signostics

User Manual

P03629 Rev 2.11.0

SigViewer™

www.signostics.com.au

CONTENTS

1. INTRODUCTION

About SigViewer

SigViewer enables users to:

- ✓ Copy **Signos RT** images to a PC.

- ✓ Enter new patients and copy them to a **Signos RT** device.

- ✓ Store, view, email, and print exam and image information.

- ✓ Display the **Signos RT** screen on the PC for magnification and projection (see Remote display, page 25).

- ✓ Connect directly to an ultrasound probe to control and display ultrasound imaging (page 10).

SigViewer displays information on three different tabs. The review tabs displays saved images. A Device tab appears when a **Signos RT** is connected (page 8). A Scanning tab appears when an ultrasound probe is directly connected to the PC (page 17). Buttons for switching between the tabs are located in the top right corner of the SigViewer window and in the menu.
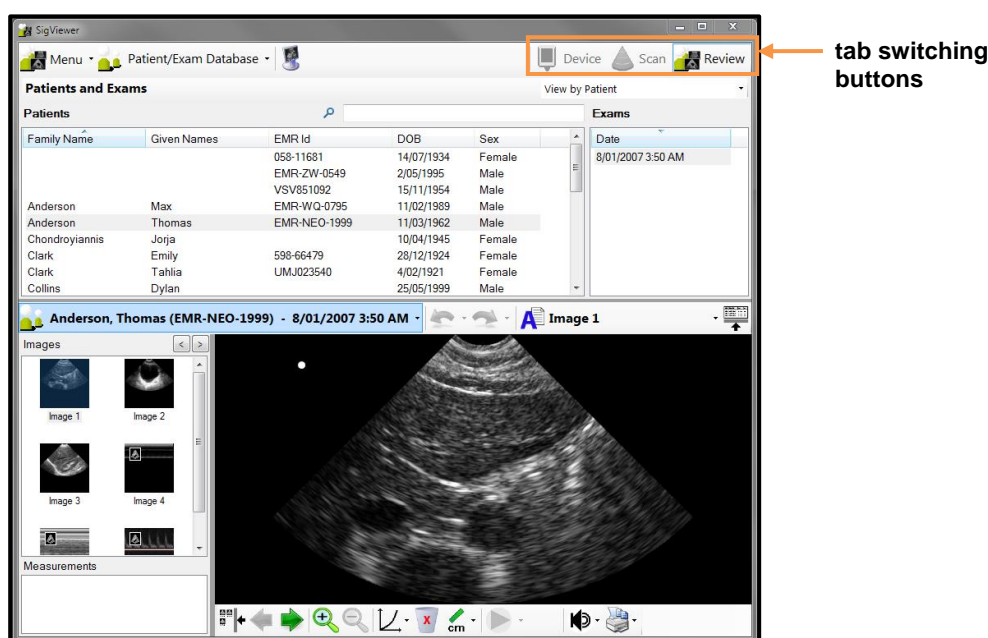
Fig 1.1 SigViewer screen

The application may be switched into full screen mode by clicking the ⬚ icon. Full screen mode fills the entire screen and is the best mode for tablet displays. In full screen mode, the tab switching buttons on the right and the full screen button are not always visible on the toolbar. These functions may also be accessed from the menu .

In this manual, text that appears on the PC screen within the **SigViewer** application is marked in bold.

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2. GETTING STARTED

Installing SigViewer onto your PC

Compatibility

SigViewer is compatible with Windows XP (Service pack 2 or above); Windows Vista; Windows 7; and Windows 8.

Administrator privileges are required to install the software. You will need at least 300MB free space on your hard drive.

Installation

Place the DVD with the **SigViewer** software into your DVD drive. A menu will launch automatically and you should select the SigViewer button; if this does not occur, navigate to the **setup.exe** file in the **SigViewer** directory of the DVD. Follow the on screen installation instructions.

Running SigViewer

The **SigViewer** application can be run by:

> Double clicking on the **SigViewer** desktop icon or selecting **SigViewer** from the main Windows Menu.

> Connecting a powered on **Signos RT** to the PC via a USB cable and clicking **File Transfer** on the Signos RT screen.

> Connecting a **Signos RT** ultrasound probe directly to the PC via a USB cable.
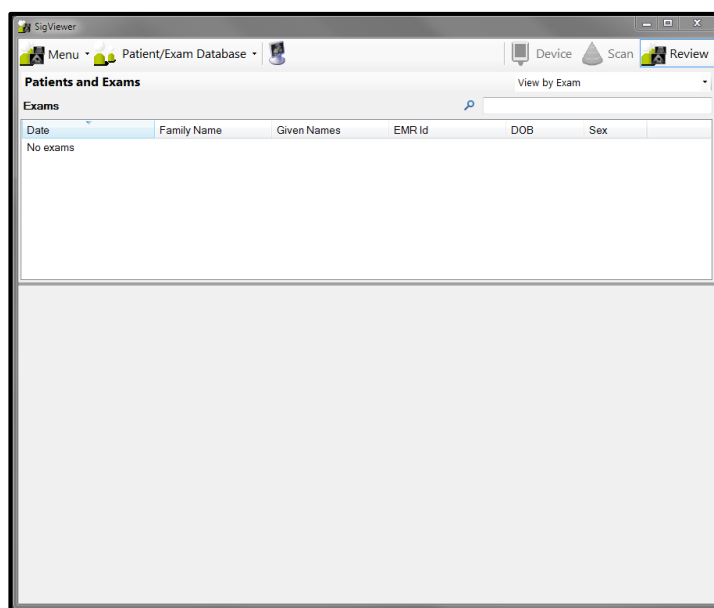

Fig 2.1 SigViewer

The first time **SigViewer** is run (Fig 2.1), there will be a single patient (Unidentified), with no exams or images stored.

Options

Options can be set up by selecting **Menu>Options**. There are three tabs containing General Options,Ultrasound Options and DICOM Options.
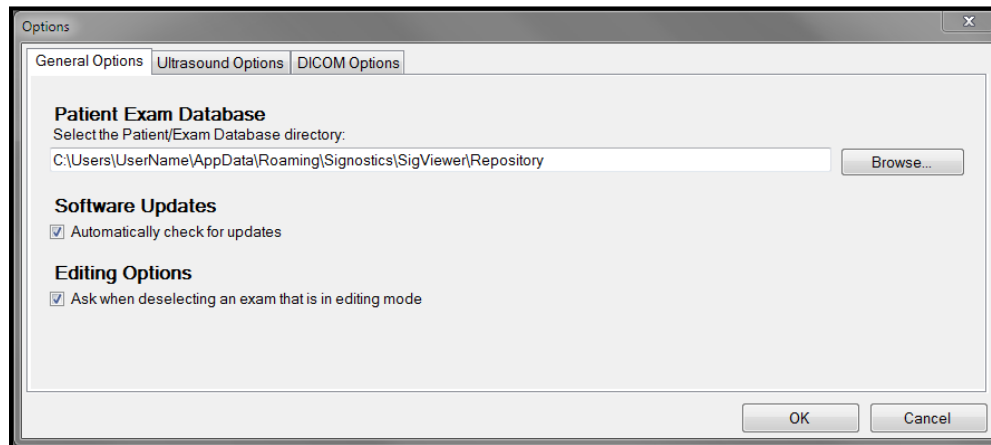
General Options

Fig 2.2 Connect to a different patient/exam database

Database Location

SigViewer displays information that is stored in a patient/exam database on the PC. You may create multiple databases on your PC, but **SigViewer** can only use one of these at a time. The current database is the one whose information is being displayed, and the one that will be updated in any synchronization process.

The **Patient Exam Database** option allows you to specify the location of the database you wish to use (Fig 2.2). You may change from the default location if you want the database in a location you backup, or if you create new databases for each year.

When creating a new database location, you should create a new folder, and enter the folder location in the Patient/Exam Database text box. Any location may be selected; however, a warning will appear if the selected location cannot be encrypted.

Software Updates

If checked, **Automatically check for updates** will periodically check the Signostics website for software updates for SigViewer, and prompt you to update software when required.

