

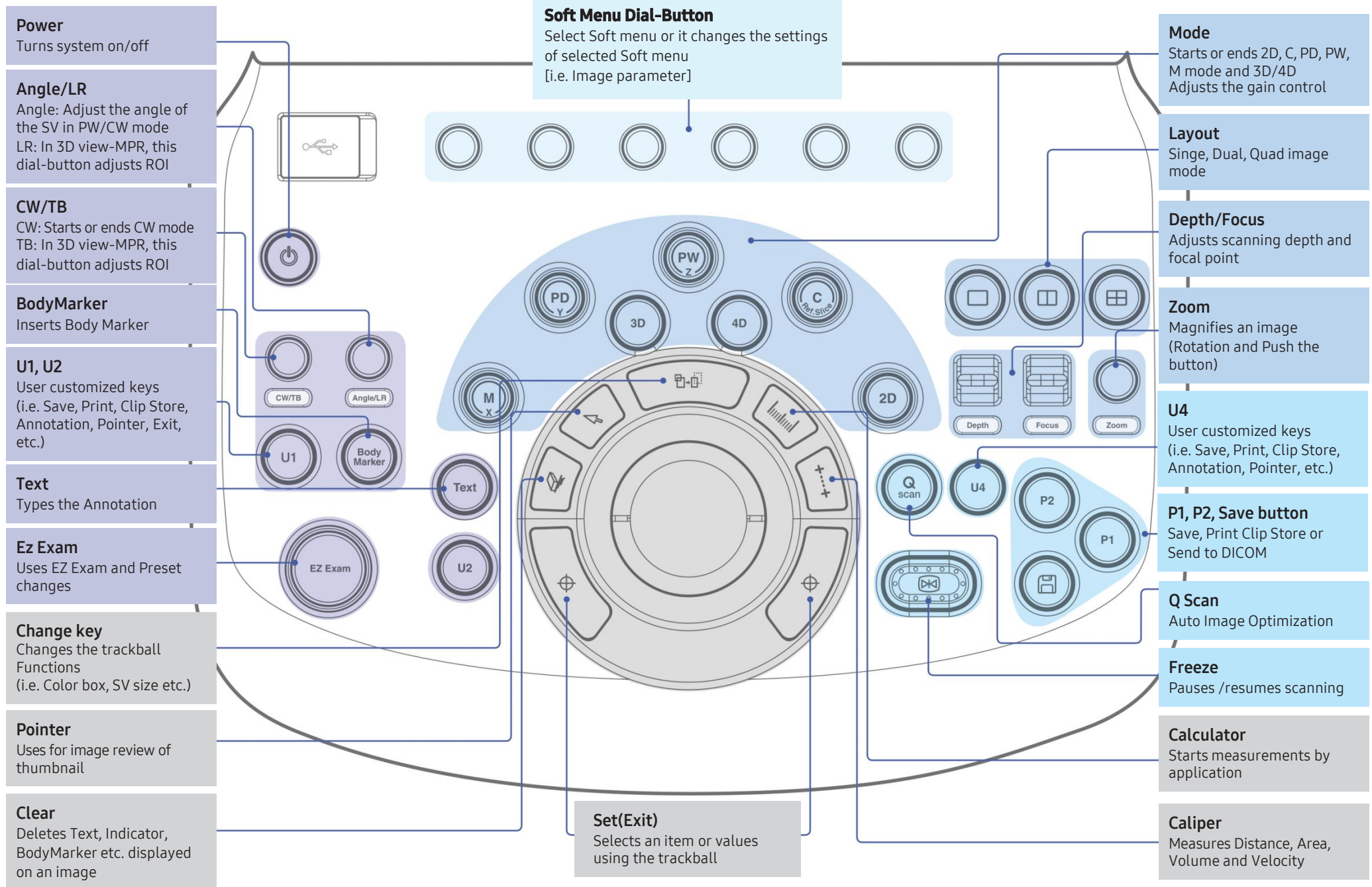
# WS80A

## Quick Manual

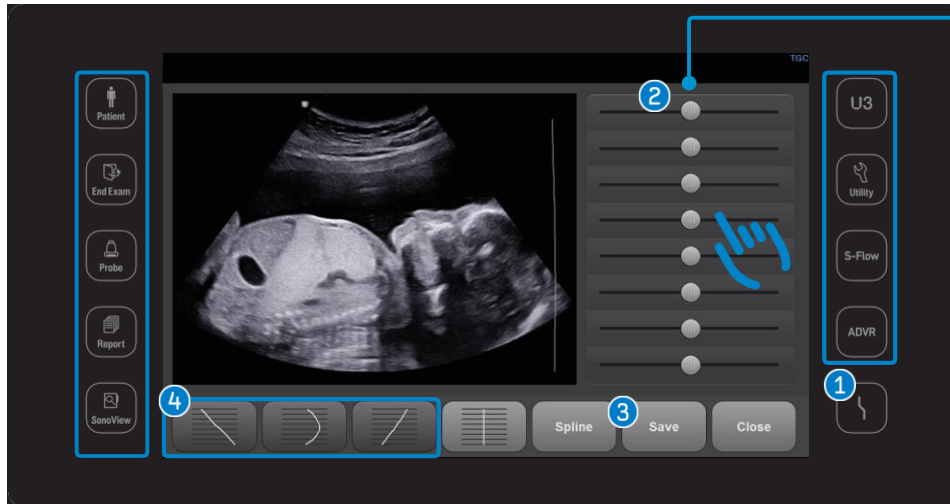


Produced by Clinical Training Center of SAMSUNG MEDISON

※ Quick Manual dose NOT include all instruction. For more detail, please refer to WS80A User Manual.  
It was written based on version 3.00 of WS80A.



## Touch screen menu



### ■ Digital TGC(Time Gain Compensation)

- 1 Tap the DTGC on the touch screen.
- 2 Change the TGC line by dragging with fingers
- 3 Save the changed TCG line.
- 4 Select the save location.

