## 3

# Displaying and Processing Images

### 3.1 Displaying Images

This section describes operations for image display.

#### 3.1.1 Image Edit Window

Images are displayed in the [Image Edit] window.

- **1** Display the [Image List] window.
- **9** Select a desired file or thumbnail image.

2.2 "Selecting Files"

The background color of the selected list is changed.

The thumbnail image selected is surrounded with the selection border.

3 Click [Open] on the operation panel.



The [Image Edit] window appears and the image of the selected file are displayed. The operation panel switches to the image edit operation panel.

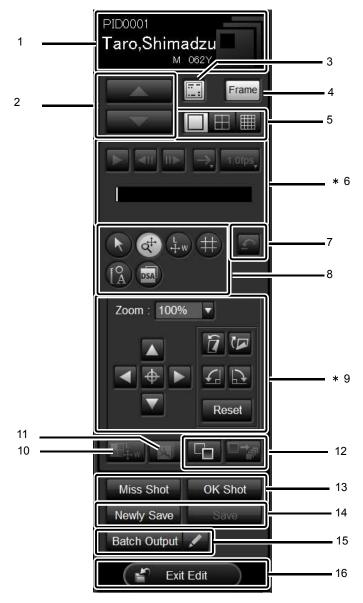


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This window can also be opened by double-clicking the desired file.

#### Operation Panel of Image Edit Window

The buttons on the operation panel is used to process or switch an image.



<sup>&</sup>quot;\*" indicates that the appearance changes according to the selected button.

No.	Item	Function	
1	Patient information display section	Displays patient information for an image displayed.  3 "■ Image Information Display Section" P.3-7	
2	<b>A</b> / <b>V</b>	Switch Page buttons Switch to the previous/next image when a study or series selected contains multiple image files.  3.1.4 "Switching Page/Display"	
3		Display Image Information button  Turns the image information display over the image on or off.  3.1.3 "Displaying Image Information"	
4	Frame	Switch Display Mode button Switches the display mode between the all frame display and the representative frame display.  3.1.5 "Switching Display Mode"	
5		Switch Display Format button Switch the image display format (number of subdivisions).  3.1.6 "Switching Display Format"	
6*	1.0fps,	Image Sequence buttons Plays sequences of a multi-frame image obtained with serial radiography.  3.2 "Playing Image Sequences"	
7	$\mathcal{L}$	Undo button Cancels previous operations and returns to the state that was saved.  3.3.6 "Undoing Image Processes"	
	R	Select Image button Selects an image.  3.1.7 "Selecting Images"	
	o't-	Enlarge/Reduce/Move button Enlarges, reduces, or moves an image.  3.3.1 "Enlarging, Reducing, Moving, Reversing, and Rotating Image"	
8	L -‡∙w	Adjust Intensity button Adjusts an image intensity.  3.3.2 "Adjusting Image Intensity"	
0	#	Shutter button Adjust an image display area.  3.3.4 "Shutter"	
	[A	Annotation button Inserts footnotes, arrows, lines and other annotations anywhere in an image.  6 "Annotations and Measurements"	
	DSA	DSA button Performs DSA post-processing.  3.3.5 "DSA Post Processing"	
* 9	Process menu display section	play The display changes in accordance with selection of the button in "8" row above, enabling the process or operation allocated to it.	

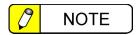
No.	Item	Function	
10	T-T-W	Edit Subdivisional Image button Changes the intensity of each frame of a composite image being displayed. When a serial image is displayed, this button creates a new composite image.  3.6 "Editing and Creating Subdivisional Image"	
11		Peak Hold button  Creates one image showing a flow of the contrast medium.  3 "■ Peak Hold (Stacking) Processing" P.3-50	
12		Copy Processing Information button Copy the processing information of the image selected.  Paste Processing Information button Paste the copied processing information to another image selected.  3.3.3 "Copying and Pasting Processing Information"	
13	Miss Shot	[Miss Shot] Registers an image as a miss shot.  3.5.1 "Miss Shot Registration"	
10	OK Shot	[OK Shot] Cancels the miss shot.  3.5.2 "Canceling Miss Shot"	
14	Save	[Save] Saves the results of image processing.  3.3.7 "Saving Processes"	
	Newly Save	[Newly Save] Saves one frame registered in a file as an image file.  3.3.8 "Newly Save"	
15	Batch Output	[Batch Output] Outputs images to a destination or printer.  5.3 "Sending Images"	
		Batch Output Setting button Sets up a destination or printer.  5.3 "Sending Images"	
16	Exit Edit	[Exit Edit] Closes the [Image Edit] window. 3.1.2 "Closing Image Edit Window"	

