HeartModel[A.I.]

3D LA & LV Quantification

PHILIPS

QuickGuide

About HeartModel[A.I.]

HeartModel[A.I.] provides fast, easy quantification with robust reproducibility for the LV and LA on a single volume loop. It is only available on the EPIQ 7 Evolution 2.0 system or higher using the X5-1 transducer, Adult Echo preset, and an ECG signal.
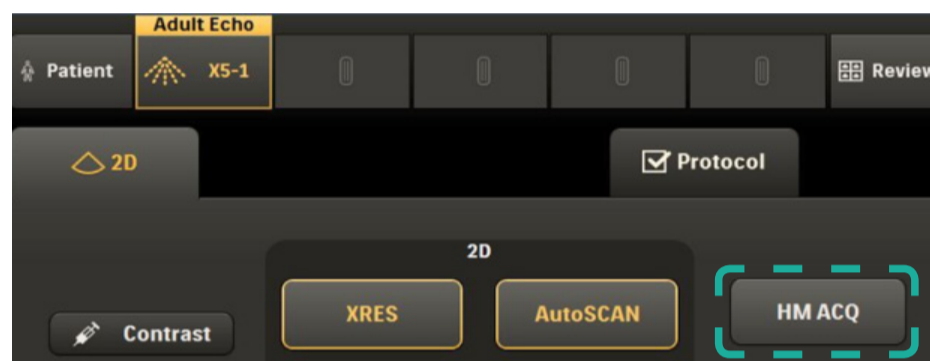
Data Acquisition

Follow the data acquisition steps below appropriate for your experience level.
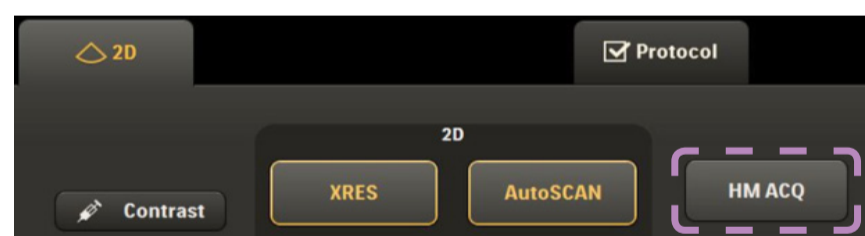Use the **X5-1 transducer**.

2D User

1. Obtain typical AP4

2. Press **HM ACQ** on the touch screen

3. Narrow sector width to increase frame rate

4. Hold image still for a few beats

5. Acquire the volume

X-Plane User

1. Obtain typical AP4

2. Press **xPlane** and confirm that LV is clearly seen in both planes

3. Narrow sector width to increase frame rate

4. Hold image still for a few beats

5. Press **HM ACQ** on the touch screen

6. Acquire the volume

3D User

1. Obtain typical AP4

2. Press **Full Volume**

3. Optimize 3D image

4. Narrow sector width to increase frame rate

5. Hold image still for a few beats

6. Press **HM ACQ** on the touch screen

7. Acquire the volume
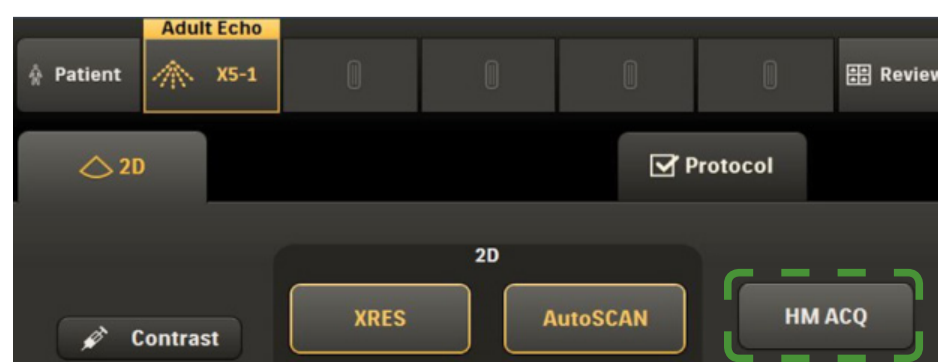
Acquisition Tips

- If a different left ventricular orientation is preferred when obtaining the apical view, do **not** rotate the transducer. Instead, use the the left/right touch panel control to position the left ventricle to the left side.
- The X5-1 scan angle must remain at 0° for the HM ACQ button to be available.