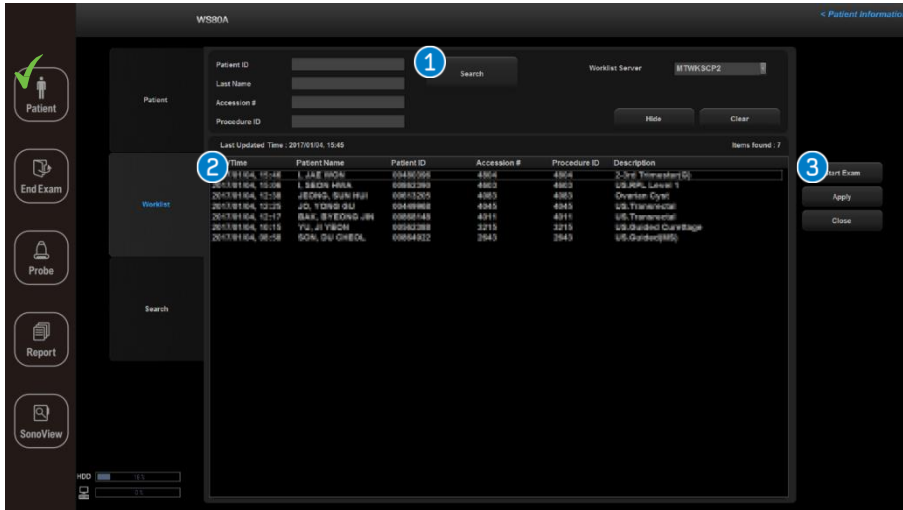
### ■ Information Area

<b>Patient</b>	Display/enter the Patient Information. You can select a patient ID from worklist or enter a new patient information manually.
<b>End Exam</b>	Finishes the exam of the currently selected patient and resets the related data.
<b>Probe</b>	Displays the Probe Selection screen to select or change the probe and application.
<b>Report</b>	Shows the measurement results of the current application and other information.
<b>SonoView</b>	Image management program. (Review, Storage, Delete, Export and Backup)

<b>U3</b>	User customized keys (i.e. Save, Print, Clip Store, Annotation, Pointer, etc.)
<b>Utility</b>	This menu is for system settings and ECG, Biopsy, Key Volume, Touch screen brightness and contrast can be adjusted.
<b>S-Flow</b>	Activates of bi-directional Power Doppler mode.
<b>ADVR</b>	Performs recording feature. (Image or Video)

## Worklist Search

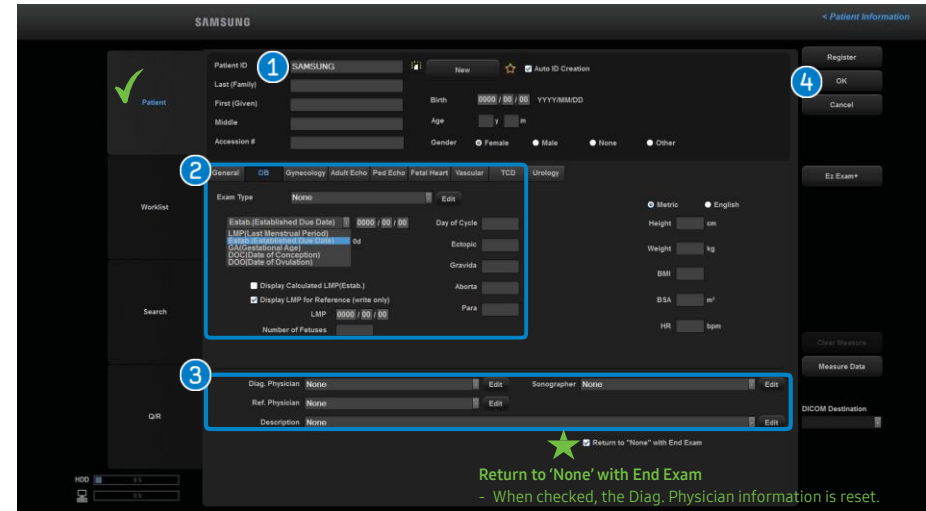
- ✓ Select [Patient] on the touch screen.  
(A Worklist search is available only when DICOM is connected.)



- Search** When you click [Search], the list of patients who match the search criteria will be displayed. Patient ID, Last Name, Accession #, Procedure ID, Start Date, and Modality can be used as search criteria.
- ID Select** Select patient list and tap on [Apply]. This applies the selected patient information to the system.
- Start Exam** Click [Start Exam] to enter scan mode. (If you wish to enter detailed patient information, please click [apply].)

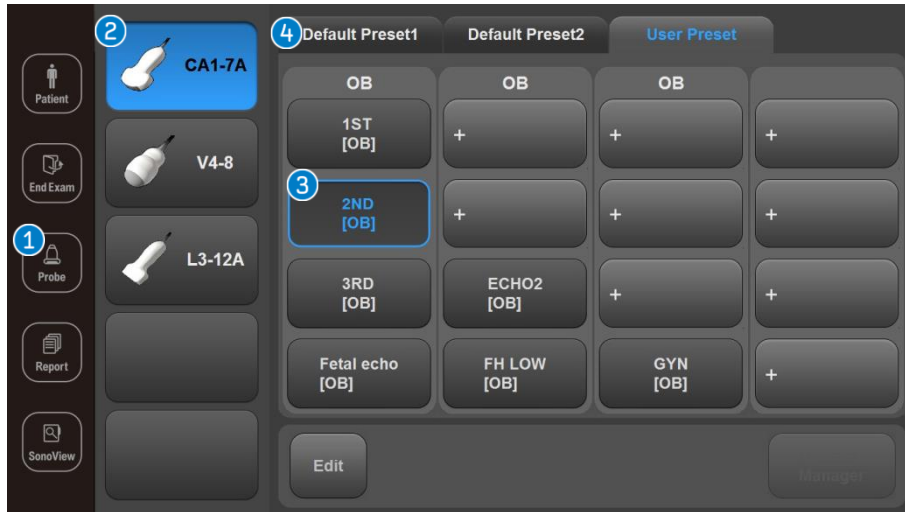
## Registration of Patient

- Select [Patient] on the touch screen then select Patient(✓) on the monitor screen.



