

## **Section 4-3**

### **Functional Checks**

#### **4-3-1 Overview**

The functional checks for Vivid™ S60/Vivid™ S70 are described in this section.

Functional checks are used to verify that the Vivid™ S60/Vivid™ S70 operates as intended.

The functional checks may also be used during troubleshooting.

#### **4-3-2 Performance Checks**

##### **4-3-2-1 Test Phantoms**

The use of test phantoms is only recommended if required by your facility's (customer's) QA program.

## 4-3-3 2D Mode (B Mode) Checks

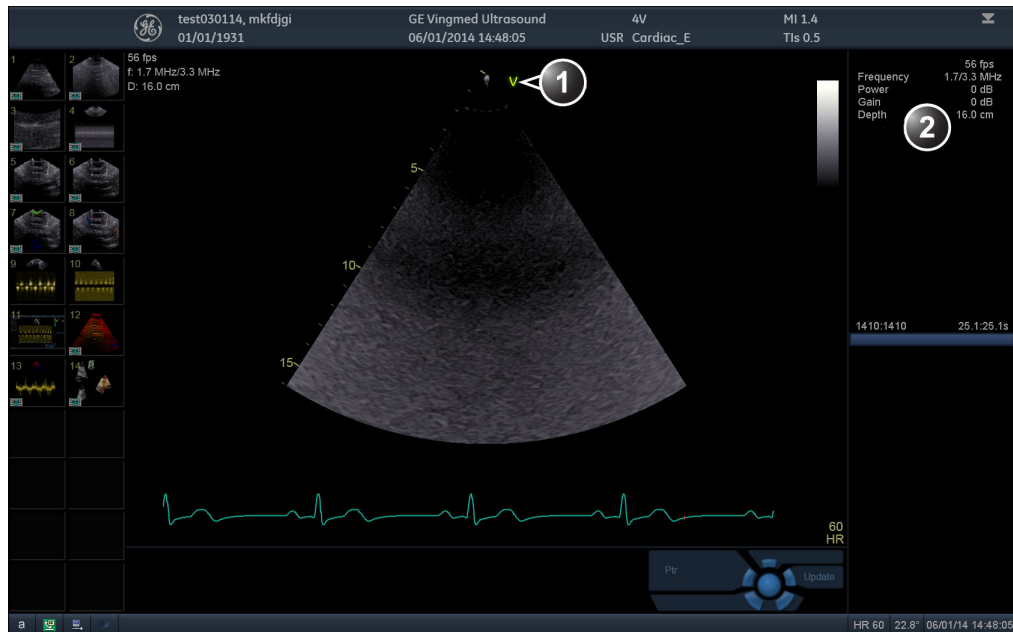
### 4-3-3-1 Introduction

The 2D Mode is the system's default mode.

### 4-3-3-2 Preparations

- 1) Connect one of the probes.
- 2) Turn ON the Vivid S60/Vivid S70.

*The 2D Mode window is displayed (default mode).*



1. Probe orientation marker
2. Parameter window

**Figure 4-12 The 2D Screen (Cardiac)**



Figure 4-13 2D Touch Panel (4D Probe Live) Page 1 and 2

### 4-3-3-3 Adjust the 2D Mode Controls



#### WARNING

Always use the minimum power required to obtain acceptable images in accordance with applicable guidelines and policies.

The following controls can be adjusted to optimize the 2D Mode display:

- Swipe to page 2 on the Touch panel and press either **Soft** or **Sharp** Auto Tissue setting.
  - **Soft**: optimizes the radial and lateral uniformity and brightness of the tissue continuously in real-time.  
The mention “Soft” is displayed on the upper right corner of the image area
  - **Sharp**: further enhances the image display by optimizing the gray scale curve.  
The mention “Sharp” is displayed on the upper right corner of the image area

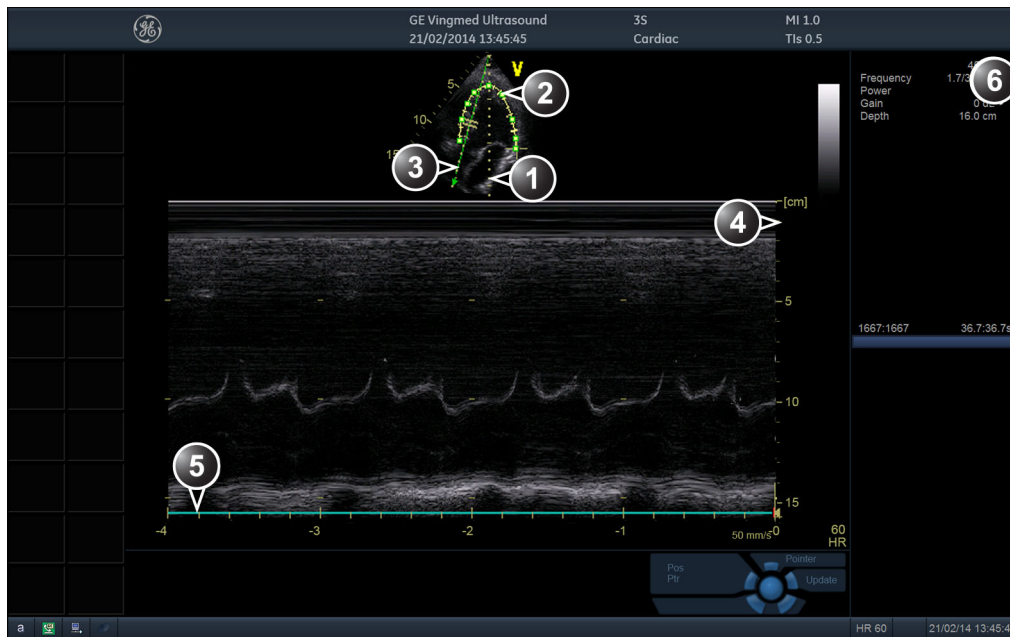
The Auto Tissue setting (Soft or Sharp) can be turned on/off by pressing **Auto** on the Control panel. The last used setting is then applied.

The Auto Tissue settings are only available in live scanning and cannot be turned off when the image is stored.

- If available, press **Virtual Apex** (probe dependent) to improve near field imaging, allowing increased visibility up to the width of the full probe aperture close to the surface.
- Use the **Gain** and **TGC** controls to optimize the overall image.  
Gain increases or decreases the amount of echo information displayed. TGC compensates for depth-related attenuation in the image.
- Use the **Depth** control to adjust the range to be imaged.
- Use the **Frequency** control (move to higher frequencies) or the **Frame rate** control (move to lower frame rate) to increase resolution in image.
- Use the **Frequency** control (move to lower frequency) to increase penetration.
- Use the **Reject** control to reduce noise in the image.
- Use the **DDP** control to optimize imaging in the blood flow regions and make a cleaner, less noisy image.
- Use **UD Clarity** (Cardiac) or **UD Speckle reduce** (non-cardiac) to reduce image speckle. Extra care must be taken to select the optimal Speckle reduction level, as too much filtering of speckle can mask or obscure desired image detail.
- Adjust **Octave** to toggle between fundamental and Harmonic mode.
- Press **Color maps** and select a grey map from the menu on screen.
- If using a 4D probe:
  - Adjust the **Quick Rotate** control on the Touch panel or press **Angle** on the Control panel to rotate the scan plane to predefined angles.
  - Adjust the **Rotate** rotary of the Touch panel to fine tune the angle adjustment.  
A scan plane indicator is displayed showing the angle position of the scan plane.

