

ULTRASONIX

SonixTablet Ultrasound System User Manual



Ultrasonix Medical Corporation

SonixTablet Ultrasound System User Manual

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CHAPTER 1: INTRODUCTION

1.1 AUDIENCE

This user manual is a reference for operators using a SonixTablet ultrasound system. It is designed for a reader familiar with ultrasound imaging techniques; it does not provide training in sonography or clinical practices. Before using the system the operator must have ultrasound training.

Note: *This is not a service manual. The SonixTablet Service Manual is available for qualified service personnel.*

1.1.1 Prescription Device

Caution: *United States law restricts this device to sale or use by, or on the order of a Physician.*

1.2 CONVENTIONS

The following conventions are used in this manual:

- cross-references for such things as tables, page numbers, sections and chapters are in blue, bold face, non-italic type (e.g., [Chapter 2: Sonix Introduction](#)) and are active hyperlinks when the manual is in Portable Document Format (PDF)
- words that are **bold italic** refer to items on the LCD display and touch screen
- "Tap" indicates the action required to activate a touch screen item

Note: *"Double-taps" may also be required from time to time.*

- "Tap and drag" indicates an optional touch screen action

Note: *To drag an item (e.g., on the Precision Panel, [3.5.2](#)), simply tap and drag a finger as required. Take care not to lift your finger off the touch screen before the drag action is complete.*

- "Select" directs the operator to choose an item(s) from onscreen pages, menus, dialogs, etc., tapping the touch screen to make the selection
- a **Warning** describes precautions necessary to prevent injury or loss of life
- a **Caution** describes precautions necessary to protect the Sonix system and its associated products
- a **Note** contains helpful information and hidden functionality
- items marked **IMPORTANT** contain vital information that must be understood and followed, but which will not endanger either people or equipment
- bulleted lists present information in list format, but do not imply a sequence
- when operating instructions must be performed in a specific order, the steps are numbered
- instructions separated by ">" indicate that multiple items must be selected (e.g., "Select **Administrator** > **Status Bar**" indicates that the user must first select the "**Administrator**" option, then when the next dialog is presented, select the "**Status Bar**" option).



1.3 UPDATES

Updated user manuals will be available for all future Sonix ultrasound system updates.

1.4 VOLTAGE DISCLAIMER

The system voltage setting is configured in the factory.

It is the user's responsibility to ensure the system is used only under the electrical conditions dictated by Ultrasonix Medical Corp. Failure to comply with these conditions may result in damage to the system which is not covered by the Ultrasonix warranty.

Caution: For users running the 100V–120V system, always ensure the utility supply voltage is 100V–120V @ 50/60 Hz.

For users running the 200V–240V system, always ensure the utility supply voltage is 200V–240V @ 50/60 Hz.

1.5 CONNECTIVITY DISCLAIMER

Caution: System networking options are intended for use *inside* your organization's firewall. Organizations that elect to configure/use the networking functionality provided by Ultrasonix are assuming all liabilities and risks associated with that decision.

1.6 PRIVACY DISCLAIMER

To protect patient data, Ultrasonix strongly recommends regular patient/image file back-up and purging of older patient files stored on the system. Refer to [Chapter 9: Image Storage, Review, Transfer and Print](#) for details on transferring patient data.

IMPORTANT: The contents of the system hard drive may include Personal Health Information that must be protected as dictated by local or state laws (for example, Federal Privacy Act or the Health Insurance Portability & Accountability Act (HIPAA)). In order to ensure regulatory compliance, Ultrasonix will not remove the system hard drive — and the patient data it contains — from the customer site.

In the event the hard drive must be removed from the system, it will be returned to the customer. Final disposition of the hard drive and its data will remain the customer's responsibility.

1.7 GENERAL DISCLAIMER

Certain licensed features, hardware options and transducers may not be certified in all markets. Consult your local Ultrasonix Authorized Distributor or Sales Representative to determine availability in your area.

1.8 SYSTEM HANDLING



Warning: *Although the SonixTablet is portable, it weighs more than 30 lbs (13+ kg). To avoid injury, be sure to follow proper workplace/ergonomic lifting techniques when transporting the system.*



Warning: *Do not place the device on any surface that blocks/restricts ventilation (e.g., do not set the device on a soft surface such as a bed). Failure to comply with this directive could inhibit system airflow and cause the system to overheat — which is not covered by the system warranty.*

1.9 LICENSE AGREEMENT

Portions of the Sonix computer programs have been patented by Ultrasonix Medical Corporation (Ultrasonix) or are patent pending, and are licensed under the following software license agreement:

Ultrasonix, or its suppliers, retain(s) ownership of and title to any computer program supplied with the Equipment and to the trade secrets embodied in such computer programs. Subject to the Buyer's acceptance and fulfillment of the obligations in this paragraph, Ultrasonix grants the Buyer a personal, non-transferable, perpetual, non-exclusive license to use any computer program supplied with the Equipment that is necessary to operate the Equipment solely on the medium in which such program is delivered for the purpose of operating the Equipment in accordance with the instructions set forth in the operator's manuals supplied with the Equipment and for no other purpose whatsoever. Buyer may not reverse – assemble, reverse – compile or otherwise reverse – engineer such computer programs nor may Buyer make a copy of such program or apply any techniques to derive the trade secrets embodied therein. In the event of a failure by Buyer to comply with the terms of this license, the license granted by this paragraph shall terminate. Further, because unauthorized use of such computer programs will leave Ultrasonix without an adequate remedy at law, Buyer agrees that injunctive or other equitable relief will be appropriate to restrain such use, threatened or actual. Buyer further agrees that (i) any of the Ultrasonix suppliers of software is a direct and intended beneficiary of this end-user sublicense and may enforce it directly against Buyer with respect to software supplied by such supplier, and (ii) NO SUPPLIER OF ULTRASONIX SHALL BE LIABLE TO BUYER FOR ANY GENERAL, SPECIAL, DIRECT, INDIRECT, CONSEQUENTIAL INCIDENTAL OR OTHER DAMAGES ARISING OUT OF THE SUBLICENSE OF THE COMPUTER PROGRAMS SUPPLIED WITH THE EQUIPMENT.



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1.10 WARRANTY REGISTRATION

To protect your investment, ensure the warranty registration card included with your system has been completed and returned to Ultronix (using the envelope provided) or register online at www.ultronix.com/register.

Note: *Warranty registration will ensure uninterrupted Technical Support and system updates.*

1.11 TRADEMARKS AND PATENTS

Ultronix Sonix systems are protected under US Patents 6,216,029 - 6,325,759 - 6,558,326 - 6,911,008 - 7,274,325 - 8,088,070 - D654,178.

The following are trademarks of Ultronix Medical Corporation: SonixGPS™, SonixShine™, SonixTablet™ and SonixTouch™.

Windows® is a trademark of Microsoft Corporation.

DICOM® (Digital Imaging and Communications in Medicine) is the registered trademark of the National Electrical Manufacturers Association (NEMA) for its standards publications relating to digital communications of medical information.

All other products and brand names mentioned in this document are trademarks of their respective companies.

CHAPTER 2: Sonix INTRODUCTION

Congratulations on your purchase of the Ultrasonix Sonix Ultrasound system. The Sonix is a high quality, easy to use diagnostic ultrasound system that is stable, highly mobile and designed to be convenient and comfortable to operate.

The various system components, including the touch screen, power pack, transducers and optional mounting system may be configured to better support system use.

2.1 SYSTEM COMPONENTS

Figure 2-1: SonixTablet System Components (Stand-Alone)



Figure 2-2: SonixTablet System Components (Cart-Mounted)

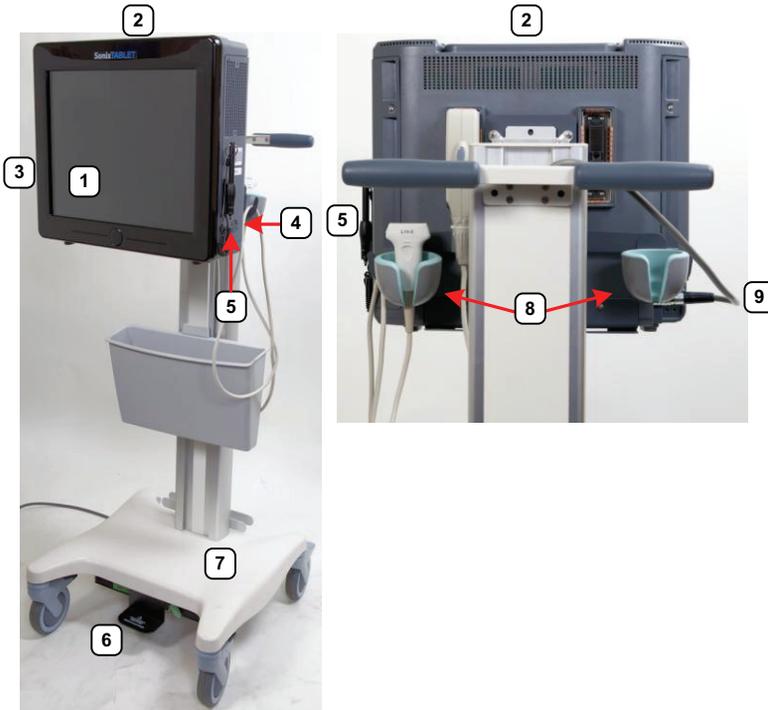


Table 2-1: SonixTablet System Components

1	LCD Display/Touch Screen
2	Folding Carry Handle (top)
3	Side Connectivity Panel (power and Network connections, USB and sound ports). Refer to 10.1 for connectivity details.
4	Speaker
5	Stylus
6	Foot pedal for Height Adjustment
7	Base
8	Transducer Holders
9	Fixed, System Power Cord
	Note: This Power Cord runs internally through the pole to the power pack mounted beneath the base.

Note: For details on mounting/removing the SonixTablet, refer to [10.3](#).

2.2 OPERATOR CONSOLE

All system controls are touch screen-based. For more details on touch screen options, refer to [3.5 Touch Screen Layout](#).



Warning: *Do not place the device on any surface that blocks/restricts ventilation (e.g., do not set the device on a soft surface such as a bed). Failure to comply with this directive could inhibit system airflow and cause the system to overheat — which is not covered by the system warranty.*

Cautions:

Be sure to place the system on a flat, stable surface.

Always move the system around on a table top with two (2) hands. Although the system is properly balanced, exerting too much force in one direction could cause it to tip.

2.3 SYSTEM CASE

The system case contains the LCD display/touch screen and system PC with two (2) transducer connection ports located on the back.

Refer to the *SonixTablet Service Manual* for complete details about the contents of the system case.



Warning: *Do not touch the patient and the transducer ports simultaneously.*



2.4 POWER PACK

The power pack includes:

- main power switch (1)
- fixed system power cord that runs to the SonixTablet (2)
- receptacle for the detachable system power cord (3).

Caution: *On stand-alone systems, the power pack must be placed with its four (4) feet set firmly on a flat surface, such as the floor or the table alongside/behind the system.*

DO NOT dangle the power pack from either of the power cords.

Refer to 2.4.1 for details on connecting the power pack to the system case.

Figure 2-3: System Power Pack



Table 2-2: System Power Pack

1	Main Power Switch
2	System Power Connection Cord
3	Power Cord (to Wall Outlet) Receptacle

Caution: ***DO NOT** turn off the main power switch when the system is turned on. Turn off the system using the console **POWER** button, then turn off the main power switch. Failure to follow the correct procedure may result in loss of patient data and/or hard drive failure.*

Note: *If the system does not power up, ensure the power cord is plugged in and the main power switch on the system case is turned to the ON position. The Main Power switch is not required for regular power shut downs and should remain in the ON position.*

2.4.1 Powering the System

Before turning the system on, connect the power cords.

To Connect the Power Cords on Stand-Alone Systems:

1. Connect the power cord from the power pack to the system.



Note: Push the connector on firmly, ensuring the **red** dot on the power connector faces upwards.

2. Connect the system power cord to the power pack.



3. Connect the power cord to a wall outlet (hospital-grade electrical outlet recommended).



To Connect the Power Cords on Cart-Mounted Systems:

1. Connect the power cord from the top of the cart (1) to the system (2).



Note: Push the connector on firmly, ensuring the **red** dot on the power connector faces upwards.

2. Connect the power cord from beneath the cart to a wall outlet (hospital-grade electrical outlet recommended).

2.4.2 Powering the System ON/OFF

After initial installation, it is important to correctly power the system ON/OFF. Failure to follow proper shutdown procedures may result in data corruptions and/or hard drive failure.

Properly powering OFF any system will protect the integrity of patient data.

Caution: NEVER shutdown the system by simply unplugging it from the wall:

- even if the battery is fully depleted (applies only to systems with a UPS)
- regardless of whether the system was configured with or without a UPS.

Either of these actions may result in data corruptions and/or hard drive failure.

To Power the System ON:

1. Ensure the power cords are connected.
2. Press and hold the system case **POWER** button for one (1) second.



Note: For systems running with a UPS, powering ON correctly will wake the UPS from Sleep Mode and ensure it is functioning correctly.

To Power the System OFF:

1. Press the system case **POWER** button.
2. If **Shutdown Options** have been configured to request confirmation, select **Yes** when presented with the message **Do you really want to shutdown the system?**

Caution: Failure to properly shut down any system may result in data corruptions and/or hard drive failure.

Note: If **Shutdown Options** have not been configured to request confirmation, the system will simply shut down.

2.5 SIDE CONNECTIVITY PANEL

The Side Connectivity Panel is located on the left side of the system case. Refer to [10.1](#) for connectivity details.



2.6 BARCODE READER

An optional pre-configured, barcode reader is available. This allows the operator to scan certain patient data for quick and reliable data entry. The results of the scan are entered directly into the fields on the **QSonix Input Patient Information dialog** and the **Exam Management** page—providing the cursor is present in the relevant field when the barcode is scanned.

Refer to **10.4 Barcode Reader** for details on connecting the barcode reader to the various hardware platforms.



Warnings:

USE OF CONTROLS or adjustments or performance of procedures other than those specified in the manufacturer's User's Guide (delivered with system) may result in hazardous laser light exposure.

NEVER attempt to look at the laser beam, even if the barcode reader appears to be non-functional.

NEVER point the laser beam in anyone's eyes.

USE OF OPTICAL instruments with the laser equipment will increase eye hazard.

UNDER NO CIRCUMSTANCES should users or technicians attempt to open or service the laser scanner. Attempting to open the barcode reader may cause exposure to hazardous laser light. Should the barcode reader require maintenance or replacement, contact Ultrasonix Technical Support.

2.7 WIRELESS ADAPTER

In addition to the standard, hard-wired network connection, the system supports an optional, factory-installed wireless adapter (**8.2.10.3 Wireless Configuration**).

Caution: System networking options are intended for use inside your organization's firewall. Organizations that elect to configure/use the networking functionality provided by Ultrasonix are assuming all liabilities and risks associated with that decision.

Caution: For details on FCC regulations as they apply to the wireless adapter, please refer to the manufacturer's User Guide included with the system.

2.8 FOOTSWITCH (DUAL OR TRIPLE)

The system supports an optional, (dual or triple) USB **Footswitch** (**8.2.13.4 Footswitch**).

Refer to **10.6 Connecting the USB Footswitch (Dual or Triple)** for details on connecting the **Footswitch** to the various hardware platforms.

CHAPTER 3: GETTING STARTED

This chapter provides a quick, step-by-step guide through the basic operation of the Sonix Ultrasound System as well as details on general touch screen layout.

3.1 TURNING ON SYSTEM

To Turn on the System:

1. Ensure the power cords are connected (2.4.1).
2. Press and hold the console **POWER** button for one (1) second. Refer to 2.4.2 **Powering the System ON/OFF** to view the button's exact location.

Caution: DO NOT use main power switch for regular power shut downs. Refer to 2.4.2 for instructions on correctly powering the system OFF. Failure to follow the correct procedure may result in loss of patient data and/or hard drive failure.

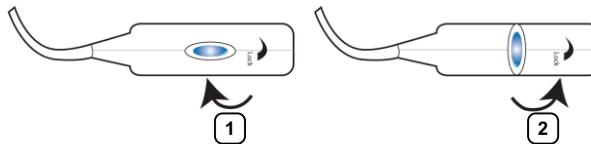
Note: If the system does not power up, ensure the Main Power switch on the power pack is turned to the ON position ("—"). Refer to Figure 2-3 for main power switch location.

3.2 CONNECTING TRANSDUCERS

The connection ports for the Ultrasonix transducers are located on the back of the system case.

To Connect/Disconnect a Transducer:

1. Turn the latch counter-clockwise to the Open or Unlock position (2).



2. Insert the transducer connector into the connection port with the transducer cord facing down, taking care not to bend the copper grounding fingers.

Note: When inserting a transducer connector, place a hand on the front of the system to anchor/balance it.

3. Ensure the connector is properly seated and turn the latch clockwise to lock it in place (1).
4. Turn the latch counter-clockwise to unlock (open) and remove the transducer.

Note: When a new exam is initiated, the transducer used in the most recent exam will still be selected if it is still connected. If it's no longer connected, the system will default to the first available transducer. This default transducer selection is not affected even if the system is turned off between exams.

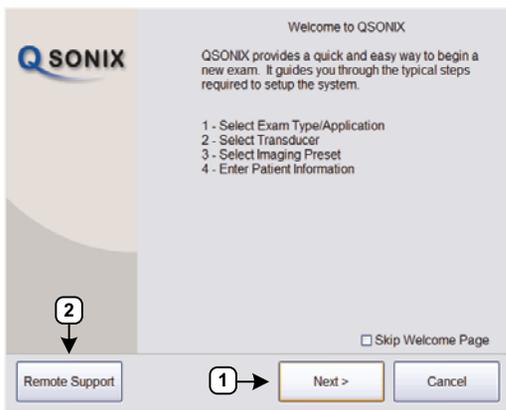


3.3 QSonix FEATURE

The **QSONIX** button provides the following basic functions:

- Quick Exam Start-up (1)
- **Remote Support** Access (2)

Figure 3-1: QSonix



Note: By default, the **Welcome to QSonix** screen will appear the first time the **QSONIX** button is pressed. **onix**If desired, after initial access to the **QSonix** feature, use the trackball and  button to select the **Skip Welcome Page** checkbox in order to hide this page.

3.3.1 Quick Exam Start-Up

The Quick Exam Start-up feature provides a series of dialogs which guide the user through the steps required to begin an exam. Once the **QSONIX** button is selected, users have the choice to navigate through the Quick Exam Start-up using the touch screen or with the trackball and  button on the LCD display:

1. Select the **Exam Type/Application**.
2. Select the transducer.
3. Select the **Imaging Preset**.
4. Enter basic **Patient Information**.
5. Begin the exam.

To Begin the Quick Exam Start-up:

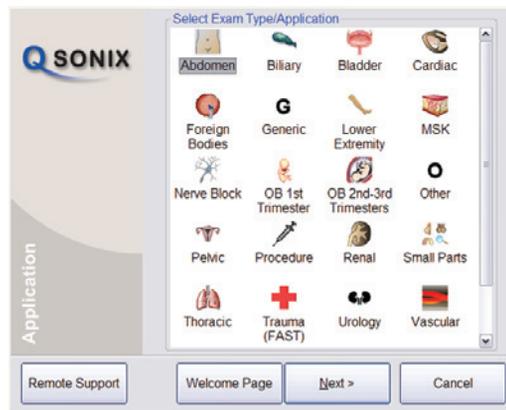
1. Tap the touch screen **QSONIX** button.
2. If the **Welcome to QSonix** page appears, select **Next**.



Note: If the **Welcome to QSonix** page has been set to skip, it can be reset to appear by selecting the **Welcome Page** button. Select **Skip Welcome Page** to prevent it from appearing the next time the **QSONIX** button is selected.



3. Select the desired **Exam Type/Application** and the system will automatically move to the next page.



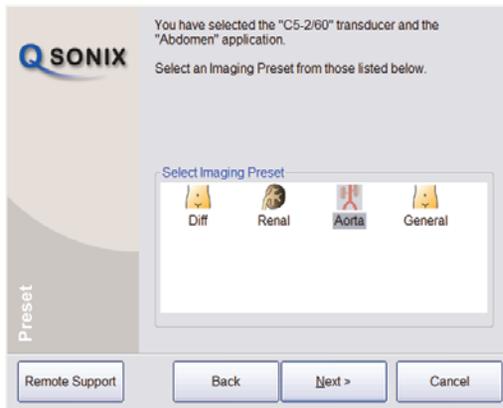
- Select the desired transducer and the system will automatically move to the next page.



Note: Only transducers currently connected to the system and applicable to the previously-selected **Exam Type/Application** will be available. If the selected **Application** is not compatible with the currently connected transducers, the system will prompt for a different transducer.

Users can also select **Back** and select a different **Application**.

- Select the desired **Imaging Preset** and the system will automatically move to the next page.



Note: User-defined **Presets** will be included here.

If a **Preset** has been hidden, it will not be available for selection from **QSonix**. Refer to [8.2.1.1 Show/Hide Imaging Presets](#) for details.

- Use the touch screen keyboard to enter data in the **Input Patient Information** fields. Tap the keyboard **Tab** key to move through the data fields.



Notes:

If additional patient information is required select **More...** to open the full **Exam Management** data entry page. This will also enable the **Operator** to find and load (if they exist on the system) previous exams for the patient.

Refer to [Chapter 4: Patient Management](#) for complete details on **Exam Management** data entry and manipulation.

Insert (Symbol) enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).

Reuse Active Patient allows **Operators** to change **Applications** while continuing to scan the current patient (i.e., the data acquired after switching to a different **Application** continues to be saved to the same patient but under a new exam).

- Select **Start Exam** to begin imaging.



3.3.2 Documentation Access

Operators can access PDF documentation via the  button. This includes a cross-referenced version of the **User Manual**.

Note: It is not possible to view a PDF when a Sonix dialog (e.g., **Exam Management**) or Windows dialog (e.g., **Date and Time Properties**) is open.

To Access a PDF:

Note: PDFs must be loaded before they can be accessed. Refer to [8.2.19 Documentation Settings](#) for details on adding/deleting documents.

1. Ensure the main touch screen is visible and that all dialogs are closed.
2. Tap the touch screen  button.
3. Select **Documentation**.
4. From the list presented, select the relevant PDF.



Note: If only one (1) PDF document has been added, it will be opened automatically.

5. The selected document will open in a PDF viewer.

To Close the PDF:

1. Select the "X" in the upper right corner of the PDF viewer window.



3.4 REMOTE SUPPORT

Remote Support allows Ultrasonix Technical Support to view and control a system for diagnostic purposes.

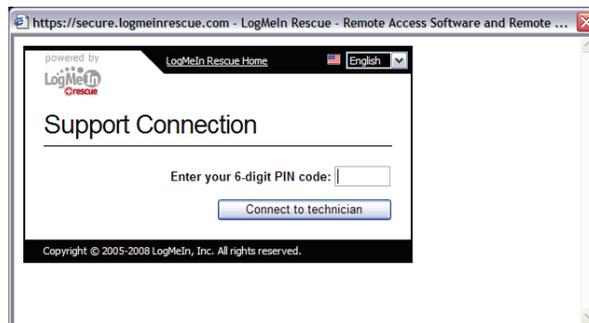
In order to use **Remote Support**, the **Network** must be configured ([8.2.10 Network](#)) and a **PIN (Personal Identification Number)** must be obtained from Ultrasonix Technical Support.

Note: The **PIN** is valid for 20 minutes only, so be sure to use it right away.

To Access Remote Support:

Note: **Remote Support** can also be accessed from the  button. Refer to [8.1.2](#) for details.

1. Tap the touch screen  button.
2. Select the **Remote Support...** button.



Note: If **Remote Support** does not appear to be available, contact your IT Department and have them check to make sure the network connection is active and the **Remote Support** option has been configured for use.

3. Enter the **PIN (Personal Identification Number)** provided by Ultrasonix Technical Support.

Note: The **PIN** is valid for 20 minutes only, so be sure to use it right away.

4. When prompted, select **Download > Run > Run** in order to install the required programs.
5. The system can now be remotely controlled.



3.5 TOUCH SCREEN LAYOUT

For demonstration purposes, this manual utilizes screen shots from the **General** software **Protocol** as **General** has the most comprehensive set of options available. Refer to **10.8** for more details on other software options.

Although **B-Mode** will always be the first touch screen presented after initialization, the touch screens for all modes are presented in the same format.

Note: The options available in section 4 (Figure 3-2) will vary depending on the active function and/or mode.

Once an image is frozen, some of the mode-specific touch screen options may be altered, for example **Cine** options will be available.

3.5.1 Main Touch Screen

Figure 3-2: Layout of Main Touch Screen (B-Mode Example)

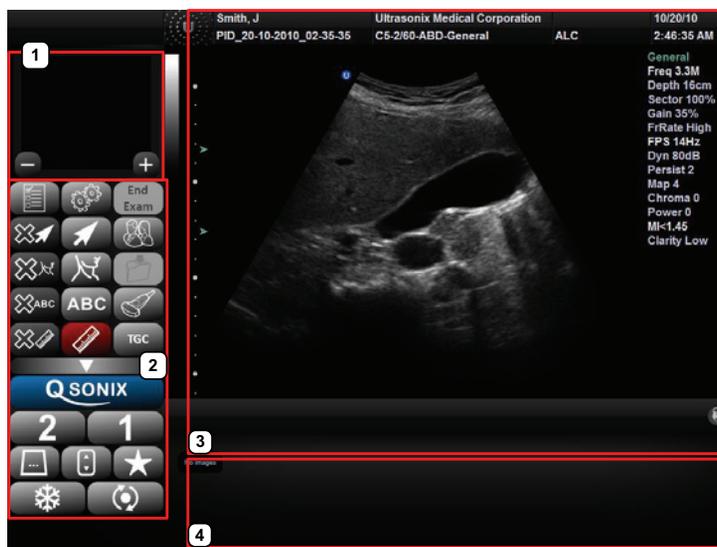


Table 3-1: Main Touch Screen Buttons

1	Precision Panel	Magnifies imaging items/options (e.g., measurement points, Color ROI box, etc). Tap/drag to control the option. Refer to 3.5.2 for details. Note: Default magnification is 200%. Tap the +/- buttons to increase/decrease the magnification level.
2	System Control Buttons	Standard system control buttons. Refer to 3.5.3 for details.
3	Imaging Screen	Display area for imaging, imaging data and thumbnails.
4	Mode, Mode Action, Imaging Parameter and Favorites Buttons	Display area for Mode, Mode Action, Imaging Parameter and Favorites buttons. Refer to 3.5.4 , 3.5.5 and 3.5.6 for details.

3.5.2 Precision Panel

The Precision Panel allows users to work in a magnified area when:

- moving an ROI box
- resizing an ROI box
- setting measurement calipers, etc.

To initiate Precision Panel operation, tap the imaging screen in the desired area.

Note: For added control, Operators may find it useful to make changes on the Precision Panel while visually following the edits on the main imaging screen.

Figure 3-3: Precision Panel

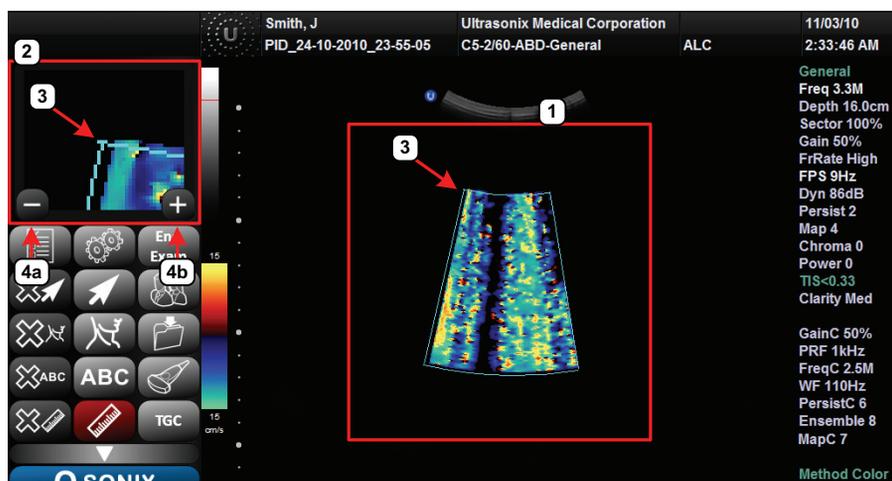


Table 3-2: Precision Panel

1	Imaging Screen	Standard imaging screen. Once tapped, the currently active area of the imaging screen is captured and enlarged on the Precision Panel.
2	Precision Panel	Note: The Precision Panel does not support every imaging screen action.
3	ROI (for this example)	The area selected (tapped) onscreen is the area magnified in the Precision Panel.
4a	Reduce Magnification Button	Tap to reduce the magnification level.
4b	Increase Magnification Button	Tap to increase the magnification level.

3.5.3 System Control Buttons

The system is delivered with the full set of system control buttons visible.

Note: The *Minimize/Maximize* button enables **Operators** to control the set of visible System buttons with one tap.

Figure 3-4: System Control Buttons (Maximized and Minimized)



Note: If the system control buttons are minimized, only items 16b to 24 will be visible.

Table 3-3: System Control Buttons

Item	Icon	System Control	Functionality
1		WORKSHEET Button	Presents the active Worksheet on the LCD display with associated options on the touch screen.
2		MENU Button	Provides access to setup menus.

Item	Icon	System Control	Functionality
3		END EXAM Button	Ends the current exam.
4		DELETE ARROW Button	Deletes all Arrows added to the image.
5		ARROW Button	Turns on/off Arrow graphic on the image field. Trackball positions and rotates the Arrow graphic.
6		EXAM MGMT Button	Provides access to the Exam Management page.
7		DELETE PICTOGRAM Button	Deletes any Pictogram added to the image.
8		PICTOGRAM Button	Turns on/off application-specific Pictogram graphics. Tap Pictogram and dial through the various icons. <ul style="list-style-type: none"> • trackball positions orientation marker • touch screen Rotate dial pivots orientation marker.
9		ARCHIVE Button (<i>Custom Key 3</i>)	Use to: <ul style="list-style-type: none"> • auto-store/print images or Cine loops to a configured printer, archive, etc. • provide access to the Exam Management/Image Review system.
10		DELETE TEXT Button	Deletes all Text added to the image.
11		TEXT Button	Activates the keyboard for Text entry and displays Application-specific Annotation buttons on the touch screen.
12		TRANSDUCER Button	Provides access to transducer selection keys on touch screen.
13		DELETE MEASUREMENT Button	Deletes all Measurements from the image.
14		MEASURE Button	Initiates/closes the Measurement Package touch screen. Removes measurements from frozen image field.
15		TGC Slide Pods	Adjusts TGC (Time Gain Compensation) curve.
16a 16b		MINIMIZE/ MAXIMIZE Buttons	Minimizes/maximizes onscreen button configuration.
17		QSONIX Button	Provides access to: <ul style="list-style-type: none"> • Quick exam start-up • Remote Support.



Item	Icon	System Control	Functionality
18	2	2 Button (<i>Custom Key 2</i>)	One of three (3) programmable buttons (8.2.12) used to: <ul style="list-style-type: none"> • auto-store/print images or Cine loops to a configured printer, archive, etc. • access certain functions such as Exam Review and Measurement Packages.
19	1	1 Button (<i>Custom Key 1</i>)	One of three (3) programmable buttons (8.2.12) used to: <ul style="list-style-type: none"> • auto-store/print images or Cine loops to a configured printer, archive, etc. • access certain functions such as Exam Review and Measurement Packages.
20		MODE Button	Tap to access the complete set of available Mode Selection and Mode Action buttons (refer to 3.5.4 for details). Note: At any given time, only one of items 20 to 22 can be active. For example, if (20) is active and (21) is tapped, Mode Access buttons will be replaced by Imaging Parameter buttons.
21		IMAGING PARAMETER Button	Tap to access the complete set of available Imaging Parameters for the currently selected Mode (refer to 3.5.5 for details). Note: Imaging Parameter button order is predefined. To customize the defaults, refer to 3.5.5.2 Editing Imaging Parameter Button Order. At any given time, only one of items 20 to 22 can be active. For example, if (20) is active and (21) is tapped, Mode Access buttons will be replaced by Imaging Parameter buttons.
22		FAVORITES Button	Tap to access the Favorites settings for modes and imaging parameters (refer to 3.5.6 for details). Note: The system is delivered with a predefined set of Favorites . To customize the defaults, refer to 3.5.6.1 Editing Favorites Button Order. At any given time, only one of items 20 to 22 can be active. For example, if (20) is active and (21) is tapped, Mode Access buttons will be replaced by Imaging Parameter buttons.
23		FREEZE Button	Pause/resume a live image. Additionally, using Custom Key settings (8.2.12) the console button can be configured to move directly to Measure .
24		UPDATE Button	Provides a wide variety of functions depending on the imaging state (e.g., toggle between image fields on Dual/Quad image, toggle between 2D and Doppler Trace image fields, etc).

3.5.4 Mode Button

Tap the touch screen  button to access the complete set of available Mode Selection and Mode Action buttons.

Notes:

Refer to [Appendix E](#) for a complete list of Mode Actions.

Many features are licensed options and may not be active on all systems. Refer to [8.2.21 Licensing](#) to determine what features are active and [Appendix B: System Specifications](#) for details on available options.

Figure 3-5: Mode Selection and Mode Action Buttons

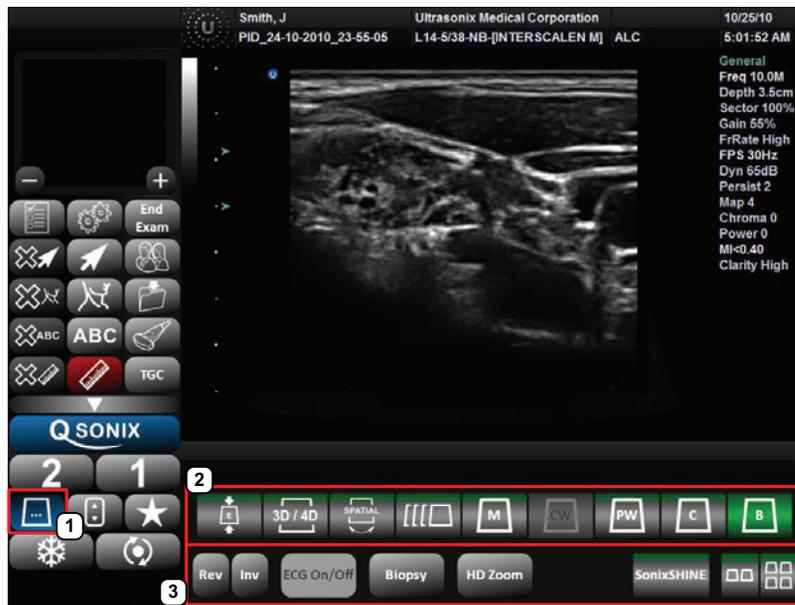




Table 3-4: Mode Buttons

1	Mode Access Button	Tap to access Mode Selection and Mode Action buttons.
2	Mode Selection Buttons	<p>Allow the Operator to change between the various Imaging Modes. The active mode is highlighted in green.</p> <p>Mode Selection Buttons are toggle buttons. For example, when Color and PW are both selected, tap  to deselect it and remain in PW only. When a single mode is selected (e.g., ) , tapping that button again will select the default system mode: .</p> <p>Additionally, Operators can always tap  to exit the current mode and return to B-Mode.</p> <p>Note: <i>To be accessible, an Imaging Mode must be licensed and have a relevant transducer connected to the system. Modes that are not accessible (for either reason) will have the selection button grayed out).</i></p>
3	Mode Action Buttons	<p>Enable the application of certain actions to an image (e.g., Invert).</p> <p>Mode Action Buttons are toggle buttons. For example, tap Biopsy Guides to view the Biopsy Guides on the LCD display. Tap it again to remove them.</p> <p>When active, most Mode Action Button will be a graduated blue color. The following exceptions apply:</p> <ul style="list-style-type: none"> • Layout—always remains gray as it is tapped to toggle through the various options •  (Dual) (refer to Table 3-5 for more details) •  (Quad) (refer to Table 3-5 for more details) • SonixShine. <p>Refer to Appendix E for a complete list of Mode Actions.</p> <p>Note: <i>The actions available are mode and/or transducer-specific.</i></p>

Table 3-5: Mode Action Icons

Icon	System Control	Functionality
	DUAL Button	Activates Dual split screen imaging.  toggles between image fields. Tap  to return to single screen imaging.
	QUAD Button	Activates Quad split screen imaging.  toggles between image fields. Tap  to return to single screen imaging.

3.5.5 Imaging Parameter Button

Tap the touch screen  button to access imaging parameters.

Note: Most imaging parameters are mode-specific, although some (such as **Steer**) are transducer-dependant. Refer to [Appendix E](#) for a complete list of imaging parameters.

Figure 3-6: Imaging Parameter Buttons

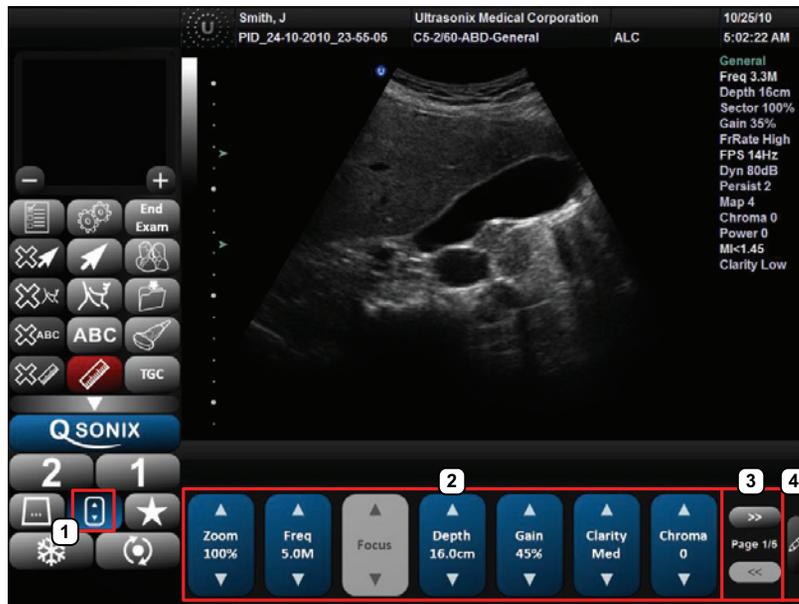


Table 3-6: Imaging Parameter Buttons

1	Imaging Parameter Access Button	Tap to access imaging parameter buttons.
2	Imaging Parameter Buttons	Enable adjustments to be made to the imaging parameter for the selected mode. Tap the top of the button to adjust the imaging parameter higher or the bottom to adjust it lower.
3	Page Selector Buttons	Tap to move through the available imaging parameter pages.
4	Edit Button	Tap  to edit imaging parameter button order.

3.5.5.1 Imaging Parameter Button Speed

Tap and hold the top or bottom of the button to speed through the parameter options. The longer the tap and hold action lasts, the faster the parameter will cycle through the available options.

Figure 3-7: Imaging Parameter Button Speed



3.5.5.2 Editing Imaging Parameter Button Order

Figure 3-8: Editing Imaging Parameter Button Order

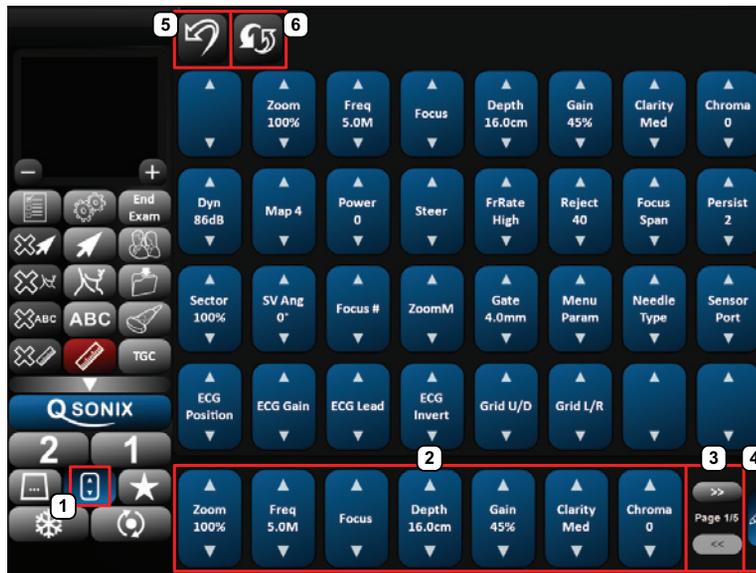
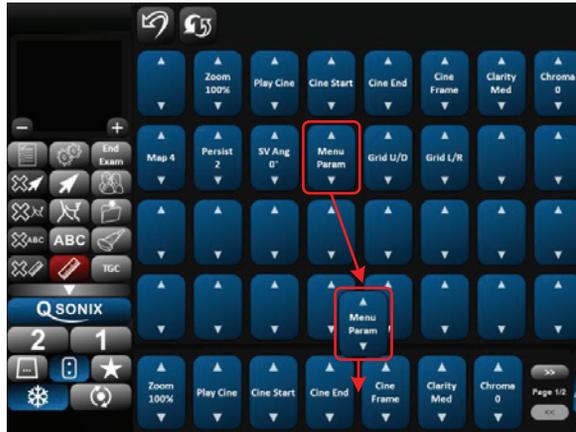


Table 3-7: Imaging Parameter Button Order

Item	Icon	System Control	Functionality
5		UNDO Button	Tap to undo <u>all</u> changes made in the current editing session.
6		RESTORE FACTORY Button	Tap to restore buttons to factory defaults.

Figure 3-9: Tap and Drag Imaging Parameters



To Edit Imaging Parameter Button Order:

1. Tap the touch screen  button.
 2. Tap .
 3. Tap and drag any imaging parameter to the desired position:
 - add to available imaging parameter buttons (item 2) (tap and drag the parameter from the main list to the relevant position on the bottom row, e.g., [Figure 3-9](#))
 - remove imaging parameter buttons from bottom row (item 2) (tap and drag the parameter from the bottom row to anywhere else on the touch screen)
 - reorder available imaging parameter buttons (item 2) (tap and drag the parameter from one spot on the bottom row to another)
-
- Note:** When applicable, use the Page Selector buttons (bottom, right) to access additional imaging parameter buttons.
-
4. Tap  to undo all changes made in the current editing session.
 5. Tap  to restore imaging parameters to factory defaults.

3.5.6 Favorites Button

When selected, the ★ button presents a set of six (6) preferred modes. Each of the modes has a maximum of six (6) preferred imaging parameters. If desired, factory default **Favorites** can be edited.

If the required mode or imaging parameter is not part of the limited set included in **Favorites**, tap  or  to access the full set of each option.

Figure 3-10: Favorites Button

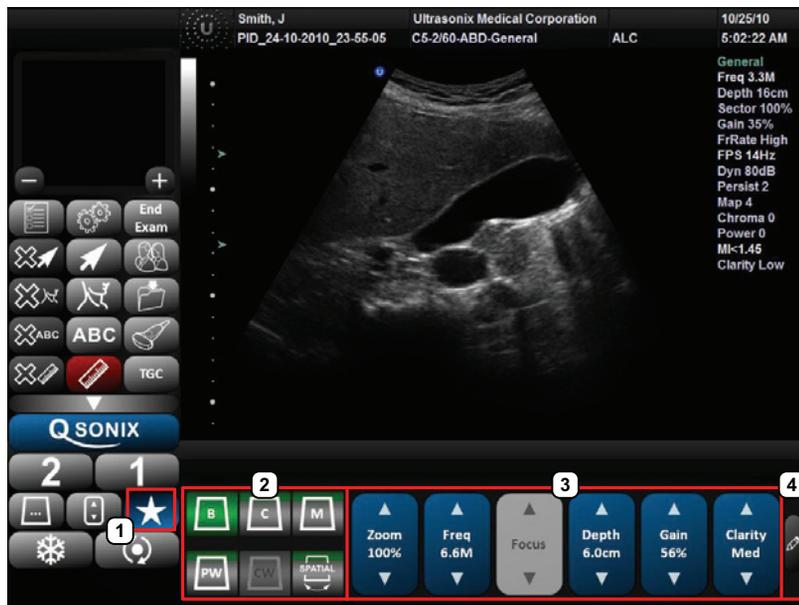


Table 3-8: Favorites Buttons

1	Favorites Access Button	Tap to access Favorites .
2	Mode Selection Buttons	Six (6) Favorite mode selection buttons.
3	Imaging Parameter Buttons	Six (6) Favorite imaging parameter buttons.
4	Edit Button	Tap  to edit Favorites settings.

3.5.6.1 Editing Favorites Button Order

Figure 3-11: Editing Favorites

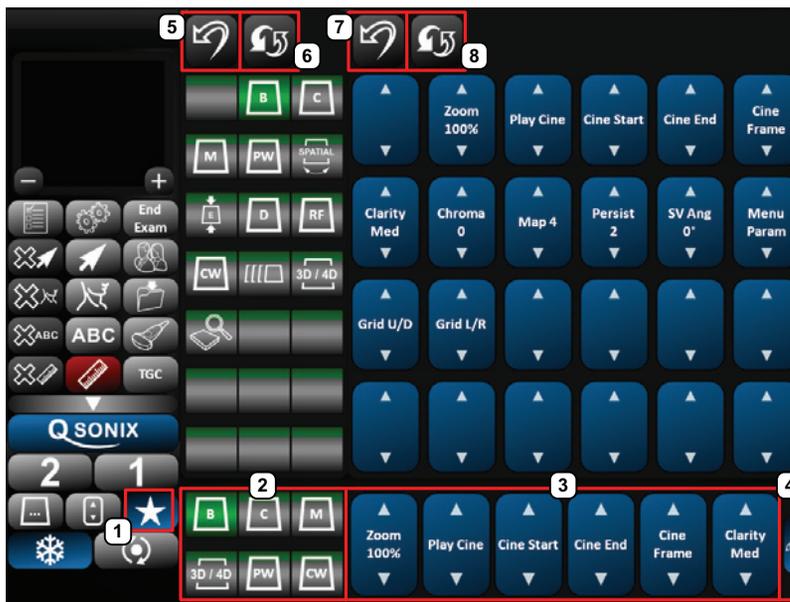


Table 3-9: Favorites Buttons

Item	Icon	System Control	Functionality
5, 7		UNDO Button	Tap to undo <u>all</u> Mode Selection or Imaging Parameter changes made in the current editing session.
6, 8		RESTORE FACTORY Button	Tap to restore Mode Selection or Imaging Parameter buttons to factory defaults.



To Edit Favorites Button Order on the Touch Screen:

1. Tap the touch screen ★ button.
2. Tap .
3. Tap and drag any Mode Selection and/or Imaging Parameter button to the desired position:
 - add to available Mode Selection and/or Imaging Parameter buttons (item **2** or **3**) (tap and drag the button from the main list to the relevant position on the bottom row)
 - remove Mode Selection and/or Imaging Parameter buttons from bottom row (item **2** or **3**) (tap and drag the button to anywhere off the bottom row)
 - reorder available Mode Selection and/or Imaging Parameter buttons (item **2** or **3**) (tap and drag the button from one spot to another)

Note: When applicable, use the Page Selector buttons (top, right) to access additional pages of imaging parameter buttons.

4. Tap the relevant  to undo all Mode Selection or Imaging Parameter changes made in the current editing session.
5. Tap the relevant  button to restore Mode Selection or Imaging Parameter buttons to factory defaults.

3.5.7 Main Touch Screen – Frozen

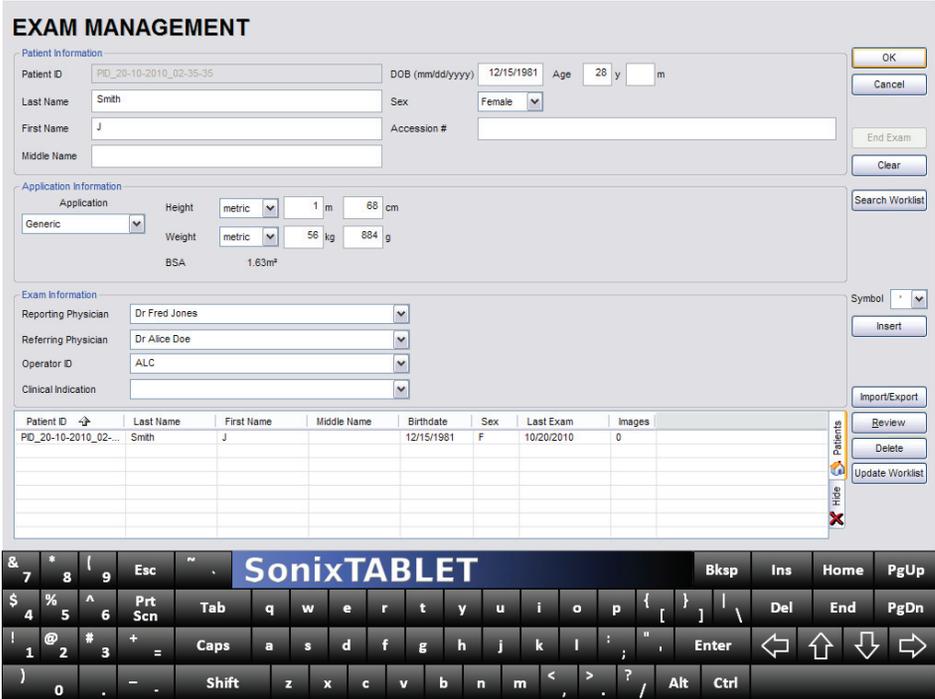
Once an image has been acquired and frozen, the touch screen will be updated with **Cine** controls (refer to [5.9 2D Cine Options](#) for details).

3.5.8 Data Entry Touch Screens

There are two (2) types of data entry touch screens. The most common type has the keyboard appear at the bottom of any data entry touch screen that requires text entry (e.g., [Figure 3-12](#) or the **Input Patient Information** dialog ([step 6](#) of Quick Exam Start-up, above) or [8.2.9 System Settings](#)).

Note: Fields that will accept data entry via the keyboard will also accept data scanned with the barcode reader. Simply ensure that the cursor is located in the required field then scan the relevant barcode.

Figure 3-12: Example Data Entry Touch Screen 1



EXAM MANAGEMENT

Patient Information

Patient ID: PID_20-10-2010_02-35-35 DOB (mm/dd/yyyy): 12/15/1981 Age: 28 y m

Last Name: Smith Sex: Female

First Name: J Accession #: [Empty]

Middle Name: [Empty]

Application Information

Application: Generic

Height: metric 1 m 68 cm

Weight: metric 56 kg 884 g

BSA: 1.63m²

Exam Information

Reporting Physician: Dr Fred Jones

Referring Physician: Dr Alice Doe

Operator ID: ALC

Clinical Indication: [Empty]

Patient ID	Last Name	First Name	Middle Name	Birthdate	Sex	Last Exam	Images
PID_20-10-2010_02-...	Smith	J		12/15/1981	F	10/20/2010	0

Buttons: OK, Cancel, End Exam, Clear, Search Worklist, Symbol, Insert, Import/Export, Review, Delete, Update Worklist

Virtual Keyboard: SonixTABLET

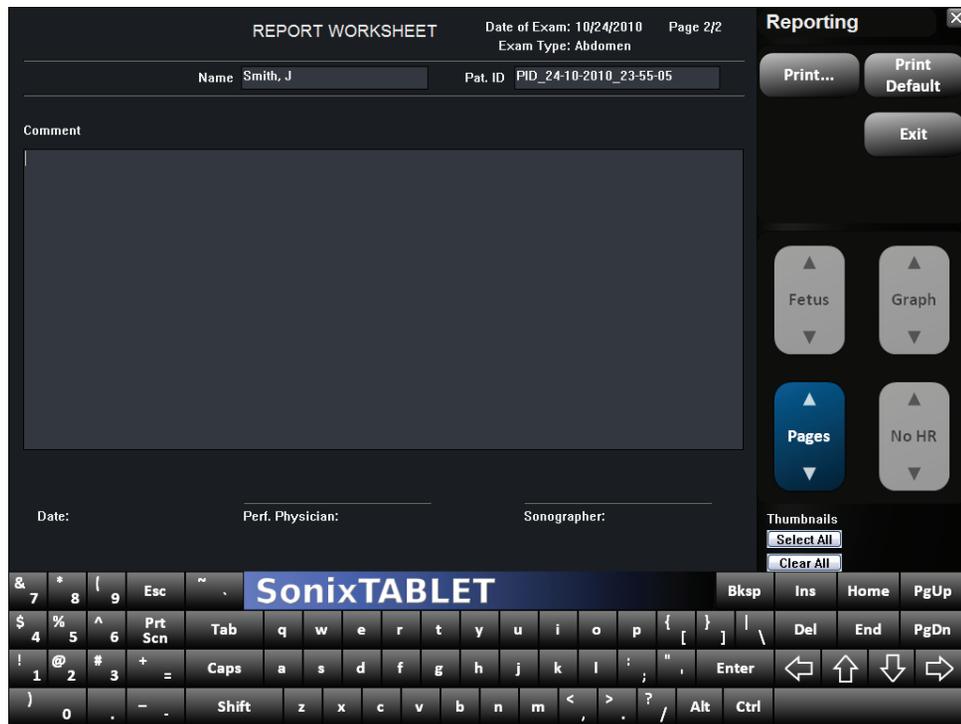
On the second type of data entry touch screen (**Figure 3-13**) the keyboard appears only when a field that can accept data entry is selected (e.g., **Comment**).

Notes:

Tap **Enter** to force a line break and **Cancel** to exit the keyboard without accepting any of the newly typed text.

Use the **Arrow** keys (bottom right) to move around in the text (whether or not the text has been accepted) adding new text where and as required. Tap **Bksp** as many times as necessary to delete new and/or previously accepted text.

Figure 3-13: Example Data Entry Touch Screen



3.5.9 TGC Settings

The **TGC** configuration box is accessed by tapping the **TGC** button.

To edit, gently drag a finger along the **TGC** line in a manner that represents where the line should be. If necessary, tap a particular spot within the **TGC** configuration box to move that portion of the line.

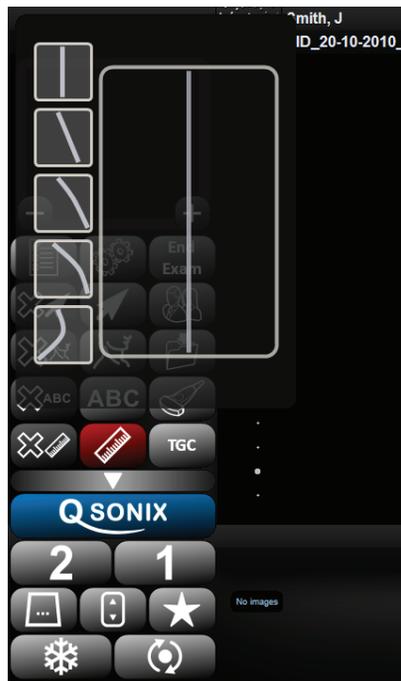
Alternatively, tap one of the pre-configured **TGC** settings and use it as is, or as a base for editing a personalized **TGC** setting.

Once accessed, the **TGC** configuration box must be edited right away, otherwise it will auto-close after five (5) seconds.

Note: *TGC settings are saved to user-defined Presets (4.8).*

Ultrasonix recommends a center position (default) for TGC settings.

Figure 3-14: TGC Settings





ULTRASONIX

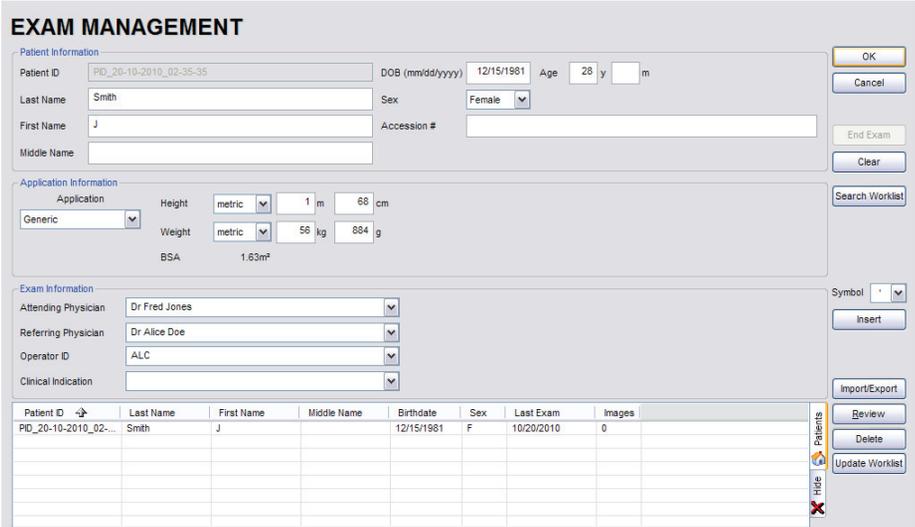
CHAPTER 4: PATIENT MANAGEMENT

Exam Management functionality allows users to enter patient/exam-related data into the system. Entering patient-specific data automatically creates a unique file in which the patient/exam data is stored.

4.1 ENTERING PATIENT DATA

The **Exam Management** page is sectioned into **Patient Information**, **Application Information** and **Exam Information** data entry areas. If applicable, data can be accessed via the storage/database tabs at the bottom right side of the page (**Patient** and **Worklist**).

Figure 4-1: Exam Management Page



EXAM MANAGEMENT

Patient Information

Patient ID: PID_20-10-2010_02-35-35 DOB (mm/dd/yyyy): 12/15/1981 Age: 28 y m

Last Name: Smith Sex: Female

First Name: J Accession #:

Middle Name:

Application Information

Application: Generic Height: metric 1 m 68 cm

Weight: metric 56 kg 884 g

BSA: 1.83m²

Exam Information

Attending Physician: Dr Fred Jones

Referring Physician: Dr Alice Doe

Operator ID: ALC

Clinical Indication:

Patient ID	Last Name	First Name	Middle Name	Birthdate	Sex	Last Exam	Images
PID_20-10-2010_02-...	Smith	J		12/15/1981	F	10/20/2010	0

Buttons: OK, Cancel, End Exam, Clear, Search Worklist, Symbol, Insert, Import/Export, Review, Delete, Update Worklist

Bottom Panel: SonixTABLET keyboard interface with keys for &, 7, *, 8, (, 9, Esc, ~, ., Bksp, Ins, Home, PgUp, \$, %, ^, 5, 6, Prt Scn, Tab, q, w, e, r, t, y, u, i, o, p, {, }, |, \, Del, End, PgDn, !, @, #, 3, +, =, Caps, a, s, d, f, g, h, j, k, l, ;, ', ", Enter, ←, ↑, ↓, →,) 0, ., -, Shift, z, x, c, v, b, n, m, <, >, ?, /, Alt, Ctrl



Table 4-1: Exam Management Page Options

	Saves the changes made to the Exam Management page and returns to imaging.
OK	Note: If a unique Patient ID is not entered manually the system will create one automatically (e.g., {C9B3F82B-BE52-4C79-8C45-28375D69F8C9}).
Cancel	Cancels any changes made to the Exam Management page and returns to live imaging. Cancel will not undo the End Exam function.
End Exam	Ends the current exam session, clears the Patient , Application and Exam data fields and prints/clears the printer queue (e.g., if printer image sheet is set for 2x2 and only two (2) images were saved, ending the exam signals the system that no more images are coming to fill up the sheet and sends the image sheet to the printer). All measurements visible on the LCD display are cleared. Note: Before ending an exam, ensure the active image has been saved/printed using the console 1 or 2 button (8.2.12 Custom Keys) in order to be able to recall it via the Review button on the Exam Management page or the Exam Review button on the touch screen.
Clear	Clears the Patient and Exam data fields. Clear will also "end" the current exam if one is open, however, it does not delete the file.
Search Worklist	Enables a DICOM or ERM Worklist search.
Insert (Symbol)	Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).
Import/Export	Use to Export data to an alternate storage device. Deleting the exported data from the local drive is optional. If the data was deleted during the Export phase, it can be reinstalled at a later date using the Import option.
Review	Opens the Exam Review page for the current patient or patient(s) selected from Patient file storage.
Delete	Removes the currently selected patient(s) from Patient file storage.
Update Worklist	Updates a DICOM or ERM Worklist search. Note: This button will only be available if the system is configured for DICOM (8.2.11.3 DICOM Worklist Settings). In order to actually update Worklist data, the system must also have an active connection to a DICOM server.
Tabs	<ul style="list-style-type: none"> • Patients: list of Patients/Exams currently available on the system • DICOM <ul style="list-style-type: none"> • Worklist: if enabled in DICOM • Store Queue: if enabled in DICOM • Print Queue: if enabled in DICOM • Hide: hides data to preserve privacy. <p>Note: Refer to 4.7 Storage/Database Tabs for more details.</p>

To Access the Exam Management Page:

1. Tap the touch screen button.

4.1.1 Patient Information

Figure 4-2: Data Fields for Patient Information



The screenshot shows a form titled "Patient Information" with the following fields:

- Patient ID: Text input field
- DOB (mm/dd/yyyy): Text input field with a date picker icon
- Age: Two input fields for years (y) and months (m)
- Last Name: Text input field
- Sex: Dropdown menu with "Unknown" selected
- First Name: Text input field
- Accession #: Text input field
- Middle Name: Text input field
- Insurance #: Text input field

Table 4-2: Patient Information Fields

Patient ID	Enter the Patient Identifier using letters and/or numbers. The system automatically creates a unique Patient ID if one is not entered manually (e.g., {C9B3F82B-BE52-4C79-8C45-28375D69F8C9}). Note: <i>The Patient ID cannot be changed after the patient file has been created (i.e., an exam has begun).</i>
Last Name First Name Middle Name	Enter the patient's Last , First and Middle Names —any of which can be modified at any point during the exam.
DOB (Date Of Birth)	Enter the patient's Date of Birth in the required format (e.g., mm/dd/yyyy) which is controlled through the Regional Settings options selected in 8.2.9 System Settings . Note: <i>A DOB entry will auto-populate the Age field.</i>
Age	Rather than entering a specific DOB , enter the patient's actual Age . Note: <i>The Age field will auto-populate if a DOB is entered.</i>
Sex	Select the patient's gender: Female , Male , Other or Unknown .
Accession #	Enter the exam's Accession Number . Note: <i>This field auto-populates when the DICOM Worklist is used.</i>
Insurance #	Enter the patient's Insurance Number .

Notes:

During imaging, if **Patient ID**, **Name**, **LMP**, etc. are not displayed at the top of the image screen, the system may be setup to hide this patient data. For details, refer to **General Options (Table 8-35)** in **8.2.15 Patient Settings**.

All these fields can be completed using the barcode reader. Simply ensure the cursor is in the required field and scan the relevant barcode.



To Enter Patient Information Manually:

1. Tap the touch screen  button.
2. Use the keyboard, trackball and console  button to enter the patient information as required.



Patient Information			
Patient ID	<input type="text"/>	DOB (mm/dd/yyyy)	<input type="text" value="mm/dd/yyyy"/> Age <input type="text"/> y <input type="text"/> m
Last Name	<input type="text"/>	Sex	<input type="text" value="Unknown"/>
First Name	<input type="text"/>	Accession #	<input type="text"/>
Middle Name	<input type="text"/>	Insurance #	<input type="text"/>

Note: The **Tab** key may be used to move through the various data fields and the **Enter** key to make drop-down menu selections.

To Enter Patient Information with the Barcode Reader:

1. Tap the touch screen  button.
2. With the cursor in the **Patient ID** field, scan the relevant patient barcode with the barcode reader.
3. Continue entering the patient/exam data as required.

Note: Fields that will accept data entry via the keyboard will also accept data scanned with the barcode reader. Simply ensure that the cursor is located in the required field then scan the relevant barcode.

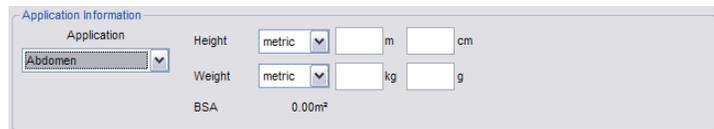
4.1.2 Application Information

Use this section of the **Exam Management** page to select the appropriate **Application** in order to enter **application**-specific data (e.g., for **Abdomen**, enter **Height** and **Weight**).

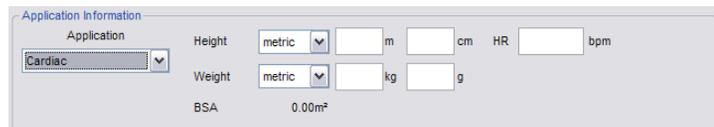
Note: The **Application** selected here is not tied to an **Imaging Preset** or **Exam Type/ Application**.

Table 4-3: Application Information Fields

Abdomen
Biliary
Bladder
Foreign Bodies
Generic
Lower Extremity
MSK
Nerve Block
Procedure
Renal
Small Parts
Thoracic
Trauma (FAST)
Urology
Vascular
Vascular Access



- **Height** and **Weight** have both metric and imperial measurement options
- **BSA (Body Surface Area)** is calculated and displayed when **Height/Weight** is entered.



Cardiac

- **Height** and **Weight** have both metric and imperial measurement options
- **BSA (Body Surface Area)** is calculated and displayed when **Height/Weight** is entered
- **HR (Heart Rate) bpm (beats per minute)** can be entered manually for use in **Cardiac** calculations during imaging.

Note: If no **HR** is entered, then it must be measured during imaging in order to be able to perform many of the different **Cardiac** calculations. Refer to [6.7.3 Cardiac Reports](#) for more details.

Application Information

Application: OB 1st Trimester

LMP (mm/dd/yyyy): mm/dd/yyyy

Gravida:

Fetus #: 1

GA: **w'd

Para:

BBT: °C

EDD: mm/dd/yyyy

Aborta:

- **LMP (Last Menstrual Period)** auto-calculates **GA (Gestational Age)** and **EDD (Estimated Date of Delivery)**

- **GA** auto-calculates **EDD**

Note: When either **OB** option is selected as the **Application**, **GA** will automatically be presented on the Patient Information Bar during imaging.

- **EDD** auto-calculates **GA**

Note: **LMP** or **GA** will display at the top of the image field in the selected Windows date format (e.g., mm/dd/yyyy). Both **weeks (w)** and **days (d)** are used to auto-calculate **EDD**. If the **GA** and **EDD** are entered manually, they will override the **LMP** field entry.

- **Gravida, Para** and **Aborta** fields
- **Fetus #** defaults to 1. Enter up to 8 for multiple gestations



Warning: In order to record measurements on multiple—but separate—fetuses, enter a **Fetus #** between 2 and 8 (i.e., to activate the **Fetus** toggle button in **OB Measurement Packages and Reports** (where 1 = A, 2 = B, etc.)).

- **BBT (Basal Body Temperature)** can be entered in °C (Celsius) or °F (Fahrenheit)

Note: **BBT** is only available if it was selected in **8.2.15 Patient Settings**.

- **Previous Exam** enables the entry of previous **OB** exam data for **Fetal Trending** (refer to **4.1.2.1 OB Previous Exam (Fetal Trending)** for details).

OB 1st Trimester
OB 2nd–3rd
Trimester

Application Information

Application: Pelvic

LMP (mm/dd/yyyy): mm/dd/yyyy

Gravida:

Exp. Ovul.: mm/dd/yyyy

Para:

Day of Cycles:

Aborta:

Pelvic

- **LMP**
- **Exp. Ovul. (Expected Date of Ovulation)**
- **Day of Cycles**
- **Gravida, Para** and **Aborta** fields.

Note: When **Pelvic** is selected as the **Application**, **LMP** will automatically be presented on the Patient Information Bar during imaging.

To Enter Application-Specific Data:

1. Tap the touch screen  button.
2. Tab to the **Application** drop-down menu on the right side of the **Application Information** section.
3. Select the desired **Application** from the drop-down menu.



Warnings:

*In order to record measurements on multiple—but separate—fetuses, enter a **Fetus #** between 2 and 8 (i.e., to activate the **Fetus** toggle button in **OB Measurement Packages** and **Reports** (where **1 = A, 2 = B, etc.**)).*

*In addition to entering the correct **Fetus #** on the **Exam Management** page, be sure to label each **Fetus** using the touch screen **ABC** button.*

Notes:

*The **Application**-related data entry fields to the right of the **Application Information** section change with the selection of the various **Applications** (refer to [Table 4-3](#) to view examples of the various options available).*

*Once the cursor is placed in a data entry field, the **Tab** key (on the touch screen keyboard) may be used to move through the various data fields and the **Enter** key may be used to toggle through drop-down menu selections.*

4.1.2.1 OB Previous Exam (Fetal Trending)

Previous Exam allows users to manually enter data from previous OB exams in order to track **Fetal Trending** details for up to three (3) **Fetuses**.

Figure 4-3: Previous Exam (Fetal Trending)

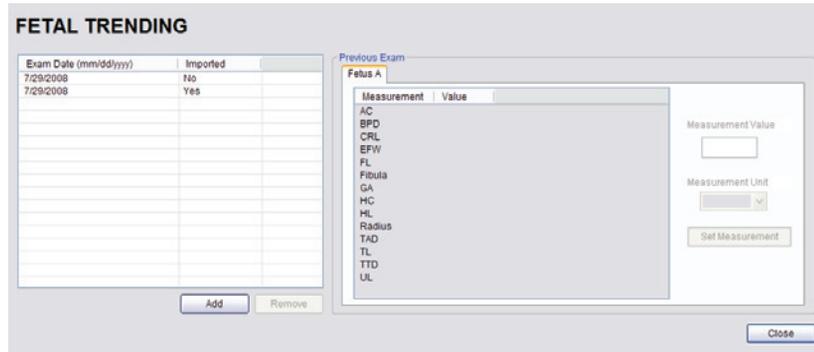
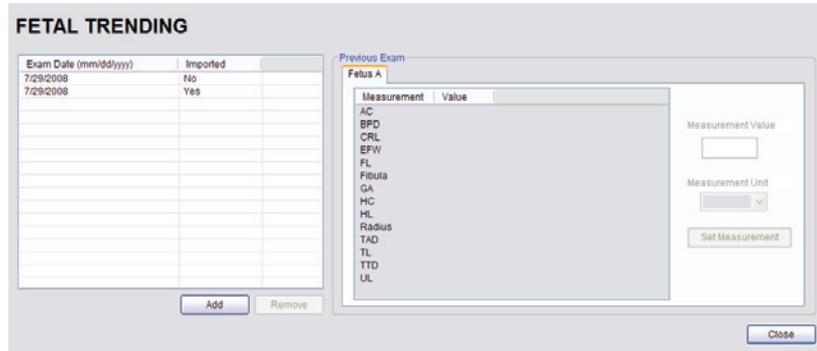


Table 4-4: Previous Exam (Fetal Trending)

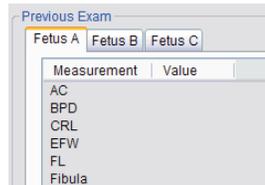
Exam Date (mm/dd/yyyy)	Indicates the date of the exam, if the exam is on the system or the date of the exam for which data was manually entered.
Imported	Yes or No indicates whether or not exam data is being read from the system (Imported = No) or has been entered manually (Imported = Yes).
Add	Select to manually enter Previous Exam data.
Remove	Select to remove Previous Exam data. Note: This option is only available for Imported data. Exams that exist on the system cannot be removed from the Fetal Trending page.
Previous Exam	Fetus A, B, C Selects the Fetus for which the exam data is applicable. Note: The number of Fetus tabs will correspond exactly to the Fetus # entered on the Exam Management page, e.g., if the Fetus # is "2" only the Fetus A and Fetus B tabs will be available.
	Measurement Lists the type of Measurement for which data will be entered.
	Value Lists the Value of the entered Measurement .
	Measurement Value Measurement Value data entry field. Note: Measurements can be edited while the exam remains active. Once it has been closed, the exam would have to be deleted and the data re-entered in order to make any edits.
	Measurement Unit Shows the relevant Measurement Unit , e.g., days , cm or g (grams) .
	Set Measurement Accepts the Measurement once it has been entered.

To Enter Previous OB Exam Data for Fetal Trending:

1. Tap the touch screen  button.
2. Select a **Patient** from the **Patient Database**.
3. Select **Previous Exam** from the **Application Information** data entry section to access the **Fetal Trending** page.

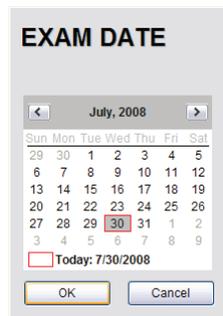


4. If required, select the relevant **Fetus** tab (**Fetus A**, **Fetus B** or **Fetus C**).



Note: The number of **Fetus** tabs will correspond exactly to the **Fetus #** entered on the **Exam Management** page, e.g., if the **Fetus #** is "2" only the **Fetus A** and **Fetus B** tabs will be available.

5. Select the **Add** button to access the **Exam Date** selector.



Note: The system will only allow the addition of one (1) exam per date.



6. Select the relevant date for the **Previous Exam**.

Note: The current date is always enclosed in a red box.

To change the current month, uses the arrow selectors on either side of the calendar header

7. Select **OK** to accept the changes or **Cancel** to exit without saving.

Note: The newly added exam date will be highlighted under **Exam Date (mm/dd/yyyy)** on the left hand side of the **Fetal Trending** page.

8. Under **Previous Exam**, highlight the desire **Measurement** and enter the relevant data in the **Measurement Value** data entry field.

9. Select the **Set Measurement** button.
10. Continue adding **Measurements** in the same manner until all data has been entered for the current **Fetus**.
11. Repeats step 4 to 10 for any additional **Fetus(es)**.
12. Select **Close** to accept the data and return to the **Exam Management** page.
13. The data entered is plotted on the growth graphs as part of the OB report package.

4.1.3 Exam Information

Figure 4-4: Exam Information Fields



The screenshot shows a form titled "Exam Information" with the following fields:

- Attending Physician: A drop-down menu.
- Referring Physician: A drop-down menu.
- Operator ID: A drop-down menu with the value "ALC" selected.
- Clinical Indication: A drop-down menu.
- Custom 1: A drop-down menu.
- Custom 2: A drop-down menu.
- Custom 3: A drop-down menu.
- Custom 4: A drop-down menu.

Table 4-5: Exam Information Fields

Attending Physician	Enter name of the Attending Physician manually or select from drop-down menu of previously entered and currently active physician names.
Referring Physician	Enter name of the Referring Physician manually or select from drop-down menu of previously entered and currently active physician names. Referring Physician auto-populates when the patient is selected from DICOM Worklist .
Operator ID	Enter name or initials of the Operator or select from drop-down menu of previously entered and currently active Operator IDs . Operator ID appears at the top of the screen during imaging.
Clinical Indication	Enter Clinical Indication manually or select from drop-down menu of previously entered and currently active Clinical Indications . Clinical Indication auto-populates when the patient is selected from DICOM Worklist , but can be modified.
Custom Label 1, 2, 3, 4	Enter user-defined data manually or select from drop-down menu of previously entered and currently active data.