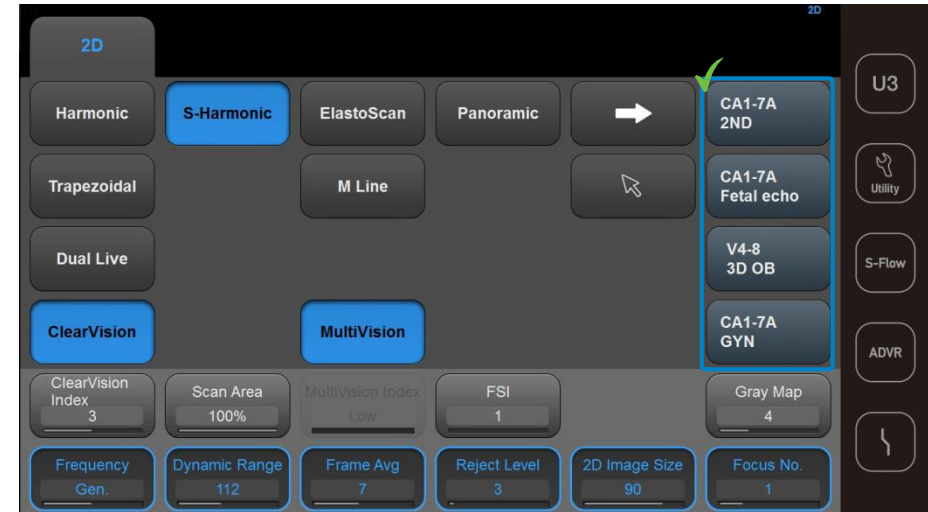
- Insert ID** Enter patient ID, name, and other types of basic patient.
- Add Information** Add required information for individual applications.
  - \* Enter the obstetrical information.
  - ① Enter the OB Application tab
  - ② LMP, EDD, Number of fetuses etc.
- Operator** Enter the name of the physician who scanned the patient.
- Start Exam** Click [OK] to enter scan mode.

## Probe Selection

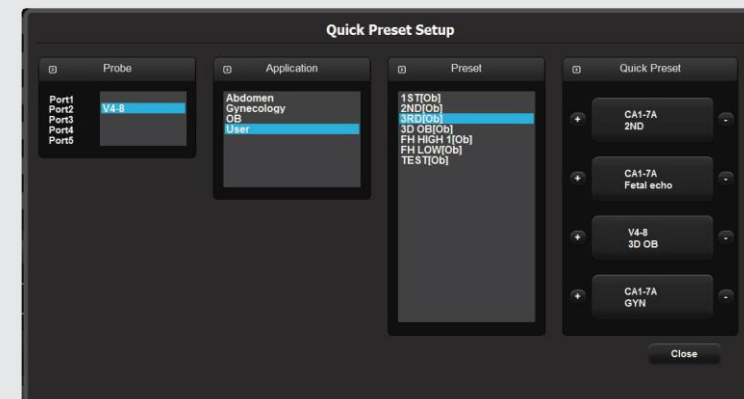


- 1 Probe Selection** Select [Probe] of the touch screen.
- 2 Probe Type** Displays a list of all probes currently connected to the system. Select the probe icon you would like to use.
- 3 User Preset** User presets can be set as user's preference.
- 4 Default Preset** Select it when you want to use the factory (default) setting.

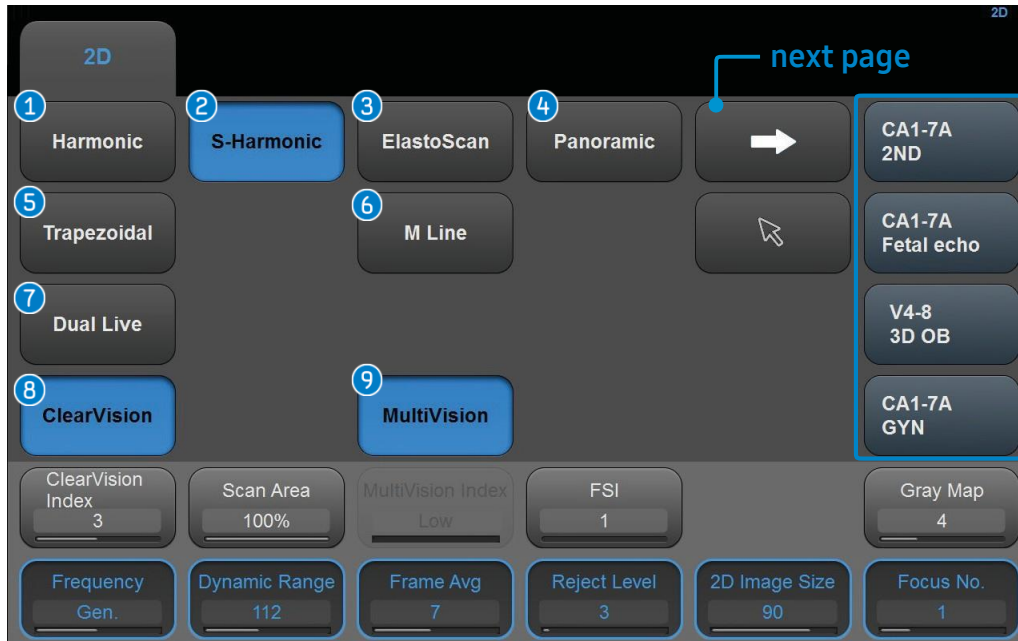
## Quick Preset



- Quick Preset** Shows the frequently used presets. Changes both probes and presets simultaneously. (Select up to 4 presets on set up menu.)  
Utility → Setup → General → Quick Preset Setup



## Touch Screen – Scan Mode



### Function

- 1 **Harmonic** Adjusts contrast resolution of image.
- 2 **S-Harmonic** Provides more clear image from near to far zone using wide band frequency.
- 3 **ElastoScan** Provides elasticity imaging of an object and strain ratio of tissue.  
*\* ElastoScan is an optional feature of this product.*
- 4 **Panoramic** Acquires wider image range via reconstructing multiple frames.

5 **Trapezoidal** Changes rectangular format from linear probe to trapezoidal format, so can provide wider view angle.

