OPERATION MANUAL

FOR

DIAGNOSTIC ULTRASOUND SYSTEMS

Aplio i900 / Aplio i800 / Aplio i700

TUS-AI900/TUS-AI800/TUS-AI700

OPTIONAL APPLICATIONS

(2B771-624EN*E)

IMPORTANT!

Read and understand this manual before operating the equipment. After reading, keep this manual in an easily accessible place.

CANON MEDICAL SYSTEMS CORPORATION

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6.2.3 Operations from the touch panel

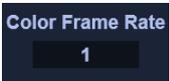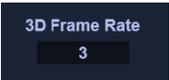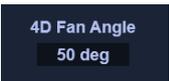This subsection describes the touch panel menus used in 4D mode.

1   4D
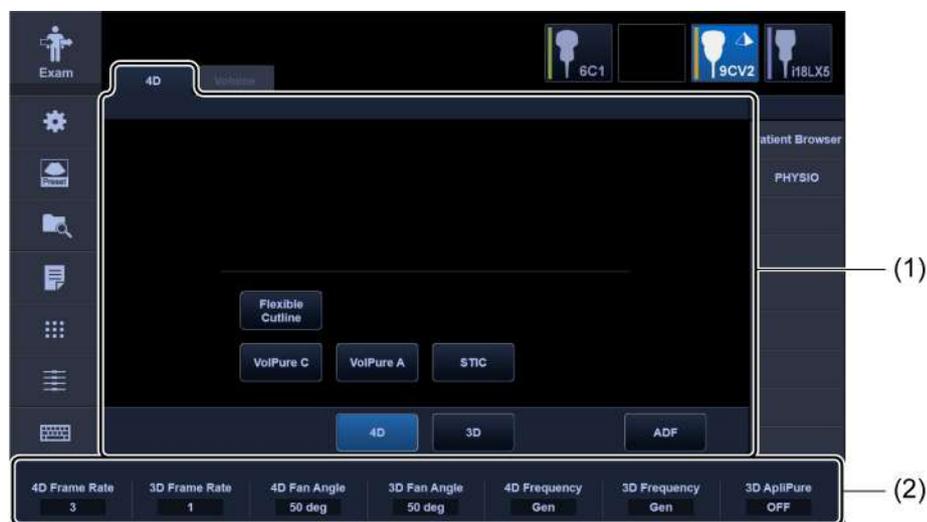
(1)   Area for main operations/imaging mode selection

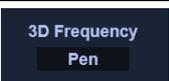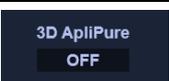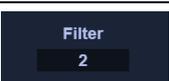| Item	Description
Flexible Cutline	Flexible cut line adjustment switch
VolPure C VolPure A	VolPure switches (refer to subsection 6.2.3.6)

Thickness < 7 mm > Rotation < 0 deg >	ROI adjustment switches for the data used to generate the VolPure image
	* Available when VolPure is activated.
	   • Thickness : Used to set the ROI width.
	   • Rotation : Used to set the ROI angle.

STIC	STIC/STIC Color switch (refer to subsection 6.2.3.7)
Azimuth < 90 ° >	Used to adjust the width in the azimuth direction. * The optional USVM-AI700A is required in order to use this function.
Elevation < 90 ° >	Used to adjust the width in the elevation direction. * The optional USVM-AI700A is required in order to use this function.