Editing Options

If checked, **Ask when deselecting an exam that is in editing mode** will prompt the user when an exam that is open for editing is deselected by the user, to confirm the user intends to close the exam and accepts they will not be able to undo changes to the exam.
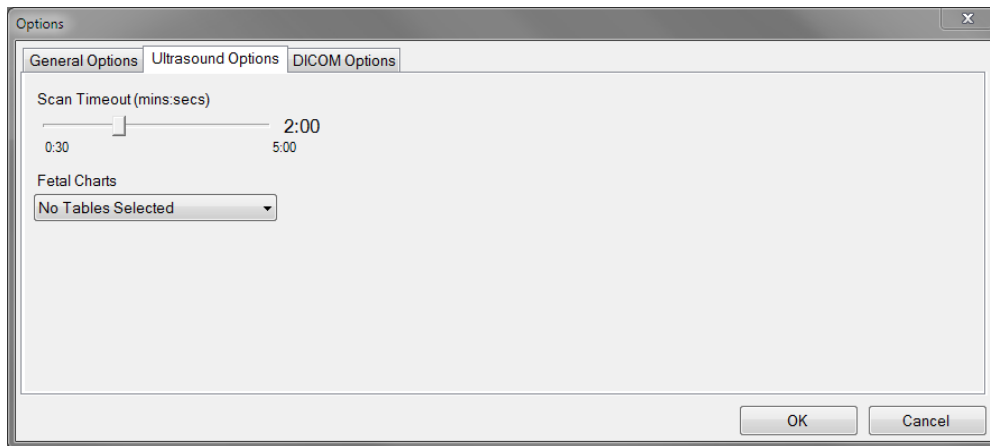
Ultrasound Options

Fig 2.3 Ultrasound Options

Scan Timeout

Enable a user to set an automatic scan timeout for scanning mode. This option is only relevant for users who use the PC to control scanning.

Fetal Charts

This option allows the chart used for fetal biometry measurements to be set. The following charts are available:

➢ ASUM (Australasian Society for Ultrasound in Medicine "Policies and Statements D7 – Statement on Normal Ultrasonic Fetal Measurements. Revised May 2001").

➢ BMUS (British Medical Ultrasound Society "Ultrasound 2009;17(3):161-167 Fetal size and dating: charts recommended for clinical obstetric practice.").

➢ Hadlock (Hadlock,F., et al. "Estimating Fetal Age: Computer-Assisted Analysis of Multiple Fetal Growth Parameters." Radiology, 152: 1984, pp 497-501; 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, pp 501-505.)
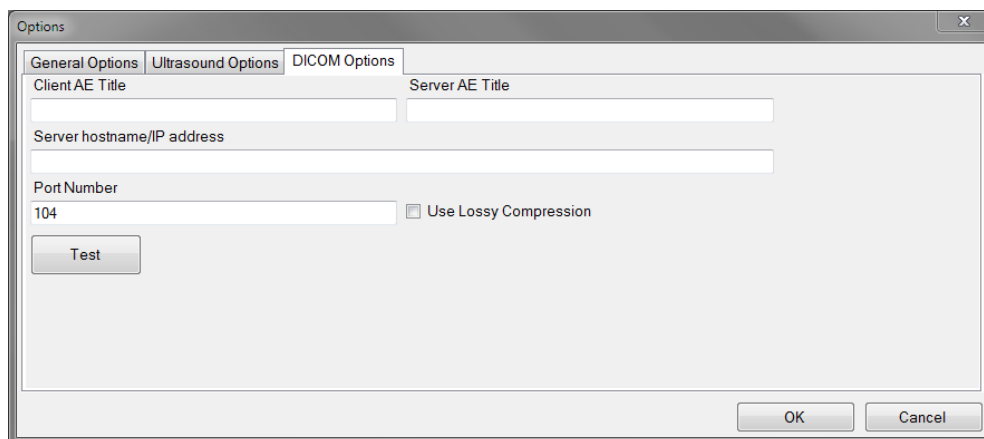
DICOM Options

Fig 2.4 DICOM Options

DICOM is a standard used to transfer images to a PACS server for storage. If required these options would normally be set up by IT personnel who understand the configuration of the server.

Client AE Title

This is the name that identifies the PC running SigViewer to the DICOM server.

Server AE Title

This is the name that identifies the server being connected to.

Server HostnameThe server hostname is a DNS name, or IP address, for the server.

Port Number

The Port number is the TCP/IP port number to connect to on the server. 104 is the standard DICOM port, but others may be used.

Test Button

Clicking the Test button will attempt to connect to the server to check that the settings are correct. No images will be transferred.

Registration

When a SignosRT is first connected to the PC, SigViewer will prompt you to register the device (Fig 2.5). Registration is important as it means you will be contacted if there is any important information relating to the safety of the device, such as updates to the device software.

Note that regardless of whether you register, the details of software updates applied will be sent back to Signostics for regulatory tracking purposes.

Fig 2.5 Device Registration

3. SYNCHRONIZING WITH YOUR SIGNOS RT

What is synchronizing?

Synchronizing describes the process of transferring patient data and images between the **Signos RT** and PC.

New patient data entered on the PC will be copied onto the **Signos RT**. New patient data, exams, and associated images will only be copied from the **Signos RT** to the PC. New exams and associated images will not be pushed from the PC onto the **Signos RT**. Any edits to existing exams on either the PC or **Signos RT** will be updated during synchronization.

How to synchronize

Use the USB connection cable in the **Signos RT** package to connect **Signos RT** to a USB port of a PC. Click **File Transfer** on the **Signos RT** screen, and if **SigViewer** is installed on the PC then **SigViewer** will launch automatically.

After connecting your **Signos RT** to a PC, you will be prompted to synchronize the device (Fig 3.1). You may bypass this step by selecting the Automatic Synchronization option from the **Device** tab (page 9).
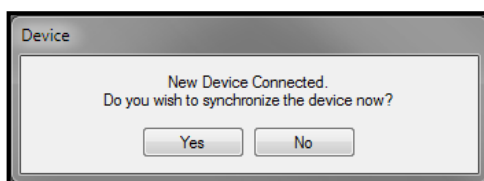
Fig 3.1 New device connected

If your microSD card is password-protected, you will need to enter the user name and password each time **SigViewer** launches. Select the user name from the drop-down box and enter the password (Fig 3.2). If you disconnect, then re-connect, **Signos RT** to the PC without shutting down the **SigViewer** program, the password prompt will not re-appear.
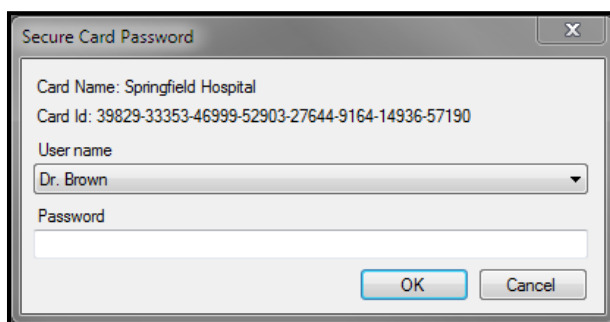
Fig 3.2 Password prompt

After synchronization is complete, you will be prompted to delete exam information from **Signos RT** (Fig 3.3). There is also the option of deleting patient information. You may bypass this step by selecting a Delete After Synchronization option from the **Device** tab (page 9).
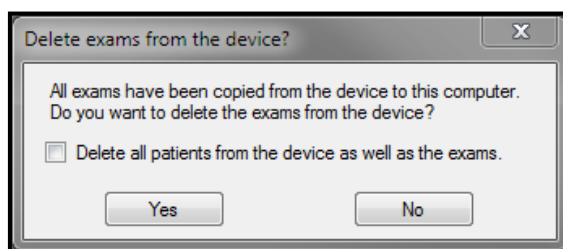
Fig 3.3 Delete after synchronization

