

# HS30

## Quick Manual



Produced by Clinical Training Center of SAMSUNG MEDISON

※ Quick Manual does NOT include all instruction. For more detail, please refer to HS30 User Manual.  
It was written based on version 1.00 of HS30.

**Power**  
Turns system on/off

**1 Patient**  
Enters, Searches, or Changes patient information

**2 SonoView**  
SonoView is a image management program

**3 Report**  
Shows the measurement results of the current application and other information

**4 End exam**  
Finishes the exam of the currently selected patient and resets the related data

**Select Probe**

**TGC**  
Time Gain Compensation

**Menu**  
Opens the chosen left menu on the monitor

**Pointer**  
Selects soft menu or uses for image review of thumbnail

**Clear**  
Deletes Text, Indicator, BodyMarker



**Setup**  
The general system setting

**Mode**  
Starts or finishes each Mode(2D, C, PD, PW, M)  
Adjusts the gain control

**Q Scan**  
Auto image optimization

**Zoom**  
Magnifies an image  
(Rotation and Push the button)

**Depth / Focus**  
Adjusts scanning depth and focal point

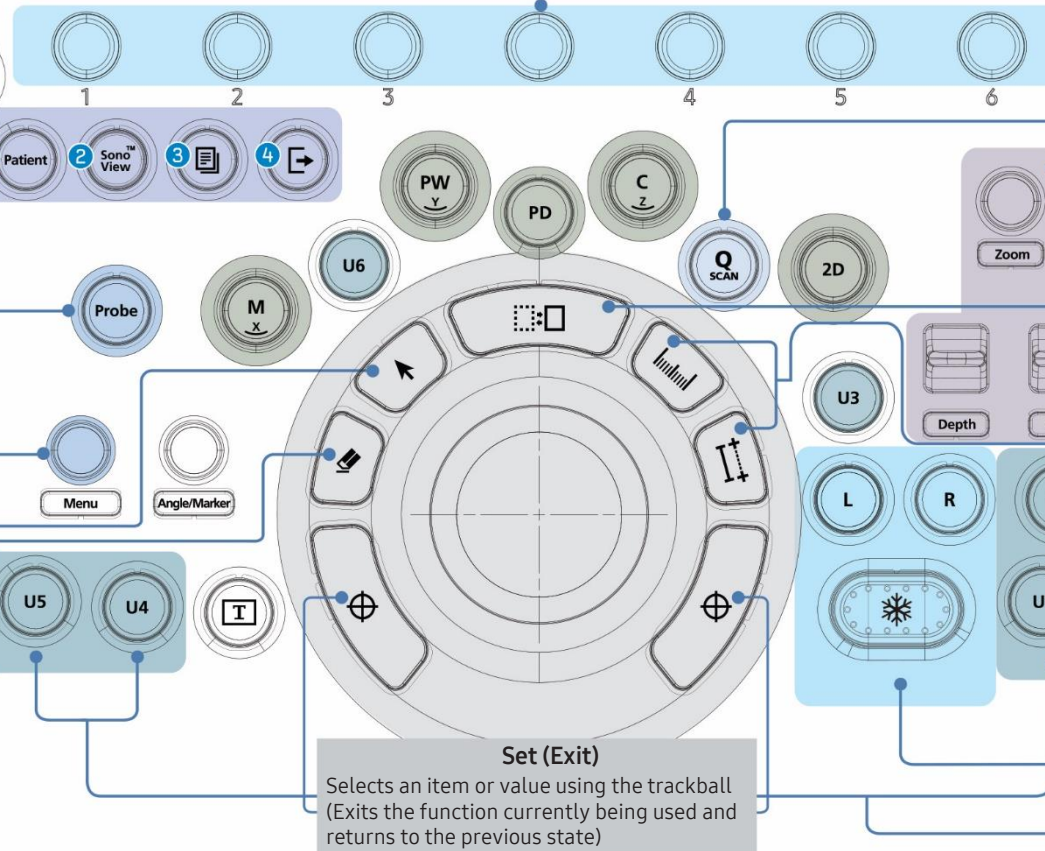
**Change key**  
Changes the trackball functions  
(i.e. Color box, SV, size, etc.)

