

Venue family ultrasound quick cards

Venue family R6 - highlights



GE HealthCare

Table of Contents

System Overview

- Basic System Overview – Page 3

System Functions – Page - 9

- Cleaning Mode – Page 10
- Power Off – Page 12

Scan Modes – Page 14

- **Contrast – Page 15**

Measurements and Comments – Page 19

- **Manual Gastric Volume Measurement – Page 20**
- **AFI – Page 21**

Features (Alphabetical) – Page 28

*Items new to R6 are in **bold***

- **Auto Bladder Volume – Page 29**
- **Nerveblox™ – Page 36**

Basic System Overview

System Overview

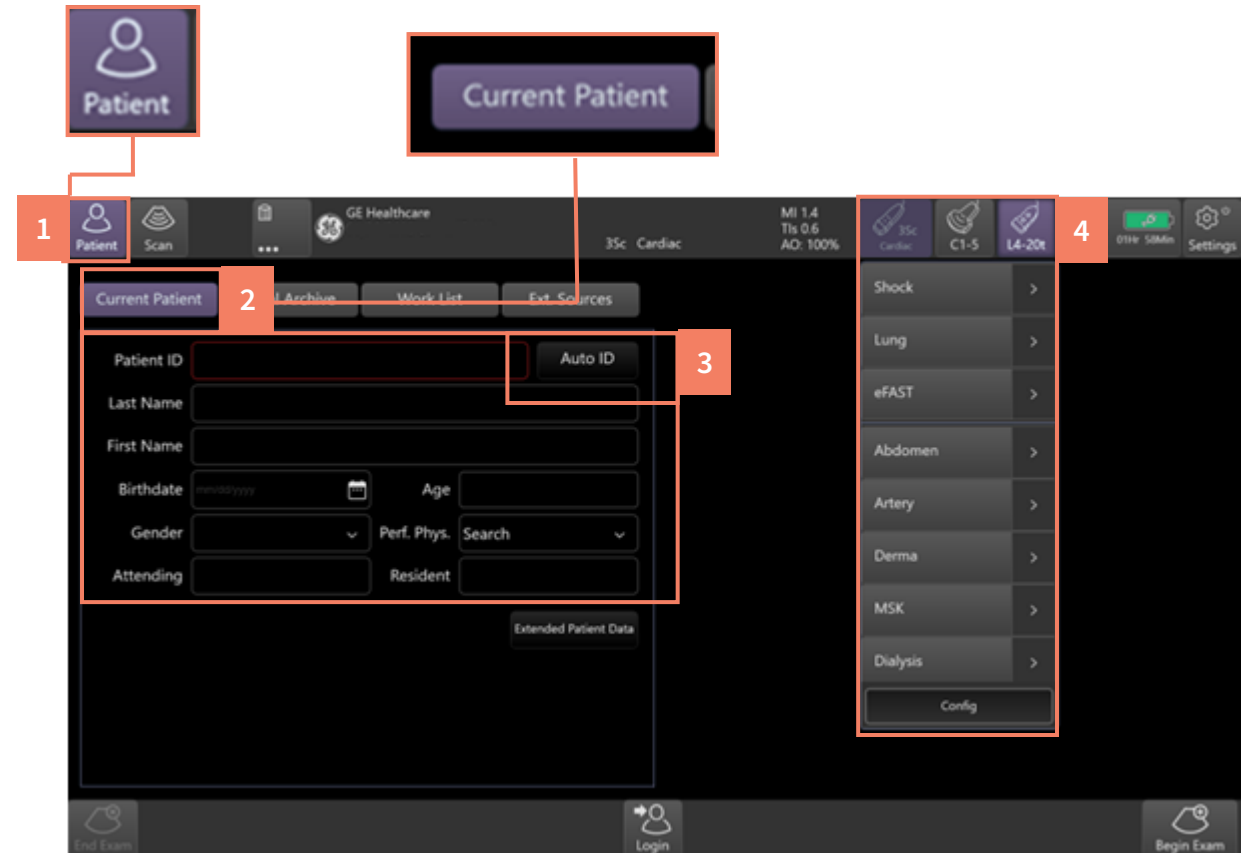
- Physical Power Button (Fig. 1).
- Battery Charge Level (Fig. 2).
- Battery Status Indicator (Fig. 3).
- Tap Settings and Off (Fig. 4).
- Turn system Off or put in Standby/Sleep Mode (Fig. 5).
- Sleep Mode icon (Fig. 6).



Starting an Exam

Enter patient information/select probe/scan

- Tap Patient (Fig. 1).
- Tap Current Patient (Fig. 2).
- Enter a Patient ID and a Last Name or tap Auto ID to apply a time and date stamp (Fig 3).
- Tap Probe and Preset (Fig. 4).



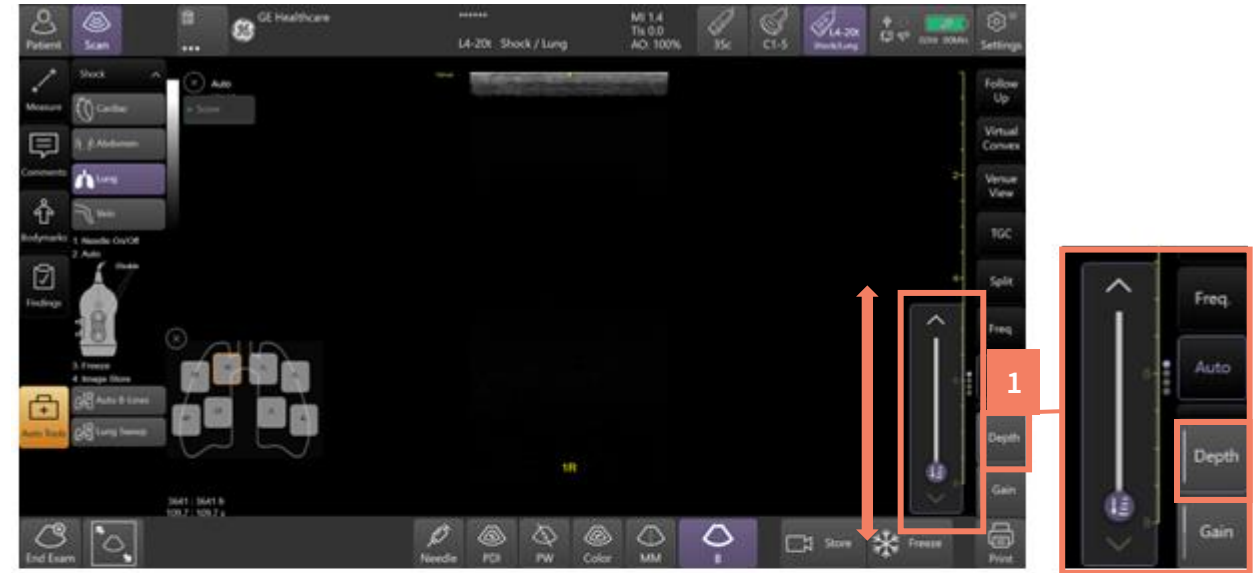
Adjusting Image Depth

Adjusting Depth Manually

- Tap Depth and slide the indicator up or down to desired depth (Fig. 1).

Adjusting Depth with finger gestures

- With one finger, Press and Hold next to the Ruler until it turns green (Fig. 2).
- Using one finger Slide Up or Down on the screen to achieve desired depth (Fig. 3).



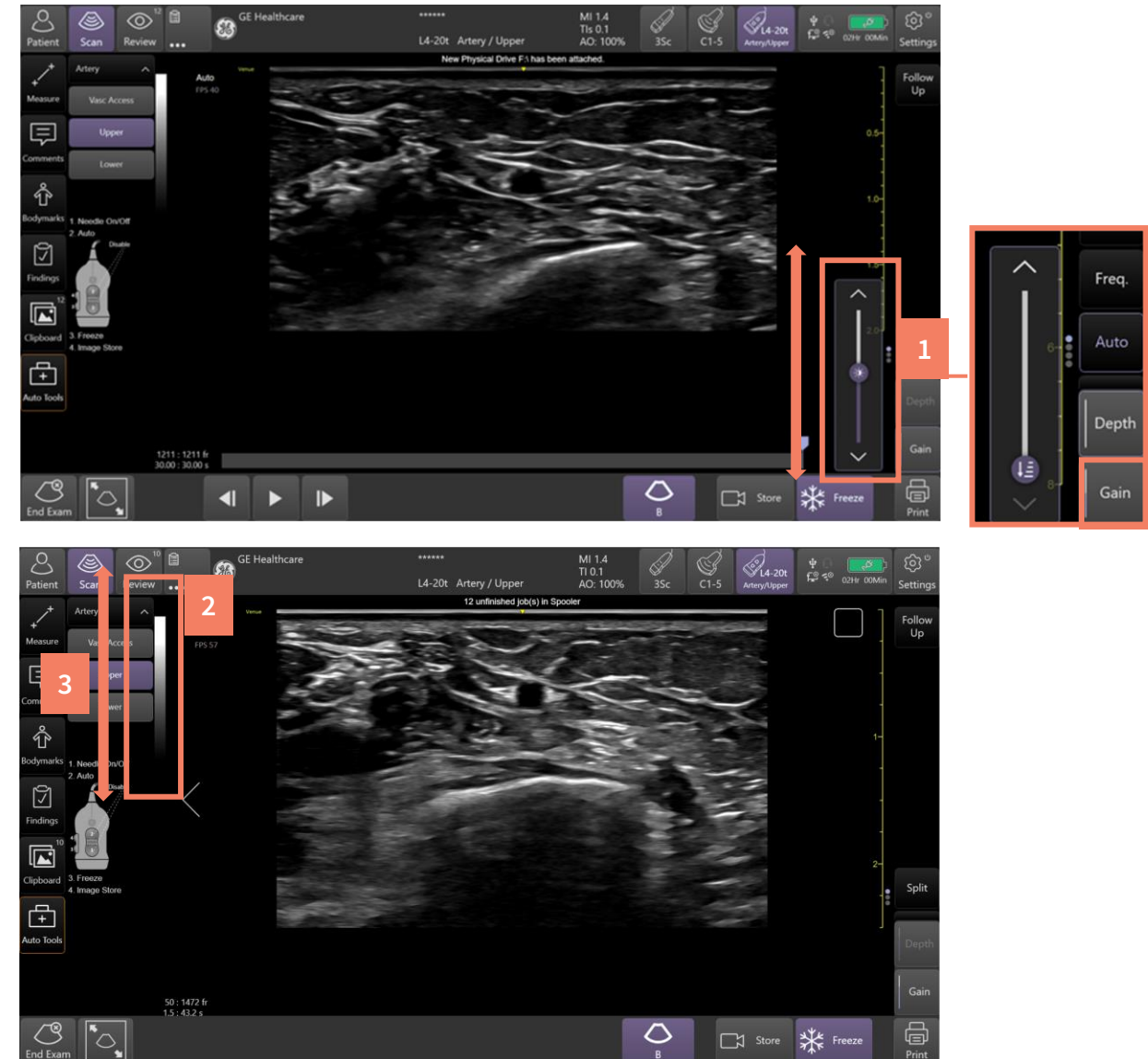
Adjusting Overall Gain

Adjusting Gain Manually

- Tap Gain and slide the indicator up or down to desired gain (Fig. 1).

Adjusting Gain with finger gestures

- With one finger Press and Hold next to the Grayscale Bar (Fig. 2).
- Using one finger Drag Up or Down on the screen to achieve desired gain (Fig. 3).



Freeze – Store - Print

Freeze

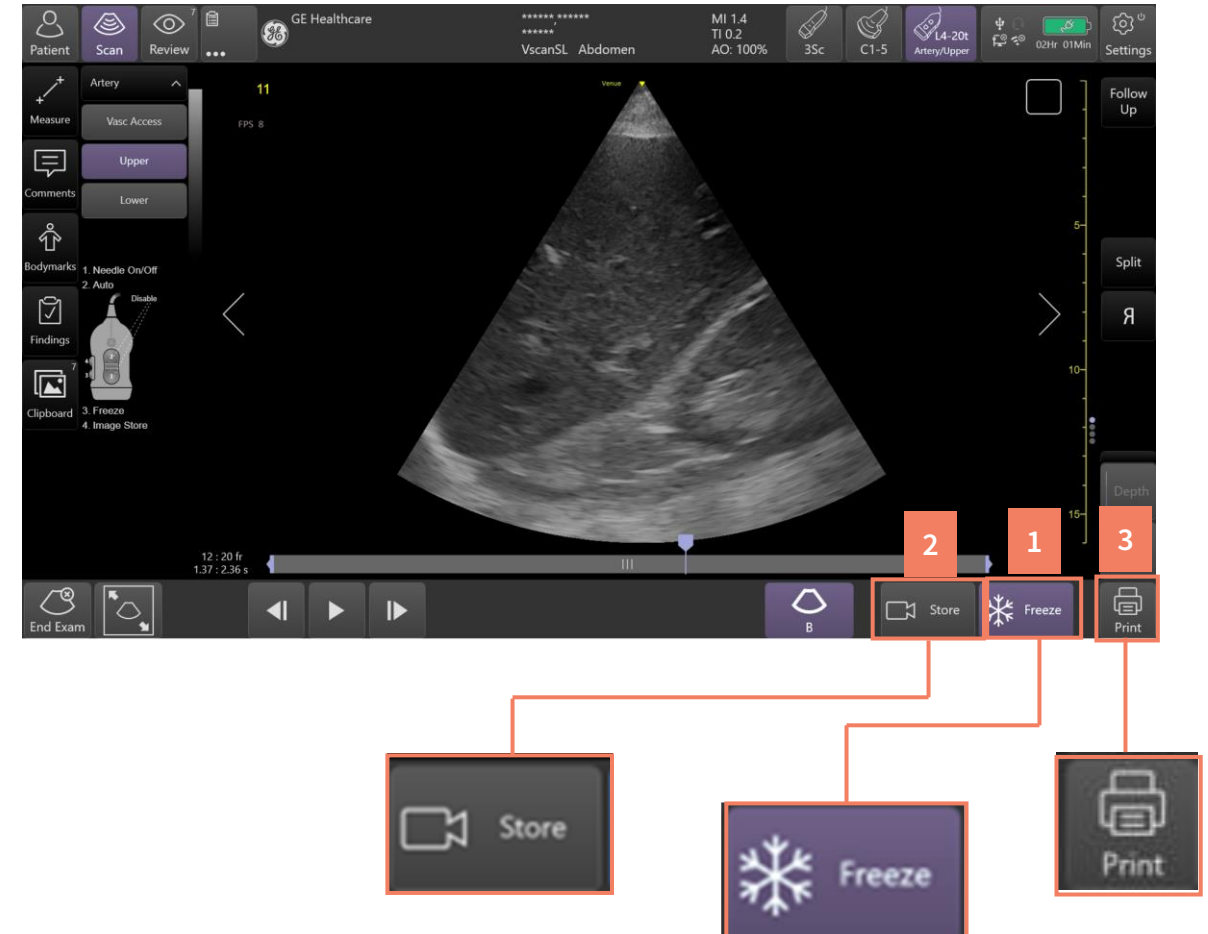
- To freeze the image while scanning, tap Freeze (Fig. 1).