The Device tab

A **Device** tab (Fig 3.4) appears when a **Signos RT** is connected to your PC. Only one **Signos RT** may be connected to **SigViewer** at a time.
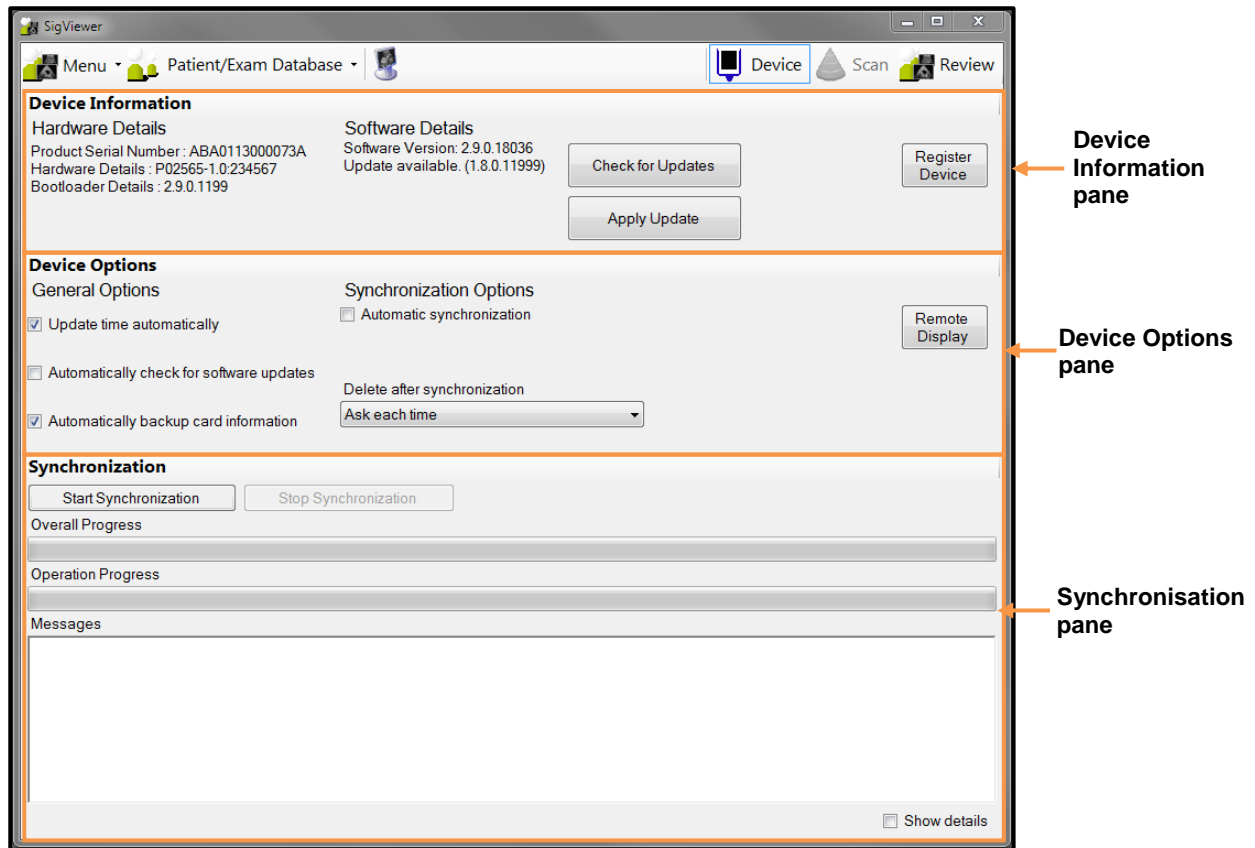

Fig 3.4 Device tab

Device Information

The **Device Information** pane gives information about the connected **Signos RT**:

- ➢ **Product Serial Number**: its unique serial number (also displayed on the back of the device).
- ➢ **Hardware Details**: the hardware revision and serial number of the display unit electronics.
- ➢ **Bootloader Details**: the version of Bootloader software installed.
- ➢ **Software Version:** availability of **Signos** software updates (below).
- ➢ **Register Device:** allows registration information for the device to be entered or re-entered.

Device Options

The **Device Options** pane allows you to set default updating options when **Signos RT** is connected to a PC.

- ➢ **Update time automatically**, if checked, will change **Signos RT** time to the local time on the PC.
- ➢ **Automatically check for software updates**, if checked, will ensure your PC checks the Signostics website for **Signos RT** software updates. **SigViewer** can only check for updates when the PC running **SigViewer** is connected to the Internet and a **Signos RT** is connected to the PC.

  If this option is selected, you will be prompted to download and update your software when updates are found. If not, you can manually check for software updates by pressing **Check for Updates**. If updates are available, install them by pressing **Apply Update**.

Do not disconnect your **Signos RT** while its software is being updated.

➢ **Automatically backup card information**, if checked, will back-up the security key file used to encrypt data on your microSD card. If this file is lost or corrupted, then data on the card becomes inaccessible.

If a device with a corrupt card is connected, **SigViewer** offers to attempt to repair the card. Press **Yes** to proceed, then choose the user name and enter the password.

➢ **Automatic Synchronization**, if checked, will ensure that synchronization will begin without prompts when **Signos RT** is connected to the PC.

➢ **Delete after Synchronization** has four options for deleting information from the **Signos RT** after synchronization has occurred:

- **Ask each time**: you will be asked whether you wish to delete exam and patient information.

- **Delete Nothing**: no information is deleted.

- **Delete Exams**: exam information is deleted.

- **Delete Exams and Patients**: exam and patient information is deleted.

➢ Remote Display will display the **Signos RT** screen on the connected PC (see page 25).

Synchronization

In the **Synchronization** pane are:

➢ Two buttons at the top:

- **Start synchronization** allows you to synchronize **Signos RT** a second or subsequent time after connection.

- **Stop synchronization** allows you to halt synchronization before it is complete.

➢ Two progress bars in the middle:

- **Overall Progress** gives the current position within the complete synchronization process.

- **Operation Progress** gives the current position within the current copying process (see below).

➢ The **Messages** box at the bottom:

- The information in blue is always visible and gives you an indication of the current stage of the synchronization process; these are the stages referred to in the **Operation Progress** bar.

- If **Show details** is checked, detailed information is displayed in black about each patient and exam that is synchronized.

Synchronization is complete when the **Overall Progress** bar reaches the end; or when the **Synchronization completed** message appears in the **Messages** box.

Synchronization conflicts

A conflict may occur during synchronization if the same patient or exam information has been edited on both **Signos RT** and **SigViewer** since you last synchronized. A message box will appear, giving options to resolve the conflict by asking which version, if any, to transfer.

If an error occurs during synchronization, then the details will be displayed in red text in the **Messages** box. An error may occur if a file cannot be copied.

Signostics recommends that you synchronize regularly with your **Signos RT** to avoid conflicts.

4. MANAGING EXAM AND PATIENT INFORMATION

Patient and Exam overview

A *patient* is an individual whose details may be saved in **SigViewer**.

An *exam* describes a single interaction (e.g., appointment) between a patient and **Signos RT** user. A patient may have one or more linked exams.

Exams consist of up to 50 different ultrasound *images*. Fig 4.1 shows the relationship between patients, exams and images.
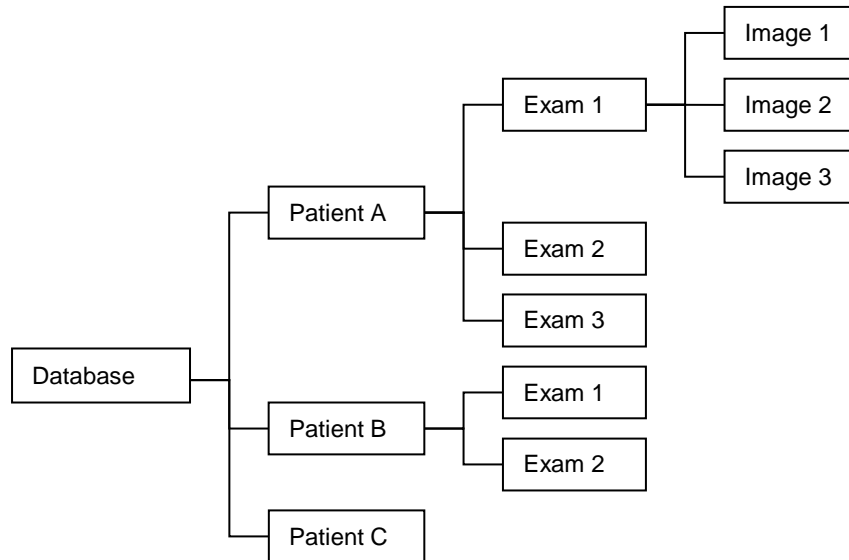

Fig 4.1 Schematic relationship between patients, exams and images

Exams are identified by patient name; different exams linked with the same patient are identified by exam date and time. If you do not enter patient details for an exam, the exam will be linked with an **Unidentified** patient. **Unidentified** patient exams are identified by exam date and time.

