

# Voluson™ e4D Education

Expanding your knowledge in electronic 4D technology



## Realtime 4D Fetal Echo

The speed of the eM6C transducer allows for ultra fast framerates to evaluate volumes of the fetal heart in situations where the fetus is moving.

1. Optimize the 2D image in Fetal Cardiac preset
2. Select 4D hard key
3. Select 4D at the top of touch panel if not already active
4. Select Fet.Cardio 4D preset
5. Adjust ROI<sup>1</sup> to include entire fetal thorax
6. Adjust volume angle to include all of the cardiac anatomy
7. Select desired Quality setting (High1-High2)
8. Select trackball Start key



All 4D manipulations can be done while in live 4D with excellent resolution and framerates.

**Tip:** Add tools such as VCI<sup>2</sup> can help enhance contrast resolution and/or TUI<sup>3</sup> for enhanced visualization.



Realtime 4D

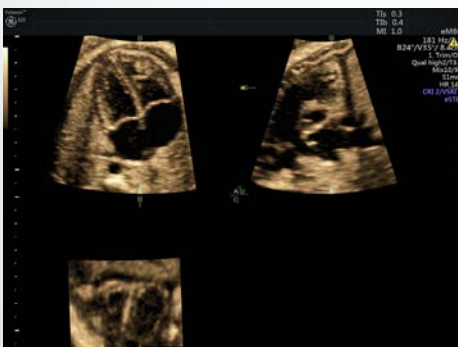


Realtime 4D w/ VCI



Realtime 4D w/ VCI & TUI

If fetus moves into a desirable position, a quick eSTIC volume can be performed utilizing the eSTIC SnapShot feature for enhanced resolution.<sup>4</sup> While in Realtime 4D, select the Snapshot trackball key.



eSTIC



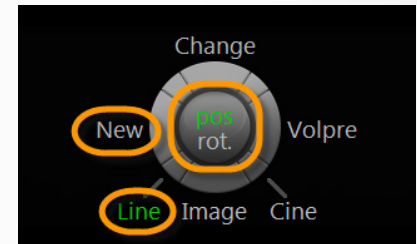
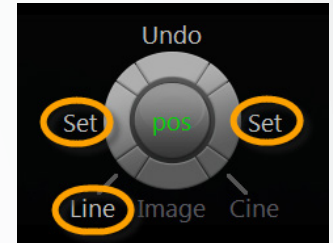
## 4D Anatomic M-Mode

4D AMM, like STIC M-Mode, enables freely-rotatable M-Mode tracing through the fetal heart to facilitate measurements that are perpendicular to the cardiac structures. However, the advantage with Realtime 4D is that 4D AMM can be used in the assessment of arrhythmias.

1. Freeze active 4D image (or recall 4D cardiac volume from clipboard)
2. Select 4D AMM on touch panel
3. Using trackball, position cursor at the starting point of the desired M-Mode line and select trackball Set key
4. Move trackball and position second cursor at the end point of the desired M-Mode line and select trackball Set key
5. While in Cine mode, select the trackball Start key to activate the M-Mode tracing cine clip
6. To adjust the location & rotation of the M-Mode line, select the trackball Line key and adjust with the trackball. Select Change key to cycle between position and rotation
7. To create a new line, select the trackball New key

### Tips:

- M-Mode line may be adjusted on a frozen 4D image or on a running 4D Cine
- Sweep speed may be adjusted on a frozen 4D image or on a running 4D Cine
- Zoom is also available to zoom both the image and the M-Mode timeline



<sup>1</sup> ROI – Region of Interest

<sup>2</sup> VCI – Volume Contrast Imaging

<sup>3</sup> TUI – Tomographic Ultrasound Imaging

<sup>4</sup> Only available on software version EC320 or later



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