Notes:

Refer to [8.2.15 Patient Settings](#) for details on adding, editing and maintaining data for these fields.

Attending Physicians and Operator IDs can also be added via [3.3.1 Quick Exam Start-Up](#).

All these fields can be completed using the barcode reader. Simply ensure the cursor is in the required field and scan the relevant barcode.



To Enter Exam Information Manually:

1. Tap the touch screen  button.
2. Enter **Exam Information** as required. Once entered, the text is available for recall from the drop-down menu.

Note: Use the **Tab** or **Enter** key to move around the **Exam Information** fields. Drop-down menu selections can be made with the trackball and  button.

To Enter Exam Information with the Barcode Reader:

1. Tap the touch screen  button.
2. With the cursor in the **Attending Physician** field, scan the relevant patient barcode with the barcode reader.
3. Continue entering the patient/exam data as required.

Note: Fields that will accept data entry via the keyboard will also accept data scanned with the barcode reader. Simply ensure that the cursor is located in the required field then scan the relevant barcode.

4.2 SELECTING AN APPLICATION–TRANSDUCER–PRESET COMBINATION

Imaging Presets specific to each **Application** are available with each of the system transducers. The **Applications** and **Presets** vary depending on the transducer type. Additional user-defined **Imaging Presets** (4.8) may be created and stored with the factory installed or default **Presets**. Due to space limitations, **Applications** and **Presets** may continue on to another page. Use the page selector buttons to move forward and back through the available options.

Refer to [C.4 Ultrasound Indications For Use Tables](#) for **Clinical Application** details on each transducer type.

Note: Always tap the **Preset** last as the system automatically moves to imaging after **Preset** selection.

To Select/Change an Application–Transducer–Preset Combination:

1. Tap the touch screen  button.

Note: The currently selected **Application–Transducer–Preset** combination is highlighted.

2. Tap the desired **Transducer**.



3. Tap the desired **Application**.
4. Tap the desired **Imaging Preset** and the system will move to live imaging.

Note: If the connected transducers do not support the selected **Application**, a message to that effect will be presented (e.g., "**The connected transducers do not support the Cardiac Application.**").

Note: If an **Imaging Preset** has been hidden, it will not be available for selection from the touch screen (or QSonix). This option applies to both default and user-defined **Imaging Presets**. Refer to [8.2.1.1 Show/Hide Imaging Presets](#) for more details.



4.3 BEGINNING AN EXAM FOR A NEW PATIENT

Note: Refer to [4.7.1.1](#) for details on beginning an exam with an existing patient.

To Begin an Exam for a New Patient (Manual Entry):

1. Tap the touch screen  button.

Note: The text cursor defaults to the **Patient ID** field unless a current exam is open. To end the current exam session, select the **End Exam** button near the top right corner of the page.

2. Enter **Patient Information** as required.

Note: The **Patient ID** cannot be edited once the exam is underway.

3. Under **Application Information**, select the appropriate **Application** in order to access the **Application**-specific data fields (e.g., for **Cardiac**, complete the **Height** and **Weight** fields).

4. Enter **Exam Information** as required.

5. To save the changes and move to live imaging, select **OK** on the **Exam Management** page or tap **OK** on the touch screen.

Note: The **Patient ID**, **Name** and **Operator ID** details appear at the top of the image field during an exam. When applicable, **GA** will also be displayed.

If the above-listed fields are relevant to the imaging session but are not displayed, the system may be configured to hide patient data. Refer to [General Options \(Table 8-35\)](#) for details.

To Begin an Exam for a New Patient (Barcode Reader):

1. Tap the touch screen  button.
2. With the cursor in the **Patient ID** field, scan the relevant patient barcode with the barcode reader.
3. Continue entering the patient/exam data as required.

Note: Fields that will accept data entry via the keyboard will also accept data scanned with the barcode reader. Simply ensure that the cursor is located in the required field then scan the relevant barcode.

4.4 BEGINNING AN EXAM WITH NO PATIENT SELECTED

It is possible to begin an exam without first entering any patient data on either the **Exam Management** page or via **QSonix**. With an unassigned exam, if a measurement is taken or an image is saved, **Operators** will be required to assign or discard the data before being permitted to end the exam.

Note: *If no data was saved, the exam cannot be assigned to a Patient.*

Before attempting to begin an exam with no Patient assigned, ensure that **Enable Unassigned Exam** has been selected in the **Patient Settings** dialog (under **General Options** in [Table 8-35](#)).



Warning: *Exams that are assigned to a Patient after images have been saved do not include identifying Patient data (such as **Patient ID** or **Name**).*

*Organizations that elect to configure/use the **Enable Unassigned Exam** functionality provided by Ultrasonix are assuming all liabilities and risks associated with that decision.*

There are three (3) methods to assign data to a Patient. On the touch screen, tap:

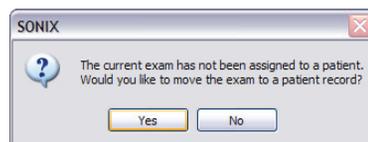
- **End Exam**: After assigning a Patient the exam will end.
- : After assigning a Patient the **Operator** has the option of continuing the exam.

Note: *If the **Operator** continues with the exam, all subsequent data saved to the exam will include identifying Patient data (such as **Patient ID**).*

- **QSONIX**: After assigning a Patient the **Operator** can continue imaging.

To Assign an Exam to a Patient after Tapping End Exam:

1. Ensure **Enable Unassigned Exam** was selected in the **Patient Settings** dialog (under [General Options](#) in [Table 8-35](#)).
2. Ensure no Patient is currently selected.
3. Begin an exam and ensure that at least one (1) measurement is taken or one (1) image is saved.
4. Ensure the system is at the main touch screen (e.g., if the touch screen is at **Measurement Packages**, tap the **Close** button to return to the main touch screen).
5. Tap the touch screen **End Exam** button and select **Yes** to assign the exam to a Patient or **No** to discard the data.



6. If **Yes** was selected in [step 5](#), the **Assign Exam** page will be presented.



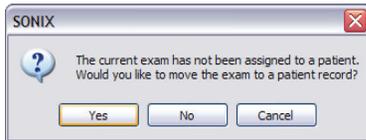
7. Enter the relevant data for a new patient or select an existing one.

Note: *The **Assign Exam** page contains all the same fields and options as the **Exam Management** page (4.1).*

8. Tap **OK** to exit.

To Assign an Exam to a Patient after Tapping Exam Mgmt:

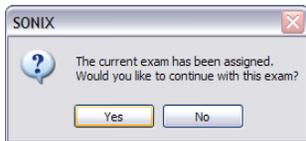
1. Ensure **Enable Unassigned Exam** was selected in the **Patient Settings** dialog (under **General Options** in **Table 8-35**).
2. Ensure no **Patient** is currently selected.
3. Begin an exam and ensure that at least one (1) measurement is taken or one (1) image is saved.
4. Ensure the system is at the main touch screen (e.g., if the touch screen is at **Measurement Packages**, tap the **Close** button to return to the main touch screen).
5. Tap the touch screen  button and select **Yes** to assign the exam to a Patient, **No** to discard the data and move to the **Exam Management** page or **Cancel** to return to imaging.



6. If **Yes** was selected in **step 5**, the **Assign Exam** page will be presented.
7. Enter the relevant data for a new patient or select an existing one.

Note: *The **Assign Exam** page contains all the same fields and options as the **Exam Management** page (4.1).*

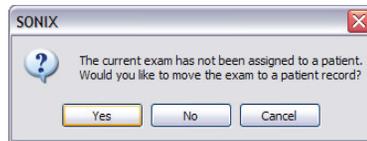
8. Select **OK** to exit.
9. When prompted, select **Yes** to continue imaging or **No** to end the exam.



Note: *If the **Operator** continues with the exam, all subsequent data saved to the exam will include identifying Patient data (such as **Patient ID**).*

To Assign an Exam to a Patient after Tapping Q_{SONIX}:

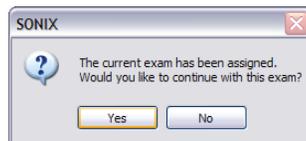
1. Ensure **Enable Unassigned Exam** was selected in the **Patient Settings** dialog (under **General Options** in [Table 8-35](#)).
2. Ensure no **Patient** is currently selected.
3. Begin an exam and ensure that at least one (1) measurement is taken or one (1) image is saved.
4. Ensure the system is at the main touch screen (e.g., if the touch screen is at **Measurement Packages**, tap the **Close** button to return to the main touch screen).
5. Tap the touch screen **Q_{SONIX}** button and select **Yes** to assign the exam to a Patient, **No** to discard the data and enter **QSonix** or **Cancel** to return to imaging.



6. If **Yes** was selected in [step 5](#), the **Assign Exam** page will be presented.
7. Enter the relevant data for a new patient or select an existing one.

Note: *The **Assign Exam** page contains all the same fields and options as the **Exam Management** page (4.1).*

8. Select **OK** to exit.
9. When prompted, select **Yes** to continue imaging or **No** to end the exam.



Note: *If the **Operator** continues with the exam, all subsequent data saved to the exam will include identifying Patient data (such as **Patient ID**).*



4.5 ENDING AN EXAM

To End the Current Exam Session:

1. Tap the touch screen  button.
2. Tap  on the touch screen or select **End Exam** from the **Exam Management** page.

Note: **End Exam** ends the current exam session, clears the **Patient** and **Exam** data fields and clears the printer queue (i.e., if printer image sheet is set for **2x2** and only two (2) images were saved, **End Exam** signals the system that no more images are coming to fill up the sheet).

Before ending an exam, ensure the active image has been saved/printed using the touch screen **1** or **2** button (**8.2.12 Custom Keys**) in order to be able to recall it via the **Review** button on the **Exam Management** page or the **Exam Review** button on the touch screen.

4.6 EXAM IMPORT/EXPORT

Exam Import/Export enables data to be copied to and from the system, allowing users to make backups that can be imported again at a later date.

Note: *The data to be backed up can be configured using either **Date** or **Patient-specific** criteria.*

When first entering the **Exam Import/Export** page, the default action will always be **Export**. In order to import patient data, simply select any **Source** other than **Local Patient Data** and the button will change from **Export** to **Import**.

Figure 4-5: Exam Import/Export

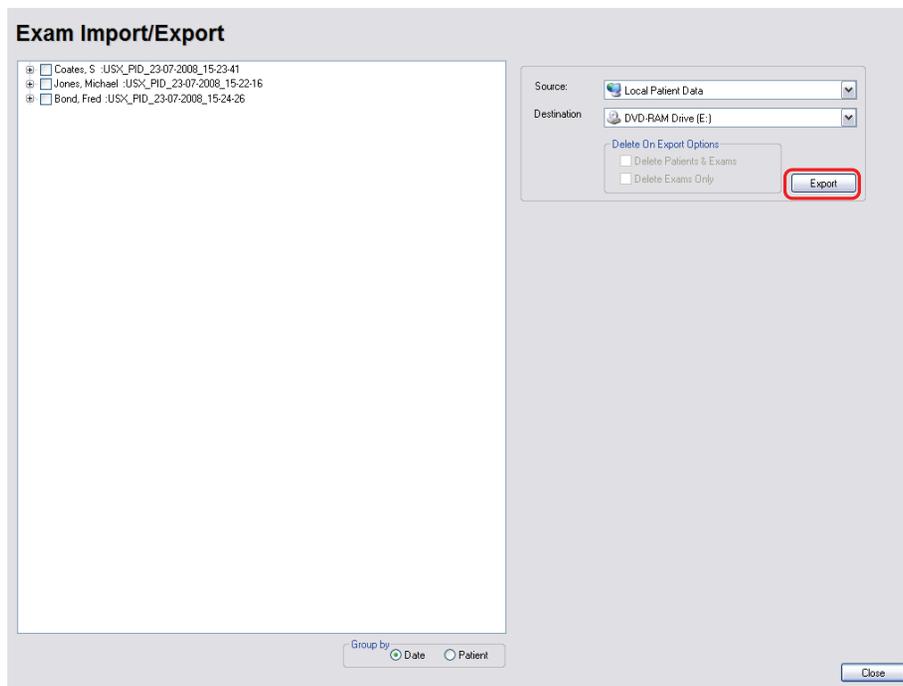




Table 4-6: Exam Import/Export

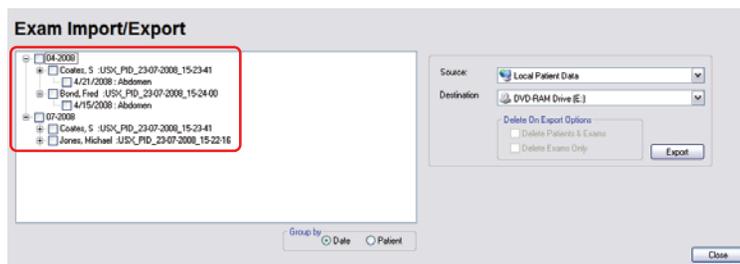
		When importing, select a Source location.
Source		<p>Note: Only currently available Sources will be presented. If the required data is not accessible, ensure the correct media has been connected to the system.</p> <p>For Export, the Source must be Local Patient Data.</p> <p>For Import, the Destination must be Local Patient Data.</p>
		When exporting, select a Destination for the Patient/Exam data.
Destination		Note: Only currently available Destination locations will be presented.
Delete On Export Options		Enables users to decide which exams—if any—to auto-delete after the Exam Export is complete.
	Delete Patient and Exams	<p>Select to delete both the Patients and Exams selected for Export. The deletion will auto-complete after the Export is finished.</p> <p>Note: Once exported, deleted Patients and Exams can be imported at a later date using the Exam Import function.</p>
	Delete Exams Only	<p>Select to delete only the Exams selected for Export. The deletion will auto-complete after the Export is finished.</p> <p>Note: Once exported, deleted Exams can be imported at a later date using the Exam Import function.</p>
Group by	Date	Groups the available Exams by Date .
	Patient	<p>Groups the available Exams by Patient.</p> <p>Note: This is the default setting.</p>

To Access Exam Import/Export:

1. Tap the touch screen button.
2. Select the **Import/Export** button.

To Export Exam Data:

1. Tap the touch screen  button.
2. Select the **Import/Export** button.
3. If desired, change the **Group by** option from **Patient** to **Date**.
4. Select the desired **Patients** and/or **Exams**.



5. From the **Source** drop-down menu, select **Local Patient Data**.

Note: *Local Patient Data* is the only **Source** for exporting data.

6. From the **Destination** drop-down menu, select the **Export Destination**.

Note: *The Delete On Export Options* will not be available for selection until a valid **Destination** location is selected.

*To create a backup without removing the data from the system, leave both **Delete On Export Options** unselected.*

7. Select the **Export** button to begin the backup.
8. When the **Export** is complete, the following message will be presented.

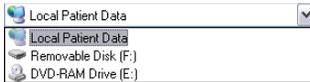


Note: *If Delete On Export Options* were selected, the data will be deleted before the **Export process is complete** message is presented.



To Import Exam Data:

1. Tap the touch screen  button.
2. Select the **Import/Export** button.
3. From the **Source** drop-down menu, select the **Source** of the data to be imported.



Note: The following actions will auto-complete once the data **Source** is changed from **Local Patient Data**:

- **Destination** drop-down menu will change to **Local Patient Data**
- **Export** button will change to **Import**.

-
4. From the list presented on the left hand side of the **Exam Import/Export** page, select the data to be imported.
 5. Select the **Import** button to begin the procedure.
 6. When the **Import** is complete, the following message will be presented.



Note: If the data selected for **Import** is already available on the system, it will not be imported, i.e., it will not overwrite the existing data.

4.7 STORAGE/DATABASE TABS

To the bottom right of the **Exam Management** page is a series of up to three (3) vertical **Storage** tabs.

Table 4-7: Storage/Database Tabs

Patients	Select to display a list of patients stored in local memory.
DICOM	Select to display the patient list recently retrieved from the DICOM or EMR Worklist server. Worklist <i>Note: This tab is available only when the system is configured for DICOM (8.2.11) or EMR (8.2.15.1).</i>
	Select to display the current DICOM Storage Queue . Store Queue <i>Note: This tab is available only if DICOM is licensed and a Storage Server has been configured (8.2.11.1).</i>
	Select to display the current DICOM Print Queue . Print Queue <i>Note: This tab is available only if DICOM is licensed and a Print Server has been configured (8.2.11.2).</i>
Hide	Select to blank out patient data on the Exam Management page. This feature provides data privacy.

4.7.1 Patients

Using data entered in [4.1.1 Patient Information](#), the system maintains and displays a database containing patient details.

Figure 4-6: Patients Database

Patient ID ↕	Last Name	First Name	Middle Name	Birthdate	Sex	Last Exam	Images	
PID_20-10-2010_02-...	Smith	J		12/15/1981	F	10/20/2010	0	

Table 4-8: Patients Database

(Patient) ID	Patient Identifier as entered in the Patient Information section.
Last Name First Name Middle Name	Patient's Last , First and Middle Names as entered in the Patient Information section.
Birthdate	Patient's Birthdate as entered in the Patient Information section.
Sex	Patient's Sex as entered in the Patient Information section.
Insurance (#)	Patient's Insurance Number (if applicable) as entered in the Patient Information section.
Last Exam	Date of the Last Exam performed on the patient (if applicable).
(Number of) Images	Total number of Images stored for the patient's most recent exam.

4.7.1.1 Manipulating the Patients Database

To Manually Select a Previously Stored Patient from the Patients Database:

1. Tap the touch screen  button.
2. Select the **Patients** tab near the bottom of the **Exam Management** page to display a list of locally stored (on the system hard drive) patients or use the **Exam Management** touch screen **Toggle Tabs** button to move to the appropriate database.

Patient ID	Last Name	First Name	Middle Name	Birthdate	Sex	Last Exam	Images
PID_20-10-2010_02-...	Smith	J		12/15/1981	F	10/20/2010	0

3. Select a patient and auto-populate the data fields.
4. Modify patient and exam data fields as required.

Note: The **(Patient) ID** cannot be modified.

5. Select **OK** to save the data and move to live imaging.

Note: When a new exam is initiated, the transducer used in the most recent exam will still be selected if it is still connected. If it's no longer connected, the system will default to the first available transducer. This default transducer selection is not affected even if the system is turned off between exams.

To Search the Patients Database for a Previously Stored Patient:

1. Tap the touch screen  button.
2. Select the **Patients** tab near the bottom of the **Exam Management** page to display a list of locally stored (on the system hard drive) patients or use the **Exam Management** touch screen **Toggle Tabs** button to move to the appropriate database.
3. Select the **Field Header** of the data to searched (e.g., **Last Name**).
4. Use the keyboard to enter the patient search data (**Patient ID** or **Name**, etc.).

Note: The **Patients Database** narrows the list of patients to those that match entered search criteria.

5. When the list has been narrowed sufficiently (e.g., to one **Patient ID** or all patients with the desired **Last Name**), select the desired patient.



To Change the Layout of the Patient Data Columns:

1. Tap the touch screen  button.
2. Position the arrow cursor over the **Field Header** to be moved.

Patient ID 	Last Name	First Name	Middle Name	Birthdate	Sex	Last Exam	Images	
PID_20-10-2010_02-...	Smith	J		12/15/1981	F	10/20/2010	0	

3. Tap and drag the column to the desired location.

Figure 4-8: DICOM Worklist Search

WORKLIST SEARCH

Search Criteria

Patient ID Start Date (mm/dd/yyyy) Station AE Title

Last Name End Date (mm/dd/yyyy) Station Location

First Name Exam Type Modality Type

Accession # Procedure ID

ID	Accession #	Last Name	First Name	Exam Type	Date/Time	Procedure Description
PD321	acc_full	Lfull	Ffull	Abdomen	4/12/2011	Abdomen
PD322		LastN	FirstN	Cardiac	4/12/2011	Cardiac
PD323	acc_nodob	Lnodob	Fnodob	Pelvic	4/12/2011	Pelvic

4.7.2.1 Manipulating the DICOM Worklist Database

To Perform a DICOM Worklist Search:

1. Tap the touch screen  button.
2. Select **Search Worklist**.
3. When the **Worklist Search** page appears on the screen enter the patient **Search Criteria** data (**Patient ID** or **Name**, etc.).

WORKLIST SEARCH

Search Criteria

Patient ID Start Date (mm/dd/yyyy) Station AE Title

Last Name End Date (mm/dd/yyyy) Station Location

First Name Exam Type Modality Type

Accession # Procedure ID

Note: *Worklist* text fields can be searched with wildcards, e.g., entering **SMI*** in the **Last Name** field will find all names beginning with **SMI**.

4. Select **Search** to update the **Worklist** with the results of the advanced search.

Notes:

The parameters from the last search will be retained for the duration of the current (computer-defined) date.

Worklist Search results are limited to a maximum of 100 records. Any result list longer than 100 records will be truncated.

To Select a Patient from the DICOM Worklist:

1. Tap the touch screen  button.
2. Select the **Worklist** tab to display the **DICOM Worklist** database or use the **Exam Management** touch screen **Toggle Tabs** button to move to the appropriate database.
3. If the desired patient is not available on the list, select **Update Worklist** to refresh the data.

Note: Updates will be based upon the last search performed.

4. Select the desired patient and the patient data fields will auto-populate.
5. Modify patient and exam data fields as required.

Note: The **Patient ID** cannot be modified.

*Modifications to auto-populated **Worklist** fields (**Name** and **Accession #**) are not recommended.*

6. Select **OK** to save the data, create a patient in the **Patient** database and move to live imaging.

Note: The patient file is automatically deleted at the end of the exam if no images or measurements are stored to the system for this patient.

Note: When a new exam is initiated, the transducer used in the most recent exam will still be selected *if* it is still connected. If it's no longer connected, the system will default to the first available transducer. This default transducer selection is not affected even if the system is turned off between exams.



4.7.3 Hide

Selecting the **Hide** tab will instantly blank all patient data visible in the **Patients** or **Worklist** database. This is very useful when an **Operator** needs to quickly protect the privacy of patient data that would otherwise be visible to anyone within viewing distance.

To reveal patient data, simply select another database tab.

Figure 4-9: Hide Tab



4.8 USER-DEFINED PRESETS FOR NON-3D/4D FORMATS

User-defined **Presets** may be created and saved to the selected **Application**. They are presented for selection along with factory defaults when selecting **Transducer**, **Application** and **Preset**. Refer to [8.2.1 Presets](#) for more details on user-defined **Presets**.

Note: When saving user-defined **Presets** in  or , the actual mode is also saved as part of the **Preset**.

During imaging, a user-defined **Preset** name is shown on the LCD display in square brackets (e.g., [**User-Defined Preset**]).

Note: When configuring a user-defined **Preset** for **M**, **PW** or **Triplex** mode, be sure to move to the desired **Layout** as this setting will be saved with the **Preset**. Refer to sections [5.1.7](#), [5.3](#) and [5.3.3](#) for more details.

TGC settings ([3.5.9](#)) are saved to user-defined **Presets** as well.

To Save User-Defined Presets:

1. Tap the touch screen  button.
2. Select an appropriate **Application–Transducer–Preset** combination where the **Preset** is similar to the required user-defined **Preset**.



3. Once the system moves to live imaging, adjust the imaging parameters (e.g., **Depth**, **Dynamic Range**, **Gain**, **Sector Size**, etc.) and **TGC** settings.
4. Tap the touch screen  button.
5. Tap **Save Preset....**



- When the **Save Preset** dialog is presented, chose the appropriate **Application** under which the new **Preset** will be stored from the **Select Application** drop-down menu.

SAVE PRESET

Select Application
Abdomen

Preset Name

OK Cancel

Note: If a user-defined **Preset** with the same name already exists, the system will present a message requiring the user to overwrite (**Yes**), save with a new name (**No**) or exit without saving (**Cancel**).

- Use the touch screen keyboard to enter a **Preset Name**.
- Select **OK** to save the **Preset** or **Cancel** to exit without saving.
- The user-defined **Preset** will now be available on the **Imaging Presets** page under the selected **Application**.

Note: Refer to [8.2.1 Presets](#) for more details on **Imaging Presets**.

CHAPTER 5: IMAGING

Tap the touch screen  button to access SonixTablet mode selection buttons ([Figure 3-5](#)). Any mode that is not already active is a purchasable option controlled through [8.2.21 Licensing](#). Talk to your sales representative or call Ultrasonix Technical support for details on purchasing/activating additional imaging modes.

Refer to [3.5 Touch Screen Layout](#) for details on touch screen buttons.

Note: Refer to [3.5.9](#) for details on configuring **Time Gain Compensation** settings.

5.1 BASIC 2D IMAGING

2D or **B-Mode** is the system's default imaging mode. Any time a user toggles out of an imaging mode (other than the combined mode of **Color/PW**) the system will default back to **B-Mode**.

The system's broadband transducers provide a range of imaging **Frequencies**:

- **Harmonics:** artifact reduction (not available with all transducers)
- **Resolution:** highest frequency
- **General:** standard imaging frequency
- **Penetration:** lowest frequency
- **EPI:** greater penetration and improved contrast resolution for the technically difficult patient.

Note: **EPI** is a licensed option available for use with the C5-2/60 curved array transducer.

Figure 5-1: 2D/B-Mode Field Locations During Imaging

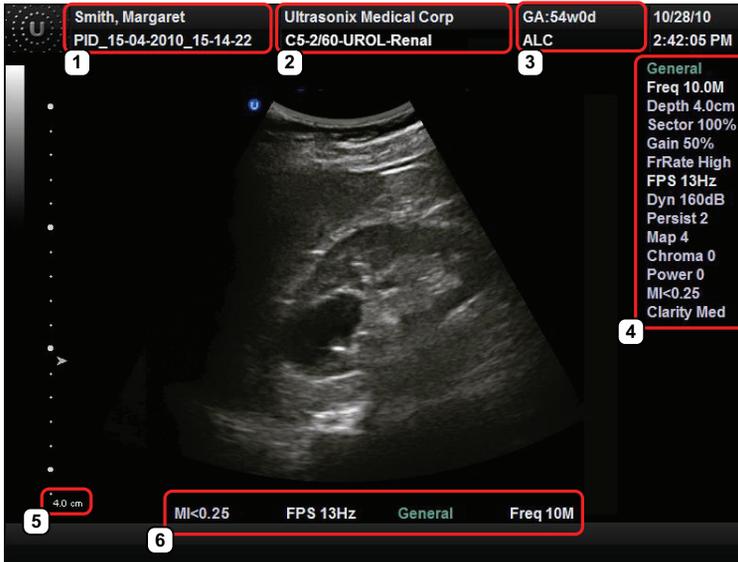
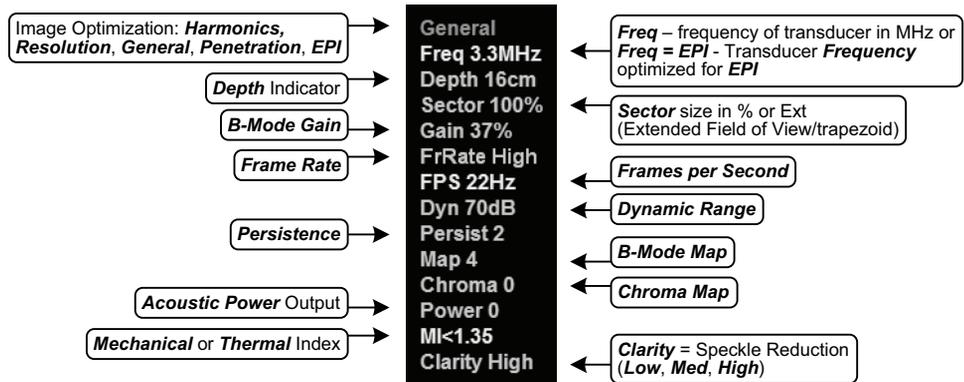


Table 5-1: 2D/B-Mode Field Locations During Imaging

1	Patient/Exam Information	<ul style="list-style-type: none"> 1: Patient Name and ID 2: Institution Name and Transducer–Application–Preset 3: GA (for OB), LMP (for Pelvic) and Operator ID.
Note: Refer to Chapter 4 and Chapter 8 for more details on Patient/Exam Information .		
4	2D/B-Mode Imaging Parameters	Refer to Figure 5-2 and Appendix E for details.
Note: If items 5 and 6 exist, then item 4 will not be visible. Refer to Parameters in Table 8-34 for more details.		
5	Depth	When Parameters is set to Subset , a Depth value will be placed under the Depth markers.
6	2D/B-Mode Imaging Parameter Subset	When Parameters is set to Subset , only four (4) imaging parameters will be displayed: MI/TI , FPS , Resolution and Freq .

Figure 5-2: 2D/B-Mode Onscreen Imaging Parameters



Note: Refer to [Appendix E](#) for details on touch screen Mode Action and Imaging Parameters buttons.

To Select/Adjust Touch Screen 2D Imaging Parameters:

1. Tap the touch screen  button.
2. Tap .
3. Tap the desired imaging parameter on the touch screen, e.g., **Persist(ence)**.
4. Turn the associated touch screen dial to adjust the imaging parameter (e.g., turn dial left to decrease **Persistence** or right to increase **Persistence**).

To Adjust the Imaging Frequency (Image Optimization):

1. Tap the touch screen  button.
2. Tap the top of the **Freq** button to adjust the parameter higher or the bottom to adjust it lower.

Note: If the **Freq** button is not visible on the touch screen, use the page selector buttons ([Figure 3-6](#)) to move through imaging parameter options to locate it.



5.1.1 Clarity (Speckle Reduction)

Clarity imaging mode enhances the **2D** image by performing adaptive filtering of the image. It provides improved visibility of real structures with various levels of speckle reduction.

To Adjust the Clarity (Speckle Reduction) Imaging Mode:

1. Tap the touch screen  button.
2. Tap .
3. Tap .
4. Tap the top of the **Clarity** button to adjust the parameter higher or the bottom to adjust it lower.

Note: If the **Clarity** button is not visible on the touch screen, use the page selector buttons (Figure 3-6) to move through imaging parameter options to locate it.

5.1.2 Spatial Compound Imaging

To Activate Spatial Compound Imaging:

1. Tap the touch screen  button.

Notes:

Spatial Compound imaging is available as an option with some transducers, but is not available during **Color** imaging.

If another mode(s) is selected while in **Compound** imaging (e.g., **Color Mode**), when exiting that mode(s), the **Operator** will be returned to **Compound** imaging, not **B-Mode**.

5.1.3 2D Zoom Imaging

To Activate the Zoom Feature:

1. On a live or frozen image, tap the touch screen  button.
2. Tap the top of the **Zoom** button to adjust the parameter higher or the bottom to adjust it lower.

Note: If the **Zoom** button is not visible on the touch screen, use the page selector buttons (Figure 3-6) to move through imaging parameter options to locate it.

3. Tap and drag the image to reposition the **FOV**.

Note: Repositioning of the **Zoom FOV** is only possible after the image has been magnified to a size that is larger than the image field.

5.1.4 Dual Imaging Format

Refer to [Split Imaging \(Table 8-38\)](#) for details on configuring the default active image (*Left Side* or *Right Side*) and the *Auto-Switch on Start* setting.

Figure 5-3: Dual Imaging



Table 5-2: Dual Imaging

	Indicates Active image:
Active Image	<ul style="list-style-type: none"> • Active LT: left • Active RT: right.

To Activate Dual Imaging:

1. With an active **B-Mode** image, tap the touch screen  button.
2. Tap .
3. When a live image appears on the left side of the LCD display (**Active LT**), tap  to freeze the **Active LT** image and unfreeze (i.e., make active) the **Active RT** image in one step.

Note: As an alternative, tap  to freeze the right image. Tapping  will then toggle between the frozen images. Tap  again at any time to activate the current image.

4. Tap  to toggle back and forth between the dual images, freezing the inactive image and unfreezing the newly active image.
5. Tap  or  to exit **Dual** imaging.

Note: *Color Doppler* is available during **Dual** but not **Quad** imaging.

5.1.5 Quad Imaging Format

Figure 5-4: Quad Image

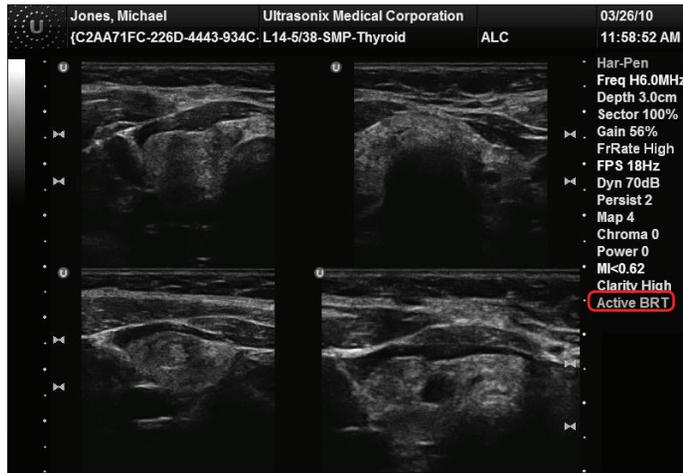


Table 5-3: Quad Imaging

	Indicates Active quadrant:
Active Image	<ul style="list-style-type: none"> • Active ULT: upper left • Active URT: upper right • Active BLT: bottom left • Active BRT: bottom right.

To Activate the Quad Imaging Format:

1. With an active **B-Mode** image, tap the touch screen  button.
2. Tap .
3. When a live image appears on the upper left side of the LCD display (**Active ULT**), tap  to freeze the **Active ULT** image and unfreeze (i.e., make active) the upper right (**URT**) quadrant in one step.

Note: As an alternative, tap  to freeze the active image. Tap  to move to the next quadrant which will also contain a frozen image. Tap  to activate it or  to move to the next quadrant.

4. Tap  again to freeze the current image and move to the next quadrant.

Note:  toggles through the images sequentially: **ULT, URT, BLT, BRT**.

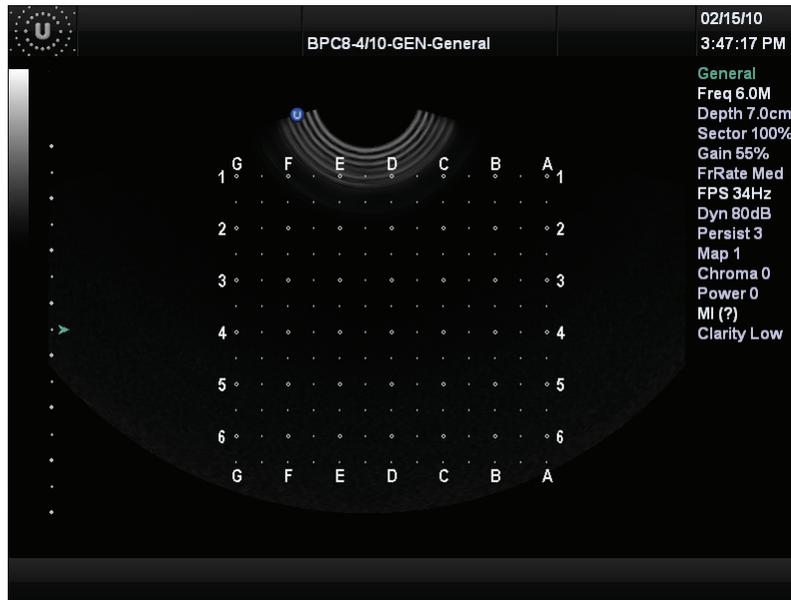
5. Continue tapping  to move through the four (4) images as required. Depending on the method selected above— only or  and —the images will be active or frozen, respectively.
6. Tap  or  to exit **Quad** imaging.

Note: **Color Doppler** is available during **Dual** but not **Quad** imaging.

5.1.6 Brachytherapy and the BPC8-4/10 Transducer

When the BPC8-4/10 transducer is active and **B-Mode** has been selected, users will be presented with additional Mode Action and Imaging Parameter buttons. These options enable the use of the grid created for **Brachytherapy**.

Figure 5-5: Brachytherapy Grid Enabled on the Imaging Screen



Note: Refer to [Appendix E](#) for details on touch screen Mode Action and Imaging Parameters buttons.



5.1.7 M-Mode Imaging

When first entering **M-Mode**, all factory supplied **Imaging Presets** will default to the maximum **Zoom** setting.

Note: This will not affect user-defined Presets.

Note: Refer to **Appendix E** for details on touch screen Mode Action and Imaging Parameters buttons.

To Activate M-Mode Imaging:

1. Tap the touch screen  button.
2. Tap .
3. A live full screen **2D** image appears with an **M-Mode** cursor.

Note: Refer to **Layout in Table E-1** and **8.2.18 Imaging Modes** to customize the **M-Mode** display settings and screen layouts.

4. Tap .
5. Tap  or  to exit **M-Mode** and return to **2D** imaging.

To Select/Adjust Touch Screen M-Mode Imaging Parameters:

1. With an active **M-Mode** image, tap the touch screen  button.
2. Tap .
3. Tap the top of the desired imaging parameter button (e.g., **MapM** or **ChromaM**) to adjust it higher or the bottom to adjust it lower.

Note: If the desired parameter button is not visible on the touch screen, use the page selector buttons (**Figure 3-6**) to move through imaging parameter options to locate it.

5.2 COLOR/POWER DOPPLER

Color Doppler is used to detect blood flow and determine flow direction. **Power Doppler** is more sensitive to low flow rate in small vessels, but offers no directional information. **Color Power Doppler** is **Power Doppler** with a red/blue color map providing directional flow information.

Figure 5-6: Color Doppler Image

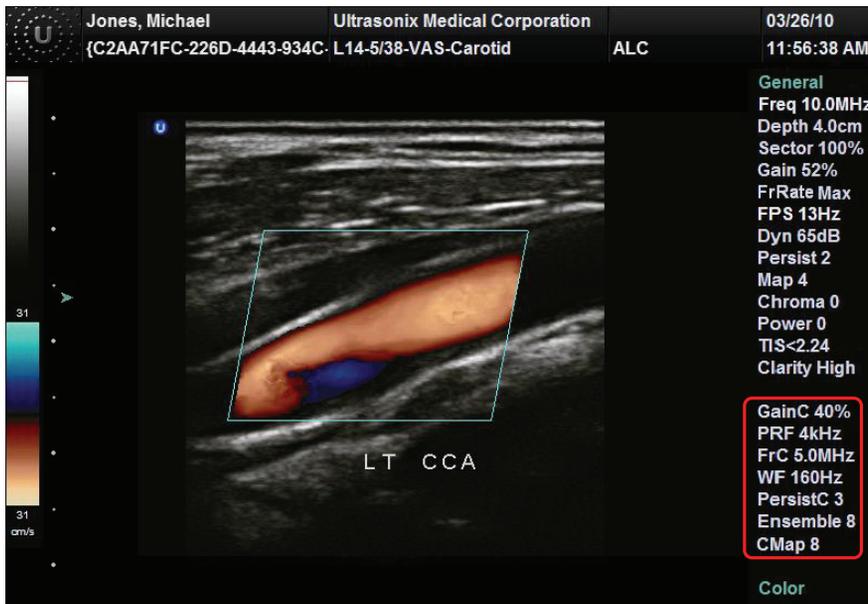
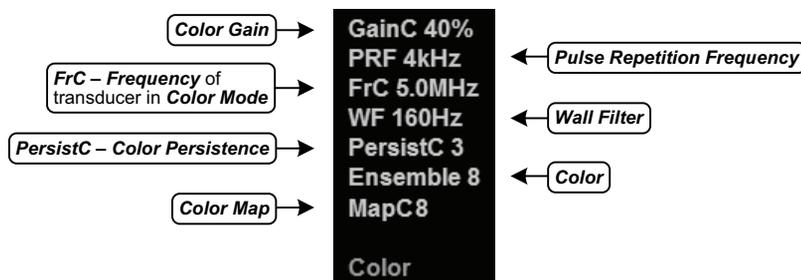


Figure 5-7: Color Doppler Imaging Parameters



Note: Refer to [Appendix E](#) for details on touch screen Mode Action and Imaging Parameters buttons.



5.2.1 Color Doppler Imaging Mode

To Activate Color Doppler Imaging Mode:

1. Tap the touch screen  button.
2. Tap .
3. To reposition the **Color** ROI box, tap and drag from any position in the box except the bottom right corner.
4. To resize the **Color** ROI box, tap and drag only from the bottom right corner of the box.
5. Tap  to exit **Color Doppler** imaging.

To Select/Adjust Touch Screen Color Imaging Parameters:

1. With an active **Color** image, tap the touch screen  button.
2. Tap the top of the desired imaging parameter button (e.g., **PersistC**) to adjust it higher or the bottom to adjust it lower.

Note: If the desired parameter button is not visible on the touch screen, use the page selector buttons ([Figure 3-6](#)) to move through imaging parameter options to locate it.

5.2.2 Power Doppler Imaging Mode

To Activate Power Doppler Imaging Mode (Method 1):

1. Tap the touch screen  button.
2. Tap .
3. Tap the **Power Doppler** mode action button to activate **Color Power Doppler** imaging.
4. To reposition the **Color Power** ROI box, tap and drag from any position in the box except the bottom right corner.
5. To resize the **Color Power** ROI box, tap and drag only from the bottom right corner of the box.
6. Tap  to exit **Color Doppler** imaging.

To Activate Power Doppler Imaging Mode (Method 2):

1. With an active **Color** image, tap the touch screen  button.
2. Tap the top/bottom of the **Method** imaging parameter button to cycle through the options: **Color** and **Power**.

Note: If the desired parameter button is not visible on the touch screen, use the page selector buttons ([Figure 3-6](#)) to move through imaging parameter options to locate it.

5.2.3 Simultaneous 2D/Color

To Activate Split Screen with Simultaneous Live 2D/Color and Live 2D:

1. Tap the touch screen  button.
2. Tap .
3. Tap the **Sim 2D/C** mode action button.

Note: *The live, 2D image with Color is displayed on the left side of the image field and the same live, 2D image without Color is simultaneously displayed on the right side of the image field. Freezing the image will freeze both sides simultaneously.*

Cine review will review both sides simultaneously.

4. To reposition the **Simultaneous 2D/Color** ROI box, tap and drag from any position in the box except the bottom right corner.
5. To resize the **Simultaneous 2D/Color** ROI box, tap and drag only from the bottom right corner of the box.
6. Tap **Sim 2D/C** to exit **Simultaneous 2D/Color** imaging.



5.3 PULSED AND CONTINUOUS WAVE DOPPLER (PW AND CW) AND TRIPLEX

Notes:

*Triplex is not available when **Cardiac** is selected as the **Application**.*

ECG is not available on this platform.

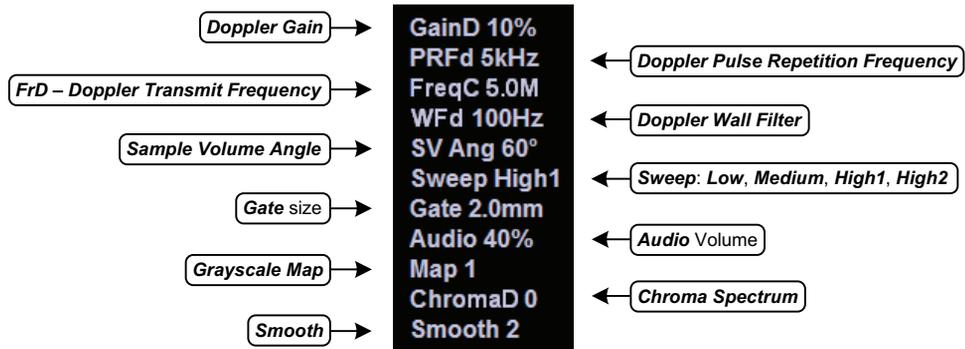
Figure 5-8: PW Doppler Imaging (Combined with Triplex)



Table 5-4: PW Doppler Imaging (Combined with Triplex)

1 PW Doppler Imaging Parameters	Refer to Figure 5-9 and Appendix E for details.
2 Cine Frame Mode	<p>Indicates Cine frames actively available for each imaging mode:</p> <ul style="list-style-type: none"> • PW (Doppler Trace) • PW (Doppler Trace) • B (2D with and without Color). <p>Tap  to toggle control between modes.</p>
3 Active Imaging Mode	<p>Indicates active imaging mode(s) when unfrozen:</p> <ul style="list-style-type: none"> • Active PW (Doppler Trace) • Active CW (Doppler Trace) • Active B (B-Mode or 2D) • Active B/PW (Simultaneous 2D and Doppler Trace) • Active B/C (2D with Color) • Triplex. <p>Tap  to toggle control between modes.</p>

Figure 5-9: PW/CW Doppler Imaging Parameters



Note: Refer to [Appendix E](#) for details on touch screen Mode Action and Imaging Parameters buttons.



5.3.1 PW Imaging Mode

To Activate PW Doppler Imaging Mode:

1. Tap the touch screen  button.
2. Tap .

Note: Refer to **Layout in Table E-1** and **8.2.18 Imaging Modes** to customize the **Doppler display settings and screen layouts**.

3. To reposition the **Color** cursor/**Gate**, tap and drag it as required.
4. To reposition the **Color** ROI box, tap and drag from any position in the box except the bottom right corner.
5. To resize the **Doppler** ROI box, tap and drag only from the bottom right corner of the box.
6. Tap  to display a live **Doppler Trace** and a frozen **2D** image/cursor.
7. Tap  to toggle back and forth between **PW Trace** and **2D**/cursor.
8. Tap  or  to exit **PW** imaging mode.

To Select/Adjust Touch Screen PW Doppler Imaging Parameters:

1. With an active **PW Doppler** image, tap the touch screen  button.
2. Tap the top of the desired imaging parameter button (e.g., **Chroma**) to adjust it higher or the bottom to adjust it lower.

Note: If the desired parameter button is not visible on the touch screen, use the page selector buttons (**Figure 3-6**) to move through imaging parameter options to locate it.

5.3.2 CW Imaging Mode

To Activate CW Doppler Imaging Mode:

1. Tap the touch screen  button.
2. Tap .
3. To position the **Doppler** cursor in the area of interest, tap and drag it as required.
4. Tap  to display a live **Doppler Trace** on the bottom of the image field and a frozen **2D** image/cursor on the top of the image field.
5. Tap  to toggle between **CW Trace** and **2D**/cursor both in live or frozen imaging states.
6. Tap  to return to full screen **2D/CW** cursor.
7. Tap  to exit **CW** imaging mode.

To Select/Adjust Touch Screen CW Doppler Imaging Parameters:

1. With an active **CW Doppler** image, tap the touch screen  button.
2. Tap the top of the desired imaging parameter button (e.g., **GainD**) to adjust it higher or the bottom to adjust it lower.

Note: *If the desired parameter button is not visible on the touch screen, use the page selector buttons (Figure 3-6) to move through imaging parameter options to locate it.*



5.3.3 Triplex Imaging Mode

Triplex imaging mode combines live **2D/Color Doppler** with live **PW Doppler** imaging, allowing the user to image with **2D/Color** and **PW Doppler** modes simultaneously.

Caution: **Triplex** imaging may diminish the quality of the **2D/Color** image and may cause **Doppler artifacts**.

Notes:

Triplex is not available when **Cardiac** is selected as the **Application**.

Refer to **Appendix E** for details on touch screen Mode Action and Imaging Parameters buttons.

To Activate Triplex Imaging Mode:

Note: **Triplex** is not available when **Cardiac** is selected as the **Application**.

1. Activate **Color** and **Pulsed Doppler** imaging modes.
2. Tap the touch screen  button.
3. Tap **Triplex**.

Note: Once **Triplex** is active, tap  to toggle through **Active PW**, **Active B/C** and **Triplex** imaging modes.

4. If required, tap **Layout** to move to the appropriate **Split Imaging** selection.

Note: Refer to **Layout** in **Table E-1** and **8.2.18 Imaging Modes** to customize the display settings and screen layouts.

5. Tap **Triplex** again to return to **Duplex** imaging.

5.4 AUTO-GAIN/B

Auto-Gain/B automatically optimizes image brightness for the following modes:

- *B*
- *Dual/Quad*
- *Compound (Spatial Compounding)*
- *Color*
- *PW Doppler*
- *Triplex*.

To Initiate Auto-B Functionality:

1. With an active image in any of the supported modes, tap the center of the touch screen **Gain** button.



5.5 ELASTOGRAPHY

Elastography is used to measure tissue stiffness.

Figure 5-10: Elastography Imaging

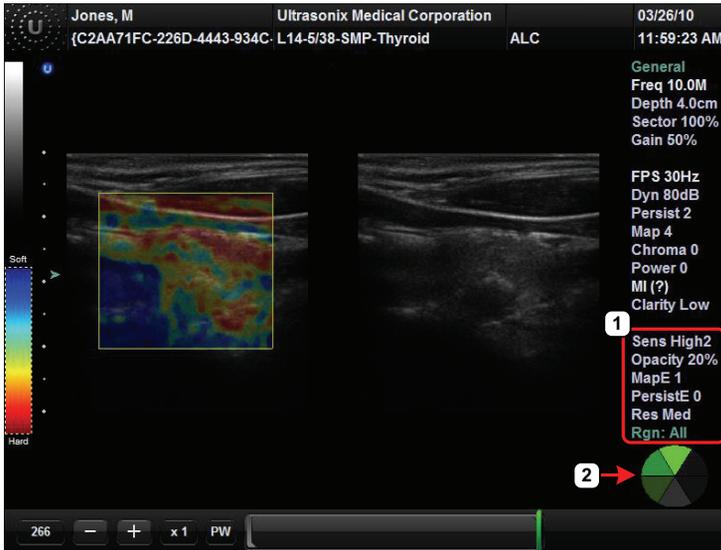
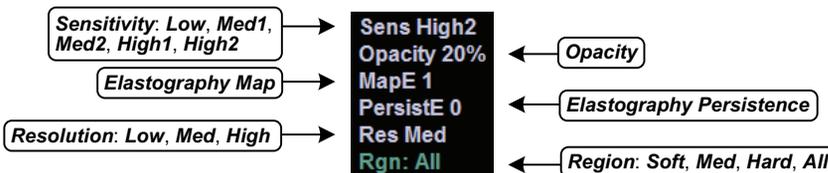


Table 5-5: Elastography Imaging

1	Elastography Imaging Parameters	Refer to Figure 5-11 and Appendix E for details.
2	Compression Feedback	Tracks the amount of pressure being placed on the transducer. When the bright green indicator is at the <u>top</u> , compression has been adjusted to the correct level.

Figure 5-11: Elastography Imaging Parameters



Note: Refer to [Appendix E](#) for details on touch screen Mode Action and Imaging Parameters buttons.

To Activate Elastography Imaging Mode:

1. Ensure a transducer is both connected to the system and currently active.

Note: To select the transducer, tap the touch screen  button.

2. Tap .



5.6 SonixShine

SonixShine mode enhances in-plane needle visibility during needle insertion. Depending on the **Shine Angle** selected, the needle will track from either the left or right side of the image (**Figure 5-6**).

Caution: Be sure to keep the needle perpendicular to the angle marker.

Note: **SonixShine** is available only:

- with the L14-5/38 transducer
 - from **B-Mode** and **Compound Imaging**.
-

Figure 5-12: SonixShine Imaging

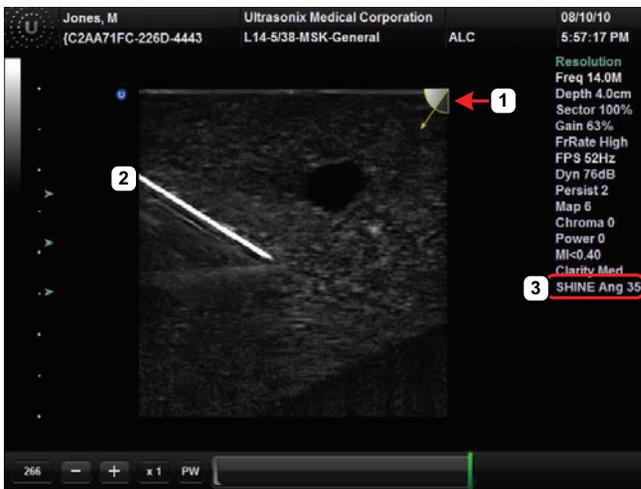


Table 5-6: SonixShine Imaging

		Marks the Shine Angle .
1	SonixShine Angle Marker	Note: The marker is displayed in the top right corner for positive angles and the top left corner for negative angles.
		Angle range: 15° to 40°.
		Angle range: -40° to -15°.
2	In-Plane Needle	Enhanced visibility of the in-plane needle.
3	Shine Ang	SonixShine Angle imaging parameter.

Note: Refer to **Appendix E** for details on touch screen Mode Action and Imaging Parameters buttons.

To Activate SonixShine Imaging:

1. Ensure **B-Mode** or **Compound Imaging** is active.
2. Tap the touch screen **SonixShine** button.

To Select/Adjust SonixShine Imaging Parameters:

1. Tap the touch screen  or  button.
2. Tap .
3. Tap the touch screen **SonixShine** button.
4. Tap the top of **Shine Ang** imaging parameter button to adjust it higher or the bottom to adjust it lower.

Note: If the **Shine Ang** imaging parameter button is not visible on the touch screen, use the page selector buttons (Figure 3-6) to move through imaging parameter options to locate it.

5. Adjust the remaining imaging parameters as required.



5.7 PANORAMIC IMAGING MODE

Panoramic imaging enables the user to generate a panoramic view of the **2D** ultrasound image field, which is much wider than the typical transducer field of view.

Panoramic images are composed of several standard ultrasound images acquired as the transducer is moved along the anatomical area of interest in a direction parallel to the transducer array. The resulting compound or composite image displays a large cross section of the area of interest which can then be viewed, measured, labeled and archived.

Figure 5-13: Panoramic Image



Warning: Measurements performed on the acquired **Panoramic** image may be inaccurate as the accuracy of the geometric re-composition is very user-dependent. Measurements performed on the acquired **Panoramic** image should be used for informational purposes only.

Note: Refer to [Appendix E](#) for details on touch screen Mode Action and Imaging Parameters buttons.

To Activate the Panoramic (Pano) Imaging Mode:

Note: The **Pano ROI** box can only be vertically resized and/or repositioned.

1. Tap the touch screen [||||] button during live **2D** imaging.
2. A progress bar with the message **Loading Panoramic Tables...** will be presented onscreen.

Note: This may take a few seconds. The **Panoramic** feature is ready to use when a white **Pano ROI** box appears on the **2D** image and **Pano Ready** appears in the lower left corner of the image field.

3. To vertically position the **Pano** ROI box, tap the top of the box and drag it up/down, as required.
4. To vertically resize the **Pano** ROI box, tap the bottom of the box and drag it up/down, as required.
5. Tap  or the **Pano Stop/Start** button to begin the **Panoramic** acquisition.
6. Move the transducer along a path parallel to the transducer array in the area of interest. For best results move the transducer at a slow and steady pace.
7. When a suitable **Pano** image is acquired, tap  or  or **Pano Start/Stop** on the touch screen.
8. Tap  or the **Pano Exit** button to exit **Panoramic** imaging mode and return to **2D** imaging.

Caution: Measurements performed on the acquired **Panoramic** image may be inaccurate as the accuracy of the geometric re-composition is very user-dependent. Measurements performed on the acquired **Panoramic** image should be used for informational purposes only.



5.8 SonixDVR RECORDING

Once configured, a **SonixDVR Recording** can be made of any imaging session.

Note: A physical recording device is not required.

Once configured and activated a red recording icon (REC) will flash at the bottom right of the imaging screen and an **MPG** video will be created. All system actions initiated during the recording session will be captured in the **MPG**.

Each time a **SonixDVR Recording** is started/stopped, a message will be displayed in the bottom left of the imaging screen.

Note: A **SonixDVR Recording** cannot be transferred via **DICOM**. Use the **Image Transfer** process (9.3) to export these files.

There are two ways to create a **SonixDVR** recording:

- via **Custom Keys** (8.2.12), so an **Operator** can start/stop a recording at will
- automatically, via **Capture Settings** (8.2.17), so a recording starts every time a new exam is initiated.

5.9 2D CINE OPTIONS

5.9.1 2D Cine Frame Indicators

Figure 5-14: 2D Cine Frame Indicators

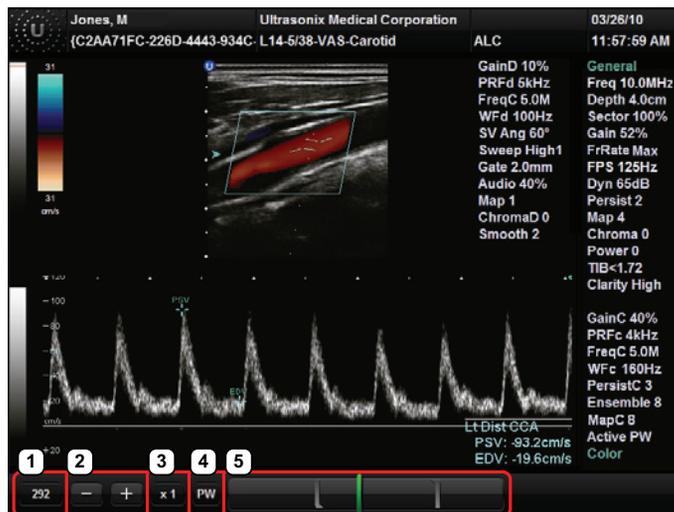


Table 5-7: 2D Cine Frame Indicators

1	Cine Frame	Marks the current Cine frame (number coincides with green marker in 5).
2	Cine Advance/Reverse	Advances (+) or reverses (-) the Cine loop , one frame at a time.
3	Cine Play Speed	Activates Cine Play Speed (1/8, 1/4, 1/2, Full (1) or Double (2)).
4	Active Imaging Cine	Marks the Active imaging Cine . Refer to Table 5-4 for more details.
		Allows the Operator to select the: <ul style="list-style-type: none"> • start frame • end frame • single (current) frame.
5	Cine Loop Slider	<p>Cine loop start and end markers are gray, while the green marker denotes the current Cine frame (item 1 lists the corresponding frame number).</p> <p>Tap and drag the start and/or end markers to define Cine loop limits. Once defined, the Cine loop can be saved using Custom Keys (8.2.12).</p> <p>Note: When an image is frozen, the slider will always be set with the start/end markers to the far left/right with the green marker at the end of the loop (far right).</p>

Note: Tap and/or tap and drag to change any of the settings.

5.9.2 2D Cine Options

Figure 5-15: 2D Cine Imaging Parameters



Table 5-8: 2D Cine Imaging Parameters

1	Play/Stop Cine	Tap to trigger the Play/Stop actions.
2	Cine Start Start Fast	When creating a Cine clip from a Cine loop : <ul style="list-style-type: none"> • Cine Start selects the start frame of the clip, moving one (1) frame at a time. • Start Fast selects the start frame of the clip, moving 10 frames at a time.
3	Cine End End Fast	When creating a Cine clip from a Cine loop : <ul style="list-style-type: none"> • Cine End selects the last frame of the clip, moving one (1) frame at a time. • End Fast selects the last frame of the clip, moving 10 frames at a time.
4	Cine Frame Frame Fast	Cine Frame selects the currently displayed frame and moves one (1) frame at a time. Frame Fast selects the currently displayed frame and moves 10 frames at a time.

Figure 5-16: 2D Cine Touch Screen Options



Table 5-9: Cine Mode Action Buttons (tap to activate)

Record	Tap to store the selected Cine frames to the system or press the appropriate Custom Key button (8.2.12).
---------------	--

Notes:

*Changes made to **Depth**, **Gain**, etc., will reset the number of frames available for review or storage.*

***Cine loop** storage is a retrospective acquisition.*

5.9.3 Cine Clip Storage

To Store a 2D or 2D/Color Cine Clip:

1. Ensure a suitable image is visible on the LCD display.
2. Tap the touch screen  button.
3. Tap  to access **Cine** imaging parameters or  to access the **Record** button.

To Select/Adjust Touch Screen Cine Controls:

1. Tap the touch screen  button.
2. Tap desired selection (e.g., **Cine Start**).



5.9.4 Raw Cine Manipulation

Once saved, a raw **Cine loop** can be edited as if it the exam was still currently active. Any frozen editing option available to an **Operator** during an exam will also be available to manipulate the saved raw **Cine** data (e.g., **Measurements**, imaging parameter changes, etc.).

To save raw **Cine** data for future manipulation, configure a **Custom Key** with the **Record Raw Cine** option (8.2.12).

To access a raw **Cine loop**, open an exiting Patient/exam using the **Exam Management** page **Review** button or via **Exam Review** (Chapter 9).

A raw **Cine loop** thumbnail will be marked with the word **RAW**.

Note: While there is no time limit on the ability to edit raw **Cine** data, once a **Software Update** is performed (8.2.20), previously existing raw **Cine loops** will cease to be available for manipulation (i.e., raw **Cine loops** can only be saved and edited with the same software version).

5.9.5 Stored Thumbnail Review

The **Stored Thumbnail Review** is displayed at the bottom of the LCD display.

Note: **Cine loops** can also be accessed via **Exam Review** (Chapter 9).

To Review a Thumbnail Image/Cine Clip During an Exam:

1. Tap the desired thumbnail.
2. Tap anywhere on the touch screen to return to the standard imaging screen.

Note: The last selected thumbnail will have a red **X** in the top right hand corner. Tap the **X** to delete the thumbnail.

CHAPTER 6: CLINICAL ANALYSIS

Measurements provide the user with the functionality to perform clinical analysis on an ultrasound image. They range from simple measurements that calculate **Length**, **Circumference**, **Area**, **Volume**, etc., to **Measurement Packages** that use calculation formulas to determine **Fetal Age**, **Heart Rate**, etc.

The reporting feature takes the **Application**-specific measurement values and generates a **Worksheet/Report** that includes patient and facility information, labeled measurement values and calculation results. Some reports contain auto-generated graphs.

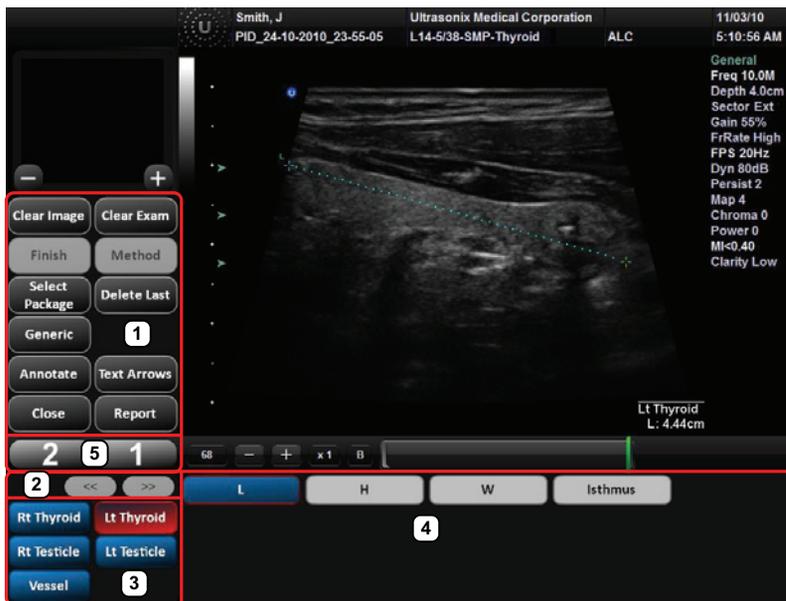
The system provides a wide range of **Application**-specific measurement/calculation packages.

Note: The availability of measurement/calculation packages is dependant upon a combination of licensed options (8.2.21), currently connected transducers and **Preset** settings (8.2.1).

The measurement/calculation package defaults to the **Exam Type/Application** selected. For example, the **Obstetrical** calculation package is the default when an **OB Application** is selected. To access measurements specific to an alternate **Application**, tap the touch screen **Presets...** button and change the **Application–Transducer–Preset** settings as required.

To access **Measurement Packages**, tap the touch screen  button.

Figure 6-1: Measurement Packages Touch Screen



Note: This example uses the **Application–Transducer–Preset** combination **SMP–L14-5/38–Thyroid**.



Table 6-1: Measurement Packages Touch Screen Options

1	Measurement Controls	Measurement touch screen control options. Refer to Table 6-2 for more details.
2	Page selector buttons	Use if more than one (1) page of Measurement Package options exists. If there is only one (1) page available, the selectors will be inaccessible (i.e., grayed out).
3	Measurement Packages	These tabs represent the actual Measurement Packages available for the current Application–Transducer–Preset combination. Note: <i>If the page selector buttons are active, there are more Measurement Packages available than what is visible on the current touch screen.</i>
4	Measurement Options	The specific measurement options available for the active Measurement Package .
5	Custom Keys 1 and 2	Tap to save images to the exam. Refer to 8.2.12 for configuration details.

Table 6-2: Measurement Packages Touch Screen Controls

Clear Image	Tap to Clear any measurements currently on the image. Note: <i>This will not remove the measurements on the Worksheet/Report.</i>
Clear Exam	Tap to Clear all measurements from both the LCD display and the Worksheet/Report . Note: <i>Confirm this action when the message Clear Exam? Yes No is presented.</i>
Finish	Tap Finish when a Trace measurement is complete. Note: <i>If Finish is not selected and Delete Last is tapped, only the last element of the Trace measurement will be deleted. Continue tapping Delete Last to move backwards through the Trace measurement, deleting as you go. Once Finish is selected, tapping Delete Last will delete the entire Trace measurement.</i>
Method	Tap to change measurements types, e.g., from B Distance to Curved Distance . The method selected appears in a message bubble on the lower right corner of the LCD display. Tap as many times as necessary to advance to the desired measurement option. Note: <i>Not all measurements have more than one measurement option.</i>
Select Package	Tap to select a different Application .
Delete Last	Tap to delete the last measurement. Tap multiple times to delete multiple measurements in reverse order.
Generic/Calcs	Tap to move to the Generic/General Application/Preset . Note: <i>After tapping Generic, the button name changes to Calcs. This indicates that the system is now using Generic measurements. Tap Calcs to exit Generic measurements and return to standard Measurement Packages. Generic measurements are not written to the Worksheet/Report.</i>
Annotate	Tap to access the Annotations touch screen (7.2 and 7.1.3). When finished, tap Close on the Annotations touch screen and the system will return to Measurement Packages .
Text Arrows	Tap to activate the Text Arrows function (7.1.5). Tap again to exit the Text Arrows function.
Close	Tap to exit the Measurement Packages touch screen.
Report	Tap to move to the relevant Report (6.7). Tap Exit to return to Measurement Packages . Note: <i>The touch screen will change to the Report Worksheet touch screen. Tap Exit to return to the measurements touch screen.</i>

6.1 GENERIC 2D MEASUREMENTS

During imaging, measurements are accessible by tapping the touch screen  button.

For the purposes of the following examples, all measurements have been taken using the **Generic** option.

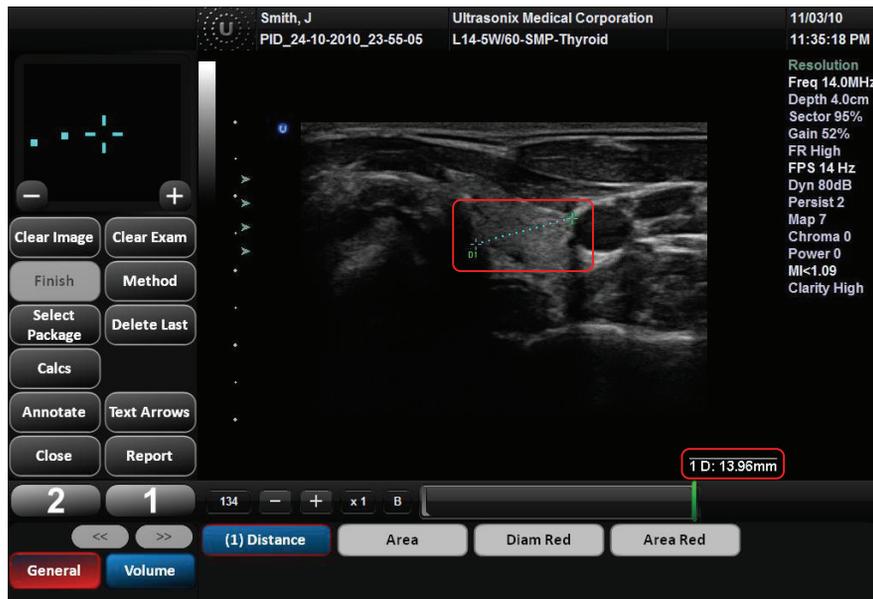
Note: **Generic** measurements are not written to the **Worksheet/Report**.

Once the first version of a measurement has been taken, the relevant touch screen button will be prefaced by (1). If additional versions of that measurement are taken, the number will increment accordingly. Unless the measurement(s) is **Generic**, it will also have been saved to the **Worksheet/Report**.

Note: *Onscreen measurement labels are placed at or near the location of the first caliper. In order to avoid overlapping measurement labels, whenever possible, take care not to overlap measurement starting points.*

6.1.1 2D Linear Measurement

Figure 6-2: 2D Image with Linear Measurement





To Perform a Linear Measurement:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Distance**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Distance set to 'B Distance'**.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen again to set the second caliper and record the measurement onscreen and (for non-**Generic** measurements) to the **Worksheet/Report**.

Note: To create and position the second caliper, tap and drag in one continuous movement. Once the tap/drag motion is interrupted (i.e., your finger lifts from the touch screen) the caliper will be set.

To Perform a 2D Curved Distance Measurement:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Distance**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Distance set to 'Curved Distance'**.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen again to set the second caliper and record the measurement onscreen and (for non-**Generic** measurements) to the **Worksheet/Report**.

Note: Tap and drag in one continuous movement to create and position the second caliper. Once the tap is interrupted (i.e., your finger lifts from the touch screen) the caliper will be set.

6.1.2 Area or Circumference Measurement

There are four (4) **Generic** methods of performing the **Area/Circumference** measurement: **Ellipse**, **Continual**, **Point by Point** and **Cross**.

6.1.2.1 Ellipse Method Area or Circumference Measurement

To Perform an Ellipse Method Area or Circumference Measurement:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area set to 'Ellipse'**.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen again to set the first caliper, position the second caliper and activate the **Ellipse** sides.

Note: *Tap and drag in one continuous movement to create and position the second caliper. Once the tap is interrupted (i.e., your finger lifts from the touch screen) the caliper will be set.*

6. Tap and drag one of the side markers (+) to increase/decrease the sides of the **Ellipse**.
7. The **Area** and **Circumference** values are presented on the bottom right of the LCD display.



6.1.2.2 Continual Method Area or Circumference Measurement

To Perform a Continual Method Area or Circumference Measurement:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area set to 'Continual'**.
4. Tap the imaging screen to position the first caliper.
5. Tap and drag to trace the circumference around the desired area.

Note: If the traced **Area** is not closed (i.e., the caliper start and end positions are not at the same point), the system will automatically fill in the space with a straight line in order to be able to calculate **Area** and **Circumference**.

6. Tap **Finish** to set the final caliper position.

Note: Prior to tapping **Finish**, use the **Delete Last** button to delete the dots in the traced measurement one at a time, in reverse order. Once **Finish** is tapped, selecting **Delete Last** will delete the entire measurement.

7. The **Area** and **Circumference** values are presented on the bottom right of the LCD display.

6.1.2.3 Point by Point Area or Circumference Measurement

To Perform a Point by Point Method Area or Circumference Measurement:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area set to 'Point by Point'**.
4. Tap the imaging screen to position the first caliper.
5. Tap and drag to set the first caliper and position the second caliper.
6. Tap and drag to set the second caliper and position the third caliper.

Note: If the traced **Area** is not closed (i.e., the caliper start and end positions are not at the same point), the system will automatically fill in the space with a straight line in order to be able to calculate **Area** and **Circumference**.

7. Tap **Finish** to set the final caliper.

Note: Prior to tapping **Finish**, use the **Delete Last** button to delete the dots in the traced measurement one at a time, in reverse order. Once **Finish** is tapped, selecting **Delete Last** will delete the entire measurement.

8. The system will automatically join the first and last caliper positions in order to calculate the **Area** and **Circumference** and display them onscreen.



6.1.2.4 Cross Area or Circumference Measurement

To Perform a Cross Method Area or Circumference Measurement:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area set to 'Cross'**.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen again to set the second caliper.

Note: Tap and drag in one continuous movement to create and position the second caliper. Once the tap is interrupted (i.e., your finger lifts from the touch screen) the caliper will be set.

6. Tap the imaging screen to position the third caliper.
7. Tap the imaging screen again to set the fourth caliper.
8. The **Area** and **Circumference** values are presented on the bottom right of the LCD display.

6.1.3 Volume Calculation

To Perform a Volume Calculation:

Note: **L (Length)** measurements can be performed using either linear (**B**) or **Curved Distance**.

If required, use the Precision Panel (3.5.2) to reposition the caliper.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Volume** to access the **L (Length)**, **H (Height)** and **W (Width)** options.

Note: By default, the touch screen **Length** option will be selected for the first measurement, **Height** will always be second and **Width**, last.

3. Tap **Method** as many times as necessary to select the **L** method: '**B Distance**' or '**Curved Distance**'.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen again to set the second caliper.
6. Repeat **step 4** and **step 5** until all three (3) linear measurements have been completed. The three (3) measurement values with auto-calculated **Volume** results will be presented on the bottom right of the LCD display.

Notes:

All three (3) measurements must be completed to calculate the **Volume**.

Only the three (3) most recent measurements (**L**, **H**, **W** and their **Volume** calculation) will be visible onscreen at any one time.

6.1.4 Percent Diameter Reduction Calculation (% Diam Red)

To Perform a % Diameter Reduction:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Diam Red**.
3. Tap the imaging screen to position the first caliper of the outer measurement.
4. Tap the imaging screen to position the second caliper of the outer measurement.
5. Tap the imaging screen to position the first caliper of the inner measurement.
6. Tap the imaging screen to position the second caliper of the inner measurement.
7. The resulting **% Diameter Reduction** is presented on the bottom right of the LCD display along with the inner (**I**) and outer (**O**) diameter measurements that were used in the calculation.



6.1.5 Percent Area Reduction Calculation (% Area Red)

When combined, the two (2) methods of performing the outer and inner **Area Reduction** measurements—**Ellipse** and **Trace**—result in a total of three (3) options.

Note: *The first caliper set is used for the outer measurement of the **Area Reduction** and the second caliper set is used for the inner measurement.*

Table 6-3: Percent Area Reduction Calculation Methods

Ellipse/Ellipse	Uses the Ellipse method for both outer and inner measurements.
Ellipse/Trace	Uses the Ellipse method for the outer measurement and the Trace method for the inner measurement.
Trace/Trace	Uses the Trace method for both outer and inner measurements.