## 4-3-4 M Mode Checks

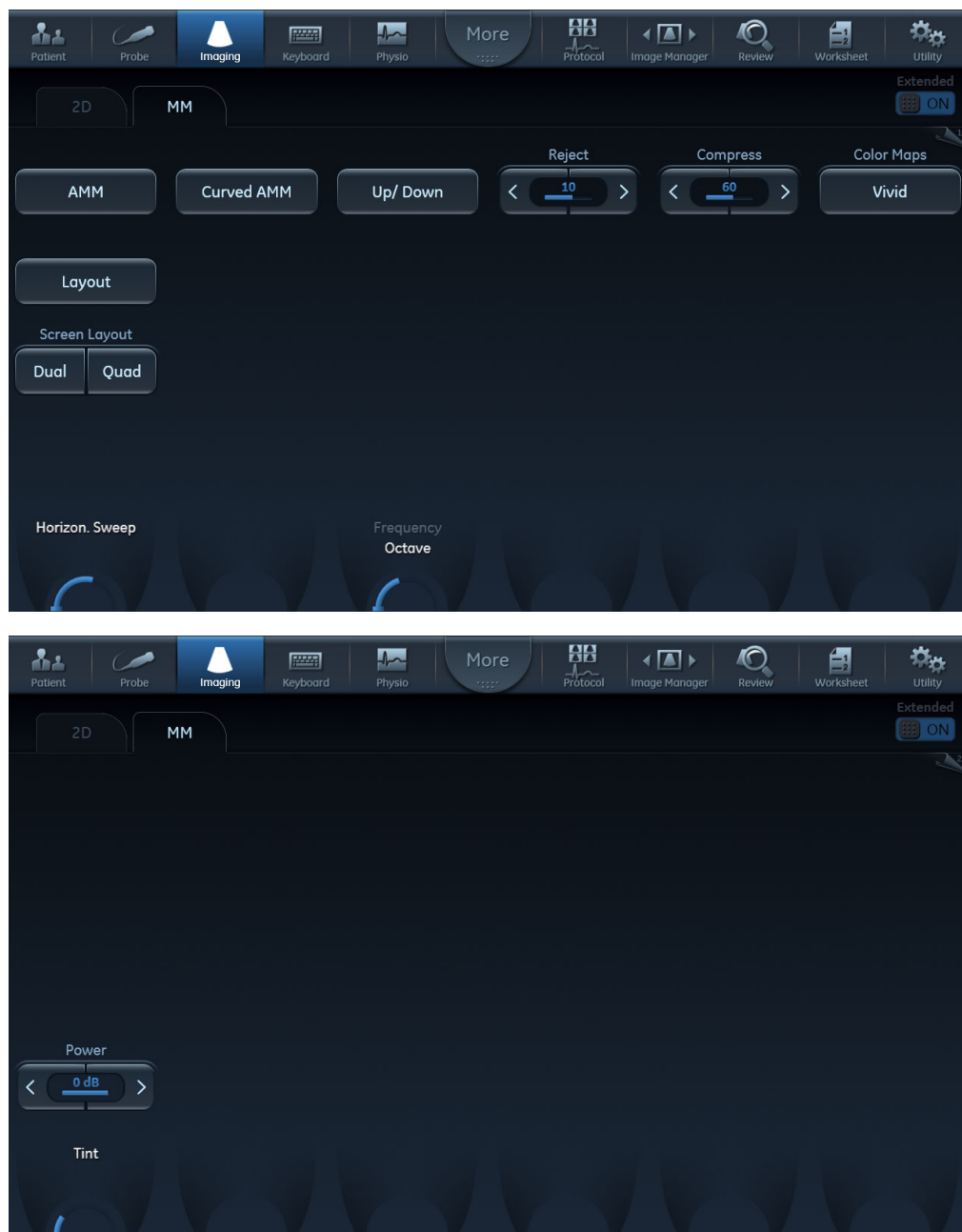
### 4-3-4-1 M-Mode Overview



1. Time motion cursor conventional M-Mode
2. Time motion cursor curved anatomical M-Mode
3. Time motion cursor anatomical M-Mode
4. Depth scale
5. Time scale
6. Parameter window

*Note:* The sweep speed information displayed in the bottom right corner of the image represents the user selected sweep speed and should be used only as a reference to confirm that the image was acquired at the selected sweep speed. It is not to be used for measurements or analysis. This is not an absolute value, but simply a reference number. Users performing studies using standardized protocols may find this sweep speed information useful for reading studies from other institutions.

**Figure 4-14 The M-Mode Screen (Composite)**



**Figure 4-15 M-Mode Touch Panel Page 1 and 2**

This unit has three types of M-Mode:

- Conventional M-Mode (MM): displays a distance/time plot of a cursor line in the axial plane of the 2D-image.
- Anatomical M-Mode (AMM): displays a distance/time plot from a cursor line, which is independent from the axial plane. AMM is available in greyscale, color, TVI, Tissue Tracking, Strain rate and Strain modes.
- Curved Anatomical M-Mode (CAMM): displays a distance/time plot from a free-drawn cursor line. CAMM is available in greyscale, color, TVI, Tissue Tracking, Strain rate and Strain modes.

Conventional M-Mode can be combined with Color Mode.

#### 4-3-4-2 Preparations

- 1) Connect one of the probes, to the scanner's left-most probe connector.
- 2) Turn ON the scanner.  
*The 2D Mode window is displayed (default mode).*
- 3) Press **MM** on the Operator panel to bring up an M-Mode picture on the screen.
- 4) Use the trackball to position the cursor over the required area of the image.

#### 4-3-4-3 Using M-Mode

##### 4-3-4-3-1 Conventional M-Mode

- 1) To access M-Mode from any other scan mode, press **MM** on the control panel.
- 2) Use the trackball to position the cursor over the required area of the image.
- 3) Press **Freeze**.
- 4) Use the trackball to scroll through the data acquired.

##### 4-3-4-3-2 Anatomical M-Mode

- 1) In M-Mode or 2D-Mode Freeze, press **AMM** on the Touch panel.

**NOTE:** *Anatomical M-Mode can also be used with previously acquired digitally stored 2D images. More than one heart cycle should be stored if performing M-Mode in post processing.*

- 2) Use the trackball (assigned function: *Pos*) to position the cursor over the required area of the image.
- 3) Press **Trackball** to allow free rotation of the solid full-length cursor line throughout the 2D image (trackball assigned function: *Angle*).
- 4) Rotate the solid cursor line to the desired direction.

