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Vivid *i* / Vivid *q* Release Notes

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Ver. 11.2.0 b.40

Operating Documentation

Regulatory Requirement

This product complies with regulatory requirements of the following European Directive 93/42/EEC concerning medical devices.

This manual is a reference for the Vivid i/q. It applies to version 11.2.0 b.40 software for the Vivid i/q ultrasound system.

Revision History

Table 1: Reason for Change

REV	DATE	REASON FOR CHANGE
1	21-Oct-2010	First release
2	24-Feb-2011	New Features and Functions section was added to include new probe- 3Sc-RS
3	23-May-2011	All updates for M4 were added

Please verify that you are using the latest revision of this document.

Information pertaining to this document is maintained on GPC (GE Medical Systems Global Product Configuration). If you need to know the latest revision, contact your distributor, local GE Sales Representative or in the USA call the GE Ultrasound Clinical Answer Center at 1 800 682 5327 or 1 262 524 5698.

ATTENTION VIVID i/q USERS:

This document contains information concerning the use of your Vivid i/q ultrasound system.

Precautions and instructions are included that supplement the main User Manual (p/n 5400907 Rev.1) and address specific concerns related to software version 11.2.0 b.40. Keep this document with the main User Manual and have all users become familiar with its contents and organization before using your system under this software version.

Table of Contents

Part 1 – New Features and Functions

This section discusses new features, functions and probes, which have been added to the system in this s/w release.

Note: This Release Note refers to probes that can be connected to the device. Please note that some of these probes, options or features, are NOT available for sale in all countries.

New probe, 3Sc-RS

A new probe, 3Sc-RS, has been added for use with the Vivid i system and this addition should be read together with the user manual.

Phased Array Sector Probes table - page 525

The Phased Array Sector probes table on page 525 of the manual has been updated to include the new 3Sc-RS probe as follows:

3Sc-RS	2D mode M-Mode Color Flow CW Doppler PW Doppler	Cardiology Coronary Transcranial Renal OB Pediatric heart Abdomen Fetal heart	Frequency: 1.5-3.6 MHz Foot print: 18.4 x 23.7 mm	

Neonatal Head Preset

Neonatal head preset has been added to the 6S-RS probe, as shown on **Probe/Application** tables on pages 531-532.

Vivid i Probe/Application Overview - page 531

The Vivid i Probe/Application Overview table on page 531 has been updated to include the 3Sc-RS probe. Below is the updated Vivid i overview table:

Vivid i Probe/Application Overview

Probe: / Application:	3S-RS	3Sc-RS	5S-RS	6S-RS	7S-RS	10S-RS	8L-RS	9L-RS	12L-RS	4C-RS	3C-RS	8C-RS	E8C-RS	6T-RS	6Tc-RS	9T-RS	P2D	P6D	i12L-RS	AcuNav 10F	AcuNav 8F	SoundStar 3D
Abdominal	+	+								+	+											
Abdominal (ped.)				+								+										
Aorta-Iliac										+	+											
Breast							+		+													
Cardiac	+	+	+	+	+	+						+		+	+		+					
Carotid					+	+	+	+	+			+						+	+			
Contrast (Abdominal/ Vascular)							+	+		+												
Coronary	+	+	+	+	+	+								+	+							
Exercise	+	+	+																			
Fetal Heart	+	+	+	+						+	+		+									
HFR (High Frame Rate)									+										+			
Intracardiac																				+	+	+
LEA							+	+	+	+												
LEV							+	+	+													
LV Contrast	+	+	+											+	+							
LVO Stress	+	+																				
Muscle Skeleton									+													
Neo Head				+	+	+						+										
Nerves							+	+	+	+		+										
Obstetrics										+			+									
Pediatric	+	+	+	+	+	+										+						
Pelvic										+			+									
Pharm Stress	+	+	+																			
Renal	+	+								+	+											
Small parts							+	+	+			+										
Small Organs									+													
Superficial							+		+			+										
Transcranial	+	+																				
Thyroid							+	+	+													
UEA							+	+	+													
UEV							+	+	+													
Vertebral							+	+														

Note: Some of the above applications depend on the availability of certain options

Vivid q Probe/Application Overview- page 532

The Vivid q Probe/Application Overview table on page 532 has been updated. Below is the updated Vivid q overview table:

Vivid q Probe/Application Overview

Probe: / Application:	M4S-RS	5S-RS	6S-RS	7S-RS	10S-RS	8L-RS	9L-RS	12L-RS	4C-RS	3C-RS	8C-RS	E8C-RS	6T-RS	6Tc-RS	9T-RS	P2D	P6D	i12L-RS	AcuNav 10F	AcuNav 8F	SoundStar 3D
Abdominal	+								+	+											
Abdominal (ped.)			+								+										
Aorta-Iliac									+	+											
Breast						+		+													
Cardiac	+	+	+	+	+						+		+	+		+					
Carotid				+	+	+	+	+			+						+	+			
Contrast (Abdominal/ Vascular)						+	+		+												
Coronary	+	+	+	+	+								+	+							
Exercise	+	+																			
Fetal Heart	+	+	+						+	+		+									
HFR (High Frame Rate)								+										+			
Intracardiac																			+	+	+
LEA						+	+	+	+												
LEV						+	+	+													
LV Contrast	+	+											+	+							
LVO Stress	+																				
Muscle Skeleton								+													
Neo Head			+	+	+						+										
Nerves						+	+	+	+		+										
Obstetrics		+	+						+			+									
Pediatric	+	+	+	+	+										+						
Pelvic									+			+									
Pharm Stress	+	+																			
Renal	+								+	+											
Small parts						+	+	+			+										
Small Organs								+													
Superficial						+		+			+										
Transcranial	+																				
Thyroid						+	+	+													
UEA						+	+	+													
UEV						+	+	+													
Vertebral						+	+														

Note: Some of the above applications depend on the availability of certain options

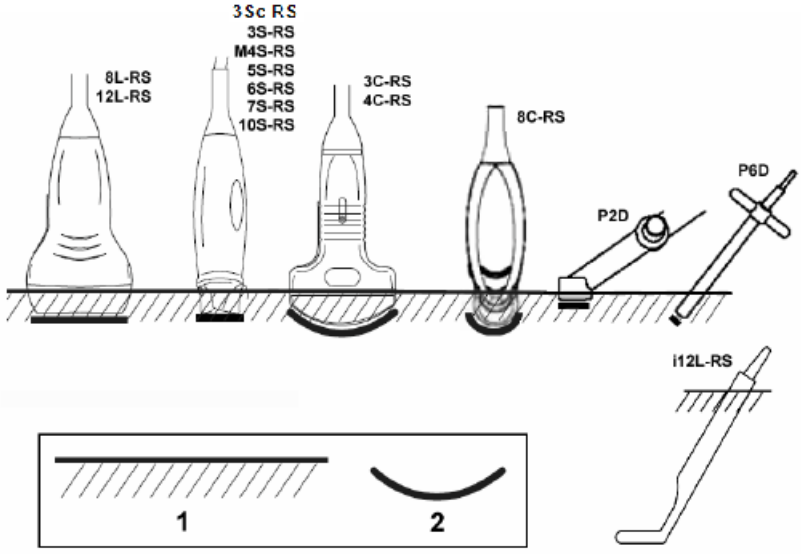
Maximum probe temperature - page 534

The Maximum probe temperature table on page 534 has been updated to include 3Sc-RS probe:

Probe	Max. Temp
3S-RS	38.2
3Sc-RS	41.3
M4S-RS	40.6
5S-RS	34.9
6S-RS	38.9
7S-RS	35.4
10S-RS	40.9
8L-RS	40.8
9L-RS	40.4
12L-RS	37.5
4C-RS	40.3
3C-RS	39.2
8C-RS	38.6
E8C-RS	40.7
6T-RS	41.8
6Tc-RS	42.7
9T-RS	39.8
P2D-RS	34.1
P6D-RS	33.3
i12L-RS	40.4
AcuNav 10F	41.8
AcuNav 8F	41.5
SoundStar 3D	41.8

Probe immersion levels - page 551

The Probe immersion levels in Figure 11-5 on page 551 have been updated as follows:



1. Fluid level
2. Contact face with patient environment

Figure 11-5: Probe immersion levels

CTO and ATO operation updates

General - Modification to CTO

This release adds the possibility of activating the existing CTO (Continuous Tissue Optimization) and existing ATO (Automatic Tissue Optimization) simultaneously in 2D live mode.

Gain rotary description - page 75

Controls	Description
Gain Rotary 	Rotational control of the total gain of the gray scale images in 2D Mode. Pressing this rotary knob allows the activation of CTO, ATO or both, depending on user's setting. See explanation below

Continuous Tissue Optimization (CTO) - page 152

CTO is intended to optimize the spatial uniformity (TGC), and brightness of the tissue and correct it continuously in real-time.

When activated, CTO is displayed in the information window.

Automatic Tissue Optimization (ATO)

ATO provides automatic optimization of the 2D image by adjusting the gray scale curve. When activated, ATO is displayed on the upper right area of the display.

Operating CTO and ATO

There are three different settings of the soft-menu paddle-switch control that allow the user to activate either CTO or ATO or both, according to their preference

While in 2D-Live mode, a soft-menu paddle-switch named **Tissue Opt** Appears with 3 possible settings:

- **ATO**
- **CTO**
- **CTO+ATO**

1. When **Tissue Opt** paddle-switch is set to **ATO** - pressing the **Active-mode** button in the **2D-Gain** rotary once will activate or deactivate the ATO function. ATO activation may be performed either while in live scanning or while in Freeze mode.

   When ATO is activated an indicator labeled **ATO** will appear on upper right area of the display

2. When **Tissue Opt** paddle-switch is set to **CTO** - pressing the **Active-mode** button in the **2D-Gain** rotary once will activate or deactivate the CTO function. CTO activation can take place while in live scanning.

   When CTO is activated an indicator labeled **CTO** will appear in upper right area of the display

3. When **Tissue Opt** paddle-switch is set to **CTO+ATO** - In this case the CTO is permanently set ON. Additionally, upon pressing the **Active-mode** button in the **2D-Gain** rotary will activate or deactivate the ATO function.

   When both CTO and ATO are activated both indicators labeled **CTO** and **ATO** will appear in upper right area of the display

Note: Please disregard the note at the top of page 152 about configuring CTO.