6.1.5.1 Ellipse/Ellipse Method of Area Reduction Calculation

To Perform an Ellipse/Ellipse Method Area Reduction:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area Red**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area Red set to 'Area Reduction Ellipse/Ellipse'**.
4. Tap the imaging screen to position the first caliper of the outer **Ellipse**.
5. Tap the imaging screen again to set the first caliper, position the second caliper and activate the outer **Ellipse** sides.
6. Tap and drag one of the side markers (+) to increase/decrease the sides of the outer **Ellipse**.
7. Tap the imaging screen to position the first caliper of the inner **Ellipse**.
8. Tap the imaging screen again to set the first caliper, position the second caliper and activate the inner **Ellipse** sides.
9. Tap and drag one of the side markers (+) to increase/decrease the sides of the inner **Ellipse**.
10. The resulting **% Area Reduction** is presented on the bottom right of the LCD display along with the inner (**I**) and outer (**O**) measurements that were used in the calculation.

6.1.5.2 Ellipse/Trace Method of Percent Area Reduction Calculation

To Perform an Ellipse/Trace Method Area Reduction:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area Red**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area Red set to 'Area Reduction Ellipse/Trace'**.
4. Tap the imaging screen to position the first caliper of the outer **Ellipse**.
5. Tap the imaging screen again to set the first caliper, position the second caliper and activate the outer **Ellipse** sides.
6. Tap and drag one of the side markers (+) to increase/decrease the sides of the outer **Ellipse**.
7. Tap the imaging screen to position the caliper at the start position of the inner **Trace** measurement.
8. Tap and drag to trace the circumference around the desired area.

Note: *If the traced Area is not closed (i.e., the caliper start and end positions are not at the same point), the system will automatically fill in the space with a straight line in order to be able to calculate Area and Circumference.*

9. The resulting % **Area Reduction** is presented on the bottom right of the LCD display along with the inner (**I**) and outer (**O**) measurements that were used in the calculation.



6.1.5.3 Trace/Trace Method of Percent Area Reduction Calculation

To Perform a Trace/Trace Method Area Reduction:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **2D** image, tap the touch screen  button.
2. Tap **Generic** then **Area Red**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Area Red set to 'Area Reduction Trace/Trace'**.
4. Tap the imaging screen to position the caliper at the start position of the outer **Trace** measurement.
5. Tap and drag to trace the circumference around the desired area.

Note: If the traced **Area** is not closed (i.e., the caliper start and end positions are not at the same point), the system will automatically fill in the space with a straight line in order to be able to calculate **Area** and **Circumference**.

6. Tap the imaging screen to position the caliper at the start position of the inner **Trace** measurement.
7. Tap and drag to trace the circumference around the desired area.
8. The resulting **% Area Reduction** is presented on the bottom right of the LCD display along with the inner (**I**) and outer (**O**) measurements that were used in the calculation.

6.2 M-MODE MEASUREMENTS

For the purposes of the following examples, all measurements have been taken using the **Generic** option.

Note: *Generic measurements are not written to the **Worksheet/Report**.*

6.2.1 M-Mode Heart Rate Measurement

To Perform an M-Mode Heart Rate Measurement:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **M-Mode** image, tap the touch screen  button.
2. Tap **Generic** then **HR**.
3. Tap the imaging screen to position the caliper on the **M-Mode Sweep** to the first beat.
4. Tap the imaging screen to position the second caliper to the next beat.

Note: *The default **Heart Rate** measurement requires one heart beat. Refer to [8.2.6 Measurements](#) to change the number of beats required for the **HR** calculation.*

Tapping the top of either caliper reactivates it, enabling repositioning.

5. The **Heart Rate** value is presented on the bottom right of the LCD display.

6.2.2 M-Mode Slope Measurement (Time, Distance and Slope)

To Perform an M-Mode Slope Measurement:

1. With a frozen **M-Mode** image, tap the touch screen  button.
2. Tap **Generic** then **Time/Slope**.
3. Tap the imaging screen to position the caliper on the **M-Mode Sweep**.
4. Tap the imaging screen to position the second caliper to the desired location.
5. The **Time**, **Distance** and **Slope** values is presented on the bottom right of the LCD display.



6.2.3 M-Mode Distance Measurement

To Perform an M-Mode Distance Measurement:

Note: If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **M-Mode** image, tap the touch screen  button.
2. Tap **Generic** then **Distance**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Distance set to 'M Distance'**.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen to position the second caliper.

Note: When using the **Cardiac Measurement Package RV/LV (M)**, both diastolic and systolic **M-Mode Distance** measurements must be completed.

6. The **Distance** value is presented on the bottom right of the LCD display.

6.3 PW/CW DOPPLER MEASUREMENTS

For the purposes of the following examples, all measurements have been taken using the **Generic** option.

Note: *Generic measurements are not written to the **Worksheet/Report**.*

6.3.1 Velocity Measurements

Velocity measurements can be performed using either a single or double caliper method.

Note: *Available/visible measurements/calculations depend upon the selections made in [8.2.1.1 Show/Hide Imaging Presets](#) and [8.2.6.2 Show/Hide Applications, Measurement Packages and Measurements](#).*

To Perform a Single Caliper Velocity Measurement:

Note: *ECG is not available on this platform.*

If required, use the Precision Panel ([3.5.2](#)) to reposition calipers.

1. With a frozen **Doppler Trace**, tap the touch screen  button.
2. Tap **Generic** then **Velocity**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Velocity set to '1 Cal. Velocity'**.
4. Tap the imaging screen to position the caliper.
5. **Velocity** values are presented on the bottom right of the LCD display.

Note: *If no measurement is selected from the touch panel, a generic **Velocity** measurement value will be displayed depending on the application selected. For example, for **Vascular**, the **Velocity** will be **cm/sec** but for **Cardiac** it may be **m/sec**.*



To Perform a Double Caliper Velocity Measurement:

Note: *ECG is not available on this platform.*

If required, use the Precision Panel (3.5.2) to reposition calipers.

1. With a frozen **Doppler Trace**, tap the touch screen  button.
2. Tap **Generic** then **Velocity**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Velocity set to '2 Cal. Velocity'**.
4. Tap the imaging screen to position the caliper to the peak velocity. A **Peak Systolic Velocity (PSV)** value is presented on the bottom right of the LCD display.
5. Tap the imaging screen to position the second caliper.
6. An **End Diastolic Velocity (EDV)** value with associated **Resistive Index (RI)** and **Systolic/Diastolic Ratio (SD)** is presented on the bottom right of the LCD display.

6.3.2 Doppler Manual Trace Measurement

Note: Available/visible measurements/calculations depend upon the selections made in [8.2.1.1 Show/Hide Imaging Presets](#) and [8.2.6.2 Show/Hide Applications, Measurement Packages and Measurements](#).

6.3.2.1 Doppler Manual Trace Measurement – Continual Method

Note: To ensure the most accurate results, position the first caliper at the start of the waveform and set the last caliper at end diastole for manual **Doppler Traces**.

To Perform a Manual Doppler Trace, Using the Continual Method:

Note: If required, use the Precision Panel ([3.5.2](#)) to reposition calipers.

1. With a frozen **Doppler Trace**, tap the touch screen  button.
2. Tap **Generic** then **Trace**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Trace set to 'Spectrum Continual'**.
4. Tap the imaging screen to position the first caliper at the start of the desired **Doppler Waveform**.
5. Tap the imaging screen to position the first caliper at the start of the desired **Doppler Waveform**.
6. The **Trace** values are presented on the LCD display.



6.3.2.2 Doppler Manual Trace Measurement – Point by Point Method

Note: *To ensure the most accurate results, position the first caliper at the start of the waveform and set the last caliper at end diastole for manual **Doppler Traces**.*

To Perform a Manual Doppler Trace, Using the Point by Point Method:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **Doppler Trace**, tap the touch screen  button.
2. Tap **Generic** then **Trace**.
3. Tap **Method** as many times as necessary dial to select **Sonix Calcs—Trace set to 'Spectrum Point by Point'**.
4. Tap the imaging screen to position the first caliper at the start of the desired **Doppler Waveform**.
5. Tap the imaging screen to position the second caliper at the next trace position.
6. Tap the imaging screen to position the third caliper at the last trace position.
7. The **Doppler Trace** values are presented on the LCD display.

6.3.3 Doppler Auto-Trace Measurement (Spectrum Range)

To Perform an Auto Doppler Trace (D-Range):

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **Doppler Trace**, tap the touch screen  button.
2. Tap **Generic** then **Trace**.
3. Tap **Method** as many times as necessary to select **Sonix Calcs—Trace set to 'Spectrum Range'**.
4. Tap the imaging screen to position the first caliper.
5. Tap the imaging screen to position the second caliper.

6.3.4 Doppler Heart Rate Measurement

To Perform a Doppler Heart Rate:

Note: *If required, use the Precision Panel (3.5.2) to reposition calipers.*

1. With a frozen **Doppler Trace**, tap the touch screen  button.
2. Tap **Generic** then **HR**.
3. Tap the imaging screen to position the caliper on the **Doppler Trace** to the first beat.

Note: *The default **Heart Rate** measurement requires one heart beat. Refer to [8.2.6 Measurements](#) to change the number of beats required for the HR calculation.*

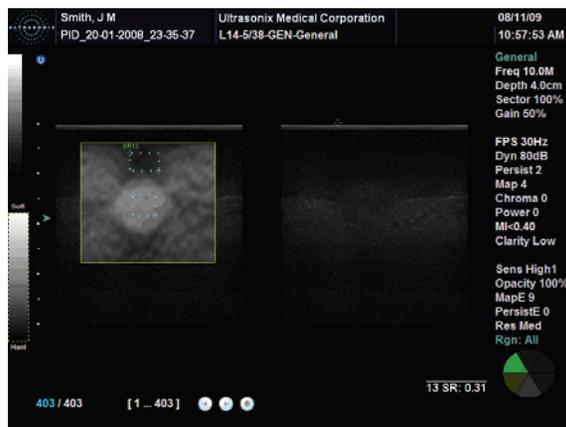
4. Tap the imaging screen to position the second caliper to the next beat.
5. The **Heart Rate** value is presented on the bottom right of the LCD display.



6.4 ELASTOGRAPHY MEASUREMENTS

The *Elastography Strain Ratio* measures the relative stiffness of two (2) regions on the image.

Figure 6-3: Strain Ratio Measurement



To Perform an Elastography Strain Ratio Measurement:

Note: The *Strain Ratio* measurement provided is part of the *General Measurement Package* and therefore will not be saved to the *Report*.

If required, use the *Precision Panel (3.5.2)* to reposition calipers.

1. With a frozen *Elastography* image, tap the touch screen  button.
2. Tap *Generic* then *Strain Ratio* .
3. Tap the imaging screen to position the first caliper of the first *Strain Ratio* box.
4. Tap the imaging screen to position the second caliper of the first *Strain Ratio* box.
5. Tap the imaging screen to position the first caliper of the second *Strain Ratio* box.
6. Tap the imaging screen to position the second caliper of the second *Strain Ratio* box.
7. Repeat [step 3](#) to [step 6](#) as many times as required.

6.5 OB-SPECIFIC MEASUREMENTS/CALCULATIONS

In the case of multiple fetuses (e.g., twins or triplets), be sure to enter the correct **Fetus #** (Table 4-3) on the **Exam Management** page. This will ensure that the **Fetus A/B** button will be active in both **OB Measurement Packages** and **Reports** (where 1 = A, 2 = B, etc.).



Warning: In addition to entering the correct **Fetus #** on the **Exam Management** page, be sure to label each **Fetus** using the touch screen **ABC** button.

Note: The **Fetus A/B** button will change based on the number of fetuses entered. For example, for eight (8) fetuses, the button would be **Fetus A/H**. Tap this button as many times as necessary to cycle through to the correct **Fetus #**.

Additionally, to ensure that each measurement is labeled correctly (e.g., **A NT, B NT, F BPD**, where **A, B, F**, etc., reflect the **Fetus #** for the measurement), after changing the **Fetus #**, always reselect the relevant measurement.



Warnings:

Various factors may affect the accuracy of **Obstetrical** measurements.

Ensure the system **Date/Time** is configured correctly.

Ensure the desired **Obstetrical** calculation author has been selected for each parameter.

In order to record measurements on multiple—but separate—fetuses, enter a **Fetus #** between 2 and 8 (i.e., to activate the **Fetus** toggle button in **OB Measurement Packages** and **Reports** (where 1 = A, 2 = B, etc.)).

Notes:

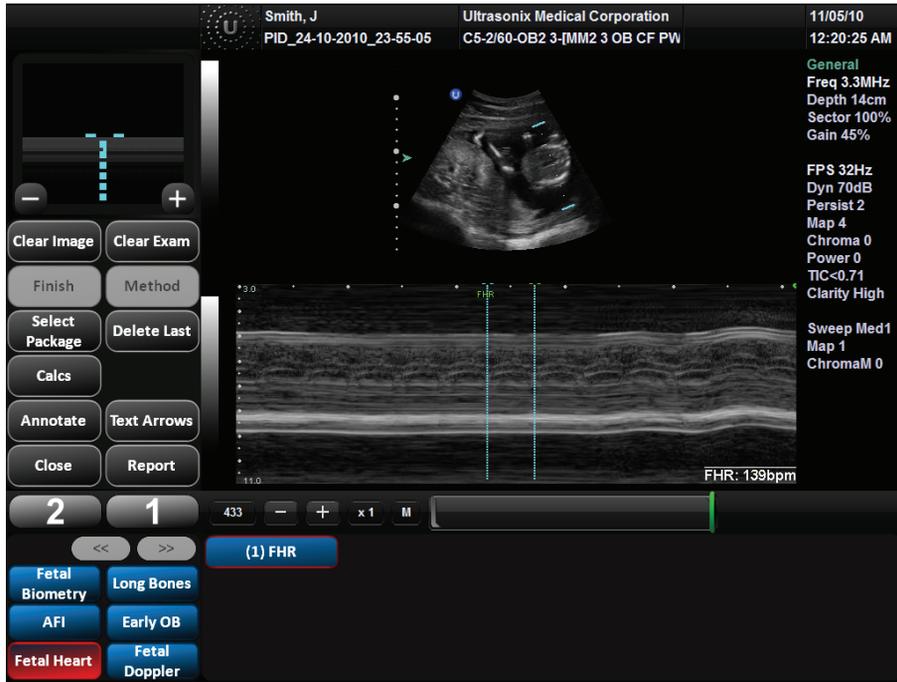
Selection of **OB Doppler** measurements **MCA (Middle Cerebral Artery)** and **Umb A (Umbilical Artery)** enable a two (2) caliper velocity measurement to be made which displays **PSV, EDV, RI** and **SD** ratio results. To obtain a **PI (Pulsatility Index)** measurement for **MCA** or **Umb A**, select **MCA-PI** or **Umb A-PI** to enable a **Doppler Trace** measurement which displays **PSV, EDV, RI, SD** and **PI** results.

Once the first instance of a measurement has been taken, the relevant touch screen button will be prefaced by (1). If additional versions of that measurement are taken, the number will increment accordingly. Unless the measurement(s) is **Generic**, it will be displayed in the **Report Worksheet**.



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Figure 6-4: Sample OB-Specific Measurement



6.6 FERTILITY-SPECIFIC MEASUREMENTS/CALCULATIONS

To select the number of follicles to be used in the **Follicle Volume** calculation, refer to **Fertility Cascade #** in [Table 8-10: Measurement Options](#).

Follicle Volumes are calculated as $V=(\text{average of all diameters})^3 * \pi/6$. For example:

- if two (2) diameter measurements (e.g., D1 and D2) are made for a Follicle (e.g., F1) then: Volume of $F1=((D1+D2)/2)^3 * \pi/6$
- if four (4) diameter measurements (e.g., D1, D2, D3 and D4) are made for a Follicle (e.g., F2), then: Volume of $F2=((D1+D2+D3+D4)/4)^3 * \pi/6$.

6.7 REPORTS AND WORKSHEETS

Reports/Worksheets have been created as an electronic documentation tool. Identifying patient/exam information is included in the **Report** header on every page.

Applications are linked to a **Report/Worksheet** that can be viewed/edited during an exam via the touch screen **Report/Worksheet** button. **Worksheets** can also be accessed via the touch screen  button.

Note: Files saved to a USB storage device during data transfer will be printed to a PDF in the relevant **Patient** directory under **Patientinfo**. Refer to [9.3](#) for more details.

Reports contain the information from a **Worksheet** but are formatted in a slightly different manner.

Certain aspects (such as measurements) of some **Worksheets** can be edited but only on the same calendar day as they were created. Once the system date rolls past midnight, these fields can no longer be edited. The exception to this is the **Notes** field.

Note: In order for the **Worksheet** to be available for editing, the **Application** used to create the original **Worksheet** must have a custom **Measurement Package**. For details on the **Applications** that qualify, refer to [8.2.6.2 Show/Hide Applications, Measurement Packages and Measurements](#).

Any measurement that is edited will be marked with an asterisk (*).



Warning: Ultrasonix does not endorse user-defined measurements for diagnostic purposes. All user-defined measurements are used at the operator's discretion and risk only.

Note: The touch screen **Report/Worksheet** button is only available if a patient has been selected.

It is not possible to edit **Calculations**.



6.7.1 Accessing Reports/Worksheets

During an exam, when in **Measurement Packages**, press/tap the **Report/Worksheet** button at any time to access the current **Report/Worksheet** on the LCD display. Touch screen options will reflect the fact that a **Report/Worksheet** is now open.

Note: Only four (4) **Report/Worksheet** touch screen buttons are common to all **Applications: Print..., Print Default, Exit** and **Pages**. The other options will only be available when imaging is underway for the relevant **Application**.

Table 6-4: Reporting (Report/Worksheet) Touch Screen Options

Print...	Tap to open the Windows Print dialog. This enables users to configure the print job using the available Print dialog parameters.
Print Default	Tap to send the job to the default printer (if one has been configured).
Exit	Tap to save and close the Report/Worksheet , returning the user to Measurement Packages .
Final Report	Tap to view Final Report layout. Note: This option is available only in Cardiac .
Worksheet	Tap to view the current Worksheet . Edits made to Worksheet Measurements the same calendar day they were taken will be saved and used in final calculations. Note: This option is available only in Cardiac . Any changes to measurements will be auto-calculated within the Worksheet/Report . The actual Calculations cannot be edited. Any measurement that is edited will be marked with an asterisk (*).
Biometrics	Tap to move to the Biometrics page of the Report . Note: This option is available only for OB Applications .
Anatomy	Tap to move to the Anatomy page of the Report . Note: This option is available only for OB Applications .
Pages	Turn the dial directly to the right of Pages to move the Report from page to page.
Graph	Use the Pages button (above) to move to the Graph page of the Report then turn the Graph dial to cycle through the available Graphs .
Fetus A/B to Fetus A/H	Turn the Fetus button dial as many times as necessary to move to the Report for the relevant Fetus (e.g., A, B, C , etc.). Note: This button is only available if Fetus # (Table 4-2) was set to a number other than 1 (options are 1 to 8 which correspond with A to H).
HR	Tap the top of the No HR/Exam HR button to toggle between options.
1 and 2.	Custom Keys 1 and 2 (refer to 8.2.12 for configuration details).

To Access a Report Worksheet while In Measurement Packages:

1. With a frozen image, tap the touch screen  button.
2. Tap **Report**.
3. Tap the top of the **Pages** button to move forward in the **Report Worksheet** or the bottom to move to a previous page.
4. Tap to make any required checkbox or drop-down menu selections.
5. To enter text in the **Comment** field, tap the field and the touch screen keyboard will be presented.
6. Tap **Exit** or the **X** in the upper right corner to close the **Report Worksheet**.

Note: *Exiting the **Report Worksheet** will not end the current exam.*

6.7.2 Obstetrics Report

As with other **Reports**, the **OB Report** allows the user to edit/delete measurements, providing the edit/deletion is done on the same calendar day as the measurements were taken.

To Delete Obstetrical Biometry Measurements from a Worksheet/Report:

Note: Report data can only be edited the same calendar day it was created.

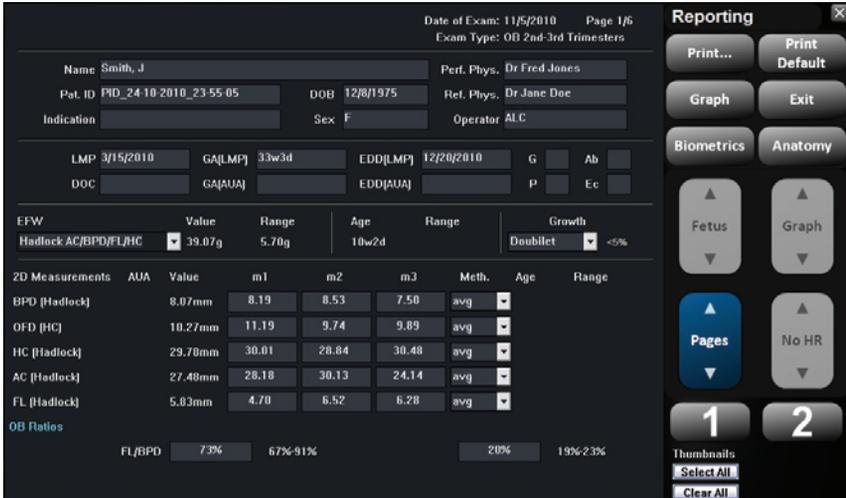
1. With a frozen **OB** image, tap the touch screen  button.
2. Tap **Report**.
3. Tap the top of the **Pages** button to move forward in the **Report Worksheet** or the bottom to move to a previous page.
4. Tap the desired measurement/data field and the touch screen keyboard will be presented.

Caution: In the case of two (2) or more fetuses, ensure the correct fetus is selected prior to deleting the **OB** parameter measurement.

Note: Only some fields are available for editing.

5. Use the keyboard **Bksp** or **Del** key and delete the relevant data.
6. Repeat **step 3** to **step 5** as many times as necessary.
7. Tap **Exit** or the **X** in the upper right corner to close the **Report Worksheet** and return to imaging.

Figure 6-5: Sample Page from an Obstetrical Report Worksheet



Date of Exam: 11/5/2010 Page 1/6
Exam Type: OB 2nd-3rd Trimesters

Name: Smith, J Perf. Phys. Dr Fred Jones
Pat. ID PID_24-10-2010_23-55-05 DOB 12/8/1975 Ref. Phys. Dr Jane Doe
Indication _____ Sex F Operator ALC

LMP 3/15/2010 GA[LMP] 33w3d EDD[LMP] 12/20/2010 G Ab
DOC _____ GA[AUA] _____ EDD[AUA] _____ P Ec

EFW Value Range Age Range Growth
Hadlock AC/BPD/FL/HC 39.07g 5.70g 10w2d Doubillet <-5%

2D Measurements	AUA	Value	m1	m2	m3	Meth.	Age	Range
BPD (Hadlock)		8.07mm	8.19	8.53	7.50	avg		
OFD (HC)		10.27mm	11.19	9.74	9.89	avg		
HC (Hadlock)		29.70mm	30.01	28.84	30.48	avg		
AC (Hadlock)		27.46mm	28.18	30.13	24.14	avg		
FL (Hadlock)		5.03mm	4.70	6.52	6.28	avg		

OB Ratios
FL/BPD 73% 67%-91% 26% 19%-23%

Reporting Panel:
Print... Print Default
Graph Exit
Biometrics Anatomy
Fetus Graph
Pages No HR
1 2
Thumbnails Select All Clear All

6.7.3 Cardiac Reports

The **HR** data in the header of the **Cardiac Report Worksheet** can be obtained from several sources. The source can also be changed in the **Report Worksheet** at the **Operator's** discretion.

- **No HR**: left blank
- **Exam HR**: derived from the **Cardiac Application Information** entry on the **Exam Management** page (refer to **Cardiac** in **Table 4-3** for more details)
- **Mmt HR**: derived from the actual **PW** measured **HR**
- **ECG HR**: derived from the actual **ECG** measured **HR**.

Figure 6-6: Cardiac Report Worksheet

REPORT WORKSHEET		Date of Exam: 11/5/2010	Page 1/2
		Exam Type: Cardiac	
Name: Smith, J	DOB: 12/8/1975	Perf. Phys. Dr Fred Jones	
Pat. ID: PID_24-10-2010_23-55-05	Sex: F	Ref. Phys. Dr Jane Doe	
Indication: <input type="text"/>	HR: 65 BPM	Operator: ALC	
CI: <input type="text"/>	BSA: 1.61m ²		

Figure 6-7: Cardiac Report Touch Screen Buttons





6.7.4 Vascular Reports

Figure 6-8: Sample Page from a Vascular Report Worksheet

REPORT WORKSHEET		Date of Exam: 8/22/2008		Page 1/4				
Exam Type: Vascular								
Name	Jones, Michael	Perf. Phys.	Dr Smith					
Pat. ID	USX_PID_23-07-2008_15-22-16	DOB	3/15/1969		Ref. Phys.	Dr Frank		
Indication		Sex	M		Operator	ALC		
Measurements	Value	m1	m2	m3	m4	m5	m6	Meth.
Stenosis D - Rt Prox ICA								
D1	1.04cm	1.04						max
D2	0.38cm	0.38						max
%	63.21%	63.21						max
Rt Carotid - Rt Dist CCA								
PSV	69.6cm/s	69.6						max
EDV	22.3cm/s	22.3						max
Rt Carotid - Rt Prox ICA								
PSV	79.0cm/s	79.0						max
EDV	29.0cm/s	29.0						max

6.7.5 Billing and QA Review Report/Worksheet Options

If desired, **Billing** details can be included in the **Billing** section.

Note: Ensure **Enable QA Review** has been selected (Table 8-10).

Any **Report/Worksheet** opened/created during/prior to this setting being selected will not include the **Billing** and **QA** options.

QA Review enables a **Reviewer** to make note of any **Follow-up Findings**, record their **QA** results, **Agree/Disagree** with the results determined by the **Operator** associated with the exam in question as well as enter any relevant **Notes** they may wish to make.

Figure 6-9: Billing and QA Review

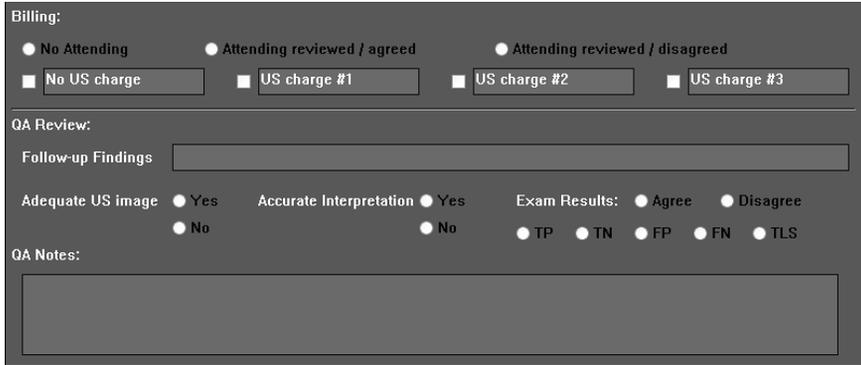


Table 6-5: Billing and QA Review Fields

No Attending	Select if no Attending Physician is present during the exam.
Attending Reviewed/Agreed	Select when an Attending Physician is present during the exam and Agrees with the Operator .
Attending Reviewed/Disagreed	Select when an Attending Physician is present during the exam and Disagrees with the Operator .
No US Charge US Charge #1 US Charge #2 US Charge #3	The names of these four (4) Ultrasound (US) fields can be edited to reflect billing codes relevant to the Exam Type/Application and/or individual institutions. Note: <i>Ultrasonix recommends "blinking out" any unused billing code fields.</i>
Follow-up Findings	Enables Reviewers to comment on Follow-up Findings as necessary. Note: <i>This field will accept approximately 75 characters.</i>
Adequate US Image	Accepts a Yes or No answer.
Accurate Interpretation	Accepts a Yes or No answer.

Exam Results	Agree/Disagree	Allows Reviewers to Agree/Disagree with the Operator's results.
	TP	True Positive
	TN	True Negative
	FP	False Positive
	FN	False Negative
	TLS	Technically Limited Study
QA Notes	Enables Reviewers to add whatever comments they feel are necessary. Note: This field will accept approximately 400 characters.	

To Access Billing and QA Review Details:

1. Tap the touch screen  button.
2. Tap the top of the **Pages** button to move to the relevant page.

REPORT WORKSHEET Page 2/2

Name: Date: Patient ID:

Operator ID: Attending Physician:

Notes:

Billing:

No Attending
 Attending reviewed / agreed
 Attending reviewed / disagreed

No US charge
 US charge #1
 US charge #2
 US charge #3

QA Review:

Follow-up Findings

Adequate US image Yes No
Accurate Interpretation Yes No
Exam Results: Agree Disagree

TP
 TN
 FP
 FN
 TLS

QA Notes:

Note: Any **Report/Worksheet** opened/created during/prior to this setting being selected will not include the **Billing** and **QA** options.

3. Tap to make any required checkbox or drop-down menu selections.
4. To enter text, tap the desired field and the touch screen keyboard will be presented.

CHAPTER 7: TEXT, ANNOTATIONS AND PICTOGRAMS

Text, **Annotations** and **Pictograms** enable the user to label images prior to image transfer and storage.

Note: **Annotation** and **Pictogram** options are controlled via 8.2.2 and 8.2.3, respectively. Refer to 8.2.5 for details on global **Annotation** settings.

Text, **Annotations** and **Text Arrows** can also be added to **3D/4D** images.

Figure 7-1: Text, Annotation and Pictogram Buttons



Table 7-1: Text, Annotation and Pictogram Buttons

Item	Icon	System Control	Functionality
4		DELETE ARROW Button	Deletes all Arrows added to the image.
5		ARROW Button	Turns on/off Arrow graphic on the image field. Trackball positions and rotates the Arrow graphic.
7		DELETE PICTOGRAM Button	Deletes any Pictogram added to the image.
8		PICTOGRAM Button	Turns on/off application-specific Pictogram graphics. Tap Pictogram and dial through the various icons. <ul style="list-style-type: none"> • trackball positions orientation marker • touch screen Rotate dial pivots orientation marker.
10		DELETE TEXT Button	Deletes all Text added to the image.
11		TEXT Button	Activates the keyboard for Text entry and displays Application-specific Annotation buttons on the touch screen.



7.1 TEXT AND ANNOTATIONS

The system enables users to add **Text** or **Preset Annotations** to the image field. **Annotations** are predefined by **Application** but can also be customized by users (8.2.2). A **Text Arrow** is available as well as an **Auto-Complete** text feature that anticipates the word being entered (8.2.5).

Figure 7-2: Annotations Touch Screen

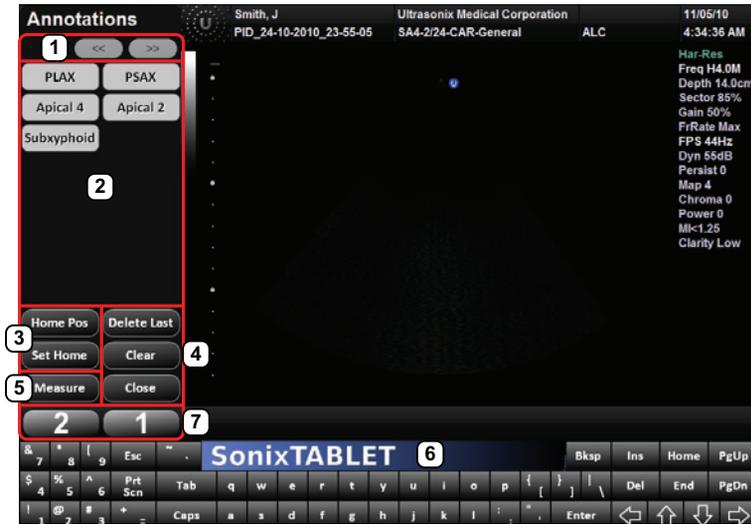


Table 7-2: Annotations Touch Screen

1	Page Selector Buttons	Annotation page selector buttons for use when there are multiple pages of Application -specific Annotations .
2	Annotation Buttons	Application -specific Annotations controlled via 8.2.2 Presets – Annotations .
3	Home Pos(ition) Buttons	Home Position configuration buttons (common to all Annotations touch screens). Note: Refer to 7.1.1 for details on setting the Home Position .
4	Edit Buttons	Tap Delete Last (or use the keyboard Backspace key) to remove the letter(s) to the left of the Text cursor. Tap Clear to remove all Annotations on the imaging screen. Common to all Annotation touch screens: Delete Last , Clear and Close .
5	Measure Button	Tap to enter Measurement Packages directly from the Annotations touch screen (common to all Annotations touch screens).
6	Touch Screen Keyboard	Use to enter text (common to all Annotation touch screens).
7	Custom Keys 1 and 2	Tap to save images to the exam. Refer to 8.2.12 for configuration details.

To Access the Annotations Touch Screen:

1. Tap the touch screen **ABC** button.

7.1.1 Set Text Home Position

The **Home Position** button enables users to automatically reposition the cursor to the previously-defined **Text Home Position**. Once a **Text/Annotation** cursor **Home Position** has been set, it will remain until/unless it is reset.

To Set the Text Home Position:

1. Tap the touch screen **ABC** button.
2. Tap the touch screen to position the cursor in the desired **Home Position**.
3. Tap **Set Home** to set the **Home Position**.

4. Tap **Close** to exit **Text/Annotation** mode.

7.1.2 Annotations (Keyboard Text)

To Enter Annotation Text:

1. Tap the touch screen **ABC** button.
2. A **Text** cursor is presented on the imaging screen.
3. Use the touch screen keyboard to enter the desired text.

Note: When the **Auto-Complete** function is active ([8.2.5 Annotations](#)), enter the first letter(s) of the preset word and the rest of the word will be presented in blue. If more than one preset word with the same first letter exists, use the **Tab** key to cycle through all the preset words beginning with that letter. To set the selected preset word, press **Enter** on the keyboard.

4. Tap **Close** to exit **Text/Annotation** mode.



7.1.3 Application-Specific Annotations

To Enter Application-Specific Annotations:

1. Tap the touch screen **ABC** button.
2. Once the **Text/Annotation** cursor location is presented on the imaging screen, tap the touch screen to reposition the cursor as required.
3. Tap the desired **Annotation** from the selection presented on the touch screen.

Note: To modify the preset **Annotations**, refer to section [8.2.2 Presets – Annotations](#).

4. Repeat [step 2](#) and [step 3](#) as many times as required.
5. Tap **Close** to exit **Text/Annotation** mode.

7.1.4 Deleting Text/Annotations

To Delete All Text/Annotations:

1. Tap the touch screen  **ABC** button.

Note: Alternatively, tap **Clear** while in the **Annotations** touch screen.

To remove only the most recently entered **Annotation**, tap **Delete Last** while in the **Annotations** touch screen. Repeating this action will delete each entry in reverse order.

7.1.5 Text Arrows

Operators can enter one (1) or multiple **Text Arrows** on a single image.

If required, Operators can also customize the length of the **Text Arrow** ([8.2.5.1](#)).

To Enter Text Arrows:

1. Tap the touch screen  button.
2. Tap the touch screen in the relevant spot to place an arrow.

Note: Alternatively, tap and drag to place and orient an arrow.

3. Repeat [step 2](#) as many times as necessary.
4. Archive the image to save it with the arrows visible.

Note: To archive, tap [1](#) or [2](#), depending on the system's printing setup (as configured in [8.2.12 Custom Keys](#)).

5. Tap  to remove all arrows from the image.

7.2 PICTOGRAMS

Pictograms are predefined, **Application**-specific icons that enable users to label the imaging feature. Customizing the availability of specific **Pictograms** is controlled through [8.2.3 Presets – Pictograms](#).

Figure 7-3: Pictogram Touch Screen

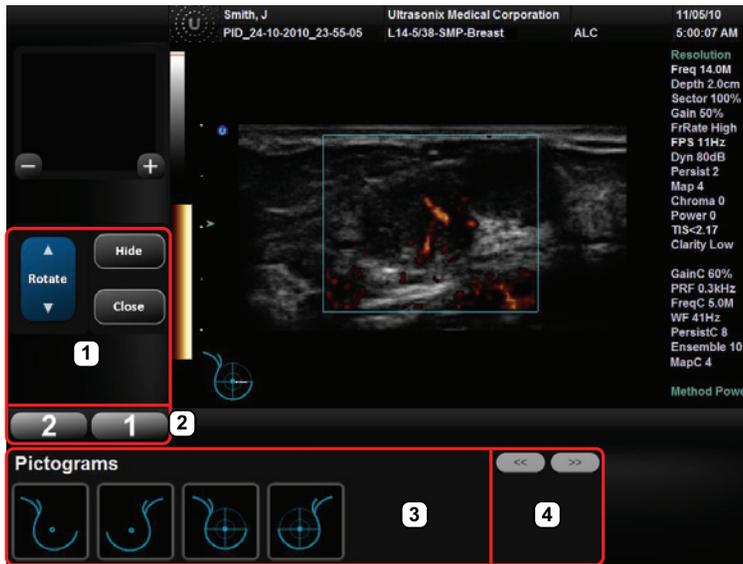


Table 7-3: Pictogram Touch Screen

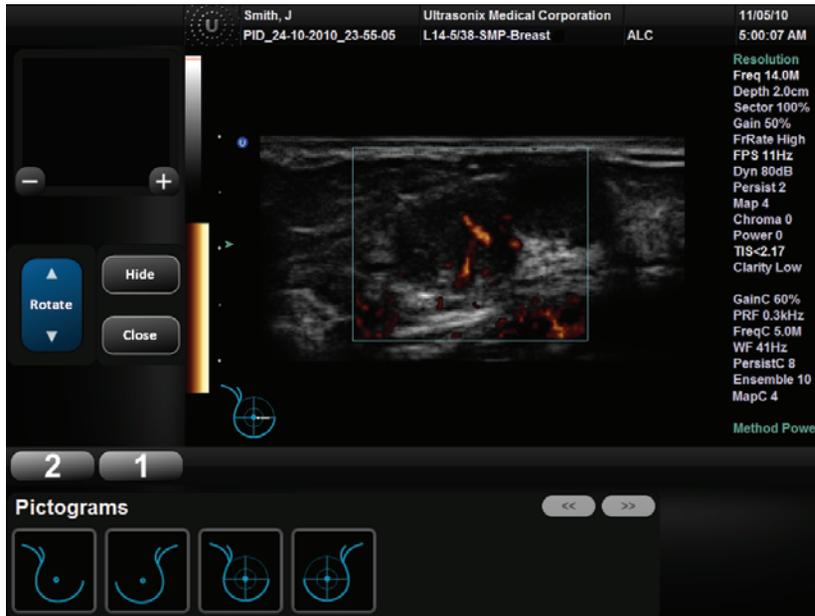
1	Edit Buttons	Common to all Pictogram touch screens: Rotate , Hide and Close .
2	Custom Keys 1 and 2	Tap to save images to the exam. Refer to 8.2.12 for configuration details.
2	Pictogram Buttons	Application -specific Pictograms controlled via 8.2.3 Presets – Pictograms .
4	Page Selector Buttons	Pictogram page selector buttons for use when there are multiple pages of Application -specific Pictograms .



To Activate a Pictogram:

1. Tap the touch screen  button.
2. Tap the desired **Pictogram** to place it on the bottom left of the imaging screen.

Note: If not all **Pictograms** fit on a single touch screen, tap the **Page Selector** buttons as required to cycle through all available **Pictograms**.



3. Tap and drag **Pictogram** orientation marker to the desired location on the **Pictogram**.
4. Tap the top of the **Rotate** button to move the orientation marker counter-clockwise or the bottom of the **Rotate** button to move clockwise.

Note: To hide the **Pictogram** from view, tap the touch screen **Hide** button.

CHAPTER 8: SYSTEM SETUP

The various features and settings of the system can be customized via one of the three (3) **System Setup** menus: **User**, **Administrator** and **Service**. Menu-level password protection applies as follows:

- **Users Settings:** no password protection
- **Administrator Settings:** optional password protection
- **Service Settings:** always password protected. Only qualified Ultrasonix Medical Corporation service personnel can access this menu.

To access any of the following functions, tap the touch screen  button.

The following tables provide a quick overview of the system's setup menus. Refer to the related sections later in this chapter for details on any particular setup option.

Note: *Unlicensed and/or inactive Menu options will be inaccessible (i.e., grayed out).*

Table 8-1: User Settings Menu

Setup	SonixLive	Configure Streaming Video for VLC or Windows Media Player .
	Administrator	Access the Administrator Settings menu.
Support	Remote Support	Access the Remote Support option. Note: <i>Remote Support is configured via 8.2.10 Network.</i>
	Chat Support	Access the Chat Support option Note: <i>Chat Support is configured via 8.2.10 Network.</i>
	Documentation	View a PDF version of the User Manual on the LCD display.

Note: *The software version number is displayed across the bottom of this menu.*

Table 8-2: Administrator Settings Menu

Application Setup	Presets	View and manage Presets with their associated Annotations , Pictograms , Measurements and Imaging Presets .
	Annotations	Toggle on/off the three (3) global Annotation settings. Note: <i>Customization of Preset-specific Annotations is handled through Presets.</i>
	Measurements	Configure measurement Graphics , Measurement and Worksheet settings.
	Training Tutorials	Download, copy or view training materials in a variety of file formats.
	SonixGPS	Not available on this platform.
	Biopsy Guide	Configure Single Guideline Biopsy option.



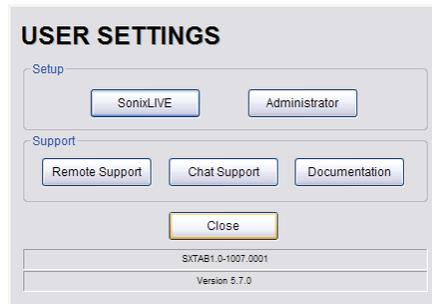
System Setup	System	Configure/customize basic System Settings: Institution Name, Regional options, Shutdown Options, Auto-Freeze, User Data, Master Volume and Admin Password. Reset system to Factory Defaults.
	Network	Configure settings for: Network (LAN (Local Area Network) or dialup), TCP/IP (Transmission Control Protocol/Internet Protocol), E-mail and Chat Support. Caution: <i>System networking options are intended for use <u>inside</u> your organization's firewall. Organizations that elect to configure/use the networking functionality provided by Ultrasonix are assuming all liabilities and risks associated with that decision.</i> Note: <i>Dialup access requires an external USB modem. Talk to your local dealer or Ultrasonix Technical Support for details.</i>
	DICOM	Enable and configure DICOM Storage, Print and Worklist.
	Custom Keys	Set the Store, Print, Archive parameters for the Custom Key buttons (1, 2 and  .
	Peripherals	Configure Peripherals: Paper Printer, LCD Display, VCR/Photo, Footswitch, (Image) Brightness/Contrast and Touch Screen settings.
	Display	Configure Appearance options for the LCD display.
	Patient	Customize entry of Patient information using a variety of options, including: show/hide fields, create new fields, allow/disallow editing of specific fields, and selection of gender and application defaults.
	Status Bar	Configure which Status Bar icons are visible on the LCD display.
	Capture	Configure Capture Settings for still images, video output and Cine loop storage.
	Imaging Modes	Configure a variety of Imaging Mode options including Split Imaging and Initial Active Display.
System Maintenance	Documentation	Add/Delete user documentation for viewing on the system Note: <i>All documents must be in PDF format.</i>
	Software Updates	Update system software via the Internet or a USB medium.
	Licensing	View and add License details.
	Service...	Access the Service Mode dialog.

Table 8-3: Service Settings Menu

Service Settings	The system is delivered with this option under Password protection. Note: <i>Only qualified Ultrasonix Medical Corporation service personnel can access this menu.</i>
Note: <i>Be sure to save whatever edits are in progress <u>before</u> exiting, otherwise changes may be lost.</i>	

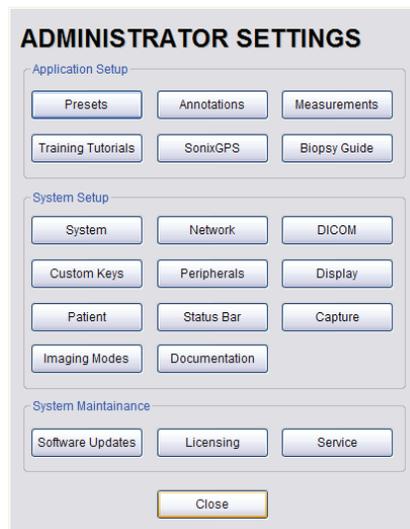
To Access the System Menus:

1. Tap the touch screen  button and the **User Settings** menu will be presented.



Note: The **Software Version** number is displayed on the **User Settings** menu.

2. From the **User Settings** menu, select **Administrator** to access **Administrator Settings**.



3. From the **Administrator Settings** menu, select **Service...** to access the **Service Mode** dialog.





8.1 USER SETTINGS

8.1.1 SonixLive Setup

SonixLive allows remote users to view live imaging as **Streaming Video** using **VLC Media Player** or **Windows Media Player (WMP)**. When both SonixLive and the **Status Bar** icon are activated and **Streaming Video** is underway, the SonixLive icon will appear on the imaging screen (refer to [8.2.16 Status Bar](#) for details on the SonixLive icon).

Note: Because **Streaming Video** may cause a noticeable decrease in overall system performance, Ultrasonix recommends activating SonixLive only when video streaming is required ([8.1.1.4 Activating/Deactivating SonixLive](#)).

The **VLC Media Player** is freeware available from VideoLAN. The Sonix system is delivered with the server-side software ready for use. Client-side software must be downloaded from the VideoLAN website. Refer to [8.1.1.1 SonixLive and VLC Media Player](#) for details on downloading and setup.

Figure 7-1: SonixLive Setup

SonixLIVE SETUP

Start SonixLIVE

Select Streaming Client

SonixLIVE Viewer

Stream to Address: 226.19.0.1

Port: 1234

Advanced Options

Frame Rate: 10

Custom Field

Custom Field

Windows Media Player

Local IP Address: 127.0.0.1

OK Cancel

Note: A **Network** connection ([8.2.10](#)) must be configured and active in order to use SonixLive.

Table 8-4: SonixLive Settings

		After configuring SonixLive (both for the Sonix system and the receiving PC), use Start/Stop SonixLive to ensure it is running only when necessary.	
Start/Stop SonixLive		Note: Because Streaming Video may cause a noticeable decrease in overall system performance, Ultrasonix recommends activating SonixLive only when video streaming is required.	
SonixLive Viewer	Stream to Address	Select from the drop-down menu (for multicasting) or type in the relevant Stream to IP Address of the client. Two (2) multicast IP Addresses are provided (226.19.0.1 and 226.19.0.2) for selection from the drop-down menu. If this is not sufficient, use an IP Address from the following range: 224.0.0.0 to 239.255.255.255 .	
	Port	The default Stream to Port (1234) should not need to be changed.	
	Advanced Option	Frame Rate	The default Frame Rate is 10 which should be sufficient for most applications. If the setting must be changed, select from the drop-down menu (1–20) or type in the relevant number.
		Custom Field Custom Field	Use these fields for VLC options, e.g., type of encoding.
Windows Media Player	Note: It is not possible to multicast (i.e., broadcast SonixLive to more than one client PC) with the Windows Media Player .		
	Local IP Address	This setting auto-completes using the system's Local IP Address . Note: A Network connection (8.2.10) must be configured and active in order for the Local IP Address to auto-complete.	

To Access SonixLive Settings:

1. Tap the touch screen  button.
2. Select SonixLive.



8.1.1.1 SonixLive and VLC Media Player

To Download the VLC Media Player Software for use on the Remote Computer:

Note: Each remote computer must have a configured copy of the **VLC** software.

1. Open the web browser and go to the website: <http://www.videolan.org/vlc/>.
2. Follow the links to download the most recent self-extracting Windows version of the **0.8.6** VLC software.

Note: The Sonix will only support remote viewing with the **VLC Media Player** on a PC running Windows XP.

*When planning to multicast, Ultrasonix recommends downloading the **VLC** software to a USB key to simplify the multi-PC installation process.*

To Install VLC Software on the Remote PC:

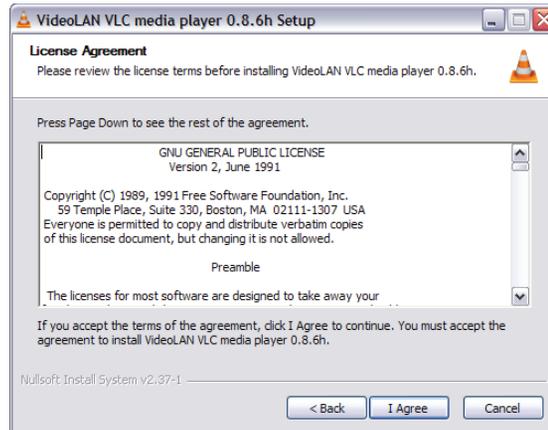
1. Open **Windows Explorer** and move to the directory containing the downloaded **VLC** software.
2. Open (or run) the self-extracting **VLC** installation software.
3. When prompted, select **English** as the **Installer Language** and select **OK**.



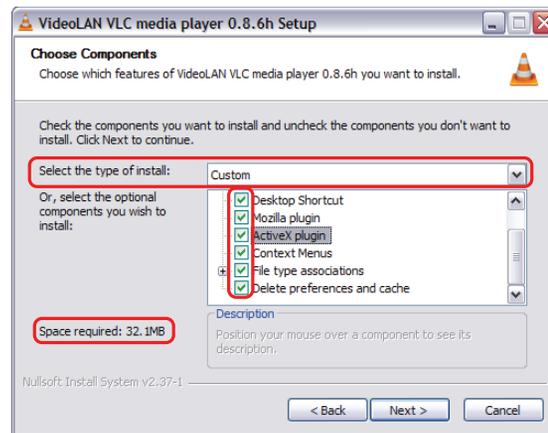
4. Select **Next** to continue past the **Welcome** screen.



5. Read the **License Agreement** and select **I agree** to continue.



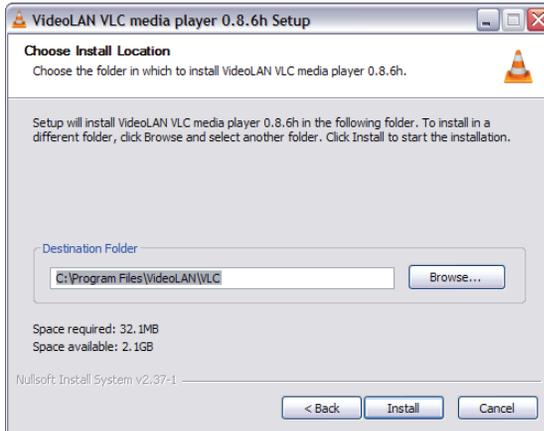
6. On the **Choose Components** dialog, select **Custom** as the type of installation.



7. Select the checkboxes for all available optional components and select **Next**.

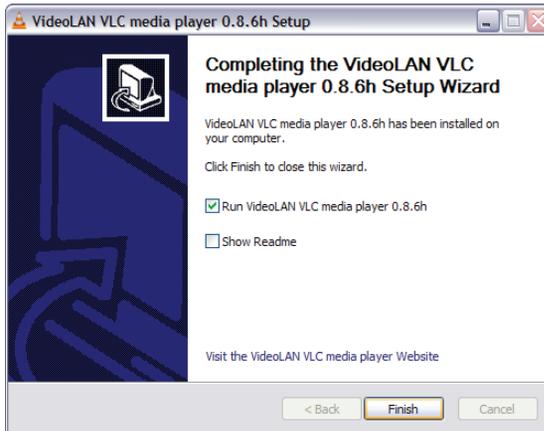
Note: Ensure the target PC has enough space to complete the installation.

8. Select **Install** to accept the default Destination Folder and begin the install.



Note: To change the **Destination Folder** location/name, select **Browse** and follow the instructions.

9. When the installation is done, select **Finish**.

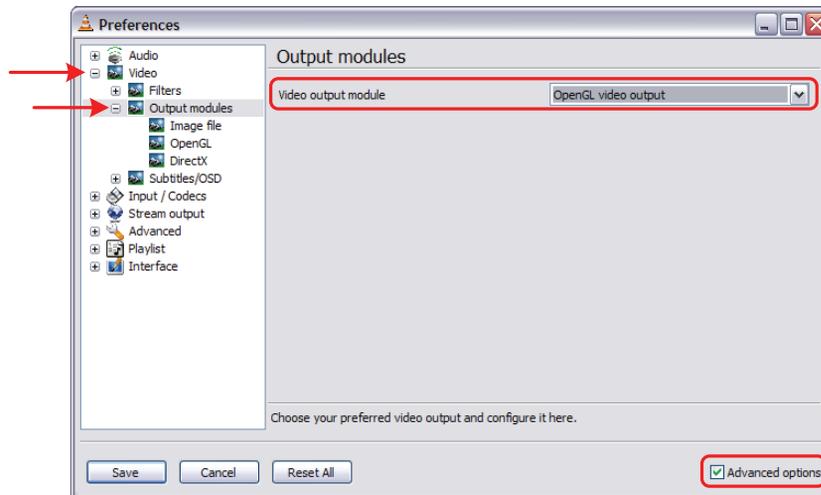


To Configure VLC Software on the Remote PC:

1. Launch the **VLC Media Player** software.
2. Select the **Settings** menu and select **Preferences...**

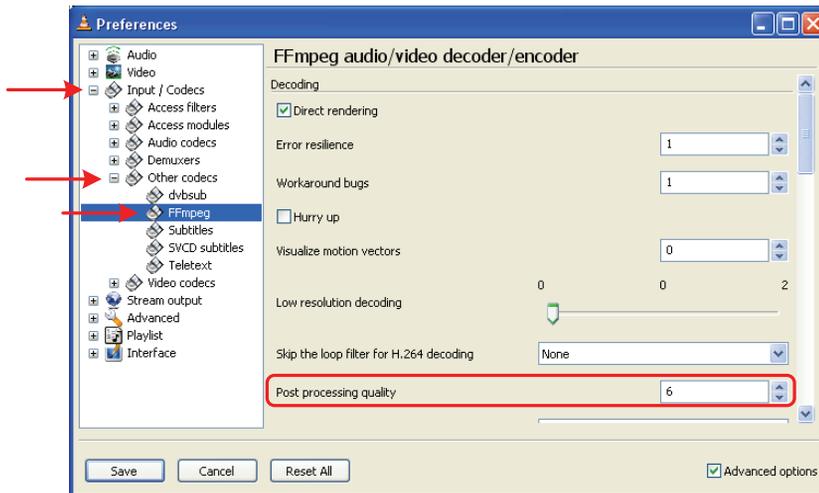


3. Select the + (plus) signs to expand **Video** and **Output modules**.



4. Select **Advanced options**.
5. From the **Video output module** drop-down menu select **OpenGL video output**.
6. Select the - (minus) sign to close **Output modules** and **Video**.

7. Select the + (plus) sign to expand **Input/Codecs** and **Other codecs**.

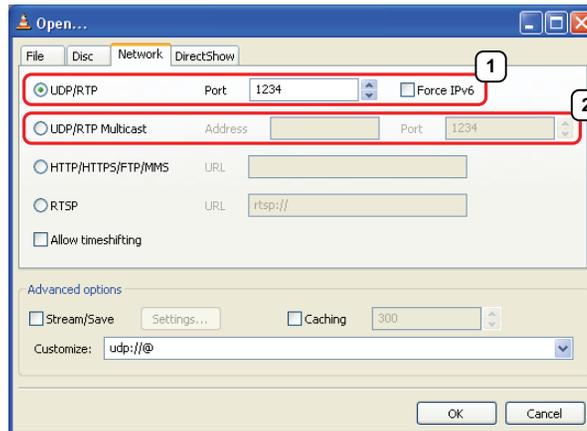


8. Select **FFmpeg**.
9. Set the **Post processing quality** field to **6**.
10. Select **Save**.
11. Select the **Open** button.



12. Select the **Network** tab.

13. Select the appropriate **UDP/RTP** radio button.



Note: For unicasting, select (1) **UDP/RTP**.

For multicasting, select (2) **UDP/RTP Multicast** and enter the multicast **IP Address** in the **Address** field.

14. Ensure the **Port** is set to **1234**.
15. Select **OK**.

To Configure SonixLive Streaming Video for VLC Media Player on the Sonix:

1. Tap the touch screen  button.
2. Select SonixLive.
3. Select the **SonixLive Viewer** radio button.
4. Select a **Stream to Address** from the drop-down menu or type one in using the keyboard.
5. If required, edit the **Frame Rate**.
6. Select the **Start** SonixLive button.

Note: Relevant message bubbles will be displayed whenever SonixLive is activated or deactivated.



The SonixLive icon will only be visible if it has been enabled (refer to [8.2.16 Status Bar](#) for more details).

7. Select **OK** to accept the changes or **Cancel** to exit without saving.



8.1.1.2 SonixLive and Windows Media Player

To Configure SonixLive Streaming Video for Windows Media Player on the Sonix:

1. Tap the touch screen  button.
2. Select SonixLive.
3. Select the **Windows Media Player** radio button.

Note: A **Network** connection ([8.2.10](#)) must be configured and active in order for the **Local IP Address** to auto-complete.

4. Select the **Start** SonixLive button.

Note: Relevant message bubbles will be displayed whenever SonixLive is activated or deactivated.



The SonixLive icon will only be visible if it has been enabled (refer to [8.2.16 Status Bar](#) for more details).

5. Select **OK** to accept the changes or **Cancel** to exit without saving.

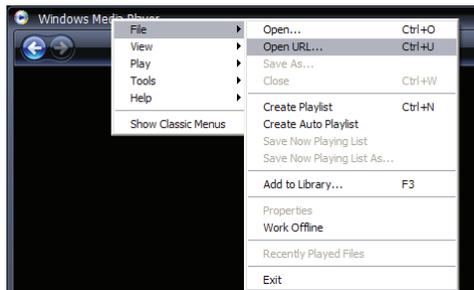
To Configure SonixLive Streaming Video for the Windows Media Player on the Remote Computer:

Note: Be sure to have the **SonixLive IP Address** handy before beginning this process.

1. After turning on the remote computer, open the **Windows Media Player** program.



2. With the cursor in the **Title Bar**, right click and select **File > Open URL....**



3. In the **Open URL** dialog, enter the **SonixLive IP Address** followed by **:8080**. For example, if the relevant **IP Address** is **127.0.0.1**, type in **http://127.0.0.1:8080**.



4. Select the **OK** button and the SonixLive video stream will be displayed in the **Windows Media Player**.

8.1.1.3 SonixLive Status Bar Settings

Status Bar settings apply to both the *VLC* and *Windows Media Players*.

Note: Refer to [8.2.16 Status Bar](#) for more details on **Status Bar** settings.

To Configure SonixLive Status Bar Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Status Bar**.



3. Select the SonixLive and **SonixLive IP Address** options.

Note: Selecting the **SonixLive IP Address** will write the actual **IP Address** to the LCD display. If privacy/security is a concern, do not select this option. To determine the relevant **IP Address**, refer to the **Local IP Address** field in [8.2.10 Network](#).

4. Select **OK** to accept the changes or **Cancel** to exit without saving.

8.1.1.4 Activating/Deactivating SonixLive

To Activate/Deactivate SonixLive:

Note: Before activating SonixLive, be sure to:

- install/configure the relevant media player settings ([8.1.1.1](#) or [8.1.1.2](#))
 - enable SonixLive ([8.2.16 Status Bar](#)).
-

1. Tap the touch screen  button.
2. Select SonixLive.
3. Select the **Start/Stop** SonixLive button.

Note: Relevant message bubbles will be displayed whenever SonixLive is activated or deactivated.



The SonixLive icon will only be visible if it has been enabled (refer to [8.2.16 Status Bar](#) for more details).

4. Select **OK** to accept the changes or **Cancel** to exit without saving.



8.1.2 Remote Support

Remote Support is a licensed option that allows a member of the Ultrasonix Technical Support to view and control the system for diagnostic purposes.

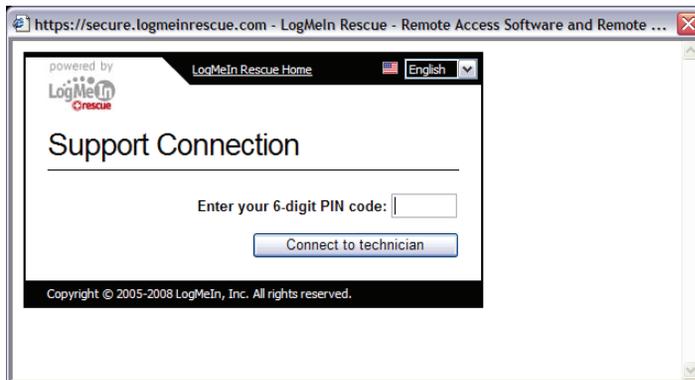
In order to use **Remote Support**, the **Network** must be configured ([8.2.10 Network](#)) and a **PIN** (**Personal Identification Number**) must be obtained from Ultrasonix Technical Support.

Note: *The PIN is valid for 20 minutes only, so be sure to use it right away.*

Remote Support can also be accessed from **QSonix**. Refer to [3.4](#) for details.

To Access Remote Support:

1. Tap the touch screen  button.
2. Select **Remote Support**.



Note: *If Remote Support does not appear to be available, contact your IT Department and have them check to make sure the network connection is active and the **Remote Support** option has been configured for use.*

3. Enter the **PIN** (**Personal Identification Number**) provided by Ultrasonix Technical Support.

Note: *The PIN is valid for 20 minutes only, so be sure to use it right away.*

4. When prompted, select **Download > Run > Run** in order to install the required programs.
5. The system can now be remotely controlled.

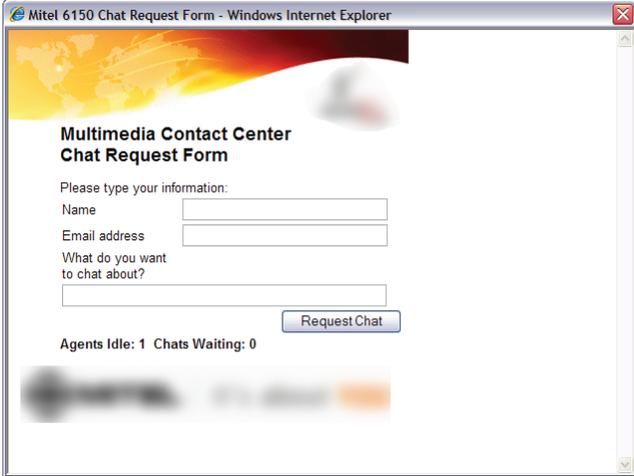
8.1.3 Chat Support

Chat Support enables a real-time discussion with a member of the Ultrasonix Technical Support team. In order to use **Chat Support**, it must first be configured in [8.2.10 Network](#).

Note: If **Chat Support** is not available, contact the IT Department and have them check to ensure the network connection is active and that **Chat Support** has been configured for use ([8.2.10.4](#)).

To Access Live Chat Support:

1. Tap the touch screen  button.
2. Select **Chat Support...**



3. If an **Agent** is logged on, use the keyboard to complete the **Chat Request Form**.
4. Select **Request Chat**, then wait while the system connects to the server.
5. When the message **Found available Agent:...** is presented, use the keyboard to enter the inquiry in the **Send** line.





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6. Select **Send** to post the message.
7. Select **End Chat** when the chat is complete.
8. Select **Yes** to continue.



8.2 ADMINISTRATOR SETTINGS

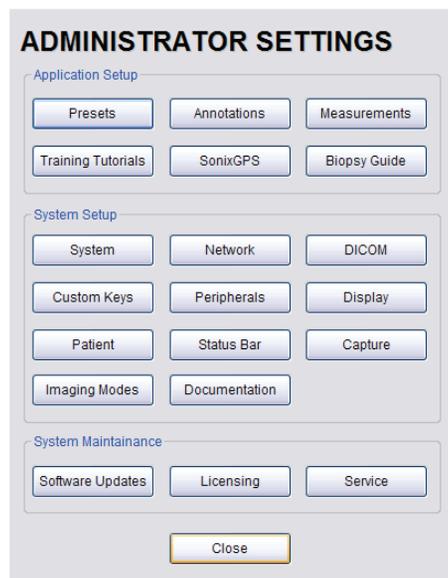
Administrator Settings allow the system administrator to configure high level **Application** and **System** settings as well as perform certain **System Maintenance** functions.

Typically, the **System** parameters are set during initial installation and only require limited access and adjustment. By default, **Administrator Settings** are not delivered with an active **Password**, however, at their discretion, each institution has the option to apply **Password** protection (8.2.9.1).



Warning: *Application parameters should be configured by a qualified medical practitioner.*

Figure 8-2: Administrator Settings Menu



To Access Administrator Settings:

1. Tap the touch screen  button.
2. Select **Administrator** to access the **Administrator Settings** menu.

8.2.1 Presets

Presets Setup enables users to manage factory default and user-defined **Imaging Presets**.

Each **Preset** can be selected/deselected via the **Presets Setup** options. Refer to [8.2.1.1 Show/Hide Imaging Presets](#) for details on hiding **Presets**.

Notes:

Only the active transducer tree will be expanded upon entry to **Presets Setup**.

3D/4D Presets are controlled from within **3D/4D Mode**.

Figure 8-3: Presets Setup

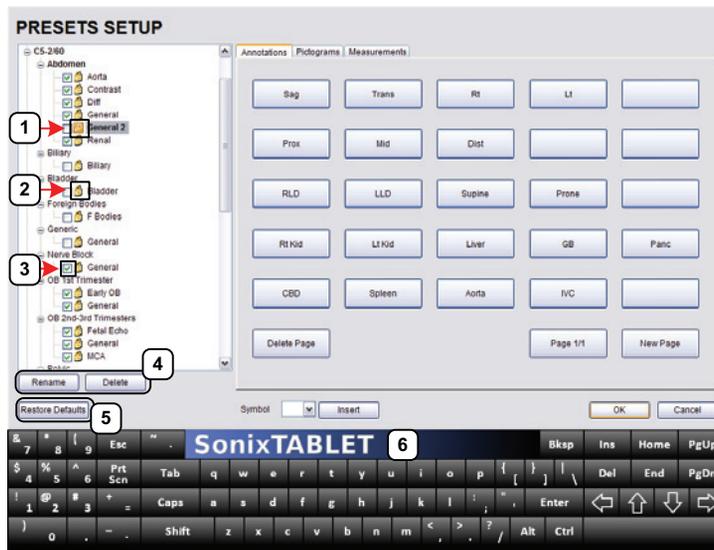


Table 8-5: Presets Setup

1	Key Icon
2	Lock Icon
3	Preset Checkbox
4	Rename and Delete <i>Note: Rename and Delete are only available if a user-defined Preset has been selected.</i>
5	Restore Defaults <i>Caution: Restore Defaults restores <u>all</u> Presets Setup changes to their factory settings.</i>
6	Touch screen keyboard

Default settings are locked (as indicated by the lock icon adjacent to the **Preset** name). Additional user-definable aspects of the default settings are available through the three (3) tabs on the **Presets Setup** page: **Annotations**, **Pictograms** and **Measurements**.

User-defined **Presets** are marked with a key icon. These cannot be locked.

The left hand menu displays all currently available **Presets**, both default and user-defined. Each **Application** is delivered with at least one default **Preset**.

To Access the Presets Setup Page:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.

To Rename a Previously Created User-Defined Preset:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. Select the user-defined **Preset** to be renamed.
4. Select the **Rename** button.
5. Type a new, unique name in the **Rename Preset** message box.



6. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Delete a User-Defined Imaging Preset:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. Select  the user-defined **Preset** to be deleted.
4. Select the **Delete** button.
5. Select **Yes** to confirm the deletion or **No** to cancel the operation.



Note: The message will specify the name of the user-defined **Preset** selected for deletion.



8.2.1.1 Show/Hide Imaging Presets

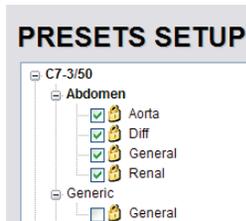
Preset availability can be controlled using its associated checkbox. When selected, as indicated by the presence of the green checkmark, the **Preset** will be available from both the touch screen and **QSonix** (providing the applicable transducer is connected).

To hide **Presets** on the touch screen and in **QSonix**, all versions of that **Preset** must be deselected (i.e., deselect every Preset of the same name under every Application for every transducer).

Note: *The show/hide function applies to both default and user-defined Presets.*

To Show/Hide Imaging Presets:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. Select/deselect the relevant checkboxes.



Note: *Deselecting **General** under **C5-2/60-Abdomen** will only hide the **General Preset** when **Abdomen** is selected for the **C5-2/60** transducer.*

*Deselecting **General** under **Abdomen** for all applicable transducers will hide that **Preset** from view on both the touch screen and in **QSonix**.*

4. Select **OK** to accept the changes or **Cancel** to exit without saving.

8.2.2 Presets – Annotations

The ability to manipulate the text of a specific **Annotation** attached to either a user-defined or default **Presets** is handled through the **Annotations** tab on the **Presets Setup** page. **Annotation** text appears by **Application** on the console touch screen.

Note: Refer to 8.2.5 for details on global **Annotation** settings.

Figure 8-4: Presets Setup – Annotations

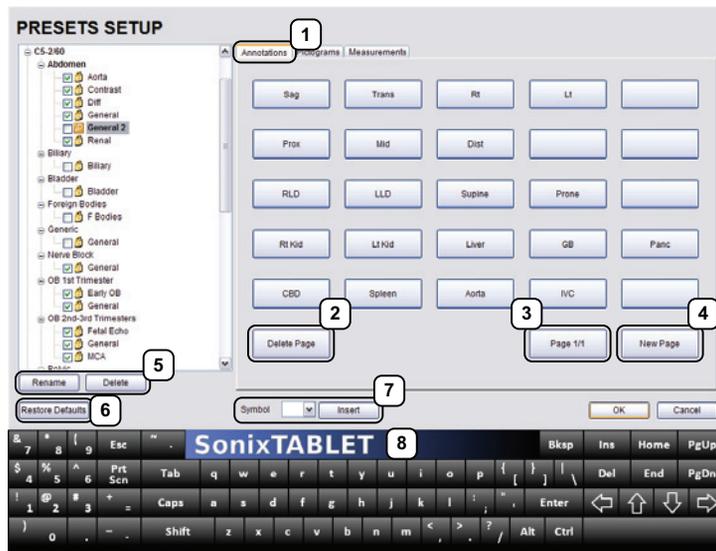


Table 8-6: Presets Setup – Annotations

1	Annotations Tab	
2	Delete Page	
3	Page Selector	
4	New Page	
5	Rename and Delete	Note: <i>Rename</i> and <i>Delete</i> are only available if a user-defined Preset has been selected.
6	Restore Defaults	Caution: <i>Restore Defaults</i> restores <u>all</u> Presets Setup changes to their factory settings.
7	Insert (Symbol)	
8	Touch screen keyboard	

Note: The order in which **Annotations** are presented is matched on the touch screen during **Text** entry (7.1 **Text and Annotations**).



8.2.2.1 Modify Annotations

Changes can only be made to the **Annotations** of one **Exam Type/Application** at a time. Additionally, the system allows users to define/change the **Home Position** for the **Annotation** cursor. Once set, whenever the **Home Position** touch screen button is tapped, the **Text** cursor will move directly to that spot.

Note: Refer to [7.1.1 Set Text Home Position](#) to define the **Text/Annotation** cursor **Home Position**.

To Modify a Preset's Annotations:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. Highlight the relevant **Preset** from the left hand menu.
4. Select  the relevant **Annotation** space on the right hand side of the LCD display.
5. Use the touch screen keyboard to type in the new **Annotation**.

Note: If multiple pages of **Annotations** are required, select the **New Page** button as often as necessary to create the desired number of **Annotation** spaces.

Alternatively, if multiple pages already exist, move through them using the onscreen page selection button, making changes as required.

6. Tap **Enter** to accept the changes or **Esc** to delete the entry.

8.2.3 Presets – Pictograms

The ability to attach/detach specific **Pictograms** to both user-defined and default **Presets** is handled via the **Pictograms** tab in **Presets Setup**. Re-ordering the sequence in which they will appear on the touch screen during a scanning session is managed here as well.

Figure 8-5: Presets Setup – Pictograms

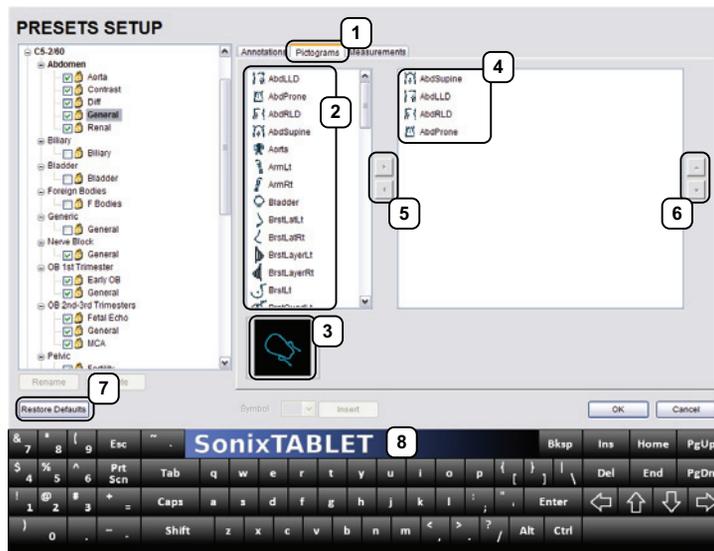


Table 8-7: Presets Setup – Pictograms

1	Pictograms Tab
2	List of available Pictograms
3	List of Pictograms attached to the selected Preset
4	Selected Pictogram
5	Pictogram Selectors
6	Pictogram Order Selectors
7	Restore Defaults <i>Caution: Restore Defaults restores <u>all</u> Presets Setup changes to their factory settings.</i>
8	Touch screen keyboard



8.2.3.1 Modify the Pictograms Attached to Presets

To Add Pictograms to an Imaging Preset:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. On the **Presets Setups** page, select the **Pictograms** tab.
4. Highlight the relevant **Preset** in the left hand column.
5. From the list of available **Pictograms**, highlight the relevant **Pictogram**.
6. Use the right facing selector button to move the item to the list of selected **Pictograms**.
7. Repeat **step 5** and **step 6** as many times as required.
8. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Delete Pictograms from an Imaging Preset:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. On the **Presets Setups** page, select the **Pictograms** tab.
4. Highlight the relevant **Preset** in the left hand column.
5. Highlight the relevant **Pictogram** in the list of selected **Pictograms**.
6. Use the left facing selector button to delete the item from the list of selected **Pictograms**.
7. Repeat **step 5** and **step 6** as many times as required.
8. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Reorder Selected Pictograms Attached to an Imaging Preset:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. On the **Presets Setups** page, select the **Pictograms** tab.
4. Highlight the relevant **Preset** in the left hand column.
5. Highlight the relevant **Pictogram** in the list of selected **Pictograms**.
6. Use the order (up/down) selector buttons to move the item to another place in the list of selected **Pictograms**.
7. Repeat **step 5** and **step 6** as many times as required.
8. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.4 Presets – Measurements

Based on *Exam Type*, **Presets – Measurements** allows users to select/deselect the available touch screen **Measurement Package** options. It also enables users to edit the default imaging **Measurement Package** for a specific *Exam Type*.

