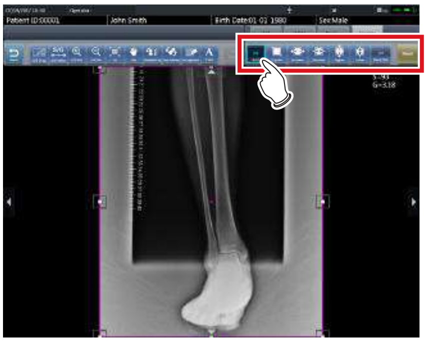


- The viewer screen is displayed.

2 Select [Cropping] tab.

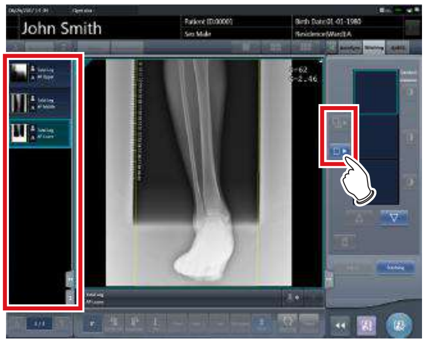


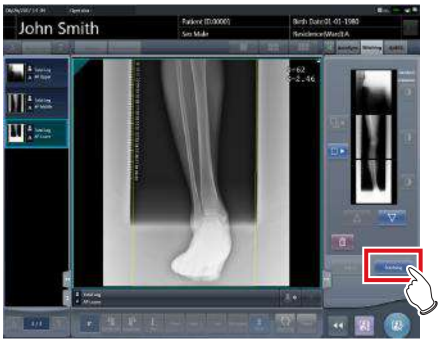
3 Change the effective image area.



- For details on how to adjust of the effective image area, refer to "6.7.3 Change of the effective image area".

4 Select the image for which the effective image area has been adjusted and then combine the images.

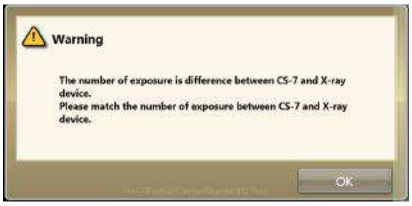




- For details on how to combine the exposed images, refer to "7.11.3 Image combination".

● Display of the image number mismatch dialog

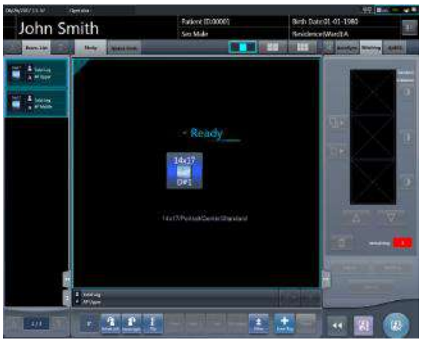
If the image number mismatch dialog appears, adjust the exposure area on the RAPID stitching device so that the number of images matches that on the Exam. Tag, or use the following procedure to add an Exam. Tag.



Warning

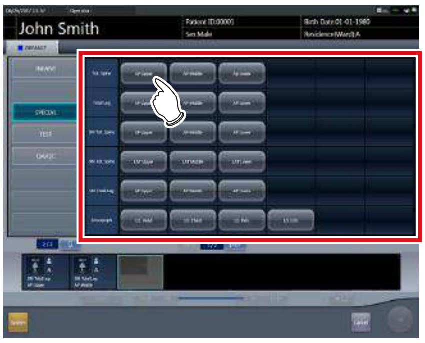
The number of exposure is difference between CS-7 and X-ray device.
Please match the number of exposure between CS-7 and X-ray device.

1 Press [+] from the exposure screen.

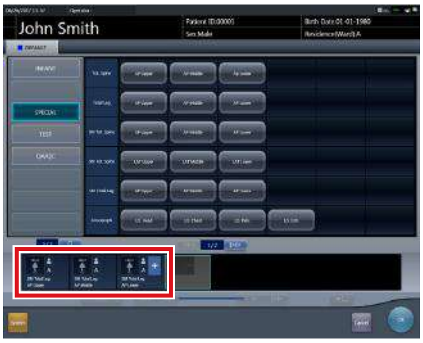


- The Body Part Selection screen is displayed.
- The [⟳] button may appear in the location of the [+] button. Refer to "6.4.1 Modification and addition of Exam. Tags" for more information on displaying the [+] button.

2 Set the Exam. Tag for stitching exposure.

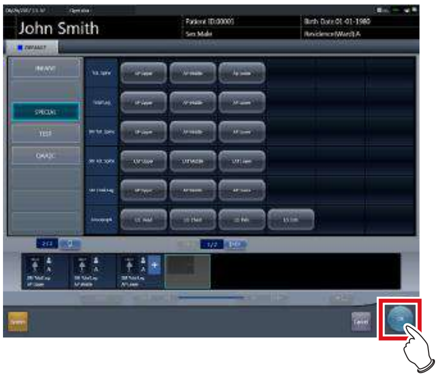


⇩



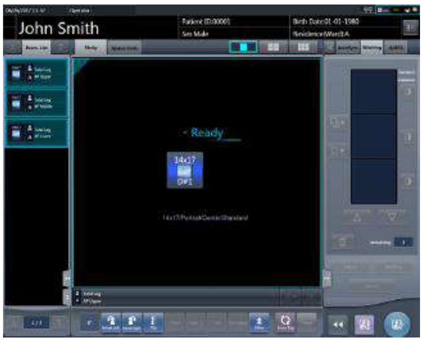
- The selected Exam. Tags are displayed on the Exam. Tags display area.

3 Press [OK].



- The exposure screen is displayed.

4 Perform the RAPID stitching exposure again.



IMPORTANT

- If the exposure area was reset on the RAPID stitching device, reconfigure the exposure area on that device.

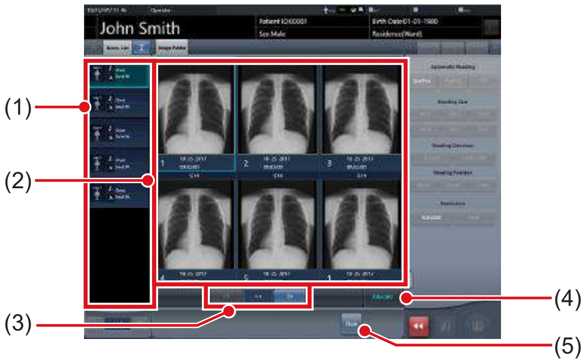
7.12 Aero Storage exposure

IMPORTANT

- The AeroDR 3 1417HD, AeroDR 3 1717HD, and AeroDR 3 1012HQ models of DR Detectors support exposing in Aero Storage mode.
- Studies for which the Mammogram and One Shot Stitching Exposure Exam. Tags cannot be allocated.
- The exposure conditions Aero Storage Mode (resolution, sensitivity, maximum exposure time) behave according to fixed values set in advance. For details about the setting values, contact Konica Minolta technical representatives.

7.12.1 Screen structure

●Exposure screen - [ImageFolder] tab



Number	Name	Functions
(1)	Study display area	The order list or body part selection is displayed.
(2)	Work area	Displays the retrieved images.
(3)	Switching button	Use the [<<] and [>>] buttons to scroll through multiple pages of images.
(4)	[Allocate]	Allocate the examination and image.
(5)	[Close]	Stops the process to allocate examination with images and displays the initial screen.

IMPORTANT

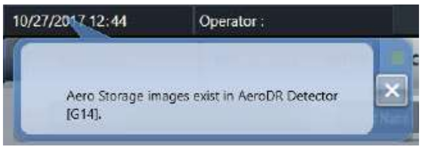
- The Control Panel function cannot be used when the [Image Folder] tab is displayed.

7.12.2 Retrieve images

This section describes the procedure to retrieve images in DR Detectors exposed in Aero Storage mode.

1 **Load the DR Detector used to expose images in Aero Storage mode into the AeroDR Battery Charger or AeroDR Battery Charger 2, or connect the wired cable.**

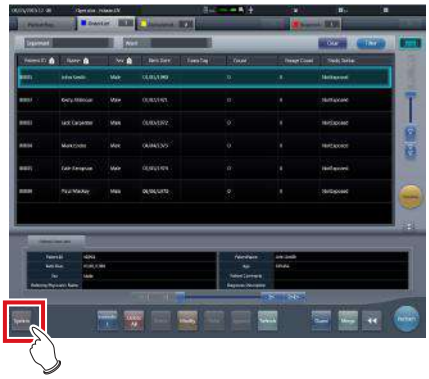
- Display the following ballon.



10/27/2017 12:44 Operator :

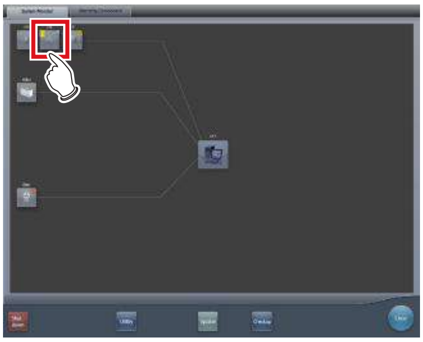
Aero Storage images exist in AeroDR Detector [G14].

2 **Press [System] on the initial screen.**



- The system monitor screen is displayed.

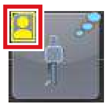
3 **Select the device icon for the DR Detector used to expose images in Aero Storage mode.**



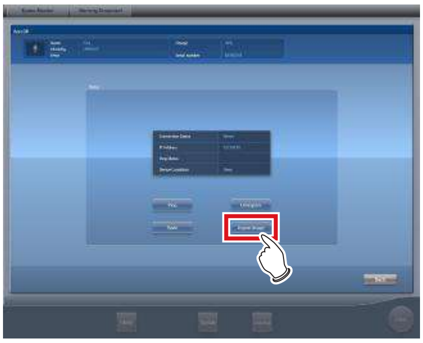
- DR detector information appears.

HINT

- In the DR Detector in which the image is saved, a mark indicating that the image has been saved is displayed in the device icon.

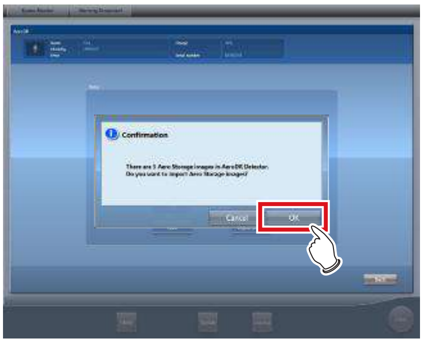


4 **Press [Import Image].**



- An image retrieval confirmation message appears with the number of images stored in the DR Detector.

5 **Press [OK].**

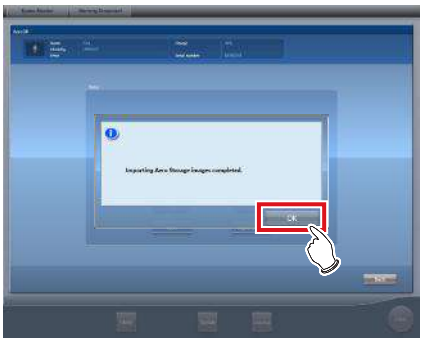


Confirmation

There are 1 Aero Storage images in AeroDR Detector.
Do you want to import Aero Storage images?

- Images are retrieved.
- The image retrieval complete confirmation message appears.

6 **Press [OK].**



Importing Aero Storage images completed.

IMPORTANT

- Images are deleted from the DR Detector once images have been retrieved.
- When restarting the retrieval process after it stops due to a communication or other error, all images are retrieved again from the first image.
- Images waiting to be resent by the DR Detector cannot be retrieved.

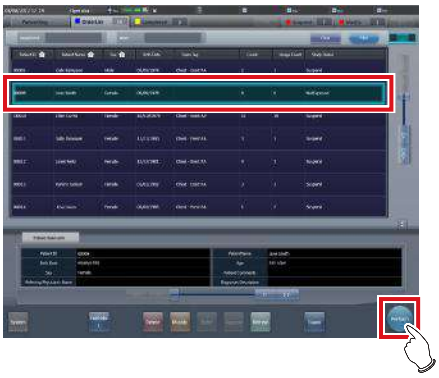
7.12.3 Allocate with examination

This section describes the procedure to allocate retrieved images with Exam. Tags for examination.

IMPORTANT

- To not allocate images, register a dummy Exam.Tag, allocate the images to this Exam.Tag, and then set the images as bad images.

1 **Select the examination, and press [Perform].**

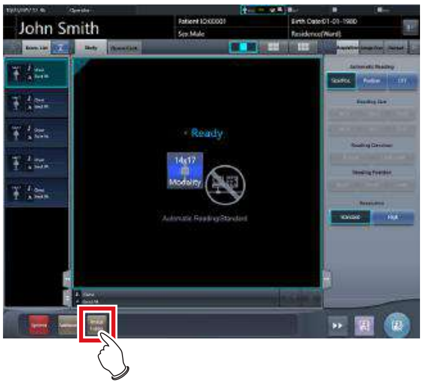


- The exposure screen is displayed.

HINT

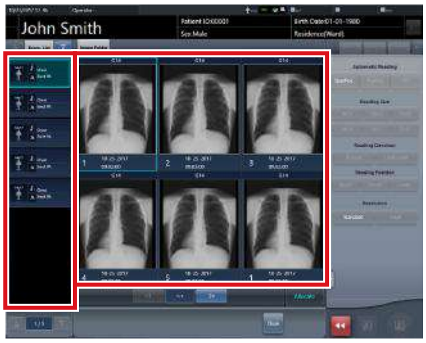
- If no examination have been registered, register the patient information and select a body imaging area before pressing [Perform].

2 Press [ImageFolder].



- Exposure screen - [ImageFolder] tab is displayed.

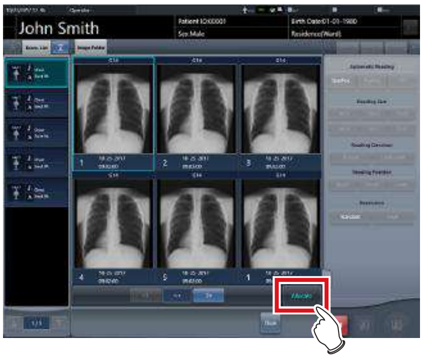
3 Select the Exam. Tag for the desired examination and the desired images to be allocated.



IMPORTANT

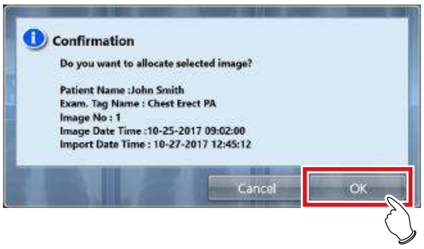
- Exam. Tags for which exposure is complete cannot be allocated.

4 Press [Allocate].



- An image allocate confirmation message is displayed.

5 Press [OK].


Confirmation

Do you want to allocate selected image?

Patient Name :John Smith
Exam. Tag Name : Chest Erect PA
Image No : 1
Image Date Time :10-25-2017 09:02:00
Import Date Time : 10-27-2017 12:45:12

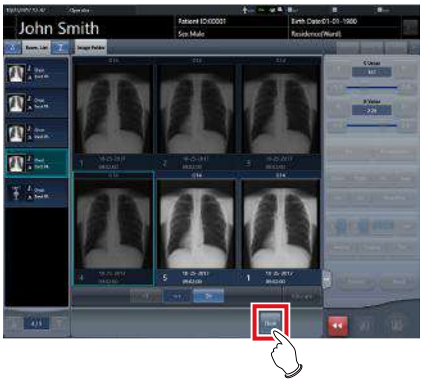
- Image and Exam. Tag are allocated.

IMPORTANT

- If incorrect images were allocated, merging and separation of studies, change the Exam. Tag, and then replace the images or perform other edits as desired.

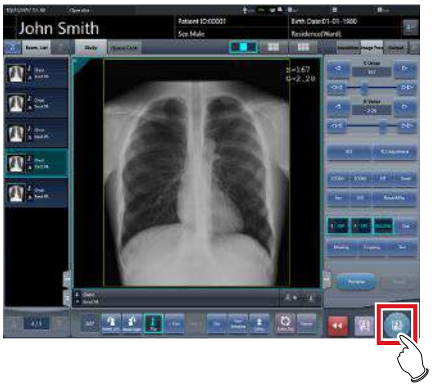
6 Repeat steps 3 to 5 to allocate retrieved images.

7 Press [Close].



- The exposure screen is displayed.

8 Press [ ].



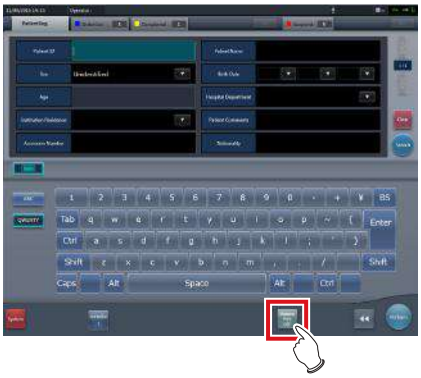
- The initial screen is displayed.
- If there are multiple examination with images exposed in Aero Storage mode, repeat the procedure from step 1.

7.13 Mammogram exposure

This section describes the screen structure and procedure for mammogram exposure.

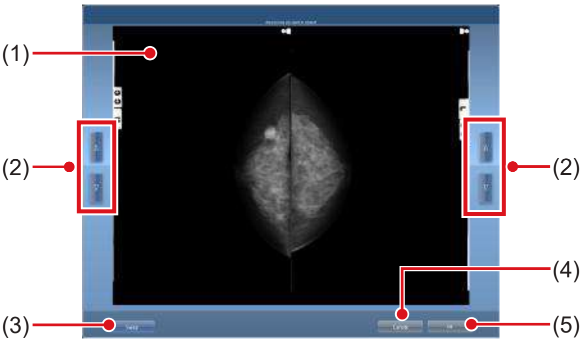
IMPORTANT

- For United States of America, this device is not intended to use for Mammography.
- If the mammogram print button on the patient registration and list screens are set to [Mammo Print OFF], change the setting go [Mammo Print ON].



7.13.1 Screen structure

The screen structure for the adjustment of the position of the right and left breast images in mammogram exposure is as follows.



Number	Name	Functions
(1)	Image preview area	Mammogram images are previewed in this area.
(2)	Vertical positioning button	Adjust the position of the images in the vertical direction. Operate the right and left vertical positioning buttons to adjust the position of the right and left images, respectively.
(3)	Segment flip button	Replaces the right and left images with each other. The images are replaced every time you press the button.
(4)	Cancel button	Cancels outputting image in AB format.
(5)	OK button	Outputs mammogram images in AB format.

7.13.2 Exposure

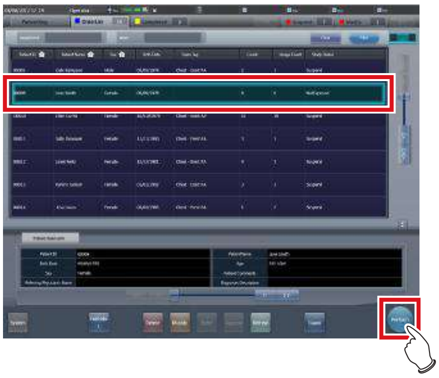
The procedure for mammogram exposure is as follows. The procedure is explained using barcode registration as an example.

IMPORTANT

- Using EF processing for mammogram images (standard processing) may produce artifacts in the high contrast area due to strong edge effect, which is characteristic of this processing. You should use hybrid processing for mammogram images in order to avoid such phenomena from appearing on the chest wall.

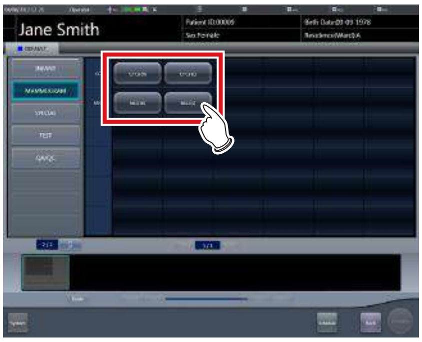
1 Select or register the examination for which mammogram exposure is to be conducted.

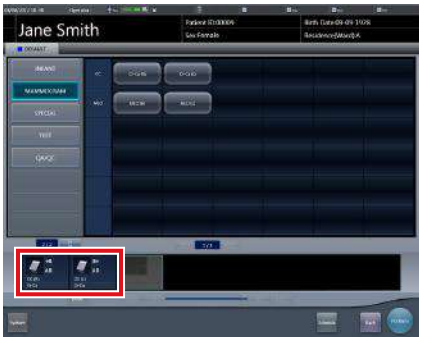
- In the case of list screen, select the examination.
- In the case of patient registration screen, register the examination.
- Press [Perform].



- The body part selection screen is displayed.
- If linked with host system such as RIS, the exposure screen is displayed.
  → Go to step 4

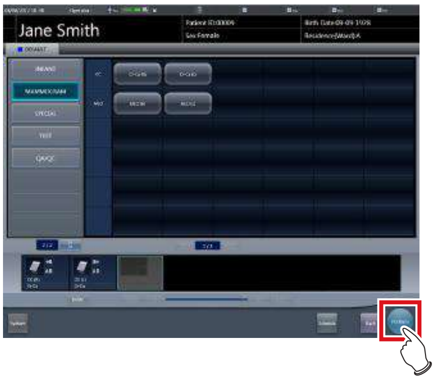
2 **Select the Exam. Tag for mammogram exposure on the body part selection screen.**





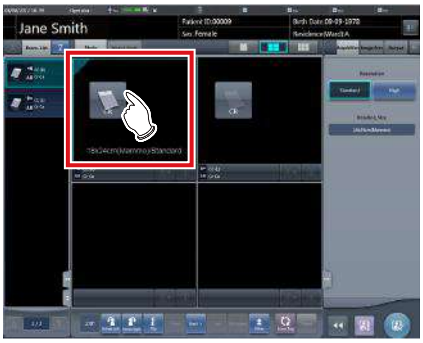
- The exposure body part is registered.

3 **Press [Perform].**

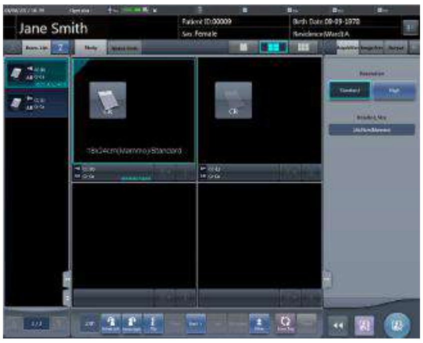


- The exposure screen is displayed.

4 **Focus on the image display area to register the Mammography cassette.**

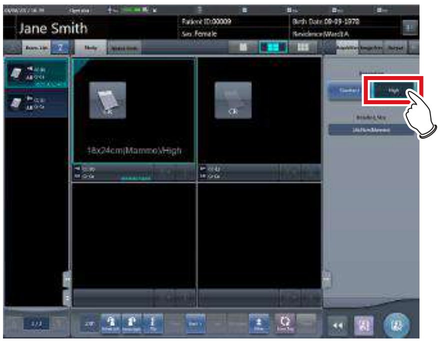


5 **Read the barcode of the Mammography cassette with a barcode reader.**



- The barcode number read is displayed in the Exam. Tag display area. This completes the read preparation for REGIUS.

6 **Select image resolution (High) on the [Acquisition] tab.**

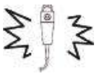


IMPORTANT

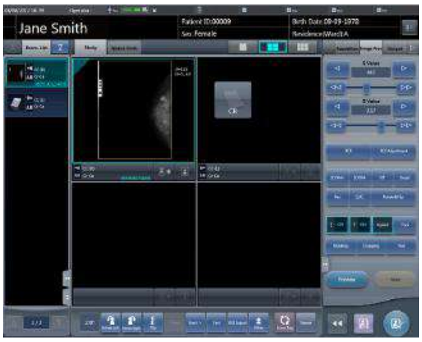
- In the case of mammogram exposure, [Standard] is 87.5μm and [High] is 43.75μm.

7 Expose using the registered Mammography cassette.

- Make sure the image display areas to be exposed are focused.
- Set up the X-ray device before exposure. Perform exposure after checking the exposure settings.


Press the exposure switch

8 Read the Mammography cassette with REGIUS.



- The image read from the barcode on the Mammography cassette will be displayed.

IMPORTANT

- In the case of X-ray link, make sure exposure settings are displayed for the image after exposure.
- Confirm that additional information such as markers and stamps is not superimposed on the breast area.

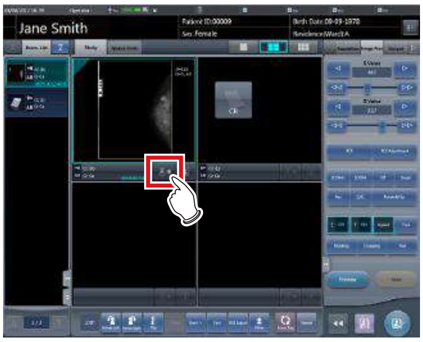
HINT

- Overlay settings (LR, CC, MLO, etc.) are made on the [Overlay] tab (host or printer). For information on the overlay setting method, refer to "6.4.23 Overlay".
- If the image needs revision (chest wall blackening process, etc.) when checking the image by pressing [Preview] of overlay, adjust the image on the viewer screen.

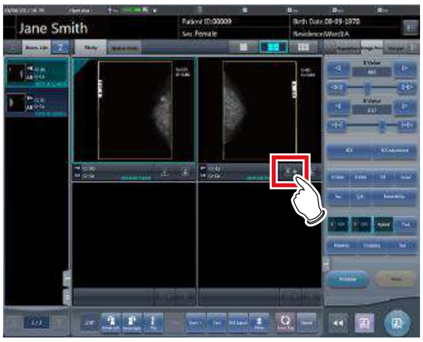
9 Perform the second exposure or more.

- Repeat from step 4 to perform the second exposure or more.

10 Press [ ] for the first image.



11 Press [ ] for the second image.

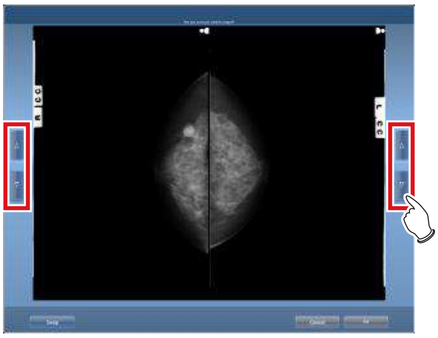


- The breast position adjustment screen is displayed. Two images are displayed on the right and left, and the vertical position of them is automatically adjusted.

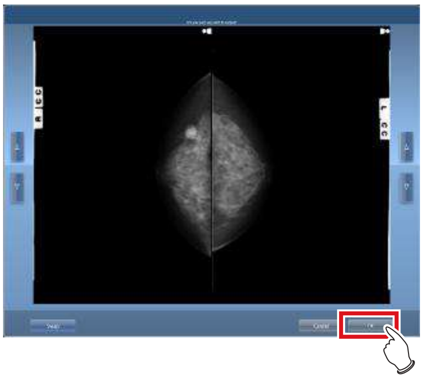
HINT

- When the two images are transposed with each other, press [Swap] to replace them with each other.

12 Fine-tune the position of the right and left images if necessary.

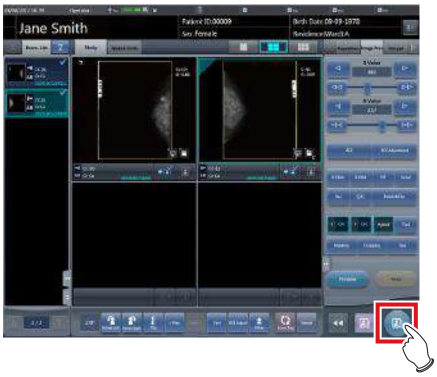


13 **Press [OK] when fine-tuning is completed.**



- The exposure screen is displayed.

14 **Press [ ].**



- The image is output, and the display returns to the initial screen.

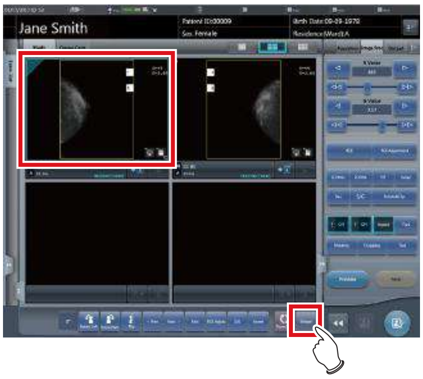
7.13.3 Chest wall blackening process adjustment

Chest wall blackening process for the mammogram image is conducted on the viewer screen.

HINT

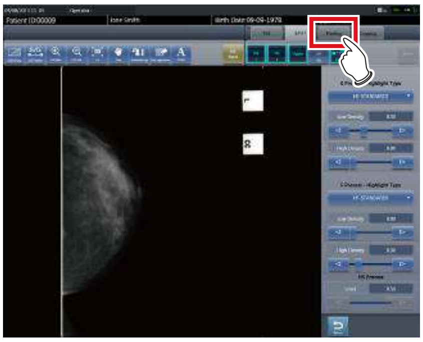
- Chest wall blackening process is [ON] under ordinary circumstances.

1 **Focus on the image to be adjusted and press [Viewer].**

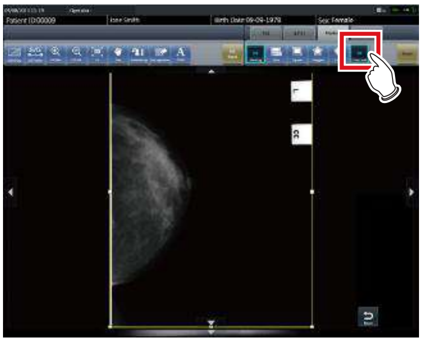


- The viewer screen is displayed.

2 **Select the [Masking] tab.**

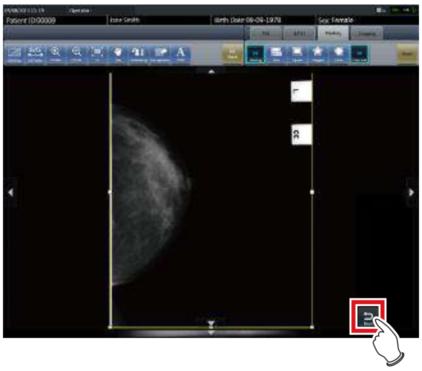


3 Press [Chest wall].



- Pressing [Chest wall] toggles blackening process between [ON] and [OFF].

4 Click [Return].



- Return to the exposure screen.
- When outputting, make sure chest wall blackening process is applied.

7.14 Media output

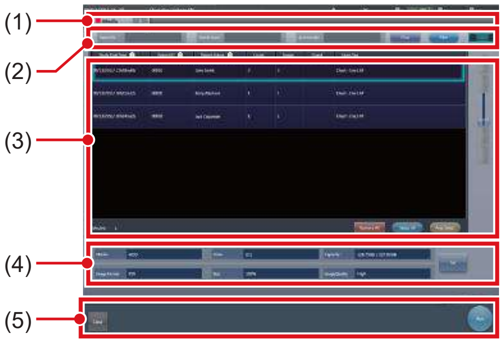
When outputting examination results to media, use the media output function.

IMPORTANT

- When outputting to CD-R and DVD-R media, this device must be equipped with a writable media drive.
- Since writing to CD-R and DVD-R media uses the disc-at-once method, additional data cannot be added on the media once data is written.
- The patient ID is used in the image file name when outputting to JPEG. When the patient ID file name has restricted characters (.\/:*?"<>|), they are replaced with "_". Be careful not to misidentify patients.

7.14.1 Screen structure

Structure of the media output screen is as follows.



Number	Name	Functions
(1)	Sorting tab	Transition with the list screen. When you switch from the system monitor screen to the media output screen, tabs other than the [Media] tab are not displayed.
(2)	Filter items	Keyword input column for refined display for the patient displayed in the [Media] tab.
(3)	List display area	Examinations registered on the [Media] tab are displayed.
(4)	Conditions setting area	The setting when outputting to media is displayed. If you press [Set], the setting screen for media output is displayed.
(5)	Tool bar area	[Run] and [Close] are displayed. [Close] is only displayed when the display transitioned from the system monitor screen to the media output screen. Press [Run] to start writing. Press [Close] to return to the system monitor screen.

HINT

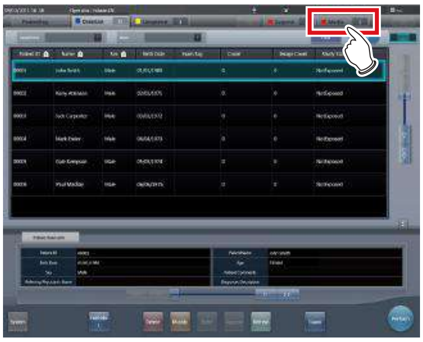
- Depending on the settings, [Media Output Status] field in the list display area displays an icon that indicates output is completed.

7.14.2 Output to media

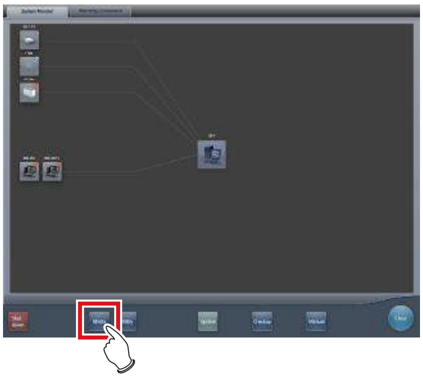
Perform outputting to media using the following procedure. First, show the media output screen from the list screen or the system monitor screen.

1 Display the media output screen.

- Press the [Media] tab to display it from the list screen.



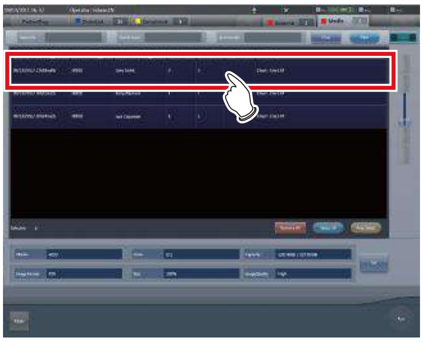
- Press [Media] to display it from the system monitor screen.



- The media output screen is displayed.

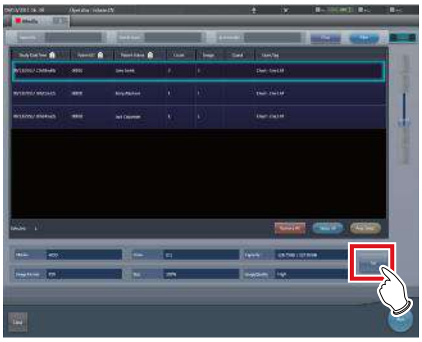
2 Press the examination that will be output to media to select.

- When outputting multiple examinations, press the other examinations in succession to select them.
- Pressing the examination with a selected status cancels the selection.
- When selecting all examinations, press [Select All].
- When canceling all selected statuses, press [Remove All].
- When selecting a range, select the start and end points after pressing [Area Select].



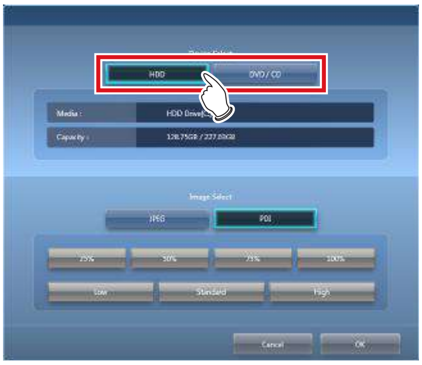
- The examination you pressed will have a selected status.

3 Press [Set].



- The setting screen is displayed.

4 Select the output destination. Press [HDD] or [DVD/CD].

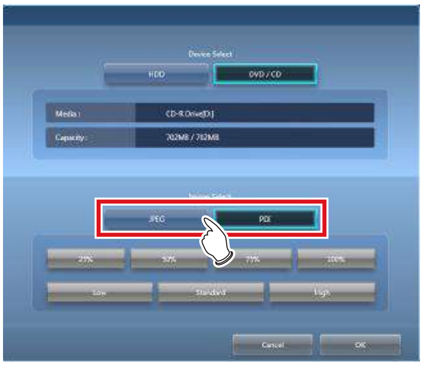


Media : HDD Drive[C:]
Capacity : 128.75GB / 227.00GB

- The drive information of the output destination is displayed in [Media:]. The capacity of the output destination is displayed in [Capacity:].

5 Select the image format. Press [JPEG] or [PDI].

- When [JPEG] is pressed, select image size and image quality. Select one image size from [25%], [50%], [75%], or [100%]. Select one image quality from [Low], [Standard], or [High].



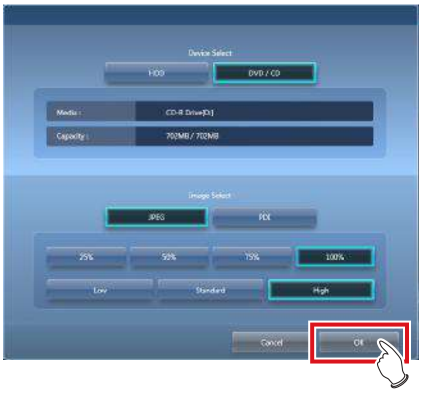
Media : CD-R Drive[D:]
Capacity : 702MB / 702MB

HINT

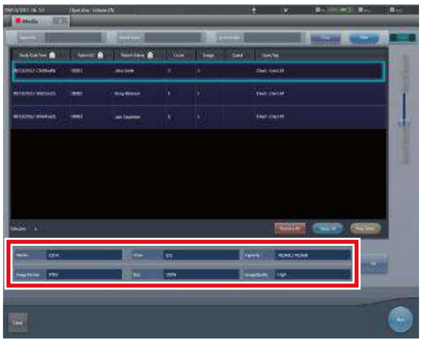
- When image size becomes larger and image quality becomes higher, data volume during output becomes larger.
- The JPEG image size is the aspect ratio for the original image. For example, when the image is at 1,500 ×1,000 pixels, it has the following image sizes:
  - 100%, 1,500 × 1,000 pixels
  - 75%, 1,125 × 750 pixels
  - 50%, 750 × 500 pixels
  - 25%, 375 × 250 pixels
- The JPEG image quality is the image quality (compression ratio) when the JPEG image is created. The relationship between the image quality and the compression ratio is as follows:
  - High: image quality 100 (uncompressed)
  - Standard: image quality 75
  - Low: image quality 50

6 Press [OK].

- Pressing [Cancel] returns to the previous screen. This time, the set contents are not reflected.



Media : CD-R Drive[D:]
Capacity : 702MB / 702MB

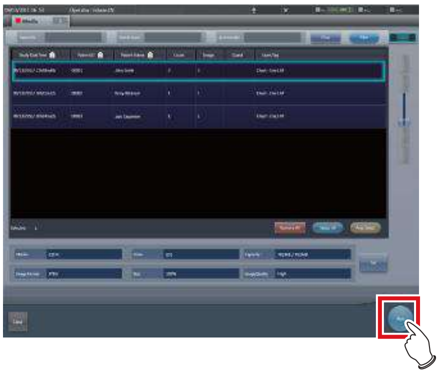


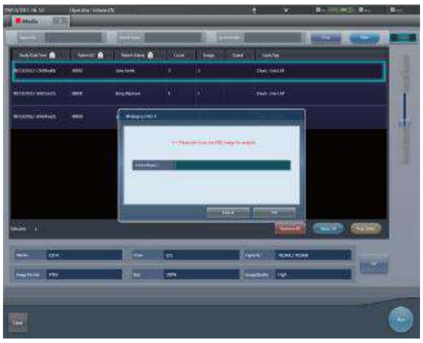
- Output settings are reflected, and when returning to the original screen, the contents are displayed in the conditions setting area.

HINT

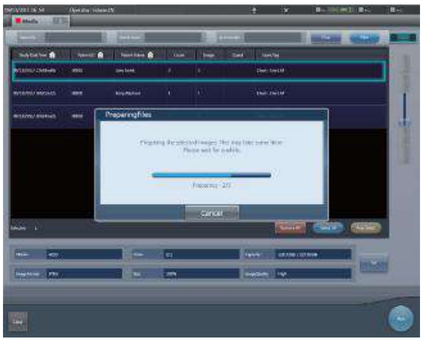
- The set contents are preserved even after this device is restarted.

7 Press [Run].

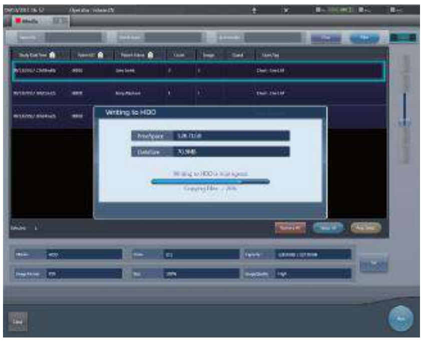




- When outputting to JPEG, specify the output destination folder for the image. Specify the folder name, then press [OK].
- You can enter up to 15 characters.
- Press [Cancel] to stop media output.



- The screen that shows the progress status is displayed and creation of the write data starts.
- Press [Cancel] to stop media output.



- The screen that shows the progress status is displayed and writing to media starts.
- When writing to media is finished, the display returns to the original screen.

HINT

- Exposed images of completed examinations that include 1 or more sheets of exposed images become targets for media output.
- Rejected images cannot be output.
- The following examinations cannot be output to media even if exposed images are included.
  - Paused examination.
  - Examination with a history of deleted images.
  - Examination of rejected images only.
- When an image is output to media in PDI format, output it together with a PDI viewer. Depending on the settings at installation, it may also be possible to enable automatic launching of the PDI viewer.
- Do not specify the drive in which the software for this device is installed as the output destination drive.
- When you press [Area Select] to select the range, the button display changes to [Area Selecting]. If range is selected or cancelled, the button display will return to [Area Select].
- Pressing [Area Select] to select the start point of the selected range displays that examination in a color that indicates a temporary selection. Selecting the end point of the selected range displays all examinations of the selected range in the normal color.
- When start point is selected in the selected range, performing the following operations cancels the selected status of the range.
  - [Select All] is pressed.
  - [Remove All] is pressed.
  - [Area Selecting] is pressed.
  - Refined search is on.
  - [Clear] is pressed.
  - The display is transitioned to another screen from the media output screen.
- The file name of the image to be output to media is automatically added in the following format (folder structure):
  - Folder name (specified)
    └Folder (PatientID)
      └Folder (ExposureDate)
        └File (PatientID_Name_Exam.Tag_
        ExposureTime(seconds)_ImageNumber.jpg)
- If the same examination contains both serial exposure images and non-serial exposure images, only the non-serial exposure images will be output to media.

7.14.3 Operation of the PDI viewer

This section describes how to start and operate the PDI viewer.

HINT

- The device to start the PDI viewer must meet the following specifications.

  OS: Windows 2000, Windows XP, Windows Vista,
  Windows 7 or Windows 10
  CPU: Pentium III processor or higher
  Memory: 256 MB RAM or more
  Graphic: 32 bit graphic board or higher
  Resolution: 1024 × 768 pixels or finer
  CD-ROM drive: (24 ×) or faster

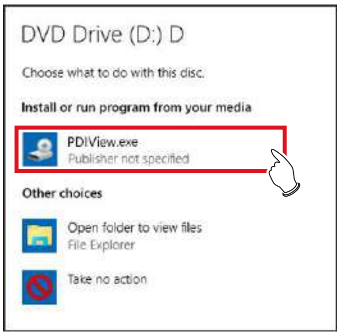
● Start-up of the PDI viewer

1 Set the disc on the disc drive of this device.

- The [INDEX.HTM] screen is displayed.

HINT

- If it does not start automatically, double-click the [INDEX.HTM] file icon in the disc drive window.
- If you start up the PDI viewer from the CD on Windows 7 and Windows 10, the dialog screen of [AutoPlay] will be displayed. Press [Run PDIView.exe] to start up the PDI viewer.



DVD Drive (D:) D

Choose what to do with this disc.

Install or run program from your media

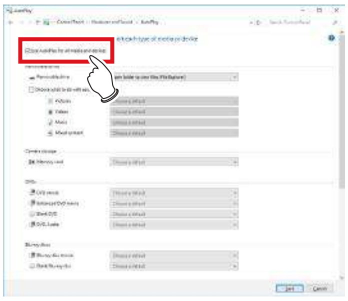
PDIView.exe
Publisher not specified

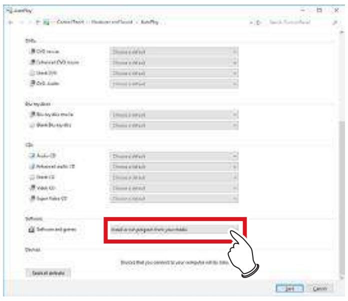
Other choices

Open folder to view files
File Explorer

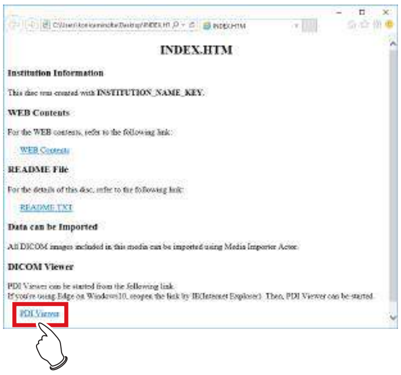
Take no action

- Following settings is required for the automatic start of the PDI viewer.
  - Check [Use AutoPlay for all media and devices] on the [Hardware and Sound/AutoPlay] screen, then select [Install or run program from your media] on the [Software and games] screen on the control panel of Windows.





2 Press [PDI Viewer].



INDEX.HTM

Institution Information

This disc was created with INSTITUTION_NAME_KEY.

WEB Contents

For the WEB contents, refer to the following link:

WEB Contents

README File

For the details of this disc, refer to the following link:

README.TXT

Data can be Imported

All DICOM images included in this media can be imported using Media Importer Actor.

DICOM Viewer

PDI Viewer can be started from the following link.
If you're using Edge on Windows10, reopen the link by IE(Internet Explorer). Then, PDI Viewer can be started.

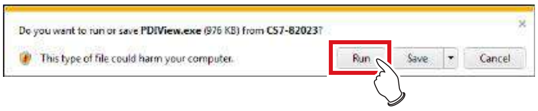
PDI Viewer

- A security warning message is displayed.

HINT

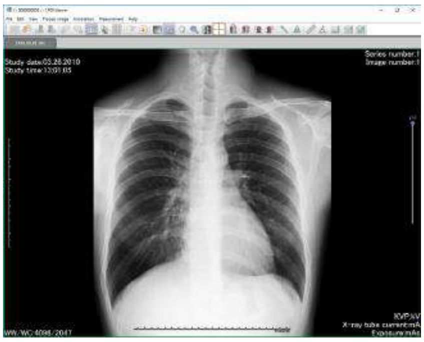
- For Windows 10, cannot start the PDI viewer from the [INDEX.HTM] screen of the Microsoft Edge. Display the [INDEX.HTM] screen on the Internet Explorer.

3 Press [Run].



Do you want to run or save **PDIView.exe** (976 KB) from **CS7-82023**?

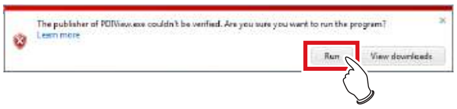
This type of file could harm your computer.



- The PDI viewer is displayed.

HINT

- The following message may be displayed when you press [Run]. Then press [Run].



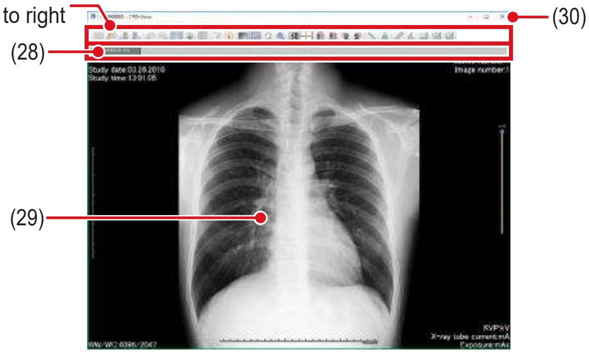
The publisher of PDIView.exe couldn't be verified. Are you sure you want to run the program?

Learn more

● Operation of the PDI viewer

The following buttons are displayed on the PDI viewer.

(1) to (27) in order from left to right



Number	Name	Functions
(1)	Patient list	Displays the patient list dialog.
(2)	Import file	Reads the data stored in the drive.
(3)	Go to next patient	Switches the screen to that of the next patent.
(4)	Go to prev patient	Switches the screen to that of the previous patent.
(5)	Go to prev series	Goes to the previous DICOM series screen.
(6)	Go to next series	Goes to the next DICOM series screen.
(7)	Switch mode (Tile)	Changes the mode to the tile display mode.
(8)	Switch mode (Stack)	Changes the mode to the stack display mode.
(9)	Change number of frames	Changes the number of frames of the image.
(10)	Tag information	Displays the DICOM tag information.
(11)	Gradation process	Apply gradation processing to the image.
(12)	Zoom	Zooms in/out on the image.
(13)	Pan	Move the image.
(14)	Magnifier	Enlarges the area pointed with the mouse pointer.
(15)	Contrast invert	Reverses black and white on the image.
(16)	Overlay	Displays or hides the overlay. **HINT** • Not used in this device.
(17)	Horizontal flip	Reverses the image in the horizontal direction.
(18)	Vertical flip	Reverses the image in the vertical direction.
(19)	Right turn	Turns the image to the right.
(20)	Left turn	Turns the image to the left.
(21)	Straight line	Draws a straight line.
(22)	Text	Press this to input text.
(23)	Distance	Measures the distance.
(24)	Angle	Measures the angle.
(25)	Rectangle area	Measures the area of a rectangle.
(26)	Ellipse area	Measures the area of an ellipse.
(27)	Polygon area	Measures the area of a polygon.
(28)	Image change tab	Changes the image.
(29)	Image display area	Displays the image.
(30)	[×]	Closes the PDI viewer.

IMPORTANT

- All measurement functions display a rough indication, and may differ from actual measurements (accuracy and performance are not guaranteed).

7.15 Multi-study

This section describes the screen structure of the exposure screen and procedure of examination when performing examination with the multi-study.
In multi-study, individual order items displayed in the Study List are referred to as examinations.
In addition, a single exposure taken for each examination unit displayed in the Exam. List is referred to as an exposure.

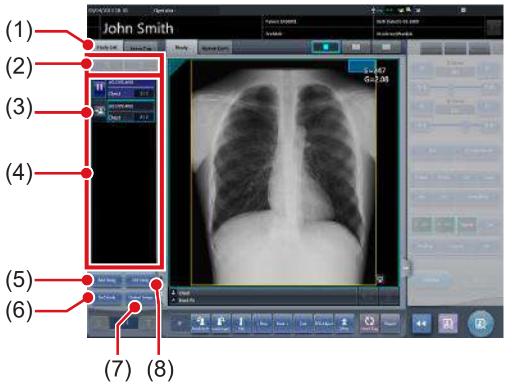
IMPORTANT

- Multi-study and real-time back up cannot be used simultaneously.
- If the total number of exposures surpasses 512, further examinations cannot be acquired. If the Get Study button is pressed and the total number of exposures surpasses 512, an error message is displayed.

7.15.1 Screen structure

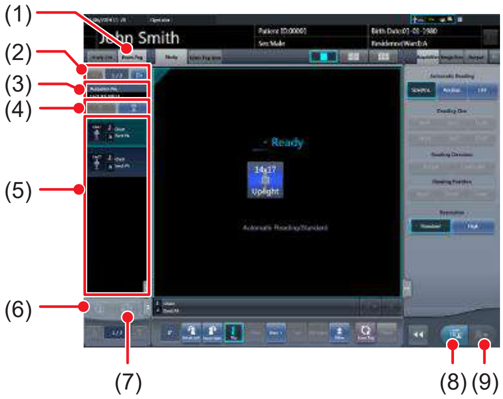
Structure of the screen when performing examination with the multi-study is as follows.

Exposure screen ([Study List] tab screen)



Number	Name	Functions
(1)	Study List tab	Displays the Study List tab screen.
(2)	Study switching button	Pressing [⤒] displays the first page of the examination item list, and [⤓] displays the last page. In this way, you can switch the target examination to be exposed.
(3)	Status Icon	▣ : Unexposed ▣ : Exposed (Saved) ▣ : Outputting ▣ : Output finished ⏸ : Paused ▣ : In progress ▣ : Finished (Exposed) 🗑 : Delete
(4)	Examination item list	Examination item list is displayed.
(5)	Add Study button	Adds an examination item to the examination item list.
(6)	Get Study button	Carries out MWM using the patient information on the exposure screen as the search key. If an examination that is not included in the displayed examination item list is found, that examination is additionally displayed.
(7)	Output Image button	Outputs images that have not been output in the examination items selected using the button. This outputs on an examination item basis.
(8)	Delete Study button	Deletes the examination selected with the button from the examination item list.

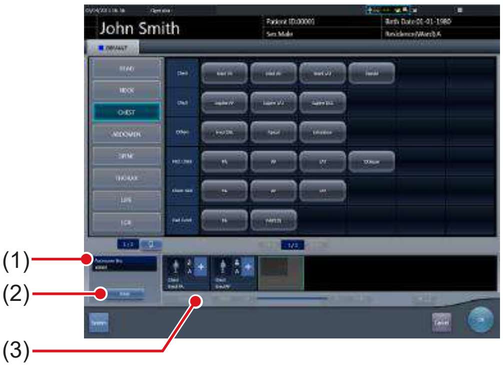
Exposure screen ([Exam.Tag] tab screen)



Number	Name	Functions
(1)	Exam. Tag tab	Displays the Exam. Tag tab screen.
(2)	Study switching button	Press [◁] to display the previous study, and press [▷] to display the next study.
(3)	Accession No.	The accession number of the current study is displayed.
(4)	Exposure switching button	Pressing [⤒] displays the first page of the exposure item list, and [⤓] displays the last page. In this way, you can switch the target examination to be exposed.
(5)	Exposure item list	Exposure item list is displayed.
(6)	Image copy button	Copies the exposed image (examination).
(7)	Image replace button	Replaces the exposed image (examination) with another.

Number	Name	Functions
(8)	Exposed image button	Saves the exposed image and operating state.
(9)	Output button	Outputs the exposed images.

Body part selection screen



Number	Name	Functions
(1)	Accession No.	Accession number of the displayed examination is displayed.
(2)	Issue button	Issues the accession number.
(3)	Delete button	Deletes exposures individually after selecting the exposure to be deleted.

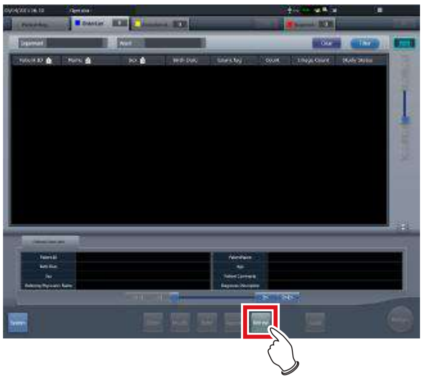
IMPORTANT

- Aside from the screen structures explained here, each screen is the same as usual. However, [▣] cannot be pressed on the exposure screen when performing an examination with multi-study.

7.15.2 Multi-study examination from the list screen

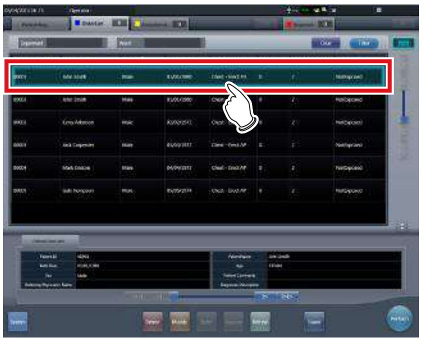
The following describes the procedure for implementing the multi-study based examination from the list screen.

1 Press [Refresh] on the list screen.



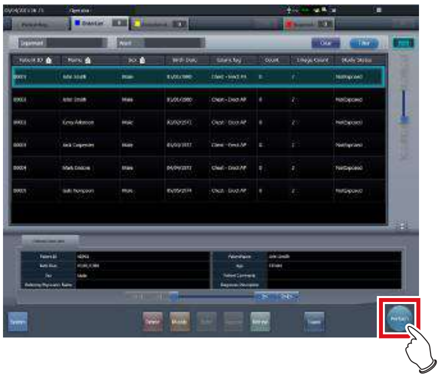
- It acquires the information from the higher system to update the list.

2 Select the examination item.



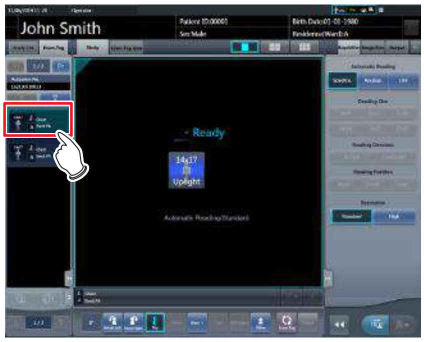
- The selected examination is highlighted.

3 Press [Perform].



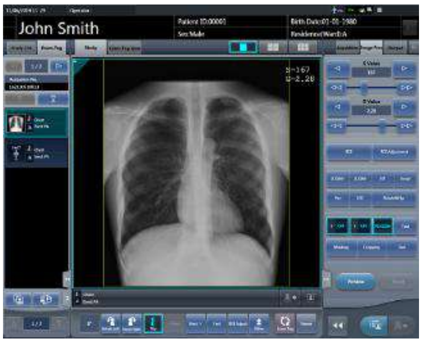
- Exposure screen ([Exam.Tag] tab screen) is displayed.
- A list of exposures relevant to the selected examination is displayed.

4 Select the first exposure in the shot list.



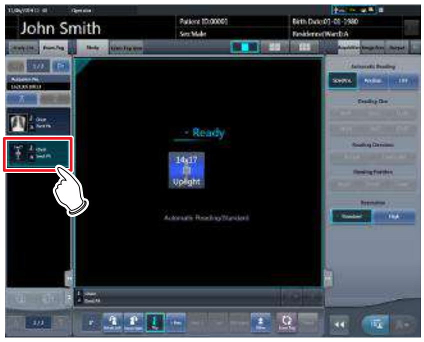
5 Perform exposure.

- You can use the exposure functions and others in the same way as you do in the ordinary examinations. For more information, refer to "5.2 Exposure procedure with DR Detector (Basic connection)" and after.



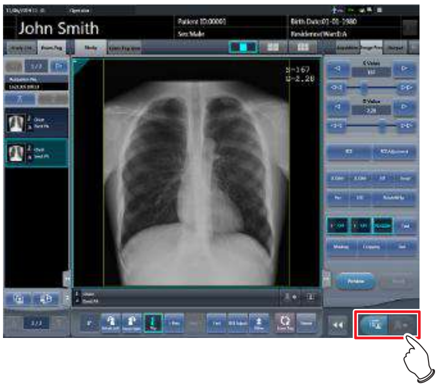
6 Select the second exposure to be exposed.

- When there are two or more exposure items, repeat the same procedure to proceed with the second and later exposures.



7 After performing the exposure, press [ ] or [ ].

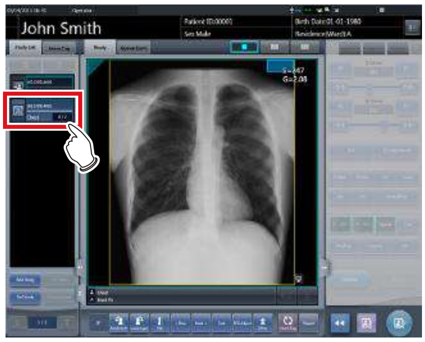
- Press [ ] to save the exposed image. Press [ ] to output the exposed image.



- After the image is saved or output, the exposure screen ([Study List] tab screen) is displayed.

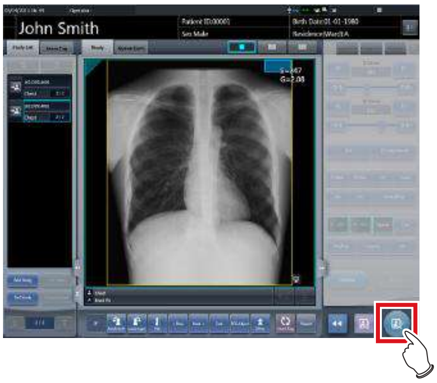
8 Press the second examination.

- When there are two or more exposure items, press the intended examination and proceed with the exposure using the same procedure.
- The displayed studies can be switched by pressing [◁]/[▷] in the Study switching button.



- Exposure screen ([Exam.Tag] tab screen) is displayed.
- Continue with your exposure using the procedures described in Steps 4 to 7.

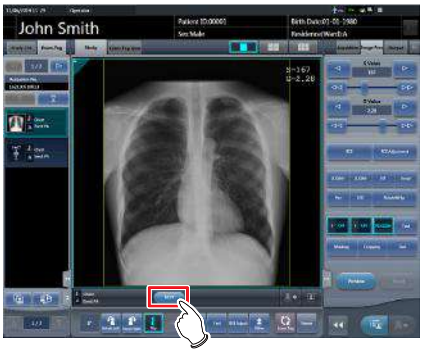
9 When exposure of every examination is completed, press [ ].



- The display returns to the initial screen.

HINT

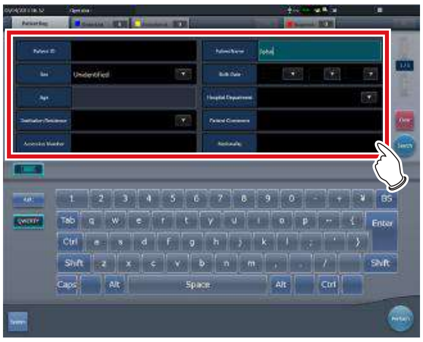
- Exposures can be added or deleted even after moved to the body part selection screen.
- In case of the automatic 1×1 display screen, next exposure can be displayed by pressing [NEXT] displayed in the Exam. Tags display area after completing the exposure of 1 examination.



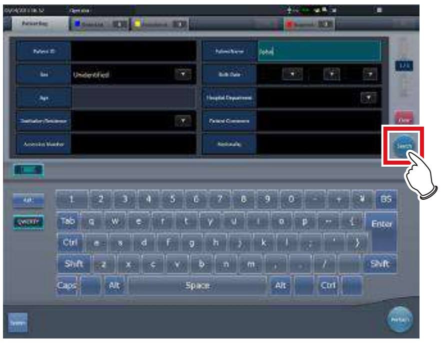
7.15.3 Multi-study examination from patient registration screen

When conducting examination by multi-study from the patient registration screen, use the following procedure.

1 Enter the search conditions from the Patient registration screen.

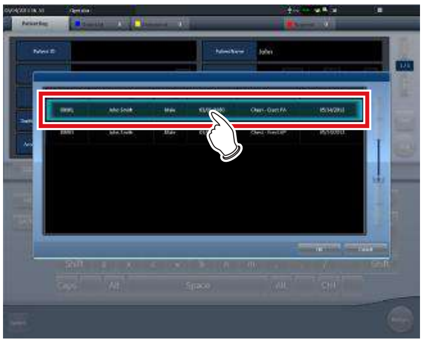


2 Press [Search].



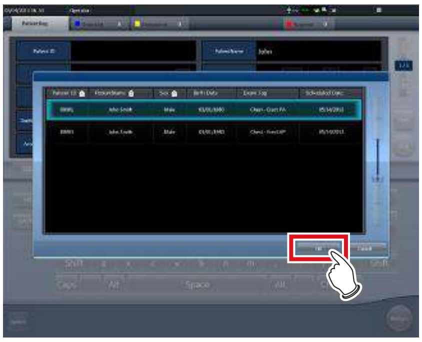
- A list of examinations corresponding to the entered conditions is displayed.

3 Select a single target examination to be exposed.



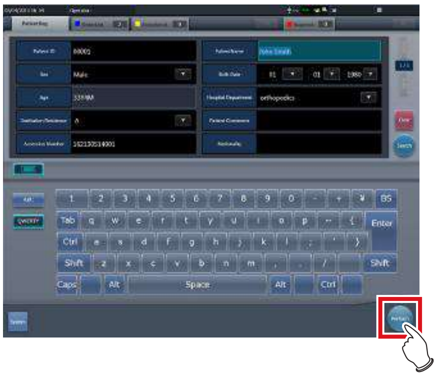
4 Press [OK].

- Press [Cancel] to return to the previous screen.



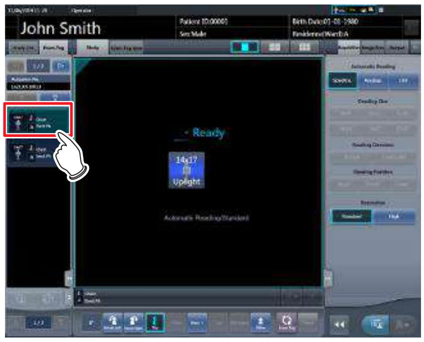
- The Patient registration screen is displayed.

5 Press [Perform].



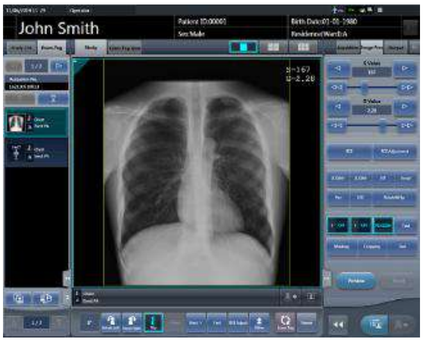
- Exposure screen ([Exam.Tag] tab screen) is displayed.
- A list of every exposure of the selected patient is displayed in the exposure list.

6 Select the first exposure in the shot list.



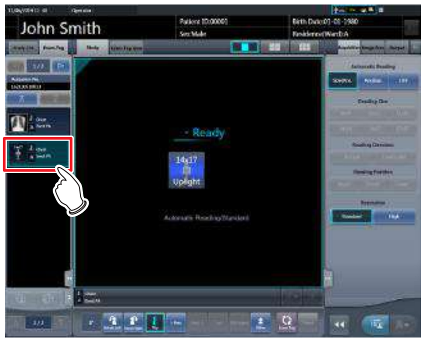
7 Perform exposure.

- Exposure and other functions can be operated same as normal examination. For detail, refer to "5.2 Exposure procedure with DR Detector (Basic connection)" and later.



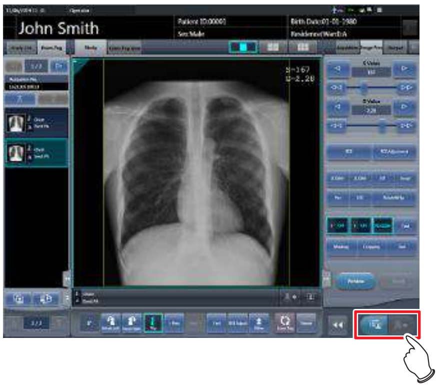
8 Select the second exposure to expose the examination.

- When there are two or more exposure items, repeat the same procedure to proceed with the second and later exposures.



9 After carrying out the exposure, press [ ] or [ ].

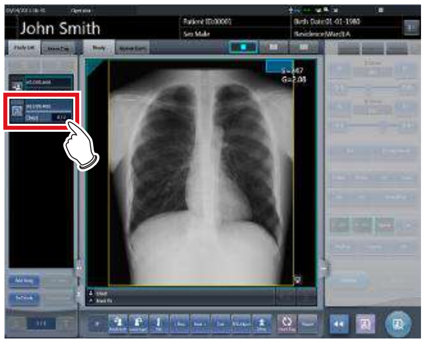
- Press [ ] to save the exposed image. Press [ ] to output the exposed image.



- After the image is saved or output, the exposure screen ([Study List] tab screen) is displayed.

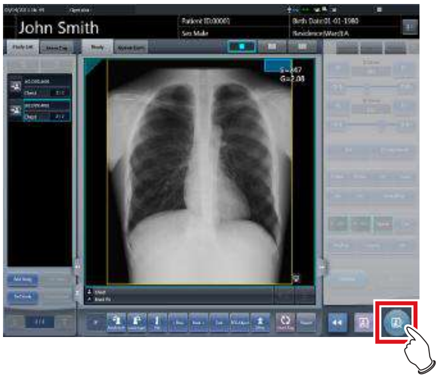
10 **Press the second examination.**

- When there are two or more exposure items, press the intended examination and proceed with the exposure using the same procedure.
- The displayed studies can be switched by pressing [◁]/[▷] in the Study switching button.



- Exposure screen ([Exam.Tag] tab screen) is displayed.
- Continue with your exposure using the procedures described in Steps 5 to 8.

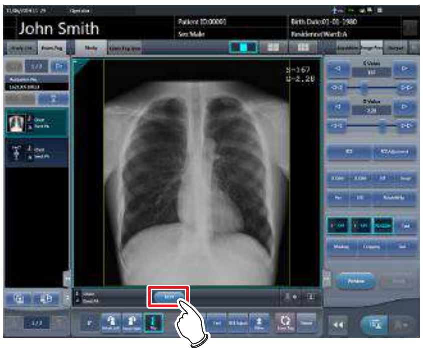
11 **Once all the examinations are finished, press [ ].**



- The display returns to the initial screen.

HINT

- Exposures can be added or deleted even after switching to the body part selection screen.
- In case of the automatic 1×1 display screen, next exposure can be displayed by pressing [NEXT] displayed in the Exam. Tags display area after completing the exposure of 1 examination.



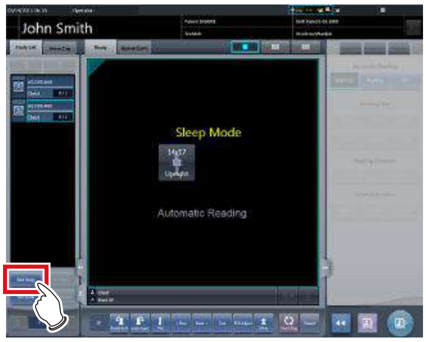
7.15.4 Additional exposure in the multi-study

The following describes how to add exposures to the examination item.

IMPORTANT

- The maximum number of exposures that can be acquired, including examinations which have already been started with exposed images, is 512. If the total number of exposures surpasses 512, an error message is displayed.

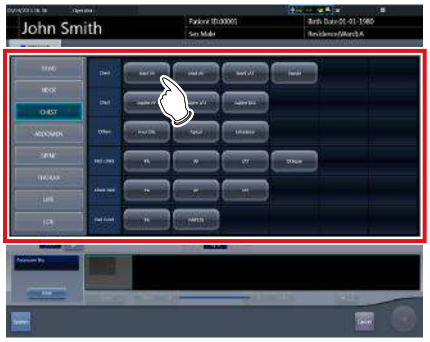
1 **Press [Add Study] on the exposure screen ([Study List] tab screen).**



- The Body part selection screen is displayed.

2 **Select the body part targeted for exposure.**

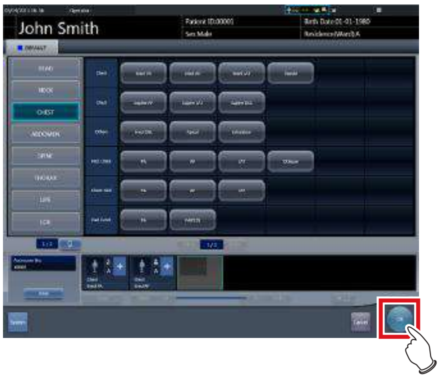
- For the body part selection procedure, refer to "5.2.4 Manual body part selection".

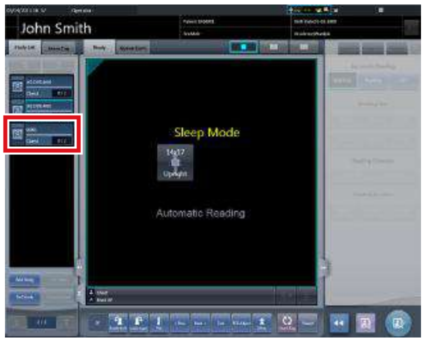


HINT

- You can issue the accession number by pressing [Issue].

3 Press [OK].





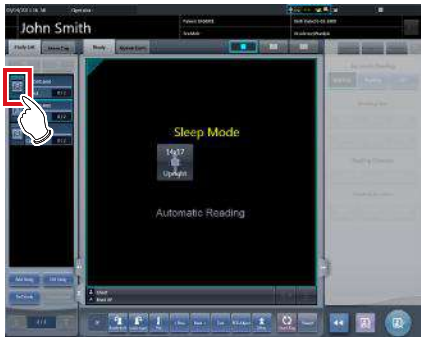
- Added exposures are displayed in the exposure item list on the exposure screen ([Study List] tab screen).

7.15.5 Deletion of exposures in the multi-study

The following describes how to delete exposures in the exam. item.

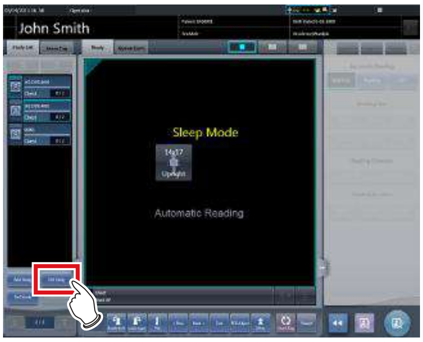
1 Select the exposure items to be deleted from the exposure screen ([Study List] tab screen).

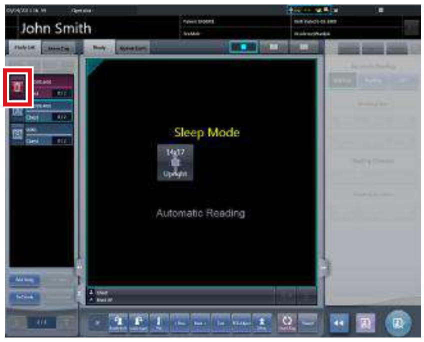
- For the selection, press the icon on the left side of the exposure item.



- After the selection, the button portion on the left end is focused on.

2 Press [Del Study].

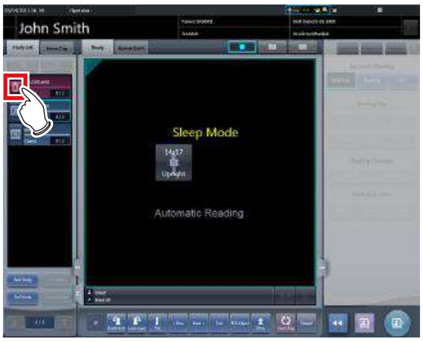




- The icon turns to [🗑] indicating the exposure item is in the deleted state.

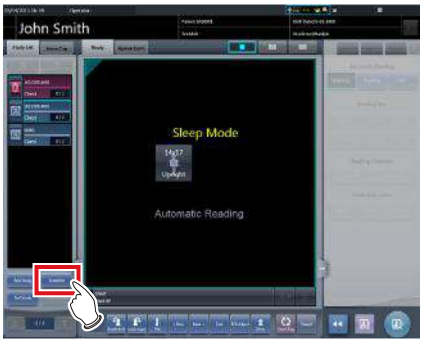
HINT

- When canceling the deleted state of the exposure item, select the currently deleted exposure item again.
- For the selection, press [🗑] icon to the left side of the exposure item.



– [Del Study] button changes to [Undelete] button.

– Press [Undelete].



– The exposure item is restored from the deleted state.

7.15.6 Image output per examination in the multi-study

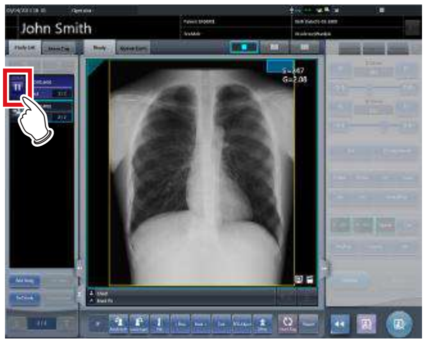
The following describes how to output every image that has been exposed but not yet output on an examination item basis.

HINT

- If you want to output exposed images on a piece-by-piece basis, press [➡] on [Exam.Tag] tab screen.

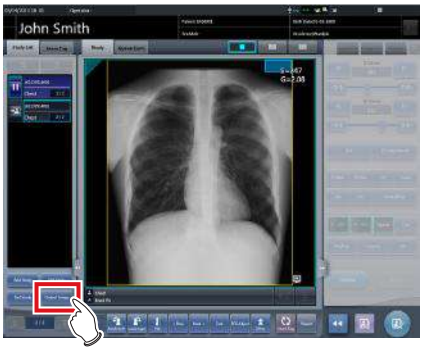
1 Select the exposure item to be output from the exposure screen ([Study List] tab screen).

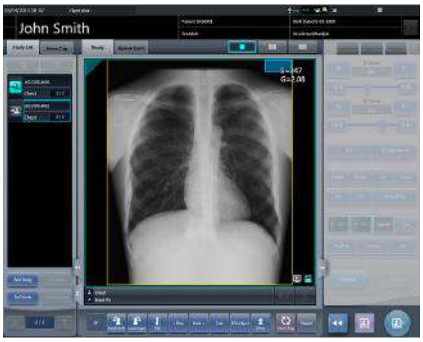
- For the selection, press the icon on the left side of the exposure item.

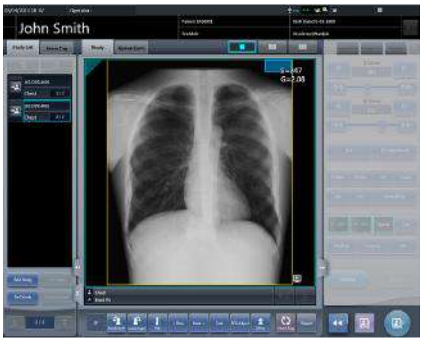


- After the selection, the button portion on the left end is focused on.

2 Press [Output Image].







- Every image in the selected examination item is output.

7.16 Examination sharing

Multiple these devices can share examination information, and perform exposure, check/adjustment of images. Examination information can be sent or received from one unit of this device to another unit of this device.

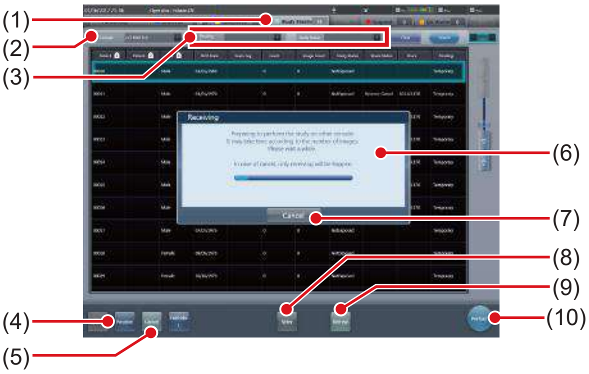
IMPORTANT

- Examination can be shared among up to nine units of this device for one system.

7.16.1 Screen structure

● List screen (reception)

Displays examination information of another unit of this device.



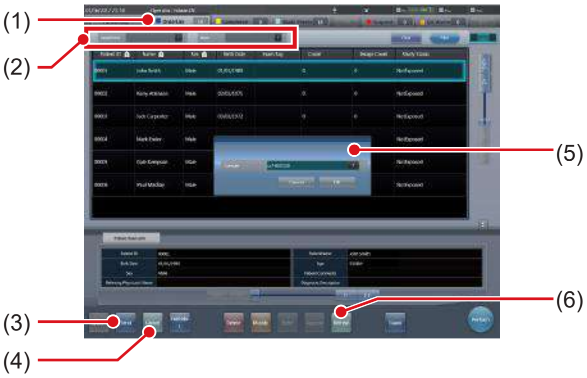
Number	Name	Functions
(1)	Study Sharing tab	Displays examinations of another unit of this device. Information is updated automatically at certain intervals. In addition, this tab does not show examination details.
(2)	Specified terminal	Select another unit of this device whose shared examinations are to be displayed.
(3)	Filter conditions	Specify conditions to display filtered examination list. Filtering can be performed with [Pending Reason], [Study Status], etc.
(4)	Receive button	Receives the selected examination. This button is displayed only when operating in examination sharing.
(5)	Cancel button	Cancels the reception process of the selected examination. This button is displayed only when operating in examination sharing.
(6)	Examination start preparation confirmation screen	Displayed when receiving examination information from another unit of this device. This screen disappears when reception is complete.
(7)	Cancel button	Press this button to prevent automatic start of examination after examination information is received. It does not cancel the reception process itself.
(8)	Refer button	References an examination. This button is available only when a completed examination is selected.
(9)	Refresh button	Updates the examination list.
(10)	Perform button	Starts an examination received from another unit of this device. This button is not available when a completed examination is selected.

HINT

- Functions of tabs and buttons not described here are the same as those of the normal list screen.
- In the [Study Sharing] tab, [Delete], [Modify], [Append], and [Guard] cannot be pressed.
- On the [Study Sharing] tab, the contents of the list are not updated by clearing the entries of Specified terminal and Filter condition by pressing the [Clear] button. The contents of the list are updated by executing search by pressing the [Search] button.

● List screen (transmission)

Displays the examination information of this device.



Number	Name	Functions
(1)	OrderList tab	This tab displays the examination information registered in this device.

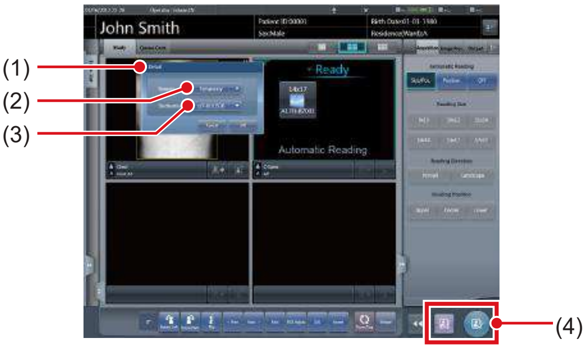
Number	Name	Functions
(2)	Filter conditions	Specify conditions to display filtered examination list. Filtering can be performed with "Pending Reason", "Study Date", etc.
(3)	Send button	Transmits a selected examination to another unit of this device. This button is displayed only when operating in examination sharing.
(4)	Cancel button	Cancels the transmission process of the selected examination. This button is displayed only when operating in examination sharing.
(5)	Transmission destination confirmation screen	This is displayed when [Send] is pressed. Select another unit of this device as the transmission destination. Pressing [OK] on this confirmation screen transmits examination information to the selected another unit of this device. Pressing [Cancel] cancels the transmission process and closes the confirmation screen.
(6)	Refresh button	Updates the examination list.

HINT

- Functions of tabs and buttons not described here are the same as those of the normal list screen.
- An error message is displayed if the buttons below are pressed while an examination reserved for transmission or transmitted examination is selected.
  - [Delete]
  - [Modify]
  - [Refer]
  - [Append]
  - [Guard]
  - [Perform]
- The name of the [OrderList] tab is set at installation.
- A tab to automatically filter by specifying a pending reason can be added. Whether to display this tab, name of the tab, and pending reason to be displayed are set at installation.

● Exposure screen (transmission)

When an examination is paused during exposure, the screen below is displayed.



Number	Name	Functions
(1)	Details confirmation screen	This is displayed when [ ] is pressed depending on the setting. This button is displayed only when operating in examination sharing. Pressing [OK] pauses the examination and transitions to the initial screen. Pressing [Cancel] cancels the examination pause.
(2)	Reason	Select the pending reason for the examination.
(3)	Destination	Select another unit of this device as the transmission destination. Selecting [None] does not perform automatic transmission.
(4)	Examination pause/finish button area	Depending on the settings, two of the following buttons will appear. [ ]: Pauses examination for which focus has been achieved. [ ]: Finishes examination and returns to the list screen. [ ]: Finishes exposure and returns to the list screen.

HINT

- The functions of [ ] and [ ] are as follows.

Icon	Examination status	RIS/HOST	Examination sharing
[ ]	Exposure finished	Transmit	No
[ ]	Pause at sharing destination	Does not transmit	Yes

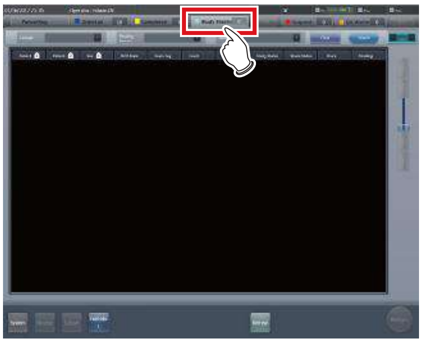
- The [ ] function is set to one of the following depending on the settings at installation.

