

# SA<sup>2</sup>

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clinical companion animal ultrasound  
*Quick Reference*



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E.I. MEDICAL IMAGING

## IMPORTANT

Thank you for purchasing E.I. Medical Imaging's new SA<sup>2</sup> veterinary ultrasound! We know you're going to love it, and it's important to us that you know we are here for you.

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Supporting Software Version [minimum]: 1.5.0.1

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## KEY FEATURES

The IBEX SA<sup>2</sup> Portable Ultrasound is flexible and easy to use.

- IBEX SA<sup>2</sup> advanced imaging software
- Full range of imaging modes: B, B+M, PW, Color Doppler
- Ruggedized transducers 2-14 MHz
- Fast boot time for more uptime
- Customized, veterinary-specific exam presets
- WiFi remote scanning app
- 12.1 inch sealed, sunlight-readable LCD Display
- Sealed, LED backlit keyboard
- 2+ hour battery run time (field swappable)
- Lightweight 7.5 lbs (2.8 kg)
- Engineered with DuraScan® technology
- Continuous record, color doppler, pulse wave doppler, multibeam, harmonic imaging, preset exam types—speckle reduction



## Intended Uses

The IBEX SA<sup>2</sup> is intended for veterinary use with companion animals.

### ***Essential System Performance***

- Provides 2D ultrasound echo and flow imaging as an aid in diagnosis.
- Performs simple geometric measurements and calculations.
- Free from artifacts or distortion in the image or error of a displayed value, which can be attributed to a physiological effect and which may alter the diagnosis.
- Displays correct numerical values associated with the diagnosis to be performed.
- Does not generate unintended or excessive ultrasound output or transducer surface temperature.

The IBEX SA<sup>2</sup> is intended for diagnostic ultrasound imaging or fluid flow analysis of animals, data processing and guidance of OPU and collection needles.

***The system is for veterinary use only.***

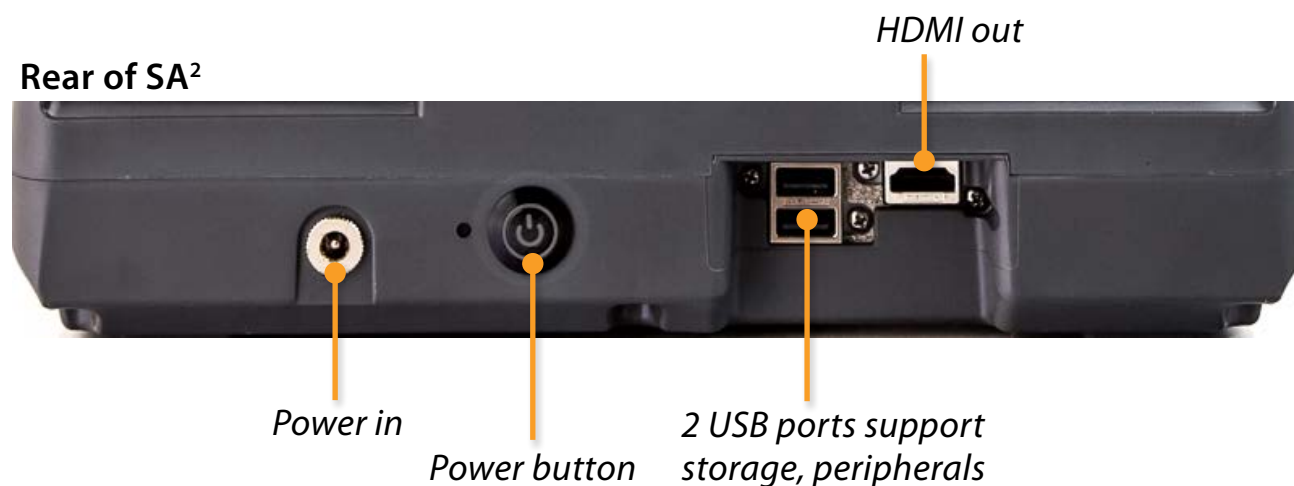
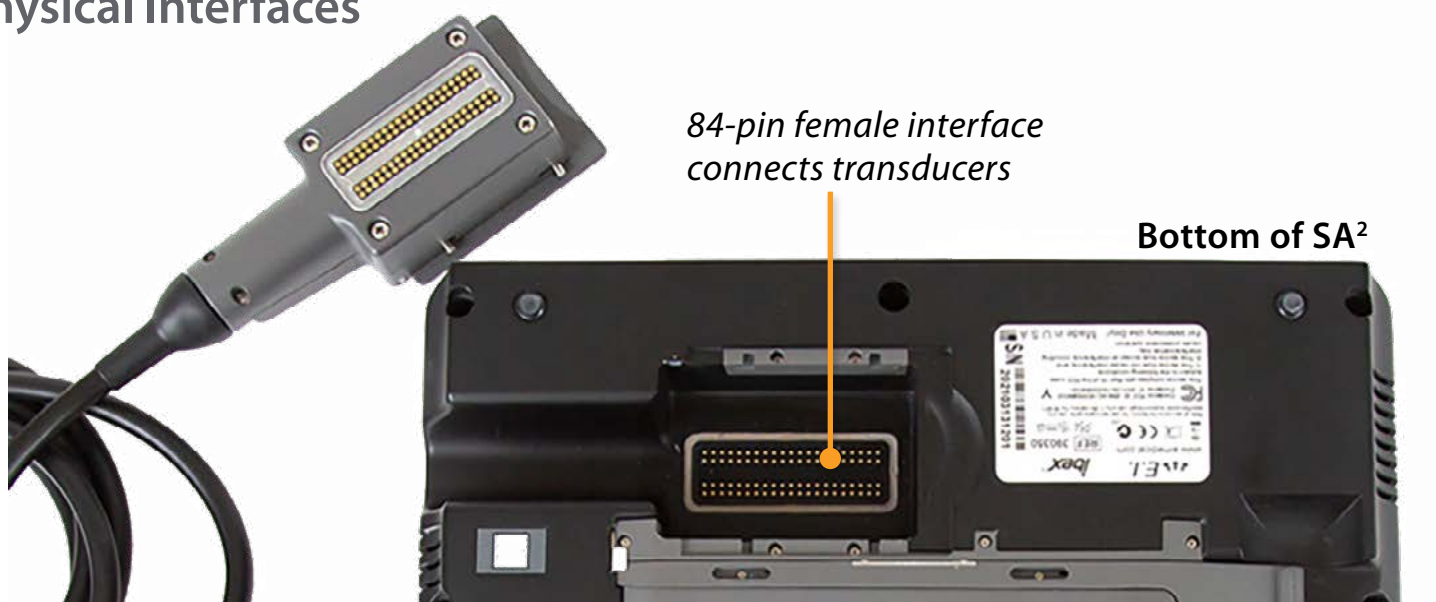
### ***Modes of Operation***

- B
- B+M
- PW
- Color Doppler

## GETTING TO KNOW YOUR IBEX® SA<sup>2</sup>

Please read all the instructions and warnings found in the *IBEX SA<sup>2</sup> Quick Reference* before using.

### Physical Interfaces





## Installing The Battery

The IBEX SA<sup>2</sup> system houses the battery in a water-resistant system access compartment. To seal the compartment:

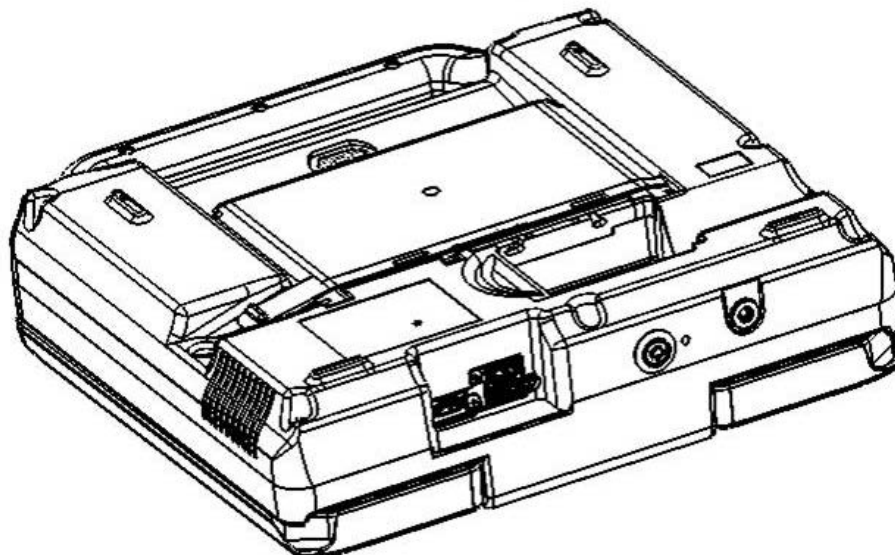
- 1 Slide the silver latch to the right and lift the handle which extends over the edge of the IBEX SA<sup>2</sup>.



- 2 Remove the cover
- 3 Insert the new battery pack by angling it into the compartment; aligning the spade connector on the IBEX SA<sup>2</sup> with the slots on the battery, ensuring connection.
- 4 Angle the battery door to panel tabs with the metal strip.



- 5 Slide the metal latch towards the left until it clicks into the locked position.
- 6 Close the panel until it clicks into the locked position.

