ACUSON Sequoia ultrasound system
VA25 SW release

Virtual Touch 2D SWE

Quick Reference Card

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Using 2D shear wave elastography (SWE) to measure shear velocity (Vs) in meters per second (m/s) and elasticity (E) in kilopascal (kPa) | Small Parts Application

Step 1

- Select compatible transducer and exam preset[1]

Step 2

- Press **VT** (Virtual Touch) located on control panel

Step 3

- **SWE** tab is default application on touch screen

Step 4

- Roll trackball to reposition the region of interest (ROI)
- Press right or left **Set** key and roll trackball to resize ROI
- Use minimal scanning pressure to prevent pre-compression effect
- Press **Update** on control panel to begin acquisition

[1] *2D SWE imaging is compatible with 5C1, DAX: General, Abdomen; 10L4: General, Thyroid, Breast, MSK; 18L6: General, Thyroid, Breast.*

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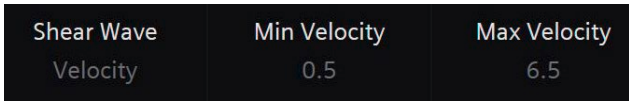
Step 5

- When acquisition is complete, system automatically freezes, emits one audible “beep” and activates Velocity or **Elasticity** display mode
- Adjust **Min** and/or **Max Velocity** or **Elasticity**
  - Increase range if measured value exceeds range by displaying “High” or,
  - Decrease range if better visualization of velocity of stiffness differences is needed
- Rotate **Shear Wave** to view **Quality** and **Displacement** displays
  - Measurements should be taken in regions with high quality (green to yellow-green) in the **Quality** display
  - Correlate the areas in the Velocity or Elasticity image with shear wave signal-to-noise ratio and **Displacement** amplitude

Note: During freeze, a cooling timer indicates remaining seconds until transducer is available for image acquisition. During a short cooling time (e.g., 1–2 seconds), the timer appears and then disappears very quickly.



Step 6

- If desired, select **Unit m/s** to display the 2D SWE image as an elasticity image in kPa
- If desired, select **Live Dual** to display the SWE image in full-screen format
- If desired, select **SWE** to hide / display 2D SWE or,
- Rotate **VT** on control panel to change transparency of 2D SWE

Measurements

Shear Velocity and Elasticity

Measurements can be performed or viewed in the Velocity (or Elasticity), Quality or Displacement display modes.

- Press **Caliper** on the control panel
- **Shear Velocity** is default measurement tool
- Roll trackball to position measurement ROI. In **Live Dual**, the measurement ROI can be placed on either image.
- If needed, rotate **ROI Diameter** to resize
- Shear wave measurements and measurement ROI depth and diameter are displayed near image (Fig. 1)
- To display measurement in report, select measurement label
- If desired, press **Set** key and roll trackball to perform additional measurements
- Select **Delete** on the control panel to delete the measurement
- Select **Report** on left side of touch screen to view, store, print or transfer shear wave measurements

Note: If measurement ROI value exceeds the current maximum velocity or elasticity setting, the measured results display **HIGH** for the shear wave value. If measurement ROI value is lower than the current minimum velocity and elasticity setting, the measured results display **LOW**. The measured results display **X.XX** (for velocity) or **XX.X** (for elasticity) if the shear wave was not detected within the ROI or if a measurement is performed outside the ROI.

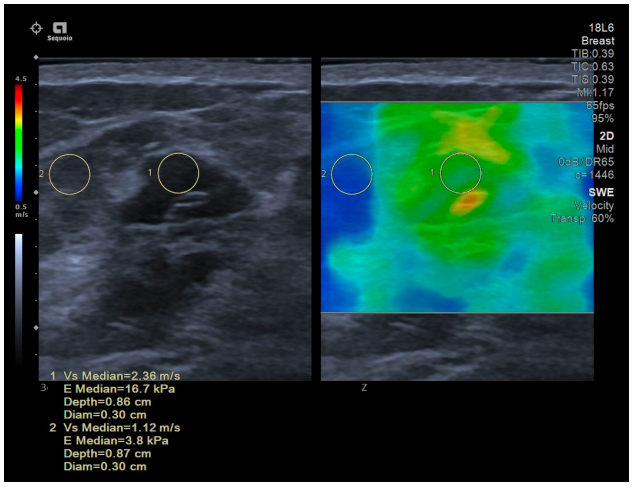


Fig. 1: Velocity display mode in Live Dual format and shear wave measurements of a breast lesion.

Shadow

Duplicates and displays a measurement on the adjacent image for a comparison of lesion size and/or location.

- In **Live Dual**, press **Caliper** on the control panel
- Select measurement tool
- **Shadow** is activated as a default on the touch screen
- Measure the right or left image
- The Shadow measurement is displayed in the measured results

Tip: *Shadow may be used with the Shear Velocity tool when* ***Live Dual*** *is activated.*

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