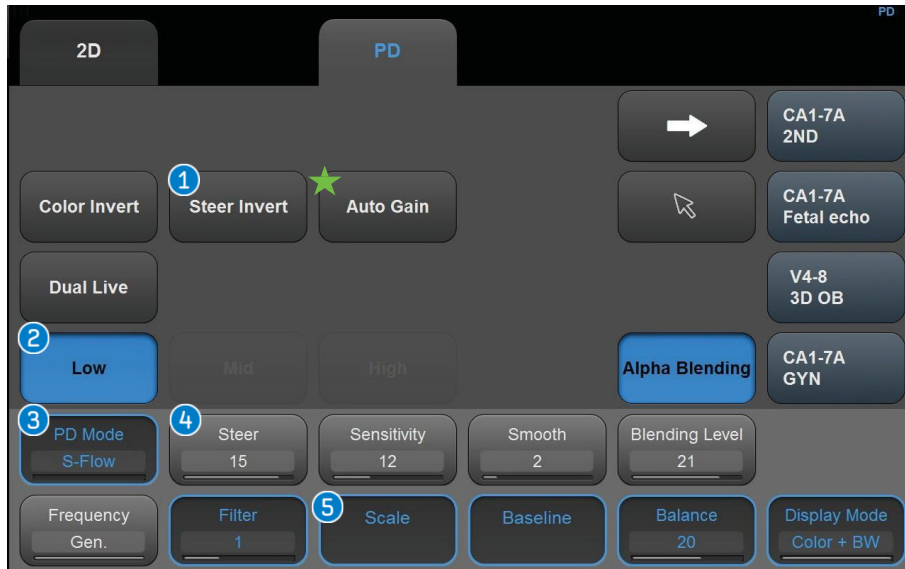
6 **M Line** The M Line indicates in the 2D image when M or PW Mode.

7 **Dual Live** Displays 2D image and Color Doppler image simultaneously.

8 **ClearVision** Removes noise and enhances outlines to make the image more clearly.

9 **MultiVision** The spatial compound image by using multi-beam.

## Color/PD Doppler/S-Flow



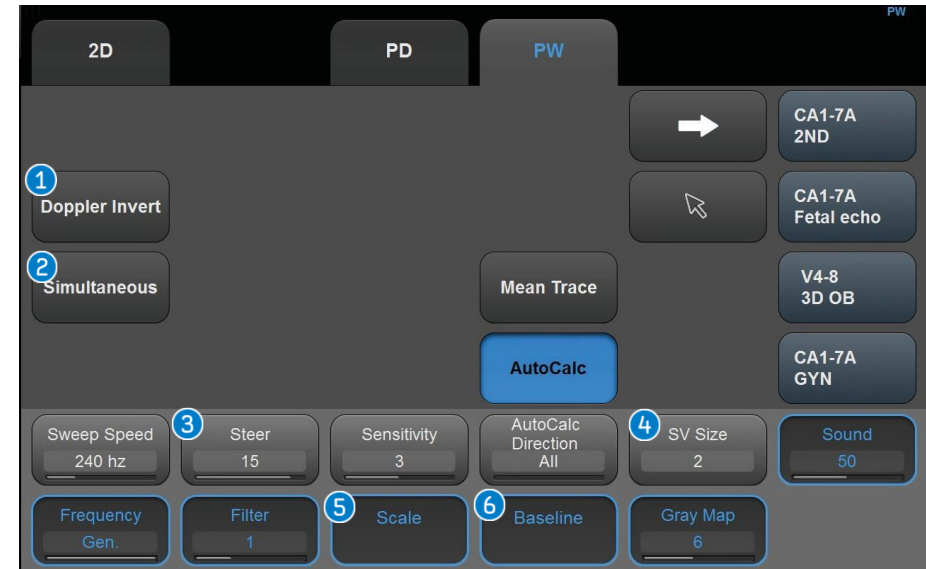
- 1 Steer Invert** Inverts the direction of color box.
- 2 Low/Mid/High** Automatically adjusts the appropriate color scale.
- 3 PD Mode (S-Flow)** High sensitivity bi-directional Power Doppler mode for tiny vessels. (Access from PD mode → S-flow mode)
- 4 Steer** Adjusts the angle of color box. (Right 3, 2, 1, none, Left 1, 2, 3)
- 5 Color Scale** Adjusts the PRF. (Pulse Repetition Frequency)

### ■ Smart Dynamic Color

#### ★ Auto Gain

- Select [Auto Gain] on the touch screen in Artery, Carotid preset.
- Adjusts proper Color gain automatically frame by frame.
  - The dynamic color coding up on blood pressure can be controlled via [Auto Gain] function.

## PW Doppler



- 1 Doppler Invert** Inverts + and -, which indicates the velocity of the spectrum.
- 2 Simultaneous** Views real-time 2D and Spectral Doppler image at the same time.
- 3 Steer Invert** Inverts the angle of the sample volume.
- 4 SV Size** Select a SV size between 0.5~20 mm.
- 5 PW Scale** Adjusts the PRF. (Pulse Repetition Frequency)
- 6 Baseline** Adjusts baseline by rotating dial-button.

### Smart Auto Doppler \* This function is only available in Vascular preset of linear probe.

- Select [Quick Scan] on the control panel in the Doppler mode.
- Location of the ROI box, the sample volume position, and the direction of the Steer angle can be controlled by one click.
  - Improves the complex UI Workflow of Doppler mode.

## 3D/4D

### ■ 3D / 4D Data Acquisition

#### 1 3D/4D

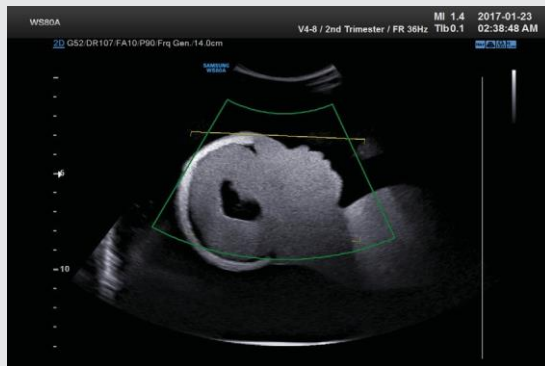


Select [3D] or [4D] on the control panel.