**Calculator & Caliper**  
Starts measurements by application  
Measures Distance, Area, Volume, Velocity

**Dual**  
Left, Right key separation

**Freeze**  
Pauses/Resumes scanning

**U1-U6**  
User customized keys  
(i.e. Save, Print, Clip Store, Annotation, Full screen, etc.)

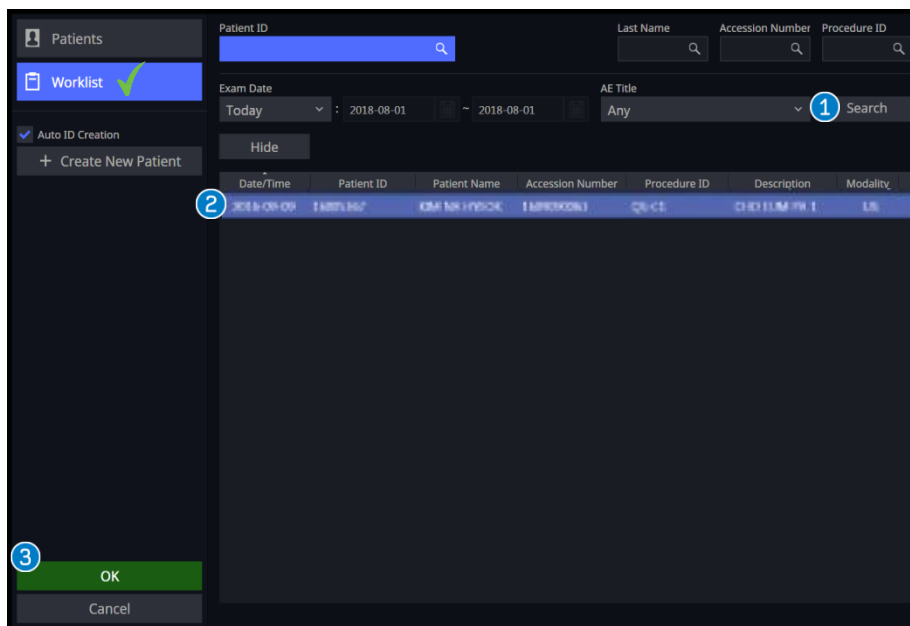


**Toggle control of Monitor menu**  
Changes the parameters on each screen

**Set (Exit)**  
Selects an item or value using the trackball  
(Exits the function currently being used and returns to the previous state)

## Worklist Search

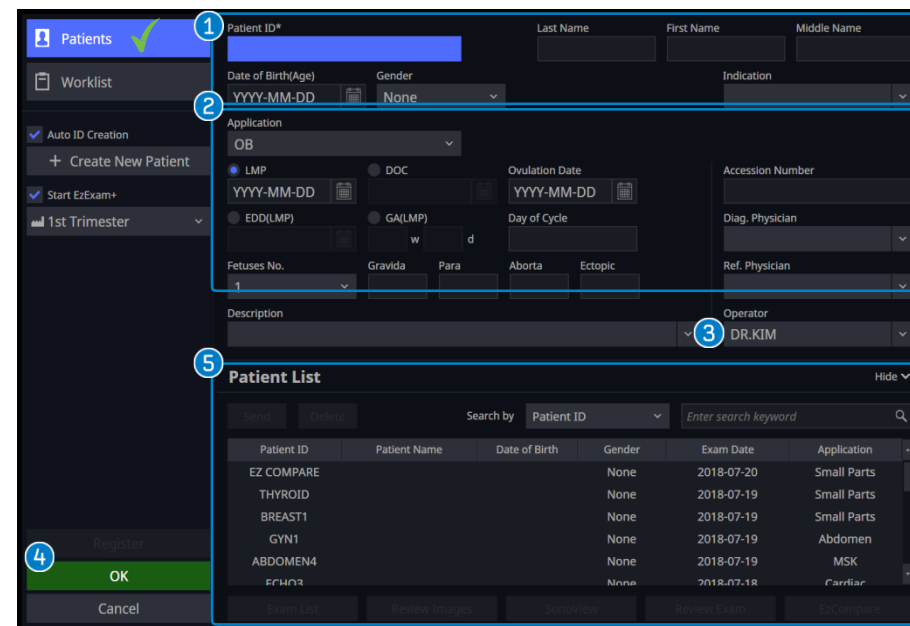
- Select [Patient] on the control panel.  
(✔ Worklist search is available only when DICOM is connected.)



- 1 Search** When you click [Search] the list of patients who match the search criteria will be displayed.  
(Patient list update)
- 2 ID Select** Select the patient list and double click.  
This applies the selected patient information to the system.
- 3 Start Exam** Click [OK] applied the patient information to the system and switches the system into scanning mode.

## Registration of Patient

- Select [Patient] on the control panel then select [Patient] (✔) in the monitor screen.



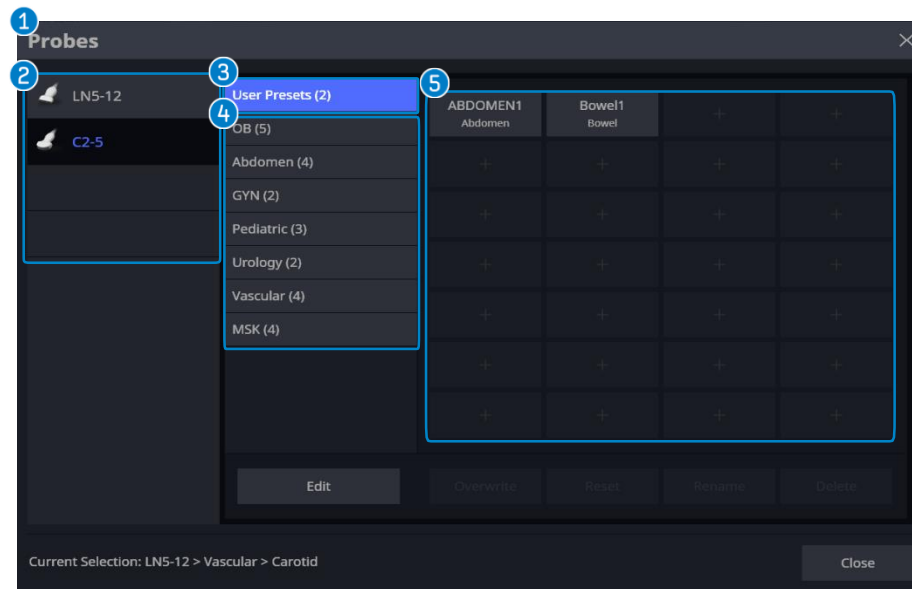
- 1 Insert ID** Enter patient ID, name, and other types of basic patient.
- 2 Study Information** Add required information for individual applications.  
\* Enter the OB information.  
Application OB tab → LMP, EDD, Fetuses No, etc.
- 3 Operator** Enter name of the physician who scanned the patient.
- 4 Start Exam** Click [OK] to enter scan mode.
- 5 Searching Patient Information** Search stored exam in the system.  
The selected patient information will be applied to the system.