Applicable probes

In this release, the CTO function will be supported on all available probes

Note: By default, the **Tissue Opt** paddle-switch is set to **CTO** on all probes except for AcuNav8, AcuNav10, SoundStar, 9T-RS, 3C-RS, 8C-RS and E8C-RS where **Tissue Opt** paddle-switch is set to **ATO** by default.

Tips while using CTO

Following are some properties of the CTO User-interface

1. **CTO** can be activated or deactivated on 2D live images only.
2. The operator may de-activate CTO at any time, resuming non-CTO operation.
3. An image that was acquired with CTO set ON will maintain its appearance and the CTO label even after being set to Freeze.
4. When **CTO** is turned ON the **2D-Gain** setting may have a different value from the value set while CTO is turned OFF. The two values are independent of each other and the user may adjust each one separately.
5. When an image is in freeze or loop replay mode, pressing the **2D rotary** knob will activate **ATO** and not **CTO**.
6. At any time the user may produce a user preset where the **Tissue Opt** control is positioned on any one of the settings: ATO, CTO or ATO+CTO.
7. Some factory settings are defaulted to CTO while others are defaulted to ATO.
8. When CTO is initially activated it disregards the current position of the **TGC** sliders and current setting of **2D Gain**. Based on its algorithm the CTO function will generate an optimized TGC curve and 2D gain setting.
9. While CTO is ON the operator may adjust all controls such as **2D Gain**, **TGC sliders** and any other controls for adjusting 2D image quality and get the expected result on the image.
10. Any changes of **2D Gain** or **TGC sliders** will be maintained as long as CTO remains ON and preset is not changed.

    For example - if the operator prefers a brighter image and decides to raise the **2D Gain** control manually of 5 units, the CTO will continue to balance the image, from that point on, with a higher **2D Gain** setting offset by 5 units, as long as the preset is not reloaded or changed.

    Another example, - if the operator wishes to improve the uniformity of the image by offsetting **TGC** slider number 4, this offset will continue to remain in effect for all additional scanning as long as CTO is maintained ON.
11. If CTO is turned off and then is re-activated, previous corrections of **TGC sliders** will not be maintained.
12. The CTO user-interface and algorithm operate in a similar way when used with the different types of probes such as: Phased, Linear and Curved arrays, and when applied to all system-presets and diagnostic indications.

Note:

When investigating anatomical structures of very low echogenicity the user may turn off CTO in order to assure the visualization of all reflected echoes, even if obscured by surrounding noise.

Modification to AFI (Automated Function Imaging) and AutoEF

A minor modification has been made to improve ease of using these features and to save user time. Previously the user had to drag a point from the center of the screen to the spots they wanted to mark on the image. With this modification the point will display near each of the 3 locations and the user will do a final adjustment and approve the positions. The intention is to save the user time by not having to drag the point across the screen.

Self-contained DICOM Viewer

Implementation of EZ DICOM CD Viewer

This addition is a simple viewer that can be burned to a CD along with selected images for reference. **This viewer is NOT intended to be a diagnostic tool and is meant only to be used for reference**.

Details of EZ DICOM CD Viewer

When the Vivid i/q system includes the EZ DICOM CD Viewer option it allows users to export exams to media such as CD/DVD MOD or flash-drive while a self-contained DICOM viewer is embedded on the same media.

Placing the media in any PC will automatically startup the DICOM viewer to allow users to view images and loops contained in the exams available on that media.

There is no need to perform any installation on the viewing PC station, as the DICOM viewer is totally self-contained on the inserted media.

Minimal requirements for the Viewing PC are:

Windows 2000 or higher (Win XP Pro, Win Vista, or Win 7 (32 / 64)

The self-contained DICOM viewer is an off-the-shelf product named EZ DICOM CD Viewer, produced by **SST Group Inc**. (see**: www.sstgroup-inc.com**)

The self-contained DICOM viewer contains a built-in quick help user manual. Read this manual to learn more about the different functions of the viewer. Translations of the user manual to different languages are available to the user.

The User Interface may be set to a different language using a special “language” icon in the EZ DICOM CD Viewer.

Configuring the EZ DICOM CD Viewer

The user can configure the system to enable or disable the embedding of the DICOM viewer on the media

1. Make sure the DICOM Viewer option is installed
2. Press Config
3. Press Connectivity tab
4. Under the Dataflow tab, in the "Name" combo-box field, select DICOM CD/DVD (or DICOM Memstick) as shown in Fig. 1-1.

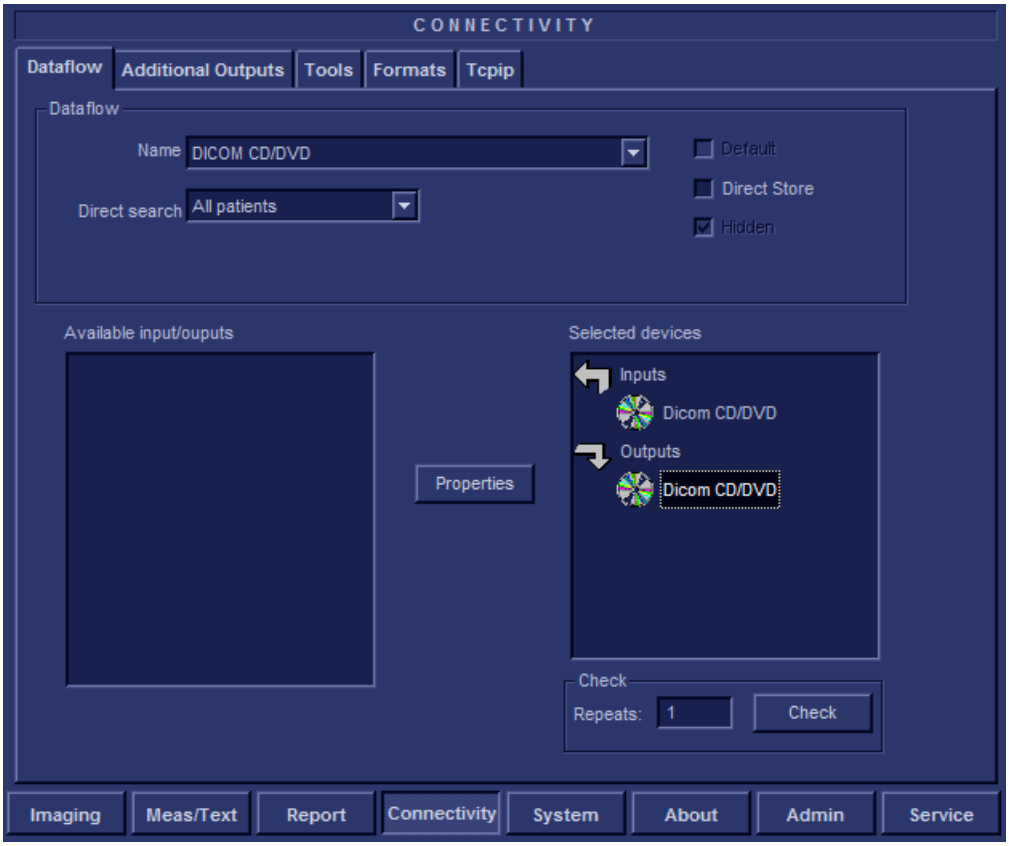


Fig. 1-1 - Select DICOM CD/DVD

5. Select **DICOM CD/DVD** output in the **Selected devices** pane as shown below

6. Click the "Properties" button. The DICOM Media Properties window will appear. Place a checkmark besides "Dicom media viewer" (See Fig. 1-2) in order to include the DICOM viewer in the output media.

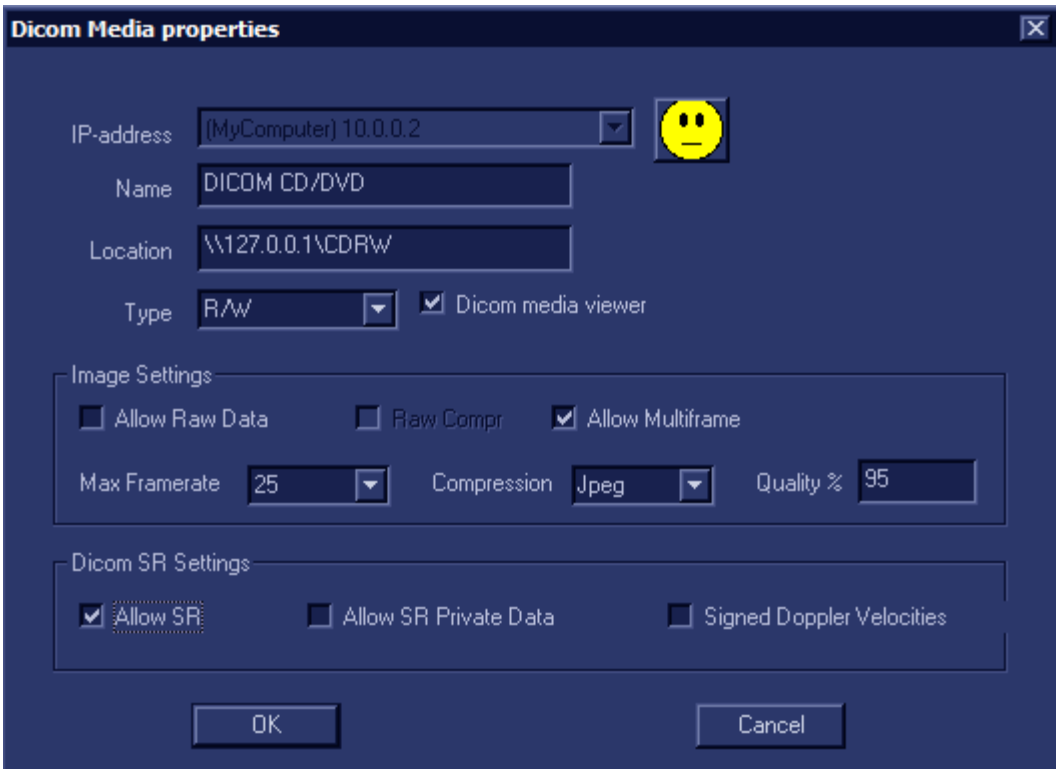


Fig. 1-2 - DICOM media properties

DICOM Structured Reporting (SR) protocol corrections

Description:

When using the Vivid i/q with software release 10.3.0. b.114, upon transferring exams containing DICOM-SR results, the SR data is not always received at the DICOM server. Occasionally, when transferring an exam, all of the DICOM-SR fields at the DICOM server remain empty

Solution:

The current release assures proper transfers of all DICOM-SR fields to the DICOM server.