#### 2 ROI Control

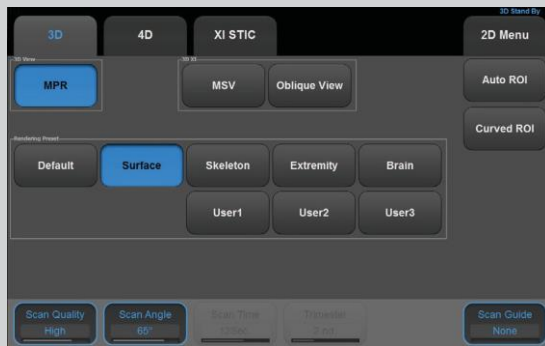


Adjust the size and location of the ROI using [Change key] and trackball.



#### 3 Select 3D Preset

Select 3D preset on touch screen.



#### 4 Enter 3D



Press [Set] or [Freeze], enter 3D or 4D mode.  
Press [Exit] during data acquisition, return to scan mode.

### ■ 3D / 4D Rendering (Axis and Orientation)



#### 1 Reference Image

Set the Reference images in 2D A, B, C.  
A : Axial Section Image  
B : Sagittal Section Image  
C : Coronal Section Image  
OH : Set the Reference images in 2D A, B, C.

#### 2 3D Rotation

Rotation of 3D image  
↶ : 90 degrees counter clockwise  
↷ : 90 degrees clockwise rotation  
↻ : 180 degrees clockwise rotation

#### 3 3D Axis Adjustment

Rotation the image by rotating the X, Y, Z knob  
⊕ : Rotating Image by X-axis ↑  
⊙ : Rotating Image by Y-axis ←→  
⊗ : Rotating Image by Z-axis ↻



## 3D/4D

### ■ 3D / 4D Rendering



- 1 Display Format**
- Single - Displays the 3D image in full screen view.
  - Dual - Displays one 2D image and one 3D image.
  - Quad - Displays all 2D and 3D images.

- 2 Position/Bias**
- Adjusts contrast and brightness in 3D image. Adjusts the light and shade according to the post curve by adjusting the [Position] and [Bias].

- 3 Th. Low**
- Allows you to adjust the threshold value in order to eliminate unnecessary data from images. As the number increases, cyst elements become more apparent. As the number decreases, bone elements become more apparent.

- ✓ Post Gain Control**
- Adjust the volume of 3D subject adjusting the 2D Gain Knob.

### ■ 3D View



**MPR** Multi Planar Reconstruction Displays three orthogonal sections.

**VOCAL** Measures the volume of an object in a standard 3D image. Rotational slices are used.

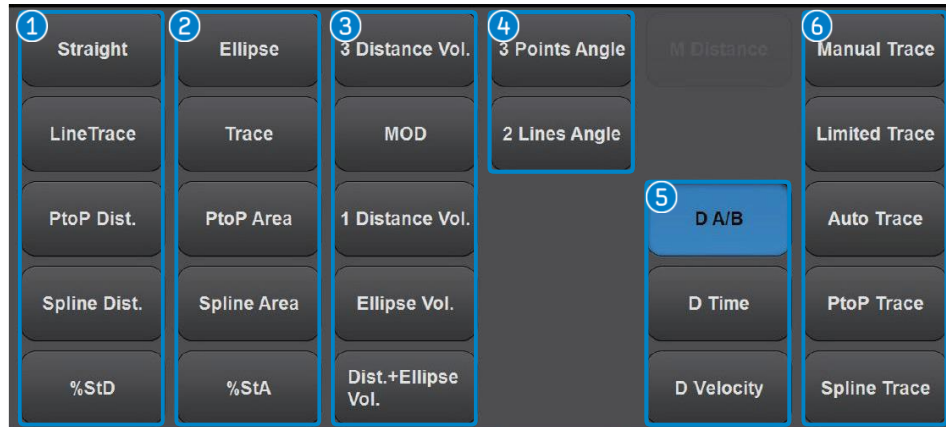
**MSV** Multi Slice View  
An image can be viewed in multiple slices.

**Oblique View** After drawing a straight or curved line in the selected image in MSV mode, you can observe the related oblique image.

**XI VOCAL** The object is cut into numerous sectional slices to determine its volume. Horizontal slices are used.

## Measurement

- Calculator Data measurement by application. (OB, Cardiac, Vascular, Prostate, etc.)
- Caliper Measures (using a trackball and [Set]) selected items. (i.e. Distance, Area, Volume, Doppler measure etc.)



### 5 Doppler (Only available in Spectral Doppler mode)

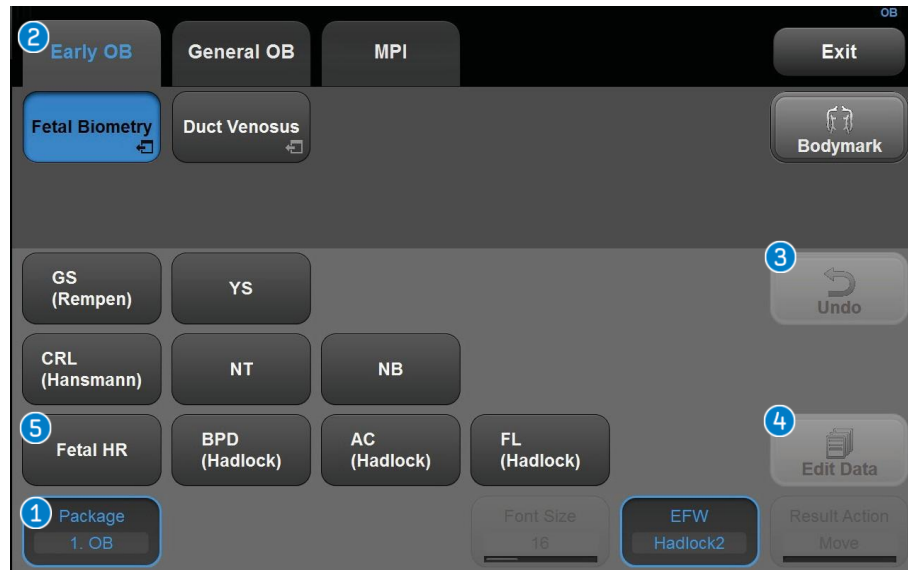
- D A/B** Measures the velocity at 2 specified points, which includes S/D ratio, RI, PI, velocity gradient, time gradient and acceleration time.
- D Time** Calculates time on selected range between the bars.
- D Velocity** Measures the velocity at 1 specified point.