## Information Area



- 1 Quick Preset** Changes both probes and presets simultaneously. Shows the frequently used presets. Select [Quick Preset] by using [Pointer] button or [Menu] knob button. (Select up to 8 presets on setup menu)  
\* Setup → System → Quick Preset
- 2 L/R Flip** Left/Right Flip  
**U/D Flip** Up/Down Flip
- 3 Layout** Single, Quad image
- 4 Keymap** Setting for user defined keys, including the positions of [Set] and [Exit] button.  
\* Setup → Customize → Buttons

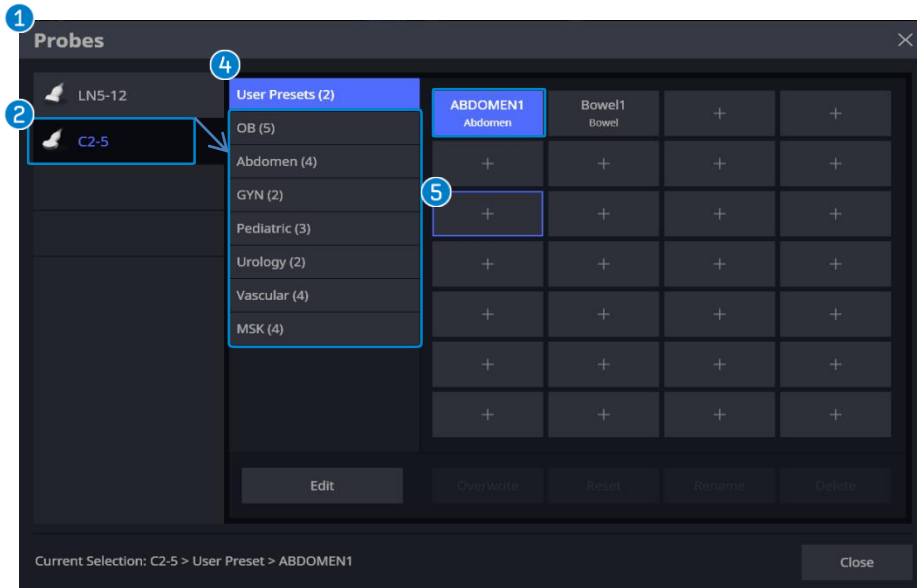
## Probe Selection



- 1 Probe Selection** Select the [Probe] button on the control panel.
- 2 Probe Type** Displays a list all probes currently connected to the system. Selects the probe icon you would like to use.
- 3 User Preset** User presets function can be set up on user's preference.
- 4 Default Preset** Displays a list of default applications the selected probe supports. Default presets are factory setting that was optimized on each probes and applications.
- 5 Preset list** Displays a list of presets that the selected application supports. When you click **3**, you can use User Preset list. When you click **4**, you can use Default Preset list.

## Creating a User Preset

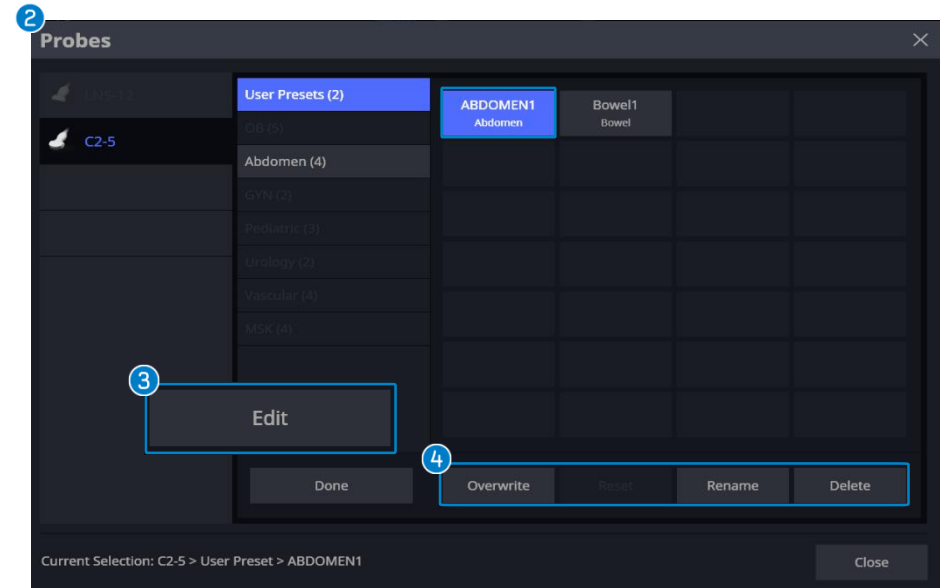
■ Function that can create User preset



- 1 **Probe Select** Select the [Probe] button on the control panel.
- 2 **Preset Select [Default]** Select Default preset what you want to change image parameters.
- 3 **Adjusting Parameters** After adjusting image parameters that user thinks proper, for saving it, select [Probe]button on the control panel.
- 4 **Preset Select [User Presets]** Select [User Presets]
- 5 **[+] Select** Selecting the [+] button opens the Create New User Preset window. Enter the name you want to use and press [OK] button.