(2) Parameter setting area
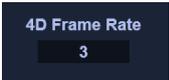
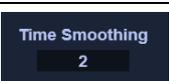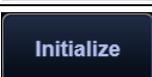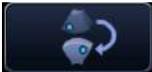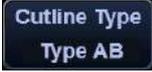| Item	Description
4D Frame Rate 3	Used to set the frame rate for 4D Live.
Color Frame Rate 1	Used to set the frame rate for 4D Live Color. * The optional USVM-AI700A is required in order to use this function.
3D Frame Rate 3	Used to set the frame rate for Single Sweep.
4D Fan Angle 50 deg	Used to set the transducer sweep angle for 4D Live.
3D Fan Angle 0 deg	Used to set the transducer sweep angle for Single Sweep.
4D Frequency Pen	Used to select the frequency setting to be used for 4D Live (from Pen, Gen, and Reso).
Color Frequency	Used to select the frequency for 4D Live Color. * The optional USVM-AI700A is required in order to use this function.
3D Frequency Pen	Used to select the frequency setting to be used for Single Sweep (from Pen, Gen, and Reso).
3D ApliPure OFF	Used to select ON/OFF for ApliPure+ during Single Sweep.
Scale	Used to adjust the velocity range for 4D Live Color. * The optional USVM-AI700A is required in order to use this function.
Filter 2	Used to adjust the low-cut filter for 4D Live Color. * The optional USVM-AI700A is required in order to use this function.
Time Smoothing 2	Used to adjust the smoothness of motion in the image for 4D Live Color. * The optional USVM-AI700A is required in order to use this function.
4D Freq.Type T6.0	Used to set the image frequency type (imaging method) for 4D Live.
3D Freq.Type T6.0	Used to set the image frequency type (imaging method) for Single Sweep.
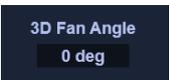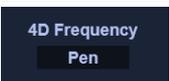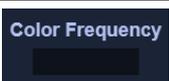
(1) Area for main operations/imaging mode selection
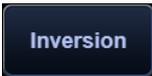
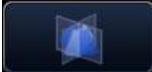| Item	Description
Inversion	Changes the 4D image rendering mode to "Inversion" (in which lumens are displayed using tone reversal).
MIP	Changes the 4D image rendering mode to "MIP".
Skeleton	Changes the 4D image rendering mode to "Skeleton".
MinIP	Changes the 4D image rendering mode to "MinIP".
Volume View	Volume View switch (refer to subsection 6.2.3.1)
Initialize	Resets the image parameter settings to the default values.
Fixed ROI	Used to turn ON/OFF the fixed ROI to be applied to 4D images.
Hide Volume	Toggles 4D image display (show/hide).
✄	Used to cut out a portion of the 4D image. * The [Magic Cut] menu is displayed on the touch panel.
Auto Flexible Cutline	Executes automatic adjustment of the flexible cutline. * Automatic adjustment is performed at 500-ms intervals during 4D Live.
↻	Rotates the 4D image 90° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 90°.
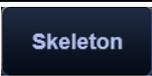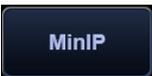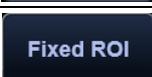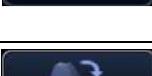
Item	Description
(rotate icon)	Rotates the 4D image 180° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 180°.
Flexible Cutline	Used for flexible cut line adjustment.
Cutline Type Type AB	Type A : Adjust flexible cut line using plane A. Type AB : Adjust flexible cut line using both plane A and B.
B plane Type1	Used to select the display orientation of plane B.

Animation	Used for animated display.
	
	 * Starts 4D animation after the playback method is selected. (Select this switch again to stop animated display.)
	
	   • H 60 deg : Used to rotate the image by 60 degrees in the horizontal direction.
	
	   • H 120 deg : Used to rotate the image by 120 degrees in the horizontal direction.
	
	   • V 60 deg : Used to rotate the image by 60 degrees in the vertical direction.
	
	   • V 120 deg : Used to rotate the image by 120 degrees in the vertical direction.

Animation Store	Stores the animated display.

Thickness 7 mm
 	
 Rotation 0 deg
	ROI adjustment switches for the data used to generate the VolPure image
	
	 * Available when VolPure is activated.
	
	   • Thickness : Used to set the ROI width.
	
	   • Rotation : Used to set the ROI angle.

(plane mode icon)	Displays the volume image in Plane mode. * Available when Volume View is activated.
Selecting the viewing direction	(cube icon) / (cube icon) / (cube icon) / (cube icon) / (cube icon) / (cube icon)
Timer A Timer B	Used to start or stop the corresponding stopwatch.

Item	Description

Changing the light source position	/ / / /
	  / / / /
	  /
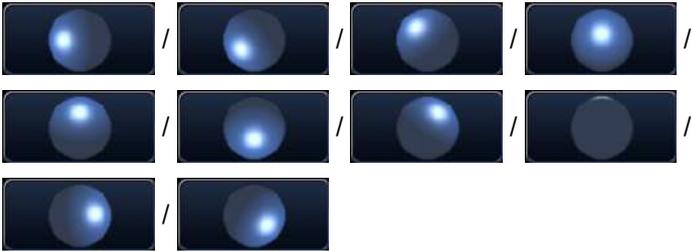	
	 * Available when Luminance or Shadow Glass is activated.