Figure 8-6: Presets – Measurements

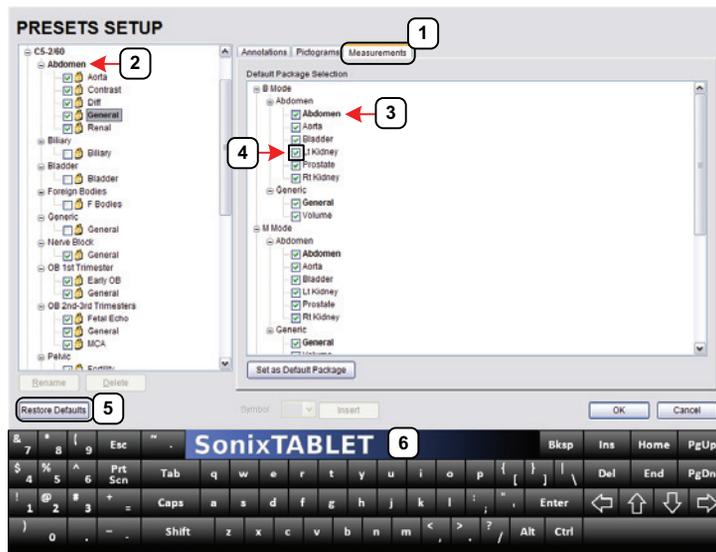


Table 8-8: Presets – Measurements

1	Measurements Tab
2	Exam Type
3	Default Imaging Measurements Package (labelled in bold face type)
4	Measurements checkbox
5	Restore Defaults <i>Caution: Restore Defaults restores <u>all</u> Presets Setup changes to their factory settings.</i>
6	Touch screen keyboard



8.2.4.1 Modify the Available Touch Screen Measurements Packages

To Edit the List of Measurements Packages Available on the Touch Screen:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. On the **Presets Setups** page, select the **Measurements** tab.
4. Highlight the relevant **Exam Type** in the left hand column.
5. From the available **Default Package Selection** list, select/deselect the checkbox for the relevant **Measurements Package**.
6. Repeat [step 4](#) and [step 5](#) as many times as required.
7. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Edit the Default Touch Screen Measurements Package:

1. Tap the touch screen  button.
2. Select **Administrator > Presets**.
3. On the **Presets Setups** page, select the **Measurements** tab.
4. Highlight the relevant **Exam Type** in the left hand column.
5. From the available **Default Package Selection** list, highlight the desired **Measurements Package**.
6. Select the **Set as Default Package** button.
7. Repeat [step 5](#) and [step 6](#) as many times as required.

Note: *There can be only one (1) default Measurements Package for each Exam Type.*

8. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.5 Annotations

There are five (5) global **Annotation** settings available.

Figure 8-7: (Global) Annotations Settings

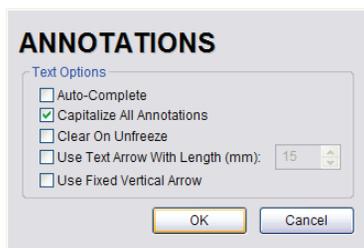


Table 8-9: (Global) Annotation Settings

<p>Auto-Complete</p>	<p>Select to automatically fill in a word when the first letter(s) is entered on the LCD display.</p> <p>If more than one Preset begins with the same letter use the Tab key to move through the list or continue typing the Preset name. When enough of the name has been completed in order to jump to the correct entry, the desired Preset name will appear onscreen and can be selected.</p>
<p>Capitalize All Annotations</p>	<p>Select to automatically force the first letter of each word in the Annotation to be typed as an upper case character.</p>
<p>Clear on Unfreeze</p>	<p>Select to automatically clear the Annotations from the image field with unFREEZE. If this option is not selected, the text will remain on the image field until the user deletes it.</p>
<p>Use Text Arrow with Length (mm)</p>	<p>Select to override the standard system Text Arrow. This enables the user to define the Text Arrow length in mm. The range is 5–30 mm with a default setting of 15 mm.</p>
<p>Use Fixed Vertical Arrow</p>	<p>Select to override the standard system Text Arrow with an arrow that is always in a vertical position. When selected, this arrow will use the length setting from the previous field (Use Text Arrow with Length (mm)).</p>

To Access the Global Annotation Settings Dialog:

1. Tap the touch screen  button.
2. Select **Administrator > Annotations**.

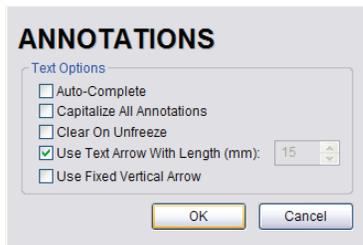
Note: Refer to [8.2.2 Presets – Annotations](#) for details on configuring **Preset-specific Annotations**.



8.2.5.1 Text Arrow Customization

To Customize the Text Arrow:

1. Tap the touch screen  button.
2. Select **Administrator > Annotations**.
3. Select **Use Text Arrow with Length (mm)**.



4. Enter the appropriate **Length** in millimeters.
5. Select **OK** to accept the setting and exit or **Cancel** to exit without saving.

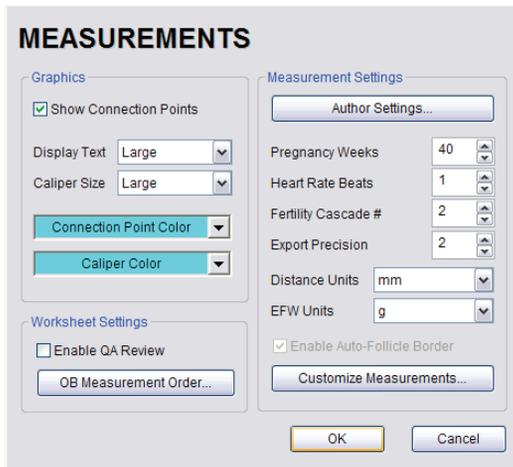
8.2.6 Measurements

The **Measurements** dialog enables users to customize the onscreen appearance of calipers, caliper labels and certain display details of the measurement/calculation packages. When the touch screen **Measure** button is pressed, **Measurements** are available on the touch screen based on clinical **Application**.

Users are also able to create customized **Measurement Packages** (8.2.6.3 Managing Custom Measurements).

Note: It is not possible to edit factory-installed **Measurement Packages**.

Figure 8-8: Measurements Settings




Warning: Ultrasonix does not endorse user-defined **Measurements, Calculations and Tables** for diagnostic purposes. All user-defined **Measurements, Calculations and Tables** are used at the **Operator's** discretion and risk only.

Table 8-10: Measurement Options

Graphics	Show Connection Points	Select to display the connection points (dotted line) between the linear calipers.
	Display Text	Allows the selection of one (1) of three (3) measurement label font size options: Small , Medium and Large .
	Caliper Size	Allows the selection of one (1) of three (3) caliper size options: Small , Medium and Large .
	Connection Point Color	Allows the selection of the color of the caliper connection points (dots) between the linear calipers. The default is turquoise.
	Caliper Color	Allows the selection of the color of the caliper end points. The default is turquoise.
	<p>Caution: Some caliper sizes/colors, font sizes or dot colors may not appear clearly on the image screen, stored image or printed/recorded image. To ensure clear visualization of the caliper, label font and connection points, Ultrasonix recommends setting the caliper graphics to at least Medium.</p> <p>Note: To ensure the caliper modifications have been activated, switch imaging modes after exiting the Setup menus.</p>	
Worksheet Settings	Worksheet Settings apply to the Report Worksheet .	
	Enable QA Review	Appends editable Billing and QA Review fields to all Reports . Note: Any Report/Worksheet opened/created during/prior to this setting being selected will not include the Billing and QA options.
	OB Measurement Order...	Allows user to change the order in which OB Measurements are presented on the touch screen, in a Worksheet (onscreen) and in a Report (printed). OB Measurements available for reordering are: BPD, OFD, HC, AC, FL, HL, GS, CRL, NT, YS, CxLength, UL, TL, TTD, CEREB, APTD, FTA, FHR, Umb A, Umb A-PI, MCA and MCA-PI . Note: Refer to Appendix H: Glossary for details on these acronyms.
Measurement Settings	Author Settings...	Refer to Appendix F for a complete list of Author Settings . Note: It is not possible to create user-defined Cardiac tables, nor can factory default tables be modified or deleted.
	Pregnancy Weeks	Defines the number of weeks used to calculate the EDD based on LMP . Range: 35–45 weeks.
	Heart Rate Beats	Number of beats used to measure the HR and FHR on an M-Mode and Doppler Trace . Range: 1–7 beats.
	Fertility Cascade #	Defines the number of times the user must repeat a follicle measurement before the system automatically moves to the next follicle. Range: 1–3 measurements.
	Export Precision	Sets the decimal placement for some types of third party reporting packages. Range: 0–6. The default is 2 decimal places.



Measurement Settings – cont'd	Distance Units	Unit used to display Distance calculation: Use default, μm, cm, in, m or mm. <hr/> Caution: Changing Distance Units during an exam will result in anomalous measurement labeling. <hr/> Note: Use default will use the default set on a per measurement basis in Customize Measurements...
	EFW Units	Unit used to display EFW calculation: g, kg, lbs or oz.
	Enable Auto-Follicle Border	Draws a border around the edges of an Auto-Follicle measurement. By default, this setting is disabled. <hr/> Note: Auto-Follicle is only available on the SonixTouch and will only be accessible if the Auto-Follicle package has been licensed.
	Customize Measurements...	Enables the user to make the following changes to measurements: <ul style="list-style-type: none"> • create custom Measurement Packages and Measurements • re-order Measurements • show/hide Applications, Measurement Packages and Measurements for the Display/Touch Screen, Worksheet or Report. <hr/> Note: A Measurement must be performed in order to appear on the Worksheet or Report .
		Warning: <i>Ultronix does not endorse user-defined Measurements, Calculations and Tables for diagnostic purposes. All user-defined Measurements, Calculations and Tables are used at the Operator's discretion and risk only.</i>

To Access Measurement Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements**.



To Configure Measurement Graphics:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements**.
3. Configure the **Graphics** settings as required: **Show Connection Points**, **Display Text**, **Caliper Size**, **Connection Point Color** and **Caliper Color**.
4. Select **OK** to accept the settings and exit or **Cancel** to exit without saving.

To Configure Basic Measurement Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements**.
3. Configure **Pregnancy Weeks**, **Heart Rate Beats**, **Fertility Cascade #**, **Export Precision**, **Distance Units** and **EFW Units** as required.
4. Select **OK** to accept the settings and exit or **Cancel** to exit without saving.

Note: Refer to [8.2.6.3](#) for details on **Customizing Measurements**.

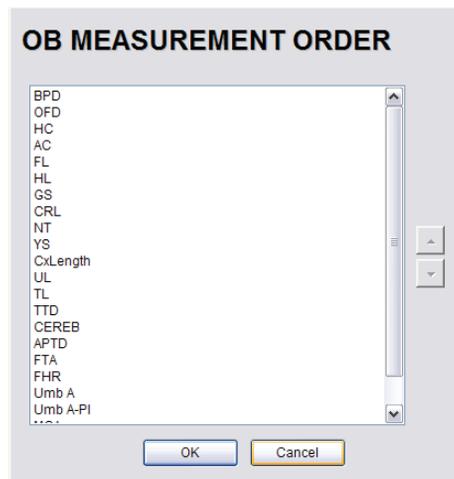
8.2.6.1 Managing Worksheet Settings

To Enable QA Review Details in Reports/Worksheets:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements**.
3. Under **Worksheet Settings**, select the **Enable QA Review** checkbox.

To Configure OB Measurement Order:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > OB Measurement Order...**
3. Select an **OB Measurement**.
4. Select the up or down selector button to move the **OB Measurement** to the desired position.



5. Repeat **step 3** and **step 4** as often as necessary to re-order the **OB Measurements** as required.
6. Select **OK** to accept the settings and exit or **Cancel** to exit without saving.

8.2.6.2 Show/Hide Applications, Measurement Packages and Measurements

The manner in which the show/hide options are applied have consequences for the availability of **Applications**, **Measurement Packages** and **Measurement** and/or the way in which **Measurement** data is saved:

- hiding an **Application** ensures that the **Application** cannot be accessed/viewed from within the measurement function (i.e., it will not be visible—and therefore not selectable—on the LCD display or the touch screen)
- hiding a **Measurement Package** ensures the **Measurement Package** cannot be used (i.e., it will not be visible—and therefore not selectable—on the LCD display or the touch screen)
- leaving a **Measurement** available on the LCD display and touch screen and selecting only **Visible in Report** ensures it can be used but cannot be viewed on the **Worksheet** during the exam. It will, however, be printed on the **Report**
- leaving a **Measurement** available on the LCD display and touch screen and selecting only **Visible in Worksheet** ensures it can be used and viewed on **the** Worksheet during the exam. It will not, however, be printed on the **Report**.

Note: *The last two (2) options apply only to **Measurements**, not **Measurement Packages**.*

Show/hide options apply to both factory-installed and customized measurements.

Figure 8-9: Customize Measurements

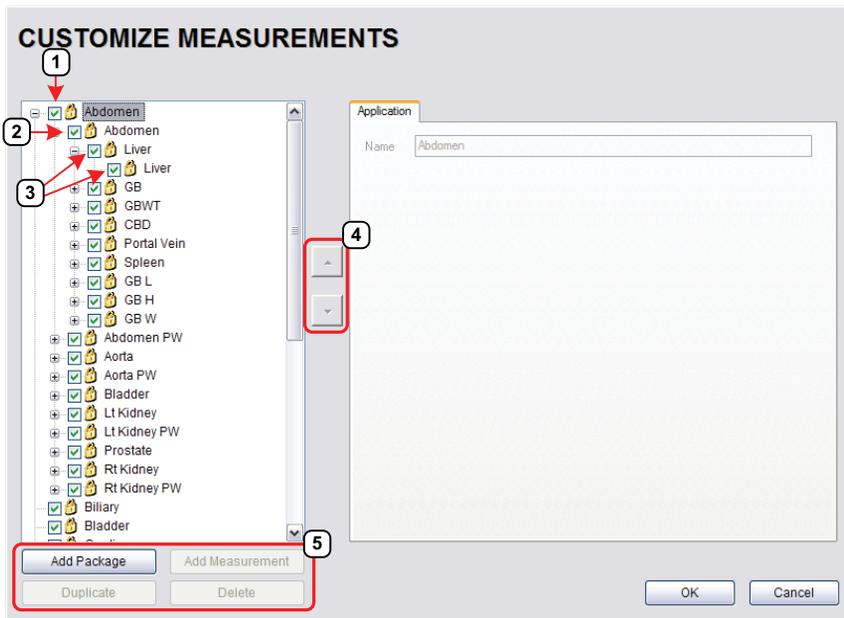
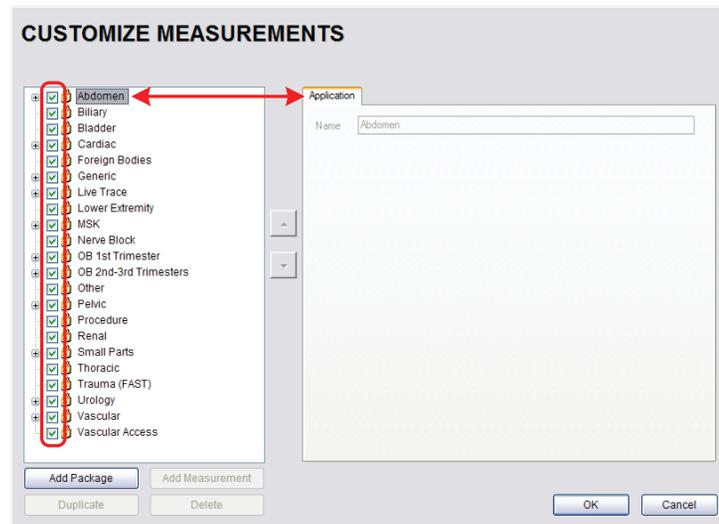


Table 8-11: Customize Measurements

1	Application Checkbox
2	Measurement Package Checkbox
3	Measurement Checkboxes
4	Measurement Selectors
5	Action Buttons

To Show/Hide Applications:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. To show/hide an **Application** on the LCD display and touch screen (within the measurement function) select/deselect the **Application** checkbox.

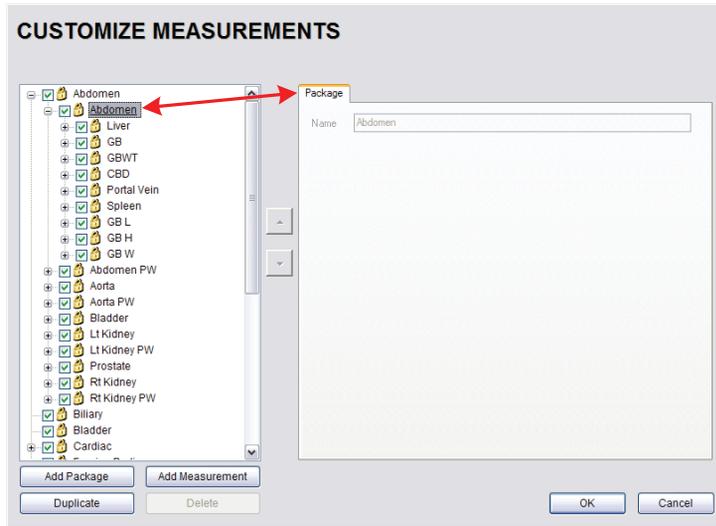


4. Repeat [step 3](#) as many times as required.
5. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.



To Show/Hide Measurement Packages:

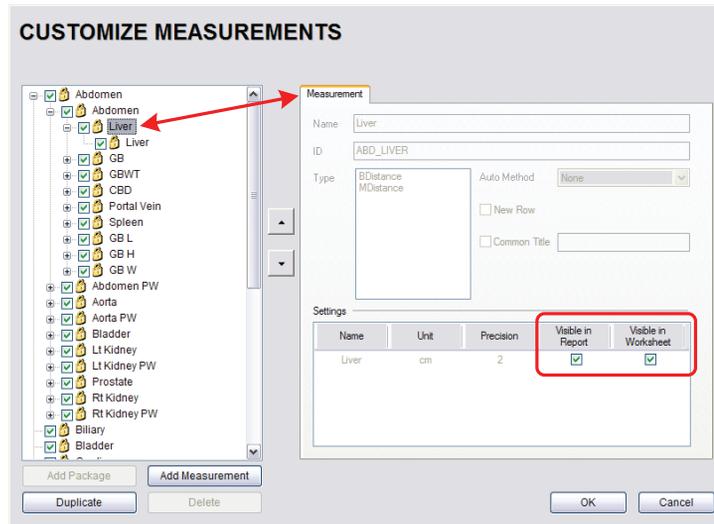
1. Tap the touch screen button.
2. Select **Administrator > Measurements > Customize Measurements...**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) sign (e.g., select the plus (+) sign next to **Abdomen**).
4. To show/hide a **Measurement Package** on the LCD display and touch screen select/deselect the relevant **Measurement Package** checkbox.



5. Repeat **step 3** and **step 4** as many times as required.
6. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Show/Hide Measurements:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) sign (e.g., select the plus (+) sign next to **Abdomen**).



4. Select a measurement from within the **Measurement Package** and the **Visible in Report** and **Visible in Worksheet** options will be presented on the right side of the dialog.
5. Select the appropriate checkbox(es): **Visible in Report** and/or **Visible in Worksheet**.

Name	Unit	Precision	Visible in Report	Visible in Worksheet
Liver	cm	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: Additional options will be available for user-created **Measurements**. Refer to [8.2.6.3 Managing Custom Measurements](#) for more details.

6. Repeat **step 3** to **step 5** as many times as required.
7. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.6.3 Managing Custom Measurements

Use **Customize Measurements...** to add/edit/delete user-defined (custom) measurements and **Measurement Packages**.

Figure 8-10: Customize Measurements

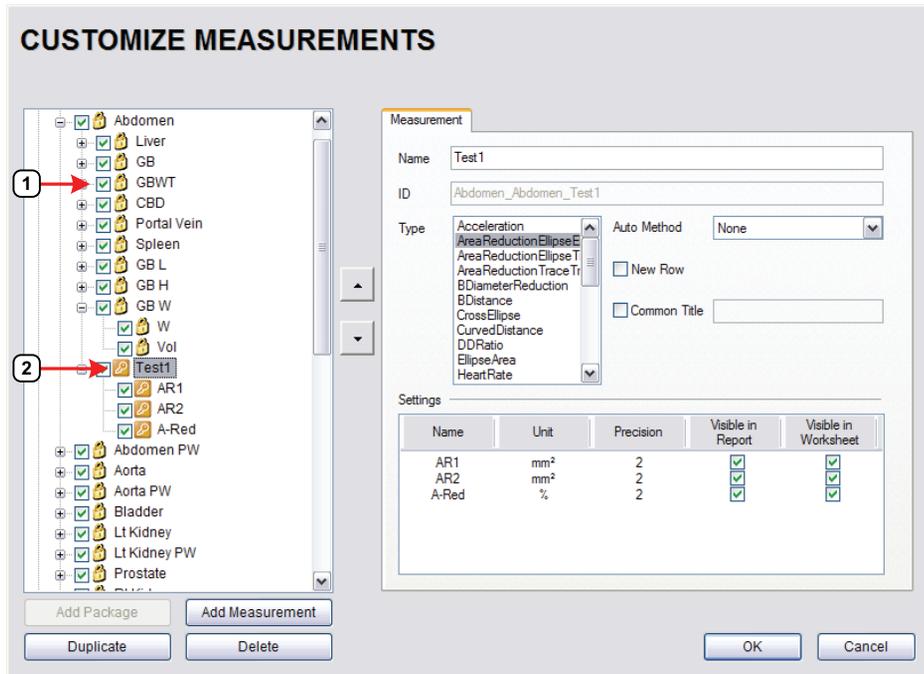


Table 8-12:

- | | |
|---|-----------|
| 1 | Lock Icon |
| 2 | Key Icon |

Default or factory-installed **Measurement Packages** and **Measurements** are locked (as indicated by the associated lock icon) and cannot be edited or deleted.

Customized **Measurements** are marked with a key icon indicating that are user-created and can be edited or deleted.



Warning: Ultrasonix does not endorse user-defined **Measurements**, **Calculations** and **Tables** for diagnostic purposes. All user-defined **Measurements**, **Calculations** and **Tables** are used at the **Operator's** discretion and risk only.

Note: As it is not possible to edit/delete default **Measurement Packages**, follow the instructions in 8.2.6.2 to hide any unwanted packages from view/use.

Table 8-13: Customize Measurement Options

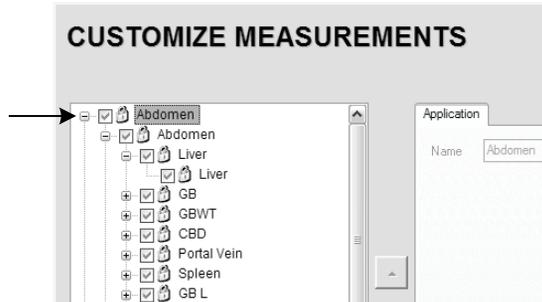
<p>Name</p>	<p>The Name of the custom measurement.</p> <p>Note: Place the cursor in this field and use the touch screen keyboard to enter a new Name.</p>
<p>ID</p>	<p>This is not an editable field. Data in this field is auto-populated and is for information purposes only.</p>
<p>Type</p>	<p> <i>Acceleration</i> <i>AreaReductionEllipseEllipse</i> <i>AreaReductionEllipseTrace</i> <i>AreaReductionTraceTrace</i> <i>BDiameterReduction</i> <i>BDistance</i> <i>CrossEllipse</i> <i>CurvedDistance</i> <i>DDRatio</i> <i>EllipseArea</i> <i>HeartRate</i> <i>HipAngle</i> <i>MDiameterReduction</i> <i>MDistance</i> <i>Pisa</i> <i>PointsArea</i> <i>PointsSpectrum</i> <i>RectArea</i> <i>RTSA</i> <i>SimpsonsTrace</i> <i>SpectrumRange</i> <i>Time</i> <i>TimeSlope</i> <i>TraceArea</i> <i>TraceAreaSolid</i> <i>TraceSpectrum</i> <i>Velocity1</i> <i>Velocity2</i> </p> <p>Selecting a pre-defined measurement Type will populate the Type attributes—which can be edited within pre-determined parameters.</p> <p>Once a Type has been selected, any attempt to change that Type for the specified measurement will result in an overwrite confirmation message.</p>



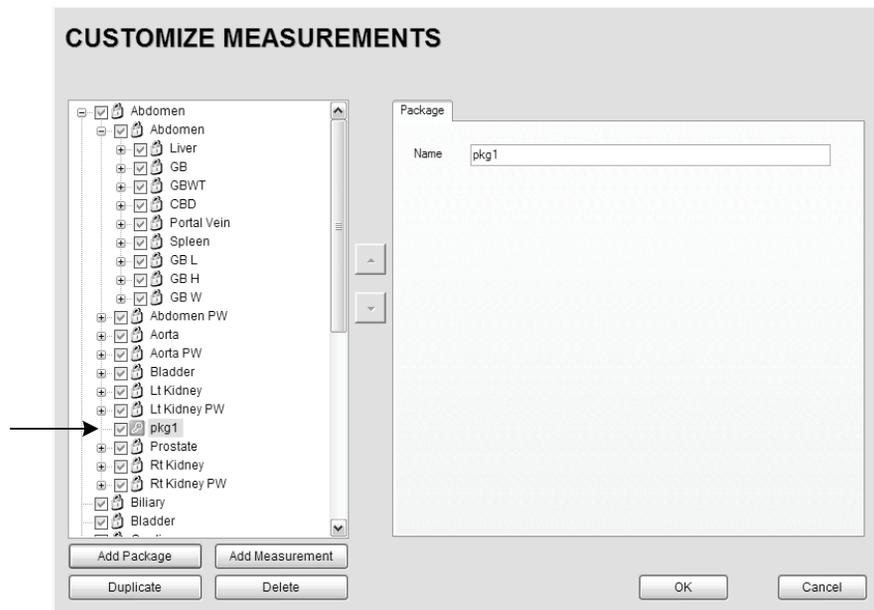
Auto-Method	Auto-Method refers to manner in which the system automatically cycles through measurements.
	None There is no pre-selected measurement/caliper auto-selection method.
	Next Measurement When measuring something that requires multiple measurements to create the final measurement (e.g., L , H , W to capture a Volume measurement) this method will automatically move to the next required measurement as each measurement is completed.
	Repeat Measurement Use to keep taking the selected measurement over and over until a new measurement is manually selected on the touch screen.
	Place Caliper for Next Mmt Use to force the system to move sequentially through the measurement options once the first measurement is taken. The first caliper for each sequential measurement will be placed automatically. Note: This option is for Cardiac only.
New Row	Forces the measurement to wrap to a New Row on the Measurement Packages touch screen.
Common Title	To group a series of measurement together, give each of the relevant measurements a Common Title . For example, under Abdomen , Abdomen , the three (3) measurements GB L , GB H and GB W , each have the Common Title , GB Vol indicating that these three (3) separate measurements actually form a single measurement: GB Volume .
Settings	Name Options available for the Type chosen (above). If desired, rename the measurement.
	Unit Measurement options available for the Type/Name chosen. Note: The Unit option is dependant upon the combination of the Type and Name. For example, In and Out Unit options for BDiameterReduction are cm, m, mm, in, ft and µm. But the D-Red Unit options for the same Type are % and ratio.
	Precision Defines the number of decimal places included in a given measurement result.
	Visible in Report Determines whether or not a measurement will be included in a Report . Refer to 8.2.6.2 for more details.
	Visible in Worksheet Determines whether or not a measurement will be included in a Worksheet . Refer to 8.2.6.2 for more details.

To Add a Custom Measurement Package:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) sign (e.g., select the plus (+) sign next to **Abdomen**).



4. Select the **Add Package** button and **pkg1** will be added (alphabetically) to the list of **Measurement Packages**.

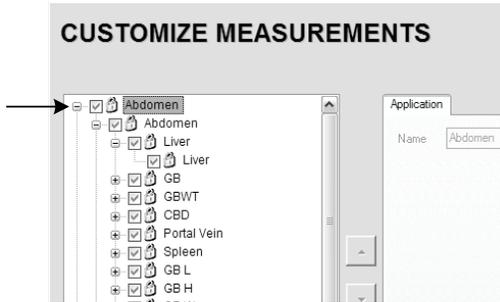




To Add a Custom Measurement:

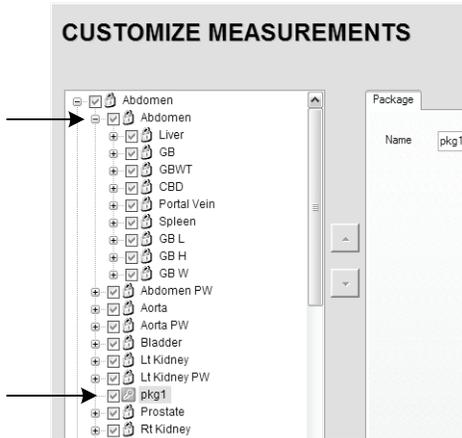
Note: Measurements can be added to both custom and default Measurement Packages.

1. Tap the touch screen button.
2. Select **Administrator > Measurements > Customize Measurements...**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) sign (e.g., select the plus (+) sign next to **Abdomen**).



Note: If the custom Measurement is to be added a custom Measurement Package, ensure that package has been created.

4. Ensure the relevant **Measurement Package** is selected (e.g., **Abdomen** or **pkg1**).

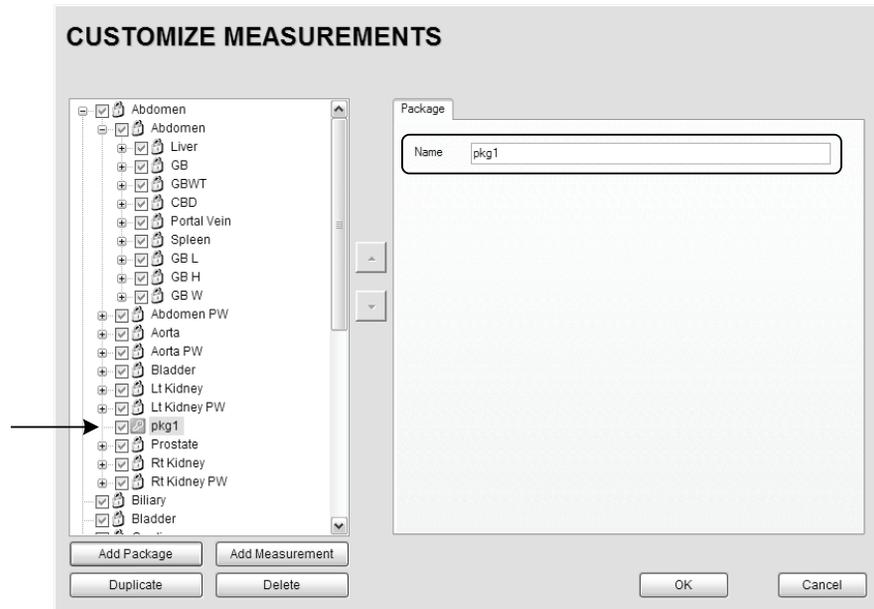


Note: If pkg1 is selected, the custom Measurement will be created one level below pkg1. If Abdomen is selected, the custom Measurement will be created at the same level as Abdomen.

5. Select the **Add Measurements** button and mmt1 will be added.

To Rename a Custom Measurement Package or Measurement:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. Select the custom **Measurement Package** or **Measurement**.
4. Place the cursor in the **Name** field on the right hand side of the dialog.

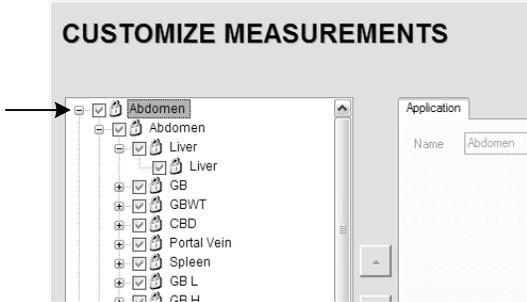


5. Use the touch screen keyboard to erase and type in a new **Measurement Package** or **Measurement Name**.

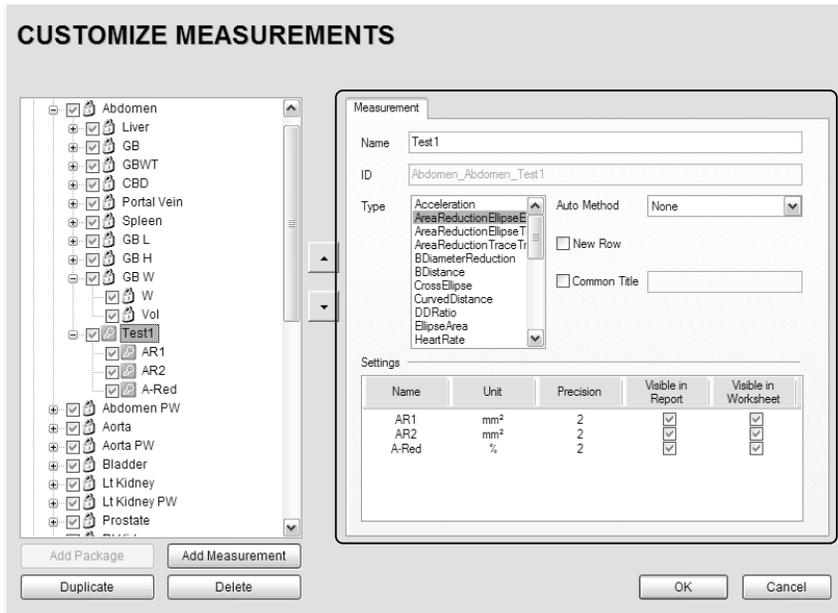


To Edit a Custom Measurement:

1. Tap the touch screen button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) sign (e.g., select the plus (+) sign next to **Abdomen**).



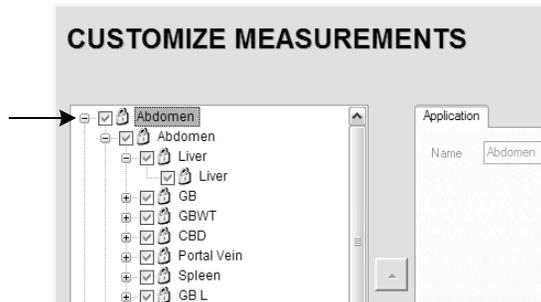
4. Select the custom **Measurement** to be edited.
5. Make the appropriate changes in the **Measurement** tab on the right hand side of the dialog.



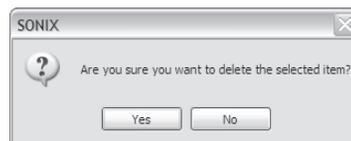
6. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Delete a Custom Measurement Package or Measurement:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) sign (e.g., select the plus (+) sign next to **Abdomen**).



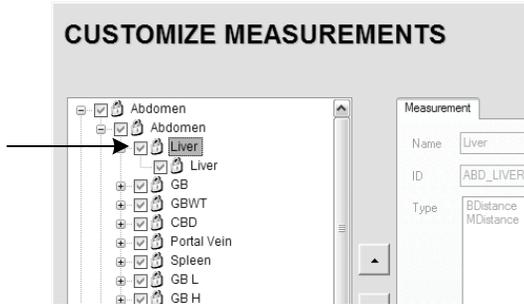
4. Select the custom **Measurement Package** or **Measurement** to be deleted.
5. Select the **Delete** button.
6. Select **Yes** to confirm the deletion or **No** to cancel the operation.





8.2.6.4 Reordering Measurements

Figure 8-11: Measurement Packages

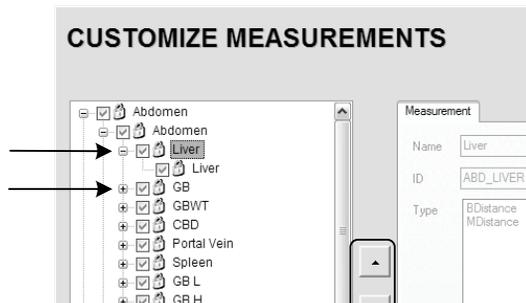


Note: Only **Measurement Packages** at the level marked in **Figure 8-11** can be reordered.

The reorder option applies to both custom and default **Measurement Packages**.

To Reorder Measurements:

1. Tap the touch screen button.
2. Select **Administrator > Measurements > Customize Measurements....**
3. Expand the relevant **Application** tree by selecting the appropriate plus (+) signs (e.g., select the plus (+) sign next to **Abdomen**).

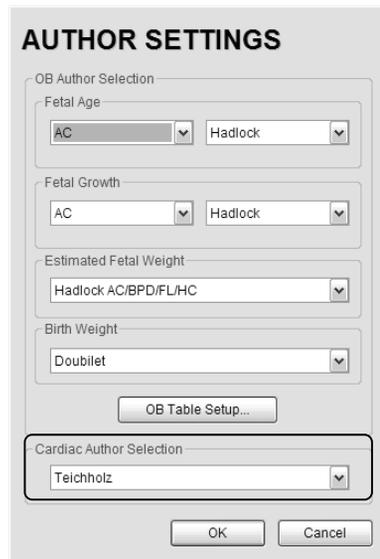


4. Highlight the relevant **Measurement** in the left hand column.
5. Use the (up/down) selector buttons to move the item to another place in the list.
6. Repeat **step 4** and **step 5** as many times as required.
7. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.6.5 Managing Author Settings

To Select the Cardiac Author:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Author Settings....**



AUTHOR SETTINGS

OB Author Selection

Fetal Age

AC Hadlock

Fetal Growth

AC Hadlock

Estimated Fetal Weight

Hadlock AC/BPD/FL/HC

Birth Weight

Doublet

OB Table Setup...

Cardiac Author Selection

Teichholz

OK Cancel

3. Select the **Cardiac Author** from the drop-down menu.

Note: Refer to [Table F-6 in Appendix F](#) for a complete list of **Cardiac Author Settings**.

4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.



To Select OB Authors:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Author Settings....**



3. Select author/measurement options for **Fetal Age** and **Fetal Growth** from the drop-down menus.
4. Select **Estimated Fetal Weight** and **Birth Weight** authors from the drop-down menus.
5. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.



Warning: Various factors may affect the accuracy of **Obstetrical** measurements. Ensure:

- system **Date** and **Time** are configured correctly.
- desired **Obstetrical** calculation author has been selected for each parameter.

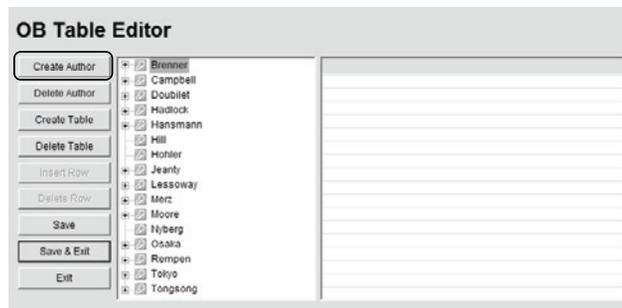
8.2.6.6 Managing OB Tables



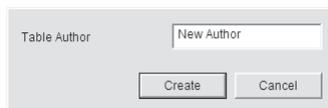
Warning: Ultrasonix does not endorse user-defined **Measurements, Calculations and Tables** for diagnostic purposes. All user-defined **Measurements, Calculations and Tables** are used at the **Operator's** discretion and risk only.

To Create New Obstetrical Calculation Authors and Look-up Tables:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Author Settings... > OB Table Setup....**
3. Select **Create Author.**



4. Enter a new **Table Author** and select **Create** to save the name to the author list.

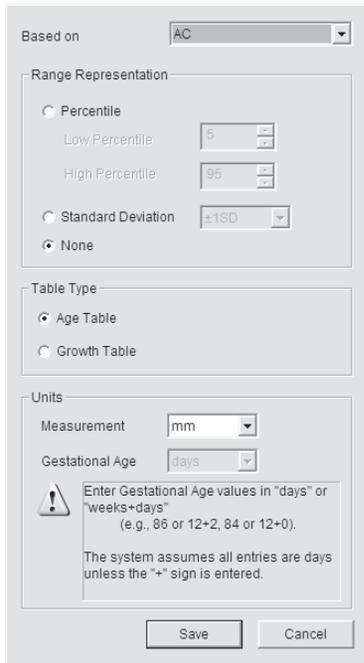


5. Highlight the newly created author and select **Create Table.**



Note: Default **Tables** are locked (as indicated by the lock icon adjacent to the **Table** name) and cannot be edited/deleted. User-created **Tables** are marked with a key icon and can be edited/deleted.

- From the **Based on** drop-down menu, select the desired parameter (**BPD**, **HC**, etc.).



Based on: AC

Range Representation:

- Percentile
 - Low Percentile: 5
 - High Percentile: 95
- Standard Deviation: ±1SD
- None

Table Type:

- Age Table
- Growth Table

Units:

Measurement: mm

Gestational Age: days

Enter Gestational Age values in "days" or "weeks+days" (e.g., 86 or 12+2, 84 or 12+0).
The system assumes all entries are days unless the "+" sign is entered.

Save Cancel

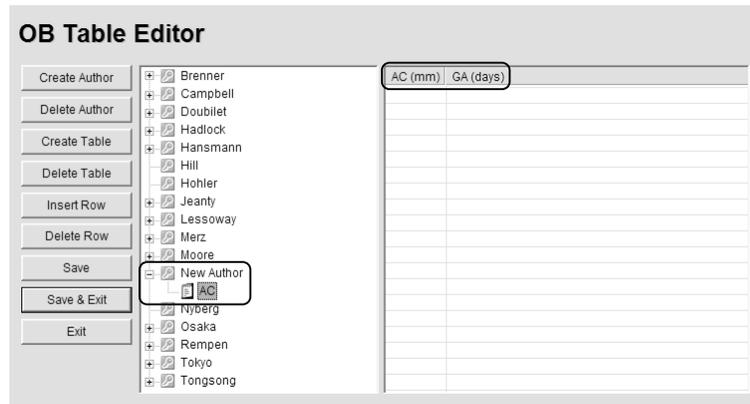
- Select the desired table **Range Representation**: **Percentile**, **Standard Deviation** or **None**.
- Select the desired **Table Type**: **Age Table** or **Growth Table**.
- From the **Measurement** drop-down menu, select the desired unit: **cm**, **cm²**, **g**, **mm**, **mm²** or **ratio**.

Note: **AC** and **HC** are assumed to be **Circumference** measurements.

- Select **Save** to accept the changes and return to the **OB Table Editor** or **Cancel** to exit without saving.

To Enter Data into a New OB table:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Author Settings... > OB Table Setup...**
3. Select the newly created **Table** (listed under the user-defined author).



Note: The right hand section of the screen will show the columns for the previously-defined **Table** parameters. For example, this **Table** was configured as follows:

Based on = AC, Range Representation = None, Table Type = Age Table and Measurement = mm.

4. Enter **Table** data as required. Use **Insert Row** and **Delete Row** buttons to simplify this process.



Warning: When entering **Gestational Age** values, use **days** or **weeks+days**:

e.g., 86 (days) = 12+2 (or 12 weeks + 2 days), 84 (days) = 12+0 (or 12 weeks).

The system assumes all entries are in days unless a plus (+) sign is entered, in which case the number is assumed to be in weeks and is converted to the equivalent number of days.

5. Select the **Save & Exit** button to save any newly entered/edited data and exit the page, **Save** to save any newly entered/edited data but remain in the **OB Table Editor** or **Exit** to cancel any newly entered/edited data and exit the page.



8.2.7 Training Tutorials

This option enables organizations to load and view a variety of different video, audio or PowerPoint files on the system in order to provide training to their staff.

The training files may be provided by Ultrasonix, but they can also be created by each organization, as long as they are created in one of the accepted digital formats.

Figure 8-12: Training Tutorials Dialog

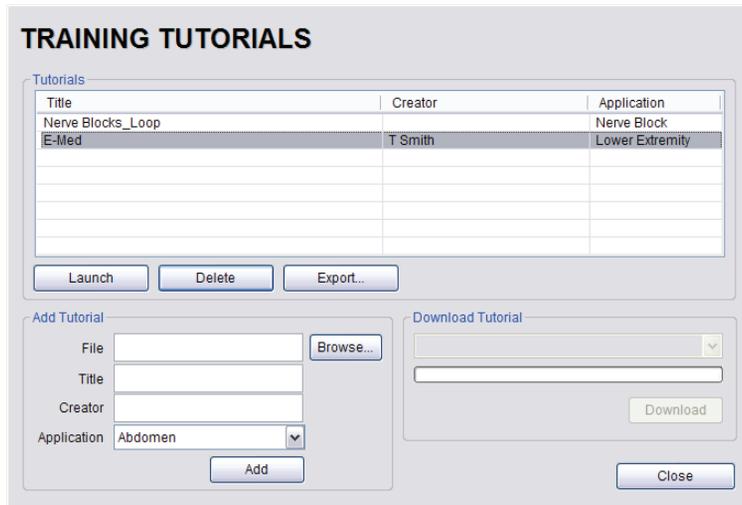


Table 8-14: Supported Training Tutorial File Formats

Video	AVI, MPG, MPEG and WMV.
Audio	MP3 and WMA.
PowerPoint	PPT.
	Note: Video files embedded in PowerPoint presentations are not supported.
Adobe® Flash	SWF.

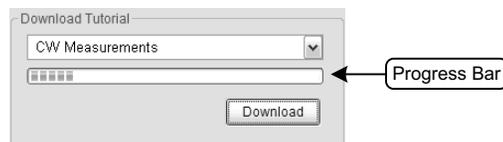
Table 8-15: Training Tutorial Options

Tutorials	The Tutorials section lists files that are currently available for viewing.
	Title Lists the Titles of the available Tutorials .
	Creator Lists the Creator of the specific Title .
	Application Lists the Exam Type/Application associated with the specific Title .
	Launch Plays the selected Title .
	Delete Deletes the selected Title .
	Export... Exports the selected Title .
Add Tutorial	Add Tutorial options enable organizations to add user-created Tutorials .
	File Displays the name of the File selected with the Browse button.
	Title Enter a descriptive Title that will immediately reveal the Tutorial's purpose.
	Creator Enter the name of the File's Creator . This might be an individual, an outside company or the name of the host organization.
	Application Select an Application which best describes the clinical relevance of the Tutorial .
	Browse... Enables the user to browse the available drives for a Tutorial file.
	Add Adds the selected Tutorial .
Download Launches the Download sequence for the selected Title .	

8.2.7.1 Manipulating Training Tutorials

To Download a Training Tutorial from the Network:

1. Tap the touch screen  button.
2. Select **Administrator > Training Tutorials**.
3. Select a file from the drop-down menu in the **Download Tutorial** section of the dialog.



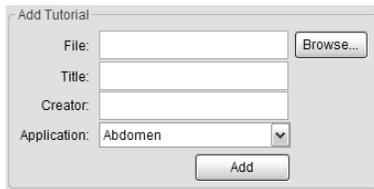
4. Select the **Download** button.
5. Follow the status of the progress bar to see how far along the download is.
6. When the download is complete, the **Title** will be added to the list of available **Tutorials**.



To Add a Training Tutorial from External Media:

Note: External media includes USB devices such as a key, drive or CD/DVD reader/writer. When using this type of media, ensure that the relevant item is loaded into the appropriate device before attempting the download.

1. Tap the touch screen  button.
2. Select **Administrator > Training Tutorials > Browse....**



The screenshot shows a dialog box titled "Add Tutorial". It has four input fields: "File:" with a "Browse..." button to its right, "Title:", "Creator:", and "Application:" with a dropdown menu showing "Abdomen". At the bottom center is an "Add" button.

3. From the dialog presented, find and select the relevant (file) **Type** and **File** name to be added.
4. Enter a **Title** and **Creator** in the fields provided.
5. Select a clinically relevant **Application** type from the drop-down menu.
6. Select the **Add** button.
7. Once the addition is complete, the **Title** will be added to the list of available **Tutorials**.

Note: As a precaution, test each file to ensure it displays properly.

To Launch a Training Tutorial:

1. Tap the touch screen  button.
2. Select **Administrator > Training Tutorials**.
3. Highlight a **Title** from the list of **Tutorials**.
4. Select the **Launch** button and the tutorial will be presented on the LCD display.



5. Select the red **X** in the top right corner of the **Tutorial** screen to stop/exit the tutorial.

Notes:

*If the presentation is in PPT format, press the **QSONIX** button to exit.*

*For files with an audio component, the volume can be adjusted with the audio slide on the right hand side of the tutorial screen. **Master Volume** control is adjusted from the **System Settings** dialog (8.2.9).*



8.2.8 Biopsy Guide

Users can configure the system with the **Single Guideline Biopsy** option.

Figure 8-13: Biopsy

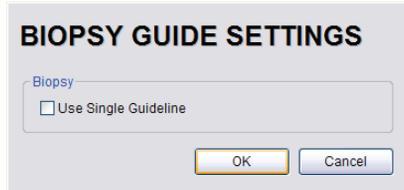


Table 8-16: Biopsy

Use Single Guideline	Select to default to a single Biopsy guideline. When left unselected, the system will use the double line guides.
-----------------------------	--

To Configure the Biopsy Guide Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Biopsy Guide**.
3. Select/deselect the checkbox for **Use Single Guideline**.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.9 System Settings

System Settings are used to configure the **Institution Name**, **Regional** parameters, **Shutdown Options**, **Auto-Freeze**, **Auto-Shutdown**, **User Data** settings and **Admin Password**.

Figure 8-14: System Settings



Table 8-17: System Settings Configuration Options

Institution Name	Enter the Institution Name using the keyboard. The text entered here appears at the top of the image field.
Insert (Symbol)	Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).



Regional	Language Settings	Interface Language	Select the desired language for the user interface.
		Keyboard Layout	Select the desired keyboard language. Note: <i>There is no correlation between Interface Languages and Keyboard Layout. For example, when English is used as the Interface Language, it is possible to select Turkish or Korean as the language for Keyboard Layout. Additionally, because Keyboard Layout selections are controlled by Windows rather than Ultronix, there are many more Keyboard Layouts to choose from than there are Interface Languages.</i>
	Internal Settings...		Select country-specific parameters, including Date and Time formats and Number display modes.
	Date/Time...		Configure the actual Date and Time (based on the Date/Time format selected in Internal Settings...).
Shutdown Options	Confirm Shutdown		Forces the system to request confirmation when powering down.
System Configuration	About		Contains (non-editable) system information, for example, Software Version and ECG Part Number (when applicable). Note: <i>ECG is not available on this platform.</i>
Auto-Freeze	Enable		Enables Auto-Freeze , which deactivates any transducer that is connected but not currently in use.
	Wait (minutes)		Once Auto-Freeze is enabled, Wait controls the number of minutes a stationary transducer will remain active before Auto-Freeze is triggered. Deactivating/freezing transducer usage will help to prolong its life span. Select a setting of 5 to 120 minutes. The default is Auto-Freeze Enabled , with a 10 minute Wait time. Note: <i>To reactivate (or unfreeze) the transducer/imaging session, simply tap the touch screen  button.</i>
Touch Screen	Enable Customization		Enable/disable an Operator's ability to customize touch screen settings.
User Data	Export	Exports user-configured System Settings to an external storage device (e.g., USB medium).	
		Note: <i>The Export function can also be used to reset all but three (3) User Data options (Settings, System Logs and Licenses) to their factory defaults.</i>	
		Imaging Presets	Exports all user-defined Imaging Preset data.
		3D/4D Presets	Exports all user-defined 3D/4D Preset data.



User Data (cont'd)	Export (cont'd)	DICOM Server Configuration		Exports DICOM configuration data.
		Settings		Exports all user-defined Settings that are not explicitly specified in any other Export option (e.g., DICOM , Network , Peripherals , Patient , ECG HR Precedence , etc).
		Measurement Order		Exports the Measurement Order data defined under Worksheet Settings on the Measurements dialog.
		Obstetrical Tables		Exports all user-defined OB Tables .
		Exam Management Field Lists		Exports all user-defined Exam Management page data (e.g. Attending Physician , Operator ID , etc).
				<p>Protocols refer to the various specialized applications that can be purchased for use on the SonixTouch (e.g., EMED and Anesthesia. All other products have only the default General Protocol),).</p> <p>Exporting settings must be done for each separate Protocol.</p> <p>Note: Only active Protocols (i.e., Protocols that have been licensed and installed) with changes to default Preset, Measurement and Worksheet settings will be available for Export.</p>
	Protocols	General	Preset Assignments	Exports all Preset data as configured under Menu > Administrator > Presets (e.g., Annotations and Pictograms).
			Measurement Customization	Exports settings defined under Customize Measurements... on the Measurements dialog.
			Worksheets	Exports Worksheet settings.
			Touch Screen Customization	Exports customized touch screen settings (e.g., Favorites).
			Banners	Not available in this release.
			System Logs	Exports copies of all current System Logs .
	Licenses	Copies existing license settings into licenses.key.		



User Data	Import	Imports user-configured System Settings from an external storage device (e.g., USB medium). Settings must have been previously exported from a Sonix system.			
		Caution: <i>Ultrasonix does <u>not</u> recommend importing user-defined Presets created with a previous software version as they may not be compatible for use with a more recent software update.</i>			
		Imaging Presets	Imports all user-defined Imaging Preset data.		
		3D/4D Presets	Imports all user-defined 3D/4D Preset data.		
		DICOM Server Configuration	Imports DICOM configuration data.		
		Settings	Imports all user-defined Settings that are not explicitly specified in any other Import option (e.g., DICOM , Network , Peripherals , Patient , ECG HR Precedence , etc).		
		Measurement Order	Imports the Measurement Order data defined under Worksheet Settings on the Measurements dialog.		
		Obstetrical Tables	Imports all user-defined OB Tables .		
		Exam Management Field Lists	Imports all user-defined Exam Management page data (e.g, Attending Physician , Operator ID , etc).		
		<p>Protocols refer to the various specialized applications that can be purchased for use on the SonixTouch (e.g., EMED, Anesthesia and General).</p> <p>Importing settings must be done for each separate Protocol.</p> <p>Note: <i>Only active Protocols (i.e., Protocols that have been licensed and installed) with <u>previously exported Preset, Measurement and Worksheet settings</u> will be available for Import.</i></p>			
		Protocols	General	Preset Assignments	Imports all Preset data as configured under Menu > Administrator > Presets (e.g., Annotations and Pictograms). Note: Presets are Protocol-specific.
				Measurement Customization	Imports settings defined under Customize Measurements... on the Measurements dialog. Note: Measurement Customization is Protocol-specific.
				Worksheets	Imports Worksheet settings. Note: Worksheets are only available for the EMED, Anesthesia and Endocrinology Protocols.
				Touch Screen Customization	Imports customized touch screen settings (e.g., Favorites). Note: Available only on SonixTouch and SonixTablet.
Banners	Not available in this release.				
SonixHUB Worksheets	Available only for new Worksheet formats created with SonixHUB . Note: SonixHUB Worksheets are Protocol-specific.				
Restore Factory		Resets the system to the default settings installed during manufacturing.			

Master Volume	Controls the master setting for Sonix audio volume.
Admin Password...	Creates/removes a global, administration level Password in order to protect Administrator Settings configuration.

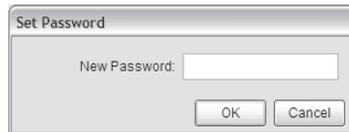
To Access System Settings:

1. Tap the touch screen  button.
2. Select **Administrator > System**.

8.2.9.1 Password Protection

To Password Protect Administrator Settings Access:

1. Tap the touch screen  button.
2. Select **Administrator > System > Admin Password...**
3. Enter a **Password** when prompted by the dialog.



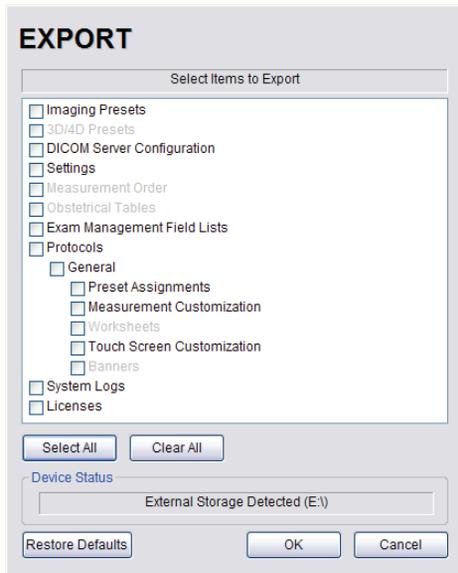
4. Select **OK** to accept the **Password** and exit or **Cancel** to exit without saving.



8.2.9.2 Export/Import User Data

To Export User Data:

1. Connect the external USB storage device on which the **Export** will be saved.
2. Tap the touch screen  button.
3. Select **Administrator > System > Export....**
4. Select the item(s) to be exported.



Note: Use **Select All** to select all items at one time and **Clear All** to clear all checkboxes.

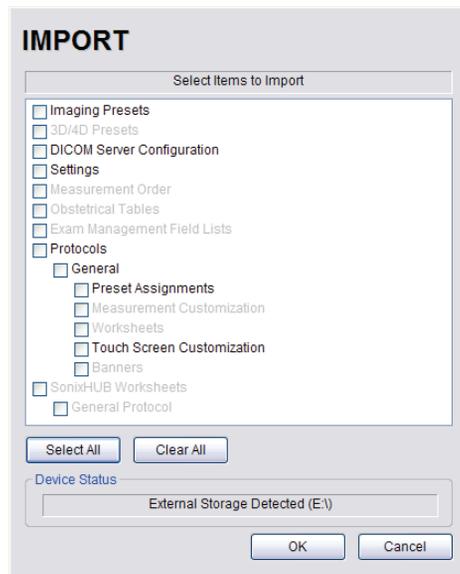
Only active **Protocols** with changes to default **Presets**, **Measurement** and **Worksheet** settings will be available for **Export**.

5. Select **OK** to begin the export process or **Cancel** to exit without exporting.
6. If **OK** is selected in the previous step, a completion dialog will be presented when the export process has finished (this will take approximately 15–45 seconds).

To Import User Data:

Caution: *Ultrasonix does not recommend importing user-defined **Presets** created with a previous software version as they may not be compatible for use with a more recent software update.*

1. Plug the previously-created removable disk (e.g., USB key) into one of the USB ports at the front of the console.
2. Tap the touch screen  button.
3. Select **Administrator > System > Import....**
4. Select the item(s) to be imported.



Note: Use **Select All** to select all items at one time and **Clear All** to clear all checkboxes.

*Only active **Protocols** with changes to default **Presets**, **Measurement** and **Worksheet** settings will be available for **Import**.*

5. Select **OK** to begin the import process or **Cancel** to exit without importing.



8.2.9.3 Reset User Data Settings to Factory Defaults

To Reset User Data:

1. Tap the touch screen  button.
2. Select **Administrator > System > Export....**
3. Select the relevant item(s).



Note: Factory defaults will be restored to all selected options (except **Settings, System Logs and Licenses**).

4. Select **Restore Defaults**.

8.2.10 Network

The **Network** setup dialog allows users to configure the system's network, either through a hard-wired LAN or Dialup connection.

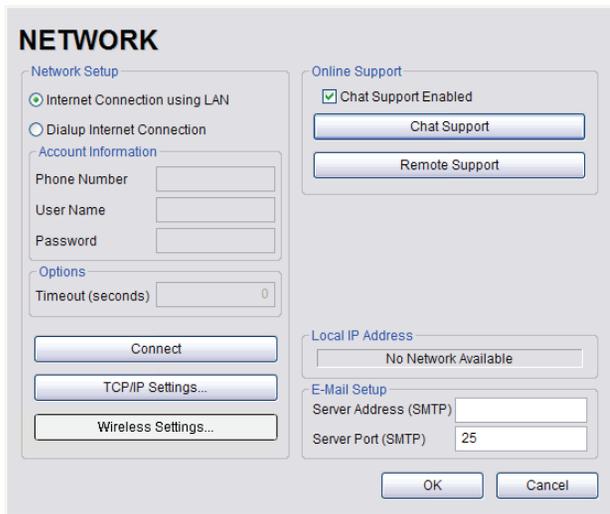
Note: A dialup connection requires a third-party, USB modem. Contact your dealer or Ultrasonix Technical Support to learn more about this option.

Remote Support is a licensed option that allows a member of the Ultrasonix Technical Support to view and control the system for diagnostic purposes. Ultrasonix Technical Support will help configure this option should it ever be required.

Chat Support enables a real-time discussion with a member of the Ultrasonix Technical Support team.

Caution: System networking options are intended for use inside your organization's firewall. Organizations that elect to configure/use the networking functionality provided by Ultrasonix are assuming all liabilities and risks associated with that decision.

Figure 8-15: Network Dialog



Note: A network connection is required to use any of the following: **DICOM**, **Chat Support**, **Remote Support** and **SonixLive**.



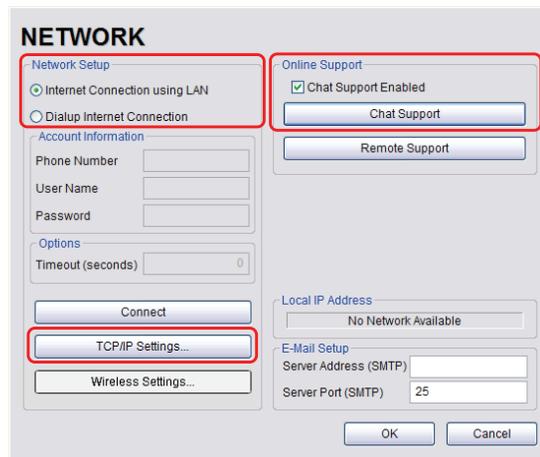
Table 8-18: Network Settings

Network Setup	Internet Connection Using LAN		
	OR Select Internet Connection type: LAN or Dialup .		
	Dialup Internet Connection		
	Account Information	Phone Number	If Dialup was selected in the previous step, enter the telephone number for the Internet Service Provider (ISP) .
		User Name	Enter the User Name for the Dialup ISP account.
		Password	Enter the Password that will protect the Dialup connection to the Internet.
	Timeout (Seconds)	Enter the Timeout limitation (in number of seconds).	
		Note: If the system fails to connect within the prescribed time limit, it will stop trying.	
Connect	Select to Connect using the Dialup settings.		
TCP/IP Settings...	Select to configure TCP/IP Settings . Refer to 8.2.10.1 Ethernet (LAN) Network Configuration for details.		
Wireless Settings...	Select to configure Wireless Settings . Refer to 8.2.10.3 Wireless Configuration for details.		
Chat Support Enabled	Select this checkbox to enable Chat Support .		
Remote Support	After receiving a PIN (Personal Identification Number) from Ultrasonix, use this option to connect to the Internet. This will allow an Ultrasonix Support technician to remotely access the system to resolve any issues that may have arisen.		
Local IP Address	When using Streaming Video , it is necessary to advise the recipient of the system's Local IP Address .		
	Note: During Streaming Video , this Local IP Address can be accessed temporarily by selecting the Streaming Video icon on the LCD display.		
	For details on Streaming Video and its associated icon, refer to 8.1.1 SonixLive Setup . If the system is not connected to a network, instead of a Local IP Address , the field will read No Network Available .		
E-Mail Setup	Server Address	Enter the Outgoing (SMTP) Server Address here.	
	Server Port	Enter the Outgoing Server Port number here.	
Note: Ultrasonix recommends that Network connections be configured using the settings provided by your IT Department.			

8.2.10.1 Ethernet (LAN) Network Configuration

To Configure an Ethernet (LAN) Connection (If Available):

1. Connect an RJ45 cable to the LAN port located on the Back Connectivity Panel.
2. Tap the touch screen  button.
3. Select **Administrator > Network > Internet Connection using LAN**.



NETWORK

Network Setup

Internet Connection using LAN

Dialup Internet Connection

Account Information

Phone Number

User Name

Password

Options

Timeout (seconds)

Online Support

Chat Support Enabled

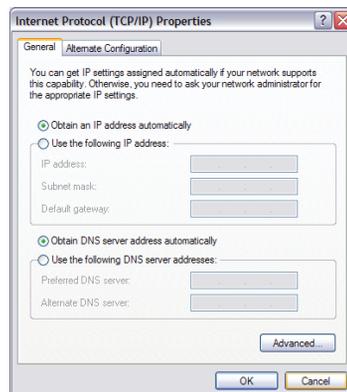
Local IP Address

E-Mail Setup

Server Address (SMTP)

Server Port (SMTP)

4. Under **Chat Support**, ensure the **Chat Support Enabled** checkbox has been selected.
5. Select **TCP/IP Settings...**
6. Under **General**, select **Obtain an IP address automatically** or **Use the following IP address** and enter the assigned static **IP address**, **Subnet mask**, and **Default gateway**.



Internet Protocol (TCP/IP) Properties

General | Alternate Configuration

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically

Use the following IP address:

IP address:

Subnet mask:

Default gateway:

Obtain DNS server address automatically

Use the following DNS server addresses:

Preferred DNS server:

Alternate DNS server:

7. Select **OK** and exit the **Menu** system.

Note: It may be necessary to restart in order for the changes to take affect.



8.2.10.2 Dialup Network Configuration

Note: A dialup connection requires a third-party, USB modem. Contact your dealer or Ultrasonix Technical Support to learn more about this option.

To Configure a Dial-up Connection (If Available):

1. Connect the modem's USB connector to connection point 7.
2. Connect the other end of the modem to a telephone jack in the wall.
3. Tap the touch screen  button.
4. Select **Administrator > Network > Dialup Internet Connection**.
5. Under **Chat Support**, ensure the **Chat Support Enabled** checkbox has been selected.
6. Complete the **Account Information** and **Options** sections: **Phone Number**, **Username**, **Password** and **Timeout**.

NETWORK

Network Setup

Internet Connection using LAN

Dialup Internet Connection

Account Information

Phone Number

User Name

Password

Options

Timeout (seconds)

Online Support

Chat Support Enabled

Local IP Address

E-Mail Setup

Server Address (SMTP)

Server Port (SMTP)

7. Select **OK** and exit the **Menu** system.

Note: While the system is dialing out, the current dialing status to the ISP will be displayed.

8.2.10.3 Wireless Configuration

Wireless is only available as a factory-installed option.

Figure 8-16: Network Configuration Page (Wireless)

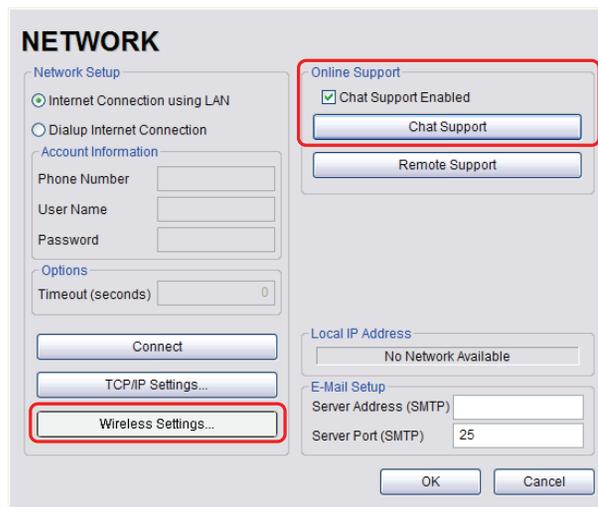


Figure 8-17: Wireless Network Connection Setup

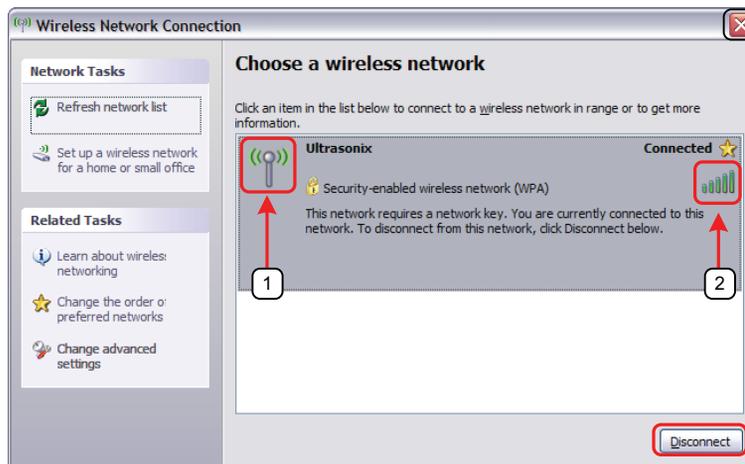




Table 8-19: Wireless Network Connection Setup

-
- | | |
|---|------------------------------------|
| 1 | Security Indicator |
| 2 | Wireless Signal Strength Indicator |
-

Notes:

Wireless Network Connection options are controlled by MS Windows, not Ultrasonix.

*Once a secured, wireless network is in place, it will be necessary to obtain the institution's **Network Key** (from the IT department) in order to log in.*

To Configure a Wireless Connection (If Available)

Notes:

When more than one wireless network is available, consult the IT department to determine which one is relevant for SonixTablet operations.

*Do not select the **Chat Support Enabled** checkbox unless an Internet connection is available.*

1. Press the console  button.
2. Select **Administrator > Network > Wireless Settings....**
3. Complete the wireless connection following the onscreen directions in the **Wireless Network Connection** dialog.
4. Under **Chat Support**, ensure the **Chat Support Enabled** check box has been selected.

Note: *Do not select the **Chat Support Enabled** checkbox unless an Internet connection is available.*

5. Select **OK** and exit the menu system.

8.2.10.4 Chat Support

Chat Support enables a real-time discussion with a member of the Ultrasonix Technical Support team. To access **Chat Support**, refer to [8.1.3](#).

Note: A network connection is required for **Chat Support**.

8.2.10.5 Remote Support

Remote Support is a licensed option that allows a member of the Ultrasonix Technical Support to view and control the Sonix for diagnostic purposes.

Note: A network connection is required for **Remote Support**.

To access **Remote Support**, refer to [8.1.2](#) or [3.4](#).



8.2.11 DICOM Configuration

The system uses the **Digital Imaging and Communications in Medicine (DICOM)** standard to share medical information with other digital imaging systems. The system, by means of the **DICOM** protocol, communicates with **Storage, Print** and **Modality Worklist Service Class Providers**.

Note: **DICOM Structured Reporting** is supported. Refer to [Table 8-21](#) for **Structured Reporting** data transfer options.

Refer to [8.2.10 Network](#) to configure the system for network connectivity.

Note: *When using a hard-wired network connection, ensure the network is connected via a CAT5 cable at the back of the system. (Check with the local IT Department to ensure that the jack from the wall is live.)*

When using a wireless network connection, ensure the wireless network is configured properly and that the system has a live wireless connection.

Figure 8-18: DICOM Configuration

DICOM CONFIGURATION

Global Settings

Local Host

Station Name: SXQQRRYYMMXXXX

AE Title: [Empty]

IP Address: 127.0.0.1

Storage Commitment AE

Port: 9000

Listening Port: 2500

Settings

Storage... Print... Worklist...

Close

Note: **Global Settings** for the **Local Host** apply to **DICOM Storage, Print** and **Worklist**.

Table 8-20: DICOM Configuration – Global Settings

Local Host	Station Name	General DICOM Station Name .
	AE Title	AE (Application Entity) Title of the Sonix system.
	IP Address	Unique identifier of the Sonix system (informational only).
	Storage Commitment AE	Port
Listening Port		Listening Port receives incoming Storage Commitment responses (N-Event).
Settings	Storage... Print... Worklist...	Use to access specific DICOM Storage, Print and Worklist settings.

To Configure the Global DICOM Settings:

1. Tap the touch screen  button.
2. Select **Administrator > DICOM**.
3. Configure the global settings as required.

8.2.11.1 DICOM Storage Settings

The **DICOM Storage Settings** dialog offers basic and advanced settings for configuring the system for **DICOM** image storage.

To Configure the DICOM Storage Setting:

1. Tap the touch screen  button.
2. Select **Administrator > DICOM > Storage**.
3. An onscreen dialog with four (4) tabs will be presented: **AE Configuration, Global Storage Settings, Brightness/Contrast** and **SonixHUB Settings**.
4. Create/select a **Device Name**. Edit the **Application Entity (AE)** settings for the selected **Device**.
5. Repeat **step 4** as many times as required.
6. Configure settings as required.

Note: In addition to the four (4) tabbed settings options, select the **Settings...** button to access **Storage Settings**.

The **DICOM Storage AE Configuration** dialog enables configuration of **AE** properties.

Figure 8-19: DICOM Storage Settings – AE Configuration

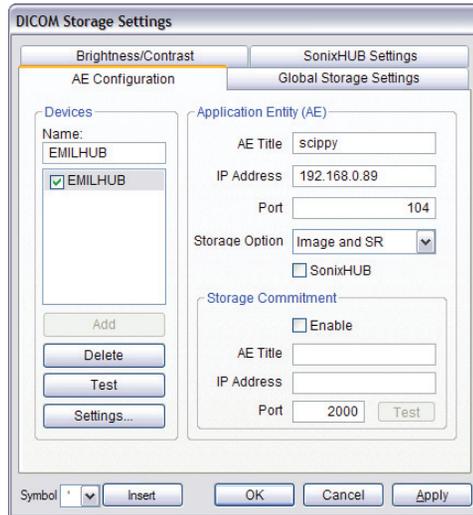


Table 8-21: DICOM Storage Settings – AE Configuration

Devices	Use the Devices option to add as many DICOM Storage Servers as required.	
	Note: <i>If more than one DICOM Storage Server is configured, during data transfer the Operator has the option of selecting which Storage Server(s) will receive the data (9.3).</i>	
	Name	Enter/select the Name of an AE Storage Device and populate the four (4) AE fields: Structured Report Only , AE Title , IP Address and Port .
	Add	Select to Add the new AE Storage Device .
	Delete	Select to Delete the selected AE Storage Device .
	Test	Select to send verification request to DICOM Storage Device (ping to verify connection).
Settings...	Select to access Storage Settings (Figure 8-20 and Table 8-22).	