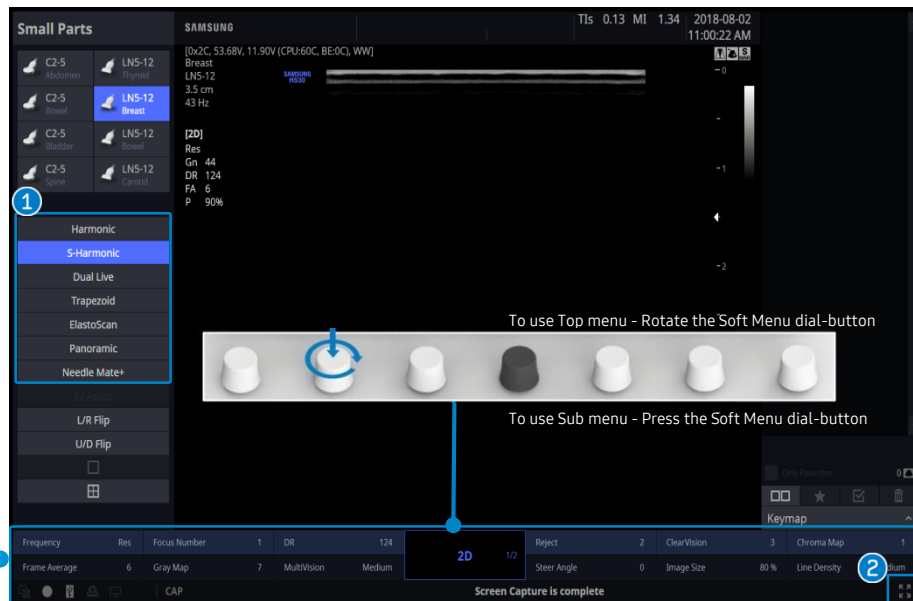
## Modifying a User Preset

■ Function that can modify current preset



- 1 **Adjusting Parameters** Adjust image parameters that user thinks proper for overwriting it.
- 2 **Probe Select** Select the [Probe] button on the control panel.
- 3 **Edit** Press the [Edit] button on the left side of the monitor.
- 4 **Overwrite** Select [Overwrite] button. This enables you to only overwrite the currently selected user preset.
- Rename** Changes the user preset's name
- Delete** Deletes the user preset that you select

## 2D Mode



### 1 Harmonic

Provides the Optimal Harmonic Imaging high frequency function to optimize images.

### S-Harmonic

Provides clearer image from near to far zone using wide band frequency.

### Dual Live

Displays 2D image and Color Doppler image simultaneously.

### Trapezoid

Changes rectangular format from linear probe to trapezoidal format, so can provide wider view angle. (Only for Linear probe)

### ElastoScan

Provides elasticity imaging of an object. *(Optional feature)*

### Panoramic

Acquires wider image range via reconstructing multiple frames. *(Optional feature)*

### Needle Mate+

Provides better needle visibility. *(Optional feature)*

### 2



Enter [Full Screen] mode. assign [Full Screen] mode to one of the User Keys.

### Frequency

Enables you to set the probe's frequency. The selected frequency is displayed the images area on the monitor. (Res: Resolution, Gen: General, Pen: Penetration )

### DR

Adjust the contrast value by changing the ratio of the minimum and maximum values of input signals. The higher value provides smoother image quality.

### Reject

Reduces noise or echoes from an image in order to make the image clearer.

### ClearVision

Provides clearer tissue boundaries using the noise reduction filter and generates sharp 2D images. (Select up to 5 levels)

### Frame Average

Use this to minimize the appearance of speckles in updated images when the same location is scanned repeatedly.

### Gray Map

Change the 2D Post Curve. The higher value provides stronger contrast image quality. (Select up to 12 levels)

### MultiVision

Combines complex beam steering and scan lines to provide the improved resolution. (Select up to 3 levels)

### Line Density

Set the scan line density. Selecting High increases the number of scan lines and improves the image resolution. (Next Page)

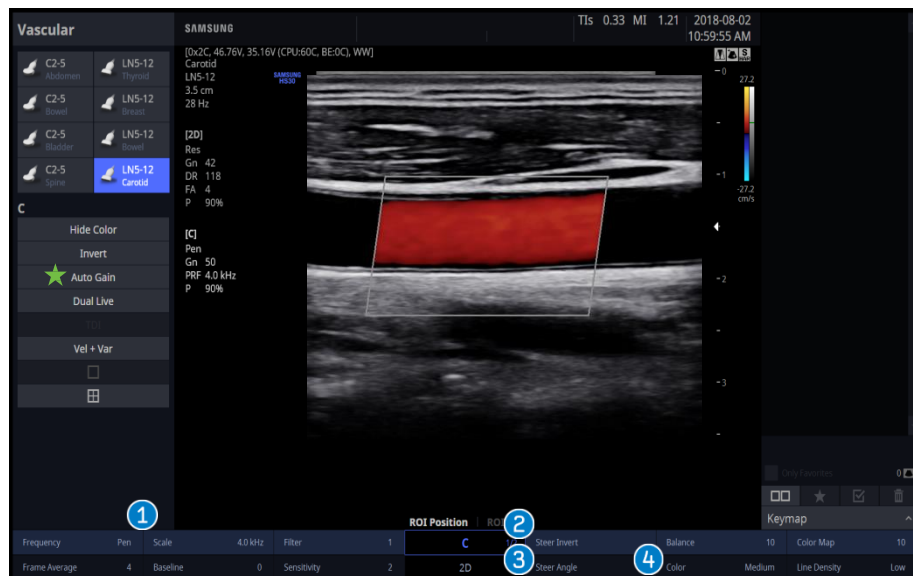
### Biopsy Guide

Adjusts the biopsy guideline before - using the biopsy feature. (Next Page)