Icon	Examination status	RIS/HOST	Examination sharing
[ ]	Pause at sharing destination	Does not transmit	Yes
[ ]	Pause	Does not transmit	No

7.16.2 Reception of examination information

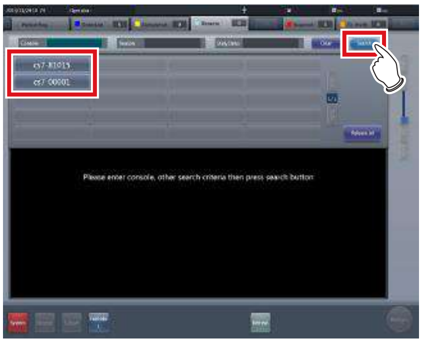
Receive shared examination information following the procedure below.

1 Press the [Study Sharing] tab on the list screen.



2 Select this device whose shared examination information is to be acquired and press [Search].

- If this device is already selected, update the list by pressing [Refresh].



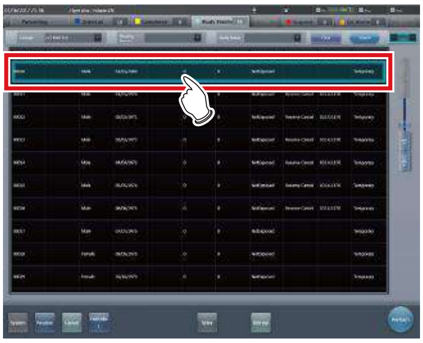
Please enter console, other search criteria then press search button

- Reception of shared examination information is started and displayed in the list.

HINT

- To update examination information to be displayed, press [Refresh].

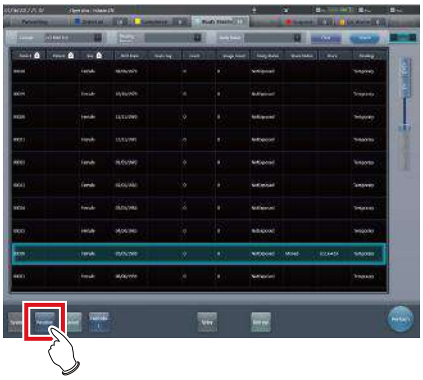
3 Select an examination to receive.



IMPORTANT

- Only one examination can be received per reception operation. Multiple examinations cannot be received at the same time.

4 Press [Receive].



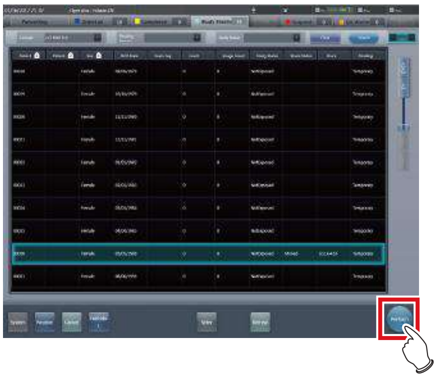
- The examination is received.

IMPORTANT

- When examination information is received, the examination information is deleted from this device (the transfer source).

HINT

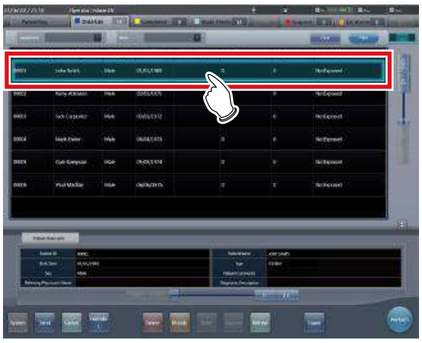
- If the examination to be received is reserved for reception or transmission with another unit of this device, then an error message is displayed and reception is not reserved.
- If the examination to be received is waiting for image retransfer, or image reading has not been completed after job registration, an error message is displayed and reception is not reserved.
- Pressing [Perform] displays the exposure screen as soon as the examination is received.



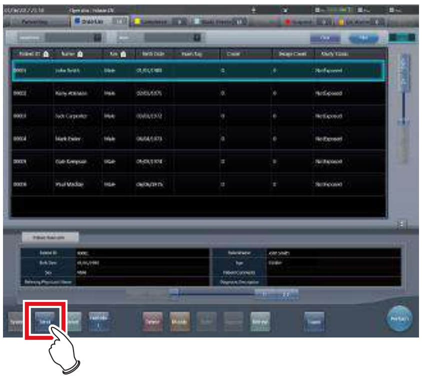
7.16.3 Transmission of examination information

The procedure for transmitting examination information is as follows.

1 Select an examination to send.

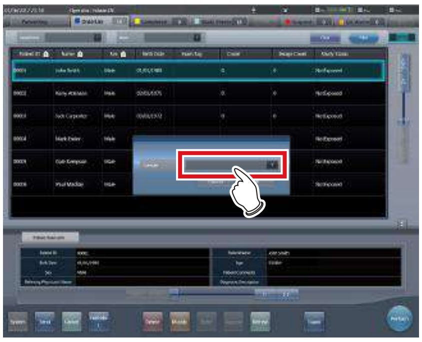


2 Press [Send].



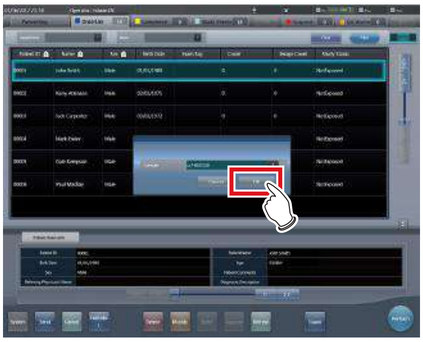
- The transmission destination confirmation screen is displayed.

3 Select this device (the transmission destination).



4 Press [OK].

- Pressing [Cancel] returns the screen to the previous screen.



- The examination is sent.

IMPORTANT

- The list screen is not updated after examination information is transmitted. Press [Refresh] to display the latest information.
- When examination information is transmitted, the examination information is deleted from this device.

HINT

- If the examination to be transmitted is reserved for reception from another unit of this device, or reserved for transmission to another unit of this device, then an error message is displayed and transmission is not reserved.
- If the examination to be transmitted is waiting for image retransfer, or image reading has not been completed after job registration, an error message is displayed and transmission is not reserved.

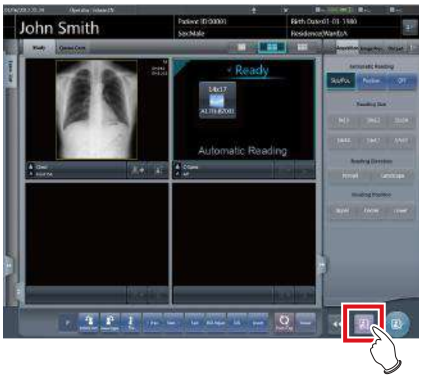
7.16.4 Transmission of examination information during exposure

The procedure for transmitting examination information by pausing an examination during exposure is as follows.

IMPORTANT

- The examination information cannot be transmitted if the examination to be paused includes image re-transmission standby or examination whose barcode has already been read.

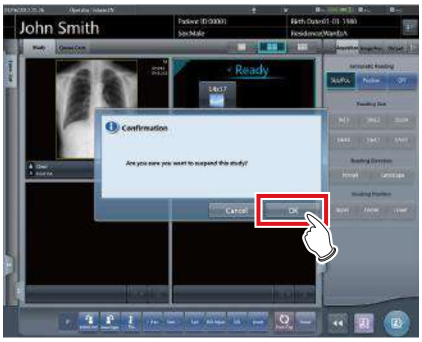
1 Press [ ].



- A confirmation screen is displayed.

2 Press [OK].

- Press [Cancel] to return to the previous screen.



Confirmation

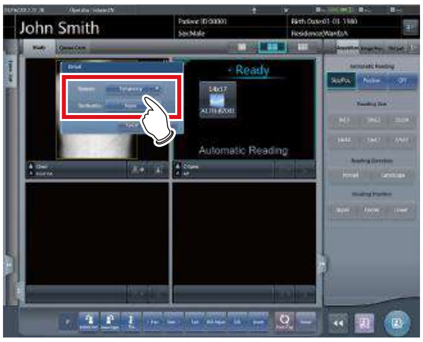
Are you sure you want to suspend this study?

- The details confirmation screen is displayed.

HINT

- The details confirmation screen may not be displayed depending on the setting. In this case, pressing [OK] transmits the data with the preset pending reason to the preset destination.

3 Select [Reason] and [Destination].

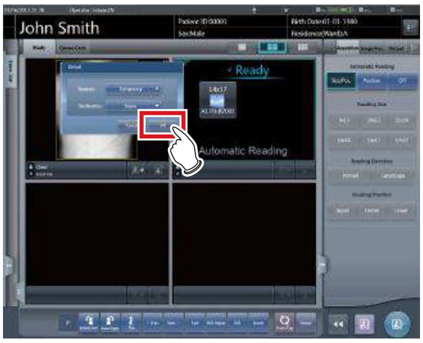


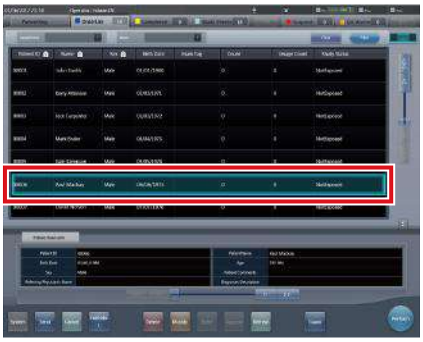
IMPORTANT

- Select [None] for transmission destination if you do not want to transmit the examination.

4 Press [OK].

- Press [Cancel] to return to the previous screen.





- Examination is reserved for the specified destination, and the initial screen is displayed.

7.17 Merging and separation of studies

This section describes the combination and separation of studies.

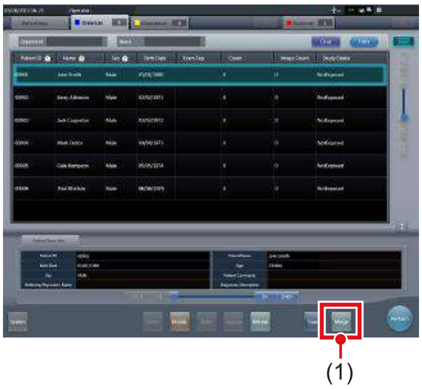
IMPORTANT

- The combination and separation of studies may cause patient, study, series, and image information to be updated.
- The combination and separation of studies cannot be performed during HOST output, RIS-OUT output, study sharing, real-time backup, or CR image reading.

7.17.1 Screen structure

The screen structure for combining and separating studies is as follows.

● List screen

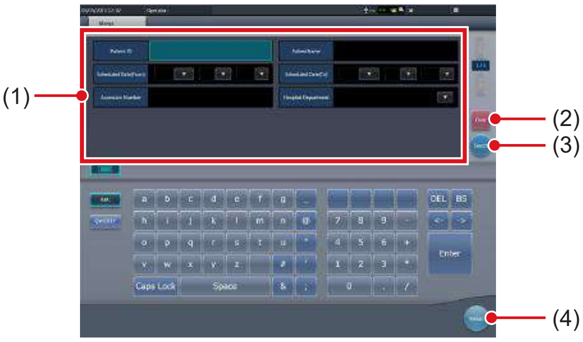


Number	Name	Functions
(1)	Merge button	Combines the selected study with another study or separates it from a study.

HINT

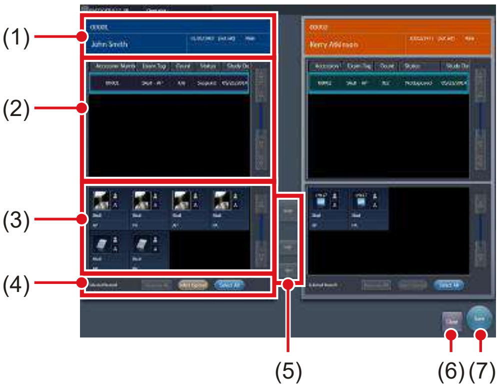
- Functions of the buttons not described here are the same as those that are available on the normal list screen.

● Study Search screen



Number	Name	Functions
(1)	Search conditions input columns	These columns are used to display and enter the search conditions.
(2)	Clear button	Clears the entered search conditions.
(3)	Search button	Searches for the study based on the entered search conditions.
(4)	Return button	Press this button before entering any search condition to stop the combination operation. The display will then return to the list screen.

● Image Move Screen



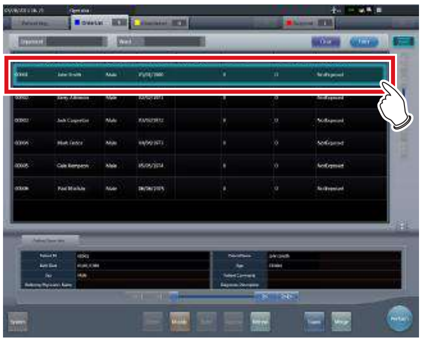
Number	Name	Functions
(1)	Patient information area	The patient information is displayed.
(2)	Examination list area	Examination information is displayed.
(3)	Image list area	Images are displayed.

Number	Name	Functions
(4)	Image selection button	Selects images. [Remove All]: Cancels the selection. [Select Exposed]: Selects all the exposed images. [Select All]: Selects all images.
(5)	Image Move button	Moves the selected images. ←: Moves the images from the image list on the right to the image list on the left. →: Moves the images from the image list on the left to the one on the right. ↔: Swap images between the left and right image lists.
(6)	Close button	Cancels operation of moving images, and returns to the list screen.
(7)	Save button	Saves the result of moving images.

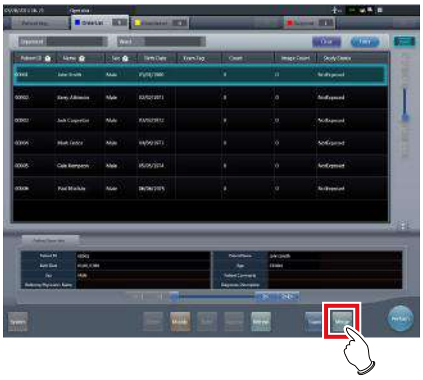
7.17.2 Merging of studies

The following describes the procedure for merging (re-assigning) studies from the list screen.

1 **Select a study with a "Suspended" or "Exposed" status that you want to merge on the list screen.**

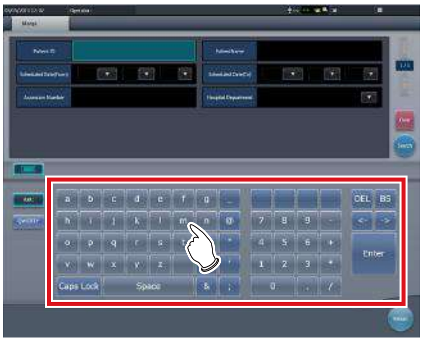


2 **Press [Merge].**



- The Study Search screen is displayed.

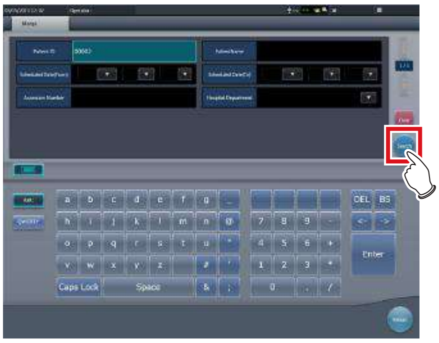
3 **Enter the patient name, ID, and other items of the destination study.**



HINT

- When an accession number is used for the search, you can change the status of every study related to the patient ID to the unexposed study. When using this function, contact Konica Minolta technical representatives.

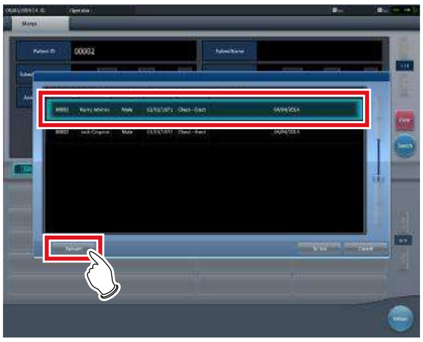
4 Press [Search].



- A confirmation screen is displayed.

HINT

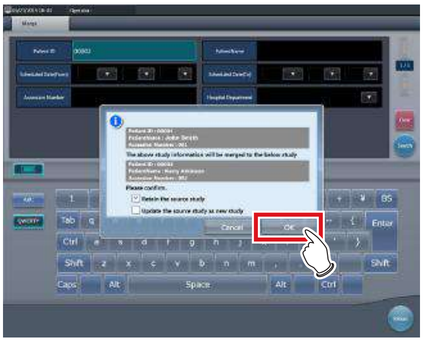
- When there are multiple sets of study results, the selection screen that is displayed when multiple relevant studies have been found is displayed. If you select a destination to combine studies in and press [Execute], the confirmation screen shown in Step 5 is displayed.



- The suspended or completed studies may be displayed depending on settings. To merge (reassign) studies, select unexposed studies.
- If you press [To List] on the selection screen that is displayed when multiple relevant studies have been found, you return to the list screen. If the study to be merged cannot be found after searching with the correct search terms, return to the list screen and redo the search.
- Press [Cancel] to return to the search screen. When there is a mistake in the search terms, return to the search screen, enter the correct search terms, and redo the search.

5 Press [OK].

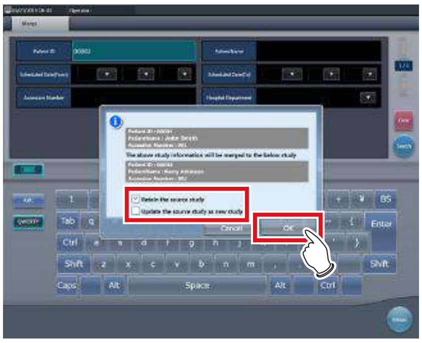
- Press [Cancel] to return to the search screen.



- The studies are combined and the display returns to the list screen.

IMPORTANT

- The study to be merged is suspended and the merging examination is deleted.
- Depending on the setting, you can leave the merging study in an unexposed state.
  When leaving the merging study, check the [Retain the source study] check box in the merge confirmation dialog window and then press [OK].
- When using the [Retain the source study] option, if the data has already been sent to an external system or you want to recreate the study as a new examination, check the [Update the source study as new study] checkbox and press [OK].



- If you press [OK] without checking the check box, the merging study is deleted.
- For the setting procedure, contact Konica Minolta technical representatives.

HINT

- Press [Cancel] on the confirmation screen to return to the search screen.
  If the search conditions are not correct when checked, press [Cancel] to return to the search screen and re-enter the correct search terms.

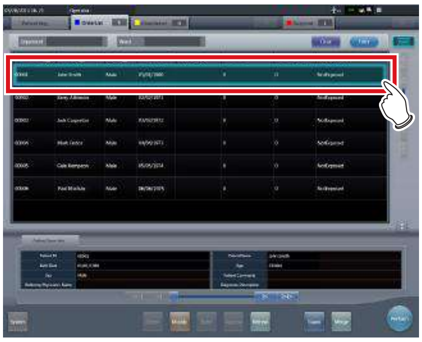
7.17.3 Moving images

The procedure for moving images between studies is as follows.

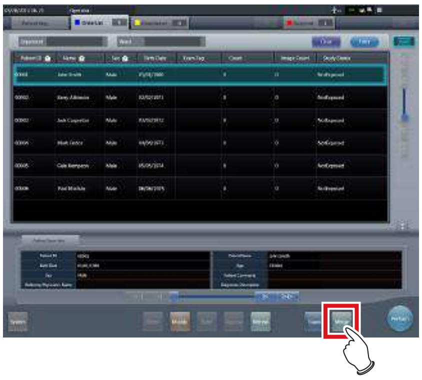
HINT

- To combine studies, select the suspended and exposed studies and combine (reassign) them with unexposed images. However, you can move images regardless of the status of the source or destination study.
  Example: Unexposed study and unexposed study, suspended study and exposed study
- The Image Move button may not be displayed depending on settings, resulting in an image movement failure.

1 On the list screen, select the study from which to move images.

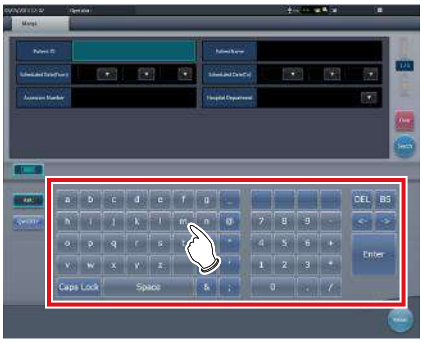


2 Press [Merge].



- The Study Search screen is displayed.

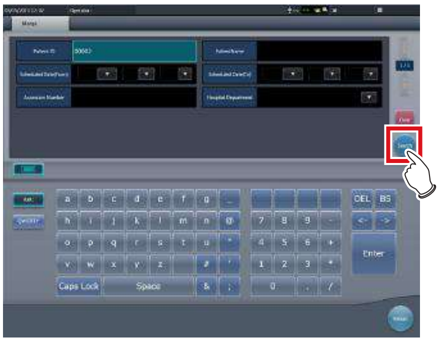
3 Enter the patient name, ID, and other items of the study to move images to.



HINT

- When an accession number is used for the search, you can search for all studies related to the patient IDs of the target study. When using this function, contact Konica Minolta technical representatives.

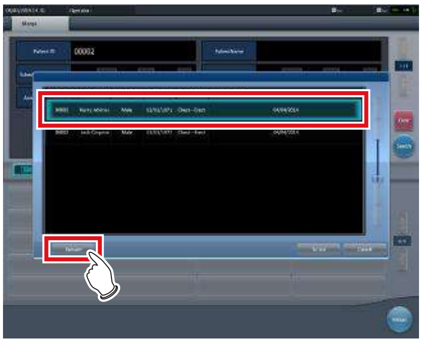
4 Press [Search].



- A confirmation screen is displayed.

HINT

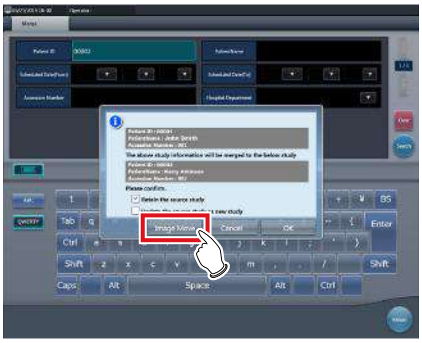
- When there are multiple sets of study results, the selection screen that is displayed when multiple relevant studies have been found is displayed. If you select a destination to move a study to and press [Execute], the confirmation screen shown in Step 5 is displayed.



- If you press [To List] on the selection screen that is displayed when multiple relevant studies have been found, you return to the list screen. If the destination study is not found after searching is carried out using the correct search terms, return to the list screen and redo the search.
- Press [Cancel] to return to the search screen. When there is a mistake in the search terms, return to the search screen, enter the correct search terms, and redo the search.

5 Press [Image Move].

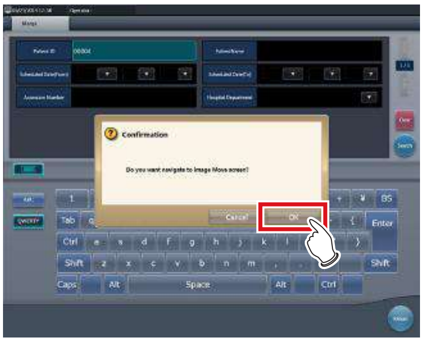
- Press [Cancel] to return to the search screen.



- The Image Move screen is displayed.

HINT

- Note that studies are combined if you press [OK] on the confirmation screen.
- Press [Cancel] on the confirmation screen to return to the search screen. If the search conditions are not correct when checked, press [Cancel] to return to the search screen and reenter the correct search terms.
- Studies other than completed, suspended, or unexposed studies cannot be combined. If an attempt is made to combine such studies, the following dialog box appears. Press [OK] to display the Image Move screen.

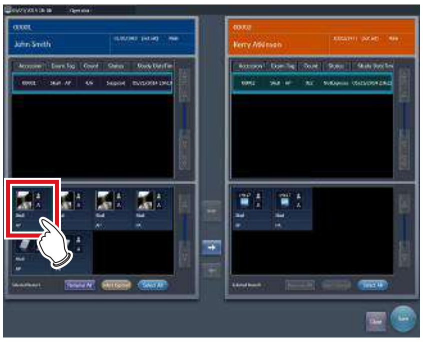


Confirmation

Do you want navigate to Image Move screen?

6 Select images to move.

- Press an image to select it. Press it again to cancel the selection.
- Multiple images can be selected.

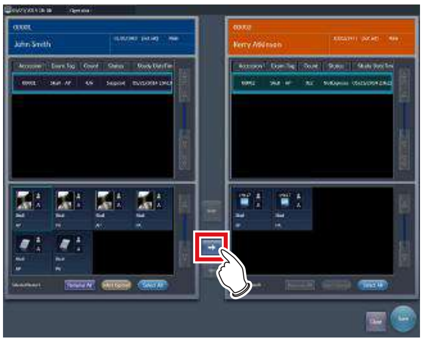


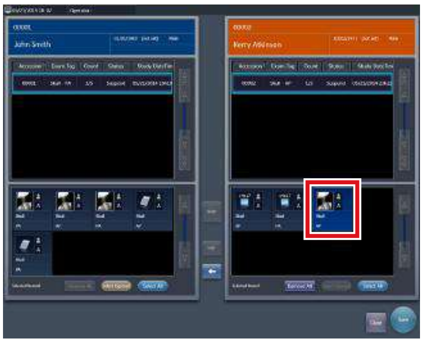
- The image is selected.

HINT

- By selecting an area while holding down the Shift key, you can select multiple images in the area.

7 Press [→].





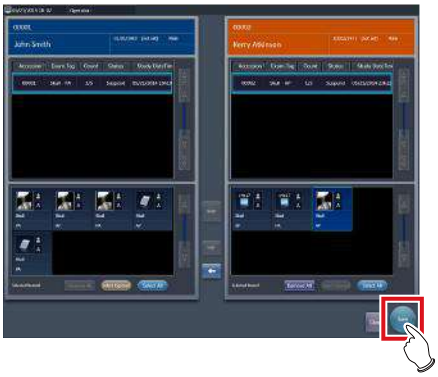
- The selected image is displayed at the end of the image list area to which the images have been moved.
- The background color of the moved image is displayed in blue or orange (color of the patient information display area of the source study).

HINT

- You can also drag and drop an image to move it.
- To move images to the image list area on the left, select images in the image list area on the right and press [←].
- To swap images between the left and right image list areas, select images in each image list area and press [↔].
- The moved image is placed at the end of the image list area of the destination.
- If the moved image is moved to the original study again, it will be placed in the same location it was in before it is moved.
- If an output image is moved, the study status is suspended, and the output completed checkmark is cleared. To output data again, press ➜ button or complete the study that is being performed.
- Up to 10 serial exposure images can be moved.
- The process to move serial exposure images can take some time.

8 Press [Save].

- Press [Close] to return to the list screen.

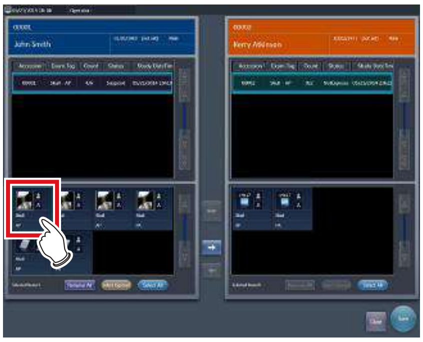


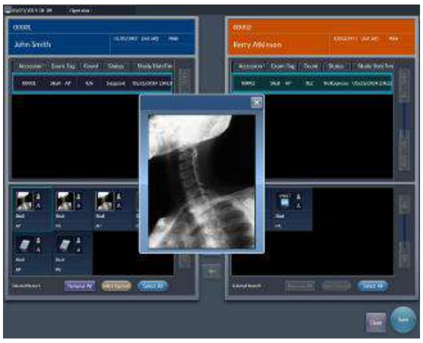
- The Image Move screen is closed.

7.17.4 Checking an image

The procedure for checking an image is as follows.

1 Double-click the image to check its details.



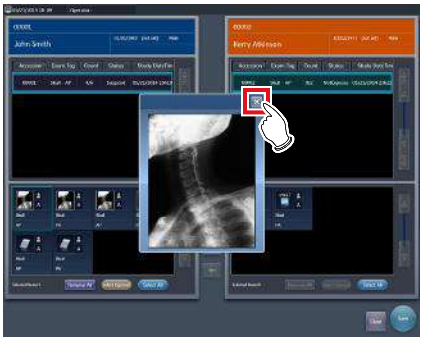


- The image display dialog box appears, and you can check the details of the target image.

HINT

- The image display dialog box shows the same image as the one displayed on the exposure screen.
- If you drag four corners or four sides of the image display dialog box, you can zoom in on or out of the image display dialog box.

2 Press [×].



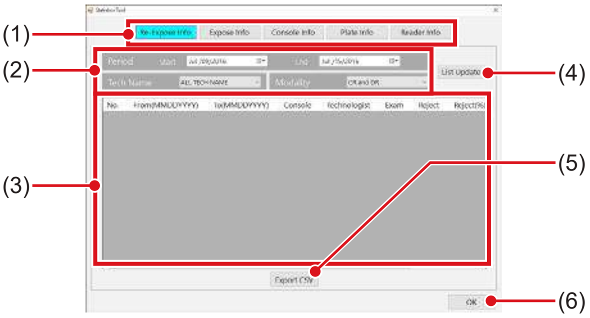
- The image display dialog box closes.

7.18 Statistics/summary tool

With the statistics/summary tool, various information items such as exposure status of this device or this device within the network or operation status of the DR Detector can be referenced or output into a file.

7.18.1 Screen structure

The basic screen structure of the statistics/summary tool is as follows. The type of information to be displayed will vary according to the tool.



Number	Name	Functions
(1)	Information type selection button	Select the type of information to be referenced.
(2)	Period specification, operator name, modality, reader selection	Select the period when information is collected or the operator name, etc. The options (filter conditions) will change according to the type of information to be referenced.
(3)	Information display area	Displays information in a list format. Pressing the item name of displayed information sorts the item name in ascending/descending order.
(4)	List Update button	Refreshes the displayed list.
(5)	Export CSV button	Outputs the displayed list in CSV format. When the list has been sorted, outputs in the sorted state.
(6)	OK button	Exit the statistics/summary tool.

IMPORTANT

- Units of this device that are started and within the network are the target of statistics and summary.Units of this device connected to the network but not started are not the target of statistics and summary.

HINT

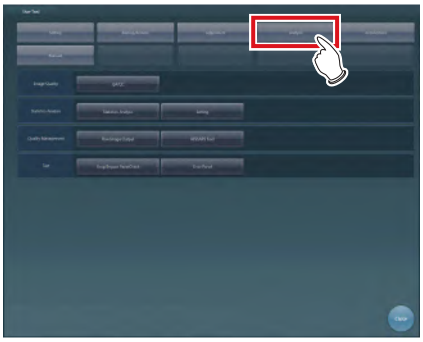
- The items to be displayed in the information display area and order of the items are set at installation.

7.18.2 Acquisition of various information

Acquire various information following the procedure below.

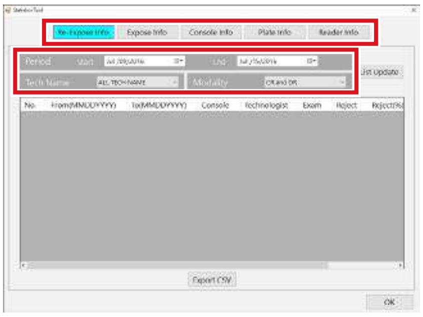
1 Display the user tool screen, and start the statistics/summary tool.

- For how to display the user tool screen and how to start the statistics/summary tool, refer to "CS-7 Operation Manual for User Tool".

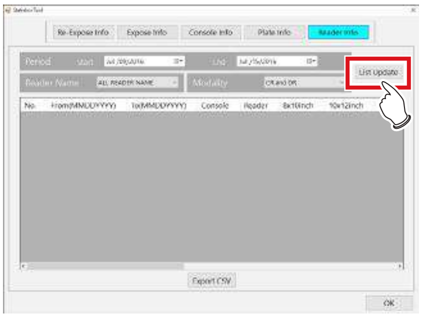


- The statistics/summary tool starts.

2 Press the type selection button for information to be acquired to specify the search range, etc.



3 Press [List Update].

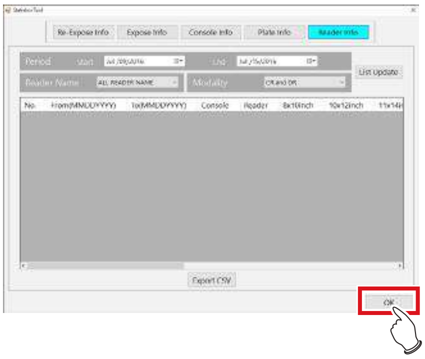


- Selected information is acquired.

HINT

- Pressing [Export CSV] enables you to output information in CSV format.
- On the Edit Columns Tool screen, you can add an apostrophe (') to the beginning of each item so that the CSV file is output.
- On the Edit Columns Tool screen, you can specify to output the re-exposure information and NG reason information separately in two CSV files.

4 Press [OK].



- Return to the user tool screen.

7.18.3 Options of information (filter conditions)

The options (filter conditions) displayed on each information screen are as follows.

Information	Options (filter conditions)	Remarks
Re-Exposure Info	Period, operator, modality	Displays the operator who performed retake or modality.
Exposure Info	Period, operator, modality	Displays exposure information.
Console Info	Period, modality	Displays information of another unit within the network. Only started devices are display targets.
Plate Info	Modality	Displays the usage of the DR Detector or CR cassette.
Reader Info	Period, reader, modality	Displays the reader information.

HINT

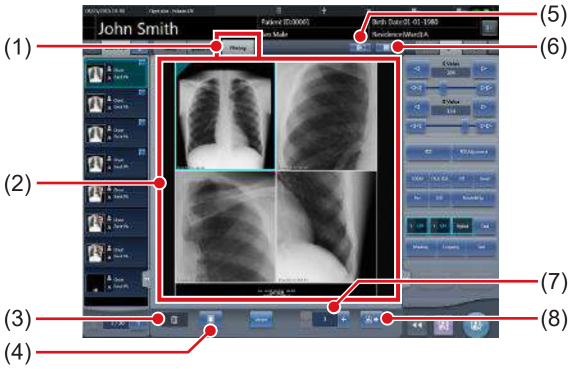
- Pressing the operator name while displaying "Re-Exposure Info" displays the breakdown of rejected images of the operator.
- On the Edit Columns Tool screen, you can set the search conditions for the acquired information so that these conditions apply to the search conditions for other acquired information.

7.19 Print composer

Using the print composer, multiple exposed images can be laid out as you like on a film and output.

7.19.1 Screen structure

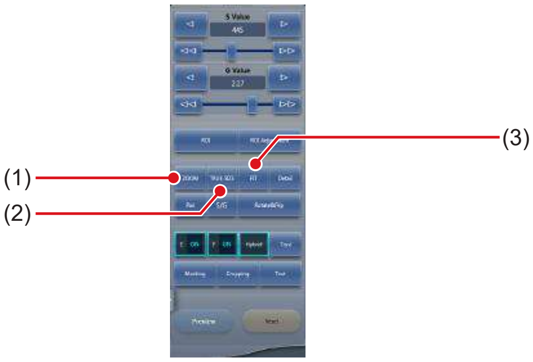
●Exposure screen



Number	Name	Functions
(1)	Filming tab	Selecting this tab can display the film editing area.
(2)	Film editing area	Displays the output layout. The display area of each exposed image is called the image box, and the border between the image boxes is the split line. You can change the output layout by dragging the image box and split line.
(3)	Trash box	To delete an exposed image assigned to the film editing area, drag it to this trash box.
(4)	Film clear button	Deletes all exposed images that have been assigned to the film editing area.
(5)	Automatic acquisition button	Assigns exposed images in the order list to each image box beginning from the top image.
(6)	Fixed format selection button	Displays the fixed format selection area.
(7)	Number of copies	Set the number of copies.
(8)	Output button	Outputs the exposed images after they have been laid out.

IMPORTANT

- If you select [Filming] tab, the operation on the control panel only applies to the image in the selected box.
- If you select the [Filming] tab, the [Zoom-] button on the control panel (image adjustment) is replaced with the [TRUE SIZE] button. In addition, functions of the [Zoom+] button and the [FIT] button are changed.



Number	Name	Functions
(1)	ZOOM button	Zooms in or out the image in the selected image box by dragging the mouse.
(2)	TRUE SIZE button	Displays the image in the selected image box in life size proportions.
(3)	FIT button	Displays the entire image in the selected image box.

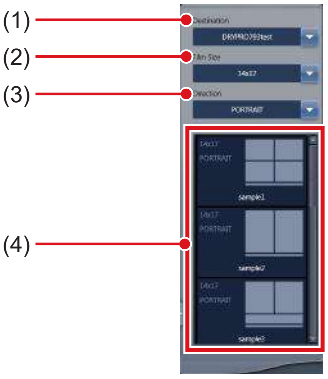
- If you select [Filming] tab, the following buttons on the control panel (overlay) will be disabled.
  - – Stamp Selection button
  - – Stamp Position button
  - – Preview button
- If you select [Filming] tab, the following tabs on the control panel will be disabled.
  - – Acquisition
  - – AeroSync
  - – QUICK
  - – Exp.info
  - – Output
  - – Stitching

HINT

- If you drag an exposed image into the film editing area, the assignment completed checkmark is displayed on the image in the examination display area.
- If you output an exposed image, the output completed checkmark is displayed on the image in the study display area.
- In the viewer screen, the image in the selected box is displayed.
- You can also zoom in or out by rotating the mouse wheel up or down on the image.

●Control panel (Filming)

This control panel is used for setting the output conditions.

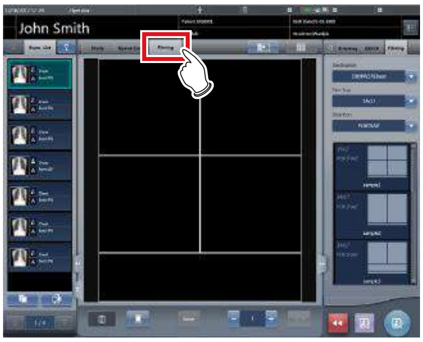


Number	Name	Functions
(1)	Destination	Selects the output destination.
(2)	Film Size	Selects the film size.
(3)	Direction	Selects the film direction.
(4)	Preset selection list	Selects the output format from the registered preset.

7.19.2 Film output

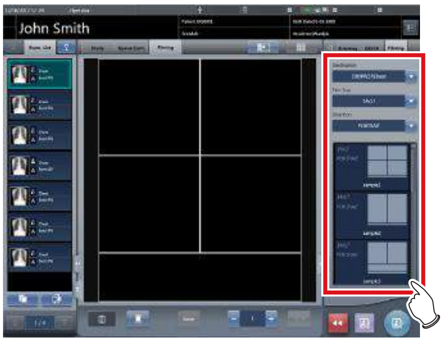
The following describes the procedure for laying out and outputting the exposed image.

1 Select the [Filming] tab.



- If you select the [Filming] tab, the [Filming] tab of the control panel is automatically displayed. If the tab is not automatically displayed, select the [Filming] tab manually.

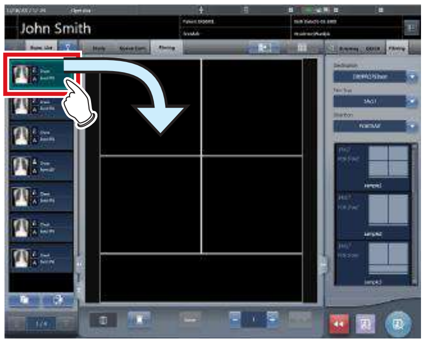
2 Set the output conditions on the control panel (filming).

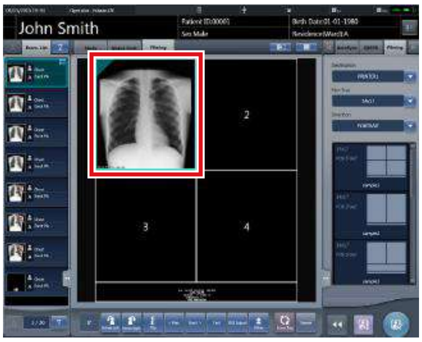


HINT

- You can also select the fixed format by pressing the Fixed format selection button.

3 Drag and drop the Exam.Tags to the image box.





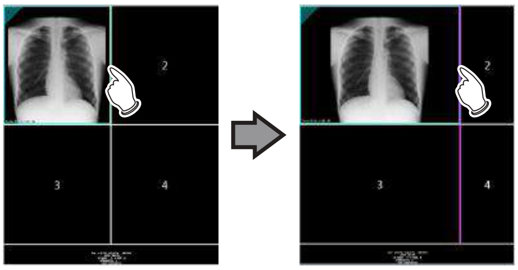
- The exposed image is displayed in the image box.

IMPORTANT

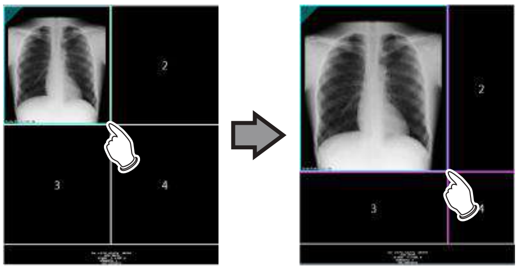
- Exam. Tags for unexposed images cannot be assigned to the image box.
- A rejected image cannot be assigned to the image box.
- A single image cannot be assigned to multiple image boxes.
- If an image box is assigned to images rotated by free rotation, the rotation and status is reset.
- Images assigned to image boxes cannot be rotated freely. To use free rotation, delete the image box allocation.
- If [Reset] on the [Image Adjustment] tab has been pressed, and the image has been rotated freely, the image box assign is automatically deleted.

HINT

- If you drop a new image into the image box to which another image has already been assigned, the image that is currently in the image box will be replaced with the new one.
- Dragging the split line changes the shape of the image box.

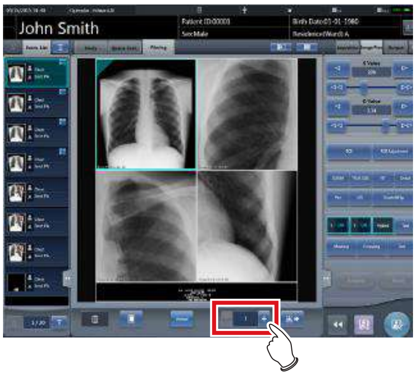


- Dragging the intersection of split lines can move two split lines at the same time.

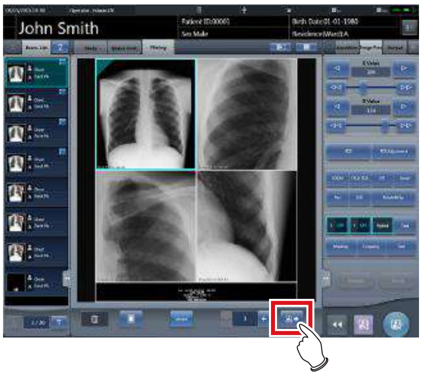


- If a new box number is reassigned to the image boxes by moving the split line, the position of the image assigned in the image box is changed.

4 Set the number of copies.



5 **Press the output button.**

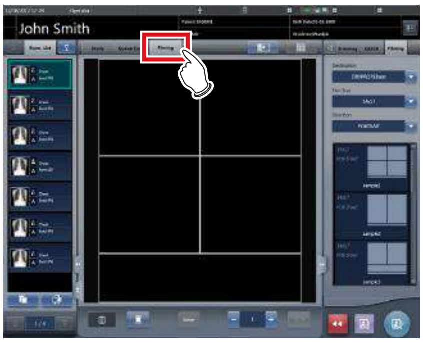


- The exposed image is output.

7.19.3 Automatic acquisition of exposed image

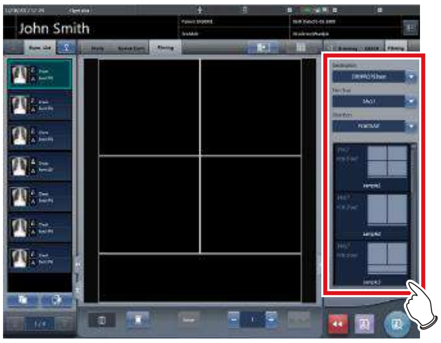
The following describes the procedure to automatically acquire exposed images.

1 **Select [Filming] tab.**

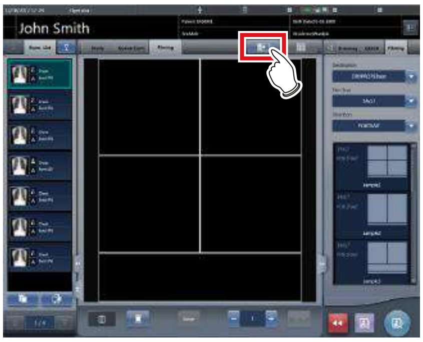


- The [Filming] tab of the control panel is automatically selected. If the tab is not automatically displayed, select the [Filming] tab manually.

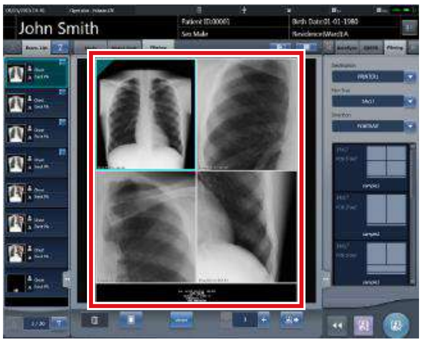
2 **Set the output conditions in the Filming tab of the control panel.**



3 **Press Automatic acquisition button.**



⇩



- The image acquired to the image box is displayed.

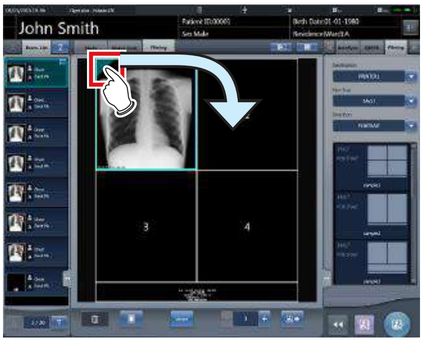
IMPORTANT

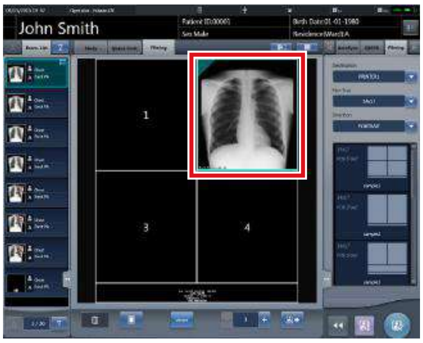
- Each exposed image is assigned to an image box in numerical order of the boxes.
- An exposed image with the output completed checkmark and the rejected exposed image are not acquired.
- If the Exam. Tag before reading is acquired, the image box will be left blank.
- Exposed images beyond the number of image boxes are not acquired.
- If an image box is assigned to images rotated by free rotation, the rotation and status is reset.
- Images assigned to image boxes cannot be rotated freely. To use free rotation, delete the image box allocation.
- If [Reset] on the [Image Proc] tab has been pressed, and the image has been rotated freely, the image box assign is automatically deleted.

7.19.4 Rearrangement of images

The following describes the procedure for rearranging the images in the film editing area.

1 Drag the triangular mark in the upper left corner of the image to be moved, and drop it into the destination image box.





- The image is displayed in the destination image box.

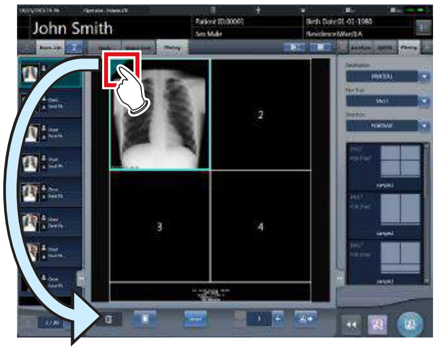
HINT

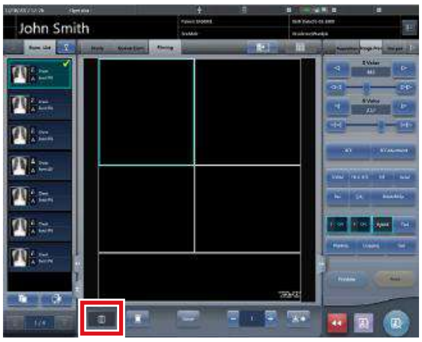
- If you move a new image to the image box to which another image has already been assigned, the image that is currently in the image box will be replaced with the new one.

7.19.5 Deletion of images

The following describes the procedure for deleting images from the film editing area.

1 **Drag the triangular mark in the upper left corner of the image to be deleted, and drop it into the trash box.**





- The image has been deleted.

7.20 Lung lack/body motion blur detection

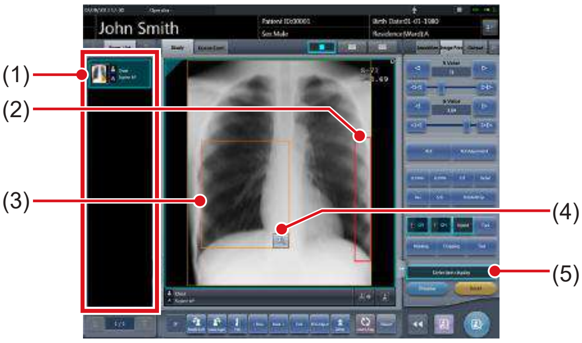
Use the lung lack/motion blur detection function to search images with a high likelihood of having deficiencies in lung images or motion blur.

IMPORTANT

- Lung images with deficiencies are images in which the entire lung is not in the image or not within the irradiation field.
- Images with motion blur are images in which the lung are blurry due to breathing, movement of the body, etc.
- This function targets front images of adult lungs.
- Before rejecting image in which lung lack or motion blur have been detected, be sure to check the images.
- In images with lesions, foreign substances, etc. in the lungs, lung lack or motion blur may be detected even when not present.
- As a false positive may occur or detection may not be possible if exposure is performed with the exposure field at a slant, be sure to perform exposures with the DR Detector parallel to the exposure position.
- This function is available only when the DR Detector is used.
- It is recommended that this function be used during examinations carried out on rounds.
- The Lung lack/body motion blur detection function cannot be used for exposed in Aero Storage mode.

7.20.1 Screen structure

● Exposure screen

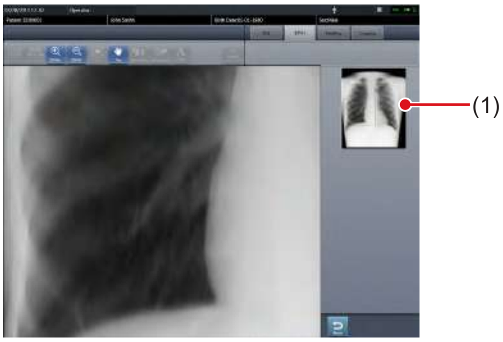


Number	Name	Functions
(1)	Order List	If a deficiency in the lung image or body motion blur is detected, an icon (⚠) indicating such is displayed for the Exam. Tag.
(2)	Lung lack detection spot	The spot where a deficiency in the lung image is detected is enclosed in a red frame. The alert frame is displayed around any of the following five areas depending on where the deficiency is detected: bottom right, bottom left, right, left, and top.
(3)	Body motion blur detection spot	The spot where the body motion blur is detected is enclosed in an orange frame.
(4)	Magnifier button	Viewer screen (for body motion blur) is displayed.
(5)	Detection display button	Turns on or off the display of the detection.

IMPORTANT

- The detection display button appears only if a deficiency in the lung image or body motion blur is detected.

● Viewer screen (for body motion blur)



Number	Name	Functions
(1)	Entire display area	The spot displayed in the image display area is enclosed in a green frame.

IMPORTANT

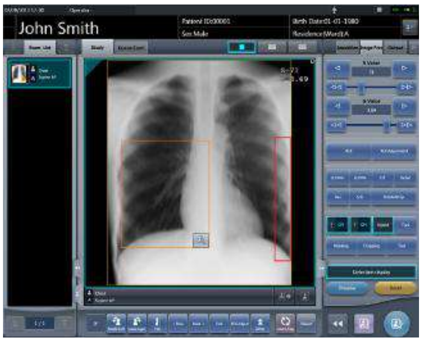
- The viewer screen (for body motion blur) cannot be used when adjusting the angle with free rotation function for the images in which body motion blur is detected.

7.20.2 Confirming the detected spot

Confirm the spot where a deficiency in the lung image or body motion blur is detected in the following procedure.

●Lung lack

1 Check the spot in the image display area where a deficiency in the lung image is detected.

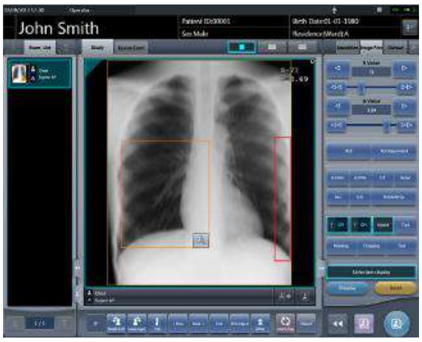


HINT

- Use [Detection display] to turn the display of the detected spot on or off.

●Body motion blur

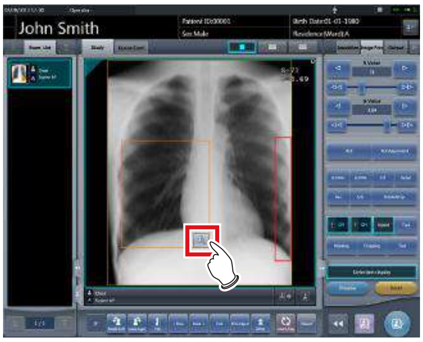
1 Check the spot in the image display area where body motion blur is detected.



HINT

- Use [Detection display] to turn the display of the detected spot on or off.

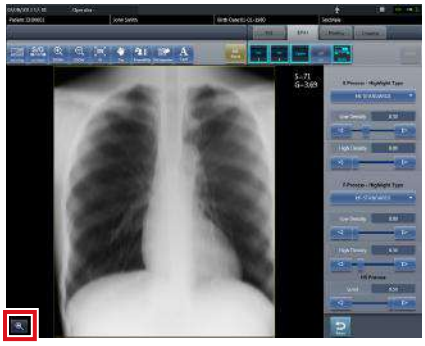
2 Press [🔍].



- Viewer screen (for body motion blur) is displayed.

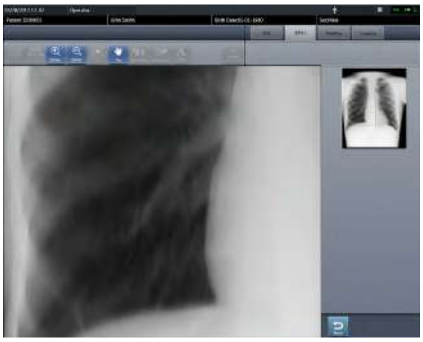
HINT

- On the viewer screen, a [🔍] icon is displayed over images in which body motion blur is detected.
- You can also display the viewer screen (for body motion blur) by pressing [🔍] on the viewer screen.



- Press the tool bar tab on the viewer screen (for body motion blur) to display the viewer screen.

3 Check the spot where the body motion blur is detected.



HINT

- Press any position in the entire display area to display the pressed position in the image display area.

7.21 Checkup mode

The checkup mode allows the patient ID and accession number to be issued automatically, reducing the time required for examination.

IMPORTANT

- Exposure in Aero Sync mode is not possible in checkup mode.

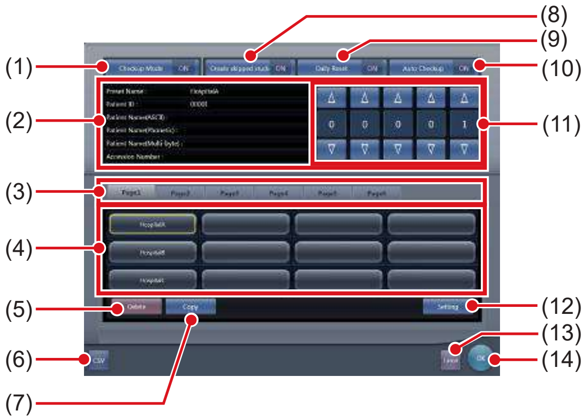
7.21.1 Screen structure

The following shows the setting screens of the checkup mode.

● Checkup setting screen

This screen is used for turning on or off the mode. You can also start setting the checkup preset on this screen.

Display this screen by pressing [Checkup] in the tool bar of the system monitor screen, or by pressing [Patient Info] on the exposure screen during checkup mode.



Preset Name : HospitalA
Patient ID : 00001
Patient Name(ASCII) :
Patient Name(Phonetic) :
Patient Name(Multi byte) :
Accession Number :

Number	Name	Functions
(1)	Checkup Mode button	Toggles the skip examination generator [ON] and [OFF].
(2)	Selected preset information display field	Displays the information in the currently selected preset.
(3)	Switching tab	Switches the preset tab.
(4)	Preset button	Used to select the preset. A preset name is indicated on the button for which the preset has already been carried out. A button remains unnamed until preset is carried out.
(5)	Delete button	Deletes the selected preset.
(6)	CSV button	Outputs the information from the examination exposed in the checkup mode in CSV format.
(7)	Copy button	Copies the selected preset.
(8)	Create skipped studies button	Turns the daily reset function [ON] and [OFF]. Setting to [ON] automatically generates the examination that is skipped when the serial number is changed.
(9)	Daily Reset button	Turns the auto examination start function [ON] and [OFF]. If set to [ON], the serial number set on the automatic number issuing function is reset when the date is changed, and the value is returned to the starting number. Turning it [ON] also deletes all the unexposed studies from the previous day automatically.
(10)	Auto Checkup button	Turns the checkup mode [ON] and [OFF]. If set to [ON], pressing the Complete button does not switch the exposure screen. Thus, the automatic issue of the numbers is maintained, allowing you to proceed with exposure of the next patient.
(11)	Serial number field	Displays the current serial number. The serial number can be changed using the [▲] and [▼] buttons. **HINT** • The serial number is held for each preset.
(12)	Setting button	Changes the contents of the selected preset.
(13)	Cancel button	Closes the screen without saving the modifications made on this screen.
(14)	OK button	Closes the screen after saving the modifications conducted on this screen.

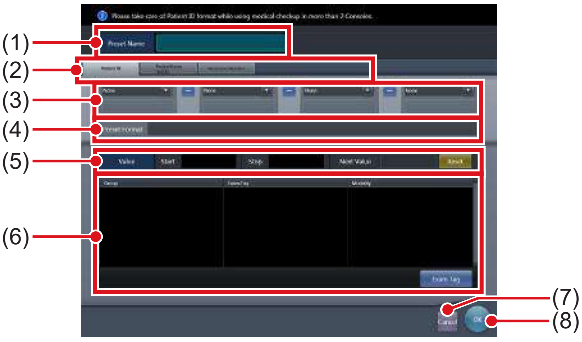
HINT

- The examination automatically generated by the Create skipped studies function can be started from the list screen.

●Checkup preset setting screen

This screen is used for setting the preset. You can set the rules for the automatic issuing of patient IDs and accession numbers.

You can display this screen by pressing [Setting] on the checkup setting screen.

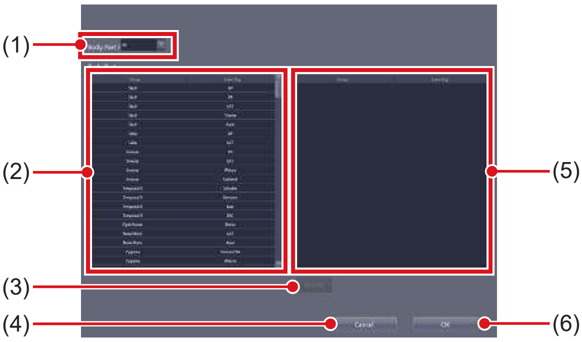


Number	Name	Functions
(1)	Preset Name	Enter a preset name. Up to 16 characters can be used.
(2)	Target item tab	Select the target item of the automatically issued number by choosing the corresponding tab.
(3)	Component selection menu	Select the components of the issued number from the menu.
(4)	Issue image	Displays an example of the number when issued according to the specified automatic issue format. [Next Value] is indicated as the value of the serial number.
(5)	Occurrence Number	Set the starting and ending values of a serial number. If you press [Reset] button, [Next value] is returned to the starting value.
(6)	Exam. Tag setting area	Displays the set Exam. Tags. Press [Exam. Tag] to display the Exam. Tag setting screen to set the Exam. Tags.
(7)	Cancel button	Closes the screen without saving the modifications made on this screen.
(8)	OK button	Closes the screen after saving the modifications conducted on this screen.

●Exam. Tag setting screen

Set the conditions of the automatic exposure.

You can display this screen by pressing [Exam. Tag] on the checkup preset setting screen.

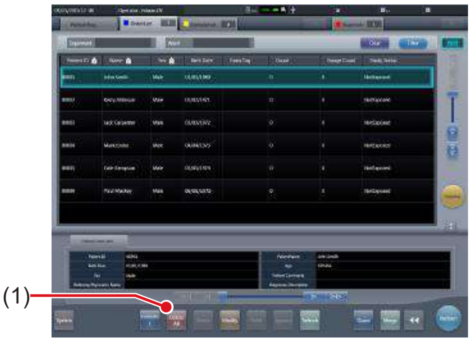


Number	Name	Functions
(1)	Body Part Filter	Narrows down the Exam. Tags to be displayed in [Body parts list].
(2)	Body Parts List	Displays the list of the Exam. Tags that are available for the setting.
(3)	Delete button	Deletes the selected Exam. Tags from the Exam. Tags area.
(4)	Cancel button	Closes the screen without saving the modifications made on this screen.
(5)	Exam. Tags settings area	Displays the Exam. Tags to be set. You can register the tags by dragging and dropping the Exam. Tags from [Body Parts List]. Up to 128 shots of Exam. Tags can be registered. You can modify the alignment sequence of the registered Exam. Tags with drag and drop operations.
(6)	OK button	Closes the screen after saving the modifications conducted on this screen.

●List screen

You can display [Delete All] in the tool bar area depending on the setting.

For more details, contact Konica Minolta technical representatives.



Number	Name	Functions
(1)	Delete all button	Deletes all the unexposed studies. Press this button to display the dialog. Press [OK] to perform the deletion.

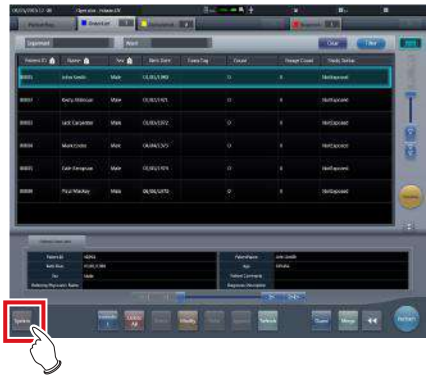
7.21.2 Preset setting procedure

The following describes how to set the preset.

●When setting up new presets

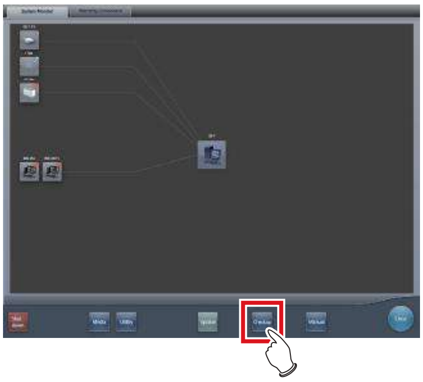
As there are no presets in the initial state, it is necessary to set new presets.

1 **Press [System] on the initial screen.**



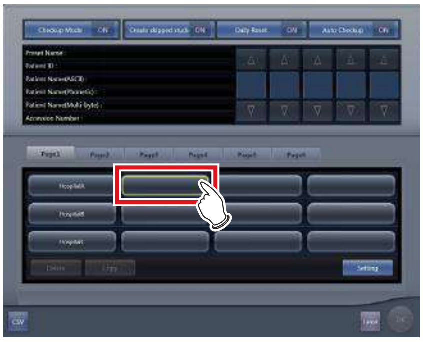
- The system monitor screen is displayed.

2 **Press [Checkup].**

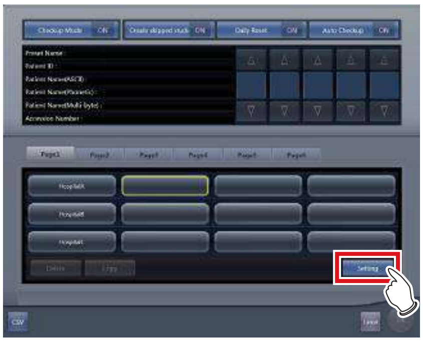


- The checkup setting screen is displayed.

3 **Select the preset button to be set from the tabs on [Page1] through [Page6].**



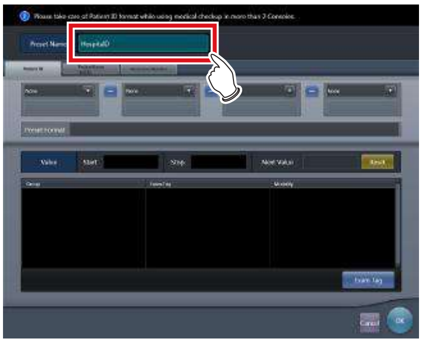
4 **Press [Setting].**



- The checkup preset setting screen is displayed.

5 Enter the desired preset name in [Preset Name].

- Up to 16 characters can be usable.

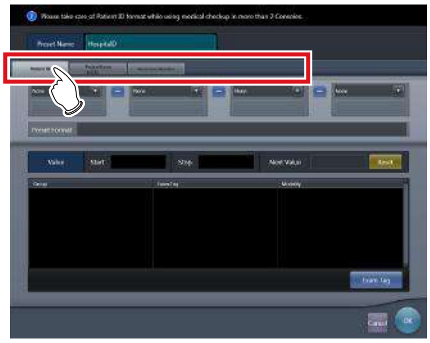

Please take care of Patient ID format while using medical checkup in more than 2 Consoles.

IMPORTANT

- When you use the checkup preset on two or more of the devices, ensure that no overlapping occurs among the set items.

6 Select the target item of the automatic number issuing by choosing the corresponding tab.

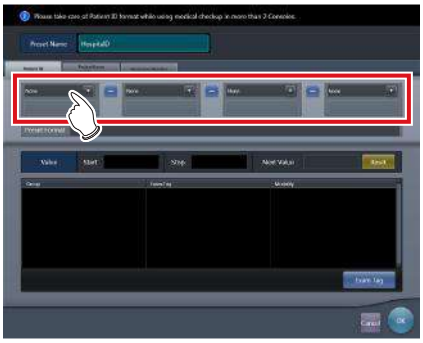
- The following items can be selected.
  - [Patient ID]
  - [PatientName (ASCII)]
  - [Accession Number]

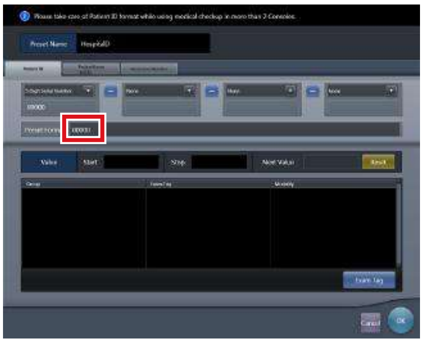

Please take care of Patient ID format while using medical checkup in more than 2 Consoles.

HINT

- [Patient ID] is a mandatory setting item.

7 Select the components of the number from the menu.


Please take care of Patient ID format while using medical checkup in more than 2 Consoles.


Please take care of Patient ID format while using medical checkup in more than 2 Consoles.

- An example of the automatically issued number is displayed in [Preset Format]. Using the corresponding tabs, set the components for each of the items you require.

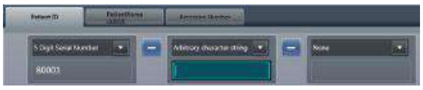
IMPORTANT

- Serial numbers can be set at between 3 and 5 digits long, but when setting multiple serial numbers, such as for [Patient ID] and [Accession Number], select serial numbers with the same amount of digits.
- Be careful. When neither serial numbers nor the time is set for [Patient ID], the same ID will be issued each time.

HINT

- The components that can be selected from the menu are as shown below.
  - Western Calendar (yyyymmdd)
  - Western Calendar (mmddyyyy)
  - Western Calendar (ddmmyyyy)
  - Western Calendar (yymmdd)
  - Western Calendar (mmddyy)
  - Western Calendar (ddmmyy)
  - Time (hhmmss)
  - Arbitrary Character String
  - 5 Digit Serial Number
  - 4 Digit Serial Number
  - 3 Digit Serial Number

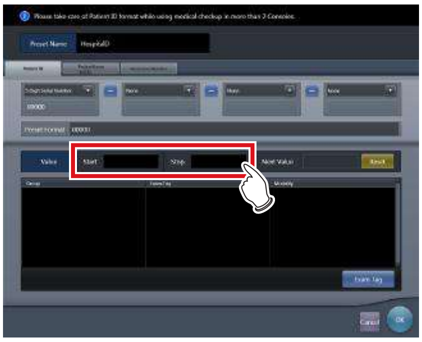
  * "y" represents year. Likewise, "m" represents month, "d" represents day, "h" represents hour, "m" represents minute, and "s" represents second.
- If you select [Arbitrary character string], the input field is displayed.



- To delimit components using "-", press [−] placed between the menus. "-" is included when it is kept pressed.

8 Set the starting and ending values using [Occurrence Number].

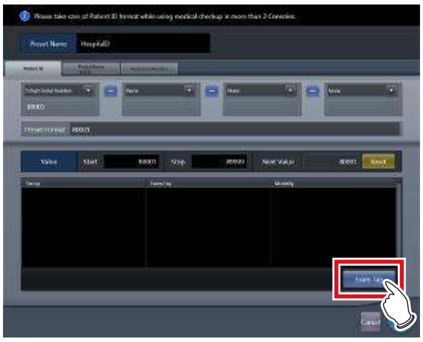
- Enter the beginning value for the serial number in [Start], and enter the ending value for the serial number in [Stop].


Please take care of Patient ID format while using medical checkup in more than 2 Consoles.
Preset Name
HospitalD
Value
Start
Stop
Next Value
Reset
Exam Tag
Cancel
OK

HINT

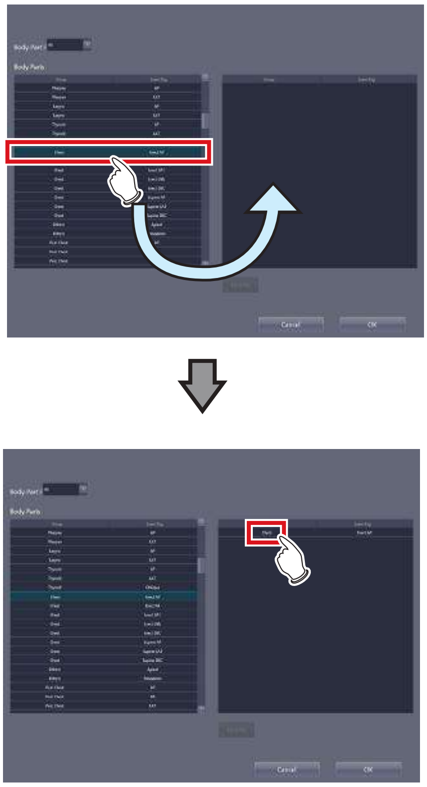
- After the ending value is issued, the next number is returned to the starting value.
- The number to be issued next time is displayed in [Next Value]. If you want to return to the starting value, press [Reset].

9 Then set the Exam. Tag. Press [Exam Tag].


Please take care of Patient ID format while using medical checkup in more than 2 Consoles.
Preset Name
HospitalD
Value
Start
Stop
Next Value
Reset
Exam Tag
Cancel

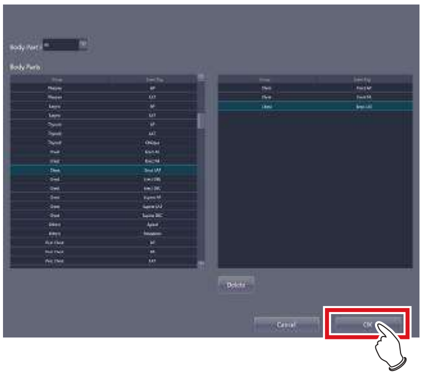
- The Exam. Tag setting screen is displayed.

10 Drag and drop the Exam.Tags from [Body Parts List] into the Exam.Tags area.



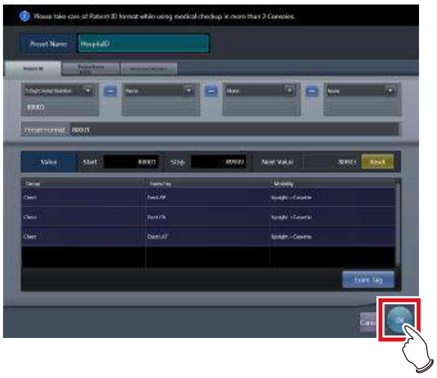
- The aligned sequence of the keys in the Exam. Tags area is the exposure sequence. You can modify their aligned sequence with drag and drop operations.
- Press [Delete] to delete the Exam. Tags in the Exam. Tag area.

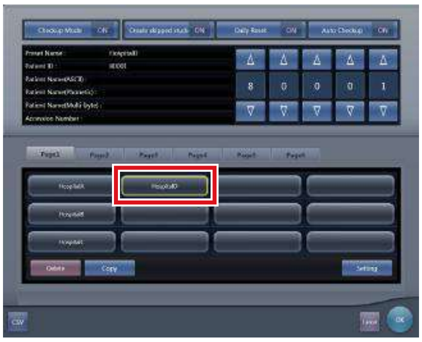
11 Press [OK].



- The display returns to the checkup preset setting screen.
- The Exam. Tags set in the Exam. Tag area are displayed.

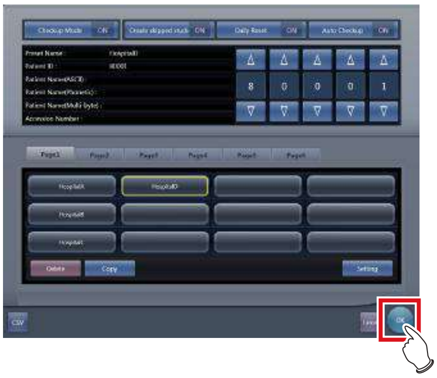
12 Press [OK].





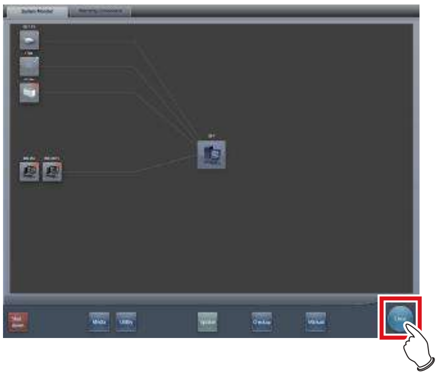
- The display returns to the checkup settings screen.
- Make sure that the specified preset name is displayed.

13 Press [OK].



- The display returns to the system monitor screen.

14 Press [Close].

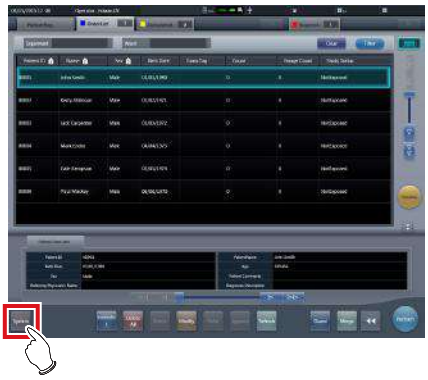


- The display returns to the initial screen.

●When copying and setting an existing preset

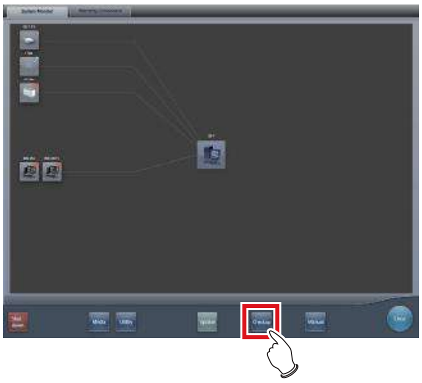
It is possible to copy an existing preset, make changes to it, and then save it as a new preset.

1 Press [System] on the initial screen.



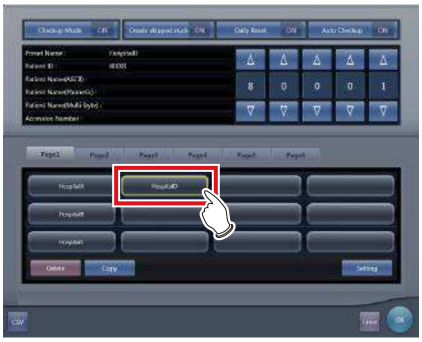
- The system monitor screen is displayed.

2 **Press [Checkup].**

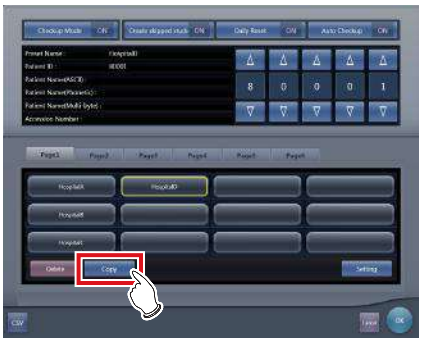


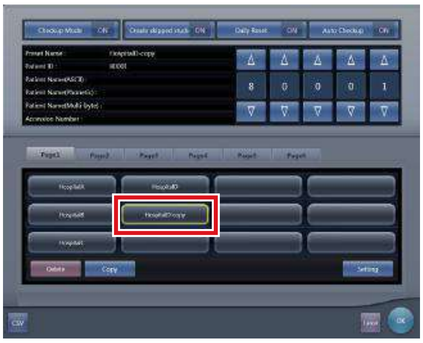
- The checkup setting screen is displayed.

3 **Select the preset to be copied.**



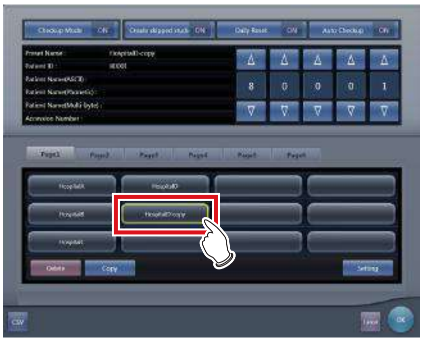
4 **Press [Copy].**



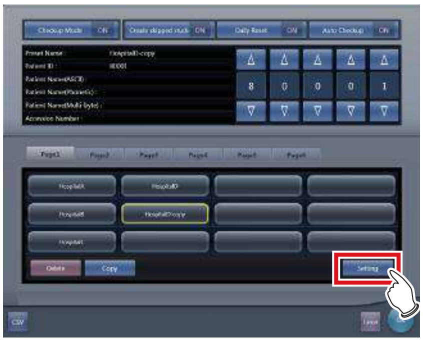


- The preset is copied.

5 **Select the copied preset.**

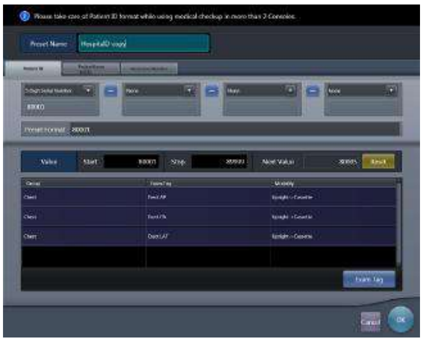


6 **Press [Setting].**

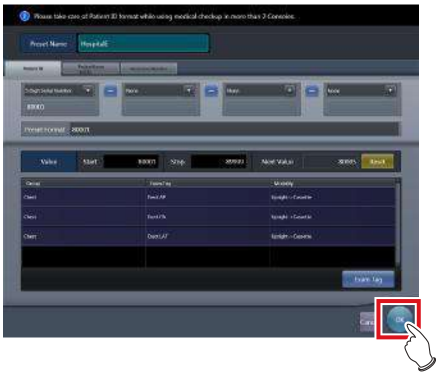


- Checkup preset settings screen is displayed.

7 **Change the settings as necessary.**

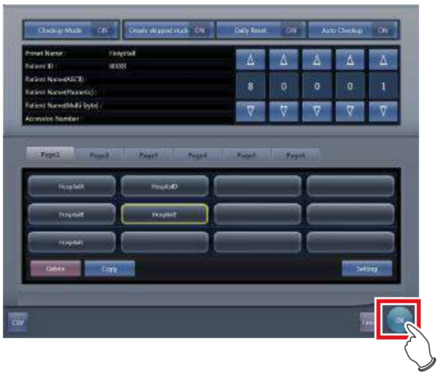


8 **Press [OK].**



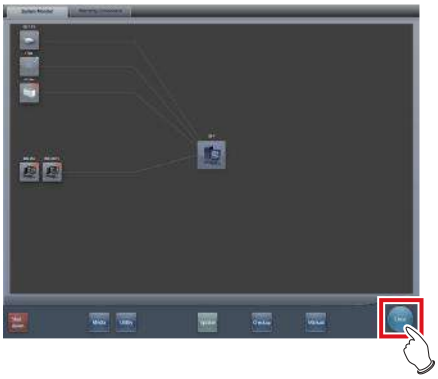
- The display returns to the checkup settings screen.

9 **Press [OK].**



- The display returns to the system monitor screen.

10 **Press [Close].**

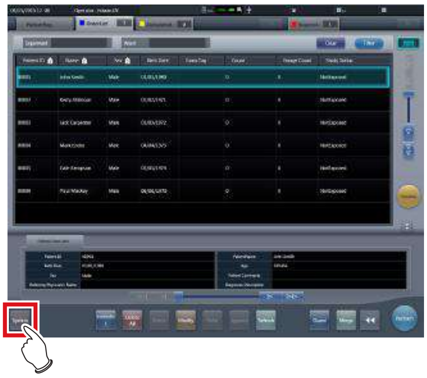


- The display returns to the initial screen.

7.21.3 Starting checkup mode

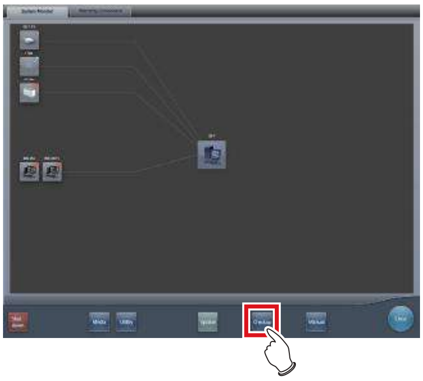
Start checkup mode and perform preparations for taking exposure.

1 **Press [System] on the initial screen.**



- The system monitor screen is displayed.

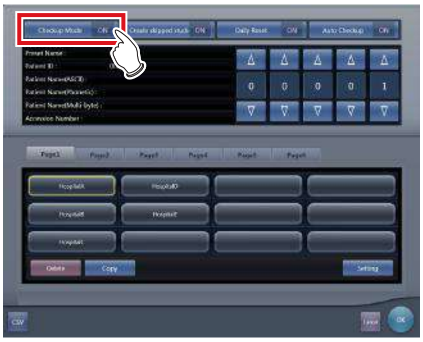
2 **Press [Checkup].**



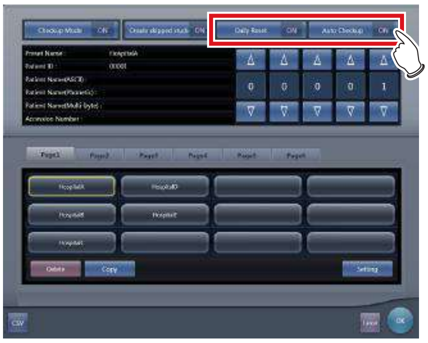
- The checkup setting screen is displayed.