Surface Rendering	Used for volume rendering display.
Luminance	Changes the 4D image rendering mode to "Luminance". * The optional USLM-AI900A is required in order to use this function. * The trackball can be used to change the light source position.
Shadow Glass	Changes the 4D image rendering mode to "Shadow Glass".
Multi View	MultiView switch (refer to subsection 6.2.3.2)
Omniview	Omniview switch (refer to subsection 6.2.3.3)
Multiplanar	Used to display only MPR images in four-frame layout (4D images are hidden).
Plane Indicator / Label	Used to switch identification displayed on MPR or 3D images. • Label : Displays an identification label (A, B, C, or 3D) for the displayed plane. • Position : Displays the position of the displayed plane.
Line Disp.	Used to switch display of the following items ON/OFF. • Boundary lines on 4D images • Rotation axis on MPR images
Icon Disp.	Used to switch display of the icon to indicate the positional relationship between the MPR image and the 3D image ON/OFF.
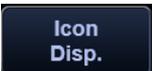
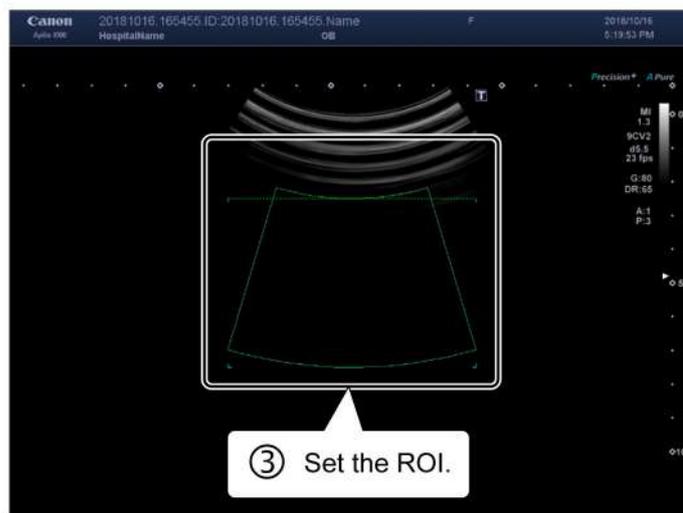| Item	Description
Icon Disp. Type Auto	Used to set the display type for the icon to indicate the positional relationship between the MPR image and the 3D image.

When Icon Disp. Type is set to "Auto"	When Icon Disp. is turned ON: The icon is displayed at all times.
	When Icon Disp. is turned OFF: The icon is displayed according to the conditions specified below. • 4D ROI unrotated • During 4D ROI operation (rotation, pan)
When Icon Disp. Type is set to "Manual"	When Icon Disp. is turned ON: The icon is displayed at all times.
	When Icon Disp. is turned OFF: The icon is not displayed at all times.

Item	Description
Map Independent	Used to independently adjust the 2D and MPR B/W color maps. ON : B/W color maps of 2D and MPR can be adjusted independently. OFF : B/W color maps of 2D and MPR are adjusted together.

6.2.3.5   Volume Color

In Volume Color mode, 3D images can be displayed in Color mode.

- Select a Color mode from among CDI (Velocity), Power Angio, and SMI.

- Refer to the compatibility table of transducers and modes in subsection 5.6 of the Operation Manual <<Fundamentals volume>> for the transducers that support Volume Color.

① Display the image in the desired Color mode.
(Refer to the Operation Manual <<Fundamentals volume>>.)

② 3D

(If a matrix array abdominal transducer is used, 4D Live mode is started when 4D is pressed.)

③ Set the ROI.

④ Press the **3D Start** multifunction (Single Sweep) switch or FRZ.