Store

- To store an ultrasound image to the system, tap Freeze (Fig. 1) and then Store. To store an ultrasound cine loop, tap Store while live scanning (Fig. 2).

Print

- Tap Print to print a physical copy of the ultrasound image. ***Printer is sold separately (Fig. 3).

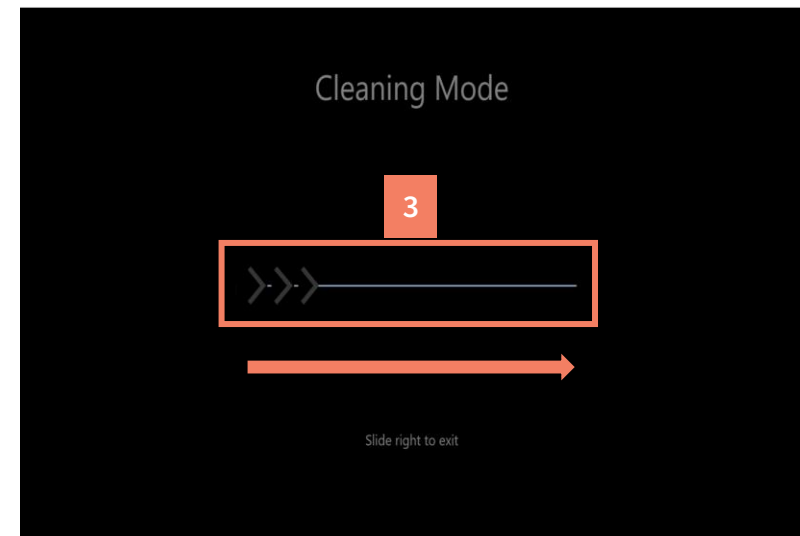
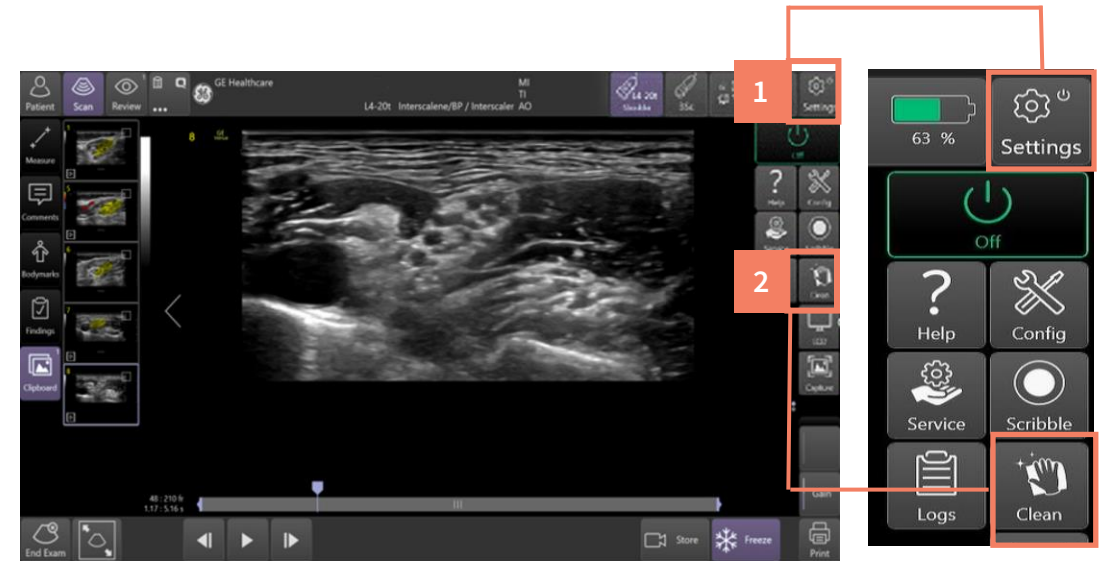


System Functions

Cleaning Mode

Cleaning Mode

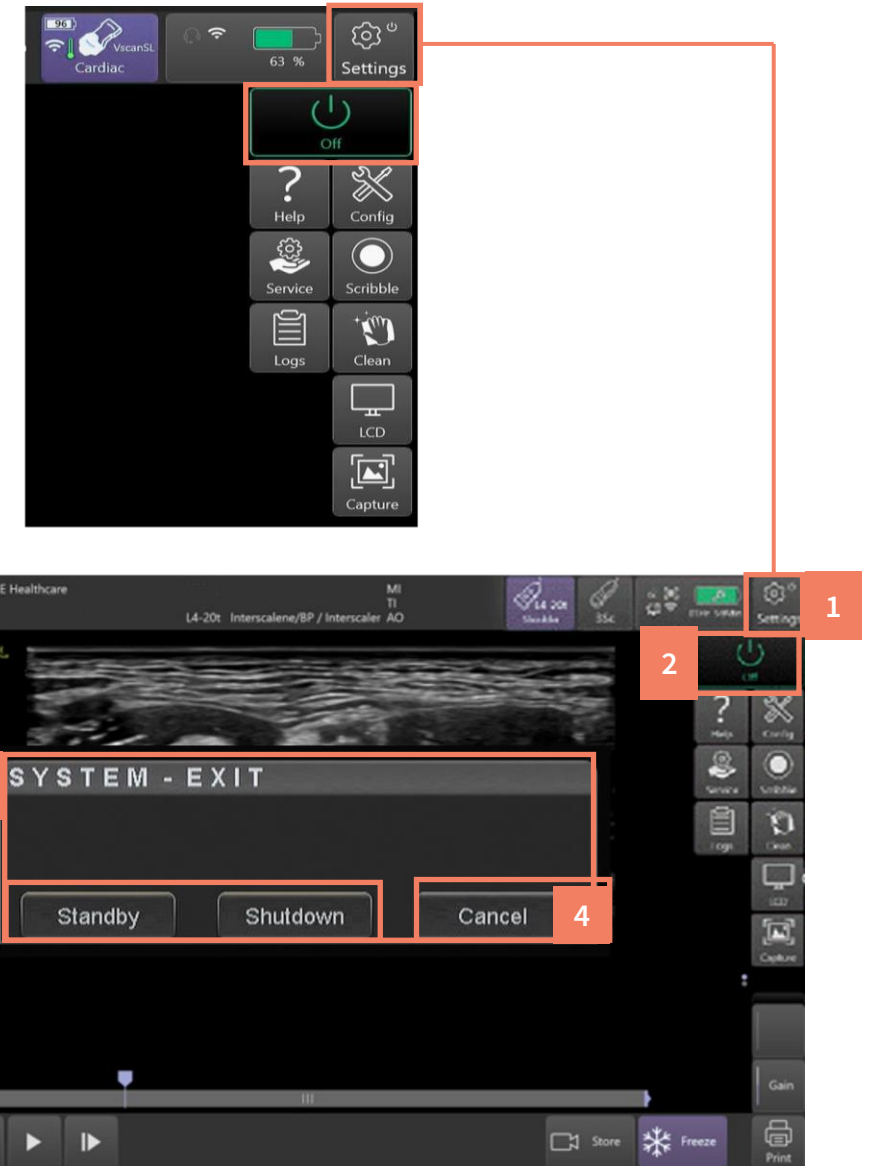
- Clean mode allows cleaning of the touch screen display without affecting system operation.
- Tap Settings (Fig. 1).
- Tap Clean (Fig. 2).
- Clean screen with approved cleaner and Slide Arrows to the right to unlock screen (Fig. 3).



Power Off

Power Off

- If the power button has been deactivated, tap Settings at the upper right corner of the screen (Fig. 1).
- Tap Off (Fig. 2) to set the system to either Standby or Shutdown; a pop-up message enables the selection of either state (Fig. 3).
- Return to the scan screen by tapping Cancel (Fig. 4).

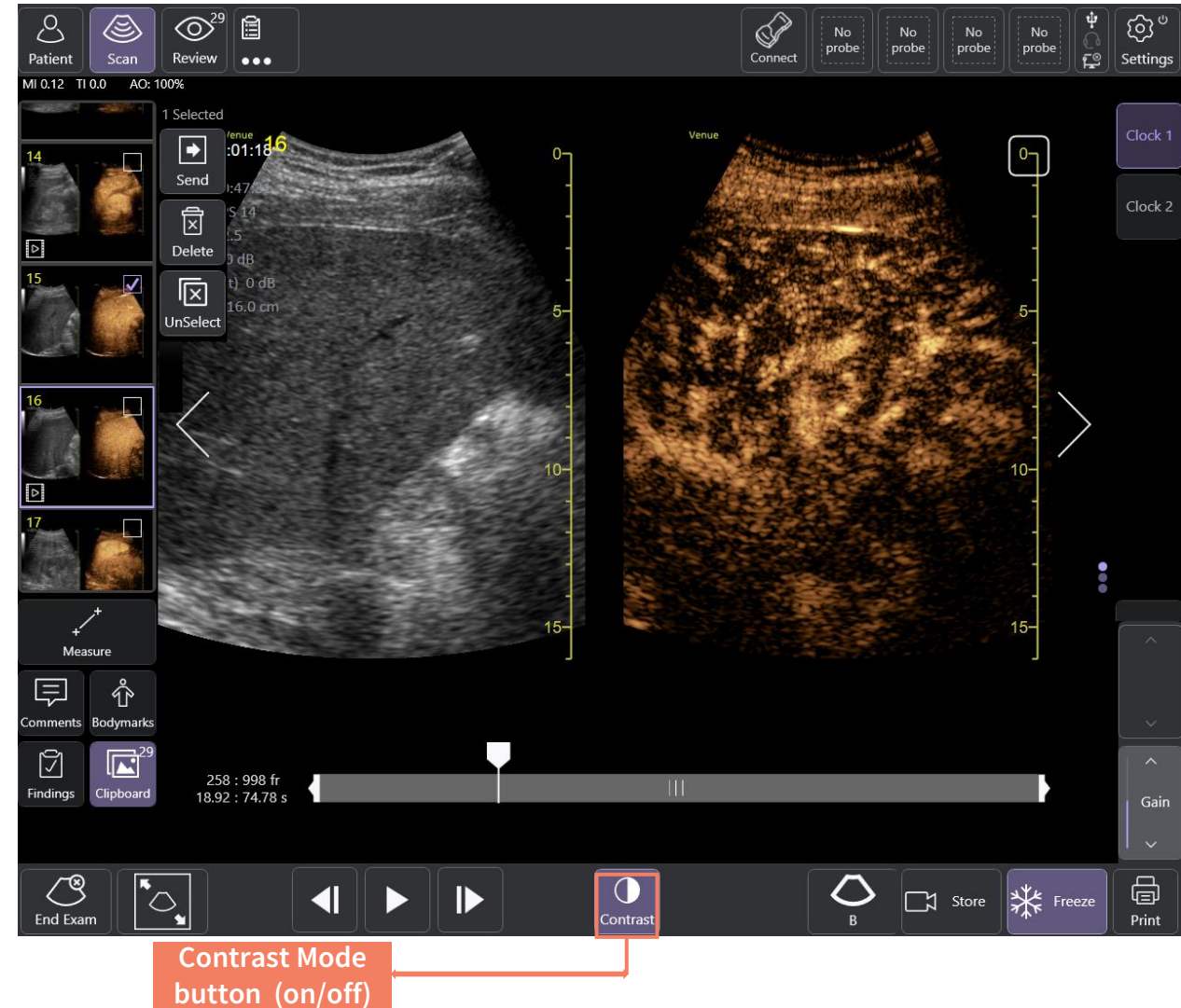


Scan Modes

Contrast (CEUS)

Used to evaluate abdominal solid organ injuries, lacerations, hematomas, lesions, tumors, & active bleeding. Injected contrast agents re-emit incident acoustic energy at a harmonic frequency much more efficiently than the surrounding tissue. Blood containing the contrast agent stands out brightly against a dark background of normal tissue.

Note: Venue/Venue Go/Venue Fit is designed for compatibility with commercially available Ultrasound contrast agents. Because the availability of these agents is subject to government regulation and approval, system features intended for use with these agents may not be commercially marketed nor made available before the contrast agent is cleared for use. Contrast-related system features are enabled only on systems for delivery to an authorized country or region of use.