The **SigViewer** *database's* physical equivalent is a filing cabinet. The filing cabinet would consist of a collection of folders, with each folder labeled with the *patient* information. The clinician would use an ultrasound system during a patient appointment (*exam*), print-out the *images* of interest, and store them in the corresponding *patient* folder.

The SigViewer screen

When **SigViewer** is launched, a screen similar to Fig 4.2 will appear, with patients, exams, and images identified in different window panes.
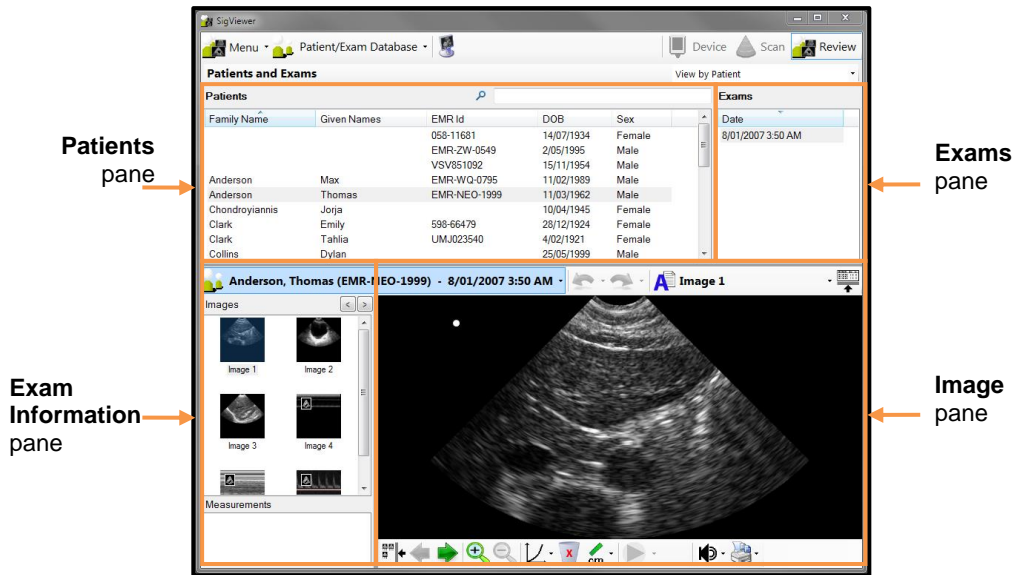
Fig 4.2 The SigViewer screen

Patient information

Adding new patients

Select **Patient/Exam Database>Add Patient** to add a new patient (Fig 4.3). Use text to complete name and EMR (electronic medical record) information; type in or use the calendar drop-down box to complete date of birth information; and use the **Sex** drop-down box to complete gender information.

Fig 4.3 Add Patient

Editing existing patients

To edit details for an existing patient, first select the patient's name from the **Patients** pane. Double-click the patient's name or select **Patient/Exam Database>Edit patient** to open a window similar to Fig 4.3.

To assign exam information to a different patient, e.g., you have an exam with an **Unidentified** patient label that you wish to assign a name, select the exam, click the patient name in the Exam Toolbar and select **Set/Change Exam Patient** from the menu. The **Select Patient for Current Exam** window will open (Fig 4.4), where you may select from the existing patient list. This window also has an **Add New Patient…** button, which allows you to add information for a new patient (see Fig 4.3).
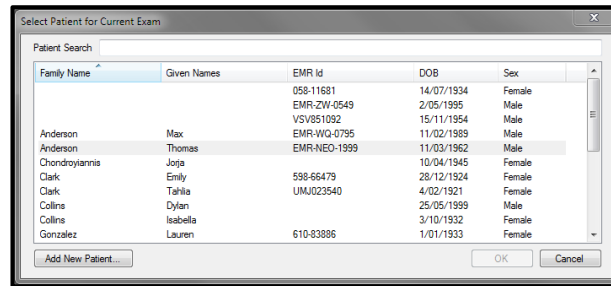
Fig 4.4 Select Patient for Exam

Deleting patient information

To delete a patient entry, first select the patient's name from the Patients pane. Select **Patient/Exam Database>Delete Patient** from the menu to delete patient information and all associated exams. You will be asked to confirm your delete request. This action cannot be undone.

Exam information

Selecting exams

By patient

Select the desired patient in the **Patients** pane. Use the scrollbar to scroll up and down the list; alternatively, begin typing the patient's name in the **Patient Search** text box to display names matching the typed text. The patients can be ordered by Family Name or EMR Id in either ascending or descending order by clicking on the column titles for the matching columns.

Selecting a patient will bring up a list of associated exams in the **Exams** pane. The exams are listed by date and time. The order of the exams may be reversed by clicking on the Date column title. Select an exam to view its images at the bottom of the screen.

By exam

Search through all exams by moving to the **View by Patient** drop-down box in the **Exams** pane, and select **View by Exam**. A list of all exams on the PC will appear in the top left pane, ordered by date. Select an exam to view its images, as shown in Fig 4.5.

Fig 4.5 View by Exam

<div style="text-align: right">Managing exam and patient information</div>
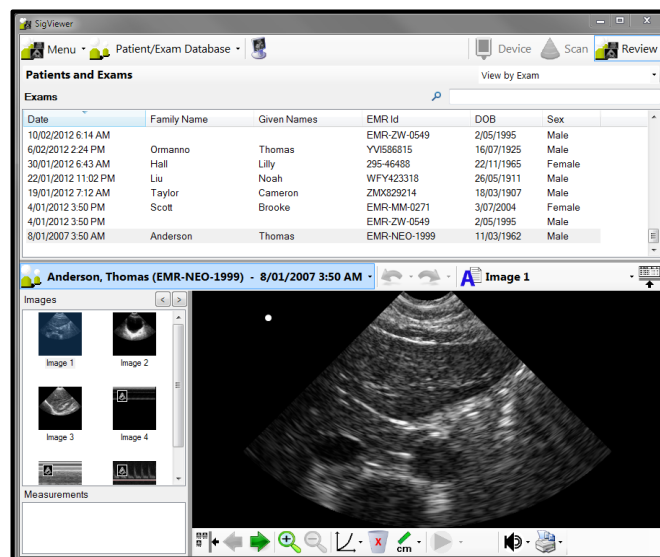
Viewing images in the selected exam

When an exam is selected (Fig 4.6), the exam toolbar shows

- ➢ The patient name and EMR (electronic medical record) identifier.
- ➢ The date and time of the exam.
- ➢ The text annotation of the current image. Click the annotation to open a menu containing predefined annotations to apply to the image, or to launch a Text Annotation window for editing the annotation/image name.

The left pane at the bottom of the screen shows:

- ➢ A thumbnail gallery of all images in the open exam. The selected image is shown in the right pane. The number of image columns can be varied between 1 and 2 using the arrow buttons.
- ➢ The measurement values for the selected image, except if only one thumbnail column is being viewed in which case the measurements are shown directly on the image.

To make the image shown in the right pane larger, click the ⚏ icon from the exam tool bar. Select this icon again to revert to the normal view. The Patients and Exams area can also be hidden by clicking the ⚏ icon next to the text annotation.
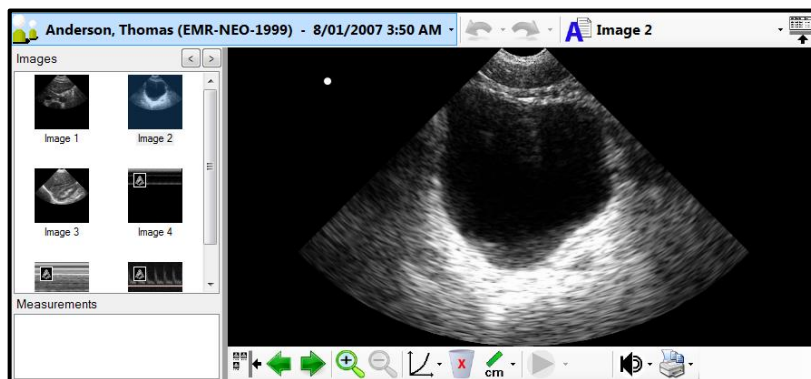
Fig 4.6 Viewing images

Editing images in the selected exam

Buttons at the bottom of the **Image** pane can be used to edit exam images (Fig 4.6). If the **SigViewer** window is not large enough to display all the buttons, a drop-down arrow will appear; click this arrow to view all buttons or re-size the **SigViewer** window.