<<Image display>>

(1) Area for main operations/imaging mode selection

Item	Description
Volume View	Volume View switch (refer to subsection 6.2.3.1)
Initialize	Resets the image parameter settings to the default values.
Hide Volume	Toggles 4D image display (show/hide).
(scissors icon)	Used to cut out a portion of the 4D image. * The [Magic Cut] menu is displayed on the touch panel.
(rotate 90° icon)	Rotates the 4D image 90° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 90°.
(rotate 180° icon)	Rotates the 4D image 180° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 180°.
B plane Type1	Used to select the display orientation of plane B.
Animation	Used for animated display. * Starts 4D animation after the playback method is selected. (Select this switch again to stop animated display.) • H 60 deg : Used to rotate the image by 60 degrees in the horizontal direction. • H 120 deg : Used to rotate the image by 120 degrees in the horizontal direction. • V 60 deg : Used to rotate the image by 60 degrees in the vertical direction. • V 120 deg : Used to rotate the image by 120 degrees in the vertical direction.
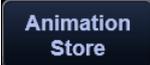
Item	Description
Animation Store	Stores the animated display.
Reverse	Used to reverse colors.
	Displays the color volume image and MPR image.
	Displays the color volume image and tissue cube cut image.
	Displays the color volume image and transparent tissue cube cut image (for observing the distribution of blood vessels in tissue).
	Used to display the blood flow with a single color map using Shadow Glass mode.
	Used to display the blood flow based on the MPR color map using Shadow Glass mode.
	Displays the cube cut image.
	Displays the color volume image.
B Crop	Turns display of Tissue MPR and Tissue Cube Cut ON/OFF. (Edit ROI is used instead when **B Crop** is not displayed on the touch panel.)
Surface Rendering	Used for volume rendering display.
Luminance	Changes the 4D image rendering mode to "Luminance". * The optional USLM-AI900A is required in order to use this function. * The trackball can be used to change the light source position.
Shadow Glass	Changes the 4D image rendering mode to "Shadow Glass". * The optional USSG-AI900A is required in order to use this function. * The Shadow Glass menu is displayed on the touch panel.
Multi View	MultiView switch (refer to subsection 6.2.3.2)
Omniview	Omniview switch (refer to subsection 6.2.3.3)
Color Top	Displays colored areas in front of black-and-white areas.
Opacity Control Power	Velocity : The color opacity is adjusted according to the velocity information of the blood flow. Power : The color opacity is adjusted using the power information of the blood flow.

(2) Parameter setting area
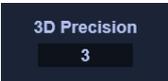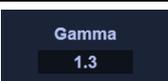
Item	Description
MPR Precision 1	Used to set the degree of smoothing of the MPR image.
3D Precision 3	Used to set the degree of smoothing of the 4D image.
Gamma 1.3	Used to set the gamma curve of the MPR image.
Color MAP 4	Used to set the hue of the color image.
Base Line 0.0	Used to set the amount by which the baseline is moved vertically.
Balance 14	Used to set the color/monochrome balance.
C Transp. 60	Used to set the transparency of the color image.
Transparency 40	Used to set the transparency of the 4D image.
3D Gain Offset 0	Used to set the gain of the 4D image.
MPR MAP 5	Used to set the hue of the MPR image.
3D MAP 5	Used to set the hue of the 4D image.
DR 60dB	Used to set the dynamic range of the MPR image.
3D Contrast 50	Used to set the contrast of the 4D image.
3D Brightness 50	Used to set the brightness of the 4D image.
FilterType Filter	Used to switch the filter type between Filter and Gradient.
Power DR 30	Used to set the dynamic range of the Power image.
Power Cut Off 5	Used to set the coloring of the Power image.
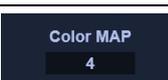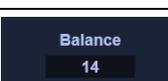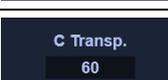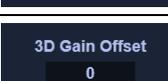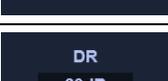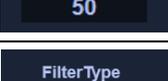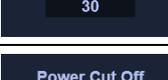
Item	Description
C MPR Precision 1	Used to adjust the degree of smoothing of the MPR image (colored part).
C 3D Precision 2	Used to adjust the degree of smoothing of the 4D image (colored part).
C Brightness 50	Used to adjust the brightness of the 4D image (colored part).
C Contrast 50	Used to adjust the 4D image contrast (colored part).
Mix 50	Used to adjust the proportion between colored areas and black-and-white areas of the 4D image.
Thickness 2.0 mm	Used to adjust the MPR image thickness.
MPR Mode Average	Used to set the mode for depth direction display of MPR images. • Average : Applies the average pixel value in the depth direction. • MIP : Applies the maximum pixel value in the depth direction. • MinIP : Applies the minimum pixel value in the depth direction.
C MPR Luminance 1	Used to adjust the 3D display of color MPR images • 0 : 3D display OFF • > 0 : 3D display ON The higher the value, the greater the 3D effect in the displayed image. * The optional USLD-AI900A is required in order to use this function.
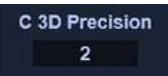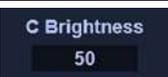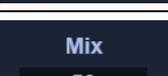
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