		Note: The data entered/edited in the following fields is specific to the selected Device Name .	
Application Entity (AE)	AE Title	AE Title of the Storage SCP .	
	IP Address	Unique identifier of Storage SCP .	
	Port	Listening Port of the Storage SCP .	
	Storage Options	Select the Storage Option to be used during data transfer (Chapter 9). <ul style="list-style-type: none"> • Image and SR: transfers both Images and Structured Report • Image: transfers only Images • SR (Structured Report): transfers only the Structured Report. 	
	SonixHUB	Select to enable/disable SonixHUB . Note: This setting is only available if SonixHUB is licensed.	
	Storage Commitment	Enable	Select to enable Storage Commitment functionality.
		AE Title	AE Title of the Storage Commitment SCP .
		IP Address	Unique identifier of Storage Commitment SCP .
		Port	Listening Port of the Storage Commitment SCP .
		Test	Select to send verification request to DICOM Storage Commitment Device (ping to verify connection).
Insert (Symbol)		Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).	

The **DICOM Storage Settings** dialog specifies how images are stored.

Figure 8-20: DICOM Storage Settings – Storage Settings

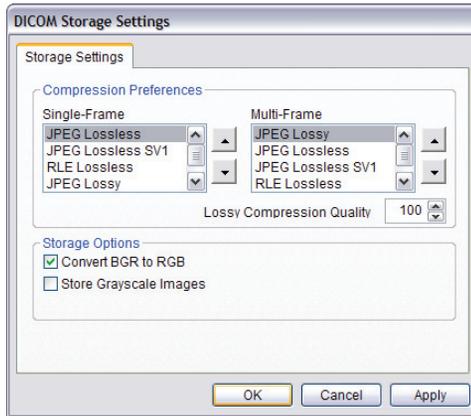


Table 8-22: DICOM Storage Settings – Storage Settings

Compression Preferences	Single-Frame	<p>JPEG Lossless JPEG Lossless SV1 RLE Lossless JPEG Lossy No Compression</p>	<p>Set DICOM image format storage order for single frame images.</p> <p>Note: Refer to the DICOM Standard for details on image formats.</p>
	Multi-Frame	<p>JPEG Lossy JPEG Lossless JPEG Lossless SV1 RLE Lossless No Compression</p>	<p>Set DICOM image format storage order for Cine loops.</p> <p>Note: Refer to the DICOM Standard for details on image formats.</p>
		<p>Lossy Compression Quality</p>	<p>Select the quality (1–100%) of image compression.</p>
Storage Options		<p>Convert BGR to RGB</p>	<p>Select to swap the color components of the image pixel data—the blue colors are swapped with the red colors.</p>
		<p>Store Grayscale Images</p>	<p>Select to store images in grayscale format.</p>
	<p>Insert (Symbol)</p>		<p>Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).</p>

The **DICOM Global Storage Settings** dialog specifies global image storage parameters.

Figure 8-21: DICOM Storage Settings – Global Storage Settings

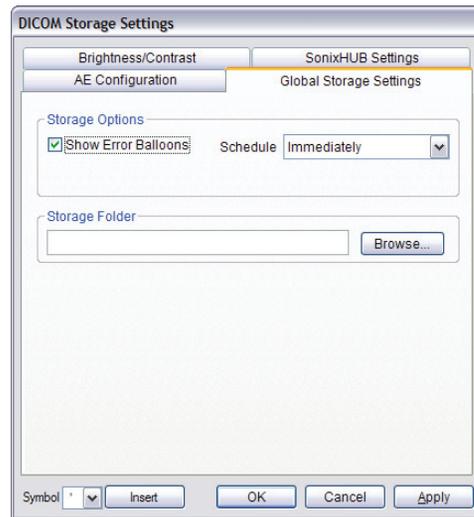


Table 8-23: DICOM Storage Settings – Global Storage Settings

Storage Options	Show Error Balloons	Select to enable the display of DICOM Storage error messages (e.g., Failed to connect to DICOM).
	Schedule	Select an auto-transfer setting: End of Exam , Immediate , On Idle .
Storage Folder		Select the location (local or remote) where the images will be stored.
Insert (Symbol)		Note: <i>If a value is specified, the AE Configuration and Storage Commitment dialogs are disabled—images can not be stored to an SCP.</i>
Insert (Symbol)		Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).



The **DICOM Storage Brightness/Contrast** dialog changes the **Brightness** and **Contrast** settings. These settings are applied to the images that are sent to the **SCP**, not the images stored locally.

The effects of these settings can be seen in the **Before** and **After** images.

Figure 8-22: DICOM Storage Settings – Brightness/Contrast

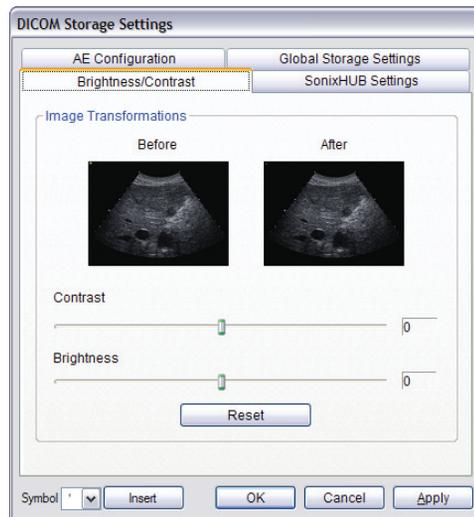


Table 8-24: DICOM Storage Settings – Brightness/Contrast

Contrast	Adjusts the level of Contrast applied to the images.
Brightness	Adjusts the level of Brightness applied to the images.
Reset	Resets the values of DICOM Storage Brightness and Contrast back to zero. Note: To adjust the Brightness/Contrast settings, position the trackball arrow over the Brightness or Contrast slider. Tap and hold the  button while moving the trackball left or right to the desired position.

The **DICOM SonixHUB Settings** dialog specifies **SonixHUB** parameters.

Note: *These settings are only available if **SonixHUB** is licensed.*

Figure 8-23: DICOM Storage Settings – SonixHUB Settings

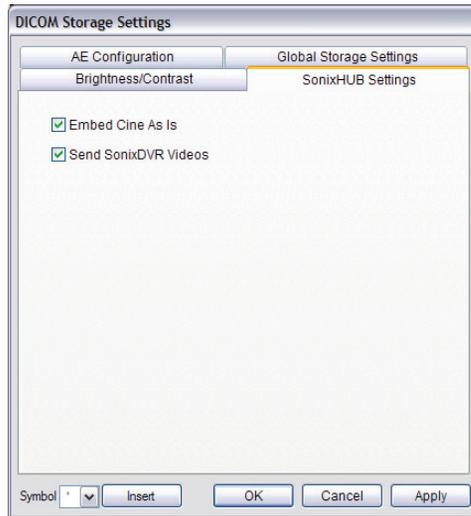


Table 8-25: DICOM Storage Settings – Global Storage Settings

Embed Cine As Is	Select to send Cine files in AVI format. When deselected, Cine files will be sent in DICOM format.
Send SonixDVR Videos	Select/deselect in order to include/exclude SonixDVR videos in the SonixHUB transfer.



8.2.11.2 DICOM Print Settings

DICOM Print Settings offer basic and advanced settings for configuring the system for **DICOM Print**.

To Configure DICOM Print Settings:

1. Tap the touch screen  button.
2. Select **Administrator > DICOM > Print**.
3. An onscreen dialog with two (2) tabs will be presented: **AE Configuration** and **Brightness/Contrast**.
4. Create/select a **Device Name**. Edit the **Application Entity (AE)** settings for the selected **Device**.
5. Repeat **step 4** as many times as required.
6. Configure **AE Configuration** and **Brightness/Contrast** as required.

Note: *In addition to the two (2) tabbed settings options, select the **Settings...** button to access **Print Settings** and **Advanced Print Settings**.*

The **DICOM Print AE Configuration** dialog enables configuration of **AE** properties.

Figure 8-24: DICOM Print Settings – AE Configuration

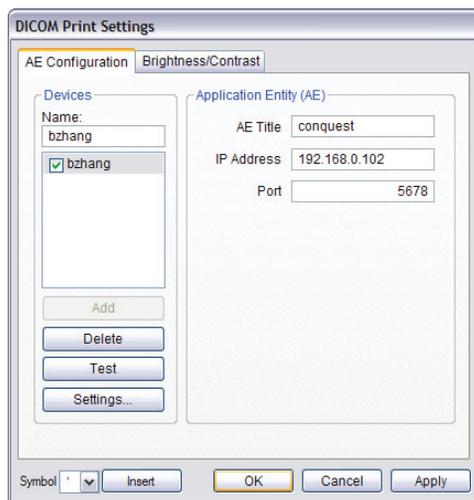


Table 8-26: DICOM Print Settings – AE Configuration

Devices		Use the Devices option to add as many DICOM Print Servers as required.
		Note: If more than one DICOM Print Server is configured, during data transfer the Operator has the option of selecting which Print Server(s) will receive the data (9.3).
	Name	Enter/select the Name of an AE Print Device and populate the three (3) AE fields: AE Title , IP Address and Port .
	Add	Select to Add the new AE Print Device .
	Delete	Select to Delete the selected AE Print Device .
	Test	Select to send verification request to DICOM Print Device (ping to verify connection).
	Settings...	Select to access Print Settings (Figure 8-25 and Table 8-27) and Advanced Print Settings (Figure 8-26 and Table 8-28).
Application Entity (AE)		Note: The data entered/edited for the next three (3) fields is specific to the selected Device Name .
	AE Title	AE Title of the Print SCP .
	IP Address	Unique identifier of Print SCP .
	Port	Listening Port of the Print SCP .
	Insert (Symbol)	Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).

The **DICOM Print Settings** dialog enables configuration of general print properties.

Figure 8-25: DICOM Print Settings – Print Settings

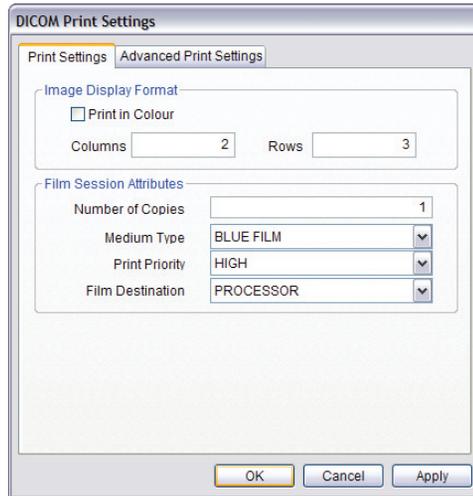


Table 8-27: DICOM Print Settings – Print Settings

Image Density Format	Print in Color	Select to print images in color. Deselect to print grayscale (default).
	Columns	Select the number of Columns per page.
	Rows	Select the number of Rows per page.
Film Session Attributes	Number of Copies	Select the Number of Copies of each page to be printed.
	Medium Type	Select the type of medium on which the images will be printed: Paper , Clear Film or Blue Film .
	Print Priority	Select the print job priority: High , Medium or Low .
	Film Destination	Select the location to which the print job will be sent: Processor or Magazine .

The **Advanced Print Settings** dialog enables configuration of advanced printing options.

Figure 8-26: DICOM Print Settings – Advanced Print Settings

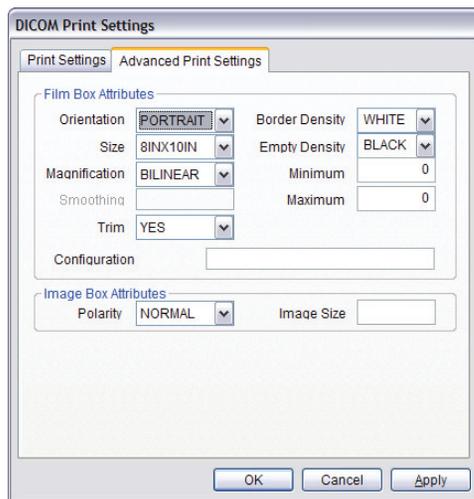


Table 8-28: DICOM Print Settings – Advanced Print Settings

Film Box Attributes	Orientation	Select the Orientation of the print page: Portrait or Landscape .
	Size	Select the Size of the print page.
	Magnification	Select the method of Magnification : Replicate , Bilinear , Cubic or None .
	Smoothing	Select the Smoothing . Note: This option is printer-specific and only available if Cubic Magnification is selected in the previous field.
	Trim	Select Yes or No to use a border (Trim) on each page.
	Configuration	Enter printer-specific Configuration information.
	Border Density	Select the Border Density : Black or White .
	Empty Density	Select the Empty Density : Black or White .
	Maximum Density	Enter the maximum image density in hundredths of OD .
Image Box Attributes	Polarity	Select the Polarity : Normal or Reverse .
	Image Size	Enter the printer-specific Image Size in mm.
Insert (Symbol)		Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).

The **DICOM Print Brightness/Contrast** dialog changes the **Brightness** and **Contrast** settings. These settings are applied to the images that are sent to the **SCP**, not to the images stored locally.

The effect of these settings can be seen in the **Before** and **After** images.

Figure 8-27: DICOM Print Settings – Brightness/Contrast

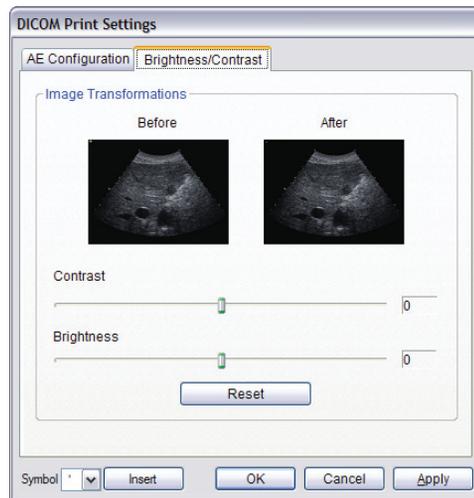


Table 8-29: DICOM Print Settings – Brightness/Contrast

Contrast	Adjusts the level of Contrast applied to the images.
Brightness	Adjusts the level of Brightness applied to the images.
Reset	Resets the values of DICOM Print Brightness and Contrast back to zero. <i>Note: To adjust the Brightness/Contrast settings, position the trackball arrow over the Brightness or Contrast slider. Tap and hold the  button while moving the trackball left or right to the desired position.</i>

8.2.11.3 DICOM Worklist Settings

DICOM Worklist Settings offer advanced settings for configuring the *DICOM Worklist SCU*.

To Configure DICOM Worklist Settings:

1. Tap the touch screen  button.
2. Select **Administrator > DICOM > Worklist**.
3. Create/select a **Device Name**. Edit the **Application Entity (AE)** settings for the selected **Device**.
4. Repeat **step 3** as many times as required.
5. Configure the dialog as required.

The **DICOM Worklist AE Configuration** dialog enables configuration of **AE** properties.

Figure 8-28: DICOM Worklist Settings – AE Configuration

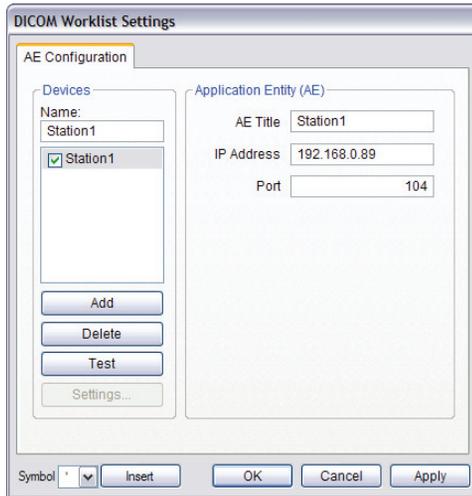


Table 8-30: DICOM Worklist Settings – AE Configuration

Devices		Use the Devices option to add as many DICOM Worklist Servers as required.
	Name	Enter/select the Name of an AE Worklist Device and populate the three (3) AE fields: AE Title , IP Address and Port .
	Add	Select to Add the new AE Worklist Device .
	Delete	Select to Delete the selected AE Worklist Device .
	Test	Select to send verification request to DICOM Worklist Device (ping to verify connection).
	Settings...	Not available in this release.
Application Entity (AE)		Note: The data entered/edited for the next three (3) fields is specific to the selected Device Name .
	AE Title	AE Title of the Worklist SCP .
	IP Address	Unique identifier of Worklist SCP .
	Port	Listening Port of the Worklist SCP .
Insert (Symbol)	Enables the insertion of text symbol(s) not available on the keyboard (e.g., punctuation, symbols and letters from other languages).	

8.2.12 Custom Keys

Custom Keys allow users to configure three (3), touch screen buttons: **1**, **2** and **⚙**.

The **Custom Key** setup dialog has a tab that corresponds to each of the **Custom Key** touch screen buttons. Once configured, tapping one of these buttons will produce the defined action.

Figure 8-29: Custom Keys

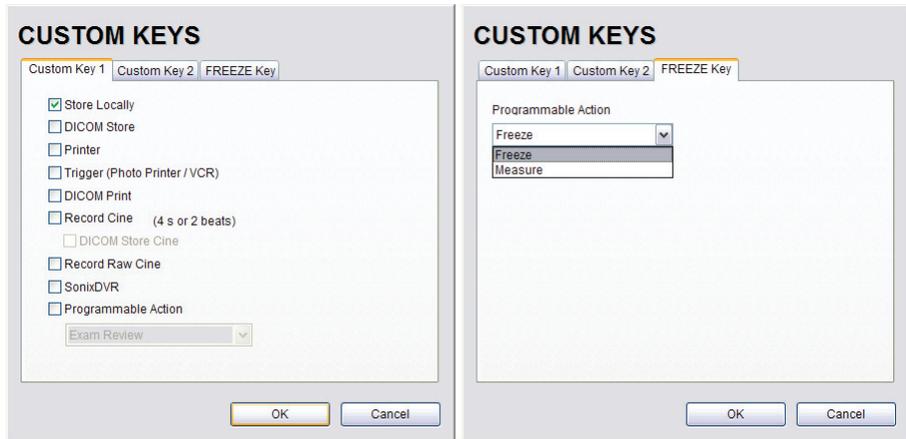


Table 8-31: Custom Key Settings

Custom Key 1, Custom Key 2	Store Locally	<p>This setting is always selected by default and can only be deselected (or reselected) if all options except Trigger are deselected.</p> <p>When selected, regardless of other settings, images will always be saved to the system's local storage.</p> <p>Note: Access locally stored images through the Exam Management page or the touch screen Exam Review button</p>
	DICOM Store	Sends images to a DICOM archive. Refer to 8.2.11 DICOM Configuration for more setup details.
	Printer	Sends output to a Paper Printer . Refer to 8.2.13 Peripherals for details on printer setup.
	Trigger (Photo Printer/VCR)	<p>Sends a Trigger signal to attached video printers (e.g., Thermal Printer).</p> <p>Note: To select Store Locally (above), all other options must be deselected.</p>



Custom Key 1, Custom Key 2, cont'd	DICOM Print Sends images to a DICOM printer. Refer to 8.2.11 DICOM Configuration for more setup details.	
	Record Cine	Enables the system to be configured to record a Cine loop . Loop duration is configured through 8.2.17 Capture Settings .
		DICOM Store Cine Enables the user to send animated DICOM to a DICOM archive (8.2.11 DICOM Configuration).
	Record Raw Cine Saves Cine loops in raw format, enabling future manipulation (5.9.4 Raw Cine Manipulation).	
	SonixDVR Recording Enables SonixDVR Recording (i.e., a physical recording device is <u>not</u> required). Note: SonixDVR Recordings cannot be transferred via DICOM. Use the Image Transfer process (9.3) to export these files.	
Programmable Action	Enables the user to configure the Custom Key(s) to one (1) of three (3) specific actions—unrelated to printing.	
	Exam Review Toggles access between imaging and Exam Review page.	
	Measure Activates Measurement Packages touch screen .	
	Report Toggles access between imaging and current Report (i.e., achieves the same result as tapping the Report button on the Measurement Packages touch screen).	
FREEZE Key Programmable Action	Enables the user to customize the action of the  button.	
	Freeze	Toggles access between live and frozen imaging. This setting is the system default.
	Measure	Toggles access between live imaging and the Measurements Package touch screen. This enables the user to determine their preferred workflow.

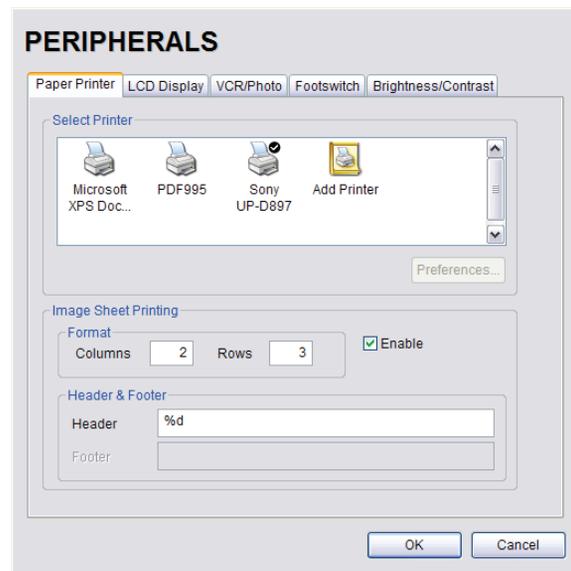
To Configure Custom Keys:

1. Tap the touch screen  button.
2. Select **Administrator > Custom Keys**.
3. Select the desired **Custom Key** tab.
4. Configure the individual **Custom Keys** as required.
5. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.13 Peripherals

The **Peripherals** setup dialogs enable software configuration for the various peripherals that are approved for connection to the system. For installation details of the specific connections involved, refer to [Chapter 10: Connectivity, Peripherals and Software](#).

Figure 8-30: Peripherals



To Access the Peripherals Dialog:

1. Tap the touch screen  button.
2. Select **Administrator > Peripherals**.
3. Select the relevant **Peripherals** dialog tab.



8.2.13.1 Paper Printer

The **Paper Printer** dialog is used to configure a laser or inkjet paper printer connected to the system. If the printer is connected via a parallel or USB port, the system will recognize the printer and subsequently list it as a recognized printer in the **Select Printer** section of the dialog.

Figure 8-31: Peripherals – Paper Printer

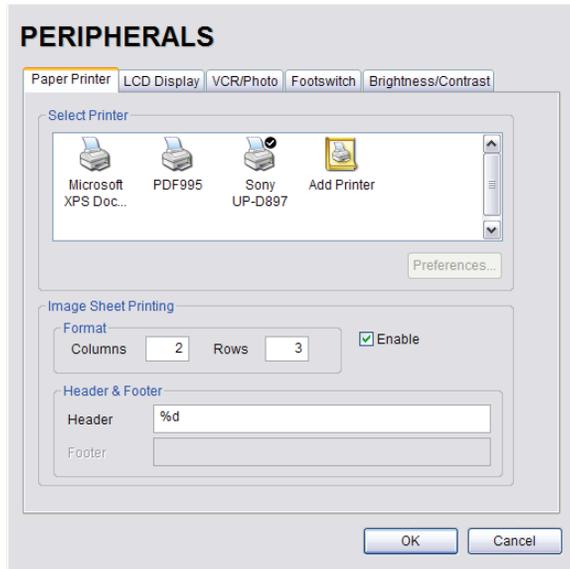


Table 8-32: Paper Printer Settings

Select Printer		Select a Paper Printer from the options presented.
Preferences		Select this button to configure Preferences for the selected printer.
Image Sheet Printing	Format	Columns Select the number of print Columns .
		Rows Select the number of print Rows .
		Enable Select to allow Image Sheet Printing .
	Header & Footer	Header Enter text to be printed in each Header .
		Footer Note: This field is always disabled.

To Configure the System for a Paper Printer:

1. Tap the touch screen  button.
2. Select **Administrator > Peripherals**.
3. Select the **Paper Printer** tab.
4. Select the printer from the list of recognized printers. For multiple printers, tap the touch screen  button and select **Set as Default Printer** from the onscreen menu.

Note: *The selected printer can be a network or a local printer and can be configured for specific formats by selecting **Preferences**.*

5. To select/deselect **Image Sheet Printing** (e.g., **2x3** image sheets), select/deselect the **Enable** box.
6. Enter the number of **Columns** and **Rows** desired in the text boxes provided.
7. To add an optional **Header** to the image sheet (or to supply special commands, as required), enter the desired text in the space provided.

Note: *To configure the touch screen **1** or **2** button to send images to the default printer, refer to [8.2.12 Custom Keys](#).*

*To send partial print pages (e.g., 3 images remaining on a 4 image/sheet format) at the end of an exam, tap the touch screen **End Exam** button.*

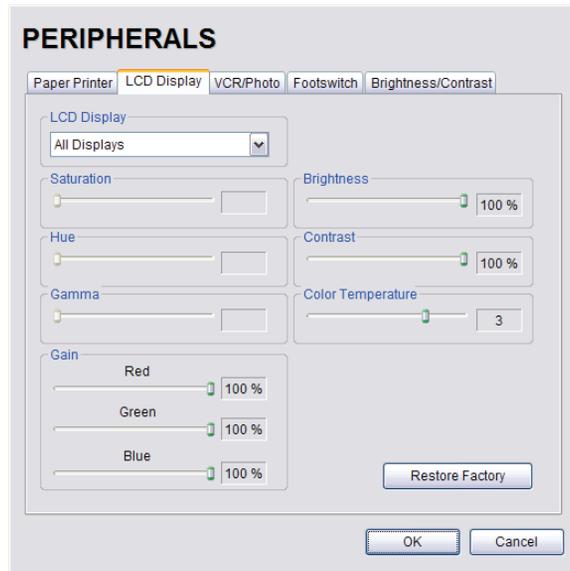


8.2.13.2 LCD Display

Adjust the following LCD display settings as required: **Saturation**, **Hue**, **Gamma**, **Brightness**, **Contrast**, **Color Mode** and **Gain (Red, Green and Blue)**.

Note: Select the **Restore Factory** button to reconfigure **LCD Display** to factory settings.

Figure 8-32: Peripherals – LCD Display



To Adjust the LCD Display Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Peripherals**.
3. Select the **LCD Display** tab.
4. Tap and drag each slider to the desired settings.
5. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.13.3 VCR/Photo

Output video includes only the image area (or full screen when a dialog such as the **Exam Management** page or **Image Review** pages are displayed on the screen). The output video does not include the thumbnail images.

Use the **VCR/Photo** dialog to enable/disable the live output video (**Video Out**).

Note: To create a **SonixDVR Recording** of an exam session, refer to [8.2.12 Custom Keys](#) and/or [8.2.17 Capture Settings](#).

A physical recording device is *not* required for **SonixDVR Recording**. However, the option must be configured in [8.2.12 Custom Keys](#) before an exam session can be recorded to an **MPG** file.

Figure 8-33: Peripherals – VCR/Photo



To Enable VCR/Photo Functionality:

1. Tap the touch screen  button.
2. Select **Administrator > Peripherals**.
3. Select the **VCR/Photo** tab.
4. Select/deselect **Enable Video Out** as required.
5. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.



8.2.13.4 Footswitch

The **Footswitch** dialog allows the user to configure the desired operation for as many as three (3) footswitches. There are seven (7) options: **None**, **Print**, **Freeze**, **Quick Cine Record**, **Exam Management**, **Measurement** and **Exam Review**.

Figure 8-34: Peripherals – Footswitch

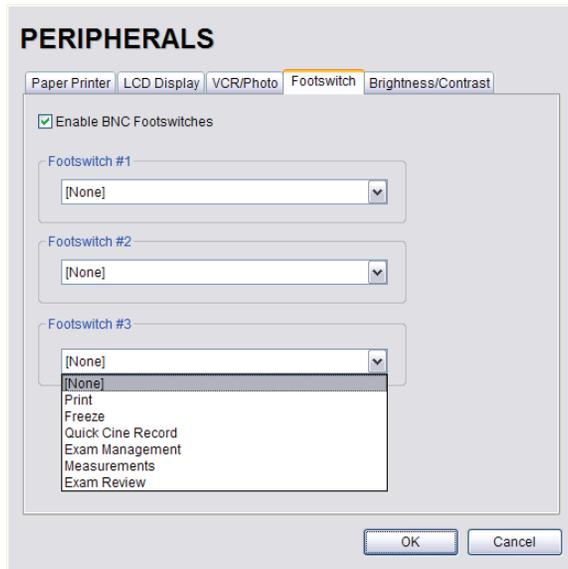


Table 8-33: Footswitch Options

Enable BNC Footswitches

Footswitch #1, #2, #3	None	Select the action to be performed when a specific footswitch is pressed.
	Print	
	Freeze	
	Quick Cine Record	
	Exam Management	
	Measurements	
	Exam Review	

To Configure the Footswitch Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Peripherals**.
3. Configure the **Footswitch** options as required.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.13.5 Brightness/Contrast

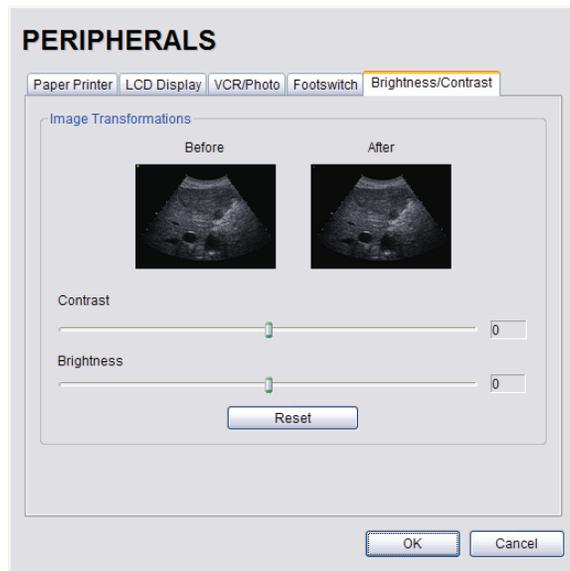
The **Brightness/Contrast** dialog allows users to change the **Brightness/Contrast** of images transferred to peripherals to ensure optimum quality.

Note: The **Brightness/Contrast** values set on this tab are not applied to the image on the screen or images stored to the system.

The effects of the **Brightness/Contrast** settings are seen in the **Before** and **After** images.

Note: Select the **Reset** button to restore **Brightness/Contrast** settings to factory defaults.

Figure 8-35: Peripherals – Brightness/Contrast



To Adjust the Brightness/Contrast Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Peripherals**.
3. Select the **Brightness/Contrast** tab.
4. Tap and drag each slider to the desired settings.
5. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.14 Display Settings

Display Settings allows users to configure the various LCD display options.

Figure 8-36: Display Settings

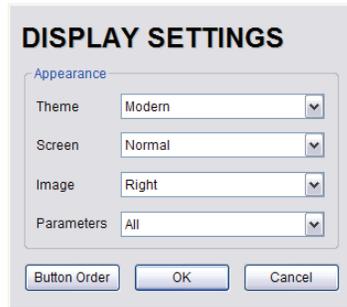


Table 8-34: Display Settings

Appearance	Theme	Classic Modern	Configure the basic settings for the LCD display using either Advanced or Classic features.
	Screen	Normal Full	Configure imaging Layout . Note: When set to full, Ultrasonix recommends working with minimized buttons as much as possible (Figure 3-4: System Control Buttons (Maximized and Minimized)).
	Image	Right Left	Configures the system so the imaging displays on the Left or the Right side of the screen.
	Parameters	All Subset	Configures the system to display All available or a specific Subset of imaging parameters: Subset consists of: MI/TI, FPS, Resolution and Freq (refer to Table E-1 for imaging parameter details). Note: When Subset is selected, a Depth value will be placed under the Depth markers.

To Configure Display Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Display**.
3. Configure **Display Settings** as required.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

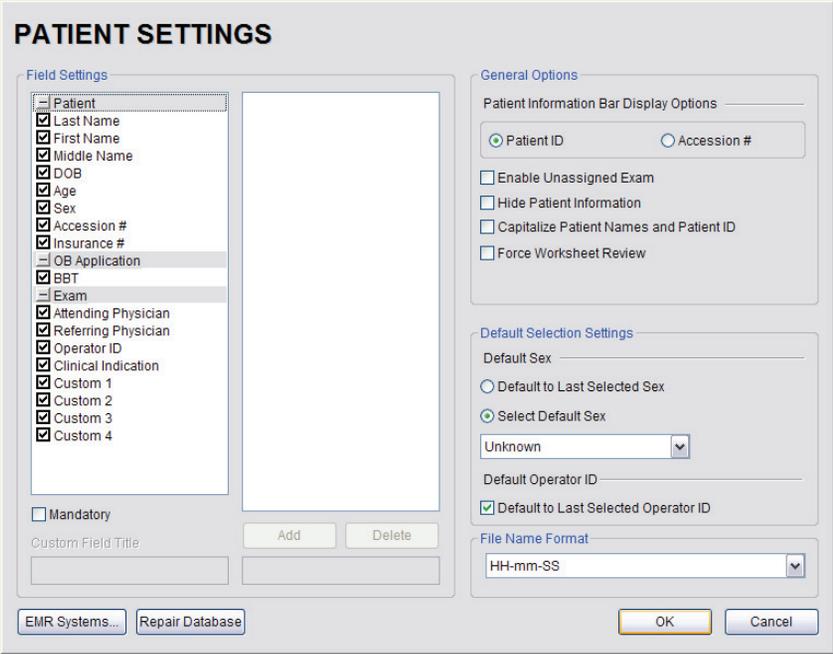
8.2.15 Patient Settings

Patient Settings allows users to configure options for the **Exam Management** page, the onscreen display of patient data and **EMR Systems**.

The following configuration options are available with the **EMR System EHealthConx**:

- **Operators** must be selected from a predetermined list (see also [3.3.1 Quick Exam Start-Up](#))
- **Worksheets** must be reviewed prior to ending an exam
- **FTP** transfers are automatically initiated once an exam is ended ([8.2.16 Status Bar](#)).

Figure 8-37: Patient Settings



PATIENT SETTINGS

Field Settings

- Patient
 - Last Name
 - First Name
 - Middle Name
 - DOB
 - Age
 - Sex
 - Accession #
 - Insurance #
- OB Application
 - EBT
 - Exam
 - Attending Physician
 - Referring Physician
 - Operator ID
 - Clinical Indication
 - Custom 1
 - Custom 2
 - Custom 3
 - Custom 4

Mandatory

Custom Field Title

Add Delete

General Options

Patient Information Bar Display Options

Patient ID Accession #

Enable Unassigned Exam

Hide Patient Information

Capitalize Patient Names and Patient ID

Force Worksheet Review

Default Selection Settings

Default Sex

Default to Last Selected Sex

Select Default Sex

Unknown

Default Operator ID

Default to Last Selected Operator ID

File Name Format

HH-mm-SS

EMR Systems... Repair Database OK Cancel

Figure 8-38: EMR System Settings and Operators

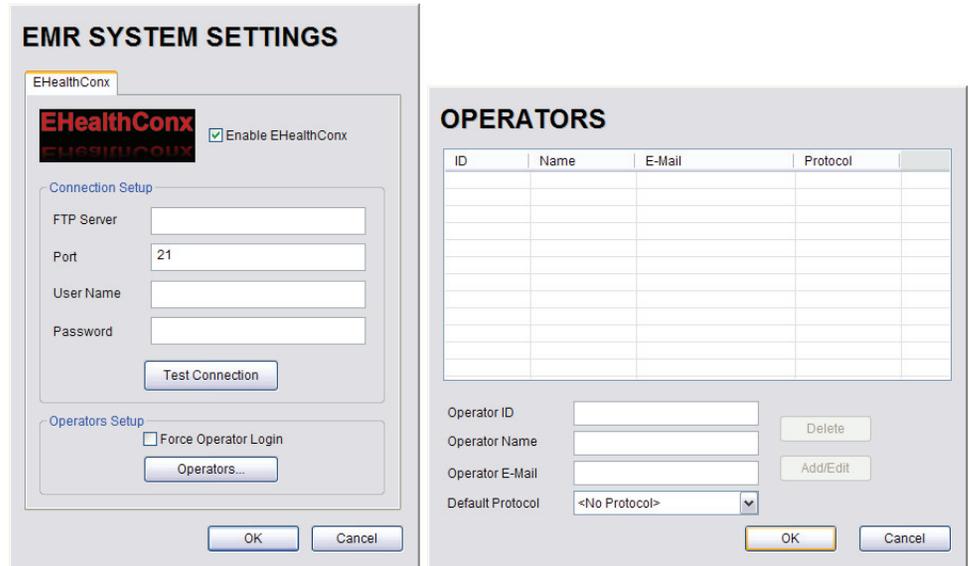


Table 8-35: Patient Settings

Field Settings	<p>Select/deselect the Field Setting data entry fields as required. Selected fields will appear on the Exam Management page and, where applicable, in the relevant databases (as described in 4.7 Storage/Database Tabs).</p>
	<p>Last Name First Name Middle Name DOB Age Sex Accession # Insurance #</p> <p>When selected, these fields will be available under Patient Information (4.1.1).</p>
	<p>BBT</p> <p>When selected, BBT will be available under Application Information (4.1.2).</p> <p>Note: BBT is only applicable when the Application is set to OB.</p>
<p>Note: Users are able to add/edit/delete data in the following fields. Deleting data does not affect existing patients.</p> <p>Once deleted, the data can be added again at a later date either here or on the Exam Management page (4.1.3).</p>	



Field Settings, cont'd	Attending Physician Referring Physician Operator ID Clinical Indication	When selected, these fields will be available under Exam Information (4.1.3) .
	Custom 1, 2, 3, 4	Use these four (4) user-defined data entry fields to create the desired label in the Field Title text entry box (e.g., Nationality). The customized label appears as one of the data entry fields under Exam Information (4.1.3) .
	Mandatory	Forces Operators to complete specific Patient data fields. If an Operator tries to begin an exam using either the Exam Management page or QSonix before all Mandatory fields have been completed, an Input Required message will be presented.
General Options	General Options control the ability to include/exclude or display/hide certain fields in the Patient Bar on the imaging screen.	
	Patient Information Bar Display Options	Patient ID OR Accession #
		The selected option (Patient ID or Accession #) will be displayed in the Patient Information Bar along the top of the LCD display during an exam.
	Enable Unassigned Exam	Select/deselect to enable/disable the ability to begin an exam <u>without</u> selecting a patient. Refer to 4.4 for more details.  Warning: Exams that are assigned to a Patient <u>after</u> images have been saved do not include identifying Patient data (such as Patient ID or Name). Organizations that elect to configure/use the Enable Unassigned Exam functionality provided by <i>Ultronix</i> are assuming all liabilities and risks associated with that decision.
	Hide Patient Information	Select/deselect to display/hide the Patient Information during an exam.
Capitalize Patient Names and Patient ID	Select to capitalize all letters in a patient's name or identification number.	
Force Worksheet Review	Forces Operators to review the Worksheet/ before they are allowed to end an exam.	



Default Selection Settings	Default Sex	<p>Default to last selected sex</p> <p>OR</p> <p>Select default sex</p>	<p>When Default to last selected sex is chosen, opening a fresh Exam Management page will result in the Sex field being populated with the same gender that was selected in the last Exam Management page.</p> <p>When Select default sex is chosen, the user must select a specific Sex from the drop-down menu. The Sex selected will then become the default and be automatically entered in the Sex field of every new patient record that is created. There are four (4) choices available: Female, Male, Other and Unknown.</p>	
	Default Operator ID	<p>Default to last selected Operator ID</p>	<p>When Default to last selected Operator ID is chosen, opening a fresh Exam Management page will result in the Operator ID field being populated with the same Operator that was selected in the last Exam Management page.</p> <p>Note: This option is especially useful if the same Operator will be using the system for an extended period of time.</p>	
	File Name Format		Not available in this release.	
EMR Systems...	Selecting an EMR (Electronic Medical Record) System setting enables that EMR System . It will also enable the configuration/control of Operator IDs .			
	Connection Setup	Enable EHealthConx	Select/deselect to enable/disable EHealthConx .	
		FTP Server Port User Name Password	Enter the relevant data as provided by EHealthConx . Note: If desired, the FTP (File Transfer Protocol) transfer status icon can be configured to appear on the LCD display during file transfer (8.2.16 Status Bar).	
		Test Connection	After entering the Connection Setup data, select this button to test the FTP connection.	
	EHealthConx Operators Setup	<p>Note: Operator IDs entered here are specific to EHealthConx, but they will also:</p> <ul style="list-style-type: none"> • be used in Quick Exam Start-up (3.3.1) if Force Operator Login was enabled • form part of the list of Operator IDs available from Exam Information (4.1.3). 		
		Force Operator Login	<p>Select to force Operators to log in when using QSonix.</p> <p>Note: The Operator ID must have already been entered here using the Operators... option (i.e., they cannot be added during the QSonix process).</p>	
Operators...		<p>Operator ID Operator Name Operator E-Mail Default Protocol</p>	<p>Enter the relevant data in each field.</p> <p>Note: The Operator E-Mail address must be valid as it is used by EHealthConx to identify the Operator involved in each specific exam.</p>	
Repair Database			<p>Performs basic database file compression which can improve system performance.</p> <p>Caution: This operation is best performed by or under the supervision of a Service Representative.</p>	



To Access the Patient Settings Dialog:

1. Tap the touch screen  button.
2. Select **Administrator > Patient**.

To Configure Patient Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Patient**.
3. Configure **Patient Settings** as required.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

To Create Mandatory Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Patient**.
3. Select the desired **Field Setting** (e.g., **Last Name**).
4. Select the **Mandatory** checkbox.
5. Repeat **step 3** and **step 4** as required.
6. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.15.1 EMR Settings

To Configure EMR System Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Patient > EMR Systems,,,.**
3. Select **Enable EHealthConx** and configure the **Connection Setup** options as required.

Note: *Ultronix recommends that **Connection Setup** options be configured using the settings provided by your IT Department.*

4. Select **Operators....**
5. Enter the required data in each field and select the **Add/Edit** button.
6. Repeat **step 5** as many times as required.
7. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.16 Status Bar

When **Status** indicators are enabled, the system will present the relevant icons at the bottom right of the LCD display. Read the definitions carefully as not all icons will always be visible—even if the relevant option has been activated.

By default, all **Status Bar** options are unselected.

Figure 8-39: Status Bar

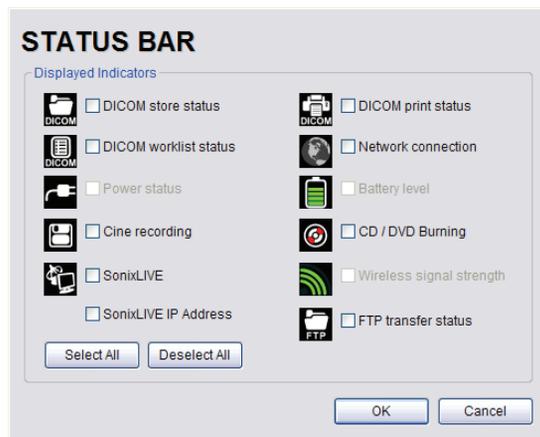


Table 8-36: Status Bar – Displayed Indicators

<p>DICOM Store status</p>  <p>Active Success Failure</p>	<p>Indicates the system is connected to a DICOM Storage server.</p> <p>This icon will be visible for only a short period of time. When a user accesses the DICOM Storage server, the icon will be presented while the operation is underway.</p> <p>Note: A Network connection must exist in order to have access to a DICOM network.</p>
<p>DICOM Print status</p>  <p>Active Success Failure</p>	<p>Indicates the system is connected to a DICOM Print device.</p> <p>This icon will be visible for only a short period of time. When the DICOM Print device is in use, the icon will be presented while the job is printing.</p> <p>Note: A Network connection must exist in order to have access to a DICOM network.</p>
<p>DICOM Worklist status</p>  <p>Success Failure</p>	<p>Indicates the system is connected to a DICOM Worklist server.</p> <p>This icon will be visible only when the DICOM Worklist server is being accessed.</p> <p>Note: A Network connection must exist in order to have access to a DICOM network.</p>

Network connection



Connected



Not Connected

Indicates whether or not a hard-wired network connection is available.

Power status



Wall Plug



Battery

Specifies the power source in use: **Wall Plug** (AC power) or **Battery (UPS)**.

The **Battery (UPS)** option is not available on this platform.

Battery level

Not available on this platform.

Cine recording



When **Cine Recording** is underway, this icon will be visible during the recording process.

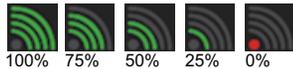
CD/DVD Burning



Indicates that a CD or DVD is being burned.

Note: *The system does not have a built-in CD/DVD player/burner. Refer to System Specifications for details on the recommended USB CD/DVD player/burner.*

Wireless signal strength



Denotes the strength of the wireless signal (%).

Note: *If a wireless network is not available and active, the relevant icon will not be presented—even if this option is enabled.*

SonixLive



Connected



Not Connected

When SonixLive is activated, the **Connected** icon will be visible on the LCD Display.

SonixLive IP Address

When **Streaming Video** is underway, selecting the icon will display the **IP Address** at which remote users can view the video.

Note: *If the relevant staff has been informed of a fixed IP Address, activating this option is unnecessary.*

*If a dynamic IP Address is used, enable this option to access the address from the LCD display during **Streaming Video**.*

*Alternatively, to maintain data privacy, do not enable this option and direct staff to view the current **Local IP Address** (fixed or dynamic) via **Menu > Administrator > Network** dialog.*

FTP transfer status



Connected



Not Connected

If an **EMR System** is configured, this icon will be visible when the **FTP** connection is live (refer to **EMR Systems...** in **Table 8-35** for more detail).

Note: *Once an **FTP** connection is configured under **EMR Systems...** (**Table 8-35**), ensure the **FTP transfer status** option is selected.*

Select All	Enables the selection of all options in one step.
Deselect All	Enables the deselection of all options in one step.

To Access Status Bar Indicators:

1. Tap the touch screen  button.
2. Select **Administrator > Status Bar**.

To Configure Status Bar Indicators:

1. Tap the touch screen  button.
2. Select **Administrator > Status Bar**.
3. Select/deselect **Displayed Indicators** as required.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.17 Capture Settings

The **Capture Settings** dialog allows the user to select between **Image** and **Full Screen** for image storage and to configure the loop storage record time.

Figure 8-40: Capture Settings

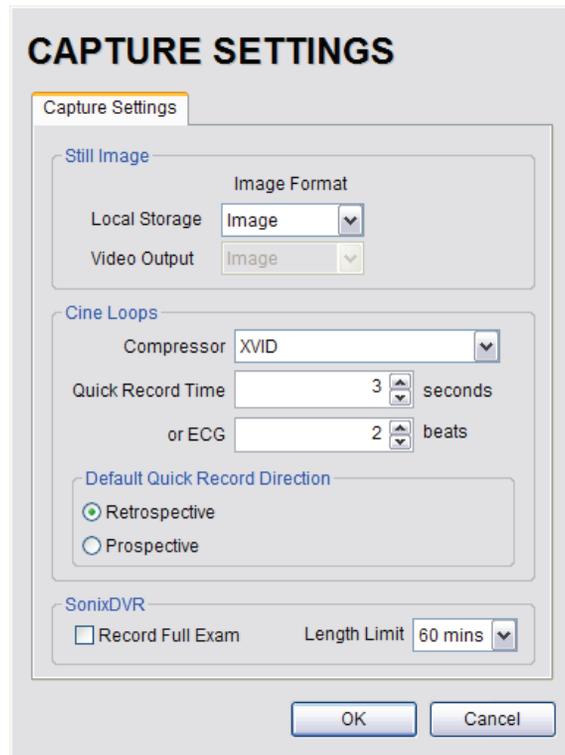


Table 8-37: Capture Settings

Still Image	Local Storage	Select between Full Screen and Image for still image storage. Note: <i>Image</i> includes image field, imaging parameters and patient data bar. Thumbnail images are not included. <i>Full screen</i> includes the entire display, including thumbnails.
	Video Output	Not available in this release.



Cine Loops	Compressor	Select the AVI movie Compressor type. XVID is the default. Caution: This setting should not be changed without a thorough understanding of Compressor types .	
	Quick Record Time	Select the Quick Record Time (1 to 30 seconds) for post recording (retrospective acquisition). Refer to 8.2.12 Custom Keys to configure the touch screen 1 or 2 button for Quick Record . Quick Record is only available for 2D or 2D/Color imaging. Note: Selecting a longer record time may slow down system performance.	
	or ECG (number of (heart) beats)	Cine capture length during an ECG is based on the number heart beats selected here. Refer to 8.2.12 Custom Keys to configure the touch screen 1 or 2 button. The default setting is 2 beats . Note: ECG is not available on this platform.	
Cine Loops	Default Quick Record Direction	Retrospective	Select to record history, i.e., the previous X seconds, where X is the number of seconds selected in Quick Record Time .
		Prospective	Select to record the next X seconds, where X is the number of seconds selected in Quick Record Time .
SonixDVR	Note: Refer to 5.8 SonixDVR Recording for more details on SonixDVR .		
	Record Full Exam	Select to record every exam from start to finish.	
	Length Limit	If Record Full Exam is selected, set the maximum record time for each exam: 5, 10, 20, 30, 40, 50 or 60 minutes . Once the Length Limit is reached, the exam will automatically stop recording and create an MPG file saved to the current Patient/Exam. Note: If the Length Limit is reached before the exam is finished, the recording will end (after being saved to the Patient/Exam). If additional recording is required, start a MPG using the Custom Key (8.2.12) configured for SonixDVR .	

To Configure Capture Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Capture**.
3. Configure **Capture Settings** as required.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.

8.2.18 Imaging Modes

The **Imaging Modes** dialog allows the configuration of a variety of **Imaging Mode** options.

Figure 8-41: Imaging Modes and Color Settings

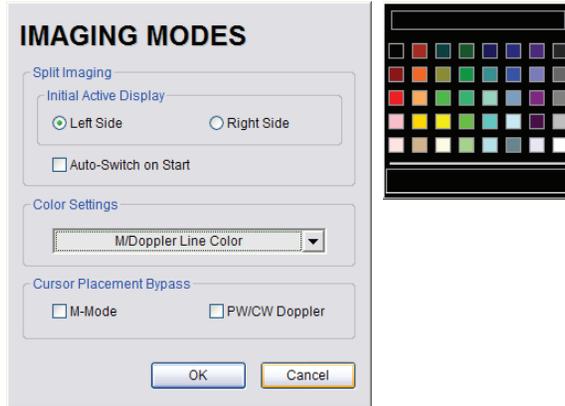


Table 8-38: Imaging Modes

Split Imaging	Initial Active Display	Left Side	When scanning in B-Mode , selecting Left Side will ensure the left image is the active image when the console Dual/Quad button is pressed. Left Side is the default setting.
		Right Side	When scanning in B-Mode , selecting Right Side will ensure the right image is the active image when the console Dual/Quad button is pressed.
	Auto-Switch on Start	Selecting this option will ensure that the selected side is active after the console Dual/Quad button is pressed, but then that image will immediately freeze and the active image will move to the opposite side. For example, if Left Side is set as Initial Active Display and Auto-Switch on Start is selected, after pressing the console Dual/Quad button, the Left Side image will be presented as active, then immediately freeze and active imaging will move to the Right Side .	
Color Settings	M/Doppler Color Line	Select/edit the M-Mode line color.	



Cursor Placement Bypass	M-Mode	<p>M-Mode automatically displays the split-screen 2D/M-Mode Sweep immediately after M-Mode is activated.</p> <p>Deselecting M-Mode displays a full screen 2D image with an M-Mode cursor line immediately after M-Mode is activated.</p> <p> activates the M-Mode Sweep.</p>
	PW/CW Doppler	<p>PW/CW Doppler automatically displays the split-screen 2D/Doppler Trace immediately after Doppler is activated.</p> <p>Deselecting PW/CW Doppler displays a full screen 2D image with the Doppler SV (Sample Volume) cursor immediately after Doppler is activated.</p> <p> activates the Doppler Trace.</p>

To Configure Imaging Modes:

1. Tap the touch screen  button.
2. Select **Administrator > Imaging Modes**.
3. Configure settings as required.
4. Select **OK** to accept the changes and exit or **Cancel** to exit without saving.
5. If **OK** is selected in [step 4](#), a message will be presented.
6. Select **OK** to continue.



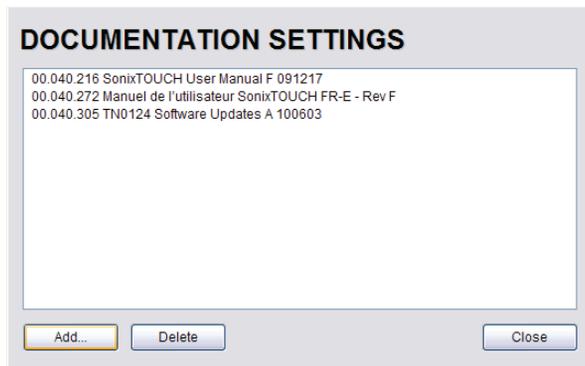
8.2.19 Documentation Settings

This option enables users to **Add/Delete** user documentation for viewing on the system.

Note: All documents must be in PDF format.

Refer to [3.3.2](#) for details on accessing the PDFs.

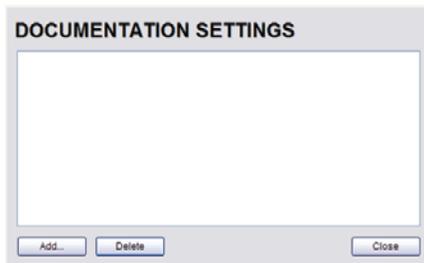
Figure 8-42: Documentation Settings



Note: To view documentation (in PDF format only) on the system, refer to [3.3.2 Documentation Access](#).

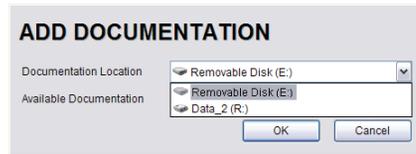
To Add a (PDF) Document:

1. Tap the touch screen  button.
2. Select **Administrator > Documentation**.



3. Ensure the appropriate media containing the relevant **User Manual** PDF(s) is connected to the system (e.g., a USB key).
4. Select the **Add...** button.

5. Select the **Documentation Location** from the drop-down menu.



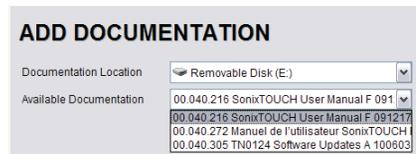
ADD DOCUMENTATION

Documentation Location: Removable Disk (E:)

Available Documentation: Removable Disk (E:)

OK Cancel

6. Select the relevant PDF from the **Available Documentation** drop-down menu.



ADD DOCUMENTATION

Documentation Location: Removable Disk (E:)

Available Documentation: 00.040.216 SonixTOUCH User Manual F 091

00.040.216 SonixTOUCH User Manual F 091217

00.040.272 Manuel de l'utilisateur SonixTOUCH F

00.040.305 TN0124 Software Updates A 100603

7. Select **OK** and the system will copy the PDF to the system.



ADD DOCUMENTATION

Documentation Location: Removable Disk (E:)

Available Documentation: 00.040.216 SonixTOUCH User Manual F 091

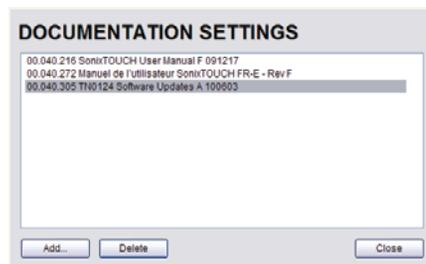
OK Cancel

Note: This may take a few moments, depending on the size of the PDF.

8. Repeat **step 4** to **step 7** as many time as required.

To Delete a (PDF) Document:

1. Tap the touch screen  button.
2. Select **Administrator > Documentation**.
3. Highlight the PDF to be deleted.



DOCUMENTATION SETTINGS

00.040.216 SonixTOUCH User Manual F 091217

00.040.272 Manuel de l'utilisateur SonixTOUCH F RE - Rev F

00.040.305 TN0124 Software Updates A 100603

Add... Delete Close

4. Select **Delete**.

8.2.20 Software Update

This option allows users to install software updates via the Internet or with a USB key.

Note: Access to **Software Update** is available only with a valid warranty license.

Figure 8-43: Software Updates

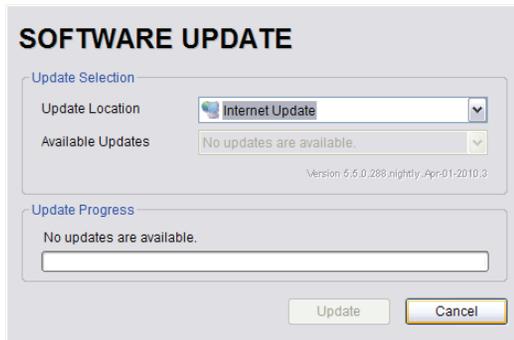


Table 8-39: Software Updates

Update Selection	Update Location	Internet Update	If the system is connected to the Internet, an automatic search for available software updates occurs. If successful, the Available Updates drop-down menu auto-populates with the software revisions available for download. The most recent revision is automatically selected but older software revisions may also be available.
		DVD-RAM Drive (E:)	If the update is located on a CD or DVD, it can be accessed via a USB DVD-RAM Drive which can be selected from the Available Updates drop-down menu. <i>Note: SonixTouch, SonixMDP/SP/OP and SonixTablet do not have a built-in CD/DVD player/burner. Refer to System Specifications for details on the recommended USB CD/DVD player/burner.</i>
		Removable Disk	If a removable disk (e.g., USB key or thumb drive) containing the update has been inserted in a USB port on the Front or Back Connectivity Panel, it will be available for selection from the Available Updates drop-down menu.
	Available Updates		Select to choose the appropriate update. Options in this drop-down menu are limited by the selection made in the Update Location drop-down menu.
Update Progress		Lets the user know when the update is complete or Ready .	

To Perform a Software Update:

1. Tap the touch screen  button.
2. Select **Administrator > Software Updates**.
3. Select an **Update Location** from the drop-down menu.

Note: In order to be available in the **Update Location** drop-down menu, the USB key must be inserted prior to selecting the **Software Update** option from the **Administrator Settings** menu.

4. Select **Update** to begin the update process or **Cancel** to exit without updating.

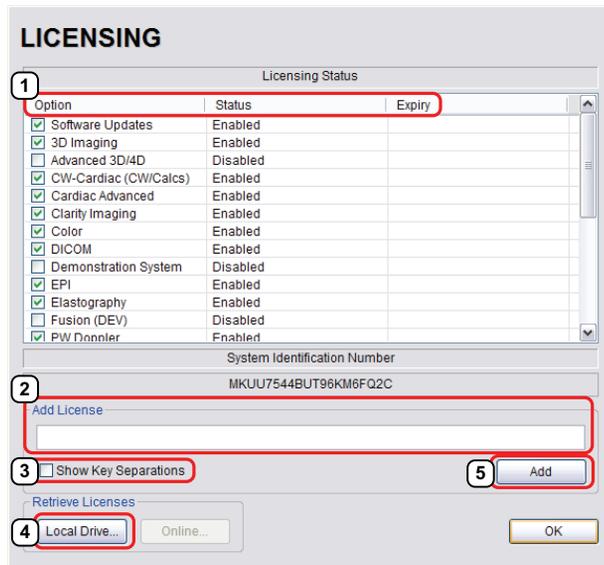
Note: The **Update Progress** bar displays the download progress. Upon completion, the **Software Update** will be auto-installed and the system will restart automatically.

8.2.21 Licensing

Licensing displays the **Options** available on the Sonix system. **Status** and **Expiry** dates (when applicable) of enabled features are also displayed.

Ultrasonix recommends including the *license.key* file in a regular backup, using the **Export** option under **8.2.9 System Settings**.

Figure 8-44: Licensing



Note: *Options that are not licensed at the time of purchase will not be visible in the **Licensing** dialog. To **Enable** a new **Option**, call your local dealer or Ultrasonix Technical Support.*

Table 8-40: Licensing Status

	Enabled	License is Enabled and has more than 30 days remaining.
	Enabled (with Expiry Date)	License is Enabled and will expire in less than 30 days. Note: The exact numbers of days remaining will be listed, e.g., Expires in 27 days.
1	Expired	License was Enabled but is now Expired . Note: To restore an Expired license, call your local dealer or Ultrasonix Technical Support.
	Disabled	Operator has deselected a licensed Option . Note: To Enable the Option, check it then select OK to save and exit.
2	Add License Text Box	When <i>license.key</i> is received in an electronic format that lends itself to the standard copy and paste method, do not select Show Key Separations . Simply copy and paste <i>license.key</i> into Add License .
3	Show Key Separations Checkbox	When entering <i>license.key</i> manually, select Show Key Separations checkbox to enable block-by-block key entry.
4	Local Drive... Button	If <i>license.key</i> is available on the local hard drive, select Local Drive... and choose the appropriate file (*.key) to import/enable the new license.
5	Add License Button	Select to add the license.

To Access the Licensing Dialog:

1. Tap the touch screen  button.
2. Select **Administrator > Licensing**.



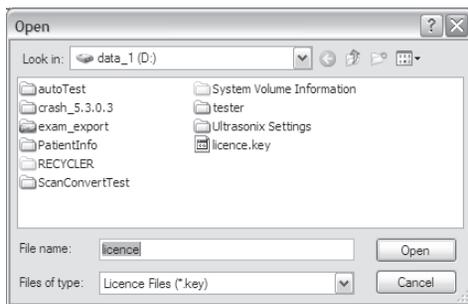
To Enter a New Licensing Key:

1. Tap the touch screen  button.
2. Select **Administrator > Licensing**.
3. Enter the new license key in the **Add License** text box.
4. Select **Add** to add the new license key.
5. Check to ensure the new license has been added then select **Close** to exit the **Licensing** dialog.

To Re-Import License.key:

Note: This process presumes the *license.key* file is stored on a USB device.

1. Insert the USB device with *license.key* file into one of the system's USB drives.
2. Tap the touch screen  button.
3. Select **Administrator > Licensing**.
4. Select **Local Drive**.
5. Under the **Look in** drop-down menu, select the relevant drive/device and locate *license.key*.



6. Select **Open** to re-import *license.key*.

Note: If there are any problems, clear all menus, return to the **Licensing** dialog and contact **Ultrasonix Technical Support** for assistance.

8.3 SERVICE MENU

Access to **Service** is password protected and restricted to certified, Ultrasonix Service representatives.

CHAPTER 9: IMAGE STORAGE, REVIEW, TRANSFER AND PRINT

The SonixTablet includes a (local) patient/exam management system with image storage, review, transfer and print which can be accessed from:

- the **Exam Management** page via the **Review** button. This allows the **Operator** to select one or multiple patients and their associated exam(s)
- a **Custom Key**, providing that **Custom Key** was configured to access the **Exam Review** page (8.2.12)
- the touch screen  button on the main touch screen, which offers access only to the current Patient and their associated exam(s).

9.1 IMAGE STORAGE

Each time a new patient is entered into the system, a local file is created for that patient. All saved images and **Cine** clips are stored in the patient file and organized by exam date and type. This image/**Cine** data may be retrieved at any time and transferred to a printer, **DICOM** archive, etc.

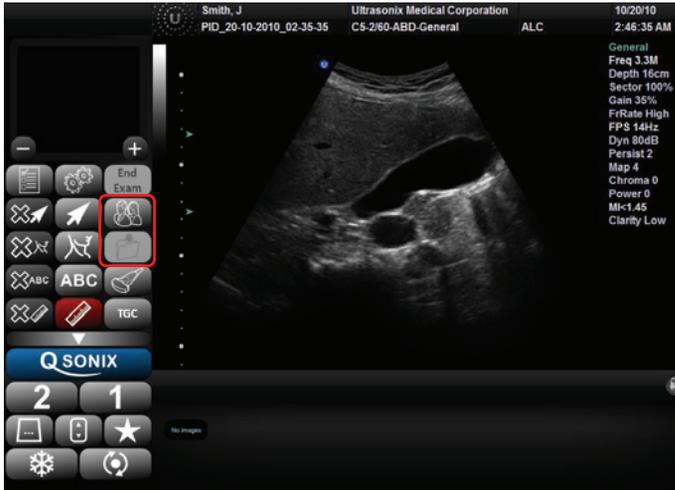
Hard drive capacity for patient data storage is at least 160 gigabytes. Depending on the number/type of images involved, the system can store more than 50,000 exams.

Note: *Ultrasonix recommends regular patient/image file back-up and purging of older patient files stored on the system.*



9.2 IMAGE REVIEW

Figure 9-1: Main Touch Screen



Note: Tap the touch screen  button to access the **Exam Review** page for the current Patient.

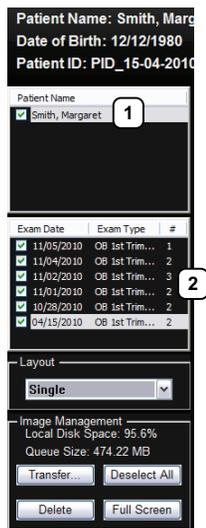
Alternatively, tap  to access the **Exam Management** page in order to review exams for different/multiple Patients.

Figure 9-2: Exam Management



Note: Select **Review** to access **Exam Review** page (review current or selected Patient(s) image files).

Figure 9-3: Sample Exam Review Page (Methods 1, 2 and 3)



Note: For methods 1, 2 and 3, images for the current exam will be presented first, but all exams for the current Patient will be available for review.

Table 9-1: Sample Exam Review Page (Methods 1, 2 and 3)

1	Current Patient.
2	Multiple exams for the current Patient.

To Access the Exam Review Page (Method 1 – Current Patient):

1. During an exam, tap the touch screen **1**, **2** or  button (whichever was configured to access **Exam Review**) to view the images for the current exam.

Note: Refer to [8.2.12](#) for details on configuring a **Custom Key** to access **Exam Review**.

To Access the Exam Review Page (Method 2 – Current Patient):

1. During a patient exam, tap the touch screen  button.
2. On the **Exam Management** page, select **Review** to view the current exam images.

To Access the Exam Review Page (Method 3 – Current Patient):

1. During a patient exam, tap the touch screen  button.

Figure 9-4: Sample Exam Review Page (Method 4 – with Multiple Patients)

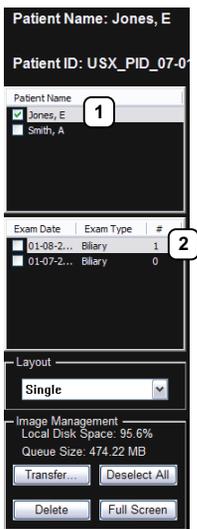


Table 9-2: Sample Exam Review Page (Method 4 – with Multiple Patients)

1	First Patient.
2	Multiple exams for the first Patient.

To Access the Exam Review Page (Method 4 – with Multiple Patients):

1. During a patient exam, tap the touch screen  button.
2. Select the **Patient** tab.
3. Select the desired Patient(s) from the **Patient** database.

Note: To select multiple Patients at the same time, tap the first Patient then, in conjunction with the touch screen keyboard **SHIFT** or **CTRL** key, tap and drag or tap to highlight the relevant Patients.

4. Select **Review** and the **Image Review** page will be presented with the exam files for the selected Patient(s).

Figure 9-5: Exam Review Page

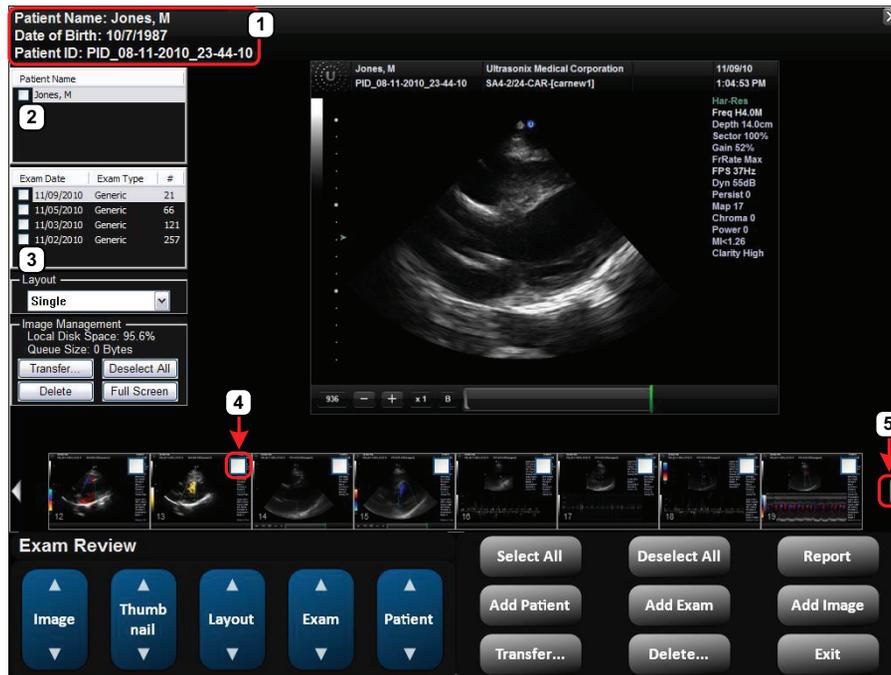


Table 9-3: Exam Review Page

1	Patient data for currently displayed image file.
2	Check Patient and Exam file(s) for image transfer or deletion.
3	
4	Check to select individual images for image transfer or deletion.
5	White arrow indicates more images. The trackball arrow cursor triggers scrolling of thumbnails both to the right and left.



Table 9-4: Exam Review Page

Patient Name	Patient(s) selected from the Exam Management page.
Exam Date/Exam Type	Displays the exam files/images for the Patient selected (above). The number of images and Cine clips stored appears in the far right column of this section. By default, if only one patient file is listed under Patient Name , the system will display the images from that patient's most recent exam. If multiple Patients Names are listed, select each of the patients individually to access a list the exam dates for that patient.
Layout	Sets up the image display area: Single, 2x2, 3x3, 4x4, 5x5, 6x6. Note: The default Layout is Single . However, if the default Layout is changed (e.g., to 2x2), the next time Exam Review is entered the system will default to the last Layout selection (in this example, 2x2).

Image Management	Local Disk Space: %	Lists the amount of available space on the system (where % equals the amount of free space available).
	Queue Size: x Kb	Lists the size of selected items (where x equals the total number of kilobytes in the queue).
	Transfer...	Transfers items to the selected destination.
	Deselect All	Deselects All selected patients/exams.
	Delete	Deletes the selected items from the system hard drive.
	Full Screen	Displays the selected image on a Full Screen . Note: Tap the touch screen  button to exit Full Screen and return to the Exam Review page.

Note: Stored **Cine** clips are identified by a small movie symbol on the lower right of the image thumbnail. Once selected, the movie will replay in the **Review** window.



Stored **MPG** files (**SonixVCR Recordings**) are identified by a small **REC** symbol on the lower left of the image thumbnail. Once selected, the **MPG** will replay on the **Review** page.



Raw **Cine loops** (5.9.4) are labelled with the icon **RAW**.

RAW

The image thumbnails on the bottom of the screen represent all the available images for the exam under review. To scroll through the thumbnails, use the trackball to move the cursor over to the right or left side of the thumbnails.

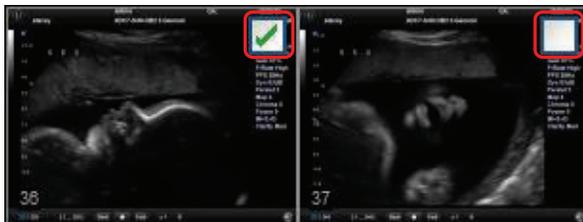
Table 9-5: Exam Review Touch Screen Controls (tap to activate)

Select All	Tap to Select All patients/patient files/images for image transfer or deletion.
Deselect All	Tap to Deselect All patients/patient files/images marked for image transfer or deletion.
Report	Tap to view the Report Worksheet .
Add Patient	Tap to add the next patient to the queue (selected via checkboxes).
Add Exam	Tap to add the next exam to the queue (selected via checkboxes).
Add Image	Tap to add the next image to the queue (selected via checkboxes).
Transfer...	Tap to initiate image transfer and display the Select Storage Destination page.
Delete...	Tap to Delete the patient(s), patient exam file(s) and/or image(s) selected via checkboxes.
Exit	Tap to Exit the Exam Review page.

Table 9-6: Exam Review Touch Screen Controls (tap to activate, dial to adjust)

Image	Tap the top of the Image button to select the next image (right) or the bottom to select the previous one (left).
Thumbnail	Tap the top of the Thumbnail button to move to the next image (right) or the bottom to select the previous one (left).
Layout	Tap the top of the Layout button to increase the number of visible images or the bottom to decrease the number.
Exam	Tap the top of the Exam button to move down through the list of available exams or the bottom to move up through the list.
Patient	Tap the top of the Patient button to move down through the list of available patients or the bottom to move up through the list.

Figure 9-6: Image Selection/Deselection





9.2.1 Deleting Image(s)/Exam(s)

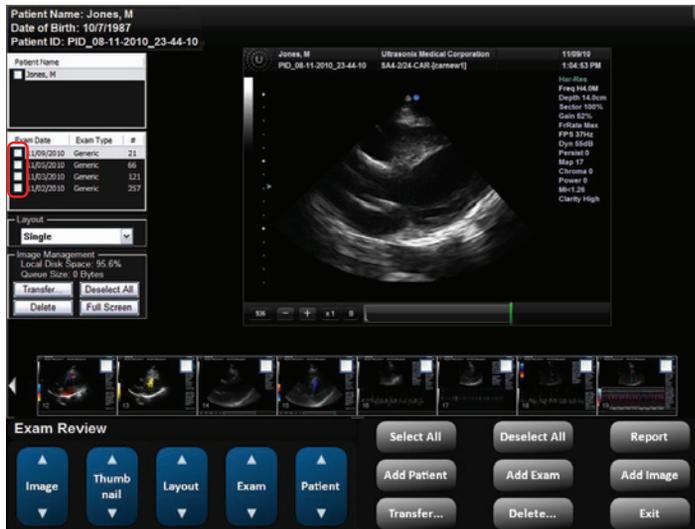
To Delete Individual Images:

1. Select the desired patient and exam date to display the images.
2. Tap the desired image(s) to place a mark in the associated checkbox(es) (as shown in [Figure 9-6](#)).
3. Tap the touch screen **Delete...** button or select **Delete** from the menu on the LCD display.

Note: Select **Deselect All** to reset the screen and deselect the patient(s), exam(s) and image(s).

To Delete a Complete Exam:

1. Select the desired **Patient** and **Exam Date**.



2. Tap the touch screen **Delete...** button or select **Delete** from the menu on the LCD display.

Note: Select **Deselect All** to reset the screen and deselect the patient(s), exam(s) and image(s).

9.3 IMAGE TRANSFER

The image management system enables users to transfer stored images and **Cine** clips to a storage medium: **DICOM** archive or **Printer** or USB medium, etc.