Contrast (CEUS)

Contrast agents which are supported by Contrast tool:

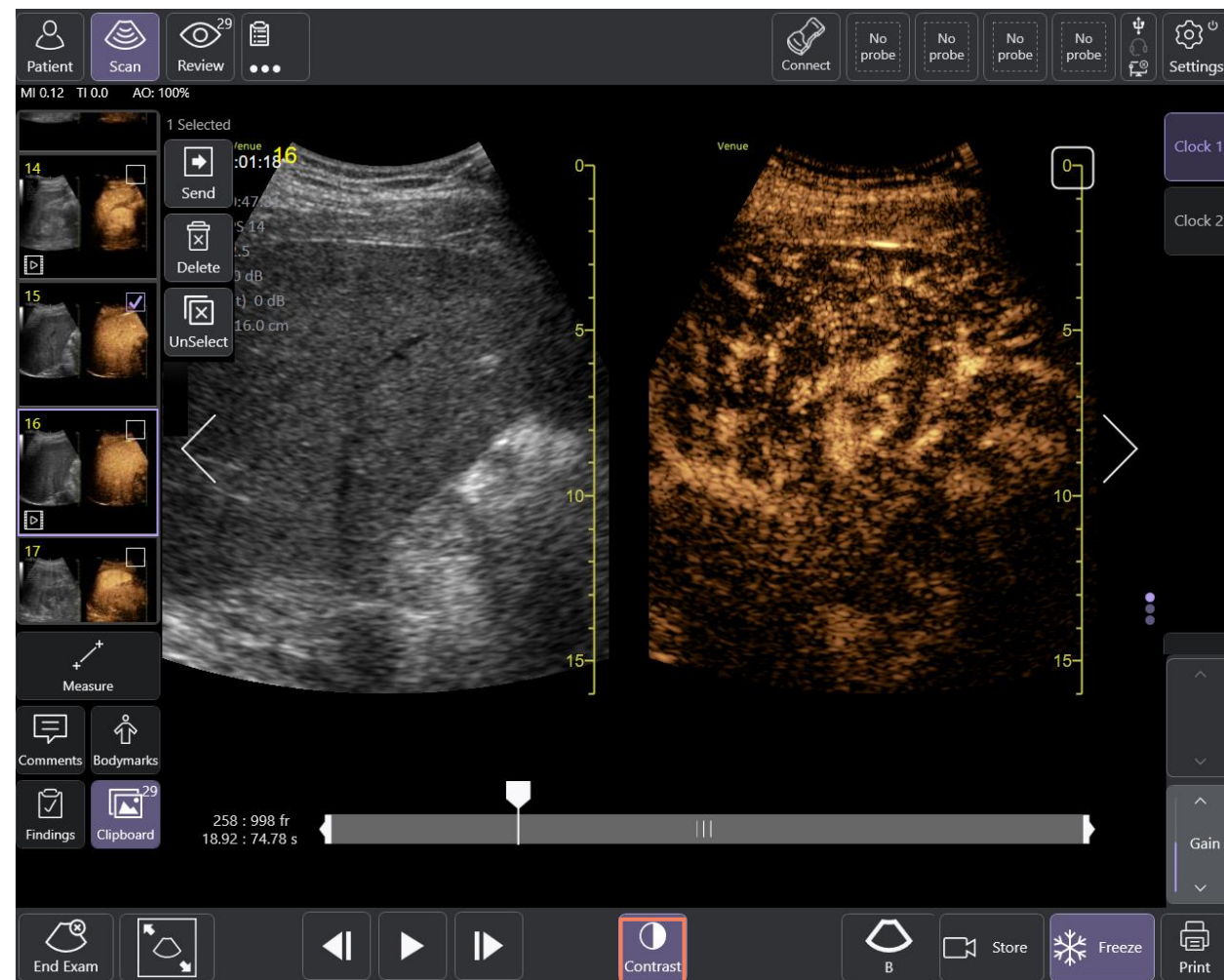
- 1 Sonozoid (not supported in the US)
- 2 Lumason or SonoVue
- 3 Optison
- 4 Definity

Contrast supports abdominal and cardiac imaging and is compatible with the following probes for both adult and pediatric abdominal and cardiac presets:

- C1-5-RS
- 9L-RS
- 12L-RS
- L4-12t-RS
- L12n-RS
- C2-9-RS
- 3Sc-RS
- M5Sc-RS

**For Cardiac Contrast, the tool defaults to a Single screen.*

**For Abdominal Contrast, the tool defaults to a dual screen and shows the 2D B-Mode image simultaneously side by side. The user can toggle between single and dual screen.*



Contrast Mode
button (on/off)

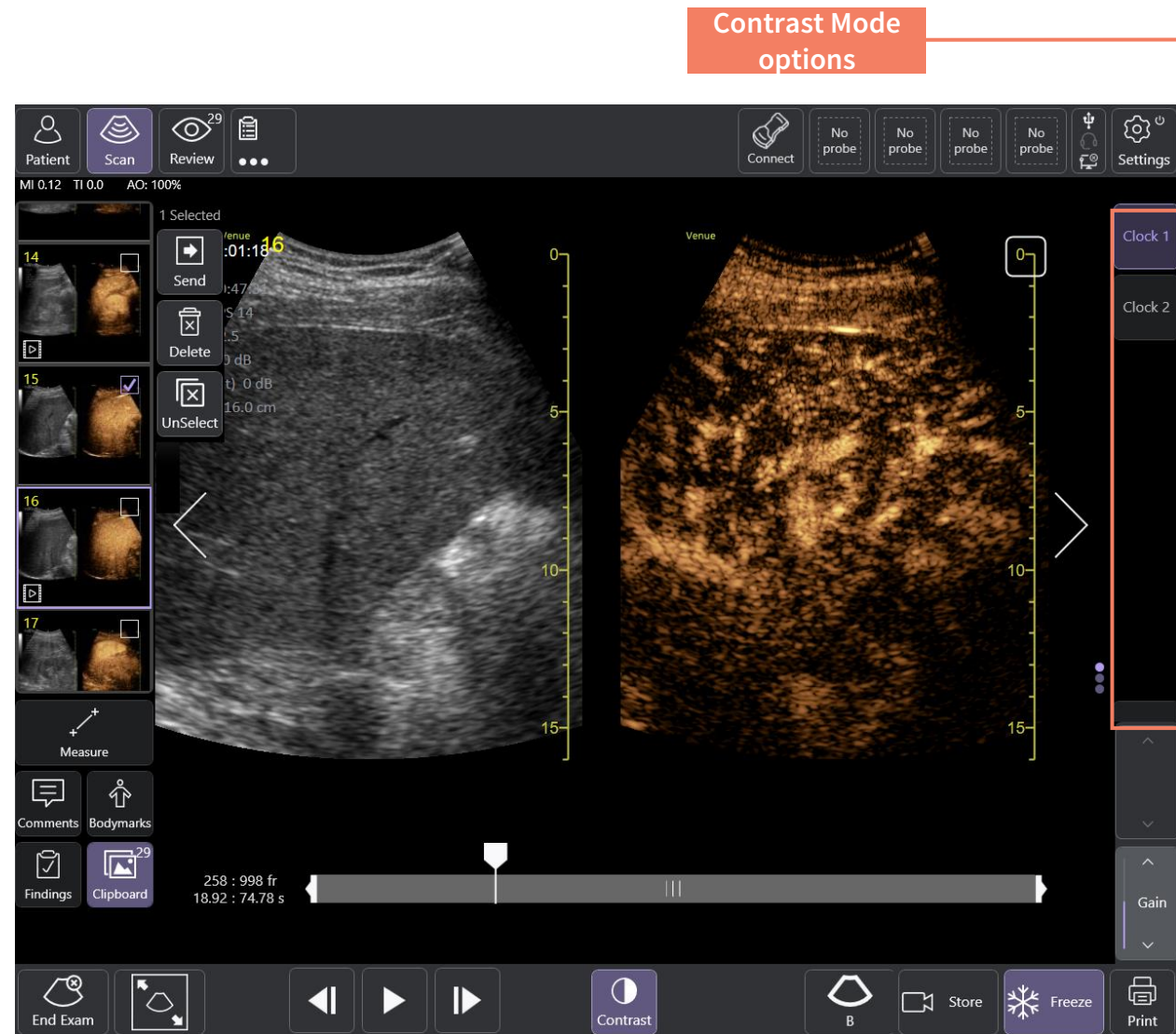
Contrast (CEUS)

Most common adjustments:

- Clock 1 – Can be used to provide information about the elapsed time since the injection of the contrast agent.
- Clock 2 - for flash imaging or second injection
- Gain – For contrast and for B mode image
- Target MI - On activating contrast mode, the Mechanical Index (MI) is lowered to visualize the contrast bubbles and can be adjusted for optimal visualization
- Depth

Advanced Buttons of the Contrast Mode are:

- Hybrid Map displays the contrast image on top of the B mode reference image enhancing visualization and characterization of the tissues
- Accumulation combines multiple frames to enhance the visualization of contrast agents or microbubbles, particularly useful for visualizing contrast in micro vessels.



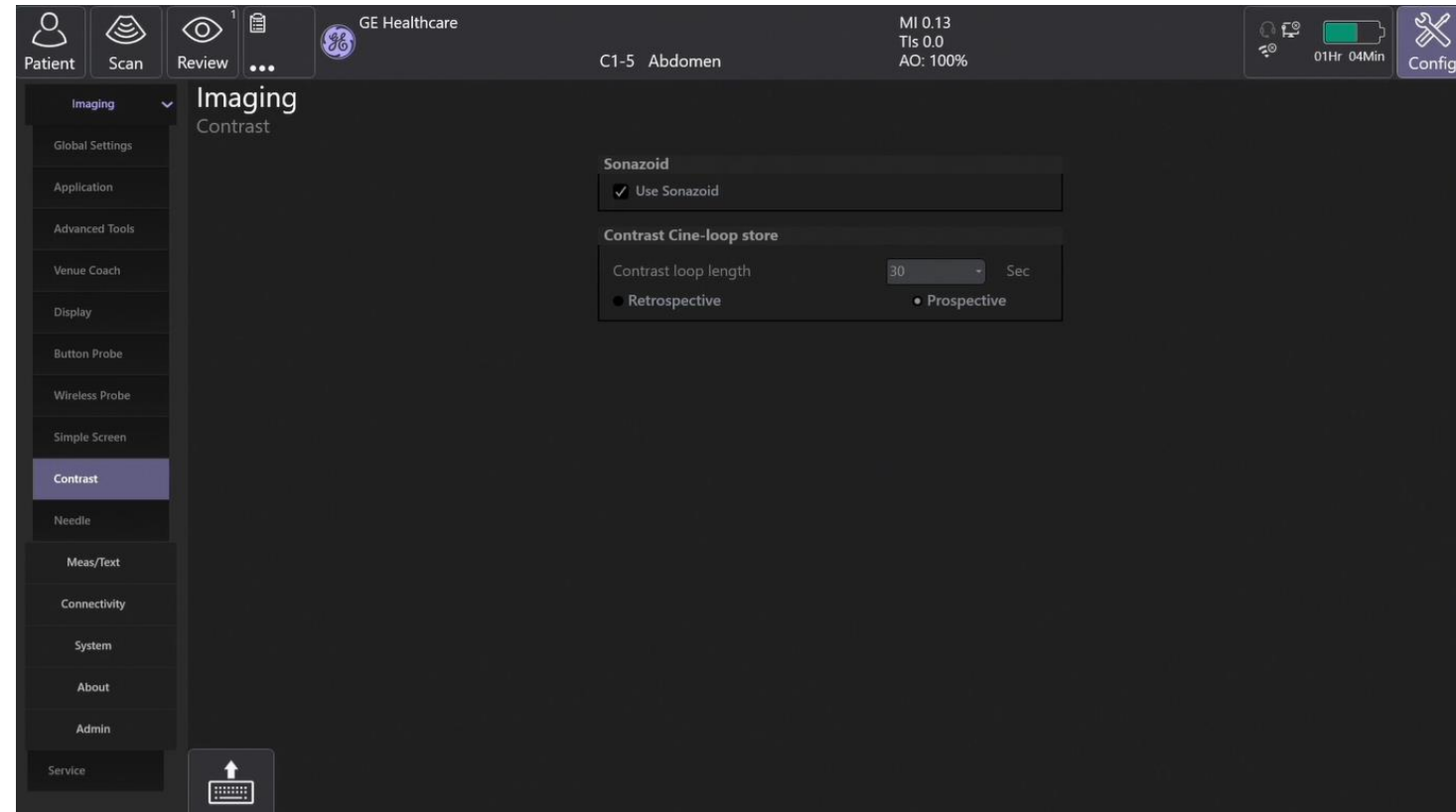
Contrast (CEUS)

The user can also configure the type of agent and loop length from the back pages.

Loop Length:

The default loop length for contrast mode is a prospective 30 second clip and can be adjusted without affecting the global loop length settings.

For Sonoazoid contrast agent, the user can select the agent in the back pages to configure the default Mechanical index which is a higher MI than other contrast agents like Lumason, Definity or Optison.



Measurements and Comments

Gastric Volume Measurement (manual)

Is an easy-to-use decision support and measurement tool which assists the user in calculating the gastric cross-sectional area, volume and the volume-to-weight ratio.

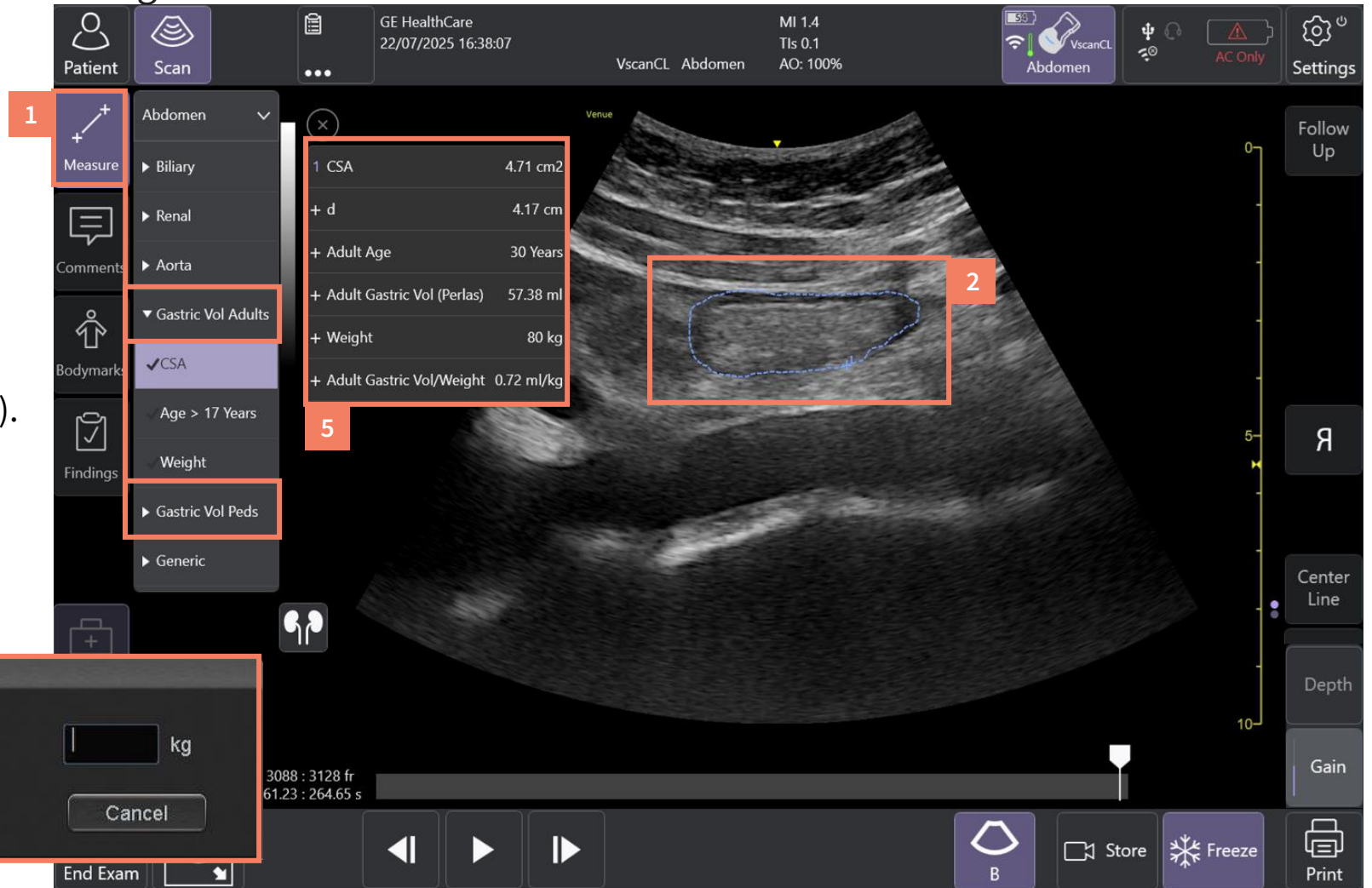
1. Tap Measure and select Gastric Volume **Adults** (Perlas formula) or **Peds** (Spencer formula) (Fig. 1).