[Internal Ref. BT11M4, # 139161]

Using Alt-X to toggle internal & external monitor settings

When connecting the Vivid i/q system to an external display the image brightness may not be optimal because it is adjusted for the internal LCD display of the Vivid i/q system.
When attempting to optimize the image settings on the external monitor, press alt-X.
This will allow you to optimize Contrast / Brightness and blue-tint to suit the particular external display, without losing the prior adjustment for the internal display.
When optimized for the external display, the internal display might not be optimized.
If you wish to use the internal display press alt-X once again to recall the prior settings of the internal display.
From now on toggling alt-X will alternate between the optimal setting for the internal display and the external display.

Part 2 - User Manual corrections and Errata

AC Adapter Label Changed - Pages 23 and 55

The AC Adapter label shown on Figure 1-2 (page 23) and on Figure 2-1 (page 55) has been revised. The updated revision is shown below.

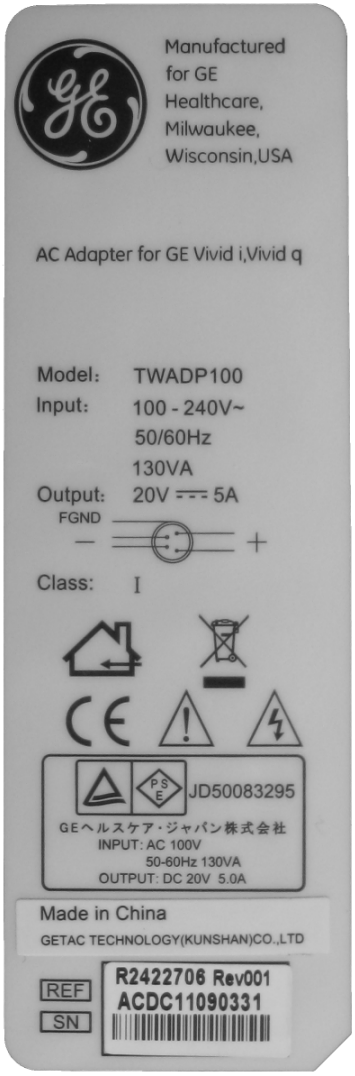


Fig. 2-1. AC Adapter Rating Label

Thermal index display configuration - page 26

It is possible to configure the system and each of its presets to display any of the three thermal index categories: **TIS, TIB** or **TIC**

Press **Config.,** then select **Imaging** tab and then **Application** tab.

The Thermal Index display selection is shown in the area marked by the yellow ellipsel.

This configuration will remain as long as the preset is not changed. Press Save to save the required setting to the currently used preset (Note: Factory presets can not be modified).

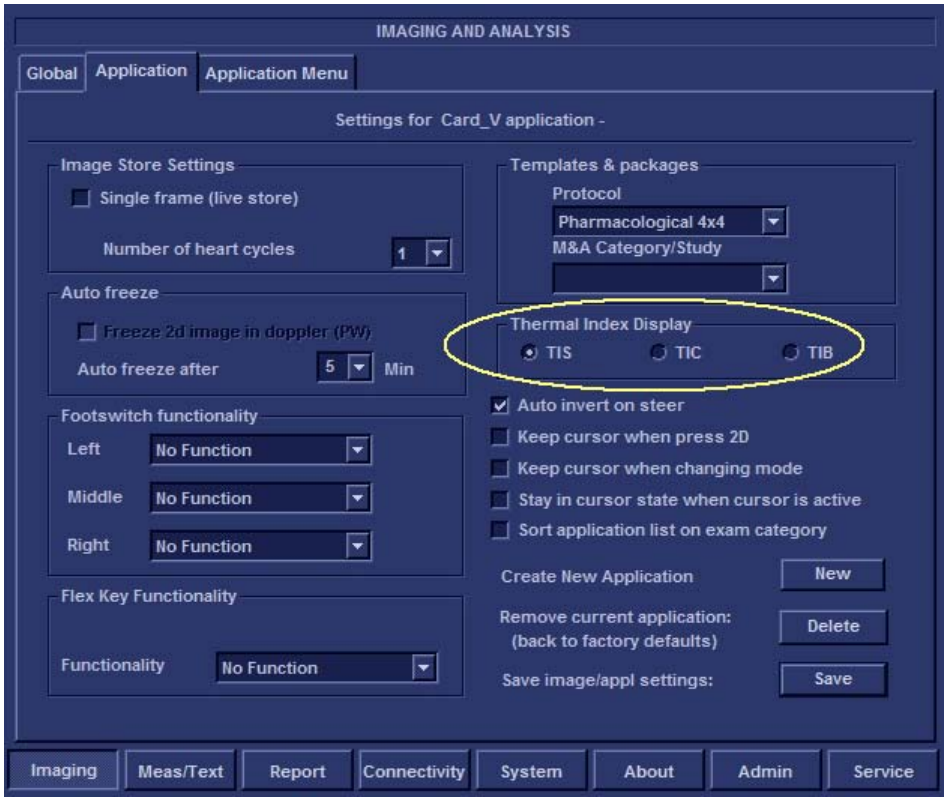


Fig. 2-2

Tips for IMT measurements - Add to User Manual - page 309

NOTE:

It is recommended to become familiar with the following article by the ASE discussing different aspects of IMT measurements:

ASE CONSENSUS STATEMENT

Use of Carotid Ultrasound to Identify Subclinical Vascular Disease and Evaluate Cardiovascular Disease Risk: A Consensus Statement from the American Society of Echocardiography Carotid Intima-Media Thickness Task Force Endorsed by the Society for Vascular Medicine

Of special interest is the potential inaccuracy that may occur with over-gained images, as mentioned in the above article Table 6 page 7.

NOTE:

The user must ensure that the display is correctly adjusted (see page 90 of User Manual).

If the display is set too dark, the user might compensate by adding too much 2D-gain which might lead to over-gained images. The effect of an over-gained image is that the IMT interfaces are slightly thickened. As a result, the automatic IMT tracing may under-estimate the IMT thickness.

Routine Disinfection Procedures - add this table to page 640

What?	When?	How?	Materials?	Who?
Keyboard and Trackball	Weekly. In event of contamination, clean immediately with a 70:30 mixture of isopropyl alcohol and water	Switch the system off! Disinfectant with a 70:30 mixture of isopropyl alcohol and water. Never allow liquid to flow into the keyboard!	Use a 70:30 mixture of isopropyl alcohol and water.	Staff users/doctors
Monitor display-surface	Weekly. In event of contamination, clean immediately with a 70:30 mixture of isopropyl alcohol and water.	Clean with dry soft, lint-free cloth. When contaminated with blood or other stains secretions, use a 70:30 mixture of isopropyl alcohol and water.	Soft, lint-free cloth. Disinfect with a 70:30 mixture of isopropyl alcohol and water.	Staff users/doctors
Devices' external surfaces (incl. monitor housing, handle and wheels)	Weekly. In event of contamination, clean immediately with a 70:30 mixture of isopropyl alcohol and water.	Clean the washable outer surfaces with a soft, non-abrasive cloth including the wheels. Do not use abrasive powder or strong chemicals!	Use a soft, non-abrasive folded cloth or sponge with a mild, general purpose, non-abrasive soap and water solution.	Trained cleaning staff

Curved Array probe - page 528

Note: The Field-of-view (FOV) is 128 degrees

8C-RS	2D mode M-Mode Color Flow PW Doppler	Pediatrics Abdomen Neonatal Head Carotid Small parts Cardiac	Frequency: 4.0-11.0 MHz Foot print: 21 x 12 mm FOV: 128 degrees	
E8C-RS	2D mode M-Mode Color Flow PW Doppler	Endocavity Fetal Heart Obstetrics Pelvic	Frequency: 4.0-11.0 MHz Foot print: 23 x 23 mm FOV: 128 degrees	

AutoEF Measurements - page 296

Contrary to the statement on page 296, AutoEF is an optional feature on the Vivid i system.

Printing a report with the Ink-saving feature - page 484

When a report containing many images is printed it contains many large areas with black background. When printing to an ink-jet printer these black areas utilize a lot of ink and take longer to print.

The report may be configured to eliminate these large black background areas while printing.

To configure the Ink-saving feature:

1. Press CONFIG and select the Report - Template tab. The tab shown below will appear. (replace Figure 10-27 in the manual).
2. Set the “Transparent background” checkmark.

All reports generated from now on will be printed with the “Ink-saving” feature, showing images with white background.

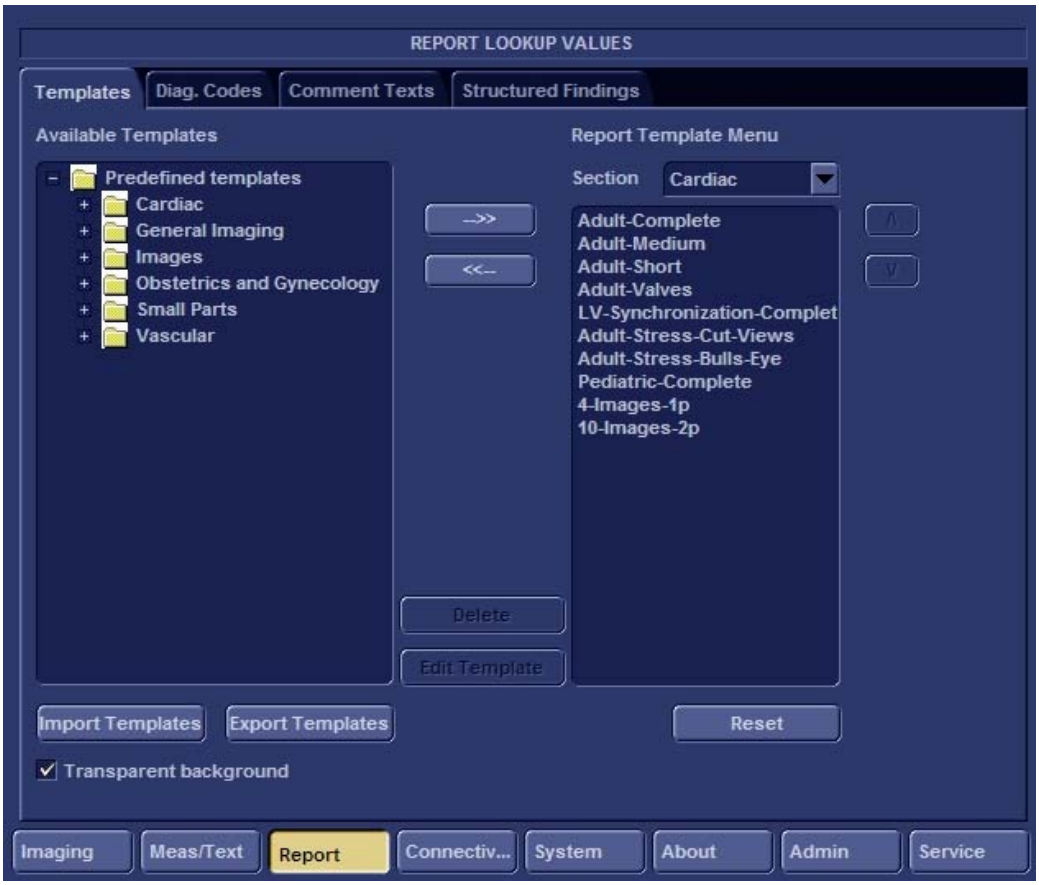


Fig. 2-3

AC/DC Box warming

△ CAUTION	When using the Vivid I/q with a standalone AC/DC adapter, please be sure to place the AC/DC adapter in an open area to allow ample cooling. Any covers might cause over-heating and cause the adapter to malfunction.