- 1 Distance**
  - Straight** Measures the straight distance between 2 points.
  - Trace** Measures traced curved-line.
  - %StD** Diameter of a vessel is measured and the stenosis ratio calculated.
- 2 Area**
  - Ellipse** Measures the circumference area.
  - Trace** Measures the traced area of an irregular object.
- 3 Volume**
  - 3 Dist. Vol.** Measures the volume of an object by using 3 straight lines.
- 4 Angle**
  - 3 Point** Measures the angle using 3 points.
  - 2 Line** Measures the angle between 2 lines.

### 6 Doppler Trace

- Manual** Traces Spectral Doppler wave form and calculates velocity, integral value and the average velocity of blood flow. (includes S/D ratio, RI, PI, Velocity gradient, Time gradient and Acceleration time.)
- Limited** Automatic spectrum trace within specified range.
- Auto** Automatic spectrum trace within whole range.

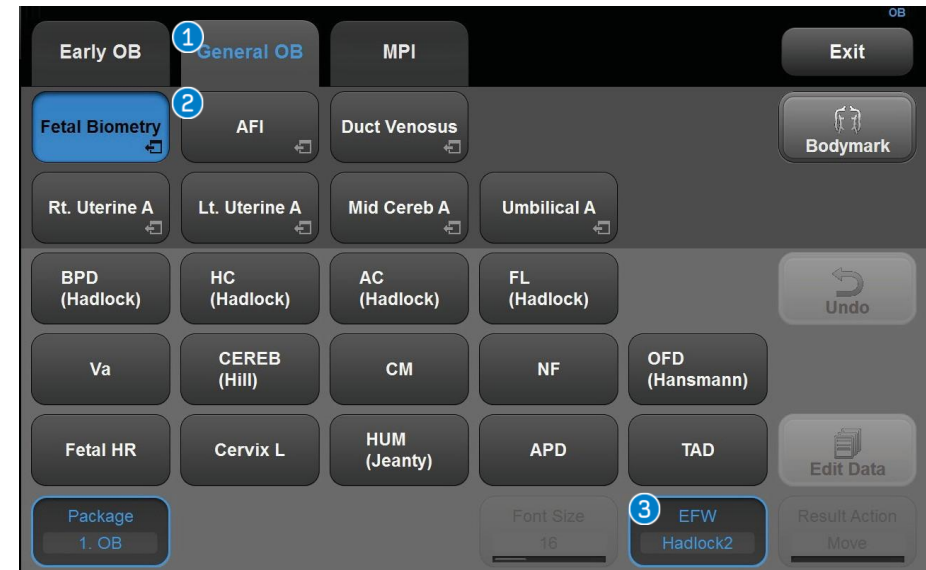
## Measurement – Early OB



- 1 Package** Provide calculate package up on selected probes/ applications.
- 2 Early OB** Activate the 1st trimester measurement items including GS, CRL, NT and etc. Measure the length using [Set] and trackball.
- 3 Undo** When [Undo] is activated, the measured item is cancelled and can be measured again.
- 4 Edit Data** Measured data to be edited in [Report].
- 5 Fetal HR** Fetal heart rate measurement  
\* HR cycle is controllable when selecting Fetal HR.



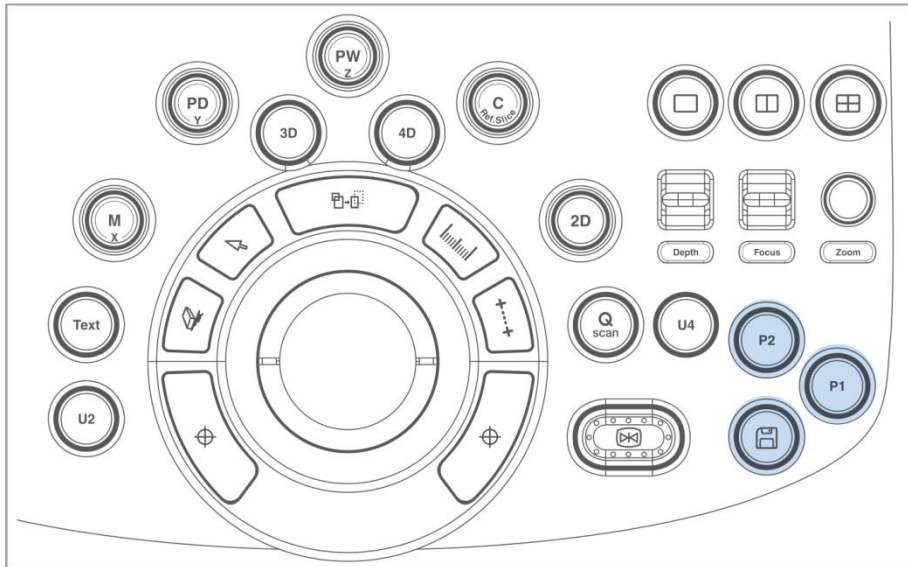
## Measurement – General OB



- 1 General OB** Each group can measure the fetal biometry. (Fetal Biometry, Cranium, Long bone, Doppler measurement)
- 2 AFI** Measures the quantity of Amniotic Fluid.  
AFI All : Sequential measurement of four pockets  
Q1, Q2, Q3, Q4: Measure each pocket
- 3 EFW** Change the EFW reference.  
Can change items for calculation of EFW according to reference.  
ex) *Hadlock 2*(BPD, AC, FL), *Hadlock 4*(BPD, HC, AC, FL)
- Meas. Setup** Change the reference & measure items on set up menu.  
Utility → Measure Setup or Measure Menu

## Still Image Save

- Saves a single image.