2. Measure cross sectional area of antrum (cm²) (Fig. 2).

3. Wait for pop up box – enter pt age (Fig. 3).

4. Wait for pop up box – enter weight in kg only (Fig. 4).

5. Results are displayed (Fig. 5).



Enter value

Adult Age Years

OK Cancel

Enter value

Weight kg

OK Cancel

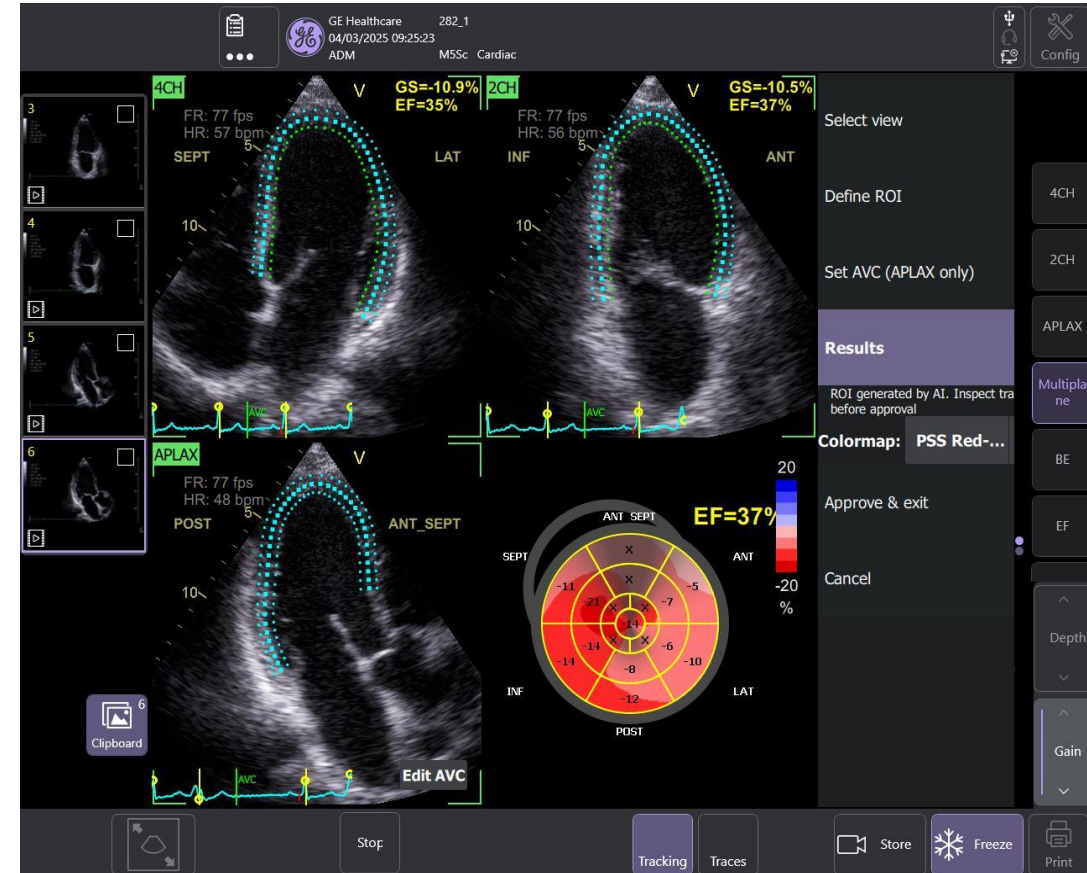
3

4

AFI Measurement Workflow

Automated Function Imaging (AFI) is a decision support assessment tool to assess the systolic function of three anatomical areas: left ventricle (LV), right ventricle (RV), and left atrium (LA).

- Cardiac AFI measurement workflow is compatible with the following probes:
 - M5Sc-RS
 - 3Sc-RS
- AFI is approved for adults only and is not supported for pediatric use.
- AFI can be performed on the standard TTE apical views, apical long-axis (APLAX), 4-chamber (4CH) and 2 chamber (2CH). It is recommended to acquire all three apical views sequentially to obtain a similar heart rate in all views.
- AFI analyses are available with stored cine loops (raw data that contain ECG tracing) and all acquisitions must be made with an ECG. *Note: Three ECG cycles are needed to perform AFI measurements. This can be changed in the Config. Pages.*

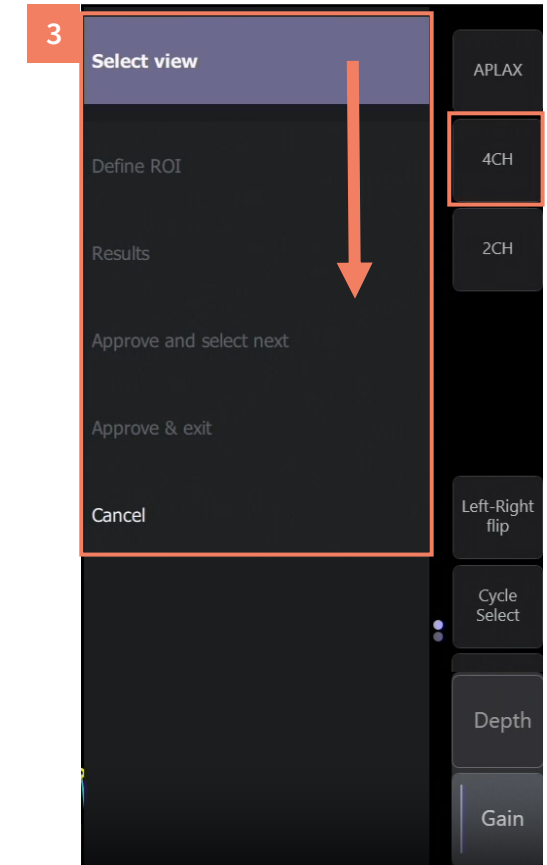
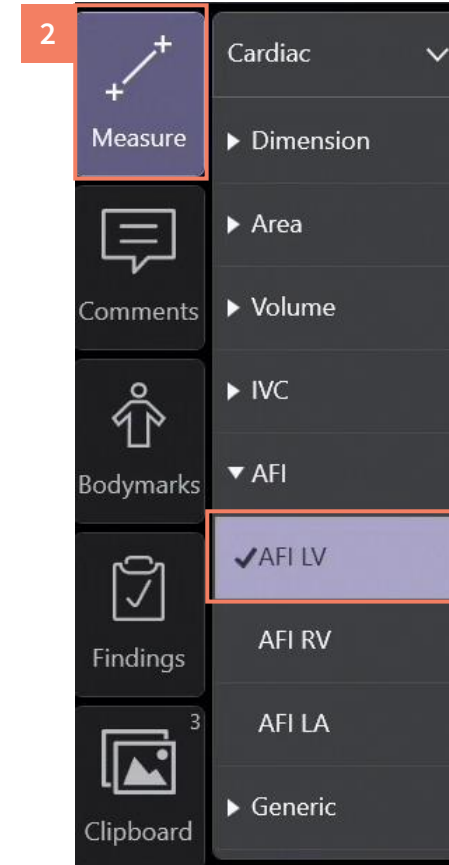
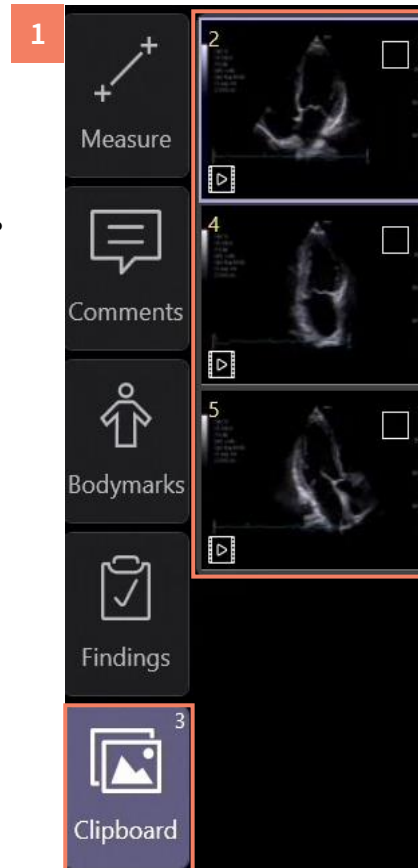


AFI Measurement Workflow

AFI LV

AFI measurement tool is located within the Cardiac Measurement package (Fig. 2).

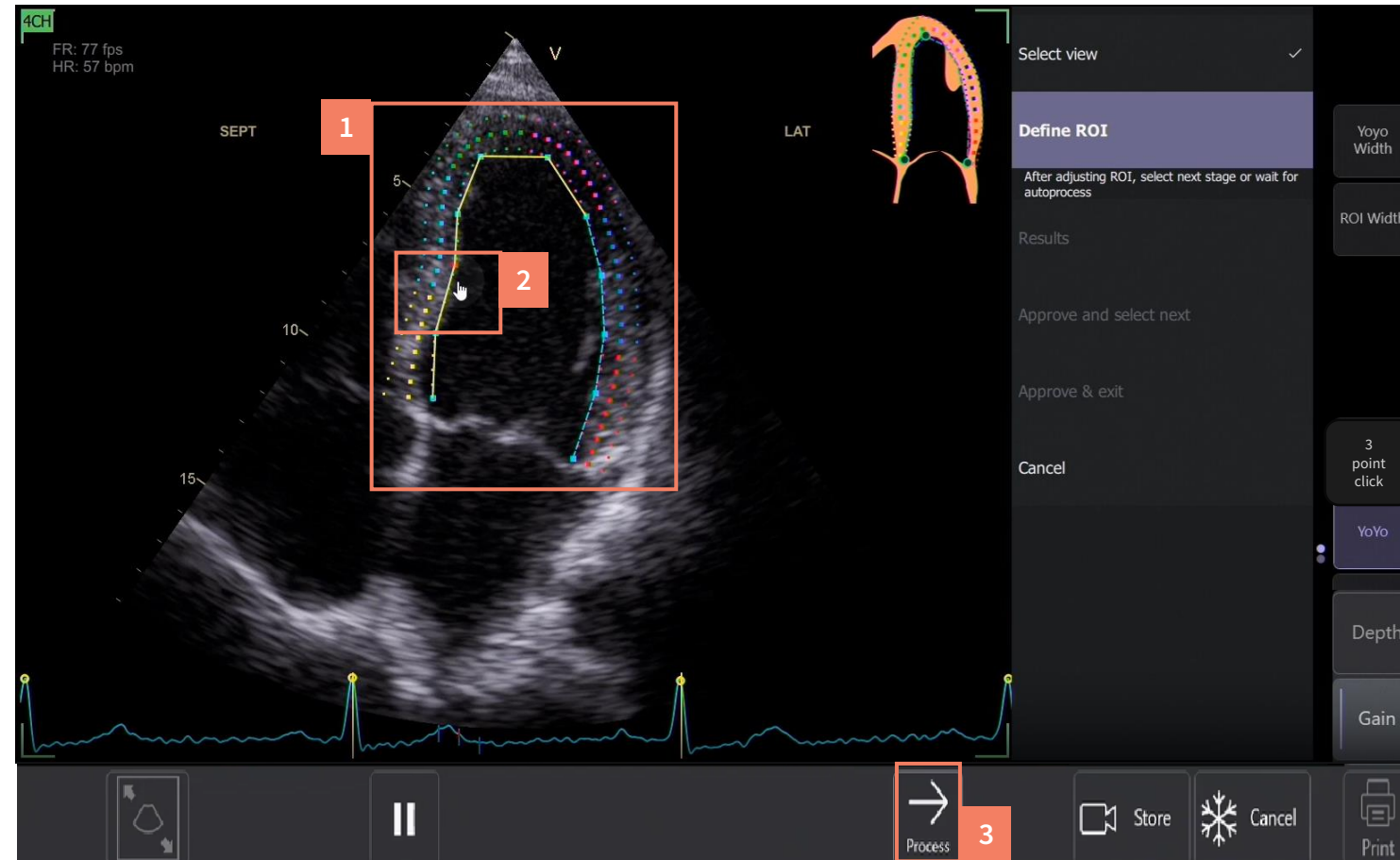
- On the left side of the screen, select the view - Recall the image from the Clipboard (Fig. 1).
- Tap Measurement > Cardiac > AFI > AFI LV (Fig. 2).
- On the right side of the screen, follow the list of steps and start by assigning a label (**4CH**) to the selected cine clip view (Fig. 3).



AFI Measurement Workflow

AFI LV

- Define ROI (Region of Interest) - (Fig. 1) The ROI is a geometric pattern and will appear onscreen over the myocardium. When performing AFI LV, the ROI is automatically placed.
- To edit the ROI, move the points within the geometric pattern (Fig 2).
 - *ROI can also be placed manually by selecting the 3 Point Click button.*
- Once ROI is correctly positioned hit "Process" on the bottom of the scan screen and the system will analyze the results (Fig. 3).