Initial Review

After HeartModel[A.I.] analyzes the data, the Initial Review state is activated and displays the apical 6-up view in both End Systole and End Diastole. Initial Review allows users to view the border placement in the apical and short axis views and make any necessary adjustments.

Apical Review

Apical Review displays ASE apical 4, 3, and 2 chamber views in both End Diastole and End Systole. 6-up view is recommended.

1 Cine play with display of ECG waveform to review border placement.

2 Press **Accept** to keep the border placement and proceed to Final Review.
or
Press **Global Edit** to make adjustments.
or
Press **Regional Edit** to make local adjustments.
or
Press **Reject** to return to the viewer.
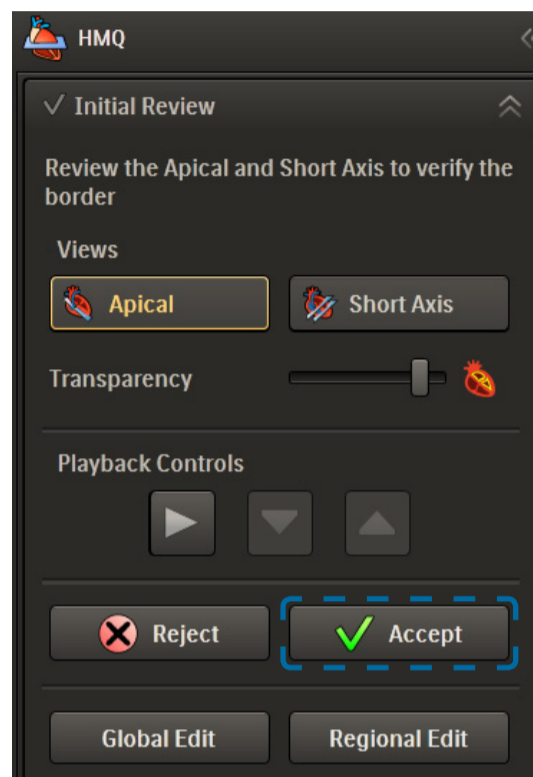
Short Axis Review

Short Axis Review displays 6-up short axis views in both End Diastole and End Systole.

1 Cine play with display of ECG waveform to confirm border placement.

2 Press **Accept** to keep the border placement.
or
Press **Global Edit** to make adjustments to the border.
or
Press **Reject** to acquire a new image.

Note: Editing in Short Axis view is not permitted.
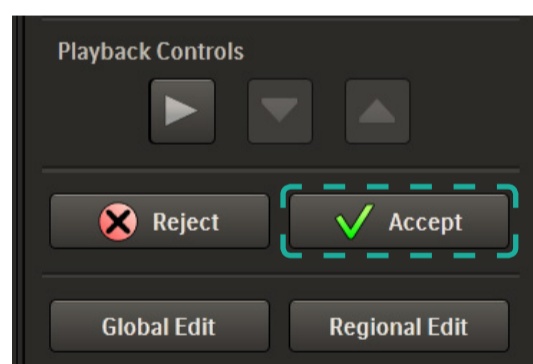
Cine Switch Controls

The Cine Switch controls allow users to specify which MPRs are playing.

Mode 1: Active MPR is playing

Mode 2: Three edit MPRs playing with Slice View
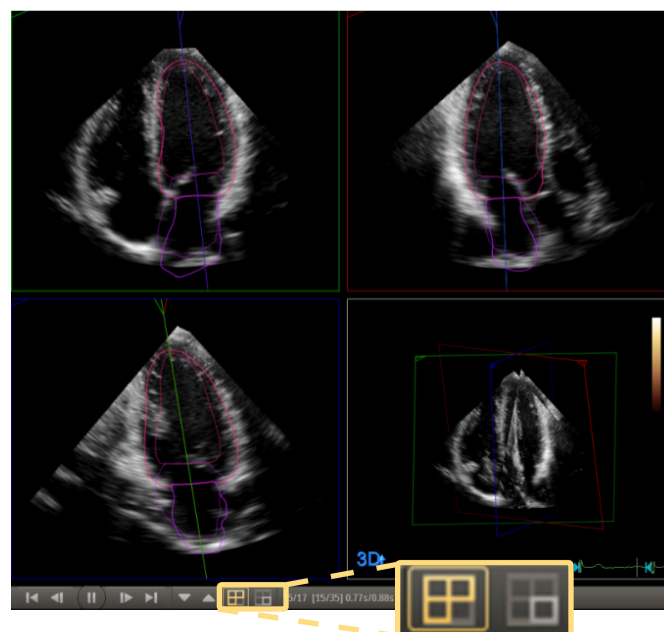
Global Edit

Global Edit allows adjustment of the 3D Left Ventricular border placement while viewing the 3 standard apical views.
Note: Global edits must be completed before the regional edits. You can not perform a global edit after a regional edit.