### Edge Enhance

Allows you to view more accurate images of organ or tissue boundaries. The higher value provides more accurate images of boundaries. (Next Page)

## Color/Power Doppler/S-Flow

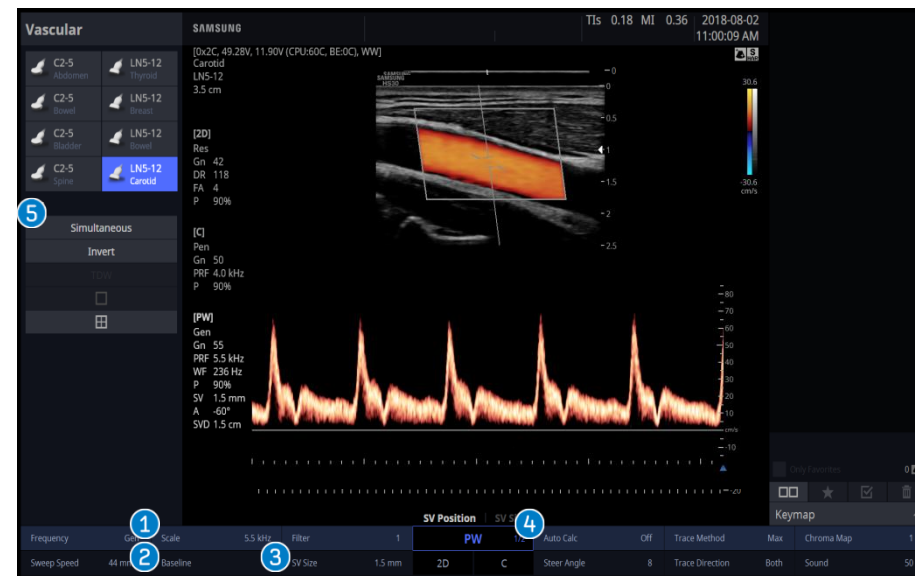


- 1 **Scale** Adjusts the PRF. (Pulse Repetition Frequency)
- 2 **Street Invert** Inverts the direction of color box.
- 3 **Steer Angle** Adjusts the angle of color box. (-8, -4, 0, 4, 8)
- 4 **Color** Automatically adjust the appropriate color scale.
- ✓ **S-Flow** High sensitivity bi-directional Power Doppler mode for tiny vessels. (Access from PD mode → S-Flow mode)

### ★ 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/CW Doppler



- 1 **Scale** Adjusts the PW/CW PRF. (Pulse Repetition Frequency)
- 2 **Baseline** Adjusts baseline by rotating dial-button.
- 3 **SV Size** Selects a SV size between 0.5~20mm.
- 4 **Auto Calc.** Automatically calculate the values of Doppler. (Live On)
- 5 **Simultaneous** Views real-time 2D and Spectral Doppler image at the same time.

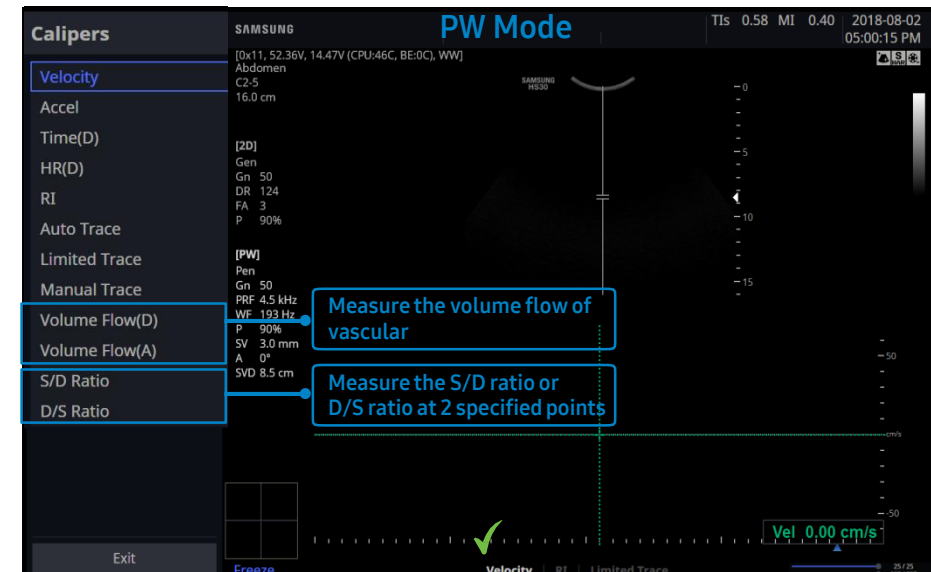
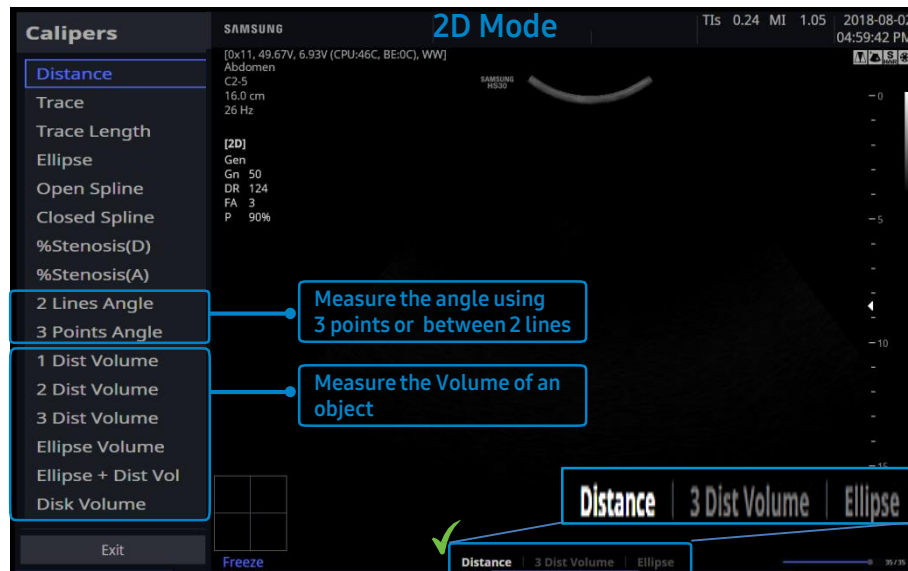
### Smart Auto Doppler