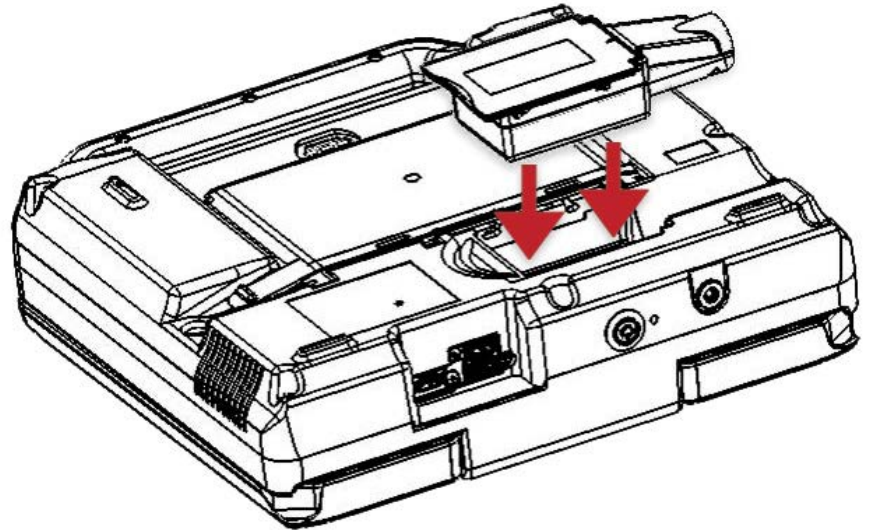


## Attaching Transducers

To attach a transducer:

- 1 Lift the probe cover latch to open position.
- 2 Align the metal engagement rods with the metal slots on the system side of the female connector.
- 3 Press the connector in place to seat.

**CAUTION** It is **CRITICAL** to **POWER-OFF** or **FREEZE** the scanner before changing the transducer. Failure to do so may cause unexpected behavior.



## Charging The Battery

To charge the battery:

- 1 Ensure that the battery is installed in the system. [If it is not already installed, see the instructions for installing the battery in the *IBEX SA² Ultrasound User Guide*]. Slide the latch to the lock position to ensure the system access door is properly sealed.
- 2 Connect the AC adapter to the IBEX SA² system.
- 3 Plug the adapter into a 100-240 VAC outlet.

During the charge cycle the yellow light illuminates indicating the charging process is underway. As the battery reaches its full charge, the light switches off which indicates the battery is at full charge.

The total charge time will range between 120 and 180 minutes from a totally drained battery to a fully charged battery.

**NOTE** Do **NOT** use the AC adapter during outdoor operation.

## Powering The System On

The power button is located on the back of the unit—press to power on the IBEX SA².

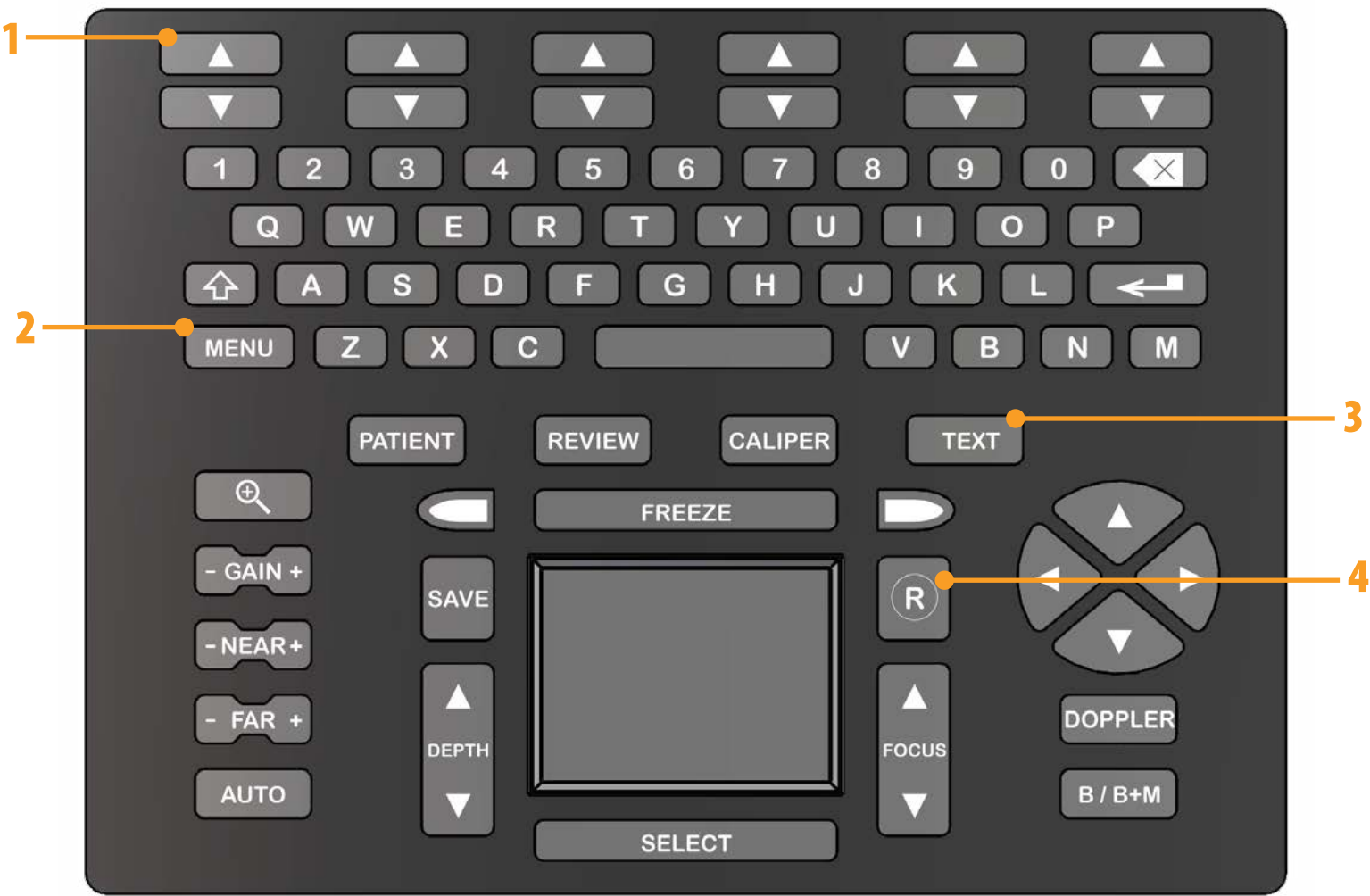
When used near an outlet, the IBEX SA² system can be powered directly [with or without the internal Li-Ion battery pack installed] by the external power supply/battery charger. It may also be used outdoors [unsheltered locations] as an internally powered system with a charged internal Li-Ion battery pack.





# INTERACTING WITH IBEX SA<sup>2</sup>

## Keyboard



**1** **Fuction Keys** The **FUNCTION** keys coordinate with the on-screen menu keys.



**2** **Menu Key** Press the **MENU** key to enter the system setting menu.  
Press the **MENU** key again to return to active scan mode.





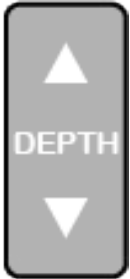
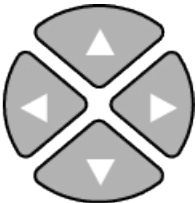
**3** **TEXT** Use the **TEXT** key to add labels to an image, access special characters, and use annotation labels as file names.















**4** **Record** Press the **RECORD** key to begin recording what you see on the screen.  
By default, recordings are saved with automatic names in a directory for the patient.



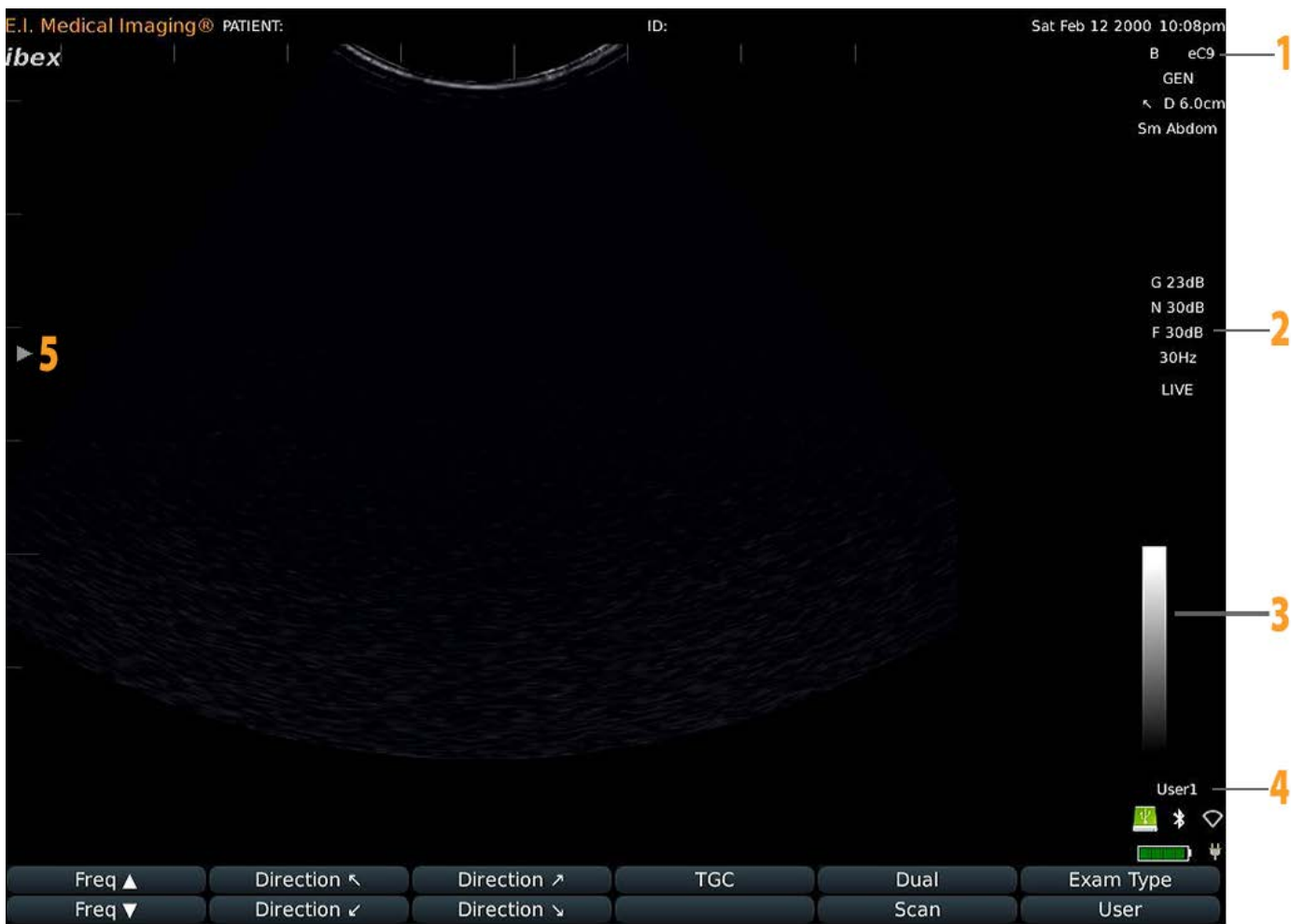
The remaining buttons are listed alphabetically.