1 Use Global sliders to adjust LV borders in ED and ES.

The current border settings and default border settings are displayed in the bottom right corner of the results panel. These settings will be exported to the EPIQ 7 analysis report page.
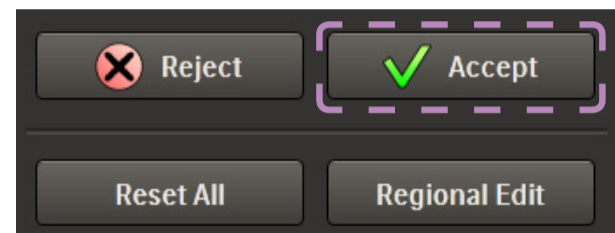

2 Press **Accept** to keep the global edits and complete the quantification.
or
Press **Regional Edit** to make localized adjustments.
or
Press **Reset All** to return all settings back to their defaults.

Border Placement Tips

- **HeartModel**[A.I.] algorithm detects inner and outer myocardial borders, but only the inner border is displayed.
- Inner border is located at blood/tissue interface (border setting 0).
- Outer border is located at compacted myocardium interface (border setting 100).
- Use slider to adjust border on the image, as needed.
- Set preferred default slider setting in **Preference** menu.
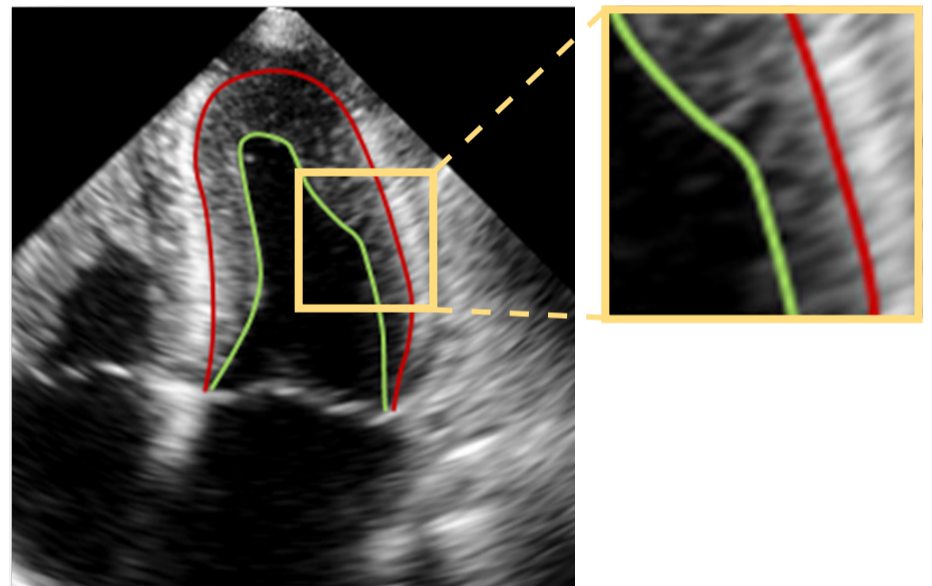
Regional Edit

Regional Edits can be performed for the Left Atrium or Left Ventricle, allowing the user to make adjustments to individual points along the border.

Left Ventricle Regional Edits

1 Press the **LV** border button on the HMQ Tasks tab.

2 Press the **Apical** view button and then press either the **ED** or **ES** button to select the phase you wish to edit.

3 Click and drag up to 9 control points in each apical view for both ED and ES, as needed.

4 Press **Accept** to keep all edits and proceed to Final Review.
*or*
Press **LA** to make adjustments to the Left Atrium.