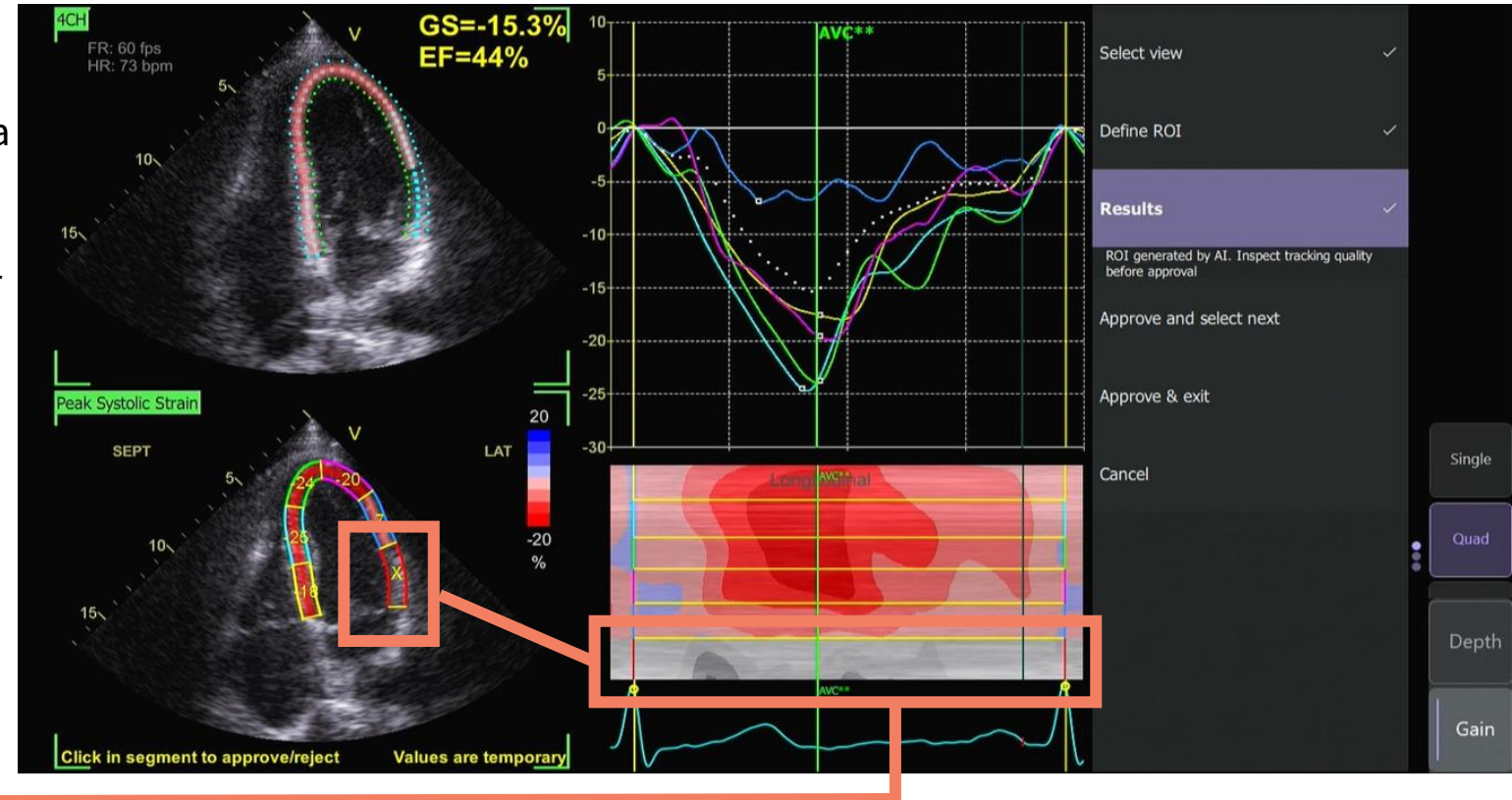


AFI Measurement Workflow

AFI LV

- When the analysis of the 4Ch view is performed, the result is presented as a Quad layout, with two screens to evaluate the tracked ROI with segments & tracking, a strain curves graph and a Color Anatomical M-Mode (CAMM).
- Up to 6 regional strain values are displayed over the tracked ROI. By reviewing the dynamics of the ROI tracking in the upper left quadrant, the user can reject or accept segments in the lower left quadrant, when necessary. Rejecting segments eliminates information from other quadrants in this 4Ch view.
- Rejected colors in CAMM (right lower quadrant) are displayed in gray. The colors which are approved are various shades of red and blue.

Quad Layout

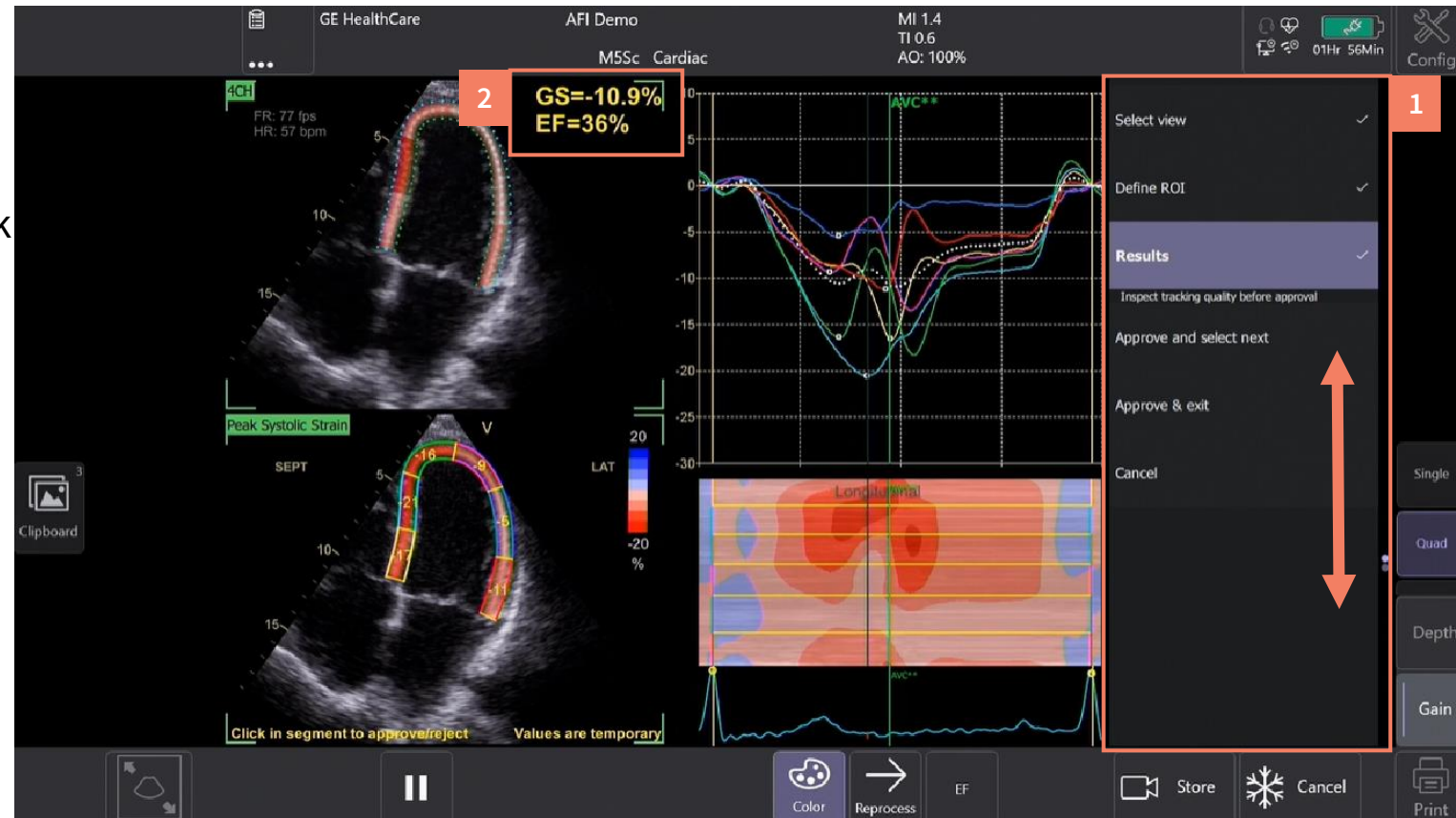


AFI Measurement Workflow

AFI LV

- The AFI measurement workflow allows the user to move forward and backward as they access these views (Fig. 1). After reviewing segments, the user may go back and readjust the ROI to recalculate the measurement. Click "Define ROI" to redefine the automatic ROI.
- After all segments are approved or rejected, two results will display onscreen in the upper left quadrant for the 4Ch view (Fig. 2):
 - GS= Global Strain
 - EF= Ejection Fraction

Quad Layout

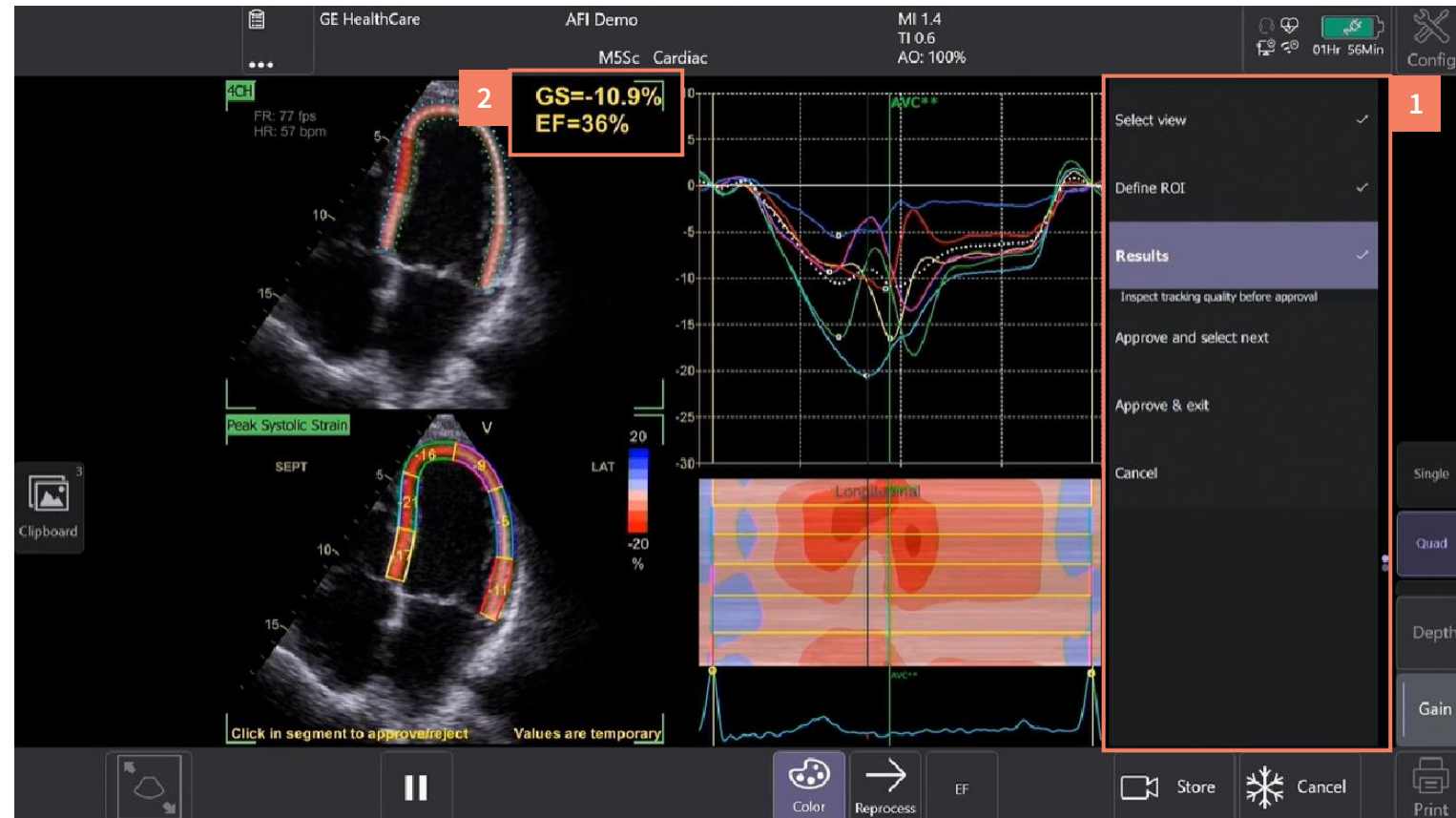


AFI Measurement Workflow

AFI LV

- Once all necessary information is gathered, tap “Approve and select next” (within Fig. 1). If needed, follow the same steps for 2CH and APLX views.
- If the analysis of only one view is performed (4CH), the result is presented as a Quad layout, with two screens to evaluate the ROI and tracking, a strain curves graph and a Color Anatomical M-Mode (Camm).