##### 4-3-4-3-3 Curved Anatomical M-Mode

- 1) In M-Mode, press **Curved AMM**.
- 2) Use the trackball (assigned function: *Pos*) to position the starting point of the time motion curve.
- 3) Press **Select** to anchor the starting point of the time motion curve.
- 4) Use the trackball to position the next point of the time motion curve.
- 5) Press **Select** to anchor the point of the time motion curve.
- 6) Repeat [step 4](#) and [step 5](#) up to draw a complete time motion curve.

**NOTE:** *The time motion curve can be edited by following the curve back to the desired point and redraw.*

- 7) On the last point, press **Select** twice to terminate the curve.

**NOTE:** *To edit the time motion curve, select a point, move it to a new position and press **Select**.*

#### 4-3-4-4 Optimizing M-Mode

The use of preset gives optimum performance with minimum adjustment. If necessary, the following controls can be adjusted to further optimize the M-Mode display:

- Adjust **Horizontal sweep** to optimize the display resolution.
- Adjust **Gain** and **TGC** controls to adjust the range to be imaged.
- Use the **Frequency** (move to higher frequencies) or the **Frame rate** control (move to lower frame rate) to increase resolution in image.
- Adjust **Dynamic range** to optimize the useful range of incoming echoes to the available greyscale.
- Adjust **Compress** to further optimize the display.
- Adjust **Reject** to reduce noise while taking care not to eliminate significant low-level diagnostic information.

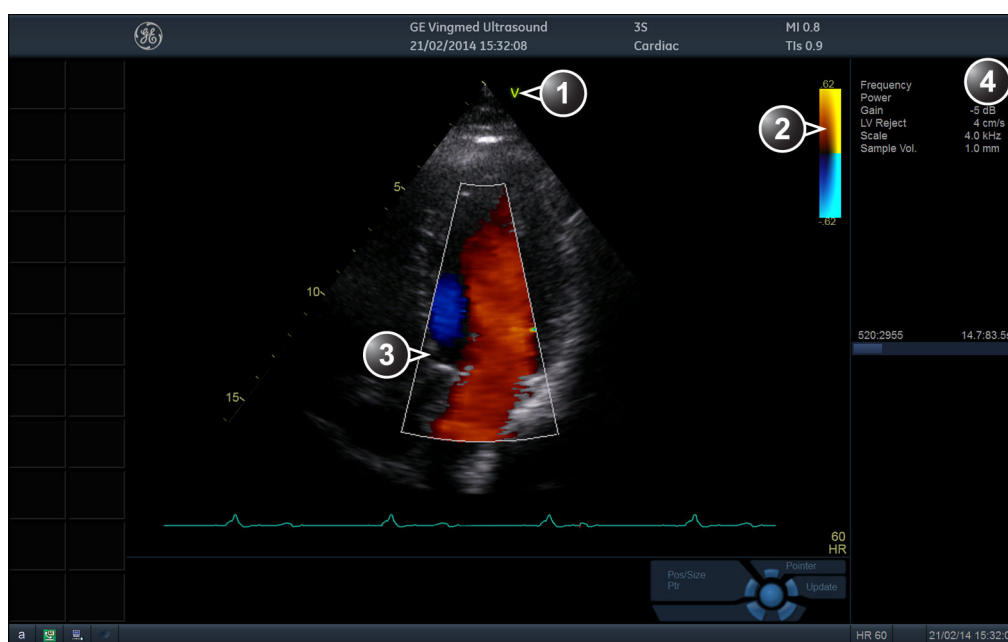
### 4-3-5 Color Mode Checks

#### 4-3-5-1 Introduction

Color Flow screens are 2D or M Mode screens with colors representing blood or tissue movement.

Color Flow may be selected both from 2D mode or from M mode or a combination of these.

#### 4-3-5-2 Color 2D Mode Overview



1. Probe orientation marker
2. Color bar
3. Color sector marker
4. Parameter window

Figure 4-16 Color Mode Screen



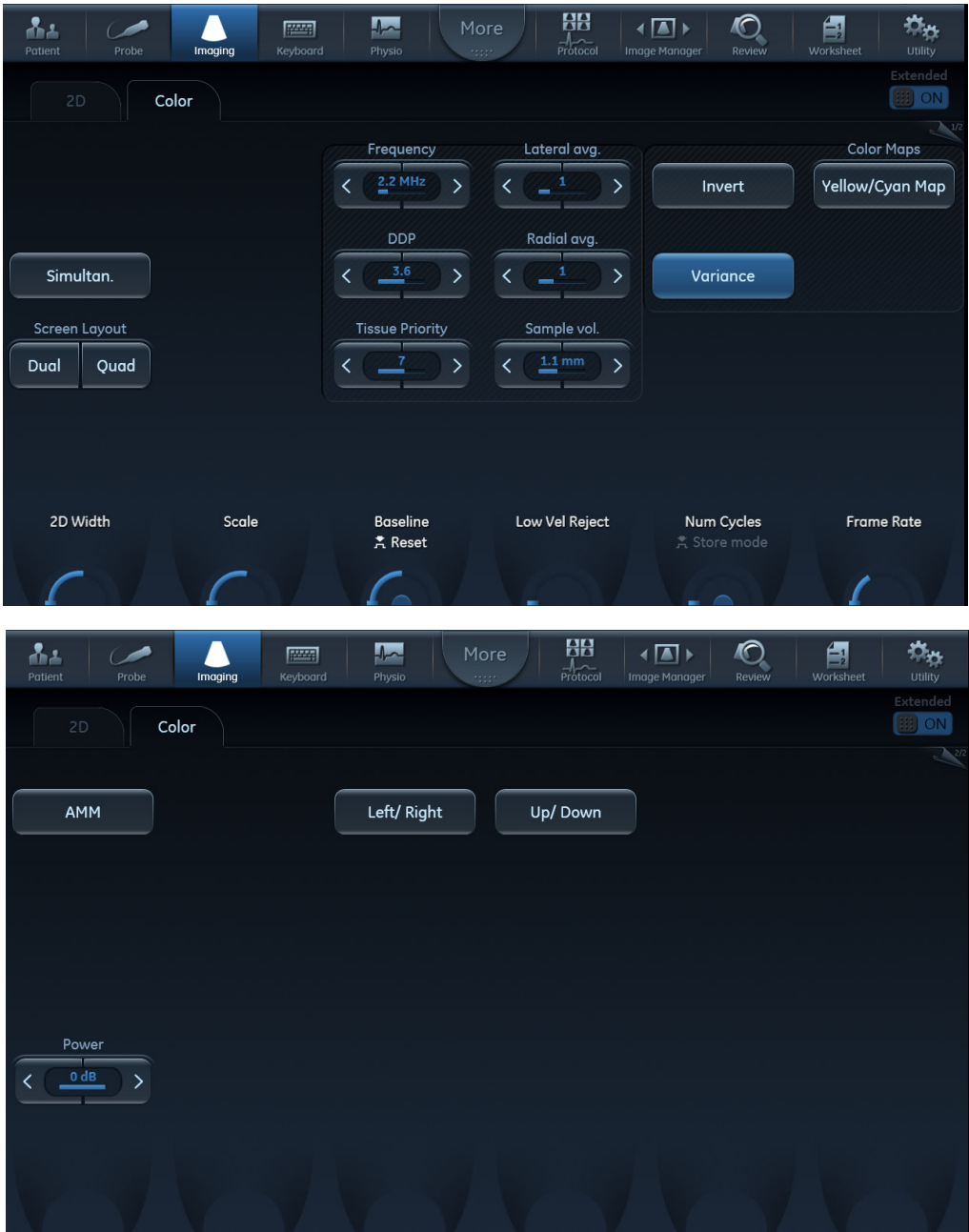
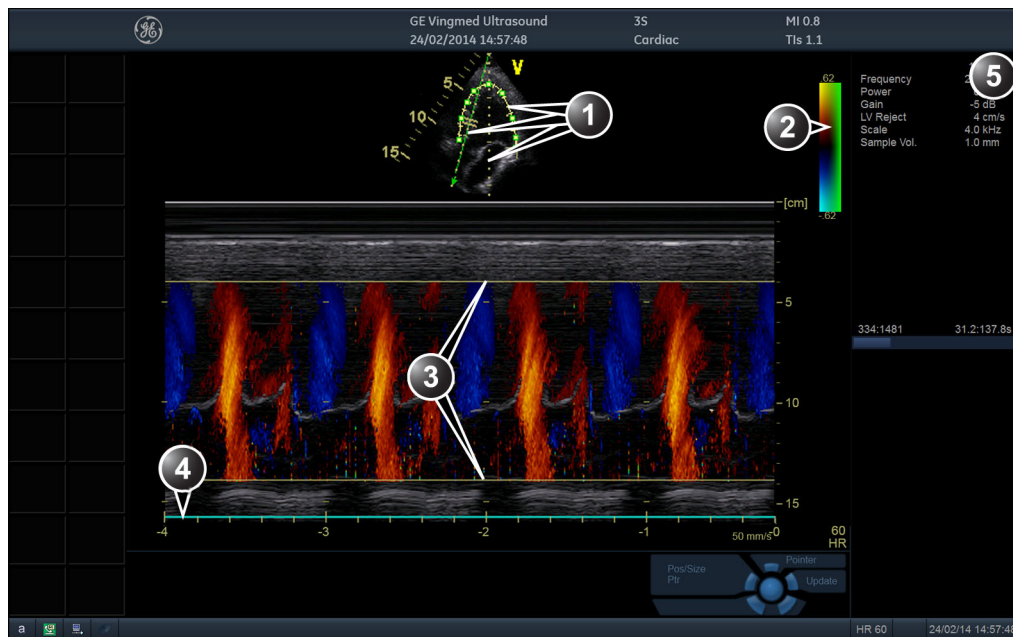