Note: Regional editing in Short Axis view is not permitted. The Short Axis view is for visualization and placement confirmation only.
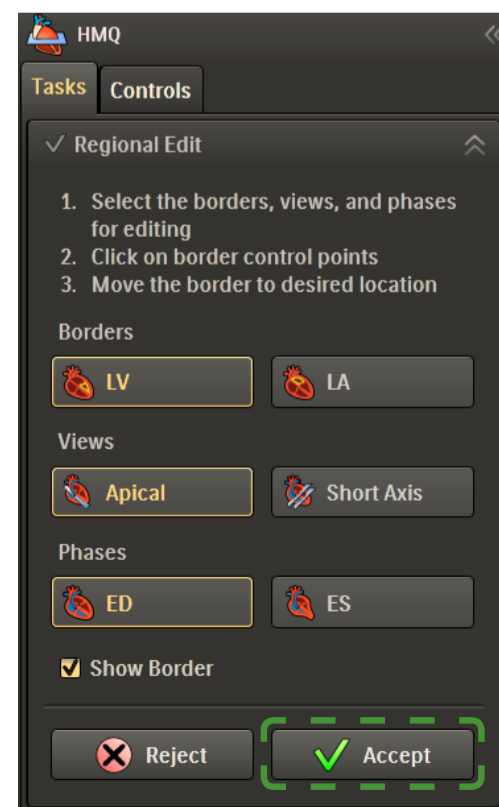
Left Atrium Regional Edits

Left Atrium regional editing can only be performed in the apical 4 chamber view at left ventricular end-systolic phase.

1 Press the LA border button to edit the left atrial borders.

2 Click and drag up to 5 control points in each view to adjust the border, as needed.

3 Press **Accept** to keep all edits and proceed to Final Review.
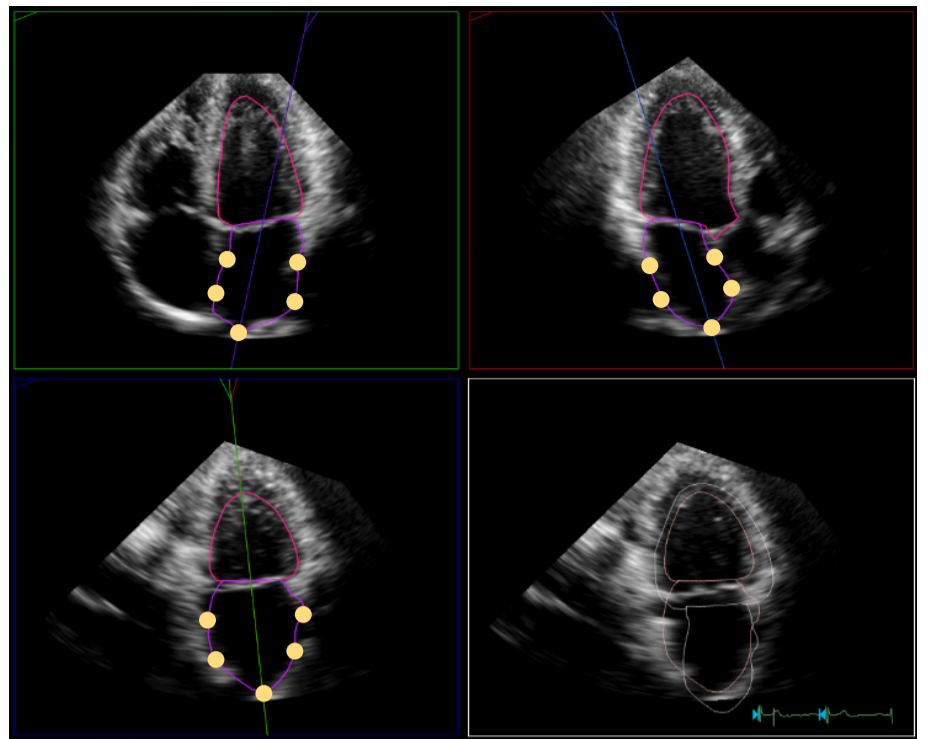
Border Settings Display

When a regional border edit is made, there will be a [R] next to the slider value in the current column display. Once a regional edit has been made, both ED and ES values will have an [R] notation when exported.

Final Review

Quantification is completed.

Select **Reject** to undo all edits and return to review.
or
Select **Reset All** to return to Initial Review.
or
Highlight the Left Atrium ES measurement and click the red X to eliminate this volume from exporting to the report.

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