3 **Press [Checkup Mode] to turn it [ON].**

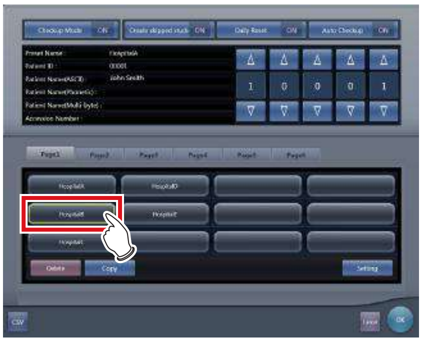
- Press [Checkup Mode] to switch between [ON] and [OFF].



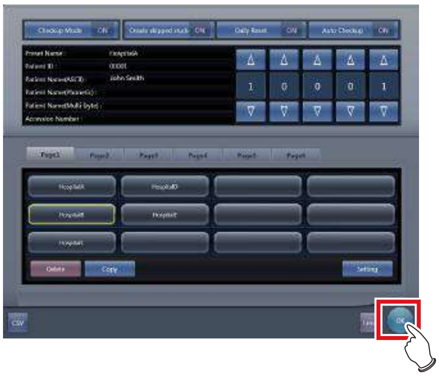
4 **Turn [Daily Reset] and [Auto Checkup] [ON] and [OFF], as necessary.**



5 **Select the preset used.**

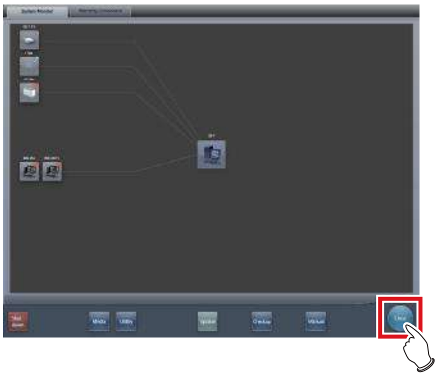


6 **Press [OK].**



- The display returns to the system monitor screen.

7 **Press [Close].**



- The display returns to the initial screen.
- When serial numbers are automatically issued, the list screen or the patient registration screen is displayed. Press [Perform] to start the exposure in checkup mode.

7.21.4 Exposure in checkup mode

The following describes the procedure for performing exposures in the checkup mode.

Before starting the exposure, refer to "7.21.3 Starting checkup mode" to make necessary preparations for the checkup mode.

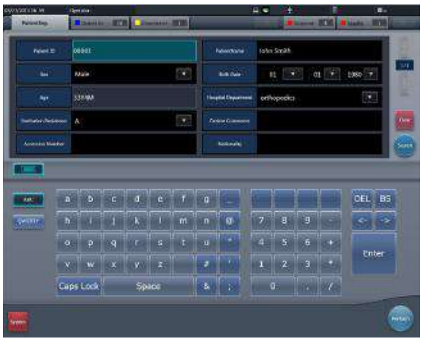
The following procedures vary depending on whether the auto examination start function is to be used, and also whether the Exam. Tags are already set for the preset used.

●When the Auto Checkup is turned ON and the Exam. Tags are set

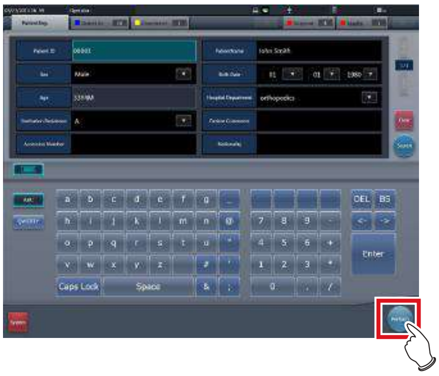
The following describes the procedure when [Auto Checkup] is turned [ON] and the Exam. Tags are set for the preset used.

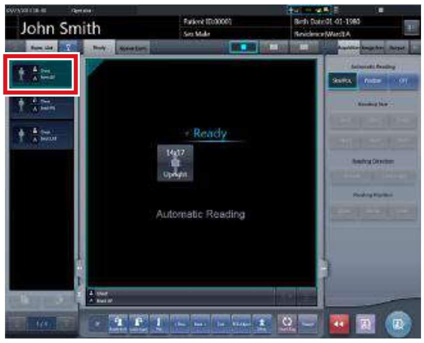
1 **Display the Patient registration screen or List screen.**

- Check that the automatic issuing worked correctly.



2 Press [Perform].

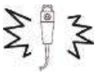




- The exposure screen is displayed.
- The screen displays the preset body part targeted for exposure.

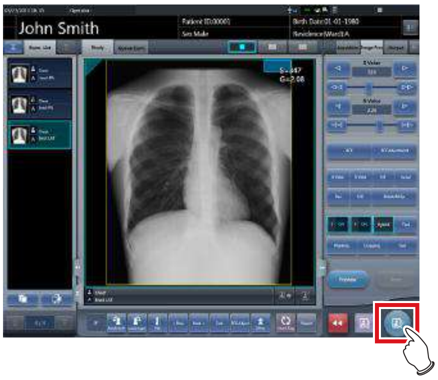
3 Perform exposure.

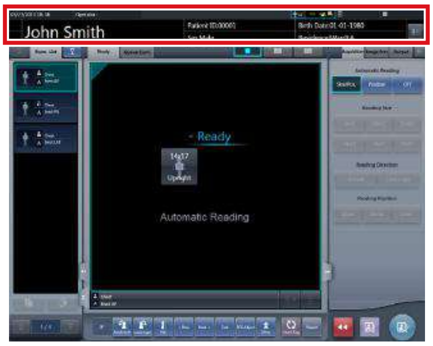
- Configure the X-ray device settings and check the exposure setting before making an exposure.



Press the exposure switch

4 Press [ ].





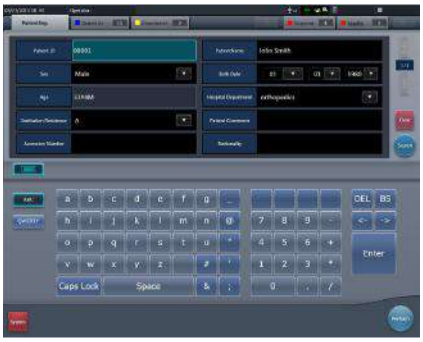
- The automatic number issuing function displays the next number.
- Continue the exposure process repeating Steps 3 and 4.

●When the Auto Checkup is turned OFF and the Exam. Tags are not set

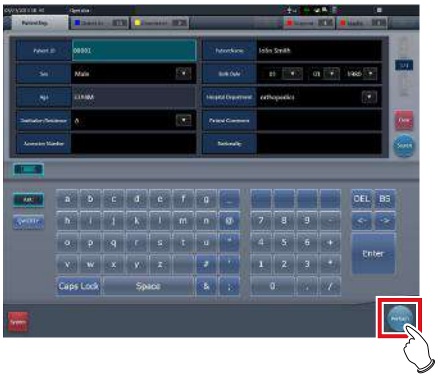
The following describes the procedure when [Auto Checkup] is turned OFF and the Exam. Tags are not set for the preset used.

1 Display the Patient registration screen or List screen.

- Check that the automatic issuing worked correctly.

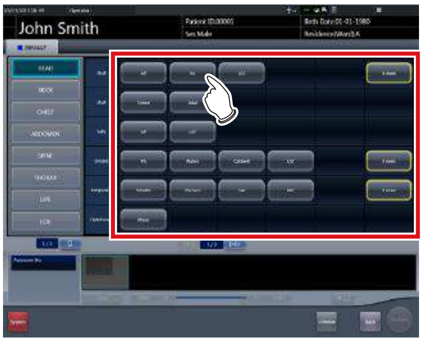


2 Press [Perform].



- The Body part selection screen is displayed.

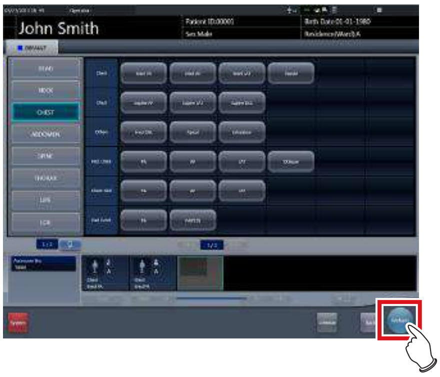
3 Select the exposure body part.

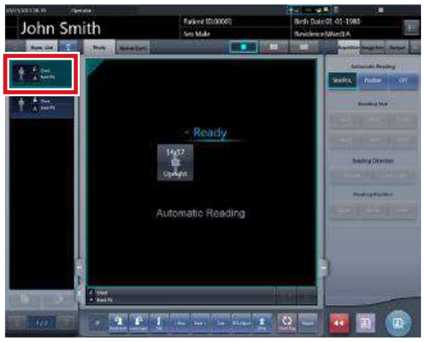


HINT

- Press [Return] to return the display to the initial screen. In this case, the issued number remains the same.
- If you press [Schedule], the number is saved and the display returns to the initial screen. In this case, a next number is automatically issued.

4 Press [Perform].

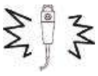




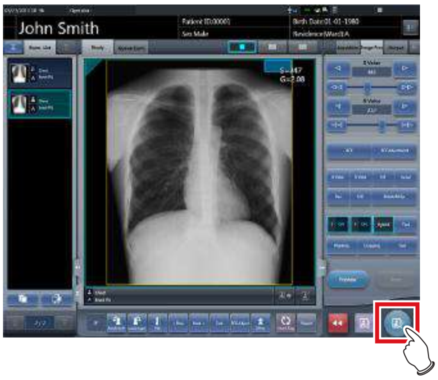
- The exposure screen is displayed.
- The selected body part targeted for exposure is displayed.

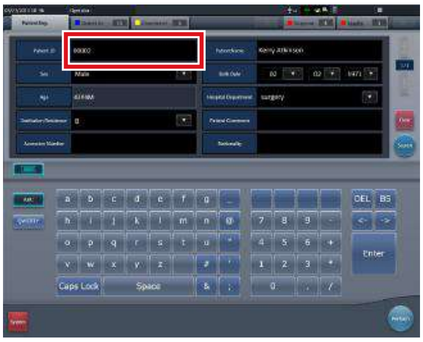
5 Perform exposure.

- Configure the X-ray device settings and check the exposure setting before making an exposure.


Press the exposure switch

6 Press [ ].





- The display returns to the initial screen with the next numbers displayed on it.
- Repeat Steps 1 to 6 to continue your exposure.

HINT

- When [Auto Checkup] is turned [ON], the display returns to the Body part selection screen rather than the initial screen.

7.21.5 Change of serial numbers and presets

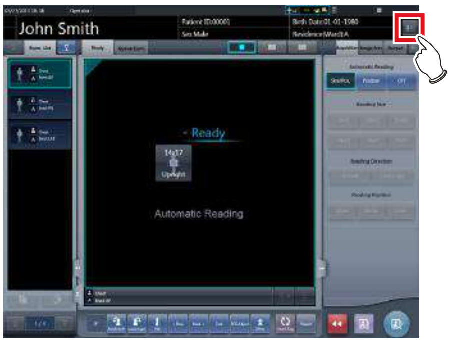
To change the serial number and preset during exposure, perform the following procedure.

IMPORTANT

- The following functions cannot be used when the checkup setting screen is displayed from the exposure screen.
  - Turns the checkup mode [ON] and [OFF].
  - Turns the daily reset function [ON] and [OFF].
  - Turns the auto examination start function [ON] and [OFF].
  - Switching to the checkup preset setting screen
  - [Delete], [Copy], and [Setting] operations

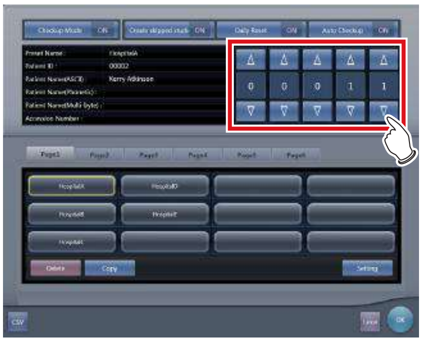
●Change of serial numbers

1 Press [Patient Info] on the exposure screen.

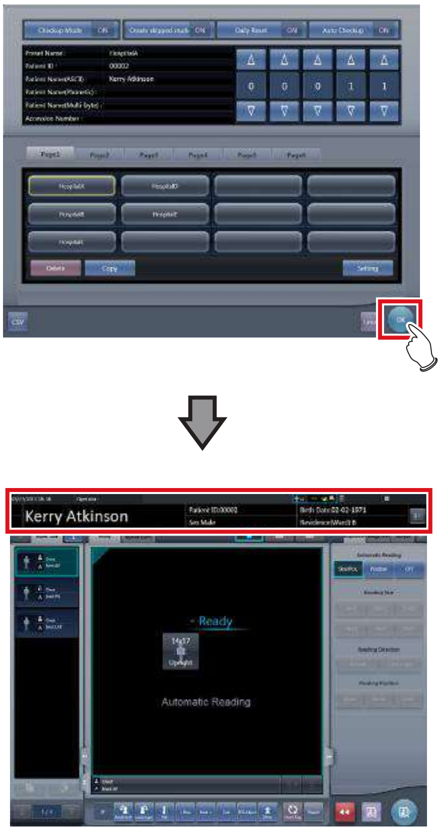


- The checkup setting screen is displayed.

2 Change the serial number using the [▲] and [▼] buttons in the serial number display field.



3 Press [OK].



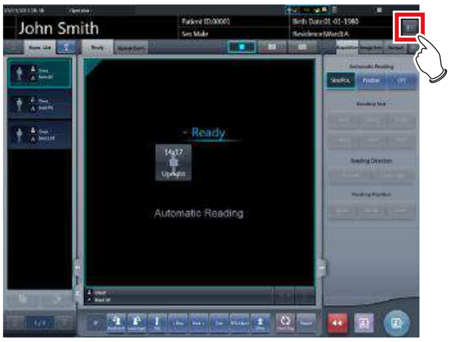
- The patient information is updated.

HINT

- When the examination of the changed serial number is completed, the process continues and starts the examination with the next serial number. For example, if the serial number is changed from "001" to "010" before the examination is finished, the serial number shifts to the next number, "011". If "011" has already been exposed, the serial number shifts to "012", the next number.

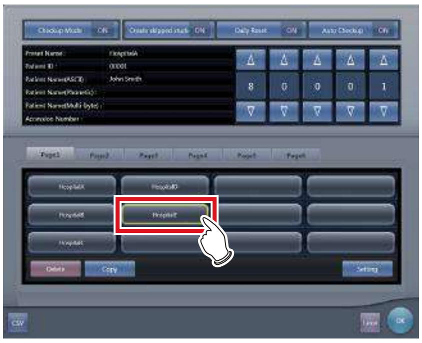
● Change of presets

1 Press [Patient Info] on the exposure screen.



- The checkup setting screen is displayed.

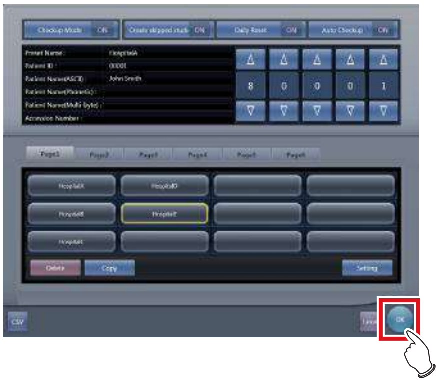
2 Select the preset to be changed.

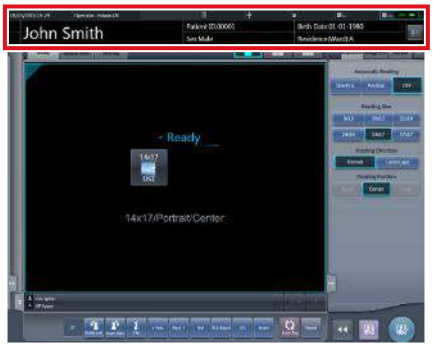


HINT

- The serial number is held for each preset, so it is also changed each time a preset is changed.

3 Press [OK].





- Patient information is updated according to the preset.

HINT

- The examination continues subsequently for the same preset.
- If you want to restart an examination from the preset before a change, select the preset. The examination restarts from the accession number before the change.

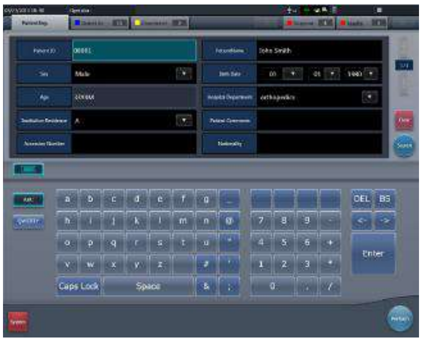
7.21.6 Auto Checkup using bar code scan

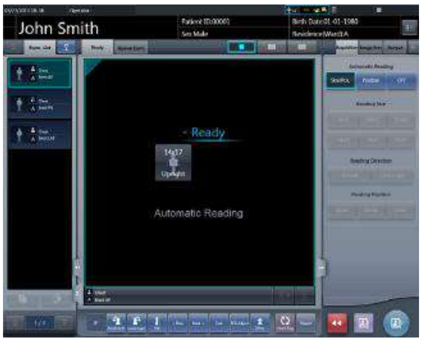
If bar code scanning is carried out on the patient registration screen by the settings, an examination can be started automatically using the scanned patient ID or accession number.
This section describes how to set [Auto Checkup] to [OFF] and automatically start an examination by the bar code scanning function.

HINT

- For details on how to automatically start an examination by the bar code scanning function, contact Konica Minolta technical representatives.

1 **Carry out bar code scanning on the patient registration screen to scan the patient ID or accession number.**

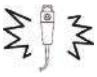




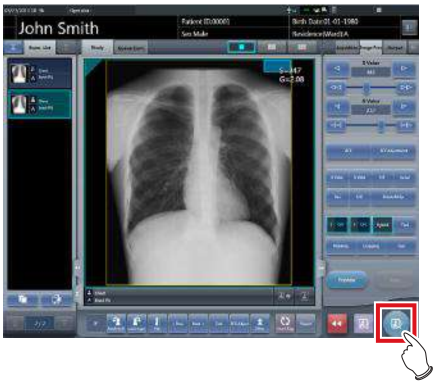
- An examination starts automatically.

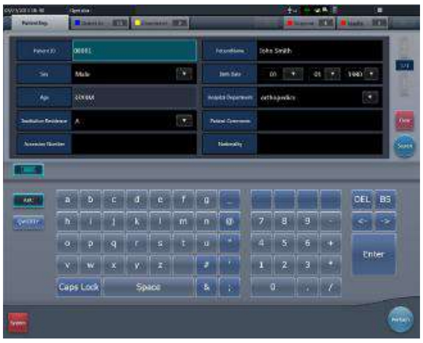
2 **Perform exposure.**

- Set up the X-ray device and check the exposure settings before performing exposure.


Press the exposure switch

3 **Press [ ].**





- The patient registration screen is displayed.

HINT

- The serial number displayed before bar code scanning was carried out is input to the patient registration screen.

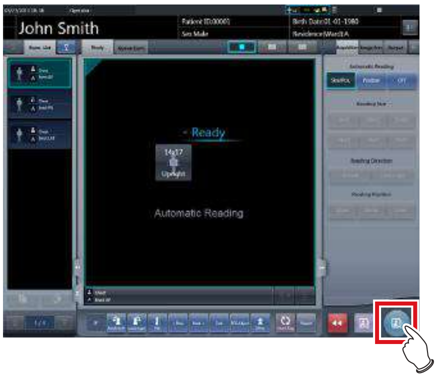
7.21.7 Ending the checkup mode

End the checkup mode.

Here, the procedure when automatic checkup is on is described. When automatic checkup is off, refer to step 3.

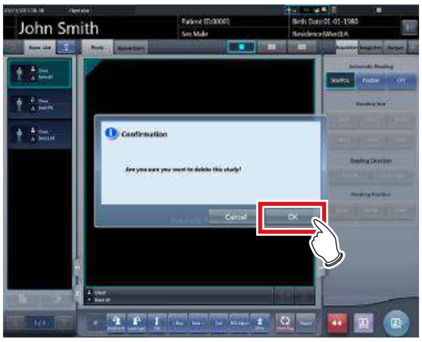
1 **Press [ ] on the exposure screen.**

- Press [ ] while nothing is being exposed.



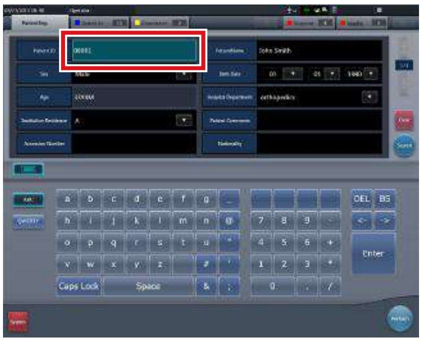
- A confirmation message to end the checkup is displayed.

2 Press [OK].



Confirmation

Are you sure you want to delete this study?

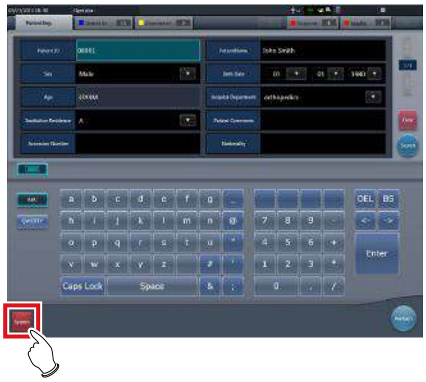


- The display returns to the initial screen with the number at the ending time issued.
- Press [Perform] to restart the checkup.

HINT

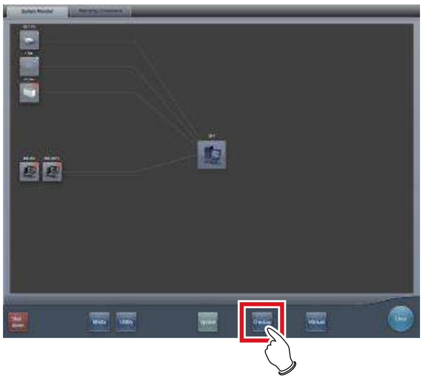
- Press [ ] instead of [ ] to save the number at the time it was paused and return to the initial screen with the next number issued.

3 Press [System] on the initial screen.



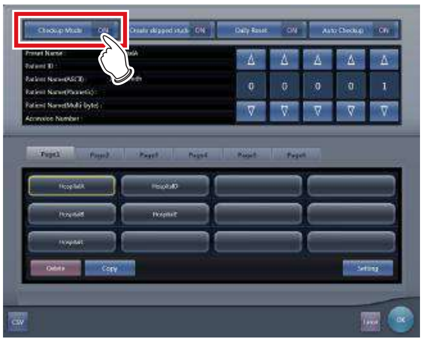
- The system monitor screen is displayed.

4 Press [Checkup].

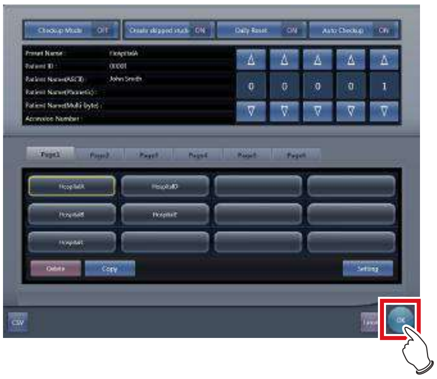


- The checkup setting screen is displayed.

5 Press [Checkup Mode] and switch to [OFF].



6 Press [OK].



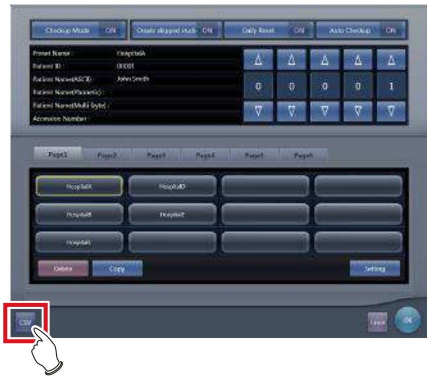
Preset Name : HospitalA
Patient ID : 00001
Patient Name(ASCII) : John Smith
Patient Name(Phonetic) :
Patient Name(Multi-byte) :
Accession Number :

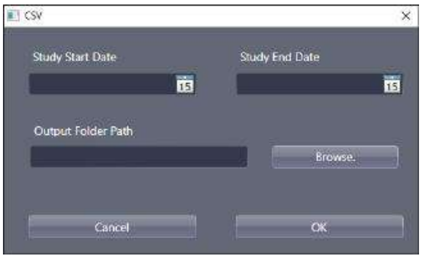
- The display returns to the system monitor screen.

7.21.8 Output of a CSV file

You can output information of the examination exposed in the checkup mode in CSV format.
You can output the information according to exposure date.

1 Press [CSV] on the checkup setting screen.

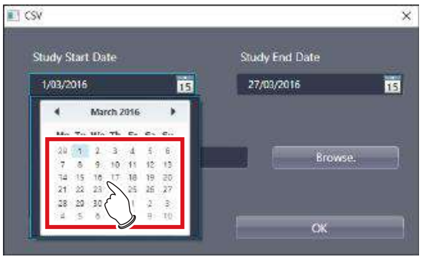




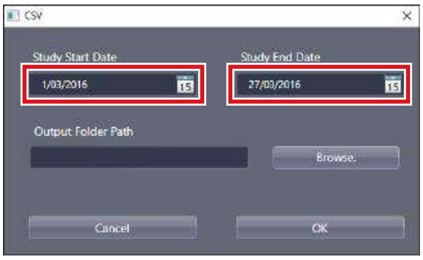
- [CSV] is displayed.

2 Select the date of the exposure of the information you want to output.

- Select the exposure date from [Study Start Date] and [Study End Date].



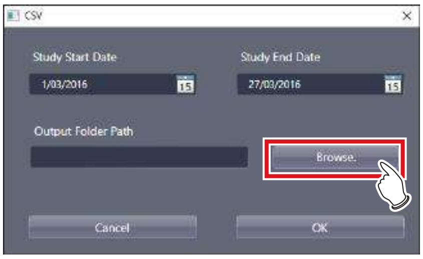
Study Start Date: 1/03/2016
Study End Date: 27/03/2016



Study Start Date: 1/03/2016
Study End Date: 27/03/2016

- The exposure date is set.

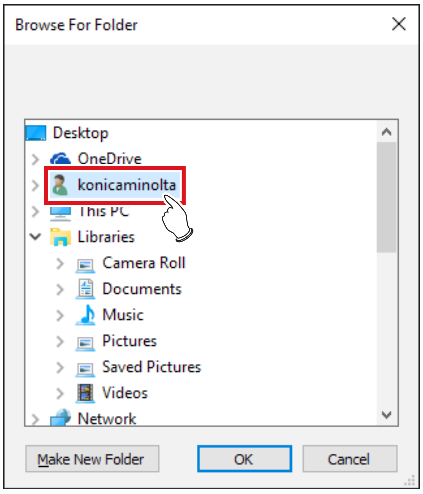
3 Press [Browse.].



Study Start Date: 1/03/2016
Study End Date: 27/03/2016

- [Browse For Folder] is displayed.

4 Select the folder you want to output the file to.



5 Press [OK].

- The CSV file is output.

HINT

- The file name is "ImageList-<Study Date>.csv". The specified examination date is entered in "<Study Date>". If, for example, from January 10, 2013 to January 18, 2013 are specified, the file name is "ImageList-20130110-20130118.csv".

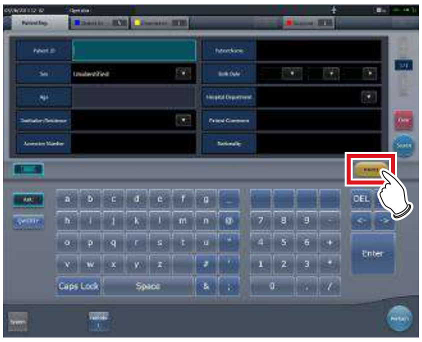
7.22 Automatic emergency number issuing

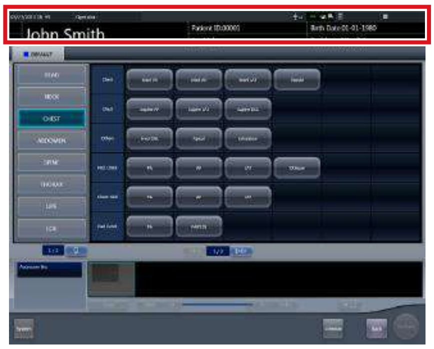
The automatic emergency number issuing function automatically issues a patient ID and accession number for the emergency patient who has been received in order for the examination to proceed immediately.

IMPORTANT

- When the checkup mode is turned ON, the automatic emergency number issuing function cannot be used. Turn the checkup mode OFF.

1 Press [trauma] on the initial screen.



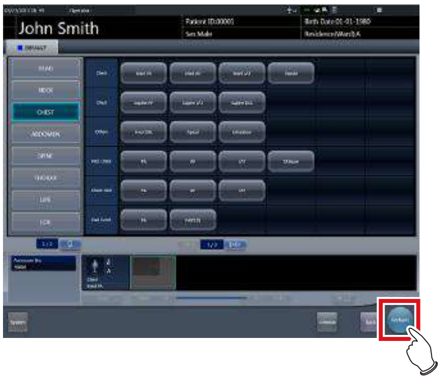


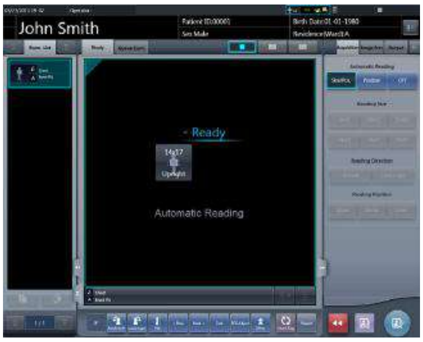
- The body part selection screen is displayed.
- Check that the automatic issuing worked correctly.

HINT

- If [trauma] button is not displayed on the initial screen, set it using the user tool.
- When automatic transition is turned OFF, the emergency number is automatically issued from the initial screen. Press [Perform] to start examination.
- If you have set to register the Exam. Tags automatically, the body part selection screen is not displayed. The display transitions to the exposure screen.

2 Select the body part and press [Perform].





- The exposure screen is displayed.

HINT

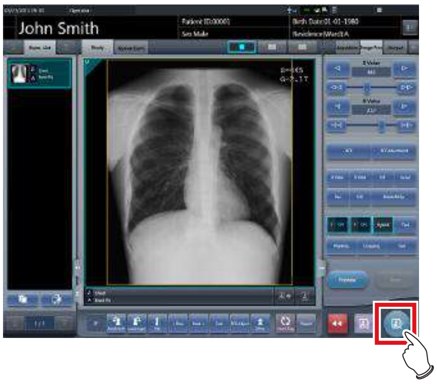
- Press [Back] on the Body part selection screen to return the display to the initial screen. In this case, the issued number remains the same.
- If you press [Schedule] on the Body part selection screen, the number is saved and the display returns to the initial screen. In this case, a new number is not issued.

3 Perform exposure.

- Configure the X-ray device settings and check the exposure setting before making an exposure.

Press the exposure switch

4 Press [].



John Smith
Patient ID:00001
Sex:Male
Birth Date:01-01-1980
Residence:Ward1A

- The display returns to the initial screen.

HINT

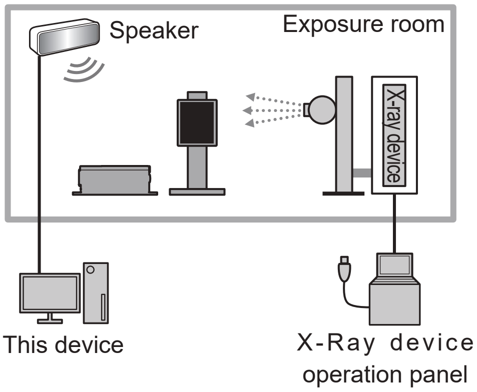
- When examining emergency patients in sequence, press [trauma] and repeat the procedure from Step 1. In this case, make sure the next number is issued.

7.23 Auto Voice function

Automatically plays the guide voice in conjunction with the exposure switch at both the start and the finish of the radiography.

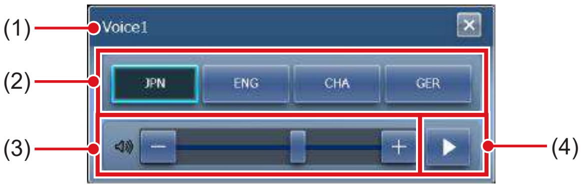
IMPORTANT

- The guide voice is registered with Exam. Tag. For more details, contact Konica Minolta technical representatives.
- The Auto Voice cannot be used in radiography with CR cassette.
- Turn off the device before turning off or removing the speaker.
- The Auto Voice cannot be used if the X-ray device free method (non-linkage) is selected.
- The Auto Voice cannot be used in AeroSync.



● Guide voice dialog

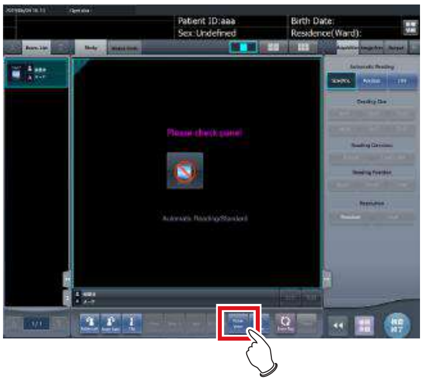
The guide voice can be switched by using the guide voice dialog displayed by pressing [Guide Voice] on the exposure screen.



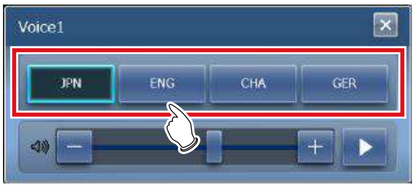
Number	Name	Functions
(1)	Guide voice group name	Displays the group name of the guide voice registered with Exam. Tag.
(2)	Voice selection button	Displays the voices registered with the guide voice group.
(3)	Volume adjustment slider/buttons	Drag the slider or press [-]/[+] to adjust the volume of the guide voice.
(4)	Play/Stop button	• Press [▶] to start playback of the guide voice. • The button is switched to [■] while playing back the guide voice. Press [■] to stop the voice.

● Switching of the guide voice

1 **Press [Guide Voice] on the exposure screen.**



2 **Select the voice.**



3 **Adjust the volume with the volume adjustment slider as necessary.**

4 **Press [▶] to confirm the guide voice.**

7.24 Real-time backup

Using the real-time backup function, you can output the exposed images to media at the same time as the study ends.

HINT

- For details on editing the tag of image data to be output, contact Konica Minolta technical representatives.

7.24.1 Points to be confirmed before use

IMPORTANT

- Before connecting the media used to this device, run a virus scan to check it for virus infections.
- Do not connect any media for any other reasons other than to carry out real-time backups. If you connect other media, the backup drive will be changed and normal output will be disabled.
- Do not remove the media while the access lamp to the media is on. Otherwise, data may be lost.

7.24.2 Media-related matters

IMPORTANT

- A USB memory, SD card and DVD-RAM can be used as the backup media. However, two or more media cannot be used simultaneously.
- Check beforehand that the PDI files being output to media can be retrieved using another company's systems.
- Access to some types of media via the encryption function is denied if you do not enter the correct password the predetermined number of times. For optimal results, read the operation manuals carefully before using the media.
- For recommended media and the purchase, contact Konica Minolta technical representatives.
- When using the DVD-RAM, format it beforehand according to the below.
  - File system: UDF 2.01 (default)
  - Allocation unit size: 2048 bytes
- When the "Burn a Disc" dialog box is displayed when you use the DVD-RAM, select "Use as the USB flash drive".
- For details of the DVD-RAM and other media, refer to their respective operation manuals. If you do not follow the relevant operating procedure(s) described in the manual, your data may not be backed up correctly.
- If you do not correctly write data to the DVD-RAM, it may result in a read error. In this case, redo the output to media process from the start.
- Depending on the media used, access to the task tray may be required in order to start the tool. If you want to display the task tray on this device, contact Konica Minolta technical representatives.
- When already append data to the media in which the image is stored, the write performance may be degraded. It is recommended to back up data in the state where image is not stored.

HINT

- The following shows the capacity per image when outputting images in PDI format.

DR Detector	Capacity
AeroDR 3 1417HD	• For "Standard" (200µm) Approximately 40MB (Approximately 8MB more for every additional image) • For "High" (100µm) Approximately 65MB (Approximately 30MB more for every additional image)
AeroDR 3 1717HD	• For "Standard" (200µm) Approximately 42MB (Approximately 10MB more for every additional image) • For "High" (100µm) Approximately 71MB (Approximately 36MB more for every additional image)
AeroDR 3 1012HQ	• For "Standard" (200µm) Approximately 36MB (Approximately 4MB more for every additional image) • For "High" (100µm) Approximately 50MB (Approximately 15MB more for every additional image)
AeroDR 1417HQ AeroDR 2 1417HQ AeroDR 2 1417S	Approximately 42MB (Approximately 10MB more for every additional image)
AeroDR 1717HQ	Approximately 44MB (Approximately 12MB more for every additional image)
AeroDR 1012HQ	Approximately 37MB (Approximately 5MB more for every additional image)

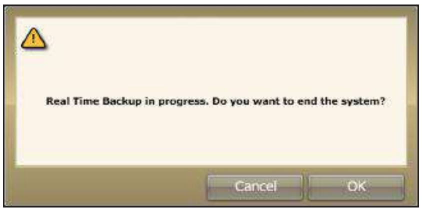
*The capacity varies depending on the image trimmed.

7.24.3 Output of images

When the real-time backup function is used, output to media is started at the same time as the study ends.

HINT

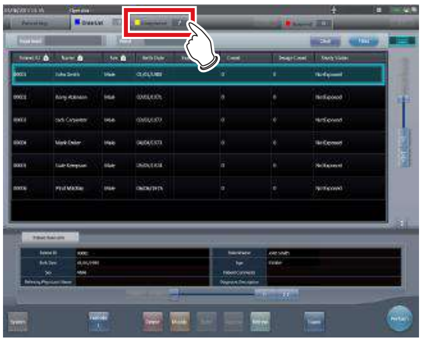
- You can proceed to the next study even before output to media has finished.
- If there is no free space remaining on the media, an error message is displayed. Replace it with a new media and press [Retry] after this device has recognized it.
- If you stop operation of this device while output to medium is continuing, the following dialog box is displayed. If you press [OK], operation of this device ends and the studies that are not output are saved as an output reservation (queue). Any studies that have been saved as the output reservation (queue) are output to media when this device is restarted.

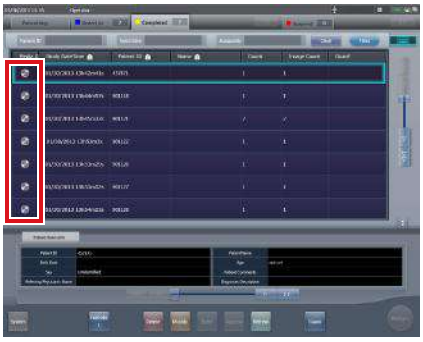


Real Time Backup in progress. Do you want to end the system?

7.24.4 Output status confirmation procedure

1 Select the [Completed] tab on the list screen.





- The icon is displayed for the studies that have already been output to media.

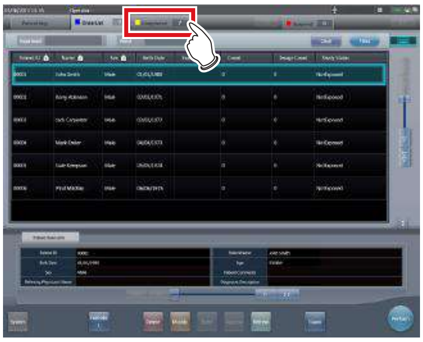
7.24.5 Re-output of images

The following describes the procedure to re-output images that have already been output once.

IMPORTANT

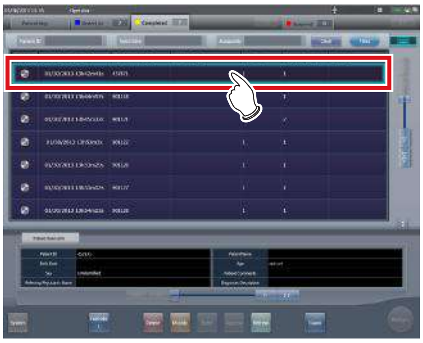
- If you changed patient information after outputting it to media, re-output it in order to update the information stored on media.

1 Select the [Completed] tab on the list screen.

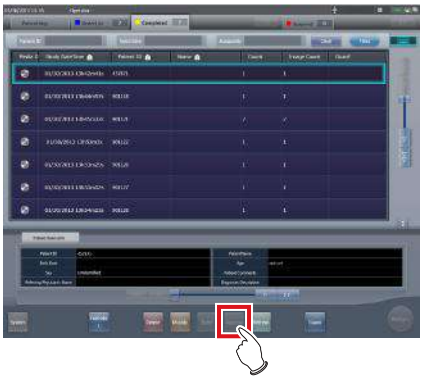


- The [Completed] tab is displayed.

2 Select the study to be re-output.

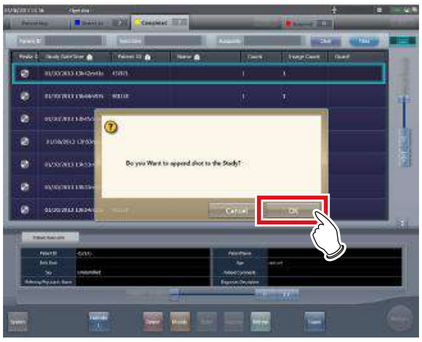


3 Press [Append].



- The confirmation dialog box is displayed.

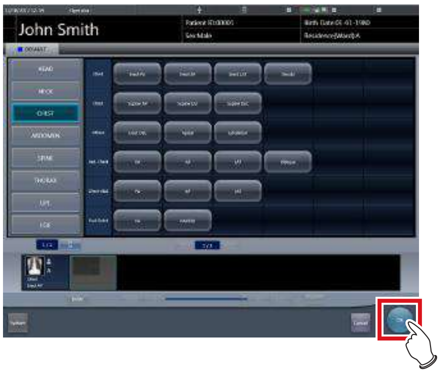
4 **Press [OK].**



Do you Want to append shot to the Study?

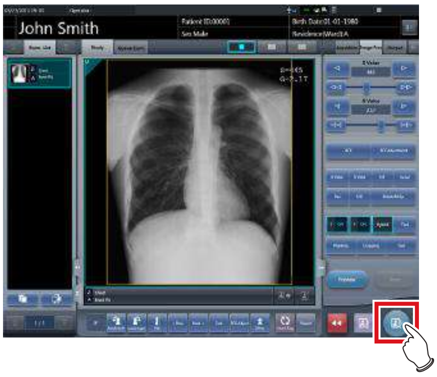
- The Body Part Selection screen is displayed.

5 **Add or change the Exam. Tags if necessary, and then press [OK].**



- The exposure screen is displayed.

6 **Add exposure or change the patient information if necessary, and then press [ ].**



- The image is output to media again.

HINT

- For the procedure to issue Study/Series UID and SOP instance UID, contact Konica Minolta technical representatives.

7.25 Web/Remote Desktop Linkup

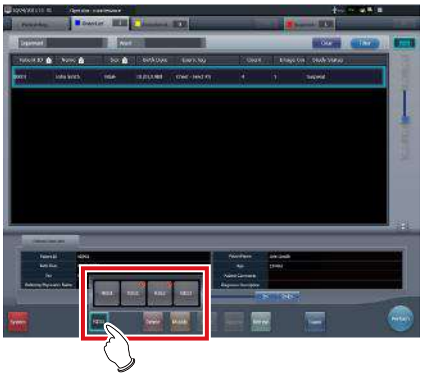
If the Web/Remote Desktop Linkup is enabled, you can start Acies client using the [Web Linkup] on the patient registration screen or list screen, start the Remote Desktop function using the [Remote Desktop Linkup], and operate the RIS client, etc. on the same terminal.

IMPORTANT

- The Web/Remote Desktop Linkup allows to connect up to two personal computers simultaneously.

HINT

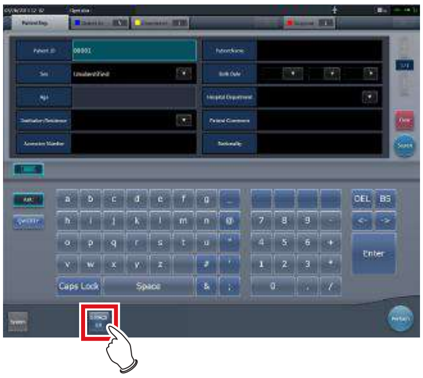
- The name you have registered during installation is displayed as the name of the [Web Linkup] or [Remote Desktop Linkup] button.
- If multiple connection destinations are registered, long pressing [Web Linkup] or [Remote Desktop Linkup] displays sub menus for you to select a connection destination displayed on the Remote Desktop.

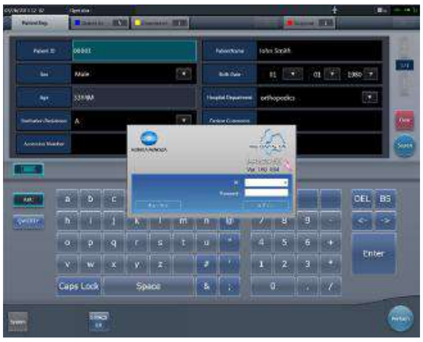


- The name of the connection destination selected from the sub menu is displayed as the name of the [Web Linkup] or [Remote Desktop Linkup] button.
- The screen for the linked devices below are examples only.

7.25.1 Web Linkup

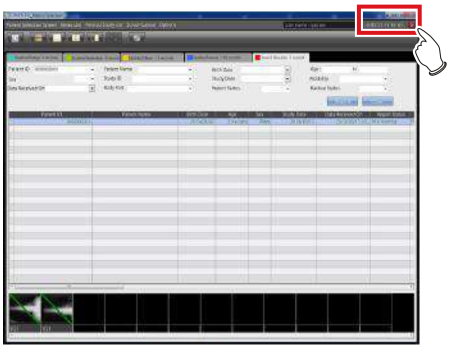
1 **Press the [Web Linkup] button on the patient registration screen or the list screen.**





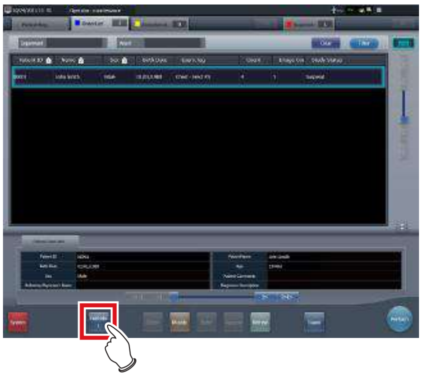
- The login dialog of the registered Acies client or the specified web page on Internet Explorer is displayed.

2 **Once operation of the connected device is finished, minimize or close the Acies client or Internet Explorer, and return to this device's screen.**



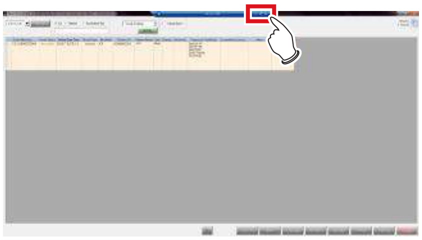
7.25.2 Remote Desktop Linkup

1 Press the [Remote Desktop Linkup] button on the patient registration screen or the list screen.



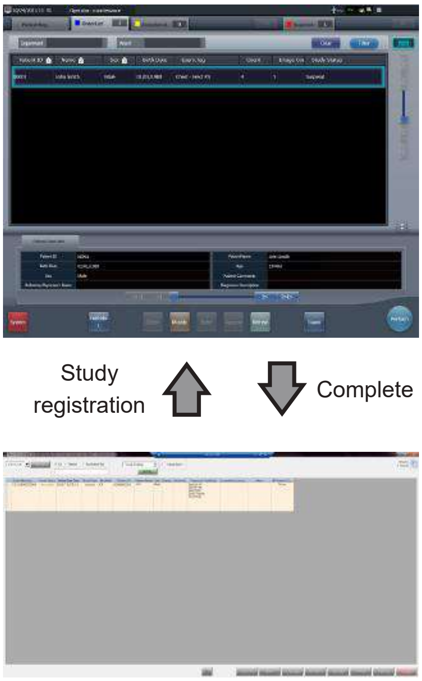
- The registered linked device is displayed via Internet Explorer or the Remote Desktop.

2 Once operation of the connected device is finished, minimize or close the Remote Desktop, and return to this device's screen.



HINT

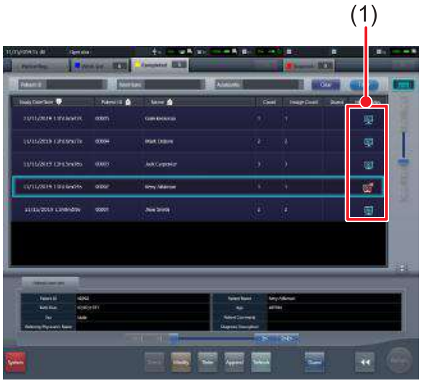
- If Auto Checkup is enabled by RIS-IN setting and automatic remote connection is set when the study is complete, the screen can be switched automatically between the screen of this device and the relational RIS client, etc.



7.26 Resending Storage Commitment

7.26.1 Screen structure

● List screen

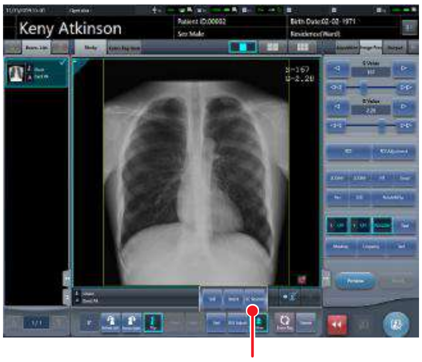


Number	Name	Functions
(1)	Device icon	Image output status to the host and Storage Commitment output status are displayed.

HINT

- If the Storage Commitment device icon is displayed in red, resend Storage Commitment from the toolbar in the exposure screen.
- If image output to the host has failed, resend the image.

● Exposure screen



[SC Resend] button

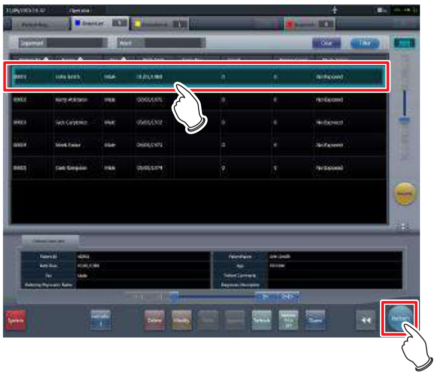
HINT

- [SC Resend] button is available only when Storage Commitment transmission/reception has failed.
- The location of [SC Resend] button may differ depending on the settings.

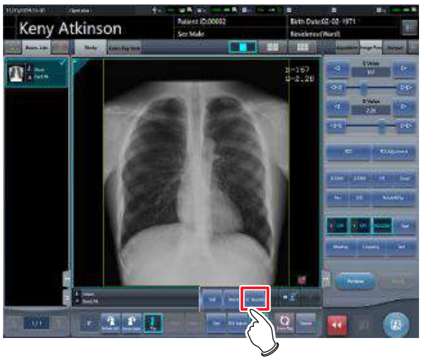
7.26.2 Resending Storage Commitment

Resend Storage Commitment.

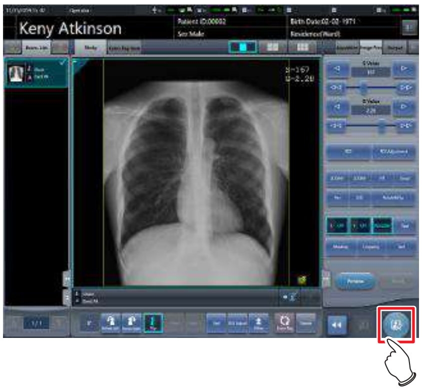
1 **From the list screen or examination history screen, select the study to resend Storage Commitment, and press [Perform].**



2 **Press [SC Resend].**



3 **Press [ ].**



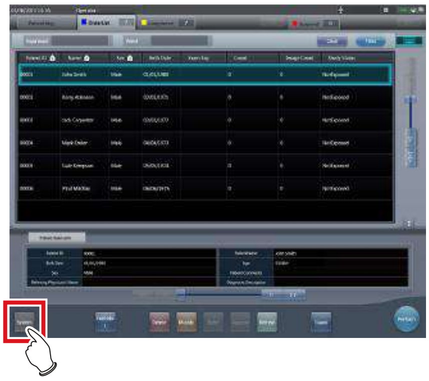
7.27.1 Switching of the wireless communication function of the DR Detector

The wireless communication functions of the DR Detector (permitted/prohibited) can be switched.

IMPORTANT

- Switch the wireless communications function from off to on while the DR Detector is in the wired connection condition.
- If there are more DR Detectors than I/F Cables, establish a wired connection once for DR Detectors that did not have one when the wireless communications function was switched from off to on before use.

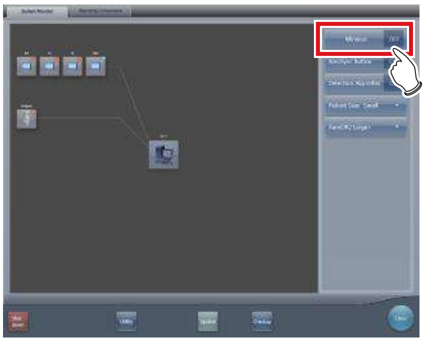
1 Press [System] on the initial screen.



- The system monitor screen is displayed.
- If the network status is not displayed, select the [System Monitor] tab on the function switching tabs.

2 Press [Wireless] to switch the wireless communication function.

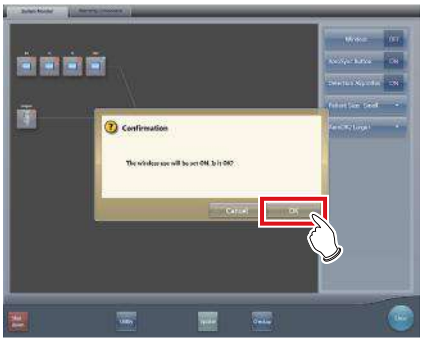
- [Wireless ON] shows that wireless communication function is on.
- [Wireless OFF] shows that wireless communication function is off.

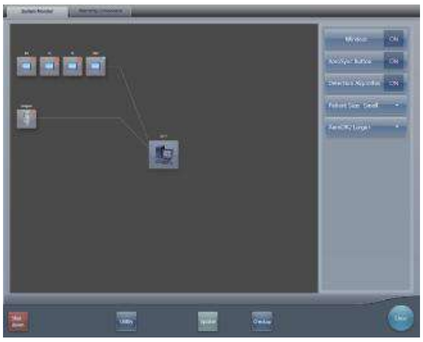


- A confirmation screen is displayed.

3 Press [OK].

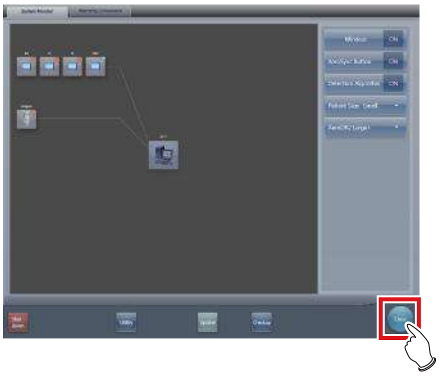
- Press [Cancel] to return to the previous screen.





- The wireless communication function switches.

4 Press [Close].

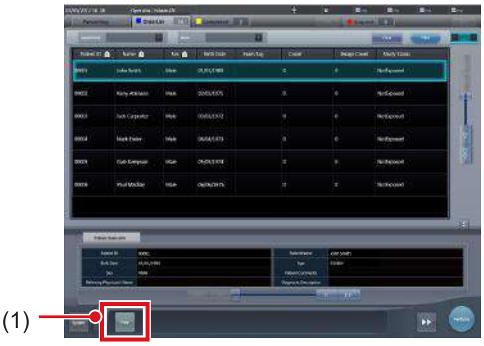


- The display returns to the initial screen.

7.27.2 Release of the X-ray linkage when using AeroDR S-SRM KIT

When using AeroDR S-SRM KIT with sync mode to the X-ray device set to manual connection, you can release the link to the X-ray.

●Screen configuration



Number	Name	Functions
(1)	Free button	The link to the X-ray device is canceled to enable exposure.

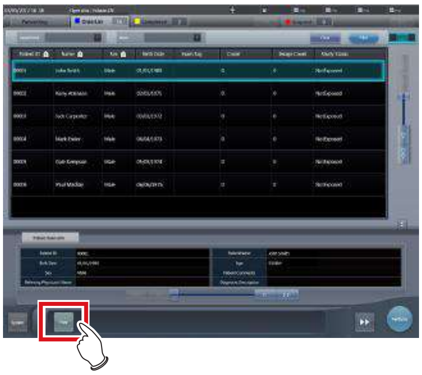
HINT

- If [Free] does not appear, press [◀◀] on the toolbar.
- When a fault occurs due to a bad connection etc., [Free] turns yellow. Check the connection status and power status of the AeroDR S-SRM KIT and then execute the link setting again.

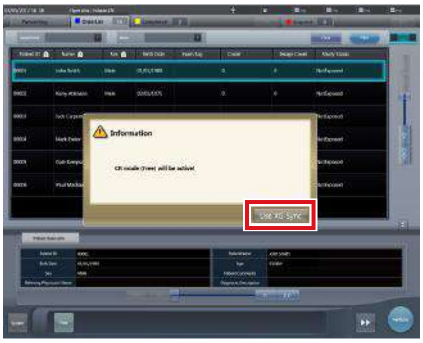
●Canceling link to X-ray device

The link to the X-ray device can be canceled as follows.

1 **Press [Free].**



⇩



Information

CR mode (Free) will be active!

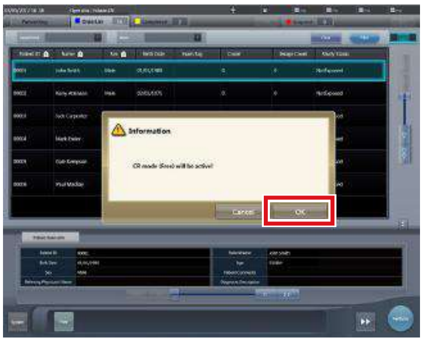
- A confirmation screen is displayed.

IMPORTANT

- The link to the X-ray device is released to enable exposure only while the confirmation screen is displayed.
- Press [Use XG-Sync] to restore the link to the X-ray device.

●About messages during CR exposure

Depending on the settings at installation, messages may appear during CR exposure.



Information

CR mode (Free) will be active!

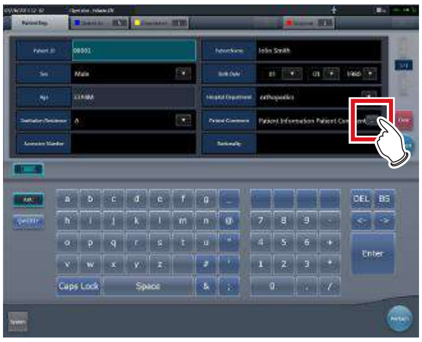
IMPORTANT

- The link to the X-ray device is released only while the confirmation screen is displayed.
- Press [OK] to restore the link to the X-ray device.

7.27.3 Display of long-sentence pop-up screen

Use the long-sentence pop-up screen to check the portion of the entry that exceeds the dimensions of the display pane of the item or an entry that spreads across multiple lines.

1 Press the long-sentence comment pop-up button, […].

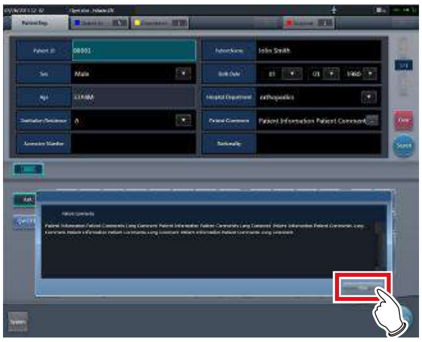


- The entry is displayed on the long-sentence pop-up screen.

HINT

- You can use the user tool to set the items to be displayed along with the entry.

2 Press [Close].

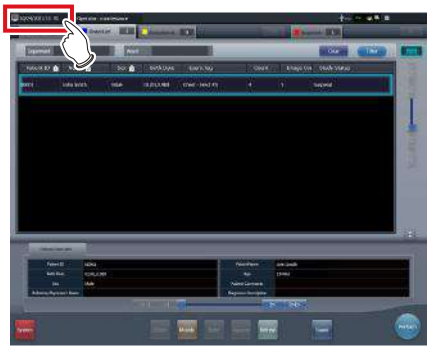


- The long-sentence pop-up screen closes.

7.27.4 Screen hide function

When the [🖥] icon is displayed in the leftmost position of the application bar, you can hide the screen using a one-touch operation.

1 Press the date and time display on the application bar.



- The screen display is hidden.

2 To return to the screen display, perform an operation with the touch panel, mouse, or keyboard.

IMPORTANT

- Before using a bar code reader or a magnetic card reader, recover the screen display first.
- Do not hide the screen display during exposure.
- If the Auto Checkup function is enabled, do not use this function.
- When returning to the screen display, if the screen saver is in operation, cancel the screen saver.

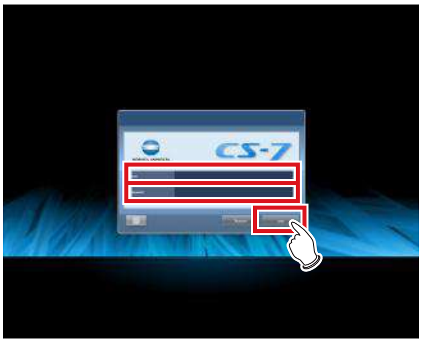
7.27.5 Screen saver

When operation is not performed for a certain time, the screen saver starts.

●Login as another operator after screen saver is canceled

If displaying the login screen after canceling screen saver, it is possible to log in with another user ID.
The following procedure describes the case where the screen saver starts up while logged in as Edward.N, and logging in as Alan.E after canceling screen saver.

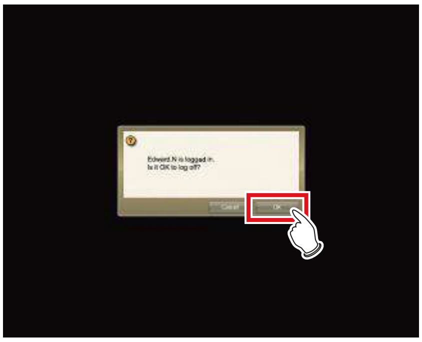
1 After canceling screen saver, input the user ID and password of Alan.E, then press [Login].



- A confirmation screen is displayed.

2 Press [OK].

- Press [Cancel] to return to the previous screen.


Edward.N is logged in.
Is it OK to log off?

- The initial screen for user ID of Alan.E is displayed.

7.27.6 Bar code reader and magnetic card reader

When optional bar code reader and magnetic card reader are used, various types of information can be read and input.
The following are precautionary items when bar code reader and magnetic card reader are used.

●Bar code reader

- When placed on its special stand, the laser is always in the lit state.
- When used in the constant lit state freeing the hands, exercise full caution that the laser is not discharged in a direction where it will enter the eyes of people.
- The bar code can be read in either up or down orientation of the CR cassette.
- After pressing the trigger button, if the bar code is not read in a certain time, the laser goes out. When reading again, release the trigger button, press it again, and discharge the laser.

●Bluetooth bar code reader

- The battery lasts for about 2 days when connected to a PC via Bluetooth communication.
  * Varies depending on the usage.
- When not used, connect the USB cable to charge.
- For approximate charging time and battery replacement, refer to the Bluetooth bar code reader operation manual.
- The display shifts to sleep state when there are no operations, and screen display disappears, however Bluetooth communication is not disconnected.
- Communication distance is within 10 m.
  * Varies depending on the usage.
- For recovery from the Bluetooth communication failure, refer to Bluetooth bar code reader operation manual.
- Data read with the bar code reader while Bluetooth communication is disconnected will not be sent to this device.
  * Accumulated data is not transferred when connection is recovered.
- If bar codes are not transmitted, ID search and screen transitions are not performed. If not yet transitioned to the exposure screen, recover the communication. For the recovery procedure, refer to the Bluetooth bar code reader operation manual.

- When reading bar codes of the patient list, read while keeping the distance from the bar codes to approx. 5 to 10 cm. Sometimes it is not possible to read outside this range.
  * Reading distance will vary depending on the size of bar code and code system.
- Connect one PC to one Bluetooth bar code reader in tandem. Do not connect multiple units.
- During normal operation, if the PC is shut down, connection of Bluetooth communication is disconnected, and the power of the bar code reader is turned off 5 minutes later.
- The valid digit number cannot be set, depending on the barcode reader used.

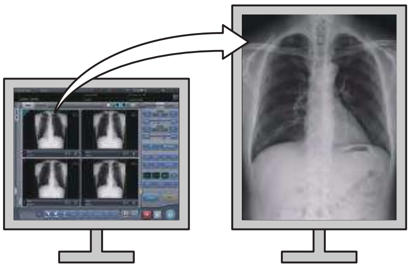
● Magnetic card reader

- When a card is read while the screen saver is operating, some data may be lost. Perform reading after the screen saver is released.
- After reading magnetic data, always check that the patient information displayed on the screen matches the patient information written on the magnetic card.
- Insert the magnetic card from the edge of the magnetic card reader unit, and slide horizontally to the opposite edge.
- While the magnetic data is being read, do not perform input. Sometimes magnetic data gets mixed with data input by input operation.

7.27.7 Addition of high precision monitor

An optional high precision monitor can be connected to this device.
The following are precautionary items when a high precision monitor is used.

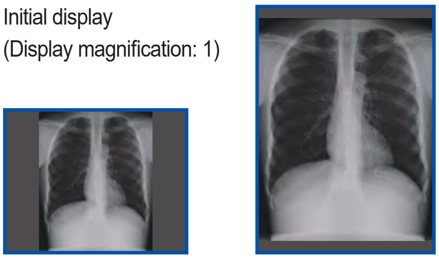
- The image that has focus on the exposure screen or the image displayed on the viewer screen is displayed. Unexposed images on the list screen, the body part selection screen, and the exposure screen are not displayed.



IMPORTANT

- Images cannot be manipulated on the high precision monitor. Perform manipulation of images with this device.
- Since high precision monitors has a different aspect ratio from that of the exposure screen and viewer screen, when you enlarge, reduce, or move an image on the exposure screen or viewer screen, an image of a different area may be displayed on such a monitor.

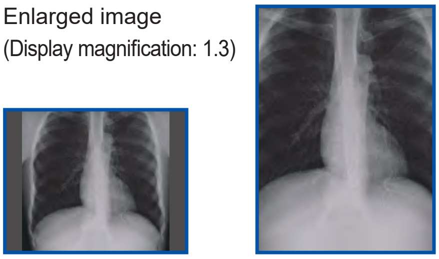
Initial display
(Display magnification: 1)



Normal monitor High precision monitor

⇩

Enlarged image
(Display magnification: 1.3)



Normal monitor High precision monitor

- The high precision monitor does not display a high-definition mammography
- When a high precision monitor is used, a detailed image for PDA cannot be created.

7.27.8 Addition of sub monitor

An optional sub monitor can be connected to this device.

The following are precautionary items when a sub monitor is used.

- Used as auxiliary exposure equipment in the exposure room.
- A network display adapter is needed for connection.

IMPORTANT

- When a problem, such as network disconnection, occurs, there may not be anything displayed on the monitor. If this occurs, restart this device.
- If the power for the AeroDR Interface Unit, etc. is turned on/off while a sub monitor is connected, the network can be disconnected and the screen display goes black or freezes, being no-op. When turning on/off the power for the AeroDR Interface Unit, etc., do so after unplugging the power cable for the network display adapter or restart this device after turning the power on/off.

7.27.9 Addition of monitor for checking image

An optional monitor for checking image can be connected to this device.

The following are precautionary items when a monitor for checking image is used.

- Used as a monitor for checking images when operating this device with the portable X-ray device.

IMPORTANT

- This device's monitor will not be displayed when connected.
- When connecting a monitor for checking images, do not perform exposure.
- Do not perform a diagnosis using the image displayed in the monitor for checking images.

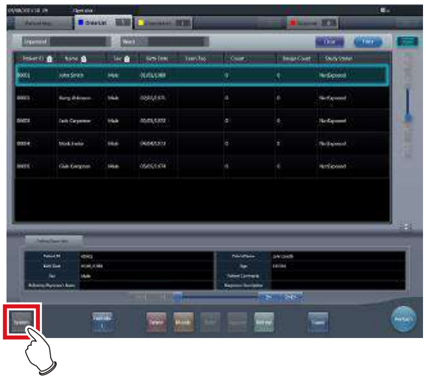
7.27.10 Display of manuals

The "CS-7 Operation Manual" and other manuals can be displayed.

●Displaying a manual from the system monitor screen

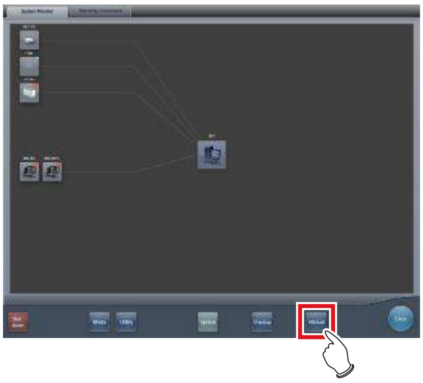
The procedure to display a manual from the system monitor screen is as follows.

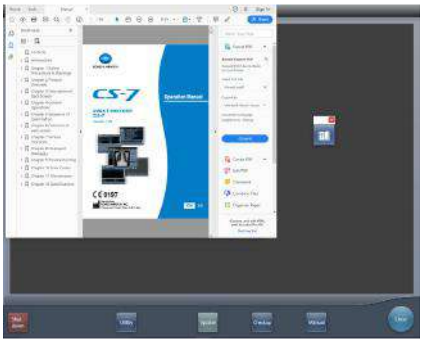
1 Press [System] on the initial screen.



- The system monitor screen is displayed.

2 Press [Manual].





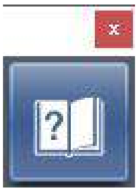
- The "CS-7 Operation Manual" is displayed.

IMPORTANT

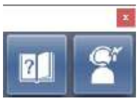
- If the manual file is not stored, the [Manual] button is not displayed.

HINT

- When the following manual display button is pressed, the "CS-7 Operation Manual" can be displayed on the front layer.

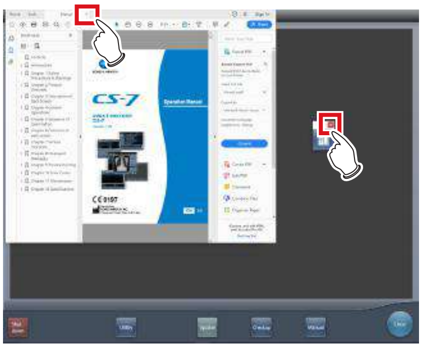


- The TeamViewer startup button may be displayed at the same time.



- You can also arrange and display the manual display button and TeamViewer startup button vertically. For more details, contact Konica Minolta technical representatives.

3 To close the manual, press [×] on the operation manual screen or [☒] in the manual display dialog box.



- The operation manual is closed.

● Displaying a manual from the user tool

For information regarding the procedure to display the manual from the user tool, refer to the "CS-7 Operation Manual for User Tool".

HINT

- Up to eight manuals can be called from the user tool if it is used.

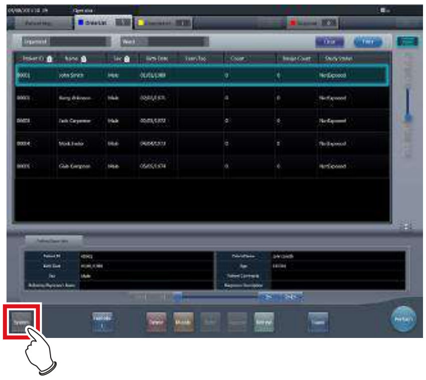
7.27.11 TeamViewer startup

TeamViewer is a remote tool for performing operation support service.
The procedure for starting up TeamViewer is as follows.

IMPORTANT

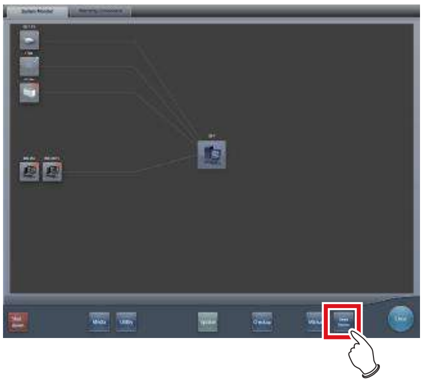
- This function is used when operating the remote maintenance service.

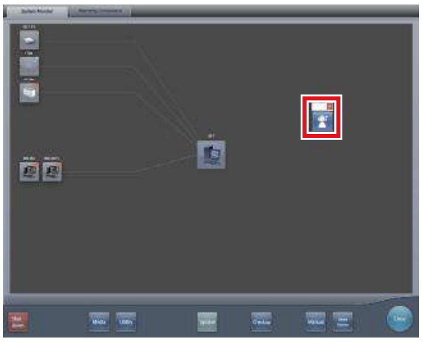
1 Press [System] on the initial screen.



- The system monitor screen is displayed.

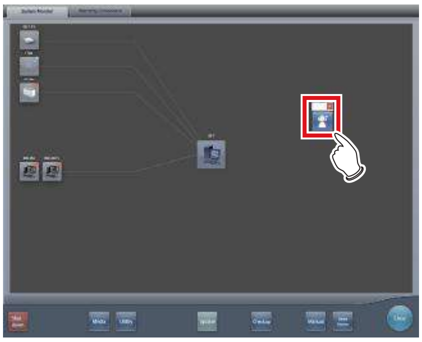
2 Press [TeamViewer].

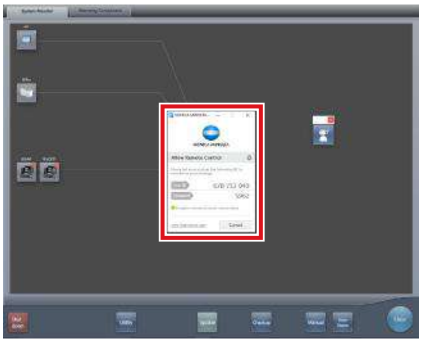




- The TeamViewer startup button is displayed.

3 **Press the TeamViewer startup button.**

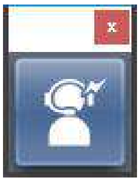




- TeamViewer starts up, and the remote operation permission screen is displayed.

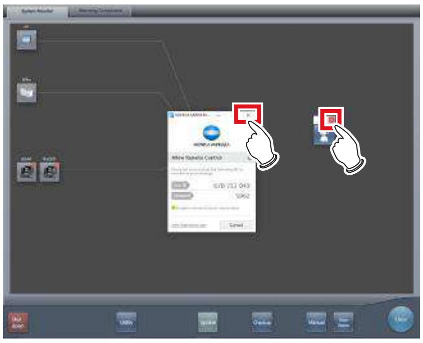
HINT

- You can press the following TeamViewer startup button to display the remote operation permission screen on the front layer.



- Give the ID (9 digits) and password (4 digits) information displayed on the remote operation permission screen to a customer service representative. This information is used to start remote access.

4 **To close the remote operation permission screen, press [×] on the remote operation permission screen or [x] on the TeamViewer startup button.**



- The remote operation permission screen is closed.

Chapter 8

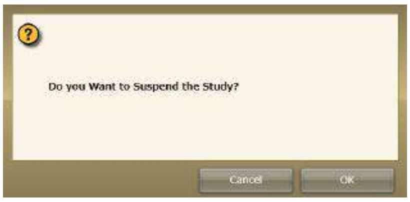
Displayed Messages

This chapter describes the displayed messages
and the countermeasures.

8.1 Displayed message types

Messages for warnings and cautions will be displayed on the screen in dialog boxes or balloons. The following describes the difference between a dialog box and a balloon.

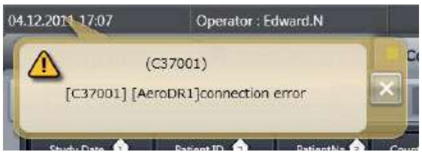
Dialog box



Do you Want to Suspend the Study?

- Together with a message, [OK] and [Cancel] are displayed. Read the message, and perform the appropriate operation.
- Pressing [Cancel] will basically return you to the previous screen.

Balloon



04.12.2011 17:07

Operator : Edward.N

(C37001)

[C37001] [AeroDR1]connection error

- [×] is displayed together with the message. The screen can be closed by pressing [×]. The screen will also close after a certain amount of time elapses.

8.2 Dialog boxes/balloons and countermeasures

HINT

- The messages displayed on this device are described in the following order:
  1) symbols
  2) numbers in ascending order
  3) alphabet characters in ascending order

8.2.1 Messages displayed in dialog boxes and countermeasures

If the following messages appear, take the respective countermeasures.

Displayed message	Problems/countermeasures
"[DR Detector name]" requires refresh operation to be used for next study. Please refresh the AeroDR by pressing [Refresh] or rebooting the AeroDR. [Refresh]: Refresh the AeroDR. [Cancel]: Return without refreshing.	Displayed when moving to the list screen while there are unreceived images in the DR Detector. Press [Refresh] to refresh the Detector.
"[ImageAcquisitionConditionName]":Wired/Wireless connection is changed during image reception. Return the panel to previous connection. Needs to retrieve the image.	Displayed when switching a wired or wireless connection while receiving an image. Check the connection status of the network device and communication cables, and tap the Exam. Tags (in the yellow frame) to re-acquire the image.
[DR Detector name]: "[ImageAcquisitionConditionName]" Press OK button to retrieve the image. This panel cannot take an image until the image is fully sent.	Re-acquire the unreceived image. Press the [OK] button. * Exposure with the corresponding panel is unavailable until image re-acquisition is complete.
[DR Detector name]: A communication error occurred during image reception. Check the connection status of the communication cable.	Displayed when a communication error occurs while the device is receiving an image from the DR Detector. Check the cable status. Also, tap the Exam. Tags (in the yellow frame) to re-acquire the image.
[DR Detector name]: The AeroDR needs to be refreshed. Do you wish to continue?	An image remains in the panel displayed by a yellow frame on the Application Bar. Press [OK] to erase images. To recapture those images without deleting them, open the study that exposed those images.
[DR Detector name]: Switched to Aero Storage mode.	The specified DR Detector has been changed to Aero Storage mode. The communication link to the CS-7 is automatically disconnected. Communication with the DR Detector cannot be established until Aero Storage mode is disabled.
[ExposureArea]cm over-sized radiation field detected. Please set the radiation area again, or add the Exam.Tag.	Displayed when the number of images detected by the AeroDR Stitching System is greater than the number of Exam. Tags. Either add Exam. Tags or perform the exposure field detection again.
[ImageAcquisitionConditionName]: Wired/Wireless connection is changed during image reception. Return the panel to previous connection. Needs to retrieve the image.	Displayed when image reception fails. Wait until the Detector has returned to the previous connection and communications are restored.
A barcode is registered to this capture condition key. Is it OK to change the registration?	Displayed when changing the exposure conditions of a CR Cassette with a registered barcode to DR Detector exposure conditions. Press [OK] to erase the registration.

Continued on the next page

Displayed message	Problems/countermeasures
A CR reader connected to CS-7 does not support mammogram reading.	Contact Konica Minolta technical representatives.
Aborting image reading could lead to image loss. If image reading is aborted, suspend the study and restart CS.	Displayed when [Delete Reading] is pressed on the JM condition confirmation screen. Press [OK] to stop the reading. When [OK] is pressed, all registered jobs will be erased.
Accession Number Format text cannot be more than 16	The number of characters of the Accession Number exceeds the possible number of characters to enter. Change the settings, and reduce the number of characters.
AEC for CR Exposure condition cannot turn ON. Is it OK to turn OFF the AEC?	This may be displayed if the image display area of an exposure condition whose AEC settings cannot be activated is pressed when linked with the X-ray device. Press [OK] to deactivate the AEC setting.
AeroDR XG BOX/ AeroDR Interface Unit2 / AeroDR Portable RF Unit Verify that the version of the device is correct.	Check the device version for the AeroDR Interface Unit2, AeroDR Generator Interface Unit, AeroDR Generator Interface Unit2, Generator Interface Unit 3, AeroDR Portable RF Unit, AeroDR Portable RF Unit2.
Aero Storage images exist in CS-7. Please allocate in exposure screen.	This is displayed when an image exposed by Aero Storage mode is saved in this device when is not allocated to Exam. Tags. Display the exposure screen and create an allocation between the image and Exam. Tags.
Allocation Error Image allocation failed.	This is displayed when an allocation between the image exposed by Aero Storage and the Exam. Tags has failed. Allocate the image and Exam. Tags again.
An accession number overlapped with existing study	Duplicated Accession Numbers have been deleted since there are multiple identical Accession Numbers with existing studies. Register an unduplicated Accession Number.
An empty accession number exsits. Please register the accession number.	A study without a registered Accession Number exists. Register the Accession Number.
An error occurred during image reading. Check the network. Restart the reader.	Displayed when a communications error occurs while reading an image with a CR Cassette exposure. Check the network and restart REGIUS.
An error occurred in the authentication device. Please check the state of the authentication device.	Displayed when an error occurs on the authentication device of the IC card. Reconnect the authentication device. If the error persists, contact Konica Minolta technical representatives.
An unexpected error has occurred.Please restart CS-7.	Displayed when an error with an unknown cause occurs. Restart the device. If the error persists, contact Konica Minolta technical representatives.
Applied image processing parameter was not found in the processing menu.	This message appears when an image processing condition not available in the user master is selected on the viewer screen. Confirm the image processing condition applied to the current examination.
Are you sure want to delete unreceived image? If press [OK], It is not able to do image re-reception. [OK]: Delete the image. [Cancel]: Return without deleting.	Displayed to reconfirm the deletion of the image remaining in the DR Detector. Press [OK] to delete.
Are you sure you want to cancel discard?	This is displayed when [ ] (cancel reject button) on the rejected image is pressed. Press [OK] to cancel reject.
Are you sure you want to change status to not exposed? If the status is changed to not exposed, the study should be restarted once again in order to re-receive the unreceived image.	Displayed when [ ] is pressed while there are unreceived images in a study. Press [Cancel], and tap the Exam. Tags (in the yellow frame) to re-acquire the image.
Are you sure you want to change the image processing parameters?	Displayed when changing the Image processing value of the Exam. Tag. Press [OK] to change the image processing parameters.