Files saved to a USB storage device (e.g., **[E:] (Removable Device)**) during data transfer will be printed to a PDF in the relevant **Patient** directory under **Patientinfo**.

Notes:

To select an entire exam, select the checkbox for the desired exam.

To select all exams for a patient, select the checkbox for the desired patient.

To select only the desired image(s) open each exam and select the individual checkbox(es) for the desired image(s).

Figure 9-7: Storage Destination Dialog



STORAGE DESTINATION

DICOM Print Server(s)
DICOM Storage Server(s)

Storage Options

Include Meta-Data Hide Patient ID

Folder Name: UltrasonixExam

Image Format: PNG

DICOMDIR Profile:

Transfer Progress

Save Settings Send Close

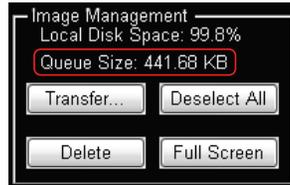


Table 9-7: Storage Destination Options

Storage Destination		<p>All available storage options will be listed here, including all printers currently attached to the system, either locally or via the network: DICOM archive or Printer or USB medium.</p> <p>Note: A removable USB device must be connected to the system in order to have it appear in the list of Storage Destinations.</p>	
Storage Options	Include All Patient Data	Creates a backup of images, reports (PDFs) and Cine files (database and measurement data are not included). If multiple patients are selected with this option, all images will generally be exported in one (1) file.	
	Hide Patient ID	Removes Patient information (Patient Name and ID) from the image, rendering the data anonymous.	
	Folder Name	Images written to a removable USB device will be written into the Folder Name entered here. The default is UltrasonixExam . Note: This field is only available if the selected Storage Destination will create a digital copy of the file e.g., a removable USB device.	
	Image Format		Enables the selection of five (5) different image formats. Note: Selecting anything other than the default (PNG) will extend the image transfer time as PNG images will have to be converted to the new format. Bitmap and DICOM images in particular will take significantly more time to transfer.
		PNG	Portable Network Graphics image format. This is the default selection. The average PNG image size is 100Kb.
		JPEG	Joint Photographic Experts Group image format.
		Bitmap (BMP)	Converting the image to a Bitmap (BMP) increases the image size as follows: <ul style="list-style-type: none"> • 800 x 600 Bitmap image = approximately 2Mb • 1024 x 768 Bitmap image = approximately 3Mb.
		GIF	Graphics Interchange File or Format image.
		DICOM	DICOM image format.
		DICOMDIR	DICOMDIR image format. Note: DICOMDIR enables users to copy images to an alternate media if—for whatever reason—it is not possible to transfer the images directly to the DICOM server. They can then be copied to the DICOM server at a later date.
DICOMDIR Profile	Select the appropriate DICOMDIR Profile (DICOMDIR Profiles are defined in the DICOM Standard .)		
Transfer Progress		<p>Displays the file transfer progress.</p> <p>Note: If multiple DICOM Storage or Print Servers have been configured (8.2.11.1 and 8.2.11.2) and DICOM Storage Server(s) or DICOM Print Server(s) is selected as the transfer medium, after selecting Send the Operator will be able to select the specific Server (or set of Servers) to which the data will be transferred.</p>	
Save Settings		Select to save the transfer settings as the default for future use.	
Send		Select to complete the image transfer.	
Close		Select to clear the dialog and exit without transferring the images.	

To Transfer Patient Exams:

1. Select the desired **Patient(s)**, **Exam Date** and/or images.



Note: The amount of space required is listed under **Image Management** as **Queue Size**.

Select **Deselect All** to reset the screen and deselect the patient(s), exam(s) and image(s).

2. Select **Transfer...**
3. Select the desired **Storage Destination**.



Note: All connected Ultrasonix-approved digital storage peripherals will appear in the list of **Storage Destinations**.

If a **DICOM Storage** or **Print Server** is connected, it will also be available for selection.

Files saved to a USB storage device (e.g., [E:] (**Removable Device**)) during data transfer will be printed to a PDF in the relevant **Patient** directory under **Patientinfo**.

4. If required, select **Include All Patient Data** and/or **Hide Patient ID**.
5. If required, change the default **Folder Name** (**UltrasonixExam**) using the console keyboard.

Note: This field is only available if the selected **Storage Destination** will create a digital copy of the file (e.g., a removable USB device).



6. Select the desired **Image Format** (**Default (PNG)**, **JPEG**, **Bitmap (BMP)** or **GIF**).



Note: *Selecting anything other than the default (PNG) will extend the image transfer time as PNG images will have to be converted to the new format. Bitmap and DICOM images in particular will take significantly more time to transfer.*

7. If desired, select **Save Settings** to save the current transfer settings as the default.
8. Select **Send** to transfer the files and/or images or **Close** to exit without transferring.

Notes:

*If multiple **DICOM Storage** or **Print Servers** have been configured (8.2.11.1 and 8.2.11.2) and **DICOM Storage Server(s)** or **DICOM Print Server(s)** is selected as the transfer medium, after selecting **Send** the **Operator** will be able to select the specific **Server** (or set of **Servers**) to which the data will be transferred.*

The original files will remain unchanged on the local hard drive.

*The **Update Progress** bar displays the transfer progress.*

CHAPTER 10: CONNECTIVITY, PERIPHERALS AND SOFTWARE

The system includes a wide range of connectivity features that allow the user to simultaneously connect a variety of peripherals. Refer to [8.2.13 Peripherals](#) and the *SonixTablet Service Manual* for further details on peripheral connectivity.



Warning: Do not touch the patient and the transducer ports simultaneously.

10.1 SIDE CONNECTIVITY PANEL

The Side Connectivity Panel can be accessed from the side of the system. The connectors are routed internally enabling easy configuration.

Figure 10-8: Side Connectivity Panel



Table 10-8: Side Connectivity Panel

	Sound Connections	Line-in (blue): may be used to connect an Ultrasonix-approved audio input device. System Speaker connection (green). System Microphone connection: Disabled.
	LAN	Use to connect the system to a network. This port supports 10 Mb/100 Mb.
	USB (x6)	Use to connect Ultrasonix-approved USB devices (e.g., printer, barcode reader, memory stick, etc.).
Video VGA Output	Not in use.	



10.2 ULTRASONIX-APPROVED DEVICES



Warning: Refer to the most recent price list to determine the exact make(s)/model(s) of Ultrasonix-approved devices.

The following peripherals have been approved for use with the system:

- SONY USB printer
- USB media (memory stick, external hard drive, etc.).
- dual or triple footswitch

10.3 MOUNTING/REMOVING THE SYSTEM FROM THE CART

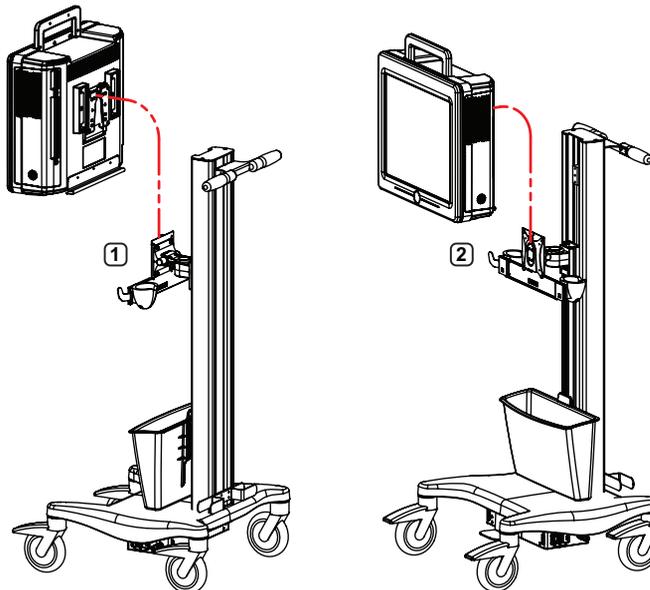
Mounting/removing the SonixTablet is easy.



Warning: Although the SonixTablet is portable, it weighs more than 30 lbs (13+ kg). To avoid injury, be sure to follow proper workplace/ergonomic lifting techniques when transporting the system.

To Cart-Mount the SonixTablet System:

1. Connect the system to the cart, lifting the Quick Release Plate over the mounting bracket on the cart arm.



2. The system is held in place by gravity and the locking tab at the top of the Quick Release Plate.

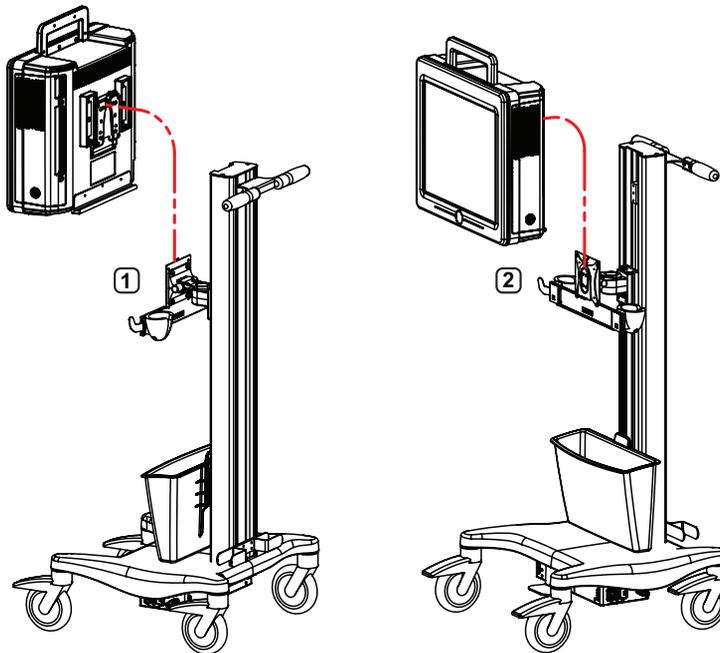
Note: Image 1 is the view from the side/rear. Image 2 is the view from the side/front.

To Remove the SonixTablet from the Cart:

1. At the rear of the system, depress the locking tab on the Quick Release Plate.



2. Lift the system up and off the cart.



Note: Keep the tab depressed until the system clears the locking mechanism.

Image 1 is the view from the side/rear. Image 2 is the view from the side/front.



10.4 BARCODE READER

A barcode reader is available as an option with the system.

Figure 10-9: Barcode Reader



Warnings:

USE OF CONTROLS or adjustments or performance of procedures other than those specified in the manufacturer's User's Guide (delivered with system) may result in hazardous laser light exposure.

NEVER attempt to look at the laser beam, even if the barcode reader appears to be non-functional.

NEVER point the laser beam in anyone's eyes.

USE OF OPTICAL instruments with the laser equipment will increase eye hazard.

UNDER NO CIRCUMSTANCES should users or technicians attempt to open or service the laser scanner. Attempting to open the barcode reader may cause exposure to hazardous laser light. Should the barcode reader require maintenance or replacement, contact Ultrasonix Technical Support.

Caution: Do not apply ultrasound gel to the barcode reader.



10.4.1 Connecting the Barcode Reader

Plug the barcode reader's USB connector into one of the USB ports on the Side Connectivity Panel (10.1). To keep it handy, store the barcode reader in one of the transducer holders.

10.5 WIRELESS ADAPTER

Wireless is available only as a pre-installed option.

Caution: System networking options are intended for use *inside* your organization's firewall. Organizations that elect to configure/use the networking functionality provided by Ultrasonix are assuming all liabilities and risks associated with that decision.

Caution: For details on FCC regulations as they apply to the wireless adapter, please refer to the manufacturer's User Guide included with the system.

10.6 CONNECTING THE USB FOOTSWITCH (DUAL OR TRIPLE)

Connect the USB footswitch to the Side Connectivity Panel (10.1) and configure it via 8.2.13.4 Footswitch.

Figure 10-10: Dual and Triple USB Footswitches





10.7 TRANSDUCER HOLDERS AND CABLE HOOKS

The transducer holder with integrated cable hook can be mounted to a table edge for stand-alone systems (Figure 10-11), or on the back of the SonixTablet when the system is pole-mounted (Figure 2-2).

Note: For best results, Ultrasonix recommends removing the transducer holders and cable hooks before cleaning (D.4.6). This will allow the operator to clean all the various curves and folds in a more effective manner.

Figure 10-11: Transducer Holder with Integrated Cable Hook



10.8 SOFTWARE

10.8.1 Anti-Virus Protection

Sonix software includes a 12 month subscription to anti-virus software that is delivered pre-installed and activated.

Caution: Anti-virus updates will only be available to users with systems connected to the Internet.

Users wishing to run their own anti-virus software—or those who do not want to run anti-virus software at all—must disable/uninstall the existing software. Contact your IT department or Ultrasonix Technical Support for more details.

APPENDIX A: SAFETY

A.1 SAFETY

This section contains important information about the safe use of the Sonix ultrasound system. Much of the information is required by various regulatory agencies and should be read prior to using the Sonix ultrasound system.



Warning: For safety details on the mTEE8-3/5 transducer, refer to 00.040.314 mTEE8-3/5 User Manual.

A.1.1 ALARA Principle and Output Displays

The Acoustic Power Output Display for the Sonix ultrasound system meets FDA requirements and the guidance standards set out by AIUM and NEMA: *Standard for Real-Time Display of Thermal and Mechanical Acoustic Output Indices on Diagnostic Ultrasound Equipment*.

The Sonix system provides real-time **Mechanical Index (MI)** and **Thermal Index (TI)** acoustic power output display values depending on the transducer and imaging mode.

- **MI: Mechanical Index (2D imaging)**
- **TIB: Thermal Index – Bone**
- **TIC: Thermal Index – Cranial**
- **TIS: Thermal Index – Soft Tissue.**

To Change the Index Value Displayed:

1. Tap the touch screen **Acoustic Power** button.
2. Toggle through the **MI**, **TIS**, **TIC** and **TIB** values available depending on the imaging mode.

Note: The **MI** and **TI** values are displayed to the right of the image field and are updated as changes—which affect the acoustic power output—are made to the system.

The ALARA principle, provided by AIUM in *Ultrasound Medical Safety – Implementing ALARA*, guides the ultrasound user on the prudent use of diagnostic ultrasound. Display of the acoustic power output value enables the ultrasound user to better implement the ALARA principle. The ultrasound user can determine the right balance of ultrasound exposure benefits to risks by using acoustic power output levels that are **As Low As Reasonably Achievable (ALARA)**. Without compromising diagnostic quality, patient ultrasound exposure should be kept to a minimum while using the lowest output power possible.



A.2 BASIC PRECAUTIONS

DO NOT operate the Sonix Ultrasound System in the presence of flammable anesthetics.

NEVER allow water or other liquids onto the power pack or interior of the system case.

NEVER splash gel or other liquids onto the LCD display/touch screen.

ALWAYS handle transducers with care. Dropping the transducer or allowing it to strike a hard surface can damage the transducer elements and the acoustic lens. Such a collision can also crack the transducer housing and destroy its electrical safety features.

The device is not intended for ophthalmic use or any use causing the acoustic beam to pass through the eye.

The device is not intended for any application in which the transducer might come in direct contact with brain tissue or the central nervous system.

To avoid the risk of electrical shock, before using the transducer, inspect the transducer face, housing and cable. DO NOT use the transducer if the transducer or cable is damaged.

Failure to repair/replace damaged parts may result in degraded image quality and therefore may impact diagnostic interpretations.

ALWAYS turn off the system before cleaning or changing fuses.

To avoid the risk of electrical shock and fire hazard, inspect the power supply, AC power cord and plug on a regular basis. Ensure they are not damaged.

Follow local governing ordinances and recycling plans regarding disposal or recycling of device components.

Keep the system clean. Carefully follow the procedures described later in this manual for cleaning the system, transducers and cooling fans.

ALWAYS **FREEZE** (❄) the system when not imaging to prevent the transducer from overheating or use the **Auto-Freeze** function to ensure the system freezes after a specified period of inactivity (**8.2.9 System Settings**).

Ensure the system is secure when imaging is being done or when the system is left unattended.

ALWAYS choose the appropriate transducer and parameters for the type of clinical application.

When scanning subjects, always work to use As Low As Reasonably Achievable (ALARA) acoustic scanning energies. Refer to **A.1.1 ALARA Principle and Output Displays** before using the system. Do not use more than the minimum energy necessary to conduct an ultrasound exam. This is especially necessary where fetal and cephalic scans are being conducted.

DO NOT remove panels or covers from the system.

ALWAYS power the system from a grounded outlet.

Ultrasonix does not recommend the use of transducer covers/sheaths containing natural rubber latex and talc as these ingredients are known to cause an allergic reaction in some individuals. Refer to *21 CFR 801.437* user labeling for more details on latex use.

DO NOT use transcranial (**TCD**) **Presets** for anything other than transcranial imaging.

When transporting the system, always carry/ship it in an upright position.

Always move the system around on a table top with two (2) hands. Although the system is properly balanced, exerting too much force in one direction could cause it to tip.



Where any transducer (including, but not limited to, an intracavity transducer) is used in a clinical application of a semi-critical nature (including, but not limited to, intraoperative, transrectal, transvaginal, transesophageal, etc.), ensure the transducer is covered with the appropriate STERILE transducer cover/sheath which has received regulatory clearance for use.



Warning: *Do not place the device on any surface that blocks/restricts ventilation (e.g., do not set the device on a soft surface such as a bed). Failure to comply with this directive could inhibit system airflow and cause the system to overheat — which is not covered by the system warranty.*



Warning: *The Sonix ultrasound system may produce physiological effects of ultrasound which may cause danger to the patient and operator.*

Cautions:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous exposure to ultrasonic energy.

Contact Ultronix if repairs are needed on the system. Repairs and component maintenance must be carried out by Ultronix authorized personnel only.



A.3 SYMBOL DEFINITIONS

Table A-1: System Symbols

Symbol	Location	Meaning
	On serial plate that indicates the serial number and electrical rating.	Alternating current.
	On transducers.	Patient applied part meets the isolation requirements for type B applied part.
	On footswitch (dual or triple).	Indicates compliance with UL 60601-1 and CSA Std C22.2 No. 601.1 standards for medical use.
	On System Label (rear of system) and/or warning/caution labels.	Warning: Dangerous Voltage. Electric Shock Hazard. Do not remove cover or back. Refer servicing to qualified service personnel.
	General warning sign located in a variety of places, including: System Label (rear of system), User Manual and Service Manual.	Warning: Consult accompanying documents. The accompanying explanation will describe a precaution(s) necessary to prevent injury or loss of life.
	On System Label (rear of system).	This product has been tested and meets IEC 60601-1 standards for safety and/or performance, including the applicable standards written or administered by the <i>American National Standards Institute (ANSI)</i> , <i>Underwriters Laboratories (UL)</i> , <i>Canadian Standards Association (CSA)</i> , <i>National Sanitation Foundation (NSF)</i> and others.
	When applicable, the CE Mark is located in a variety of places, including: System Label (rear of system), User Manual and Service Manual.	When affixed to the product, the CE Label testifies to its compliance with Council Directive 93/42/EEC concerning medical devices.
	On System Label (rear of system).	<i>Waste Electrical and Electronic Equipment (WEEE)</i> symbol indicates this device must not be disposed of as unsorted municipal waste. It must be disposed of in accordance with all local laws and regulations. Contact Ultronix Technical Support for more information on the decommissioning of this equipment.

A.4 ELECTRICAL SAFETY REQUIREMENTS

A.4.1 System

The SonixMDP Ultrasound System is classified in accordance with the IEC 60601–1, the standard for Medical Electrical Equipment as follows.

Table A-2: System Electrical Safety

Standard	IEC 60601–1
Type of protection against electrical shock	Class I
Degree of protection against electrical shock	Type BF
Degree of protection against ingress of water	Ordinary



Warning: Accessory equipment connected to the analog and digital interfaces must be certified according to their respective IEC standards (e.g., IEC 60950 for data processing equipment and IEC 60601–1 for medical equipment). Furthermore, all configurations shall comply with the system standard IEC 60601–1. Any person who connects additional equipment to the signal input part or signal output part configures a medical system and is therefore responsible for ensuring that the system complies with the requirements of the system standard IEC 60601–1–1. If in doubt, consult Ultrasonix Technical Support.

A.4.2 Additional Hardware

Table A-3: Barcode Reader Electrical Safety

UL (Underwriter’s Laboratory)	UL listed for US and Canada UL 60950 C22.2 No. 60950
Laser Class	CDRH and IEC Laser Class 1 – In accordance with IEC 60825–1:1993 + A1:1997 + A22001 Class 1



A.5 EMC (ELECTROMAGNETIC COMPATIBILITY) REQUIREMENTS

A.5.1 System

The SonixMDP Ultrasound System has special precautions regarding EMC. Always install and use according to the EMC information provided in the relevant Service Manual.

Portable and mobile RF communications equipment can affect the Sonix Ultrasound System.

Transducer cables must be raised above the ground during scanning.



Warning: *The use of accessories, transducers and cables other than those specified by Ultrasonix may result in increased emissions or decreased immunity of the system.*

A.5.2 Additional Hardware

Table A-4: Barcode Reader

Electromagnetic Compatibility	Class B: FCC Part 15 ICES-003 European Union Directive 89/336/EEC
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Table A-5: Footswitch (Dual or Triple)

Electromagnetic Compatibility	Class B: FCC Part 15 and Industry Canada European Union: En 55022, En 61000-3-1/3, EN 60601-1-2
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A.6 ENVIRONMENTAL CONDITIONS

A.6.1 System

Table A-6: System Operating Environment

Operational Temperature	50° to 104° F (10° to 40° C)
Operational Humidity	30 to 75% relative humidity
Shipping/Storage Conditions	+5° to +122° F (-15° to +50° C)
Shipping/Storage Humidity	10% to 90% (non-condensing)
Shipping/Storage Pressure (kilopascal)	50 kPa to 106 kPa (kilopascal)



Warning: Operate in an indoor environment only, free from moisture, flammable liquids, gases, corrosive substances, strong electrical or magnetic fields and equipment that generates high frequency waves.

Ultrasonix cannot guarantee the proper performance of the system if used in the above-listed conditions.

A.6.2 Additional Hardware

Table A-7: Barcode Reader

Operating Temperature	32° to 104° F (0° to 40° C)
Storage Temperature	-40° to 140° F (-40° to 60° C)
Humidity	5% to 95% relative humidity, non-condensing
Light Levels	Up to 4842 Lux (footcandles)
Shock	Designed to withstand 1.5 m (5') drops
Contaminants	Sealed to resist airborne particulate contaminants
Ventilation	None required

Table A-8: Wireless

Operating Temperature	32° to 104° F (0° to 40° C)
Storage Temperature	-4° to 158° F (-20° to 70° C)
Humidity	80% maximum, non-condensing

Note: For more details on the wireless adapter and other peripherals, refer to the manufacturer's User's Guides included with the system.



A.7 LIMITING TRANSDUCER SURFACE HEATING

Ultronix has ensured that the transducer surface temperature in still air does not exceed 50°C and applied on tissue does not exceed 43°C.

Surface heating may be created by transmitting energy on the same area of a transducer at a high rate. This heating may occur, for example, during Pulsed Wave Doppler or Color Doppler imaging. The only Ultronix transducer where this surface heating issue could be an issue is the EC9-5/10 transducer. To limit the surface heating, Sonix software conditions are used to prevent the same area on the transducer from being excited to a rate of less than 100us. Thorough testing has shown no noticeable EC9-5/10 transducer surface heating. For added security the Sonix system high voltage excitation power circuit contains "Polyswitches" that ensure no more than a specified current can be drawn from these high-voltages circuits.

A.8 LATEX

Ultronix does not recommend the use of transducer covers containing natural rubber latex and talc as these ingredients are known to cause an allergic reaction in some individuals. Refer to *21 CFR 801.437* user labeling for more details on latex use.

APPENDIX B: SYSTEM SPECIFICATIONS

Notes:

Talk to your Ultrasonix dealer for details on standard and optional features.

Ultrasonix Medical Corporation reserves the right to alter system specifications at any time.

√ – Standard ◆ – Optional Ø – Not Available

Table B-1: System Specifications

	TAB	TCH	MDP	SP	OP	LGY ⁵
CLINICAL APPLICATIONS						
Abdominal	√	√	√	√	√	√
Biliary	√	√	√	√	√	√
Bladder	√	√	√	√	√	√
Cardiac	◆	◆	√	√	◆	Ø
<i>Note: Access to Cardiac is controlled through licensing. If CW is not licensed and active, then the Cardiac Application is not available.</i>						
Foreign Bodies	√	√	√	√	√	√
Generic	√	√	√	√	√	√
Lower Extremities	√	√	√	√	√	√
Musculoskeletal (MSK)	√	√	√	√	√	√
Nerve Block	√	√	√	√	√	√
OB 1st Trimester ¹	√	√	√	√	√	√
OB 2nd–3rd Trimester ¹	√	√	√	√	√	√
Other	√	√	√	√	√	√
Pelvic	√	√	√	√	√	√
Procedure	√	√	√	√	√	√
Renal	√	√	√	√	√	√
Small Parts	√	√	√	√	√	√
Thoracic	√	√	√	√	√	√
Trauma (FAST)	√	√	√	√	√	√
Urology	√	√	√	√	√	√
Vascular	√	√	√	√	√	√
Vascular Access	√	√	√	√	√	√
MEASUREMENTS AND ANALYSIS						
Obstetrical calculation and report package	√	√	√	√	√	√
Abdominal calculation and report package	√	√	√	√	√	√
Gyn/Fertility calculation and report package	√	√	√	√	√	√
Cardiac calculation and report package	◆	◆	√	√	◆	Ø
<i>Note: Access to Cardiac calculations is controlled through licensing. If CW is not licensed and active, the Cardiac Application—and therefore the Cardiac calculation and report package—is not available.</i>						
Vascular calculation and report package	√	√	√	√	√	√
Auto-Follicle calculation and report package	Ø	√	Ø	Ø	Ø	Ø



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	TAB	TCH	MDP	SP	OP	LGYS ⁵
BROADBAND TRANSDUCERS²						
SA4-2/24 broadband (2–4 MHz), 24 mm, 80.5/90.55" (2.05 m/2.30 m) cable, phased array	◆	◆	◆	◆	◆	∅
PA7-4/12 broadband (7–4 MHz), 12 mm, 90.55 (2.30 m) cable, phased array	◆	◆	◆	◆	◆	∅
mTEE8-3/5 broadband (7–5 MHz), 10 mm, 78.74" (2 m) cable, transesophageal phased array	◆	◆	◆	◆	◆	∅
MC9-5/12 broadband (4–9 MHz), 12 mm radius, 75" (1.90 m) cable, microconvex	◆	◆	◆	◆	◆	∅
EC9-5/10 broadband (5–9 MHz), 10 mm radius, 75" (1.90 m) cable, endocavity microconvex array	◆	◆	◆	◆	◆	◆
C5-2/60 broadband (2–5 MHz), 60 mm radius, 75" (1.90 m) cable, curved array	◆	◆	◆	◆	◆	◆
C7-3/50 (3–7 MHz), 50 mm, 90.5" (2.30 m) cable, curved array	◆	◆	◆	◆	◆	∅
BPC8-4/10 (4–8 MHz), 10 mm, 86.6" (2.20 m) cable, endocavity microconvex array	◆	◆	◆	◆	◆	∅
BPL9-5/55 (5–9 MHz), 55 mm, 86.6" (2.20 m) cable, endocavity linear array	◆	◆	◆	◆	◆	∅
L9-4/38 broadband (4–9 MHz), 38 mm, 75" (1.90 m) cable, linear array	◆	◆	◆	◆	◆	◆
L14-5/38 broadband (5–14 MHz), 38 mm, 75" (1.90 m) cable, linear array	◆	◆	◆	◆	◆	∅
L14-5W/60 broadband (5–14 MHz), 60 mm, 75" (1.90 m) cable, wide linear array	◆	◆	◆	◆	◆	∅
L40-8/12 broadband (8–40 MHz), 12 mm, 86.6" (2.2 m) cable, high frequency linear array	◆	◆	◆	◆	◆	∅
HST15-8/20 broadband (10 MHz) 20 mm, 75" (1.90 m) cable, hockey stick linear array	◆	◆	◆	◆	◆	∅
4DC7-3/40 broadband (3–7 MHz), 40 mm radius, 75" (1.90 m) cable, 4D motor-driven electronic curved array	∅	◆	◆	◆	◆	∅
m4DC7-3/40 broadband (3–7 MHz), 40 mm radius, 78.74" (2 m) cable, mini 4D motor-driven electronic curved array	∅	◆	◆	◆	◆	∅
4DEC9-5/10 broadband (5–9 MHz), 10 mm radius, 75" (1.90 m) cable, 4D motor-driven electronic endocavity microconvex array	∅	◆	◆	◆	◆	∅
4DL14-5/38 broadband (5-14 MHz), 38 mm, 78.74" (2m) cable, 4D motor-driven electronic linear array	∅	◆	◆	◆	◆	∅
PRESETS						
Default presets	√	√	√	√	√	√
User-defined presets	√	√	√	√	√	√
PHYSICAL CHARACTERISTICS						
Footprint: 53.5 cm x 71 cm (21" x 28") 53.5 cm x 91.5 cm (21" x 36")	∅ ∅	√ ∅	∅ √	∅ √	∅ √	√ ∅
System Size: 45 cm wide x 17 cm deep x 41 cm high (17.7" x 6.9" x 16.1")	√	∅	∅	∅	∅	∅
Weight, with UPS: 88.5 kg (195 lbs) 102 kg (225 lbs) 108 kg (238)	∅ ∅ ∅	√ ∅ ∅	∅ √ ∅	∅ √ ∅	∅ ∅ ∅	∅ ∅ √
Weight, without UPS: 63.6 kg (140 lbs) 77 kg (170 lbs) 75 kg (166 lbs)	∅ ∅ ∅	√ ∅ ∅	∅ √ ∅	∅ √ ∅	∅ √ ∅	∅ ∅ √
System Weight: 15 kg (33 lbs)	√	∅	∅	∅	∅	∅
Power Pack Size: 10.4 cm wide x 40 cm long x 5.8 cm high (4.1" x 15.75" x 2.3")	√	∅	∅	∅	∅	∅
Power Pack Weight: 2.7 kg (5.95 lbs)	√	∅	∅	∅	∅	∅
Height, System (Measured from top of LCD display to floor): Static Position: 137 cm (54") Highest Position: 152.5 cm (60") Lowest Position: 137 cm (54")	∅	√ ∅ ∅	∅ √ √	∅ √ √	∅ √ √	∅ ∅ ∅
Height, System (Measured from top of LCD display to floor): Highest Position: 155 cm (61") Lowest Position: 142 cm (56")	∅	∅ ∅	∅ ∅	∅ ∅	∅ ∅	√ √
Height, Transport Mode (LCD display folded flat over console): 108 cm (42.5")	∅	√	√	√	√	∅
Tilt, Console (Measured from trackball position to floor): Highest Position: 97.2 cm (38.3") Lowest Position: 78.5 cm (30.9")	∅	√	∅	∅	∅	∅



	TAB	TCH	MDP	SP	OP	LGY ⁵
Tilt/Lift, Console (Combination of tilt and lift, measured from trackball position to floor): Highest Position: 100 cm (39.5") Lowest Position: 82 cm (32.25")	Ø	Ø	√	√	√	Ø
Tilt Angle, Console (Measured by degrees (°) off horizontal position): 0–40° down 0–10° down	Ø Ø	√ Ø	Ø √	Ø √	Ø √	Ø Ø
Swivel Range, Console (Measured by degrees (°) off center position): ± 45°	Ø	√	√	√	√	Ø
Tilt Angle, LCD Display (Measured by degrees (°) from the "Transport Mode position): 0 to 115°	Ø	√	√	√	√	Ø
Swivel Range, LCD Display (Measured by degrees (°) off center position): ± 90°	Ø	√	√	√	√	Ø
TFT (Active Matrix) LCD display: 17" 19" with SAW (Surface Acoustic Wave) touch screen	Ø √	√ Ø	√ Ø	√ Ø	√ Ø	√ Ø
Touch Screen: 10.4" LCD display with resistive touch screen 8.4" LCD display with resistive touch screen 5.5" LCD display with resistive touch screen	Ø Ø Ø	√ Ø Ø	Ø √ Ø	Ø √ Ø	Ø √ Ø	Ø Ø √
Transducer connectors	2	3	3	3	3	3
USER INTERFACE³						
QSonix Quick Exam Start-up Remote Support Access ⁴	√	√	√	√	√	√
Universal language option	◆	◆	◆	◆	◆	◆
Touch Screen Controls Imaging Parameters (Maps, Persistence, Dynamic Range, PRF, etc.) Mode Actions (Reverse, Invert, Biopsy, Layout, etc.) Cine	√	√	√	√	√	√
Easy-to-use Interface	√	√	√	√	√	√
User-programmable Custom Keys	√	√	√	√	√	√
Text, Annotations, Pictograms, Arrows	√	√	√	√	√	√
CINE MEMORY						
Up to seven (7) minutes of data (Transducer/sector size dependant)	√	√	√	√	√	√
Total available memory: >8,000 fr	√	√	√	√	√	√
REMOTE SUPPORT⁴						
Real-time live chat support	√	√	√	√	√	√
Ultronix remote system diagnostic capability	√	√	√	√	√	√
1-Step Software upgrades (CD-ROM or Internet)	√	√	√	√	√	√
STORAGE AND CONNECTIVITY						
DICOM service classes (Print/Store/Worklist)	◆	◆	◆	◆	◆	√
Patient data hard drive storage (at least 160 Gb)	√	√	√	√	√	√
Still image storage (PNG, JPEG, BMP, GIF)	√	√	√	√	√	√
Cine loop storage & trim (AVI)	√	√	√	√	√	√
USB ports 2 on Console, 2 on Back Connectivity Panel 2 on Console, 3 on Back Connectivity Panel 6 on Side Connectivity Panel 2 on Console front	Ø Ø √ Ø	√ Ø Ø Ø	Ø √ Ø Ø	Ø √ Ø Ø	Ø √ Ø Ø	Ø Ø Ø √
Built-in Firewall	√	√	√	√	√	√
2 Programmable BNCs for Input/Output	Ø	√	√	√	√	√
DVI (Digital video) output	Ø	√	√	√	√	Ø
USB printer output	√	√	√	√	√	Ø
Hard-wired Network (LAN) connection	√	√	√	√	√	√
Wireless Network connection	◆	◆	◆	◆	Ø	Ø
Streaming video (SonixLive) ⁷	◆	◆	◆	◆	Ø	◆

	TAB	TCH	MDP	SP	OP	LGY ⁵
Recommended ECG Electrode: Kendall Medi-Trace 200 and 230 Foam Electrode	∅	◆	◆	∅	∅	∅
Biopsy Start Kits						
EC9-5/10, Manufactured by Protek, Part Number: 7544 and CIVCO, Part Number: 610-986	◆	◆	◆	◆	◆	◆
C5-2/60, Manufactured by CIVCO, Part Number: 684-003	◆	◆	◆	◆	◆	◆
C5-2/60 and C7-3/50, Manufactured by Protek, Part Number: 7462	◆	◆	◆	◆	◆	◆
L14-5W/60, Manufactured by CIVCO, Part Number: 684-004	◆	◆	◆	◆	◆	∅
L9-4/38, Manufactured by CIVCO, Part Number: 684-005	◆	◆	◆	◆	◆	∅
L14-5/38, Manufactured by CIVCO, Part Number: 684-005	◆	◆	◆	◆	◆	◆
4DEC-5/10, Manufactured by CIVCO, Part Number: 610-666	∅	◆	◆	◆	◆	∅

- 1 Ultrasonix Medical Corporation is not responsible for misdiagnosis from customized measurements.
- 2 Certain transducers may not be available in all markets. Consult your local Ultrasonix Authorized Distributor or Sales Representative to determine availability in your area.
- 3 Specific User Interface options are dependant upon licensed features.
- 4 Where available. Requires Internet connection and ISP.
- 5 Some LGY (Legacy) options are specific to the OP/SP platform, while others apply only to the CEP. If the options are different on the three (3) LGY hardware platforms, then three (3) options will be marked, one each for OP, SP and CEP (e.g., ∅/◆/◆).



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APPENDIX C: TRANSDUCER SPECIFICATIONS

C.1 TRANSDUCER DISCLAIMER

Certain transducers may not be available in all markets. Consult your local Ultrasonix Authorized Distributor or Sales Representative to determine availability in your area.

C.2 MEASUREMENT ACCURACY

Table C-1: Measurement Accuracy Test Results

	Probe	Relative Error	Range		Test Method
			Min	Max	
2D MEASUREMENT TEST					
Axial Distance	SA4-2/24 ^^	± 0.4%	0.1 mm	300.0 mm	Multipurpose Phantom*
	PA7-4/12	± 0.05%	0.03 mm	239.09 mm	Multipurpose Phantom*
	MC9-4/12 ^	± 1.0%	0.1 mm	120.0 mm	Multipurpose Phantom*
	EC9-5/10 ^	± 0.3%	0.1 mm	120.0 mm	Multipurpose Phantom*
	C5-2/60	± 1.57%	0.05 mm	283.93 mm	Multipurpose Phantom*
	C7-3/50	± 0.5%	0.03 mm	127.32 mm	Multipurpose Phantom*
	BPC8-4/10	± 0.41%	0.03 mm	127.32 mm	Multipurpose Phantom*
	BPL9-5/55	± 0.25%	0.03 mm	89.98 mm	Multipurpose Phantom*
	L9-4/38 ^	± 1.1%	0.07 mm	90.42 mm	Multipurpose Phantom*
	L14-5/38 ^	± 0.3%	0.1 mm	90.0 mm	Multipurpose Phantom*
	L14-5W/60	± 0.3%	0.1 mm	104.7 mm	Multipurpose Phantom*
	L40-8/12	± 1.16%	0.03 mm	25.04 mm	Multipurpose Phantom*** ** *
	HST15-8/20 ^	± 1.4%	0.1 mm	90 mm	Multipurpose Phantom*
	4DC7-3/40	± 0.15%	0.03 mm	240.07 mm	Multipurpose Phantom*** ** *
	m4DC7-3/40	± 0.01%	0.03 mm	239.46 mm	Multipurpose Phantom*** ** *
	4DEC9-5/10	± 0.11%	0.03 mm	159.99 mm	Multipurpose Phantom*
	4DL14-5/38	± 0.64%	0.04 mm	90.82 mm	Multipurpose Phantom*** ** *
	Max. Value Among Probes	± 7.04%	0.1 mm	300.0 mm	



		Range			
	Probe	Relative Error	Min	Max	Test Method
Lateral Distance	SA4-2/24 #	± 0.5%	0.1 mm	303.37 mm	Multipurpose Phantom*
	PA7-4/12	± 1.10%	0.03 mm	310.58 mm	Multipurpose Phantom*
	MC9-4/12 §	± 4.5%	0.1 mm	200.0 mm	Multipurpose Phantom*
	EC9-5/10 §	± 0.1%	0.1 mm	200.0 mm	Multipurpose Phantom*
	C5-2/60	± 1.1%	0.05 mm	241.68 mm	Multipurpose Phantom*
	C7-3/50	± 0.1%	0.03 mm	198.75 mm	Multipurpose Phantom*
	BPC8-4/10	± 0.4%	0.03 mm	198.75 mm	Multipurpose Phantom*
	BPL9-5/55	± 0.25%	0.03 mm	54.78 mm	Multipurpose Phantom*
	L9-4/38 §	± 0.2%	0.07 mm	36.08 mm	Multipurpose Phantom*
	L14-5/38 §	± 0.3%	0.1 mm	37.6 mm	Multipurpose Phantom*
	L14-5W/60	± 0.2%	0.1 mm	90.5 mm	Multipurpose Phantom*
	L40-8/12	± 0.72%	0.05 mm	12.7 mm	Multipurpose Phantom**** **
	HST15-8/20 §	± 4.0%	0.1 mm	250.2 mm	Multipurpose Phantom*
	4DC7-3/40	± 0.45%	0.03 mm	345.62 mm	Multipurpose Phantom**** **
	m4DC7-3/40	± 0.48%	0.03 mm	346.2 mm	Multipurpose Phantom**** **
	4DEC9-5/10	± 0.99%	0.03 mm	258.80 mm	Multipurpose Phantom*
	4DL14-5/38	± 1.54%	0.04 mm	38.15 mm	Multipurpose Phantom**** **
		Max. Value Among Probes	± 4.5%	0.1 mm	346.2 mm
Area	SA4-2/24 &	± 3.44%	0.01 cm ²	313.25 cm ²	Multipurpose Phantom*
	PA7-4/12	± 8.79%	0.01 cm ²	667.cm ²	Multipurpose Phantom*
	MC9-4/12 §	± 2.0%	0.01 cm ²	173.79 cm ²	Multipurpose Phantom*
	EC9-5/10	± 0.28%	0.01 cm ²	113.18 cm ²	Specific Target 1**
	C5-2/60 &	± 2.03%	0.01 cm ²	224.00 cm ²	Multipurpose Phantom*
	C7-3/50	± 3.69%	0.01 cm ²	267.83 cm ²	Multipurpose Phantom*
	BPC8-4/10	± 5.22%	0.01 cm ²	203.12 cm ²	Multipurpose Phantom*
	BPL9-5/55	± 7.93%	0.01 cm ²	48.21 cm ²	Multipurpose Phantom*
	L9-4/38 §	± 0.1%	0.01 cm ²	26.13 cm ²	Multipurpose Phantom*
	L14-5/38 §	± 4.29%	0.01 cm ²	27.00 cm ²	Multipurpose Phantom*
	L14-5W/60	± 0.65%	0.01 cm ²	58.53 cm ²	Multipurpose Phantom*
	L40-8/12	± 4.31%	0.01 cm ²	2.94 cm ²	Multipurpose Phantom**** **
	HST15-8/20 §	± 2.0%	0.01 cm ²	18.13 cm ²	Multipurpose Phantom*
	4DC7-3/40	± 1.01%	0.01 cm ²	689.67 cm ²	Multipurpose Phantom*
	m4DC7-3/40	± 1.01%	0.01 cm ²	689.77 cm ²³	Multipurpose Phantom*
	4DEC9-5/10	± 3.54%	0.01 cm ²	323.40 cm ²	Multipurpose Phantom*
	4DL14-5/38	± 1.51%	0.01 cm ²	26.64 cm ²	Multipurpose Phantom**** **
		Max. Value Among Probes	± 8.79%	0.01 cm ²	689.77 cm ²



	Probe	Relative Error	Range		Test Method
			Min	Max	
Volume	SA4-2/24	± 6.97%	0.01 cm ³	7973.00 cm ³	Specific Target 2***
	PA7-4/12	± 6.35%	0.01 cm ³	8802.97 cm ³	Specific Target 2***
	MC9-4/12 *****	± 2.56%	0.01 cm ³	1618.10 cm ³	Specific Target 1**
	EC9-5/10	± 1.93%	0.01 cm ³	1450.00 cm ³	Specific Target 1**
	C5-2/60	± 1.37%	0.01 cm ³	3770.00 cm ³	Specific Target 1**
	C7-3/50	± 7.69%	0.01 cm ³	6637.46 cm ³	Specific Target 1**
	BPC8-4/10	± 4.41%	0.01 cm ³	2641.74 cm ³	Specific Target 1**
	BPL9-5/55	± 7.96%	0.01 cm ³	234.36 cm ³	Specific Target 1**
	L9-4/38	± 0.5%	0.01 cm ³	60.88 cm ³	Specific Target 1**
	L14-5/38	± 1.07%	0.01 cm ³	64.00 cm ³	Specific Target 1**
	L14-5W/60	± 0.37%	0.01 cm ³	532.74 cm ³	Specific Target 1**
	L40-8/12	± 3.53%	0.01 cm ³	2.49 cm ³	Specific Target *****
	HST15-8/20 *****	± 0.68%	0.01 cm ³	110.14 cm ³	Specific Target 1**
	4DC7-3/40	± 3.04%	0.01 cm ³	15192.74 cm ³	3D Phantom *** ** ** *
	m4DC7-3/40	± 4.08%	0.01 cm ³	15672.85 cm ³	3D Phantom *** ** ** *
	4DEC9-5/10	± 0.07%	0.01 cm ³	5476.83 cm ³	Multipurpose Phantom*
	4DL14-5/38	± 4.56%	0.01 cm ³	162.75 cm ³	Multipurpose Phantom*** ** ** *
Max. Value Among Probes	± 7.96%	0.01 cm ³	15692.74 cm ³		
M-MODE TEST					
Distance	SA4-2/24 ^^	± 0.31%	0.04 mm	299.29 mm	Multipurpose Phantom*
	PA7-4/12	± 0.3%	0.22 mm	238.13 mm	Multipurpose Phantom*
	MC9-4/12 ^	± 1.20%	0.1 mm	118.23 mm	Multipurpose Phantom*
	EC9-5/10 ^	± 0.3%	0.1 mm	117.7 mm	Multipurpose Phantom*
	C5-2/60 ^^	± 0.7%	0.1 mm	237.1 mm	Multipurpose Phantom*
	C7-3/50	± 0.02%	0.22 mm	237.08 mm	Multipurpose Phantom*
	BPC8-4/10	± 0.2%	0.04 mm	118.23 mm	Multipurpose Phantom*
	BPL9-5/55	± 0.65%	0.04 mm	118.23 mm	Multipurpose Phantom*
	L9-4/38 ^	± 0.52%	0.04 mm	99.07 mm	Multipurpose Phantom*
	L14-5/38 ^	± 1.2%	0.1 mm	88.9 mm	Multipurpose Phantom*
	L14-5W/60	± 1.8%	0.1 mm	88.3 mm	Multipurpose Phantom*
	L40-8/12	± 0.26%	0.05 mm	24.7 mm	Multipurpose Phantom*** ** ** *
	HST15-8/20 ^	± 1.1%	0.1 mm	84.12 mm	Multipurpose Phantom*
	4DC7-3/40	± 0.3%	0.22 mm	237.08 mm	Multipurpose Phantom*
	m4DC7-3/40	± 0.17%	0.04 mm	240.41 mm	Multipurpose Phantom*** ** ** *
	4DEC9-5/10	± 0.36%	0.04 mm	159.46 mm	Multipurpose Phantom*
	4DL14-5/38	± 0.2%	0.04 mm	88.67 mm	Multipurpose Phantom*** ** ** *
Max. Value Among Probes	± 1.8%	0.22 mm	299.29 mm		



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		Range			
	Probe	Relative Error	Min	Max	Test Method
Heart Rate	SA4-2/24	± 3.60%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	PA7-4/12	± 4.2%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	MC9-4/12	± 0.3%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	EC9-5/10	± 4.3%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	C5-2/60	± 7.0%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	C7-3/50	± 5.67%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	BPC8-4/10	± 6.33%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	BPL9-5/55	± 1.00%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	L9-4/38	± 6.0%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	L14-5/38	± 5.0%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	L14-5W/60	± 5.3%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	L40-8/12	± 0.67%	8 BPM	60000 BPM	Doppler Phantom****
	HST15-8/20	± 1.67%	8 BPM	60000 BPM	Ultrasonix Test Equipment
	4DC7-3/40	± 7.33%	8 BPM	60000 BPM	Multipurpose Phantom*
	m4DC7-3/40	± 3.33%	8 BPM	60000 BPM	Doppler Phantom****
4DEC9-5/10	± 0.71%	8 BPM	60000 BPM	Multipurpose Phantom*	
4DL14-5/38	± 3.33%	8 BPM	60000 BPM	Doppler Phantom****	
	Max. Value Among Probes	± 7.33%	8 BPM	60000 BPM	
PW MODE TEST					
Velocity Calipers	SA4-2/24	± 6.18%	0 cm/s	408.87 cm/s	Doppler Phantom****
	PA7-4/12	± 3.89%	0.18 cm/s	119.47 cm/s	Doppler Phantom****
	MC9-4/12	± 5.76%	0 cm/s	591.23 cm/s	Doppler Phantom****
	EC9-5/10	± 2.89%	0 cm/s	223.38 cm/s	Doppler Phantom****
	C5-2/60	± 6.05%	0 cm/s	591.23 cm/s	Doppler Phantom****
	C7-3/50	± 7.06%	0.18 cm/s	519.24 cm/s	Doppler Phantom****
	BPC8-4/10	± 8.23%	0.06 cm/s	302.63 cm/s	Doppler Phantom****
	BPL9-5/55	± 5.36%	0.06 cm/s	151.89 cm/s	Doppler Phantom****
	L9-4/38	± 4.05%	0.2 cm/s	865.95 cm/s	Doppler Phantom****
	L14-5/38	± 7.23%	0 cm/s	472.18 cm/s	Doppler Phantom****
	L14-5W/60	± 3.54%	0.23 cm/s	689.19 cm/s	Doppler Phantom****
	L40-8/12	± 3.49%	0.02 cm/s	408.24 cm/s	Doppler Phantom****
	HST15-8/20	± 9.67%	0 cm/s	591.23 cm/s	Doppler Phantom****
	4DC7-3/40	± 2.32%	0.28 cm/s	754.93 cm/s	Multipurpose Phantom*
	m4DC7-3/40	± 5.94%	0.12 cm/s	628.23 cm/s	Doppler Phantom****
4DEC9-5/10	± 5.55%	0.01 cm/s	365.08 cm/s	Multipurpose Phantom*	
4DL14-5/38	± 6.91%	0.05 cm/s	700.45 cm/s	Doppler Phantom****	
	Max. Value Among Probes	± 9.67%	0.25 cm/s	865.95 cm/s	

		Range			
	Probe	Relative Error	Min	Max	Test Method
Heart Rate	SA4-2/24	± 5.67%	8 BPM	15000 BPM	Doppler Phantom****
	PA7-4/12	± 2.67%	8 BPM	15000 BPM	Doppler Phantom****
	MC9-4/12	± 4.67%	8 BPM	15000 BPM	Doppler Phantom****
	EC9-5/10	± 4.67%	8 BPM	15000 BPM	Doppler Phantom****
	C5-2/60	± 4.67%	8 BPM	15000 BPM	Doppler Phantom****
	C7-3/50	± 4.67%	8 BPM	15000 BPM	Doppler Phantom****
	BPC8-4/10	± 4.33%	8 BPM	15000 BPM	Doppler Phantom****
	BPL9-5/55	± 3.33%	8 BPM	15000 BPM	Doppler Phantom****
	L9-4/38	± 3.67%	8 BPM	15000 BPM	Doppler Phantom****
	L14-5/38	± 5.0%	0 BPM	15000 BPM	Doppler Phantom****
	L14-5W/60	± 3.67%	0 BPM	15000 BPM	Doppler Phantom****
	L40-8/12	± 1%	8 BPM	15000 BPM	Doppler Phantom****
	HST15-8/20	± 4.67%	8 BPM	15000 BPM	Doppler Phantom****
	4DC7-3/40	± 4.00%	0 BPM	15000 BPM	Multipurpose Phantom*
	m4DC7-3/40	± 3.33%	8 BPM	15000 BPM	Doppler Phantom****
	4DEC9-5/10	± 4.33%	8 BPM	15000 BPM	Multipurpose Phantom*
	4DL14-5/38	± 1.67%	8 BPM	15000 BPM	Doppler Phantom****
Max. Value Among Probes		± 5.67%	8 BPM	15000 BPM	
CW MODE TEST					
Velocity Callipers	SA4-2/24	± 5.37%	0 cm/s	1506.23 cm/s	Doppler Phantom****
	PA7-4/12	± 4.24%	0.26 cm/s	938.2 cm/s	Doppler Phantom****
Heart Rate	SA4-2/24	± 6.7%	8 BPM	15000 BPM	Doppler Phantom****
	PA7-4/12	± 1.00%	8 BPM	15000 BPM	Doppler Phantom****

- * Gammex RMI 403GS S/N 802260-3036-3.
- ** A ball with a diameter of 6.2 cm.
- *** A ball with a diameter of 3.8 cm.
- **** Doppler String Phantom Mark 4 SN: MK4-395; JJ&A Instruments.
- ***** A ball with a diameter of 2.1 cm.
- ***** A ball with a diameter of 0.7 cm.
- ***** Gammex Precision Multipurpose Phantom SN: 802263-3649-1
- ***** Optimal Ultrasound Phantom SN: RD00162
- ***** 3D Ultrasound Calibration Phantom
- § Horizontal Pins were located at a depth of 2 cm in the Multipurpose Phantom.
- # Horizontal Pins were located at a depth of 12 cm in the Multipurpose Phantom.
- ^ Pin targets were located between a depth of 2 to 4 cm in the Multipurpose Phantom.
- ^^ Pin targets were located between a depth of 6 to 8 cm in the Multipurpose Phantom.
- \$ Cyst was located at a depth of 3 cm in the Multipurpose Phantom.
- & Cyst was located at a depth of 6 cm in the Multipurpose Phantom.

Table C-2: Field Definitions

Field	Definition
Max. Value Among Probes	Maximum error or range among all probes (except in the lower range where the minimum values were used) was chosen for presentation.



C.3 ACOUSTIC OUTPUT RECORDING TABLES

Below are copies of the **Acoustic Output Reporting Tables for Track 3** for all transducers and all modes (provide data where global maximum displayed index exceeds 1.0).

The following notes apply to **ALL** Acoustic Output Reporting Tables for **ALL** transducers/modes:

- a) This index is not required for this operating mode; see section 4.1.3.1 of the *Standard for real-time display of thermal and mechanical acoustic output indices on diagnostic ultrasound equipment* (AIUM/NEMA 1998b)
- b) This probe is not intended for trans-cranial or neonatal cephalic uses
- c) This formulation for TIS is less than that for an alternate formulation in this mode
- # No data are reported for this operating condition since the global maximum index value is not reported for the reason listed.

Table C-3: Transducer Model SA4-2/24 (Operating Mode: B)

Index Label		MI	TIS		TIB	TIC	
			scan	non-scan			non-scan
Global Maximum Index Value		1.37	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.93					
	W_0 [mW]		(a)	(a)		(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)		
	Z_1 [cm]				(a)		
	Z_{bp} [cm]				(a)		
	z_{sp} [cm]	4.58				(a)	
	$d_{eq}(z_{sp})$ [cm]					(a)	
	f_c [MHz]	2.00	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.58					
	PRF [Hz]	31.553					
	$p_r@PII_{max}$ [MPa]	2.65					
	$d_{eq}@PII_{max}$ [cm]					(a)	
	Focal Length	FL _X [cm]		(a)	(a)	(a)	(a)
		FL _Y [cm]		(a)	(a)	(a)	(a)
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.08						
Operating Control Conditions	Control 1 Depth	800	[mm]				
	Control 2 Focus	46	[mm]				
	Control 3 Gate	-	[mm]				
	Control 4 Preset	ABD-Aorta (SA4-2/20mm) - HarRes					

$$ISPTA.3 [mW/cm^2] = 44.0766$$

Table C-4: Transducer Model SA4-2/24 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		1.01	3.13	(c)	(c)	(a)	4.77	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.75						
	W_0 [mW]		219.13	(c)		(a)	324.69	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	4.02				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	3.00	3.00	(c)	(c)	(a)	3.00	
	Dim of A_{aprt}	X [cm]		1.63	(c)	(c)	(a)	1.63
		Y [cm]		1.40	(c)	(c)	(a)	1.40
Other Information	PD [μ sec]	1.26						
	PRF [Hz]	15.282						
	$p_r@PII_{max}$ [MPa]	2.65						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		5.60	(c)	(c)		5.60
		FL _Y [cm]		5.60	(c)	(c)		5.60
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.09							
Operating Control Conditions	Control 1 Depth	800	[mm]					
	Control 2 Focus	56	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	CAR-Diff (SA4-2/20mm) - Pen						

$$ISPTA.3 [mW/cm^2] = 115.098$$



Table C-5: Transducer Model SA4-2/24 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		1.37	0.46	(a)	(a)	(a)	1.29	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.93						
	W ₀ [mW]		48.51	(a)		(a)	88.10	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(a)			
	Z ₁ [cm]				(a)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	4.58				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	2.00	2.00	(a)	(a)	(a)	2.00	
	Dim of A _{aprt}	X [cm]		1.63	(a)	(a)	(a)	1.63
		Y [cm]		1.40	(a)	(a)	(a)	1.40
Other Information	PD [µsec]	0.58						
	PRF [Hz]	65						
	p _r @P _{II} _{max} [MPa]	2.65						
	d _{eq} @P _{II} _{max} [cm]					(a)		
	Focal Length	FL _X [cm]		4.60	(a)	(a)		4.60
		FL _Y [cm]		4.60	(a)	(a)		4.60
I _{PA,3} @M _I _{max} [W/cm ²]	0.16							
Operating Control Conditions	Control 1 Depth	800	[mm]					
	Control 2 Focus	46	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	ABD-Aorta (SA4-2/20mm) - HarRes						

ISPTA.3 [mW/cm²] = 90.7986

Table C-6: Transducer Model SA4-2/24 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.22	(a)	1.07	0.8631	1.24	1.10	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.38						
	W ₀ [mW]		(a)	72.93		72.93	72.93	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				7.36			
	Z ₁ [cm]				4.66			
	Z _{bp} [cm]				2.49			
	zsp [cm]	4.66				4.66		
	d _{eq} (z _{sp}) [cm]					6.13		
	f _c [MHz]	3.07	(a)	3.07	3.07	3.07	3.07	
	Dim of A _{aprt}	X [cm]		(a)	1.54	1.54	1.54	1.54
		Y [cm]		(a)	1.40	1.40	1.40	1.40
Other Information	PD [µsec]	3.06						
	PRF [Hz]	5000						
	p _r @P _{II} _{max} [MPa]	0.63						
	d _{eq} @P _{II} _{max} [cm]					2.77		
	Focal Length	FL _X [cm]		(a)	5.00	5.00		3.07
		FL _Y [cm]		(a)	5.00	5.00		3.07
I _{PA,3} @M _I _{max} [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 91.68118

Table C-7: Transducer Model SA4-2/24 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.22	0.00	1.72	0.8631	0.02	1.77	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.38						
	W_0 [mW]		0.07	117.32		117.32	117.32	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				7.36			
	Z_1 [cm]				4.66			
	Z_{bp} [cm]				2.49			
	z_{sp} [cm]	4.66				4.66		
	$d_{eq}(z_{sp})$ [cm]					7.78		
	f_c [MHz]	3.07	3.07	3.07	3.07	3.07	3.07	
	Dim of A_{aprt}	X [cm]		1.54	1.54	1.54	1.54	1.54
		Y [cm]		1.40	1.40	1.40	1.40	1.40
Other Information	PD [μ sec]	3.06						
	PRF [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	0.63						
	$d_{eq}@P_{II_{max}}$ [cm]					3.52		
	Focal Length	FL _X [cm]		5.00	5.00	5.00		5.00
		FL _Y [cm]		5.00	5.00	5.00		5.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.03							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 106.3303$$

Table C-8: Transducer Model SA4-2/24 (Operating Mode: CW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.06	1.34E-04	1.61E-04	0.0001	2.05E-03	4.81E-04	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.07						
	W_0 [mW]		0.02	0.02		0.02	0.02	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.01			
	Z_1 [cm]				3.80			
	Z_{bp} [cm]				1.63			
	z_{sp} [cm]	3.80				3.80		
	$d_{eq}(z_{sp})$ [cm]					0.10		
	f_c [MHz]	1.62	1.62	1.62	1.62	1.62	1.62	
	Dim of A_{aprt}	X [cm]		0.66	0.66	0.66	0.66	0.66
		Y [cm]		1.40	1.40	1.40	1.40	1.40
Other Information	PD [μ sec]	0.00						
	PRF [Hz]	12500						
	$p_r@P_{II_{max}}$ [MPa]	0.09						
	$d_{eq}@P_{II_{max}}$ [cm]					0.01		
	Focal Length	FL _X [cm]		5.00	5.00	5.00		5.00
		FL _Y [cm]		5.00	5.00	5.00		5.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.16							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	CAR-Gen						

$$ISPTA.3 [mW/cm^2] = 155.3387$$



ULTRASONIX

Table C-9: Transducer Model SA4-2/2 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS				TIB	TIC
			scan	non-scan		non-scan		
				$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Global Maximum Index Value		0.22	0.00	1.72	0.86311	0.02	1.77	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.38						
	W_0 [mW]		0.07	117.32		117.32	117.32	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.00			
	Z_1 [cm]				4.66			
	z_{bp} [cm]				2.49			
	z_{sp} [cm]	4.66				4.66		
	$d_{eq}(z_{sp})$ [cm]							
	f_c [MHz]	3.07	3.07	3.07	3.07	3.07	3.07	
	Dim of A_{aprt}	X [cm]		1.54	1.54	1.54	1.54	1.54
		Y [cm]		1.40	1.40	1.40	1.40	1.40
Other Information	PD [µsec]	3.06						
	FPS [Hz]	9						
	PRFd [Hz]	3333						
	$p_r @ PII_{max}$ [MPa]	0.63						
	$d_{eq} @ PII_{max}$ [cm]					635.20		
	Focal Length	FL_x [cm]		5.00	5.00	5.00		5.00
FL_y [cm]			5.00	5.00	5.00		5.00	
$I_{PA,3} @ M_{max}$ [W/cm^2]		0.02						
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm^2] = 68.44

Table C-10: Transducer Model PA7-4/12 (Operating Mode: B)

Index Label		MI	TIS		TIB	TIC	
			scan	non-scan			non-scan
Global Maximum Index Value		0.50	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.03					
	W_0 [mW]		(a)	(a)		(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)		
	Z_1 [cm]				(a)		
	Z_{bp} [cm]				(a)		
	z_{sp} [cm]	3.20				2.50	
	$d_{eq}(z_{sp})$ [cm]					(a)	
	f_c [MHz]	4.20	(a)	(a)	(a)	(a)	(a)
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.77					
	PRF [Hz]	30					
	$p_r@P_{II_{max}}$ [MPa]	1.63					
	$d_{eq}@P_{II_{max}}$ [cm]					(a)	
	Focal Length	FL _X [cm]		(a)	(a)	(a)	(a)
		FL _Y [cm]		(a)	(a)	(a)	(a)
$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.01						
Operating Control Conditions	Control 1 Depth	90 [mm]					
	Control 2 Focus	55 [mm]					
	Control 3 Gate	- [mm]					
	Control 4 Preset	GEN-GEN					

$$ISPTA.3 [mW/cm^2] = 31.6907$$

Table C-11: Transducer Model PA7-4/12 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS		TIB	TIC	
			scan	non-scan			non-scan
Global Maximum Index Value		0.60	0.00	(a)	(a)	0.01	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.55					
	W_0 [mW]		0.01	(a)		(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)		
	Z_1 [cm]				(c)		
	Z_{bp} [cm]				(a)		
	z_{sp} [cm]	2.00				2.50	
	$d_{eq}(z_{sp})$ [cm]					(a)	
	f_c [MHz]	6.58	6.58	(a)	(a)	(a)	6.58
	Dim of A_{aprt}	X [cm]		2.56	(a)	6.40	(a)
		Y [cm]		1.40	(a)	1.20	(a)
Other Information	PD [μ sec]	2.70					
	PRF [Hz]	0					
	$p_r@P_{II_{max}}$ [MPa]	2.44					
	$d_{eq}@P_{II_{max}}$ [cm]					(a)	
	Focal Length	FL _X [cm]		7.00	(a)	(a)	7.00
		FL _Y [cm]		7.00	(a)	(a)	7.00
$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.00						
Operating Control Conditions	Control 1 Depth	90 [mm]					
	Control 2 Focus	70 [mm]					
	Control 3 Gate	- [mm]					
	Control 4 Preset	GEN-GEN					

$$ISPTA.3 [mW/cm^2] = 10.12121$$



Table C-12: Transducer Model PA7-4/12 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.50	0.00	(a)	(a)	(a)	7.31E=06	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.03						
	W ₀ [mW]		0.03	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	3.20				2.50		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	4.20	4.20	(a)	(a)	(a)	4.20	
	Dim of A _{aprt}	X [cm]		2.56	(a)	(a)	(a)	2.56
		Y [cm]		1.40	(a)	(a)	(a)	1.40
Other Information	PD [µsec]	0.77						
	PRF [Hz]	50						
	p _r @P _{II} _{max} [MPa]	1.63						
	d _{eq} @P _{II} _{max} [cm]					(a)		
	Focal Length	FL _x [cm]		5.50	(a)	(a)		5.50
		FL _y [cm]		5.50	(a)	(a)		5.50
I _{PA,3} @MI _{max} [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	55	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 52.81783

Table C-13: Transducer Model PA7-4/12 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.29	(a)	1.91	0.7634	0.12	0.71	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.76						
	W ₀ [mW]		(a)	60.35		60.35	60.35	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				20.95			
	Z ₁ [cm]				2.30			
	Z _{bp} [cm]				3.20			
	zsp [cm]	2.30				2.50		
	d _{eq} (z _{sp}) [cm]					5.36		
	f _c [MHz]	6.66	(a)	6.66	6.66	6.66	6.66	
	Dim of A _{aprt}	X [cm]		(a)	2.56	2.56	2.56	2.56
		Y [cm]		(a)	1.40	1.40	1.40	1.40
Other Information	PD [µsec]	2.14						
	PRF [Hz]	5000						
	p _r @P _{II} _{max} [MPa]	1.29						
	d _{eq} @P _{II} _{max} [cm]					0.79		
	Focal Length	FL _x [cm]		(a)	4.50	4.50		6.66
		FL _y [cm]		(a)	4.50	4.50		6.66
I _{PA,3} @MI _{max} [W/cm ²]	0.43							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	45	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 431.4567

Table C-14: Transducer Model PA7-4/12 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.29	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Assoc. Acoustic Param.	Pr.3 [MPa]	0.76						
	W_0 [mW]		0.01	71.20		71.20	71.20	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				24.72			
	Z_1 [cm]				2.30			
	Z_{bp} [cm]				3.20			
	zsp [cm]	2.30				2.50		
	$d_{eq}(z_{sp})$ [cm]					5.82		
	f_c [MHz]	6.66	6.66	6.66	6.66	6.66	6.66	
	Dim of A_{aprt}	X [cm]		2.56	2.56	2.56	2.56	2.56
		Y [cm]		1.40	1.40	1.40	1.40	1.40
Other Information	PD [μ sec]	2.14						
	PRF [Hz]	5000						
	$p_r @ P_{II_{max}}$ [MPa]	1.29						
	$d_{eq} @ P_{II_{max}}$ [cm]					0.86		
	Focal Length	FL _X [cm]		5.50	5.50	5.50		5.50
		FL _Y [cm]		5.50	5.50	5.50		5.50
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.45							
Operating Control Conditions	Control 1 Depth	90 [mm]						
	Control 2 Focus	45 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 445.1894$$

Table C-15: Transducer Model PA7-4/12 (Operating Mode: CW Doppler)

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.05	2.00E-05	$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Assoc. Acoustic Param.	Pr.3 [MPa]	0.09						
	W_0 [mW]		1.67E-03	2.05E-03		2.05E-03	2.05E-03	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				1.33E-03			
	Z_1 [cm]				2.50			
	Z_{bp} [cm]				2.12			
	zsp [cm]	2.50				2.50		
	$d_{eq}(z_{sp})$ [cm]					0.10		
	f_c [MHz]	2.51	2.51	2.51	2.51	2.51	2.51	
	Dim of A_{aprt}	X [cm]		1.12	1.12	1.12	1.12	1.12
		Y [cm]		1.40	1.40	1.40	1.40	1.40
Other Information	PD [μ sec]	0.00						
	PRF [Hz]	12500						
	$p_r @ P_{II_{max}}$ [MPa]	0.11						
	$d_{eq} @ P_{II_{max}}$ [cm]					0.01		
	Focal Length	FL _X [cm]		5.00	5.00	5.00		5.00
		FL _Y [cm]		5.00	5.00	5.00		5.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.08							
Operating Control Conditions	Control 1 Depth	90 [mm]						
	Control 2 Focus	50 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 77.35337$$



ULTRASONIX

Table C-16: Transducer Model PA7-4/12 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
				$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Global Maximum Index Value		0.11	0.00	1.37	0.3776158	0.00	0.50	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.29						
	W_0 [mW]		0.04	43.05		43.05	43.05	
	min of $[W_{.3}(z_1) : I_{TA.3}(z_1)]$ [mW]				4.91			
	Z_1 [cm]				3.92			
	z_{bp} [cm]				3.20			
	z_{sp} [cm]	3.92				2.50		
	$d_{eq}(z_{sp})$ [cm]					4.53		
	f_c [MHz]	6.66	6.66	6.66	6.66	6.66	6.66	
	Dim of A_{aprt}	X [cm]		2.56	2.56	2.56	2.56	2.56
		Y [cm]		1.40	1.40	1.40	1.40	1.40
Other Information	PD [µsec]	2.37						
	FPS [Hz]	9						
	PRFd [Hz]	3333						
	$p_r @ P_{II_{max}}$ [MPa]	0.72						
	$d_{eq} @ P_{II_{max}}$ [cm]					2.51		
	Focal Length	FL _x [cm]		5.50	5.50	5.50		5.50
		FL _y [cm]		5.50	5.50	5.50		5.50
$I_{PA.3} @ M_{max}$ [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	45	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 93.13$

Table C-17: Transducer Model mTEE8-3/5 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.04	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.10						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.03				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	5.00	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	2.30						
	PRF [Hz]	28						
	$p_r@P_{II_{max}}$ [MPa]	0.12						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3}@MI_{max}$ [W/cm ²]	-0.02							
Operating Control Conditions	Control 1 Depth	80 [mm]						
	Control 2 Focus	5 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 0.37$$

Table C-18: Transducer Model mTEE8-3/5 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.09	0.00	(a)	(a)	(a)	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.20						
	W_0 [mW]		0.00	(a)		(a)	0.01	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.35				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	5.00	5.00	(a)	(a)	(a)	5.00	
	Dim of A_{aprt}	X [cm]		2.56	(a)	(a)	(a)	2.56
		Y [cm]		0.60	(a)	(a)	(a)	0.60
Other Information	PD [μ sec]	0.58						
	PRF [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	0.25						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	-0.01							
Operating Control Conditions	Control 1 Depth	80 [mm]						
	Control 2 Focus	50 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 0.17$$



Table C-19: Transducer Model mTEE8-3/5 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.04	0.00	(a)	(a)	0.00	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.10						
	W ₀ [mW]		0.00	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	1.03				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	5.00	5.00	(a)	(a)	(a)	5.00	
	Dim of A _{aprt}	X [cm]		2.56	(a)	(a)	(a)	2.56
		Y [cm]		0.60	(a)	(a)	(a)	0.60
Other Information	PD [µsec]	2.30						
	PRF [Hz]	41						
	p _r @P _{II} max [MPa]	0.12						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _x [cm]		3.00	(a)	(a)		3.00
		FL _y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @MI _{max} [W/cm ²]	-0.03							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	5	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 0.54

Table C-20: Transducer Model mTEE8-3/5 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.05	(a)	0.01	0	0.09	0.01	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.10						
	W ₀ [mW]		(a)	0.39		0.39	0.39	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				0.17			
	Z ₁ [cm]				1.34			
	Z _{bp} [cm]				2.10			
	zsp [cm]	1.34				1.34		
	d _{eq} (z _{sp}) [cm]					0.51		
	f _c [MHz]	5.00	(a)	5.00	5.00	5.00	5.00	
	Dim of A _{aprt}	X [cm]		(a)	2.56	2.56	2.56	2.56
		Y [cm]		(a)	0.60	0.60	0.60	0.60
Other Information	PD [µsec]	2.16						
	PRF [Hz]	5000						
	p _r @P _{II} max [MPa]	0.13						
	d _{eq} @P _{II} max [cm]					1.51		
	Focal Length	FL _x [cm]		(a)	0.50	0.50		5.00
		FL _y [cm]		(a)	0.50	0.50		5.00
I _{PA,3} @MI _{max} [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	5	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 3.43

Table C-21: Transducer Model mTEE8-3/5 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.05	0.00	0.01	0.01	0.00	0.01	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.10						
	W_0 [mW]		0.00	0.51		0.51	0.51	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.17			
	Z_1 [cm]				1.34			
	Z_{bp} [cm]				2.10			
	z_{sp} [cm]	1.34				1.34		
	$d_{eq}(z_{sp})$ [cm]					0.58		
	f_c [MHz]	5.00	5.00	5.00	5.00	5.00	5.00	
	Dim of A_{aprt}	X [cm]		2.56	2.56	2.56	2.56	2.56
		Y [cm]		0.60	0.60	0.60	0.60	0.60
Other Information	PD [μ sec]	2.16						
	PRF [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	0.13						
	$d_{eq}@P_{II_{max}}$ [cm]					1.73		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	80 [mm]						
	Control 2 Focus	5 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 3.59$$

Table C-22: Transducer Model mTEE8-3/5 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.05	0.00	0.01	3.1E-005	0.00	0.01	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.10						
	W_0 [mW]		0.00	0.51		0.51	0.51	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.07			
	Z_1 [cm]				1.34			
	Z_{bp} [cm]				2.10			
	z_{sp} [cm]	1.34				1.34		
	$d_{eq}(z_{sp})$ [cm]					0.58		
	f_c [MHz]	5.00	5.00	5.00	5.00	5.00	5.00	
	Dim of A_{aprt}	X [cm]		2.56	2.56	2.56	2.56	2.56
		Y [cm]		0.60	0.60	0.60	0.60	0.60
Other Information	PD [μ sec]	2.16						
	FPS [Hz]	3						
	PRFd [Hz]	3333						
	$p_r@P_{II_{max}}$ [MPa]	0.13						
	$d_{eq}@P_{II_{max}}$ [cm]					2.72		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
FL_Y [cm]			3.00	3.00	3.00		3.00	
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	80 [mm]						
	Control 2 Focus	50 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 2.53$$



Table C-23: Transducer Model MC9-4/12 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.85	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48						
	W ₀ [mW]		(a)	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(a)			
	Z ₁ [cm]				(a)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	3.58				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	3.01	(a)	(a)	(a)	(a)	(a)	
	Dim of A _{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	0.65						
	PRF [Hz]	63						
	p _r @P _{II} max [MPa]	2.14						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _x [cm]		(a)	(a)	(a)		(a)
		FL _y [cm]		(a)	(a)	(a)		(a)
I _{PA,3} @M _I max [W/cm ²]	136.26							
Operating Control Conditions	Control 1 Depth	70 [mm]						
	Control 2 Focus	60 [mm]						
	Control 3 Gate	0 [mm]						
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 36.20