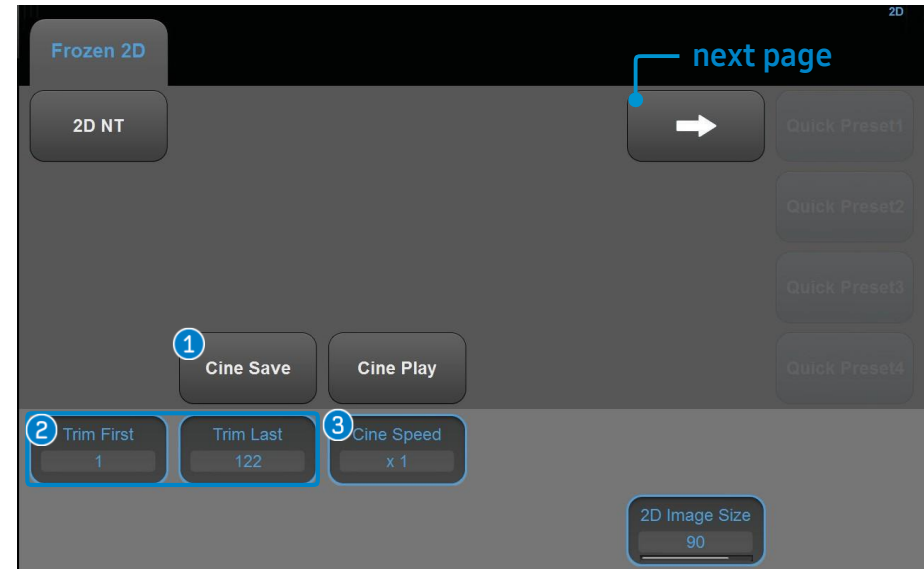


**Still Image Save** Press [Save key].  
 (In the default settings, the [Save key] is assigned to save but user can choose on the setup menu.)  
 \*Available in Freeze mode or Unfreeze mode.

**P1-2 [Peripheral key]** Multiple functions can be saved to the [P1] and [P2], such as Save, Store Clip, Print1, Print2, and Send to DICOM.  
 ※ You can set the functions on Setup menu.

## Cine Save – Freeze Mode

- Saves video between Unfreeze and Freeze mode up on available maximum frame.



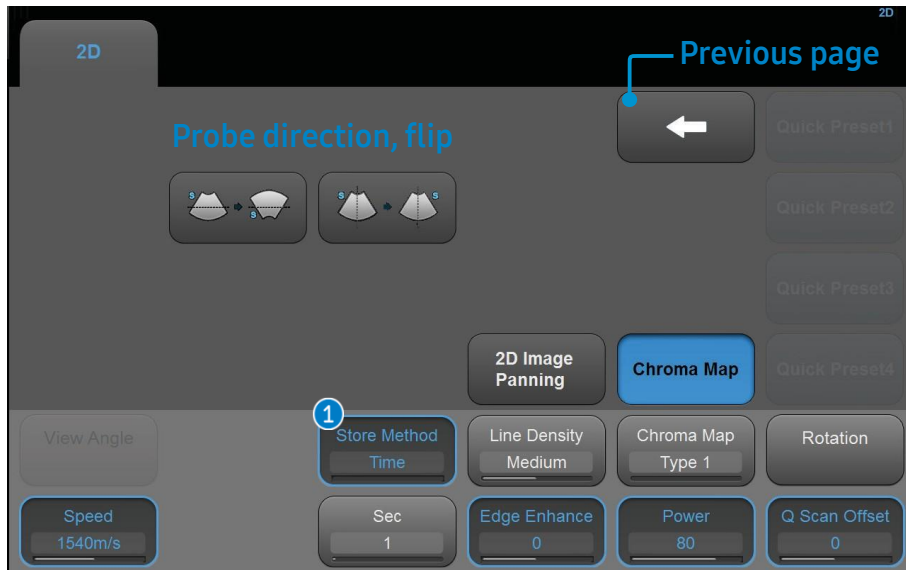
**1 Cine Save** Tap the [Cine Save] to save the specified image frames by tapping it.  
 (Only available on Freeze mode)

**2 Trim First.** Set the first frame of the cine images to be saved.  
**Trim Last.** Set the last frame of the cine images to be saved.

**3 Cine Speed** Sets cine play speed.  
 It can be set from x0.5, x1.0, x1.5 to x2.0.

## Store Clip Image Save – Scan Mode

■ Store Clip Image : On the scan mode, press the [User key] on the control panel that corresponds to store clip. (Usually be assigned on the [P1])

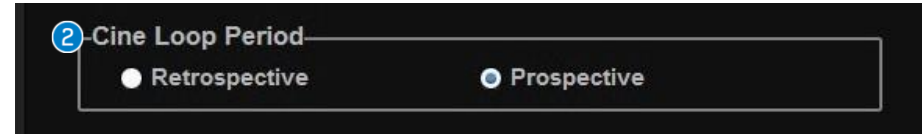


**1 Store method** Select the method for saving the cine image when you use the store clip function.  
Select the type of store clip.

**Time** Sets time duration when save the images.

**Manual** Sets store range by manual.  
Saves the images from the time when [Store Clip] is firstly pressed to it is pressed again.

**ECG Beat** Saves the images by heart beat. (1 - 8 beats)  
※ ECG Beat can be selected only when ECG is on.



### 2 Cine Loop Period - configure on the setup

**Retrospective** When you select this option, scanned cine image will be saved.

**Prospective** When you select this option, cine images will be scanned to be saved.

### ■ DICOM Transfer Mode

#### Configure on the setup (DICOM and User Defined key)

**Send On End Exam** Sends all saved images when you press [End Exam].

**Send As You Go** Sends an image whenever you press [Save].

**Manual Send to DICOM** Transfers images manually in the [SonoView].

## SonoView – Image Review

- [SonoView] is a image management program.
- Tab the [SonoView] of the touch screen.