Displayed message	Problems/countermeasures
Are you sure you want to change the layout?	This is displayed when changing the layout in the print composer. Press [OK] to change it.
Are you sure you want to clear the film?	This is displayed when clearing the film in the print composer. Press [OK] to clear them.
Are you sure you want to complete these examinations? Completing the study will erase the unreceived image. (Unread barcode will be deleted)	Displayed when ending multiple studies at once. Press [OK] to run the termination process. Studies with no exposed images will be deleted. (Unread barcodes will be deleted.)
Are you sure you want to complete these examinations? examinations that has no images will be deleted. (Unread barcode will be deleted)	Displayed when ending multiple studies at once. Press [OK] to run the termination process. Studies with no exposed images will be deleted. (Unread barcodes will be deleted.)
Are you sure you want to complete these examinations? There is examination that is not started. (Unread barcode will be deleted)	Displayed when ending multiple studies at once. Press [OK] to run the termination process. Unexposed images exist. (Unread barcodes will be deleted.)
Are you sure you want to complete this study? Completing the study will erase the unreceived image.	Displayed when pressing [ ] while there are unreceived images in a study. Press [Cancel], and tap the Exam. Tags (in the yellow frame) to re-acquire the image.
Are you sure you want to delete this study?	Displayed when [ ] is pressed while there are no exposed images for the study in progress. Press [OK] to end the study.
Are you sure you want to delete this study? (Unread cassette barcode will be deleted)	Displayed when pressing [ ] while there are unexposed images in a study. Press [OK] to end the study. Press [OK] to delete barcodes on which image reading has not been performed.
Are you sure you want to delete this study? Deleting the study will erase the unreceived image.	Displayed when pressing [ ] while there are unreceived images in a study. Press [Cancel], and tap the Exam. Tags (in the yellow frame) to re-acquire the image.
Are you sure you want to discard image? [OK]: Discard [Cancel]: Return without discarding	Displayed when confirming re-exposure. Press [OK] to reject.
Are you sure you want to re-Assign image to film?	This is displayed when clearing the images that have been assigned to the print composer. Press [OK] to clear them.
Are you sure you want to suspend these examinations?	Displayed when pausing multiple studies at once. Press [OK] to run the suspension process.
Are you sure you want to suspend these examinations? If this examination is suspended, it is necessary to start this examination again in order to re-receive an image.	Displayed when pausing multiple studies at once. Press [OK] to run the suspension process. When suspended, beginning the study again is required in order to re-acquire images. Also, studies with no exposed images return to unexposed status.
Are you sure you want to suspend these examinations? Studies no captured images is changed to not started.	Displayed when pausing multiple studies at once. Studies with no exposed images return to unexposed status.
Are you sure you want to suspend this study?	This is displayed when suspending a study containing an exposed Exam. Tag.
Are you sure you want to suspend this study? If this study is suspended, it is necessary to start this study again in order to re-receive an image.	Displayed when [ ] is pressed while there are unreceived images in a study. Press [Cancel], and tap the Exam. Tags (in the yellow frame) to re-acquire the image.
As the image is queued for output, it cannot be discarded. Before discarding the image, please wait for the output finished or delete the output queue.	Displayed when trying to delete an image while output is in progress. Delete the image after stopping output.

Continued on the next page

Displayed message	Problems/countermeasures
As the stitched image is created, this image cannot be deleted.	Displayed when attempting to delete an image on which combination stitching was performed. First delete the combined image and then perform the deletion.
Automatic generated submaster cannot be copied	Contact Konica Minolta technical representatives.
Before study completion, please output or reject each Mammo Image.	This is displayed when finishing an examination while there are mammogram images that have not yet been output. Output all mammogram images or reject them.
Below consoles are having more studies, but only partial studies are displayed.	Displayed when unable to acquire parts of a study after performing multiple terminal study acquisition through study sharing. Check the connection and reacquire the study.
Birth date is mandatory, Please enter birth date.	Displayed when mandatory fields have not been filled in. Press [OK] to close the screen.
Calibration of [DR Detector name] have expired. Please perform calibration urgently. Do it now? - If choose later: Press the arrow buttons at the bottom of the screen. And Press the calibration button in the toolbar that appears.	This is displayed when calibration of the DR Detector has expired. Perform calibration as soon as possible.
Calibration of [DR Detector name] will expire in [LimitDate] more day(s).	The calibration expiration date of the DR Detector is displayed.
Calibration of [DR Detector name] will expire in [LimitDate] more day(s). Please perform calibration. Do it now? - If choose later: Press the arrow buttons at the bottom of the screen. And Press the calibration button in the toolbar that appears.	This is displayed when calibration of the DR Detector will be expiring soon. Perform calibration.
Can not manipulate the data in the deleted status.	The study cannot be opened as it has been deleted.
Cannot add exposures beyond [0].	Displayed when the number of scheduled exposures for the same patient exceeds the maximum value. Further reservations cannot be added.
Cannot add exposures beyond [MaxSize].	This is displayed when the maximum number of Exam. Tags that can be registered has been exceeded.
Cannot add SERIALs beyond 10 exposures.	This message appears when attempting to select more than 10 serial exposure Exam. Tags.
Cannot capture images due to low battery power. Charge the battery.	Displayed when the battery level for the DR Detector in use is low. Charge the DR Detector.
Cannot edit the stitching position, because image stitching is performed at other console. Please stitch the images again.	Displayed when trying to recombine an image that was combined on another shared terminal. Combine the images again on the original shared terminal.
Cannot get exposures beyond [0].	The Image Count for this patient has exceeded the upper limit. No more studies can be acquired.
Cannot perform the calibration in the Technologist. Please perform again in higher than super user privileges.	This is displayed when you log in as Technologist and try to perform calibration. Log in again using Super user or higher privileges.
Cannot perform the operation as selected study data save is in progress. Please perform the same operation after some time.	The selected study was displayed during image processing. Wait until processing is finished and perform the operation again.
Cannot perform the studies as different Patients studies got selected.	Displayed when a different study is performed with a multi-study. Reselect a study of the same patient.
Cannot perform the study as the study is in moving.	Displayed when the [Perform] button is pressed while a study is being transmitted or the destination device is receiving a study. Cancel sending the transmission or start the study with the destination device.

Displayed message	Problems/countermeasures
Cannot perform this operation as image reading is inprogress	Displayed when attempting to shut down the system or delete a job while reading an image. Shut down the system after the image reading is finished.
Cannot read the magnetic card. Restart the system.	This is displayed if an error occurred when a magnetic card is read.
Card registration is completed.	Displayed when all IC cards to use for log in are registered.
Changed parameters have not been saved. Are you sure you want to discard them?	Displayed when [Back] is pressed with without pressing [Apply] after making edits on the stitching viewer screen. Press [OK] to close without saving the edits.
Changing patient information may cause errors in PACS study matching. Confirm all changed data immediately on PACS.	This is displayed when the patient information is modified after starting the study.
Channel change is not required for wireless access point.	This is displayed when there is no necessity to change the channel settings of the wireless access point.
Connected successfully.	This is displayed when the connection is confirmed as a result of the connection confirmation diagnosis.
Copying …	Image copying in progress. Wait until the process end.
Could not find the matching Order to apply the exposure results. Please check.	This is displayed when there is no Exam. Tag to apply the exposure result from the X-ray device.
CR mode (Free) will be active!	Displayed when set to non-interlock with the X-ray device. To return to the sync setting, press [OK] or [Use XG-Sync]. (When S-SRM X-ray Exposure sync mode is set to Manual)
CS-7 AEROSYNC license is not registered. Please register for the license.	Displayed when using the Aero-Sync mode exposure function on a console with the device's unregistered AEROSYNC license. Register the device's AEROSYNC license.
CSV OutPut Successfully saved.	Displayed when CSV output is complete.
Data Already Present. Please Change Media	This is displayed when appending to written media is not possible.
DB data got udapted, Updated Study will be displayed.	Displayed when updating a study while it is in operation. Check the content details.
DB Error - Create order failed.	This is displayed when a new study cannot be created.
Deleting of the job is not success.	This is displayed when stopping of JM read has failed.
Destination setting is invalid. This study is not shared, and suspended.	The moving process was not performed because the destination settings were not correct. Check the destination settings.
Device cancellation failed.	Displayed when canceling the DR Detector registration from the exposure room has failed.
Different digit serial numbers can not be configured.	Displayed when setting the Start value and Stop value with differing numbers of digits. Set link numbers with the same number of digits.
Digit Serial Number or Time is not configured to Patient ID. Every time same Patient ID will get generated. Is it OK?	The patient may be recognized as an identical patient on each occasion. Set the link number settings and time settings.
Do you want change the body size, Please confirm?	This is displayed when a child patient size is changed to other patient size in the [Exp. Info] tab.
Do you want to abort the calibration process?	This is displayed when aborting calibration. Press [OK] to abort.
Do you want to allocate selected image? Patient Name : [Patient Name] Exam. Tag Name : [Exam. Tag Name] Image No : [Image No] Image Date Time : [Image Date Time] Import Date Time : [Import Date Time]	This is displayed in the exposure screen when creating an allocation between an Aero Storage image and Exam. Tag.

Continued on the next page

Displayed message	Problems/countermeasures
Do you Want to append shot to the Study?	This is displayed when adding exposure to studies. Press [OK] to add exposure.
Do you want to change the Detection Algorithm setting to OFF ?	This is displayed when changing the detection selection processing setting from ON to OFF. Press [OK] to turn OFF the detection selection processing.
Do you want to change the Detection Algorithm setting to ON ? Appropriate area of radiation field is required in case of ON. Refer user manual for details.	This is displayed when changing the detection selection processing setting from OFF to ON. Press [OK] to turn ON the detection selection processing.
Do you want to change the wireless access point channel? Channel setting change may take few minutes	Displayed when changing the channel settings of the wireless access point. Press [OK] to change channel settings.
Do you want to change the wireless access point to the suitable channel? Channel setting change may take few minutes.	Displayed when changing the channel settings (Auto CH) of the wireless access point. Press [OK] to change channel settings.
Do you want to clear all?	Displayed when [Clear] is pressed after entering patient info. Press [OK] to erase the contents of the entry form.
Do you want to clear the Log?	Displayed when deleting the log using the Log management tool or Reject log tool. Press [Yes] to delete the log.
Do you want to close?	Displayed when it is necessary to confirm closing a screen.
Do you want to continue this operation?	Displayed when terminating exposure.
Do you want to copy the image ?	Displayed when [⧉] is pressed. Press [OK] to copy images.
Do you want to delete the selected record?	Displayed when [Delete] is pressed on the list screen. Press [OK] to delete the study.
Do you want to end the system?	Displayed when the [Shut down] button is pressed. Press [OK] to end.
Do you want to exchange the image ?	Displayed when [🔄] is pressed. Press [OK] to exchange images.
Do you want to exit without saving?	Displayed when closing the screen without saving changes. Press [OK] to close the screen without saving.
Do you want to overwrite collimator size?	May be displayed when updating the reading conditions while linked with an X-ray device. Press [OK] to update the collimator size.
Do you want to overwrite the data?	This is displayed when patient information is read from the magnetic card while operating in the patient registration screen.
Do you want to register the study?	This is displayed when trying to transition to the list screen after entering the patient information.
Do you want to Save?	Displayed when a confirmation for saving is necessary.
Do you want to Save/Backup the Log?	Displayed when backing up (saving) the log using the Log management tool or Reject log tool. Press [Yes] to save.
Do you want to Switch the JM?	Displayed when switching the JM. Press [OK] to switch the JM. When [OK] is pressed, all registered jobs will be erased.
Empty fields are not allowed. Please enter the text.	Displayed when either the preset name, arbitrary character string, or link number is not entered. Enter a preset name, arbitrary character string, or link number.
Enter End date.	Displayed when an end date is not set. Set the end date.

Displayed message	Problems/countermeasures
Enter Start date or End date.	Displayed when the start date or end date is not set. Set the start date or end date.
Entered value is invalid	Displayed when numerals besides acceptable values are entered. Enter values that are within range.
Error happened in JM switching, Please confirm the backup JM status.	Displayed when JM switching fails. Check that the device personal computer assigned to be the new JM is turned on.
Error has occurred. Please restart CS-7.	Displayed when an internal processing error occurs while "Backing up" the log or "Deleting" the log. Restart this device.
Error in queue deletion.	Displayed when deleting a queue fails. Restart the device and try deleting the queue again.
Error occured in Study Sharing. The study was not moved.	Displayed when attempting to transmit a study stored on the device from the Study Sharing tab and the target study does not exist or a study is being performed. Confirm from the device that the study is not being performed, has not been deleted, and has not been move to another device.
Error occurred during receive cancel operation in [Other device name]. Check the study status in [Other device name]	Cancellation of the scheduled move for the target study failed. Check the target study status. If the target study has already been moved, it cannot be cancelled.
Error occurred during receive completion operation. Check the study status in [Other device name]	An error of unknown cause occurred during the moving process. Move the target study again. If the problem persists, restart the device and try to move the target study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Error occurred during send cancel operation to [Other device name]. Check the [Other device name] study status.	Cancellation of the scheduled move for the target study failed. Check the target study status. If the target study has already been moved, it cannot be cancelled.
Error occurred during send completion operation to [Other device name]. Check the [Other device name] study status.	An error of unknown cause occurred during the moving process. Move the target study again. If the problem persists, restart the device and try to move the target study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Error occurred while receiving the files in [Other device name]. Check the network status.	Communication between consoles failed. Confirm that there is not a problem with the LAN connection between the device and the console and establish the communications again. If the problem persists, restart the device and try to establish communications again. If this does not solve the problem, contact Konica Minolta technical representatives.
Error occurred while receiving the files in [Other device name]. Please check the study status in [Other device name]	Failed to prepare the target study for moving. Check the target study status. Studies in the following statuses cannot be moved. • The target study has been deleted and does not exist • The target study is in progress • The target study has been reserved for moving or is currently being moved. • The same study exists in the destination terminal and the exposure is complete • The same study exists in the destination terminal and is scheduled for moving
Error occurred while receiving the files in [Other device name]. There is no matching study. Please check the study status.	The target study has been deleted or has already been moved. Check the target study status.

Continued on the next page

Displayed message	Problems/countermeasures
Error occurred while sending to [Other device name]. Check the network status.	Communication between consoles failed. Confirm that there is not a problem with the LAN connection between the device and the console and establish the communications again. If the problem persists, restart the device and try to establish communications again. If this does not solve the problem, contact Konica Minolta technical representatives.
Error occurred while sending to [Other device name]. Check the study status of [Other device name].	Failed to prepare the target study for moving. Check the target study status. Studies in the following statuses cannot be moved. • The target study has been deleted and does not exist • The target study is in progress • The target study has been reserved for moving or is currently being moved.
Error occurred while sending to [Other device name]. There is no matching study. Check the study inforamtion.	The target study has been deleted or has already been moved. Check the target study status.
Error occurred while the image was been copied.	Contact Konica Minolta technical representatives.
Error updating patient DB.	This is displayed when updating of the patient information has failed after modifying the patient information.
Exam.Tag copy process error occured.	Contact Konica Minolta technical representatives.
Exam tag other than stitching are contained in the source images.	Displayed when images with body part Exam. Tags not to be stitched are included with the body part Exam. Tags to be combined. Select the body part Exam. Tags to be stitched.
Exam tag selection limit is exceeded.	Set the number of Exam. Tags within range.
Exchanging …	Image replacement in progress. Wait the processes end.
Expose again? [OK]: Discard and add exposure [Cancel]: Discard only	Displayed when [ ] is pressed. Press [OK] to perform exposure again.
Exposure area and Exam.Tag. don't match. Please confirm the number of exposure.	Displayed when the number of images detected by the AeroDR Stitching System is less than the number of Exam. Tag. Confirm the image count and performed the exposure.
Exposure results applied for more than one order.	This is displayed when an exposure result is applied to multiple images that were exposed.
Exposure sync setting error. Check the network connection.	Displayed when unable to set exposure synchronization mode. Check the connection to the x-ray device, and set it again.
Failed save CSV Output.	The CSV file may be corrupted. Run the CSV output again.
Failed to complete study.	This is displayed when completion of the study has failed.
Failed to connect.	This is displayed when the connection cannot be confirmed as a result of the connection confirmation diagnosis. Press [Close] to close the screen and then check the network connection.
Failed to create stitching image.	Displayed when updating combination stitched images fails. Restart the device, and perform the image combination again.
Failed to delete AeroDR panel.	Unable to delete DR Detector correction data that is registered to an exposure room. On the system monitor screen for the exposure room registered with the corresponding DR Detector, clear the DR Detector registration and perform the deletion procedure again.
Failed to get AeroDR panel information.	Check the communications status with the corresponding DR Detector.
Failed to get Stitching Unit.	Confirm the status of the communications with the AeroDR Stitching Unit.

Displayed message	Problems/countermeasures
Failed to get XG BOX.	Check the status of the connection with the corresponding Generator Interface Unit.
Failed to obtain the Exam.Tag.	This is displayed when the obtaining of the exposure condition has failed.
Failed to obtain the image data.	This is displayed when obtaining image data has failed.
Failed to process grid moire suppression. Please do not use this image for purpose of diagnosis.	This is displayed when grid moire suppression processing has failed. The corresponding image cannot be used.
Failed to suspend study.	This is displayed when suspending of the study has failed.
Failed to update the inside of AeroDR.	Displayed when deleting the image remaining in the DR Detector fails.
Few data are in the output Queue. Wait till the output happens or delete the Queue data for switching.	Displayed when switching connected devices while there is still data that is has not been outputted. Wait for the data to be outputted, or delete the output data before switching connected devices.
File already exists. Do you want to overwrite?	Displayed when saving a file and another file exists with the same name. Press [OK] to overwrite it.
File read error ([0])	Displayed when reading a file fails.
Folder does not exist, Please select other folder.	Specify an existing folder.
Future Date Entered for Patient BirthDate.Please Confirm.	Displayed when the date of birth is set after present time. Enter a past date.
Gain calibration successfully completed. Correct Data was updated.	This is displayed when calibration has completed and the correction data has been updated.
Image Exchange process error occurred.	Contact Konica Minolta technical representatives.
Image inversion will be canceled.	Displayed when trying to merge flipped images. Confirm the contents of the images and press [OK] to clear the flip.
Image is being resent. (Do not turn off the power to the AeroDR.)	Displayed during image re-acquisition. Wait until image re-acquisition is complete.
Image not assigned. because it exceeded the maximum film size ([MaxAssignSize]MB).	This is displayed when the size that can be assigned to the print composer has been exceeded. Assign again.
Image Read operation is not complete. Study move is not possible. Are you sure you want to suspend studies?	Study transmission is not available due to studies that have not completed image reading. Press [OK] to continue the suspension process.
Image processing has failed. Please suspend the study and restart CS-7.	Image processing has failed due to unforeseen circumstances. Please suspend the study momentarily, and then display the image again after restarting the console.
Images have not been captured. Are you sure you want to complete study?	Displayed when [ ] is pressed while there are unexposed images for the study in progress. Press [OK] to end the study.
Images have not been captured. Are you sure you want to complete study? (Unread cassette barcode will be deleted)	Displayed when pressing [ ] while there are unexposed images in a study. Press [OK] to end the study. When [OK] is pressed, barcodes on which image reading has not been performed are deleted.
Images will be rearranged. Is it OK?	Displayed when [Reset] is pressed. Press [OK] to sort again.
Importing Aero Storage images failed. Please try again.	This error appears when the device fails to import Aero Storage images. Try importing the Aero Storage images again.
Input is Mandatory.	Displayed when the study is started without mandatory fields filled in. Fill in the mandatory fields.
Input is not proper value. Please correct it.	Displayed when the entered value is not correct. Enter the correct value.

Continued on the next page

Displayed message	Problems/countermeasures
Input value is not proper. Please correct it.	Displayed when the entered value is not correct. Enter the correct value.
Invalid value. Can not use "\" here.	Displayed when "\" is entered. Do not use "\".
Invalid value. Can not use "\" or "=" here.	Displayed when "\" or "=" is entered. Do not use "\" or "=".
Invalid value. Cannot use "\", "^" or "=" here.	Displayed when "\", "^", or "=" is entered. Do not use "\", "^", or "=".
Is it OK to cancel the registration?	Displayed when attempting to cancel the DR Detector registration to the exposure room. Press [OK] to erase the registration.
Is it OK to delete?	Displayed when characters which have been placed in annotation are selected and [Delete] is pressed. Press [OK] to delete.
Is it OK to delete all?	Displayed when characters which have been placed in annotation are selected and [Delete All] is pressed. Press [OK] to delete.
Is it OK to delete the active capture conditions?	Displayed when attempting to delete unexposed Exam. Tags. Press [OK] to delete the Exam. Tags.
Is it OK to delete the registered cassette barcode?	Displayed when deleting the Exam. Tags with the bar code registered.
Is it OK to delete the selected queue?	Displayed when the [Delete] button is pressed. Press [OK] to delete the queue.
Is it OK to log off?	Displayed when [Log off] in the tool bar area is pressed. Press [OK] to log off.
It cannot edit because of the waiting for an output. Please perform edit after waiting till the completion of an output or deleting output queue.	Displayed when trying to edit combined Exam. Tags while output is in progress. Wait until output is complete, or delete the output queue before editing.
It is not uniformly exposed. Confirm that there are no foreign objects before the AeroDR Detector or check the irradiation field aperture.	This is displayed when irradiation was not uniform. Check for foreign objects and problems with the irradiation field aperture, then perform exposure again.
Less than Minimum Space Required. Please Check Media.	This is displayed when the amount of available space on the media for storing backup data is low. Prepare new media.
Log Backup Failed due to an error.	Displayed when an internal processing error occurs while backing up (saving) the log using the Log management tool or Reject log tool fails. Confirm that the designated save location is write-enabled and try to back up (save) the Log again.
Log delete operation is completed.	Displayed when deleting the log using the Log management tool or Reject log tool is complete. Press [Yes] to delete the log.
Log has been Saved. Do you want to clear the Log?	Displayed when confirming whether to delete the log after backing up (saving) the log using the Log management tool or Reject log tool is complete. Press [Yes] to delete the log.
Mammo Exam. Tag is fixed with high resolution.	This is displayed when changing the reading resolution to Standard in the mammogram exposure conditions. Set the reading resolution to High.
Mandatory Field is not Entered. Perform Not Possible.	Displayed when an improper character has been entered. Press [OK] to close the screen.

Displayed message	Problems/countermeasures
Max value of shots has exceeded. Cannot perform the study.	Displayed when the total number of exposures in a study selected through multi-study exceeds the max value. Reduce the number of selected exposures and perform the study again.
Maximum number of preset is configured.	Displayed when the number of preset settings exceeds the upper limit. Delete the preset to add more settings.
Media Not Inserted. Please Insert Media	This is displayed when media is not inserted.
Media Not Inserted. Please insert new media and click Retry button.	This is displayed when the media for storing backup data is not recognized. Check the media and select the Retry button.
Media Write Error	This is displayed when a media write error has occurred.
Merge Error	This is displayed when the process to merge studies failed. Try to merge them again later.
Merge not possible as the searched study is in progress in another console.	This is displayed when merging studies that are currently shared. Try to merge them again after stopping sharing.
More than 16 characters are not allowed.	Displayed when the number of entered characters exceeds the character limit. Enter characters within the limit.
More than 250 characters for Preset name is not allowed	Set by reducing the number of characters.
Multiple patient can not be selected.	Displayed when selecting a different patient's study after multiple search results are displayed in multi-study. Reselect a study of the same patient.
Multiple Study Exist With Given Information.	This is displayed when there are multiple studies with same patient ID or Accession Number as a result of study search.
New stitching information has not been saved. Are you sure you don't want to create stitching image?	Displayed when [Back] is pressed without pressing [Apply] after making edits on the stitching viewer screen. Press [OK] to close without saving the edits.
Non-activated AeroDR detector is found. Please activate using service tool.	Contact Konica Minolta technical representatives.
Not able to retrieve studies from below consoles. Please check the connectivity of these consoles.	Displayed when unable to acquire parts of a study after performing multiple terminal study acquisition through study sharing. Check the connection and reacquire the study.
Not Enough Space For Output. Please insert new media and click Retry button.	This is displayed when there is not enough available space on the media to store backup data. Replace the media and select the Retry button a short while later.
Now image reading. Please try to log off again after a while.	This is displayed when a log in with separate user account is attempted while another user is logged in during the time when the image is captured from the reader and being displayed.
Only stitched image exam tag exists, discard is not possible.	Displayed when attempting to reject an image on which combination stitching was performed. Combination stitched images cannot be rejected.
Operation not possible	Displayed when numerals besides acceptable values are entered. Enter values that are within range.
Order is registered. Do you want to overwrite?	This is displayed when [Clear] is pressed for the registered study.
Output for card registration is completed.	Displayed when CSV data for IC card registration is output.
Output image is updated. Please output again in order to reflect the correct mammo CAD result.	The output image is updated. Output again in order to reflect the correct mammo CAD result.
Output Not Possible to CD/DVD. Please Check Media.	This is displayed when the media for storing backup data is not the correct type. Use the correct media.

Continued on the next page

Displayed message	Problems/countermeasures
Output queue present. Error may happen if Area selection is changed. Do you want to continue?	This is displayed when the area selection button is pressed while there is untransmitted data.
Overwrite the RM device info?	This is displayed when overwriting the RM device information. Press [OK] to overwrite it.
Patient ID format selection is mandatory.	Displayed when the patient ID is not set. Set the patient ID.
Patient ID: [PATIENTID] Patient name: [PATIENTNAME] Reader name: [READERNAME] Image reception is not completed. Check the network.	Displayed when a communication error occurs while reading an image when performing a CR Cassette exposure with a cassette capable of resending images. When reconnected to the network, the device is able to resend the images.
Patient info already present in DB. Do you want to use that patient info?	This is displayed when a patient information is already registered in this device when the patient information entered.
Patient size could not be changed for some order. Please check.	This is displayed when the patient size could not be changed in the study.
Patient Update Error.	Displayed when updating patient information fails. Update patient info again.
PatientID is mandatory, Please enter PatientID.	Displayed when mandatory fields have not been filled in. Press [OK] to close the screen.
PatientName is mandatory, Please enter PatientName.	Displayed when mandatory fields have not been filled in. Press [OK] to close the screen.
PDA backprocess error.	Restart the device. If this does not solve the problem, contact Konica Minolta technical representatives.
PDA backprocess error. Faild to display on the PDA.	Restart the device. If this does not solve the problem, contact Konica Minolta technical representatives.
PDA Backprocess sending error. Faild to display on the PDA.	Restart the device. If this does not solve the problem, contact Konica Minolta technical representatives.
PDA backprocess startup error. Check settings.	Restart the device. If this does not solve the problem, contact Konica Minolta technical representatives.
Perform Not Possible.	This is displayed when starting of selected study has failed.
Please check all reader and console is running and press [OK].	Displayed after pressing [Backup] on the system monitor JM screen when a problem occurs with JM.
Please connect to a netowrk and proceed with Area selection.	Displayed when disconnected from network when switching from first area. Press [OK] to close the screen, then check that the device is connected to a network and select an area again.
Please Enter Correct Password.	Displayed when the wrong password is entered on the system monitor screen. Press [Close] to close the screen.
Please Enter Password.	Displayed when [OK] is pressed without a password being entered on the system monitor password entry screen. Enter the correct password and press [OK].
Please enter the mandatory fields	This is displayed when an study is attempted to start without values entered into the mandatory input form.
Please Enter Value for both Content Date and Content Time Fields	This is displayed when neither image date nor time are entered in the image supplementary information and [OK] is pressed.
Please input the alphanumeric character.	Displayed when non-English characters are entered. Enter English alpha-numeric characters.
Please input the content for searching.	This is displayed when [Search] is pressed without the values required for search are not entered in the input form.
Please input the integer.	Displayed when a non-numeric character is entered. Enter numeric characters.

Displayed message	Problems/countermeasures
Please restart Regius.	Displayed when JM switching is finished.
Please select queue(s) that is to be deleted.	Displayed when [Delete] is pressed without selecting a target queue for deletion. Select the target queue to be deleted.
Please set the right number of digits for start and stop values.	Displayed when entering a numeral that exceeds the upper limit of the set number of digits. Enter numerals within the limit.
Please wait for a while until connection is restored. Do not turn off the power of the AeroDR. Turning off the power will delete the image before it is fully sent.	Wait for a while until the device and DR Detector connection is restored.
Please wait…	This is displayed when internal processing is being carried out in this device. Wait until the processing end.
Preset Format text cannot be more than 64	Displayed when the number of entered characters exceeds the character limit. Enter characters within the limit.
Preset Name already exists.	Displayed when entering a preset name that already exists. Enter a different name.
Preset Name is invalid.	Displayed when an invalid name is entered. Enter another name.
Press [Re-reception] to retrieve the image from "[DR Detector name]". Patient ID: [PATIENTID] Exam.Tag: [BODYPARTS] [Re-reception]: Open the study, and executes re-reception the image automatically. [Cancel]: Return without the Image re-reception. [Delete]: Delete the image in "[DR Detector name]".	Displayed when moving to the list screen while there are unreceived images in the DR Detector. Press [Re-reception] to re-acquire the images.
progressing…	Displayed while various processes are running. Wait for a while until the processes end.
Queue cannot be deleted because this study is moving to other console.	Studies in the process of moving cannot be cancelled.
Radiation field detection Failed.	Displayed when exposure field detection of the AeroDR Stitching Unit fails. Check the exposure range, and perform exposure field detection again.
Re exposure is required. Do you really want to cancel the operation?	Displayed when trying to cancel stitching exposure. Press [OK] to cancel exposure.
Reader name: [READERNAME] Are you sure you want to cancel image reception? Please restart the reader in case of reception canceled.	Displayed when an image display area is pressed during the resending of images while exposing with a CR cassette. Press [OK] and restart REGIUS to cancel resending.
Reading cassette is already started. This operation is interrupted.	Displayed when [Body Part Selection] or [●] are pressed while a cassette is already being read. Wait until the cassette reading is complete, and perform the operation again.
Real Time Backup in progress. Do you want to end the system?	This is displayed when terminating system operation while the Real Time Backup process is in progress. Press [OK] to terminate system operation. The queued data that has not been output to external media will remain where it is.
Received an exposure parameter change request from X-ray device during SW1 is pressed. Please release SW1, confirm the Exposure parameter again and perform exposure.	This message appears when exposure settings are changed while the Exposure switch is pressed. Release the Exposure switch, confirm the exposure settings, and then start the exposure process again.
Receive Cancel Error occured. Please refresh the study list and try again.	Displayed when attempting to cancel reception of a study which does not exist. Confirm that the target study has not been moved to another device.

Continued on the next page

Displayed message	Problems/countermeasures
Receive Error occured. Please refresh the study list and try again.	Displayed when attempting to receive a target study which does not exist. Confirm that the target study has not been moved to another device.
Registration Failed	This is displayed when registering of patient information has failed.
Re-reception Error. Check network condition and Retry operation.	Displayed when image reacquisition fails. After a few seconds, press [Resend] for re-acquisition.
Re-reception Error. Check network condition and touch application bar after few seconds.	Displayed when image reacquisition fails. Check the connection status of the network device and communication cables, and tap the Application Bar after a few seconds or tap the Exam. Tags (in the yellow frame) to re-acquire the image.
Re-reception Error. Check network condition and touch application bar after few seconds.	Image re-reception from the AeroDR Stitching System failed. After a few seconds, touch the yellow frame on the Application Bar, and receive the image again.
Restoring Previous Setting. Please Wait…	Displayed when area switching fails and the area settings are returned to their original status.
Same Patient ID: [0],Patient Name: [1],Sex: [2],DOB:[3] available in Database, do you want to overwrite?	This is displayed when registering patient information that is already registered in this device.
Scheduled Date(From) cannot be greater than Scheduled Date(End).	This is displayed when the value for the examination schedule date entered in (From) is larger than that for (To). Enter appropriate values.
Search Error occurred	This is displayed when a search to the higher system has failed.
Select Folder Path.	Displayed when a folder path is not selected. Select a folder path.
Send Cancel Error occured. Please refresh the study list and try again.	Displayed when attempting to cancel transmission of a study which does not exist. Confirm that the target study has not been moved to another device.
Send Error occured. Please refresh the study list and try again.	Displayed when attempting to transmit a study which does not exist or which has already been reserved for transmission to another device. Confirm that the target study has not been moved to another device.
Separately, if you want to use the panel Aero-Sync environment was conducted calibration must be calibrated Aero-Sync environment.	This is displayed when using the DR Detector calibrated in Sync Mode in the Aero-Sync environment. Perform calibration in the Aero-Sync environment.
Separately, if you want to use the panel Sync environment was conducted calibration must be calibrated Sync environment.	This is displayed when using the DR Detector calibrated in Aero-Sync Mode in the Sync environment. Perform calibration in the Sync environment.
SERIAL exam tag can be exchanged only with another SERIAL exam tag.	This message appears when attempting to change serial exposure Exam. Tags and non-serial exposure Exam. Tags while exposing serial exposure.
Setting File loading failed due to file lock	The file may be corrupted. Load the file again.
Sex is mandatory, Please enter Sex.	Displayed when mandatory fields have not been filled in. Press [OK] to close the screen.
Some of the components are going to expire or have expired. Please Check.	Displayed when there is a unit which will require or does require an exchange. Contact Konica Minolta technical representatives.
Space Not Enough. Please Check Media	This is displayed when there is not enough space to write to the media.
Start Date should be less than End Date.	Displayed when the end date is set earlier than the start date. Set the start date earlier than the end date.

Displayed message	Problems/countermeasures
Start value should be less than Stop value.	Displayed when setting the Start value to a number higher than the Stop value. Enter a Start value that is lower than the Stop value.
Stitched image will be selected. Is it OK to clear selected image(s).	Displayed when trying to decompress a combined image into the stitch adjustment panel. Press [OK] to decompress it.
Study already present in DB. Do you want to use that study?	This is displayed when matching study information is already registered in this device when study information is entered.
Study Append Error occured. Please refresh the study list and try again.	Displayed when attempting to append a target study which does not exist. Confirm that the target study has not been moved to another device.
Study Delete Error occured. Please refresh the study list and try again.	Displayed when attempting to erase a target study which does not exist. Confirm that the target study has not been moved to another device.
Study got deleted from database, Perform operation is not possible.	This is displayed when a selected study has been deleted by a higher system.
Study Guard Error occured. Please refresh the study list and try again.	Displayed when attempting to guard a target study which does not exist. Confirm that the target study has not been moved to another device.
Study ID is mandatory, Please enter PatientID.	Displayed when mandatory fields have not been filled in. Press [OK] to close the screen.
Study is Already Performed in Another Console.	The same study has already been started in another exposure room.
Study is in progress state, Do you want to perform?	This is displayed when attempting to start a study that is "in progress".
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Check the network status.	Communication between consoles failed. Confirm that there is not a problem with the LAN connection between the device and the console and establish the communications again. If the problem persists, restart the device and try to establish communications again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. [Other device name] file access failed.	File access failed due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. [Other device name] DB access failed for	DB access failed due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Check the study status for completeness all required files	Due to a failure in moving the target study or cause, not all of the necessary data is available and the target study cannot be moved.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Failed to access image information of [Other device name]	Failed to move the image file due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again, and if this does not solve the problem, contact Konica Minolta technical representatives.

Continued on the next page

Displayed message	Problems/countermeasures
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Failed to access study information of [Other device name]	Failed to move study info due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again, and if this does not solve the problem, contact Konica Minolta technical representatives.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Not existing the respective study. Please check the study status.	The target study has been deleted or has already been moved. Check the target study status.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Patient information is not matching, Please correct the patient information.	The patient information in the destination does not match the patient information in the source. Check the source and destination patient info. When the patient name, date of birth, and sex are different, the patient is determined to be someone else and it is not possible to move the study.
Study reserve to the console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME].check the study status or Study sharing status.	The target study does not satisfy sharing conditions. Check the target study status. Target studies in the following statuses cannot be moved. • The same study exists in the destination and is in progress • The same study exists in the destination and is complete • The same study exists in the destination and is scheduled for moving • The study in the source is in progress • The study in the source is scheduled for moving to another terminal
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Check the network status.	Communication between consoles failed. Confirm that there is not a problem with the LAN connection between the device and the console and establish the communications again. If the problem persists, restart the device and try to establish communications again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Failed to access Image information of [Other device name]	Failed to move the image file due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to the target study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Failed to access study information of [Other device name]	Failed to move study info due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. [Other device name] DB access failed.	DB access failed due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again. If this does not solve the problem, contact Konica Minolta technical representatives.
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. [Other device name] file access failed.	File access failed due to unforeseen circumstances. Move the target study again. If the problem persists, restart the device and try to move the study again. If this does not solve the problem, contact Konica Minolta technical representatives.

Displayed message	Problems/countermeasures
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Patient information is not matching, Please correct the patient information.	The patient information in the destination does not match the patient information in the source. Check the source and destination patient info. When the patient name, date of birth, and sex are different, the patient is determined to be someone else and it is not possible to move the study.
Study retreival from console [Other device name] got failed for the study [PATIENT_ID,PATIENT_NAME]. Please check the study status or Study sharing status.	The target study does not satisfy sharing conditions. Check the target study status. Target studies in the following statuses cannot be moved. • The same study exists in the destination and is in progress • The same study exists in the destination and is complete • The same study exists in the destination and is scheduled for moving • The study in the source is in progress • The study in the source is scheduled for moving to another terminal
Study without captured images cannot be completed.	Cannot be terminated because studies with no exposed images are included. Press [OK] to close the screen.
Study without exam tags exists. Cannot perform the study.	Displayed when studies with unspecified Exam. Tags are included in the studies selected with the multi-study. Select only studies with specified exposure body parts, and then begin the study.
System cannot be switched by current user. [ERRORS]	Restart this device.
System hasn't completed [STATUS] within a time frame yet. Are you want to proceed?	Cancel and restart the device.
System hasn't completed [STATUS] within a time frame yet. System complete the process.	Press [OK] to force stop the process.
The Card ID is already in use.	Displayed when the ID of the IC card entered in Operator tool is already used. Check the operator information and enter a correct card ID.
The contents changed when the tab was changed without saving are lost. Are you sure?	Displayed when switching tabs without saving setting information.
The corresponding patient is not present in the DB	This is displayed when patient information could not be found in the patient information search.
The number of exposure is difference between CS-7 and X-ray device. Please match the number of exposure between CS-7 and X-ray device.	The number of images does not match between this device and the RAPID stitching device. Adjust the exposure area on the RAPID stitching device so that the number of images matches that on the Exam. Tag, or add an Exam. Tag to this device.
The wireless use will be set OFF. Is it OK?	Displayed when changing wireless from enabled to disabled. Press [OK] to continue.
The wireless use will be set ON. Is it OK?	Displayed when changing wireless from disabled to enabled. Press [OK] to continue.
There are images unreceived to the AeroDR. Do not turn off the power of AeroDR. Return AeroDR detector to previous connection state(Wired/Wireless). In the case of wireless connection, the electric wave state has deteriorated. Please check an electric wave state by the AeroDR icon at the upper right of a screen, and wait until connection returns.	Displayed when unreceived images remain in the DR Detector. Check the network equipment and communication cable connection status. Press [OK], and wait until image re-acquisition is complete.
There are no captured images. Are you sure you want to change status to not started?	This is displayed when suspending a study without capturing any image.

Continued on the next page

Displayed message	Problems/countermeasures
There is an exposed image in the study, do you want to edit the study?	This is displayed when modifying the patient information of the completed study.
Some data failed to update Card ID.	Displayed when there is data that IC card registration failed. Check the data, in the dialog, that failed to be registered.
There is no corresponding study, patient info.	Displayed when the queried patient or study cannot be found. Press [OK] to close the screen.
There is no corresponding study, patient.	This is displayed when corresponding study or patient information was not found as a result of searching the higher system for study or patient information.
There is no corresponding study.	This is displayed when a searched study was not found. Enter new search conditions and search again.
There is no Exam. Tag license.	Contact Konica Minolta technical representatives.
There is no images for auto assignment.	This is displayed when there are no Exam. Tags set for auto assignment in the print composer.
This cassette has already been started reading. Unable to delete barcode registration.	Displayed when trying to delete a cassette barcode that is already being read.
This cassette has already been started reading. Unable to delete jobs registered with manual registration mode.	Displayed when trying to change the order of Exam. Tags that are already being read.
This cassette is already registered. Register a different cassette.	This is displayed when trying to register a cassette that is already registered to a barcode.
This cassette is for contact mammography. Check the Exam. Tag.	This is displayed when a bar code for a mammogram cassette is read in to a registered exposure condition.
This cassette is for general exposure. Check the Exam. Tag.	Displayed when a barcode of a normal exposure cassette is read into a registered mammogram exposure condition.
This cassette is for PCM. Check the Exam. Tag.	This is displayed when a bar code for a mammogram cassette is read in to a registered exposure condition.
This character is not allowed	Displayed when an invalid character is entered. Do not enter these characters.
This data is being output.	Study output in progress. Wait until the processes end.
This data is being processed.	Study processing in progress. Wait until the processes end.
This data is guarded.	Displayed when trying to delete a study which is protected.
This image can't be deleted because it is being output.	Displayed when trying to delete a queue while output is in progress. Delete the queue after stopping output.
Timeout occurred in image reception.	Displayed when a timeout occurs while the device is receiving an image from the DR Detector. Tap the Exam. Tags (in the yellow frame) to re-acquire the image.
Trimming area cannot be moved outside of image. Please set trimming area again.	The trimming area is displayed when an image is outside of the valid image area. Please set the trimming area within the valid image area.
Unable to clear log	Displayed when deleting the log using the Log management tool or Reject log tool fails. Restart this device and try to delete the log again.
Unable to create the stitched image. Please create the stitched image at the viewer screen for stitching.	Displayed when updating combination stitched images fails. Display the viewer screen used to adjust combine positions and manually combine the images.
Unable to prepare to read CR cassette as CR Mammography license is not installed, Please register the license.	Displayed when mammogram exposure conditions are read with the barcode and the CR Mammography license is not registered. Register the CR Mammography license.

Displayed message	Problems/countermeasures
Unable to receive the image. Suspend the study, and then re-start this study. It probably retrieve the image.	Displayed if an image may be recovered when exposure is interrupted due to an internal error in this device. If the image is not displayed and the DR Detector does not contain untransferred images (the same status as that observed when no exposures have been carried out), the image may be recoverable by suspending the study and displaying the exposure screen from the list screen again.
Unable to register mammo exam tag. because CR Mammography license is not installed. Please install the license.	This is displayed when registering mammogram exposure conditions using a DR Detector that has not had the CR Mammography license registered.
Unregistered card has been read.	Displayed when a log in attempt is made with an unregistered IC card. Please register the IC card.
Update Success.	Displayed when image transfer is successful. Press [OK].
User: [USERNAME] has already logged in. Log off this user?	Displayed when attempting to log in into another account while a user is already logged in. Press [OK] to log in with a different user account.
Waiting for a response from the authentication device. Please wait for a moment.	Displayed when the system response becomes slow because the authentication device is inserted or removed while the IC card is being read. Please wait until it is completed.
Wireless Access Point channel setting change failed.	Displayed when changing the wireless access point channel settings fails. Press [Close] to close the screen and then check the AeroDR Portable RF Unit or AeroDR Portable UF Unit condition.
Wireless Access Point channel setting successfully changed.	This is displayed when the channel settings of the wireless access point has been changed.
You cannot register more than [MaxSize] images.	This is displayed when trying to add an Exam. Tag exceeding the maximum number of Exam. Tags that can be registered.

Continued on the next page

8.2.2 Messages displayed in balloons and countermeasures

If the following messages appear, take the respective countermeasures.

Displayed message	Problems/countermeasures
Aero Storage images exist in AeroDR Detector [DR Detector name].	Images exposed with the Aero Storage function and stored in the DR Detector have not been received. Select the applicable DR Detector from the system monitor to retrieve the images.
Aero Storage image import setting is not actived.	Contact Konica Minolta technical representatives.
Enter number.	This is displayed when a character other than number is entered in the input form for numbers. Confirm the character entered.
Entered day is invalid.	This is displayed when a day other than 1 to 31 is entered. Enter the correct day.
Entered hour is invalid.	This is displayed when an hour other than 0 to 24 is entered. Enter the correct hour.
Entered minutes are invalid.	This is displayed when a minute other than 00 to 59 is entered. Enter the correct minute.
Entered month is invalid.	This is displayed when a month other than 1 to 12 is entered. Enter the correct month.
Entered seconds are invalid.	This is displayed when a second other than 00 to 59 is entered. Enter the correct second.
Entered value is invalid.	This is displayed when a value out of range is entered. Enter a numeral value within the range in accordance with the displayed message.
Entered year is invalid.	This is displayed when a year out of range is entered. Enter a year within the range.
Entered year is invalid. Enter a value of 1800 or higher.	This is displayed when a year before 1800 is entered. Enter a year 1800 A.D. or later.
Future date not possible.	This is displayed when a future date from current date is entered. Enter the correct date.
Future month not possible.	This is displayed when a future month from current date is entered. Enter the correct month.
Future year not possible.	This is displayed when a future year from current date is entered. Enter a year within the range.
Invalid value. Can not use "\" here.	This is displayed when one of "\", "^" or "=" is entered in the specific input form.
Invalid value. Can not use "\" or "=" here.	This is displayed when one of "\", "^" or "=" is entered in the specific input form.
Invalid value. Can not use "\", "^" or "=" here.	This is displayed when one of "\", "^" or "=" is entered in the specific input form.
Please input the alphanumeric character.	This is displayed when a character other than alphanumeric is entered in the input form for alphanumeric. Confirm the character entered.
Please input the integer.	This is displayed when a character other than integer is entered in the input form for integers. Confirm the character entered.
The entered year is not a leap year. Check the date.	This is displayed when February 29 is entered in a year other than leap year. Enter the correct day.
The following AeroDR panel is registered. AeroDR panel name: {DeviceName}	This is displayed when a DR Detector is registered to an exposure room.

Displayed message	Problems/countermeasures
The maximum number of characters is not reached.	This is displayed when allowable number of characters are exceeded. Confirm the number of characters.
The minimum number of characters is not reached.	This is displayed when the number of characters has not reached the minimum number required. Confirm the number of characters.
The remaining battery power is low. Charge the battery.	This is displayed when the battery level of the DR Detector is getting low. Charge the DR Detector.
The remaining PC battery power is low.	This is displayed when the battery level of this device being used is getting low. Charge this device.
The remaining PC battery power is low. Charge the battery.	This is displayed when the battery level of this device being used is insufficient. Charge this device. If this device cannot be charged right away, shut down this device.
Wrong user name or password.	This is displayed when incorrect user name or password is entered for login.

Chapter 9

Troubleshooting

This chapter describes the countermeasures when the problems occur.

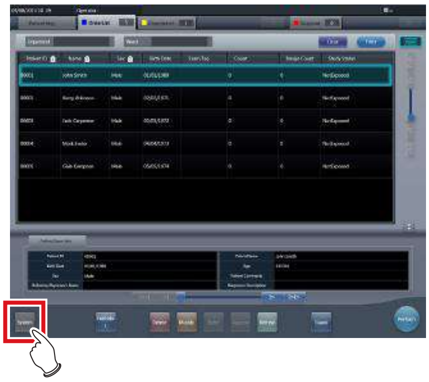
9.1 Various problems and countermeasures

When the followings occur while using this device, take the respective countermeasures.

9.1.1 JM issues

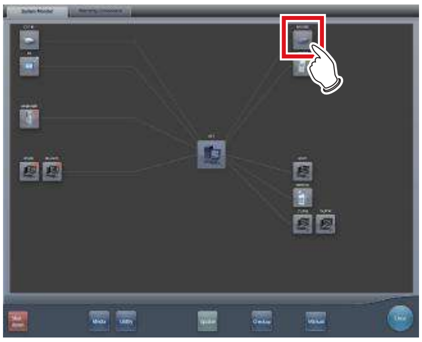
When the backup JM is used in combination, it is possible to switch to the backup JM when a fault occurs on the standard JM. Switch over must be performed because when the JM has a fault, exposures are not possible with the REGIUS.
Switching of the JM can be performed from this single unit. At this time, it is unnecessary to restart this device, but the REGIUS must be restarted.

1 Press [System].



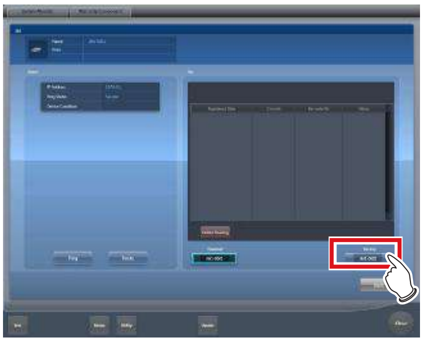
- The system monitor screen is displayed.
- If the network status is not displayed, press the [System Monitor] tab on the function switching tabs.

2 Press [JM].



- The JM status confirmation screen is displayed.

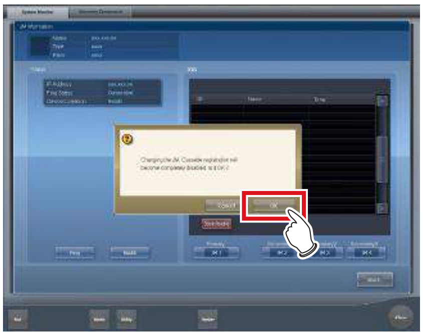
3 Select [Backup].



- The confirmation screen is displayed.

4 Press [OK].

- Press [Cancel], and the switchover of JM is cancelled, returning to the JM status confirmation screen, however, exposure cannot be performed because a fault has occurred in the JM.



- The confirmation screen is displayed.

5 After checking that all REGIUS and this unit have activated, press [OK].

- Display returns to the JM status confirmation screen.
- A confirmation screen indicating completion of JM switchover and prompting restart of REGIUS is displayed.

⇩

- Press [OK] to restart all REGIUS and the switchover of JM is completed.
- Exposure can be performed again.

6 The confirmation screen is displayed on this unit connected to the same system.

IMPORTANT

- After the switchover of JM, contact Konica Minolta technical representatives as soon as possible.

HINT

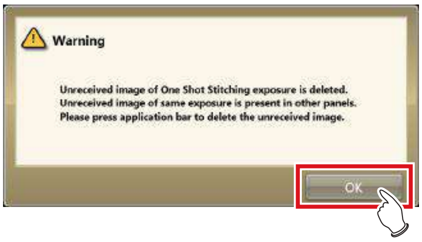
- Switching to backup JM may take about 1 minute.

9.1.2 Reacquisition of images from the DR Detector

Reacquire the images when images cannot be received from the DR Detector after the exposure due to reasons such as communication errors, etc.

IMPORTANT

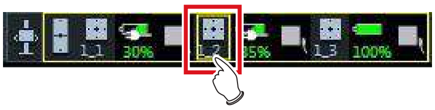
- Reacquire images that have not been transferred using this device, in which a communication error has occurred.
- If you end your examination while an image that has not been transferred is left in the DR Detector, you will not be able to acquire the image again.
- When images that have not been transferred remain in the DR Detector, exposure cannot be performed with that DR Detector.
- If an image cannot be received using the Auto stitching exposure with DR Detector, cancel the image reacquisition and do not perform any changes to the exposure device.
- In the event of a communication error and depending on the timing at which the error has occurred, images may not be displayed and the DR Detector may not contain any images that have not been transferred (the same status as that observed when no exposures have been carried out). In such a case, a message may be displayed. Suspend the study and display the exposure screen from the list screen. This operation may successfully recover the images.
- Non-transferred images need to be reacquired because the One Shot stitching exposure conducts the combining and displaying images after acquiring all the images.
- Delete the non-transferred images from all the DR panels used in the exposure, to delete the non-transferred images by the reacquiring of the One Shot stitching exposure.
  (a) Press [OK] when a message "Unreceived image of One Shot Stitching exposure is deleted. Unreceived image of same exposure is present in other panels." appeared.



Warning

Unreceived image of One Shot Stitching exposure is deleted.
Unreceived image of same exposure is present in other panels.
Please press application bar to delete the unreceived image.

  (b) Press the framed device icon.



  (c) Press [OK] when a confirmation screen appeared.

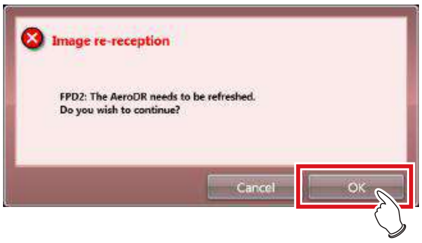


Image re-reception

FPD2: The AeroDR needs to be refreshed.
Do you wish to continue?

  (d) Press [OK] when the confirmation screen appeared again.

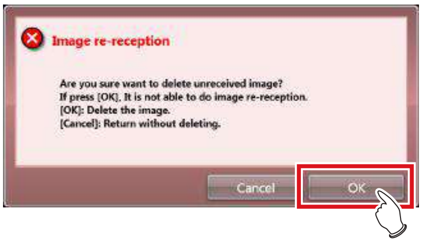


Image re-reception

Are you sure want to delete unreceived image?
If press [OK]. It is not able to do image re-reception.
[OK]: Delete the image.
[Cancel]: Return without deleting.

1 **When the message "There are images unreceived to the AeroDR. Do not turn off the power of AeroDR." is displayed, press [OK].**

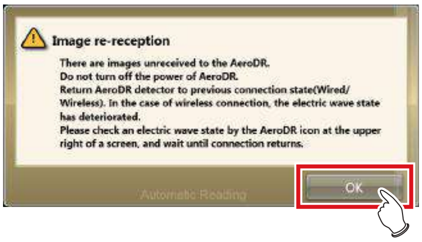
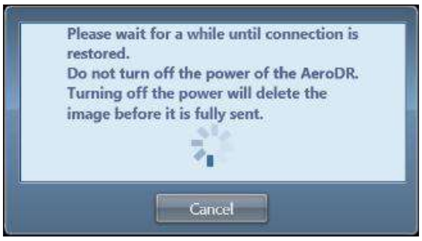


Image re-reception

There are images unreceived to the AeroDR.
Do not turn off the power of AeroDR.
Return AeroDR detector to previous connection state(Wired/Wireless). In the case of wireless connection, the electric wave state has deteriorated.
Please check an electric wave state by the AeroDR icon at the upper right of a screen, and wait until connection returns.

- When the wireless connection is used, check the state of wireless communication. When the wired connection is used, check that the wired cables are securely connected.
- When reconnection is made, the device icon in the application bar is enclosed in a yellow frame.



Please wait for a while until connection is restored.
Do not turn off the power of the AeroDR.
Turning off the power will delete the image before it is fully sent.

- The dialog window regarding the reconnection between this device and the DR Detector is displayed.

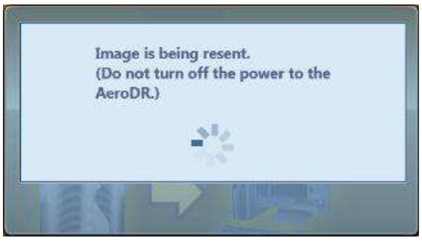
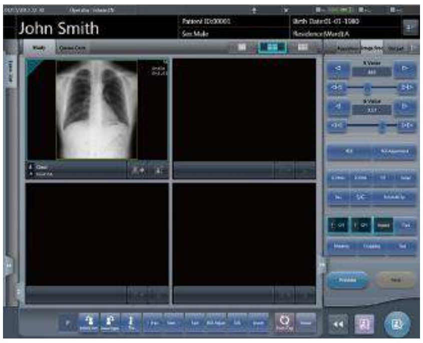


Image is being resent.
(Do not turn off the power to the AeroDR.)

- When the connection is restored, images are automatically transferred.



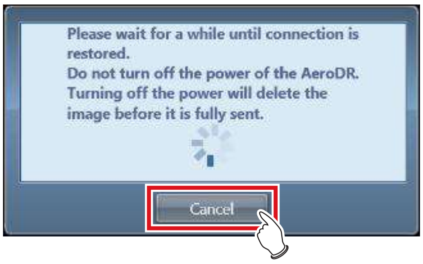
- Images are reacquired and displayed.

9.1.3 Stopping and resuming reacquisition of images from the DR Detector

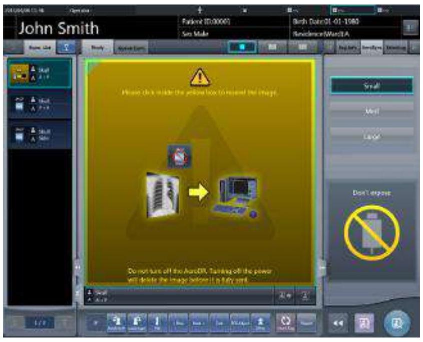
If recovery of the connection with the DR Detector is taking a long time, you can stop reacquisition of images.

●Stopping reacquisition of images

1 **Press [Cancel] if the dialog box indicating that recovery of the connection is underway.**



Please wait for a while until connection is restored.
Do not turn off the power of the AeroDR.
Turning off the power will delete the image before it is fully sent.



- The Exam. Tag for the unacquired image is highlighted.

IMPORTANT

- If you suspend the examination and display the list screen without acquiring images that have not been transferred, or if you restart this device after deactivating it once, a confirmation dialog for reacquiring the images appears.

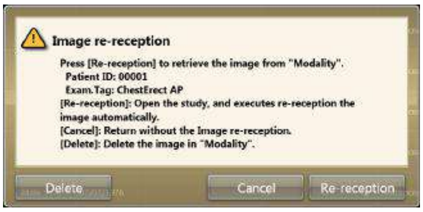


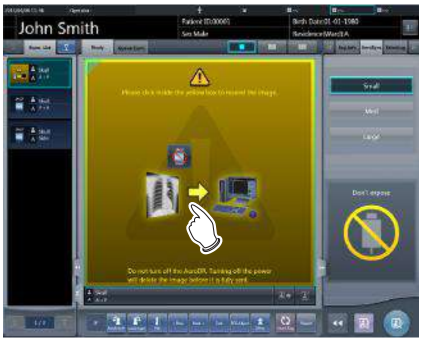
Image re-reception

Press [Re-reception] to retrieve the image from "Modality".
Patient ID: 00001
Exam.Tag: ChestErect AP
[Re-reception]: Open the study, and executes re-reception the image automatically.
[Cancel]: Return without the Image re-reception.
[Delete]: Delete the image in "Modality".

  - When [Delete] is pressed, the image deletion confirmation screen is displayed. When [OK] is pressed on the image deletion confirmation screen, the images not transferred yet are deleted.
  - When [Cancel] is pressed, the display returns to the list screen.
  - When [Re-reception] is pressed, the study is started, and the image is acquired from the DR Detector.

● Resuming reacquisition of images

1 Press the image display area to resume reacquisition of images from the DR Detector.



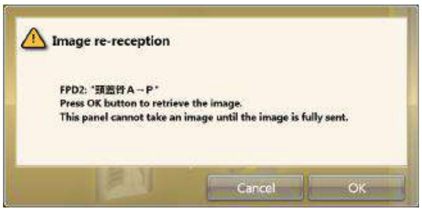


Image re-reception

FPD2: "頭蓋骨A→P"
Press OK button to retrieve the image.
This panel cannot take an image until the image is fully sent.

- The confirmation dialog is displayed.

IMPORTANT

- The confirmation dialog displayed varies depending on the connection with the DR Detector.
  - When the connection with the DR Detector is restored:
    Press [OK] and reacquisition of images from the DR Detector is resumed.

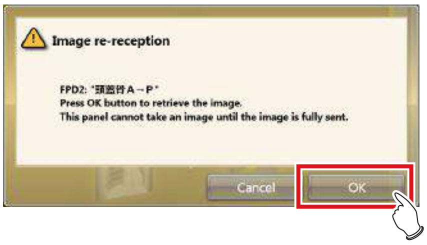


Image re-reception

FPD2: "頭蓋骨A→P"
Press OK button to retrieve the image.
This panel cannot take an image until the image is fully sent.

  - When the connection with the DR Detector is not restored:
    After pressing [OK], check the connection with the DR Detector.

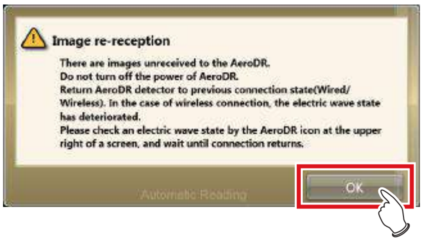
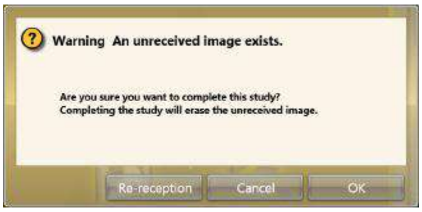


Image re-reception

There are images unreceived to the AeroDR.
Do not turn off the power of AeroDR.
Return AeroDR detector to previous connection state(Wired/Wireless). In the case of wireless connection, the electric wave state has deteriorated.
Please check an electric wave state by the AeroDR icon at the upper right of a screen, and wait until connection returns.

- If there is an image on the DR Detector that has not been transferred when [ ] or [ ] is pressed on the exposure screen, a confirmation screen for reacquiring the images is displayed.



Warning An unreceived image exists.

Are you sure you want to complete this study?
Completing the study will erase the unreceived image.

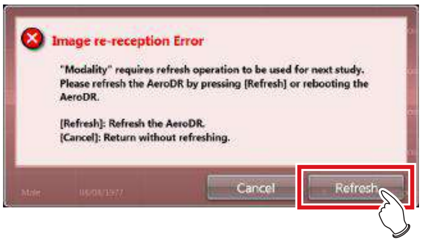
  - When the [Re-reception] is pressed, the image acquisition from the DR Detector is started.
  - When [Cancel] is pressed, the display returns to the exposure screen.
  - When [OK] is pressed, the examination is ended or suspended.

9.1.4 Deletion of untransferred images in the DR Detector

If you have ended the study without acquiring untransferred images, or performed an exposure using a different DR Detector without acquiring untransferred images, use the following procedure to delete the untransferred images.

1 When the message ""Modality" requires refresh operation to be used for next study." is displayed, press [Refresh].

- Press [Cancel] to return to the previous screen.



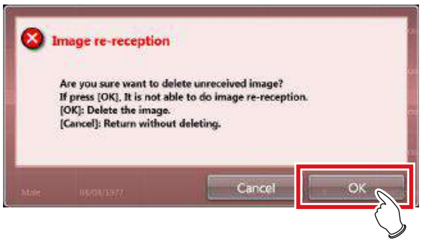
"Modality" requires refresh operation to be used for next study.
Please refresh the AeroDR by pressing [Refresh] or rebooting the AeroDR.

[Refresh]: Refresh the AeroDR.
[Cancel]: Return without refreshing.

- The confirmation screen is displayed again.

2 Press [OK].

- Press [Cancel] to return to the previous screen.



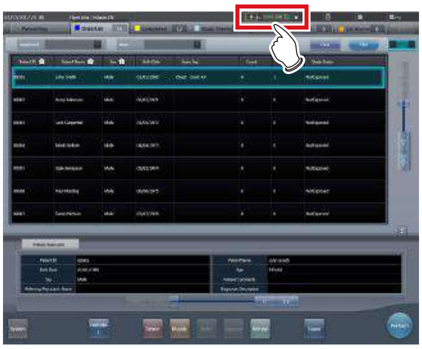
Are you sure want to delete unreceived image?
If press [OK], It is not able to do image re-reception.
[OK]: Delete the image.
[Cancel]: Return without deleting.

- The confirmation dialog box disappears and untransferred images in the DR Detector are deleted, then exposure can be performed.

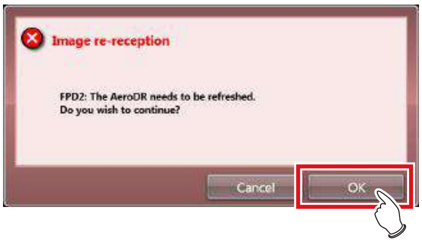
HINT

- You can also delete untransferred images by pressing the device icon that is enclosed in a frame on the list screen.

(a) Press the device icon that is enclosed in a frame.

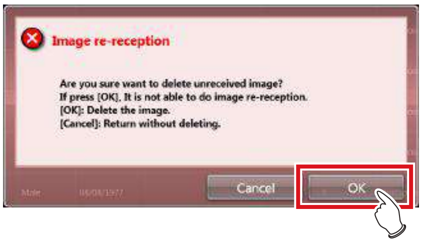


(b) When the confirmation dialog is displayed, press [OK].



FPD2: The AeroDR needs to be refreshed.
Do you wish to continue?

(c) When the confirmation dialog is displayed again, press [OK].



Are you sure want to delete unreceived image?
If press [OK], It is not able to do image re-reception.
[OK]: Delete the image.
[Cancel]: Return without deleting.

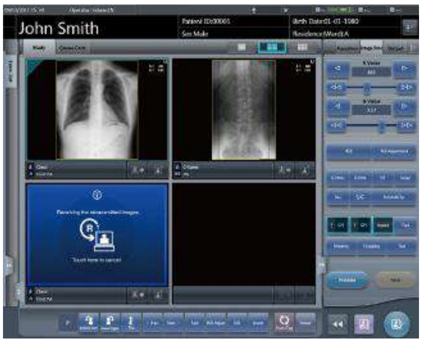
9.1.5 Reacquisition of images from the REGIUS

Reacquire the images when images cannot be received from the REGIUS after the exposure due to reasons such as communication errors, etc.

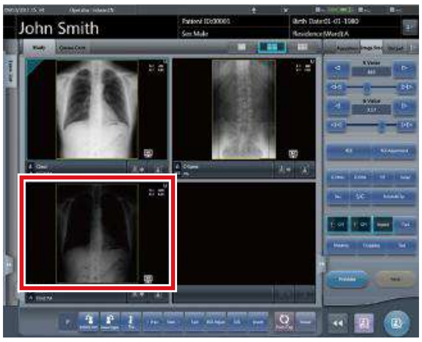
1 **When the message "Image reception is not completed. Check the network." appears, press [OK].**

2 **Please check the connection status with REGIUS.**

- A confirmation screen will be displayed. Press [OK].



- The "Receiving the retransmitted images" screen is displayed.
- It continues until the images are received successfully.



- Images are reacquired and displayed.

HINT

- If you cancel via the "Receiving the retransmitted images" screen, a confirmation screen which says, "Are you sure you want to cancel image reception? Restart the reader in case of reception canceled." will be displayed.
  → Press [OK] to cancel retransmission. The REGIUS needs to be restarted.
  → Press [Cancel] to return to the "Receiving the retransmitted images" screen, and to continue receiving.

9.1.6 Communications error during image reception

When a fault occurs in network communications while receiving images, operation sometimes becomes impossible.
When operation cannot be continued after about 5 minutes have elapsed, shut down this device and restart.

9.1.7 How to release the lock on the exposure screen

After operating the exposure switch of the X-ray device, the screen sometimes remains locked without displaying the exposure image ([ ] and [ ] cannot be pressed).
When this condition occurs, perform the following operation.

1 **Again press only the first stage of the exposure switch, and release it.**
   - The screen lock is released, and the screen operation and operation of the exposure switch are enabled.
   - Make sure "Ready" is displayed in the work area of the exposure target, and expose again.

IMPORTANT

- In the above operation when the screen lock is released, X-rays are not actually exposed, rather it is a state awaiting exposure.

Chapter 10

Error Codes

This chapter describes the error codes and countermeasures.

10.1 Types of error codes and recognition methods

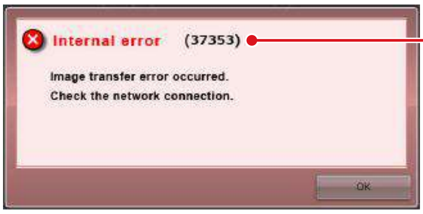
10.1.1 Types of error codes

Error messages are all displayed in a dialog box. The types and description of error messages are as follows.

Types	Description
Communication errors	An error has been caused in communications.
Software errors	An error has been caused in this device.
DR Detector errors	An error has been caused in the DR Detector.
AeroDR Interface Unit2 errors	An error has been caused in the AeroDR Interface Unit2.
AeroDR Generator Interface Unit errors	An error has been caused in the AeroDR Generator Interface Unit.
AeroDR Generator Interface Unit2 errors	An error has been caused in the AeroDR Generator Interface Unit2.
Generator Interface Unit 3 errors	An error has been caused in the Generator Interface Unit 3.
AeroDR Portable RF Unit errors	An error has been caused in the AeroDR Portable RF Unit.
AeroDR Portable RF Unit2 errors	An error has been caused in the AeroDR Portable RF Unit2.
AeroDR Stitching System errors	An error has been caused in the AeroDR Stitching System.
REGIUS errors	An error has been caused in the REGIUS series.

10.1.2 Recognition method for error codes

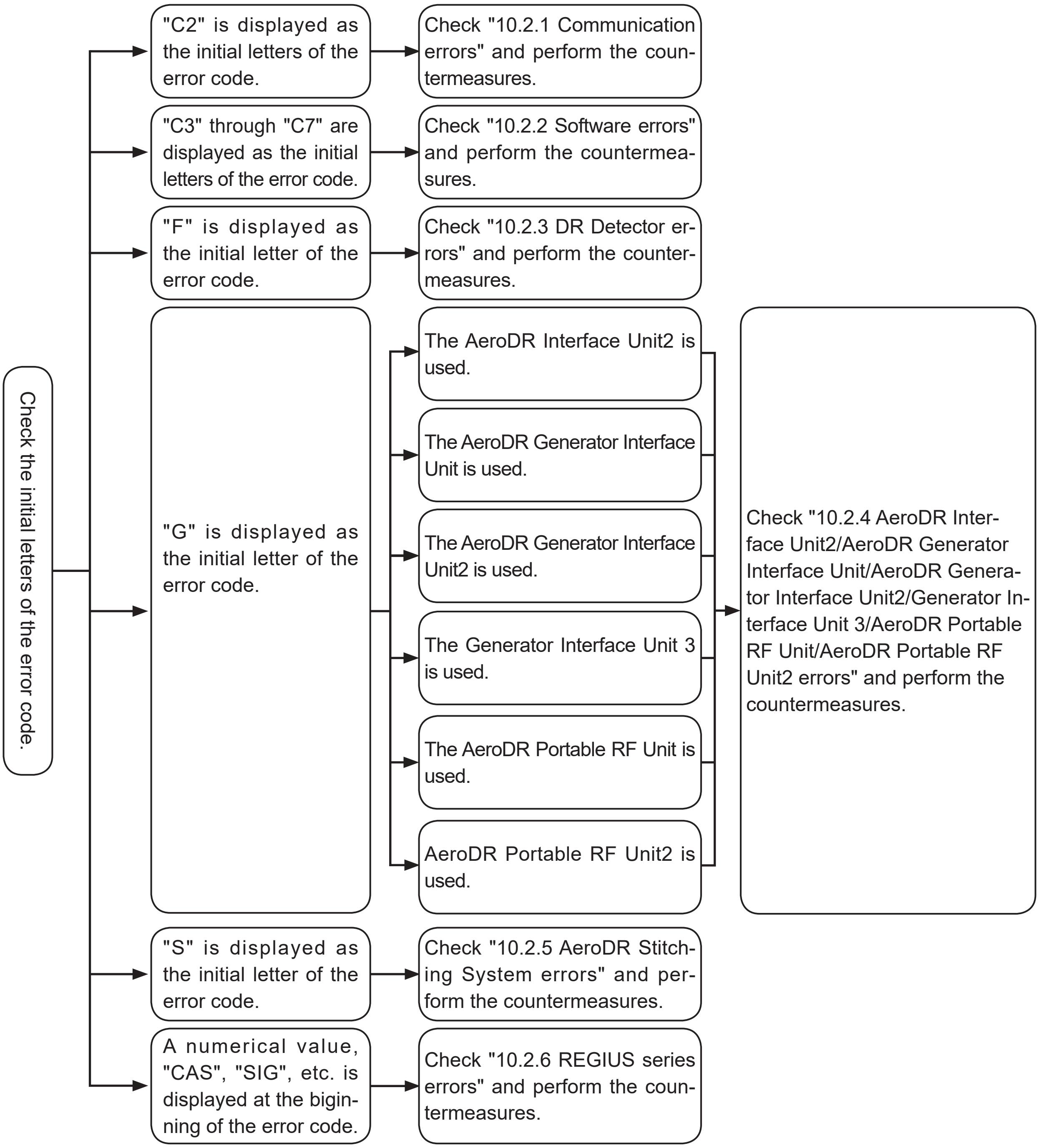
The initial letters have been decided for each type of error code. When an error message has been displayed, identify the type of error in accordance with the flow and check the error description and the countermeasures in each item.



Internal error (37353)

Image transfer error occurred.
Check the network connection.

Error code



Check the initial letters of the error code.

- "C2" is displayed as the initial letters of the error code. → Check "10.2.1 Communication errors" and perform the countermeasures.
- "C3" through "C7" are displayed as the initial letters of the error code. → Check "10.2.2 Software errors" and perform the countermeasures.
- "F" is displayed as the initial letter of the error code. → Check "10.2.3 DR Detector errors" and perform the countermeasures.
- "G" is displayed as the initial letter of the error code.
  - The AeroDR Interface Unit2 is used.
  - The AeroDR Generator Interface Unit is used.
  - The AeroDR Generator Interface Unit2 is used.
  - The Generator Interface Unit 3 is used.
  - The AeroDR Portable RF Unit is used.
  - AeroDR Portable RF Unit2 is used.

  → Check "10.2.4 AeroDR Interface Unit2/AeroDR Generator Interface Unit/AeroDR Generator Interface Unit2/Generator Interface Unit 3/AeroDR Portable RF Unit/AeroDR Portable RF Unit2 errors" and perform the countermeasures.
- "S" is displayed as the initial letter of the error code. → Check "10.2.5 AeroDR Stitching System errors" and perform the countermeasures.
- A numerical value, "CAS", "SIG", etc. is displayed at the bigining of the error code. → Check "10.2.6 REGIUS series errors" and perform the countermeasures.

10.2 Error codes and countermeasures

If the following error codes appear, take the respective countermeasures.

IMPORTANT

- After performing countermeasures, if the problem does not go away, contact Konica Minolta technical representatives.
- If the displayed error code is not supported on this device, contact Konica Minolta technical representatives.

HINT

- The "*" at the tail of the error code is indicating a character from 0 to 9 or from A to Z.
- For operation of the AeroDR SYSTEM and the REGIUS series, refer to the respective operation manuals.

10.2.1 Communication errors

Error codes starting with "C2" are indicating communication errors.

Error code	Displayed message	Problems/countermeasures
C21522	X-ray system error detected.	(1) Pause the examination and start it again. (2) Restart the X-ray device and this device if it is displayed again.
C21523	X-Ray device initializing, Please wait.	Check the X-ray device status.
C21524	X-ray system connection error. Check the network.	Check the network status.
C21525	Connection destination X-ray device or DAP error message displayed.	Contact Konica Minolta technical representatives.
C21526	Parameter setting to the X-ray system error.	Check the exposure settings set on this device.
C21527	The X-ray system interlock failed.	Check the X-ray device status.
C21528	The X-ray system inter unlock failed.	
C21529	Failed to send the X-ray system buzzer sound (success).	
C21530	Failed to send the X-ray system buzzer sound (failure).	
C21531	Failed to retrieve DAP value.	Contact Konica Minolta technical representatives.
C21532	[Display X-ray generator warning message]	Refer to the X-ray device Manual.
C21541	X-ray system error detected.	Restart the X-ray device and this device.
C21542	[Display X-ray generator error message]	Refer to the X-ray device Manual.
C21559	Internal error occurred in X-ray communication process.	Restart the X-ray device and this device.
C27300 - C27307	[AeroDR Stitching Unit name] Failed to connect AeroDR Stitching Unit. Please check the network connection.	Contact Konica Minolta technical representatives.
C27308	[AeroDR Stitching Unit name] Timeout error occurred in AeroDR Stitching Unit. Please check the network connection.	
C27309 - C27313	[AeroDR Stitching Unit name] Failed to connect AeroDR Stitching Unit. Please check the network connection.	
C27314	[AeroDR Stitching Unit name] Communication with AeroDR Stitching Unit has failed. Please check the network connection.	
C27315	[AeroDR Stitching Unit name] Communication with AeroDR Stitching Unit has failed.	
C27316	[AeroDR Stitching Unit name] Failed to connect AeroDR Stitching Unit. Please check the network connection.	

Error code	Displayed message	Problems/countermeasures
C27600 - C27604	Initialization Error	Check the destination connected to.
C27605	Health check error	
C27606 - C27608	Scheduled check error	
C2761*	Error in study completed notification to RIS	
C27620 - C27626	Patient search error	
C27628 C27629 C2763* C2764*	Folder check error	
C2770* C2773*	Communication error occurred in RIS-OUT communication. Check the communication destination.	Check the network status.
C2774*	Communication error occurred in RIS-IN communication. Check the communication destination.	

10.2.2 Software errors

Error codes starting with "C3" through "C7" are indicating software errors.

Error code	Displayed message	Problems/countermeasures
C35500	Failed to initialize.	Restart this device.
C35501	There was an error with reading the setting file.	Check the setting file and update it.
C35502	A time-out occurred.	MWM search request response waiting time-out occurred. Check the connection destination.
C35503	A socket error occurred.	An error occurred in communication with DICOM. (1) Check the destination connected to, the network status, and connection settings. (2) Restart the device.
C35504	Channel mismatch occurred	Contact Konica Minolta technical representatives.
C35520	Failed to initialize.	Restart this device.
C35521	There was an error with reading the setting file.	Check the setting file and update it.
C35522	A time-out occurred.	PPS result notification time-out occurred. Check the connection destination.
C35540	Failed to initialize.	Restart this device.
C35541	There was an error with reading the setting file.	Check the setting file and update it.
C35542	A time-out occurred.	Detach result notification response timeout occurred. Check the connection destination.
C35543	Channel mismatch occurred	Contact Konica Minolta technical representatives.
C35560	Failed to initialize.	
C35561	There was an error with reading the setting file.	
C35562	A time-out occurred.	
C35563	Socket error has occurred.	Check the network equipment and communication cable connection status.
C35564	Exceeded the maximum number of strings obtained.	Contact Konica Minolta technical representatives.
C36020	At PrintComposer process, execution error occurred.	(1) Try performing the operation again. (2) Contact Konica Minolta technical representatives.
C36021	At PrimtComposer process, Fatal error occurred. Contact a service representative.	Contact Konica Minolta technical representatives.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
C36022	At PrimtComposer process, processing is timeout.	(1) Try performing the operation again. (2) Contact Konica Minolta technical representatives.
C37001	[DR Detector name] Connecting detector	Check the network equipment and communication cable connection status.
C37002	[DR Detector name] disconnection error	
C37003 C37004	Error. Please touch the work area.	Check the network equipment and communication cable connection status. Touching either the working area or exposure condition items may fix the problem.
C37005	[DR Detector name] Disconnected energy saving not set. Please touch the work area.	(1) Touch either the working area or exposure condition items. (2) Check the network equipment and communication cable connection status. (3) Stop the examination.
C37006	[DR Detector name] wireless forbidden error	Check the network equipment and communication cable connection status.
C37007	[DR Detector name] version up error Version upgrade failed. Check the connection and restart the AeroDR cassette.	
C37008	[DR Detector name] calibration error Calibration failed. Check the connection and retry.	(1) Check the network equipment and communication cable connection status. (2) Restart the calibration tool.
C37009	There are images unreceived to the AeroDR. Do not turn off the power of AeroDR. Return AeroDR detector to previous connection state(Wired/Wireless). In the case of wireless connection, the electric wave state has deteriorated. Please check an electric wave state by the AeroDR icon at the upper right of a screen, and wait until connection returns.	(1) Check the network equipment and communication cable connection status. (2) Press [OK], and wait until image re-acquisition is complete.
C37010	[DR Detector name] Correction processing error Correction processing error. Restart the CS-7 and retake.	Restart this device and perform the exposure again.
C37012	[DR Detector name] Additional registration error	Check the network equipment and communication cable connection status.
C37013	[DR Detector name] Registration cancelation error	
C37014	[DR Detector name] Set panel data error	
C37015	[DR Detector name] Get panel data error	
C37017	[DR Detector name] Attribute information error.	
C37018	[DR Detector name] Error in image file creation. Please contact the service representation.	Contact Konica Minolta technical representatives.
C37019	[DR Detector name] Exposure Permission Setting Error Please touch the work area.	(1) Touch either the working area or exposure condition items. (2) Check the network equipment and communication cable connection status.
C37025	[DR Detector name] Exposure Mode Setting Error Please touch the work area.	Touching either the working area or exposure condition items may fix the problem. If not, contact Konica Minolta technical representatives.
C37026	[DR Detector name] pulse error Pulse error was detected. Please touch the work area.	(1) Touch either the working area or exposure condition items. (2) Check the network equipment and communication cable connection status.
C37054	Exposure field setting error. Check the network connection and touch this exposure condition.	(1) Check the network equipment and communication cable connection status. (2) When [Ready] is displayed, press the Exam. Tag.
C37055	Communication error. Check the network connection and touch this exposure condition.	
C37056	Version up failed. Check the connection and restart the AeroDR XG BOX/ AeroDR Interface Unit2.	(1) Check the network equipment and communication cable connection status. (2) Restart the device and the AeroDR Interface Unit.

Error code	Displayed message	Problems/countermeasures
C37058	Failed to set the Setting data. Please check network connection and retry.	Contact Konica Minolta technical representatives.
C37059	Failed to get the Setting data. Please check network connection and retry.	Contact Konica Minolta technical representatives.
C37060	Exposure sync setting error. Check the network connection and touch this exposure condition.	Check the network equipment and communication cable connection status.
C37064	Network connection between AeroDR and AeroDR XG BOX/AeroDR Interface Unit2 may not be good. Check the network connection and take exposure once again.	The DR Detector and AeroDR Interface Unit2, AeroDR Generator Interface Unit, AeroDR Generator Interface Unit2 or Generator Interface Unit 3 communications status is poor. Check the network status and then try performing the exposure again.
C37102	5th AeroDR Detector can not be registered.	Up to four DR Detectors can be registered to one exposure room. A fifth DR Detector cannot be registered because four panels are already registered.
C37103	Unknown AeroDR Detector.	The DR Detector is unregistered. Registered DR Detectors are available.
C37104	Unknown exposure device.	Exposure device is not registered. Registered panels (DR Detectors or CR cassettes) are available.
C37111	An error occurred when canceling registration of the AeroDR panel.	Check the network equipment and communication cable connection status.
C37116	The license of the panel you tried to register does not exist or the number of licenses is insufficient. Obtain a license or register the panel for the number of licenses obtained.	(1) Acquire a DR Detector license. (2) Register DR Detectors without exceeding the number of licenses.
C37119	Non-activated AeroDR detector is found.	Contact Konica Minolta technical representatives.
C37120	This detector is not installed. Please go to "Quick Repair" tool to install.	Contact Konica Minolta technical representatives.
C37121	There's no selectable channel. It will take maximum 30 minutes to recover the wireless LAN.	This appears when there are no accessible channels available when attempting to switch access point channels while detecting radar waves. Please wait until wireless communication is restored.
C37122	Radar wave has been detected. Changing the communication channel. It takes about 1 minute for channel change.	This appears when radar waves are detected. Please wait until the device has finished switching the access point channel.
C37123	Channel has been changed.	This appears when the device has finished switching the access point channel.
C37124	Failed to start the AP Process. Please restart the PC.	Restart the device. If this does not solve the problem, contact Konica Minolta technical representatives.
C37150	[LongLenIF] Initialization failed. Contact a service representative.	(1) Restart the device. (2) Contact Konica Minolta technical representatives.
C37151	[LongLenIF] Termination failed. Contact a service representative.	
C37153	[DR Detector name] Radiation field detection Failed. Radiation field light got off.	Check the light intensity and exposure range, and perform exposure field detection again.
C37154	[DR Detector name] Radiation field detection Failed. Radiation field is out of range.	
C37155 - C37157	[DR Detector name] Radiation field detection Failed.	
C37300	Termination status	(1) Please check the connection status. (2) Restart the device.
C3730* C3731* C3732*	Initialization error	
C3733* C3734*	Conversion error	

Continued on the next page

Error code	Displayed message	Problems/countermeasures
C37350 C37351	Internal error occurred in DICOM communication. Contact a service representative.	Contact Konica Minolta technical representatives.
C37352	Failed to get DICOM communication setting. Please confirm communication setting.	
C37353	Failed in communication. Please confirm communication setting and server is working.	
C37354	Failed in A-ASSOCIATE. Please confirm communication setting and server is working.	
C37355	Rejected from server in A-ASSOCIATE due to invalid setting. Please confirm communication setting.	
C37356	Internal error occurred in DICOM communication. Contact a service representative.	
C37357	It failed in the communication of release.	
C37358	A-ABORT was received.	Check the network and destination connected to.
C3736* C3737*	Internal error occurred in RIS-OUT communication. Contact a service representative.	Data transfer failed or error occurred at the communication data creation. (1) Please check the connection destination. (2) Restart the device. (3) Please check the setting again.
C37400 - C37402	Conversion error	(1) Please check the connection status. (2) Restart the device.
C37403 - C37409 C3741* C37420 C37421	Health check error	
C37422 - C37430	Scheduled check error	
C37431 - C37438 C3744*	Termination error	
C37454 - C37456	Study performing error	
C37457 - C37459 C3746* C37470 - C37472	Error in study completed notification to RIS	
C37473 - C37479 C3748* C37495	Patient search error	
C3760*	Internal error occurred in RIS-OUT communication. Contact a service representative.	Data transfer failed or error occurred at the communication data creation. (1) Please check the connection destination. (2) Restart the device. (3) Please check the setting again.
C3761*	Internal error occurred in RIS-IN communication. Contact a service representative.	
C37614	MWM C-FIND request aborted because it exceeded the maximum number of search responses.	Contact Konica Minolta technical representatives.
C37662	Internal error occurred in RIS-OUT communication. Contact a service representative.	Error occurred at the data transfer, the communication data creation or the image creation. (1) Output again. (2) Please check the connection destination. (3) Restart the device. (4) Please check the setting again.