You will be prompted to confirm that you wish to edit exams; an exam in editing mode will show an asterisk after the exam date/time. Any changes you make to an exam in editing mode can be undone (or redone) using the ↶ **Undo** and ↷ **Redo** icons in the exam tool bar.

Measurements Menu

The measurement menu allows you to add and delete measurement shapes. Measurement information is displayed in the **Measurements** box in the bottom left corner of the **SigViewer** window. You will need to position each shape before a measurement value will appear.

➢ **Callipers** - Insert a caliper measurement.

➢ **Arrow –** Insert an arrow indicator

➢ **Polygon** - Insert a polygon measurement.

➢ **Ellipse** - Insert an ellipse measurement.

➢ **Bladder Volume** - Insert a bladder volume measurement will add an outline bordering the bladder after you click on the image to indicate bladder position. Try to click as closely as possible to the centre of the dark, anechoic region.

➢ **BPM** Insert a BPM calipers inserts a caliper that displays a beats per minute (BPM) measurement calculated from one, two, or four cycles. Can only be used on M-mode and PW Doppler images.

➢ **Fetal Biometry -** Insert a Fetal Biometry measurement inserts a special caliper, or ellipse, measurement on a B-mode image that estimates gestational age.

➢ **Delete Measurement** will delete the selected measurement or arrow**.**

➢ **Delete All Measurements** will delete all measurements and arrows.

Navigation and editing tool bar

These icons allow you to view and delete different images in the exam, and to pan and zoom around the selected image. You may also view image settings, overlay grids and rulers and edit text annotations.

➢ **Previous Image** in the exam.

➢ **Next Image** in the exam.

➢ **Zoom in** will magnify the image. If the image is larger than the pane size, use the scrollbars at the right and bottom of the image to pan. Alternatively, click on the image and use the mouse wheel to zoom in and out, and click-drag to pan around it. On a touch screen pinching will zoom in and out.

➢ **Zoom out** will decrease the magnification.

➢ The **Transfer Curve** slider box allows you to adjust the image's grayscale characteristics. The range is -3 to 3: select a higher number to make the image darker.

➢ **Delete Image**.

Voice recording popup

Click the voice recording button to open a popup for recording and playing back voice recordings. These icons allow you to manipulate voice recordings for the selected image.

> ▶ **Play a**n existing recording.

> ● **Record** a new annotation.

> ■ **Stop** playing or recording.

> ☒ **Delete** an existing voice recording.

Movie controls

| ⏸ ▾ 31/32 |

The movie button allows you to play and pause movies. Click the right part of the button to shown a control which allows you to scroll through a movie one frame at a time.

Grids and Rulers

Right-clicking an image in the **Image** pane generates a pop-up menu enabling you to add a grid or rulers to the image.
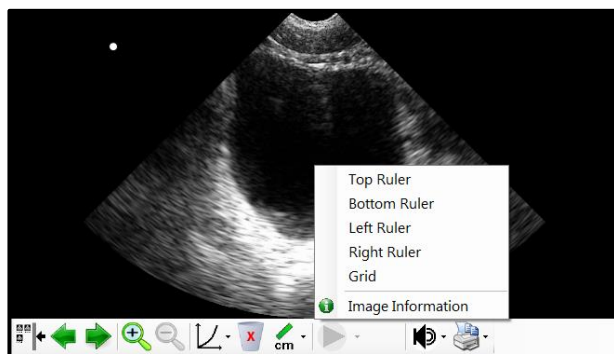

Fig 4.7 Grids and Rulers

Image Information

Right-clicking an image in the **Image** pane generates a pop-up menu enabling you to access **Image Information** (Fig 4.7). Image Information displays:

- **Image Properties** such as image name, date image acquired, size and resolution, frame rate, and movie information.

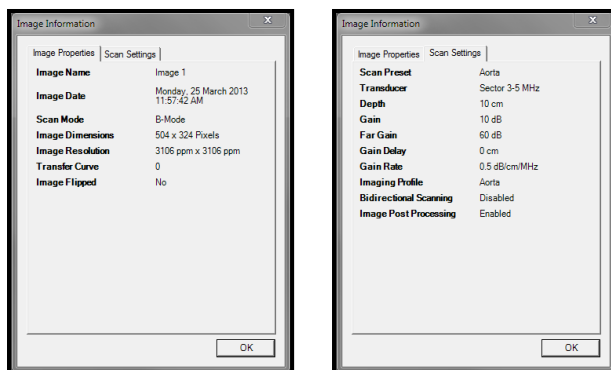- **Scan Settings** such as the preset and scan settings used to generate the image.

Fig 4.8 Image information tabs

Exporting images

To export one image from an exam, select the image in the thumbnail gallery and right-click on it and select **Export Image**. You may choose to export patient and exam information about the image (Fig 4.9). Any information selected will be displayed at the top or bottom of the image when the file is opened. You may also choose how duplex images are exported. Duplex images refer to M-mode and PW Doppler images that have an associated B-mode image.
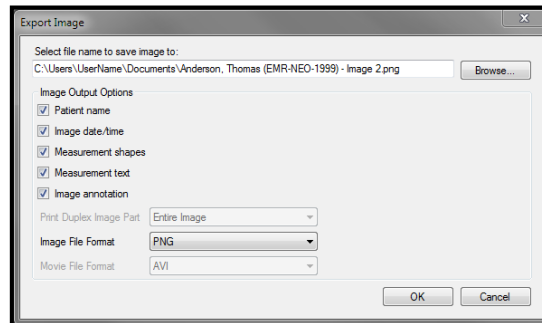

Fig 4.9 Export Image

Still images will be exported as JPG, PNG or DICOM files depending on the option set. When movie clips are exported they will be exported as AVI or DICOM files depending on the option set.

Alternatively, highlight the image you wish to export and select **Patient>Copy Image** or right-click **Copy Image** to simply copy the image to the clipboard with the previously selected exam and patient information. To control the information included with the image use **Copy Image Advanced**. Alternatively, simply drag the image to the required application.

To export multiple images, an **Export Images** page similar to Fig 4.9 appears; select the folder in which your images will be saved, and unique file names will automatically be generated.

➢ To export all images from a right-click in the thumbnail gallery and select **Export All Images**.

➢ To export some images from an exam, select the desired images from the thumbnail gallery and right-click **Export Images**.

Sending to a DICOM Server

To send images to a DICOM server the select ▣ **Printing** from the image tool bar, then select one of the send DICOM commands from the popup menu.

While the image(s) are being transferred a progress window will appear.

Deleting an exam

Select **Patient/Exam Database>Delete Exam** to delete the selected exam. You will be asked to confirm your delete request. This action cannot be undone.

5. SCANNING

SigViewer can control the **Signos RT** ultrasound probe directly when the ultrasound probe is connected directly to a PC or tablet computer.

Warning

✓ Where **Signos RT** or the **Signos RT** Ultrasound Probe is connected to a personal computer via USB, the personal computer and connected peripherals shall be outside the patient environment and must be certified to the respective IEC standards and particular national deviations (IEC 60950 or IEC 60601-1:2nd and/or 3rd edition). Furthermore, any user connecting **Signos RT** to other equipment is configuring a medical system, and therefore is responsible for ensuring the system complies with IEC 60601-1: 3rd Edition Clause 16, and/or the relevant IEC 60601-1-1 collateral standard for use with IEC 60601-1:2nd Edition. Extension cords or Multiple Socket Outlets shall not be connected to the system when the PC is only IEC 60950 compliant a medical grade isolation transformer complying with IEC 60601-1 2nd Edition and/or IEC 60601-1 3rd Edition shall be used.

Contact Signostics for guidance on connecting **Signos RT** to external computers and peripherals.

Failure to comply with these guidelines may result in electric shock.

✓ **Users intending to use Sigviewer for scanning must refer to the Signos RT User Manual (Signostics part number P03123 or P03622) for intended uses, safety information, acoustic output, and warnings**.

Setting Up

Before scanning, check you have access to everything you need and the device is ready to scan as follows:

➢ The **Signos RT** ultrasound probe is plugged into the PC and has battery charge available to scan (the probe LED is green or flashing green). Note that exact probe battery level can be accessed by clicking the probe battery icon.