[Internal Ref. BT11, # 140835]

User-defined measurements - "Add measurement" window is missing - see User manual page 348

Step 4 on page 348 of the User manual states:

4. Press **Add Measurement** in the Measurement menu sheet.

The Add measure window is displayed.

Fig. 2-4

Please note that this window appears for cardiac applications only. In other applications this window is skipped, bringing you directly to the “Measurement menu sheet” shown in Figure 7-58.

[Internal Ref. BT11M4, # 140292]

Part 3 – Important Information, tips and workaround

This section identifies notes tips and cautions regarding known issues that may cause some user inconvenience.

Turning System On / Off

Removing USB devices while in standby mode

Caution: Introduce or remove USB devices only while system is in full shut-down mode, or while system is turned ON. Use the proper eject command (Alt-E), otherwise it may cause system failure.

[Internal Ref. # 111903, 120234]

Boot-up and turn-off may sometimes take longer than expected

When CD or DVD media is located in the drive while system is being turned On or Off, both processes may take longer than expected, as function of media contents.

[Internal Ref. BT10, # 121287]

The logon screen pops up before the application screen appears

Description

On rare occasions the system-logon screen pops up too early, before the application is fully loaded. When this happens the system will not detect any user (ADM and USR) and the only way to start the application is to log-on using the “emergency mode”.

Workaround

The workaround is to press the "Esc" key twice, or just re-boot the system

[Internal Ref. BT11M4, # 138511]

ECG

ECG trace on cart

Note: On rare occasions, the ECG signal may disappear; in such cases turn the system off (complete shutdown) and on again.

[Internal Ref. # 110177]

Imaging

2D Imaging

Clear vessel - “CLR” icon is often active when probe is held up in air

Description:

1. Use a 9L-RS probe.
2. Turn on **Virtual Convex** and scan with the probe while it is held up in air.
3. Turn **Clear Vessel** on.

Issue: The CLR icon will display active (green) even though no structure is visible.
It is expected to be inactive (displayed in gray) whenever no carotid vessel is visible.

Workaround: Simply disregard while not scanning the carotid.

[Internal Ref. BT10M4, # 121884]

Lower focus markers disappears when lowered to the far field

When using probes with a sector-image having wide field-of-view, or when using split-screen mode, the focus marker may not always be visible as it may be positioned outside the frame of the image. This is particularly noticeable when the focus marker is lowered to the far field.

[Internal Ref. BT11M3, # 134038]

The “Wide-aperture” focus marker changes its shape when image is exported to EchoPAC PC

Description:

When linear probes are used, they sometimes operate in “Wide aperture” mode, which is indicated by focus markers of the following shape: 

When such an image is stored and reviewed on the EchoPAC PC, the focus markers will display as: 

The different focus graphic indicators do not affect the reviewed image.

[Internal Ref. BT11M3, # 135255]

CTO operation in M-mode on linear probes

When activating **CTO** while a linear probe is in use with M-Mode, - only the 2D image is optimized.

[Internal Ref. BT11M3, #, 136554,]

Reviewing images with active CTO on EchoPAC

When an image has been acquired with CTO and transferred to the EchoPAC, the CTO label will not appear on the display of the EchoPAC.

[Internal Ref. BT11M3, #, 136783]

ATO while in M-mode: only the 2D display is optimized, the MM remains unchanged

The current design of the ATO function is confined to optimizing the 2D image. It is not intended to optimize the M-Mode image.

[Internal Ref. BT11M4, # 134509]

Vertical scale is missing while in dual-screen

Description:

1. Use any linear array probe in “virtual convex” mode
2. Press “1/2/4” button to activate dual-screen
3. Notice the vertical depth-scale is missing

Workaround:

Deactivate “virtual convex” mode; the vertical depth-scale will appear

. [Internal Ref. BT11M4, # 141375]

Zoom area may become very narrow

Description:

1. Activate “HiRes Zoom” while using any linear probe
2. Store an image
3. Restore the same image from the clipboard

4. Press “Zoom”
5. Use the trackball to move the zoom-area towards one of the edges of the image

Issue: The actual zoom area might sometimes lose proper control and become very narrow.

Workaround: Exit from Zoom.

[Internal Ref. BT11M4, # 140700]

Color Mode

Color intermittently appears outside ROI borders

Description:

1. Use a linear probe with Virtual-convex setting in color mode
2. Activate Zoom
3. Decrease Zoom-ROI size and move it sideways to extreme positions

Issue: Color may appear outside the color-ROI borders, and sometimes the scale may appear across the image

Workaround:

1. Reduce the color ROI size, or
2. Increase zoom-ROI size to decrease the zoom factor

[Internal Ref. BT11M4, # 137644]

PW/CW Imaging

Sound in Doppler mode

Note: On rare occasions, the Doppler sound disappears. If this occurs, move the Doppler gate slightly in any direction, to make the sound audible.

[Internal Ref. # 100670]

Thin vertical strips in PW Doppler at shallow depth, using the 12L-RS probe

Note: When applying the “superficial” preset to the 12L-RS while using it in PW Duplex or triplex modes, thin black vertical strips may appear, as shown in image below (Fig. 3-1). This may appear only when Doppler-gate is placed at shallow depth at distance within 5 mm of skin-line.

Workaround: Adjust your scan so that the Doppler target is located deeper than 5 mm.

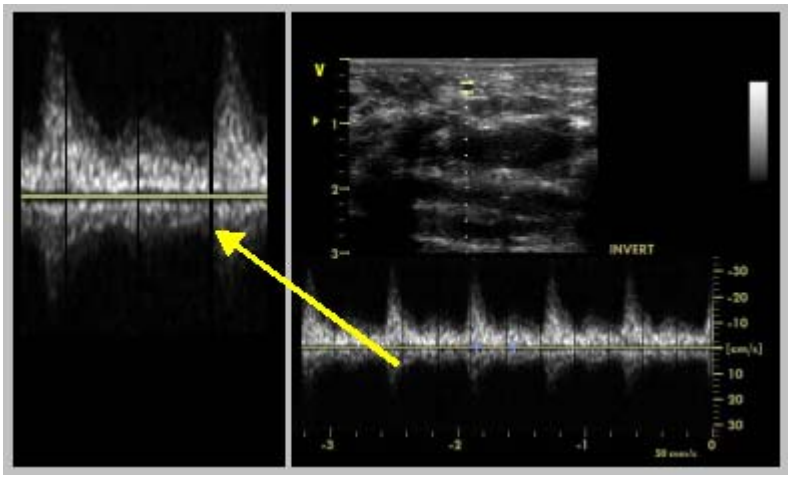


Fig. 3-1

[Internal Ref. # 118095]

HI audio volume in CW causes Doppler artifacts

Note: When the audio volume is set very high while in CW mode, some tonal noise (horizontal line) may appear on the CW spectrum.

Workaround: Simply lower the audio volume.

[Internal Ref. # 116600]

Changing CW baseline is not reconstructed while scrolling back to review the CW spectrum

1. Scan in CW mode for a few seconds (10-20).
2. While scanning, modify the location of the base line.
3. Hit **Freeze**.
4. Scroll back through the Doppler image - the original baseline level is not reconstructed. The last setting of the baseline is in effect throughout the spectrum.

[Internal Ref. BT10, # 120378]

Abnormal Doppler Trace in CW mode

Description:

1. Scan in CW mode and press **Freeze**.
2. Press **Measure** button.
3. Select **Trace** from Measure menu.
4. Turn **Auto Trace** (soft key) to ON.
5. Perform Trace measurements.

Issue: Doppler trace measurement below the base line does not trace well and “spikes” to the bottom of the spectrum (Fig. 3-2). This does not happen in PW where the trace follows the spectrum as expected.

Workaround: Use the **Sensitivity** button to improve the tracing. In instances where two traces are made on the same spectrum, the Sensitivity button will only affect the first trace.

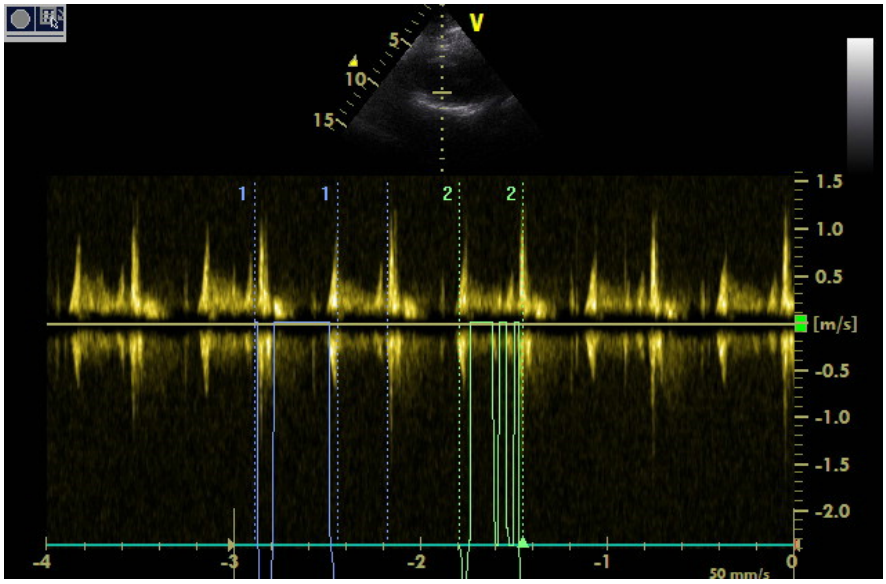


Fig. 3-2

[Internal Ref. BT11M3, # 132127]

Doppler noise appearing as vertical lines while using Triplex mode with the 9L-RS probe

Description: While using the 9L-RS probe in simultaneous triplex mode to image peripheral blood vessels, occasional, intermittent vertical noisy lines may appear. See image below.