#### Image Information Display Section

This section shows the information below:



No.	Item	Function	
1	Patient ID	The patient ID is displayed.	
2	Patient name	The patient's name is displayed.	
3	Sex	The patient's sex is displayed. M: Male; F: Female; O: Other	
4	Age	The patient's age is displayed.	



Items not registered at the time of image acquisition are not displayed.

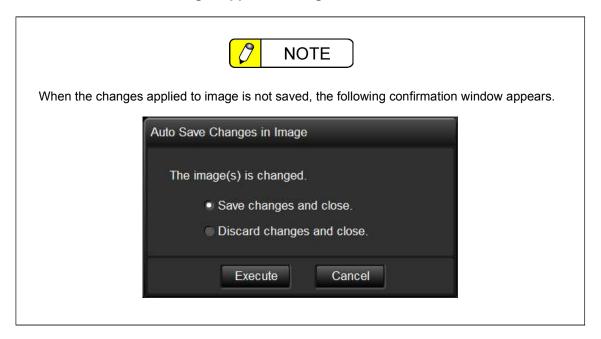
#### 3.1.2 Closing Image Edit Window

1 Click [Exit Edit] on the image edit operation panel.



The [Image Edit] window closes and the [Image List] window returns.

In the case that the changes applied to image is not saved.



- 1 Click either [Save changes and close] or [Discard changes and close].
- Click either [Execute] or [Cancel].

  If you click [Execute], the appropriate process is performed, and the window is closed.

  If you click [Cancel], the [Image Edit] window is returned.

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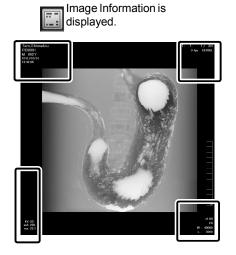
#### 3.1.3 Displaying Image Information

Image information can be displayed (or not displayed) over the image in the image display area.

1 Click on the image display operation panel.



Click the button to switch between display and non-display of image information.



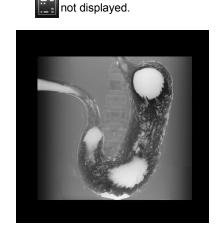
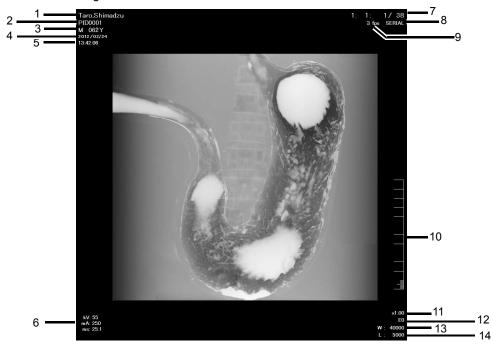


Image Information is

#### Image Information

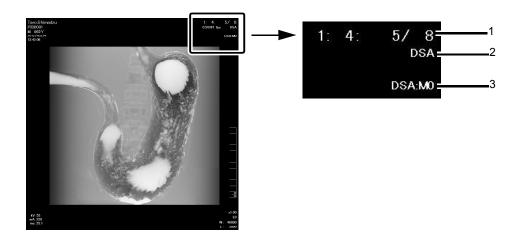
The contents of the image information are described below.