Figure 4-17 Color 2D Touch Panel - Page 1 and 2

**4-3-5-3 Color M-Mode Overview**

1. Time motion cursors (M-Mode, AMM and Curved AMM)
2. Color bar
3. Flow sector marker
4. Time scale
5. Parameter window

**Figure 4-18 Color M-Mode Screen (Composite)**

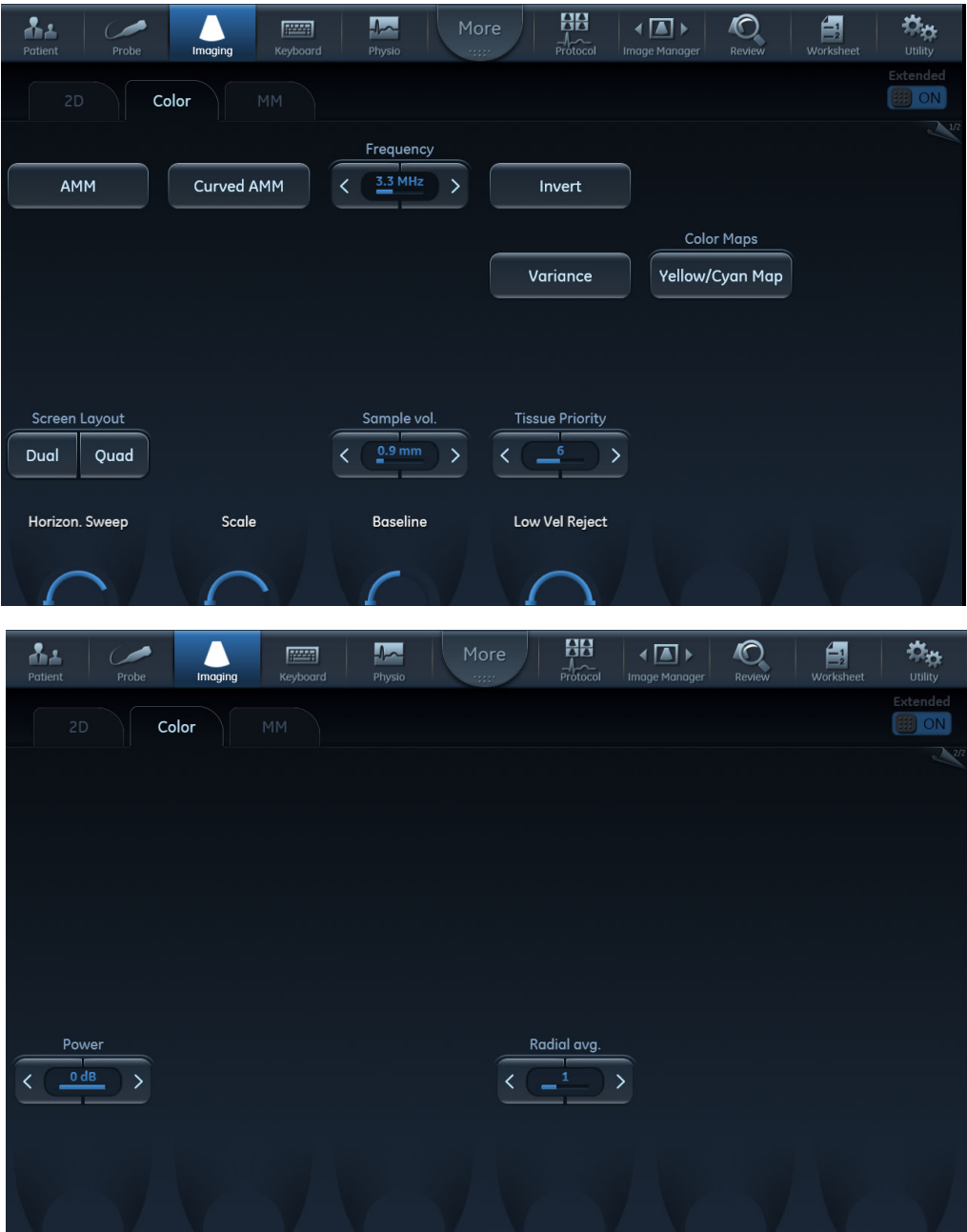


Figure 4-19 Color M-Mode Touch Panel - Page 1 and 2 (Color Controls)

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**4-3-5-4 Using Color Mode****4-3-5-4-1 Color 2D**

- 1) From an optimized 2D image, press **Color**.
- 2) Use the trackball (assigned function: *Pos*) to position the ROI frame over the area to be examined.
- 3) Press **Select**. The instruction *Size* should be highlighted in the trackball status bar.