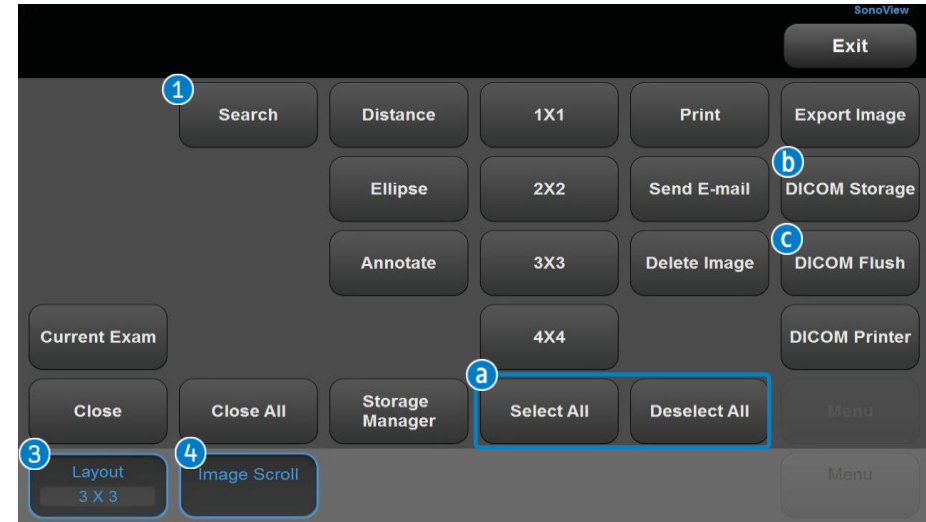


- [Current Exam] is shown on the first page.

- |                       |  |
|-----------------------|--|
| <b>1 Search</b>       | Open exam list.  |
| <b>2 Exam list</b>    | The selected exam list or completed exam list is displayed. The selected image is shown in blue box. |
| <b>3 Layouts</b>      | Adjusts displayed images layout from 1 x 1 to 4 x 4 (Max. 16 images)                                 |
| <b>4 Image Scroll</b> | Displays the images on the next or previous page.  |

## Send to DICOM – Manual

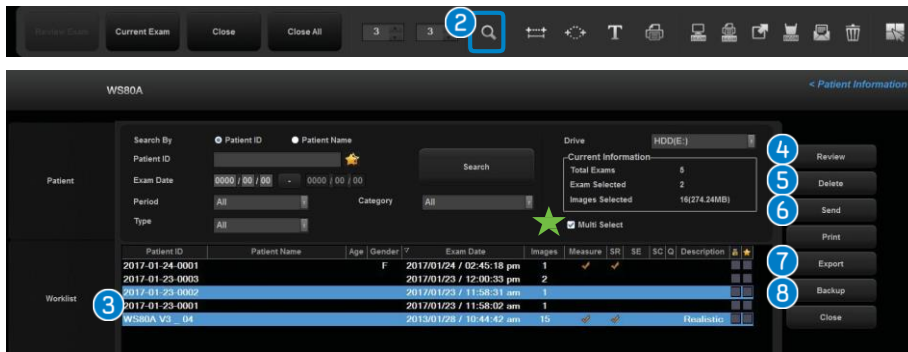
- The method to manually transfer images.



- |  |   |
|--|---|
| <b>a Select All</b><br><b>Deselect All</b> | Selects or deselects all images. Select the images using the trackball or [Set]. The selected images are shown in blue box. |
| <b>b DICOM Storage</b>                     | Sends the selected image to the DICOM server. Only available if the image is selected. [DICOM Storage] → [Transfer]         |
| <b>c DICOM Flush</b>                       | Transfers all <b>NOT SENT</b> image to PACS. Only available if the exam is running.   |

## SonoView – Image Management, Export & Backup

- 1 Tab the [SonoView] of the touchscreen.
- 2 Select Exam [Search] of the [SonoView]screen.

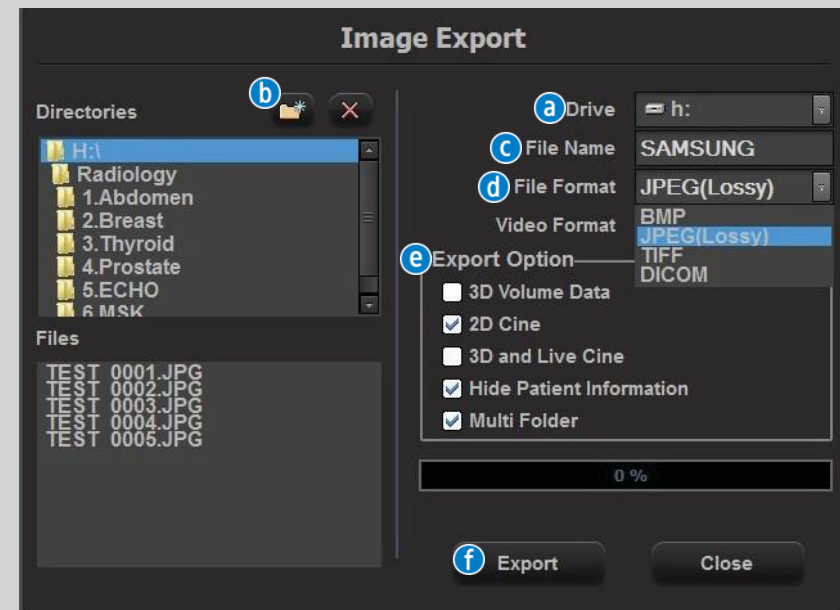


- 3 Select patient ID in the exam list.  
(★ Multi Select - selects multiple exams)

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>4 <b>Continue Exam or Review Exam</b></li> </ol> | <p>Reviews the saved images.<br/>If the exam was performed within 24 hours from now, append exam is allowed.<br/>Exams performed longer than 24 hours, only [Review Exam] is allowed.</p> |
| <ol style="list-style-type: none"> <li>5 <b>Delete</b></li> </ol>                       | <p>Deletes the saved exams.</p>   |
| <ol style="list-style-type: none"> <li>6 <b>Send</b></li> </ol>                         | <p>Transfers the saved images to PACS server.<br/>(Select [Send] → Displayed the DICOM Storage → Select Alias → [Transfer])<br/>* Transfers all images on selected exams.</p>             |

- 7 **Export** Converts image to PC compatible format such as BMP, JPEG, TIFF, AVI, MPEG, DICOM..

- a Select Drive. ( CD-G; USB-H: )
- b Directories – Select the location in which the exam will be saved.
- c Enter the file name.
- d Select file and video format. (BMP, JPEG, TIFF, DICOM, AVI, MP4)
- e Export Option  
Hide Patient Information – To remove patient ID and name  
Multi Folder – Categorized files per date and patient ID
- f Click [Export]



- 8 **Backup** Back up and restore data.  
These back up data only can be review on the system.  
Select Backup → Confirm [Yes] → Select Drive → DVD(g:), USB(h:)

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