<div>Auto</div> <div>AUTO</div>	<p>The <b>AUTO</b> gain feature allows the system to automatically adjust <b>Gain</b> settings for optimal image quality. <b>AUTO Gain</b> calculates the optimal <b>Gain</b> values based on tissue composition.</p> <p>Before pressing the <b>AUTO</b> key, make sure the probe is on the target anatomy.</p>
<div>B+M KEY</div> <div>B /B+M</div>	<p><b>B+M MODE</b> [Motion Mode] imaging is a scan that displays motion in a wave-like manner. This mode is especially useful in depicting motion in cardiac applications. By incorporating <b>B Mode</b> functionality with M-Mode strips, you can control the exact position of the desired scan location.</p>
<div>Backspace</div> <div></div>	<p>Use the <b>BACKSPACE</b> key to clear text, one character at a time.</p>
<div>Caliper</div> <div>CALIPER</div>	<p>Press the <b>CALIPER</b> key to automatically enter the measurement area menu during an active scan.</p> <p>In an active scan, pressing the <b>CALIPER</b> key freezes the image automatically.</p>
<div>Caps Lock</div> <div></div>	<p>The <b>CAPS LOCK</b> key is a toggle. Press it and <b>CAPS</b> are in effect [letters will be entered as capital letters].</p> <p>Press it again to turn off <b>CAPS</b>.</p>
<div>Depth</div> <div></div>	<p>Press the <b>DEPTH</b> key up or down to adjust the depth of the scan.</p> <p>Note: the current depth is indicated in the upper right corner of the screen.</p>
<div>Doppler</div> <div>DOPPLER</div>	<p>The <b>DOPPLER</b> key enters Doppler functionality. Different Doppler modes [Color, Power, PW] can be entered using the function keys.</p>
<div>Down/Up</div> <div></div>	<p>Use the down arrow to move the cursor on the screen. This is particularly useful when entering text into dialogs.</p>

<b>Enter</b> 	Press the <b>ENTER</b> key to commit information entered into a field. For example, as you fill in the name, ID and other information for a patient, you can press <b>ENTER</b> to commit the information and move to the next field.
<b>Far</b> 	The <b>FAR</b> gain control is used to make adjustments to the electronic amplification of the echoes in the image area that are farthest away [far field] from the transducer.
<b>Freeze</b> 	Press the <b>FREEZE</b> key to freeze and unfreeze the active image on the screen. Freeze keys are also located on select probes.
<b>Gain</b> 	Press the <b>GAIN</b> key to adjust the overall gain up or down.
<b>Left/Right</b> 	The <b>LEFT/RIGHT</b> arrow keys are located to the left and right of the freeze key.  Use the arrow keys to move the cursor horizontally. This is useful when navigating through dialogs.
<b>Near</b> 	Press <b>NEAR</b> key to adjust near gain.
<b>Patient</b> 	Press the <b>PATIENT</b> key to search for patients and create new patient records.
<b>Review</b> 	Use the <b>REVIEW</b> key to view saved images/loops.
<b>Save</b> 	Use <b>SAVE</b> to save images to the IBEX SA <sup>2</sup> local storage. By default, images are saved with automatic names in a directory for the current patient.
<b>Select</b> 	Use the <b>SELECT</b> key when in caliper mode to set the measurements.
<b>Space</b> 	Use the <b>SPACE</b> key to enter a space between words when entering text into dialog fields.
<b>Zoom</b> 	Press the <b>ZOOM</b> key to enlarge the image.  To exit zoom, press the <b>ZOOM</b> key again, or press the Super Key.
















SCREEN LAYOUT

The home screen of the SA<sup>2</sup>...



1	<div>B eC9 GEN D 6.0cm Sm Abdom</div>	Denotes <b>transducer type attached</b> ; the <b>frequency</b> of the transducer; the <b>scanning mode</b> [B or B+M]; <b>scanning direction</b> [←/→]
2	<div>G 23dB N 30dB F 30dB 30Hz LIVE</div>	<b>G</b> Gain <b>N</b> Near <b>F</b> Far <b>15Hz</b> Current frame rate per second, set in the <b>SCAN</b> menu. <i>The higher the number, the faster the image—when this number is too low, the image is slow and appears as a delay following probe movement.</i> <b>LIVE</b> Indicates image is currently active. If <b>FREEZE</b> button is pressed, this will change to <b>FROZEN</b> .

Screen Layout con't

3		Gray-scale bar for <b>tonal reference</b> .		
4		User1		Default name [can be configured as a custom name]
		USB Status		No memory stick
				At least 1 USB port has a memory stick
		Bluetooth		Bluetooth disabled
				Bluetooth enabled
				Bluetooth connected
		WiFi		WiFi off [default]
				WiFi enabled [gray]
				WiFi connected [white]
		Battery		4 green bars = full charge 1 yellow bar = ¼ charge or less
		AC Power		Unit is plugged into AC power
5		Transmit Focus		Appears on the side of the scan area to indicate the focal region. Adjust the focus position with the up/down button. <i>If not seen, unit is set to Autofocus.</i>



## ON-SCREEN MENUS

The **FUNCTION** keys at the top of the keyboard correspond to the on-screen **HOME MENU** buttons at the bottom of the screen.



**Freq** Frequency up and down allows you to change the frequency setting (probe-specific). Higher frequencies = higher resolution, lower frequencies are used for deeper penetration. The current frequency is indicated in the upper right portion of the screen (a number followed by MHz).

**Direction** The four direction arrows select which corner of the image corresponds to the marker on the probe.

**TGC** Time-Gain-Compensation. This launches a menu that allows for the adjustment of gain levels at various depths within the image.

**Dual** Split-screen mode—compare two images, either from the current scan session or from stored images in the REVIEW menu.

**Scan** Displays the scan menu, which has adjustments for some of the imaging parameters.

**Exam Type** Allows you to select a preset for the type of exam you will be doing and is probe-dependent.

**Back** Takes you back to the previous menu.

### Menu

Press **MENU** to display the System Settings menu.



### Option



**Display** Display adjustments.

**Measure** Adjust Measurement options like temperature, weight, length.

**Audio** Adjust speaker, key click, and system sound volumes.

**Image/Vid** Adjust image formatting, video formatting, and recording loop length.

**Misc** Set clinic name, keyboard backlight time, enable reproduction workflow.

**Back** Takes you back to the previous menu.

*Initial Customizations*

To customize your ultrasound, access the various menus above. In general, the Measure and Image/Vid menus will be the ones that contain the customization options related to base operations.

*Setup*

USB	Wifi	User			
Bluetooth	System	Annotations			Back

**User** Name/rename users

**Annotations** Set labels

**USB** Save files to a USB memory stick.

**Bluetooth** Enables Bluetooth.

**WiFi** Enables WiFi.

*System*

Clock	Info	Unlock			
Reset	Setup	Export Logs			Back

**Clock** Set day and time.

**Reset** Returns the selected user to defaults.

**Info** Information about the software.

**Setup** Change clinic and host names.

**Unlock** Enable features that are ordered separately.

**Export Logs**

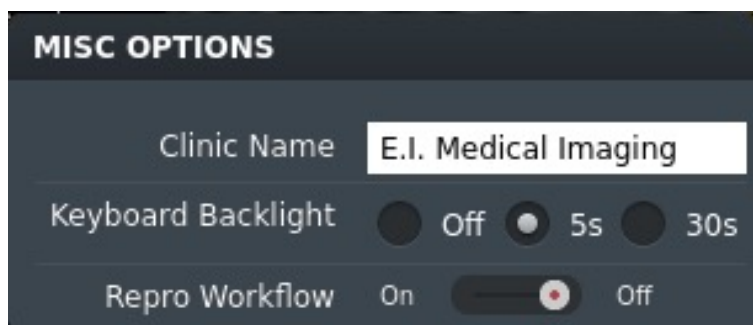
**Back** Takes you back to the previous menu.

**Moving Around The Screens**

The touchpad acts like a mouse to move the cursor on the screen. To select, press the **SELECT** key or the **ENTER** key. You can also tap the touchpad.

The **FUNCTION** keys coordinate with menu items on the screen.