*NOTE: If the trackball control Pointer is selected, press **Trackball** to be able to select between Position and Size controls.*

- 4) Use the trackball to adjust the dimension of the ROI.

**4-3-5-4-2 Color M-Mode**

- 1) From M-Mode press **Color**.
- 2) Use the trackball (assigned function: *Pos*) to position the color area in the M-Mode display.
- 3) Press **Select**. The instruction *Size* should be highlighted in the trackball status bar.

*NOTE: If the trackball control Pointer is selected, press **Trackball** to be able to select between Position and Size controls.*

- 4) Use the trackball to adjust the dimension of the color area.

## 4-3-6 PW/CW Doppler Mode Checks

### 4-3-6-1 Introduction

PW and CW Doppler modes are used to measure velocity (most often in blood).

Doppler mode can be done with a special pencil probe or with an ordinary probe. By using an ordinary probe, you can first bring up a 2D picture for navigation purpose and then add PW/CW Doppler.

### 4-3-6-2 PW and CW Doppler Overview



1. Sample volume (PW only)
2. Angle correction marker
3. Velocity scale
4. Low velocity reject
5. Nyquist velocity
6. Doppler baseline
7. Frequency scale (configurable, see Page 4-30)
8. Parameter window

*Note:* the sweep speed information displayed in the bottom right corner of the image represents the user selected sweep speed and should be used only as a reference to confirm that the image was acquired at the selected sweep speed. It is not to be used for measurements or analysis. This is not an absolute value, but simply a reference number. Users performing studies using standardized protocols may find this sweep speed information useful for reading studies from other institutions.

**Figure 4-20 PW/CW Doppler Mode Screen**

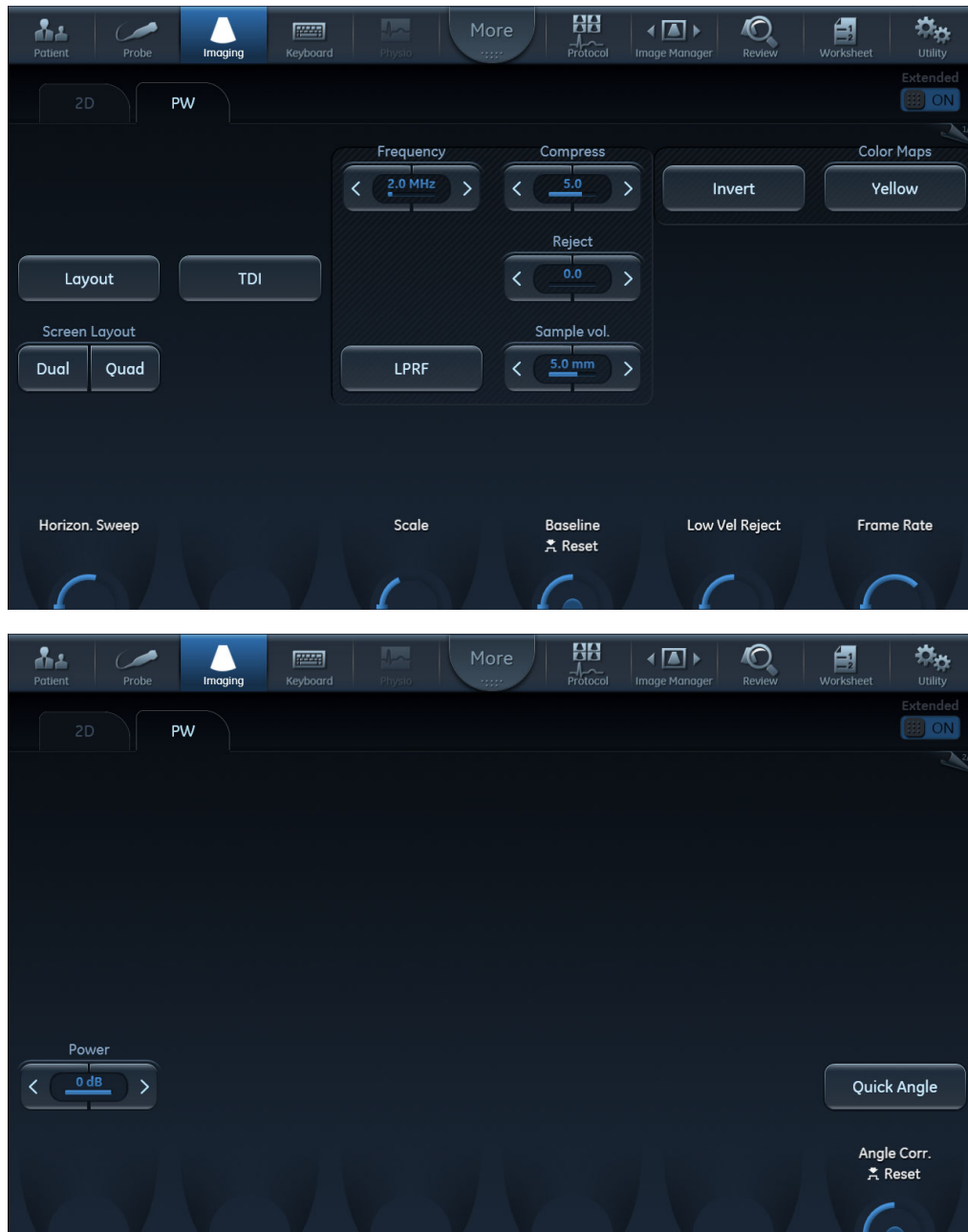


Figure 4-21 PW Doppler Touch Panels - Page 1 and 2

**Related information:**

Refer to the *Vivid S60/Vivid S70 User Manual*.

### 4-3-6-3 Using PW/CW Doppler Modes

#### 4-3-6-3-1 Alternative 1

- 1) Press **PW** or **CW**. A scanning screen is displayed with a Doppler cursor on the 2D mode image and a Doppler spectrum in the lower part of the screen.
- 2) Use the trackball to position the Doppler cursor line and in PW the sample volume location over the area of interest.
- 3) In PW, adjust the **Sample Volume**.

**NOTE:** *Sample Volume adjustment may affect the Scale, Frame rate and LV rej. settings.*

#### 4-3-6-3-2 Alternative 2

- 1) Press **Cursor** on the control panel. A cursor line is displayed on the 2D image.
- 2) Select the cursor type on the Touch panel.
- 3) With the trackball adjust the position of the cursor line.
- 4) Press **PW** or **CW**.