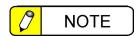
No.	Item	Description	
1	Patient Name	The patient's name is displayed.	
2	ID	The patient ID is displayed.	
3	Sex/Age	The patient's sex and age are displayed. M: Male; F: Female; O: Other.	
4	Acquisition Date	The acquisition date is displayed in the "year/month/day" format.	
5	Acquisition Time	The acquisition time is displayed in the "hour:minute:second" format.	
6	X-ray Condition  The X-ray conditions below are displayed.  kV: Tube voltage at the irradiation  mA: Tube current at the irradiation  ms: Irradiation duration in millisecond units		
7	Frame Number and Total Number of Frames	The numbers related to the displayed image are displayed as shown below:  Series number: Image number: Frame number/Total number of frames  Ex. 1: 2: 1/1	
8	Radiography Mode	The radiography mode (e.g., SPOT, SERIAL, or DSA) is displayed.	
9	Frame Rate	The acquisition rate is displayed when the multi frame image is displayed.	
10	Scale	The scale is displayed for the subject 10 cm above the table. The larger scale unit is 1 cm.	
11	Enlargement Factor (xN)	The enlargement factor (N) is displayed.	
12	Edge Level	The edge level is displayed.	

	No.	Item	Description
	13	Window Width (W)	The window width value is displayed.
Ī	14	Window Level (L)	The window level value is displayed.

The illustration below shows information for the DSA image. The item at the upper right of the window shows the DSA-specific information.



No.	Item	Description
1	Image Number	Displays the numbers of image displayed in the format below:  Example: "1:1:1/1" means "Series number: Image number: Frame number / Total number of frames".
2	Radiography Mode	Displays the radiography mode.
3	Mask Frame	Displays the number of mask frame.



Items not registered at image acquisition are not displayed.

#### 3.1.4 Switching Page/Display

When a file selected contains multiple image files, the display can be switched to the previous/next image by using the or by scrolling with the mouse.

#### Switch Page button

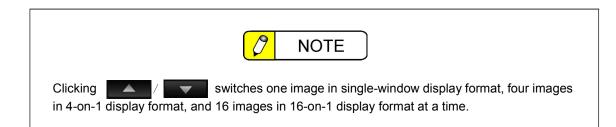
The \_\_\_\_\_ are enabled when a file contains multiple image files. Click \_\_\_\_ or to switch the page.



Item	Function
<b>A</b>	Returns to the previous image.
-	Advances to the next image.

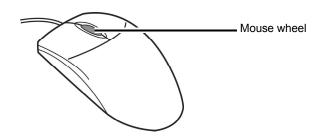
The following diagrams show how switches the display of 8 images (A to H) (4-on-1 display) format. Ε F В В Α Α G Н C D C D After clicking the After clicking the Initial state downward-pointing upward-pointing button button

In the 4-on-1 display, the display goes forward/backward by four images each time the button is clicked.



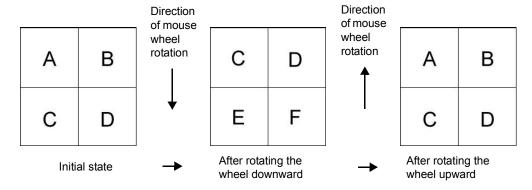
#### Scroll

When a file selected contains multiple image files, the display can be switched by rotating the mouse wheel forward or backward.



Item	Function
Move the mouse wheel forward	Returns to the previous image.
Move the mouse wheel backward	Advances to the next image.

The following diagrams show how rotating the mouse wheel switches the display of 6 images (A to F) in (4-on-1 display) format.



In the 4-on-1 format, the display goes forward/backward by one row (two images) along wheel rotation.



Scrolling with the mouse wheel switches the images one row (i.e., one image in single-window display format, two images in 4-on-1 display format, and four images in 16-on-1 display format) at a time.

#### 3.1.5 Switching Display Mode

The image display modes has two types of modes: all frame display mode and representative frame display mode. Click Frame to switch between them. The appearance of the button changes in accordance with the display mode. The default mode is all frame display mode.



Item	Function
Frame	All Frame Display Mode button All frames of the selected file are displayed.
Frame	Representative Frame Display Mode button A representative frame of the selected file is displayed.



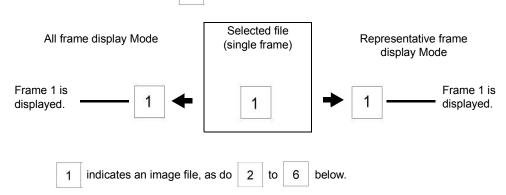
The representative frame of a multi-frame file is the center frame.