Error code	Displayed message	Problems/countermeasures
C37680	[Detached] RIS-OUT A-ASSOCIATE request is rejected. Please check communication setting.	Check the communication settings of the device and the server.
C37680	[MPPS] RIS-OUT A-ASSOCIATE request is rejected. Please check communication setting.	
C37680	[MWM] RIS-IN A-ASSOCIATE request is rejected. Please check communication setting.	
C37681	[Detached] RIS-OUT communication received transient reject for A-ASSOCIATE request.	Check the connection status from the server.
C37681	[MPPS] RIS-OUT communication received transient reject for A-ASSOCIATE request.	Check the server status.
C37681	[MWM] RIS-IN communication received transient reject for A-ASSOCIATE request.	
C37698	The end notification was received.	(1) Please check the connection destination. (2) Restart the device.
C37699	[Patient ID] Real Time backup Failed	Contact Konica Minolta technical representatives.
C3772*	At PrintComposer process, internal error occurred.	(1) Try performing the operation again. (2) Contact Konica Minolta technical representatives.
C40001	Failed to create queue file.	Check the system monitor and if there is no output data, redo the output operation. If the error persists, restart the device, and perform the output operation again.
C40002	Failed to queue.	(1) Restart the device. (2) Redo settings and output.
C40004	Failed to read Exam. Tag. Please confirm the Exam. Tag.	Contact Konica Minolta technical representatives.
C40005	Corrupted Exam. Tag is Found.	
C40006	Corrupted Exam. Tag has been recovered.	Check the exposure conditions on the device screen, and change the Exam. Tag on the Body part selection screen.
C40007	Reselect Exam. Tag. in Body part selection screen	Registration of Exam. Tag failed. Register the Exam. Tag from the body part selection screen again.
C40008	Study is busy. Reopen study after few seconds.	The study is currently being processed so the study cannot be performed. Wait for a while before performing a study.
C40010	The free space to save examination ({0} GB) is insufficient. Please delete backup data and so on, so that free space becomes enough.	Restart the device.
C50001	The Channel is inactive. (Service No:[0], Channel No:[1])	(1) If the settings are off after checking the system monitor, turn the settings on. (2) When the icon does not exist, contact Konica Minolta technical representatives.
C50002	The service and channel to get settings are invalid. (Service No:[0], Channel No:[1])	
C60001	Loaded default parameter for image processing. Confirm parameters.	Image processing conditions are set to default values because they are incorrect. Check the image processing conditions after exposure.
C70001	RIS Code mapping file not found. Please call service representitive.	Contact Konica Minolta technical representatives.
C80001	Unable to register this Exam. Tag due to no available modalities. Please confirm modalities of the Exam. Tag.	Using the Exam. Tag edit tool, confirm the modalities that have been set.
C90001	Order number of shot is abnormal. There is a possibility that the operations of order has not been reflected. Before you start exposing, make sure you have registered the exposing conditions.	Check the registered Exam. Tags before starting exposure.
C90002	Order number of shot is abnormal. It is greater than [0]. There is a possibility that the operations of order has not been reflected. Before you start exposing, make sure you have registered the exposing conditions.	Cannot perform exposure that exceeds the maximum. Check the registered Exam. Tags, and perform exposure within the number of registered cases.

Error code	Displayed message	Problems/countermeasures
C90003	Cannot perform the study as the image count exceeds the limit [0].	The Image Count for this patient has exceeded the upper limit. No more studies can be started.

10.2.3 DR Detector errors

Error codes starting with "F" are indicating DR Detector errors.

Error code	Displayed message	Problems/countermeasures
F0100*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0101*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0200*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0201*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0202* F0203*	[DR Detector name] version up error If the panel after rebooting does not recover, contact a service representative.	
F0210* F0211*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0300*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0400*	[DR Detector name] version up error If the panel after rebooting does not recover, contact a service representative.	
F090** F091** F092** F093** F094**	[DR Detector name] radio error The radio condition has transiently worsened.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives. Wireless connection cannot be used, but continued operation is possible with the wired connection.

Error code	Displayed message	Problems/countermeasures
F0H00* F0H01*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0H02*	[DR Detector name] internal error. If the panel after rebooting does not recover, contact a service representative.	
F0H03*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0H04* F0H05*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0H06* F0H07* F0H08*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0H09* F0H10*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0H16* F0H17*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0I00* F0I01* F0I02* F0I03*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	
F0I04* F0I05*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	
F0I06* F0I07*	[DR Detector name] capacitor error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0I08* F0I09* F0I10*	[DR Detector name] capacitor error Can continue to use the panel. But, if the panel after rebooting does not recover, contact a service representative.	Lithium ion capacitor is degraded, or the power consumption of the whole AeroDR SYSTEM has increased. (1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives. However, continued use is possible.
F0I11* F0I12* F0I13*	[DR Detector name] capacitor error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0I14*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	
F0I15*	[DR Detector name] capacitor error If the panel after rebooting does not recover, contact a service representative.	
F0I16*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	
F0I17*	cradle error If the panel after rebooting does not recover, contact a service representative.	
F0I18*	[DR Detector name] Power source error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector and AeroDR Battery Charger/AeroDR Battery Charger2. (2) Contact Konica Minolta technical representatives.
F0I19*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0I20*	[DR Detector name] power source error Remove cable or cradle from the panel. If the panel does not recover after a while, contact a service representative.	(1) Remove the DR Detector from the AeroDR Battery Charger/AeroDR Battery Charger2 or the wired connection cable. (2) Contact Konica Minolta technical representatives.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
F0I21*	[DR Detector name] capacitor error Contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0I22*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	
F0I23*	[DR Detector name] power source error The AeroDR panel cannot be charging because of high temperature inside the panel. You can charge it again after cooling down.	(1) Move the DR Detector away from an electrical carpet, a location exposed to direct sunlight, or a place where heat can build up, then wait until the temperature falls. If an error occurs, charging will not be possible. However, it will be possible to carry out exposures. (2) If the problem persists, contact Konica Minolta technical representatives.
F0I24* F0I25*	[DR Detector name] capacitor error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0I26*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F0I27*	[DR Detector name] capacitor error If the panel after rebooting does not recover, contact a service representative.	
F0I28*	cradle error If the cradle after rebooting does not recover, contact a service representative.	(1) Restart the AeroDR Battery Charger/AeroDR Battery Charger2. (2) Contact Konica Minolta technical representatives.
F0I34* F0I35* F0I36* F0I37*	[DR Detector name] cable/cradle connection error Poor connection of a cable or a cradle. Please reconnect after checking for a foreign particle in the connector.	(1) Confirm that the wired connection connector part of the DR Detector, AeroDR Battery Charger, AeroDR Battery Charger2 and I/F Cable doesn't have any foreign objects attached. (2) Confirm that the I/F Cable is not connected at an angle. (3) Reconnect.
F0I38*	[DR Detector name] cable/cradle connection error Poor connection of a cable or a cradle. Please reconnect after checking for a foreign particle in the connector.	(1) Confirm that the wired connection connector part of the DR Detector, AeroDR Battery Charger, AeroDR Battery Charger2 and I/F Cable doesn't have any foreign objects attached. (2) Check the AeroDR Battery Charger or AeroDR Battery Charger2 power. (3) Confirm that the I/F Cable is not connected at an angle. (4) Reconnect.
F0I39*	[DR Detector name] power source error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0I46*	[DR Detector name] The AeroDR panel cannot be charging because of high temperature inside the panel. You can charge it again after cooling down. If this error occurs frequently, contact a service representative.	(1) Move the DR Detector away from an electrical carpet, a location exposed to direct sunlight, or a place where heat can build up, then wait until the temperature falls. If an error occurs, charging will not be possible. However, it will be possible to carry out exposures. (2) If the problem persists, contact Konica Minolta technical representatives.
F0I47*	Please reconnect the cable or the cradle.	(1) Please reconnect the I/F Cable or the AeroDR Battery Charger. (2) If the problem persists, contact Konica Minolta technical representatives.
F0J11*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F0P01*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	

Error code	Displayed message	Problems/countermeasures
F0Q00* F0Q01*	[DR Detector name] shock detection Detected a shock. Be careful in handling the panel.	The DR Detector is precision equipment, therefore subjecting it to strong impacts or excessive loads such as falls and hits may cause it to malfunction. Be careful in handling the DR Detector.
F0Q02* F0Q03*	[DR Detector name] shock detection Detected a shock. Please run the panel check tool because of the possibility of malfunction.	The DR Detector may be malfunctioning. (1) Use the drop/impact panel check tool to check if the DR Detector is malfunctioning or not. (2) If an error occurs, contact Konica Minolta technical representatives.
F0Q10* F0Q11* F0Q12*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F2E01*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F2E17*	[DR Detector name] version up error If the panel after rebooting does not recover, contact a service representative.	
F3205* F3500*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F3600* F3601* F3604* F3605*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F3606* F3700*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F3800* F3801*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F3802* F3803* F3804*	[DR Detector name] wired LAN error If the panel after rebooting does not recover, contact a service representative.	
F3805*	[DR Detector name] cable connection failure Poor connection of a cable. Please reconnect after checking for a foreign particle in the connector.	Continuing to expose images without an improvement in conditions will result in a delay in transferring images. (1) Confirm that the wired connection connector part of the DR Detector and I/F Cable doesn't have any foreign objects attached. (2) Confirm that the I/F Cable is not connected at an angle. (3) Reconnect.
F39***	[DR Detector name] radio error Temporarily wireless status became worse.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives. Wireless connection cannot be used, but continued operation is possible with the wired connection.
F3C00*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F3C11* F3C12*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F3J00*	[DR Detector name] radio error Temporarily wireless status became worse.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives. Wireless connection cannot be used, but continued operation is possible with the wired connection.
F3K24*	[DR Detector name] network error IP address is already in use for another device. Contact a service representative.	Contact Konica Minolta technical representatives.

Error code	Displayed message	Problems/countermeasures
F3L27*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	(1) Restart the DR Detector. (2) Contact Konica Minolta technical representatives.
F3P00*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F3Y00* F3Z02*	[DR Detector name] internal error If the panel after rebooting does not recover, contact a service representative.	
F4I32*	[DR Detector name] holding the power switch down error The panel's power switch is held down. please release the power switch.	The power switch of the DR Detector is pressed and held for 30 seconds or longer. Release the power switch.
F4I33*	[DR Detector name] holding the power switch down error The panel's power switch is held down. please release the power switch.	The selection switch of the DR Detector is pressed and held for 30 seconds or longer. Release the selection switch.

10.2.4 AeroDR Interface Unit2/AeroDR Generator Interface Unit/ AeroDR Generator Interface Unit2/Generator Interface Unit 3/ AeroDR Portable RF Unit/AeroDR Portable RF Unit2 errors

Error codes starting with "G" are indicating AeroDR Interface Unit2, AeroDR Generator Interface Unit, AeroDR Generator Interface Unit2, Generator Interface Unit 3, AeroDR Portable RF Unit, AeroDR Portable RF Unit2 errors.

HINT

- Error codes are common to the AeroDR Interface Unit2, AeroDR Generator Interface Unit, AeroDR Generator Interface Unit2, Generator Interface Unit 3, AeroDR Portable RF Unit, and AeroDR Portable RF Unit2.
- [Device name] under the Displayed message column and the "corresponding device" under the Problems/countermeasures column indicate a device in which an error is occurring.

Error code	Displayed message	Problems/countermeasures
G0600X	Version up failed. Contact a service representative.	Contact Konica Minolta technical representatives.
G0601X	Restart the AeroDR Interface Unit / AeroDR Interface Unit2, and CS-7. If the error cannot be released, contact a service representative.	(1) Restart the corresponding device and this device. (2) Contact Konica Minolta technical representatives.
G0602X	Restart the AeroDR Interface Unit / AeroDR Interface Unit2, and CS-7. If the error cannot be released, contact a service representative.	
G06030	Restart the AeroDR Interface Unit / AeroDR Interface Unit2, and CS-7. If the error cannot be released, contact a service representative.	
G2010S G2011S	[Device name] There is a startup error. Release the exposure switch.	Initial status error of the corresponding device occurred. Release the exposure switch.
G2012S	[Device name] There is a startup error. Contact a service representative.	Contact Konica Minolta technical representatives.
G2020S G2021S	[Device name] There is a startup error. Release the exposure switch.	Initial status error of the corresponding device occurred. Release the exposure switch.
G2022S	[Device name] There is a startup error. Contact a service representative.	Contact Konica Minolta technical representatives.
G2030S G2031S	[Device name] There is a startup error. Release the exposure switch.	Initial status error of the corresponding device occurred. Release the exposure switch.
G2032S	[Device name] There is a startup error. Contact a service representative.	Contact Konica Minolta technical representatives.
G22000	[Device name] There is a X-ray device exposure link error. Restart the X-ray device and AeroDR Interface Unit/AeroDR Interface Unit2.	Link error between the X-Ray device and the corresponding device occurred. Restart the X-ray device and the corresponding device.
G2201U	[Device name] There is a X-ray device exposure link error. Contact a service representative.	Contact Konica Minolta technical representatives.
G2300U - G2302U	[Device name] There is an internal device error or a communication error. Restart the AeroDR Detector, AeroDR Interface Unit/AeroDR Interface Unit2 and CS-7.	System error of the corresponding device occurred. Restart the corresponding device, and the device.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
G2303U	[Device name] Exposure link failed, X-rays are not exposed. Please take exposure once again.	X-rays were not irradiated. Try performing the exposure again. The release of the exposure switch may occur quickly, so exposure while making sure to release the exposure switch properly.
G2500U	[Device name] There is an internal device error. Restart the AeroDR Interface Unit/AeroDR Interface Unit2.	System error of the corresponding device occurred. Restart the corresponding device.
G2501U	[Device name] There is an internal device error or a communication error. Contact a service representative.	Contact Konica Minolta technical representatives.
G410**	[Device name] Exposure switch is not released. Release the exposure switch.	Release the exposure switch.
G4103U	[Device name] Exposure link failed, X-rays are not exposed. Please take exposure once again.	X-rays were not irradiated. Try performing the exposure again. The release of the exposure switch may occur quickly, so exposure while making sure to release the exposure switch properly.

10.2.5 AeroDR Stitching System errors

Error codes starting with "S" are indicating AeroDR Stitching System errors.

Error code	Displayed message	Problems/countermeasures
S000** S00100	[AeroDR Stitching Unit name] MCB Error Contact a service representative.	Contact Konica Minolta technical representatives.
S00110 S00120	[AeroDR Stitching Unit name] Motor Error Please power OFF of AeroDR Stitching unit. Please confirm the auto barrier unit movement area before switch the power to ON.	(1) Turn off the AeroDR Stitching System. (2) Check that there are no obstacles in the operating range of the Stitching Mask of the AeroDR Stitching X-Ray Auto-barrier Unit, and turn on the AeroDR Stitching System.
S00130	[AeroDR Stitching Unit name] MCB Error Contact a service representative.	Contact Konica Minolta technical representatives.
S00140	[AeroDR Stitching Unit name] Motor Error Please power OFF of AeroDR Stitching unit. Please confirm the auto barrier unit movement area before switch the power to ON.	(1) Turn off the AeroDR Stitching System. (2) Check that there are no obstacles in the operating range of the Stitching Mask of the AeroDR Stitching X-Ray Auto-barrier Unit, and turn on the AeroDR Stitching System.
S00200	[AeroDR Stitching Unit name] Motor Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S00210 S00220	[AeroDR Stitching Unit name] Motor Error Please power OFF of AeroDR Stitching unit. Please confirm the auto barrier unit movement area before switch the power to ON.	(1) Turn off the AeroDR Stitching System. (2) Check that there are no obstacles in the operating range of the Stitching Mask of the AeroDR Stitching X-Ray Auto-barrier Unit, and turn on the AeroDR Stitching System.
S00230	[AeroDR Stitching Unit name] Sensor Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S00240	[AeroDR Stitching Unit name] Motor Error Please power OFF of AeroDR Stitching unit. Please confirm the auto barrier unit movement area before switch the power to ON.	(1) Turn off the AeroDR Stitching System. (2) Check that there are no obstacles in the operating range of the Stitching Mask of the AeroDR Stitching X-Ray Auto-barrier Unit, and turn on the AeroDR Stitching System.
S00250	[AeroDR Stitching Unit name] Motor Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S00260	[AeroDR Stitching Unit name] Sensor Error Please power OFF/ON of AeroDR Stitching unit.	
S00400	[AeroDR Stitching Unit name] MCB Error Contact a service representative.	Contact Konica Minolta technical representatives.

Error code	Displayed message	Problems/countermeasures
S00420	[AeroDR Stitching Unit name] Motor Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S00510 S00530	[AeroDR Stitching Unit name] Sensor Error Contact a service representative.	Contact Konica Minolta technical representatives.
S008** S00900 S00910 S00920 S00930	[AeroDR Stitching Unit name] MCB Error Contact a service representative.	Contact Konica Minolta technical representatives.
S00940 S00A00 S00A10 S00A20	[AeroDR Stitching Unit name] Motor Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S00A30	[AeroDR Stitching Unit name] Sensor Error Please power OFF/ON of AeroDR Stitching unit.	
S00A40 S00A50	[AeroDR Stitching Unit name] Motor Error Please power OFF/ON of AeroDR Stitching unit.	
S00A60 S00C90	[AeroDR Stitching Unit name] Sensor Error Please power OFF/ON of AeroDR Stitching unit.	
S00CA0	[AeroDR Stitching Unit name] Side Cover Open Please close the AeroDR stitching unit cover and press RESET switch.	Close the side cover of the AeroDR Stitching Unit, and press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error.
S00CB0	[AeroDR Stitching Unit name] Panel Error Properly set the grid inside AeroDR stitching unit, close the over and press the RESET switch.	Check that the DR Detector is correctly inserted in the AeroDR Stitching Unit, and close the side cover. Press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error.
S00CC0	[AeroDR Stitching Unit name] Grid Error Properly set the grid inside AeroDR stitching unit, close the over and press the RESET switch.	Check that the grid is correctly installed on the AeroDR Stitching Unit, and then close the side cover. Press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error.
S00CD0	[AeroDR Stitching Unit name] Panel Error Properly close the inner cover of AeroDR stitching unit and switch the power OFF/ON.	(1) Open the side cover on the AeroDR Stitching Unit and close the internal lid. (2) Close the side cover and restart the AeroDR Stitching System.
S200**	[AeroDR Stitching Unit name] Internal connection error Please power OFF of AeroDR Stitching unit. Please confirm the connectivity of Power box and auto barrier unit before switching the power to ON.	(1) Turn off the AeroDR Stitching System. (2) Check the power unit and the AeroDR Stitching X-Ray Auto-barrier Unit are connected by the power cable, and turn on the AeroDR Stitching System.
S208**	[AeroDR Stitching Unit name] Internal Error Please power OFF/ON of AeroDR Stitching unit. Please confirm the connectivity of Power box and Stitiching unit before switching the power to ON.	(1) Turn off the AeroDR Stitching System. (2) Check the power unit and the AeroDR Stitching Unit are connected by the power cable, and turn on the AeroDR Stitching System.
S20C50	[AeroDR Stitching Unit name] Network Error Please confirm the network of AeroDR stitching unit and CS-7, switch on the power OFF/ON of AeroDR stitching unit.	Check that the AeroDR Stitching Unit and this device are connected by the network cable and restart the AeroDR Stitching System.
S20C60	[AeroDR Stitching Unit name] Network Error Please confirm the network of AeroDR stitching unit and CS-7, press the AeroDR Stitching unit RESET switch.	Check that the AeroDR Stitching Unit and this device are connected by the network cable, and press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error.
S30460	[AeroDR Stitching Unit name] Height detection (out of range) Please press the AeroDR Stitching unit RESET switch. Repeat the height detection.	(1) Press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error. (2) Check the collimator installation position in the X-ray device is correct. (3) Execute height detection. (4) If the problem is not solved by the above method, there is a possibility that the intensity of the exposure field lamp has changed. Change the brightness setting.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
S30470	[AeroDR Stitching Unit name] Internal Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S30540	[AeroDR Stitching Unit name] MCB Error Contact a service representative.	Contact Konica Minolta technical representatives.
S307**	[AeroDR Stitching Unit name] Internal Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S30FD0	[AeroDR Stitching Unit name] Internal Error Contact a service representative.	Contact Konica Minolta technical representatives.
S30FE0 S30FF0	[AeroDR Stitching Unit name] Internal Error Please power OFF/ON of AeroDR Stitching unit.	Restart the AeroDR Stitching System.
S40430	[AeroDR Stitching Unit name] Height detection failed (lamp is off) Please press the AeroDR Stitching unit RESET switch. Repeat the height detection.	(1) Press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error. (2) Check that the exposure field lamp is set to on, press the Set switch on the AeroDR Stitching X-Ray Auto-barrier Unit, and re-execute height detection. (3) If the problem is not solved by the above method, there is a possibility that the intensity of the exposure field lamp has changed. Change the brightness setting.
S40440	[AeroDR Stitching Unit name] Height detection failed(cross mark mismatch) Please press the AeroDR Stitching unit RESET switch. Repeat the height detection.	(1) Press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error. (2) Check the installation position of the Collimator of the X-ray device and the AeroDR Stitching X-Ray Auto-barrier Unit is correct. (3) If the problem is not solved by the above method, there is a possibility that the intensity of the exposure field lamp has changed. Change the intensity settings and then implement height detection.
S40450	[AeroDR Stitching Unit name] Height detection failed(other reason) Please press the AeroDR Stitching unit RESET switch. Repeat the height detection.	(1) Press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error. (2) Check the collimator installation position in the X-ray device is correct. (3) Execute height detection. (4) If the problem is not solved by the above method, there is a possibility that the intensity of the exposure field lamp has dropped. Reset the light sensor sensitivity setting and then execute height detection. (5) If the problem is not solved with the light sensor sensitivity setting, there is a possibility that the intensity of the exposure field lamp has changed. Change the brightness setting.
S40480	[AeroDR Stitching Unit name] Obstacle in the movement Obstacle detected in the AeroDR Stitching unit movement. Please press the RESET switch.	Check that there are no obstacles in the operating range of the Stitching Mask of the AeroDR Stitching X-Ray Auto-barrier Unit, and press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error.
S40490	[AeroDR Stitching Unit name] Switch Error AeroDR stitching unit switch is in pressed state. Confirm the switch not pressed state and switch the power OFF/ON of AeroDR stitching unit.	Check that the Set switch of the AeroDR Stitching X-Ray Auto-barrier Unit is not being continuously pressed, and restart the AeroDR Stitching System.
S404A0	[AeroDR Stitching Unit name] Switch Error AeroDR stitching unit switch is in pressed state. Confirm the switch not pressed state and switch the power OFF/ON of AeroDR stitching unit.	Check that the Image Area switch of the AeroDR Stitching X-Ray Auto-barrier Unit is not being continuously pressed, and restart the AeroDR Stitching System.
S404B0	[AeroDR Stitching Unit name] Switch Error AeorDR stitching unit switch is in pressed state. Confirm the switch not pressed state and switch the power OFF/ON of AeroDR stitching unit.	Check that the Reset switch of the AeroDR Stitching X-Ray Auto-barrier Unit is not being continuously pressed, and restart the AeroDR Stitching System.

Error code	Displayed message	Problems/countermeasures
S404D0	[AeroDR Stitching Unit name] Emergency Stop AeroDR stitching unit emergency stop switch is ON. Release the emergency stop and press the RESET switch.	Release the Emergency Stop switch on the AeroDR Stitching X-Ray Auto-barrier Unit, and then press the Reset switch to cancel the error.
S404F0	[AeroDR Stitching Unit name] Obstacle in the movement Obstacle detected in the AeroDR Stitching unit movement. Please press the RESET switch.	Check that there are no obstacles in the operating range of the Stitching Mask of the AeroDR Stitching X-Ray Auto-barrier Unit, and press the Reset switch on the AeroDR Stitching X-Ray Auto-barrier Unit to cancel the error.

10.2.6 REGIUS series errors

Error codes starting with a numerical value, "CAS", "SIG", etc. are indicating REGIUS errors.

Error code	Displayed message	Problems/countermeasures
CASIN2	Barcode scanning Error	(1) Remove the CR cassettes from the slot, and check the barcode labels for any dirt or peeling. (2) Contact Konica Minolta technical representatives.
CASIN3	Incorrect barcode	Re-select Exam. Tags with the device.
CASIN4	Cassette Jam (feeds 2 cases simultaneously)	Remove the CR cassettes from the slot, and re-insert the CR cassettes one at a time.
CASIN5	Unregistered Job	Remove the CR cassettes from the slot, and register them with the device before re-inserting them.
CASIN6	Cassette Jam(feeds 2 case contiguously)	Remove the last inserted CR cassettes, and wait for the slot's blue indicator to light up before re-inserting them.
CASIN7	Cassette Jam(feeds 2 case contiguously)	Contact Konica Minolta technical representatives.
CASINB	Unsupported Cassette is inserted	A cassette that is not supported by the device is inserted. The device does not support cleaning cassettes (optical cleaners, insertion rollers).
CASINE	Failed to take the plate out of the cassette. Open upper door and remove cassette.	Removing the plate from the cassette failed. Open the top door and remove the cassette.
CASINF	Cannot start cassette process because of overheating. Open upper door and remove cassette Try it again after a while.	The cassette cannot be processed as the internal humidity is too high. After opening the top door and removing the cassette, wait a while before inserting a cassette.
CASINI	Cassette insertion is not proper enough. Push it moreover.	The insertion of the cassette is not correct. Insert the cassette correctly.
CASINJ	Cleaning of a roller is required.	Clean the rollers.
CASOUT8	Discharge stack is full	Remove the CR cassettes that have accumulated in the ejection container, and check that the ejection container shutter is closed.
CASOUT9	Discharge door opens	Close the ejection container shutter, and restart the transport operation.
DOOR1	Opened front door is detected	Close the front door. When a CR Cassette is left inside the device, after pulling the Transport Unit to the front and removing the CR Cassette, check that there are no CR Cassettes in the device (in the front plate, back plate, or plate), return the Transport Unit to the back, and then close the front door.
LAMPA	Erase-lamp A turns off	Contact Konica Minolta technical representatives.
LAMPC	Fluorescent-tube turns off	
LAMPD	Erase lamp life expired.	The Erasure Lamp need to be replaced. Contact Konica Minolta technical representatives.
LAMPG	Erase lamp life had exceeded. Please call service to get lamp changed.	

Continued on the next page

Error code	Displayed message	Problems/countermeasures
LASER1	Laser Error	Contact Konica Minolta technical representatives.
POLI1	Polygon PLL Error	
SIG1	Uses Default Shading Coefficient	
SIG2	Uses Default QRV Table	
SIG3	Uses Default Shading Coefficient / QRV Table	
0001	Error occurred while copying setting files	The setting file may have not been updated. Check the saved settings, and perform the update again.
04001 - 05000	-	(1) Restart the REGIUS series. (2) If the error persists after restarting, restart the device and the REGIUS series.
05001	JM Error. Please call service. Or change to Backup JM if it exists.	(1) When there is a backup JM, switch the JM. (2) If there is no backup JM, contact Konica Minolta technical representatives.
05002	JM Switching Error	Check that the JM in the backup destination is running, and switch the JM again.
05003	ExchangeParts DB Initialization Error	Check that the JM is running, and restart the device.
05004	JM switched.	JM switching was completed successfully.
05005	Please restart Regius	JM switching was completed successfully. Restart all CR cassette readers.
05006	JM Error. Please call service. Or change to Primary JM	(1) Switch from the backup JM to the primary JM. (2) Contact Konica Minolta technical representatives.
06000 - 06785	-	(1) Restart the REGIUS series. (2) If the error persists after restarting, restart the device and the REGIUS series.
07000	Initialization failed. Cassette is set in the reader. Please open the door and remove the Cassette and Plate.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07001 07002	Initialization failed. Plate still might be inside the reader. Please open the door and check inside.	
07003 - 07005	Initialization failed. Cassette is set in the reader. Please open the door and remove the Cassette and Plate.	
07006	Initialization failed. Plate still might be inside the reader. Please open the door and check inside.	
07007 - 07016	Initialization failed. Sensor Error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07017	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07018 07019	Initialization failed. Sensor Error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07020	Initialization failed. Cassette was detected. Please open the top door and remove the Cassette.	Open the top door and remove the cassette.
07021	Initialization failed. Sensor Error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07022	Single unit operation error.	Contact Konica Minolta technical representatives.
07023 07024	Initialization failed. Sensor Error was detected during initialization.	
07100 - 07106	Error was detected during Cassette insertion.	Remove the cassette and perform the image reading operation again. (The plate image on the cassette can be read again.)

Error code	Displayed message	Problems/countermeasures
07107	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	Remove the cassette and perform the image reading operation again. (The plate image on the cassette can be read again.)
07108 07109	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07110	Cassette might not contain the plate. Please open the door and remove the cassette. Confirm the plate is in the cassette.	Remove the cassette and plate from the device. (1) When there is not a plate inside the device or inside the cassette, check that the correct cassette has been inserted. (2) Delete the image on the plate using the Erase mode when the plate is inside the device.
07111 - 07117	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07118	Critical error has occurred while processing the cassette. Please contact service. Please open the top door and remove the Cassette. And open the back door and remove the Plate.	Remove the plate and cassette. (1) After this error occurs, even if the power is turned OFF and ON, the device error will not be cleared. (2) Contact Konica Minolta technical representatives.
07119 - 07124	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07125	Critical error has occurred while processing the cassette. Please contact service. Please open the top door and remove the Cassette. And open the back door and remove the Plate.	(1) After opening the top door, remove the plate and cassette. (2) After this error occurs, even if the power is turned OFF and ON, the device error will not be cleared. Contact Konica Minolta technical representatives.
07126 - 07129	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07130	Cassette Size error was detected during cassette insertion. Please confirm whether the cassette size is supported.	Remove the cassette. Check the cassette size and confirm that the cassette is compatible with the device.
07131 - 07135	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07136	Cassette size and the Plate size might not match. Please open the door and remove the Cassette. Confirm the size of the cassette and plate. Erase the cassette in ERASE MODE before using the cassette again.	(1) Remove the cassette and plate from the device. (2) Confirm that the cassette and plate size match. (3) Load the removed plate with a cassette of the matching size, and erase the image with the Erase mode.
07137	Single unit operation error.	Contact Konica Minolta technical representatives.
07138 07139	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.
07140 - 07142	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	While processing the cassette, an error was detected. Open the door, remove the cassette/plate, and erase the cassette using Erase mode.
07143 - 07152	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	(1) Remove the cassette and plate from the device. (2) Delete the image on the removed plate using the Erase mode.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
07153	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE.	While processing the cassette, an error was detected. Open the door, remove the cassette/plate, and erase the cassette using Erase mode.
07154	Error was detected while processing the cassette. Please open the door and remove the Cassette and Plate. After removal, erase the cassette in ERASE MODE. Moreover, please clean a roller.	While processing the cassette, an error was detected. Open the door, remove the cassette/plate, and erase the cassette using Erase mode. Also, clean the rollers.
07200 - 07224 07300 - 07354	Single unit operation error.	Contact Konica Minolta technical representatives.
07400 - 07409	Initialization failed. Reader error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07410 07411	Erasure error was detected.	An error was detected in the device when erasing the image. (1) As the image reading is complete, wait for the image transfer to finish. (2) After confirming that the transfer is complete, remove the cassette. (3) Contact Konica Minolta technical representatives.
07412 - 07414	Reader error was detected.	(1) Remove the cassette and plate from the device. (2) Contact Konica Minolta technical representatives.
07415	Initialization failed. Reader error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07416 - 07419	Reader error was detected.	(1) Remove the cassette and plate from the device. (2) Contact Konica Minolta technical representatives.
07420	Initialization failed. Reader error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07421 07422	Reader error was detected.	(1) Remove the cassette and plate from the device. (2) Contact Konica Minolta technical representatives.
07600 - 07622	Single unit operation error.	Contact Konica Minolta technical representatives.
07650 07651	Reader error was detected.	Contact Konica Minolta technical representatives.
07700 07701	Initialization failed. Reader error was detected during initialization.	Open and close the top door. Perform initialization of the device again. Check if the error reoccurs.
07710 - 07746	Detected Memory error.	After this error occurs, even if the power is turned OFF and ON, the device error will not be cleared. Contact Konica Minolta technical representatives.
07747 - 07749	Detected Data error.	Contact Konica Minolta technical representatives.
07750 - 07759	Detected Data error.	An error was detected in the transferred data. (1) Check the transmitted data and the communication cable. (2) Afterward, power the device OFF and ON.
07800 07801	Parameters which cannot be processed in the Reader Settings are specified	An error was detected in the cassette size parameter. (1) Remove the cassette and plate from the device. (2) Contact Konica Minolta technical representatives.
07802	Reader error was detected.	(1) Remove the cassette and plate from the device. (2) Contact Konica Minolta technical representatives.
07803	Parameters which cannot be processed in the Reader Settings are specified	Exposure conditions which cannot be processed by the device have been indicated. Recheck the exposure conditions.
07810	Top door open	Close the top door.
07811	Back door open	Close the back door.
07812	Left side door open	Close the left side door.
07820	Cassette insertion is not proper enough. Push it moreover.	The insertion of the cassette is not correct. Insert the cassette correctly.

Error code	Displayed message	Problems/countermeasures
07821	Failed to take the plate out of the cassette. Open upper door and remove cassette.	Removing the plate from the cassette failed. Open the top door and remove the cassette.
07822	Cannot start cassette process because of overheating. Open upper door and remove cassette. Try it again after a while.	The cassette cannot be processed as the internal temperature is too high. After opening the top door and removing the cassette, wait a while before inserting a cassette.
07823	Erase lamp life had exceeded. Please call service to get lamp changed.	The Erasure Lamp need to be replaced. Contact Konica Minolta technical representatives.
07999	Service call. Program data of reader corrupted. Need to recover the program.	Contact Konica Minolta technical representatives.
10000 - 12011	-	Restart this device and the REGIUS series.
12012 - 26999	-	(1) Restart the REGIUS series. (2) If the error persists after restarting, restart the device and the REGIUS series.
27000	Reader is not in the status of sending image. Image transmission failed.	The reader's power was cut while reading, and the image data was lost. Perform the exposure again and reread the image.
27001	USB was disconnected while calibration. Re-try maintenance command.	Contact Konica Minolta technical representatives.
27002	Maintenance operation failed as USB was disconnected during its operation. Re-try maintenance command.	
27010	Service call. Version of program doesn't correspond. Need to update program.	
27100	This reader is in process. Connect to the former PC. To terminate process, turn off the reader. The image will be deleted.	This message is displayed when one reader connects to a reader which is transferring image data. (1) When the reader connection has changed Reconnect to the device processing the reading of the original image. With the return to the correct connection condition, transfer will be performed again. (However, this only occurs when the device and the reader's processes are continued. If they are powered OFF or the process is stopped, the data transfer will not be performed.) (2) When the device was restarted while processing an image reading The image data will not be transferred. Remove the plate and cassette and power the reader OFF and ON. Delete the image on the removed plate using the Erase mode.
27101	The reader was switched. To complete image reading, connect to the former reader.	Reconnect to the original reader performing the processing. With the return to the correct connection condition, transfer will be performed again. (However, this only occurs when the device and the reader's processes are continued. If they are powered OFF or the process is stopped, the data transfer will not be performed.) If a connection with the original reader cannot be established, restart the device. The image data cannot be transferred again. Also, remove the plate and cassette and power the reader OFF and ON. Delete the image on the removed plate using the Erase mode.
27105	Another reader is working in the system. This reader is unusable now. Stop another reader if you want to use this reader.	The message will be displayed if multiple readers are connected to one system. Readers which have not been detected by the device cannot be used. To use a connected reader, after unplugging all reader USB cables, connect only the reader to be used. (When unplugging readers, confirm that the readers are not performing any processes.)

Continued on the next page

Error code	Displayed message	Problems/countermeasures
27110	USB was disconnected during image transmission. Connect USB. Image transmission will start after connection.	Confirm that the USB cable is connected. After connecting, continue the transfer of image data.
27750	Communication error has occurred with PRINTER communication. Check the communication destination.	Failed to acquire printer information. Restart the printer and reacquire printer information.
27751 - 27759	Communication error has occurred with PRINTER communication.Check the communication destination	Communication with the printer failed. (1) Output again. (2) Contact Konica Minolta technical representatives.
27770 27771	Internal error occurred in HOST communication. Check the communication destination.	HOST sending failed. (1) Check the HOST status, and output again. (2) Contact Konica Minolta technical representatives.
35940	Space Not Enough	There is not enough free space in the media. Check the media's free space, and adjust the study to be outputted.
35941	Media Write Error	Contact Konica Minolta technical representatives.
35942 35943	Media Write Error	Writing to the media failed. (1) Check the media status, and output again. (2) Contact Konica Minolta technical representatives.
35944	Media Write Error	JPEG creation failed. (1) Output again. (2) Contact Konica Minolta technical representatives.
35945	Time Out Error	Contact Konica Minolta technical representatives.
36200	BAD RECEIVE MGZ	An error occurred in the printer's ejection magazine. Check the printer status.
36201	BAD SUPPLY MGZ	An error occurred in the printer's supply magazine. Check the printer status.
36202	CALIBRATING	The printer is in the process of calibration. Wait for the calibration to finish, and output again.
36203	CALIBRATION ERR	An error occurred in the printer's calibration. Check the printer status.
36204	CHECK CHEMISTRY	A problem occurred with the developer machine's chemicals. Check the developer machine.
36205	CHECK SORTER	A problem occurred with the sorter. Check the sorter.
36206	CHEMICALS EMPTY	The developer fluid level is empty. Replenish the developer machine's chemicals.
36207	CHEMICALS LOW	The developer fluid level is low. Replenish the developer machine's chemicals.
36208	COVER OPEN	The printer's cover, drawer, or door is open. Check the printer status.
36209	ELEC CONFIG ERR	The printer is not operational due to a setting error. Check the printer settings.
36210	ELEC DOWN	The imager is not operational due to a problem with electronic hardware. Check the imager.
36211	ELEC SW ERROR	The printer is not operational due to a software error. Check the printer status.
36212	EMPTY 8X10	There is no more 8×10 film. Set the film.
36213	EMPTY 8X10 BLUE	There is no more 8×10 blue film. Set the film.
36214	EMPTY 8X10 CLR	There is no more 8×10 clear film. Set the film.
36215	EMPTY 8X10 PAPR	There is no more 8×10 paper. Set the paper.
36216	EMPTY 10X12	There is no more 10×12 film. Set the film.

Error code	Displayed message	Problems/countermeasures
36217	EMPTY 10X12 BLUE	There is no more 10×12 blue film. Set the film.
36218	EMPTY 10X12 CLR	There is no more 10×12 clear film. Set the film.
36219	EMPTY 10X12 PAPR	There is no more 10×12 paper. Set the paper.
36220	EMPTY 10X14	There is no more 10×14 film. Set the film.
36221	EMPTY 10X14 BLUE	There is no more 10×14 blue film. Set the film.
36222	EMPTY 10X14 CLR	There is no more 10×14 clear film. Set the film.
36223	EMPTY 10X14 PAPR	There is no more 10×14 paper. Set the paper.
36224	EMPTY 11X14	There is no more 11×14 film. Set the film.
36225	EMPTY 11X14 BLUE	There is no more 11×14 blue film. Set the film.
36226	EMPTY 11X14 CLR	There is no more 11×14 clear film. Set the film.
36227	EMPTY 11X14 PAPR	There is no more 11×14 paper. Set the paper.
36228	EMPTY 14X14	There is no more 14×14 film. Set the film.
36229	EMPTY 14X14 BLUE	There is no more 14×14 blue film. Set the film.
36230	EMPTY 14X14 CLR	There is no more 14×14 clear film. Set the film.
36231	EMPTY 14X14 PAPR	There is no more 14×14 paper. Set the paper.
36232	EMPTY 14X17	There is no more 14×17 film. Set the film.
36233	EMPTY 14X17 BLUE	There is no more 14×17 blue film. Set the film.
36234	EMPTY 14X17 CLR	There is no more 14×17 clear film. Set the film.
36235	EMPTY 14X17 PAPR	There is no more 14×17 paper. Set the paper.
36236	EMPTY 24X24	There is no more 24×24 film. Set the film.
36237	EMPTY 24X24 BLUE	There is no more 24×24 blue film. Set the film.
36238	EMPTY 24X24 CLR	There is no more 24×24 clear film. Set the film.
36239	EMPTY 24X24 PAPR	There is no more 24×24 paper. Set the paper.
36240	EMPTY 24X30	There is no more 24×30 film. Set the film.
36241	EMPTY 24X30 BLUE	There is no more 24×30 blue film. Set the film.
36242	EMPTY 24X30 CLR	There is no more 24×30 clear film. Set the film.
36243	EMPTY 24X30 PAPR	There is no more 24×30 paper. Set the paper.
36244	EMPTY A4 PAPR	There is no more A4 paper. Set the paper.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
36245	EMPTY A4 TRANS	There are no more A4 transparencies. Set the transparencies.
36246	EXPOSURE FAILURE	A problem of unknown cause occurred with the exposure unit. Check the printer.
36247	FILM JAM	A film jam occurred in the printer. Check the printer.
36248	FILM TRANSP ERR	A film feed-related error occurred. Check the printer.
36249	FINISHER EMPTY	The finisher is empty. Check the finisher.
36250	FINISHER ERROR	An error occurred in the finisher. Check the finisher.
36251	FINISHER LOW	The finisher's supply is low. Check the finisher.
36252	LOW 8X10	Low supply on 8×10 film. Set the film.
36253	LOW 8X10 BLUE	Low supply on 8×10 blue film. Set the film.
36254	LOW 8X10 CLR	Low supply on 8×10 clear film. Set the film.
36255	LOW 8X10 PAPR	Low supply on 8×10 paper. Set the paper.
36256	LOW 10X12	Low supply on 10×12 film. Set the film.
36257	LOW 10X12 BLUE	Low supply on 10×12 blue film. Set the film.
36258	LOW 10X12 CLR	Low supply on 10×12 clear film. Set the film.
36259	LOW 10X12 PAPR	Low supply on 10×12 paper. Set the paper.
36260	LOW 10X14	Low supply on 10×14 film. Set the film.
36261	LOW 10X14 BLUE	Low supply on 10×14 blue film. Set the film.
36262	LOW 10X14 CLR	Low supply on 10×14 clear film. Set the film.
36263	LOW 10X14 PAPR	Low supply on 10×14 paper. Set the paper.
36264	LOW 11X14	Low supply on 11×14 film. Set the film.
36265	LOW 11X14 BLUE	Low supply on 11×14 blue film. Set the film.
36266	LOW 11X14 CLR	Low supply on 11×14 clear film. Set the film.
36267	LOW 11X14 PAPR	Low supply on 11×14 paper. Set the paper.
36268	LOW 14X14	Low supply on 14×14 film. Set the film.
36269	LOW 14X14 BLUE	Low supply on 14×14 blue film. Set the film.
36270	LOW 14X14 CLR	Low supply on 14×14 clear film. Set the film.
36271	LOW 14X14 PAPR	Low supply on 14×14 paper. Set the paper.
36272	LOW 14X17	Low supply on 14×17 film. Set the film.
36273	LOW 14X17 BLUE	Low supply on 14×17 blue film. Set the film.

Error code	Displayed message	Problems/countermeasures
36274	LOW 14X17 CLR	Low supply on 14×17 clear film. Set the film.
36275	LOW 14X17 PAPR	Low supply on 14×17 paper. Set the paper.
36276	LOW 24X24	Low supply on 24×24 film. Set the film.
36277	LOW 24X24 BLUE	Low supply on 24×24 blue film. Set the film.
36278	LOW 24X24 CLR	Low supply on 24×24 clear film. Set the film.
36279	LOW 24X24 PAPR	Low supply on 24×24 paper. Set the paper.
36280	LOW 24X30	Low supply on 24×30 film. Set the film.
36281	LOW 24X30 BLUE	Low supply on 24×30 blue film. Set the film.
36282	LOW 24X30 CLR	Low supply on 24×30 clear film. Set the film.
36283	LOW 24X30 PAPR	Low supply on 24×30 paper. Set the paper.
36284	LOW A4 PAPR	Low supply on A4 paper. Set the paper.
36285	LOW A4 TRANS	Low supply on A4 transparencies. Set the transparencies.
36286	NO RECEIVE MGZ	The printer's discharge magazine cannot be used. Check the printer.
36287	NO RIBBON	The printer does not have a ribbon cartridge. Check the printer.
36288	NO SUPPLY MGZ	There is no supply magazine. Check the printer.
36289	CHECK PRINTER	The printer could not be prepared. Check the printer.
36290	CHECK PROC	The developer machine cannot be used. Check the developer machine.
36291	PRINTER DOWN	The printer cannot be used due to an unspecified reason. Check the printer.
36292	PRINTER BUSY	The printer cannot be used because it is currently processing. Output once the printer can be used.
36293	PRINT BUFF FULL	The printer cannot be used because the printer buffer is full. Output again once the printer can be used.
36294	PRINTER INIT	The printer is not ready because it is still warming up, etc. Output once the printer is prepared.
36295	PRINTER OFFLINE	The printer is offline. Output after the printer is online.
36296	PROC DOWN	The developer machine cannot be used. Check the developer machine.
36297	PROC INIT	The developer machine cannot be used as it is currently being initialized. Output once the printer can be used.
36298	PROC OVERFLOW FL	The developer machine's liquid waste tank is nearly full. Empty the liquid waste tank chemicals.
36299	PROC OVERFLOW HI	The developer machine's liquid waste tank is full. Empty the liquid waste tank chemicals.
36300	QUEUED	The printer job is pending in the job queue.
36301	RECEIVER FULL	The discharge magazine is full. Check the printer.
36302	REQ MED NOT INST	The requested film magazine has been inserted, but it is unusable. Check the printer.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
36303	REQ MED NOT AVAI	The requested film cannot be used with this printer. Check the selected film.
36304	RIBBON ERROR	An error occurred with the printer's ribbon cartridge. Check the printer.
36305	SUPPLY EMPTY	The supply magazine is empty. Check the printer.
36306	SUPPLY LOW	Low supply in the supply magazine. Check the printer.
36307	UNKNOWN	An undefined error occurred. (1) Output again. (2) Contact Konica Minolta technical representatives.
36308	EMPTY 8X10 DR	There is no more 8×10 DR film. Set the film.
36309	EMPTY 8X10 DR B	There is no more 8×10 DR blue film. Set the film.
36310	EMPTY 8X10 DR C	There is no more 8×10 DR clear film. Set the film.
36311	EMPTY 10X12 DR	There is no more 10×12 DR film. Set the film.
36312	EMPTY 10X12 DR B	There is no more 10×12 DR blue film. Set the film.
36313	EMPTY 10X12 DR C	There is no more 10×12 DR clear film. Set the film.
36314	EMPTY 11X14 DR	There is no more 11×14 DR film. Set the film.
36315	EMPTY 11X14 DR B	There is no more 11×14 DR blue film. Set the film.
36316	EMPTY 11X14 DR C	There is no more 11×14 DR clear film. Set the film.
36317	EMPTY 14X14 DR	There is no more 14×14 DR film. Set the film.
36318	EMPTY 14X14 DR B	There is no more 14×14 DR blue film. Set the film.
36319	EMPTY 14X14 DR C	There is no more 14×14 DR clear film. Set the film.
36320	EMPTY 14X17 DR	There is no more 14×17 DR film. Set the film.
36321	EMPTY 14X17 DR B	There is no more 14×17 DR blue film. Set the film.
36322	EMPTY 14X17 DR C	There is no more 14×17 DR clear film. Set the film.
36323	EMPTY 24X24 DR	There is no more 24×24 DR film. Set the film.
36324	EMPTY 24X24 DR B	There is no more 24×24 DR blue film. Set the film.
36325	EMPTY 24X24 DR C	There is no more 24×24 DR clear film. Set the film.
36326	EMPTY 24X30 DR	There is no more 24×30 DR film. Set the film.
36327	EMPTY 24X30 DR B	There is no more 24×30 DR blue film. Set the film.
36328	EMPTY 24X30 DR C	There is no more 24×30 DR clear film. Set the film.
36329	LOW 8X10 DR	Low supply on 8×10 DR film. Set the film.
36330	LOW 8X10 DR B	Low supply on 8×10 DR blue film. Set the film.
36331	LOW 8X10 DR C	Low supply on 8×10 DR clear film. Set the film.

Error code	Displayed message	Problems/countermeasures
36332	LOW 10X12 DR	Low supply on 10×12 DR film. Set the film.
36333	LOW 10X12 DR B	Low supply on 10×12 DR blue film. Set the film.
36334	LOW 10X12 DR C	Low supply on 10×12 DR clear film. Set the film.
36335	LOW 11X14 DR	Low supply on 11×14 DR film. Set the film.
36336	LOW 11X14 DR B	Low supply on 11×14 DR blue film. Set the film.
36337	LOW 11X14 DR C	Low supply on 11×14 DR clear film. Set the film.
36338	LOW 14X14 DR	Low supply on 14×14 DR film. Set the film.
36339	LOW 14X14 DR B	Low supply on 14×14 DR blue film. Set the film.
36340	LOW 14X14 DR C	Low supply on 14×14 DR clear film. Set the film.
36341	LOW 14X17 DR	Low supply on 14×17 DR film. Set the film.
36342	LOW 14X17 DR B	Low supply on 14×17 DR blue film. Set the film.
36343	LOW 14X17 DR C	Low supply on 14×17 DR clear film. Set the film.
36344	LOW 24X24 DR	Low supply on 24×24 DR film. Set the film.
36345	LOW 24X24 DR B	Low supply on 24×24 DR blue film. Set the film.
36346	LOW 24X24 DR C	Low supply on 24×24 DR clear film. Set the film.
36347	LOW 24X30 DR	Low supply on 24×30 DR film. Set the film.
36348	LOW 24X30 DR B	Low supply on 24×30 DR blue film. Set the film.
36349	LOW 24X30 DR C	Low supply on 24×30 DR clear film. Set the film.
37350 37351	Internal error occurred in DICOM communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37352	Failed to get DICOM communication setting. Please confirm communication setting.	Failed to get DICOM communication settings. (1) Check the communication settings. (2) Contact Konica Minolta technical representatives.
37353	Failed in communication. Please confirm communication setting and server is working.	Connection failed. (1) Check the communication settings or the server. (2) Contact Konica Minolta technical representatives.
37354	Internal error occurred in DICOM communication. Contact a service representative.	Communications failed. (1) Check the host or network. (2) Contact Konica Minolta technical representatives.
37355 37356	Internal error occurred in DICOM communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37357	Internal error occurred in DICOM communication. Contact a service representative.	Communications shutdown processing failed. (1) Check if sending is complete. (2) Contact Konica Minolta technical representatives.
37358	Internal error occurred in DICOM communication. Contact a service representative.	Communications were paused by the host. (1) Check the host. (2) Contact Konica Minolta technical representatives.

Continued on the next page

Error code	Displayed message	Problems/countermeasures
37390 - 37392	Media Write Error	Contact Konica Minolta technical representatives.
37620 37621	Internal error occurred in PRINTER communication. Contact a service representative.	
37622	Internal error occurred in PRINTER communication. Contact a service representative.	Failed to acquire imager information. (1) Restart the imager and check it again. (2) Contact Konica Minolta technical representatives.
37623 37624	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37625	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37626 37627	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37628	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37629 37630	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37631	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37632 - 37635 37640 37641	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37642	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37643 37644	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37645	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37646 37647	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37648	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37649 37650	Internal error occurred in PRINTER communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37651	Internal error occurred in PRINTER communication. Contact a service representative.	Communication with the imager failed. (1) Try performing output again. (2) Contact Konica Minolta technical representatives.
37670 - 37672	Internal error occurred in HOST communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37673	Internal error occurred in HOST communication. Contact a service representative.	Host communications failed. (1) Check server or network. (2) Contact Konica Minolta technical representatives.
37674 37675	Internal error occurred in HOST communication. Contact a service representative.	Contact Konica Minolta technical representatives.
37676	Internal error occurred in HOST communication. Contact a service representative.	Host communications failed. (1) Check server or network. (2) Contact Konica Minolta technical representatives.
37680	HOST A-ASSOCIATE is rejected. Please check communication setting.	Connection request for communication with the host was denied. Check the communication settings.
37680	PRINT A-ASSOCIATE is rejected. Please check communication setting.	Connection request for communication with the imager was denied. Check the communication settings.
37681	HOST A-ASSOCIATE is rejected transient.	Connection request for communication with the host was temporarily denied. Check the host.

Error code	Displayed message	Problems/countermeasures
37681	PRINT A-ASSOCIATE is rejected transient.	Connection request for communication with the imager was temporarily denied. Check the imager.
50000A	Reading order is not selected. In order to perform image retrieval, click on [OK] button to close this dialog, and then select reading order	After pressing [OK] and closing the dialog, set the reading sequence.
50000B	Reading order is not selected. To eject the cassette, click on [Eject] button. In order to perform image retrieval, click on [OK] button to close this dialog, and then select reading order.	(1) Press [Eject] to remove the cassette. (2) After pressing [OK] and closing the dialog, set the reading sequence.
50001A 50001AB	Required to re-erase since imaging plate was exposed very much.	As a large amount of X-rays were used during exposure, deletion needs to be performed again.
90001	An error occurred during image reading. Check the network. Restart the reader.	Check the console network connection and the CR cassette reader network connection. After restarting the CR cassette reader, read the CR cassette with which exposure performed again.
90002	Image reception is not completed. Check the network.	Check the console network connection and the CR cassette reader network connection.
99999	CR Process Initialization failed. Please Restart the console or call service.	(1) Restart the device. (2) Contact Konica Minolta technical representatives.

Chapter 11

Maintenance

This chapter describes the items that require periodic maintenance.

11.1 Maintenance and inspection items

This chapter describes inspections and cleaning required in order to maintain the use of this device in an optimum condition.

● Quality Tool

HINT

- "Simple Check QC for CS-7" is available for checking of imaging quality. Please contact our customer service for the detail.
- For more details, contact Konica Minolta technical representatives.

11.1.1 Maintenance schedule

Maintenance and inspection items periodically performed by the user, and maintenance and inspection items supported by service engineers are as follows.

● Maintenance items performed by the user

Maintenance task	Maintenance interval
Check operation of cooling fan	Weekly
Check built-in clock time	Weekly
Clean operation unit display	Weekly
Clean keyboard	Monthly
Clean mouse	Monthly

● Maintenance items handled by a service engineer

Maintenance task	Maintenance interval
Change the hard disk	Every 5 years, or 20,000 hours of operation
Backup the system	Semi-annually
Defragment the hard disk	Every year

IMPORTANT

- To ensure optimum use of this device, be sure to perform periodic maintenance.
- The above task intervals are estimates, and vary according to usage.
- Contact Konica Minolta technical representatives to discuss "Maintenance items handled by a service engineer".

11.1.2 Confirmation and cleaning

Check and clean the following items daily.

● Check operation of the cooling fan

Check that the cooling fan has not stopped, and is not making abnormal sounds (rattling). Periodically clean the cooling fan exhaust outlet with a vacuum cleaner.

● Check built-in clock time

Check and correct the built-in clock time with the user tool. Check periodically and discuss with the user tool administrator.

● Clean the operation unit display

The operation unit display requires periodic cleaning. At that time, be careful about the following points.

- Wipe with a soft cloth.
- Do no use a chemical cloth or wet cloth.
- Do not spray water or other liquids directly onto the display.

● Clean the keyboard

Check that the power for the whole system including this device and all peripheral devices is turned off (power lamp is out), then wipe the surface of the keyboard with a dry cloth.

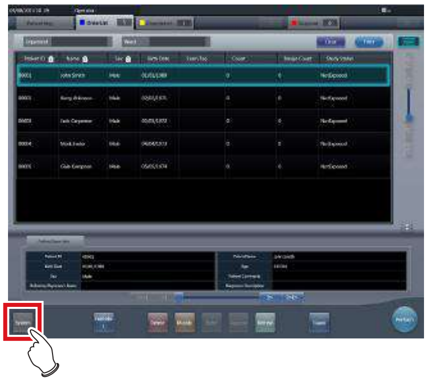
● Clean the mouse

In order for the optical mouse to function properly, the internal optical sensor must be able to properly measure the direction and amount of movement. To prevent the sensor from getting dirty, use in a low-dust environment, and clean periodically with a dry cloth.

11.1.3 Periodically replaced parts

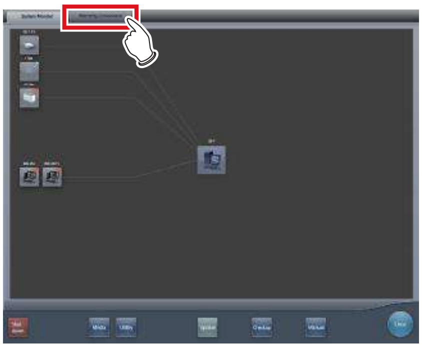
The number (period) of uses is counted for the DR Detectors and REGIUS. When it is time to replace the regular replacement parts, the [System] icon turns yellow. If the [System] icon turns yellow, check the regular replacement parts with the following procedure.

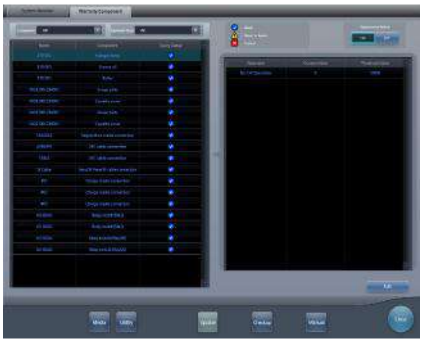
1 Press [System].



- The system monitor screen ([System Monitor] tab) is displayed.

2 Select [Warranty Component] tab.





- Replacement unit screen is displayed.
- Check the status of the regular replacement parts with the replacement unit list and unit usage status.
- For details on regular replacement parts, contact Konica Minolta technical representative.

HINT

- The yellow [System] icon will return to the original color when the regular replacement parts have been replaced.

11.1.4 Consumables

IMPORTANT

- For information on consumables or periodic replacement parts for hardware of this device, UPS, etc., refer to each device's manual.
- In particular, continued use of the battery may result in degradation and wear, and it may no longer exhibit proper functioning capabilities. For extended, safe use, it is necessary to replace parts which have become worn or degraded.

Chapter 12

Specifications

This chapter describes the specifications of this device.

12.1 Specifications

12.1.1 Software specifications

Item	Description
Product name	DIRECT DIGITIZER CS-7
Product classification	MDD: Class II a, Rule10 FDA: 510 (k) Class II
Remarks (for MDD)	CE marking, indicating conformity with the Medical Devices Directive 93/42/EEC
DICOM support	DICOM Storage SCU DICOM Basic Grayscale Print Management SCU DICOM Modality Worklist Management SCU DICOM Modality Performed Procedure Step SCU DICOM Verification SCU DICOM X-Ray Radiation Dose SR Storage SCU DICOM Storage Commitment SCU DICOM X-Ray Radiofluoroscopic Image Storage
Image processing	Auto-gradation process Frequency processing (F process) Equalization processing (E process) Hybrid processing (HF process - HE process) Hybrid smoothing process (HS process) REALISM processing (RE process - RF process) Realism smoothing process (RS process) Grid removal process/Scattered Radiation Correction (Intelligent-Grid) Automatic exposure field recognition process
Readable devices	1) DR Detector 2) REGIUS MODEL 170, REGIUS MODEL 190, REGIUS MODEL 210, REGIUS MODEL 110, REGIUS MODEL 110S, REGIUS MODEL 110HQ 3) REGIUS SIGMA, REGIUS SIGMA2
Sampling pitch	400µm (During serial exposure Only for AeroDR 3 1417HD, AeroDR 3 1717HD) 200µm (Only for AeroDR 3 1417HD, AeroDR 3 1717HD, AeroDR 3 1012HQ) 175µm 100µm (Only for AeroDR 3 1417HD, AeroDR 3 1717HD, AeroDR 3 1012HQ) 87.5µm (Only for REGIUS series)
Image output	Host: max 4ch Printer: max 2ch
Software components	1) Application : CS-7 application software 2) OS : Windows 7 Professional 32bit/Windows 10 IoT Enterprise (64bit) ---------------- SOUP 3) Middleware : .NET framework 4.6.1 -- SOUP Microsoft SQL Server Compact Edition ---------------------------- SOUP Postgre SQL-- SOUP 4) Driver : CD-R/DVD-R writing library ------------------------------------ SOUP * OS is installed in PC. It is not included in CS-7 product.
Software main functions	1) Order registration/Order cooperation The order registration method of this device can be selected according to the connection environment of the facility. 2) Exam. Tag Select the Exam. Tag for exposure to select the optimal reading condition, image-processing condition, and output condition for each body part. 3) Image reading 4) Linkage with X-ray equipment Linkage of exposure between X-ray equipment, Digital Radiography, and this device. 5) Image processing 6) Image sending to printer/PACS/image storage media

IMPORTANT

- This device does not have a function for controlling the X-ray device. Exposure is operated via the X-ray device.

12.1.2 Hardware specifications

Item	Description				
CPU	Intel Core i3 processor 2.93 GHz or higher				
Memory	Standard 2 GB				
OS	Microsoft Windows 7 Professional 32bit or Microsoft Windows 10 IoT Enterprise (64bit)				
Hard disk	250 GB or more				
Optical drive	CD/DVD super multi drive or higher (CD/DVD read, write enabled)				
PCI slot	2 empty slots or more (PCIx1, PCI-Express)				
Input/output port	Ethernet: 10base-T/100base-TX/1000base-T USB: 6 ports or more [*1]				
Keyboard	Full size keyboard				
Mouse	Optical wheel mouse (USB)				
Sound	Audio function available				
Power requirements	AC 100 V (Single phase 50/60 Hz)				
Power consumption	80 W or less				
Standard (for MDD)	Conforms to the standards that the CE marking requires.				
Major accessories	Control unit power cable Keyboard Mouse				
Recommended storage and usage environment conditions		Temperature		Humidity	
	During operation	5 to 35°C (0 m to 3,048 m in maximum altitude)	35°C 5°C	20 to 80% RH (ensure no water condensation)	80%RH 20%RH
		Temperature		Humidity	
	In storage	-40 to 65°C (0 m to 10,668 m in maximum altitude)	65°C −40°C	5 to 95% RH (ensure no water condensation)	95%RH 5%RH

[*1] Required for 1 mouse, keyboard, and touch panel.

IMPORTANT

- These product specifications may change for improvement without prior notice.
- If One Shot stitching exposure is being used, the device requires 4GB or more memory.
- If AeroDR 3 1417HD, AeroDR 3 1717HD, AeroDR 3 1012HQ is being used, the device requires 4GB or more memory.
- If RS processing is being used, the device requires 4GB or more memory.

● Hardware specifications for serial exposure

Item	Description
CPU	Intel Core i7 processor 3.40 GHz or higher
Memory	16 GB or more
OS	Microsoft Windows 10 IoT Enterprise (64bit)
Storage	512 GB or more SSD (PCI Express, M.2)
Optical drive	CD/DVD super multi drive or higher (CD/DVD read, write enabled)
PCI slot *1	2 empty slots or more (PCI-Express. Inside PCI-Express x 16 is 1 slot or more)
Input/output port	10base-T/100base-TX/1000base-T *2 Serial port: 1 port or more USB: 6 ports or more *3
Keyboard	Full size keyboard (USB or PS/2)
Mouse	Optical wheel mouse (USB)
Monitor	17 inch TFT touch panel monitor or other monitor. Resolution: SVGA or higher
Sound	Audio function available
Power requirements	AC 100 V - 240 V (Single phase 50/60 Hz)

*1 Use another LAN card in a PCI slot if using separate networks for information and for images.
*2 Use 1000BASE-T for serial exposure.
*3 Required for 1 mouse, keyboard, and touch panel.

IMPORTANT

- These product specifications may change for improvement without prior notice.

12.1.3 Hardware specifications (when using the portable X-ray device)

<table>
<tr><th>Item</th><th colspan="3">Description</th></tr>
<tr><td>CPU</td><td colspan="3">Intel Core i5-2520M vPro processor 2.50 GHz or higher</td></tr>
<tr><td>Memory</td><td colspan="3">Standard 4 GB or more</td></tr>
<tr><td>OS</td><td colspan="3">Microsoft Windows 7 Professional 32bit or
Microsoft Windows 10 IoT Enterprise (64bit)</td></tr>
<tr><td>Storage</td><td colspan="3">HDD: 250 GB or more
SSD: 128 GB or more</td></tr>
<tr><td>Input/output port</td><td colspan="3">Ethernet: 1000 base-T/100 base-TX/10 base-T × 2
USB: 3 ports or more</td></tr>
<tr><td>Keyboard</td><td colspan="3">PC built-in keyboard</td></tr>
<tr><td>Monitor</td><td colspan="3">Aspect ratio - 16:10; Resolution - 1280 x 800 or higher
Aspect ratio - 16:9; Resolution - 1366 x 768 or higher</td></tr>
<tr><td>Sound</td><td colspan="3">Audio function available</td></tr>
<tr><td>Power requirements</td><td colspan="3">AC 100 V (Single phase 50/60 Hz)</td></tr>
<tr><td>Power consumption</td><td colspan="3">80 W or less</td></tr>
<tr><td>Standard (for MDD)</td><td colspan="3">Conforms to the standards that the CE marking requires.</td></tr>
<tr><td>Major accessories</td><td colspan="3">Power cable</td></tr>
<tr><td rowspan="4">Recommended storage and usage environment conditions</td><td rowspan="2">During operation</td><td>Temperature</td><td>Humidity</td></tr>
<tr><td>5 to 35°C</td><td>30 to 80% RH (ensure no water condensation)</td></tr>
<tr><td rowspan="2">In storage</td><td>Temperature</td><td>Humidity</td></tr>
<tr><td>-20 to 50°C</td><td>30 to 80% RH (ensure no water condensation)</td></tr>
</table>

IMPORTANT

- These product specifications may change for improvement without prior notice.

12.1.4 Optional products

Category	Product name
LCD monitor	17 inch high field of vision LCD multi-touch monitor, 19 inch high field of vision LCD multi-touch monitor 23 inch high field of vision LCD multi-touch monitor
High precision monitor	21 inch color LCD monitor DP-DVI conversion cable
Bar code Reader	CS multi-bar code reader CS bar code reader Bluetooth bar code reader (when using the portable X-ray device)
Magnetic card reader	CD magnetic card reader
Add-in LAN	Add-in Ethernet board Wireless LAN adapter (when using the portable X-ray device)
Expansion memory	Memory module for expansion

HINT

- For the specifications of the monitor and options, refer to the operation manual of each product.

Konica Minolta Healthcare Americas, Inc.
411 Newark-Pompton Turnpike, Wayne, NJ 07470,
U.S.A.
TEL. 973-633-1500

EC REP
EU Authorized Representative:
Konica Minolta Business Solutions Europe GmbH
Capellalaan 65,2132 JL, Hoofddorp,
The Netherlands
TEL. +31-20-658-4100

Konica Minolta Healthcare India Private Ltd.
Office No.201, 2nd Floor, Atrium 2,
Next to Courtyard Marriott Hotel, Andheri Kurla Road,
Chakala, Andheri (East), Mumbai - 400093, India
TEL. +91-22-61916900

Konica Minolta Business Solutions (Canada) Ltd.
5875 Explorer Drive, Mississauga,
Ontario, L4W 0E1, Canada
TEL. 905-890-6600

Konica Minolta Medical & Graphic (SHANGHAI) Co., Ltd.
Room1602, Tower B, Hongwell International Plaza,
1602 West Zhongshan Road, Xuhui District,
Shanghai 200235 China
TEL. 021-6422-2626

A47FBA01EN24

2020-01-28
(MA)

Definium XR/f ST

Definium XR/f ST is a commercial configuration of Proteus XR/f ST

Product Datasheet

gehealthcare.com

Table of contents

Floor Mounted Tube Stand

Design	Manual movement, with fully counter balanced horizontal tube arm
Longitudinal tube travel	164 cm
Vertical tube travel	155 cm
Focal spot-to-floor distance	Variable from 40 to 195 cm
X-ray tube rotation	± 150° (detents at +90°, 0°, -90°)
Tube stand column rotation	± 180° (detents at +90°, 0°, -90°)
Locks	Electromagnetic brakes
Tube arm console controls	Longitudinal, transverse, vertical, angular and rotational lock control buttons

Fixed Table

Tabletop dimensions	220 cm x 82,5 cm
Height from floor	77 cm
Tabletop composition	Laminated structure (according to EN 438 standard)
Tabletop-to-film distance	8.0 cm ± 0.4 cm
Tabletop Al. equivalence	< 1 mm Al. at 100 kVp
Tabletop weight limit	300 kg
Tabletop movement	Manual, 4-way floating top
Longitudinal travel	90 cm (±45cm)
Transverse tabletop travel	23 cm (±11.5 cm)
Table locks	Electromagnetic brakes
Table lock controls	Full-length foot switch along table base
Bucky travel	58.3 cm Total center-to-center
Radiographic coverage	180 cm (Radiotransparent area of Tabletop is 198x68cm)
Grid*	40 lines/cm - 10:1 linear ratio Focused at 100 cm
Detector bucky Sizes	35x43 cm (14x17 in.) or 43x43 cm (17x17 in.) either orientation
Auto-charging system	Yes
Easy rotational detector	Yes

*See optional grids available

Collimator

Collimator type	Manual (Multilayer, square field X-ray collimator, 6 pairs of lead- lined shutters)
Field lamp	24 VDC
Lighting timer	30 sec.
Average luminosity	160 lx.
Alignment light	LED
Inherent filtration	2.0 mm aluminum (EN 60601-1-3)
SID measuring	Retractable measuring tape
Optional external DAP	External DAP with rails for a Manual collimator upgrade. Dose area meter VacuDAP 2004 inter-phased with the generator. cable 15m.

Wall Stand

Standard type	Non-tilting Bucky
Vertical bucky travel	155 cm (from 35 to 190 cm)
Vertical movement	Manual, fully counterbalanced
Film center to floor	35 cm
Surface to detector distance	40 mm
Detector bucky sizes	35x43 cm (14x17 in.) or 43x43 cm (17x17 in.) either orientation
Auto-charging system	Yes
Easy rotational detector	Yes
Grid*	40 lines/cm - 12:1 - linear ratio Focused at 180 cm
Al. equivalence	< 0.85 mm at 100 kVp
Locks	Electromagnetic brakes
Detector load	Left or Right load
Weight	145 kg

*See optional grids available

Generator

kW maximum power	**50 kW**	**50 kW**	**65 kW**	**80 kW**
Input power	Single-Phase 220/240 VAC	Three-Phase 380/480 VAC	Three-Phase 380/480 VAC	
kVp range (1kVp steps)	40 – 125 Kvp	40 – 150 Kvp Accuracy: ±(3% + 1 kVp)	40 – 150 Kvp Accuracy: ±(3% + 1 kVp)	
mA range	10 – 650 mA (19 steps, Renard scale)	10 – 650 mA (19 steps, Renard scale)	10 – 650 mA (19 steps, Renard scale)	10 to 800mA (20 steps, Renard scale)
	10, 12.5, 16, 20, 25, 32, 40, 50, 64, 80, 100, 125, 160, 200, 250, 320, 400, 500, 650, 800 (Depending on generator model) Accuracy: ±(4% + 1 mA)			
Power output (0.1s)	640 mA @ 78 kVp 500 mA @ 100 kVp 400 mA @ 125 kVp	640 mA @ 78 kVp 500 mA @ 100 kVp 400 mA @ 125 kVp 320 mA @ 150 kVp	630 mA @ 100 kVp 630 mA @ 103 kVp 500 mA @ 125 kVp 500 mA @ 130 kVp 400 mA @ 150 kVp	800 mA @ 100 kVp 640 mA @ 125 kVp 500 mA @ 150 kVp
Exposure time range	0.001 - 10 seconds Accuracy: ± (2% + 0.1 ms)			
mAs range	0.1 mAs – 500 mAs Accuracy: ± (10% + 0.2 mAs)			
High voltage ripple (Typ.)	<1kVp @ 100 kVp			
Anatomical programming	534 Anatomical Views			
Automatic line comp.	± 10%			
Low speed or high Speed (optional) Rotor Controller 1 Tube				
Microprocessor controlled				
Auto diagnostic system				
Tube overload protection monitoring of the remaining X-Ray Tube Heat Units				
Prep./ exposure x-ray hand switch				
AEC				

X-Ray Tube

Model	**E7254FX** X-ray tube Toshiba 12º 150 kVp dual focal spots 0.6 and 1.2 mm 400KHU LS/HS 40/102 Kw (180Hz)
HSS-1T	High speed starter (3.000/9.000 r.p.m.) for one x-ray tube
kW maximum power	50 KW/ 65 KW/ 80 KW
Tube type	Rotating Anode (HS)
Anode voltage	150 kVp
Speed starter	(3,000 / 9,000) r.p.m.
Focal spots	0.6 - 1.2 mm
Target angle	12º
Power ratings	
Small focal spot	40 kW
Large focal spot	102 kW
Anode heat storage capacity	400 KHU

Grids

Grid 103 Lines (40 lines/cm), 10 :1, Focalized at 1 m

Grid 103 Lines, 10 :1, Focalized at 1.5 m

Grid 103 Lines 12:1, Focalized a 1.8 m

Options

Compression band for table

Hand grip for table

Lateral detector holder movable on tabletop

Lateral detector holder with wheels

Mechanical tracking with table docking

Movable table for wall stand-only configuration

External DAP

Konica Minolta Wireless Detector

Product name	AeroDR 1417XE	AeroDR 1417LT	AeroDR 1417HD AeroDR 1717HD
Detection technology	Indirect-Conversion	Indirect-Conversion	Indirect-Conversion
Scintillator	CsI - Hi Quality Type	CsI - Standard Type	CsI - Hi Quality Type
Dimensions (mm) (width x depth X height)	383. x 460.27 × 15.9	383. x 460.27 × 15.9	384×460×15mm
weight	2.6 kg / 5.7 Lbs (including power cell)	2.5 kg / 5.5 Lbs. (including power cell)	2.6 kg / 5.7 Lbs (including power cell)
WLAN standard	IEEE 802.11a, 5 GHz IEEE 802.11n, 5 GHz/2.4GHz	IEEE 802.11a, 5 GHz IEEE 802.11n, 5 GHz/2.4GHz	IEEE 802.11a, 5 GHz IEEE 802.11n, 5 GHz/2.4GHz
DQE	at 1 mR, RQA5 65% (@ 0 cycle/mm) 51% (@ 1 cycle/mm)	at 1 mR, RQA5 42% (@ 0 cycle/mm) 35% (@ 1 cycle/mm)	at 1 mR, RQA5 72% (@ 0 cycle/mm) 56% (@ 1 cycle/mm)
MTF	Over 0.53 at 1cycle/mm	Over 0.53 at 1cycle/mm	Over 0.53 at 1cycle/mm
Pixel spacing	175μ	175μ	100μ/200μ are selectable
Image area size (mm)	348.95 x 425.25 (1994x2430 Pixels)	348.95 x 425.25 (1994x2430 Pixels)	348.8×425.6
Image pixel size (pixcels)	1,994 x 2,430	1,994 x 2,430	3488×4256 (100μ） 1744×2128 (200μ）
Preview time	less than 2 seconds	less than 2 seconds	Less than 3 sec (100μ) Less than 2 sec (200μ)
Cycle time **(Exposure linkage with X-ray)**	(CS-7) Approx. 4 seconds (wired) Approx. 6 seconds (wireless)	(CS-7) Approx. 4 seconds (wired) Approx. 6 seconds (wireless)	(CS-7) Approx. 4 seconds (wired) Approx. 6 seconds (wireless)
AED function	Yes	Yes	Yes
Battery technology	Lithium Ion Capacitor	Lithium Ion Capacitor	Lithium Ion Capacitor
Battery life time	Same duration as panel	Same duration as panel	Same duration as panel
Battery recharging time empty to full	Within 0.5 hour with AeroDR battery charger, AeroDR battery charger 2, AeroDR I/F cable	Within 0.20 hour (13 minutes) with AeroDR Docking Station II or AeroDR I/F cable	Within 0.5 hour with AeroDR battery charger, AeroDR battery charger 2, AeroDR I/F cable3

Product name	AeroDR 1417XE	AeroDR 1417LT	AeroDR 1417HD AeroDR 1717HD
Battery performance (Exposure linkage with X-ray)	Up to 300 exposures and 8.2 hours	Up to 150 exposures and 4.1 hours *	Up to 251 exposures and 6.9 hours(100µ) Up to 309 exposures and 8.6 hours(200µ)
Battery performance (AED)	Up to 250 exposures and 6.8 hours (General X-ray)	Up to 125 exposures and 3.4 hours (General X-ray)	Up to 167 exposures and 4.6 hours(100µ) Up to 198 exposures and 5.4 hours(200µ)
Memory function inside a panel	Yes - Back-up only	Yes - Back-up only	Yes - Back-up only
Battery duration	Approx. 20 hours in standby mode	Approx. 16 hours in standby mode	Approx. 13 hours in standby mode
Water resistance	IPX6	IPX6	IPX6
Drop impact resistance	Drop test from the height of 1m has been cleared.	Drop test from the height of 1m has been cleared.	Drop test from the height of 1.2m has been cleared. (MIL-STD 810G)
Digital shock sensor	Yes	Yes	Yes
Max. withstanding load	150 kg @ 40 mm in diameter/ 300kg @ whole area	150 kg @ 40 mm in diameter/ 300kg @ whole area	180 kg @ 40 mm in diameter/ 400kg @ whole area

CS-7 Universal Control Station Hardware

- Intel Core i5-2520 vPro processor, 3.2GHz, CD/DVD RW,
- 8GB RAM (USCAN)/ 4GB RAM
- Windows 10
- 320 GB HDD
- Intel PRO/1000 GT network connection
- 23" LCD Multi-touch monitor - 178 degree viewing angle
- 1920 x 1080 native resolution

CS-7 Universal Control Station Software Features:

- CS-7 S/W Operating Platform
- REALISM™ advanced image processing algorithms
- Equalization, frequency & gradation processing
- Study append
- Free text annotation
- Multi-study
- Automatic masking
- Study list filter
- History search
- Image zoom
- Grid suppression
- HIPAA compliance enabling features (Audit trail, Auto log-out)
- DICOM store (x2 connections)
- DICOM modality worklist
- Procedure code mapping
- CS-7 Study combine/move
- CS-7 Departmental data analysis
- CS-7 Tube/gauze software

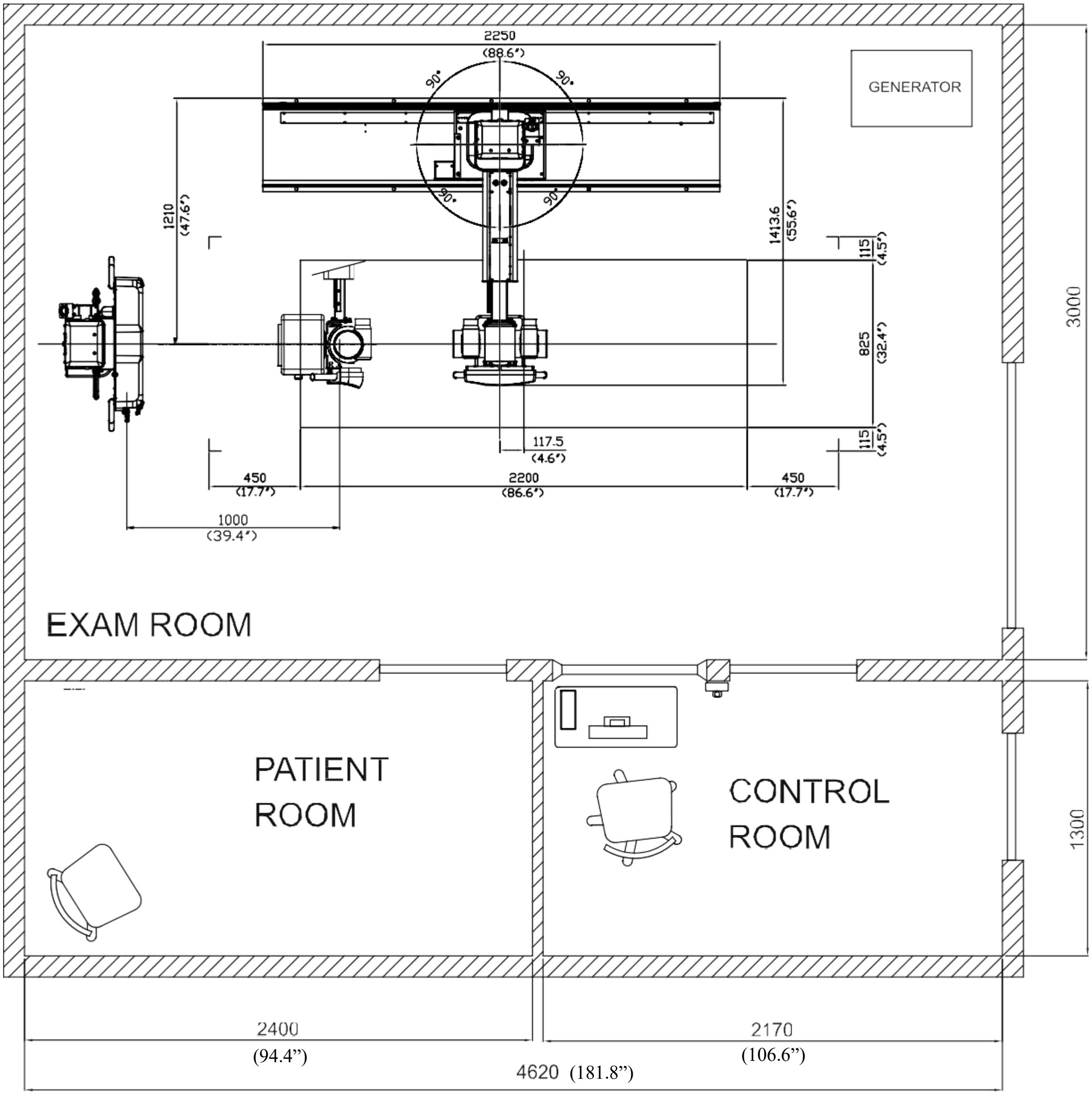
Available Options Include:

- Media storage
- Intelligent grid
- DICOM print (x2 connections)
- LDAP access control (US only)
- Stitching license
- Motion/lung detection
- Applications training

Typical Room Layout

FULLY FUNCTIONAL LAYOUT:

NOTE: Layout allows for 3.5” deep surface wall duct between wall stand and generator. X-ray tube cable will drape from a ceiling box. This layout is ADA compliant.