\* 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.

## Measurement

- Caliper Measures (using the trackball and [Set] button) selected items. (i.e. Distance, Area, Volume, Doppler measure etc.)  
 Move the cursor with the trackball or the [Menu] knob button, and press the [Set] button or the [Menu] knob button.



<b>Distance</b> Distance Trace Length %Stenosis(D)	Distance Measures the straight distance between 2 points. Trace Length Measures traced curved-line. %Stenosis(D) Diameter of a vessel is measured and stenosis ratio calculated.
<b>Area</b> Ellipse Trace %Stenosis(A)	Ellipse Measures the circumference area. Trace Measures the trace and area of an irregular object. %Stenosis(A) Area of a vessel is measured and the stenosis ratio is calculated.
✓ <b>Default Tool</b>	Shows the frequently used calipers. Use Default Tool by pressing [Change Key] button on the control panel. Select up to 3 calipers on each image mode (2D Mode, D Mode, M Mode) * Setup → Measurement → Application

<b>Velocity</b> Velocity Accel* Time(D) HR	Velocity Measures the velocity at 1 specified point. Accel* Measures the velocity to calculate the time and acceleration. Time(D) Calculates the time between the bars. HR Measures the Heart rate between the two bars.
<b>Ratio</b> RI	RI Measures the RI (Resistivity Index) at 2 specified points.
<b>Trace</b> Auto Limited Manual	Auto Automatic spectrum trace within whole range. Limited Automatic spectrum trace within specified range. Manual Trace Spectral Doppler wave form and calculate velocity, and the average velocity of blood flow. (includes S/D ratio, RI, PI)

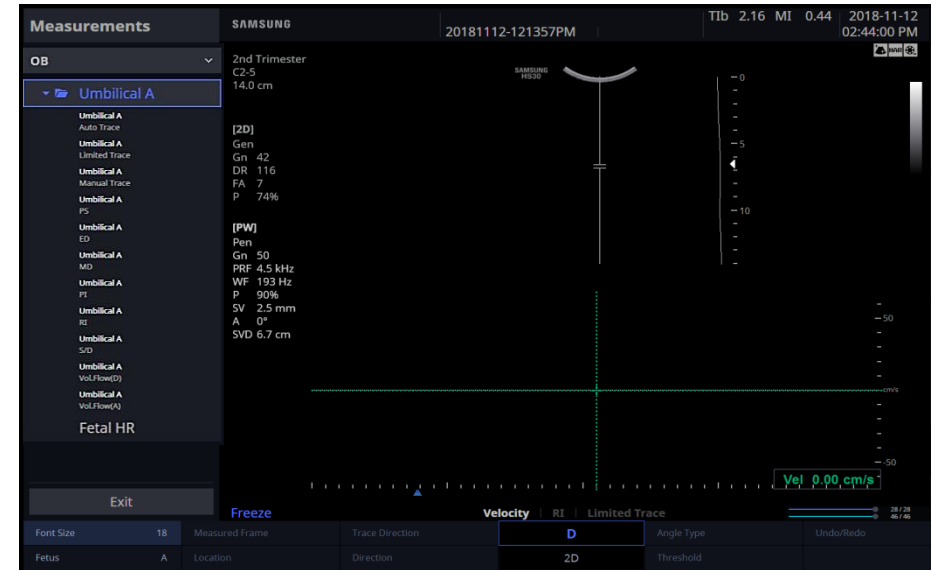
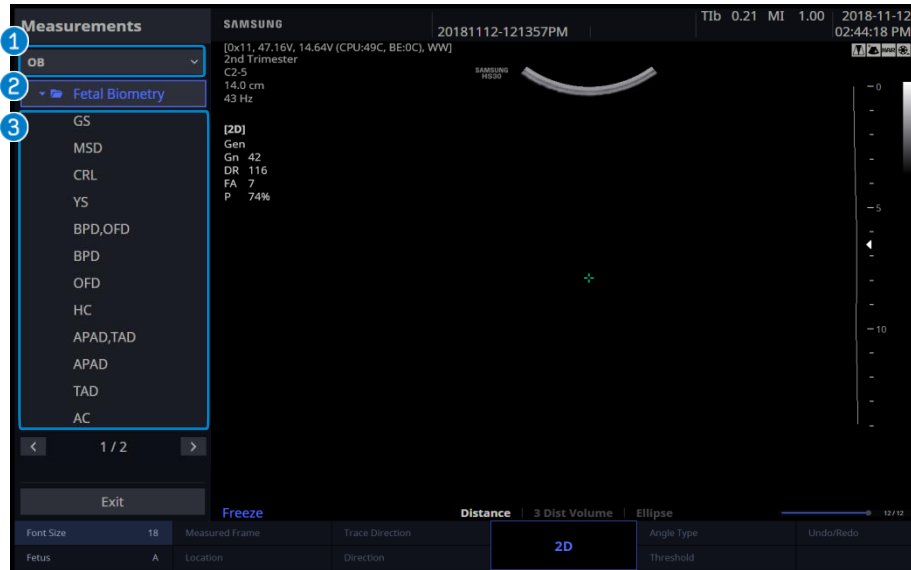
Accel\* : Acceleration