➢ The **Signos RT** probe has been cleaned or disinfected as appropriate (see Signos RT User Manual for cleaning and disinfection instructions).

➢ You have suitable ultrasound transmission gel available.

➢ The patient is positioned appropriately and you have access to the anatomy to be scanned.

➢ The **SigViewer** application has detected the ultrasound probe and displays the Scan Tab (see Fig 5.1).
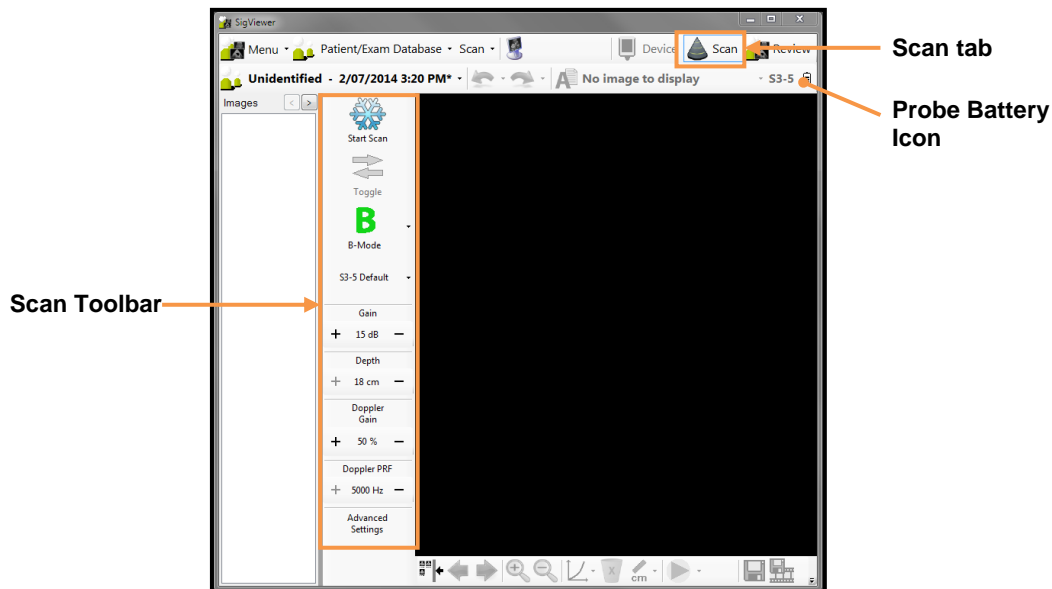

Fig 5.1 Scan Tab

Default Settings

Each transducer defaults to a set of preset scan settings at initialization which provide appropriate setting for general scanning. The settings are set to values which should be adequate for average patients, and the depth is set to the maximum depth. The user is able to modify the default preset and create new customized presets (see Scan Settings). Scan settings cannot increase acoustic output level, ensuring the device always operates with safe acoustic output levels.

Entering exam and patient information

Patient data may be set before beginning a scan, or added at any later time. Enter patient data by clicking the patient name and selecting **Set/Change Exam Patient.** Select from the stored list of patients, or click the **Add New Patient** box to create a new patient.

Imaging modes

Warning

✓ Check the connecting cable, connectors, and system housings before use for cracks or fraying. Do not use if damaged.

Signos RT employs three separate imaging modes, known as B-mode, M-mode and PW Doppler mode.

Changing imaging modes

The current imaging mode is indicated in the vertical scan toolbar. Change by clicking on the icon and selecting the new imaging mode.

Starting and Stopping a Scan

Click the Freeze icon [Start Scan] or the *scan button* on the probe to begin scanning. The scanned image will constantly be updated on the screen.

When actively scanning, click the freeze icon or *scan button* to stop and save the scan image. The last scanned image will be retained on the screen and in the exam.

B-mode Imaging

Signos RT generates conventional sector-shaped B-mode images of underlying anatomy.

For probe orientation, the *Scan Button* on the probe corresponds to the **Flip Icon** on the display.   The convention is for the *Scan Button* to be on the patient's right side for transverse scans, and superior for sagittal or coronal scans (Fig 5.2), with a white dot (flip icon) on the image to denote scan button position.
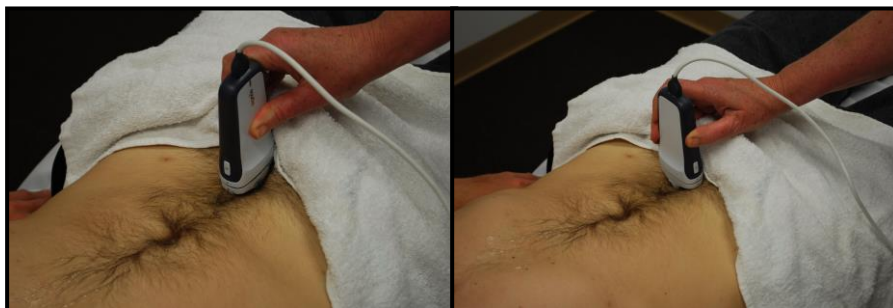

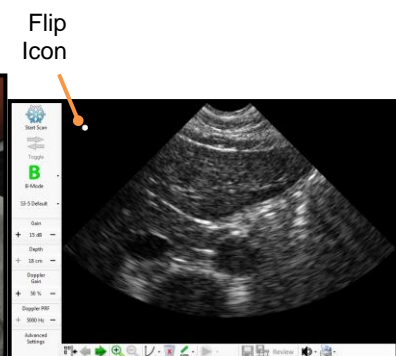**Fig 5.2 B-mode scans with correct probe orientation**

Fig 5.3 B-mode scan showing field of view and orientation

M-mode Imaging

M-mode images can record tissue motion over time

With M-mode selected, starting a scan will initiate a B-mode image with a line down the centre of the image showing the position of the M-mode line of sight (Fig 5.4). The line is a locating aid, assisting the user to align the tissue of interest. With the B-mode scan running, clicking the *Toggle Icon* will freeze the B-mode image and commence generating the M-mode trace (**Fig 5.5**). Changing back from the M-mode trace to the B-mode positioning is via clicking the *Toggle Icon* again.

M-mode images show a stationary interface as a straight line on the trace. Heart rates can be measured using the BPM menu.

PW Doppler Imaging

PW Doppler images can record fluid motion over time.

With PW Doppler mode selected, starting a scan will initiate a B-mode image with a line and a gate down the center of the image. The line and gate are a locating aid, assisting the user to align the tissue of interest (Fig 5.6). The gate position can be moved up and down and widened via the mouse or touch screen. With the B-mode scan running, clicking the *Toggle Icon* will freeze the B-mode image and commence generating a PW Doppler trace (Fig 5.7). Changing from the PW Doppler trace back to the B-mode positioning scan is via clicking the *Toggle Icon*. A trace depicting fluid velocity is displayed on the image.

Note: PW Doppler does not provide absolute velocity measurements. It only provides an indication of relative or changes in velocity.
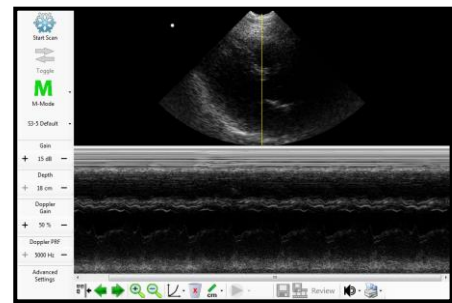
Toggle Icon

Fig 5.4 Positioning scan for M-mode
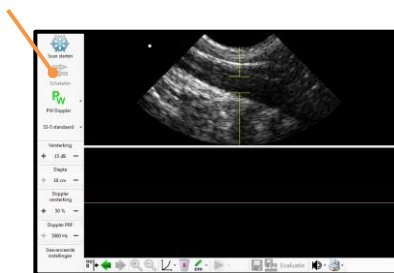

Fig 5.5 M-mode trace

Toggle
Icon

Fig 5.6 B-mode scan with PW Doppler line and gate

Fig 5.7 PW Doppler trace

Quick adjustments

The Scan Tool Bar provides icons for quickly adjusting common settings, such as Gain and Depth for all modes, and Doppler Gain and Doppler pulse repetition frequency for PW Doppler.

To adjust other scan parameters select **Advanced Settings** which will open another panel containing the advanced scan parameters.