Compliance to Standards

The Definium XR/f digital radiographic imaging system is designed to meet applicable performance standards for diagnostic X-ray equipment enunciated by the U.S. Department of Health and Human Services pursuant to the Radiation Control for Health and Safety Act. In addition, the system complies with UL, IEC requirements.

Warranty

The published company warranty in effect on date of shipment shall apply. Right reserved to make changes.

About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter – great people and technologies taking on tough challenges. From medical imaging, software and IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

GE Healthcare
Chalfont St. Giles, Buckinghamshire, UK

GE Healthcare, Europe
Headquarters Buc, France
+33 800 90 87 19

GE Healthcare, Middle East and Africa
Istanbul, Turkey
+90 212 36 62 900

GE Healthcare, North America
Milwaukee, USA
+1 866 281 7545

GE Healthcare, Latin America
Sao Paulo, Brazil
+55 800 122 345

GE Healthcare, Asia Pacific
Tokyo, Japan
+81 42 585 5111

GE Healthcare, ASEAN
Singapore +65 6291 8528

GE Healthcare, China
Beijing, China +86 800 810 8188

GE Healthcare, India
Bangalore, India
+91 800 209 9003

General Electric Company reserves the right to make changes in specifications and features shown herein, or discontinue the product described at any time without notice or obligation. Contact your GE Representative for the most current information.

www.gehealthcare.com

GE Healthcare

Technical
Publications

5847500- 1EN

Revision 6

Radiographic System: Proteus XR/f - Definium XR/f

Operator Manual

1639

WARNING

THIS EQUIPMENT IS DANGEROUS TO BOTH PATIENT AND OPERATORUNLESS MEASURES OF PROTECTION ARE STRICTLY OBSERVED

Though this equipment is built to the highest standards of electrical and mechanical safety, the useful radiation beam becomes a source of danger in the hands of the unauthorized or unqualified operator. Excessive exposure to radiation causes damage to human tissue.

Therefore, adequate precautions must be taken to prevent unauthorized or unqualified persons from operating this equipment or exposing themselves or others to its radiation.

Before operation, persons qualified and authorized to operate this equipment should be familiar with the Recommendations of the International Commission on Radiological Protection, contained in Annals Number 60 of the ICRP, with applicable National Standards, and should have been trained in use of the equipment.

ENVIRONMENTAL STATEMENT
ON THE LIFE CYCLE OF THE EQUIPMENT OR SYSTEM

This equipment or system contains environmentally dangerous components and materials (such as PCB's, electronic components, used dielectric oil, lead, batteries etc.) which, once the life-cycle of the equipment or system comes to an end, becomes dangerous and need to be considered as harmful waste according to the international, domestic and local regulations.

The manufacturer recommends to contact an authorized representative of the manufacturer or an authorized waste management company once the life-cycle of the equipment or system comes to an end to remove this equipment or system.

REVISION HISTORY

REV	DATE	REASON FOR CHANGE	PAGES
1	SEP 25, 2020	First edition.	126
2	DEC 18, 2020	Updated document format, replaced advisory symbols, added system label, amended control Panel illustrations, added Digital Detector to Applied parts, added patient max weight in specifications section, replaced illustrations with new 2250 mm tube stand base, added back page.	126
3	FEB 8, 2021	Cleaning and disinfection section added. Elevating Table up/down Travel updated.	134
4	FEB 22, 2021	Sect. 2, Warning in accordance with Canada Regulations	134
5	MAR 12, 2021	Sect. 2: Warning page 17, Image page 32.Sect. 3: Start- up and Shutdown. Sect. 4: Warning page 59. Sect. 5.4.1, 5.5.2, 5.5.3: Images updated. Sect. 10.2.1, 10.2.3: Specifications and illustrations updated.	134
6	AUG 12, 2021	Sect. 2.6 Safety Symbols UDI Symbol added. Sect. 3.1 & 3.2 Start up and Shutdown with new relay.Sect 5.4.5 Images updated. Sect. 10.2.1, 10.2.3: Elevating Table Specifications and illustrations updated. Sect. 6.2, E006 removed (not applicable). Sect. 10.3.1 Max 125 kVp for Single phase Gen.	136

This Document is the English original version, edited and supplied by the manufacturer.

The Revision state of this Document is indicated in the code number shown at the bottom of this page.

SEDECAL
Sociedad Española de Electromedicina y Calidad S.A.
Pelaya, 9 - 13. Polígono Industrial “Río de Janeiro” 28110
Algete, Madrid - España (Spain)

Phone: +34 916 280 544 Fax: +34 902 190 385 www.sedecal.com

ADVISORY SYMBOLS

The following advisory symbols will be used throughout this manual.Their application and meaning are described below.

⚠ DANGER !	***DANGERS ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEEDED OR AVOIDED WILL CAUSE SERIOUS PERSONAL INJURY OR DEATH.***
⚠ WARNING	**ADVISE OF CONDITIONS OR SITUATIONS THAT IF NOT HEEDED OR AVOIDED COULD CAUSE SERIOUS PERSONAL INJURY, OR CATASTROPHIC DAMAGE OF EQUIPMENT ORDATA.**
⚠ CAUTION	***Advise of conditions or situations that if not heeded or avoided could cause personal injury or damage to equipmentor data.***
Note **.**	*Alert readers to pertinent facts and conditions. Notes represent information that is important to know but which do not necessarily relate to possible injury or damage to equipment.*

TABLE OF CONTENTS

Section **Page**

Section **Page**

SECTION 1 INTRODUCTION

This manual contains all the necessary information to understand and operate the ***Proteus XR/f System.*** It provides a general description, safety information, operating instructions and specifications concerning the equipment. This manual is not intended to teach radiology or to make any type of clinical diagnosis.

The Tube Support Column, the Table and the Wall Stand are associated equipment to the X-ray Generator Unit.

Basically, the System consists of the following associated subassemblies: Tube Support with variable height, X-ray Tube, Collimator, Elevating Table (ET) or non Elevating Table (ST) and Wall Stand. The Table (ET or ST) and the Wall Stand house a Digital Detector (Digital Radiography). An optional Single Panel System without Table is available.

The Control Panel is ergonomically built, equipped with logically arranged and easily accessible controls. Column movements are driven by the Control Panel hand-grips. Brakes are released by a slight thumb pressure on the control push-buttons.

Illustration 1
Radiographic Room Positioners

Elevating Table (ET)

Non Elevating Table (ST)

The Generator Cabinet comprises the Power Module (which contains the power and control components) and the High Voltage Transformer.

The operator controls and displays for radiographic operations are shown on one of the Screen Console of the Image Acquisition Workstation. All functions, displays and controls are logically arranged, easily accessible and identified to prevent confusion. Technique factors and functions are selected by pushing the corresponding buttons or by touching directly on the screen, as applicable.

The Image Acquisition Workstation is used for imaging processing and diagnosis in Digital Radiography Systems.

The High Frequency X-ray Generator provides all the advantages of high frequency waveform Generators including lower patient dose, shorter exposure times and greater accuracy and consistency.

The Generator is controlled by multiple microprocessors providing increased exposure consistency, efficient operation and extended Tube life. A high level of self-diagnosis greatly increases serviceability and reduces down time.

1.1 GENERAL FEATURES

The main features of the **Radiographic Room** are:

- A solid and ergonomic design.
- Easy operation, security and precision of all positioning movements with respect to patient.
- Movement Controls for each component of the Radiographic Room.
- Specific System Configurations are detailed in the following table:

FLOOR MOUNTED TUBE STAND	
Control Panel	Digital
Autodiagnostics	n
Horizontal Motion of Column(Configurable Stops)	Manual (3)
Vertical Motion of Arm	Manual
Rotation of the Column on its Vertical Axis (Detents)	Manual ±180° (- 180°, --90°, 0°, +90°, +180°)
Rotation of the Tube-Collimator Assembly on its Transverse Axis (Detents)	Manual +150°, - 130° (Angle Readout) (--90°, 0°, +90°)
Transverse Motion of Tube-Collimator Assembly (Telescopic Arm)	Manual with Centering Detent
SID Readout respect to Table Detector	Continuous
SID Readout respect to Wall Stand Detector	Continuous
ELEVATING TABLE or NON ELEVATING TABLE	
Digital Detector Assembly with Longitudinal Motion	n
Ion Chamber Connection	n

WALL STAND	
Digital Detector Assembly with vertical motion and adjusted with Internal Counterweights	n
Ion Chamber Connection	n
Right or Left Detector Panel Loading(as per customer order)	n
OPTIONS	
Table Receptor Centering (mechanical link with the Tube Stand Column)	n
Dosemeter Device	n
ACCESSORIES	
Hand Grips for Table Tabletop	n
Compression Band for Table	n
Table Top Lateral Detector Holder	n
Lateral Detector Holder with trolley	n
Arm Support for Wall Stand	n
Hand Grips for Wall Stand	n

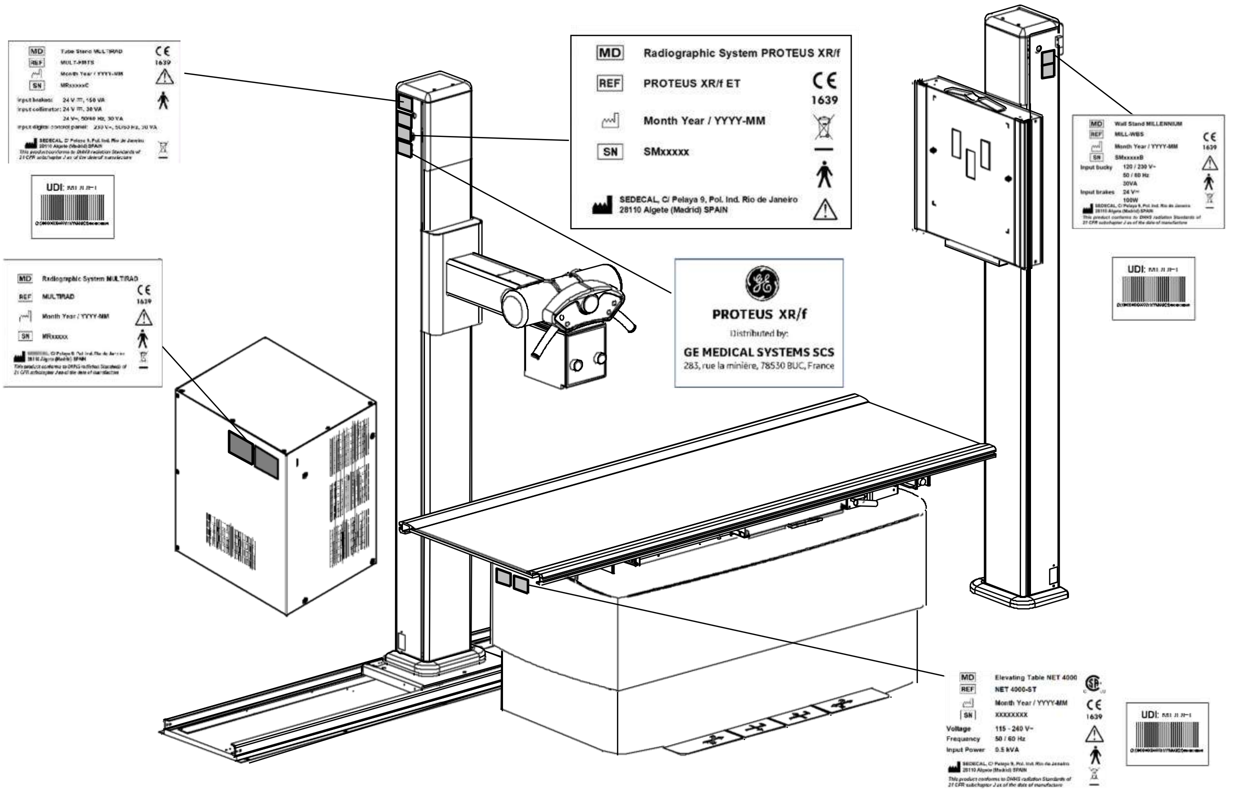
Note . *The Handgrips must not be positioned in the trajectory of theX-Ray beam.*

1.2 PRODUCT IDENTIFICATION

The major items in the Radiographic Room have some identification labels attached to them which provide the following manufacturer and product information.

- Product.
- Model.
- Volts (V), Line Phases, Frequency (Hz), and Power (kVA, kW).
- Date of manufacture.
- Serial number.
- Reference.
- Manufacturer.
- Place of manufacture.
- Certification.

RAD Room Label


MD
Tube Stand MULTIRAD
REF
SN
MRxxxxxC
Input brakes: 24 V ⎓, 150 VA
Input collimator: 24 V ⎓, 30 VA
24 V~, 50/60 Hz, 30 VA
Input digital control panel: 230 V~, 50/60 Hz, 30 VA
SEDECAL, C/ Pelayo 9, Pol. Ind. Rio de Janeiro
28110 Algete (Madrid) SPAIN
This product conforms to DHHS radiation Standards of 21 CFR subchapter J as of the date of manufacture
CE
1639
UDI:
MD
Radiographic System MULTIRAD
REF
MULTIRAD
Month Year / YYYY-MM
SN
MRxxxxx
CE
1639
MD
Radiographic System PROTEUS XR/f
REF
PROTEUS XR/f ET
Month Year / YYYY-MM
SN
SMxxxxx
SEDECAL, C/ Pelaya 9, Pol. Ind. Rio de Janeiro
28110 Algete (Madrid) SPAIN
CE
1639
PROTEUS XR/f
Distributed by:
GE MEDICAL SYSTEMS SCS
283, rue la minière, 78530 BUC, France
MD
Wall Stand MILLENNIUM
REF
MILL-WBS
Month Year / YYYY-MM
SN
SMxxxxxB
Input bucky 120 / 230 V~
50 / 60 Hz
30VA
Input brakes 24 V⎓
100W
SEDECAL, C/ Pelaya 9, Pol. Ind. Rio de Janeiro
28110 Algete (Madrid) SPAIN
This product conforms to DHHS radiation Standards of 21 CFR subchapter J as of the date of manufacture
CE
1639
UDI:
MD
Elevating Table NET 4000
REF
NET 4000-ST
Month Year / YYYY-MM
SN
XXXXXXXX
Voltage 115 - 240 V~
Frequency 50 / 60 Hz
Input Power 0.5 kVA
SEDECAL, C/ Pelayo 9, Pol. Ind. Rio de Janeiro
28110 Algete (Madrid) SPAIN
This product conforms to DHHS radiation Standards of 21 CFR subchapter J as of the date of manufacture
CE
1639
UDI:

Note **.** *For further information on the standardized symbology of this labels, refer to Section 2.*

1.3 INDICATIONS FOR USE

In accordance with FDA 510(k):

The **Proteus XR/f Radiographic Systems** with Digital Detector are intended for use by a qualified/trained doctor or technician on both adult and pediatric subjects for taking diagnostic radiographic exposures of the skull, spinal column, chest, abdomen, extremities, and other body parts. Applications can be performed with the patient sitting, standing, or lying in the prone or supineposition.

In accordance with IEC Standards:

INTENDED USE

Intended for use by a qualified/trained doctor or technician on both adult and pediatric subjects for taking diagnostic radiographic exposures of the skull, spinal column, chest, abdomen, extremities, and other body parts. Applications can be performed with the patient sitting, standing, or lying in the prone or supine position. Not for mammography.

The **Proteus XR/f Radiographic System** are equipment designed for general radiography in hospitals, clinics, radiology imaging centers and medical practices.

Patients may be physically abled, disabled, immobilized or in a state of shock.

This **Proteus XR/f Radiographic System** contributes to the metrics of imaging performance ensuring the efficient use of radiation.

As example of X-ray image receptors types that can be used: Digital Detectors.

NORMAL USE

The Normal Use of this equipment is defined as the Intended Use plus the Maintenance and Service tasks.

CONTRAINDICATIONS

Do not use the equipment for any purposes other than those for which it is intended. Operation of the equipment for unintended purposes could lead to fatal or other serious injury.

This equipment is not intended for mammography applications.

This equipment is not specifically designed for paediatric purposes; if children are to be examined, they should always be accompanied by an adult.

1.4 APPLIED PARTS

Applied Parts refer to parts of medical equipment that in Normal Use necessarily comes into physical contact with the patient for medical equipment to perform its function. This RAD equipment includes the following Applied Parts:

- Tabletop of the RAD Table.
- Tabletop of the RAD Wall Stand.
- Digital Detector.
- Hand Grips (optional).
- Arm Support (optional).
- Compression Band (optional).
- Lateral Detector Holders (optional).
- Other accessories.

WARNING

BEAR IN MIND THAT SOME APPLIED PARTS MAY HEAT UP TO 48°C (118.4°F) WHEN THE AMBIENT TEMPERATURE FOR OPERATION IS ON THE LIMIT. THIS IS COMPLETELY NORMAL AND DOES NOT MEAN A MALFUNCTION OF THE EQUIPMENT.

This page intentionally left blank.

SECTION 2 SAFETY AND REGULATORY INFORMATION

This section describes the safety considerations, general precautions for patient, operator and equipment in order to perform a safe operation and service tasks.

Regulatory information and symbols used in the equipment are detailed in this section to operate it safely.

2.1 GENERAL

⚠ **WARNING**

FOR CONTINUE SAFE USE OF THIS EQUIPMENT FOLLOW THE INSTRUCTIONS IN THIS OPERATING MANUAL. BOTH OPERATOR AND SERVICE PERSONNEL HAVE TO STUDY THIS MANUAL CAREFULLY, INSTRUCTIONS HEREIN SHOULD BE THOROUGHLY READ AND UNDERSTOOD BEFORE ATTEMPTING TO PLACE THE EQUIPMENT IN OPERATION, ESPECIALLY THE INSTRUCTIONS CONCERNING SAFETY, REGULATIONS, DOSAGE AND RADIATION PROTECTION. KEEP THIS OPERATING MANUAL WITH THE EQUIPMENT AT ALL TIMES AND PERIODICALLY REVIEW THE OPERATING AND SAFETYINSTRUCTIONS.

TECHNICAL INSTRUCTIONS FOR SERVICE PERSONNEL SUCH AS PRE-INSTALLATION REQUIREMENTS, INSTALLATION, CALIBRATION OR MAINTENANCE ARE DESCRIBED IN THE RESPECTIVE CHAPTERS OF THE PRE-INSTALLATION AND SERVICE MANUALS PROVIDED WITH THIS EQUIPMENT.

PLEASE STUDY THIS MANUAL AND THE MANUALS FOR EACH SYSTEM COMPONENT TO BE FULLY AWARE OF ALL THE SAFETY AND OPERATIONAL REQUIREMENTS.

⚠ **WARNING**

MODIFICATION ON THE EQUIPMENT ARE NOT ALLOWED IN ANY WAY. USE ONLY THE INTERCONNECT CABLES AND ACCESSORIES APPROVED BY THE MANUFACTURER

WARNING

OPERATOR AND SERVICE PERSONNEL AUTHORIZED TO USE, INSTALL, CALIBRATE AND MAINTAIN THIS EQUIPMENT MUST BE AWARE OF THE DANGER OF EXCESSIVE EXPOSURE TO X-RAY RADIATION. IT IS VITALLY IMPORTANT THAT EVERYONE WORKING WITH X-RAY RADIATION IS PROPERLY TRAINED, INFORMED ON THE HAZARDS OF RADIATION AND TAKE ADEQUATE STEPS TO ENSURE PROTECTION AGAINST INJURY.

WARNING

OPERATOR MUST HAVE SUFFICIENT KNOWLEDGE TO COMPETENTLY PERFORM THE DIFFERENT DIAGNOSTIC IMAGING PROCEDURES WITH X-RAY DEVICES. THIS KNOWLEDGE IS ACQUIRED THROUGH A VARIETY OF EDUCATIONAL METHODS INCLUDING CLINICAL WORKING EXPERIENCE, AND AS PART OF MANY COLLEGE AND UNIVERSITY RADIOLOGIC TECHNOLOGY PROGRAMS IN ACCORDANCE WITH LOCAL LAWS OR REGULATIONS.

WARNING

SERVICE PERSONNEL MUST HAVE SUFFICIENT KNOWLEDGE TO COMPETENTLY PERFORM THE SERVICE TASKS RELATED TO X-RAY DEVICES AND PARTICULARLY TO THE EQUIPMENT DESCRIBED IN THIS MANUAL. THIS KNOWLEDGE IS ACQUIRED THROUGH A VARIETY OF EDUCATIONAL METHODS FOR TECHNICIANS IN ACCORDANCE WITH LOCAL LAWS OR REGULATIONS, INCLUDING SPECIFIC TRAINING ON THIS EQUIPMENT.

WARNING

X-RAY EQUIPMENT IS DANGEROUS TO BOTH PATIENT AND OPERATOR UNLESS PROTECTION MEASURES ARE STRICTLY OBSERVED. IF THE EQUIPMENT IS NOT ACCURATELY USED, IT MAY CAUSE INJURY.

ALTHOUGH X-RADIATION CAN BE HAZARDOUS, X-RAY EQUIPMENT DOES NOT POSE ANY DANGER WHEN IT IS PROPERLY USED.

WARNING

SPECIAL ATTENTION MUST BE GIVEN TO DIAGNOSTIC X-RAY EQUIPMENT SPECIFIED TO BE USED IN COMBINATION WITH ACCESSORIES OR OTHER ITEMS. BE AWARE OF POSSIBLE ADVERSE EFFECT ARISING FROM THESE MATERIALS LOCATED IN THE X- RAY BEAM. (SEE THE TABLE BELOW FOR THE MAXIMUM EQUIVALENT ATTENUATION OF MATERIALS POSSIBLY LOCATED IN THE X-RAY BEAM).

ITEM	**MAXIMUM ATTENUATION EQUIVALENT mm AL**	
	21 CFR	**IEC 60601-2-54:2009 AND IEC 60601-2-54:2009+AMD1:2015**
Total of all layers composing the front panel of cassette holder	1.2	1.2
Total of all layers composing the front panel of FILM CHANGER	1.2	1.2
Total of all layers, excluding detector itself, composing the front panelof DIGITAL X-RAY IMAGING DEVICE	1.2	1.2
Cradle	2.3	2.3
PATIENT SUPPORT, stationary, without articulated joints	1.2	1.2
PATIENT SUPPORT, movable, without articulated joints (including stationary layers)	1.7	1.7
PATIENT SUPPORT, with radiolucent panel having one articulatedjoint	1.7	1.7
PATIENT SUPPORT, with radiolucent panel having two or more articulated joints	2.3	2.3
PATIENT SUPPORT, cantilevered	2.3	2.3

Note 1.- Devices such as RADIATION DETECTORS are not included in the item listed in this table.

Note 2.- Requirements concerning the ATTENUATION properties of RADIOGRAPHIC CASSETTES and of INTENSIFYING SCREENS are given in ISO 4090 [3], for ANTI- SCATTER GRIDS in IEC 60627[1].

Note 3.- ATTENUATION caused by table mattresses and similar accessories is not included in the maximum ATTENUATION EQUIVALENT for PATIENT SUPPORT.

Note 4.- Maximum ATTENUATION EQUIVALENT mm Al is only applied to the corresponding item. If several items given in this table are located in the path of the X-RAY BEAM between the PATIENT and the X-RAY IMAGE RECEPTOR, each corresponding maximum ATTENUATION EQUIVALENT mm Al is separately applied to each item.

2.2 RESPONSIBILITIES

WARNING

THIS X-RAY UNIT MAY BE DANGEROUS TO PATIENT AND OPERATOR UNLESS SAFE EXPOSURE FACTORS, OPERATING INSTRUCTIONS AND MAINTENANCE SCHEDULES ARE OBSERVED.

WARNING

THE EQUIPMENT HEREIN DESCRIBED IS SOLD WITH THE UNDERSTANDING THAT THE MANUFACTURER, ITS AGENTS, AND REPRESENTATIVES ARE NOT LIABLE FOR INJURY OR DAMAGE WHICH MAY RESULT FROM OVEREXPOSURE OF PATIENTS OR PERSONNEL TO X-RAYRADIATION.

WARNING

IT IS THE RESPONSIBILITY OF THE OPERATOR TO ENSURE THE SAFETY OF THE PATIENT WHILE THE X-RAY EQUIPMENT IS IN OPERATION BY VISUAL OBSERVATION, PROPER PATIENT POSITIONING, AND USE OF THE DEVICES THAT ARE INTENDED TO PREVENT PATIENT INJURY.

ALWAYS WATCH ALL PARTS OF THE SYSTEM TO VERIFY THAT THERE IS NEITHER INTERFERENCE NOR POSSIBILITY OF COLLISION WITH THE PATIENT OR WITH OTHER EQUIPMENTS.

WARNING

IT IS THE RESPONSIBILITY OF THE PURCHASER / CUSTOMER TO PROVIDE THE MEANS FOR AUDIO AND VISUAL COMMUNICATION BETWEEN THE OPERATOR ANDTHE PATIENT.

WARNING

IT IS THE RESPONSIBILITY OF THE OPERATOR TO ENSURE THAT ALL THE EXPOSURE PARAMETERS ARE CORRECT BEFORE PERFORMING AN EXAM TO THE PATIENT, BY VERIFYING THAT THE PARAMETER SELECTION HAS NOT BEEN MODIFIED UNINTENTIONALLY OR BY THE CONTACT OF EXTERNAL ELEMENTS ON THE CONTROL CONSOLE, IN ORDER TO AVOID THE OVEREXPOSURE OR THE NEED OF PERFORMING A NEW EXAM TO THE PATIENT.

WARNING

MAKE SURE THAT THE X-RAY TUBE IS SET IN WORKING POSITION WITH THE REFERENCE AXIS (X-RAY BEAM) POINTING TO THE RECEPTION AREA.

2.3 MAXIMUM PERMISSIBLE DOSE (MPD)

Before operation, people qualified and authorized to operate this equipment should be familiar with the Recommendations of the International Commission on Radiological Protection, contained in Annals Number 60 of the ICRP, with applicable National Standards; and should have been trained in use of the equipment.

WARNING

THE OPERATOR SHALL USE THE LARGEST POSSIBLE DISTANCE FROM THE FOCAL SPOT TO SKIN IN ORDER TO KEEP THE ABSORBED DOSE AS LOW AS REASONABLY ACHIEVABLE.

2.4 RADIATION PROTECTION

Although this equipment is built to the highest safety standards and incorporates a high degree of protection against X-radiation other than the useful beam, no practical design of equipment can provide complete protection, nor can any practical design compel the operator to take adequate precautions to prevent the possibility of any persons carelessly, unwisely, or unknowingly exposing themselves or others to X-radiation.

⚠ **WARNING**

IT IS THE RESPONSIBILITY OF THE OPERATOR TO RESTRICT ACCESS TO THE EQUIPMENT IN ACCORDANCE WITH LOCAL REGULATIONS FOR RADIATION PROTECTION.

Because exposure to X-ray radiation can be damaging to the health, use great care to ensure protection against exposure to the primary beam. Some of the effects of X-ray radiation are cumulative and may extend over a period of months or years. The best safety rule for an X-ray operator is *"Avoid exposure to the primary beam at **all times**"*.

Any object in the path of the primary beam produces secondary (scattered) radiation. The intensity of secondary radiation depends on the energy and intensity of the primary beam and the atomic number of the object material struck by the primary beam. Secondary radiation may be of greater intensity than that of the radiation reaching the receptor. Take protective measures to safeguard against it.

An effective protective measure is the use of lead shielding. To minimize dangerous exposure, use such items as lead screens, lead impregnated gloves, aprons, thyroid collars, etc. Lead screens should contain a minimum of 2.0 mm of lead or equivalent and personal protective devices (aprons, gloves, etc.) must contain a minimum of 0.25 mm of lead or equivalent. For confirmation of the local requirements at your site, please refer to your "Local Radiation Protection Rules" as provided by your Radiation Protection Advisor.

⚠ **CAUTION**

Observe the following rules for radiation protection of the personnel in the examination room during X-ray exposures:

- ***Wear radiation protective clothing.***

- ***Wear a personal dosimeter.***

- ***Use the recommended protective materials and devices against radiation.***

- ***While operating or servicing X-ray equipment, always keep as large a distance as possible from the Focal Spot and X-ray beam, never shorter than 2 meters, protect body and do not expose hands, wrists, arms or other parts of the body to the primary beam.***

- ***Protect the patient against radiation outside the area of interest by using protection accessories.***

- ***Use the smallest X-ray field collimation. Make sure that the area of interest will be completely exposed and the X-ray field does not exceed the area of interest.***

- ***Select a Focal Spot to patient skin distance (SID) as large as possible to keep the absorbed dose for the patient as low as reasonably possible.***

The radiation dose decreases or increases according to the Focal Spot to patient skin distance (SID): the greater the SID distance, the lower the radiation dose. The radiation dose is inversely proportional to the distance squared.

- ***Select as short an examination time as possible. This will reduce total radiation dose considerably.***

- ***Use Grids and Automatic Exposure Control with Ion Chambers whenever possible.***

- ***Place the region of interest as close as possible to the image receptor. This will reduce exposure to radiation and optimize the exposure.***

- ***Be sure that audible and visual communication between the patient and operator is established throughout the entire examination.***

2.5 MONITORING OF PERSONNEL

Monitoring of personnel to determine the amount of radiation to which they have been exposed provides a valuable cross check to determine whether or not safety measures are adequate. It may reveal inadequate or improper radiation protection practices and potentially serious radiation exposure situations.

The most effective method of determining whether or not the existing protective measures are adequate is the use of instruments to measure the exposure. These measurements should be taken at all locations where the operator, or any portion of the body may be exposed. Exposure must never exceed the accepted tolerable dose.

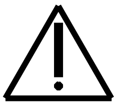
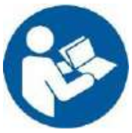
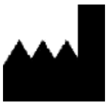
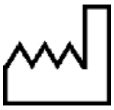
A frequently used, but less accurate, method of determining the amount of exposure is the placement of film at strategic locations. After a specified period of time, develop the film to determine the amount of radiation.

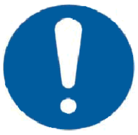
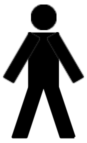
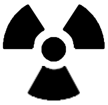
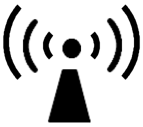
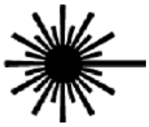
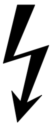
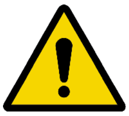
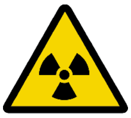
A common method of determining whether personnel have been exposed to excessive radiation is the use of personal radiation dosimeters. These consist of X-ray sensitive film or thermoluminescent material enclosed within a holder that may be worn on the body. Even though this device only measures the radiation which reaches the area of the body on which they are worn, they do provide a reasonable indication of the amount of radiation received.

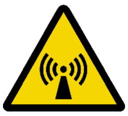
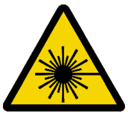
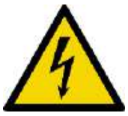
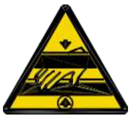
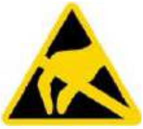
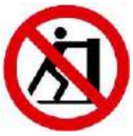
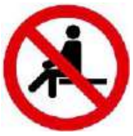
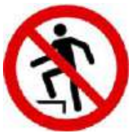
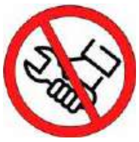
2.6 SAFETY SYMBOLS

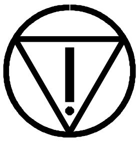
The following safety symbols may appear in the equipment.Their

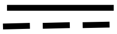
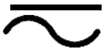
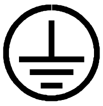
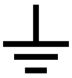
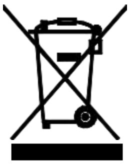
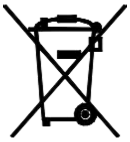
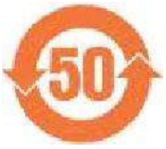
meaning are described below.

	**Caution. Consult accompanying documents.**
	**Safety Symbol. Follow instructions for use, especially thoseinstructions identified with Advisory Symbols to avoid any risk for the Patient or Operator.** *(Only applies to IEC 60601-1:2005 and IEC 60601-1:2005+AMD1:2012)*
	**Manufacturer.**
	**Date of Manufacture.**
MD	**Medical Device.**
REF	**Catalogue Number (Model reference).**
SN	**Serial Number.**
TYPE	**Model Configuration.**
UDI	**Unique Device Identifier.**

	**General Mandatory action.**
	**Type B applied part.**
IPx0	**Protection against harmful ingress of water or particulate matter.IP Classification: Ordinary.**
	**Ionizing radiation.**
	**Non-ionizing electromagnetic radiation.**
	**Radiation of Laser apparatus.** Do not stare into beam. *(Only applicable to equipment with Laser Pointer)*
	**Dangerous voltage.**
	**General warning, caution, risk of danger.**
	**Warning: Ionizing radiation.**

	**Warning: Non-ionizing radiation.**
	**Warning: Laser beam.**
	**Warning: Electricity.**
	**Warning: Do not place fingers between mobile and fixed parts of the equipment, it may cause serious injuries to patient or operator.As well, make sure the patient extremities are correctly positioned into limit areas during operation, movement of parts may cause serious damages to patient.**
	**Electrostatic sensitive devices.**
	**No pushing.**
	**No sitting.**
	**No stepping on surface.**
	**Do not handle.**

	**Emergency stop.**
⏻	**“Stand-by” power.** *(Only applies to IEC 60601-1:2005 and IEC 60601-1:2005+AMD1:2012)*
|	**“ON” power.**
○	**“OFF” power.**
⏼	**“ON” / “OFF” (push-push).** *Each position, “ON” or “OFF”, is a stable position.*
~	**Alternating current.**
3~	**Three-phase alternating current.**
3N~	**Three-phase alternating current with neutral conductor.**
N	**Connection point for the neutral conductor on PermanentlyInstalled equipment.**

	**Direct current.**
	**Both direct and alternating current.**
	**Protective Earth (Ground).**
	**Earth (Ground).**
	**This symbol according to the European Directive indicates that the Waste of Electrical and Electronic Equipment (WEEE) must notbe disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer or an authorized waste management companyfor information concerning the decommissioning of your equipment.**
 **Li/Pb/Cd/Hg**	**This separate collection symbol is affixed to a battery or its packing, to advise that the battery must be recycled or disposed of in accordance with local or country laws. The letters below thesymbol indicate whether certain elements (Li=Lithium, PB=Lead, CD=Cadmium, Hg=Mercury) are contained in the battery. All batteries removed from the equipment must be properly recycled or disposed. Please contact an authorized representative of the manufacturer or an authorized waste management company for information concerning the decommissioning of your equipment.**
	**Pollution Control.** *(Only applicable to People's Republic of China (PRC)).* **This symbol indicates the product contains hazardous materials inexcess of the limits established by the Chinese Standards. It must not be disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer or an authorized waste management company for information concerning the decommissioning of your equipment.**

2.7 REGULATORY INFORMATION

2.7.1 CERTIFICATIONS

The ***Proteus XR/f*** covered by this Operation Manual bears a CE marking in accordance with the provisions of the 93/42/EEC MDD dated June 14, 1993, as amended by 2007/47/EEC dated September 5, 2007, concerning Medical Devices.

Statement of Compliance with IEC 60601-1-3: ***Proteus XR/f*** *with radiation protection in accordance with IEC 60601-1-3:1994, IEC 60601-1-3:2008 and IEC 60601-1-3:2008+AMD1:2013.*

Statement of Compliance with IEC 60601-2-54: ***Proteus XR/f*** *for Radiography and/or Radioscopy in accordance with IEC 60601-2-54:2009 and IEC 60601-2-54:2009+AMD1:2015.*

Statement of Compliance with 21CFR Subchapter J: *This* ***Proteus XR/f*** *conforms to DHHS radiation Standards of 21CFR subchapter J as of the dateof manufacture.*

2.7.2 ENVIRONMENTAL STATEMENT ON THE CYCLE OF THE EQUIPMENT OR SYSTEM

This equipment or system contains environmentally dangerous components and materials (such as PCBs, electronic components, used dielectric oil, lead, batteries etc.) which, once the life-cycle of the equipment or system comes to an end, becomes dangerous and need to be considered as harmful waste according to the international, domestic and local regulations.

The manufacturer recommends to contact an authorized representative of the manufacturer or an authorized waste management company once the life-cycle of the equipment or system comes to an end to remove this equipment or system.

2.7.3 MODE OF OPERATION

- *Continuous operation,* in accordance with Standard IEC 60601-1:2005and IEC 60601-1:2005+AMD1:2012.
- *Continuous operation with intermittent loading,* in accordance with Standard IEC 60601- 1:1988.
- *Permanently Installed Equipment.*

2.7.4 PROTECTION AGAINST ELECTRIC SHOCK HAZARDS

Protection against electric shock hazards in accordance with Standards:
IEC 60601-1:1988, IEC 60601-1:2005 and IEC 60601-1:2005+AMD1:2012,IEC 60601-2-54:2009 and IEC 60601-2-54:2009+AMD1:2015.

This equipment has been classified as a *type-B (🯅) device,* in accordance with Standard IEC 60601- 1 requirements: *Class I - Type B applied parts.*

⚠ DANGER !

TO AVOID THE RISK OF ELECTRIC SHOCK, THIS EQUIPMENT MUST ONLY BE CONNECTED TO A SUPPLY MAINS WITH PROTECTIVE EARTH.

ACCORDING TO MDD/93/42/EEC AS AMENDED BY 2007/47/EEC, THIS UNIT IS EQUIPPED WITH EMC FILTERS. THE LACK OF PROPER GROUNDING MAY PRODUCE ELECTRICAL SHOCK TO THE USER.

2.7.5 PROTECTION AGAINST HARMFUL INGRESS OF WATER OR PARTICULATE MATTER

Protection against harmful ingress of water or particulate matter: *Ordinary (IPx0),* in accordance with Standard IEC 60601-1:1988, IEC 60601-1:2005 and IEC 60601-1:2005+AMD1:2012.

2.7.6 PROTECTION AGAINST HAZARDS OF IGNITION OF FLAMMABLE ANAESTHETICMIXTURES

Degree of Safety in the presence of Flammable Anesthetics Mixture with air or with oxygen or with nitrous oxide: *Not suitable for use in the presence of Flammable Anesthetics Mixture with air or with oxygen or with nitrous oxide*, in accordance with Standard IEC 60601-1:1988, IEC 60601-1:2005 and IEC 60601-1:2005+AMD1:2012.

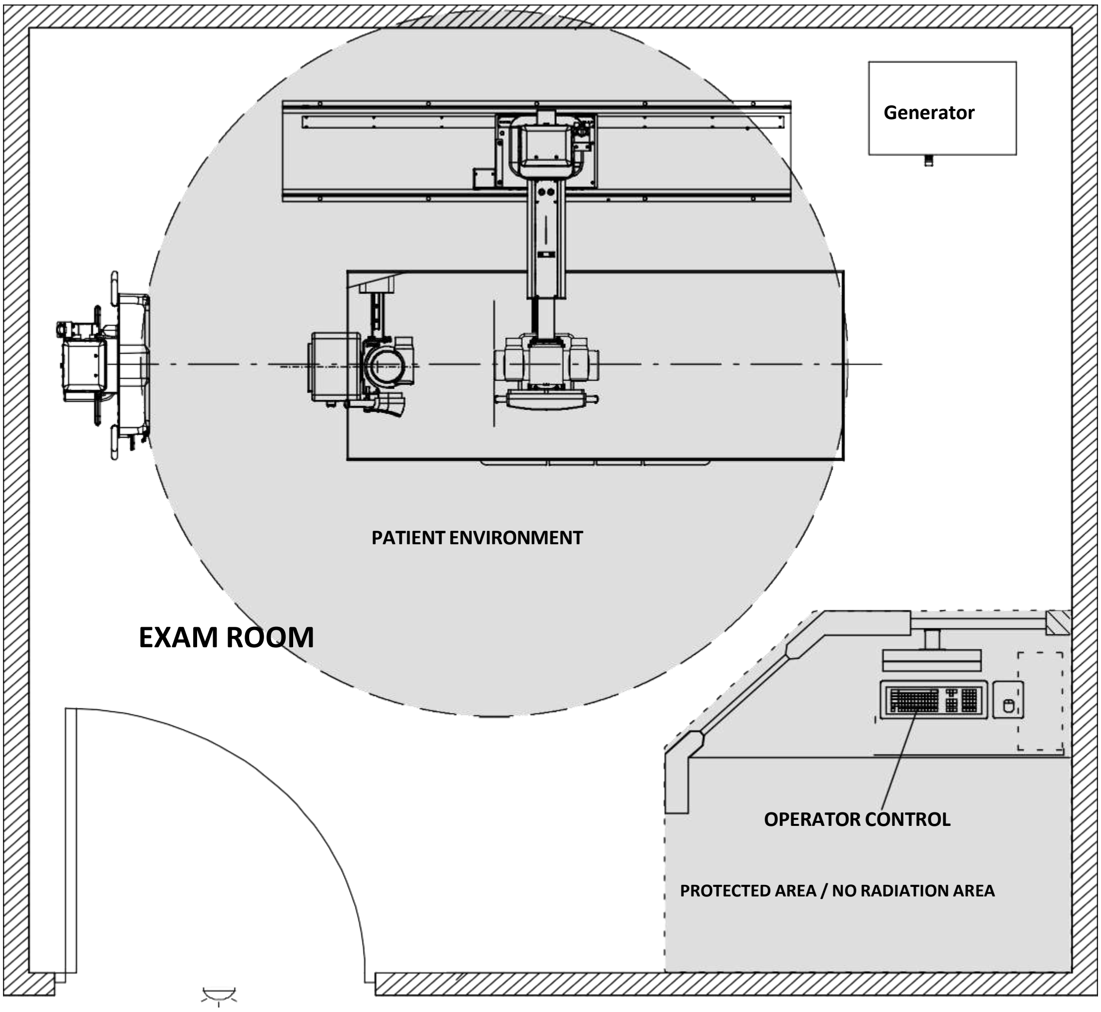
2.7.7 PROTECTION AGAINST HAZARDS FROM UNWANTED OR EXCESSIVE RADIATION

Protection against hazards from unwanted or excessive radiation in accordance with Standards IEC 60601-1:1988, IEC 60601-1:2005 and IEC 60601-1:2005+AMD1:2012, and IEC 60601-1-3:1994, IEC 60601-1-3:2008 and IEC 60601-1-3:2008+AMD1:2013.

2.7.8 DESIGNATED SIGNIFICANT ZONES OF OCCUPANCY

X-ray equipment specified for examinations that do not need the operator or staff to be close to the patient during normal use shall be provided with means to allow the following control functions from a "*Protected Area*" (*refer to illustration below*):

- Selection and control of modes of operation.
- Selection of loading factors for the exposure.
- Actuation of the exposure controls.
- Other necessary controls for the operator during exposure.



X-Ray equipment specified for any radiological examination that requires the operator or staff to be close to the patient during normal use (a.e. some pediatric examinations or other types of examinations for patients that may require assistance), shall have at least one *“Significant Zone of Occupancy”* for the use of the operator and staff, designated as follows:

Illustration 2
Radiographic Examination on the Chest Unit or Front Panel

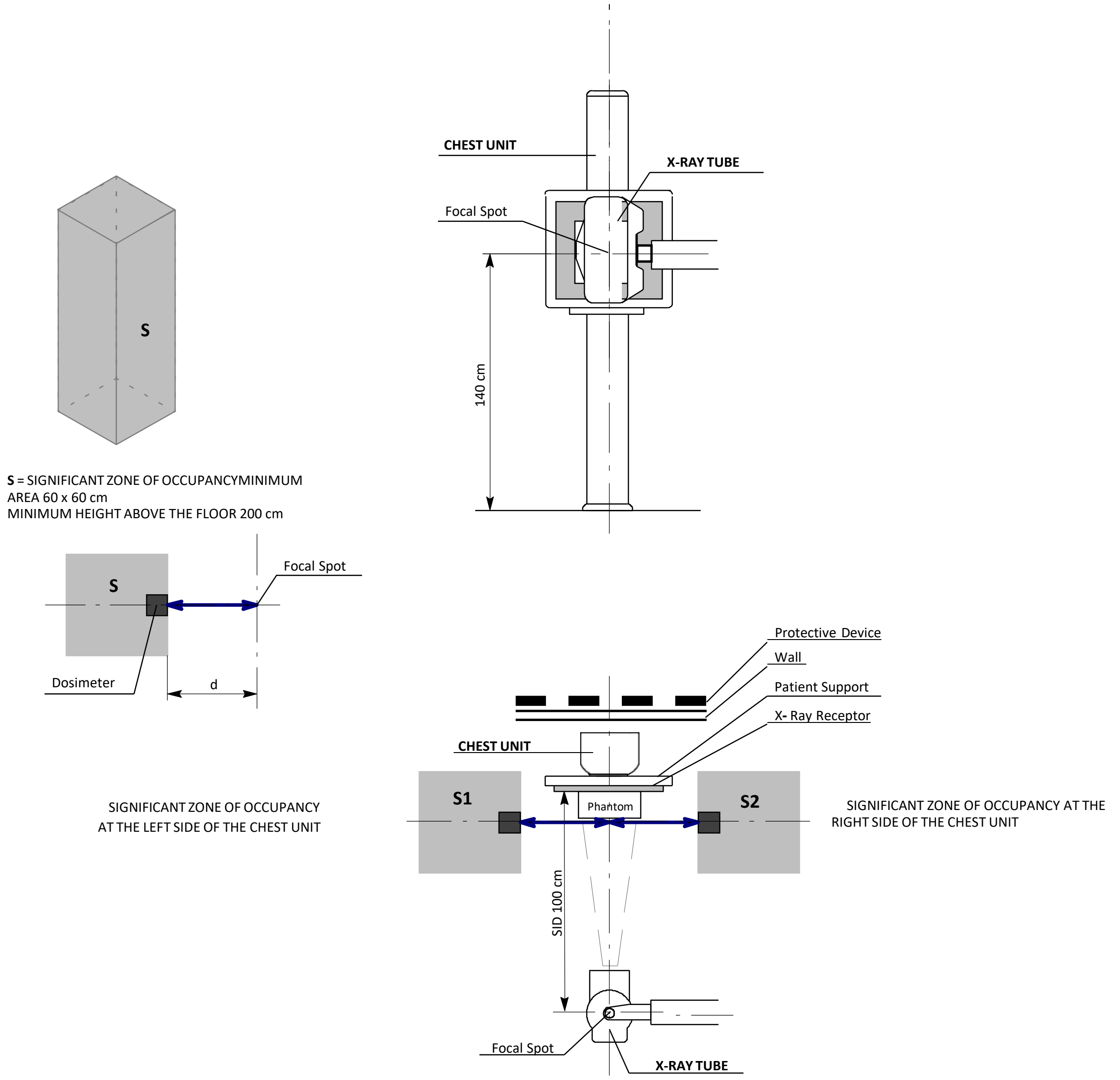
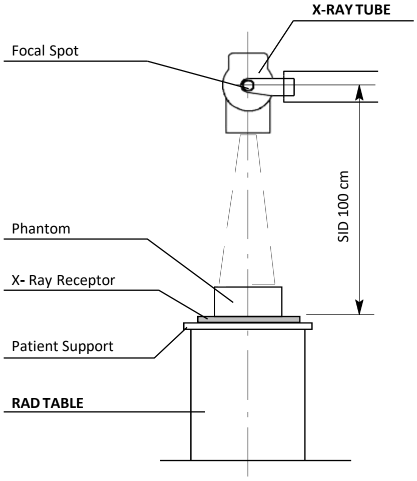
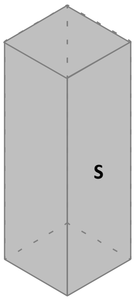
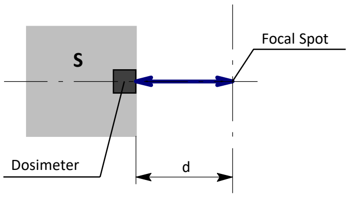

S
S = SIGNIFICANT ZONE OF OCCUPANCYMINIMUM
AREA 60 x 60 cm
MINIMUM HEIGHT ABOVE THE FLOOR 200 cm
S
Focal Spot
Dosimeter
d
CHEST UNIT
X-RAY TUBE
Focal Spot
140 cm
Protective Device
Wall
Patient Support
X- Ray Receptor
CHEST UNIT
SIGNIFICANT ZONE OF OCCUPANCY
AT THE LEFT SIDE OF THE CHEST UNIT
S1
Phantom
S2
SIGNIFICANT ZONE OF OCCUPANCY AT THE
RIGHT SIDE OF THE CHEST UNIT
SID 100 cm
Focal Spot
X-RAY TUBE

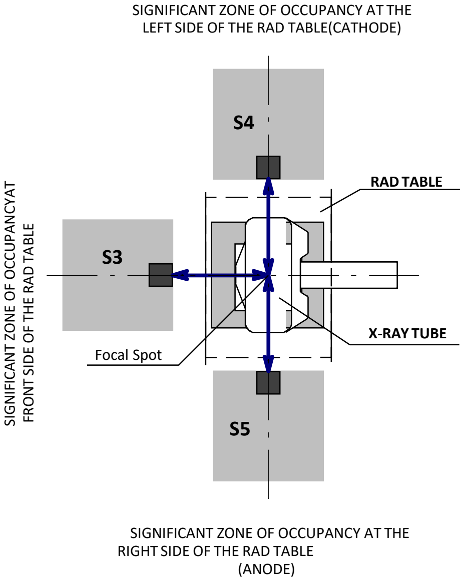
Illustration 3
Radiographic Examination on any Patient Support or any Table





S = SIGNIFICANT ZONE OF OCCUPANCYMINIMUM
AREA 60 x 60 cm
MINIMUM HEIGHT ABOVE THE FLOOR 200 cm




SIGNIFICANT ZONE OF OCCUPANCY AT THE
LEFT SIDE OF THE RAD TABLE(CATHODE)
S4
RAD TABLE
S3
X-RAY TUBE
Focal Spot
S5
SIGNIFICANT ZONE OF OCCUPANCYAT
FRONT SIDE OF THE RAD TABLE
SIGNIFICANT ZONE OF OCCUPANCY AT THE
RIGHT SIDE OF THE RAD TABLE
(ANODE)

2.7.9 DISTRIBUTION OF STRAY RADIATION

Measurement conditions to determine the distribution of Stray Radiation in the Significant Zone of Occupancy are in accordance with Standard IEC 60601-1-3:1994, IEC 60601-1-3:2008 and IEC 60601-1-3:2008+AMD1:2013.

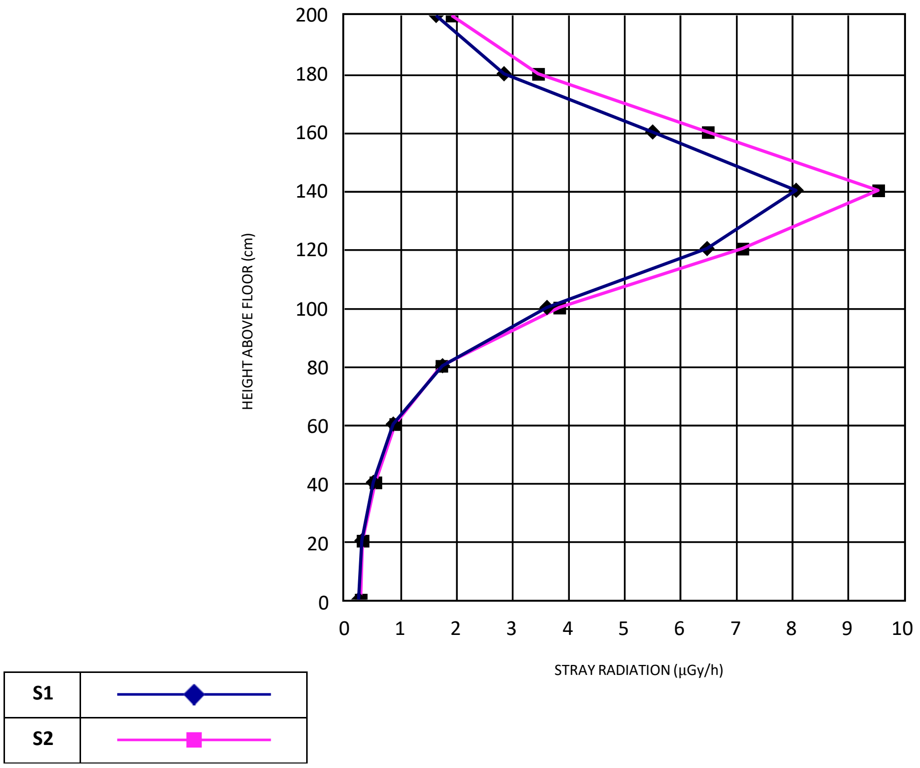
- Exposure Parameters: RAD mode, 150 kVp, 20 mAs.
- Collimator opening for Field Size 18 x 18 cm, SID 100 cm.
- Phantom: Rectangular water phantom of 25 x 25 x 15 cm, or a materialhaving a similar X-Ray attenuation coefficient.
- Radiation measuring instrument: Low Radiation Dosimeter.

Note **.** *The results have been obtained with a configuration that is representative of the worst case within the different configurations of the unit.*

Refer to Illustration 2 for Receptor in Vertical position and refer to Illustration 3for Receptor in Horizontal Position.

The following illustrations show the Distribution of Stray Radiation in each examination position.

Illustration 4
Distribution of Stray Radiation with the Receptor in Vertical Position.



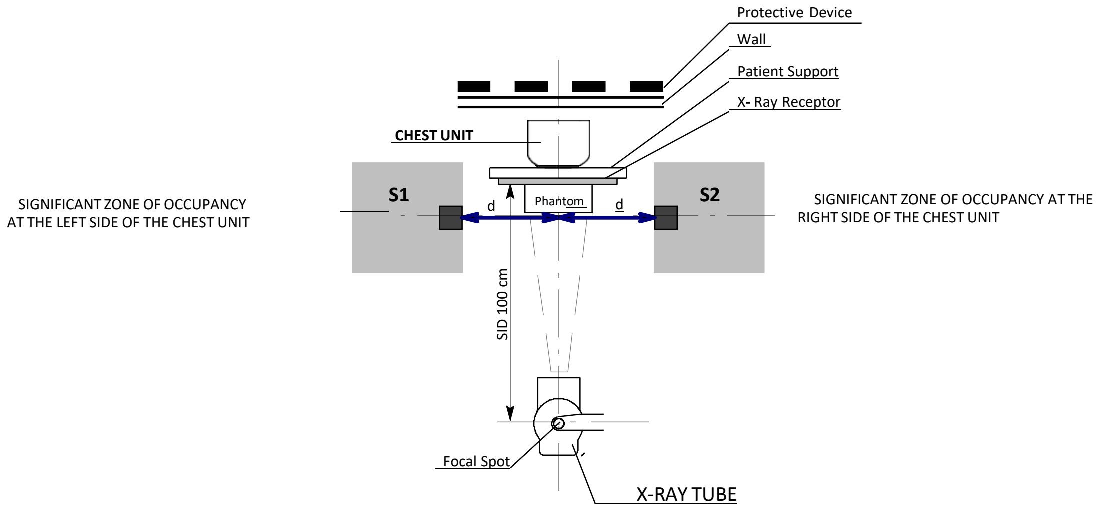
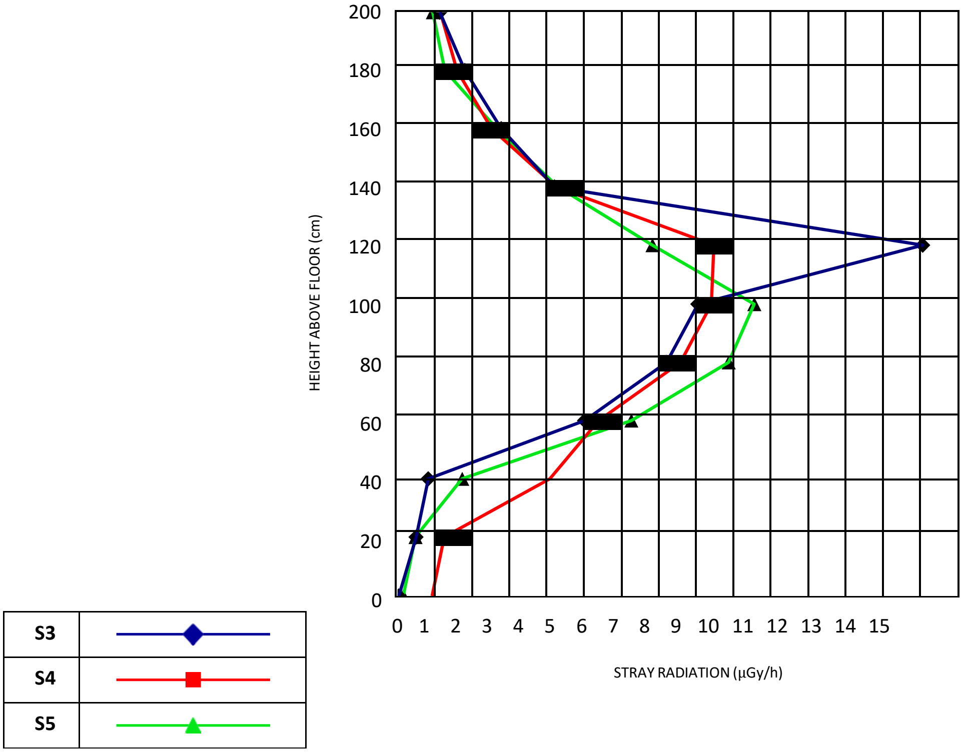
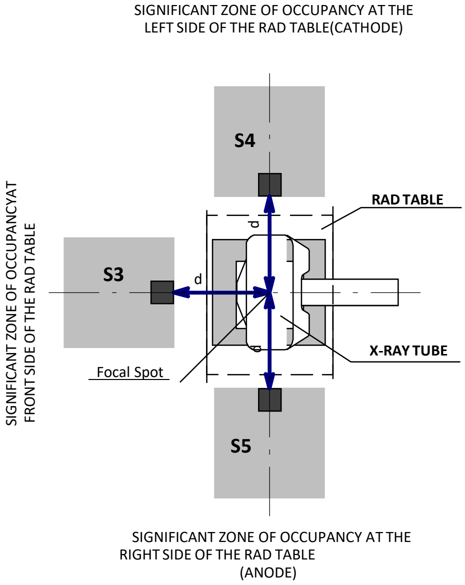

Protective Device
Wall
Patient Support
X- Ray Receptor
CHEST UNIT
S1
S2
SIGNIFICANT ZONE OF OCCUPANCY AT THE LEFT SIDE OF THE CHEST UNIT
SIGNIFICANT ZONE OF OCCUPANCY AT THE RIGHT SIDE OF THE CHEST UNIT
d
Phantom
d
SID 100 cm
Focal Spot
X-RAY TUBE

Illustration 5
Distribution of Stray Radiation with the Receptor in Horizontal Position.




SIGNIFICANT ZONE OF OCCUPANCY AT THE LEFT SIDE OF THE RAD TABLE(CATHODE)
S4
RAD TABLE
d
SIGNIFICANT ZONE OF OCCUPANCYAT FRONT SIDE OF THE RAD TABLE
S3
d
d
X-RAY TUBE
Focal Spot
S5
SIGNIFICANT ZONE OF OCCUPANCY AT THE RIGHT SIDE OF THE RAD TABLE (ANODE)

2.8 ELECTROMAGNETIC COMPATIBILITY (EMC)

This equipment generates, uses, and can radiate radio frequency energy.

CAUTION

The equipment may cause radio frequency interference to other medical or non medical devices and to radio communications.

To provide reasonable protection against such interference, this equipment complies with emissions limits for a Group 1 - Class A Medical Devices Directive as stated in IEC 60601-1-2:2007 and IEC 60601-1-2:2014. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment is found to cause interference (which may be determined by turning the equipment on and off), the operator (or qualified service personnel) should attempt to correct the problem by one or more of the following measures:

- reorient or relocate the affected device,
- increase the separation between the equipment and the affected device,
- power the equipment from a source different from that of the affected device,
- consult the service engineers for further suggestions.

To comply with the regulations applicable to an electromagnetic interference for a Group 1 - Class A Medical Device, all interconnect cables to peripheral devices must be shielded and properly grounded. Use of cables not properly shielded and grounded may result in the equipment causing radio frequency interference in violation of the European Union Medical Device Directive and of Federal Communications Commission regulations.

CAUTION

Before using this equipment make sure that all requirements about EMC included in this manual are accomplished.

CAUTION

Should any interference (EMC) be detected with other equipment, please position other equipment away from thisone.

CAUTION

It is customer responsibility to assure that this equipment and vicinity equipment complies the value of radio frequency interferences shown in General Regulation for safety according to IEC 60601-1-2:2007 and IEC 60601-1-2:2014 Tables as described in this section.

CAUTION

The manufacturer is not responsible for any interference caused by using other than recommended interconnect cables, accessories and transducers or by unauthorized changes or modifications to this equipment.

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC EMISSIONS(IEC 60601-1-2:2007 AND IEC 60601-1-2:2014)

This Radiographic Room is intended for use in the electromagnetic environment specified below.
The customer or the user of this Radiographic Room should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	This Radiographic *Room* uses RF energy only forits internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	This *Radiographic Room* is suitable for use in all establishments other than domestic and those directly connected to the public low- voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/flicker emissionsIEC 61000-3-3	Complies	

NOTE - In accordance with Standard IEC 61601-1-2:2014, the emission characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 Class A). If it is used in a residential environment (for which CISPR 11 Class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orientating the equipment. (*) Current above 16A

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY(IEC 60601-1-2:2007)

The Radiographic Room is intended for use in the electromagnetic environment specified below.
The customer or the user of the Radiographic Room should assure that it is used in such an environment.

Immunity test	IEC 60601-1-2:2007 Test level	Generator Compliance level	System Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	¦ 6kV contact ¦ 8kV air	¦ 6kV ¦ 8kV	¦6kV --	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4 (*)	¦ 2kV for power supply lines ¦ 1kV for input/output lines	¦ 2kV ¦ 0.5kV	¦ 2kV ¦ 0.5kV	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000- 4- 5 (**)	¦ 1kV line(s) to line(s) ¦ 2kV line(s) to earth	¦1kV ¦ 2kV	¦1kV ¦ 2kV	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines. IEC 61000- 4- 11	< 5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T)for 5 cycles 70% U_T (30% dip in U_T)for 25 cycles < 5% U_T (>95% dip in U_T) for 5s	>95% during 10 ms 60% during 100 ms 30% during 500 ms >95% during 5000 ms	>95% during 10 ms 60% during 100 ms 30% during 500 ms >95% during 5000 ms	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Radiographic Room requires continued operation during power mains interruptions, it is recommended that the X-Ray System is powered from an Uninterruptible Power Supplyor a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000- 4- 8	3 A/m	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

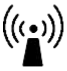
NOTE - U_T is the a.c. mains voltage prior to application of the test level.

(*) This test has been performed according to the standard IEC 801- 4

(**) This test has been performed according to the standard IEC 801- 5

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY(IEC 60601-1-2:2007)

The Radiographic Room is intended for use in the electromagnetic environment specified below.
The customer or the user of the Radiographic Room should assure that it is used in such an environment.

Immunity test	IEC 60601-1-2:2007 Test Level	Compliance level	Electromagnetic environment - guidance
Conducted RFIEC 61000- 4- 6 Radiated RF IEC 61000- 4- 3	3Vrms 150kHz to 80MHz 3V/m 80MHz to 2.5GHz	3Vrms 150kHz to 80MHz 3V/m 1 GHz to 2.5GHz	Portable and mobile RF communications equipment should be used no closer to any part of the Radiographic Room, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$, 80 MHz to 800 MHz (Generator) $d = 1.2\sqrt{P}$, 80 MHz to 800 MHz (System) $d = 2.3\sqrt{P}$, 800 MHz to 2.5 GHz (*) where 'P' is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and 'd' is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[a]), should be less than the compliance level in each frequency range[b]). Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 - At 80MHz and 800MHz, the higher frequency range applies.

NOTE 2 - These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection fromstructures, objects and people.

NOTE 3 - In the 3rd equation of the 4th column, the constant parameter has a value of 2.3 for frequencies between 1 GHz and 2.5 GHz.No information is given for frequencies between 80 MHz and 1 GHz.

[a]) *Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which this Radiographic Room is used exceeds the applicable RF compliance level above, this Radiographic Room should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re- orienting or relocating this Radiographic Room.*

[b]) *Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.*
(*) The radiated RF value is defined for a frequency range 1 GHz to 2.5 GHz. There are no values defined for frequencies between 80MHz and1 GHz.

RECOMMENDED SEPARATION DISTANCES BETWEEN PORTABLE ANDMOBILE RF COMMUNICATIONS EQUIPMENT AND THE X-RAY SYSTEM(IEC 61601-1-2:2007)

The Radiographic Room is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. Thecustomer or the user of this Radiographic Room can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Radiographic Room as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter **W**	**Separation distance according to frequency of transmitterm**			
	150 KHz to 80 MHz $d = 1.2\sqrt{P}$	**(GENERATOR)** **80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**(SYSTEM)** **80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**800 MHz to 2.5 GHz** $d = 2.3\sqrt{P}$
0.01	0.12	--	0.12	0.23
0.1	0.38	--	0.38	0.73
1	1.2	--	1.2	2.3
10	3.8	--	3.8	7.3
100	12	--	12	23

TYPICAL RF DEVICES (Worst-Case scenario)

Device: Power @ Frequency	**Recommended distance(m)**
GMRS device (Professional Walkie- Talkie): 5 W @ 462- 467 MHz	2.7
GSM / UMTS cell phone: 2 W @ 850/1700/1900 MHz	3.3
FRS device (Amateur Walkie- Talkie): 500 mW @ 462- 467 MHz	0.9
WiFi / Bluetooth devices: 100 mW @ 2400- 2500 MHz	0.8
DECT devices (modern cordless phones): 100mW @ 1880- 1900 MHz	0.8
RFID reader (3): 10 mW @ 125- 150 KHz / 13.56 MHz	0.12
RFID reader (3): 10 mW @ 902- 928 MHz / 2400- 2500 MHz	0.23
Station transmitter ATSC TV broadcasting: 100 kW @ 54- 800 MHz	380
Station transmitter ATSC TV broadcasting: 100 kW @ 800- 890 MHz	730
Station transmitter FM radio broadcasting: 100 kW @ 87.5- 108 MHz	380

For transmitters rated at a maximum output power not listed above, the recommended separation distance 'd' in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where 'P' is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 - At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 - These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY(IEC 61601-1-2:2014)

This Radiographic Room is intended for use in the electromagnetic environment specified below.
The customer or Operator of this Radiographic Room should assure that it is used in such an environment.

Immunity Test	**IEC 60601-1-2:2014 Test Level**	**Compliance Level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD)IEC 61000-4-2	¦ 8 kV contact ¦ 2 kV, ¦ 4 kV, ¦ 8 kV, ¦ 15 kV air	¦ 8 kV contact ¦ 2 kV, ¦ 4 kV, ¦ 8 kV, ¦ 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	¦ 2 kV for power supply lines ¦ 1 kV for input/output lines (100 kHz repetition frequency)	¦ 2 kV for power supply lines ¦ 1 kV for input/output lines (100 kHz repetition frequency)	Mains power quality should be thatof a typical commercial or hospital environment.
Surge IEC 61000-4-5	¦ 0.5 kV, ¦ 1 kV line(s) to line(s) ¦ 0.5 kV, ¦ 1 kV, ¦ 2 kVline(s) to earth	¦ 0.5 kV, ¦ 1 kV line(s) to line(s) ¦ 0.5 kV, ¦ 1 kV, ¦ 2 kVline(s) to earth	Mains power quality should be thatof a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines. IEC 61000-4-11	0% U_T for 0.5 cycle at 0°, 45°, 90°,135°, 180°, 225°, 270° and 315° 0 % U_T for 1 cycleat 0° 70 % U_T for 25/30 cyclesat 0° 0% U_T 250/300 cycles	0% U_T for 0.5 cycle at 0°, 45°, 90°,135°, 180°, 225°, 270° and 315° 0 % U_T for 1 cycleat 0° 70 % U_T for 25/30 cyclesat 0° 0% U_T 250/300 cycles	Mains power quality should be thatof a typical commercial or hospital environment. If the user of the ThisX-ray System requires continued operation during power mains interruptions, it is recommended that this X-ray System is powered from an Uninterruptible Power Supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic ofa typical location in a typical commercial or hospital environment.

NOTE - U_T is the a.c. mains voltage prior to application of the test level.

GUIDANCE AND MANUFACTURER'S DECLARATION - ELECTROMAGNETIC IMMUNITY(IEC 60601-1-2:2014)			
This Radiographic Room is intended for use in an electromagnetic environment specified below. The customer or Operator of this Radiographic Room should assure that it is used in such an environment.			
Immunity Test	**IEC 60601-1-2:2014 Test Level**	**Compliance Level**	**Electromagnetic environment - guidance**
Radiated RF EM fieldsIEC 61000-4-3	3 Vrms from 80 MHz to 2.7 GHz (80% AM at 1 kHz)	3 Vrms from 80 MHz to 2.7 GHz (80% AM at 1 kHz)	Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm to any part of theequipment, including cables specified by manufacturer. Otherwise, degradation of theperformance of this equipment could result.
Proximity fields from RF wireless Communications equipment IEC 61000-4-3	Refer to next table "IMMUNITY REQUIREMENTS FOR RF WIRELESS COMMUNICATIONSEQUIPMENT"	Refer to next table "IMMUNITY REQUIREMENTS FOR RF WIRELESS COMMUNICATIONSEQUIPMENT"	
Conducted disturbances induced by RF fields IEC 61000-4-6	3 Vrms from 150 kHz to 80 Mhz 6 Vrms in ISM bands from 150 kHz to 80 MHz (80% AM at 1 kHz)	3 Vrms from 150 kHz to 80 Mhz 6 Vrms in ISM bands from 150 kHz to 80 MHz (80% AM at 1 kHz)	
NOTE - The ISM (industrial, scientific and medical) bands between 0.15 MHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz. The amateur radio bands between 0.15 MHz and 80 MHz are 1.8 MHz to 2.0 MHz; 3.5 MHz to 4.0 MHz; 5.3 MHz to 5.4 MHz; 7 MHz to 7.3 MHz; 10.1 MHz to 10.15 MHz; 14 MHz to 14.2 MHz; 18.07 MHz to 18.17 MHz; 21.0 MHz to 21.4 MHz; 24.89 MHz to 24.99 MHz; 28.0 MHz to 29.7 MHz; and 50.0 MHz to 54.0 MHz.			

IMMUNITY REQUIREMENTS TO RF WIRELESS COMMUNICATIONS EQUIPMENT(IEC 60601-1-2:2014)

This Radiographic Room is intended for use in an electromagnetic environment specified below.
The customer or Operator of this Radiographic Room should assure that it is used in such an environment.

Band [a] **(MHz)**	**Modulation [b]**	**Distance (m)**	**Immunity Test Level (V/m)**
380 - 390	Pulse modulation [b] 18 Hz	0.3	27
430 - 470	FM [c] ¦5 kHz deviation1 kHz sine		28
704 - 787	Pulse modulation [b] 217Hz		9
800 - 960	Pulse modulation [b] 18Hz		28
1700 - 1990	Pulse modulation [b] 217Hz		28
2400 - 2570	Pulse modulation [b] 217Hz		28
5100 - 5800	Pulse modulation [b] 217Hz		9

[a] *For some services, only the uplink frequencies are included.*

[b] *The carrier shall be modulated using a 50 % duty cycle square wave signal.*

[c] *As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.*

2.9 QUANTITATIVE INFORMATION

Note . *The following tables show the Quantitative Information associated to this equipment according to the Standard IEC 60601-1-3:2008 and IEC 60601-1-3:2008+AMD1:2013. These tables illustrate loading factors for image performance and supply Dose indication examples. Therefore, they are an example of the adjustment of Loading Factors, Focal Spot Selection, SID and Collimator opening, which affect to the radiation quality or to the radiation dose rate applied in normal use.*

2.9.1 FUNCTIONAL TESTS PERFORMED TO OBTAIN THE QUANTITATIVE INFORMATION

Equipment:

- Rad Positioner with Ralco Collimator.

Instrumentation used:

- Dosimeter: Vacuda
- Dosimeter: Unfors
- Rectangular Phantom made of Polymethyl-methacrylate (PMMA) layers: 25 cm x 25 cm x 20 cm.

Test Details:

- Minimum SID distance: 100 cm.
- Maximum SID distance: 180 cm.
- Open Collimator size: 13 cm x 13 cm (min.), 43 cm x 43 cm (max.)
- The measurements were made with the exposure parameters shown onthe results table:
- KVp Range: 40 KVp, 60 KVp, 80 KVp, 100 KVp, 125 KVp
- mAs Range: 1 mAs, 2 mAs, 10 mAs, 50 mAs, 100 mAs
- Performed measurements of Air Kerma or Air Kerma Rate at thefollowing designated positions:
  - Distance SID doses
  - Patient (Phantom) Entrance doses and Entrance doses Rate
  - Patient (Phantom) Output doses and Output doses Rate
  - Collimator Output doses

Quantitative Information													
Loading Factors				**Parameter Selection**			**Filtrat.**	**Measured Doses**					
KVp	**mA**	**Time (s)**	**mAs**	**Focal Spot Selection**	**SID** Source-Image Distance **(cm)**	**Collimator blades opening (cm)**	**HVL (min. value allowed) (mmAl)**	**Collimator Output Dose (µGy*m2)**	**SID Dose(mGy)**	**Phantom Input Dose (mGy)**	**Phantom Input Dose Rate (Gy/h)**	**Phantom Output Dose Rate (mGy/h)**	**Phantom Output Dose (µGy)**
40	**160**	**0.012**	**2**	**Small**	**100**	**13x13**	**1.6**	0.2	0.016	0.025	7.479	10.795	0.036
	100	**0.1**	**10**	**Small**				1.1	0.087	0.136	4.906	7.682	0.213
	200	**0.5**	**100**	**Large**				11	0.836	1.307	9.407	14.125	1.962
	400	**1**	**400**	**Large**				40	3.073	4.802	17.286	23.863	6.629
	160	**0.012**	**2**	**Small**		**43x43**		2.1	0.016	0.025	7.615	18.691	0.062
	100	**0.1**	**10**	**Small**				11.8	0.090	0.140	5.038	13.354	0.371
	200	**0.5**	**100**	**Large**				107.1	0.862	1.347	9.698	23.798	3.305
	400	**1**	**400**	**Large**				391.3	3.166	4.947	17.809	41.228	11.452
	160	**0.012**	**2**	**Small**	**180**	**13x13**		0.2	0.005	0.006	1.865	4.273	0.014
	100	**0.1**	**10**	**Small**				1.1	0.027	0.034	1.214	3.453	0.096
	200	**0.5**	**100**	**Large**				11	0.257	0.325	2.343	5.985	0.831
	400	**1**	**400**	**Large**				40	0.940	1.190	4.283	11.723	3.257
	160	**0.012**	**2**	**Small**		**43x43**		2.1	0.005	0.007	1.962	6.243	0.021
	100	**0.1**	**10**	**Small**				11.8	0.028	0.035	1.269	4.420	0.123
	200	**0.5**	**100**	**Large**				107.1	0.267	0.338	2.432	7.400	1.028
	400	**1**	**400**	**Large**				391.3	0.979	1.239	4.461	12.763	3.545

Note **.** *Combined standard uncertainty is ±35% (IEC 60580 : 2000 / IEC 60601-2-54:2009 and IEC 60601-2-54: 2009+ AMD1:2015).*

Quantitative Information													
Loading Factors				Parameter Selection			Filtrat.	Measured Doses					
KVp	mA	Time (s)	mAs	Focal Spot Selection	SID Source-Image Distance (cm)	Collimator blades opening (cm)	HVL (min. value allowed) (mmAl)	Collimator Output Dose (µGy*m2)	SID Dose(mGy)	Phantom Input Dose (mGy)	Phantom Input Dose Rate (Gy/h)	Phantom Output Dose Rate (mGy/h)	Phantom Output Dose (µGy)
60	160	0.012	2	Small	100	13x13	2.2	0.6	0.046	0.072	21.746	113.713	0.379
	100	0.1	10	Small				3.9	0.252	0.394	14.195	79.388	2.205
	200	0.5	100	Large				39.4	2.587	4.042	29.103	157.649	21.896
	400	1	400	Large				191.4	10.009	15.639	56.299	295.137	81.983
	160	0.012	2	Small		43x43		7.5	0.048	0.074	22.299	233.322	0.778
	100	0.1	10	Small				40.6	0.265	0.414	14.894	161.562	4.488
	200	0.5	100	Large				389.3	2.691	4.205	30.277	320.682	44.539
	400	1	400	Large				1491.3	10.435	16.304	58.696	596.348	165.652
	160	0.012	2	Small	180	13x13		0.6	0.014	0.018	5.345	53.374	0.178
	100	0.1	10	Small				3.9	0.078	0.098	3.538	36.438	1.012
	200	0.5	100	Large				39.4	0.796	1.007	7.251	72.125	10.017
	400	1	400	Large				191.4	3.078	3.896	14.025	145.377	40.383
	160	0.012	2	Small		43x43		7.5	0.015	0.019	5.677	71.217	0.237
	100	0.1	10	Small				40.6	0.082	0.103	3.717	48.584	1.350
	200	0.5	100	Large				389.3	0.832	1.053	7.582	96.355	13.383
	400	1	400	Large				1491.4	3.219	4.074	14.667	179.186	49.774

Note . *Combined standard uncertainty is ±35% (IEC 60580 : 2000 / IEC 60601-2-54:2009 and IEC 60601-2-54: 2009+ AMD1:2015).*

Quantitative Information													
Loading Factors				**Parameter Selection**			**Filtrat.**	**Measured Doses**					
KVp	**mA**	**Time (s)**	**mAs**	**Focal Spot Selection**	**SID Source-Image Distance (cm)**	**Collimator blades opening (cm)**	**HVL (min. value allowed) (mmAl)**	**Collimator Output Dose (µGy*m2)**	**SID Dose(mGy)**	**Phantom Input Dose (mGy)**	**Phantom Input Dose Rate (Gy/h)**	**Phantom Output Dose Rate (mGy/h)**	**Phantom Output Dose (µGy)**
80	**160**	**0.012**	**2**	**Small**	**100**	**13x13**	**2.9**	1.4	0.087	0.136	40.753	378.000	1.260
	100	**0.1**	**10**	**Small**				7.4	0.461	0.702	25.909	256.070	7.113
	200	**0.5**	**100**	**Large**				74.5	4.674	7.303	52.582	511.763	71.078
	400	**1**	**400**	**Large**				366.7	18.374	28.709	103.353	982.017	272.783
	160	**0.012**	**2**	**Small**		**43x43**		14.3	0.090	0.141	42.391	829.043	2.763
	100	**0.1**	**10**	**Small**				77	0.483	0.754	27.162	553.148	15.365
	200	**0.5**	**100**	**Large**				735.9	4.884	7.632	54.949	1099.409	152.696
	400	**1**	**400**	**Large**				2856.2	19.209	30.014	108.049	2111.165	586.435
	160	**0.012**	**2**	**Small**	**180**	**13x13**		1.4	0.026	0.033	9.931	181.096	0.604
	100	**0.1**	**10**	**Small**				7.2	0.142	0.179	6.462	120.177	3.338
	200	**0.5**	**100**	**Large**				74.5	1.449	1.834	13.201	239.228	33.226
	400	**1**	**400**	**Large**				366.7	5.703	7.218	25.986	480.835	133.565
	160	**0.012**	**2**	**Small**		**43x43**		14.3	0.027	0.035	10.419	249.574	0.832
	100	**0.1**	**10**	**Small**				77	0.149	0.189	6.799	162.094	4.503
	200	**0.5**	**100**	**Large**				735.9	1.520	1.924	13.851	328.883	45.678
	400	**1**	**400**	**Large**				2856.2	5.988	7.578	27.282	632.661	175.739

Note **.** *Combined standard uncertainty is ±35% (IEC 60580 : 2000 / IEC 60601-2-54:2009 and IEC 60601-2-54: 2009+ AMD1:2015).*

Quantitative Information													
Loading Factors				**Parameter Selection**			**Filtrat.**	**Measured Doses**					
KVp	**mA**	**Time (s)**	**mAs**	**Focal Spot Selection**	**SID Source-Image Distance (cm)**	**Collimator blades opening (cm)**	**HVL (min. value allowed) (mmAl)**	**Collimator Output Dose (µGy*m2)**	**SID Dose(mGy)**	**Phantom Input Dose (mGy)**	**Phantom Input Dose Rate (Gy/h)**	**Phantom Output Dose Rate (mGy/h)**	**Phantom Output Dose (µGy)**
100	**160**	**0.012**	**2**	**Small**	**100**	**13x13**	**3.6**	2.1	0.131	0.205	61.550	854.348	2.848
	100	**0.1**	**10**	**Large**				11.2	0.698	1.091	39.282	562.852	15.635
	200	**0.5**	**100**	**Large**				113	7.136	11.149	80.276	1132.591	157.304
	400	**1**	**400**	**Large**				448.9	28.400	44.375	127.800	1784.097	619.478
	160	**0.012**	**2**	**Small**		**43x43**		21	0.137	0.215	64.362	1829.478	6.098
	100	**0.1**	**10**	**Large**				114.8	0.735	0.140	41.371	1221.809	33.939
	200	**0.5**	**100**	**Large**				1067.6	7.491	1.347	84.277	2346.574	325.913
	400	**1**	**400**	**Large**				4373	29.791	4.947	134.061	3901.774	1354.78
	160	**0.012**	**2**	**Small**	**180**	**13x13**		2.1	0.040	0.006	15.334	396.261	1.321
	100	**0.1**	**10**	**Large**				11.2	0.217	0.034	9.877	263.614	7.323
	200	**0.5**	**100**	**Large**				113	2.224	0.325	20.269	536.807	74.557
	400	**1**	**400**	**Large**				448.9	8.878	1.190	32.361	861.997	299.304
	160	**0.012**	**2**	**Small**		**43x43**		21	0.043	0.007	16.187	555.391	1.851
	100	**0.1**	**10**	**Large**				114.8	0.228	0.035	10.404	363.757	10.104
	200	**0.5**	**100**	**Large**				1067.6	2.334	0.338	21.268	743.791	103.304
	400	**1**	**400**	**Large**				4373	9.313	1.239	33.946	1173.788	407.565

Note **.** *Combined standard uncertainty is ±35% (IEC 60580 : 2000 / IEC 60601-2-54:2009 and IEC 60601-2-54: 2009+ AMD1:2015).*

Quantitative Information													
Loading Factors				**Parameter Selection**			**Filtrat.**	**Measured Doses**					
KVp	**mA**	**Time (s)**	**mAs**	**Focal Spot Selection**	**SID Source-Image Distance (cm)**	**Collimator blades opening (cm)**	**HVL (min. value allowed) (mmAl)**	**Collimator Output Dose (µGy*m2)**	**SID Dose(mGy)**	**Phantom Input Dose (mGy)**	**Phantom Input Dose Rate (Gy/h)**	**Phantom Output Dose Rate (mGy/h)**	**Phantom Output Dose (µGy)**
125	**160**	**0.012**	**2**	**Small**	**100**	**13x13**	**4.5**	2.9	0.194	0.303	90.897	1611.652	5.372
	100	**0.1**	**10**	**Large**				19.1	1.037	1.620	58.304	7.682	0.213
	200	**0.5**	**100**	**Large**				164.1	10.722	16.753	120.620	2195.061	304.870
	400	**1**	**400**	**Large**				823.7	43.078	67.310	121.158	2211.652	1228.696
	160	**0.012**	**2**	**Small**		**43x43**		29.7	0.204	0.319	95.666	3558.261	11.861
	100	**0.1**	**10**	**Large**				163.4	1.090	1.704	61.337	2407.617	66.878
	200	**0.5**	**100**	**Large**				1595.2	11.243	17.568	126.489	4963.617	689.391
	400	**1**	**400**	**Large**				5679.6	45.270	70.734	127.321	4418.609	2454.783
	160	**0.012**	**2**	**Small**	**180**	**13x13**		2.9	0.058	0.073	21.923	776.609	2.589
	100	**0.1**	**10**	**Large**				19.1	0.317	0.401	14.449	520.278	14.452
	200	**0.5**	**100**	**Large**				164.1	3.349	4.238	30.515	1068.730	148.435
	400	**1**	**400**	**Large**				823.7	13.470	17.047	30.685	1072.487	595.826
	160	**0.012**	**2**	**Small**		**43x43**		29.7	0.062	0.078	23.395	1085.478	3.618
	100	**0.1**	**10**	**Large**				163.4	0.338	0.428	15.416	728.765	20.243
	200	**0.5**	**100**	**Large**				1595.2	3.523	4.459	32.108	1509.496	209.652
	400	**1**	**400**	**Large**				5679.6	14.191	17.961	32.330	1515.913	842.174

Note . *Combined standard uncertainty is ±35% (IEC 60580 : 2000 / IEC 60601-2-54:2009 and IEC 60601-2-54: 2009+ AMD1:2015).*

Quantitative Information													
Loading Factors				**Parameter Selection**			**Filtrat.**	**Measured Doses**					
KVp	**mA**	**Time (s)**	**mAs**	**Focal Spot Selection**	**SID** Source-Image Distance **(cm)**	**Collimator blades opening (cm)**	**HVL (min. value allowed) (mmAl)**	**Collimator Output Dose (µGy*m2)**	**SID Dose(mGy)**	**Phantom Input Dose (mGy)**	**Phantom Input Dose Rate (Gy/h)**	**Phantom Output Dose Rate (mGy/h)**	**Phantom Output Dose (µGy)**
150	**160**	**0.012**	**2**	**Small**	**100**	**13x13**	**5.4**	3.8	0.253	0.395	118.573	2493.391	8.311
	100	**0.1**	**10**	**Large**				24.4	1.375	2.148	77.331	1679.791	46.661
	200	**0.5**	**100**	**Large**				239.3	14.530	22.704	163.467	3508.591	487.304
	400	**1**	**400**	**Large**				882.9	59.548	93.043	133.983	2882.504	2001.739
	160	**0.012**	**2**	**Small**		**43x43**		38.5	0.262	0.409	122.731	5744.348	19.148
	100	**0.1**	**10**	**Large**				210.7	1.444	2.257	81.244	3862.957	107.304
	200	**0.5**	**100**	**Large**				2124.2	15.252	23.832	171.587	8057.739	1119.130
	400	**1**	**400**	**Large**				8581.3	62.748	98.043	141.183	6629.009	4603.478
	160	**0.012**	**2**	**Small**	**180**	**13x13**		3.8	0.077	0.098	29.337	1208.087	4.027
	100	**0.1**	**10**	**Large**				24.4	0.426	0.539	19.410	819.235	22.757
	200	**0.5**	**100**	**Large**				239.3	4.548	5.756	41.442	1714.226	238.087
	400	**1**	**400**	**Large**				882.9	18.687	23.651	34.057	1409.948	979.130
	160	**0.012**	**2**	**Small**		**43x43**		38.5	0.080	0.102	30.467	1700.870	5.670
	100	**0.1**	**10**	**Large**				210.7	0.453	0.573	20.646	1152.939	32.026
	200	**0.5**	**100**	**Large**				2124.2	4.803	6.078	43.764	2436.730	338.435
	400	**1**	**400**	**Large**				8581.3	19.748	24.993	35.990	2005.983	1393.043

Note . *Combined standard uncertainty is ±35% (IEC 60580 : 2000 / IEC 60601-2-54:2009 and IEC 60601-2-54: 2009+ AMD1:2015).*

2.10 DETERMINISTIC EFFECTS

Deterministic effects may occur when the Radiation dose to a certain organ or tissue exceeds a specific threshold. Particular organs or tissues of such concern in diagnostic Radiology are the skin and the eye lens. The numerical value of the threshold dose is in the range between 1 Gy and 3 Gy.