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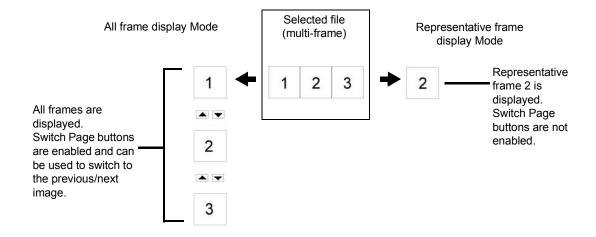
#### All Frame Display Mode and Representative Frame Display Mode

The display method for a given file differs between the all frame display mode and the representative frame display mode. The following diagrams show the differences between them.

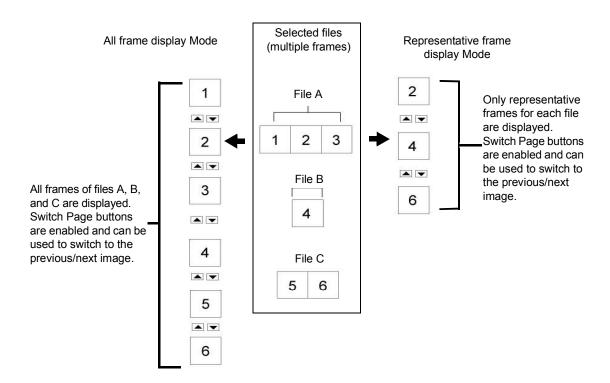
- When a single-frame file is selected:
  - In both modes, the frame 1 is displayed.



- · When a multi-frame file is selected:
  - In the all frame display mode, frames  $\begin{vmatrix} 1 \end{vmatrix}$ ,  $\begin{vmatrix} 2 \end{vmatrix}$  and  $\begin{vmatrix} 3 \end{vmatrix}$  are displayed.



- When two ore more files are selected, files including both a single-frame file and a multi-frame file:
  - In the all frame display mode, frames 1 to 6 are displayed.
  - In the representative frame display mode, representative frames 2, 4, and 6 are displayed.



#### 3.1.6 Switching Display Format

The image display area can be switched between single-image, 4-image, and 16-image display format.



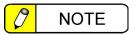
Display mode Button	
	Indicates the single-window display format. Also indicates full-screen display.
Indicates the 4-on-1 display format. Also indicates 4-division, 2×2 mu display in some cases.	
Indicates the 16-on-1 display format. Also indicates 16-division, 4×4 format display in some cases.	

- To select an frame in the multi-format display, click it. The image is surrounded with the selection border.
- When the display mode is switched to 4-on-1 or 16-on-1 display format, the process menu display section changes to the image selection menu.

3.1.7 "Selecting Images"

#### 3.1.7 Selecting Images

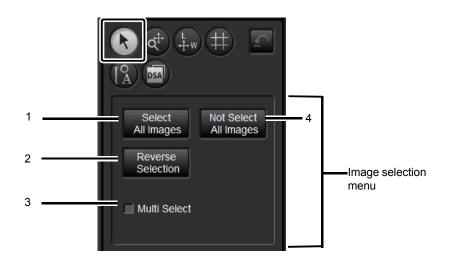
Select the image to be processed in the 4-on-1 display and 16-on-1 display formats. Various image processing will be applied to it.



The image selection menu can be used in 4-on-1 display and 16-on-1 display formats. In single-window display format, the image displayed is considered to be selected and so the image selection menu cannot be used.



The process menu display section changes to the image selection menu.



No.	ltem	Function
1	Select All Images	[Select All Images] Selects all the image files in the selected file.
2	Reverse Selection	[Reverse Selection] Reverses the selected state. Selected images will be deselected and unselected images will be selected.
3	☐ Multi Select	[Multi Select] Selects this option to select multiple images in 4-on-1 display or 16-on-1 display format.
4	Not Select All Images	[Not Select All Images] Deselects all selected images. The selection border around the images selected first remains.