Quad Layout

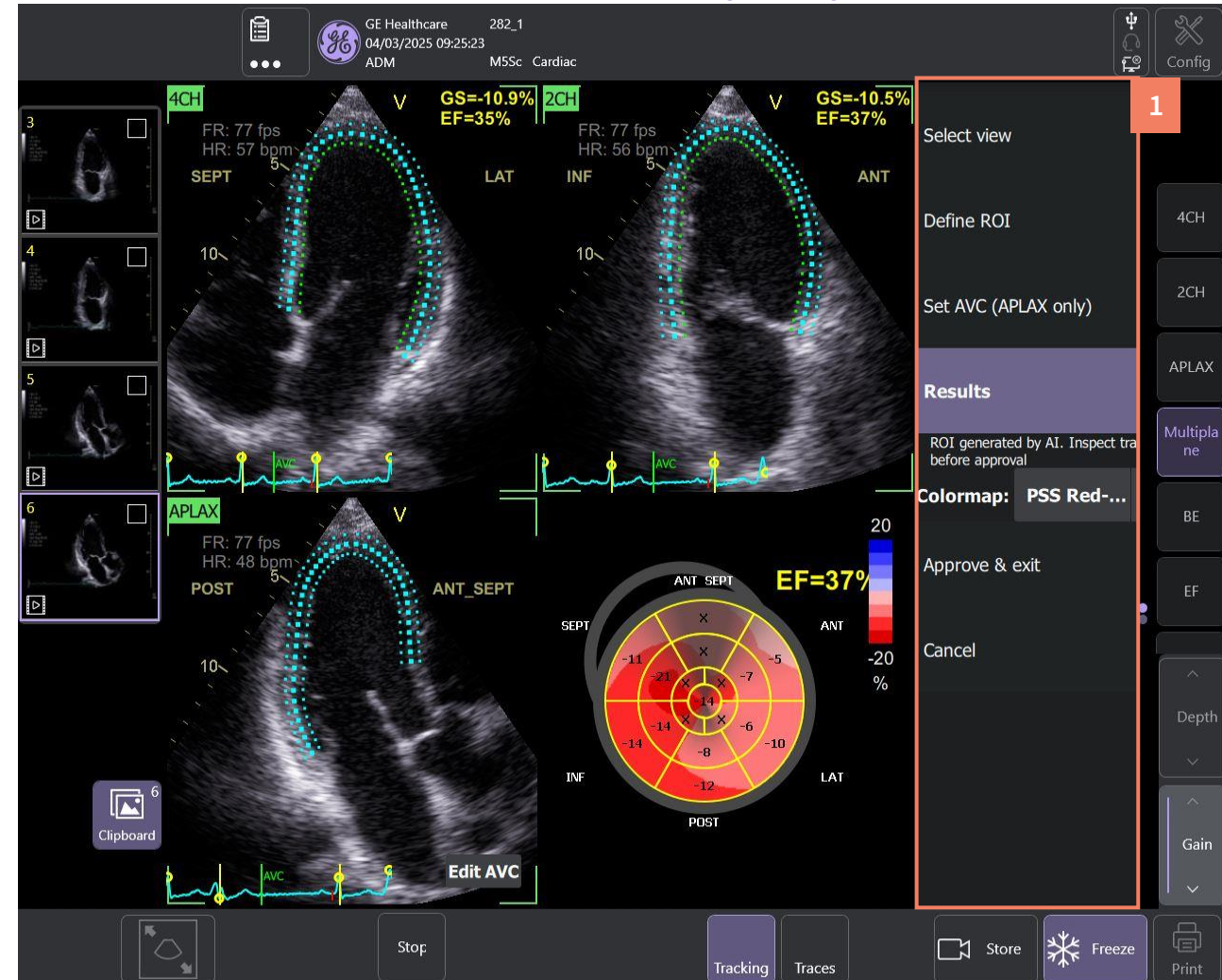


AFI Measurement Workflow

AFI LV

- If a complete analysis of all three views is performed (APLAX, 4CH and 2CH) the result is presented as a Bull's Eye layout showing color-coded and numerical values for peak systolic longitudinal strain, PSS (Peak Systolic Strain), TTP (Time To Peak global longitudinal strain) and traces.
- The screen is divided into 4 quadrants. Each of the three views obtained previously are analyzed and a final overview is displayed here, along with the Bull's Eye strain view in the bottom right quadrant. When complete, Global Strain and is displayed for each obtained view. Ejection Fraction is displayed for 2CH and 4CH. The average Global Strain and Bi-plane Ejection Fraction for all three views are display in the Strain quadrant for LV
- When finished, select "Approve & exit" (within Fig. 1).
 - *Note: If the user exits the AFI measurement workflow before selecting "Approve & exit" no results will be stored, and all data will be gone.*

Bull's Eye Layout



Features

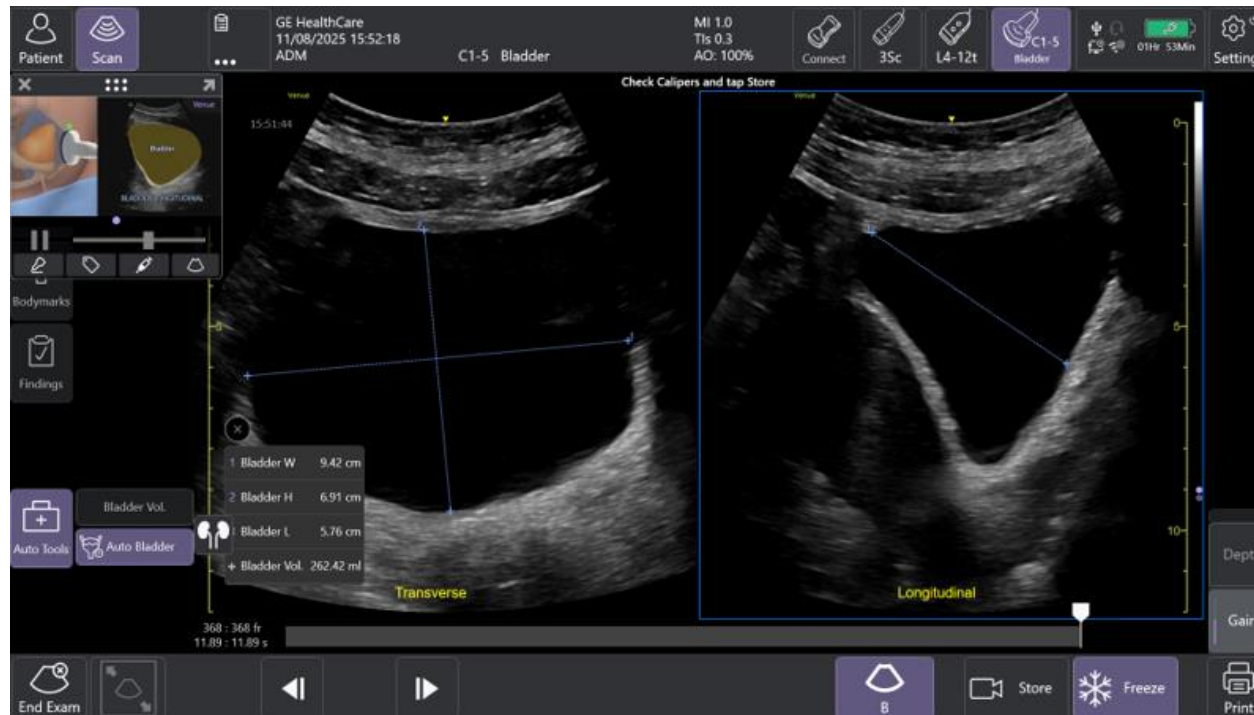
Auto Bladder Volume

Auto Bladder Volume Tool

The Auto Bladder Volume Tool assists the user in obtaining a bladder volume measurement.

Note:

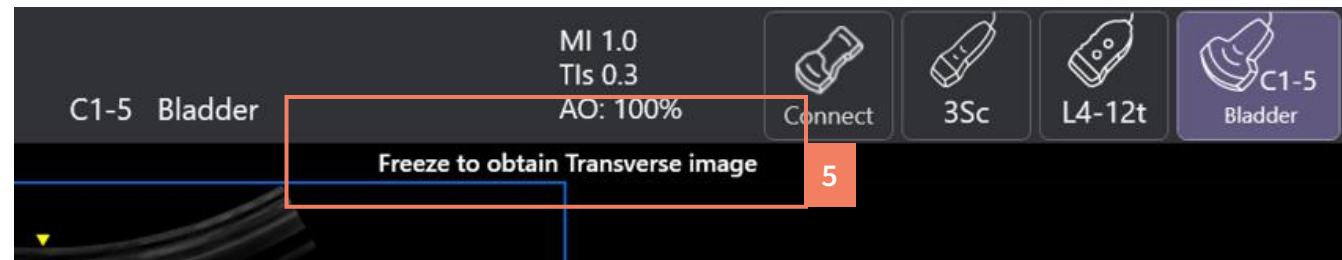
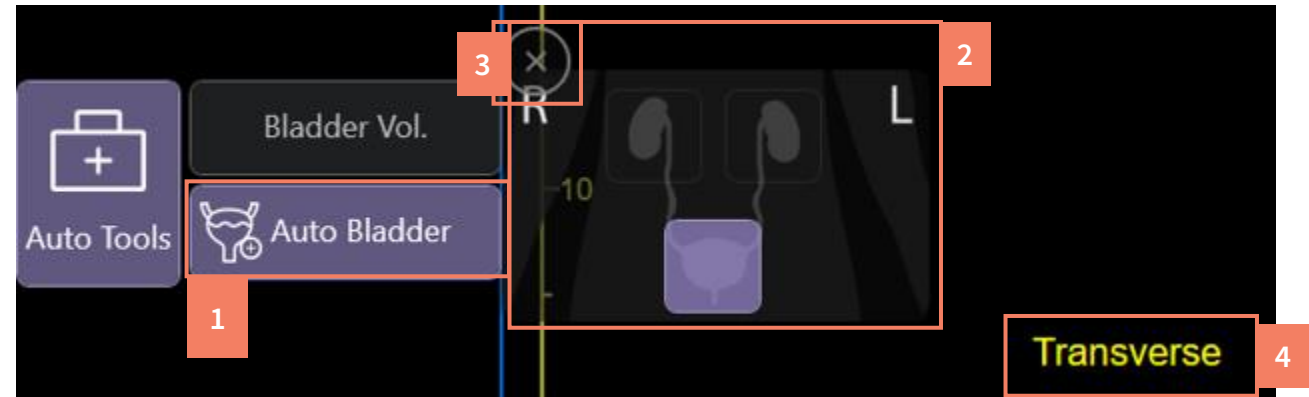
- The **Auto Bladder Volume Tool supports normal bladders** (non-pathological, both transverse and longitudinal planes) with a **volume range of 30-500 mL**.
- Auto Bladder Volume Tool **supports adults only**.



Auto Bladder Volume Tool

From the Patient Page, enter patient data, select the desired Probe, Exam Category (Abdomen), and Preset (Bladder).

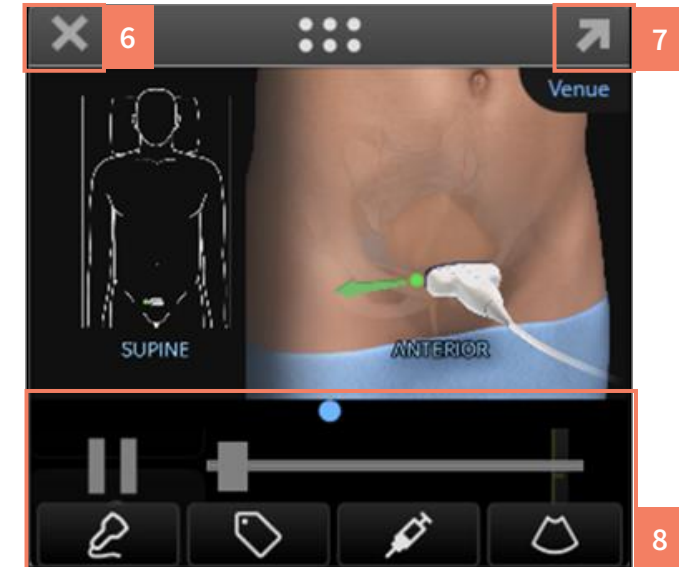
- From within Auto Tools, tap Auto Bladder (Fig. 1).
- An anatomical diagram is visible on the bottom left corner of the screen (Fig. 2). The diagram can be hidden by tapping the X in the upper left-hand corner of diagram (Fig 3).
- Images are automatically labeled (Fig. 4).
- Throughout the exam, instructions are displayed at the top of the screen (Fig. 5). Follow all instructions.



Auto Bladder Volume Tool

- A Window appears on the top left corner of the screen with a reference video, including probe position, 2D reference image, anatomical markings, and a representative video of the anatomy being scanned (Fig. 6-8).
- Minimize the reference video by tapping the X in the upper left corner of the screen. (Fig 6).
- The Arrow in the upper right corner enlarges the image (Fig. 7).
- Use the icons to play, pause, or advance through the video (Fig 8).

Note: The reference video is not stored with the image or video clip.

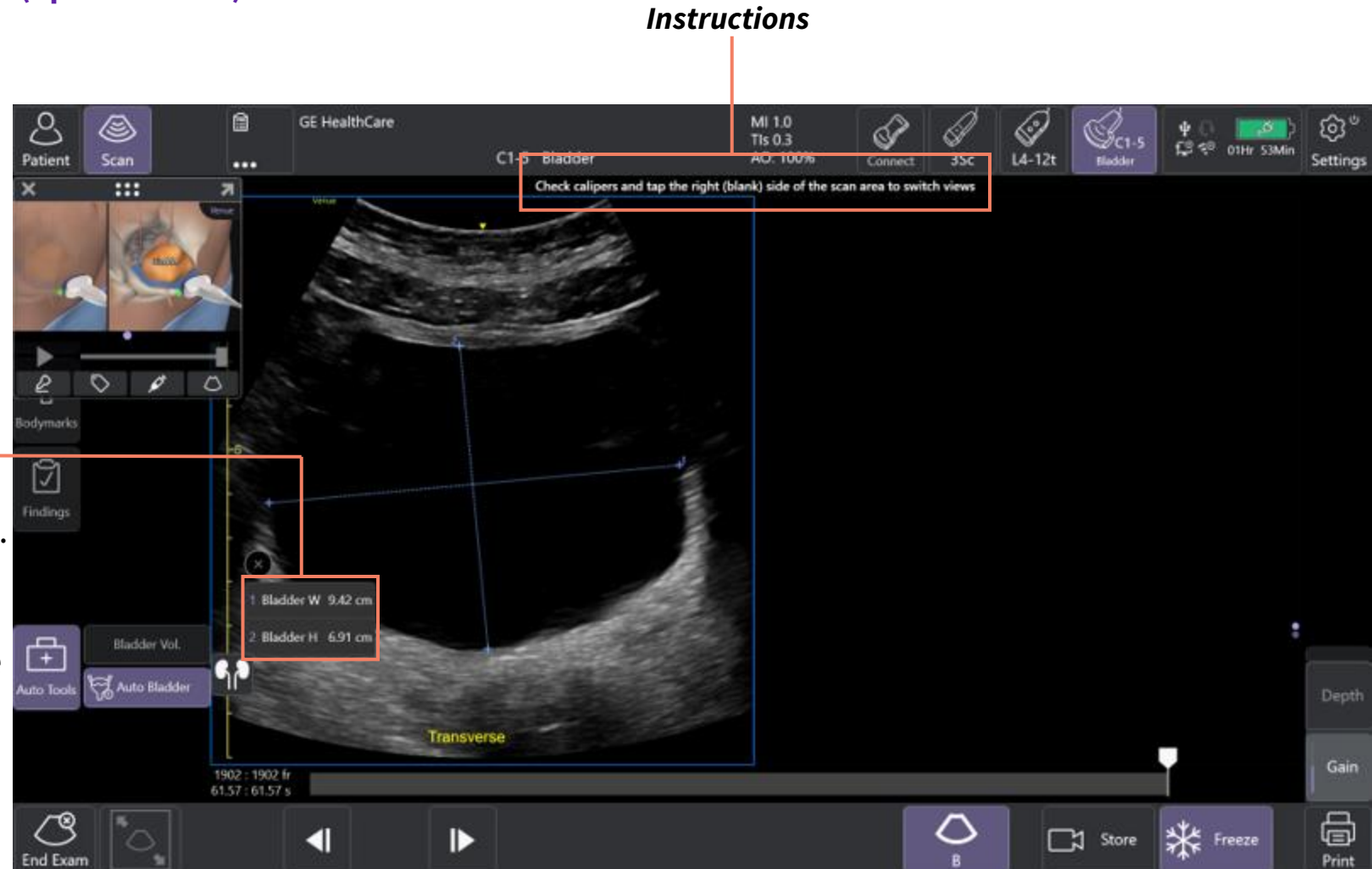


Auto Bladder Volume Tool (split screen)

- The workflow always starts with the transverse view. When in split screen mode, the left side of the screen is always initially active.
- Scan the bladder in transverse view. When an image is obtained, tap Freeze.
- Height and width measurements are automatically calculated and displayed on the image and in the measurement window.