### 4-3-6-4 Optimizing PW/CW Doppler Modes

The use of preset gives optimum performance with minimum adjustment. If necessary, the following controls can be adjusted to further optimize the PW/CW modes display:

- Adjust the **Active mode gain** to set the gain in the spectral Doppler area.
- Adjust **Low velocity reject** to reduce unwanted low velocity blood flow and tissue movement.
- In PW mode, adjust **Sample volume** to low setting for better resolution, or higher setting to more easily locate the disturbed flows. Adjustment of the Sample volume may affect the PRF (Nyquist limit) settings.
- Adjust the **Compress** setting to balance the effect of stronger and weaker echoes and obtain the desired intensity display.
- Adjust **Frequency** to optimize flow display. Higher setting will improve resolution and the lower setting will increase the depth penetration.
- Adjust **Frame rate** to a higher setting to improve motion detection, or to a lower setting to improve resolution.

**NOTE:** *Frequency and Frame rate settings may affect the Low Velocity Reject.*

- Adjust **Power** to obtain an acceptable image using the lowest setting possible. This is particularly important in CW mode, as the energy duty cycle is 100% (constant).

**NOTE:** *The Doppler Power setting affects only Doppler operating modes.*



#### CAUTION

**Use all noise reduction controls with care. Excessive application may obscure low level diagnostic information.**

Adjust the following settings to further optimize the display of the image.

- Use the **Horizontal sweep** to optimize the sweep speed.
- To view signal detail, adjust **Scale** to enlarge the vertical spectral Doppler trace. Velocity range directly controls the pulse repetition frequency, which is responsible for the setting of the Nyquist limit (the ability to detect maximum velocity without aliasing).
- Use **Invert** to reverse the vertical component of the spectral Doppler area of the display.

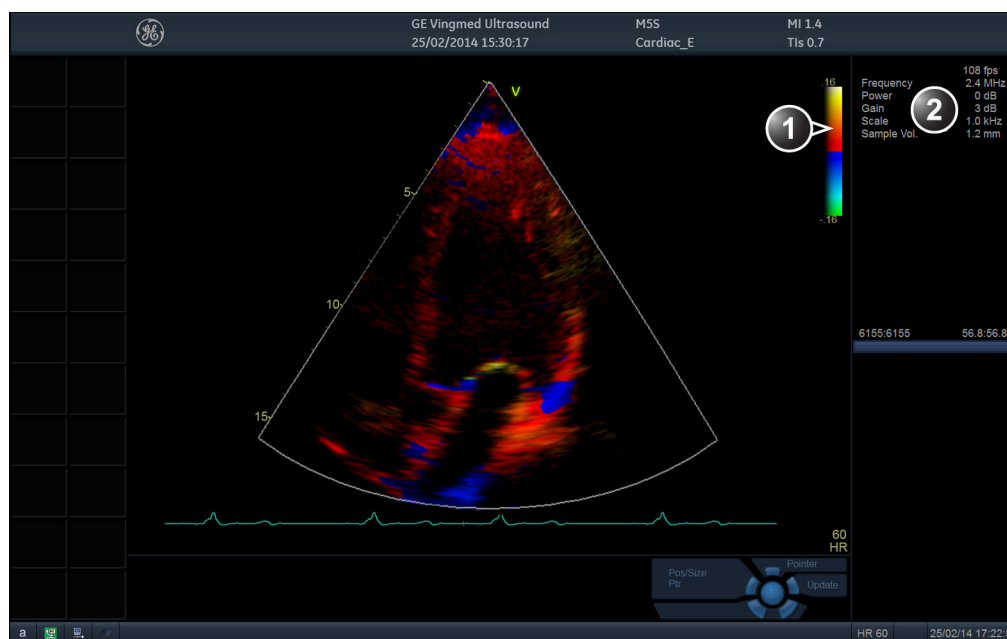
- Use **Quick angle** and **Angle correction** to steer the ultrasound beam to the blood flow to be measured (Not typically required during cardiac studies).
- Adjust **LPRF** (PW Doppler mode only) to toggle between high and low Pulse Repetition Frequency (PRF). When the Doppler PRF is raised beyond a certain limit, more than one Doppler gate is displayed on the screen.
- Press **Auto** on the Control panel to activate Automatic Spectrum Optimization (ASO). ASO is used to automatically adjust baseline and scale of the PW/CW spectrum to optimize the spectral display. It will avoid the display of a folded spectrum and stretch the spectrum vertically as large as possible. ASO optimization is not continuous but performed instantaneously each time **Auto** is pressed.

## 4-3-7 Tissue Velocity Imaging (TVI) Checks

### 4-3-7-1 Introduction

TVI calculates and color codes the velocities in tissue. The tissue velocity information is acquired by sampling of tissue Doppler velocity values at discrete points. The information is stored in a combined format with grey-scale imaging during one or several cardiac cycles with high temporal resolution.