As shown in the Quantitative Information Tables, the radiation dose effects measured in this equipment are below the threshold in which the severity of certain effects would take place on human skin or eyes lens.

This mentioned threshold was established by the International Commission on Radiological Protection (IRCP Publication No 60).

Quantitative Information tables (*Refer to Section 2.9*) illustrate examples of available loading factors for image performance and supply Dose indication, which affect to the radiation quality or to the radiation dose rate applied in normal use.

As indicated in the Quantitative Information Tables, the number of exposures needed to reach the previously described maximum radiation values will depend on the selected techniques for each radiographic study.

This page intentionally left blank.

SECTION 3 START UP AND SHUTDOWN

3.1 START UP

The System should be powered by the same Room Electrical Cabinet where the X-ray Generator is connected, that is, the whole System will be powered from the same ON/OFF Main Breaker in the Room Electrical Cabinet.

<u>To turn the System ON</u>:

1. Turn ON the Main Breaker of the Room Electrical Cabinet. The Emergency OFF Switch must not be activated in the Room Electrical Cabinet.

⚠ **WARNING**

IN THE EVENT OF AN EMERGENCY FORCIBLY DEPRESS THE X-RAY ROOM "EMERGENCY OFF SWITCH" (USUALLY A RED MUSHROOM-SHAPED SWITCH).

THIS SWITCH SHOULD BE LOCATED ON OR NEAR THE X-RAY ROOM ELECTRICAL CABINET, USUALLY PLACED NEAR THE GENERATOR CONTROL CONSOLE. MORE THAN ONE OF THESE SWITCHES MAY BE PLACED AROUND THEROOM FOR GREATER ACCESSIBILITY.

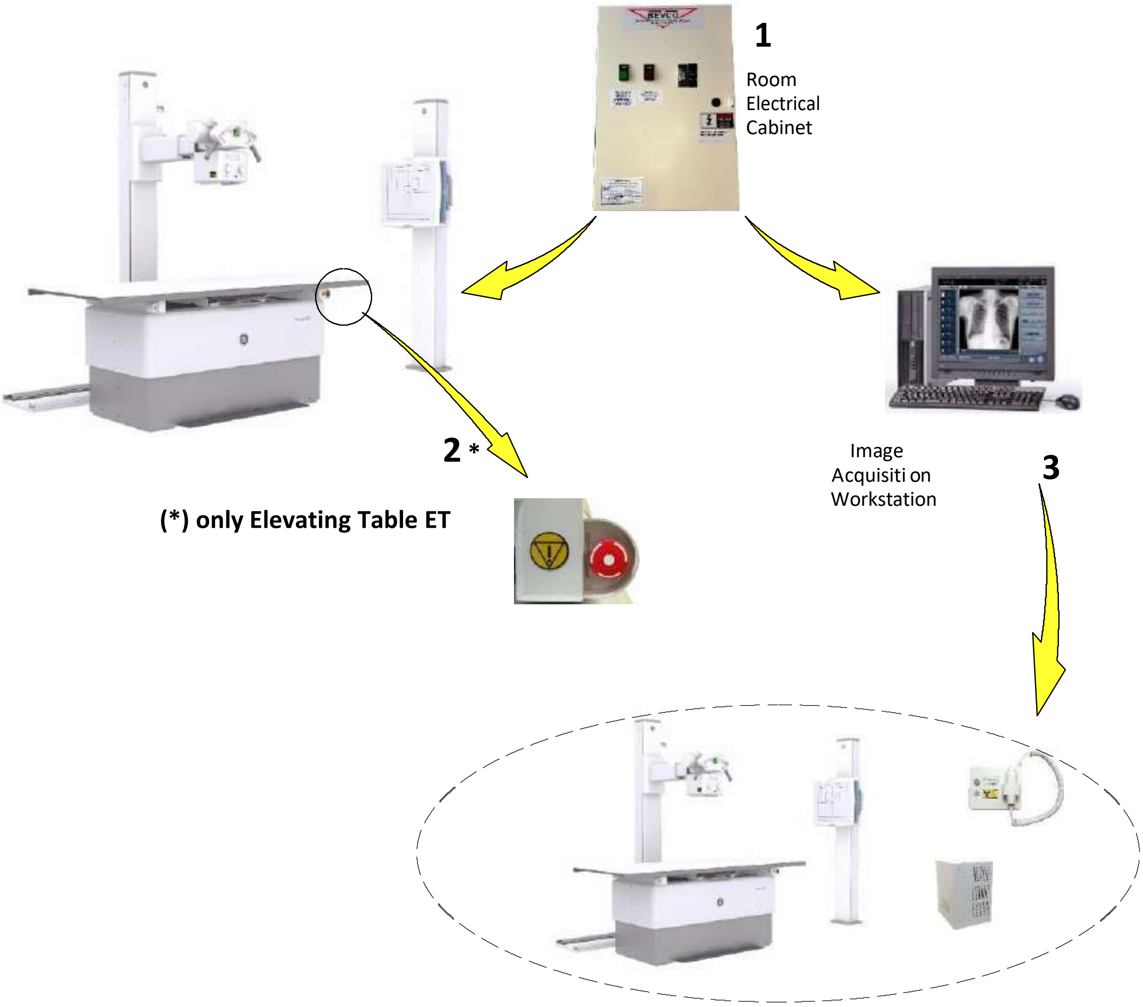
⚠ **WARNING**

TO ISOLATE THE EQUIPMENT FROM MAINS, TURN OFF THE SWITCH LOCATED AT THE ROOM ELECTRICAL CABINET.

2. In the case of the Elevating Table, check that the Emergency OFF Switch (E-stop button) of the Table to allow operation of the Table, Tube Stand and Wall Stand.

3. Turn ON the Workstation. This action automatically starts the X-Ray Generator, Table, Wall Stand and Tube Stand.

Illustration 6
Start-up sequence



3.2 SHUTDOWN ROUTINE

To turn the System OFF (Proteus XR/f ET, ST or Single Panel):

1. Turn OFF the Image Acquisition Workstation. This action turns OFF the Workstation and then the Generator, Positioners and Floor Mounted Tube Stand.

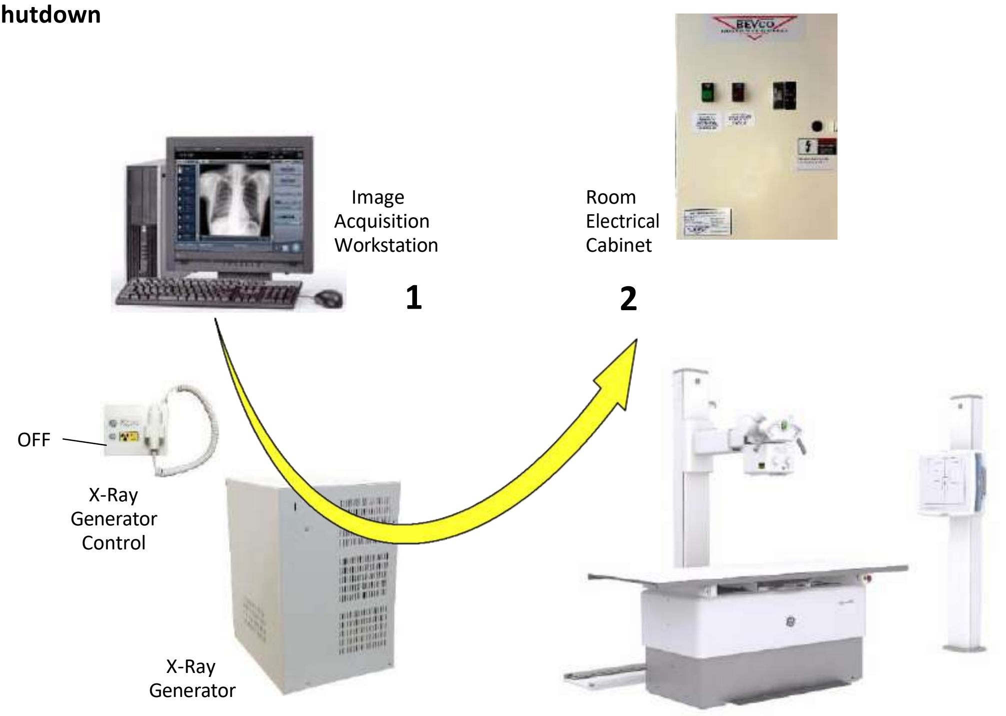
   Independently to the Image Acquisition Workstation, the Generator can be turned OFF by pressing the OFF button of the X-Ray Generator Control (PC Interface Box), the Green Lamp turns OFF.

   In the case of the Elevating Table, the Table, Tube Stand and Wall Stand can be turned off by pressing the Emergency OFF Switch (E- stop button) of the Table.

Note . *It is not necessary to turn OFF the Emergency Off Switch of the Table before turning off the Main Breaker of the Room ElectricalCabinet.*

2. Turn OFF the Main Breaker of the Room Electrical Cabinet.

Illustration 7 Shutdown sequence



This page intentionally left blank.

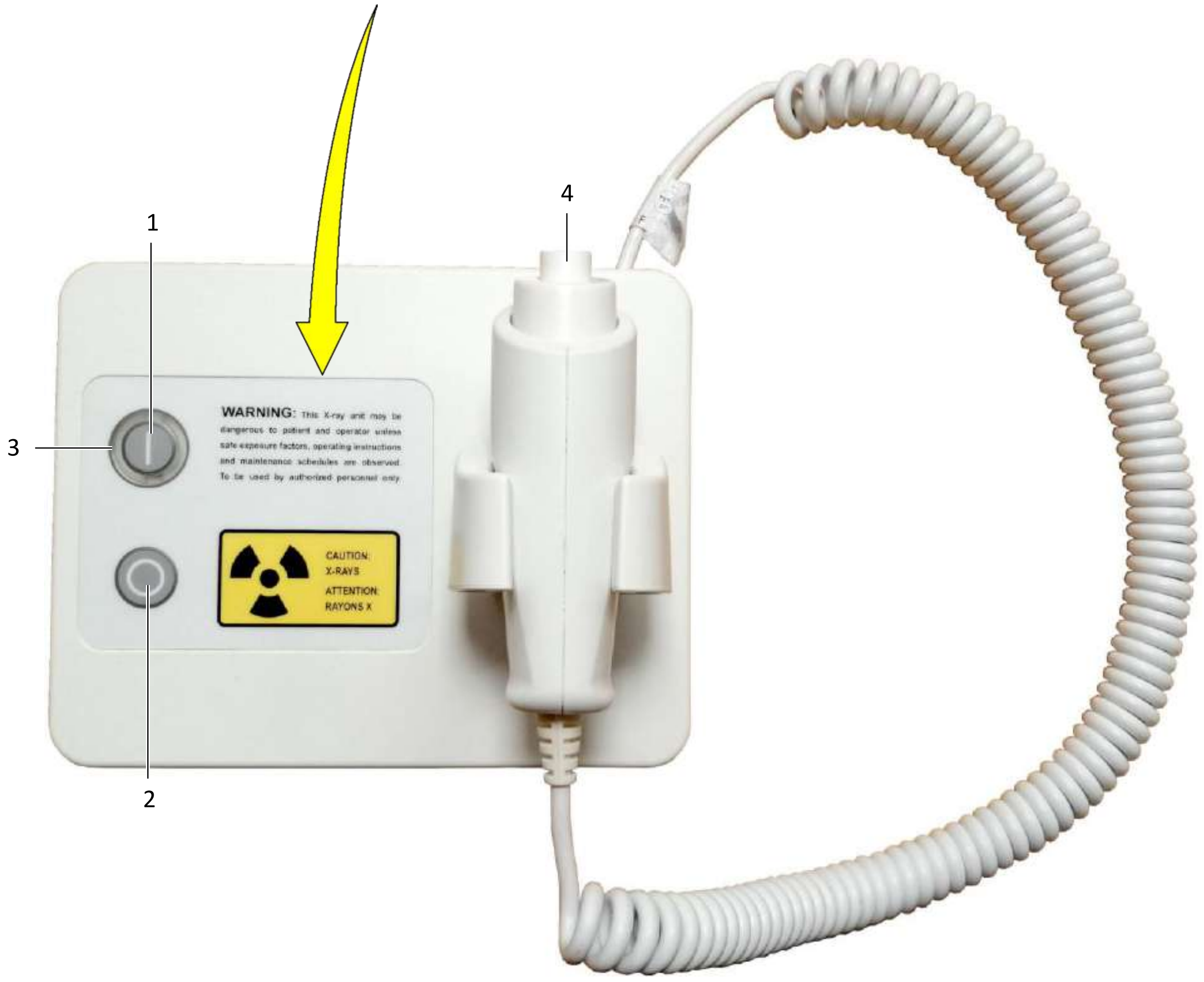
SECTION 4 X-RAY GENERATOR CONTROL

The Generator parameters are controlled through the Console of the Image Acquisition Workstation. The Generator is equipped with a PC Interface Box that comprises the following controls:

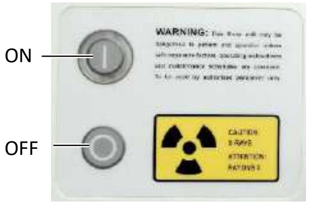
1. Generator Power ON.
2. Generator Power OFF.
3. "*Generator Power ON*" Indicator, it lights when the Generator is ON.
4. Handswitch, with the controls for radiographic "*Preparation*" and "*Exposure*".

WARNING

THIS X-RAY UNIT MAY BE DANGEROUS TO PATIENT AND OPERATOR UNLESS SAFE EXPOSURE FACTORS, OPERATING INSTRUCTIONS AND MAINTENANCE SCHEDULES ARE OBSERVED. TO BE USED BY AUTHORIZED PERSONNEL ONLY.


1
4
3
2
WARNING: This X-ray unit may be dangerous to patient and operator unless safe exposure factors, operating instructions and maintenance schedules are observed. To be used by authorized personnel only.
CAUTION: X-RAYS
ATTENTION: RAYONS X

4.1 POWER ON / OFF



ON: The Generator is turned ON by pressing this push-button (Pilot light is ON).

OFF: The Generator is turned OFF by pressing this push-button.

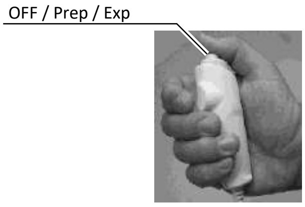
If the X-ray Tube is rotating when pressing the "*OFF*" push-button, the Generator will stop the anode immediately and then the unit will be turned off (approx. 5 seconds). The equipment only turns off if "*Preparation*" is not activated.

IN THE EVENT OF AN EMERGENCY FORCIBLY DEPRESS THE X-RAY ROOM "EMERGENCY OFF SWITCH" (USUALLY A RED MUSHROOM-SHAPED SWITCH).

THIS SWITCH SHOULD BE LOCATED ON OR NEAR THE X-RAY ROOM ELECTRICAL CABINET, USUALLY PLACED NEAR THE GENERATOR CONTROL CONSOLE. MORE THAN ONE OF THESE SWITCHES MAY BE PLACED AROUND THEROOM FOR GREATER ACCESSIBILITY.

TO ISOLATE THE EQUIPMENT FROM MAINS, TURN OFF THE SWITCH LOCATED AT THE ROOM ELECTRICAL CABINET.

4.2 EXPOSURE CONTROLS



Radiographic exposures from are made with the "*Prep*" (preparation) and"*Expose*" buttons on the Handswitch.

The X-ray Handswitch button has three positions: "*Off*", "*Preparation*", and *"X-ray Exposure".*

Press the handswitch half-way for *"Prep"* and fully for *"Exp".*

PREP: Press the handswitch half-way (*"Prep"* position) to prepare the selected X-ray tube for exposure. The *"Ready"* indicator on the Console will light when the X-ray tube is prepared and there are no interlock failure or system faults.

After pressing this push-button, the following functions are activated:

- Anode rotation.
- Filament current switches from stand-by to the selected mA.

Note .

Press "Prep" only when the technique is selected on the Console and the Patient is ready for the exposure. The Generator can be configured so that the anode remains running for the time established during installation when "Prep" is pressed a predetermined number of times in less than a minute.

EXP: After the "*Ready*" indicator is illuminated on the Control Console, fully press the handswitch to start a X-ray exposure. If the button is released before the Generator completes the selected time or the AEC time, the exposure will be prematurely terminated and the actual mAs and Exposure Time will be displayed.

The "*X-ray On*" indicator remains illuminated on the Control Console during the length of exposure.

READY: Indicates that the technique selected is properly set, there are no interlock failures or system faults, the anode is rotating and the X-ray Tube is ready for exposure. The "*Ready*" indicator should be shown on the Control Console.

⏻

X-RAY ON: Indicates that the X-ray exposure is in progress. At the same time that radiographic exposures are being made, an audible signal sounds. The "*X-ray On*" indicator should be shown on the Control Console.

☢

This page intentionally left blank.

SECTION 5 OPERATION

Illustration 8
Proteus XR/f ET Positioners

Illustration 9
Proteus XR/f ST Positioners

WARNING

USE THE EQUIPMENT HAND-GRIPS TO CONTROL AND DRIVE MANUAL MOVEMENTS, NEVER PUSH DIRECTLY ON THE RECEPTOR, X-RAY TUBE OR COLLIMATOR.

WARNING

MONITOR THE SYSTEM MOVEMENTS WITH SPECIAL CARE. AVOID ANY IMPACT OF THE SYSTEM ON FLOOR, CEILING OR OTHER ELEMENTS IN THE ROOM. IT MAY CAUSE SERIOUS DAMAGE TO THE EQUIPMENT.

WARNING

DO NOT CONNECT ITEMS NOT SPECIFIED AS PART OF THE SYSTEM OR BEEN SPECIFIED AS BEING COMPATIBLEWITH THE SYSTEM.

WARNING

MONITOR WITH SPECIAL CARE THE PATIENT POSITION (HANDS, FEET, FINGERS, ETC.) AND USE THE PATIENT HAND-GRIPS TO AVOID INJURY TO PATIENT CAUSED BY TABLE-TOP MOVEMENTS. PATIENT HANDS MUST BE KEPT AWAY FROM MOBILE COMPONENTS OF THE UNIT.

OPERATOR SHOULD NEVER MOVE TABLE-TOP FROM LATERAL SIDE (PATIENT HEAD OR FEET). IT MAY CAUSE FINGERPINCH UNDER THE TABLE-TOP.

INTRAVENOUS TUBING, CATHETERS AND OTHER PATIENTCONNECTED LINES SHOULD BE ROUTED AWAY FROM MOVING EQUIPMENT.

5.1 FLOOR MOUNTED TUBE STAND

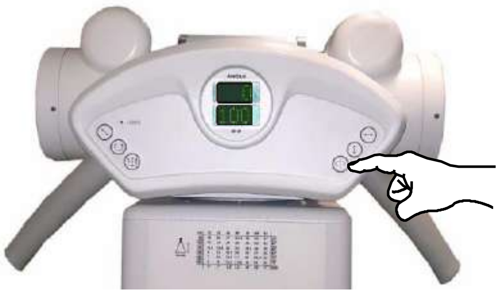
Operation controls for the Floor Mounted Tube Stand are located at the ControlPanel.

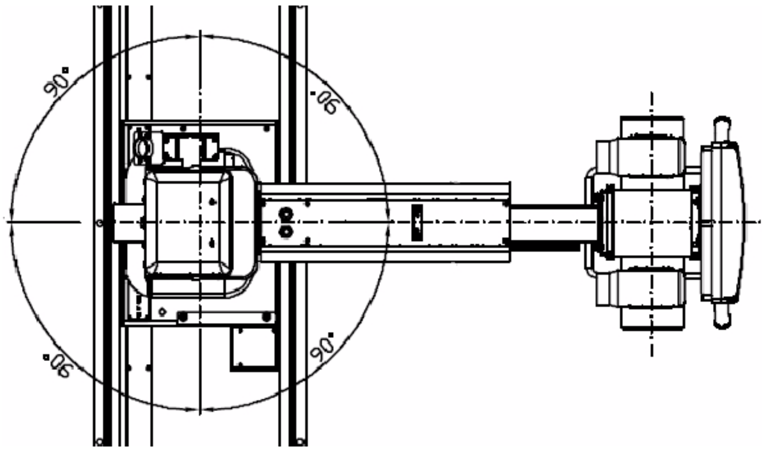
5.1.1 COLUMN ROTATION CONTROL

The Column rotation must be manually positioned by the Operator. Press the column rotation button and then rotate the Column to the desired angle.

This motion can reach ±180° with detents at 0°, 90° and - 90°.

If the System includes Mechanical Tracking Link, before attempting to rotate the Column, disengage the Linking Bar of the Mechanical Tracking device *(refer to Section 5.6 Mechanical Tracking Link).*



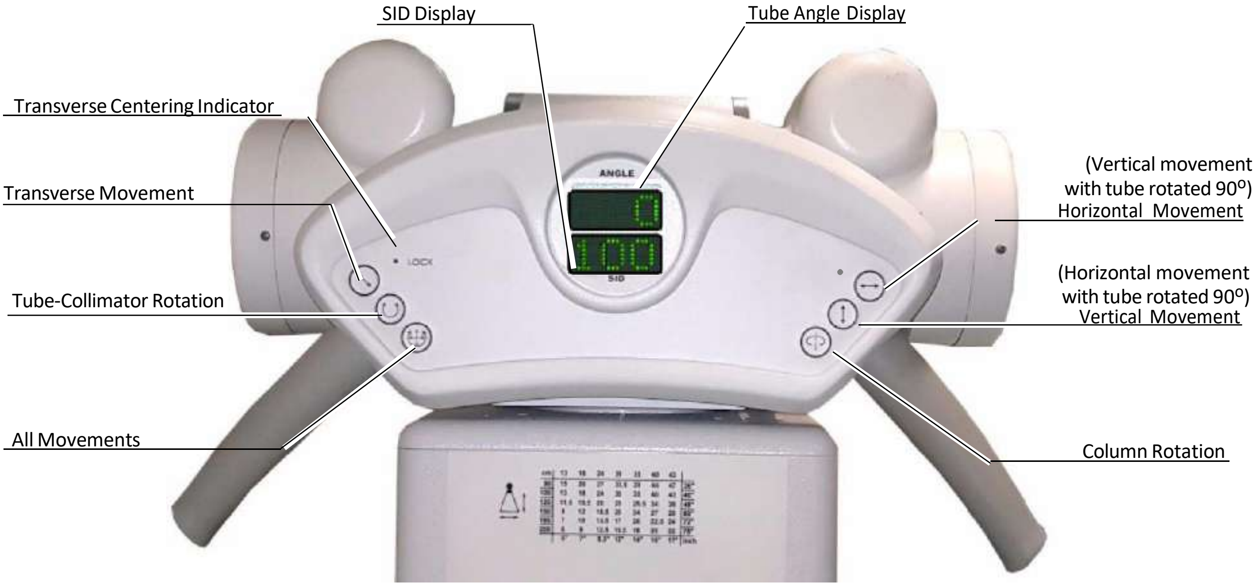


CAUTION

Rotation may be limited by cables. Avoid strain on the cables when rotating the Column.

5.1.2 CONTROL PANEL

Illustration 10Control Panel



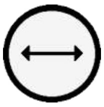
After the System is turned ON, a startup routine begins and the Control Panel momentarily shows the software version (e.g., V01 R0.0 = Vers.01 R0.0).

The Display then shows the position data of the Tube-Collimator Assembly.(Angle and SID).

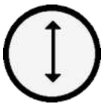
ANGLE DISPLAY: Indicates the Angle of the Tube-Collimator Assembly on its vertical axis. In case of error, this Display flashes the error code (e.g., E06).

SID DISPLAY: Indicates the Source-Image Distance (SID). The SID Display shows “**- - -** ” when the SID value is not defined, that is, when the Tube-Collimator Assembly is not within the range of ±45° on its vertical axis or when it is not perpendicular (±45°) to the Vertical Receptor.

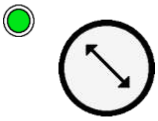
ERROR CODES IN THE DIGITAL CONTROL PANEL: Error codes appear on the Digital Control Panel Display and indicate the potential cause of a system failure (*refer to Section 6.2 for further information on Error Codes).*



Note **.**



Note **.**



LOCK

HORIZONTAL MOVEMENT: Press and hold this button to allow horizontal movement of the Column in order to establish the desired SID (Source-Image Distance) with the Vertical Receptor. This control is used to horizontally position the Column with respect to the Horizontal Receptor. Release this button to lock the Column in position.

Horizontal movement is provided with detents related to the distance from the Vertical Receptor that can be modified during System Configuration. Detent points are shown on the SID Display when the distance is reached with respect to the Vertical Receptor. Press this button again to continue movement.

VERTICAL MOVEMENT: Press and hold this button to allow vertical movement of the Tube-Collimator Assembly in order to achieve the desired SID with respect to the Horizontal Receptor. This control is also used to vertically position the Tube-Collimator Assembly with respect to the Vertical Receptor. Release this button to lock the Tube-Collimator Assembly in vertical position.

Horizontal and vertical movements always correspond to the button arrow direction, that is, the buttons for horizontal and vertical movement interchange its function when the Tube-Collimator is turned 60° left or right.

COLUMN ROTATION: Refer to Section 5.1.1.

TUBE-COLLIMATOR ROTATION: Press and hold this button to allow rotation of the Tube-Collimator Assembly to the desired angle. Release this button to lock in position.

This movement has detents at 0°, 90° and - 90° which are shown on the Angle Display. Press this button again to continue with movement.

TRANSVERSE MOVEMENT: Press and hold this button to allow transverse movement of the Tube-Collimator Assembly. Release this button to lock the Tube-Collimator Assembly in position.

This movement is provided with a detent when the Tube-Collimator Assembly is centered with respect to the Horizontal Receptor ("LOCK" indicator lit). Press this button again to continue with movement.

FREE MOVEMENTS: Press and hold this button to allow Horizontal, Vertical and Rotation movements at the same time. Release button to lock in position.

This button pushed disables the corresponding detents.

5.2 RALCO MANUAL COLLIMATOR R225/R225 DHHS

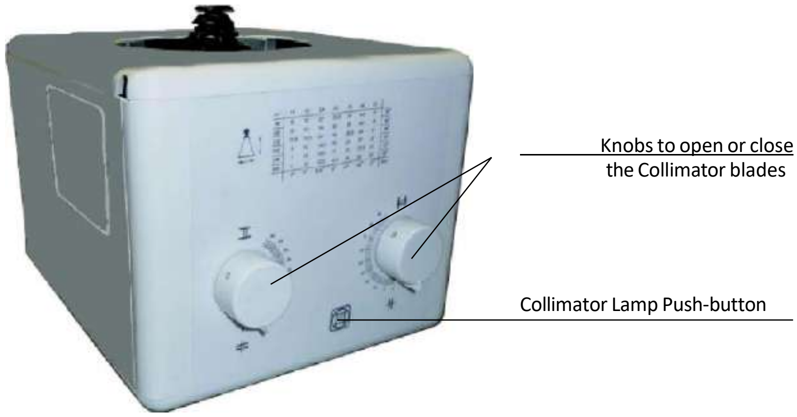
Collimator controls consist of a button to switch on the Collimator lamp and two knobs to open or close the internal blades of the Collimator.

When pressing the Collimator Lamp push-button, the Collimator light and the Laser light turn on. They remain lighting for 30 seconds before they switch Off automatically (lighting time can be configured).

Exposure field on the Receptor is adjusted by setting the two knobs. The table on the Front Panel shows the number to set with the knobs to open the blades according to the SID and X-ray field to be used.

The Collimator can rotate ¦90° on its vertical axis while the Tube remains in the same position. This movement is performed by manually turning the Collimator and has detents every 90°.

Illustration 11
Collimator Controls


Knobs to open or close the Collimator blades
Collimator Lamp Push-button

Note . *Refer to the corresponding Collimator Manual for extended information about operation or technical description needed to maintain compliance with Standard IEC 60601-1-3:2008.*

For patient positioning, the Collimator Lamp is also turned on when any lock related to the receptor is activated: All Table movement pedals, Wall Stand vertical Lock, or Table Receptor Handle. It remains on for 30 seconds before they switch Off automatically (light on time can be configured by the Service Engineer).

5.3 DOSEMETER DEVICE (OPTIONAL)

The optional Dosemeter device is related to the Collimator installed in the Tube Stand. It is used for simultaneously determining the dose area product, dose area product rate and irradiation time.

Note . *Refer to the corresponding Dosemeter Manual for extended information about operation or technical description needed to maintain compliance with Standard IEC 60601- 1- 3: 2008.*

5.4 TABLE

The Proteus XR/f System may include an ET Table (Elevating Table), *refer toSection 5.4.1*. or a ST Table (non Elevating Table), *refer to Section 5.4.2.*

5.4.1 ET TABLE

The Elevating Table with its variable height has been designed for easy access from beds, wheelchairs or stretchers with patient care and comfort in mind.

The Table-Top travels are controlled with the Pedals located at the Table Base. Also the Table incorporates two safety devices and a control for the Horizontal Receptor positioning.

Illustration 12
Elevating Table

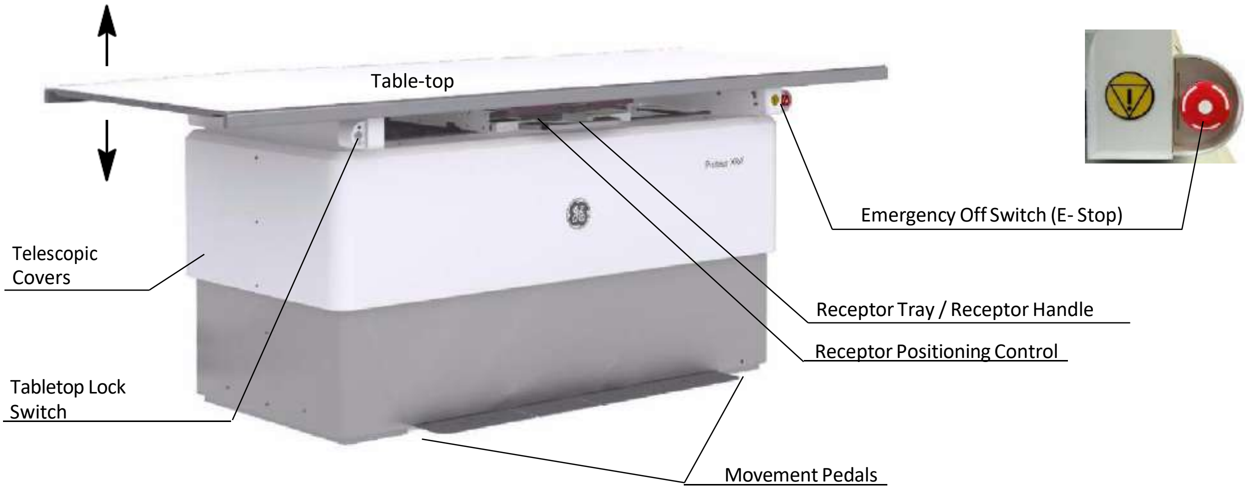


Table-top
Emergency Off Switch (E- Stop)
Telescopic Covers
Receptor Tray / Receptor Handle
Receptor Positioning Control
Tabletop Lock Switch
Movement Pedals

WARNING

THE MAXIMUM PATIENT WEIGHT SUPPORTED WITH THE TABLE-TOP AT ANY POSITION IS 350 KG (771 LBS) EVENLY DISTRIBUTED OVER THE SURFACE OF THE TABLE-TOP. EXCEEDING THIS LIMIT MAY CAUSE EQUIPMENT DAMAGEOR INJURY TO THE PATIENT.

TABLE MOVEMENT PEDALS: A row of pedals located at the Table Baseprovide a comfortable control of the Table movements.

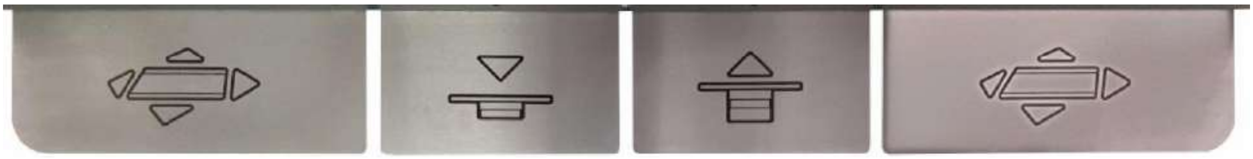


TABLE-TOP MOVEMENT PEDALS: Double tap on any of the two pedals (at both ends of the Pedal row) to release longitudinal and transverse brakes, this allows free movement of Table-top for better positioning of patient. Release Pedal to block movement.

UP PEDAL: Double tap on Pedal to lift Table-top to desired height. Release Pedal to stop movement.

DOWN PEDAL: Double tap on Pedal to lower Table-top to desired height. Release Pedal to stop movement.

The Service Engineer can modify the configuration of the pedals and change the brake releasing from the double tap to a single tap.

Note .

A Height Detent in the Up and Down travel of the Table-top can be set by the Service Engineer to stop the Table-top automatically at the operator desired height.

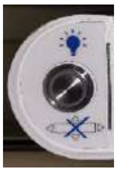


TABLE-TOP LOCK SWITCH: This security switch disables Table-top horizontal movement avoiding any unexpected Table-top motion (e.g. patient steps on Pedal while sitting on Table before positioning or getting off the Table).

WARNING

BEFORE PATIENT SITS OR GETS OFF THE TABLE PRESS TABLE-TOP LOCK SWITCH TO AVOID PATIENT INJURY OR DAMAGE TO EQUIPMENT.

WARNING

THIS ELEVATING TABLE PROVIDES A SAFETY SYSTEM UNDER TABLE-TOP WHICH STOPS DOWN PEDAL MOVEMENT WHEN TRAVEL FINDS AN OBSTACLE.

5.4.2 ST TABLE

WARNING

THE MAXIMUM PATIENT WEIGHT SUPPORTED WITH THE TABLE-TOP AT ANY POSITION IS 300 KG (661.3 LBS) EVENLY DISTRIBUTED OVER THE SURFACE OF THE TABLE-TOP. EXCESSIVE WEIGHT AT ONE POINT MAY CAUSE EQUIPMENT DAMAGE OR INJURY TO THE PATIENT.

Illustration 13 Radiographic Table

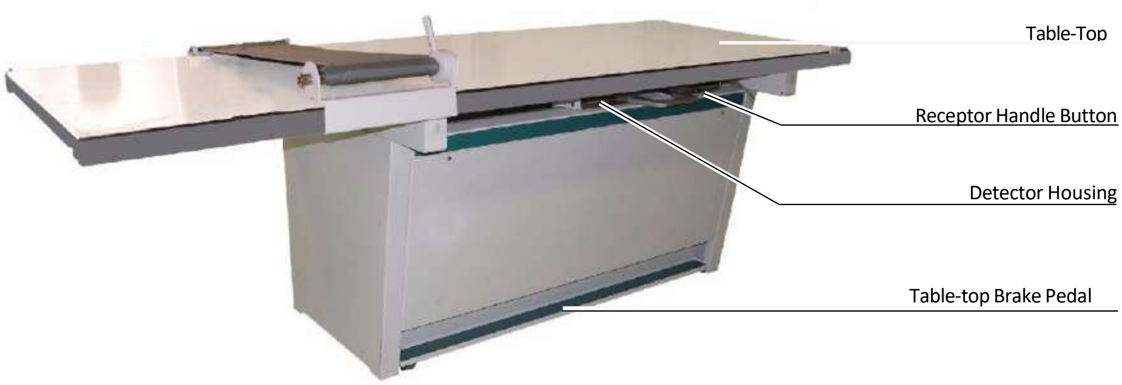
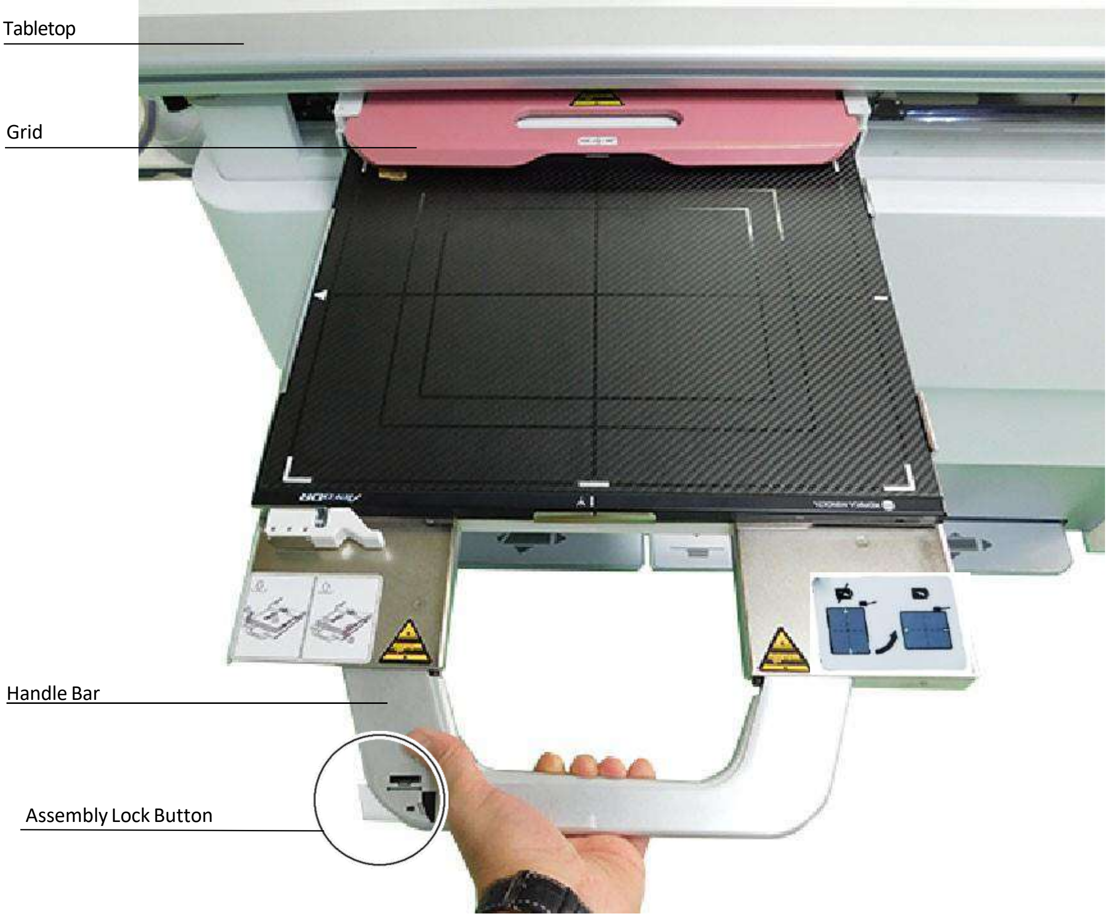


TABLE-TOP BRAKE PEDAL: The Table-Top is provided with a four-way floating movement for improved patient positioning. Pressing and maintaining the pedal down will release the longitudinal and transverse brakes of the Table-Top. Release the pedal to lock into position.

5.4.3 PORTABLE RECEPTOR ASSEMBLY FOR TABLE

Illustration 14
Portable Receptor Assembly in the Rad Table



5.4.3.1 PORTABLE RECEPTOR ASSEMBLY WITH NON-ROTATING TRAY

The Portable Receptor Assembly with Non-Rotating Tray is designed to conveniently house a Portable Detector, an Ion Chamber and a Grid. The Operator can load the Digital Detector in Portrait or Landscape position.

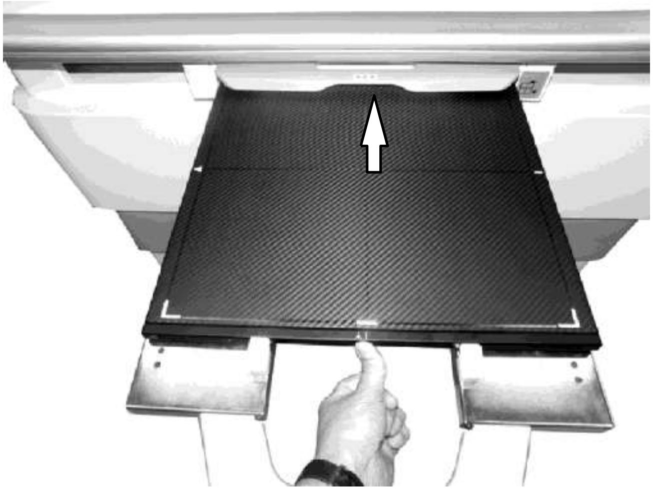
The Handle of the Assembly includes a Handle Bar for extracting the Tray.

The Handle also contains a Lock Button to move horizontally the Receptor Assembly.

LOADING AND UNLOADING THE TRAY

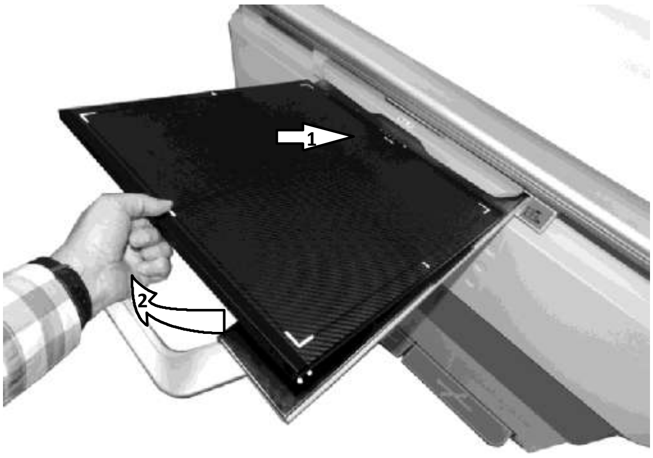
1. Grab the Handle and pull the Tray until it is completely out.
2. Then place the Detector centered in the Tray and push slightly theend-stop with the Detector end until it is fitted in the four stops of the tray.

Illustration 15
Detector Loading



3. To unload the Detector, grab the Handle and pull the Tray until it is completely out.
4. Push the Detector towards the end Stop and carefully remove the Detector.

Illustration 16 Detector Unloading



5.4.3.2 PORTABLE RECEPTOR ASSEMBLY WITH ROTATING TRAY

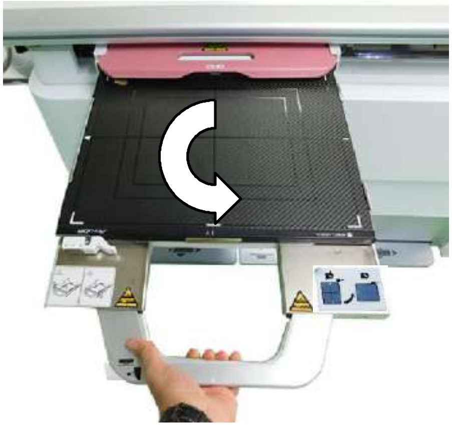
The Portable Receptor Assembly with Rotating Tray is designed to conveniently house a Portable Detector, an Ion Chamber and a Grid. It can also provide the system with information about the position and status of the Grid and Detector. The Digital Detector can be loaded in Portrait or Landscape position by rotating the Tray.

The Handle of the Assembly includes a Handle Bar for extracting the Tray. The Lock Button allows also the horizontal movement of the Receptor Assembly.

ROTATING THE TRAY

1. Pull out the Detector Tray to the end of its travel (Rotating Position).
2. Insert the Detector in the Tray.
3. Push the Tray Counterclockwise until it rotates 90° to achieve Portrait or Landscape position.

Illustration 17
Rotation of the Portable Receptor Assembly in the Rad Table



4. Insert the Tray.

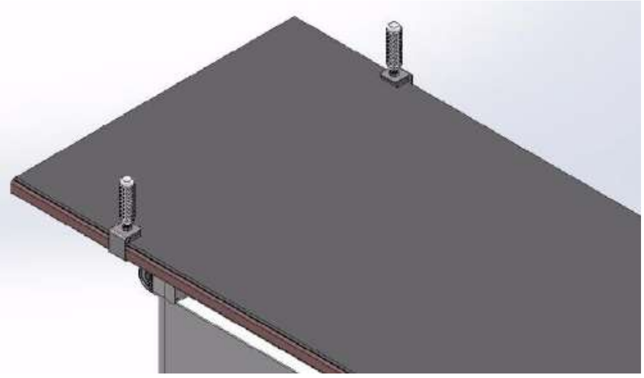
CAUTION

Due to moving parts within the Detector Assembly, all body parts and objects must be clear of possible Pinch Areas between the Detector Assembly and the Rotating Tray.

5.4.4 HAND GRIPS (OPTIONAL)

The Hand Grips are used by patients and operators to keep their hands away from the Tabletop edges and make the patient feel safe while the table-top is being positioned.

The Hand Grips are hand tightened along the Tabletop rails and locked at any position.



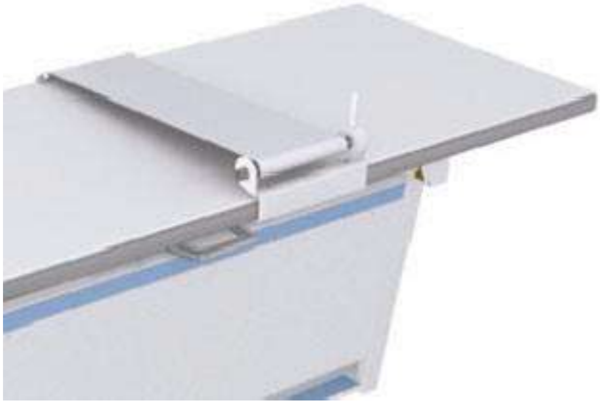
WARNING

USE ALWAYS THE HAND GRIPS TO AVOID INJURIES IN PATIENT HANDS OR FINGERS WHEN THE TABLETOP IS IN MOVEMENT. PATIENT’S HANDS MUST BE KEPT AWAY FROM THE TABLETOP EDGES IN EVERY MOMENT.

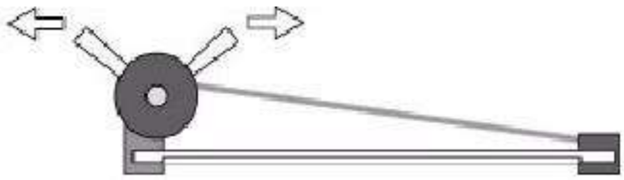
5.4.5 COMPRESSION BAND (OPTIONAL)

This device supplies compression to the anatomical area of interest in order to avoid unnecessary movements.

It is mounted on the Tabletop rails. Install both brackets of the Compression Band in the Table-top rails, roll the band in the shaft, engage the end of the band in with the hooks and use the lever lock or unlock the Compression Band to get the required tension of the Band.



Insert the Band Support and the opposite Support in the Table-top Rails



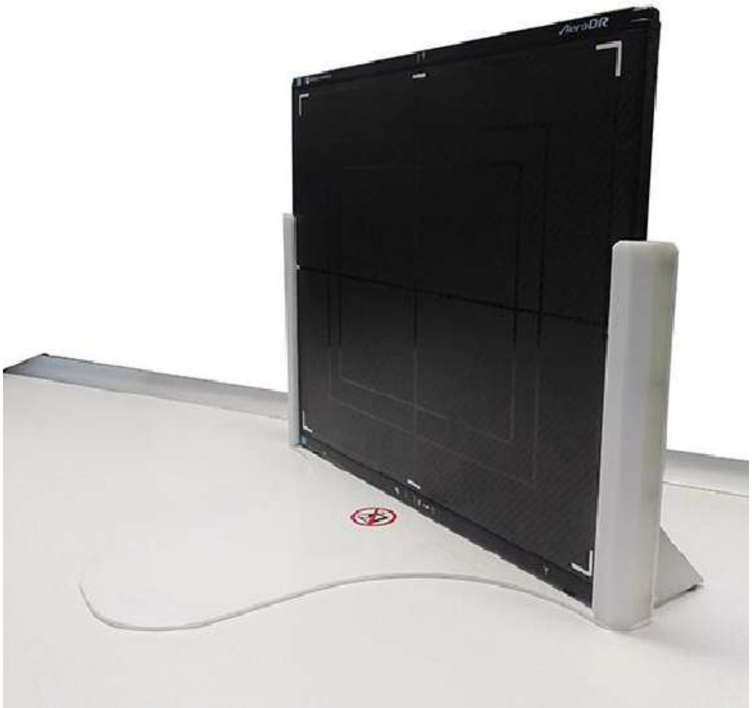
Extend the Band, hook one end and obtain the required tension with the Lock Lever

5.4.6 LATERAL DETECTOR HOLDER ON TABLE (OPTIONAL)

The Lateral Detector Holder is used for Table lateral work, including knee,shoulder, skull, etc.

This Lateral Detector Holder is placed directly on the Tabletop.It can

hold a Detector of 35 x 43 cm.



5.4.7 LATERAL DETECTOR HOLDER WITH TROLLEY (OPTIONAL)

This mobile detector holder is designed to accommodate portable DR detectorsof 35x43 cm (14”x17”).

WARNING

DRIVE THE EQUIPMENT WITH CARE. AVOID ANY IMPACT OF THE UNIT WITH WALLS, FURNITURE OR OTHER ELEMENTS IN THE ROOM THAT MAY CAUSE DAMAGE TO THE EQUIPMENT AND/OR THE OTHER ROOM ELEMENTS.

WARNING

DRIVE THE EQUIPMENT IN FLAT SURFACES. IF IT IS NOTPOSSIBLE, TRAVEL SURFACES SHOULD NOT EXCEED 5ºINCLINATION RAMPS, EXCEEDING THIS ANGLE COULDCAUSE SERIOUS DAMAGE TO THE EQUIPMENT, AND BYUSING IT UNDER THESE CONDITIONS COULDEVENTUALLY REPRESENT A DANGER FOR THE USER. HOLD ALWAYS THE VERTICAL BAR TO DRIVE CORRECTLYTHIS ACCESSORY EQUIPMENT.

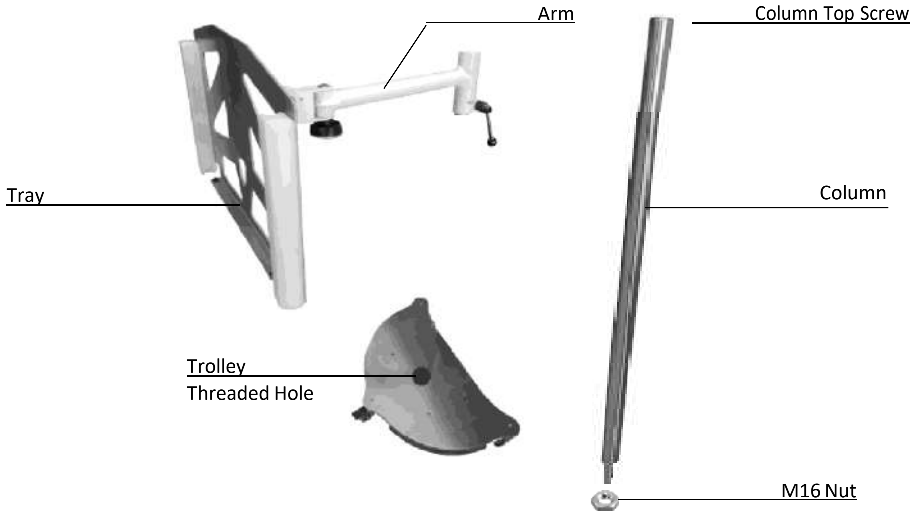
CAUTION

Do not try to step over any possible obstacle when movingthe holder, the equipment could fall over.

ASSEMBLY PROCEDURE

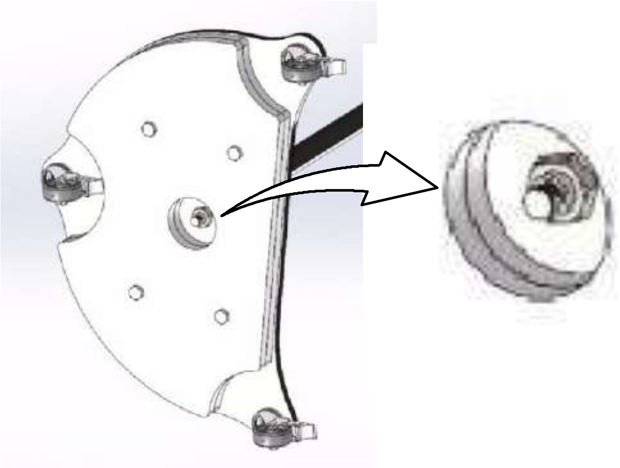
1. Remove the M16 nut attached to the Column and install the Column inthe Trolley threaded hole.

Illustration 18
Assembly Parts



2. Once the Column is inserted and hand tightened, install the M16 nut atthe end of the Column, apply a torque of 20 Nm.

Illustration 19
Nut Installation below the Trolley

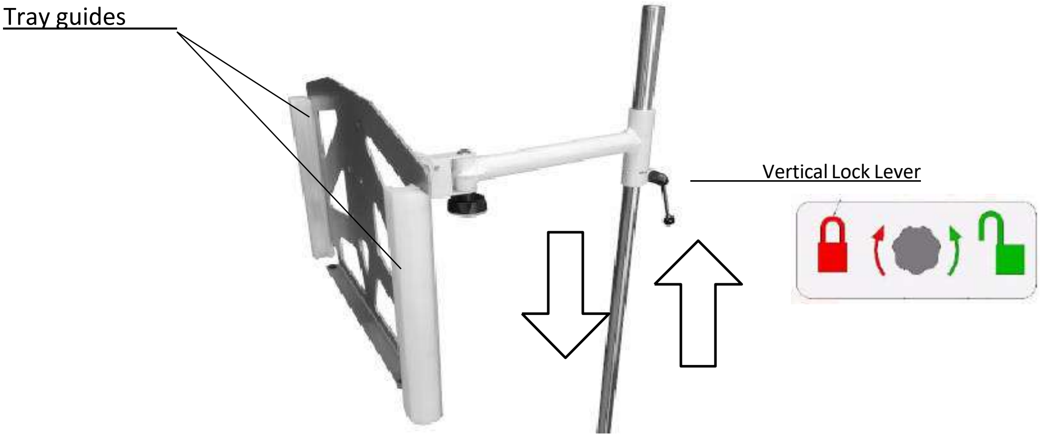


3. Remove the screw at the top of the Column and insert the Arm in the Column. Tighten the locking lever.
4. Reinstall the Screw at the Top of the Column.

USAGE

1. Make sure the Vertical Lock Lever is tightened and carefully insert the DR detector in the Tray (between the Guides), the orientation is always landscape.
2. Release the Arm Lock Lever to position the Detector at the desired height. Hold the Detector Support during this procedure to avoid the Armto fall down.

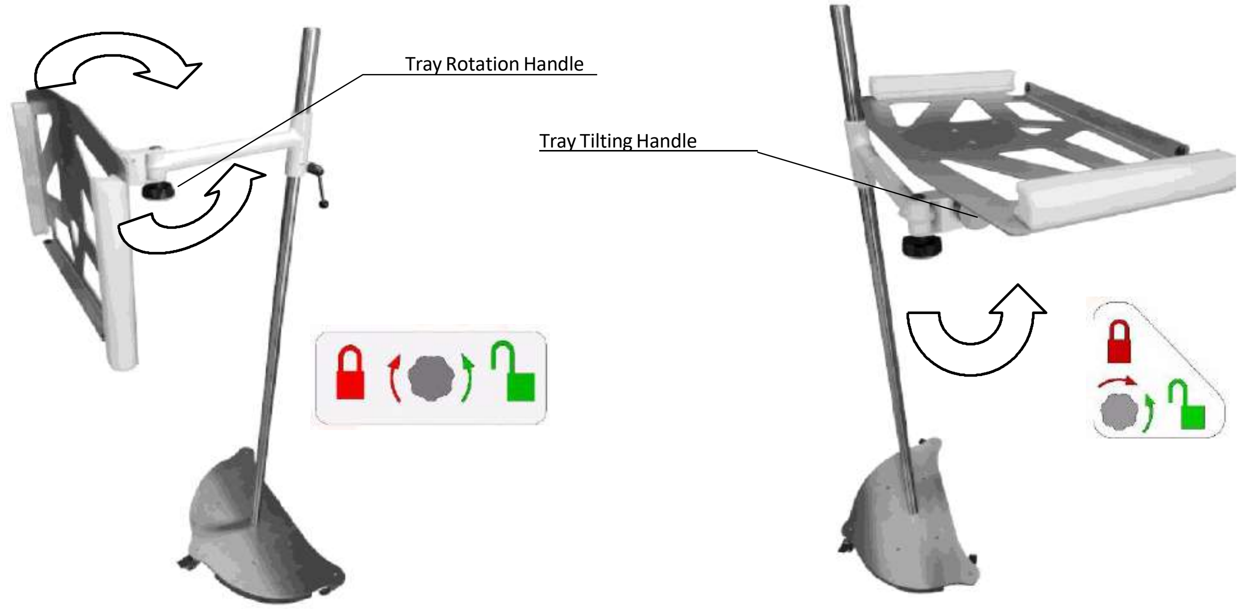
Illustration 20
Tray Guides and Vertical Lock Lever



3. The DR detector Tray includes a rotation adjustment handle of +/- 90°from the Arm.

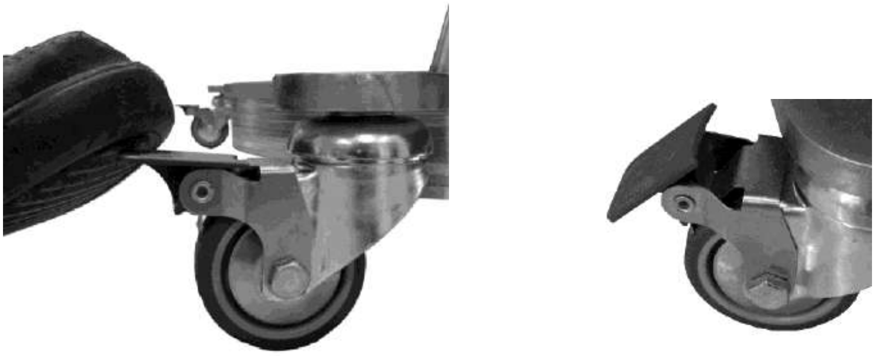
4. Also, the DR detector Tray includes a Tray Tilting adjustment handle of90°.

Illustration 21
Tray Rotation and Tray Tilting



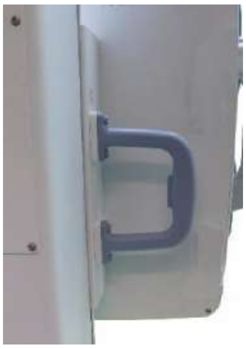
The mobile detector holder is provided with three wheels and each with its ownbrake pedal. Step on the brake pedal to lock the wheel.

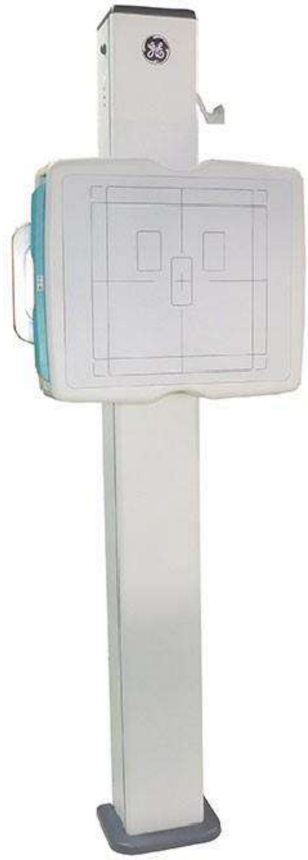
Illustration 22 Wheel
Brake Pedal



5.5 WALL STAND

The Wall Stand enables radiographic operations at different positions within the range of the Vertical Carriage travel.





ON / OFF: The Wall Stand is turned ON / OFF when the Table or the Control Unit, in case of Single Panel system, is turned ON / OFF.

VERTICAL CARRIAGE ASSEMBLY: The carriage slides vertically along the Column. It is controlled by an Electrical Lock.

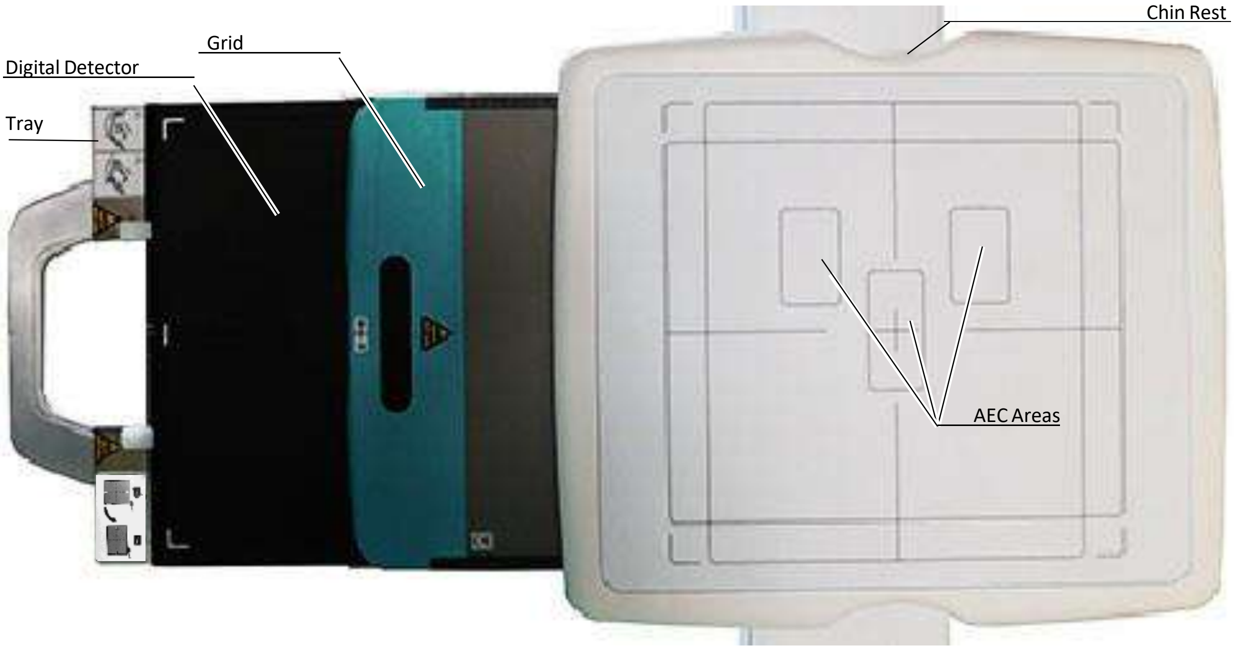
The lock is released by pressing the Carriage Handle Button in order to allow vertical movement and positioning with respect to patient. Release the button to lock in position. As well, the vertical movement is locked when the equipmentis turned OFF.

5.5.1 PORTABLE RECEPTOR ASSEMBLY FOR WALL STAND

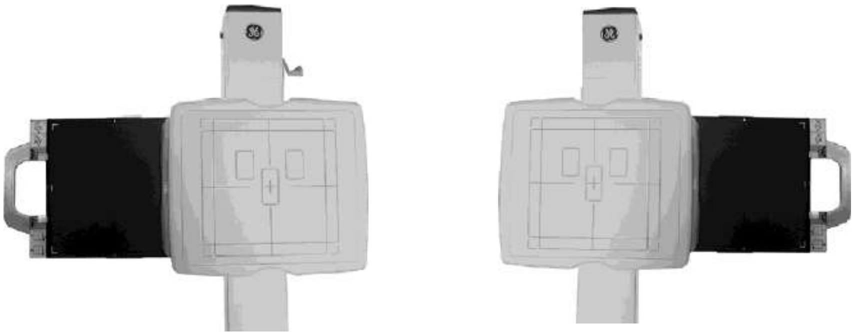
The Wall Stand can house a Portable Digital Detector. The Receptor Assemblyhas the following characteristics:

- Chin Rest.
- Ion Chamber Housing.
- Front Panel with AEC Detector Areas and very low absorption level.
- Removable Grid.

Illustration 23
Portable Receptor Assembly with Rotating Tray in the Wall Stand



Note **.** Loading of Receptor can be adapted at right or left side as percustomer order requirements.



5.5.1.1 PORTABLE RECEPTOR ASSEMBLY WITH NON-ROTATING TRAY

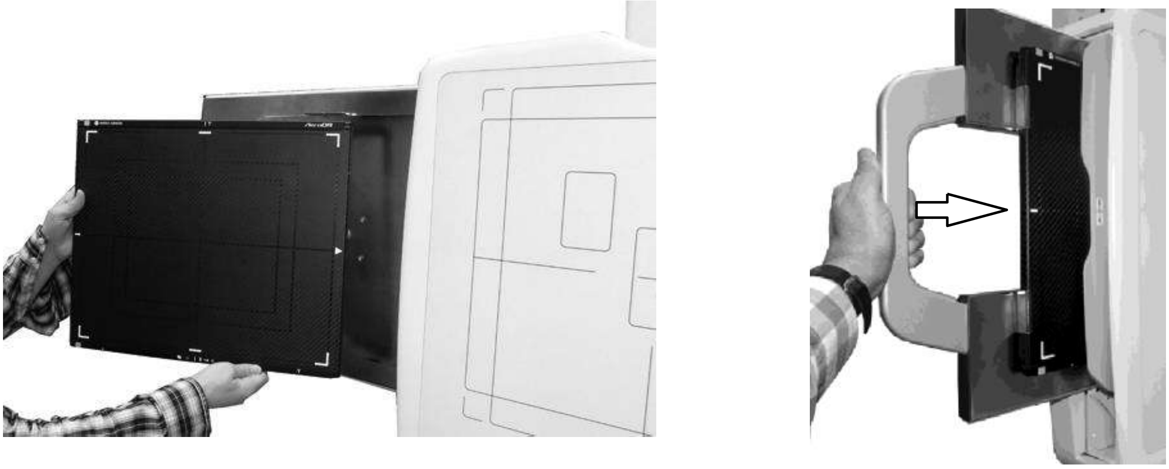
The Portable Receptor Assembly with Non-Rotating Tray is designed to conveniently house a Portable Detector, an Ion Chamber and a Grid. The Operator can load the Digital Detector in Portrait or Landscape position.

The Handle of the Assembly includes a Handle Bar for extracting the Tray.

LOADING AND UNLOADING THE TRAY

1. Grab the Handle and pull the Tray until it is completely out.
2. Then place the Detector centered on the Tray and insert it in the tray. Push slightly the end-stops with the Detector end until it is fitted in the frame of the tray.

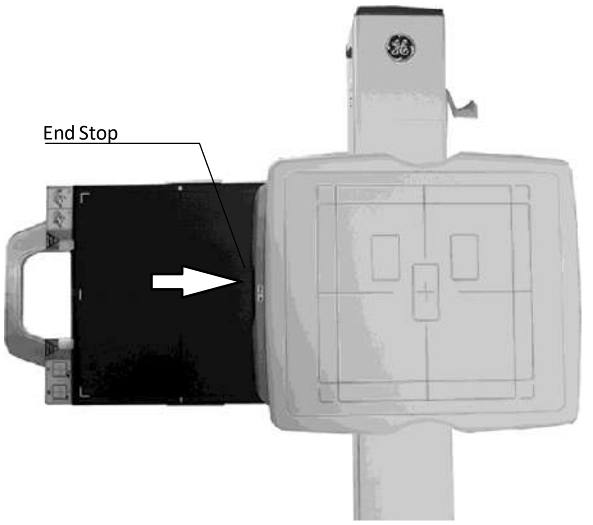
Illustration 24 Detector Loading

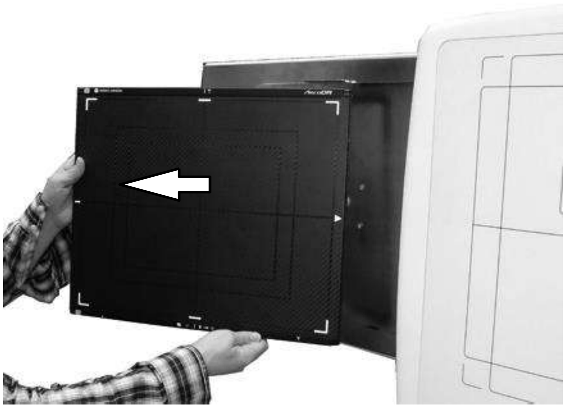


3. Fully insert the Tray inside the Detector Assembly.

4. To unload the Detector, grab the Handle and pull the Tray until it is completely out.

5. Push the Detector towards the end Stop and carefully lift and remove the Detector with both hands.





5.5.1.2 PORTABLE RECEPTOR ASSEMBLY WITH ROTATING TRAY

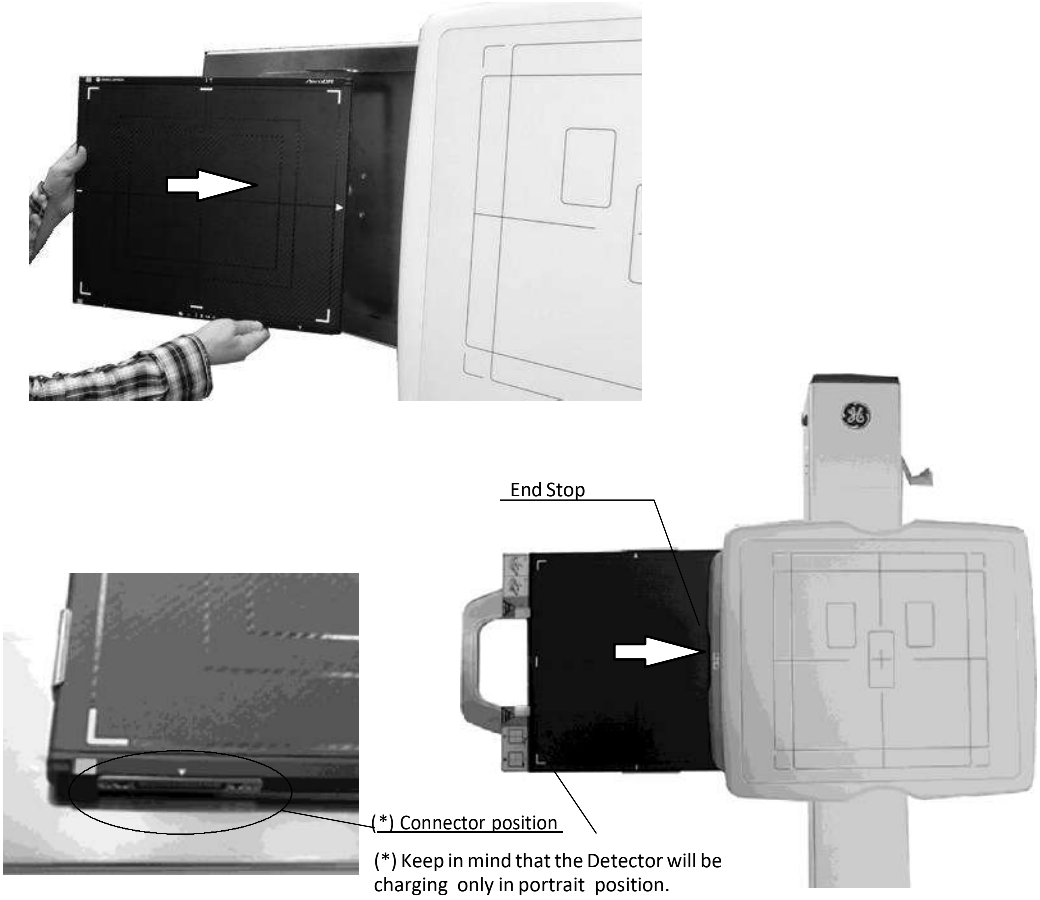
The Portable Receptor Assembly with Rotating Tray is designed to conveniently house a Portable Digital Detector, an Ion Chamber and a Grid. It can also provide the system with information about the position and status of the Grid and Detector. The Digital Detector is always loaded in Landscape position and can be manually rotated to Portrait position.

The Handle of the Assembly includes a Bar for extracting the Tray.

LOADING AND UNLOADING THE TRAY

1. Grab the Handle and pull the Tray until it is completely out.
2. Then place the **Detector in Landscape position** and insert it in the tray. Push slightly the end-stops with the Detector end until it is fitted in the frame of the tray.
3. Fully insert the Tray inside the Detector Assembly.
4. Keep in mind that the Detector is not connected when loaded in landscape position (the “loading” indicator is located at the Detector Interface Box).

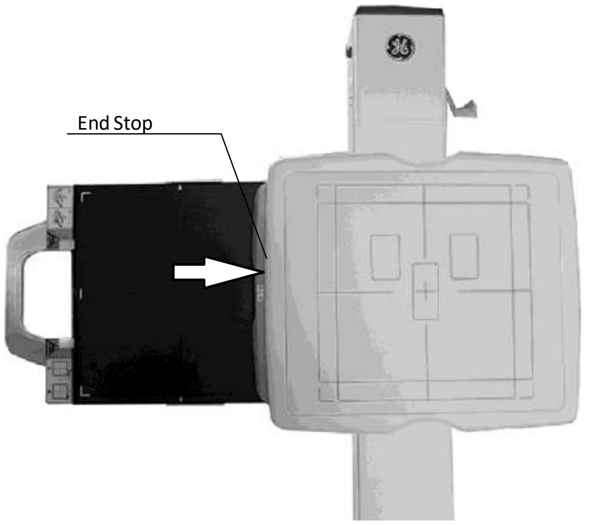
Illustration 25
Detector Loading

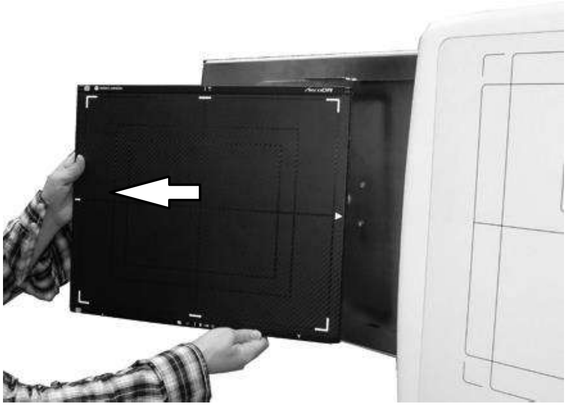


(*) Keep in mind that the Detector will be charging only in portrait position.

5. To unload the Detector, grab the Handle and pull the Tray until it is completely out.

6. Push the Detector towards the end Stop and carefully lift and remove the Detector with both hands.

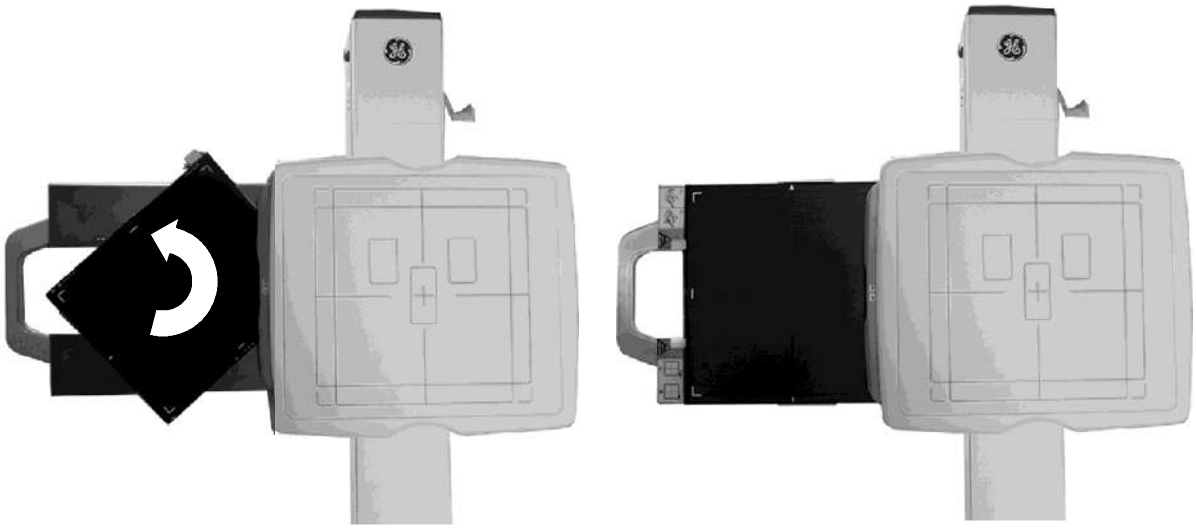




ROTATING THE TRAY

1. If the Detector is not inside the Tray, pull out the Detector Tray to the endof its travel (Rotating Position) and insert the Detector in the Tray.

2. Push carefully the Tray Counterclockwise with both hands until it rotates90° to achieve Portrait position.



3. Insert the Tray.

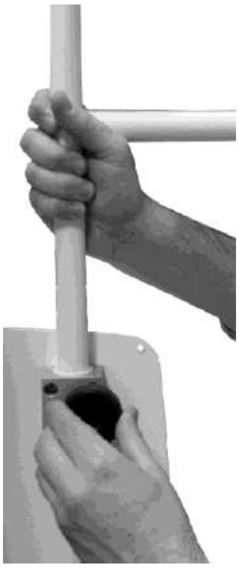
CAUTION

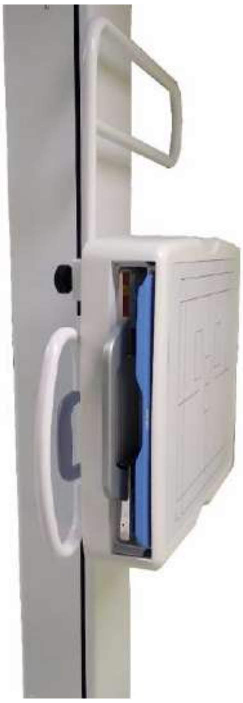
Due to moving parts within the Detector Assembly, all body parts and objects must be clear of possible Pinch Areas between the Detector Assembly and the Rotating Tray.

5.5.2 ARM SUPPORT (OPTIONAL)

The Wall Stand can be prepared to hold an Arm Support. In that case, the sideof the Column Carriage includes an Arm Support holder with a knob.

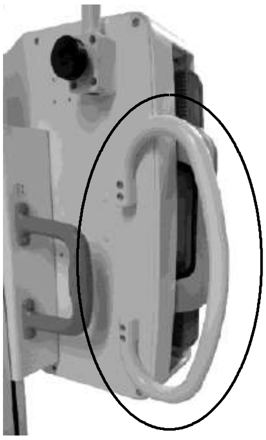
Insert the Arm Support in the holder and screw the knob.





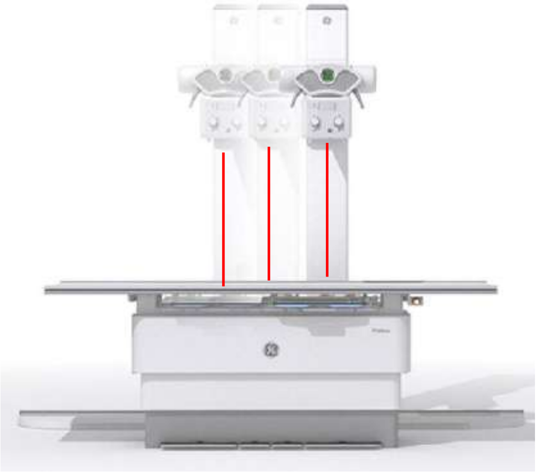
5.5.3 HAND GRIPS FOR WALL STAND (OPTIONAL)

The Wall Stand can be provided with Hand Grips. In that case, the Assemblyincludes the corresponding Hand Grips (x2) on two sides of it.