1. **Workaround:** Moving the Doppler gate or changing its size may eliminate this artifact
2. To eliminate this artifact set the Doppler frequency and Color frequency to the same frequency value

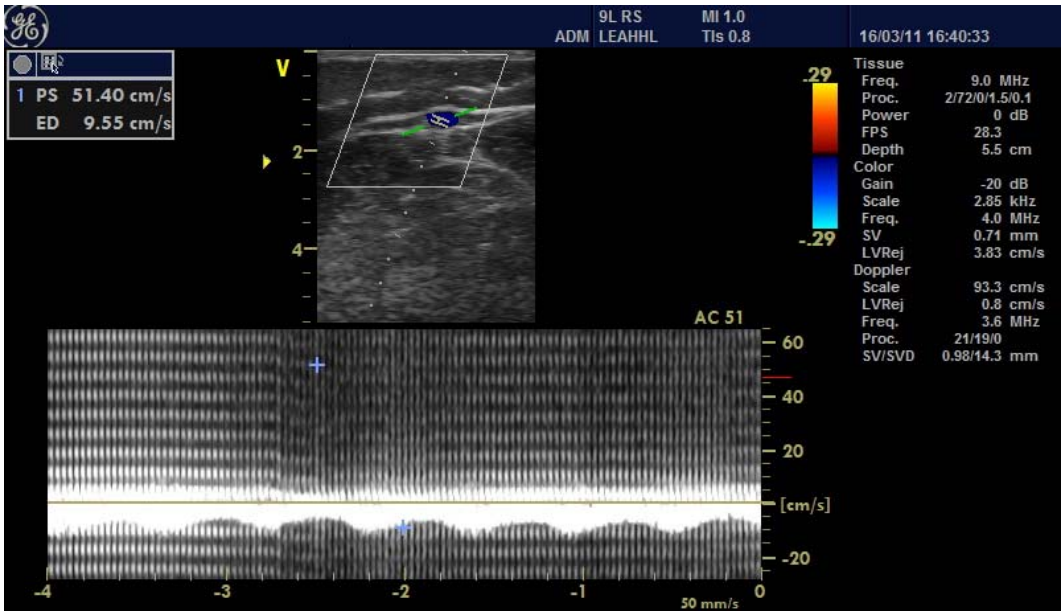


Fig. 3-3

[Internal Ref. BT11M4, # 141304]

2D & color imaging noise with AcuNav 10F catheter

Note: Strong environmental electric noise, produced by other nearby equipment, may sometimes be picked up by the system when using the AcuNav catheter. The environmental noise may cause interferences that may appear in the center area of the sector as shown below (Fig. 3-4).

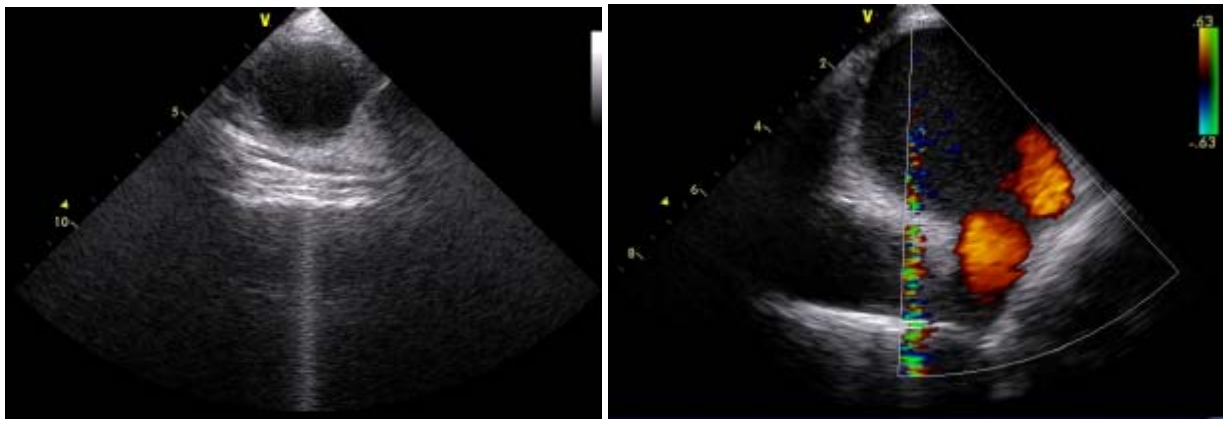


Fig. 3-4

[Internal Ref. #13224337, 117407, 131055]

Probes

TEE probe User Manual Update

The TEE Probe User Manual contains a section named “Thermal Safety”. The temperature cut-off value for the 6T-RS/6Tc-RS probes is different on Vivid i/q. The description should read as follows:

“….The lower probe operation temperature limit is 18.0°C. If the probe tip temperature is below this limit, the temperature display disappears and scanning will not be possible (the system enters Freeze Mode). Scanning will resume after the probe tip temperature is above 18.2°C and the user presses the Freeze button.”

[Internal Ref. BT10, # 124188]

Probe holder does not fit the M4S-RS and 6S-RS probe.

The probe-holder accessory does not fit the M4S-RS and 6S-RS probe very well.

Please refrain from using the probe-holder for this probe.

[Internal Ref. BT10, # 113349]

When handle is folded the probe holder is free to move

When the carrying handle is folded underneath the base of the system, the probe holder which mounts to the connector, is not supported by the surface beneath it and may be free to move or dismount from the connector.

M&A packages

Auto-M&A user-settings for Doppler in vascular applications are lost after re-boot

For example:

1. Use a linear probe with Carotid preset.
2. Press Config -> Meas/text -> Advanced tab.
3. On the upper pane scroll down to locate "Start M&A on Freeze PW" and set it ON (this step is optional).
4. Select Config -> Meas/text -> Modify calc tab, click on Generic and flag the parameters PS ED and RI. Click Save.
5. Select Carotid (under Generic) and flag the parameters PS ED and RI. Click Save.
6. Exit Config.
7. Activate PW mode, press Freeze. Activate the M&A menu if it does not appear automatically
8. Select Generic, then select Point, then click on Auto and on Frozen Tabs
9. Click Modify Calcs button just below it. View the checkmarks to see if they appear where needed (change if necessary).
10. On upper part of window select “above” and “max” tabs (as required).
11. Click Save As default located at the bottom of this window.
12. If you need to see the trace repeat step 8 above but select Trace instead of Point.
13. On the M&A menu select Carotid and repeat steps 8 through 12 above.

14. Re-boot the system.
15. Some settings defined above are lost. The system will be set on Manual and OFF and it is required to repeat steps 8 through 13 above to set it to Auto and Frozen again.

[Internal Ref. BT10, # 80485]

When using Virtual convex in dual-screen mode, the calipers do not go across

Description:

1. Use a linear probe and activate “Virtual Convex”.
2. Press the 1/2/4 button to enter “dual mode”, then freeze.
3. Press “Caliper” and attempt to measure across from one half to the other.

Issue: The caliper is blocked. This will also occur with the “Ellipse” tool.

Workaround: Turn off “Virtual Convex” to allow measurements across the screen.

[Internal Ref. BT10M4, # 129750]

Fetal growth OB graphs - Sometimes missing a caliper

Description:

1. Use the OB measurement application
2. Perform some OB measurements
3. Press “Worksheet”.
4. Press the “Graph” softkey.
5. The Fetal growth graph is displayed
6. A caliper representing the gestational age of the fetus appears on the graph.

Issue:

Sometimes the caliper representing the gestational-age calculation is missing from the graph

Workaround:

Use the numerical value representing the gestational-age calculation which always appears on besides the graph

[Internal Ref. BT11M4, # 141394, 129864]

AFI & AutoEF

AFI & AutoEF packages

Disabling of Auto EF measurements

Caution: Do not disable any sub-measurement of AutoEF or AFI as this will disable the whole set of measurements.

[Internal Ref. # 109290]

AutoEF package

Edge-shift button is missing

Tip: When recalling a loop with trace, or when processing the traced endocardial border and later pressing “Recalc”, the Left/right Edge-shift buttons are missing.

Workaround: To adjust Edge-shift re-calculates AutoEF from the beginning.

[Internal Ref. # 112475, 118928]

Auto EF measurements on EchoPAC PC worksheet

Note: On EchoPAC PC version 7.0.0 or prior all Auto EF measurements displayed on EPPC's worksheet are under Generic worksheet.

[Internal Ref. # 112706]

AutoEF processed image seems slow

Note: The AutoEF processed image runs slower than the original speed of the heart-rate. In order to see the loop in correct playback speed exit AutoEF.

[Internal Ref. # 113390]

AutoEF and AFI in stress exam

Caution: Avoid using the AutoEF or AFI measurements from within the Protocol study.

[Internal Ref. # 114779]

Edge detection on inverted images

Caution: If the image is **(L/R)** inverted, rotate the image back to a standard (non-inverted) view before adjusting the edge detection control, otherwise the trace may be inaccurate.

[Internal Ref. # 113447]

AutoEF-ToolTip: User-language needs to be configured twice

Description:

Configure the User language as follows:

1. Open '"System->Settings->Soft-Menu”
2. Change “Language” (for the first time)
3. Re-boot the system
4. Check the “Language”

Issue: The previous language appears instead of the newly selected language.

Workaround: Repeat steps 1-4 above a second time and restart the system.
This time the new language will appear.

[Internal Ref. BT10, # 124639]

AFI package

Deleting measurements from worksheet

Caution: Do not delete individual AutoEF measurements from the worksheet. Always delete a full set.