### 4-3-7-2 TVI Overview



1. TVI color bar
2. Parameter window

Figure 4-22 TVI Mode Screen



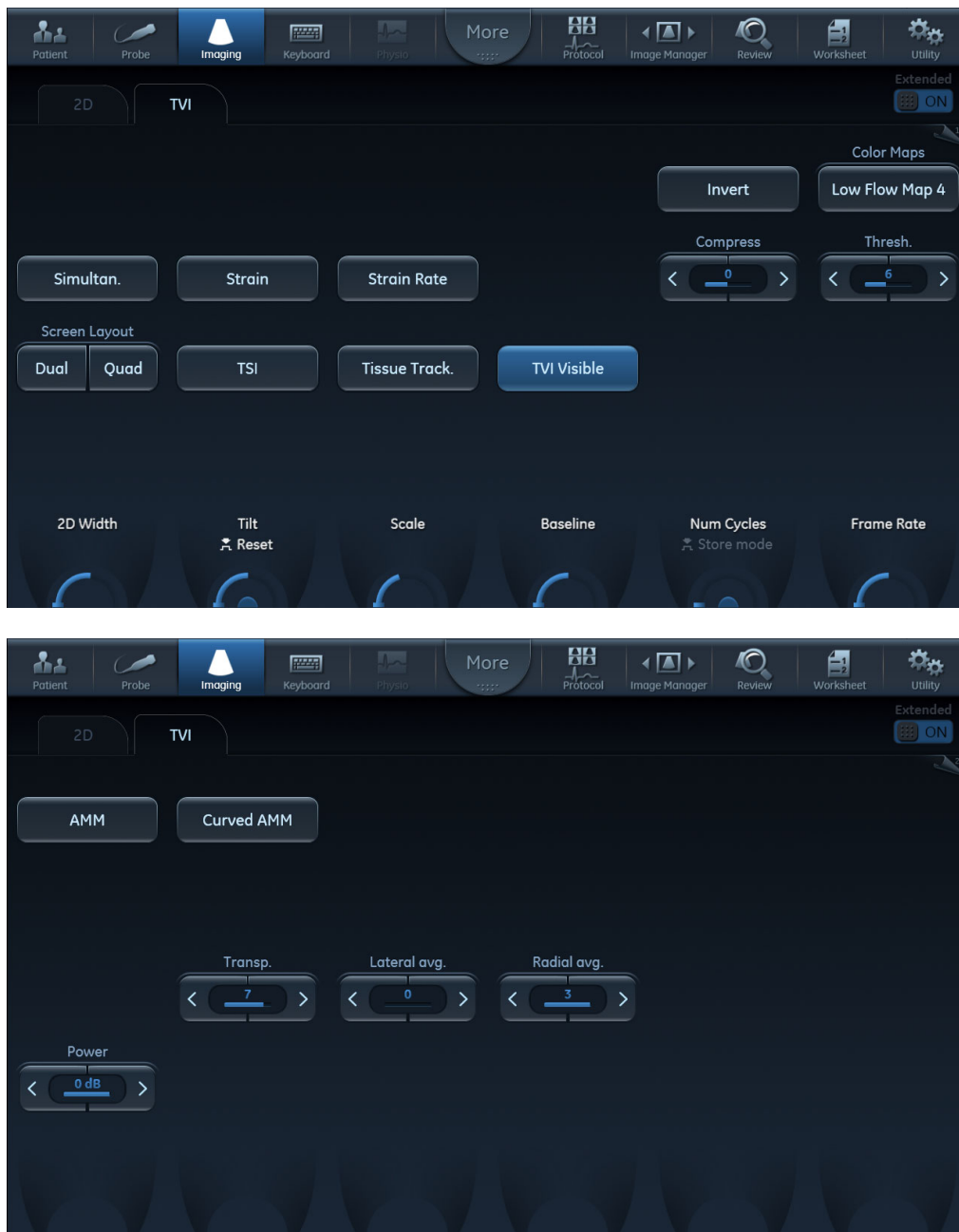


Figure 4-23 TVI Touch Panel - Page 1 and 2

**Tissue Velocity Imaging (TVI)** calculates and color-codes the velocities in tissue. The tissue velocity information is acquired by sampling of tissue Doppler velocity values at discrete points. The information is stored in a combined format with greyscale imaging during one or several cardiac cycles with high temporal resolution.

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**4-3-7-3 Using TVI**

- 1) While in 2D mode press **TVI** on the control panel.
- 2) Use the trackball (assigned function: *Pos*) to position the ROI frame over the area to be examined.
- 3) Press **Select**. The instruction *Size* should be highlighted in the trackball status bar.

**NOTE:** *If the trackball control Pointer is selected, press **Trackball** to be able to select between Position and Size controls.*

- 4) Use the trackball to adjust the dimension of the ROI.

**4-3-7-4 Optimizing TVI**

The use of preset gives optimum performance with minimum adjustment. If necessary, the following controls can be adjusted to further optimize the TVI display:

- To reduce quantification noise (variance), the Nyquist limit should be as low as possible, without creating aliasing. To reduce the Nyquist limit: reduce the **Scale** value.

**NOTE:** *The Scale value also affects the frame rate. There is a trade off between the frame rate and quantification noise.*

- TVI provides velocity information only in the beam direction. The apical view typically provides the best window since the beams are then approximately aligned to the longitudinal direction of the myocardium (except near the apex). To obtain radial or circumferential tissue velocities, a parasternal view must be used. However, from this window the beam cannot be aligned to the muscle for all the parts of the ventricle.

**NOTE:** *PW will be optimized for Tissue Velocities when activated from inside TVI.*

### 4-3-8 Probe/Connectors Check

**NOTE:** Probes can be connected at any time, whether the unit is ON or OFF



#### CAUTION

Take the following precautions with the probe cables:

- Keep away from the wheels.
- Do not bend.
- Do not cross cables between probes.

**Table 4-2 Probe and Connectors Checks**

Step	Task	Expected Result(s)
1	Press <b>Probe</b> on the Operator Panel.	A list of the connected probes will pop up on the screen.
2	If not already selected, use the trackball to select the desired probe.	An application menu for the desired probe is listed on the screen.
3	<ul style="list-style-type: none"> <li>• Trackball to the desired application.</li> <li>• Press <b>Select</b> to launch the application.</li> <li>• To change application without changing the current probe, press <b>Appl.</b> on the Operator Panel.</li> </ul>	The selected application starts.
4	Verify no missing channels.	All channels are functioning.
5	Verify there's no EMI/RFI or artifacts specific to the probe.	No EMI/RFI or artifacts.
6	Check the probe in each active connector slot.	It will display pictorial data each time.
7	Do a leakage test on the probe.	It passes the test.
8	Repeat this procedure for all available probes.	

#### Related information:

- [Electrical Safety Tests](#) on page 10 - 15

**4-3-9 ECG Check****4-3-9-1 Introduction**

The ECG capability on this unit, is intended as use as a trigger for measurements, but can also be viewed on the screen.

**4-3-9-2 Parts Needed**

- ECG Harness, P/N:16L0026 + P/N:16L0028
  - ECG Pads, (3 pc)
- or
- ECG simulator

**4-3-9-3 Preparations**

None

**4-3-9-4 ECG Check****Table 4-3 ECG Checks**

Step	Task	Expected Result(s)
1	Connect the ECG harness to the connector on the front of the system.	The unit displays a straight curve along the bottom edge of the image sector on the screen.
2	Connect the three leads to an ECG simulator,  or:  Fasten the three ECG Pads to your body and connect the three leads to respective ECG Pad.	When connecting, the signal on the screen will be noisy.  When the connection is completed, a typical clean ECG signal is displayed.

## 4-3-10 Cineloop Check

### 4-3-10-1 Introduction

A cineloop is a sequence of images recorded over a certain time frame. When using ECG the time frame can be adjusted to cover one or more heart cycles. When frozen, the System automatically displays the cineloop boundary markers on either side of the last detected heart cycle



- |                                 |                                |
|---------------------------------|--------------------------------|
| 1. Left marker (cineloop start) | 3. Right marker (cineloop end) |
| 2. Current frame                | 4. Cine speed                  |

**Figure 4-24 Cineloop Display**

### 4-3-10-2 Preparation

- 1) Connect one of the probes to the scanner.
- 2) Turn ON the scanner. The 2D Mode window is displayed (default mode).

### 4-3-10-3 Using Cineloop

#### 4-3-10-3-1 Selection of a Cineloop

- 1) Press **Freeze**.

*The left and right markers are displayed on either side of the last detected heart cycle on the ECG trace.*

- 2) Press **2D Freeze**.

*The selected heart beat is played back.*

- 3) Press **2D Freeze** to freeze the cineloop.
- 4) Use the trackball to scroll through the acquisition and find the sequence of interest.
- 5) Adjust **Cycle select** to move from heart beat to heart beat and select the heart cycle of interest.
- 6) Adjust **Num cycles** to increase or decrease the number of heart beats to be played back.
- 7) In Freeze, press **Set left** or **Set right** to set the corresponding cineloop boundary to the current frame.
- 8) Adjust **Left marker** and **Right marker** to trim or expand the cineloop boundaries.
- 9) Press **2D Freeze** to run the cineloop and **Img. Store** to store the cineloop or **Freeze** to return to live scanning.