5.6 MECHANICAL TRACKING OF TABLE RECEPTOR (OPTIONAL)

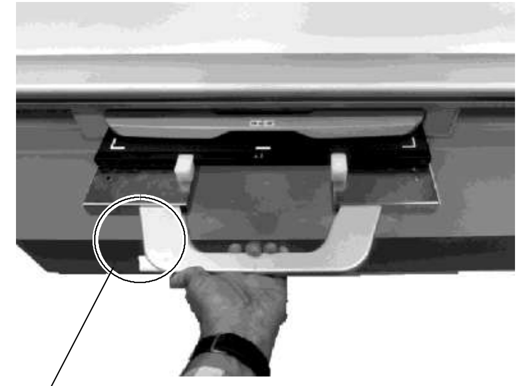
The system can be provided with an optional Mechanical Tracking Link of the Table Receptor when it is centered with respect to the Tube-Collimator. This Tracking Link device transmits the horizontal Column motion to the Receptor Assembly so the Receptor and the Column remain centered.



To engage the assembly, press the Table Receptor Lock Button and push the Receptor assembly toward the tracking link until the linking bar is engaged in the Tracking link channel.

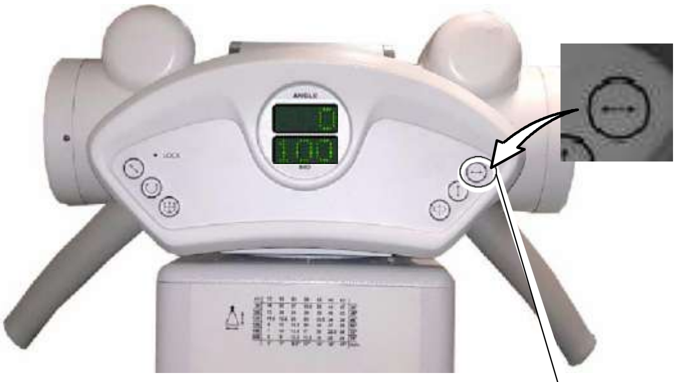
To disengage the assembly, press the Column horizontal movement button of the Column Control panel and push the assembly to the right or left travel end until the Table Receptor Assembly is disengaged.

To mechanically engage:



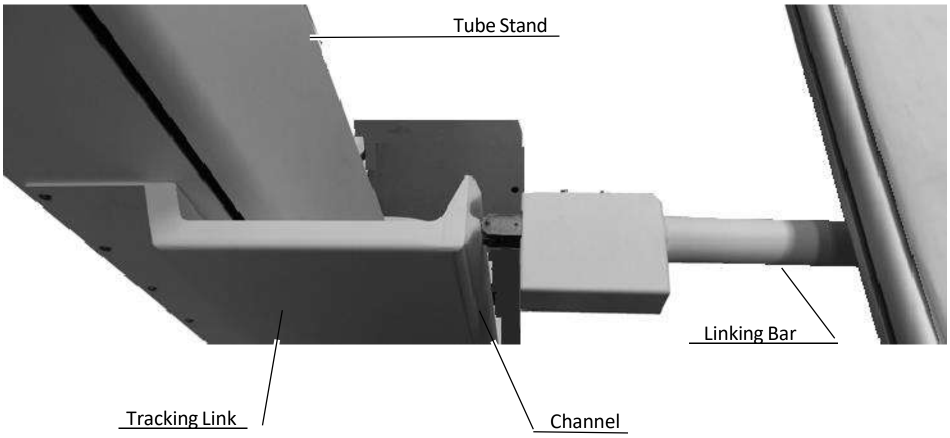
Press the Table Receptor Lock Button
and push the assembly to engage the device

To disengage the Assembly:



Press the Column Horizontal Movement Button and carry
the assembly to the left or right travel end until theReceptor
Assembly is disengaged

When the operator engages this device, (Linking Bar inside the Channel of the Column Tracking Link device), the Brake of the Receptor Assembly remains released.



5.7 GRIDS

Grids are intended to reduce scattered radiation and significantly enhance image quality. Before using the Grid, clean the front and back side with a dry cloth to remove dust and dirt.

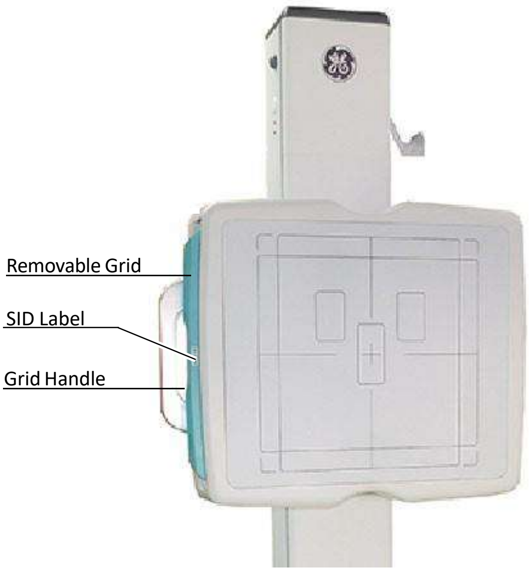
The Wall Stand and the Table may hold a Removable Grid. The Grids are labelled 100 cm (40”), 150 cm (59”) or 180 cm (70”). Use the corresponding Grid according to the SID (Source to Image Distance).

When inserting the Grid in the Grid Slot, pay special attention to the type of focalization distance of each Grid.

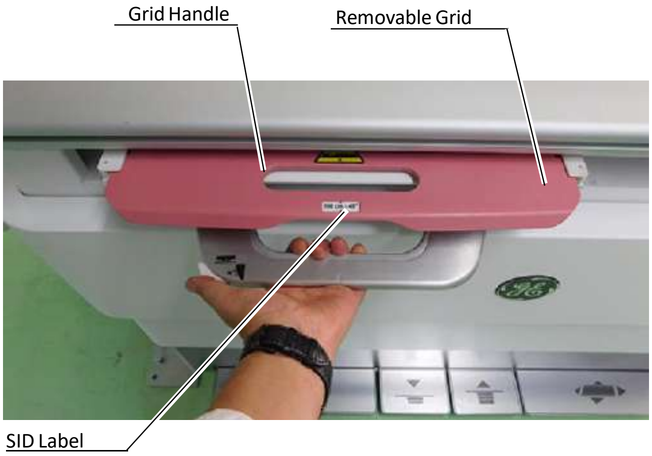
Check the correct insertion of the Grid in the slot with the label side facing the Tube. A click sound means that the Grid is in place.

CAUTION

Handle the Grid with care. Dropping the Grid could cause damage and reduced image quality.



Wall Stand



Table

Standard Grids:

40 lines/cm (103 lines/inch), 10:1 focalized at 1 m (40”).

40 lines/cm (103 lines/inch), 10:1 focalized at 1.5 m (59”).

40 lines/cm (103 lines/inch), 12:1 focalized at 1.8 m (70”).

5.8 X-RAY BEAM ALIGNMENT WITH RESPECT TO PATIENT

After selecting RAD parameters for the technique to be performed:

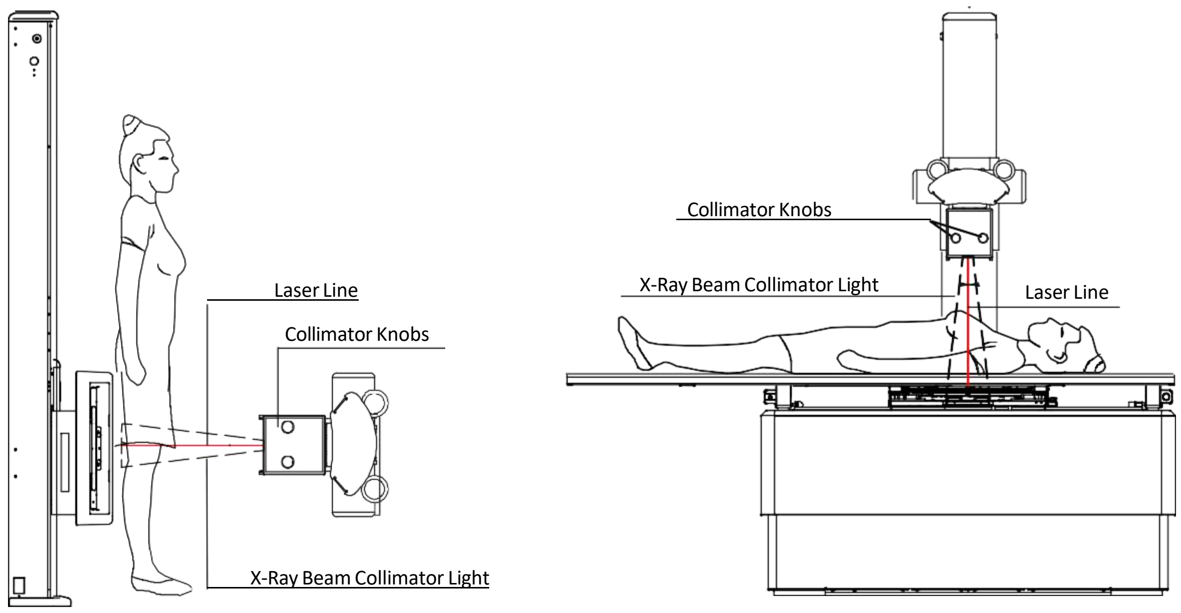
1. Point the X-Ray Tube-Collimator Assembly to the Image Receptor.

2. Center the Collimator light, which corresponds to the X-Ray beam, with respect to receptor. For that, use the Collimator Light centering marks and the laser line on the receptor handle if applicable.

3. Position the patient for the examination.

4. Turn ON the Collimator Lamp and adjust the field size with the Collimator controls.

Illustration 26 Patient Positioning



5. Perform any adjustment on the patient position, Receptor or Tube Collimator Assembly to assure that the X-Ray beam is correctly positioned.

WARNING

ALWAYS SELECT THE CORRECT FIELD SIZE TO AVOID EXCESSIVE RADIATION.

WARNING

THE X-RAY BEAM AXIS AND THE REFERENCE AXIS OF THE PLANE OF INTEREST COINCIDE AND ARE ORTHOGONAL WITH RESPECT TO THE PLANE OF INTEREST, IN EXAMS PERFORMED WITH THE DR DETECTOR PERPENDICULARLY POSITIONED WITH RESPECT TO THE TUBE-COLLIMATOR ASSEMBLY.

IN CASE OF EXAMS WHERE THE DR DETECTOR IS NOT PERPENDICULARLY POSITIONED WITH RESPECT TO THE TUBE-COLLIMATOR ASSEMBLY, THE X-RAY BEAM AXIS DOES NOT COINCIDE WITH THE REFERENCE AXIS OF THE PLANE OF INTEREST AND IT IS NOT ORTHOGONAL WITH RESPECT TO THE PLANE OF INTEREST. THEREFORE, THERESULTING IMAGE WILL BE DEFORMED.

IT IS THE OPERATOR RESPONSIBILITY THE PROPER POSITIONING OF THE PATIENT AND EQUIPMENT BEFOREPERFORMING AN EXAM.

SECTION 6 ERROR CODES

6.1 GENERATOR ERROR CODES

Error codes indicate the potential cause of a system failure. Error codes are shown on the operator Console, at the same time an alarm sounds. Correct the error cause and reset the error indication. *(Refer to Table 1).*

All these error codes can be preceded by the letter "*E*" (i.e., E01) (depends on the software application) and they will enable the operator to indirectly convey the possible source of error to service personnel. This may prevent the need for a service call or enable service personnel to anticipate corrective actions prior to arriving in site.

Table 1
Generator Error Codes

ERROR	DESCRIPTION	WHAT TO DO
E001	BACKUP TIMER - I2C ERROR I2C bus error while trying to access the external redundant backup timer.	Turn the Generator OFF, check the proper external cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E002	WRONG WS CONFIGURATION ERROR One or more workstations are not properly configured; a default value has been assigned.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E003	NO WS CONFIGURED ERROR No tube has been configured for any of the workstations, there is no workstation available and a default value has been assigned.	
E004	FLUORO ORDER ERROR The Fluoro order input signal is active during the Start- upsequence.	Release any external exposure device or buttons.Turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E005	EXP ORDER ERROR The Exposure order input signal is active during the Start- up sequence.	
E006	PREP ORDER ERROR The Preparation order input signal is active during the Start- up sequence.	
E007	TUBE2 MODEL ERROR The tube index (related to a tube in the tube list) configuredfor the tube 2 is outside boundaries, a default value has been assigned.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E008	TUBE1 MODEL ERROR The tube index (related to a tube in the tube list) configuredfor the tube 1 is outside boundaries, a default value has been assigned.	
E009	INVERTER ERROR (IGBT FAULT) The inverter module has been overloaded.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and wait 30 minutesbefore turning it ON again. If the equipment remains inoperative, turn it OFF and call Field Service.

Table 1 (*cont.*) Generator Error Codes

ERROR	DESCRIPTION	WHAT TO DO
E010	EEPROM CHECK ERROR Erroneous data stored in the EEPROM.	Turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E011	LOAD CAPACITOR ERROR Error while charging the load capacitors. The DC bus voltagedoes not reach the right value during Start- Up.	
E012	MA RANGE ERROR Tube current out of range during exposure.	Press the "*Reset*" button. Repeat with same technique values, If the error code persists try withanother combinations of kV and mA values. If the equipment remains inoperative, turn it OFF and call Field Service.
E013	KVP RANGE ERROR Anode- Cathode voltage out of range during exposure.	
E014	KVP RAMP ERROR Anode- Cathode voltage does not reach the final value in the designated rise time.	
E015	LARGE FIL CURRENT RANGE ERROR Large filament current out of range.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E016	SMALL FIL CURRENT RANGE ERROR Small filament current out of range.	
E018	ROTOR ERROR The Anode Rotor Controller (starter) is not sending back the Ready condition within the designated time.	
E019	MA WITHOUT EXP ERROR Tube current without exposure order from the microcontroller.	
E020	KVP WITHOUT EXP ERROR Anode-Cathode voltage without exposure order from the microcontroller.	
E023	EEPROM ERROR Error while writing in the EEPROM.	Turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E024	BUCKY/DIGITAL PANEL ERROR The designated time has elapsed since the exposure signalwas activated while the equipment was "Ready" without any acknowledge from the WorkStation configured as Bucky or Digital Panel.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF, check the properexternal cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E025	LARGE FIL DEMAND ERROR Large filament current demand above the limit.	Press the "*Reset*" button. **Repeat with same technique values, If the error code persists try with** another combinations of kV and mA values. If the equipment remains inoperative, turn it OFF and call Field Service.
E026	SMALL FIL DEMAND ERROR Small filament current demand above the limit.	
E027	KVP POTENTIOMETER - I2C ERROR I2C bus error while trying to access the digital potentiometerthat adjusts the kV oscillator.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E028	ABC POTENTIOMETER - I2C ERROR I2C bus error while trying to access the digital potentiometersthat adjust the ABC window.	
E029	GENERATOR OVERHEAT ERROR Generator heat capacity exceeded. "Warning".	Turn the Generator OFF and wait 30 minutes before turning it ON againor decrease the exposure parameters. If the equipment remains inoperative, turn it OFF and call Field Service

Table 1 (*cont*.) Generator Error Codes

ERROR	DESCRIPTION	WHAT TO DO
E030	CORRUPT RTC ERROR Wrong date stored in the Real Time Clock (RTC) and/or inthe time stamp.	Press the “*Reset*” button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E031	TIME STAMP CHECK ERROR The time stamp checksum is wrong.	
E032	RTC - I2C ERROR I2C bus error while trying to access the Real Time Clock(RTC).	
E033	COMMUNICATIONS ERROR (Comms lost at the Console)The remote console has lost the communications with the generator.	Press the “*Reset*” button. If the error code persists, turn the Generator OFF, check the properexternal cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E034	TANK PRESOSTAT ERROR Tank presostat opened.	Turn the Generator OFF and wait 30 minutes before turning it ON again.If the equipment remains inoperative, turn it OFF and call Field Service.
E035	BUCKY MOTION (X-RAY ACK) ERROR The acknowledge for X-rays from the Bucky or FPD hasbeen lost before the end of the exposure.	Press the “*Reset*” button. If the error code persists, turn the Generator OFF, check the proper external cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E036	TUBE THERMOSTAT ERROR Tube thermostat opened. ”Warning”.	Turn the Generator OFF and wait 30 minutes before turning it ON again.If the equipment remains inoperative, turn it OFF and call Field Service.
E037	TUBE OVERLOAD ERROR Tube ratings exceeded or not enough Heat Units to performthe selected exposure. “Warning”.	Wait for the Tube to cool down or decrease the exposure parameters. If the equipment remains inoperative, turn it OFF and call Field Service.
E038	+5V POWER SUPPLY FAILURE +5V power supply is out of range.	Press the “*Reset*” button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E039	+15V POWER SUPPLY FAILURE +15V power supply is out of range.	
E040	IMBALANCED KVP ERROR Imbalanced kVp, there is not the same voltage in Anode and Cathode branches.	
E041	IMBALANCED MA ERROR Imbalanced mA, there is not the same current in Anode and Cathode branches.	
E042	CORRUPT COUNTERS ERROR The counters checksum is wrong.	
E043	CORRUPT ERROR LOG ERROR The error log checksum is wrong.	
E044	EEPROM - I2C ERROR I2C bus error while trying to access the EEPROM.	
E045	CORRUPT TUBE DATA ERROR The tube data checksum is wrong.	
E046	BUSY BUS - I2C ERROR I2C bus error, the bus remains always busy.	
E047	LICENCE — I2C ERROR I2C bus error while trying to access the Licence.	

Table 1 (*cont*.) Generator Error Codes

ERROR	DESCRIPTION	WHAT TO DO
E048	DOOR ABORTED EXPOSURE The door switch has been opened before the end of the exposure.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E049	COMMUNICATIONS ERROR (Comms lost at the generator) The generator has lost the communications with the remoteconsole.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF, check the proper external cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E050	ABORTED EXPOSURE ERROR The user has released the exposure device/s before the endof the exposure (Prep and/or Exp).	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E051	WRONG EXPOSURE TIME ERROR The exposure time is above the maximum (very unlikely) or itis so short that it is not reachable according to the present configuration (rise time and kVp decay/high voltage capacity).	Press the "*Reset*" button. If the error code persists, increase the exposure time. If the equipment remains inoperative, turn it OFF and call Field Service.
E053	FLUORO SYNC ERROR The timeout for receiving the fluoro synchronism pulse has elapsed.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF, check the proper external cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E054	DIGITAL SYNC ERROR The timeout for receiving the Digital/DSI synchronism pulsehas elapsed.	
E055	NOT ENOUGH DOSE ERROR The backup timer has elapsed before the AEC or the Systemends the exposure.	
E056	NOT ENOUGH BACKUP TIME ERROR The backup timer has elapsed before the Tomograph endsthe exposure.	
E057	DUAL ENERGY ERROR It is not possible to load the Dual Energy parameters for thenext exposure.	Press the "*Reset*" button. Wait for the Tube/Generator to cool down or select a more suitable technique for the current thermal status. If the equipment remains inoperative, turn it OFF and call Field Service.
E058	TUBE1 DATA ERROR The tube data pointed by the tube 1 index are not defined, a default tube has been selected.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E059	TUBE2 DATA ERROR The tube data pointed by the tube 2 index are not defined, a default tube has been selected.	
E060	AUTOCAL ERROR The number of exposures to autocalibrate a mA station hasrun out.	
E061	LICENCE ERROR There has been an error while trying to access the Licencedata. Default options have been selected.	
E062	AEC ERROR AEC selection error.	Press the "*Reset*" button. If the error code persists, try selecting different parameters. If the equipment remains inoperative, turn it OFF and call Field Service.
E063	ROTOR READY ERROR The Ready from the starter has been lost before the end ofthe exposure.	

Table 1 (*cont.*) Generator Error Codes

ERROR	DESCRIPTION	WHAT TO DO
E064	TANK FEEDBACK ERROR The Feedback connector from the tank is not plugged in.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E065	+24 DELAYED POWER SUPPLY FAILURE +24V delayed power is out of range.	
E066	+24 (UNR) POWER SUPPLY FAILURE +24V (unregulated) power supply is out of range.	
E067	- 15 POWER SUPPLY FAILURE - 15V power supply is out of range.	
E068	+3.3 POWER SUPPLY FAILURE +3.3V power supply is out of range.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E069	+24 PERMANENT (UNR) POWER SUPPLY FAILURE +24 permanent (unregulated) power supply is out of range.	
E070	AEC RAPID TERMINATION Exposure was aborted because a lack of radiation receivedon the AEC.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF, check the proper external cable connections and then turn the Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E071	INTERLOCK ERROR Exposure was aborted because an interlock configured to abort exposures has been deactivated during the exposure.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E072	POSITIONER OK ERROR Exposure was aborted because the signal Positioner OK (configured to be used as an interlock) has been deactivated during the exposure.	
E073	XON FEEDBACK ERROR Exposure was aborted because the signal XON Feedback has not been activated or has been deactivated during theexposure.	
E074	COP GENERATOR RESET ERROR The generator has been reset because of the COP module.	
E075	CLK GENERATOR RESET ERROR The generator has been reset because of the CLK module.	
E076	TRAP GENERATOR RESET ERROR The generator has been reset because of an illegal operationcode.	
E077	SOFTWARE INTERRUPT GENERATOR RESET ERROR The generator has been reset because of a software interrupt.	
E078	MEMORY OVERFLOW INTERRUPT GENERATOR RESETERROR The generator has been reset because of a memory overflow interrupt.	
E079	REQUIRED MA STATIONS CAL ERROR The required mA stations have not been calibrated.	At least one required mA station has not been properly calibrated.Call Field Service for mA stations recalibration.

Table 1 (*cont.*) Generator Error Codes

ERROR	DESCRIPTION	WHAT TO DO
E091	HEARTBEAT ERROR (R2CP Protocol) The main controller is not receiving the Heartbeat messages within the configured timeout. R2CP (CAN) protocol functionality.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E099	INCORRECT MESSAGE Last message was not recognized as a SHFR protocol message.	
E101	NO SPEED AVAILABLE The starter does not allow starting the tube neither in high speed nor in low one.	
E102	LOW SPEED UNAVAILABLE The starter does not allow starting the tube in low speed.	
E103	HIGH SPEED UNAVAILABLE The starter does not allow starting the tube in high speed.	
E104	DOSIMETER TUBE 1 NO ANSWER ERROR The dosimeter of the tube 1 doesn't respond.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF, check the proper external cable connections and integrity of the dosimeter and then turnthe Generator ON. If the equipment remains inoperative, turn it OFF and call Field Service.
E105	DOSIMETER TUBE 1 TEST ERROR The dosimeter of the tube 1 didn't complete initialization test.	
E106	DOSIMETER TUBE 1 STATUS ERROR The dosimeter of the tube 1 answered a wrong or unexpected status.	
E107	DOSIMETER TUBE 2 NO ANSWER ERROR The dosimeter of the tube 2 doesn't respond.	
E108	DOSIMETER TUBE 2 TEST ERROR The dosimeter of the tube 2 didn't complete initialization test.	
E109	DOSIMETER TUBE 2 STATUS ERROR The dosimeter of the tube 2 answered a wrong or unexpected status.	
E125 to E240	System failure related to Dual Speed Starter.	Press the "*Reset*" button. If the error code persists, turn the Generator OFF and ON. If the equipment remains inoperative, turn it OFF and call Field Service.

6.2 SYSTEM ERROR CODES IN THE CONTROL PANEL

Error codes indicate the potential cause of a system failure. They appear on the Digital Control Panel Display and will enable the operator to indirectly convey the possible source of error to service personnel. This may prevent the need for a service call or enable service personnel to anticipate corrective actions prior to arriving on site.

Table 2
System Error Codes

ERROR	DESCRIPTION	WHAT TO DO
"E10"	Failure in memory Integrated Circuit.	Turn the System OFF / ON. If the error remains, turn it OFFand call Field Service.
"rAN Err"	Failure in Microcontroller.	Turn the System OFF / ON. If the error remains, turn it OFFand call Field Service.

This page intentionally left blank.

SECTION 7 OPERATING SEQUENCES

7.1 START-UP ROUTINE

Start-up the system as described in Section 3.

7.2 X-RAY TUBE WARM-UP PROCEDURE

CAUTION

Before effecting X-ray exposures ensure that the Tube is properly warmed-up. Make sure that no persons will be inadvertently exposed to unnecessary X-rays during this procedure.

Routine exposures should not be effected unless the Tube is previously warmed-up, this prolongs X-ray Tube life.

It is recommended that the following procedure will be performed for X-ray Tube warm-up, at the start of each day and when the Tube selected has not been in use for approximately one hour.

CAUTION

This warm-up procedure is used for a typical X-ray Tube. Consult the X-ray Tube manufacturer instructions for the actual Tube in use, comparing its recommendations with this procedure. If there is conflict with this procedure, comply with the Tube manufacturer's instructions.

Perform X-ray Tube warm-up as follows:

- Close the collimator blades fully.
- Select 70 kV, 100 mAs, 200 mA and 500 ms exposure.
- Insure that no one will be exposed.
- Make a total of three exposures, 15 seconds apart.

CAUTION

Excessive filament evaporation shortens X-ray Tube life. Minimize evaporation by keeping Exposure "Preparation" time to an absolute minimum.

7.3 RADIOGRAPHIC OPERATION

RAD operation can be performed in the following modes:

- One point control by selecting kV with AEC operations.
- Two point control by selecting kVp and mAs independently.
- Three point control by selecting kV, mA and Exposure Time independently.

A typical RAD examination sequence is as indicated below:

1. Make sure that the X-ray Tube is properly warmed-up.
2. Position the patient for the examination.
3. Select the "*DR Detector*" or "*Free Exposure*" *workstation*, and technique parameters using the Generator controls on the software Console.

⚠ **CAUTION**

Confirm the detector is in the proper receptor for the selected workflow prior to exposure.

4. Instruct patient to maintain the required position. Prepare the X-ray Tube by pressing the Handswitch push-button to the "*Prep*" position and maintain it until the "*Prep*" indicator is illuminated.
5. Instruct patient to remain still and to hold his breath as required, then make the X-ray exposure by pressing the Handswitch push-button fully to the "*Exp*" position and maintain it throughout the exposure. The "*X-ray On*" indicator will light and an alarm will sound during the exposure.
6. When the exposure is finished, release the Handswitch push-button.
7. Repeat the procedure if additional exposures are desired.

7.4 AEC OPERATION

The proper use of AEC requires accurate patient positioning. For examination using AEC, the operator will need to select the desired AEC parameters as follows:

1. Make sure that the X-ray Tube is properly warmed-up.
2. Position the patient for the examination.
3. Select the "*DR Detector*" workstation and enter in AEC mode byselecting at least one Area Detector "*Field*" on the Software Console.
4. If required, choose another *"Sensitivity"* and adjust the "*Density*" setting("*0*" is the normal setting).
5. Select the technique parameters using the Generator controls on the Console.
6. Continue with the radiographic operation. *(Refer to Section 7.3 - step 4.)*

7.4.1 AEC RAPID TERMINATION

Rapid Termination is a Safety device that cuts the X-ray exposure in case of an error with the selected Ion Chamber or the selected parameters (short backup time) are not appropriate for an exposure with AEC.

AEC Rapid Termination compares the AEC ramp with a 25% of the final value at the 30% of the Backup Time. It is activated after 30% of the exposure back-up time and after 10 ms of exposure, both conditions have to be fulfilled.

For a proper operation of the Rapid Termination feature, the operator must select an exposure back-up time higher or equal to 40 ms whenever the AEC is ON. Anyway, the back-up time must be selected according to the examination and patient, this exposure time is slightly higher than the worse case expected.

When AEC Rapid Termination is activated, Error Code "E070" is shown.

7.4.2 HOW TO VERIFY THE PROPER FUNCTIONING OF THE AUTOMATIC EXPOSURECONTROL

Note . *This procedure is not mandatory, it is only a method so that the operator can verify the proper functioning of the Automatic Exposure Control.*

1. Ensure that X-ray Tube has been properly warmed up.
2. Align and center the X-Ray Tube to the DR Detector.
3. Set a SID of 1 m (40”).
4. Collimate the X-Ray beam so that it completely covers all three Ion Chambers (Left, Center and Right).
5. Place on the Table-Top and within the X-Ray beam a homogeneous phantom (e.g. a bucket with 10 cm of water) that covers all three Ion Chambers.
6. Set a technique, for example: 70 kVp, 250 mA, 1.0 second back-up time.
7. Select “*Center*” Ion Chamber and Density “*Normal - 0*”.

   Make a RAD exposure and note the exposure mAs and time. For a proper functioning of the AEC, the exposure must not be aborted by the AEC back-up timer.
8. Deselect “*Center*” and select “*Left*” Ion Chamber.

   Make a RAD exposure and note the exposure mAs and time. For a proper functioning of the AEC, the exposure must not be aborted by the AEC back-up timer.
9. Deselect “*Left*” and select “*Right*” Ion Chamber.

   Make a RAD exposure and note the exposure mAs and time. For a proper functioning of the AEC, the exposure must not be aborted by the AEC back-up timer.
10. The noted Exposure mAs and time have to be equal ¦10% between all three Ion Chambers. If not, contact Service.

11. Repeat the above steps changing the Density and/or the homogeneous phantom (e.g. a bucket with 5 cm of water).

    Compare the Exposure mAs and time between each Ion Chamber and between the values noted before (for a lower density or less water, lower mAs and a shorter time; for half of density or half of water, half of mAs / time). If not, contact Service.

12. Finally, check the proper functioning of the AEC back-up timer by making a RAD exposure with the selections indicated in step 6., but with the Collimator blades fully closed.

    The exposure must be finished by the AEC back-up timer, that is, the exposure length is 1.0 second. If not, contact Service.

7.5 USING AND MAINTAINING THE DIGITAL DETECTOR

Before Exposure, check the equipment daily and confirm that it works properly.

The action of the Air-Conditioning or Heating may produce condensation in the equipment, wait until the condensation evaporates before performing an exposure. As a general rule, raise or lower the room temperature gradually to avoid condensation.

During exposure, do not use the Detector near devices generating a strong magnetic field.

For Wireless Detectors, do not cover the IR Data Port with hands or other parts of the body and do not use the selected frequency channel (2.4 GHz band) for other wireless devices.

After every examination, wipe with a cloth slightly damped the patient contact surfaces as well as the handle and Grid with disinfectants such as ethanol. For cleaning, wipe with a cloth damped in neutral detergent.

Note **.** *For further information on the Digital Detector Handling and Maintenance, refer to the Digital Detector manuals.*

7.6 GUIDELINES FOR PEDIATRIC APPLICATIONS

WARNING

THE PRACTITIONER WILL BE THE ULTIMATE RESPONSIBLE OF APPLYING THE PROPER DOSE TO THE PATIENT FOR RADIOGRAPHIC PROCEDURES. THE PURPOSE OF THESE GUIDELINES IS TO HELP THE PRACTITIONER TO MINIMIZE POTENTIAL RISKS.

CAUTION

Use special care when imaging patients outside the typical adult size range.

CAUTION

Children are more radiosensitive than adults. Adopting the Image Gently campaign guidelines and reducing dose for radiographic procedures while maintaining acceptable clinical image quality will benefit patients.

Please review the following link and reduce pediatric technique factorsaccordingly: *http://www.pedrad.org/associations/5364/ig/*

As a general rule, next recommendations shall be observed in pediatrics:

- X-Ray Generator must have short exposures times.
- AEC must be used carefully, preferably use manual technique setting, applying lower doses.
- If possible, use high kVp techniques.
- As the use of Grids require higher doses, never use Grids in pediatric exams. Remove the Grid from the receptor assembly and select the lower possible doses. If the Grid can not be detached, pediatric exams can not be performed using this device.

Positioning the pediatric patient:

Pediatric patients are not as likely as adults to understand the need to remain still during the procedure. Therefore it makes sense to provide aids to maintaining stable positioning. It is strongly recommended the use **of immobilizing devices** such as bean bags and restraint systems (foam wedges, adhesive tapes, etc.) to avoid the need of repeating exposures due to the movement of the pediatric patients. Whenever possible use techniques based on the lowest exposure times.

Shielding:

We recommend you provide extra **shielding of radiosensitive organs or tissues such as eyes, gonads and thyroid glands.** Applying a correct collimation will help to protect the patient against excessive radiation as well. Please review the following scientific literature regarding pediatric radiosensitivity: *GROSSMAN, Herman. "Radiation Protection in Diagnostic Radiography of Children". Pediatric Radiology, Vol. 51, (No. 1): 141- 144, January, 1973: http://pediatrics.aappublications.org/cgi/reprint/51/1/141*.

Technique factors:

You should take steps to reduce technique factors to the lowest possible levels consistent with good image acquisition.

For example if your adult abdomen settings are: 70- 85 kVp, 200- 400 mA, 15- 80 mAs, consider starting at 65- 75 kVp, 100- 160 mA, 2.5- 10 mAs for a pediatric patient. Whenever possible use high kVp techniques and large SID (Source Image Distance).

Summary:

- Image only when there is a clear medical benefit.
- Image only the indicated area.
- Use the lowest amount of radiation for adequate imaging based on size of the child (reducing tube output - kVp and mAs).
- Try to use always short exposure times, large SID values and immobilizing devices.
- Avoid multiple scans and use alternative diagnostic studies (such as ultrasound or MRI) when possible.

This page intentionally left blank.

SECTION 8 PERIODIC MAINTENANCE

In order to assure continued safe performance of the equipment, a periodic maintenance program must be established. It is the **owner's responsibility** to supply or arrange for this service.

There are two levels of maintenance, the first consists of tasks which are performed by the user/operator, and the second are those tasks to be performed by qualified X-ray service personnel.

The first periodic maintenance service should be performed twelve (12) months after installation, and the subsequent services at twelve (12) month intervals.

The manufacturer undertakes to have available spare parts for this equipment at least for ten (10) years after the unit manufacturing.

⚠ WARNING

NEVER ATTEMPT TO PERFORM MAINTENANCE TASKS WHILE THE ME EQUIPMENT IN USE WITH A PATIENT.

8.1 OPERATOR TASKS

The tasks of this periodic maintenance shall include the following items:

⚠ DANGER !

DO NOT REMOVE ANY COVER, DISASSEMBLE OR MANIPULATE INTERNAL COMPONENTS IN THE UNIT. THESE ACTIONS COULD CAUSE SERIOUS PERSONAL INJURIES AND / OR EQUIPMENT DAMAGE.

⚠ WARNING

NEVER ATTEMPT TO CLEAN ANY PART OF THE UNIT WHEN IT IS SWITCHED ON. ALWAYS SWITCH OFF THE EQUIPMENT AND ISOLATE THE MAINS ELECTRICALSUPPLY BEFORE CLEANING.

1. Switch the generator OFF.
2. Externally, check the proper cable connections between each major component in the X-ray system.
3. Cleaning and disinfection. *(Refer to Section 9).*

8.2 SERVICE TASKS

Only service personnel specifically trained on this medical X-ray equipment should work on service tasks (installation, calibration or maintenance) of the equipment. (*Refer to the respective chapters of the Service Manual provided with this equipment.)*

SECTION 9 CLEANING AND DISINFECTION

9.1 SCOPE

This section is part of the accompanying documents for the supplied equipment used in radiological diagnosis and is in accordance with the cleaning and disinfection requirements described in ISO-17664 in its 2017 revision.

⚠ CAUTION

DO NOT ATTEMPT TO CLEAN / DISINFECT ANY PART OF THE EQUIPMENT WHEN IN OPERATION.

BEFORE STARTING CLEANING / DISINFECTION MAKE SURE THE EQUIPMENT IS CORRECTLY OFF, WITH THE POWER CABLE DISCONNECTED FROM THE MAINS (IN CASE OF EQUIPMENT WITH A MAINS PLUG) OR WITH THE POWER SUPPLY CUT FROM THE ELECTRICAL PANEL IN THE ROOM (IN CASE OF EQUIPMENT PERMANENTLY CONNECTED TO THE ROOM ELECTRICAL CABINET).

⚠ DANGER !

DO NOT REMOVE ANY COVERS, OR DISASSEMBLE OR MANIPULATE INTERNAL COMPONENTS OF THE UNIT. THESE ACTIONS CAN CAUSE SERIOUS PERSONAL INJURYAND EQUIPMENT DAMAGE.

⚠ WARNING

The operator must follow the personal cleaning processes before and after each performance.

⚠ WARNING

The waste and utensils used for cleaning and disinfecting the equipment must be disposed of locally in the waste containers specifically designated for this purpose by the person in charge of the installation according to local regulations.

9.2 DESCRIPTION

The document describes the cleaning and disinfection step by step of all thesurfaces of the equipment used for radiological diagnosis.

Likewise, the products and techniques to be used to carry out the cleaning and disinfection process are indicated.

DANGER !

IN CASE OF CLEANING AND DISINFECTION PROCESSES WITH RISK OF CONTACT WITH BLOOD OR TISSUE REMAINS, THE OPERATOR MUST USE PERSONAL PROTECTION MEANS SUCH AS GOWNS, GOGGLES AND MASKS TO AVOID CONTAGION.

WARNING

FOR CLEANING OR DISINFECTING THE EQUIPMENT, DO NOT USE SPRAYERS, OR APPLY LIQUIDS DIRECTLY ON SCREENS OR OTHER SURFACES.

WARNING

BEFORE USING THE EQUIPMENT AGAIN, THE USER MUST HAVE HANDS CLEAN AND COMPLETELY DRY, WITHOUT REMAINING DISINFECTING PRODUCTS LIKE WIPES ORHYDROALCOHOLIC GEL.

WARNING

DO NOT USE ANY CLEANING OR DISINFECTION PRODUCTS NOT INCLUDED IN THIS DOCUMENT SINCE THE EQUIPMENT COULD BE DAMAGED.

Note .

It is recommended that the Receptors used outside the equipment (Radiographic Film in Cassette, CR or Digital Detectors) are placed inside a plastic radiotransparent bag for each use, thus avoiding the excess of cleaning and disinfection processes directly on the surfaces of the Receptors. Do not use fabric bags.

9.3 MANUAL CLEANING

Note . *The cleaning of the equipment must be carried out according to the frequency of use and the environmental conditions of the place where it is located, these times must be marked according to theuser’s criteria.*

9.3.1 CHEMICAL AGENTS AND WATER QUALITY

Prepare the solution to be used with:

a. Drinking water at room temperature.

b. PH Neutral soap (for example Universal Cleaner- PH Neutral by Frosch or equivalent). To determine the amount and time of application, see the manufacturer’s instructions.

The total amount of solution depends on the surface to be cleaned. Change the solution as many times as necessary to maintain the quality of the cleaning, flush the drain and redo another solution.

9.3.2 DESCRIPTION OF MATERIALS AND ACCESSORIES

- Vinyl, nitrile, latex or similar gloves. Discard gloves after cleaning is complete. Attention to possible allergic reactions to the components.
- Other recommended personal protection material: mask, gown,goggles.
- Lint-free cloths for rubbing (e.g. microfiber, suede, etc.)
- Lint-free cloths to dry (e.g. cotton, etc.)
- Container to dissolve.
- Lint-free cloths for specific surfaces such as for touch screens or monitors.
- Brushes for slots and grids.

9.3.3 CLEANING STEP BY STEP

1. Wash hands, cover wounds if any, and put on the personal protection material required for cleaning as indicated by the corresponding regulations and the guidelines of the center where the equipment is located. Gloves and protective glasses are recommended.
2. Prepare the solution to use. (See section 2.1 Chemical Agents and Water Quality.)
3. Prepare the material to use for cleaning. (See section 2.2 Description of Materials and Accessories.)

⚠ WARNING

DURING THE EQUIPMENT CLEANING PROCEDURE, DO NOT USE SPRAYERS, OR APPLY LIQUIDS DIRECTLY TO SCREENS OR OTHER SURFACES.

4. Rub the covers and external surfaces, especially those in contact with the patient, with a soft and Lint-free cloth impregnated in the solution and manually wrung out (moistened so as not to drop drops) and that does not damage the surfaces or release fibers.
5. Wash the cloth with clean water after each use.
6. Rinse the surface with a cloth dampened in clean water. The cloth must be manually wrung out so that it does not leave liquid remains.
7. Repeat the operation, rinsing and draining the cloth until the surface isclean.
8. Dry surfaces with a soft dry cloth that does not release fibers, especially on rough surfaces.

⚠ WARNING

IN THOSE PARTS IN CONTACT WITH THE PATIENT (E.G. TABLETOPS OR HANDLES) OR IN FREQUENT CONTACT BY THE USER (E.G. CONSOLES, TOUCH SCREENS, CONTROL PANELS, CONTROLS TO PERFORM EQUIPMENT MOVEMENTS, ETC.). CARRY OUT THE SAME CLEANING OPERATION BUT USE A CLEAN LINT-FREE CLOTH IMPREGNATED WITH ISOPROPYL ALCOHOL IN A 70% SOLUTION INSTEAD.

9.4 MANUAL DISINFECTION

Note .

The disinfection of the equipment must be carried out according to the frequency of use and the environmental conditions of the place where it is located, these times must be marked according to the user's criteria.

9.4.1 CHEMICAL AGENTS AND WATER QUALITY

The following chemical agents are those validated by the equipment manufacturer to carry out the disinfection tasks. Only use these agents in the indicated proportions.

CAUTION

Never mix the indicated chemical agents, they could cause chemical reactions and / or damage to the equipment surfaces.

- **Drinking water at room temperature with household bleach in 1:50 ratio.**

•

Contact time: 5 minutes.

To prepare the 1:50 bleach-water mix, put 20 ml. of household bleach into a 1- liter bottle and fill the bottle with water to completion. Close and flipseveral times to mix.

- **70% isopropyl alcohol.**

Contact time: 2 minutes for touchscreens or monitors and 5 minutes forthe rest. Times to mix.

- **Ethyl alcohol (ethanol) 70%.**

Contact time: 5 minutes for Digital Detectors.

- **0.036% alkyldimethyl benzyl ammonium chloride** in hydroalcoholic solution.

  <u>Contact time:</u> 5 minutes

Table 3
Disinfectants to be used according to surfaces

Disinfecting Agent	**Types of surfaces to be disinfected**			
	(*) Screens or monitor	**Digital Detectors**	**(*) Laptops**	**Rest of surfaces**
Drinking water at room temperature with household bleach in 1:50 ratio	p			p
70% isopropyl alcohol.	p		p	p
Ethyl alcohol (ethanol) 70%.		p		p
Alkyl dimethyl benzyl ammonium chloride 0.036% in hydroalcoholic solution.				p
Notes: - The contact time of the disinfecting agent on screens or monitors should not exceed 2 minutes. - Laptops should never be disinfected with bleach.				

9.4.2 DESCRIPTION OF MATERIALS AND ACCESSORIES

- Vinyl, nitrile, latex or similar gloves. Discard gloves after cleaning is complete. Attention to possible allergic reactions to the components.

- Other recommended personal protection material: mask, gown, goggles.

- Lint-free cloths for rubbing (e.g. microfiber, suede, etc.)

- Lint-free cloths to dry (e.g. cotton, etc.)

- Container to dissolve.

- Lint-free cloths for specific surfaces such as for touch screens or monitors.

- Brushes for slots and grids.

- Disinfecting wet wipes. Use only in cases where the container with the solution cannot be moved and make sure not to leave residues of disinfectant on the wipe or fibers, especially on the cracks or rough surfaces.

9.4.3 DISINFECTING STEP BY STEP

1. Wash hands, cover wounds if any, and put on the personal protection material required for cleaning as indicated by the corresponding regulations and the guidelines of the center where the equipment is located. Gloves and protective glasses are recommended.

2. Prepare the solution to use. (See section 3.1 Chemical Agents and Water Quality.)

3. Prepare the material to use for cleaning. (See section 3.2 Description of Materials and Accessories.)

⚠ **WARNING**

DURING THE EQUIPMENT DISINFECTION, DO NOT USE SPRAYERS, OR APPLY LIQUIDS DIRECTLY TO SCREENS OR OTHER SURFACES.

4. Rub the covers and external surfaces, especially those in contact with the patient, with a soft and clean cloth impregnated in the solution and manually wrung out (moistened so as not to drop drops) and that does not damage the surfaces or release fibers.

5. Allow sufficient time for the chemical to have a disinfecting effect on surfaces (contact time is indicated in section 3.1 Chemical Agents and Water Quality).

6. Rinse the surface with a cloth dampened in clean water. The cloth must be manually wrung out so that it does not leave liquid remains.

7. Repeat the operation, rinsing and draining the cloth until the surface is clean.

8. Dry surfaces with a soft dry cloth that does not release fibers, especially on rough surfaces.

SECTION 10 TECHNICAL SPECIFICATIONS

Note **.** *These Technical Specifications do not include the Digital Detector nor the Image Acquisition Computer and Screen. Refer to the Digital Detector and Image Acquisition Computer and Screen Documentation.*

10.1 ENVIRONMENTAL CONDITIONS

ATMOSPHERIC PRESSURE (hPa)		**RELATIVE HUMIDITY (%)**		**AMBIENT TEMPERATURE**	
MIN	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**
WORKING					
700 hPa (20.7 inHg)	1060 hPa (31.3 inHg)	30%	75%	10 °C (50 °F)	35 °C (95 °F)
TRANSPORT & STORAGE					
500 hPa (14.7 inHg)	1060 hPa (31.3 inHg)	10%	90%	-20 °C (-4 °F)	70 °C (158 °F)

10.2 POSITIONERS

10.2.1 POWER LINE REQUIREMENTS

Note . *The Tube Stand and the Wall Stand (ET or ST) are power supplied through the Table. In the case of Single Panel system, the Tube Stand and Wall Stand are supplied from the Control Unit.*

• ET TABLE (Elevating Table)	115- 240 $V^{\sim}$, 500 VA, 50 / 60 Hz,
(supplied from the Room Electrical Cabinet)	
• ST TABLE (Non Elevating Table)	115- 240 $V^{\sim}$, 250 VA, 50 / 60 Hz,
(supplied from the Room Electrical Cabinet)	
• TUBE STAND	
Input Brakes	24 $V^{=}$, 100 VA
Input Collimator	24 $V^{=}$, 30 VA
. . . .	24 $V^{\sim}$, 50 / 60 Hz, 30 VA
Input Digital Control Panel	230 $V^{\sim}$, 50 / 60 Hz, 30 VA
(supplied from the Table or Control Unit in case of Single Panel system)	
• WALL STAND	
Input Brakes	24 $V^{=}$, 100 W
(supplied from the Table or Control Unit in case of Single Panel system)	

10.2.2 INFORMATION RELATED TO RADIATION

Radiation Output Accuracy: C.V. (Coefficient of Variation) ≤ 0.05
(Reproducibility related to loading factors)

Maximum Symmetrical Radiation Field:
Measured at 75 kVp: 230 mm in “X” axis and 260 mm in “Y” axis. Measured at 125 kVp: 220 mm in “X” axis and 260 mm in “Y” axis.
(Test performed at a distance from the Focal Spot of 1200 mm, in accordance with IEC 60806: 1984)

10.2.3 PHYSICAL CHARACTERISTICS

FLOOR MOUNTED TUBE STAND

Dimensions	
Height	2319.5 mm (91.3”)
Width	2250 mm (88.6”)
Length	1413.6 mm (55.6”)
Weight	224 kg (493 lb)
Maximum Height of X-ray Tube focus (vertical position)	1981 mm (78”)
SID from horizontal axis of X-Ray Tube facing the ET Table (maximum)	1458.8 mm (57.4”)
SID from horizontal axis of X-Ray Tube facing the ST Table	1260.8 mm (49.6”)
Distances from the floor to Focal Spot ofthe X-Ray tube facing the Wall Stand	
Minimum height	397.1 mm (15.6”)
Maximum height	1950.9 mm (76.8”)
Arm vertical travel	1553.8 mm (61.2”)
SID from Horizontal axis of X-Ray Tube facing the Wall Stand (typical room layout)	
Minimum SID	1000 mm (39.4”)
Maximum SID	2645 mm (104.1”)
Column longitudinal motion	1645 mm (64.7”)
Rotation of Column with respect to its vertical axis *(Rotation may be limited by cables)*	±180°
Rotation of Tube-Collimator Assembly with respect to its transverse axis *(Rotation may be limited by cables)*	+180° -130°

ET TABLE

Dimensions

Maximum HeightMinimum	895 mm (35.2”)
Height	550 mm (21.6”)
Length	2200 mm (86.6”)
Width	868 mm (34.2”)
Weight	335 Kg (738.5 lbs)
Dimensions of Floating Table-Top	2200 x 868 mm (86.6” x 34.2”)
Radiotransparent area of Table-top	2100 x 618 mm (83” x 24”)
Table-Top / Digital Detector distance	90 mm ± 5 mm (3.5” ± 0.2”)
Tabletop Attenuation	<1.2 mm eq. Al at 100 kV.
Vertical Tabletop Travel	340 mm (13.4”)
Longitudinal Travel of Table-top	1100 mm (43.3”)
Transverse Tabletop Travel	250 mm (9.8”)
Maximum patient weight .... (evenly distributed on the Table-top) Detector	350 Kg (771 lbs)
size	max. 43 x 43 cm (17 x 17”)

ST TABLE

Dimensions	
Height	770 mm (30.3”)
Length	2200 mm (86.6”)
Width	825 mm (32.5”)
Weight	155 kg (341.7lb)
Dimensions of Floating Table-Top	2200 x 825 mm (86.6” x 32.5”)
Radiotransparent Area of Table-Top	1980 x 681 mm (78” x 26”)
Table-Top / Digital Detector distance	80 mm (±4) (3.14”, ±0.15”)
Table-Top Attenuation	<1.2 mm Al eq. at 100 kW900
Longitudinal travel of Table-Top	mm (35.4”)
Transverse travel of Table-Top	230 mm (9.1”)
Maximum patient weight . . . . (evenly distributed on the Table-top) Detector	300 Kg (661.3 lbs)
size	max. 43 x 43 cm (17 x 17”)

WALL STAND

Dimensions	
Height	2235 mm (88”)
Width	712.2 mm (28”)
Length	381 mm (15”)
Weight	145 kg (319.6 lb)
Table-Top Dimensions	559 x 485 mm (22” x 19”)
Table-Top / Detector distance	40 mm (¦ 3) (1.57” (¦0.11”))
Table-Top Attenuation	<0.85 mm Al eq.
Height from horizontal axis of receptor	
Maximum heightMinimum	1900 mm (74.8”)
height	345.5 mm (13.6”)
Table-Top Vertical Travel	1554.5 mm (61.2”)
Detector size	max. 43 x 43 cm (17 x 17”)

Illustration 27
Dimensions of the Radiographic Room - Proteus XR/f ET (Elevating Table)

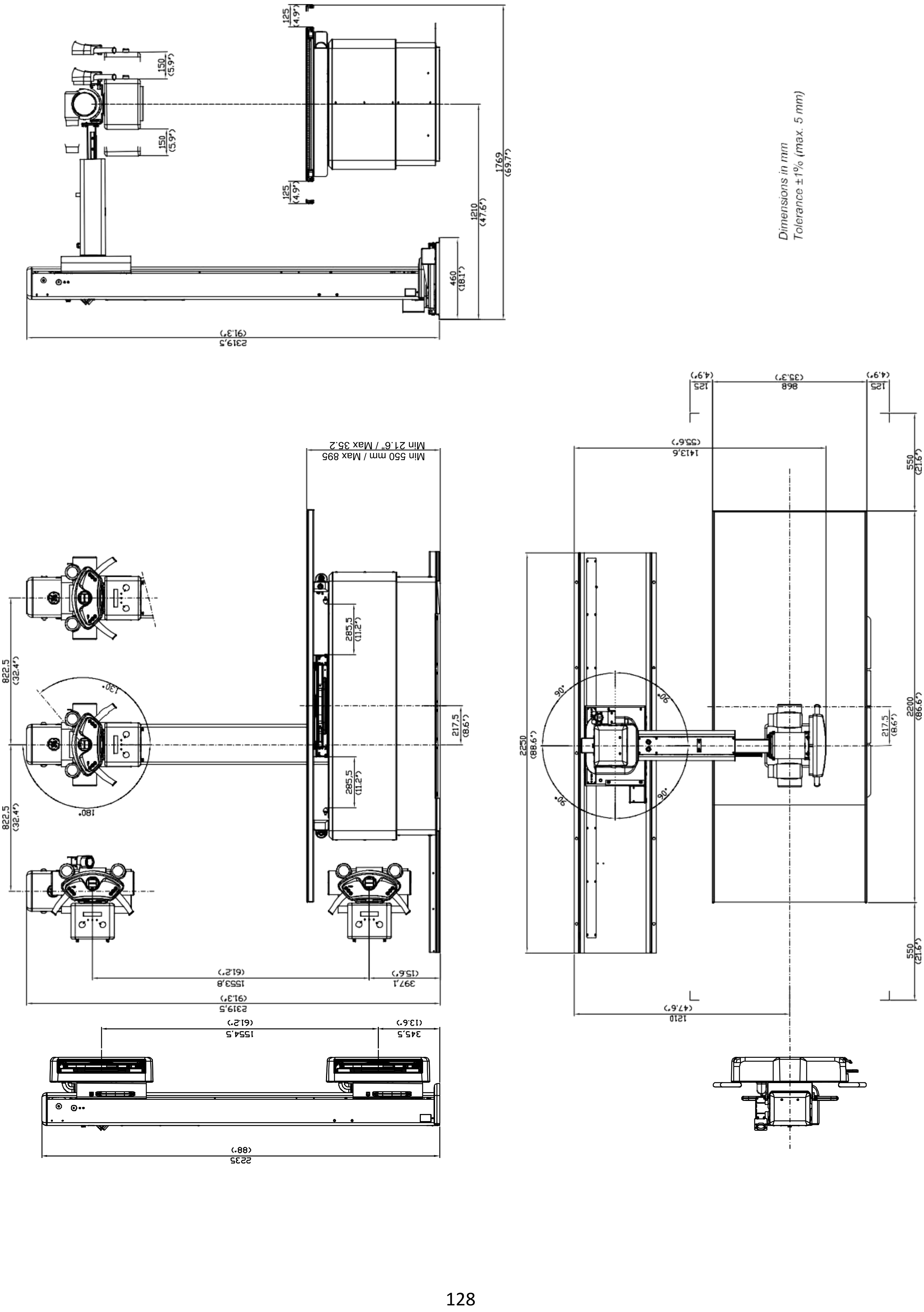
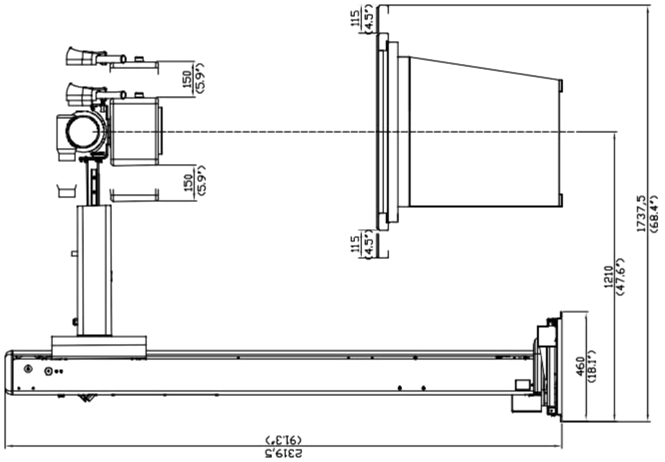
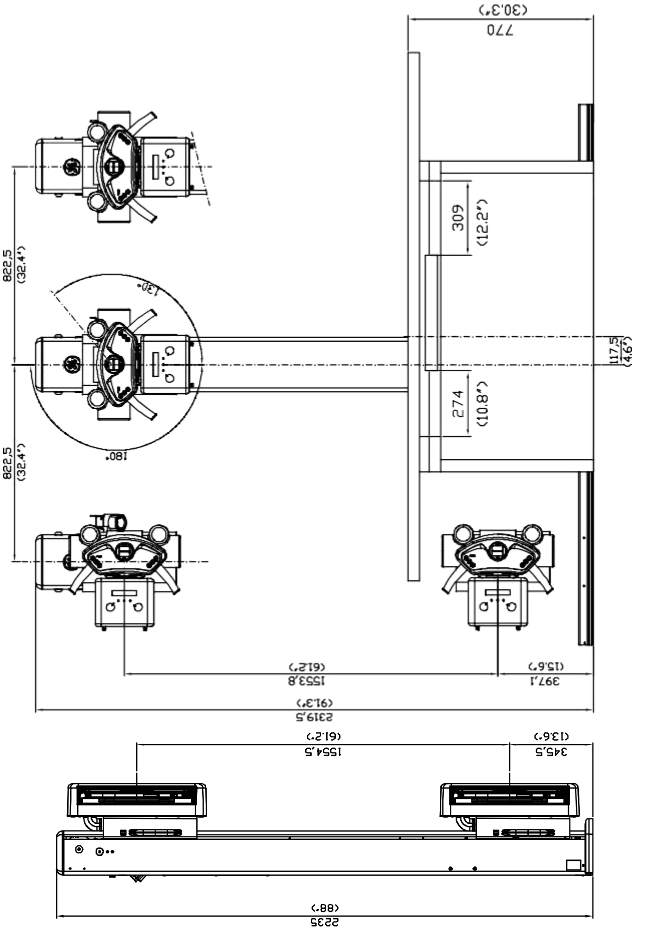


Illustration 28
Dimensions of the Radiographic Room - Proteus XR/f ST (non Elevating Table)



Dimensions in mm
Tolerance ±1% (max. 5 mm)



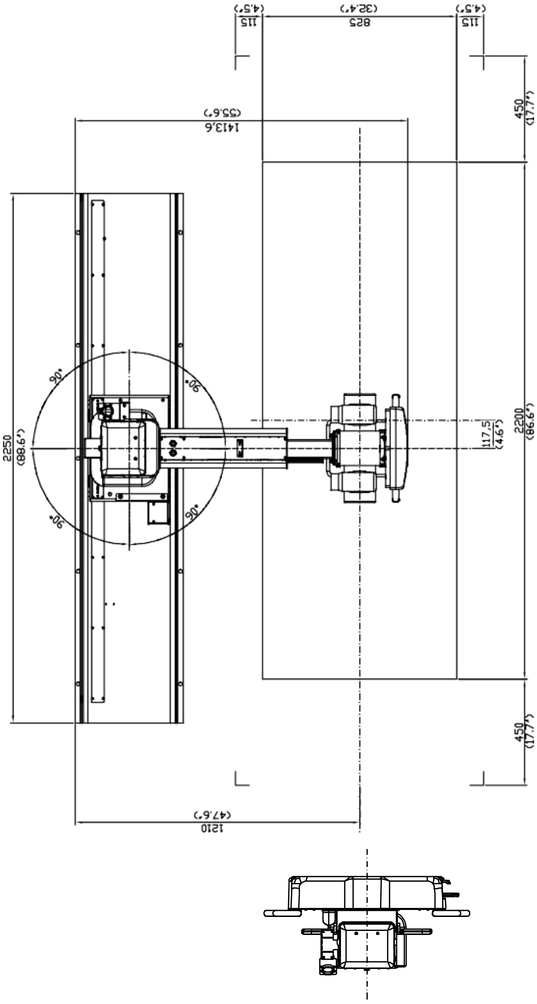


Illustration 29
Dimensions of the Radiographic Room - Proteus XR/f Single Panel Option

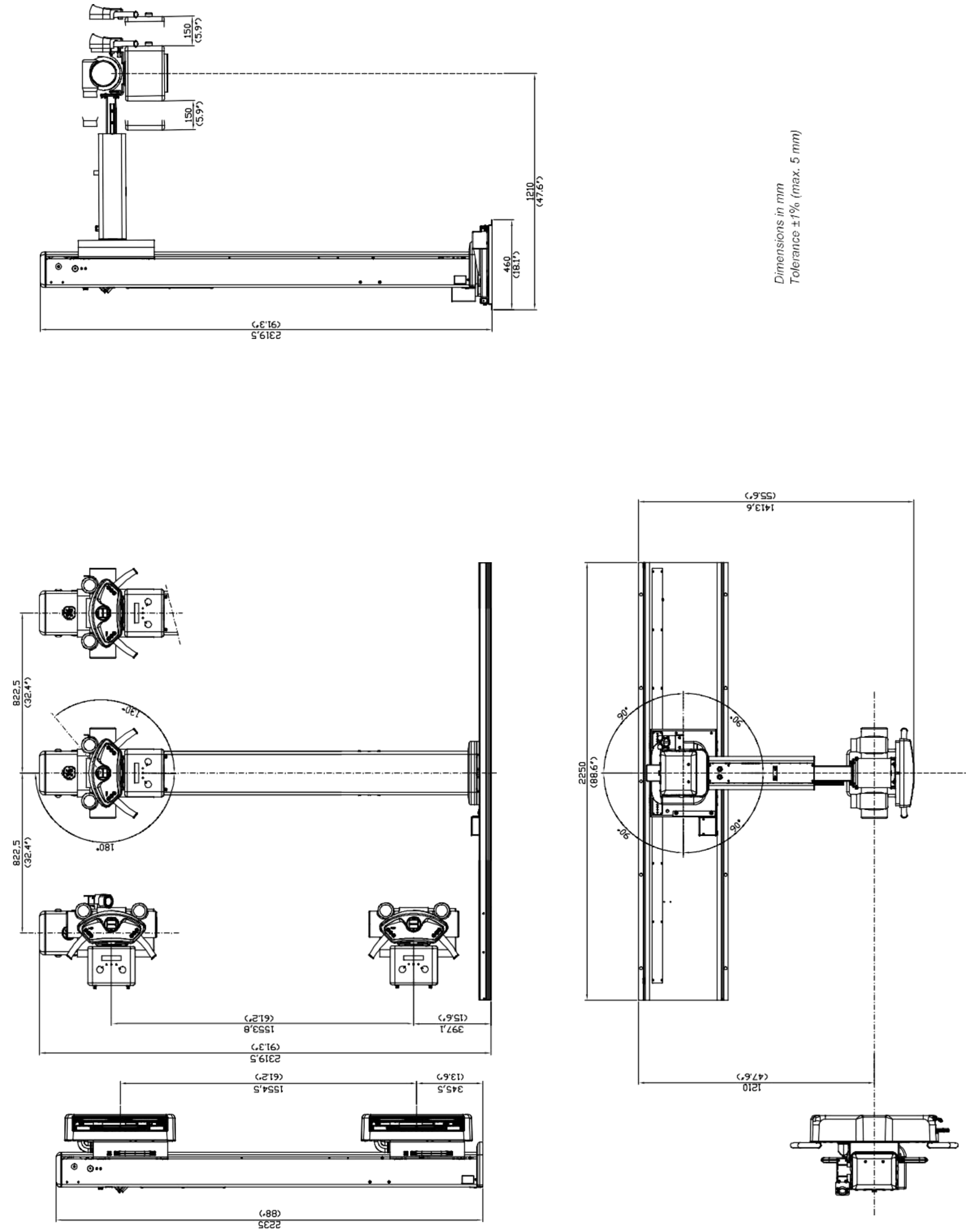
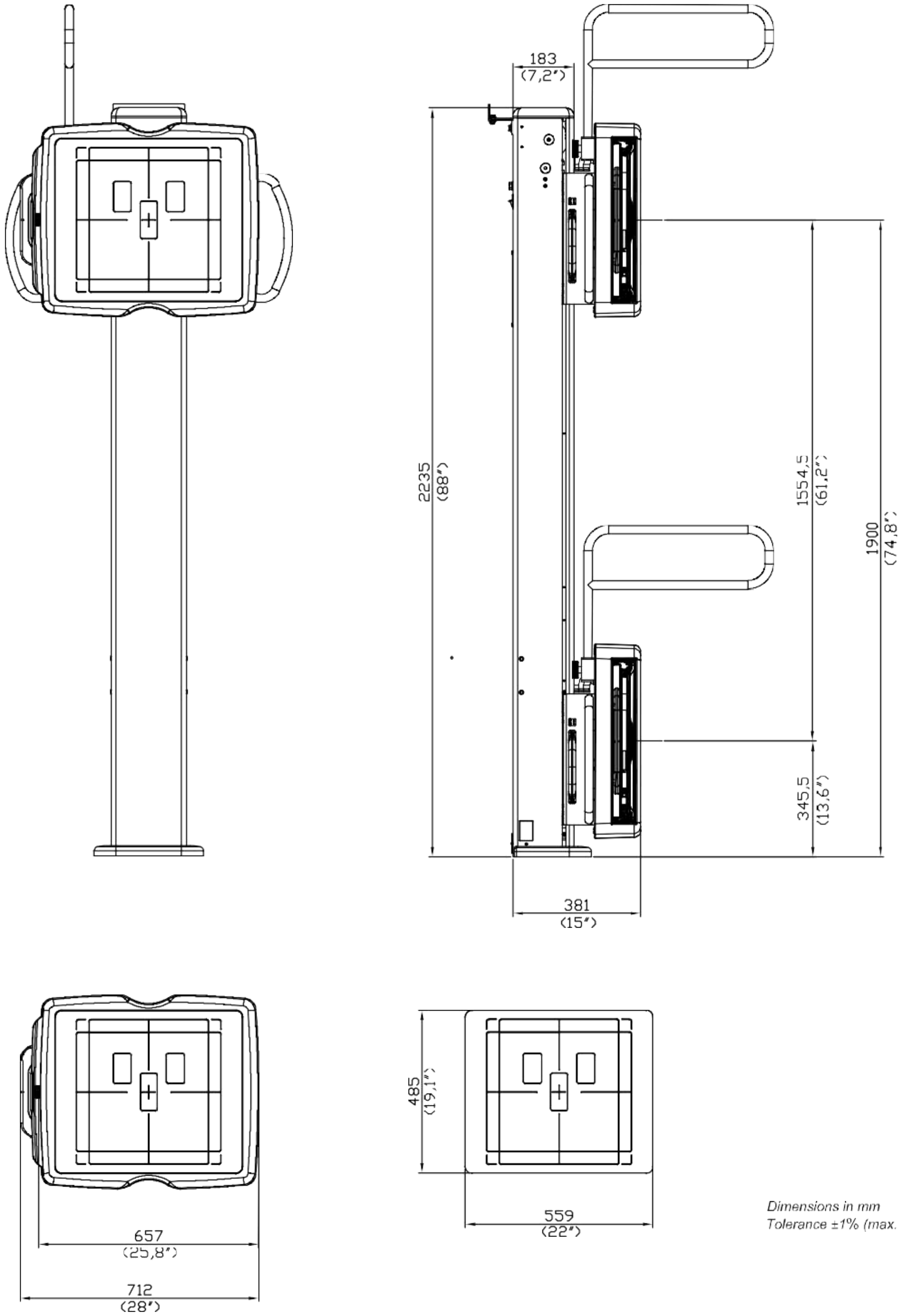


Illustration 30
Dimensions of the Wall Stand for Portable Detector



Dimensions in mm
Tolerance ±1% (max. 5 mm)

10.3 X-RAY GENERATOR

10.3.1 FACTORS

GENERATOR MODEL *(Refer to Identification Label)*	**SINGLE-PHASE GENERATOR**
Maximum Power kW	**50 kW**
Maximum mA	650 mA
Maximum kVp	125 kVp
Power Line	208*/230 V~ - 50/60 Hz
	Line voltage automatic compensation: ±10%.
	Maximum line regulation for maximum kVA demand: 6%.
*NOTE: * For Generators operating with lines at 208 V~ or below, an auxiliary boost transformer is required to adequate the line voltage to 230 V~.*	

GENERATOR MODEL *(Refer to Identification Label)*	**THREE-PHASE GENERATOR**		
Maximum Power kW	**50 kW**	**65 kW**	**80 kW**
Maximum mA	650 mA	650 mA	800 mA
Maximum kVp	150 kVp		
Power Line	208/230/400/415/440/480 V~ - 50 / 60 Hz		
	Line voltage automatic compensation: ±10%.		
	Maximum line regulation for maximum kVA demand: 6%.		

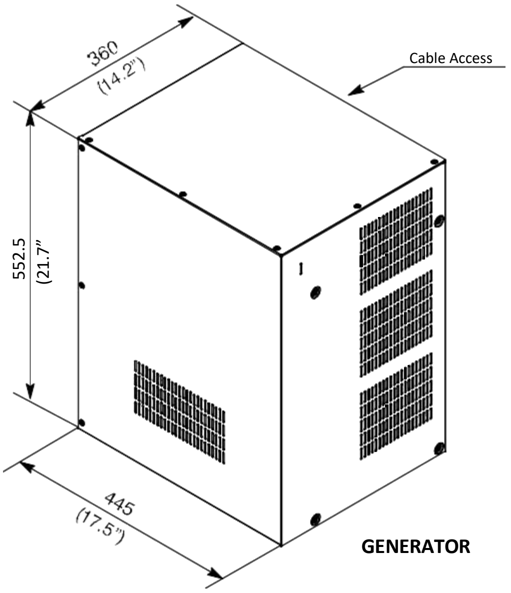
10.3.2 RANGE OF RADIOGRAPHIC PARAMETERS

PARAMETER	RANGE
kVp	From 40 kV to 150 kV in 1 kV steps Accuracy: ±(3% + 1 kVp)
mA	From 10 mA to 800 mA through the following mA stations: 10, 12.5, 16, 20, 25, 32, 40, 50, 65, 80, 100, 125, 160, 200, 250, 320, 400, 500, 650, 800. *(Depending on the Generator model)* Accuracy: ±(4% + 1 mA)
mAs	Product of mA x Time values from 0.1 mAs to 650 mAs Accuracy: ±(10% + 0.2 mAs)
ms	From 1 to 10000 milliseconds through the following Time stations: 1, 2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 25, 32, 40, 50, 65, 80, 100, 125, 160, 200, 250, 320, 400, 500, 650, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000. 6500, 8000 and 10000. *(Depending on the Generator model)* Accuracy: ±(2% + 0.1 ms)
AEC	mAs: 0.1 mAs to 500 mAs
	Exposure Time: Nominal shortest irradiation Time = 11 ms
Max ms (with Digital Detector)	Refer to the Digital Detector specifications
Duty Cycle	1 maximum power exposure at 100 ms, every minute during 8 hours.
	The Duty Cycle of the Generator is continuous, but limits must be programmed during installation according to the X-ray Tube capacity to be used. Maximum leakage radiation depends on the type of X-ray Tube.
Radiation Output Accuracy (Reproducibility related toloading factors)	C. V. (Coefficient of Variation) ≤ 0.05

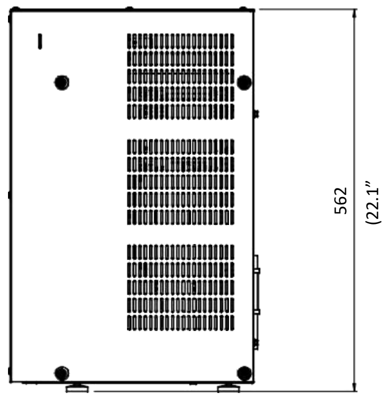
10.3.3 PHYSICAL CHARACTERISTICS

COMPONENT	DIMENSIONS			WEIGHT
	Length	Width	Height	
X-ray Generator with Leveling Legs	445 mm (17.5”)	360 mm (14.2”)	min. 562 mm (22.1”)	65 kg (143 lb)
PC Interface Box	131 mm (5.2”)	165 mm (6.5”)	32 mm (1.25”)	0.5 kg (1.1 lb)

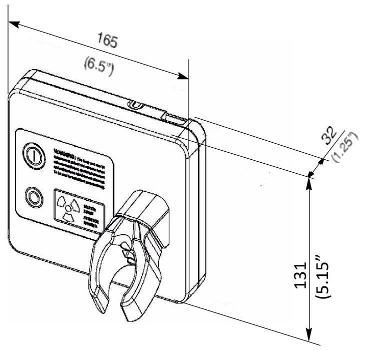
Illustration 31
Generator and PC Interface Box Dimensions



GENERATOR



GENERATOR WITH LEVELING LEGS



PC INTERFACE BOX

10.4 X-RAY TUBE

Canon E7254FX	High Speed - Rotating Anode, Focal Spots: 0.6 mm / 1.2 mm Anode kHU / kVp: 400 kHU / 150 kVp, Target Angle: 12° Maximum Specified Energy Input in 1 hour: 150 kVp @ 4800 mAs Inherent Filtration of X-ray Source (Tube + Collimator): refer to Identification Label

GE HEALTHCARE

Certificate ES03/60071

The management system of

SOCIEDAD ESPAÑOLA DE ELECTROMEDICINA Y CALIDAD, S.A. (SEDECAL)

Pol. Ind. Río de Janeiro, C/ Pelaya, 9-13
28110 Algete (Madrid)

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

- ✓ **Design, manufacture, sales and technical support to customers for medical and veterinarian use, of: X-ray generators, X-ray systems (stationary, mobile, portable and monoblocks), X-ray tube starters, radiological positioners and ozone generators.**
- ✓ **Subcontracted design and manufacture of X-ray systems and components.**
- ✓ **Design and manufacture of electronic, mechanical and electromechanical modules for industrial applications.**

in/ from the following sites

Headquarters and factory: Pol. Ind. Río de Janeiro, C/ Pelaya, 9-13
28110 Algete (Madrid)

This certificate is valid from
19 July 2021 until 19 July 2024.
Issue 6. Company certified since January 1997.
Certified with SGS since 6 April 2018.

ENAC CERTIFICACIÓN Nº 05 / C - SC001

Authorized by

Certification Management

SGS INTERNATIONAL CERTIFICATION SERVICES IBERICA, S.A.U.
C/Trespaderne, 29. 28042 Madrid. España.
t 34 91 313 8115 www.sgs.com

Certificate ES19/85998

The management system of

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Polígono Industrial Rio de Janeiro.
C/ Pelaya, 9-13
28110 ALGETE (Madrid). Spain

has been assessed and certified as meeting the requirements of

ISO 13485:2016
EN ISO 13485:2016

For the following activities

Design, manufacture, sales and technical support to customers of X-ray generators and X-ray systems (stationary, mobile, portable and monoblocks), X-ray tube starters, radiological positioners and ozone generators.

This certificate is valid from 20 July 2021 until 19 July 2024 and remains valid subject to satisfactory surveillance audits.
Issue 3. Certified since 28 January 1997.
Re certification audit due before 19 July 2024.

Authorised by

Pieter Weterings
Certification Manager
SGS Belgium NV
SGS House Noorderlaan 87 2030 Antwerp Belgium
t +32 (0)3 545-48-48 f +32 (0)3 545-48-49 www.sgs.com

SGS Belgium 13485-2 0308

Accreditation Number
005-QMS
EN ISO/IEC 17021-1:2015

EC Certificate Full Quality Assurance System: Certificate ES19/85990

The management system of

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Poligono Industrial Rio de Janeiro
C/ Pelaya, 9-13
28110 Algete, Madrid. Spain

has been assessed and certified as meeting the requirements of

Directive 93/42/EEC

on medical devices, Annex II (excluding Section 4)

For the following products

The scope of registration appears on the subsequent pages of this certificate

This certificate is valid from 30/06/2019 until 19/07/2023
and remains valid subject to satisfactory surveillance audits.
Issue 1. Certified since 20/05/1997
and first certified by SGS Belgium on 30/06/2019.
Re certification audit due before 19/07/2021

This is a multi-site certification.
Additional site details are listed on subsequent pages

Certification is based on reports numbered ES/MAD 133585

Authorised by

Pieter Weterings
Certification Manager

SGS Belgium NV, Notified Body 1639
SGS House Noorderlaan 87 2030 Antwerp Belgium
t +32 (0)3 545-48-48 f +32 (0)3 545-48-49 www.sgs.com

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Directive 93/42/EEC

on medical devices, Annex II (excluding Section 4).

Issue 1

Detailed scope

X-Ray Generator SHF:

SHF-1010, SHF-1015, SHF-1020, SHF-1025, SHF-1030, SHF-1035,
SHF-1610, SHF-1615, SHF-1620, SHF-1625, SHF-1630, SHF-1635,
SHF-210, SHF-215, SHF-220, SHF-225, SHF-230, SHF-235,
SHF-310, SHF-315, SHF-320, SHF-325, SHF-330, SHF-335,
SHF-410, SHF-415, SHF-420, SHF-425, SHF-430, SHF-435,
SHF-510, SHF-515, SHF-520, SHF-525, SHF-530, SHF-535,
SHF-610, SHF-615, SHF-620, SHF-625, SHF-630, SHF-635, SHF-835,
SHF-1610 PSU, SHF-1615 PSU,
SHF-210 PSU, SHF-215 PSU,
SHF-310 PSU, SHF-315 PSU,
SHF-410 PSU, SHF-415 PSU, SHF-510 PSU, SHF-515 PSU
SHF-1610-C, SHF-1615-C,
SHF-210-C, SHF-215-C,
SHF-310-C, SHF-315-C,
SHF-410-C, SHF-415-C,
SHF-510-C, SHF-515-C
SHF-0510-M, SHF-0530-M, SHF-1010-M, SHF-1030-M,
SHF-0510-MPSTA, SHF-1010-MPSTA

X-Ray Generator SHFR:

SHFR100, SHFR200, SHFR300, SHFR400, SHFR500, SHFR600, SHFR800

X-Ray Generator HERCULES:

HERCULES-32, HERCULES-40, HERCULES-50, HERCULES-65, HERCULES-80

Battery Mobile X-Ray Unit EASY MOVING:

SM-20HF-Batt, SM-32HF-Batt, SM-40HF-Batt, SM-50HF-Batt
SM-20HF-B-D-C, SM-32HF-B-D-C, SM-40HF-B-D-C, SM-50HF-B-D-C
SM-20HF-B-D-V, SM-32HF-B-D-V, SM-40HF-B-D-V, SM-50HF-B-D-V
SM-20HF-B-D-T, SM-32HF-B-D-T, SM-40HF-B-D-T, SM-50HF-B-D-T
SM-20HF-B-D-TEZ, SM-32HF-B-D-TEZ, SM-40HF-B-D-TEZ, SM-50HF-B-D-TEZ
SM-20HF-B-D-S, SM-32HF-B-D-S, SM-40HF-B-D-S, SM-50HF-B-D-S
SM-20HF-B-D-FDX, SM-32HF-B-D-FDX, SM-40HF-B-D-FDX, SM-50HF-B-D-FDX
SM-20HF-B-D-FDXW, SM-32HF-B-D-FDXW, SM-40HF-B-D-FDXW,
SM-50HF-B-D-FDXW
SM-20HF-B-D-KM (AeroDR X30), SM-32HF-B-D-KM (AeroDR X30),
SM-40HF-B-D-KM (AeroDR X30), SM-50HF-B-D-KM (AeroDR X30)

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Directive 93/42/EEC

on medical devices, Annex II (excluding Section 4).

Issue 1

Detailed scope

Capacitor Mobile X-Ray Unit MOBIXRAY:
SMR-16, SMR-20, SMR-32

Portable X-Ray Unit SPL:
SPL-HF-2.0, SPL-HF-4.0, SPL-HF-8.0

Portable X-Ray Unit DRAGON X:
SPSL-HF-4.0, SPSL-HF-8.0,
SPSL-HF-4.0-APR, SPSL-HF-8.0-APR,
SPSLW4, SPSLW8, SPSL4HC, SPSL8HC

Radiographic System SEDECAL X:
SEDECAL X BRS (BRX),
SEDECAL X URS,
SEDECAL X PLUS LP,
SEDECAL X PLUS LP PLUS

Radiographic System MILLENNIUM:

MILLENNIUM (Proteus XR/i), Composed of:
Tube stand MILLENNIUM: MILL-FMTS
Tube stand AD MILLENNIUM: MILL-FMTSAD
Fixed height Table MILLENNIUM: MILL-FWFTT-B
Elevating Table MILLENNIUM: MILL-EL-B
Wall Stand MILLENNIUM: MILL-WBS
Tomography MILLENNIUM: MILL-TOMO
Power Supply: BRAKE BOX

MILLENNIUM PLUS AT, Composed of:
Tube stand MILLENNIUM PLUS AT: MILL-FMTSAT-PLUS
Elevating Table MILLENNIUM PLUS AT: MILL-ELAT-PLUS
Wall Stand MILLENNIUM PLUS AT: MILL-WBSAT-PLUS
Wall Stand Manual Tilting: TWBS-TILT
Tomography MILLENNIUM PLUS: MILL-TOMO-PLUS

MILLENNIUM PLUS TPC, Composed of:
Tube stand MILLENNIUM PLUS TPC: MILL-FMTSTPC-PLUS
Elevating Table MILLENNIUM PLUS TPC: MILL-ELTPC-PLUS
Wall Stand MILLENNIUM PLUS TPC: MILL-WBSTPC-PLUS
Wall Stand Manual Tilting: TWBS-TILT
Tomography MILLENNIUM PLUS: MILL-TOMO-PLUS

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Directive 93/42/EEC

on medical devices, Annex II (excluding Section 4).

Issue 1

Detailed scope

Radiographic System PROTEUS XR/f:

PROTEUS XR/f ET, Composed of:
Tube stand MILLENNIUM: MILL-FMTS
Tube stand AD MILLENNIUM: MILL-FMTSAD
Fixed height Table MILLENNIUM: MILL-FWFTT-B
Elevating Table MILLENNIUM: MILL-EL-B
Wall Stand MILLENNIUM: MILL-WBS
Tomography MILLENNIUM: MILL-TOMO
Power Supply: BRAKE BOX

PROTEUS XR/f AT, Composed of:
Tube stand MILLENNIUM PLUS AT: MILL-FMTSAT-PLUS
Elevating Table MILLENNIUM PLUS AT: MILL-ELAT-PLUS
Wall Stand MILLENNIUM PLUS AT: MILL-WBSAT-PLUS
Wall Stand Manual Tilting: TWBS-TILT
Tomography MILLENNIUM PLUS: MILL-TOMO-PLUS

PROTEUS XR/f ST, Composed of:
Tube stand MULTIRAD: MULT-FMS
Table MULTIRAD: MULT-FWFTT
Wall Stand MULTIRAD: MULT-WBS
Power Supply: BRAKE BOX

Radiographic System MULTIRAD:

MULTIRAD (Proteus XR/e), Composed of:
Tube stand MULTIRAD: MULT-FMS
Table MULTIRAD: MULT-FWFTT
Wall Stand MULTIRAD: MULT-WBS
Power Supply: BRAKE BOX

MULTIRAD NET, Composed of:
Tube stand MULTIRAD: MULT-FMS
Elevating Table NET 4000: NET 4000-ST
Wall Stand MULTIRAD: MULT-WBS
Wall Stand MILLENNIUM: MILL-WBS
Power Supply: BRAKE BOX

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Directive 93/42/EEC

on medical devices, Annex II (excluding Section 4).

Issue 1

Detailed scope

Radiographic System NOVA:

NOVA FA Composed of:
Ceiling Suspension NOVA: NOVA FA
Elevating Table NET 4000: NET 4000-AU
Moving Elevating Table: FLEXI-DT
Wall Stand NBS 2100: NBS 2100-AU

NOVA AT Composed of:
Ceiling Suspension NOVA: NOVA AT
Elevating Table NET 4000: NET 4000-AT
Moving Elevating Table: FLEXI-DT
Wall Stand NBS 2100: NBS 2100-AT
Wall Stand Manual Tilting: TWBS-TILT

NOVA ST Composed of:
Ceiling Suspension NOVA: NOVA ST
Elevating Table NET 4000: NET 4000-ST
Moving Elevating Table: FLEXI-DT
Wall Stand NBS 2100: NBS 2100-ST
Wall Stand Manual Tilting: TWBS-TILT

Sociedad Española de Electromedicina y Calidad, S.A. (SEDECAL)

Directive 93/42/EEC

on medical devices, Annex II (excluding Section 4).

Issue 1

Detailed scope

Radiographic System CHALLENGE X:

CHALLENGEX AP Composed of:
Ceiling Suspension CHALLENGE X: CHAP
Elevating Table NET400: NET400AP
Elevating Table NET500: NET500AP
Wall Stand CHALLENGE X: CHWSAP
X-Ray Generator Console: STH

X Ray Generator Console:
CTSC

Radiographic Unit Control Software:
SedewareControl1

Additional facilities

Polígono Industrial Río de Janeiro
C/ Rafael Pillado Mourelle, 6 Nave C-5
28110 Algete, Madrid. Spain

Polígono Industrial Río de Janeiro
C/ Navas, 3
28110 Algete, Madrid. Spain