Table C-24: Transducer Model MC9-4/12 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.89	0.33	(a)	(a)	(a)	0.30	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.40						
	W ₀ [mW]		28.14	(a)		(a)	28.14	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	3.58				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	2.45	2.45	(a)	(a)	(a)	2.45	
	Dim of A _{aprt}	X [cm]		4.00	(a)	(a)	(a)	4.00
		Y [cm]		1.10	(a)	(a)	(a)	1.10
Other Information	PD [µsec]	1.47						
	PRF [Hz]	600						
	p _r @P _{II} max [MPa]	1.89						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _x [cm]		8.00	(a)	(a)		8.00
		FL _y [cm]		8.00	(a)	(a)		8.00
I _{PA,3} @M _I max [W/cm ²]	131.91							
Operating Control Conditions	Control 1 Depth	120 [mm]						
	Control 2 Focus	80 [mm]						
	Control 3 Gate	0 [mm]						
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 83.65

Table C-25: Transducer Model MC9-4/12 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.85	2.78	(c)	(c)	13.13	2.05	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48						
	W_0 [mW]		194.17	(c)		194.17	194.17	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	3.58				3.58		
	$d_{eq}(z_{sp})$ [cm]					0.13		
	f_c [MHz]	3.01	3.01	(c)	(c)	3.01	3.01	
	Dim of A_{aprt}	X [cm]		4.00	(c)	(c)	4.00	4.00
		Y [cm]		1.10	(c)	(c)	1.10	1.10
Other Information	PD [µsec]	0.65						
	PRF [Hz]	55						
	$p_r@PII_{max}$ [MPa]	2.14						
	$d_{eq}@PII_{max}$ [cm]					0.09		
	Focal Length	FL _X [cm]		6.00	(c)	(c)		6.00
		FL _Y [cm]		6.00	(c)	(c)		6.00
	$I_{PA,3}@MI_{max}$ [W/cm ²]	136.26						
Operating Control Conditions	Control 1 Depth	70 [mm]						
	Control 2 Focus	60 [mm]						
	Control 3 Gate	0 [mm]						
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 36.46$$

Table C-26: Transducer Model MC9-4/12 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.38	(a)	0.92	0.8427	11.13	1.82	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.60						
	W_0 [mW]		(a)	77.21		77.21	77.21	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				70.83			
	Z_1 [cm]				2.68			
	Z_{bp} [cm]				1.59			
	z_{sp} [cm]	2.68					2.68	
	$d_{eq}(z_{sp})$ [cm]						0.12	
	f_c [MHz]	2.50	(a)	2.50	2.50	2.50	2.50	
	Dim of A_{aprt}	X [cm]		(a)	1.10	1.10	1.10	1.10
		Y [cm]		(a)	0.80	0.80	0.80	0.80
Other Information	PD [µsec]	5.65						
	PRF [Hz]	8800						
	$p_r@PII_{max}$ [MPa]	0.76						
	$d_{eq}@PII_{max}$ [cm]					0.10		
	Focal Length	FL _X [cm]		(a)	7.00	7.00		7.00
		FL _Y [cm]		(a)	7.00	7.00		7.00
	$I_{PA,3}@MI_{max}$ [W/cm ²]	13.13						
Operating Control Conditions	Control 1 Depth	80 [mm]						
	Control 2 Focus	70 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 652.97$$



Table C-27: Transducer Model MC9-4/12 (Operating Mode: PW+B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		.85		1.48	1.23	1.0575	13.13	1.09
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48						
	W ₀ [mW]		103.53	103.53		103.53	103.53	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				49.22			
	Z ₁ [cm]				3.85			
	Z _{bp} [cm]				3.55			
	zsp [cm]	3.58				3.58		
	d _{eq} (z _{sp}) [cm]					0.10		
	f _c [MHz]	3.01	3.01	2.50	2.50	2.50	3.01	
	Dim of A _{aprt}	X [cm]		4.00	4.00	4.00	4.00	4.00
		Y [cm]		1.10	1.10	1.10	1.10	1.10
Other Information	PD [µsec]	0.65						
	PRF [Hz]	16						
	p _r @PII _{max} [MPa]	2.14						
	d _{eq} @PII _{max} [cm]					0.08		
	Focal Length	FL _x [cm]		7.00	7.00	7.00		7.00
		FL _y [cm]		7.00	7.00	7.00		7.00
I _{PA,3} @MI _{max} [W/cm ²]	136.26							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	70	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 662.17

Table C-28: Transducer Model MC9-4/12 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.89		1.23	1.25	1.07	13.15	1.11
Assoc. Acoustic Param.	Pr.3 [MPa]	1.4						
	W ₀ [mW]		105.35	105.35		105.35	105.35	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				4.65			
	Z ₁ [cm]				3.58			
	Z _{bp} [cm]				3.55			
	zsp [cm]	3.58				3.58		
	d _{eq} (z _{sp}) [cm]					8.09		
	f _c [MHz]	2.45	2.45	2.50	2.50	2.50	2.45	
	Dim of A _{aprt}	X [cm]		4.00	4.00	4.00	4.00	4.00
		Y [cm]		1.10	1.10	1.10	1.10	1.10
Other Information	PD [µsec]	1.47						
	FPS [Hz]	11.00						
	PRFd [Hz]	2700						
	p _r @PII _{max} [MPa]	1.89						
	d _{eq} @PII _{max} [cm]					4.60		
	Focal Length	FL _x [cm]		7.00	7.00	7.00		7.00
FL _y [cm]			7.00	7.00	7.00		7.00	
I _{PA,3} @MI _{max} [W/cm ²]	131.91							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	70	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 257.85

Table C-29: Transducer Model EC9-5/10 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.57	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.40						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	2.62				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.00	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.25						
	PRF [Hz]	60.774						
	$p_r@P_{II_{max}}$ [MPa]	2.42						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
	$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.01						
Operating Control Conditions	Control 1 Depth	700	[mm]					
	Control 2 Focus	27	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	PEL-General (EC9-5/10mm) - General						

$$ISPTA.3 [mW/cm^2] = 2.88$$

Table C-30: Transducer Model EC9-5/10 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.50	1.35	(a)	(a)	(a)	1.31	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.29						
	W_0 [mW]		42.49	(a)		(a)	73.48	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	2.46				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.67	6.67	(a)	(a)	(a)	6.67	
	Dim of A_{aprt}	X [cm]		1.00	(a)	(a)	(a)	2.57
		Y [cm]		0.60	(a)	(a)	(a)	0.60
Other Information	PD [μ sec]	0.60						
	PRF [Hz]	13.341						
	$p_r@P_{II_{max}}$ [MPa]	2.27						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		2.70	(a)	(a)		2.70
		FL _Y [cm]		2.70	(a)	(a)		2.70
	$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.02						
Operating Control Conditions	Control 1 Depth	700	[mm]					
	Control 2 Focus	27	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	PEL-General (EC9-5/10mm) - Gen						

$$ISPTA.3 [mW/cm^2] = 10.4397$$



ULTRASONIX

Table C-31: Transducer Model EC9-5/10 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.57	0.57	(c)	(c)	(c)	0.90	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.40						
	W ₀ [mW]		19.96	(c)		(c)	50.56	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(c)			
	zsp [cm]	2.62				(c)		
	d _{eq} (z _{sp}) [cm]					(c)		
	f _c [MHz]	6.00	6.00	(c)	(c)	(c)	6.00	
	Dim of A _{aprt}	X [cm]		1.00	(c)	(c)	(c)	2.57
		Y [cm]		0.60	(c)	(c)	(c)	0.60
Other Information	PD [µsec]	0.41						
	PRF [Hz]	65						
	p _r @P _{II} max [MPa]	2.42						
	d _{eq} @P _{II} max [cm]					(c)		
	Focal Length	FL _x [cm]		2.70	(c)	(c)		2.70
		FL _y [cm]		2.70	(c)	(c)		2.70
I _{PA,3} @MI _{max} [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	700	[mm]					
	Control 2 Focus	27	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	PEL-General (EC9-5/10mm) - HarRes						

ISPTA.3 [mW/cm²] = 3.08

Table C-32: Transducer Model EC9-5/10 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.29	(c)	0.40	0.281	1.33	0.48	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.75						
	W ₀ [mW]		(c)	12.59		12.59	12.59	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				7.52			
	Z ₁ [cm]				2.42			
	Z _{bp} [cm]				0.99			
	zsp [cm]	2.42				2.42		
	d _{eq} (z _{sp}) [cm]					2.47		
	f _c [MHz]	6.67	(c)	6.67	6.67	6.67	6.67	
	Dim of A _{aprt}	X [cm]		(c)	0.57	0.57	0.57	0.57
		Y [cm]		(c)	0.60	0.60	0.60	0.60
Other Information	PD [µsec]	1.33						
	PRF [Hz]	6666.7						
	p _r @P _{II} max [MPa]	1.31						
	d _{eq} @P _{II} max [cm]					-		
	Focal Length	FL _x [cm]		(c)	(c)	2.70		6.67
		FL _y [cm]		(c)	(c)	2.70		6.67
I _{PA,3} @MI _{max} [W/cm ²]	0.25							
Operating Control Conditions	Control 1 Depth	700	[mm]					
	Control 2 Focus	27	[mm]					
	Control 3 Gate	20.00	[mm]					
	Control 4 Preset	PEL-General (EC9-5/10mm) - Pen						

ISPTA.3 [mW/cm²] = 332.93

Table C-33: Transducer Model EC9-5/10 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.27	0.19	(c)	(c)	0.84		
Assoc. Acoustic Param.	Pr.3 [MPa]	0.70						
	W_0 [mW]		5.92	(c)	(c)	47.27		
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	2.64				(c)		
	$d_{eq}(z_{sp})$ [cm]					(c)		
	f_c [MHz]	6.67	6.67	(c)	(c)	(c)	6.67	
	Dim of A_{aprt}	X [cm]		1.00	(c)	(c)	(c)	2.57
		Y [cm]		0.60	(c)	(c)	(c)	0.60
Other Information	PD [µsec]	1.33						
	PRF [Hz]	19.298						
	$p_r@P_{II_{max}}$ [MPa]	1.28						
	$d_{eq}@P_{II_{max}}$ [cm]					(c)		
	Focal Length	FL_X [cm]		2.70	(c)	(c)	2.70	
		FL_Y [cm]		2.70	(c)	(c)	2.70	
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.14							
Operating Control Conditions	Control 1 Depth	700	[mm]					
	Control 2 Focus	26.95	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	PEL-General (EC9-5/10mm) - General						

$$ISPTA.3 [mW/cm^2] = 181.00$$

Table C-34: Transducer Model EC9-5/10 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.27	0.19	(c)	(c)	0.84		
Assoc. Acoustic Param.	Pr.3 [MPa]	0.70						
	W_0 [mW]		5.92	(c)	(c)	47.27		
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	2.64				(c)		
	$d_{eq}(z_{sp})$ [cm]					(c)		
	f_c [MHz]	6.67	6.67	(c)	(c)	(c)	6.67	
	Dim of A_{aprt}	X [cm]		1.00	(c)	(c)	(c)	1.00
		Y [cm]		0.60	(c)	(c)	(c)	0.60
Other Information	PD [µsec]	1.33						
	FPS [Hz]	7.00						
	PRFd [Hz]	4000						
	$p_r@P_{II_{max}}$ [MPa]	1.28						
	$d_{eq}@P_{II_{max}}$ [cm]					(c)		
	Focal Length	FL_X [cm]		2.70	(c)	(c)	2.70	
FL_Y [cm]			2.70	(c)	(c)	2.70		
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.19							
Operating Control Conditions	Control 1 Depth	700	[mm]					
	Control 2 Focus	26.95	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	PEL-General (EC9-5 10mm) - General						

$$ISPTA.3 [mW/cm^2] = 249.02$$



Table C-35: Transducer Model C5-2/60 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Global Maximum Index Value		0.93	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.56				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	2.50	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	0.71						
	PRF [Hz]	41						
	$p_r @ PII_{max}$ [MPa]	2.19						
	$d_{eq} @ PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 67.11$

Table C-36: Transducer Model C5-2/60 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Global Maximum Index Value		0.83	0.00	(a)	(a)	(a)	0.05	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.31						
	W_0 [mW]		0.06	(a)		(a)	5.84	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.20				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	2.50	2.50	(a)	(a)	(a)	2.50	
	Dim of A_{aprt}	X [cm]		6.40	(a)	(a)	(a)	6.40
		Y [cm]		1.20	(a)	(a)	(a)	1.20
Other Information	PD [µsec]	1.07						
	PRF [Hz]	6700						
	$p_r @ PII_{max}$ [MPa]	1.88						
	$d_{eq} @ PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 17.83$

Table C-37: Transducer Model C5-2/60 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.93	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$	0.21	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48		(a)	(a)			
	W_0 [mW]		0.15	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]					(c)		
	Z_1 [cm]					(c)		
	Z_{bp} [cm]					(a)		
	z_{sp} [cm]	4.56					(a)	
	$d_{eq}(z_{sp})$ [cm]						(a)	
	f_c [MHz]	2.50	2.50	(a)	(a)	(a)	2.50	
	Dim of A_{aprt}	X [cm]		6.40	(a)	(a)	(a)	6.40
		Y [cm]		1.20	(a)	(a)	(a)	1.20
Other Information	PD [μ sec]	0.71						
	PRF [Hz]	41						
	$p_r @ P_{II_{max}}$ [MPa]	2.19						
	$d_{eq} @ P_{II_{max}}$ [cm]						(a)	
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 67.11$$

Table C-38: Transducer Model C5-2/60 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.30	(a)	$A_{aprt} \leq 1$	$A_{aprt} > 1$	2.13	1.22	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.48		1.82	1.29			
	W_0 [mW]		(a)	152.91		152.91	152.91	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				10.15			
	Z_1 [cm]					2.81		
	Z_{bp} [cm]					4.69		
	z_{sp} [cm]	2.81					2.81	
	$d_{eq}(z_{sp})$ [cm]						10.07	
	f_c [MHz]	2.50	(a)	2.50	2.50	2.50	2.50	
	Dim of A_{aprt}	X [cm]		(a)	6.40	6.40	6.40	6.40
		Y [cm]		(a)	1.20	1.20	1.20	1.20
Other Information	PD [μ sec]	5.89						
	PRF [Hz]	12500						
	$p_r @ P_{II_{max}}$ [MPa]	0.61						
	$d_{eq} @ P_{II_{max}}$ [cm]						3.88	
	Focal Length	FL _X [cm]		(a)	4.00	4.00		2.50
		FL _Y [cm]		(a)	4.00	4.00		2.50
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.16							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 633.22$$



Table C-39: Transducer Model C5-2/60 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.30	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$	0.12	2.60	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.48						
	W_0 [mW]		0.12	325.36		325.36	325.36	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				10.15			
	Z_1 [cm]				2.81			
	z_{bp} [cm]				4.69			
	z_{sp} [cm]	2.81					2.81	
	$d_{eq}(z_{sp})$ [cm]						14.70	
	f_c [MHz]	2.50	2.50	2.50	2.50	2.50	2.50	
	Dim of A_{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [µsec]	5.89						
	PRF [Hz]	12500						
	$p_r @ PII_{max}$ [MPa]	0.61						
	$d_{eq} @ PII_{max}$ [cm]						5.66	
	Focal Length	FL _X [cm]		3.00	3.00	3.00		3.00
		FL _Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.16							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 654.59$

Table C-40: Transducer Model C5-2/60 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.53	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$	0.12	1.12	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.83						
	W_0 [mW]		0.10	140.14		140.14	140.14	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				11.71			
	Z_1 [cm]				3.74			
	z_{bp} [cm]				4.69			
	z_{sp} [cm]	3.74					3.74	
	$d_{eq}(z_{sp})$ [cm]						9.27	
	f_c [MHz]	2.50	2.50	2.50	2.50	2.50	2.50	
	Dim of A_{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [µsec]	2.46						
	FPS [Hz]	8						
	PRFd [Hz]	3333						
	$p_r @ PII_{max}$ [MPa]	1.15						
	$d_{eq} @ PII_{max}$ [cm]						3.32	
	Focal Length	FL _X [cm]		3.00	3.00	3.00		3.00
FL _Y [cm]			3.00	3.00	3.00		3.00	
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.07							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 280.66$

Table C-41: Transducer Model C7-3/50 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.80	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.44						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.12				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	3.25	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.00						
	PRF [Hz]	25						
	$p_r@PII_{max}$ [MPa]	2.28						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 62.9816$$

Table C-42: Transducer Model C7-3/50 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.45	0.00	(a)	(a)	(a)	0.02	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.94						
	W_0 [mW]		0.02	(a)		(a)	3.03	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	5.10				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	4.39	4.39	(a)	(a)	(a)	4.39	
	Dim of A_{aprt}	X [cm]		6.40	(a)	(a)	(a)	6.40
		Y [cm]		1.20	(a)	(a)	(a)	1.20
Other Information	PD [μ sec]	-2.81						
	PRF [Hz]	6700						
	$p_r@PII_{max}$ [MPa]	2.03						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	60	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 13.3715$$



Table C-43: Transducer Model C7-3/50 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				A _{aprt} ≤1	A _{aprt} >1			
Global Maximum Index Value		0.80	0.00	(a)	(a)	0.03	1.13E-05	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.44						
	W ₀ [mW]		0.09	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	4.12				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	3.25	3.25	(a)	(a)	(a)	3.25	
	Dim of A _{aprt}	X [cm]		6.40	(a)	(a)	(a)	6.40
		Y [cm]		1.20	(a)	(a)	(a)	1.20
Other Information	PD [µsec]	0.00						
	PRF [Hz]	41						
	p _r @P _{II} max [MPa]	2.28						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @M _I max [W/cm ²]	0.03							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 103.29

Table C-44: Transducer Model C7-3/50 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				A _{aprt} ≤1	A _{aprt} >1			
Global Maximum Index Value		0.34	(a)	3.13	2.145	3.84	1.44	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.65						
	W ₀ [mW]		(a)	180.27		180.27	180.27	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				18.89			
	Z ₁ [cm]				4.88			
	Z _{bp} [cm]				4.69			
	zsp [cm]	4.88				4.88		
	d _{eq} (z _{sp}) [cm]					9.08		
	f _c [MHz]	3.64	(a)	3.64	3.64	3.64	3.64	
	Dim of A _{aprt}	X [cm]		(a)	6.40	6.40	6.40	6.40
		Y [cm]		(a)	1.20	1.20	1.20	1.20
Other Information	PD [µsec]	-0.48						
	PRF [Hz]	5000						
	p _r @P _{II} max [MPa]	1.19						
	d _{eq} @P _{II} max [cm]					2.56		
	Focal Length	FL _X [cm]		(a)	5.00	5.00		5.00
		FL _Y [cm]		(a)	5.00	5.00		5.00
I _{PA,3} @M _I max [W/cm ²]	0.12							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 470.288

Table C-45: Transducer Model C7-3/50 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.34	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$	0.02	2.14	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.65						
	W_0 [mW]		0.22	267.20		267.20	267.20	
	min of $[W_0(z_1) : I_{TA,3}(z_1)]$ [mW]				18.89			
	Z_1 [cm]				4.88			
	Z_{bp} [cm]				4.69			
	z_{sp} [cm]	4.88				4.88		
	$d_{eq}(z_{sp})$ [cm]					11.06		
	f_c [MHz]	3.64	3.64	3.64	3.64	3.64	3.64	
	Dim of A_{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [μ sec]	-0.48						
	PRF [Hz]	5000						
	$p_r @ P_{II_{max}}$ [MPa]	1.19						
	$d_{eq} @ P_{II_{max}}$ [cm]					3.12		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.13							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 513.115$$

Table C-46: Transducer Model C7-3/50 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.34	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$	0.02	2.14	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.65						
	W_0 [mW]		0.22	267.20		267.20	267.20	
	min of $[W_0(z_1) : I_{TA,3}(z_1)]$ [mW]				6.20			
	Z_1 [cm]				4.88			
	Z_{bp} [cm]				4.69			
	z_{sp} [cm]	4.88				4.88		
	$d_{eq}(z_{sp})$ [cm]					11.06		
	f_c [MHz]	3.64	3.64	3.64	3.64	3.64	3.64	
	Dim of A_{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [μ sec]	-0.48						
	FPS [Hz]	8.00						
	PRFd [Hz]	3300						
	$p_r @ P_{II_{max}}$ [MPa]	1.19						
	$d_{eq} @ P_{II_{max}}$ [cm]					5.45		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
FL_Y [cm]			3.00	3.00	3.00		3.00	
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.10							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 380.16$$



Table C-47: Transducer Model BPC8-4/10 (Operating Mode: B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
				$A_{aprt} \leq 1$	$A_{aprt} > 1$	non-scan		
Global Maximum Index Value		0.34	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.72						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.47				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	4.38	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	0.00						
	PRF [Hz]	34						
	$p_r @ P_{II,max}$ [MPa]	1.41						
	$d_{eq} @ P_{II,max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3} @ M_{I,max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 12.9753$

Table C-48: Transducer Model BPC8-4/10 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
				$A_{aprt} \leq 1$	$A_{aprt} > 1$	non-scan		
Global Maximum Index Value		0.44	0.00	(a)	(a)	(a)	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.69						
	W_0 [mW]		0.01	(a)		(a)	0.09	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.47				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	2.53	2.53	(a)	(a)	(a)	2.53	
	Dim of A_{aprt}	X [cm]		2.14	(a)	(a)	(a)	2.14
		Y [cm]		1.10	(a)	(a)	(a)	1.10
Other Information	PD [µsec]	1.56						
	PRF [Hz]	5000						
	$p_r @ P_{II,max}$ [MPa]	1.02						
	$d_{eq} @ P_{II,max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3} @ M_{I,max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 3.255059$

Table C-49: Transducer Model BPC8-4/10 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.34	0.00	(a)	(a)	0.00	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.72						
	W_0 [mW]		0.02	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.47				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	4.38	4.38	(a)	(a)	(a)	4.38	
	Dim of A_{aprt}	X [cm]		2.14	(a)	(a)	(a)	2.14
		Y [cm]		1.10	(a)	(a)	(a)	1.10
Other Information	PD [μ sec]	0.00						
	PRF [Hz]	55						
	$p_r@P_{II_{max}}$ [MPa]	1.41						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 20.9894$$

Table C-50: Transducer Model BPC8-4/10 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.23	(a)	1.38	0.366	0.91	0.63	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.60						
	W_0 [mW]		(a)	43.80		43.80	43.80	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				12.60			
	Z_1 [cm]				2.72			
	Z_{bp} [cm]				2.60			
	z_{sp} [cm]	2.72					2.72	
	$d_{eq}(z_{sp})$ [cm]						4.46	
	f_c [MHz]	6.63	(a)	6.63	6.63	6.63	6.63	
	Dim of A_{aprt}	X [cm]		(a)	2.14	2.14	2.14	2.14
		Y [cm]		(a)	1.10	1.10	1.10	1.10
Other Information	PD [μ sec]	1.45						
	PRF [Hz]	12500						
	$p_r@P_{II_{max}}$ [MPa]	0.84						
	$d_{eq}@P_{II_{max}}$ [cm]					1.34		
	Focal Length	FL _X [cm]		(a)	5.00	5.00		6.63
		FL _Y [cm]		(a)	5.00	5.00		6.63
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.26							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 130.3774$$



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Table C-51: Transducer Model BPC8-4/10 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.23	0.00	1.74	0.366	0.00	0.78	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.60						
	W ₀ [mW]		0.01	54.07		54.07	54.07	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				15.56			
	Z ₁ [cm]				2.72			
	Z _{bp} [cm]				2.60			
	zsp [cm]	2.72				2.72		
	d _{eq} (z _{sp}) [cm]					4.95		
	f _c [MHz]	6.63	6.63	6.63	6.63	6.63	6.63	
	Dim of A _{aprt}	X [cm]		2.14	2.14	2.14	2.14	2.14
		Y [cm]		1.10	1.10	1.10	1.10	1.10
Other Information	PD [µsec]	1.45						
	PRF [Hz]	12500						
	p _r @PII _{max} [MPa]	0.84						
	d _{eq} @PII _{max} [cm]					1.48		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
		FL _y [cm]		3.00	3.00	3.00		3.00
I _{PA,3} @MI _{max} [W/cm ²]	0.27							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 135.3385

Table C-52: Transducer Model BPC8-4/10 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.09	0.00	0.93	0.0393	0.00	0.42	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.24						
	W ₀ [mW]		0.02	29.34		29.34	29.34	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				3.76			
	Z ₁ [cm]				4.47			
	Z _{bp} [cm]				2.60			
	zsp [cm]	4.47				4.47		
	d _{eq} (z _{sp}) [cm]					2.98		
	f _c [MHz]	6.65	6.65	6.65	6.65	6.65	6.65	
	Dim of A _{aprt}	X [cm]		2.14	2.14	2.14	2.14	2.14
		Y [cm]		1.10	1.10	1.10	1.10	1.10
Other Information	PD [µsec]	-2.03						
	FPS [Hz]	6						
	PRFd [Hz]	3333						
	p _r @PII _{max} [MPa]	0.66						
	d _{eq} @PII _{max} [cm]					1.38		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
FL _y [cm]			3.00	3.00	3.00		3.00	
I _{PA,3} @MI _{max} [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 65.12

Table C-53: Transducer Model BPL9-5/55 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.42	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.88						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.12				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	4.38	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	-1.13						
	PRF [Hz]	38						
	$P_r@P_{II_{max}}$ [MPa]	1.64						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
	$I_{PA,3}@MI_{max}$ [W/cm ²]	0.01						
Operating Control Conditions	Control 1 Depth	60	[mm]					
	Control 2 Focus	45	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 27.6989$$

Table C-54: Transducer Model BPL9-5/55 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.04	0.00	(a)	(a)	(a)	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.11						
	W_0 [mW]		0.00	(a)		(a)	0.04	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.31				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	8.77	8.77	(a)	(a)	(a)	8.77	
	Dim of A_{aprt}	X [cm]		6.00	(a)	(a)	(a)	6.00
		Y [cm]		0.80	(a)	(a)	(a)	0.80
Other Information	PD [μ sec]	0.00						
	PRF [Hz]	6700						
	$P_r@P_{II_{max}}$ [MPa]	0.42						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
	$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00						
Operating Control Conditions	Control 1 Depth	60	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 2.919413$$



Table C-55: Transducer Model BPL9-5/55 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.42		0.00	(a)	(a)	0.00	0.00
Assoc. Acoustic Param.	Pr.3 [MPa]	0.88						
	W ₀ [mW]		0.03	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	z _{sp} [cm]	4.12				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	4.38	4.38	(a)	(a)	(a)	4.38	
	Dim of A _{aprt}	X [cm]		6.00	(a)	(a)	(a)	6.00
		Y [cm]		0.80	(a)	(a)	(a)	0.80
Other Information	PD [µsec]	-1.13						
	PRF [Hz]	55						
	p _r @P _{II,max} [MPa]	1.64						
	d _{eq} @P _{II,max} [cm]					(a)		
	Focal Length	FL _x [cm]		3.00	(a)	(a)		3.00
		FL _y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @M _{I,max} [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth		60 [mm]					
	Control 2 Focus		45 [mm]					
	Control 3 Gate		- [mm]					
	Control 4 Preset		GEN-GEN					

ISPTA.3 [mW/cm²] = 40.0904

Table C-56: Transducer Model BPL9-5/55 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.02		(a)	0.04	0.201	0.01	0.13
Assoc. Acoustic Param.	Pr.3 [MPa]	0.05						
	W ₀ [mW]		(a)	12.63		12.63	12.63	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				0.01			
	Z ₁ [cm]				3.85			
	Z _{bp} [cm]				3.71			
	z _{sp} [cm]	3.85				3.85		
	d _{eq} (z _{sp}) [cm]					2.09		
	f _c [MHz]	6.70	(a)	6.70	6.70	6.70	6.70	
	Dim of A _{aprt}	X [cm]		(a)	6.00	6.00	6.00	6.00
		Y [cm]		(a)	0.80	0.80	0.80	0.80
Other Information	PD [µsec]	-5.34						
	PRF [Hz]	5000						
	p _r @P _{II,max} [MPa]	0.13						
	d _{eq} @P _{II,max} [cm]					21.23		
	Focal Length	FL _x [cm]		(a)	5.50	5.50		6.70
		FL _y [cm]		(a)	5.50	5.50		6.70
I _{PA,3} @M _{I,max} [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth		60 [mm]					
	Control 2 Focus		55 [mm]					
	Control 3 Gate		10 [mm]					
	Control 4 Preset		GEN-GEN					

ISPTA.3 [mW/cm²] = 0.73095

Table C-57: Transducer Model BPL9-5/55 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.02	0.00	1.18	0.201	0.00	0.37	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.05						
	W_0 [mW]		0.02	36.99		36.99	36.99	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.01			
	Z_1 [cm]				3.85			
	Z_{bp} [cm]				3.71			
	z_{sp} [cm]	3.85				3.85		
	$d_{eq}(z_{sp})$ [cm]					23.58		
	f_c [MHz]	6.70	6.70	6.70	6.70	6.70	6.70	
	Dim of A_{aprt}	X [cm]		6.00	6.00	6.00	6.00	6.00
		Y [cm]		0.80	0.80	0.80	0.80	0.80
Other Information	PD [μ sec]	-5.34						
	PRF [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	0.13						
	$d_{eq}@P_{II_{max}}$ [cm]					36.34		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	60	[mm]					
	Control 2 Focus	55	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 13.1225$$

Table C-58: Transducer Model BPL9-5/55 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.02	0.00	1.18	0.20138	0.00	0.37	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.05						
	W_0 [mW]		0.02	36.99		36.99	36.99	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.04			
	Z_1 [cm]				3.85			
	Z_{bp} [cm]				3.71			
	z_{sp} [cm]	3.85				3.85		
	$d_{eq}(z_{sp})$ [cm]					3.85		
	f_c [MHz]	6.70	6.70	6.70	6.70	6.70	6.70	
	Dim of A_{aprt}	X [cm]		6.00	6.00	6.00	6.00	6.00
		Y [cm]		0.80	0.80	0.80	0.80	0.80
Other Information	PD [μ sec]	-5.34						
	FPS [Hz]	5						
	PRFd [Hz]	4000						
	$p_r@P_{II_{max}}$ [MPa]	0.13						
	$d_{eq}@P_{II_{max}}$ [cm]					22.71		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
FL_Y [cm]			3.00	3.00	3.00		3.00	
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	60	[mm]					
	Control 2 Focus	55	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 4.42$$



Table C-59: Transducer Model L9-4/38 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				A _{aprt} ≤1	A _{aprt} >1			
Global Maximum Index Value		0.60	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	2.62						
	W ₀ [mW]		(a)	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(a)			
	Z ₁ [cm]				(a)			
	Z _{bp} [cm]				(a)			
	z _{sp} [cm]	2.79				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	4.77	(a)	(a)	(a)	(a)	(a)	
	Dim of A _{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	1.61						
	PRF [Hz]	55						
	p _r @P _{II} _{max} [MPa]	4.14						
	d _{eq} @P _{II} _{max} [cm]					(a)		
	Focal Length	FL _x [cm]		(a)	(a)	(a)		(a)
		FL _y [cm]		(a)	(a)	(a)		(a)
I _{PA,3} @M _I _{max} [W/cm ²]	0.56							
Operating Control Conditions	Control 1 Depth	35	[mm]					
	Control 2 Focus	27.5	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 98.37

Table C-60: Transducer Model L9-4/38 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				A _{aprt} ≤1	A _{aprt} >1			
Global Maximum Index Value		0.36	0.00	(a)	(a)	(a)	0.01	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.91						
	W ₀ [mW]		0.00	(a)		(a)	0.40	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(a)			
	Z ₁ [cm]				(a)			
	Z _{bp} [cm]				(a)			
	z _{sp} [cm]	3.03				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	6.40	6.40	(a)	(a)	(a)	6.40	
	Dim of A _{aprt}	X [cm]		3.84	(a)	(a)	(a)	3.84
		Y [cm]		0.70	(a)	(a)	(a)	0.70
Other Information	PD [µsec]	0.77						
	PRF [Hz]	6700						
	p _r @P _{II} _{max} [MPa]	1.77						
	d _{eq} @P _{II} _{max} [cm]					(a)		
	Focal Length	FL _x [cm]		3.00	(a)	(a)		3.00
		FL _y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @M _I _{max} [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	30	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 10.6

Table C-61: Transducer Model L9-4/38 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.60	0.00	(a)	(a)	0.10	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	2.62						
	W_0 [mW]		0.01	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	2.79				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	4.77	4.77	(a)	(a)	(a)	4.77	
	Dim of A_{aprt}	X [cm]		3.84	(a)	(a)	(a)	3.84
		Y [cm]		0.70	(a)	(a)	(a)	0.70
Other Information	PD [μ sec]	1.61						
	PRF [Hz]	62						
	$p_r@P_{II_{max}}$ [MPa]	4.14						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	1.23							
Operating Control Conditions	Control 1 Depth	35	[mm]					
	Control 2 Focus	27.5	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 110.89$$

Table C-62: Transducer Model L9-4/38 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.21	(a)	3.25	1.69	5.50	1.44	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.37						
	W_0 [mW]		(a)	106.48		106.48	106.48	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				6.94			
	Z_1 [cm]				3.41			
	Z_{bp} [cm]				2.77			
	z_{sp} [cm]	3.41				3.41		
	$d_{eq}(z_{sp})$ [cm]					6.51		
	f_c [MHz]	6.40	(a)	6.40	6.40	6.40	6.40	
	Dim of A_{aprt}	X [cm]		(a)	3.84	3.84	3.84	3.84
		Y [cm]		(a)	0.70	0.70	0.70	0.70
Other Information	PD [μ sec]	2.16						
	PRF [Hz]	6700						
	$p_r@P_{II_{max}}$ [MPa]	0.79						
	$d_{eq}@P_{II_{max}}$ [cm]					3.03		
	Focal Length	FL _X [cm]		(a)	3.50	3.50		6.40
		FL _Y [cm]		(a)	3.50	3.50		6.40
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.04							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	35	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 176.99$$



ULTRASONIX

Table C-63: Transducer Model L9-4/38 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.21	0.00	4.73	1.69	0.04	2.10	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.37						
	W ₀ [mW]		0.06	155.24		155.24	155.24	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				6.94			
	Z ₁ [cm]				3.41			
	Z _{bp} [cm]				2.77			
	zsp [cm]	3.41				3.41		
	d _{eq} (z _{sp}) [cm]					7.86		
	f _c [MHz]	6.40	6.40	6.40	6.40	6.40	6.40	
	Dim of A _{aprt}	X [cm]		3.84	3.84	3.84	3.84	3.84
		Y [cm]		0.70	0.70	0.70	0.70	0.70
Other Information	PD [µsec]	2.16						
	PRF [Hz]	6700						
	p _r @PII _{max} [MPa]	0.79						
	d _{eq} @PII _{max} [cm]					3.66		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
		FL _y [cm]		3.00	3.00	3.00		3.00
I _{PA,3} @MI _{max} [W/cm ²]	0.05							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	35	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 210.97

Table C-64: Transducer Model L9-4/38 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.21	0.00	5.40	1.69	0.05	2.40	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.37						
	W ₀ [mW]		0.07	177.24		177.24	177.24	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				19.90			
	Z ₁ [cm]				3.41			
	Z _{bp} [cm]				2.77			
	zsp [cm]	3.41				3.41		
	d _{eq} (z _{sp}) [cm]					8.40		
	f _c [MHz]	6.40	6.40	6.40	6.40	6.40	6.40	
	Dim of A _{aprt}	X [cm]		3.84	3.84	3.84	3.84	3.84
		Y [cm]		0.70	0.70	0.70	0.70	0.70
Other Information	PD [µsec]	2.16						
	FPS [Hz]	7						
	PRFd [Hz]	4000						
	p _r @PII _{max} [MPa]	0.79						
	d _{eq} @PII _{max} [cm]					2.31		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
FL _y [cm]			3.00	3.00	3.00		3.00	
I _{PA,3} @MI _{max} [W/cm ²]	0.06							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	35	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 248.85

Table C-65: Transducer Model L14-5/38 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.80	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.99						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.95				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.23	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.00						
	PRF [Hz]	29						
	$p_r@P_{II_{max}}$ [MPa]	3.03						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
	$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.03						
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	33	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	Gen-Gen (L14-5 38mm) - Pen						

ISPTA.3 [mW/cm²] = 66.32

Table C-66: Transducer Model L14-5/38 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.43	0.00	(a)	(a)	(a)	0.02	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.12						
	W_0 [mW]		0.01	(a)		(a)	1.41	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	2.10				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.66	6.66	(a)	(a)	(a)	6.66	
	Dim of A_{aprt}	X [cm]		3.84	(a)	(a)	(a)	3.84
		Y [cm]		0.70	(a)	(a)	(a)	0.70
Other Information	PD [μ sec]	2.21						
	PRF [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	1.81						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
	$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.01						
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	33	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	Gen-Gen (L14-5 38mm) - Pen						

ISPTA.3 [mW/cm²] = 54.12



Table C-67: Transducer Model L14-5/38 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.80	0.00	(a)	(a)	0.00	0.23	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.99						
	W ₀ [mW]		0.00	(a)		(a)	16.71	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	1.95				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	6.23	6.23	(a)	(a)	(a)	6.23	
	Dim of A _{aprt}	X [cm]		3.84	(a)	(a)	(a)	3.84
		Y [cm]		0.70	(a)	(a)	(a)	0.70
Other Information	PD [µsec]	0.00						
	PRF [Hz]	33						
	p _r @P _{II} max [MPa]	3.03						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _x [cm]		3.00	(a)	(a)		3.00
		FL _y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @MI _{max} [W/cm ²]	0.04							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	33	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	Gen-Gen (L14-5 38mm) - Pen						

ISPTA.3 [mW/cm²] = 75.47

Table C-68: Transducer Model L14-5/38 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.39	(a)	0.59	0.37	0.10	0.25	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.02						
	W ₀ [mW]		(a)	18.54		18.54	18.54	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				6.14			
	Z ₁ [cm]				2.40			
	Z _{bp} [cm]				2.77			
	zsp [cm]	2.40				2.40		
	d _{eq} (z _{sp}) [cm]					3.00		
	f _c [MHz]	6.67	(a)	6.67	6.67	6.67	6.67	
	Dim of A _{aprt}	X [cm]		(a)	3.84	3.84	3.84	3.84
		Y [cm]		(a)	0.70	0.70	0.70	0.70
Other Information	PD [µsec]	1.93						
	PRF [Hz]	5000						
	p _r @P _{II} max [MPa]	1.77						
	d _{eq} @P _{II} max [cm]					0.37		
	Focal Length	FL _x [cm]		(a)	3.00	3.00		6.77
		FL _y [cm]		(a)	3.00	3.00		6.77
I _{PA,3} @MI _{max} [W/cm ²]	0.16							
Operating Control Conditions	Control 1 Depth	60	[mm]					
	Control 2 Focus	30	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 622.80

Table C-69: Transducer Model L14-5/38 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.39	0.00	0.92	0.37	0.00	0.39	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.02						
	W_0 [mW]		0.02	29.03		29.03	29.03	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				9.61			
	Z_1 [cm]				2.40			
	Z_{bp} [cm]				2.77			
	z_{sp} [cm]	2.40				2.40		
	$d_{eq}(z_{sp})$ [cm]					3.76		
	f_c [MHz]	6.67	6.67	6.67	6.67	6.67	6.67	
	Dim of A_{aprt}	X [cm]		3.84	3.84	3.84	3.84	3.84
		Y [cm]		0.70	0.70	0.70	0.70	0.70
Other Information	PD [μ sec]	1.93						
	PRF [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	1.77						
	$d_{eq}@P_{II_{max}}$ [cm]					0.46		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.17							
Operating Control Conditions	Control 1 Depth	60 [mm]						
	Control 2 Focus	30 [mm]						
	Control 3 Gate	20 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 661.68$$

Table C-70: Transducer Model L14-5/38 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.39	0.00	0.92	0.37	0.00	0.39	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.02						
	W_0 [mW]		0.02	29.03		29.03	29.03	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				9.61			
	Z_1 [cm]				2.40			
	Z_{bp} [cm]				2.77			
	z_{sp} [cm]	2.40				2.40		
	$d_{eq}(z_{sp})$ [cm]					3.76		
	f_c [MHz]	6.67	6.67	6.67	6.67	6.67	6.67	
	Dim of A_{aprt}	X [cm]		3.84	3.84	3.84	3.84	3.84
		Y [cm]		0.70	0.70	0.70	0.70	0.70
Other Information	PD [μ sec]	1.93						
	FPS [Hz]	4.00						
	PRFd [Hz]	3333						
	$p_r@P_{II_{max}}$ [MPa]	1.77						
	$d_{eq}@P_{II_{max}}$ [cm]					0.93		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
FL_Y [cm]			3.00	3.00	3.00		3.00	
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.13							
Operating Control Conditions	Control 1 Depth	60 [mm]						
	Control 2 Focus	30 [mm]						
	Control 3 Gate	20 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 521.73$$



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Table C-71: Transducer Model L14-5W/60 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.32	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.82						
	W ₀ [mW]		(a)	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(a)			
	Z ₁ [cm]				(a)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	3.90				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	6.60	(a)	(a)	(a)	(a)	(a)	
	Dim of A _{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	0.45						
	PRF [Hz]	34						
	p _r @P _{II} max [MPa]	2.00						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _x [cm]		(a)	(a)	(a)		(a)
		FL _y [cm]		(a)	(a)	(a)		(a)
I _{PA,3} @M _I max [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 22.76

Table C-72: Transducer Model L14-5W/60 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.16	0.00	(a)	(a)	(a)	0.15	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.41						
	W ₀ [mW]		0.04	(a)		(a)	13.75	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	4.16				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	6.60	6.60	(a)	(a)	(a)	6.60	
	Dim of A _{aprt}	X [cm]		5.88	(a)	(a)	(a)	5.88
		Y [cm]		0.70	(a)	(a)	(a)	0.70
Other Information	PD [µsec]	0.79						
	PRF [Hz]	6700						
	p _r @P _{II} max [MPa]	1.05						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _x [cm]		3.00	(a)	(a)		3.00
		FL _y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @M _I max [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	45	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 15.67

Table C-73: Transducer Model L14-5W/60 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.32	0.00	$A_{aprt} \leq 1$	$A_{aprt} > 1$	(a)	0.00	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.82		(a)	(a)	(a)		
	W_0 [mW]		0.02	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]					(c)		
	Z_1 [cm]					(c)		
	Z_{bp} [cm]					(a)		
	z_{sp} [cm]	3.90					(a)	
	$d_{eq}(z_{sp})$ [cm]						(a)	
	f_c [MHz]	6.60	6.60	(a)	(a)	(a)	6.60	
	Dim of A_{aprt}	X [cm]		5.88	(a)	(a)	(a)	5.88
		Y [cm]		0.70	(a)	(a)	(a)	0.70
Other Information	PD [μ sec]	0.45						
	PRF [Hz]	41						
	$P_r @ P_{II_{max}}$ [MPa]	2.00						
	$d_{eq} @ P_{II_{max}}$ [cm]						(a)	
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 27.45$$

Table C-74: Transducer Model L14-5W/60 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.16	(a)	$A_{aprt} \leq 1$	$A_{aprt} > 1$	0.38	0.39	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.41						
	W_0 [mW]		(a)	35.70		35.70	35.70	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]					4.52		
	Z_1 [cm]					3.18		
	Z_{bp} [cm]					3.43		
	z_{sp} [cm]	3.18					3.18	
	$d_{eq}(z_{sp})$ [cm]						3.82	
	f_c [MHz]	6.60	(a)	6.60	6.60	6.60	6.60	
	Dim of A_{aprt}	X [cm]		(a)	5.88	5.88	5.88	5.88
		Y [cm]		(a)	0.70	0.70	0.70	0.70
Other Information	PD [μ sec]	2.20						
	PRF [Hz]	6700						
	$P_r @ P_{II_{max}}$ [MPa]	0.84						
	$d_{eq} @ P_{II_{max}}$ [cm]						2.21	
	Focal Length	FL _X [cm]		(a)	5.00	5.00		6.60
		FL _Y [cm]		(a)	5.00	5.00		6.60
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.03							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 120.91$$



Table C-75: Transducer Model L14-5W/60 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.16	0.00	1.94	0.48	0.03	0.67	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.41						
	W ₀ [mW]		0.00	61.61		61.61	61.61	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				4.52			
	Z ₁ [cm]				3.18			
	z _{bp} [cm]				3.43			
	z _{sp} [cm]	3.18					3.18	
	d _{eq} (z _{sp}) [cm]						5.02	
	f _c [MHz]	6.60	6.60	6.60	6.60	6.60	6.60	
	Dim of A _{aprt}	X [cm]		5.88	5.88	5.88	5.88	5.88
		Y [cm]		0.70	0.70	0.70	0.70	0.70
Other Information	PD [µsec]	2.20						
	PRF [Hz]	6700						
	p _r @P _{II} _{max} [MPa]	0.84						
	d _{eq} @P _{II} _{max} [cm]						2.90	
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
		FL _y [cm]		3.00	3.00	3.00		3.00
I _{PA,3} @M _I _{max} [W/cm ²]	0.03							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 133.63

Table C-76: Transducer Model L14-5W/60 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.16	0.00	1.94	0.48	0.03	0.67	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.41						
	W ₀ [mW]		0.07	61.61		61.61	61.61	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				3.25			
	Z ₁ [cm]				3.18			
	z _{bp} [cm]				3.43			
	z _{sp} [cm]	3.18					3.18	
	d _{eq} (z _{sp}) [cm]						5.02	
	f _c [MHz]	6.60	6.60	6.60	6.60	6.60	6.60	
	Dim of A _{aprt}	X [cm]		5.88	5.88	5.88	5.88	5.88
		Y [cm]		0.70	0.70	0.70	0.70	0.70
Other Information	PD [µsec]	2.20						
	FPS [Hz]	6						
	PRFd [Hz]	3333						
	p _r @P _{II} _{max} [MPa]	0.84						
	d _{eq} @P _{II} _{max} [cm]						3.42	
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
FL _y [cm]			3.00	3.00	3.00		3.00	
I _{PA,3} @M _I _{max} [W/cm ²]	0.02							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	Penetration						

ISPTA.3 [mW/cm²] = 83.64

Table C-77: Transducer Model L40-8/12 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.40	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.29						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.20				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	10.62	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.18						
	PRF [Hz]	251						
	$p_r@PII_{max}$ [MPa]	2.00						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
	$I_{PA,3}@MI_{max}$ [W/cm ²]	67.95						
Operating Control Conditions	Control 1 Depth	30 [mm]						
	Control 2 Focus	15 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 94.02$$

Table C-78: Transducer Model L40-8/12 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.40	0.19	(a)	(a)	(a)	0.26	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.29						
	W_0 [mW]		3.69	(a)		(a)	10.50	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.20				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	10.62	10.62	(a)	(a)	(a)	10.62	
	Dim of A_{aprt}	X [cm]		1.30	(a)	(a)	(a)	1.30
		Y [cm]		0.60	(a)	(a)	(a)	0.60
Other Information	PD [μ sec]	0.18						
	PRF [Hz]	23						
	$p_r@PII_{max}$ [MPa]	2.00						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		1.50	(a)	(a)		1.50
		FL _Y [cm]		1.50	(a)	(a)		1.50
	$I_{PA,3}@MI_{max}$ [W/cm ²]	67.95						
Operating Control Conditions	Control 1 Depth	30 [mm]						
	Control 2 Focus	15 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 144.11$$



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Table C-79: Transducer Model L40-8/12 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.40		(c)	6.56	(c)	5.35	3.26
Assoc. Acoustic Param.	Pr.3 [MPa]	1.29						
	W ₀ [mW]		(c)	129.82		129.82	129.82	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(c)			
	zsp [cm]	1.20				1.20		
	d _{eq} (z _{sp}) [cm]					0.10		
	f _c [MHz]	10.62	(c)	10.62	(c)	10.62	10.62	
	Dim of A _{aprt}	X [cm]		(c)	1.30	(c)	1.30	1.30
		Y [cm]		(c)	0.60	(c)	0.60	0.60
Other Information	PD [µsec]	0.18						
	PRF [Hz]	83						
	p _r @P _{II} max [MPa]	2.00						
	d _{eq} @P _{II} max [cm]					0.05		
	Focal Length	FL _x [cm]		(c)	1.50	(c)		1.50
		FL _y [cm]		(c)	(c)	(c)		1.50
I _{PA,3} @M _I max [W/cm ²]	67.95							
Operating Control Conditions	Control 1 Depth	30	[mm]					
	Control 2 Focus	15	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 32.13

Table C-80: Transducer Model L40-8/12 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.27		(a)	0.17	0.1212	0.42	0.09
Assoc. Acoustic Param.	Pr.3 [MPa]	0.86						
	W ₀ [mW]		(a)	3.59		3.59	3.59	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				2.55			
	Z ₁ [cm]				1.00			
	Z _{bp} [cm]				1.49			
	zsp [cm]	1.00				1.00		
	d _{eq} (z _{sp}) [cm]					0.10		
	f _c [MHz]	10.00	(a)	10.00	10.00	10.00	10.00	
	Dim of A _{aprt}	X [cm]		(a)	1.30	1.30	1.30	1.30
		Y [cm]		(a)	0.60	0.60	0.60	0.60
Other Information	PD [µsec]	1.41						
	PRF [Hz]	5000						
	p _r @P _{II} max [MPa]	1.21						
	d _{eq} @P _{II} max [cm]					0.01		
	Focal Length	FL _x [cm]		(a)	1.50	1.50		1.50
		FL _y [cm]		(a)	1.50	1.50		1.50
I _{PA,3} @M _I max [W/cm ²]	26.40							
Operating Control Conditions	Control 1 Depth	30	[mm]					
	Control 2 Focus	15	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 185.61

Table C-81: Transducer Model L40-8/12 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB		TIC		
			scan	non-scan		non-scan			
Global Maximum Index Value		0.40	0.39	$A_{aprt} \leq 1$	$A_{aprt} > 1$			0.52	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.29							
	W_0 [mW]		7.69	20.90		20.90	20.90		
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				8.67				
	Z_1 [cm]				1.20				
	Z_{bp} [cm]				1.49				
	z_{sp} [cm]	1.20					1.20		
	$d_{eq}(z_{sp})$ [cm]						0.10		
	f_c [MHz]	10.62	10.62	10.62	10.62	10.62	10.62	10.62	
	Dim of A_{aprt}	X [cm]		1.30	1.30	1.30	1.30	1.30	
		Y [cm]		0.60	0.60	0.60	0.60	0.60	0.60
Other Information	PD [μ sec]	0.18							
	PRF [Hz]	39							
	$p_r @ P_{II_{max}}$ [MPa]	2.80							
	$d_{eq} @ P_{II_{max}}$ [cm]						0.03		
	Focal Length	FL_X [cm]		1.50	1.50	1.50		1.50	
		FL_Y [cm]		1.50	1.50	1.50		1.50	
$I_{PA,3} @ MI_{max}$ [W/cm ²]	67.95								
Operating Control Conditions	Control 1 Depth	30 [mm]							
	Control 2 Focus	15 [mm]							
	Control 3 Gate	20 [mm]							
	Control 4 Preset	GEN-General							

$$ISPTA.3 [mW/cm^2] = 200.22$$

Table C-82: Transducer Model L40-8/12 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.40	0.40	$A_{aprt} \leq 1$	$A_{aprt} > 1$			0.54
Assoc. Acoustic Param.	Pr.3 [MPa]	1.29						
	W_0 [mW]		7.93	21.34		21.34	21.34	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				5.89			
	Z_1 [cm]				1.20			
	Z_{bp} [cm]				1.49			
	z_{sp} [cm]	1.20					1.20	
	$d_{eq}(z_{sp})$ [cm]						3.41	
	f_c [MHz]	10.62	10.62	10.62	10.62	10.62	10.62	10.62
	Dim of A_{aprt}	X [cm]		1.30	1.30	1.30	1.30	1.30
		Y [cm]		0.60	0.60	0.60	0.60	0.60
Other Information	PD [μ sec]	0.18						
	FPS [Hz]	5.00						
	PRFd [Hz]	5000						
	$p_r @ P_{II_{max}}$ [MPa]	2.00						
	$d_{eq} @ P_{II_{max}}$ [cm]						1.72	
	Focal Length	FL_X [cm]		1.50	1.50	1.50		1.50
FL_Y [cm]			1.50	1.50	1.50		1.50	
$I_{PA,3} @ MI_{max}$ [W/cm ²]	67.95							
Operating Control Conditions	Control 1 Depth	3 [mm]						
	Control 2 Focus	1.5 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 216.94$$



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Table C-83: Transducer Model HST15-8/20 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Global Maximum Index Value		0.20	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.51						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	z_{bp} [cm]				(a)			
	z_{sp} [cm]	3.32				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.60	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	0.34						
	PRF [Hz]	55						
	$p_r @ P_{II_{max}}$ [MPa]	1.10						
	$d_{eq} @ P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

$ISPTA.3 [mW/cm^2] = 5.5$

Table C-84: Transducer Model HST15-8/20 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
				$A_{aprt} \leq 1$	$A_{aprt} > 1$			
Global Maximum Index Value		0.19	0.00	(a)	(a)	(a)	1.10	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.48						
	W_0 [mW]		0.03	(a)		(a)	64.75	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	z_{bp} [cm]				(a)			
	z_{sp} [cm]	3.32				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.60	6.60	(a)	(a)	(a)	6.60	
	Dim of A_{aprt}	X [cm]		2.85	(a)	(a)	(a)	2.85
		Y [cm]		0.60	(a)	(a)	(a)	0.60
Other Information	PD [µsec]	0.87						
	PRF [Hz]	10000						
	$p_r @ P_{II_{max}}$ [MPa]	1.03						
	$d_{eq} @ P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		4.20	(a)	(a)		4.20
		FL _Y [cm]		4.20	(a)	(a)		4.20
$I_{PA,3} @ MI_{max}$ [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	42	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

$ISPTA.3 [mW/cm^2] = 28.22$

Table C-85: Transducer Model HST15-8/20 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.42	0.00	(a)	(a)	(a)	0.32	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.51						
	W_0 [mW]		0.01	(a)		(a)	19.07	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	3.32				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	6.60	6.60	(a)	(a)	(a)	6.60	
	Dim of A_{aprt}	X [cm]		2.85	(a)	(a)	(a)	2.85
		Y [cm]		0.60	(a)	(a)	(a)	0.60
Other Information	PD [μ sec]	0.34						
	PRF [Hz]	63						
	$p_r@P_{II_{max}}$ [MPa]	1.10						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		4.00	(a)	(a)		4.00
		FL _Y [cm]		4.00	(a)	(a)		4.00
$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	55 [mm]						
	Control 2 Focus	40 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 6.3$$

Table C-86: Transducer Model HST15-8/20 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.19	(a)	0.44	0.22	0.86	0.16	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.61						
	W_0 [mW]		(a)	9.20		9.20	9.20	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				3.45			
	Z_1 [cm]				1.42			
	Z_{bp} [cm]				2.21			
	z_{sp} [cm]	1.42				1.42		
	$d_{eq}(z_{sp})$ [cm]					2.18		
	f_c [MHz]	9.98	(a)	9.98	9.98	9.98	9.98	
	Dim of A_{aprt}	X [cm]		(a)	2.85	2.85	2.85	2.85
		Y [cm]		(a)	0.60	0.60	0.60	0.60
Other Information	PD [μ sec]	1.45						
	PRF [Hz]	12500						
	$p_r@P_{II_{max}}$ [MPa]	0.99						
	$d_{eq}@P_{II_{max}}$ [cm]					0.90		
	Focal Length	FL _X [cm]		(a)	4.00	4.00		9.98
		FL _Y [cm]		(a)	4.00	4.00		9.98
$I_{PA,3}@M_{I_{max}}$ [W/cm ²]	0.28							
Operating Control Conditions	Control 1 Depth	55 [mm]						
	Control 2 Focus	40 [mm]						
	Control 3 Gate	20 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 276.03$$



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Table C-87: Transducer Model HST15-8/20 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.19	0.00	0.56	0.22	0.01	0.20	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.61						
	W ₀ [mW]		0.00	11.82		11.82	11.82	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				4.44			
	Z ₁ [cm]				1.42			
	z _{bp} [cm]				2.21			
	z _{sp} [cm]	1.42				1.42		
	d _{eq} (z _{sp}) [cm]					2.48		
	f _c [MHz]	9.98	9.98	9.98	9.98	9.98	9.98	
	Dim of A _{aprt}	X [cm]		2.85	2.85	2.85	2.85	2.85
		Y [cm]		0.60	0.60	0.60	0.60	0.60
Other Information	PD [µsec]	1.45						
	PRF [Hz]	12500						
	p _r @P _{II} _{max} [MPa]	0.99						
	d _{eq} @P _{II} _{max} [cm]					1.02		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
		FL _y [cm]		3.00	3.00	3.00		3.00
I _{PA,3} @MI _{max} [W/cm ²]	0.28							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	20	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 277.21

Table C-88: Transducer Model HST15-8/20 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.08	0.00	0.62	0.21	0.01	0.33	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.21						
	W ₀ [mW]		0.08	19.75		19.75	19.75	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				1.18			
	Z ₁ [cm]				3.32			
	z _{bp} [cm]				2.21			
	z _{sp} [cm]	3.32				3.32		
	d _{eq} (z _{sp}) [cm]					2.80		
	f _c [MHz]	6.60	6.60	6.60	6.60	6.60	6.60	
	Dim of A _{aprt}	X [cm]		2.85	2.85	2.85	2.85	2.85
		Y [cm]		0.60	0.60	0.60	0.60	0.60
Other Information	PD [µsec]	1.39						
	FPS [Hz]	6						
	PRFd [Hz]	4000						
	p _r @P _{II} _{max} [MPa]	0.44						
	d _{eq} @P _{II} _{max} [cm]					3.16		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
FL _y [cm]			3.00	3.00	3.00		3.00	
I _{PA,3} @MI _{max} [W/cm ²]	0.01							
Operating Control Conditions	Control 1 Depth	55	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	24.5	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 21.51

Table C-89: Transducer Model 4DC7-3/40 (Operating Mode: B)

Index Label		MI	TIS		TIB	TIC	
			scan	non-scan			non-scan
Global Maximum Index Value		0.49	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.05					
	W_0 [mW]		(a)	(a)		(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)		
	Z_1 [cm]				(a)		
	Z_{bp} [cm]				(a)		
	z_{sp} [cm]	3.97				(a)	
	$d_{eq}(z_{sp})$ [cm]					(a)	
	f_c [MHz]	4.50	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.45					
	PRF [Hz]	37					
	$p_r@PII_{max}$ [MPa]	1.94					
	$d_{eq}@PII_{max}$ [cm]					(a)	
	Focal Length	FL _X [cm]		(a)	(a)	(a)	(a)
		FL _Y [cm]		(a)	(a)	(a)	(a)
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00						
Operating Control Conditions	Control 1 Depth	90 [mm]					
	Control 2 Focus	40 [mm]					
	Control 3 Gate	- [mm]					
	Control 4 Preset	GEN-General					

$$ISPTA.3 [mW/cm^2] = 9.47$$

Table C-90: Transducer Model 4DC7-3/40 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.39	0.00	(a)	(a)	0.01		
Assoc. Acoustic Param.	Pr.3 [MPa]	0.83						
	W_0 [mW]		0.01	(a)		0.85		
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	5.12				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	4.50	4.50	(a)	(a)	(a)	4.50	
	Dim of A_{aprt}	X [cm]		6.40	(a)	(a)	(a)	6.40
		Y [cm]		1.20	(a)	(a)	(a)	1.20
Other Information	PD [μ sec]	1.08						
	PRF [Hz]	5000						
	$p_r@PII_{max}$ [MPa]	1.84						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)	3.00	
		FL _Y [cm]		3.00	(a)	(a)	3.00	
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	90 [mm]						
	Control 2 Focus	40 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 1.76$$



Table C-91: Transducer Model 4DC7-3/40 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.49		0.00	(a)	(a)	(a)	0.00
Assoc. Acoustic Param.	Pr.3 [MPa]	1.05						
	W ₀ [mW]		0.03	(a)		(a)	(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	3.97				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	4.50	4.50	(a)	(a)	(a)	4.50	
	Dim of A _{aprt}	X [cm]		6.40	(a)	(a)	(a)	6.40
		Y [cm]		1.20	(a)	(a)	(a)	1.20
Other Information	PD [µsec]	0.45						
	PRF [Hz]	41						
	p _r @P _{II} _{max} [MPa]	1.94						
	d _{eq} @P _{II} _{max} [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @M _I _{max} [W/cm ²]	0.00							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 10.5

Table C-92: Transducer Model 4DC7-3/40 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.32		(a)	4.98	2.73	4.03	1.86
Assoc. Acoustic Param.	Pr.3 [MPa]	0.69						
	W ₀ [mW]		(a)	232.23		232.23	232.23	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				6.22			
	Z ₁ [cm]				3.27			
	Z _{bp} [cm]				4.69			
	zsp [cm]	3.27				3.27		
	d _{eq} (z _{sp}) [cm]					10.87		
	f _c [MHz]	4.50	(a)	4.50	4.50	4.50	4.50	
	Dim of A _{aprt}	X [cm]		(a)	6.40	6.40	6.40	6.40
		Y [cm]		(a)	1.20	1.20	1.20	1.20
Other Information	PD [µsec]	4.08						
	PRF [Hz]	6700						
	p _r @P _{II} _{max} [MPa]	1.15						
	d _{eq} @P _{II} _{max} [cm]					5.35		
	Focal Length	FL _X [cm]		(a)	4.00	4.00		4.50
		FL _Y [cm]		(a)	4.00	4.00		4.50
I _{PA,3} @M _I _{max} [W/cm ²]	0.10							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 415.94

Table C-93: Transducer Model 4DC7-3/40 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.32	0.005	5.74	2.73	0.06	2.14	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.69						
	W_0 [mW]		0.22	268.04		268.04	268.04	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				6.22			
	Z_1 [cm]				3.27			
	Z_{bp} [cm]				4.69			
	z_{sp} [cm]	3.27				3.27		
	$d_{eq}(z_{sp})$ [cm]					11.68		
	f_c [MHz]	4.50	4.50	4.50	4.50	4.50	4.50	
	Dim of A_{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [μ sec]	4.08						
	PRF [Hz]	6700						
	$p_r@P_{II_{max}}$ [MPa]	1.15						
	$d_{eq}@P_{II_{max}}$ [cm]					5.74		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
	$I_{PA,3}@MI_{max}$ [W/cm ²]	0.11						
Operating Control Conditions	Control 1 Depth	90 [mm]						
	Control 2 Focus	40 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 420.8$$

Table C-94: Transducer Model 4DC7-3/40 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		0.32	0.005	5.74	2.73	0.06	2.14	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.69						
	W_0 [mW]		0.23			268.04	238.04	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				26.90			
	Z_1 [cm]				3.27			
	Z_{bp} [cm]				4.69			
	z_{sp} [cm]	3.27				3.27		
	$d_{eq}(z_{sp})$ [cm]					11.68		
	f_c [MHz]	4.50	4.50	4.50	4.50	4.50	4.50	
	Dim of A_{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [μ sec]	4.08						
	FPS [Hz]	7						
	PRFd [Hz]	5000						
	$p_r@P_{II_{max}}$ [MPa]	1.15						
	$d_{eq}@P_{II_{max}}$ [cm]					2.76		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	0.13							
Operating Control Conditions	Control 1 Depth	90 [mm]						
	Control 2 Focus	40 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 500.52$$



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Table C-95: Transducer Model m4DC7-3/40 (Operating Mode: B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.32	0.005	5.74	2.73	0.06	2.14	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.69						
	W ₀ [mW]		0.23			268.04	238.04	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				26.90			
	Z ₁ [cm]				3.27			
	z _{bp} [cm]				4.69			
	zsp [cm]	3.27				3.27		
	d _{eq} (z _{sp}) [cm]					11.68		
	f _c [MHz]	4.50	4.50	4.50	4.50	4.50	4.50	
	Dim of A _{aprt}	X [cm]		6.40	6.40	6.40	6.40	6.40
		Y [cm]		1.20	1.20	1.20	1.20	1.20
Other Information	PD [µsec]	4.08						
	FPS [Hz]	7						
	PRFd [Hz]	5000						
	p _r @P _{II} _{max} [MPa]	1.15						
	d _{eq} @P _{II} _{max} [cm]					2.76		
	Focal Length	FL _X [cm]		3.00	3.00	3.00		3.00
		FL _Y [cm]		3.00	3.00	3.00		3.00
I _{PA,3} @M _{max} [W/cm ²]	0.13							
Operating Control Conditions	Control 1 Depth	90	[mm]					
	Control 2 Focus	40	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 500.52

Table C-96: Transducer Model m4DC7-3/40 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS		TIB	TIC	
			scan	non-scan			
Global Maximum Index Value		0.85	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48					
	W ₀ [mW]		(a)	(a)		(a)	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(a)		
	Z ₁ [cm]				(a)		
	z _{bp} [cm]				(a)		
	zsp [cm]	3.58				(a)	
	d _{eq} (z _{sp}) [cm]					(a)	
	f _c [MHz]	3.01	(a)	(a)	(a)	(a)	(a)
	Dim of A _{aprt}	X [cm]		(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)
Other Information	PD [µsec]	0.65					
	PRF [Hz]	63					
	p _r @P _{II} _{max} [MPa]	2.14					
	d _{eq} @P _{II} _{max} [cm]					(a)	
	Focal Length	FL _X [cm]		(a)	(a)	(a)	(a)
		FL _Y [cm]		(a)	(a)	(a)	(a)
I _{PA,3} @M _{max} [W/cm ²]	136.26						
Operating Control Conditions	Control 1 Depth	70	[mm]				
	Control 2 Focus	60	[mm]				
	Control 3 Gate	0	[mm]				
	Control 4 Preset	GEN-General-PEN					

ISPTA.3 [mW/cm²] = 36.20

Table C-97: Transducer Model m4DC7-3/40 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.89	0.33	(a)	(a)	(a)	0.30	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.40						
	W_0 [mW]		28.14	(a)		(a)	28.14	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	3.58				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	2.45	2.45	(a)	(a)	(a)	2.45	
	Dim of A_{aprt}	X [cm]		4.00	(a)	(a)	(a)	4.00
		Y [cm]		1.10	(a)	(a)	(a)	1.10
Other Information	PD [μ sec]	1.47						
	PRF [Hz]	600						
	$p_r@P_{II_{max}}$ [MPa]	1.89						
	$d_{eq}@P_{II_{max}}$ [cm]					(a)		
	Focal Length	FL _X [cm]		8.00	(a)	(a)		8.00
		FL _Y [cm]		8.00	(a)	(a)		8.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	131.91							
Operating Control Conditions	Control 1 Depth	120	[mm]					
	Control 2 Focus	80	[mm]					
	Control 3 Gate	0	[mm]					
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 83.65$$

Table C-98: Transducer Model m4DC7-3/40 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan			non-scan	
Global Maximum Index Value		0.85	2.78	(c)	(c)	13.13	2.05	
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48						
	W_0 [mW]		194.17	(c)		194.17	194.17	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	3.58				3.58		
	$d_{eq}(z_{sp})$ [cm]					0.13		
	f_c [MHz]	3.01	3.01	(c)	(c)	3.01	3.01	
	Dim of A_{aprt}	X [cm]		4.00	(c)	(c)	4.00	4.00
		Y [cm]		1.10	(c)	(c)	1.10	1.10
Other Information	PD [μ sec]	0.65						
	PRF [Hz]	55						
	$p_r@P_{II_{max}}$ [MPa]	2.14						
	$d_{eq}@P_{II_{max}}$ [cm]					0.09		
	Focal Length	FL _X [cm]		6.00	(c)	(c)		6.00
		FL _Y [cm]		6.00	(c)	(c)		6.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	136.26							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	60	[mm]					
	Control 3 Gate	0	[mm]					
	Control 4 Preset	GEN-General-PEN						

$$ISPTA.3 [mW/cm^2] = 36.46$$



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Table C-99: Transducer Model m4DC7-3/40 (Operating Mode: PW+B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		.85		1.48	1.23	1.0575	13.13	1.09
Assoc. Acoustic Param.	Pr.3 [MPa]	1.48						
	W ₀ [mW]		103.53	103.53		103.53	103.53	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				49.22			
	Z ₁ [cm]				3.85			
	Z _{bp} [cm]				3.55			
	zsp [cm]	3.58				3.58		
	d _{eq} (z _{sp}) [cm]					0.10		
	f _c [MHz]	3.01	3.01	2.50	2.50	2.50	3.01	
	Dim of A _{aprt}	X [cm]		4.00	4.00	4.00	4.00	4.00
		Y [cm]		1.10	1.10	1.10	1.10	1.10
Other Information	PD [µsec]	0.65						
	PRF [Hz]	16						
	p _r @P _{II} _{max} [MPa]	2.14						
	d _{eq} @P _{II} _{max} [cm]					0.08		
	Focal Length	FL _x [cm]		7.00	7.00	7.00		7.00
		FL _y [cm]		7.00	7.00	7.00		7.00
I _{PA,3} @M _I _{max} [W/cm ²]	136.26							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	70	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 662.17

Table C-100: Transducer Model m4DC7-3/4 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.89		1.23	1.25	1.07	13.15	1.11
Assoc. Acoustic Param.	Pr.3 [MPa]	1.4						
	W ₀ [mW]		105.35	105.35		105.35	105.35	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				4.65			
	Z ₁ [cm]				3.58			
	Z _{bp} [cm]				3.55			
	zsp [cm]	3.58				3.58		
	d _{eq} (z _{sp}) [cm]					8.09		
	f _c [MHz]	2.45	2.45	2.50	2.50	2.50	2.45	
	Dim of A _{aprt}	X [cm]		4.00	4.00	4.00	4.00	4.00
		Y [cm]		1.10	1.10	1.10	1.10	1.10
Other Information	PD [µsec]	1.47						
	FPS [Hz]	11.00						
	PRFd [Hz]	2700						
	p _r @P _{II} _{max} [MPa]	1.89						
	d _{eq} @P _{II} _{max} [cm]					4.60		
	Focal Length	FL _x [cm]		7.00	7.00	7.00		7.00
FL _y [cm]			7.00	7.00	7.00		7.00	
I _{PA,3} @M _I _{max} [W/cm ²]	131.91							
Operating Control Conditions	Control 1 Depth	80	[mm]					
	Control 2 Focus	70	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General-PEN						

ISPTA.3 [mW/cm²] = 257.85

Table C-101: Transducer Model 4DEC9-5/10 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		1.35	(a)	(a)	(a)	(a)	(a)	
Assoc. Acoustic Param.	Pr.3 [MPa]	3.02						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.00				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	5.00	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [μ sec]	0.84						
	PRF [Hz]	59						
	$p_r@PII_{max}$ [MPa]	3.59						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3}@MI_{max}$ [W/cm ²]	215.09							
Operating Control Conditions	Control 1 Depth	50 [mm]						
	Control 2 Focus	45 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 286.96$$

Table C-102: Transducer Model 4DEC9-5/10 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		1.35	4.19	(a)	(a)	(a)	4.28	
Assoc. Acoustic Param.	Pr.3 [MPa]	3.02						
	W_0 [mW]		176.01	(a)		(a)	136.49	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	1.00				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	5.00	5.00	(a)	(a)	(a)	5.00	
	Dim of A_{aprt}	X [cm]		1.00	(a)	(a)	(a)	1.00
		Y [cm]		0.50	(a)	(a)	(a)	0.50
Other Information	PD [μ sec]	0.84						
	PRF [Hz]	19						
	$p_r@PII_{max}$ [MPa]	3.59						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	215.09							
Operating Control Conditions	Control 1 Depth	50 [mm]						
	Control 2 Focus	20 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 229.42$$



Table C-103: Transducer Model 4DEC9-5/10 (Operating Mode: M)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		1.35	4.84	(a)	(a)	0.45	8.05	
Assoc. Acoustic Param.	Pr.3 [MPa]	3.02						
	W ₀ [mW]		203.36	(a)		(a)	257.07	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				(c)			
	Z ₁ [cm]				(c)			
	Z _{bp} [cm]				(a)			
	zsp [cm]	1.00				(a)		
	d _{eq} (z _{sp}) [cm]					(a)		
	f _c [MHz]	5.00	5.00	(a)	(a)	(a)	5.00	
	Dim of A _{aprt}	X [cm]		1.00	(a)	(a)	(a)	1.00
		Y [cm]		0.50	(a)	(a)	(a)	0.50
Other Information	PD [µsec]	0.84						
	PRF [Hz]	42						
	p _r @P _{II} max [MPa]	3.59						
	d _{eq} @P _{II} max [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
I _{PA,3} @M _I max [W/cm ²]	215.09							
Operating Control Conditions	Control 1 Depth	50	[mm]					
	Control 2 Focus	45	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 204.28

Table C-104: Transducer Model 4DEC9-5/10 (Operating Mode: PW Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.42	(a)	1.35	0.57	1.39	1.78	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.93						
	W ₀ [mW]		(a)	56.71		56.71	56.71	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				16.41			
	Z ₁ [cm]				1.08			
	Z _{bp} [cm]				1.20			
	zsp [cm]	1.08				1.08		
	d _{eq} (z _{sp}) [cm]					6.31		
	f _c [MHz]	5.00	(a)	5.00	5.00	5.00	5.00	
	Dim of A _{aprt}	X [cm]		(a)	1.00	1.00	1.00	1.00
		Y [cm]		(a)	0.50	0.50	0.50	0.50
Other Information	PD [µsec]	2.46						
	PRF [Hz]	6700						
	p _r @P _{II} max [MPa]	1.12						
	d _{eq} @P _{II} max [cm]					1.91		
	Focal Length	FL _X [cm]		(a)	5.50	5.50		5.00
		FL _Y [cm]		(a)	5.50	5.50		5.00
I _{PA,3} @M _I max [W/cm ²]	0.11							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	55	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 438.9

Table C-105: Transducer Model 4DEC9-5/10 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		1.35	4.67	5.50	9.61	0.18	7.24	
Assoc. Acoustic Param.	Pr.3 [MPa]	3.02						
	W_0 [mW]		196.30	231.15		231.15	231.15	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				16.87			
	Z_1 [cm]				1.00			
	Z_{bp} [cm]				1.20			
	z_{sp} [cm]	1.00				1.00		
	$d_{eq}(z_{sp})$ [cm]					12.83		
	f_c [MHz]	5.00	5.00	5.00	5.00	5.00	5.00	
	Dim of A_{aprt}	X [cm]		1.00	1.00	1.00	1.00	1.00
		Y [cm]		0.50	0.50	0.50	0.50	0.50
Other Information	PD [μ sec]	0.84						
	PRF [Hz]	19						
	$p_r@P_{II_{max}}$ [MPa]	3.59						
	$d_{eq}@P_{II_{max}}$ [cm]					3.83		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
	$I_{PA,3}@MI_{max}$ [W/cm ²]	215.09						
Operating Control Conditions	Control 1 Depth	70 [mm]						
	Control 2 Focus	55 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 531.31$$

Table C-106: Transducer Model 4DEC9-5/10 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB		TIC	
			scan	non-scan		non-scan		
Global Maximum Index Value		1.35	4.68	5.54	8.63	10.16	7.29	
Assoc. Acoustic Param.	Pr.3 [MPa]	3.02						
	W_0 [mW]		196.75	232.72		232.72	232.72	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				12.65			
	Z_1 [cm]				1.00			
	Z_{bp} [cm]				1.20			
	z_{sp} [cm]	1.00				1.00		
	$d_{eq}(z_{sp})$ [cm]					12.87		
	f_c [MHz]	5.00	5.00	5.00	5.00	5.00	5.00	
	Dim of A_{aprt}	X [cm]		1.00	1.00	1.00	1.00	1.00
		Y [cm]		0.50	0.50	0.50	0.50	0.50
Other Information	PD [μ sec]	0.84						
	FPS [Hz]	7						
	PRFd [Hz]	4000						
	$p_r@P_{II_{max}}$ [MPa]	3.59						
	$d_{eq}@P_{II_{max}}$ [cm]					4.44		
	Focal Length	FL_X [cm]		3.00	3.00	3.00		3.00
		FL_Y [cm]		3.00	3.00	3.00		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	215.09							
Operating Control Conditions	Control 1 Depth	70 [mm]						
	Control 2 Focus	55 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-General						

$$ISPTA.3 [mW/cm^2] = 384.61$$



Table C-107: Transducer Model 4DL14-5/38 (Operating Mode: B)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.35		(a)	(a)	(a)	(a)	(a)
Assoc. Acoustic Param.	Pr.3 [MPa]	0.63						
	W_0 [mW]		(a)	(a)		(a)	(a)	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(a)			
	Z_1 [cm]				(a)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.33				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	3.30	(a)	(a)	(a)	(a)	(a)	
	Dim of A_{aprt}	X [cm]		(a)	(a)	(a)	(a)	(a)
		Y [cm]		(a)	(a)	(a)	(a)	(a)
Other Information	PD [µsec]	1.50						
	PRF [Hz]	68						
	$p_r@PII_{max}$ [MPa]	1.04						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		(a)	(a)	(a)		(a)
		FL _Y [cm]		(a)	(a)	(a)		(a)
$I_{PA,3}@MI_{max}$ [W/cm ²]	12.98							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 31.77523$

Table C-108: Transducer Model 4DL14-5/38 (Operating Mode: Color and Power Doppler)

Index Label		MI	TIS			TIB	TIC	
			scan	non-scan				
Global Maximum Index Value		0.35		0.02	(a)	(a)	(a)	0.02
Assoc. Acoustic Param.	Pr.3 [MPa]	0.63						
	W_0 [mW]		1.57	(a)		(a)	1.94	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(a)			
	z_{sp} [cm]	4.33				(a)		
	$d_{eq}(z_{sp})$ [cm]					(a)		
	f_c [MHz]	3.30	3.30	(a)	(a)	(a)	3.30	
	Dim of A_{aprt}	X [cm]		6.00	(a)	(a)	(a)	6.00
		Y [cm]		0.80	(a)	(a)	(a)	0.80
Other Information	PD [µsec]	1.50						
	PRF [Hz]	6						
	$p_r@PII_{max}$ [MPa]	1.04						
	$d_{eq}@PII_{max}$ [cm]					(a)		
	Focal Length	FL _X [cm]		3.00	(a)	(a)		3.00
		FL _Y [cm]		3.00	(a)	(a)		3.00
$I_{PA,3}@MI_{max}$ [W/cm ²]	12.98							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	-	[mm]					
	Control 4 Preset	GEN-GEN						

$ISPTA.3 [mW/cm^2] = 35.76714$

Table C-109: Transducer Model 4DL14-5/38 (Operating Mode: M)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.35	0.49	$A_{aprt} \leq 1$ (c)	$A_{aprt} > 1$ (c)	2.85	0.01	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.63						
	W_0 [mW]		31.08	(c)		38.02	38.02	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				(c)			
	Z_1 [cm]				(c)			
	Z_{bp} [cm]				(c)			
	z_{sp} [cm]	4.33				4.33		
	$d_{eq}(z_{sp})$ [cm]					3.52		
	f_c [MHz]	3.30	3.30	(c)	(c)	3.30	3.30	
	Dim of A_{aprt}	X [cm]		6.00	(c)	(c)	6.00	6.00
		Y [cm]		0.80	(c)	(c)	0.80	0.80
Other Information	PD [μ sec]	1.50						
	PRF [Hz]	55						
	$P_r @ P_{II_{max}}$ [MPa]	1.04						
	$d_{eq} @ P_{II_{max}}$ [cm]					2.15		
	Focal Length	FL _X [cm]		3.00	(c)	(c)		3.00
		FL _Y [cm]		3.00	(c)	(c)		3.00
$I_{PA,3} @ MI_{max}$ [W/cm ²]	12.98							
Operating Control Conditions	Control 1 Depth	70 [mm]						
	Control 2 Focus	50 [mm]						
	Control 3 Gate	- [mm]						
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 26.77141$$

Table C-110: Transducer Model 4DL14-5/38 (Operating Mode: PW Doppler)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.13	(a)	$A_{aprt} \leq 1$ 0.23	$A_{aprt} > 1$ 0.054	2.54	0.15	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.23						
	W_0 [mW]		(a)	14.55		14.55	14.55	
	min of $[W_3(z_1) : I_{TA,3}(z_1)]$ [mW]				0.57			
	Z_1 [cm]				4.50			
	Z_{bp} [cm]				3.71			
	z_{sp} [cm]	4.50				4.50		
	$d_{eq}(z_{sp})$ [cm]					2.71		
	f_c [MHz]	3.30	(a)	3.30	3.30	3.30	3.30	
	Dim of A_{aprt}	X [cm]		(a)	6.00	6.00	6.00	6.00
		Y [cm]		(a)	0.80	0.80	0.80	0.80
Other Information	PD [μ sec]	4.15						
	PRF [Hz]	5000						
	$P_r @ P_{II_{max}}$ [MPa]	0.39						
	$d_{eq} @ P_{II_{max}}$ [cm]					4.43		
	Focal Length	FL _X [cm]		(a)	5.00	5.00		3.30
		FL _Y [cm]		(a)	5.00	5.00		3.30
$I_{PA,3} @ MI_{max}$ [W/cm ²]	1.36							
Operating Control Conditions	Control 1 Depth	70 [mm]						
	Control 2 Focus	50 [mm]						
	Control 3 Gate	10 [mm]						
	Control 4 Preset	GEN-GEN						

$$ISPTA.3 [mW/cm^2] = 28.18728$$



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Table C-111: Transducer Model 4DL14-5/38 (Operating Mode: PW+B)

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.35	0.25	0.34	0.1519	2.85	0.22	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.63						
	W ₀ [mW]		16.04	21.66		21.66	21.66	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				0.59			
	Z ₁ [cm]				4.33			
	Z _{bp} [cm]				3.71			
	zsp [cm]	4.33				4.33		
	d _{eq} (z _{sp}) [cm]					3.34		
	f _c [MHz]	3.30	3.30	3.30	3.30	3.30	3.30	
	Dim of A _{aprt}	X [cm]		6.00	6.00	6.00	6.00	6.00
		Y [cm]		0.80	0.80	0.80	0.80	0.80
Other Information	PD [µsec]	1.50						
	PRF [Hz]	23						
	p _r @P _{II} _{max} [MPa]	1.04						
	d _{eq} @P _{II} _{max} [cm]					5.35		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
		FL _y [cm]		3.00	3.00	3.00		3.00
I _{PA,3} @M _I _{max} [W/cm ²]	1.36							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-GEN						

ISPTA.3 [mW/cm²] = 38.93478

Table C-112: Transducer Model 4DL14-5/38 (Operating Mode: Triplex (B/Color/PW))

Index Label		MI	TIS		TIB	TIC		
			scan	non-scan				
Global Maximum Index Value		0.35	0.0003	0.34	0.152	2.86	0.22	
Assoc. Acoustic Param.	Pr.3 [MPa]	0.63						
	W ₀ [mW]		0.02	21.75		21.75	21.75	
	min of [W ₃ (z ₁) : I _{TA,3} (z ₁)] [mW]				5.49			
	Z ₁ [cm]				4.33			
	Z _{bp} [cm]				3.71			
	zsp [cm]	4.33				4.33		
	d _{eq} (z _{sp}) [cm]					3.35		
	f _c [MHz]	3.30	3.30	3.30	3.30	3.30	3.30	
	Dim of A _{aprt}	X [cm]		6.00	6.00	6.00	6.00	6.00
		Y [cm]		0.80	0.80	0.80	0.80	0.80
Other Information	PD [µsec]	1.50						
	FPS [Hz]	7						
	PRFd [Hz]	5000						
	p _r @P _{II} _{max} [MPa]	1.04						
	d _{eq} @P _{II} _{max} [cm]					1.75		
	Focal Length	FL _x [cm]		3.00	3.00	3.00		3.00
FL _y [cm]			3.00	3.00	3.00		3.00	
I _{PA,3} @M _I _{max} [W/cm ²]	12.98							
Operating Control Conditions	Control 1 Depth	70	[mm]					
	Control 2 Focus	50	[mm]					
	Control 3 Gate	10	[mm]					
	Control 4 Preset	GEN-General						

ISPTA.3 [mW/cm²] = 162.35

C.4 ULTRASOUND INDICATIONS FOR USE TABLES

The SonixTablet Ultrasound Imaging System is intended for the following applications: Abdominal, Cardiac, Intraoperative Neurological, Fetal, Pediatric, Small Parts, Neonatal/Adult Cephalic, OB/GYN, Transrectal, Transvaginal, Peripheral Vascular, Musculoskeletal conventional, Musculoskeletal superficial, Pelvic, Nerve block, Vascular Access, Transcranial.