Movies

SigViewer is able to save the last 32 frames of a B-mode scan as a movie for later playback. **SigViewer** also has a Scan **Review** mode that enables users to scroll through the last 32 frames one image at a time and then save any of the last 32 images.

Entering Scan Review Mode

Scan review mode is entered by selecting the *Review* icon.

The movie pause/play button can be used to control playback of the review frames.

Clicking the right part of the pause/play button pops up a control that allow the user to scroll through single frames.

Single images can be saved by clicking on the *Save* icon.

Movies can be saved by clicking on the Save Movie icon.

Recommended ultrasound transmission gel

Signostics recommends the use of *Aquasonic 100* Ultrasound Transmission Gel manufactured by Parker Laboratories, INC. Fairfield, New Jersey 07004. A sample is provided with the system.

Recommended ultrasound probe sterile sheaths

Where fluid contamination is possible, such as during ultrasound guided fluid drainage of vascular access, the ultrasound probe shall be covered with an appropriate sterile sheath, which will promote asepsis and minimize cleaning. Signostics recommends the use of Eclipse Probe Cover – Latex Free 38-03 by Parker Laboratories, INC. Fairfield, New Jersey 07004.

Warning

✓ Be aware of latex allergy. Some commercially available probe covers contain latex. Refer to the US FDA alert title: '*Medical Alert: Allergic Reactions to Latex-Containing Medical Devices*', issued March 29, 1991.

6. SCAN MENU

The scan menu appears when the Scan tab is showing and enables users to:

➢ Manage Scan Setting presets.

➢ Run scan sequences.

➢ Display Probe Information.

Scan Settings

The **Scan>Scan Settings** menu enables users to:

➢ Choose **Manage Presets…** to create, edit, or delete presets (see Manage scan settings).

➢ Choose **Default Presets…** to set the default preset for each transducer (Fig 6.1). Select the desired preset from the drop-down list provided. Press **OK** to apply changes.

➢ Choose **Diagnostic Area…** to define which system-defined presets appear (Fig 6.2). You may select between **General Medical**, **Veterinary**, **Physiotherapy,** or **Obstetric**. Press **OK** to apply changes.

➢ Choose **Revert to Factory Presets**… to restore any deleted system-defined presets and restore factory default presets for each transducer. User-defined presets will not be affected.
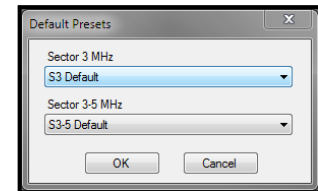
Fig 6.1 Default Presets
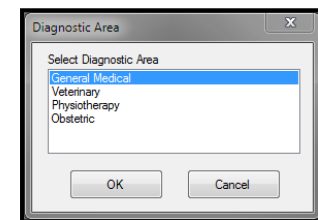
Fig 6.2 Diagnostic Area

Manage scan settings

Scan>Scan Settings>Manage Presets… will open the **Manage Presets** screen, where you can copy, edit, rename, and delete scan presets (Fig 6.3). **System presets are locked and unable to be changed, but can be copied or saved as a user preset that can be changed**.

Use the **Copy** button to create a copy of an existing scan preset.

Use the **Save As** button at the bottom of the screen to save the preset to a different user preset. You will be prompted to name your preset when you save it.

Customizing scan presets

User presets can be adjusted by clicking any of the Manage Presets tabs and adjusting settings. The Main tab contains the most commonly adjusted settings (Fig 6.4), with other tabs for Advanced settings (Fig 6.5), M-Mode (Fig 6.6), Doppler (Fig 6.7), and Annotations (Fig 6.8). For a complete description and definition of scan settings, refer to Appendix 1 of the **Signos RT** User Manual.
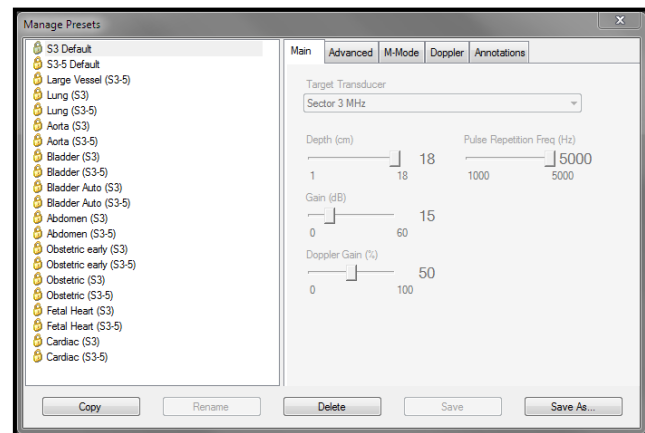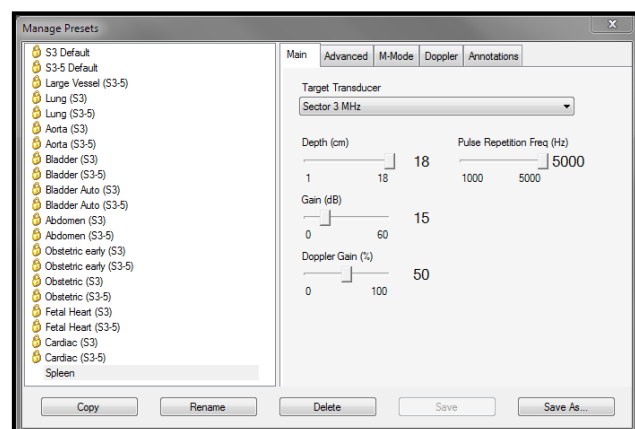

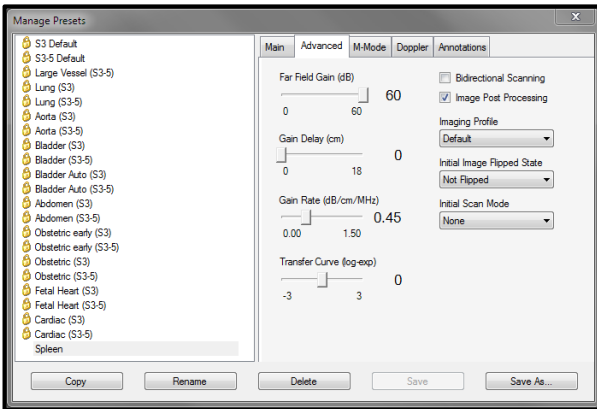**Fig 6.3 Manage Presets**

Fig 6.4 Main Scan Settings

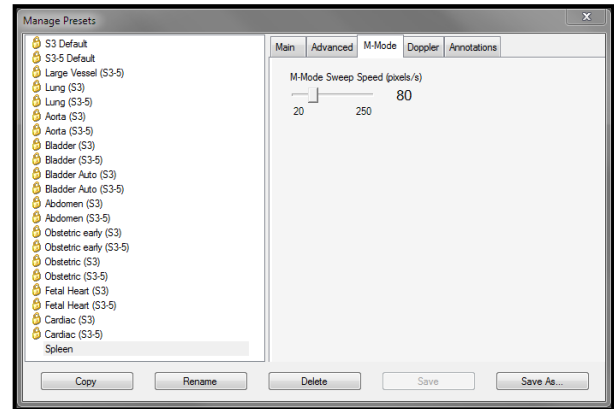Other functions

Fig 6.5 Advanced Settings

Fig 6.6 M-Mode Settings

To change the text annotations that appear for user presets when [icon] **Image Text Annotation** is selected from the Tool Bar press:

- ➤ **Add** to add a new annotation for this preset.
- ➤ **Edit** to modify the currently selected annotation.
- ➤ **Delete** to remove the annotation.