[Internal Ref. # 109673]

AFI- bull's eye with PSI map is stored as PSS map

Description:

1. Activate **Config**.
2. Select **Meas/Text** tab.
3. Select **Advanced** tab.
4. Change the “AFI PSS/PSI Mode” to contain “**PSS & PSI”**.
5. Using AFI, analyze 3 loops (APLAX, 2CH, 4CH).
6. In the Review screen, press the PSS/PSI softkey to change bull's eye to display PSI.
7. Press **Freeze**, and choose **Yes** to save the loop.

Issue: The stored bull’s-eye in clipboard displays PSS map instead of PSI map.

Workaround: Press the PSS\PSI soft key to enable PSI.

[Internal Ref. BT10, # 124568]

AFI Worksheet: To maintain consistency deleting individual measurements is not recommended.

Description:

When performing AFI measurements, a column of strain measurements appear on the worksheet. When an AFI measurement is repeated, a new column will appear with the new strain measurements, and so on.

The final result is often set to calculate the average of the last 3 columns of measurements.

Tip: For consistency of the averaged results it is not recommended to delete individual measurement “cells” from the worksheet. If some results need to be erased, it is recommended to erase the whole column.

[Internal Ref. BT11M3, # 134471]

Q Analysis

Q-Analysis screen becomes black after ejecting a USB device at the end of an export operation

Description:

1. Retrieve TVI loop.
2. Enter QA and place a sample area on 2D area.
3. In plot area press update/menu.
4. Select Export traces from menu (Or select “Save As...”).
5. Select location as USB Flash Card.
6. Fill in file name and press Save.
7. Press Alt+E, to eject the device.
8. Wait for the message "the media can be safely removed".
9. Remove media.

At this point the Q-analysis screen turns black. Any added information, like sample-area regions and resulting traces are lost after export or “save as…” if not stored to clipboard.

Workaround: Retrieve the loop from clipboard back to the Q-Analysis screen and redefine the sample-area regions.

[Internal Ref. BT10M4, # 121266]

Annotation

Annotation and bodymark do not always maintain their original geometrical location

Description Scenario 1:

1. Store some images with different annotation and bodymarks
2. End the exam and export it to any media
3. Import the exam back to your system
4. Retrieve images from the exams.

Description Scenario 2:

1. Use Remote-Remote dataflow and store some images with different annotation and bodymarks to an EchoPAC version BT-09
2. Use the EchoPAC to retrieve images from the exams.

Description Scenario 3:

1. Store some images with different annotation and bodymarks
2. End the exam and export it to MPEGVue CD
3. Open the MPEGVue exam on any PC
4. Retrieve images from the exams.

Issue:

In all the above scenarios, the annotation and bodymarks may have shifted from their position in the original image.

[Internal Ref. BT11M4, # 106200, 109536, 140614, 140615]

Archive & Connectivity

Worklist patient demographics

Note: While working in “work list” workflow, always bear in mind that following fields: Height, Weight, Description, Accession, Contrast and Referral Reasons of patient demographics will be updated in all the examinations of the day according to the inputs of the last exam of the same day.

[Internal Ref. # 107085]

Split-screen review

Tip: When reviewing an image that was saved in split-screen mode, only the right pane is shown. Use the “Review” function to view both halves of the image.

[Internal Ref. # 106428]

On some menus the “Excel Export” and “Delete” soft-keys appear but are not operational

Note: When selecting an existing patient from the patient-list and clicking on “Patient Info” soft-key, then clicking “More”, two non-operational soft-keys appear: “Excel Export” and “Delete”.

Workaround: When selecting a patient and entering the Examination List screen, the “Excel Export” soft-key is operational. Use the “Delete Exam” instead of “Delete” button to delete the exam.

[Internal Ref. # 117959]

Patient search in Archive can not be made by age

It is not possible to search for patients via the ***"Age"*** field as this field is inactive.

Workaround: Perform patient search by ***"Date of Birth"*** field, instead of searching via the ***"Age"*** field. For further explanation, read the User manual, in the **Archiving** chapter under the **Advanced Search** section.

[Internal Ref. # 110877]

Images generated with the 9L-RS probe are cropped in Review screen

Use the 9L-RS linear probe with "virtual convex" turned on. Store some images and activate the "Review" screen. The images on display are cropped to the point where the scale bar is not visible.

Note: This only happens when "virtual convex" is turned on.

Workaround: Turn off the "Virtual convex" function before storing images for review.

[Internal Ref. BT10M4, # 128920]

When Exporting to Excel - Patient's age is rounded up

When the patient's next birthday is less than 182 days away, the patient's reported age is rounded up.

For example – patient is 12 years and 7 months old – the system will indicate an age of 12 years but the exported Excel file will display an age of 13.

[Internal Ref. BT10M4, # 122659]

Cannot assign a printer to 'Print patients' soft button

Description:

1. Use the Config. Tab to configure the printer to be a different one from the factory-default printer.
2. Press "Patients" and go to "Patient List".
3. Press "More" twice.
4. Press "Print Patients" soft button.

Issue: The configured printer is not printing. It seems like the print goes to the default printer.

Workaround: Call your GE service representative who can reconfigure the default printer to be the correct one.

[Internal Ref. BT10M4, # 122685]

Wrong message appears if power is interrupted while doing Disk Management

Description:

1. Use a Vivid i/q system with a battery.
2. Start Disk Management into the DVD media, while the "Move" flag is set ON.
3. In case AC/DC power supply to the DVD drive is disconnected by mistake – the process is terminated but a wrong error message will appear.

Issue: User gets error message: "Error in media finalize" > press OK> another Warning appears: "Current media is full. Please insert next media". This warning is not relevant.

Workaround: Contrary to the above wrong messages, following this sequence, the media is assumed to be corrupted. Simply reconnect power to the DVD device and repeat the disk management process into a new DVD media.

[Internal Ref. BT10M4, # 127748]

Measurements may disappear while viewing a stored image

Description:

1. Perform some measurements on a frozen image and press “Store”.
2. Retrieve the same image from the clipboard - the measurements are visible.
3. Adjust the “Frame” soft-key control.

Issue: The measurements will disappear and will not re-appear when setting the “Frame” soft-key control to its original position.

Workaround: Retrieve the same image from clipboard to view the original measurements.

[Internal Ref. BT10M4, # 124516]

Russian characters are not supported on the Image Vault 5.0 server

Description:

1. Configure your system to use Russian language.
2. Create a new patient and export the exam to the Image Vault DICOM server.
3. View the patient in the Image Vault server.

Issue: The “Last Name” field appears correct (in Russian), but “Patient ID” and “First Name” includes only "???????" signs instead of the Russian characters.

Workaround: Use Latin characters in this situation.

[Internal Ref. BT10M4, # 129735]

On the Patient List the last Name text may “mix” with the First Name to become partially unreadable

Description:

On the Patient-List screen, if the Last Name column is too narrow or the last name is too long, the text may over-write and “mix” with the text of the first name to become unreadable. See item 1 in Fig. 3-5.

Workaround: Widen the Last Name column as follows:

1. Place trackball pointer over border (item 2 Fig. 3-5) and widen the column.
2. Re-select the Patient List to clarify the text.

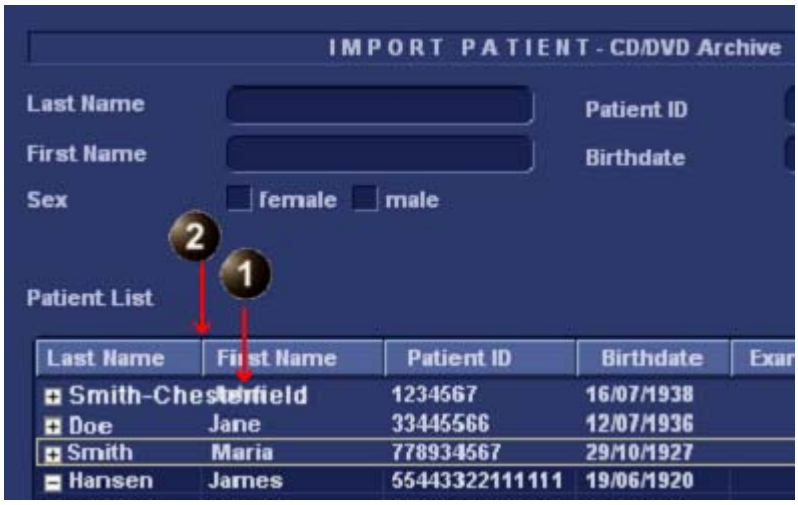


Fig. 3-5

[Internal Ref. BT11M3, # 124893]

The list of devices does not show both Iomega hard-disk and a memory stick at the same time when doing “Save As…”

Description:

1. Connect a USB memory stick and an Iomega hard-disk device to the system.
2. Store an image.
3. Use the trackball to point at the image and press the “Update/Menu” button in order to save the image.
4. Select **Save As…** on the pop-up menu.
5. The device list will not display both of the devices. It will either display the Memory Stick or the iOmega HDD device. The first one that was connected will display, while the second device to be connected will not display.

Workaround: Remove one of the devices or connect them in proper order so that the first one connected will be recognized.

[Internal Ref. BT11M3, # 134470]

DVD is not recognized as it should after exporting to MOD

While exporting an exam to an MOD device, refrain from disconnecting or re-connecting the DVD device. Doing so may sometimes lead to a state where the DVD device is inserted but not recognized by the system. This may also lead to a state where the DVD is recognized by the system even though physically disconnected

[Internal Ref. BT11M4, # 139456]

EchoPAC PC

Images with measurements imported from EchoPAC PC shrink in size

Note: While reviewing an exam on the EchoPAC, when measurements are made on an image, stored in the EchoPAC, and later exported to the Vivid system, the graphics and text on that image shrink in size when viewed on the Vivid system. The text annotation and the measurement results will also shrink to a size which is difficult to read on the display of the Vivid system. If in Doppler mode, the Doppler sweep will shrink in horizontal length.

Note: On the EPPC none of the images undergo any shrinking.

Workaround: Press “Measure”. The image will return to its original size and may be re-measured. The previous measurements performed on the EPPC will remain unchanged in the Worksheet.

[Internal Ref. # 119802]

Sending images generated by Virtual Convex or Compound to EchoPAC PC

When viewing Vivid i/q images on the EPPC, in some cases they will appear in DICOM-preview format, rather than in “raw-data” format. This will occur on images that were generated in “Virtual convex” format using any linear probe, or with the “compound” feature on a convex probe.