## MISCELLANEOUS OPTIONS MENU



**Clinic Name** the institution name that will appear on all saved images

**Keyboard Backlight** how long the keyboard stays illuminated after pressing any key on the keyboard.

**Repro Workflow** sets Repro Workflow to **ON**—when **Repro Workflow** is on, the regular patient area is not available

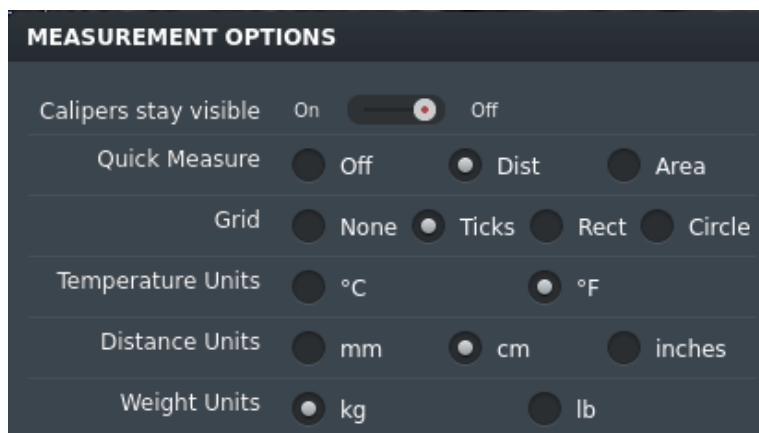
## DISPLAY OPTIONS MENU



**LCD Bightness** the institution name that will appear on all saved images

**Style** adjusts the overall look-and-feel of the display. Dialogs, buttons, formatting will change.

## MEASURE MENU



**Calipers Stay Visible** allows user to make a reference measurement on-screen that stays visible when the image is unfrozen

**Quick Measure** select whether to enable linear [distance] or area measurements when employing QUICK STORE or to turn the feature off.

**Grid** choose from the following display grid options:

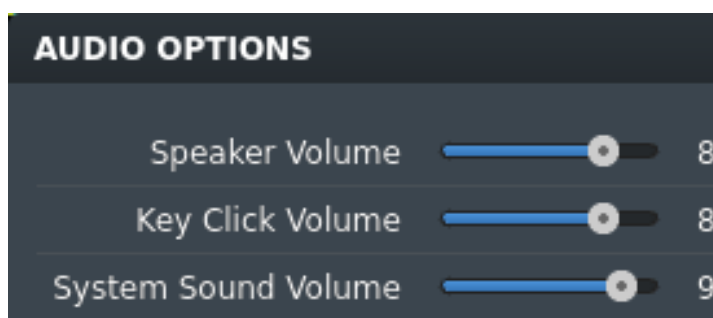
- 1cm tick marks along the side
- 1cm square grid overlaid on the screen [rectangular]
- Circular bullseye [for estimating diameters]
- No measurement reference

**Temperature Units** select **F** [Fahrenheit] or **C** [Celsius]

**Distance Units** select **mm** [millimeter], **cm** [centimeter], or **inches**

**Weight Units** select **kg** [kilogram] or **lb** [pound]

## AUDIO MENU

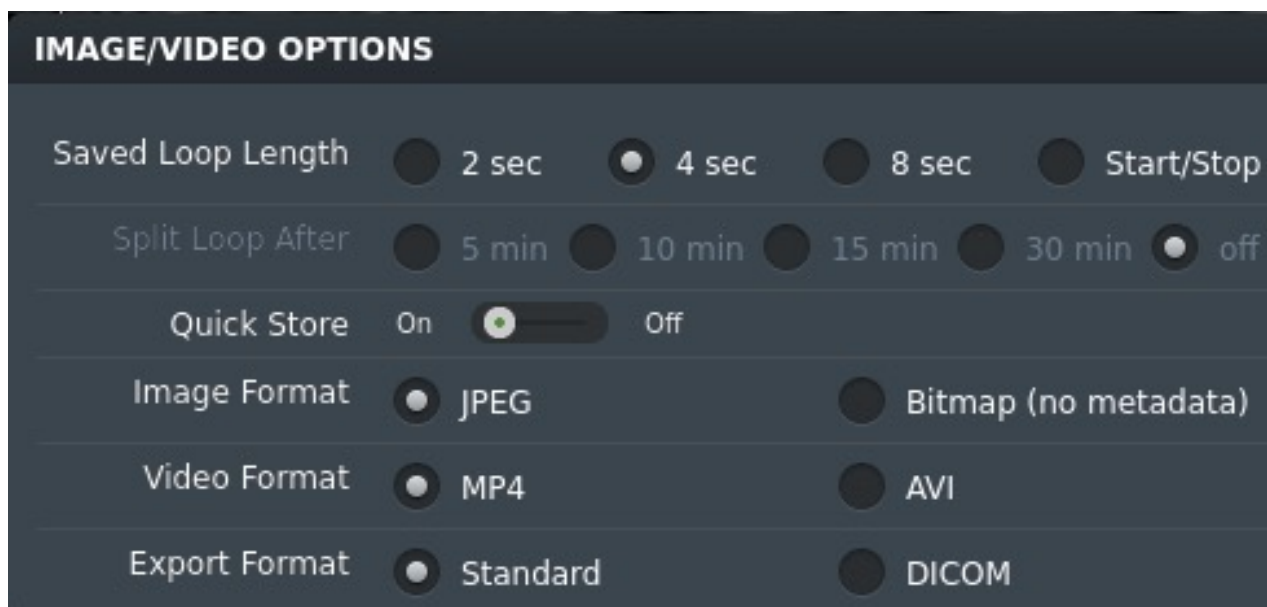


**Speaker Volume** adjusts the overall volume of the unit

**Key Click Volume** adjusts the volume of when keys are clicked on the keyboard

**System Sound Volume** adjusts the volume of system sounds like errors

## IMAGE/VIDEO MENU



The screenshot shows a dark-themed menu titled "IMAGE/VIDEO OPTIONS". It contains several settings, each with a radio button or a toggle switch. The settings are: "Saved Loop Length" with options 2 sec, 4 sec (selected), 8 sec, and Start/Stop; "Split Loop After" with options 5 min, 10 min, 15 min, 30 min, and off (selected); "Quick Store" with a toggle switch set to On; "Image Format" with options JPEG (selected) and Bitmap (no metadata); "Video Format" with options MP4 (selected) and AVI; and "Export Format" with options Standard (selected) and DICOM.

Setting	Options	Selected
Saved Loop Length	2 sec, 4 sec, 8 sec, Start/Stop	4 sec
Split Loop After	5 min, 10 min, 15 min, 30 min, off	off
Quick Store	On, Off	On
Image Format	JPEG, Bitmap (no metadata)	JPEG
Video Format	MP4, AVI	MP4
Export Format	Standard, DICOM	Standard

**Saved Loop Length** the length of recording taken when the record key is pressed [start/stop indicates the record key is used to start and stop recording for any length of video desired]

**Split Loop After** allows you to select when to split the loop. This is only valid when **Saved Loop Length** is set to **Start/Stop** and the **Video Format** is set to **AVI**.

**Quick Store** select **ON** or **OFF**

**Image Format** **JPEG** [standard] or **BITMAP** [no metadata]

**Export Format** **JPEG** [standard photo format] or **DICOM** [compatible with PAC servers, requires software to read]



## Customizing User Presets

Press the **USER** key shown on the screen and click **SETUP**.

Assign a name or application to each user. The system has a fluid memory; when a specific user is selected the SA<sup>2</sup> will remember the last settings employed. This way different users can select their own name and make changes to the settings without interfering with others' preferences.

## Customizing Annotations

Press the **MENU** key > **SETUP** > **ANNOTATIONS**.

Create lists of quick annotations or deselects lists that don't apply—this helps minimize button presses for accessing your preferred annotations [see section on annotations]

## Performing a Factory Reset

To reset the settings to factory defaults, press the **MENU** key > **SYSTEM** > **RESET**. The dialog box that opens up offers three options:

- Reset the user you are on so as not to change the other users' settings
- Reset all to restore all factory defaults across users
- Reset system to wipe memory, settings, and storage

## Performing a Software Update

Please visit <https://www.eimedical.com/firmware-sa> for download and installation instructions.

## STARTING AN EXAM

### Creating New Patient

- 1 Press **PATIENT** **PATIENT** button to display **Patient Search Screen**.

The screenshot shows the 'PATIENT SEARCH' screen with a 'CREATE PATIENT' dialog box open. The dialog box contains the following information:

CREATE PATIENT							
Patient	Mick	Owner	Steve	ID	1024	Species	Canine
Gender	M	Neutered	Y	Birthdate	02/14/15	Age	7.9
RFID		Weight (kg)	31.7	Add Folder To Patient			

At the bottom of the screen, there are 'Create' and 'Back' buttons.

- 2 Press **▲** to display the **Create Patient** dialog.  
Use the **UP/DOWN** key to move from field to field.  
To enter special characters, press the **TEXT** key.  
The on-screen keyboard will appear. To exit this keyboard and continue editing, use the **OK** button displayed on the keyboard.
- 3 Press **▲** [Create] to save the new patient record.  
When you leave the patient creation screen, an exam will start for the new patient.  
The **PID** and **TAG** information displays at the top of the screen.

### Selecting Existing Patient

- 1 Press the **PATIENT** button to display the **Patient Search Screen**.
- 2 Move from field to field using the **UP/DOWN** key. Fill in fields with search criteria.
- 3 Select correct patient from search results by double-tapping on the touch pad.  
You will be returned to **Exam Mode** for the patient selected.

## Choosing Exam Type

From the home screen, press ▲ for **Exam Type**.

Select the ▲ key that corresponds to the desired imaging application.

The selected exam type will appear toward the upper right of the screen.

## Adjusting the Image

### Depth



The **DEPTH** key is located toward the left of the keyboard.

Press the **UP** arrow ▲ to move the field of view up [decrease the total depth displayed on the screen] and the **DOWN** arrow ▼ to move the field of view down [increase the total depth displayed].

### Frequency

On the home screen, ↑↓ corresponds to **Frequency Control**, and pressing it toggles the frequency through various settings for the transducer that is attached.