After changing Scan Settings and annotations, you can click:

- ➤ S**ave As** to save the changes in a new preset. You will be prompted to name your new preset.
- ➤ S**ave** to save your changes, over-writing the original preset.
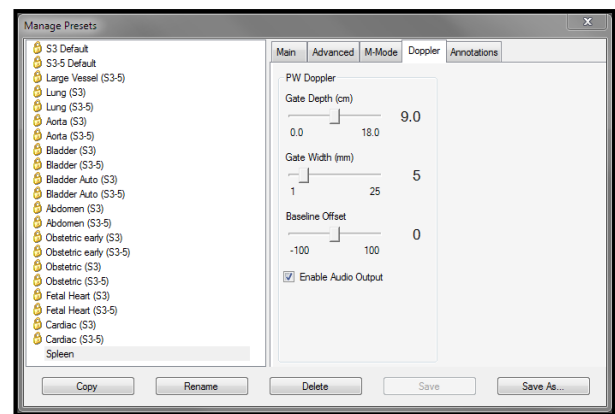
Fig 6.7 Doppler Settings

Loading a preset

To load a scan preset, you use the Scan Tool Bar to select the preset from the drop down box. Accessing presets via the Scan Tool Bar also enables you to edit the current settings and save them as a user preset.
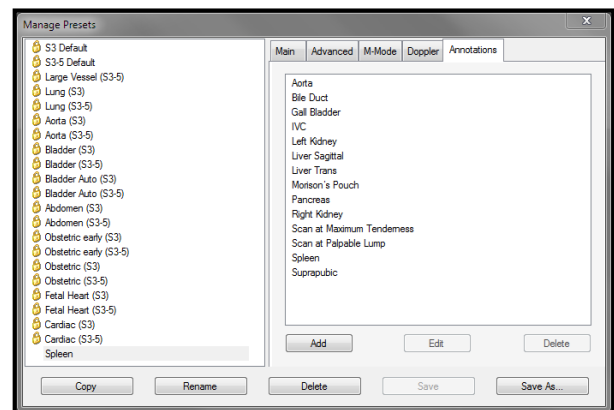
Fig 6.8 Annotations

Other functions

Sequences

Two frequently used scan *sequences* have been pre-set into **SigViewer**. Each sequence consists of a number of *steps*.

- ➢ **Bladder Auto**: allows you to estimate bladder volume using two Bladder Volume shapes on two images.
- ➢ **Bladder Calipers**: allows you to estimate bladder volume using three caliper measurements from two images.

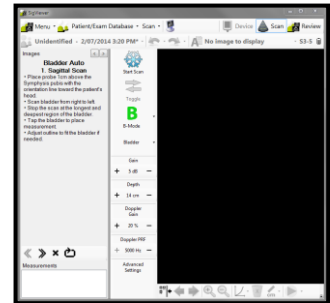Choose **Scan>Start Sequence** and select a sequence option to begin running the sequence.

When a sequence is running, a Sequence Panel will replace the Exam Information Panel to instruct you what type of scan to perform (Fig 6.9).

Fig 6.9 Start Sequence

- ➢ **Next** skips to the next step in the sequence.
- ➢ **Previous** returns to the previous step in the sequence.
- ➢ **Repeat** repeats the sequence from the first step. All images from the original sequence are saved.

Only one image may be saved to each step, but a scan can be redone at each step until a satisfactory image is obtained. Each image is automatically labeled with the sequence step. The required measurement shapes that need to be correctly positioned appear as appropriate.

If completing the sequence would mean that the number of images in the active exam would exceed the maximum allowed (50), an error message will appear allowing you either to open a new exam or to cancel the sequence.

Probe Information

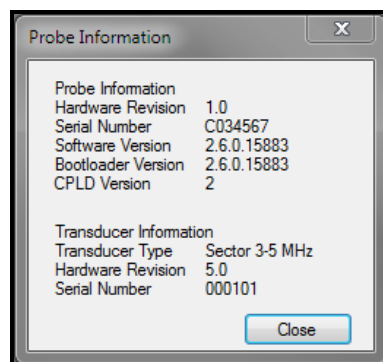Choose **Scan>Probe Information** to display information on the connected ultrasound probe.

Fig 6.10 Probe Information

7. OTHER FUNCTIONS

Printing

To print the current image, select 🖨 **Printing** from the image tool bar and then select **Print View** from the menu. Patient and exam information will appear on a print preview screen. If the image is zoomed **Print View** will show only the zoomed section.

To print all of the images in the open exam, select 🖨 **Printing** from the image tool bar and then select **Print Exam** from the menu. A print preview screen will appear (Fig 7.1). Patient, exam and measurement shape information will appear on each printed page.
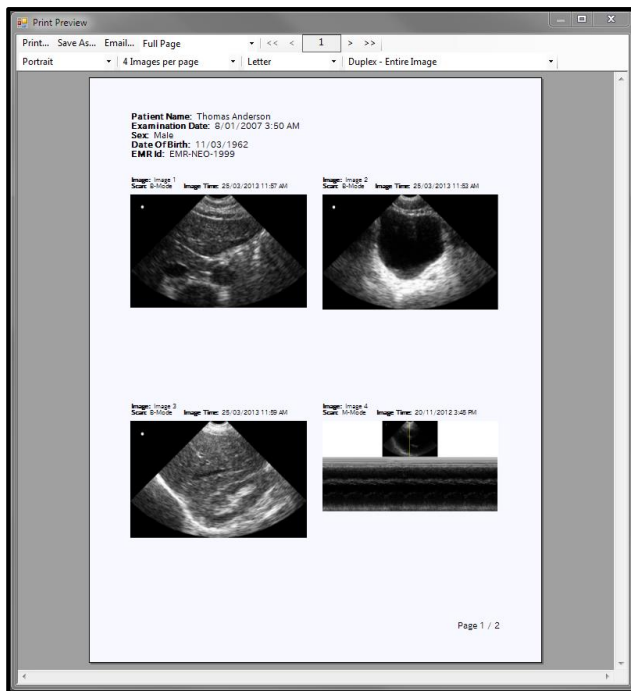
Fig 7.1 Print Preview

Use menu options to:

- ➢ Print the images to a printer, fax, or other output.
- ➢ Save the images to a PDF file.
- ➢ Email the images. The images are attached as a PDF file.
- ➢ Change magnification.
- ➢ Scroll through the images.
- ➢ Change page orientation.
- ➢ Select the number of images per page.
- ➢ Select paper size.
- ➢ Change how duplex M-mode and PW Doppler images are displayed.

Remote display

It is possible to display information from **Signos RT** on your computer screen.

Connect your **Signos RT** to your computer via USB and press **Remote Display** on the **Select USB Function** screen. If not already open, **SigViewer** and the **Remote Display** window will launch automatically. Your **Signos RT** will not respond to any keyboard commands or mouse clicks made on your PC. Close the **Remote Display** window on the PC to return to the **Device** tab.

If a **Signos RT** is already connected to the PC, launch **Remote Display** by pressing the button on the right side of the **SigViewer** Device tab (see Fig 3.4, page 8).

Note: this mode is primarily intended for reviewing images. Although a scan can be performed while connected to a PC in remote display mode, please be aware that SignosRT only conforms to CISPR11 RF Emissions Class A while scanning in this configuration. Refer to the **Signos RT** User Manual for further details.

Recovering information

Recovery mode

Your **Signos RT** will enter **Recovery Mode** if it cannot start correctly. A blue screen will appear asking you to connect the device to a PC loaded with **SigViewer** and connected to the Internet. When the **Signos RT** is connected, **SigViewer** will try to repair the software. If this does not work, you may need to send an error report (page 26).

Repairing databases

If the database your **SigViewer** is using has become corrupt and unusable, a message box will appear when you launch **SigViewer**. **SigViewer** can repair the database by regenerating the information, but any patient details for patients without linked exams will be lost. Patient details can be re-loaded by synchronizing a device with the relevant patient information with the repaired database.

For further information, please contact Signostics Customer Support (page 26).

Other functions

Help

Send error report

This utility should be used only when requested by your Customer Support representative. If you are experiencing problems, please obtain a valid case number (a six digit number) by contacting Customer Support in your country.

Customer Support may request you to send through log files. If the problem is with your **Signos RT**, first plug it in to your PC and select **Menu>Maintenance>Send Error Report**. Enter the case number given to you by Customer Support and press **Transmit**.

Data transmitted to Signostics will contain device-specific information and may contain patient information. No images are transmitted. All data received by Signostics will be treated in confidence with the sole purpose of resolving the device problem.

Signostics Customer Support

> **Free call within Australia**   1800 SIGNOS (1800 744 667)

For further details, see <u>Contact information</u> (page 2).

SigViewer software updates

You can manually check for **SigViewer** updates using the **Menu>Maintenance>Check for SigViewer Updates**.

About

Menu>About launches a window describing the **SigViewer** software. The **Details** button will launch the **Attributions Help** page.

Other functions

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