[Internal Ref. BT10 CR-7524, # 122992]

Loops of images generated using virtual convex and compound modes under some conditions are corrupted when viewed on the EchoPAC PC

1. While connected to EchoPAC PC using Remote-Remote workflow, end the current exam.
2. Use a linear probe in 2D mode while both Compound and Virtual-Convex modes are turned on.
3. Do not create a New Patient and store some images.
4. When reviewing these images on the EchoPAC PC the images are corrupted and may not be used for diagnostics.

Workaround: Always create a patient before storing any images when working in Remote-Remote dataflow.

[Internal Ref. BT10, # 125241]

Some configuration settings made on the EchoPAC PC can not be transferred to the Vivid i/q system

Description:

When performing customized annotation on the EchoPAC PC version BT10 or earlier, or when marking “anonymous patient” on the Global/Application tab, these settings cannot be transferred to the Vivid i/q system.

Sequence:

1. Use the EPPC to create some user defined system configurations: Produce some custom annotations, and mark anonymous patient flag in Global/Application tab.
2. Back up system configuration to CD/DVD.
3. Place the CD/DVD into the Vivid i/q drive and perform restore from the CD/DVD.

You may find that any user-defined annotations and anonymous patient mark have not been restored.

[Internal Ref. BT11M3, # 135261]

DICOM

DICOM SR measurements – Comprehensive list

NOTE: For a comprehensive table of DICOM SR measurements please refer to the relevant Conformance Statement document located on the following GE Healthcare WEB site:

http://www.gehealthcare.com/usen/interoperability/dicom/products/ultrasound_dicom.html

Locate the following files which are relevant for this software release:

Vivid i version 11 DOC0821435 Rev.1

Vivid q version 11 DOC0821436 Rev.1

DICOM SR measurements – Private tags

It is possible to configure the DICOM output to block exporting measurements with SR private tags (Fig. 3-6).

Note: When exporting while the marked flag is removed, there may be some measurements with SR private tags that are not blocked from being sent out of the system.

Workaround: Configure your DICOM viewer to avoid processing any measurements with SR private tags.

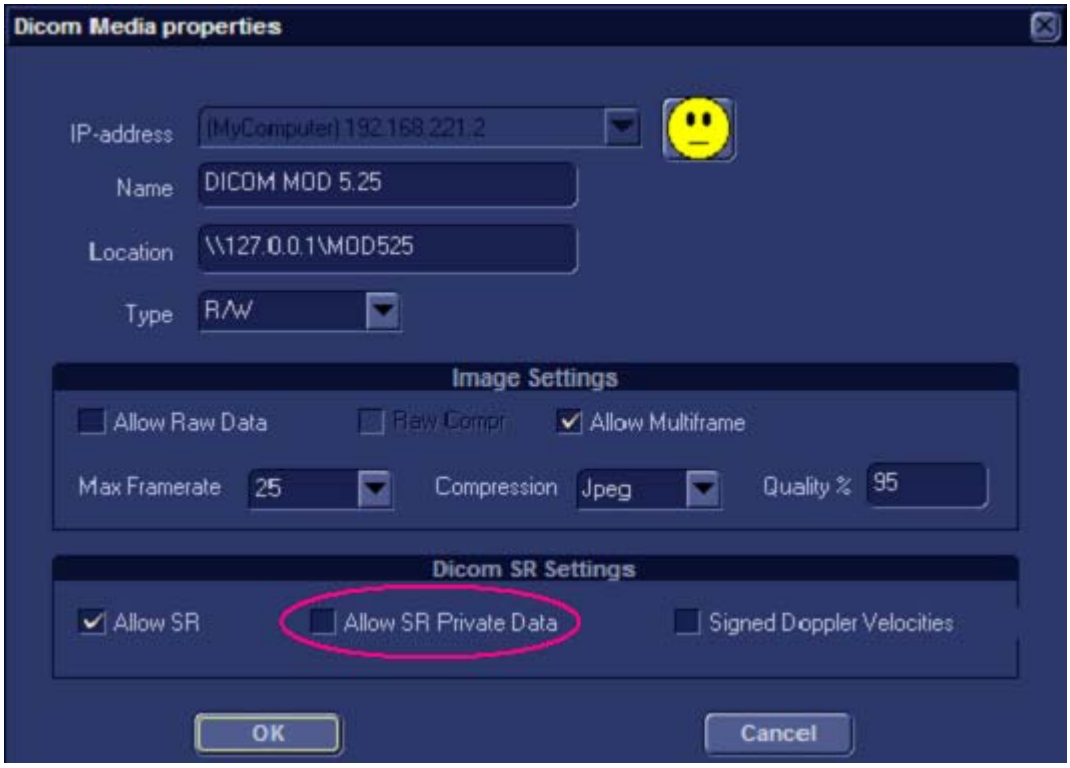


Fig. 3-6

[Internal Ref., # 134616]

Exam data on DICOM transfer

Note: If two exams are done on the same day and one of the images from first exam is transferred to a DICOM server using 'Alt+Print', the image is transferred to the DICOM server with the exam info of the second exam (i.e. accession number, study ID etc.)

This happens only if the two exams are done on the same day.

[Internal Ref. # 13178219 # 112052]

When exams are exported to DICOM CD or DVD, some fields are not supported

Caution: When exporting an exam to a DICOM CD or DVD, the following fields are not included in the exported exam:

- **Address**
- **Phone**
- **EchoLab**
- **B/P (blood pressure)**
- **Tape**
- **Counter**
- **Comments field**

Note: These fields remain intact in the system Archiving database and will always export correctly when using the raw-data export dataflow.

[Internal Ref. # 118665]

Some images cannot be played as cine loops when exporting to DICOM server

The following is a description of the sequence which causes loops that were acquired during stress protocol to appear as still frames on the DICOM viewer:

Description of issue:

1. Enter stress protocol exam and store some loops.
2. Pause and exit from the stress protocol by pressing **Proto. In/out** soft-key button.
3. Scan and store some images in CW or PW mode.
4. Remain in CW or PW mode.
5. Re-enter stress protocol by pressing **Protocol** and **Begin/Continue** soft-key button.
6. Continue to store the rest of the loops defined by the stress protocol, and complete the stress protocol exam.
7. Export the stress exam to a PACS or DICOM server.
8. Problem: All of the loops stored after the re-entry (step 5) will appear as still frames instead of running loops.

Workaround: After step 4 above, press the 2D button, in order to scan in 2D mode. Now press the **Proto. In/out** soft-key button to re-enter the stress protocol.

This will assure that the rest of the stored loops will later appear as running loops on the DICOM viewer.

[Internal Ref. # 115008, 124798]

Transfer to a DICOM Server may become very slow, while system is scanning

Note: When the system is configured to “Direct Store” to a DICOM Server, the data transfer rate may become very slow, and images are held up in the spooler for a long time.

This happens only when the system is configured to include the DICOM header and while system is in scanning mode.

Workaround:

There are two options to increase transfer rate:

1. Reconfigure system to exclude sending the DICOM header.
2. Freeze the scanning for a while. As a result, the data transfer rate will increase to a high speed, allowing the release of data accumulated in the spooler.

[Internal Ref. BT10M4, # 129973]

DICOM server configuration – only one IP address can be stored

Description

1. Go to Config > Connectivity tab and select the Dataflow tab
2. Select “DICOM Storage", and press on "Properties".
3. Click the IP Address drop-down box > Click on Modify.
4. Insert several different servers with different IP's
5. Open the IP address drop-down box in the DICOM properties screen
6. Only one of the servers inserted is saved. all other servers are deleted.

[Internal Ref. BT11M4, # 141145]

“No free space” message appears after DICOM export

Description:

After “exporting” a large number of images to a DICOM server, the system may display an error message "no free space".

This happens more frequently when large numbers of images are exported to DICOM and the system remains on for long periods of time

Workaround:

Perform full shut-down and restart of the system.

This causes the system to delete the extra temporary files and provide some extra space for further normal operation.

It is recommended to perform full system shut-down after prolonged use of exporting to DICOM

[Internal Ref. BT11M4, # 141504]

MPEGVue

Using MPEGVue to view a split-screen loop, the image is frozen

When using MPEGVue on an external PC, to view a loop that was generated in color-mode by a linear probe, and originally stored in split-screen mode, the display contains a static image instead of a running loop.

Workaround: Save loops in full-screen to view the running loop.

[Internal Ref. BT10, # 124657]

AVI video generated from MPEGvue player is running in slow-motion

Use the MPEGVue player and save a loop in .AVI format (Save As… AVI).

Run the .AVI loop using any type of viewer. The loop is playing back in slow-motion, at about half of the original speed.

Workaround: Save loops in MPEG instead of AVI format.

[Internal Ref. BT10, # 122949]

Annotations and bodymarks do not maintain their position after export to MPEGvue

Description:

1. Use the system to generate some images, while adding text annotation or body-marks at particular locations on the images.
2. Store these images and export them to MPEGVue format.
3. Review the MPEGVue images on an external viewer.
4. Some of the text or body-mark annotations will not appear at their original locations, as stored on the system.

[Internal Ref. BT11M3, # 135288]

Image shifts out of video area when MPEGVue player window is being dragged

Description:

1. Start the MPEGVue player on a PC
2. Resize the window so it will not occupy a full screen
3. Move the window around the screen

Issue: The image is sometimes shifted away from the video area and is partly hidden

This issue seems to be related to a limitation of the particular PC hardware used. In most cases this does not occur.

Workaround:

Click the desired image in the image list. The image will appear correctly

[Internal Ref. BT11M4, # 139668]

Stress Protocol

Using the “Smart Stress” feature

When using the stress protocol, in case the selected template has the option **“Smart Stress”** turned on it is required to turn off the “**Smart Depth”** option in your application preset.

This requirement is important in order to assure that those scanning parameters defined in the baseline will be correctly duplicated in the corresponding views of the next level.

Please do the following:

1. Prepare your own special preset where the “Smart Depth” feature is turned OFF.
2. Be sure to use this special preset whenever intending to perform a stress exam which is using the “Smart Stress” feature.

[Internal Ref., # 118289]

Smart Stress is not working when Q Stress flag is turned ON

Description:

1. Operate the Vivid i/q system in Stress Exercise mode (select 2x4 template).
2. Go to the template editor & set the “QStress Acq.” flag ON.

Issue: The “smart stress” feature does not operate as defined, even though the flag remains set **On**. It operates as the regular Stress package.