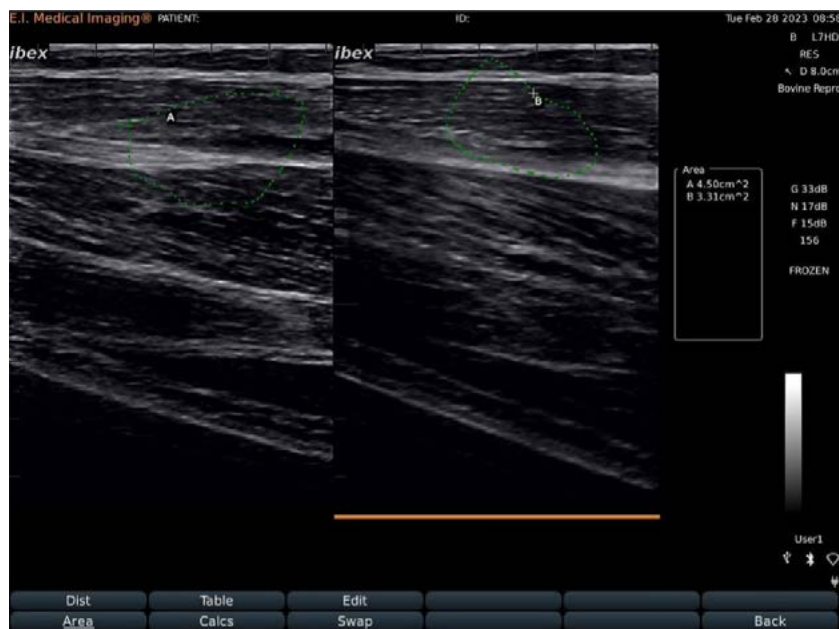
The frequency is displayed toward the upper right of the screen.

Use lower frequencies to penetrate to deeper structures and higher frequencies to achieve higher resolution of shallower structures.

### Dual Imaging

**DUAL** is a split-screen feature that allows the user to compare side-by-side images.

To begin, press **F3** for **DUAL** from the home screen. The yellow bar at the bottom of the scan screen on the left indicates that the left side is active.



Freeze a live image or press ▲ to enter the review menu and select a stored image.

Press ▲ for **SIDE** to change the active side to the right and follow the same steps to retrieve a stored image or create a new one.

Pressing **SAVE** from **DUAL** mode will store a screenshot, including both images.

### Gain

Manipulate images by adjusting the **GAIN** settings. Gain controls compensate for the reduction in sound amplitude as it travels into tissue. Gain controls can intensify the returning signals and display images brighter and more visible on the screen.

Adjust the gain for the near field [shallower, closer to the transducer surface], far field [deeper, farther from the transducer surface], or the entire field [overall gain]. Excessive increase in gain will add noise to the image.

For optimal diagnostic images, adjust Gain to produce uniform gray scale responses. To view all gain settings, press **GAIN [F6]** from the home menu.

<div>Overall <b>GAIN</b></div> <div></div>	<p>To adjust the overall gain, use the <b>GAIN</b> key to increase/decrease the brightness of the entire field.</p>
<div>Near <b>GAIN</b></div> <div></div>	<p>The <b>NEAR</b> gain control is used to lighten or darken the intensity of the echoes in the near field of the image [the area closest to the transducer].</p>
<div>Far <b>GAIN</b></div> <div></div>	<p>The <b>FAR</b> gain control is used to make adjustments to the electronic amplification of the echoes in the image area farthest [far field] from the transducer.</p>
<div>Time <b>GAIN</b> Compensation [<b>TGC</b>]</div>	<p><b>TGC</b> refers to the time taken for an echo to travel from the transducer to the target area. As the ultrasound signal travels further into the tissue, more and more of its energy is absorbed causing the echoes to decrease in strength.</p> <p>At greater depths, the <b>TGC</b> needs to be set at a higher setting.</p> <p>At a short distance, for example near the skin line, there is more energy level available and therefore the <b>TGC</b> can be run at nearly a minimum setting.</p>



### High Gain Setting

Images appear bright with detail lost.



### Low Gain Setting

Images appear dark with no detail.



### Optimal Gain Setting

Images appear with uniform grayscale and optimal detail.

## Using Auto GAIN

The **Auto Gain** feature allows the system to automatically adjust gain settings for optimal image quality. **Auto Gain** calculates the optimal gain values based on tissue composition.


To use the **Auto Gain** feature, select the **AUTO**  button in the **Gain Settings** dialog, and then press **SELECT**  to apply.

*The **AUTO** button should be pressed when the transducer is in contact with the patient or it will not function. It has to “see” the current image to make adjustments.*



### Focal Zone

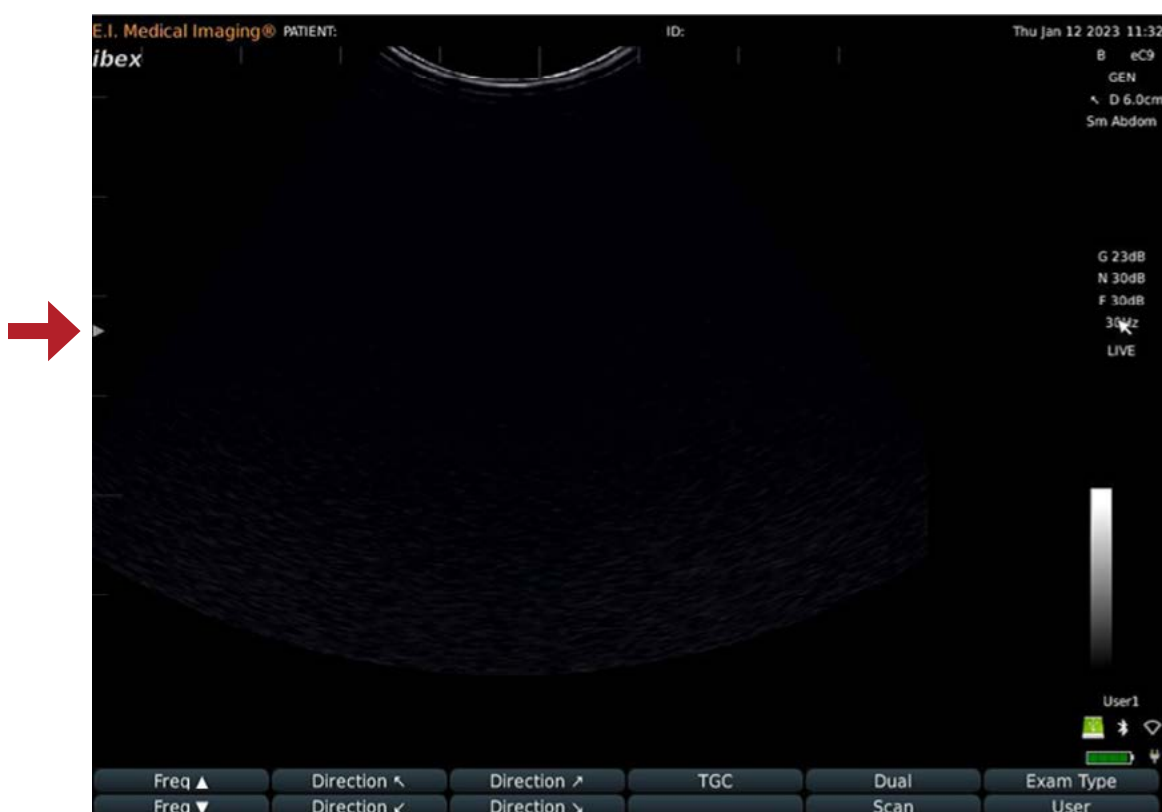
Control areas of focus within an image by adjusting the focal zone. The default area of focus is the center section of the image.

By pressing the **UP/DOWN**  key, specific focal zone control is enabled.

*If the focal indicator arrow is brought all the way to the top until it disappears, the system will employ an autofocus mode.*

A white arrow will appear on the left side of the image indicating the area of the image with highlighted focus.

Use the **UP/DOWN** key to change the targeted focal area.



### Scan Menu

The **SCAN MENU** contains advanced imaging settings. Contact your sales rep or customer service for assistance with these settings.

## ENDING PATIENT EXAM

To complete an exam, press the **PATIENT**  key.

Once in the patient menu, press **▼**, which corresponds to **END EXAM**—select **YES** when asked to confirm.


The system will return to the home screen with no patient selected.

## MANAGING IMAGES

### Freezing Images

The EVO allows you to freeze any active image for further analysis.

Press the **FREEZE**  key on either keyboard to:

- Take measurements of images and loops.
- Review images frame by frame using the left and right arrow keys or touch pad.
- Use the **RIGHT** and **LEFT** arrows  [on either side of the **FREEZE** key] to step through a cineloop when frozen.
- Press **Start** and **Set End** to trim a video.

Probes with a freeze button give the added ability to:

- Freeze images without going to the scanner by pressing and releasing the button once.
- Store images without going to the scanner by holding the freeze button for two seconds from a frozen image.

### Saving Images and Cineloops

When you save an image/cineloop, the system captures and stores the following information in the file:

- The patient name and ID
- The timestamp
- The voice memo
- Probe
- Everything displayed

The system saves images as jpegs [.jpg] and cineloops as AVIs [.avi] file format.

The system assigns a default file name based on the following convention:

Year	Month	Day	Hour	Minutes	Seconds
4-digit	alpha abbreviation	2-digit	2-digit	2-digit	2-digit

**Example:** 2015Oct16-15.43.47.JPG

### Quick Store

When **Quick Store** is **ON**, images and recordings are saved to the EVO local storage and named automatically. If a patient has been selected, images are saved to a directory for the patient. If no patient name has been entered, the image is saved in the **Unassigned** directory.

By default, **Quick Store** is **ON**.

- If you have added annotations, they will be saved with the image.
- By default, the image is saved with an automatic name in a directory for the patient.
- If no patient name has been entered, the image is saved in the **Unassigned** directory.

### Saving Images

To save images with user-defined names, disable **Quick Store**.

To disable **Quick Store**:

- 1 Press **SUPER**, **Options [F1]**, **Misc [F3]**
- 2 Turn **Quick Store OFF**.

Now, when you press **SAVE**, you'll be prompted to enter a file name for the image.

When **Quick Store** is disabled, the **Save Dialog** will look something like this:



### Using Annotation Labels as File Names

Save images quickly, using annotation labels in the file names.