The system also provides the ability to measure anatomical structures (fetal, abdominal, pediatric, small organ, cardiac, transrectal, transvaginal, peripheral vessel, musculo-skeletal) and provides calculation packages that provide information to the clinician that may be used adjunctively with other medical data obtained by a physician for clinical diagnosis purposes.



ULTRASONIX

**TABLE C-113: SONIXTABLET ULTRASOUND SCANNER
DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORMS**

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							Other [Notes]
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	
Ophthalmic								
Fetal	♦	♦	♦		♦	♦	♦	♦ [3-8,11]
Abdominal	♦	♦	♦	♦	♦	♦	♦	♦ [3-8,11]
Intraoperative ¹								
Intraoperative Neurological	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Pediatric	♦	♦	♦	♦	♦	♦	♦	♦ [3-8,11]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-8,11]
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8,11]
Adult Cephalic	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8,11]
Cardiac	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8,11]
Transesophageal	♦	♦	♦	♦	♦	♦	♦	
Transrectal	♦	♦	♦	♦	♦	♦	♦	♦ [3-8,11]
Transvaginal	♦	♦	♦		♦	♦	♦	♦ [3-8,11]
Transurethral								
Transcranial	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10,11]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-8,11]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-8,11]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10,11]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-6,8-9,11]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-114: SA4-2/24 Phased Array Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Small Organ ²								
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Adult Cephalic	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Cardiac	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



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DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-115: PA7-4/12 Phased Array Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Small Organ ²								
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Adult Cephalic	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Cardiac	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-116: mTEE8-3/5 Transesophageal Phased Array Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological								
Pediatric								
Small Organ ²								
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal	♦	♦	♦	♦	♦	♦	♦	
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



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DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-117: MC9-4/12 Microconvex Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Adult Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-6,8-9]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-118: EC9-5/10 Microconvex Endocavity Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological								
Pediatric								
Small Organ ²								
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal	◆	◆	◆		◆	◆	◆	◆ [3-6,,8,11]
Transvaginal	◆	◆	◆		◆	◆	◆	◆ [3-6,,8,11]
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

◆ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-119: C5-2/60 Convex Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Abdominal	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Small Organ ²	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Neonatal Cephalic								
Adult Cephalic								
Cardiac	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Laparoscopic								
MSK Conventional	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
MSK Superficial	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Vascular Access								
Nerve Block								
Other								

◆ = Cleared for use

Notes:

13. Abdominal organs and vascular
14. Breast, Thyroid, Testicle
15. Elastography
16. Panoramic Imaging
17. Compound Imaging
18. Freehand 3D Imaging
19. Live 3D/4D Imaging
20. Imaging for guidance of biopsy
21. Imaging for guidance of nerve block injections
22. Imaging for guidance of central or peripheral lines
23. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
24. BB/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-120: C7-3/50 Convex Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Abdominal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Neonatal Cephalic								
Adult Cephalic								
Cardiac	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

25. Abdominal organs and vascular
26. Breast, Thyroid, Testicle
27. Elastography
28. Panoramic Imaging
29. Compound Imaging
30. Freehand 3D Imaging
31. Live 3D/4D Imaging
32. Imaging for guidance of biopsy
33. Imaging for guidance of nerve block injections
34. Imaging for guidance of central or peripheral lines
35. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
36. BB/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-121: BPC8-4/10 Microconvex Endocavity Biplane Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological								
Pediatric								
Small Organ ²								
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-122: BPL9-5/55 Linear Endocavity Biplane Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological								
Pediatric								
Small Organ ²								
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal	♦	♦	♦	♦	♦	♦	♦	♦ [3-6,8]
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-123: L9-4/38 Linear Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Abdominal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Adult Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-6,8,9]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-124: L14-5/38 Linear Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Abdominal	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Small Organ ²	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Neonatal Cephalic	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Adult Cephalic	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Laparoscopic								
MSK Conventional	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
MSK Superficial	◆	◆	◆		◆	◆	◆	◆ [3-6,8,11]
Vascular Access	◆	◆	◆		◆	◆	◆	◆ [3-6,8,10,11]
Nerve Block	◆	◆	◆		◆	◆	◆	◆ [3-6,8,9,11]
Other								

◆ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-125: L14-5W/60 Wide Linear Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Abdominal	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Adult Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-6,8,9]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-126: L40-8/12 Linear Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-6,8,9]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-127: HST15-8/20 Linear Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Neonatal Cephalic	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Peripheral Vascular	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-6,8]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-6,8,10]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-6,8,9]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM
Table C-128: 4DC7-3/40 Motorized Convex Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	◆	◆	◆		◆	◆	◆	◆ [3-8]
Abdominal	◆	◆	◆		◆	◆	◆	◆ [3-8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	◆	◆	◆		◆	◆	◆	◆ [3-8]
Small Organ ²	◆	◆	◆		◆	◆	◆	◆ [3-8]
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional	◆	◆	◆		◆	◆	◆	◆ [3-8]
MSK Superficial	◆	◆	◆		◆	◆	◆	◆ [3-8]
Vascular Access								
Nerve Block								
Other								

◆ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-129: m4DC7-3/40 Motorized Convex Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal	♦	♦	♦		♦	♦	♦	♦ [3-8]
Abdominal	♦	♦	♦		♦	♦	♦	♦ [3-8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-8]
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-8]
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-130: 4DEC9-5/10 Motorized Microconvex Endocavity Radius Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal								
Intraoperative ¹								
Intraoperative Neurological								
Pediatric								
Small Organ ²								
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal	♦	♦	♦		♦	♦	♦	♦ [3-8]
Transvaginal	♦	♦	♦		♦	♦	♦	♦ [3-8]
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional								
MSK Superficial								
Vascular Access								
Nerve Block								
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.



ULTRASONIX

DIAGNOSTIC ULTRASOUND INDICATIONS FOR USE FORM

Table C-131: 4DL14-5/38 Linear Transducer

Intended use: Diagnostic ultrasound imaging or fluid flow analysis of the human body as follows:

Clinical Application	Mode of Operation							
	B	M	PW Doppler	CW Doppler	Color Doppler	Power Doppler	Combined Modes ¹²	Other [Notes]
Ophthalmic								
Fetal								
Abdominal	♦	♦	♦		♦	♦	♦	♦ [3-8]
Intraoperative ¹								
Intraoperative Neurological								
Pediatric	♦	♦	♦		♦	♦	♦	♦ [3-8]
Small Organ ²	♦	♦	♦		♦	♦	♦	♦ [3-8]
Neonatal Cephalic								
Adult Cephalic								
Cardiac								
Transesophageal								
Transrectal								
Transvaginal								
Transurethral								
Transcranial								
Peripheral Vascular								
Laparoscopic								
MSK Conventional	♦	♦	♦		♦	♦	♦	♦ [3-8]
MSK Superficial	♦	♦	♦		♦	♦	♦	♦ [3-8]
Vascular Access	♦	♦	♦		♦	♦	♦	♦ [3-8,10]
Nerve Block	♦	♦	♦		♦	♦	♦	♦ [3-9]
Other								

♦ = Cleared for use

Notes:

1. Abdominal organs and vascular
2. Breast, Thyroid, Testicle
3. Elastography
4. Panoramic Imaging
5. Compound Imaging
6. Freehand 3D Imaging
7. Live 3D/4D Imaging
8. Imaging for guidance of biopsy
9. Imaging for guidance of nerve block injections
10. Imaging for guidance of central or peripheral lines
11. Volume Navigation/Image Fusion/GPS (available only with the GPS transducer)
12. B/M, B/PW Doppler or CW Doppler, B/C/PW Doppler (Triplex) or CW Doppler (Triplex CW), B/Power Doppler/PW Doppler or CW Doppler, Simultaneous Color Doppler or Power Doppler.

APPENDIX D: MAINTENANCE AND CLEANING

D.1 TRANSDUCERS

D.1.1 Guidelines

Ultrasonix recommends inspecting the transducers prior to each use:

- Ensure the transducers are always clean before they are used. There must be no ultrasound gel (from previous imaging), any debris, films or unusual odors present.
- Ensure there are no cracks or other damage to the transducers before they are used. Inspect the transducer surfaces for cracks and feel for cracks with finger tips as well.

Where any transducer (including, but not limited to, an intracavity transducer) is used in a clinical application of a semi-critical nature (including, but not limited to, intraoperative, transrectal, transvaginal, transesophageal, etc.), ensure the transducer is covered with the appropriate STERILE transducer cover/sheath which has received regulatory clearance for use.

D.1.2 Ultrasound Coupling Gels

The following ultrasound coupling gels are recommended for use with Ultrasonix transducers:

Table D-1: Recommended Ultrasound Coupling Gels

Gel Name	Manufacturer	Address
Aquasonic 100	Parker Laboratories, Inc.	286 Eldridge Road Fairfield, NJ, 07004 USA Ph (800) 631-8888 Fax (973) 276-9510
Clear Image	Sonotech, Inc.	774 Marine Drive Bellingham, WA 98225 USA Ph (360) 671-9121 Fax (360) 671-9024
Echo-Oil®	Echo Ultrasound	R.D.#2. Box 118 Reedsville, PA 17084 USA
Echotrack®	Echo Ultrasound	R.D.#2. Box 118 Reedsville, PA 17084 USA
Ecogel 100& 200	Echo-Med Pharmaceutical Inc.	7050 Bramalea Road Unit C58 Mississauga, ON L5S 1S9 Canada Ph (905) 405-1050 Fax (905) 405-0775



Do not use gels that contain any of the following solutions:

- Acetone
- Methanol
- Denatured ethyl alcohol
- Mineral oil
- Iodine
- Any lotions or gels that contain perfume.

If there are any questions, contact Ultrasonix Medical Corporation.

D.1.3 General Transducer Maintenance

Cautions:

DO NOT drop the transducers.

DO NOT hit the transducers against any surface that can dislodge or damage any of the transducer components.

DO NOT pinch or kink the transducer cable.

DO NOT use a brush to clean the transducer. (Use a soft cloth.)

DO NOT immerse the transducer scan head past the first seam in any liquid.

DO NOT soak the transducer for extended periods of time.

DO NOT rinse or immerse near the strain relief.

DO NOT use coupling gels and cleaning agents that have not been recommended by Ultrasonix.

DO NOT use sterilization or disinfection methods that have not been recommended by Ultrasonix. Severe damage will result. Contact Ultrasonix if you have any doubt about sterilization or disinfection methods. Use of non-recommended cleaning agents may cause damage to the housing and will void transducer warranties.

DO NOT use chemicals such as phenol, benzothonium chloride, pHisoHex, benzoyl peroxide, hydrogen peroxide—commonly found in hospitals or clinics. These chemicals will damage the transducer.

D.1.3.1 Inspection and Testing

Inspect the transducers prior to each use:

- always ensure the transducers are clean before they are used. There must be no ultrasound gel (from previous imaging), debris, films, or unusual odors present
- ensure there are no cracks or other damage to the transducers before they are used. Inspect the transducer surfaces for cracks and feel for cracks with finger tips as well.

Cautions:

DO NOT use transducers if they are found to be cracked, damaged, or broken.

DO NOT use the transducer if the transducer cable insulation is damaged, thereby exposing the wiring.

D.1.3.2 Storing and Packaging

To help avoid contamination, ensure the transducer is clean/disinfected and dry before storing/packing it. Store transducers:

- in one of the transducer holders
- separately, in a protected environment to avoid inadvertent transducer damage
- in the original case (recommended)
- away from direct sunlight, dust and extreme temperatures.

After placing a transducer in its carrying case, wrap the case in bubble wrap and place the wrapped case in a cardboard box.



D.1.4 General Transducer Cleaning/Disinfecting Recommendations and Warnings



Warnings:

Never sterilize the transducer with sterilization techniques such as autoclave, ultraviolet, gamma radiation, gas, steam, or heat sterilization techniques. Severe damage will result using the above sterilization techniques.

Use of precleaning solutions should be restricted to the external transducer face. DO NOT get solution on any other areas or surfaces of the transducer. This includes transducer connectors and contacts.

Some chemicals such as phenol, benzothonium chloride, pHisoHex, benzoyl peroxide, hydrogen peroxide are commonly found in clinic and hospital settings, while others are found in antibacterial skin cleaners or lotions. **Use of these chemicals will cause damage to your transducer.**

Avoid transducer contact with strong solvents such as acetone, freon and other industrial cleansers.

Follow all infection control policies and procedures established by your organization, including safety procedures involving personal protective equipment (such as gloves, protective eyewear and protective clothing)

DO NOT use sterilization or disinfection methods that have not been recommended by Ultrasonix. Severe damage will result. Contact Ultrasonix if you have any doubt about sterilization or disinfection methods.



Warning: Any transducer suspected of being contaminated with **Creutzfeldt Jacob** disease material cannot be cleaned or sterilized.

Contact Ultrasonix Medical Corporation to obtain instructions on the proper disposal of these transducers.

Remove ultrasound transmission gel with a dry or water-moistened soft cloth. It is recommended that transducers are reprocessed as soon as is reasonably practical following use.

Cautions:

Use only Ultrasonix recommended cleaners/disinfectants ([Table D-2](#) and [Table D-3](#)). They have been tested and determined safe to use on Ultrasonix transducers. Failure to follow these instructions may cause damage and will void transducer warranties.

Reprocessing should be completed only by personnel thoroughly trained in proper cleaning/disinfection procedures.

Follow all product/manufacture label cleaning and safety instructions.

Always verify product expiration dates.

Follow all regulatory and manufacturer instructions on product disposal.

For complete regulatory information and approval status on the products listed here, refer to the relevant EPA, FDA, Health Canada and CE documentation.

Note: Repeated processing has minimal effect on these transducers. End of life is normally determined by wear and damage due to use. Disassembly is not required.

D.1.5 Cleaning/Disinfecting Non-Invasive Transducers

To prevent biological materials (bioburden) from drying on the equipment, always reprocess transducers as soon as is reasonably practical following use.

Table D-2: Non-Invasive Cleaning/Disinfecting Agents

NON-INVASIVE TRANSDUCERS		CLEANING/DISINFECTING AGENTS													
		75% IPA	Alkazyme	Cidex Activated Dialdehyde Solution 14 day	Cidex Plus 28 day	Cidex OPA	Cidezyme	Klenzyme	McKesson Brand	Metrizyme	Milton Disinfecting Liquid	Nuclean	Omnicide – FG2	Steranios 2%	T-spray
MISCELLANEOUS	SA4-2/24				♦	♦					♦				♦
	PA7-4/12				♦	♦					♦				♦
	MC9-5/12				♦	♦					♦				♦
	HST15-8/20			♦	♦	♦	♦	♦							
	4DC7-3/40			♦	♦	♦	♦	♦							
	PA4-2/20			♦	♦	♦	♦	♦							
	L40-8/12		♦			♦		♦						♦	
	m4DC7-3/40		♦			♦		♦						♦	
	4DL14-5/38		♦			♦		♦						♦	
GPS	C5-2/60 GPS	♦		♦	♦		♦	♦	♦			♦	♦		♦
	L14-5/38 GPS	♦		♦	♦		♦	♦	♦			♦	♦		♦
LINEAR AND CONVEX	C5-2/60	♦			♦	♦	♦	♦	♦	♦	♦		♦		♦
	C7-3/50	♦			♦	♦	♦	♦	♦	♦			♦		♦
	L9-4/38	♦			♦	♦	♦	♦	♦	♦			♦		♦
	L14-5/38	♦			♦	♦	♦	♦	♦	♦			♦		♦
	L14-5W/60	♦			♦	♦	♦	♦	♦	♦			♦		♦

Caution: Use only Ultrasonix recommended cleaners/disinfectants (Table D-2). They have been tested and determined safe to use on Ultrasonix transducers. Failure to follow these instructions may cause damage and will void transducer warranties.



D.1.5.1 Cleaning Non-Invasive Transducers

Thorough cleaning is essential for successful disinfection. If a transducer is not properly cleaned, any remaining particles (e.g., blood, bodily fluids, dirt) may protect the microorganisms from the disinfection process, rendering it ineffective. Disinfectants overloaded with soil can become contaminated and may themselves become a source for microorganism transmission.

Before cleaning, always remove covers, accessories and attachments.

To Clean a Transducer:

1. After every patient exam, wipe the ultrasound transmission gel off the transducer.
2. Wipe the transducer and cable with a soft, dry or water-moistened cloth.
3. Following the manufacturer's instructions, clean the transducer with a recommended cleaning/disinfecting agent from [Table D-2](#).
4. Remove any residue with a soft cloth moistened in water then wipe with a clean, dry cloth.

Caution: *Do not allow cleaning solutions to air dry on the transducer.*

D.1.5.2 Disinfecting Non-Invasive Transducers

Using a disinfecting agent from the list in [Table D-2](#), follow the manufacturer's instructions to disinfect the transducer.

D.1.6 Cleaning/Disinfecting Endocavity Transducers

Endocavity transducers are semi-critical medical devices and must be decontaminated using, at a minimum, High Level Disinfection.

Clean and disinfect transducers prior to the first exam and following each exam thereafter.



Warning: For instructions on cleaning/disinfecting the mTEE8-3/5 transducer, refer to the most recent Sonix Ultrasound System mTEE8-3/5 User Manual.

Table D-3: Endocavity Cleaning/Disinfecting Agents

ENDOCAVITY TRANSDUCERS	CLEANING/DISINFECTING AGENTS			
	Cidex Activated Dialdehyde Solution 14 day	Cidex Plus 28 day	Cidex OPA	Cidezyme
EC9-5/10	◆	◆	◆	◆
4DEC9-5/10	◆	◆	◆	◆
BPC8-4/10	◆	◆	◆	◆
BPL9-5/55	◆	◆	◆	◆

Caution: Use only Ultrasonix recommended cleaners/disinfectants (Table D-3). They have been tested and determined safe to use on Ultrasonix transducers. Failure to follow these instructions may cause damage and will void transducer warranties.



To Clean/Disinfect a Transducer:

1. Unplug the transducer.
2. Wash the transducer head and cable with soap and water to remove any protein buildup; however do not rinse or immerse the transducer near the strain relief.
3. Following the manufacturer's instructions, disinfect the transducer with a recommended disinfecting agent from [Table D-3](#).

Note: *Where any transducer (including, but not limited to, an intracavity transducer) is used in a clinical application of a semi-critical nature (including, but not limited to intraoperative, transrectal, transvaginal, transesophageal, etc.), ensure the transducer is covered with the appropriate STERILE transducer cover/sheath which has received regulatory clearance for use.*

4. Wipe with a clean, dry cloth.

Caution: *Do not allow cleaning solutions to air dry on the transducer.*

D.1.7 Sterilization

Sterilization of transducers is not possible. Follow the instructions for cleaning and disinfection instead:

- Endocavity transducers: [D.1.6](#)
- Non-invasive transducers: [D.1.5.1](#) and [D.1.5.2](#).

Note: *Where transducers (non-critical and semi-critical medical devices/equipment) cannot withstand sterilization, the FDA recognizes the use of a sterile gel and a sterile transducer cover as an acceptable method of infection control for ultrasound transducers.*

D.2 SHIPPING TRANSDUCERS FOR SERVICE

It is the customer's responsibility to ensure:

- each transducer is disinfected prior to shipping ([D.1.5](#) and [D.1.6](#))
- the transducer is properly packaged for shipment ([D.1.3.2](#))
- all shipping waybills/paperwork is completed as per the relevant regulations and laws.

D.3 RECOMMENDED FREQUENCY OF HIGH-LEVEL MAINTENANCE PROCEDURES

The frequency of preventive maintenance performed on the system plays a key role in eliminating or extending the periods between downtime due to poor performance or unexpected breakdown. The following table offers recommendations that must be weighed by factors like frequency of use and environmental conditions. In every case, frequent checks of safety-related items are highly recommended.

Note: *Additional maintenance procedures (covered in the relevant Service Manuals) must be completed by qualified service personnel.*

Table D-4: Maintenance Procedure Frequency

Test/Clean	Frequency Interval	Task
Transducers	Six (6) months	Check for cracks or bent pins (D.1 Transducers).
System Filter	Four (4) months or as required	Check for good air flow without excessive noise.
		Remove and vacuum (D.4.8 System Filter).
		Note: <i>Filter cleaning frequency is dependant upon usage location. If the system is used in a high traffic area (such as an Emergency Room) filters may require more frequent cleaning.</i>
System Fans	Six (6) months	Check for good air flow without excessive noise.
Cart	Clean as necessary	The wheels have sealed bearings therefore no lubrication is necessary.

D.4 CLEANING SYSTEM COMPONENTS

Ultrasonix recommends the following cleaning instructions for all external surfaces, including the cart, cables and connectors.

Cautions:

Power off and unplug the system before cleaning.

Do not spill or spray water on the controls, transducer connection receptacle, or transducer ports.



D.4.1 LCD Display/Touch Screen and Cabinet

Cautions:

Power off and unplug the system prior to cleaning the LCD display/touch screen.

DO NOT apply cleaning solutions directly to any surface of the system.

D.4.1.1 LCD Display Cabinet

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe down the cabinet:

- water
- mild detergent (PH level at or near 7) and water solution.

D.4.1.2 LCD Display/Touch Screen

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe down the cabinet:

- 50:50 isopropyl alcohol and water
- any proprietary glass cleaning solution
- water
- mild detergent (PH level at or near 7) and water solution.

D.4.2 Power Pack

Cautions:

Power off and unplug the system prior to cleaning.

DO NOT apply cleaning solutions directly to the power pack.

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe the power pack:

- water
- mild detergent (PH level at or near 7) and water solution.

D.4.3 Power Cord(s)

Cautions:

Power off and unplug the system prior to cleaning.

DO NOT apply cleaning solutions directly to the power cord.

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe the power cord:

- water
- mild detergent (PH level at or near 7) and water solution.

D.4.4 Barcode Reader



Warning: *Disconnect the barcode reader prior to cleaning.*

Caution: *DO NOT apply cleaning solutions directly to the barcode reader.*

Note: *Barcode reader usage should not entail patient contact.*

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe the barcode reader:

- water
- mild detergent (PH level at or near 7) and water solution.

D.4.5 Wireless Adapter (When Connected Externally)



Warning: *Disconnect the wireless adapter prior to cleaning.*

Caution: *DO NOT apply cleaning solutions directly to the wireless adapter.*

Note: *Wireless adapter usage should not entail patient contact.*

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe the wireless adapter:

- water
- mild detergent (PH level at or near 7) and water solution.



D.4.6 Transducer Holders and Cable Hooks

Cautions:

Power off and unplug the system prior to cleaning.

For best results, Ultrasonix recommends removing the transducer holders and cable hooks before cleaning. This will allow the operator to clean all the various curves and folds in a more effective manner.

DO NOT apply cleaning solutions directly to the transducer holders and cable hooks.

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe off the transducer holders and cable hooks:

- water
- mild detergent (PH level at or near 7) and water solution.

D.4.7 Footswitch (Dual and Triple)



Warning: *Disconnect the footswitch prior to cleaning.*

Caution: *DO NOT apply cleaning solutions directly to the footswitch.*

Apply a small amount of one of the following recommended cleaning solutions to a soft, non-abrasive cloth and wipe off the footswitch:

- water
- 70% isopropyl alcohol.

Note: *Over time, silk-screened graphics may be damaged by the solvent effect of the isopropyl alcohol.*

D.4.8 System Filter

Cautions:

Power off and unplug the system prior to cleaning.

Vacuum only. DO NOT apply any liquids to the system filter.

Filter cleaning frequency is dependant upon usage location. If the system is used in a high traffic area (such as an Emergency Room), the filter may require more frequent cleaning.

*Failure to regularly clean the system filter may cause reduced air flow and result in the system overheating. **System failures due to a lack of filter cleaning may not be covered by the Warranty or a Service Contract.***

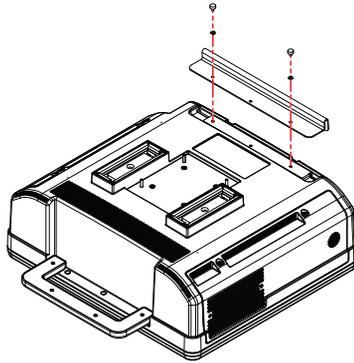
This filter should be cleaned approximately every three (3) to six (6) months. Periodically, the system will present a cleaning reminder message. Always clean the filter when this reminder is presented.

To Clean the System Filter:

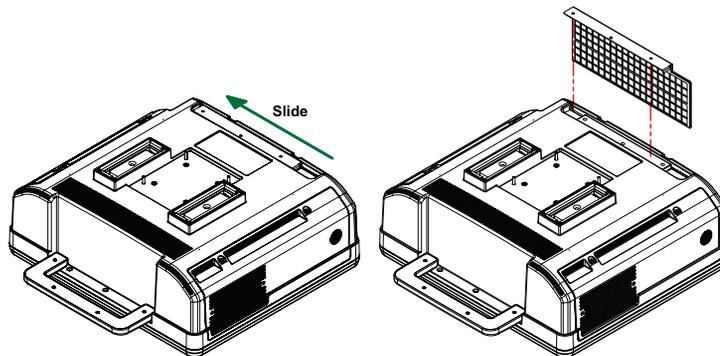
1. Power off and unplug the system.
2. Using a soft towel or bubble wrap to protect the LCD display/touch screen, gently tip the system flat.

Note: *Ensure the surface used is steady and secure.*

3. Unscrew the two (2) thumbscrews and washers.



4. Push the filter forward (following the directional arrow label) then lift up.



5. Vacuum thoroughly and reinstall the filter.
6. Plug in and power on the system.



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APPENDIX E: MODE ACTION AND IMAGING PARAMETER OPTIONS

The following tables ([Table E-1](#) and [Table E-2](#)) describe the available Mode Action and Imaging Parameter buttons for the various platforms and their primary imaging modes.

The specific mix of available Mode Action and Imaging Parameter buttons is dependant upon the combination of:

- mode
- transducer
- licensed options (and its attendant hardware, such as the **SonixGPS**)
- platform (SonixTouch, SonixMDP, SonixSP, SonixOP or SonixTablet)
- frozen/live image.

Note: Only primary imaging modes are included in the following tables. For details on modes that can be applied in combination (e.g., **Color** and **PW**), refer to all relevant primary modes.



Table E-1: Touch Screen Mode Action Buttons (by Imaging Mode)

Mode Action	Description	Imaging Mode								
		B-Mode	M-Mode	Color	PW/CW	Elastography	SonixGPS	Panoramic	SonixShine	
4B (Quad)	<p>Tap to activate Quad.</p> <p>Tap to display Biopsy guidelines.</p> <p>Note: This option is only available for the following transducers: C5-2/60, EC9-5/10, L9-4/38, L145-38 and L14-5W/38.</p> <p>To change the onscreen orientation of the Biopsy Guide, refer to 8.2.8 Biopsy Guide.</p> <p>For details on Biopsy use, refer to the instructions included with the Biopsy Starter Kits (Biopsy Starter Kit manufacturers and part numbers are listed under Accessories in Appendix B).</p>									
Biopsy										
Color Invert	Tap to Invert the direction of the Color Map .									
Color On/Off	Tap to select/deselect Color Doppler imaging.									
Dual	<p>Tap to activate Dual.</p> <p>Note: Quad imaging is not available in Color mode.</p>									
ECCG On/Off	<p>Tap to turn on/off the ECCG machine.</p> <p>Note: This option is only available when Cardiac is selected as the Preset. Refer to Accessories in Appendix B for the recommended ECCG electrode.</p>									
Grid On/Off	<p>Toggles the Brachytherapy Grid on and off.</p> <p>Note: To access Brachytherapy, both the BPC8-4/10 transducer and B-Mode must be active.</p>									
Grid Save	<p>Saves the adjustments made to the Grid using the Brachytherapy Imaging Parameters.</p> <p>Note: To access Brachytherapy, both the BPC8-4/10 transducer and B-Mode must be active.</p>									
HD Zoom	<p>Tap to activate HD Zoom. Use the trackball to position the ROI.</p> <p>Note: enables ROI resizing with the trackball. Press again to accept the resized ROI and return to ROI repositioning or to move directly to imaging. Both HD Zoom and Zoom mode action buttons can be applied to an image.</p>									
Inv	Tap to Invert the image orientation by 180°.									



Mode Action	Description	Imaging Mode							
		B-Mode	M-Mode	Color	PW/CW	Elastography	SonixGPS	Panoramic	SonixShine
Layout	<p>Tap Layout to cycle through to the next Split Imaging display type. The default is 1:1. The four (4) options are, in order:</p> <p>Split 1:1 ½ Imaging Mode – ½ Trace (top/bottom configuration)</p> <p>Large Trace ½ Imaging Mode – ¾ Trace</p> <p>Small Trace ¾ Imaging Mode – ½ Trace</p> <p>Side by Side ½ Imaging Mode – ½ Trace (side by side configuration).</p>		•	•	•				
Overlay	<p>Tap to toggle between the side-by-side Comparative image view and the combined or overlaid image view.</p> <p>Note: The default view is Comparative.</p>					•			
Pano Cancel	<p>Tap to cancel the current Panoramic acquisition.</p> <p>Note: This is not a toggle button.</p>							•	
Pano Exit	<p>Tap to exit Panoramic imaging.</p> <p>Note: This is not a toggle button.</p>							•	
Pano Start/Stop	Tap to start or stop the Panoramic acquisition.							•	
Power Doppler	Tap to activate Power Doppler .			•					
Rev	Tap to Reverse the image orientation right/left.	•	•	•	•	•	•	•	•
Sim 2D/C	<p>Tap to activate/deactivate Simultaneous 2D/Color (side-by-side split screen):</p> <ul style="list-style-type: none"> • left side: live 2D/Color • right side: live 2D. 			•					
SonixGPS	Tap to activate SonixGPS .	•						•	•
Trace On/Off	Tap to activate/deactivate live spectral Doppler Trace display with measurement values.						•		
Triplex	<p>Tap to activate/deactivate Triplex imaging mode.</p> <p>Note: Triplex is only available if both PW and Color have been activated.</p> <p>Once Triplex is active, press the console button to toggle through Active PW, Active B/C and Triplex imaging modes.</p>							•	

1 When licensed (and with the L14-5/38 transducer active in **B-Mode**), the **SonixShine** mode selection button is located on the touch screen with the mode action buttons.



Table E-2: Touch Screen Imaging Parameters (by Imaging Mode) (Tap to activate and/or dial/press to adjust)

Imaging Parameter	Description	Imaging Mode							
		B-Mode	M-Mode	Color	PW/CW	Elastography	SonixGPS	Panoramic	SonixShine
(Acoustic) Power	Adjusts Acoustic Power (turn) and toggles (press) MI, TIS, TIC, TIB display if applicable.  Warning: Refer to A.1.1 ALARA Principle and Output Displays.	•	•	•	•	•	•	•	•
Audio	Adjusts the Audio setting: 0–100% in 5% increments.				•				
Baseline	Adjusts the Color Doppler Baseline : 0.2–6.7kHz.		•						
BaselineC	Adjusts the Color Doppler Baseline .		•						
BaselineD	Adjusts the Doppler Trace Baseline up or down.				•				
Chroma	Adjusts the color Maps overlaying the 2D image: 0–7.	•	•	•	•	•	•	•	•
ChromaD	Adjusts the color Map of the Doppler Trace : 0–7.				•				
ChromaM	Adjusts the color of the M-Mode Sweep : 0–7.		•						
Clarity	Adjusts the level of speckle reduction: Off, Low, Med, High, Max .	•	•	•	•	•	•	•	•
Depth	Adjusts the imaging Depth up or down.	•	•	•	•	•	•	•	•
Dyn (Dynamic Range)	Adjusts the overall image contrast resolution in 1 dB increments. Displayed Dynamic Range varies from 15dB to 145dB. Complete system Dynamic Range is 302dB. Note: An increase in dB increases the level of grays displayed.	•	•	•	•	•	•	•	•
Ensemble	Adjusts Color Doppler sensitivity: range 6–16. Note: This adjusts both the FPS and TIS.			•					
Focus	Adjusts the focal zone position up or down.	•	•	•	•	•	•	•	•
Focus #	Adjusts the number of transmit focal zones on the screen. The maximum number of focal zones varies depending on which transducer is selected. Note: Increasing the number of focal zones will reduce the Frame Rate. If desired, enable Auto-Focus by setting the Focus # to 0 (zero). Note: There is no Focus Marker when Auto-Focus is active.	•						•	•
Focus Span	Adjusts the distance between focal zones.	•							•

Imaging Parameter Description	Imaging Mode							
	B-Mode	M-Mode	Color	PW/CW	Elastography	SonixGPS	Panoramic	SonixShine
Freq Adjusts the transducer: Frequency: Penetration, General, Resolution, Harmonics and EPI.	•	•	•	•	•	•	•	•
FreqC Adjusts the Frequency of the Color Doppler: 4–6.6MHz.		•						
FreqD Adjusts PW/CW Doppler Frequency: 4.0–6.6MHz. Note: Not available in CW.			•					
FrRate Adjusts the Frame Rate: Med, High and Max.	•	•	•			•	•	•
Gain Adjusts the overall Gain. Note: Tapping the center of the touch screen Gain button initiates the Auto-Gain/B function.	•	•	•	•	•	•	•	•
GainC Adjusts the Color Gain: 0–100%, in 2% increments.			•					
GainD Adjusts the PW/CW Doppler Gain: 0–100% in 2% increments.				•				
Gate Adjusts the PW/CW Sample Volume Gate size from 1.0mm–40.0mm in 0.5mm increments. Note: Not available in CW.				•				
Grid L/R Adjusts the Brachytherapy Grid Left and Right. Note: To access Brachytherapy, both the BPC8-4/10 transducer and B-Mode must be active.	•					•		
Grid U/D Adjusts the Brachytherapy Grid Up and Down. Note: To access Brachytherapy, both the BPC8-4/10 transducer and B-Mode must be active.	•					•		
Map Adjusts the grayscale Map: 1–17.	•	•	•	•	•	•	•	•
MapC Adjusts the Color Doppler Map: 1–9.			•					
MapD Adjusts the grayscale Map of the Doppler Trace: 1–3.				•				
MapE Adjusts the Elastography Color Map: 1–20, including grayscale.					•			
MapM Adjusts the grayscale Map of the M-Mode display: 1–3.								
(Imaging) Method Color/Power/TDI Toggles between the (Imaging) Method options: Color, Power and TDI (Tissue Doppler Imaging).		•						•



Imaging Parameter	Description	Imaging Mode											
		B-Mode	M-Mode	Color	PW/CW	Elastography	SonixGPS	Panoramic	SonixShine				
Opacity	Adjusts the Elastography image Opacity overlaid on the 2D image: 0–100% in 10% increments. Note: <i>The lower the setting, the more transparent the Elastography display</i>					•							
Persist	Adjusts the level of visual smoothing of the 2D image: 0–6.	•	•										•
PersistC	Adjusts the Color Doppler Persistence : 0–6.			•									
PersistE	Adjusts the Elastography Persistence : 0–6.					•							
PRF	Adjusts the PW/CW Doppler Pulse Repetition Frequency up or down.			•									
PRFc	Adjusts the Color PRF .												
PRFd	Adjusts the Doppler PRF .					•							
Priority	Adjusts the Color Doppler 2D Priority .			•									
Reject	Eliminates or Rejects noise from the image: 25–60.	•	•	•		•							•
Res	Adjusts the color Resolution in the ROI box: Low , Med(ium) or High . Note: High sharpens the edges of the ROI the most.												
Rgn	Adjusts the visible Elastography Region that is overlaid on the 2D image based on the selected tissue stiffness: Soft , Med(ium) , Hard or All . Note: Region coloration can be adjusted with the Map setting.												
Sector	Adjusts the image Sector size: 50–100% in 5% increments. Note: Extended Field of View (FOV) and trapezoid imaging if available. Use the trackball to move the sector to different positions.	•	•	•	•	•	•	•	•	•	•	•	•
Sens	Adjusts transducer Sensitivity depending on the level of compression applied during imaging: Low , Med1 , Med2 , High1 or High2 .												
SHINE Ang	Use to adjust the SonixShine Angle : -40° to -15° or 15° to 40°. The imaging location of the SonixShine angle marker is dictated by the angle selected. When set to a negative angle (-40° to -15°), the angle marker is located in the upper left corner of the image. When set to a positive angle (15° to 40°), it's located in the upper right corner.												•
Smooth	Adjusts spectrum smoothing: 1–5.												
Steer	Steers the 2D beam on linear transducers.	•	•	•									•



Imaging Parameter Description	Imaging Mode							
	B-Mode	M-Mode	Color	PW/CW	Elastography	SonixGPS	Panoramic	SonixShine
SteerC Steers the Color ROI box right or left on linear transducers.			•					
SteerD Steers the Doppler line on linear transducers.				•				
SV Ang Adjusts the Sample Volume Angle : -80° to +80°, in 2° increments.				•				
Sweep Adjusts the Sweep speed of Doppler Trace (Low, Med, High1 and High2) . Note: Not available in CW.		•		•				
WF Adjusts the Wall Filter : 67–3333Hz.			•	•				
WfC Adjusts the Color WF : 20–1000Hz in 20Hz increments.			•					
WfD Adjusts the Doppler WF : 40–2000Hz in 40Hz increments.				•				
Zoom Adjusts the image in or out. Note: If the image is zoomed to the point where it is larger than the imaging field use the trackball to pan around the image.	•	•	•	•	•	•	•	•
ZoomM Adjusts the amount of M-Mode magnification. Use the trackball to reposition ZoomM location.		•						

¹ When licensed, the **SonixShine** mode selection button is located on the touch screen with the mode action buttons.



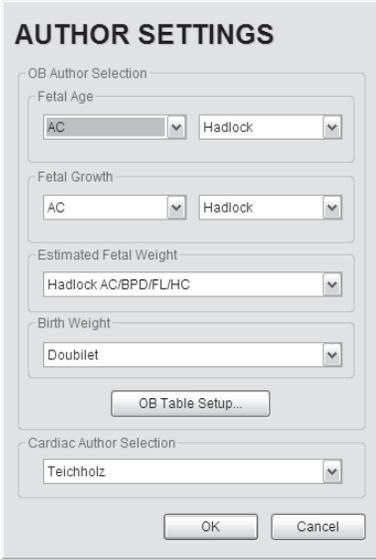
APPENDIX F: OB AND CARDIAC AUTHORS

OB and Cardiac Authors are controlled within **Measurements**.

Note: For details on **OB Table Setup...** refer to **8.2.6.6 Managing OB Tables**.

To Access Author Settings:

1. Tap the touch screen  button.
2. Select **Administrator > Measurements > Author Settings**.



AUTHOR SETTINGS

OB Author Selection

Fetal Age

AC Hadlock

Fetal Growth

AC Hadlock

Estimated Fetal Weight

Hadlock AC/BPD/FL/HC

Birth Weight

Doublet

OB Table Setup...

Cardiac Author Selection

Teichholz

OK Cancel



Table F-1: OB Author Selection – Fetal Age

Parameter	Authors	Parameter	Authors
AC	BC Women's Hadlock Hansmann Tokyo	FL	BC Women's Hadlock Hansmann Merz Osaka Tokyo
BDN	Jeanty Tongsong	FTA	Osaka
BPD	BC Women's Hadlock Hansmann Osaka Tokyo	GS	Hansmann Nyberg Rempen
		HC	BC Women's Hadlock Hansmann
CEREB	Hill	HL	Jeanty
CRL	BC Women's Hadlock Hansmann Osaka Rempen	OFD	Hansmann
		TL	Jeanty
		TTD	Hansmann
		UL	Jeanty

Table F-2: OB Author Selection – Fetal Growth

Parameter	Authors	Parameter	Authors
AC	BC Women's Hadlock Tokyo	FL	BC Women's Hadlock Jeanty Osaka Tokyo
AFI	Moore	FTA	Osaka
BPD	BC Women's Hadlock Osaka Tokyo	HC	BC Women's Hadlock
		HL	Jeanty
CRL	BC Women's Hadlock Osaka	TC	BC Women's

Table F-3: OB Author Selection – Fetal Growth Ratios

Parameter	Authors
CI (HC)	Hadlock
FL/AC	Hadlock
FL/BPD	Hohler
FL/HC	Hadlock
HC/AC	Campbell

Table F-4: OB Author Selection – Estimated Fetal Weight

Parameter	Authors
EFW	Hadlock (AC/BPD/FL) (AC/BPD/FL/HC) (AC/FL) (AC/FL/HC)
	Hansmann (BPD/TTD) Osaka (BPD/FTA/FL) Tokyo (BPD/APTD/TTD/FL)

Table F-5: OB Author Selection – Birth Weight

Parameter	Authors
BW	Brenner Doubilet Hadlock Osaka



Warning: *Ultrasonix does not endorse user-defined Measurements, Calculations and Tables for diagnostic purposes. All user-defined Measurements, Calculations and Tables are used at the Operator's discretion and risk only.*

Table F-6: Cardiac Author Selection

Parameter	Authors
Volume	Cubed Gibson Teichholz



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APPENDIX G: REFERENCES

G.1 OB

EFW (Hadlock AC/BPD/FL) (Estimated Fetal Weight (Hadlock AC/BPD/FL))

Hadlock, F., et al. "Estimated of Fetal Weight with the Use of Head, Body, and Femur Measurements, A Prospective Study." [American Journal of Obstetrics and Gynecology](#), 151:13 (February 1, 1985), 333-337.

EFW (Hadlock AC/BPD/FL/HC) (Estimated Fetal Weight (Hadlock AC/BPD/FL/HC))

Hadlock, F., et al. "Estimated of Fetal Weight with the Use of Head, Body, and Femur Measurements, A Prospective Study." [American Journal of Obstetrics and Gynecology](#), 151:13 (February 1, 1985), 333-337.

EFW (Hadlock AC/FL) (Estimated Fetal Weight (Hadlock AC/FL))

Hadlock, F., et al. "Estimated of Fetal Weight with the Use of Head, Body, and Femur Measurements, A Prospective Study." [American Journal of Obstetrics and Gynecology](#), 151:13 (February 1, 1985), 333-337.

EFW (Hadlock AC/FL/HC) (Estimated Fetal Weight (Hadlock AC/FL/HC))

Hadlock, F., et al. "Estimated of Fetal Weight with the Use of Head, Body, and Femur Measurements, A Prospective Study." [American Journal of Obstetrics and Gynecology](#), 151:13 (February 1, 1985), 333-337.

EFW (Hansmann BPD/TTD) (Estimated Fetal Weight (Hansmann BPD/TTD))

Hansmann, M., et al. [Ultrasound Diagnosis in Obstetrics and Gynecology](#). New York: Springer-Verlag, (1986), 154.

EFW (Osaka BPD/FTA/FL) (Estimated Fetal Weight (Osaka BPD/FTA/FL))

Osaka University. [Ultrasound in Obstetrics and Gynecology](#). (July 20, 1990), 103-105.

EFW (Tokyo BPD/APTD/TTD/FL) (Estimated Fetal Weight (Tokyo BPD/APTD/TTD/FL))

Tokyo, Shinozuka, N. FJSUM, et al. "Standard Values of Ultrasonographic Fetal Biometry." [Japanese Journal of Medical Ultrasonics](#), 23:12 (1996), 880, Equation 1.

G.1.1 OB Gestational Age

AC (Abdominal Circumference)

Hadlock, F., et al. "Estimated Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." [Radiology](#), 152: (1984), 497-501.

Hansmann, M., et al. [Ultrasound Diagnosis in Obstetrics and Gynecology](#). New York: Springer-Verlag, (1986), 431.

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." [Journal of Clinical Ultrasound](#), Vol. 26, No 9 (1998), 433-453.

Tokyo, Shinozuka, N. FJSUM, et al. "Standard Values of Ultrasonographic Fetal Biometry." [Japanese Journal of Medical Ultrasonics](#), 23:12 (1996), 885.

BND (Binocular Distance)

Jeanty P, Cantraine F, Cousaert E, Romero R, Hobbins JC. "The Binocular Distance: A New Way to Estimate Fetal Age." [Journal of Ultrasound in Medicine](#) 3:241, 1984.

Tongsong T, Wanapirak C, Jesadapornchai S, Tathayathikom E. "Fetal binocular distance as a predictor of menstrual age." [International Journal of Gynecology and Obstetrics](#) 38:87 1992.

BPD (Biparietal Diameter)

Hadlock, F., et al. "Estimated Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." [Radiology](#), 152: 1984), 497-501.

Hansmann, M., et al. [Ultrasound Diagnosis in Obstetrics and Gynecology](#). New York: Springer-Verlag, (1986), 440.

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." [Journal of Clinical Ultrasound](#), Vol 26, No 9 (1998), 433-453.

Osaka University. [Ultrasound in Obstetrics and Gynecology](#). (July 20, 1990), 98.

Tokyo, Shinozuka, N. FJSUM, et al. "Standard Values of Ultrasonographic Fetal Biometry." [Japanese Journal of Medical Ultrasonics](#), 23:12 (1996), 885.



Cereb (Cerebellum)

Hill, Lyndon, M., et al. "The Transverse Cerebellar Diameter in Estimating Gestational Age in the Large for Gestational Age Fetus." Obstetrics and Gynecology, (June 1990) Vol. 75, No. 6, 981-985 .

CRL (Crown Rump Length)

Hadlock, F., et al. "Fetal Crown-Rump Length: Re-evaluation of Relation to Menstrual Age (5-18 weeks) with High-Resolution, Real-Time Ultrasound." Radiology, 182: (February 1992), 501-505.

Hansmann, M., et al. Ultrasound Diagnosis in Obstetrics and Gynecology. New York: Springer-Verlag, (1986), 439.

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." Journal of Clinical Ultrasound, Vol. 26, No 9 (1998), 433-453.

Osaka University. Ultrasound in Obstetrics and Gynecology. (July 20, 1990).

Rempen, German Society for Gynecology and Obstetrics, March 1991, Issue 15, Vol 1, pp. 23-28.

EFW (Estimated Fetal Weight)

Brenner, W.E., et al. "A standard of fetal growth for the United States of America." American Journal of Obstetrics and Gynecology, 126: (1976), 555.

Doubilet, Peter M., et al. "Improved Birth Weight Table for Neonates Developed from Gestations Dated by Early Ultrasonography." Journal of Ultrasound in Medicine, 16: (1997), 241-149 .

Hadlock, F., et al. "In Utero Analysis of Fetal Growth: A Sonographic Weight Standard." Radiology, 181: (1991), 129-133.

Osaka University. Ultrasound in Obstetrics and Gynecology. (July 20, 1990), 103-105.

FL (Femur Length)

Hadlock, F., et al. "Estimated Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." Radiology, 152: (1984), 497-501.

Hansmann, M., et al. Ultrasound Diagnosis in Obstetrics and Gynecology. New York: Springer-Verlag, (1986), 431.

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." Journal of Clinical Ultrasound, Vol. 26, No 9 (1998), 433-453.

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FL/AC Ratio (Femur Length/Abdominal Circumference)

Hadlock, F.P., R.L. Deter, R.B. Harrist, E. Roecker, and S.K. Park. "A Date Independent Predictor of Intrauterine Growth Retardation: Femur Length/Abdominal Circumference Ratio," American Journal of Roentgenology, 141: (November 1983), 979-984.

FL/BPD Ratio (Femur Length/Biparietal Diameter)

Hohler, C.W. & T.A. Quetel. "Comparison of Ultrasound Femur Length and Biparietal Diameter in Late Pregnancy," American Journal of Obstetrics and Gynecology, 141:7 (Dec. 1 1981), 759-762.

FTA (Fetal Trunk Area)

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GS (Gestational Sac)

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HC (Head Circumference)

Hadlock, F., et al. "Estimated Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." Radiology, 152: (1984), 497-501.

Hansmann, M., et al. Ultrasound Diagnosis in Obstetrics and Gynecology. New York: Springer-Verlag, (1986), 431.

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." Journal of Clinical Ultrasound, Vol. 26, No 9 (1998), 433-453.



HL (Humeral Length)

Jeanty P, et al. "Estimation of Gestational Age from Measurements of Fetal Long Bones." Journal of Ultrasound Medicine (1984) 3:75-79.

OFD (Occipito-Frontal Diameter)

Hansmann, M., et al. Ultrasound Diagnosis in Obstetrics and Gynecology. New York: Springer-Verlag, (1986), 431.

TL (Tibial Length)

Jeanty, P, et al. "Estimation of Gestational Age from Measurements of Fetal Long Bones." Journal of Ultrasound Medicine (1984) 3:75-79.

TTD (Transverse Trunk Diameter)

Hansmann, M., et al. Ultrasound Diagnosis in Obstetrics and Gynecology. New York: Springer-Verlag, (1986), 431.

UL (Ulnar Length)

Jeanty P, et al. "Estimation of Gestational Age from Measurements of Fetal Long Bones." Journal of Ultrasound Medicine (1984) 3:75-79.

G.1.2 OB Growth Analysis

AC (Abdominal Circumference)

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Tokyo, Shinozuka, N. FJSUM, et al. "Standard Values of Ultrasonographic Fetal Biometry." Japanese Journal of Medical Ultrasonics, 23:12 (1996).

AFI (Amniotic Fluid Index)

Moore, T. R., et al. "The amniotic fluid index in normal human pregnancy." American Journal of Obstetrics and Gynecology, (1990) 162: 1168-1173.

BPD (Biparietal Diameter)

Hadlock, F., et al. "Estimated Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." Radiology, 152: (1984), 497-501.

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Tokyo, Shinozuka, N. FJSUM, et al. "Standard Values of Ultrasonographic Fetal Biometry." Japanese Journal of Medical Ultrasonics, 23:12 (1996).

CI (HC) (Cephalic Index (Head Circumference))

Hadlock FP, et al., "Estimating Fetal Age: Effects on Head Shape on BPD," American Journal Roentgen, 1981; 137:83-85.

CRL (Crown Rump Length)

Hadlock, F., et al. "Fetal Crown-Rump Length: Re-evaluation of Relation to Menstrual Age (5-18 weeks) with High-Resolution, Real-Time Ultrasound." Radiology, 182: (February 1992), 501-505.

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Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." Journal of Clinical Ultrasound, Vol 26, No 9 (1998), 433-453.

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Tokyo, Shinozuka, N. FJSUM, et al. "Standard Values of Ultrasonographic Fetal Biometry." Japanese Journal of Medical Ultrasonics, 23:12 (1996).

FL/HC Ratio (Femur Length/Head Circumference)

Hadlock, F.P., R.B. Harrist, Y. Shah, & S/K. Park. "The Femur Length/Head Circumference Relation in Obstetric Sonography." Journal of Ultrasound in Medicine, 3: (October 1984), 439-442.

FTA (Fetal Trunk Area)

Osaka University. Ultrasound in Obstetrics and Gynecology. (July 20, 1990), 99-100.

HC (Head Circumference)

Hadlock, F., et al. "Estimated Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." Radiology, 152: (1984), 497-501.

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." Journal of Clinical Ultrasound, Vol 26, No 9 (1998), 433-453.

HC/AC (Head Circumference/Abdominal Circumference)

Campbell S., Thomas Alison. "Ultrasound Measurements of the Fetal Head to Abdomen Circumference Ratio in the Assessment of Growth Retardation," British Journal Obstetrics and Gynaecology, 84: (March 1977), 165-174.

HL (Humeral Length)

Jeanty P., E. et al. "Ultrasonic Evaluation of Fetal Limb Growth." Radiology (1982) 143: 751-754.

TC (Trunk Circumference)

Lessoway, V A. et al. "Ultrasound Fetal Biometry Charts for a North American Caucasian Population." Journal of Clinical Ultrasound, Vol 26, No 9 (1998), 433-453.

G.2 CARDIAC

AFI (Amniotic Fluid Index)

Rutherford S., et al., "Four Quadrant Assessment of Amniotic Fluid Volume," Journal of Reproductive Medicine, 1987;32:587-589.

AVA (Aortic Valve Area)

Reynolds, Terry. The Echocardiographer's Pocket Reference. 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 338.

CO (Cardiac Output)

Reynolds, Terry. The Echocardiographer's Pocket Reference. 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 337, 337-8, 371.

E/A Ratio

Maron, Barry J., et al., "Noninvasive Assessment of Left Ventricular Diastolic Function by Pulsed Doppler Echocardiography in Patients with Hypertrophic Cardiomyopathy", Journal of the American College of Cardiology, 1987, Vol.10, 733-742.

E/E' Ratio

Oh, Seward, and Jamil Tajik, The Echo Manual: Second Edition. Lippincott Williams & Wilkins, 1999, 55.

EDV (End Diastolic Velocity)

Schiller et al., "Recommendations for Quantitation of the Left Ventricle by Two-Dimensional Echocardiography", Journal of the American Society of Echocardiography, Vol 2, No. 5, Sept-Oct 1989, 362.

EF (Ejection Fraction)

Reynolds, Terry. The Echocardiographer's Pocket Reference. 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 371.

ESV

Schiller et al., "Recommendations for Quantitation of the Left Ventricle by Two-Dimensional Echocardiography", Journal of the American Society of Echocardiography, Vol 2, No. 5, Sept-Oct 1989, 362.

FS (Fractional Shortening)

Reynolds, Terry. The Echocardiographer's Pocket Reference. 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 371.



IVS FT (Interventricular Septum FT)

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 371.

LV Mass

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Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 371.

LVEDV

Belenkie, Israel, et al., "Assessment of Left Ventricular Dimensions and Function by Echocardiography." [American Journal of Cardiology](#), June 1973:31.

Gibson DG, "Estimation of left ventricular size by echocardiography." [British Heart Journal](#), 1973, 35:128.

Teichholz et al, "Problems in Echocardiographic Volume Determinations: Echocardiographic-Angiographic Correlations in the Presence or Absence of Asynergy", [American Journal of Cardiology](#), January 1976, Vol 37, 7 -11.

LVESV

Belenkie, Israel, et al., "Assessment of Left Ventricular Dimensions and Function by Echocardiography." [American Journal of Cardiology](#), June 1973:31.

Gibson DG, "Estimation of left ventricular size by echocardiography." [British Heart Journal](#), 1973, 35:128.

Teichholz et al, "Problems in Echocardiographic Volume Determinations: Echocardiographic-Angiographic Correlations in the Presence or Absence of Asynergy", [American Journal of Cardiology](#), January 1976, Vol 37, 7 -11.

LVOT Area (Left Ventricular Outflow Tract Area)

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 338.

LVOT SV (Left Ventricular Outflow Tract SV)

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 355.

Myocardial Thick

Schiller et al., Recommendations for Quantitation of the Left Ventricle by Two-Dimensional Echocardiography, [Journal of the American Society of Echocardiography](#), Vol 2, No. 5, Sept-Oct, 1989, 358-367.

PISA ERO

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 352.

Qp/Qs

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 355.

RVOT Area (Right Ventricular Outflow Tract Area)

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 355.

RVOT SV (Right Ventricular Outflow Tract SV)

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 355.

RVSP

Reynolds, Terry. [The Echocardiographer's Pocket Reference](#). 3rd ed., School of Cardiac Ultrasound, Arizona Heart Institute, (2007), 333.

SV

Oh, Seward, and Jamil Tajik, [The Echo Manual: Second Edition](#). Lippincott Williams & Wilkins, 1999, 40.

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Brunn J., Block U., Ruf G., Bos I., Kunze W.P., Scriba P.C. "Volumetric analysis of thyroid lobes by real-time ultrasound". [Deutsche Medizinische Wochenschrift](#) 1981;106:1338-40.

VolFlow (Volume Flow)

Evans, D.H., et. al., [Doppler Ultrasound Physics, Instrumentation and Clinical Applications](#). New York, 1989, Chapter 11, 188-205.



ULTRASONIX

APPENDIX H: GLOSSARY

% A Red	Percent Area Reduction	AV	Aortic Valve
% Area Red	Percent Area Reduction	AVA	Aortic Valve Area
% D Red	Percent Diameter Reduction	AVI	Audio Video Interleave
% Diam Red	Percent Diameter Reduction	AVm	Mean Average Velocity
2D	Two Dimensional	AVp	Peak Average Velocity
3D	Three Dimensional	B/M-Mode	2D and M-Mode
4D	Four Dimensional (Live 3D)	Base	Baseline (i.e., Doppler Baseline)
4DC	4D Curved Array Transducer	BBT	Basal Body Temperature
Abd	Abdomen	BGR	Blue Green Red
AC	Abdominal Circumference	Blad Wall	Bladder Wall
AC	Alternating Current (power supply)	BLT	Bottom Left
ACC	Acceleration	BMP	Bitmap
AD	Angio Doppler	BNC	Bayonet Neill Concelman
Admin	Administrative/Administrator	BND	Binocular Distance
AE	Application Entity (DICOM)	BPD	Biparietal Diameter
AFI	Amniotic Fluid Index	BPM	Beats per Minute
AFV	Amniotic Fluid Volume	BRT	Bottom Right
AIUM	American Institute of Ultrasound in Medicine	BSA	Body Surface Area
ALARA	As Low As Reasonably Achievable	Calcs	Calculations
ANSI	American National Standards Institute	Card	Cardiology
Ao	Aorta	CBD	Command Bile Duct
AO/LA	Aorta/Left Atrium	CCA	Common Carotid Artery
AoV	Aortic Valve	CD	Compact Disc
AP	Anterior Posterior	Cereb	Cerebellum
APAD	Anterior Posterior Abdominal Diameter	CEREB	Cerebellum
APD	Anterior Posterior Diameter	CFM	Color Flow Mode
APTD	Anterior Posterior Thorax Diameter	CI	Cardiac Index
AR	Area	CI	Cephalic Index
Area Red	Area Reduction	CIR	Circumference
AT	Acceleration Time	cm	centimeters
AUA	Average Ultrasound Age	Cntrst Pos	Contrast Position
		CO	Cardiac Output



ULTRASONIX

COR	Coronal	F	Follicle
CRL	Crown Rump Length	FAST	Focused Assessment with Sonography in Trauma (Trauma (FAST))
CSA	Canadian Standards Association	FDA	U.S. Food and Drug Administration
CSA	Cross Sectional Area	FHR	Fetal Heart Rate
CW	Continuous Wave	FL	Femur Length
CWD	Continuous Wave Doppler	FOV	Field Of View
CxLength	Cervix Length	FPS	Frames per second
DCM	DICOM	FR	Frame Rate
DEL	Delete	FrD	Doppler Transmit Frequency
DIAM RED	Diameter Reduction	Freq	Frequency
DICOM	Digital Imaging and Communications in Medicine	Frm	Frame
DISP	Display	FrRate	Frame Rate
DIST	Distal	FS	Fractional Shortening
Dist	Distance	FTA	Fetal Trunk Area
DPD	Directional Power Doppler	Fwd	Forward
DT	Deceleration Time	g	grams
DVD	Digital Video Device	GA	Gestational Age
Dyn	Dynamic Range	Gb	Gigabyte
EC	Endocavity	GB	Gall Bladder
ECA	External Carotid Artery	GBWT	Gall Bladder Wall Thickness
ECG	Electrocardiogram	Gen	General
EDD	Estimated Date of Delivery	GIF	Graphics Interchange File or Format
EDV	End Diastolic Velocity	GS	Gestational Sac
EDVPG	EDV Pressure Gradient	Gyn	Gynecology
EF	Ejection Fraction	H	Height
EFW	Estimated Fetal Weight	HC	Head Circumference
EMR	Electronic Medical Record	HDMI	High Definition Multimedia Interface
Endom Thick	Endometrial Thickness	HIPAA	Health Insurance Portability & Accountability Act
EMC	Electromagnetic Compatibility	HL	Humeral Length
EPI	Extended Pulse Imaging	HR	Heart Rate
EPSS	E Point Septal Separation	Hz	Hertz
ET	Elapsed Time	ICA	Internal Carotid Artery
EV	Endovaginal		



ICT	Intracavity Transducer	MED	Medial
in	inches	MGr	Mean Gradient
IP	Internet Protocol	MI	Mechanical Index
ISP	Internet Service Provider	Min	Minimum
IT	Information Technology (e.g., IT Department)	M-M	Motion Mode
IVS	Interventricular Septum	mm	millimeters
IVSd	Interventricular Septum diastole	MPEG	Moving Picture Experts Group
IVSs	Interventricular Septum systole	MPG	Moving Picture (Experts) Group
JPEG	Joint Photographic Experts Group	MPR	Multiplanar Reconstruction
Kb	Kilobyte	Multi	Multiple
kPa	Kilopascal	Msk	Musculoskeletal
L	Length	MV	Mean Velocity
LA	Long Axis	MV	Mitral Valve
LA	Left Atrium	Myocardial Thick ..	Myocardial Thickness
LAN	Local Area Network	NEMA	National Electrical Manufacturers Association
LAT	Lateral	NET	Network
LCD	Liquid Crystal Display	NF	Nuchal Fold
LMP	Last Menstrual Period	NSF	National Sanitation Foundation
LONG	Longitudinal	NT	Nuchal Thickness
LOV	Left Ovary	NTSC	National Television Standards Committee
LT	Left	OB	Obstetrics
LVDd	Left Ventricular Diameter diastole	OD	Optical Density
LVDs	Left Ventricular Diameter systole	OEM	Original Equipment Manufacturer
LVET	Left Ventricular Ejection Time	OFD	Occipital-Frontal Diameter
LVOT	Left Ventricular Outflow Tract	OOD	Outer Orbital Diameter
LVOTd	Left Ventricular Outflow Tract distance	PA	Phased Array
LVPWd	Left Ventricular Posterior Wall diastole	PAL	Phased Alternating Line
LVPWs	Left Ventricular Posterior Wall systole	Pano	Panoramic Imaging Mode
Max	Maximum	Params	Parameters
Mb	Megabyte	PDF	Portable Document Format
MCA	Middle Cerebral Artery	Pel	Pelvis
MCA- PI	Middle Cerebral Artery-Pulsatility Index	Pen	Penetration
MEAS	Measure	Persist	Persistence



ULTRASONIX

PGr	Pressure Gradient	RVDd	Right Ventricular Dimension diastole
PHT	Pressure Half Time	RVDs	Right Ventricular Dimension systole
PI	Pulsatility Index	RVOT	Right Ventricular Outflow Tract
Picto	Pictogram	RVWd	Right Ventricular Wall diastole
PIN	Personal Identification Number	RVWs	Right Ventricular Wall systole
PISA	Proximal Isovelocity Surface Area	SA	Short Axis
PNG	Portable Network Graphics	SAG	Sagittal
Pos	Position	SAW	Surface Acoustic Wave
POS	Position	SCP	Service Class Provider
PostV Blad	Post Void Bladder	SCU	Service Class User
PreV Blad	Pre Void Bladder	SD	Standard Deviation
PRF	Pulse Repetition Frequency	SD	Systolic/Diastolic Ratio
PROX	Proximal	SDK	Software Development Kit
PSV	Peak Systolic Velocity	SEL	Select
PSVPG	PSV Pressure Gradient	Sens	Sensitivity
PV	Peak Velocity	Simult	Simultaneous
PV	Pulmonary Valve	SMTP	Simple Mail Transport Protocol
PW	Pulsed Wave Doppler	SonixGPS	Sonix Guidance Positioning System
PWD	Power Doppler	SV	Sample Volume
Q	Quadrant (e.g., AFI)	SV	Stroke Volume
Qp	Pulmonic Blood Flow	SV1	Selection Value 1
Qs	Systemic Blood Flow	TAD	Transverse Abdominal Diameter
Rad	Radius	TC	Trunk Circumference
Rect	Rectangle	TCP	Transfer Control Protocol
Res	Resolution	TCP/IP	Transmission Control Protocol/Internet Protocol
RF	Radio Frequency	TFT	Thin Film Technology
RGB	Red Green Blue	TGC	Time Gain Compensation
Rgn	Region	THI	Tissue Harmonic Imaging
RLE	Run Length Encoding	TI	Thermal Index
RI	Resistive Index	TIB	Thermal Index – Bone
ROI	Region of Interest	TIC	Thermal Index – Cranial
ROV	Right Ovary	TIS	Thermal Index – Soft Tissue
RT	Right	TL	Tibia Length
RTSA	Real Time Spectrum Analysis		



TDI	Tissue Doppler Imaging	US	Ultrasound
TRANS	Transverse	USB	Universal Serial Bus
Transp	Transparency	VAC	Volts Alternating Current
Trauma (FAST)	Trauma (Focused Assessment with Sonography in Trauma)	VCR	Video Cassette Recorder
TTD	Transverse Trunk Diameter	Vel	Velocity
TV	Tricuspid Valve	Vol	Volume
UI	User Interface	VolFlow	Volume Flow
UL	Ulnar Length	VPS	Volumes per Second
UL	Underwriter's Laboratory	VR	Volume Rendering
ULT	Upper Left	VTI	Velocity Time Integral
Umb A	Umbilical Artery	W	Width
Umb A-PI	Umbilical Artery- Pulsatility Index	WEEE	Waste Electrical and Electronic Equipment
UPS	Uninterruptible Power Supply	WF	Wall Filter
URL	Uniform Resource Locator	WWW	World Wide Web
URT	Upper Right	YS	Yolk Sack



ULTRASONIX