Note: Visually check the placement of calipers. To adjust calipers, tap the desired caliper, slide the hand to reposition it, then tap again to set the new location.

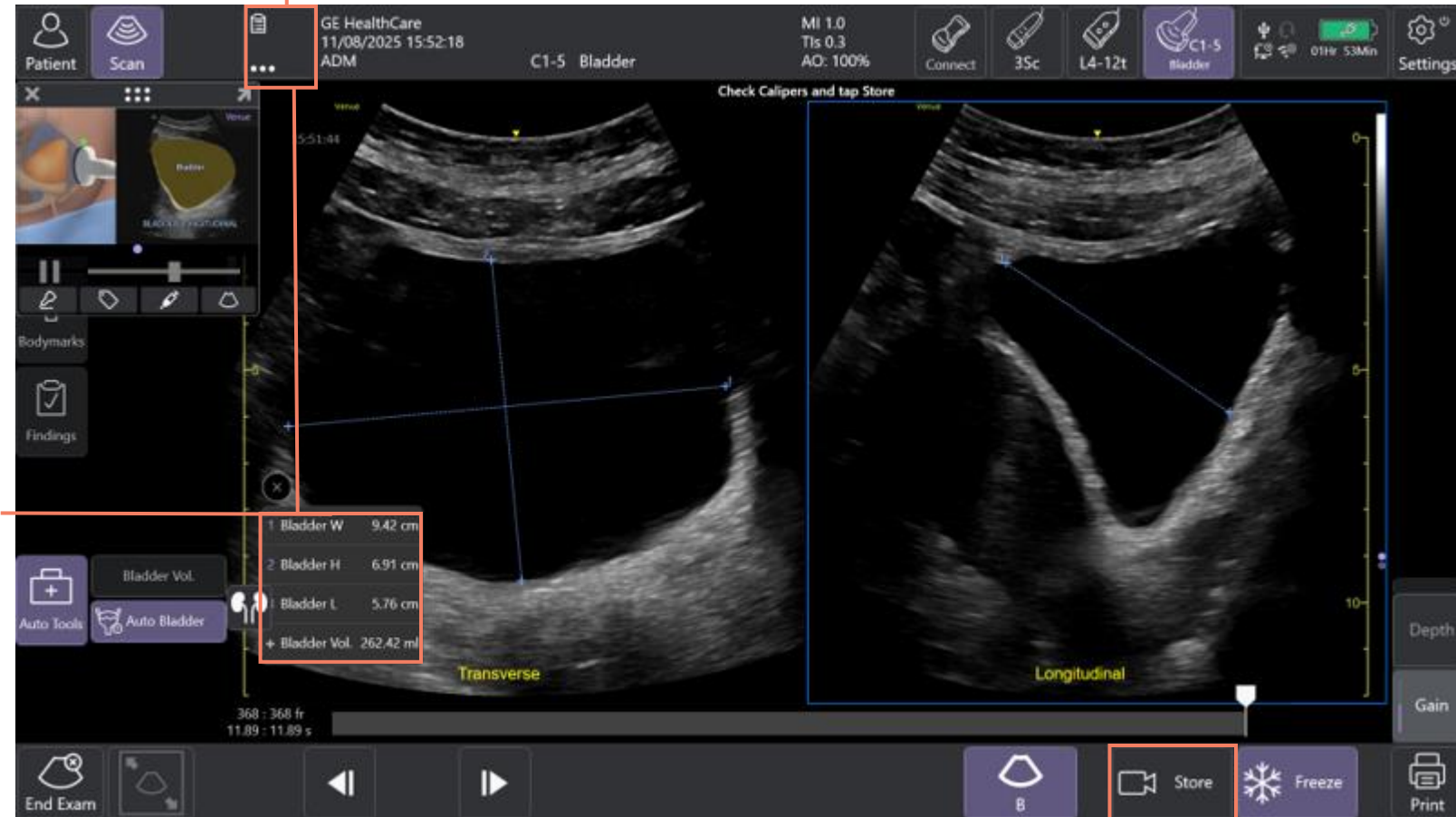
- When satisfied with the measurements, tap the right (blank) side of scan area to switch to the longitudinal view.



Auto Bladder Volume Tool

- The right side of the screen will now be live. Obtain a longitudinal image of the bladder and when ready tap Freeze.
- Measurements are automatically calculated and displayed on the scan screen.
- Visually check the placement of calipers. Reposition calipers, if needed.
- When satisfied with the measurements, tap Store. **Measurements will not be saved until hitting Store.** Once stored, measurements can be viewed either on-screen or by selecting the Worksheet button.

Worksheet

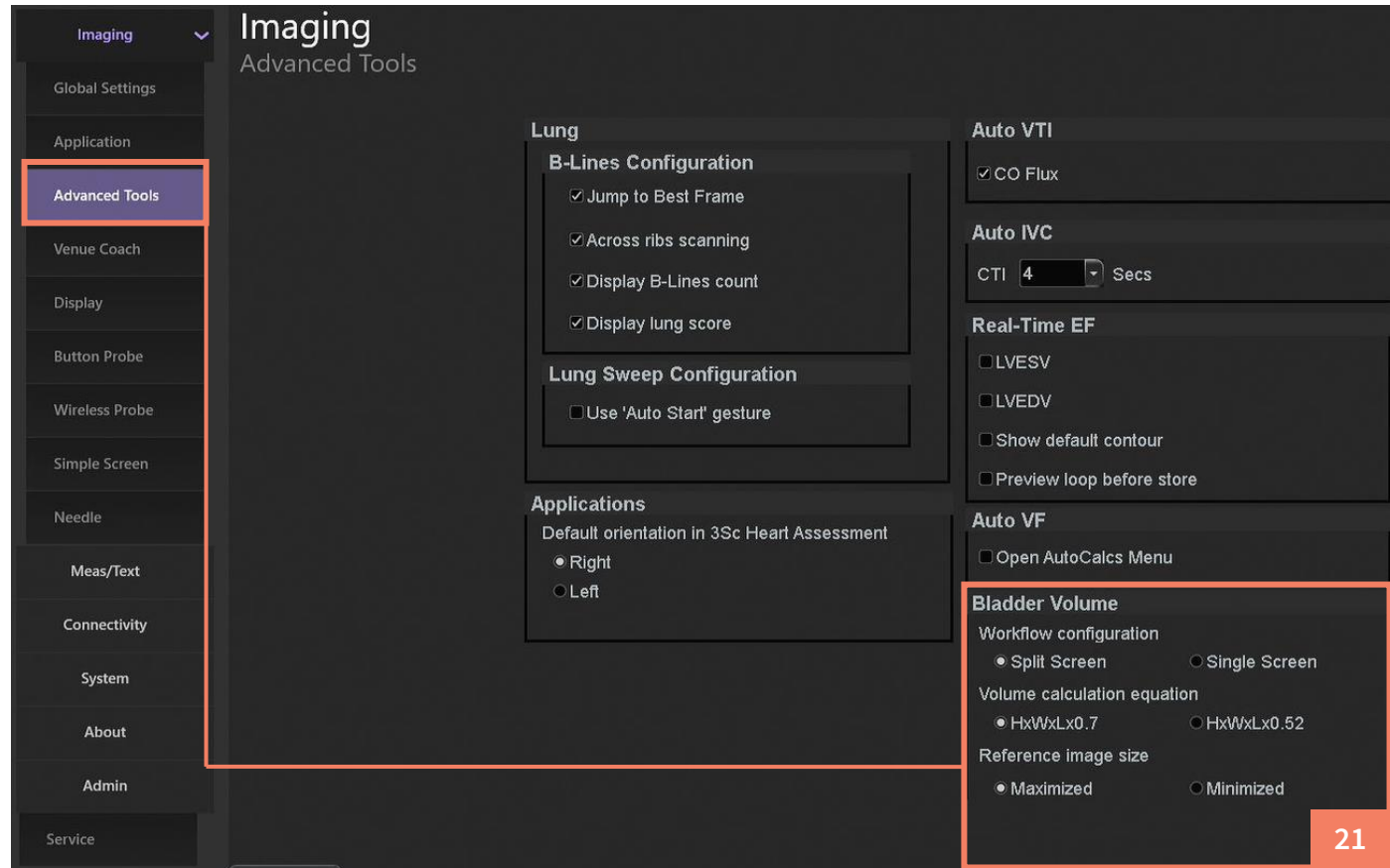


Store

Auto Bladder Volume Tool

Before using the Bladder Volume Tool, configure the system to the desired workflow and equation within the Config page).

- There are two workflow options for the bladder volume:
 - Single screen
 - Split screen
- Depending on the bladder shape, there are two equation options for calculating bladder volume:
 - A standard calculation - $L \times W \times H \times 0.7 = V$ (ml)
 - A more specialized calculation (spherical) - $L \times W \times H \times 0.52 = V$ (ml)



Note: The Manual Bladder Volume Tool is available on the Venue Family systems and follows a similar workflow. It provides on-screen instructions and allows users to choose between split-screen and single-screen modes. Please note this manual tool does not automatically place calipers—users are responsible for positioning the measurements. It is considered a standard feature.

Nerveblox™

Nerveblox

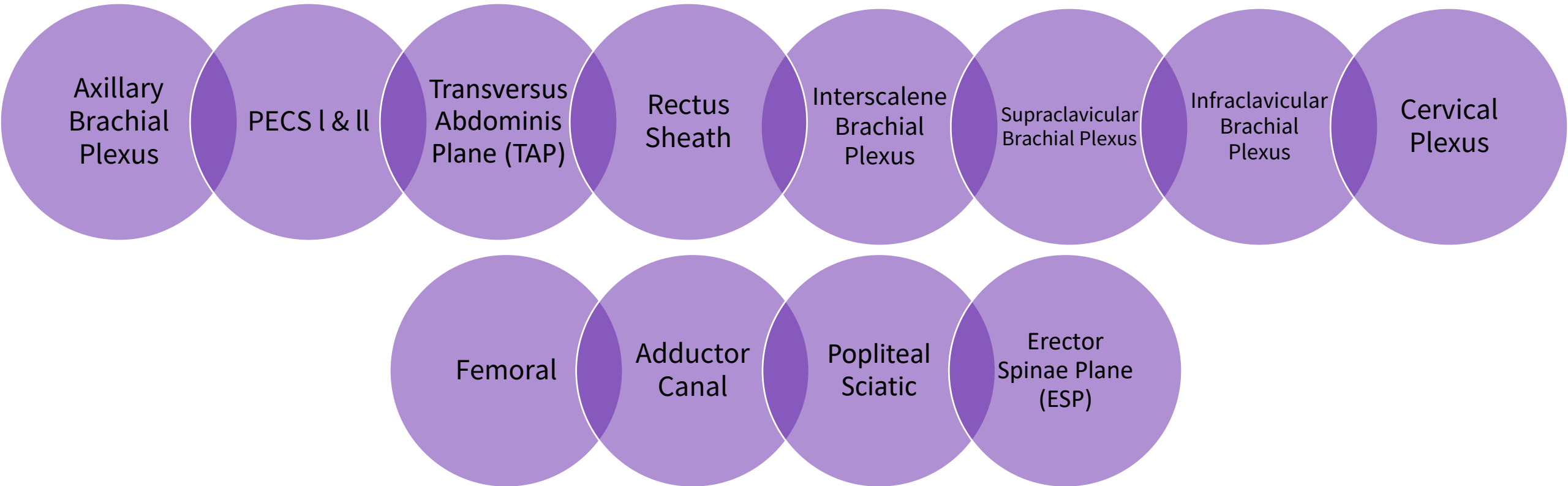
Nerveblox is a clinical tool designed to support nerve detection and guidance during the scouting phase of a nerve block procedure. It assists qualified healthcare professionals in identifying and highlighting anatomical structures within ultrasound images, thereby enhancing the accuracy of ultrasound-guided regional anesthesia.

- ✓ For use prior to needle insertion for anesthetic administration and is not intended for use in combination with needles or during needle insertion
- ✓ Exclusively for adult patients, 18 years of age or older. Not supported for Pediatrics.