- 1 Make sure **Quick Store** is turned **OFF** [described above].
- 2 Press **SAVE** to save an image.  
When the **Save Dialog** prompts you for a name, press the **TEXT** key.  
Select the label you want pressing the appropriate function key.
- 3 The image will be saved with the annotation label name.

If you attempt to save images to the same directory with the same label name, a prompt will appear asking if you want to overwrite or rename the previous image.

Choose **Rename** and you'll be able to save a series, for example: *Uterus1*, *Uterus2*, *Uterus3* and so on.

Press the **MENU** key to return to scanning.

### Recording and Saving Cineloops

Press the **RECORD**  key to begin recording what you see on the screen; you should see a blinking red circle on the right side of the screen indicating that a recording is in progress. This is a decrementing counter; it indicates the time left until the recording is complete.



By default, the recording is saved with an automatic name in a directory for the patient.

To save AVI files with user-defined names, disable **Quick Store**.

To disable **Quick Store**:

- 1 Press **MENU** > **Options** > **Measure**.
- 2 Turn **Quick Store** off.


Now, when you press **RECORD**, you'll be prompted to enter a file name for the image.

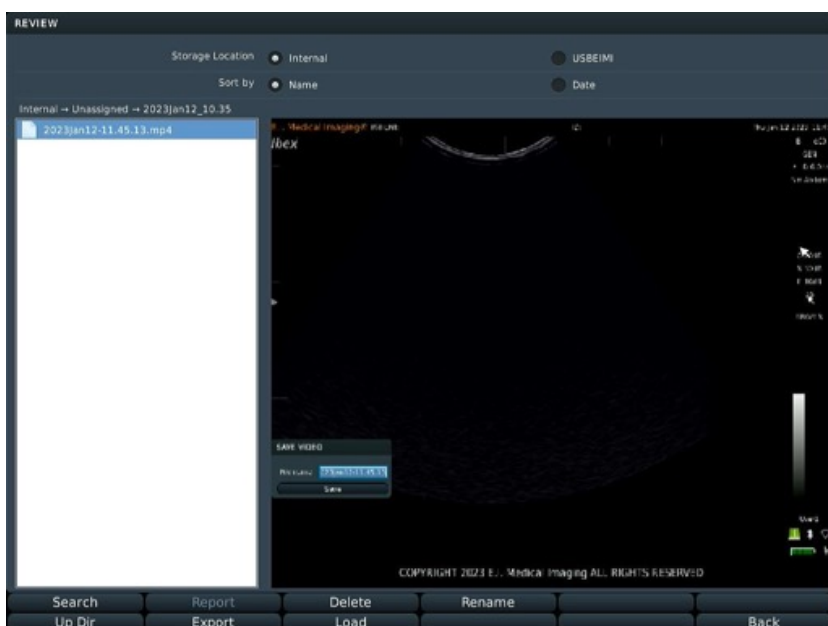
The length of the recording is also set under **Image/Vid Options**.

- 1 Press **SUPER** > **Options** > **Image/Vid**.
- 2 Set **Saved Loop Length**. You can choose 2 seconds, 4 seconds or 8 seconds.




To record longer loops, choose **Start/Stop**. When this is selected, press **RECORD** to start and stop the recording for whatever length you like. *When utilized, the blinking red number counts **up** instead of down.*

## Recalling Images and Cineloops

You can recall stored images and cineloops for comparison studies. Press the **REVIEW**  key to bring up the **REVIEW** screen.





### Recalling Saved Images and Cineloops

- 1 To recall saved images, press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to view from the list on the left; to change directories press **UP DIR**  from the bottom menu
- 3 Press **LOAD**  to view.
- 4 **UP DIR** moves the search up a folder level. Pressing it repeatedly will result in arrival at the root menu, where you can choose to search the on-board Flash drive or one of two USB drives.

Within the main menu on the onboard drive (and the USB drives if images have been exported to them), there will be a master **PATIENT** folder (for images saved to a specific patient), and a master **UNASSIGNED** folder (for images stored without a patient selected. These are organized by a time/date stamp)


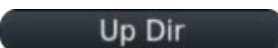
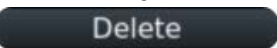
*When you view a cineloop, a blue bar on the right indicates progress.*

### Renaming Images

- 1 To recall saved images, press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to rename from the list on the left.
- 3 Press **RENAME** .
- 4 Rename the file and press **ENTER**.

### Deleting Images

To delete images and cine loops for the system, complete the following:

- 1 Press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to delete from the list on the left; to change directories press **UP DIR** .
- 3 Press **DELETE** . The system will **NOT** ask if you want to delete—BE SURE!



# ASSIGN TO PATIENT/PATIENT TO PATIENT

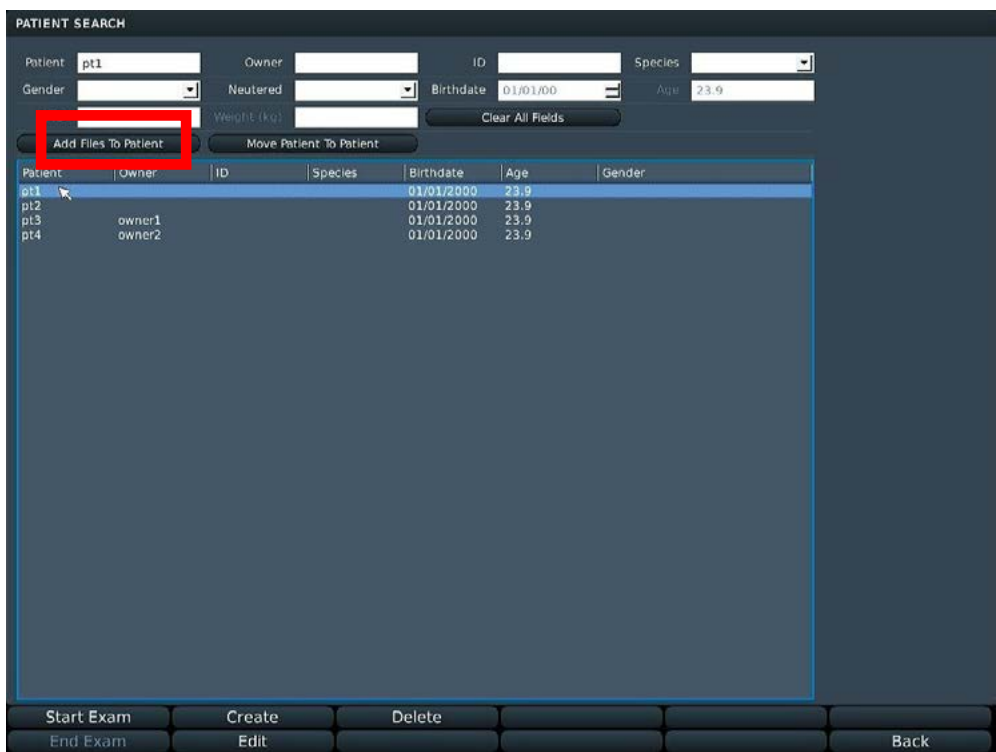
These features are to help users with moving, or copying, images/videos to the appropriate patient.

**NOTE** These features work appropriately when a patient and owner are set. It can work without an owner, but any time an owner is referenced, it will show a blank item. This is normal.

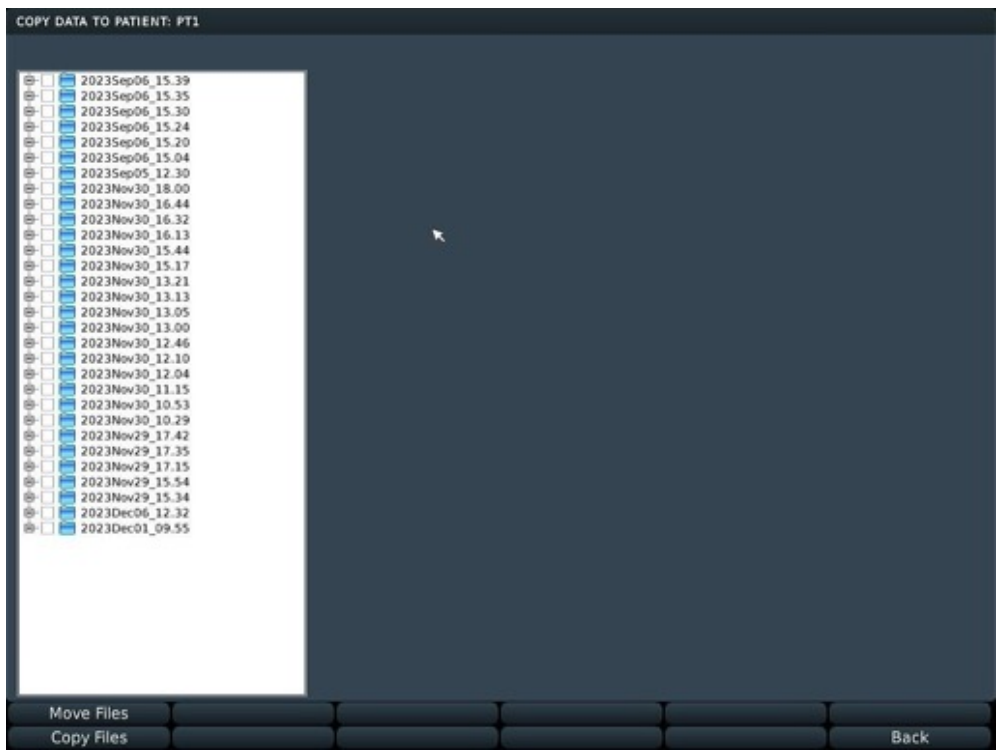
## Assign to Patient/Add Files to Patient— Patient Window

To access this feature, you will need to follow:

- 1 Open the **PATIENT** menu using the **PATIENT** key.
- 2 Select a patient.