## Measurement

### ■ Calculator Data measurement per each application. (OB, Cardiac, Vascular, Prostate, etc.)

Move the cursor with the trackball or the [Menu] knob button, and press the [Set] button or the [Menu] knob button.



**1 Application** Provides calculate package up on selected probes and applications.

**2 Group** Select a measurement group by pressing the [Menu] knob button or using the [Pointer] button.  
(Customize order of Group on Setup)  
**\* Setup → Measurement → Menu → Group**

**3 Label** Select a measurement label by pressing the [Menu] knob button or using the [Pointer] button.  
Provides Auto Sequence that executes selected items in a group in sequential order.  
(Customize order of Label on Setup)  
**\* Setup → Measurement → Menu → Label**

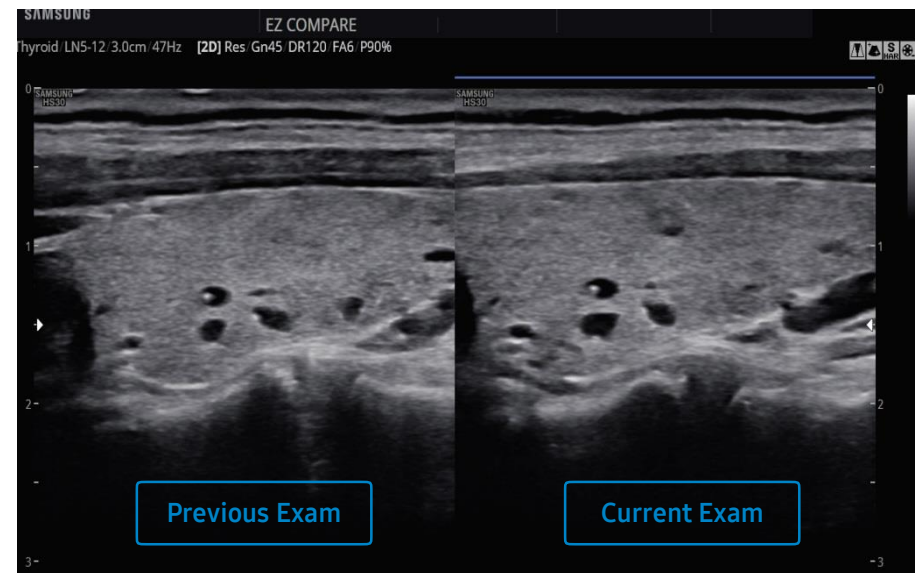
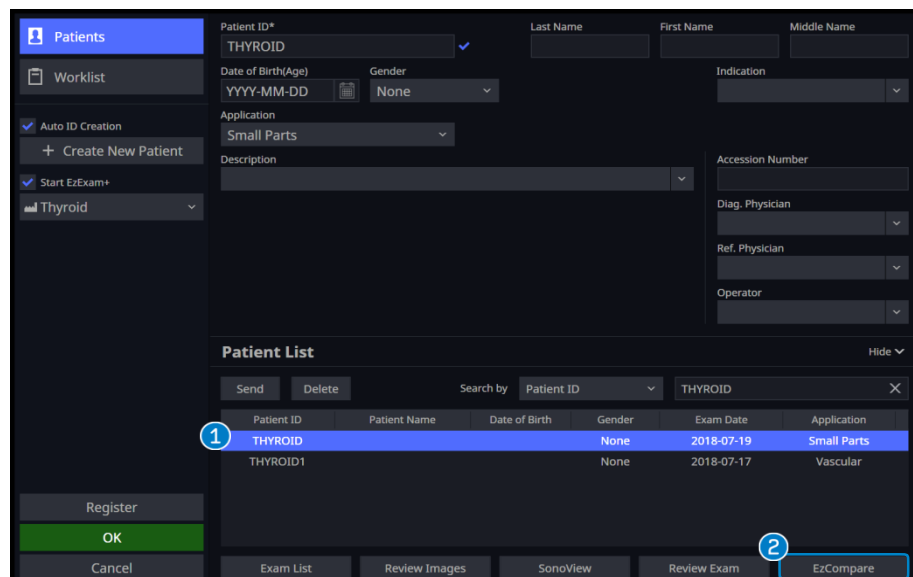
**Trace** **Auto** Automatic spectrum trace within whole range.  
**Limited** Automatic spectrum trace within specified range.  
**Manual** Trace Spectral Doppler wave form and calculate velocity, and the average velocity of blood flow. (includes S/D ratio, RI, PI)

**Velocity** **PS, ED, MD** Measures the velocity at specified 1 point. (Peak Systolic Velocity, End Diastolic Velocity, Min Diastolic Velocity)  
**PI, RI, S/D** Measures the velocity at specified 2 points.

**Volume Flow** **Vol. Flow(D)** Measures the volume flow value by selecting two bars on a Spectral Doppler image, specify two points in 2D Image Mode.  
**Vol. Flow(A)** Measures the volume flow value by selecting two bars on a Spectral Doppler image, specify an ellipse in 2D Image Mode.