[Internal Ref. BT10M4, # 130951]

While in stress protocol and zoom is active, parameters are missing in the soft menu window

Description:

1. Enter protocol. Use pharmacological 4*4 template.
2. Acquire some images and activate zoom.
3. Use soft menu rocker switch to open the soft menu on the right.
4. The last two items on the bottom of the soft menu window (“Power” and “Diff”) are hidden by other text on the screen.

Workaround: Exit from Zoom in order to access these hidden controls.

[Internal Ref. BT11M3, # 135422]

Physiological Unit

Quick disconnect and re-connect of the External Respiratory Interface. Both respiratory and ECG signals become flat lines

Description:

1. Use a system with respiratory option. Connect an ECG cable.
2. Press **Physio**.
3. Press **Int. Resp** soft key.
4. Notice the respiratory and ECG signals are both functioning.
5. Connect an External Respiratory Interface unit to USB port of the system.
6. The external respiratory signal is displayed and functional.
7. Disconnect and quickly re-connect the External Respiratory Interface. Both respiratory and ECG signals become flat lines. In addition, cine frame numbers display a wrong value such as: 1854:1854 21411805184s.

Workaround: Press Freeze / Un-freeze or press the 2D button. The signals should become functional again.

[Internal Ref. BT11M3, # 136344]

Noisy External ECG when activating Internal Respiratory

The following occurs on some systems equipped with the Respiratory option.

Description:

Hook up the system to an external ECG monitor, using the External ECG cable.

Verify proper ECG operation.

Issue: Activate the display of the Internal Respiratory trace, - the ECG signal becomes noisy. De-activate the display of the Internal Respiratory trace, the ECG signal returns to a proper signal.

Workaround: When using External ECG always turn off the display of the internal respiratory signal. This does not impose any limitation because there is no way to operate both external ECG and internal ECG-based respiratory signal at the same time because they share a common connector.

Reporting

Report template in Russian may contain some garbled letters

Issue: When setting system to use Russian, the reports will accept information in Russian characters, but the names of the fields will remain in English. In case you design a customized Russian template where the names of the field are in Russian, these names will appear garbled.

Workaround: When customizing report templates, always write the names of the fields in English characters.

[Internal Ref. BT10M4, # 130120]

Fetus number is not transferred to report correctly

When the fetus number, entered via patient's info screen, is greater than one, the number appearing in the report or in an exported Excel file is wrong.

The following steps describe the issue:

1. Select Patient.
2. Go to patient's info.
3. Set patient's category to "obstetrics".
4. Set Fetus number to 2.
5. Save the data and select to view the report.
6. The fetus number will display as 3.
7. When exporting to an Excel file, the same wrong number will appear.

Note: when fetus number is entered in step 4 as 3 or 4, the displayed fetus numbers will show as 7 or 15 respectively.

Workaround: Disregard the fetus number as shown in the report or in the Excel exported file.

[Internal Ref. BT10M4, # 122661, 135804, 139965]

Report: "ink-saving" background does not function on an image having stored measurements

When using the "ink-save" option while printing a report with images, some images appear with black background.

The images containing stored measurements are printed with black background, while those without measurements print with white (ink-saving) background

[Internal Ref. BT11M4, # 137605, 137651]

BSA is displayed with question mark '?' in Report after export/import to/from EchoPAC PC BT09

Description

1. Create new patient
2. In Patient Info insert weight and height to get BSA
3. BSA is calculated and displayed in units of **m^2** (meter squared)
4. View the Report. BSA is displayed in units of **m^2**
5. Perform export via CD/DVD to EchoPAC PC (EPPC) ver. BT09
6. On the EPPC open the Patient Information screen:BSA is displayed in units of **m^2**
7. Go to Report. The BSA field displays in units of **?** instead of **m^2**

Same happens when importing an exam from EPPC to the Vivid i/q system

The BSA field in the report is displayed in units of **?** instead of **m^2**

[Internal Ref. BT11M4, # 137691, 129912]

All default report templates are empty after restoring user template from EchoPAC PC

Description

1. Create user report template on EchoPAC BT11 110.3.0 build 271
2. Perform backup to CD
3. Restore custom report template on the system
4. Restore is completed correctly
5. After shutdown go to Report

Issue:

User template appears correctly but all factory-default report templates appear as blue empty screens.

Note:

This issue does not occur when importing templates from EchoPAC BT08 7.3.0.

[Internal Ref. BT11M4, # 139318]

DVD

DVD device detection

Tip: Always plug in the power cable first, and wait a few seconds before plugging in the DVD device to assure proper detection of the device.

[Internal Ref. # 110913]

Media corruption as result of AC power failure

While doing any type of media-writing session, such as export, backup, disk-management, save As etc. the system may issue different error messages in case a writing-error has been detected.

In the special case where the AC power is interrupted in the midst of media-writing session, some error messages may be misleading.

It is therefore required that whenever the above failure has occurred, the user should repeat the whole session onto a new media. It is assumed that the previous session has failed.

[Internal Ref. # 118179]

Misleading message for corrupted media following power-fail

In case the system power is disrupted in the midst of exporting exams to CD-R media, the media is expected to be corrupted. If, however, you do the following, you may get some misleading messages:

1. Enter Config and select Connectivity tab.
2. Select “Tools”.
3. Select “Re-open media”.

Issue: On some particular conditions the message will say

“Mounted CD-R media can not be opened due to lack of free space"

This message is wrong. The correct message should be:

“Mounted CD-R media is corrupted”

Workaround: Following the above, it is most likely that the media is corrupted. Please repeat the process and export the exams onto a fresh new media.

[Internal Ref. BT10M4, # 129240,]

No message appears if power is interrupted while exporting to a DVD media

Note:

1. Use a Vivid i/q system with a battery
2. Export some studies to a DVD media
3. In case AC/DC power supply to the DVD drive is disconnected by mistake during an export procedure – The export process is terminated but no error message will appear.

Workaround: Even though there was no message to warn user about this situation, the DVD is likely to be corrupted. Simply reconnect power to the DVD device and repeat the export process to a new DVD media

[Internal Ref. BT10M4, # 126079]

Peripherals

Printer is not working after temporary AC power down

Description:

1. Use the Vivid i/q system with a printer and with a charged battery.
2. Connect printer and system to the same AC source.
3. Print a report and turn the AC power off. Printing will stop.
4. Turn AC power back on.
5. The system is on and ready to work. Printer is detected.
6. Print report. Nothing is printed.

Workaround: Restart the system in order to restore printing capability

[Internal Ref. BT11M3, # 135813]

Disconnection of peripheral

Tip: System does not notify that a USB device has been disconnected. If a peripheral is not operating correctly, please inspect the connection to verify that it is hooked up properly.

[Internal Ref. # 114574, 120464]

Message "Media was ejected improperly." appear after inserting a USB Flash card

Description:

Connect a USB flash-card (memory stick) to the system. The following message appears:

"Media was ejected improperly."

This message is wrong because media was inserted rather than ejected.

Workaround: Disregard this message.

[Internal Ref. BT10M4, # 130145]

CartoSound™ operation

Clarification: The CartoSound™ is an imaging module which is a sub-system of the Carto XP™ system and the Carto 3™ system

The Vivid i/q system can currently interface to both Carto XP™ / Carto 3™ systems

Long boot-up time while system is used with “Carto”

Description

1. Set Carto Interface to be the default dataflow
2. Turn the Vivid i/q system to full shutdown and turn it on again
3. The boot-up time is long, about 3 minutes, and there is no “progress” message.

[Internal Ref. BT10M4, # 129632]

General

Help screen is not updated after exiting from Screen Saver.

Description:

1. Activate Help
2. Leave the system for more than 15 minutes. The Screen Saver will activate
3. Move the trackball to cancel Screen Saver

Issue:

The Help window is displayed partly empty

Workaround:

Move the trackball to refresh the Help screen so it appears correctly

[Internal Ref. BT11M4, # 139280]

System Configuration

Assigning the Flex-key to left / right steering

Description:

When you wish to configure the Flex-key to the “Steer” function, the Flex-key menu contains both “Steer Left” and “Steer Right” entry.

You may use either “Steer Left” or “Steer Right” entry. The function will be similar. Pressing the Flex-key several times will alternate between 3 positions: left-steer, no-steer and right-steer.

[Internal Ref. BT11M3, # 136164]

Multiple Interfacing option

It is possible to connect the Vivid i/q by multiple interfacing to both of the Carto (either Carto XP or Carto 3) and CardioLab (or ComboLab) systems. This will allow the use of both the CardioLab and the Carto during the same patient’s procedure.

A dedicated dataflow named "CardioLab / CartoSound interface" is available under this option and needs to be activated as part of the multiple interface.

Multiple interfacing will be installed and configured by the GE field engineer as part of the system installation.

Video Splitter

A high-quality isolated VGA Video Splitter is provided with the multiple interfacing option, and is installed by your GE field engineer to allow the parallel connection of the Video signal from the Vivid i/q to both Carto XP / Carto 3 and CardioLab / ComboLab systems.

Following is the part number of the video splitter

Part description	P/N	Hcat No.
P1007MH Isolated VGA Splitter	5390022	H45031SD

Note: Installation of Carto 3 and the needed VGA splitter (to connect to the Vivid i/q) shall be performed by the BWI (Biosense Webster Inc.) field engineer according to the BWI manual and instructions.

Warning: To avoid possible electrical shock to user or patient the Vivid-i/q should be connected to Carto3 only by using Isolated VGA Splitter.

Details for multiple interfacing are described in the following manuals:

1. The CardioLab User's manual
   Installation Instructions
   Mac-Lab/CardioLab/
   Centricity Cardiology INW
   Installation - Vol. 2 of 2
   Version 6.8.1 or higher
   2027332-107 Revision Dx7 or higher
2. The Carto XP version 10 Instructions For Use Manual
   Instructions for Use for the CARTO®XP System 2010 V10
3. The Carto 3 Instructions For Use Manual
   Instructions For Use for the CARTO® 3 System 2010
   P.N.: UG-5400–00 (06B)
   03 February 2010

Hardware

Physical damage to the power-cable on the Vivid cart

Caution: When pushing the cart of Vivid i/q and the rear of the cart bumps into the wall, excessive force may be applied to the power cable connector. This may damage the connector.

Workaround:

1. Avoid pushing the cart into the wall.
2. Inspect the strain relief occasionally for any physical damage, and call your GE service representative in case of visible damage.

[Internal Ref. # 118583]