**NOTE:** *Cineloop storage can be configured to store heart cycles with additional time before and after the R-wave and to display a preview before storage.*

#### 4-3-10-3-2 Adjustment of Cineloop Playback

- Use the trackball or adjust **Speed** to increase or decrease the speed of the cineloop playback. *The speed factor (%) is displayed on the right side of the ECG.*

### 4-3-11 Back End Processor Checks

If all the previous checks have been passed successfully, the Back End Processor is fully functional.

**NOTE:** *If the system seems to be operating erratically, refer to [Chapter 7](#) in this manual.*

### 4-3-12 Operator Panel Check

The Operator Panel is automatically checked during Vivid S60/Vivid S70 system start-up.

## 4-3-13 Peripheral Checks

### 4-3-13-1 Printer Checks

The internal printer is controlled from the **P1** key on the Vivid S60/Vivid S70's Operator Panel.

Table 4-4 outlines the steps for performing Printer checks.

**Table 4-4 Printer Checks**

Step	Task	Expected Result(s)
1	When scanning in 2D Color Mode, press Freeze to stop image acquisition.	Image scanning stops with the last picture on the screen.
2	Press P1 on the Operator Panel	The image displayed on the screen is printed on the assigned printer.
3	Check if the print quality on the pictures from both printers are of expected quality.	

### 4-3-13-2 Windows Print Test Page

This checks that the printer is correctly installed and hooked up at the Windows level.

- 1) Open the Printers folder, either from Start > Settings > Printers or from Utilities > System > Printers.
- 2) Right-click on a printer and select Preferences.
- 3) Select Print Test Page (this will send a print to the printer bypassing all of the Scanner software).
- 4) Observe the printed page.

If the page prints out, the problem you are looking for is probably a configuration issue in windows, or configuration issue in Utilities > Connectivity.

If the page prints out from Windows, there could not be a problem within Windows. In this event, you will see an incomplete print out of the test page.

If the page does not print out, there probably is a cabling issue, or a printer configuration issue in Windows.

**NOTE:** For the Sony small-format printers, you will see an incomplete Test Page printed out. This is normal.

### 4-3-13-3 Setup and Check a Printer Service

- 1) Select Utility > Connectivity
  - If you get a pop-up asking you to log on, select ADM.
  - Type the current password.
- 2) Select the Service tab.
- 3) In the combo box "Select Service to Add" select "Standard Print" and click on Add.

- 4) In the right pane Properties "Combo Box" select the printer you wish to check. Set any other parameters you desire.
- 5) In the left pane "Properties" Enter a name that describes the printer and configuration you just selected in the right pane.
- 6) Select the Button tab.
- 7) Select one of the "Physical Print Buttons" that you want to configure.
- 8) In the right pane click on the service name you just created in the Services Tab.
- 9) Click on the ">" button. This will place this service in the PrintFlow View for the printer button you selected.
- 10) Click on Save.

You have now configured a printer service and attached it to a print button.

Now you can check the printer by pressing the Print button you just configured.

If you configured it for 1 row and 1 column, each time you press the Print button, you will get a print sent to the printer.

If you configured some other combination of rows or columns, you will have to push the printer button multiple times before a print is sent to the printer.

If the image does not print, check the configuration to verify that you have it set up correctly.

#### **4-3-13-4 View the Windows Printer Queues**

- 1) Go to **Utility > System > Peripherals**.
- 2) Click on **Properties**.



## 4-3-14 Mechanical Functions Checks

### 4-3-14-1 Monitor Articulated Arm Movement Check

**Table 4-5 Monitor Articulated Arm Movement Check**

Step	Task	Expected Result(s)
1	Lift the up/down release handle <i>upwards</i> . (It is located on the <i>right</i> side below the operator panel).	The <i>up and down</i> movement locking mechanism is released, allowing the arm to be raised or lowered.
2	While lifting the release handle, raise the operator panel <i>upwards</i> , then <i>downwards</i> and make sure it is able to reach its maximum lowest and maximum highest positions.	<p>Ensure that you do not apply too much force to move the operator panel and that the movement is smooth.</p> <p>Ensure that you do not apply too much force to move the release handle and that the movement is smooth.</p> <p>During the movement up and down make sure the image displayed on the monitor does not present any disturbance.</p>
3	Release the up/down handle.	Make sure the arm is locked and no movement is observed when moderate force is applied to the operator panel ( <i>upwards</i> and <i>downwards</i> ).
4	Check all positioning capabilities of the Articulated Arm, as illustrated in <a href="#">Figure 5-6</a> on page 5-9.	Make sure the arm can be moved freely into the illustrated positions.

### 4-3-14-2 Operator Panel Movement Check

**Table 4-6 Operator Panel Movement Check**

Step	Task	Expected Result(s)
1	Lift the left/right release handle located on the <i>left</i> side of the Operator Panel.	The <i>left and right</i> movement locking mechanism is released, allowing the Operator Panel to be swiveled 30 degrees to the right and left from the center position.
2	While lifting the release handle, swivel the operator panel left and right and make sure it is able to reach its maximum left and maximum right positions.	<p>Ensure that you do not apply too much force to move the operator panel and that the movement is smooth.</p> <p>Ensure that you do not apply too much force to move the release handle and that the movement is smooth.</p> <p>During the movement up and down make sure image displayed on monitor does not present any disturbance.</p>
3	Release the left/right handle.	Make sure Operator Panel is locked and no movement is observed when moderate force is applied to the operator panel ( <i>left</i> and <i>right</i> ).

**4-3-14-3 Monitor Movement Check****Table 4-7 Monitor Movement Check**

Step	Task	Expected Result(s)
1	Tilt the monitor <i>forwards</i> and <i>backwards</i> .	Ensure that you do apply some force to move the monitor. During movement some friction should felt.  During the movement, make sure the image displayed on the monitor does not present any disturbance.
2	Tilt the monitor sideways - <i>left</i> and <i>right</i> .	Ensure that you do apply some force to move the monitor. During movement some friction should felt.  During the movement, make sure the image displayed on the monitor does not present any disturbance.

**4-3-14-4 Front Wheel Function Check****Table 4-8 Brakes Function Check (Front Castor Wheels)**

Step	Task	Expected Result(s)
1	Release the wheel lock (upper lever) on each front castor wheel by pushing the lever labeled OFF. Push and pull the unit <i>right, left, backwards</i> and <i>forwards</i> .	Ensure that the wheels move freely in all directions. Check the wheels for wear and tear, and replace if necessary.
2	Press the foot brake (lower lever) <i>down</i> on each front castor wheel to lock the wheels in position. Push and pull the unit <i>right, left, backwards</i> and <i>forwards</i> .	Ensure that the wheels are locked and there is no movement in any direction.