Compatible with the following probes:

- L4-12t-RS
- L4-20t-RS
- 12L-RS
- 9L-RS
- ML6-15-RS
- Vscan Air SL
- Vscan Air CL

Nerveblox is available for the following nerve scouting procedures:

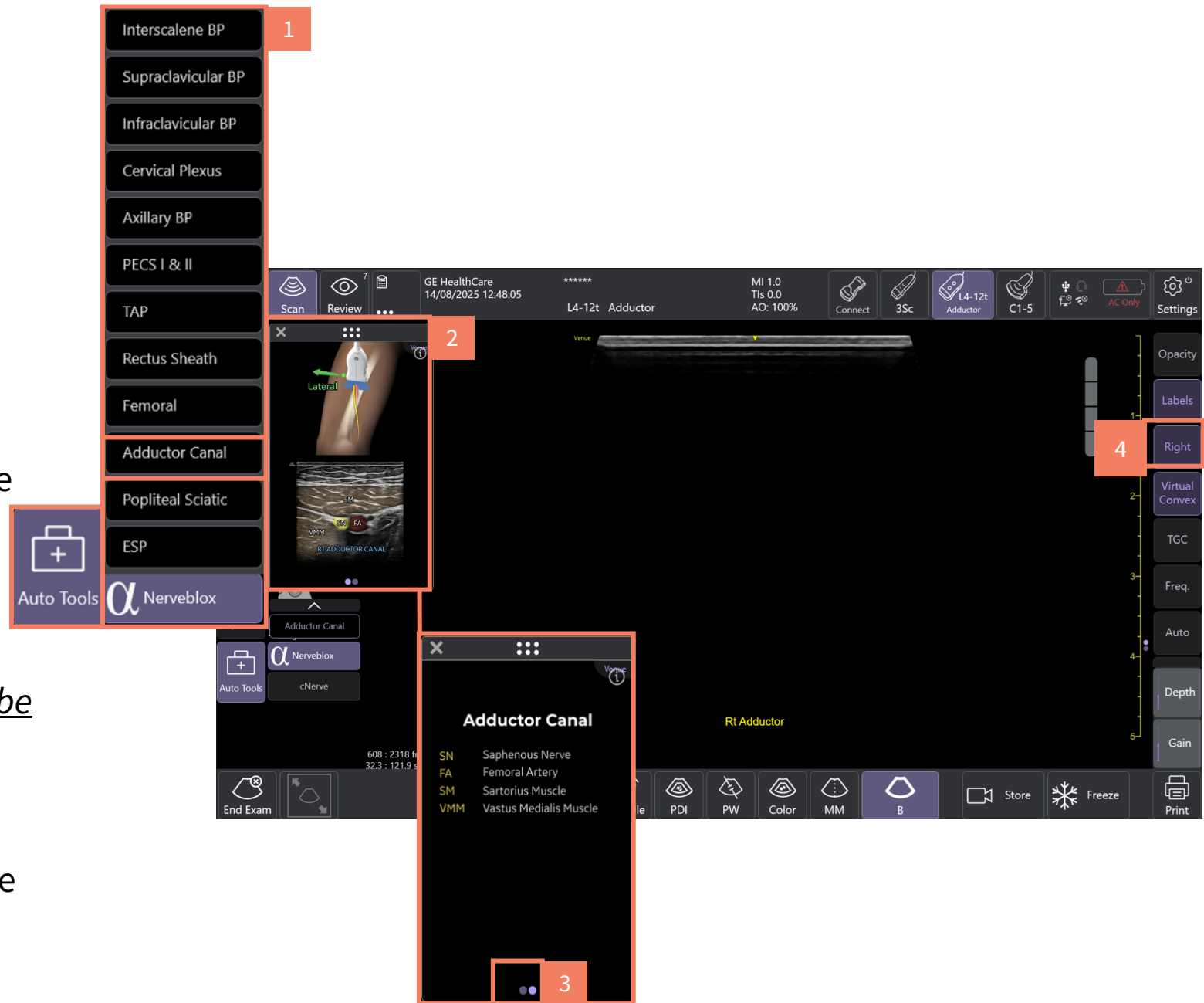


Nerveblox

From within Auto Tools tap Nerveblox and select the nerve being scanned (Fig. 1).

A window appears on the top left corner of the screen with a reference image. It provides reference probe orientation and anatomical view images as additional schematic guidance (Fig. 2). Swipe right on the reference image to view a list of labels and abbreviations (Fig. 3).

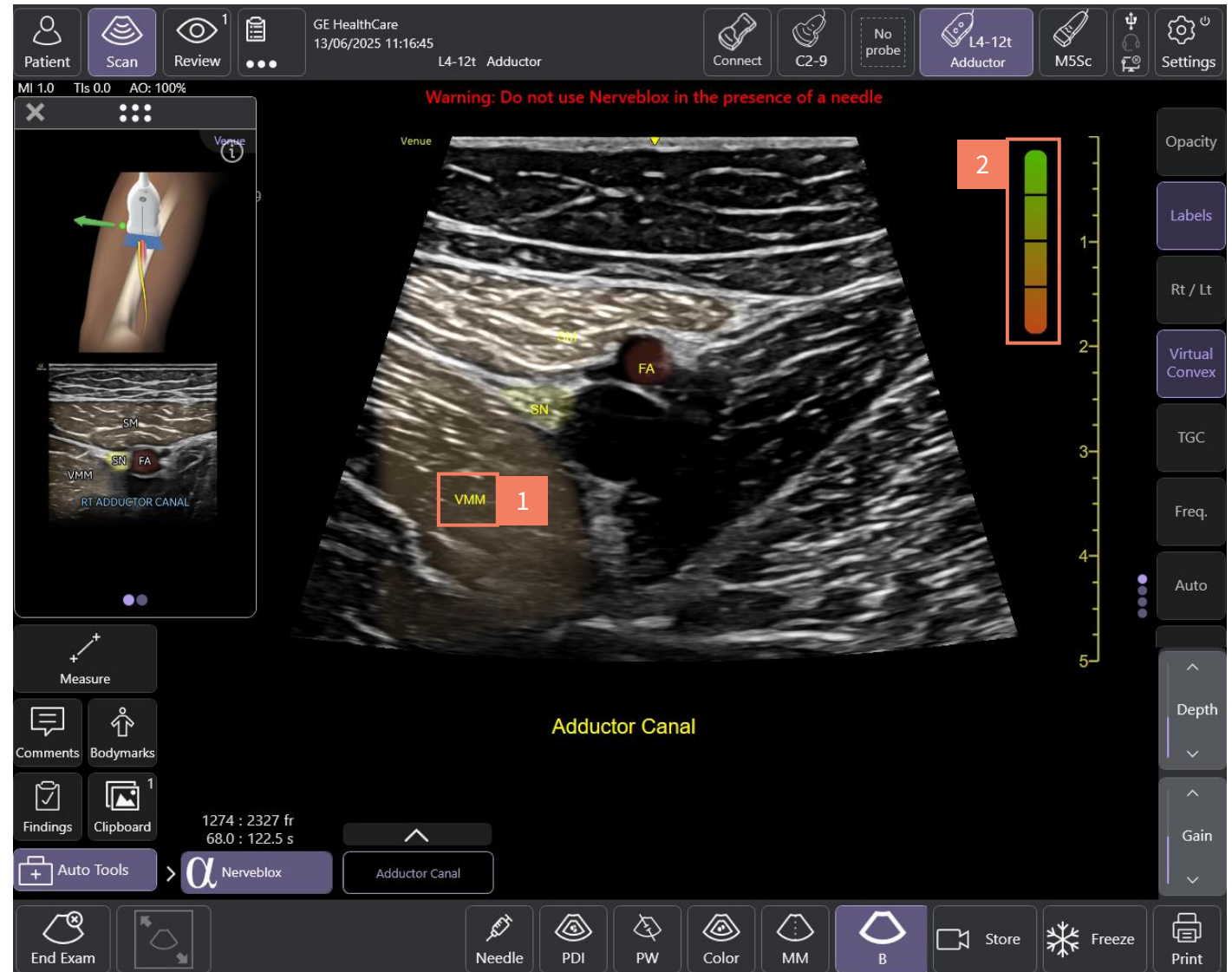
CAUTION: To ensure correct outputs from Nerveblox, you must align the ultrasound probe orientation exactly as shown in the schematic guide (Fig. 2). Any deviation can result in incorrect outputs. You can adjust the probe orientation by tapping the 'Rt/Lt' button in the scan controls area (Fig. 4).



Nerveblox

Scan the anatomy of interest. Nerveblox highlights the nerve and surrounding anatomy.

- Colors overlay the anatomy, and labels appear for anatomical structures (Fig. 1).
- A Quality Meter is displayed providing real-time feedback (Fig. 2). It highlights clinically relevant anatomical structures in real time with color and name labels.
 - The quality meter will read green when in the correct nerve block plane. As the user moves away from the correct plane the quality meter will change from green to yellow to red or turn completely GRAY.



Nerveblox

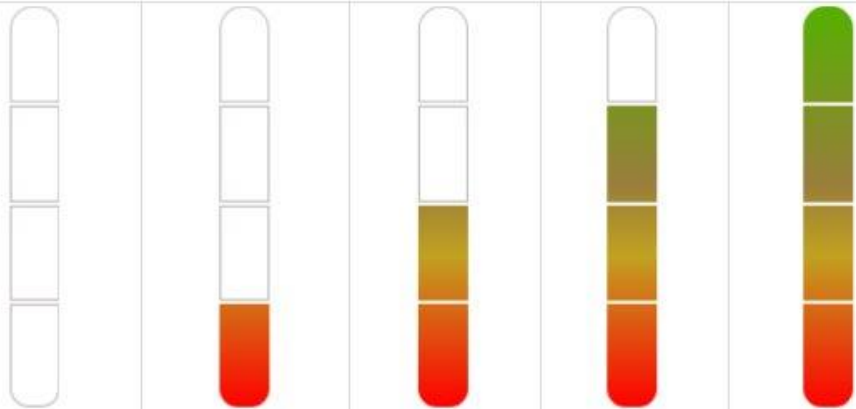
QUALITY METER

The quality meter provides visual feedback by assigning a quality score to the ultrasound image based on anatomical structure visibility by coloring a bar at varying levels.

The below criteria collectively influence the overall quality score, ensuring a standardized assessment of image quality:

- The relevance of the acquired image to the selected block region.
- The extent to which all supported anatomical structures are visible in the image.
- The relevance of the acquired image to the selected probe orientation.

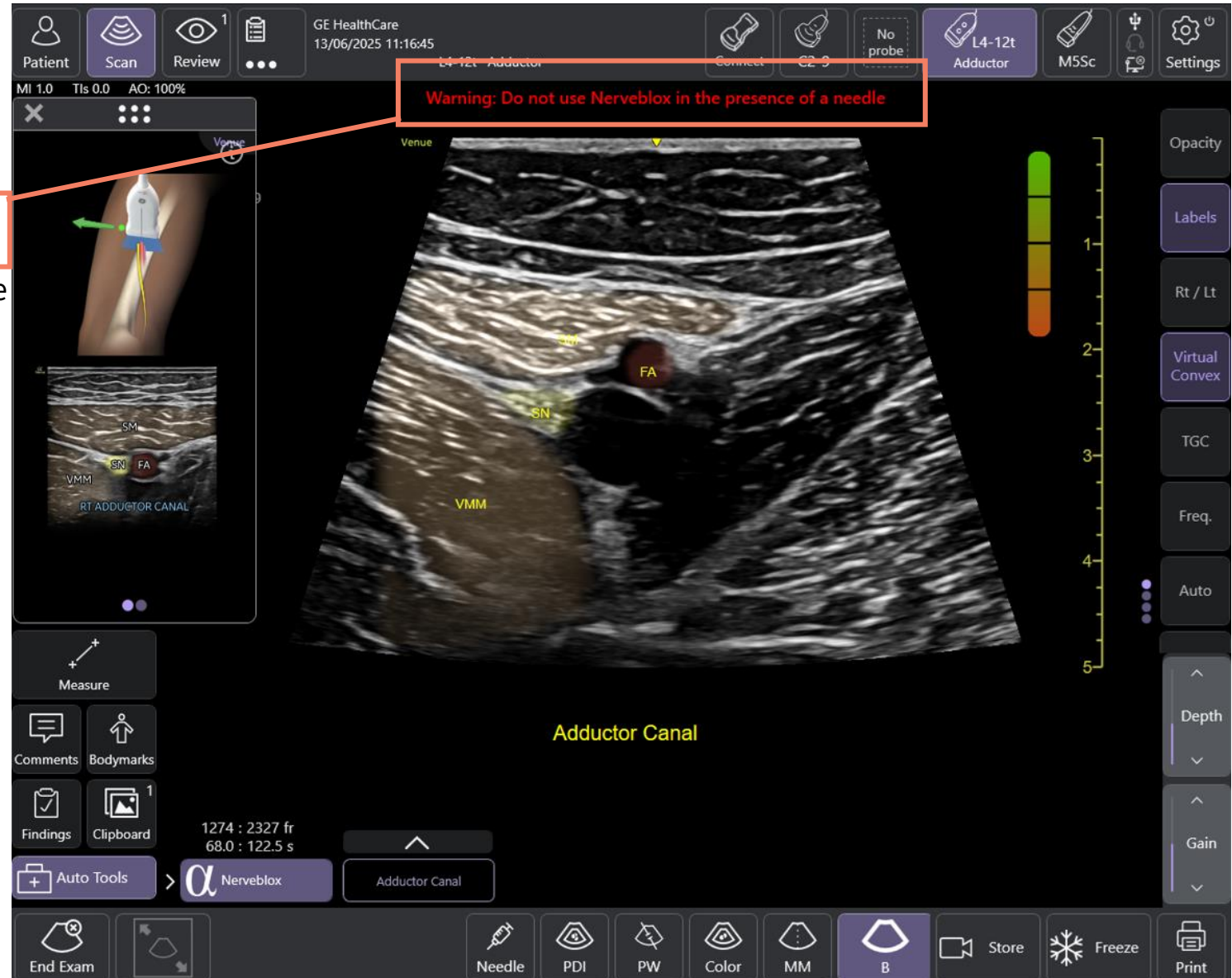
Quality Score Descriptions

				
Color overlays are not provided		Color overlays are provided		
Quality Score 0: Image does not correspond to the selected block region	Quality Score 1: Image corresponds to the selected block region but has insufficient diagnostic visibility	Quality Score 2: Minimal anatomical structures are visible	Quality Score 3: Majority of the anatomical structures are visible	Quality Score 4: All anatomical structures are visible

Nerveblox

CAUTION:

- DO NOT use Nerveblox in the presence of a needle.
The software is intended for pre-injection guidance only and has not been validated for use in combination with needles.
- DO NOT use Nerveblox for arterial or venous line insertions.
- Nerveblox cannot be used with Needle Mode.
- Warning: Nerveblox does not make any recommendation about where the needle should be placed nor where the anesthetic should be injected.





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