- 3 Click **ADD FILES TO PATIENT** to bring up the following dialog:



You can either select the directory or expand the directory and select individual files. This will show a quick preview of what the file is.

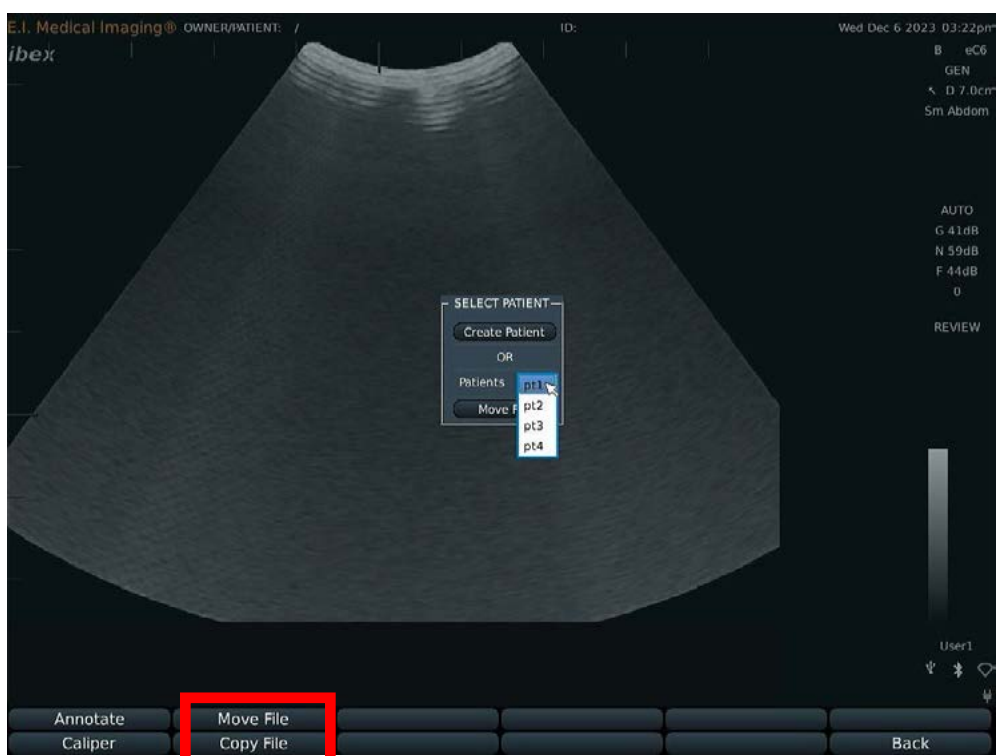
**NOTE** Copying is slower than moving, so it is recommended to move over copy.

### Assign to Patient—Review Image/Video

- 1 Press the **REVIEW** button.
- 2 Select the image or video you want to review.
- 3 Press either the **MOVE FILE** or **COPY FILE** button. This opens a dialog to either create a new patient (if the one you want to move or copy the image to does not exist) or select the patient from the dropdown menu.



- 4 Press the corresponding **MOVE FILE** or **COPY FILE** button. Once completed, another dialog will display to show the operation completed.



**NOTE** The **CREATE PATIENT** button will open the patient window to create a patient. See *Creating New Patient s* *ection for more information.*

## Patient to Patient

This feature allows you to move images or videos that were incorrectly added to the wrong patient and move them to the correct one.

**NOTE** Since there can be multiple patients with same names, owners are used to help filter results. It is strongly recommended to make sure all patients have appropriate owners listed.

- 1 Select two patients. This will activate the **MOVE PATIENT TO PATIENT** button.
- 2 Press the **MOVE PATIENT TO PATIENT** button.

**PATIENT SEARCH**

Patient: pt4 Owner: owner2 ID: Birthdate: 01/01/000 Age: 23.9 Species: Gender: Neutered: Clear All Fields

Add Files To Patient Move Patient To Patient

Patient	Owner	ID	Species	Birthdate	Age	Gender
pt1				01/01/2000	23.9	
pt2				01/01/2000	23.9	
pt3	owner1			01/01/2000	23.9	
pt4	owner2			01/01/2000	23.9	

Start Exam End Exam Create Edit Delete Back

- 3 This will open a window where you can move images or videos between the two.

**NOTE** The window does not pre-populate with the select owners/patients. You must select the ones you want to move.

**MOVE DATA TO PATIENT**

From Patient To Patient

Owner Patient Owner Patient

Move -> Move <-

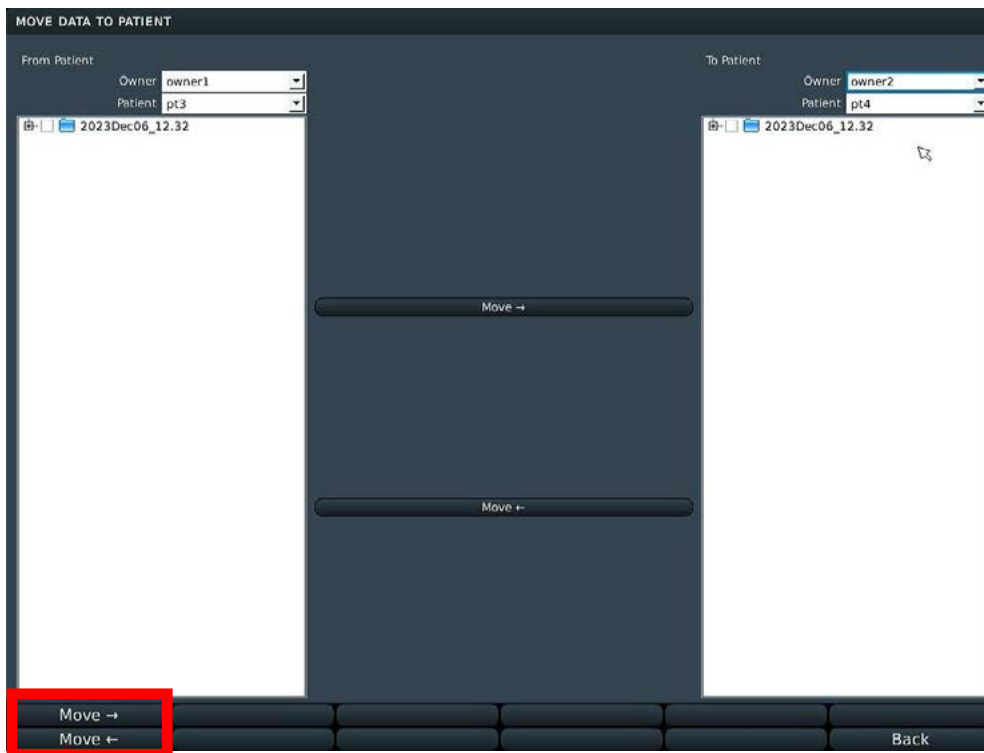
Move -> Move <- Back

- 4 You can select directories or individual images/videos.

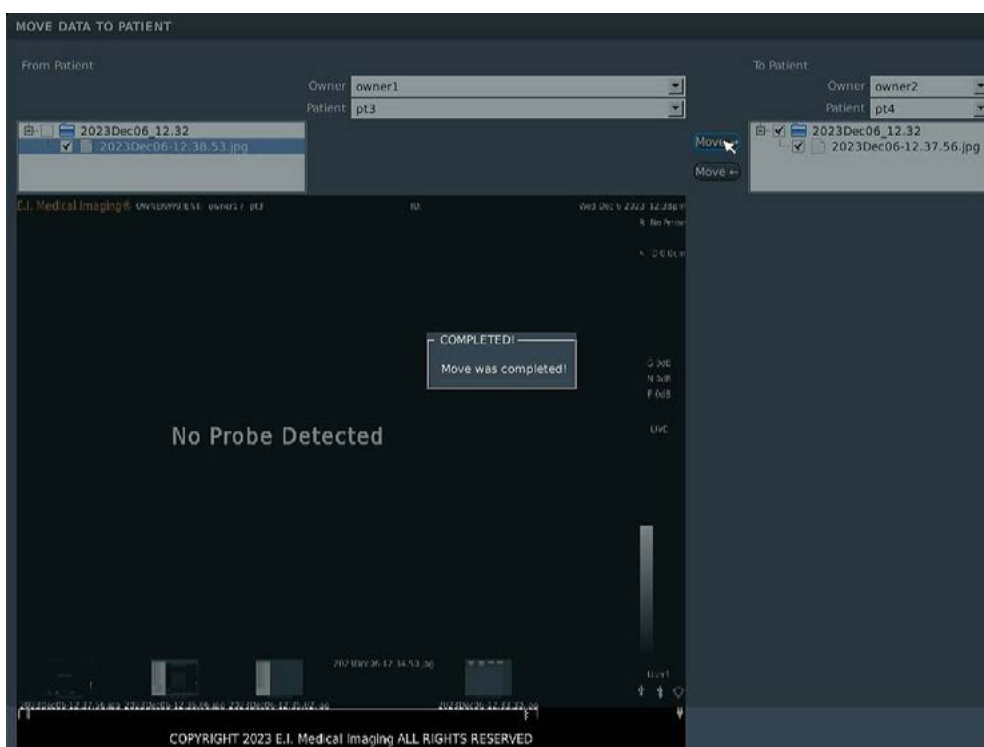
**NOTE** Selecting images/videos will provide a preview and skew the window—this is normal. It allows you to view the preview of the image to make sure you are moving the file you want. This also covers up the button bar at the bottom.

- 5 Click either **MOVE RIGHT** or **MOVE LEFT** once a file or folder is selected. A window telling the operation was completed will open briefly.

*Repeat this for any other owner/patient combination as needed.*



- 6 When completed, press the [MENU] button to return to normal operation. This will close the [PATIENT] window.




## USING MEASUREMENTS [LINEAR, AREA] AND ANNOTATIONS

The SA<sup>2</sup> auto-calculates distance and area measurements.