## EzCompare™

- [EzCompare™] displays the previous exam image and the current exam image side by side on the split screen, allowing you to compare and assess it. Automatically matches the image settings, annotations, and Body Marker used in the previous study.



- ID Select** Select the ID from the patient list using the trackball and [Set] button.
- Select [EzCompare]** Switching to [EzCompare] mode and move to scan mode.
- Check Thumbnail Field** The stored images are displayed as thumbnail and date tab appears.
- Compare Prior study** On one side of the screen, selected images are displayed. On the other side, live scan image will be displayed as identical setting of selected image. (Dual screen)
  - \* Live scan is available only when the same probe/preset as the one applied to the saved image is selected.

### Clinical Benefit

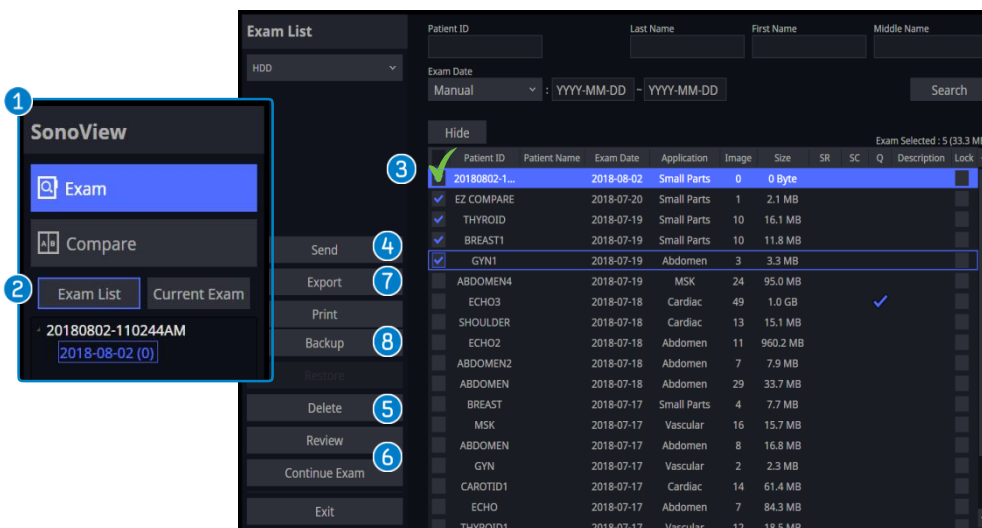
Using [EzCompare™] makes it possible to compare accurate comparison with previous tests and checking the difference in variation of tissue.

- ① Fatty Liver diagnostic: Fatty Liver levels can be easily recognizable according to the brightness of the Liver.
- ② MSK examination: MSK testing is difficult to create the same image as the images previously examined because of the deviation of the images due to the scanning angle.
- ③ A Follow-up : When the follow-up is examined that is useful to observe changed aspect lesion such as size, shape, or echogenicity, etc.

## SonoView – Image Management, Export & Backup

1 Tab [SonoView] of the control panel.

2 Select [Exam List] of the monitor screen.



3 **Select Exam** Check the combo box (✓) in front of the patient ID in the [Exam List].

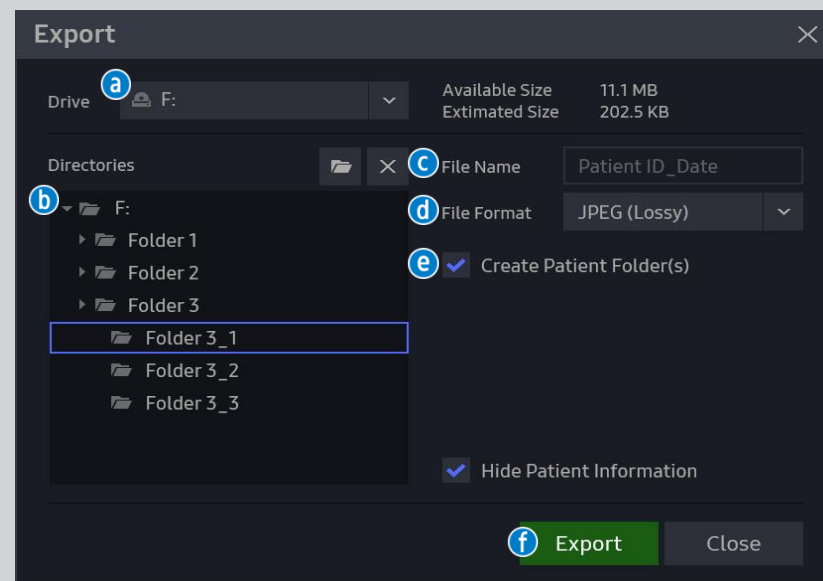
4 **Send** Transfers the exam to PACS server.  
(Select Send → Displayed the DICOM Storage → Select Alias → Transfer)  
\* Transfer all images on selected exams.

5 **Delete** Deletes the exam.

6 **Review or Continue Exam** Reviews the saved images.  
Exams performed longer than 24 hours, only review is allowed.  
If the exam was performed within 24 hours from now, append exam is allowed.

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

- a Select Drive. ( CD-G:, USB-F: )
- 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, MPEG, AVI, DICOM)
- e Export Option  
Hide Patient Information – To remove patient ID and name  
Create Patient Folder – Categorized files per date and patient ID
- f Click [Export]



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

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