### Taking Distance Measurements



To take distance measurements:

- 1 Press **CALIPER** key  to freeze the image. Using the touch pad, move the cursor to the location where you want to start measuring. Tap the touch pad to set the start position.
- 2 Move the cursor again and tap the touch pad again to complete a linear measurement. A label will appear at the end of the line indicating the length.

**NOTE** If the labels are too big or small, you can adjust the font size.



Press **EDIT**, then **FONT+** or **FONT-** to make font larger or smaller.

### Applying A Gestation Table To A Linear Measurement




- 1 Press **F4** to view **TABLE**.
- 2 Select the **Species** from the first drop down.
- 3 Select the measurement from the lower drop down. Press **ENTER** . The coordinating result (fetal days) will appear below the measurement.  
**NOTE** If a measurement table has been selected before measuring, the calculation is automatically applied to the measurement.
- 4 Continue taking measurements by pressing the [**DIST**] key and repeating steps 2 and 3 until you are done. Press **SAVE**  to save any images.
- 5 Press the **CALIPER** key to return to active scanning.

### Taking Area Measurements

To take area measurements:

- 1 Press the **CALIPER** key to freeze the image, and then press the **AREA** key to display the crosshairs on the screen.
- 2 Move the crosshairs to the far boundary of the measurement area, and then press the **SELECT** key to mark the origin.
- 3 Using the touchpad move the crosshairs in a circular direction and delineate the measurement area until you return to the starting position.
- 4 Press the **SELECT**  key to end the measurement and display the size. The text box turns black.
- 5 Continue taking measurements by pressing the **AREA** key and repeating steps 2 and 3 until you are done—then press the **FREEZE**  key to return to active scanning.

## Adding Text Labels to Images

- 1 Press the **TEXT** key
- 2 When the cursor appears on the screen, you can move it with the touchpad
- 3 Enter text, or press one of the function keys to use a common label.
- 4 Press **SELECT**  or the **ENTER**  key to anchor the label.
- 5 Press **TEXT** to cycle through the lists.
- 6 Press **SAVE**  to save an image with the labels

The labels stay on the screen until you return to live scanning; to return to scanning, press the **MENU** key.

## Adjusting Font Size

Press the **TEXT** key to cycle through the options.

On the final screen, press **EDIT**. Use ▲ and ▼ to increase or decrease the font.

## Adding Arrows

After pressing the **TEXT** key, press ▲ to activate the arrow.



Use the touchpad to position it as desired. Add text to label the arrow and press **ENTER** to save the text and arrow.

This turns the surrounding box from blue to black.

## Adding Text to Saved Images

You can annotate and label saved images [JPGs] with alphanumeric text.

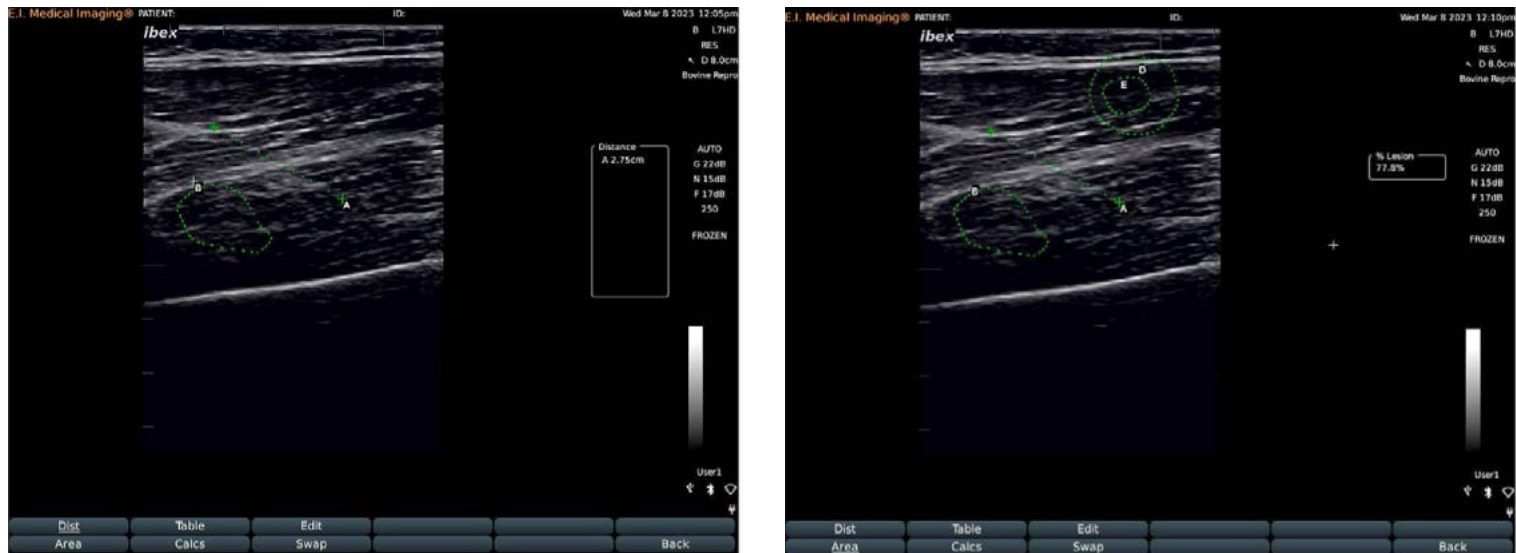
To add text to saved image files:

- 1 Recall the saved image file. Press the **REVIEW**  key to load the image.
- 2 Press the **TEXT** key to allow manual text entry or use list of available labels.
- 3 Continue to press the **TEXT** key to press through list of preset annotations.
- 4 Press **SAVE**  to save image.



### Measurement Side Bar

When **CALIPER** is pressed a measurement side bar is displayed. This will show the various measurements based upon what is supported by the probe. It will display a box based on what is set for the default measurement. Here it will show a letter label (A, B, C, etc) that corresponds to the measurement you took, as shown below.




For calculation measurements it will show the result of the calculations. Changing measurement does not clear already existing measurements.

## NAVIGATING THE REVIEW MENU

### Editing Images

New image files can be saved from stored ones.

To measure and annotate an image after it has been stored, navigate to that image in the **REVIEW**  menu and recall the image back to full screen.


Make the necessary edits and press **SAVE**  to store the updated copy.

**PLEASE NOTE**...the new JPEG will be stored under the new date and time and not in the original folder [but still within the **PATIENT**  if a patient is assigned].

To store a freeze—measure, annotate, and store a still frame [JPEG] from a stored video loop, recall the desired video loop from the **REVIEW** menu.


Freeze the image at the chosen time [left and right arrow keys can be used to advance through the frames after freezing the playback], and apply the necessary edits.

Press **SAVE** to store the updated copy.




To save a shorter video clip from a longer file—recall the video loop from the **REVIEW** menu, then use the **RECORD**  key to save the desired portion. [See “Recording and Saving Cineloops” p.23](#)

### Reporting Images

To write a report on a set of images, the **PATIENT**  must be currently selected.

Enter the **REVIEW**  menu and navigate to the folder of images that you wish to report on. Press **F3** for **REPORT** to fill out a report form that will be saved as an additional JPEG alongside the images within that folder.

### Recalling Saved Images and Cineloops




- 1 To recall saved images, press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to view from the list on the left; to change directories press **UP DIR** .
- 3 Press **LOAD**  to view.
- 4 The **UP DIR** [Up Directory] button moves the search up a folder level. Pressing it repeatedly will result in arrival at the root menu, where you can choose to search the on-board Flash drive or one of two USB drives.

Within the main menu on the onboard drive [and the USB drives if images have been exported to them], there will be a master **PATIENT** folder [for images saved to a specific patient], and a master **UNASSIGNED** folder [for images stored without a patient selected. These are organized by a time/date stamp]

When you view a cineloop, a blue bar on the right indicates progress.

## Recalling Images and Cineloops



### Recalling Saved Images and Cineloops

- 1 To recall saved images, press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to view from the list on the left; to change directories press **UP DIR**  from the bottom menu
- 3 Press **LOAD**  to view.
- 4 **UP DIR** moves the search up a folder level. Pressing it repeatedly will result in arrival at the root menu, where you can choose to search the on-board Flash drive or one of two USB drives.

Within the main menu on the onboard drive (and the USB drives if images have been exported to them), there will be a master **PATIENT** folder (for images saved to a specific patient), and a master **UNASSIGNED** folder (for images stored without a patient selected. These are organized by a time/date stamp)



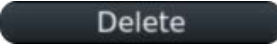
*When you view a cineloop, a blue bar on the right indicates progress.*

### Renaming Images

- 1 To recall saved images, press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to rename from the list on the left.
- 3 Press **RENAME [F1]** .
- 4 Rename the file and press **ENTER**.


### Deleting Images

To delete images and cine loops for the system, complete the following:

- 1 Press the **REVIEW**  key.
- 2 Select the image or cineloop you'd like to delete from the list on the left; to change directories press **UP DIR** .
- 3 Press **DELETE [F5]** . The system will **NOT** ask if you want to delete—**BE SURE!**

## Quick Access Bar

Below the main ultrasound area and above the buttons is the **Quick Access Bar**. This will show stored images and videos. By default it will show the *Unassigned* directory, and opening up an image from USB or a patient will change the directory to where it was loaded.

For example, if you open an image from a patient, it will populate the bar with that patient's images/videos and allow you to quickly open any image without the need to go into the **Review** .

**NOTE** To change the directory you will have to open an image/video from **Review**.



## Exporting Images

### *Saving Files to a USB Memory Stick*

- 1 Insert the memory stick where you want to save the files into one of the USB ports on the back of the SA<sup>2</sup>.
- 2 Navigate to the **USB Menu**. Press the **MENU** key, **SETUP**, **USB**.

The dialog below will display. You can also click on the **USB** icon in the status panel: tap on the touch pad to launch the USB dialog.

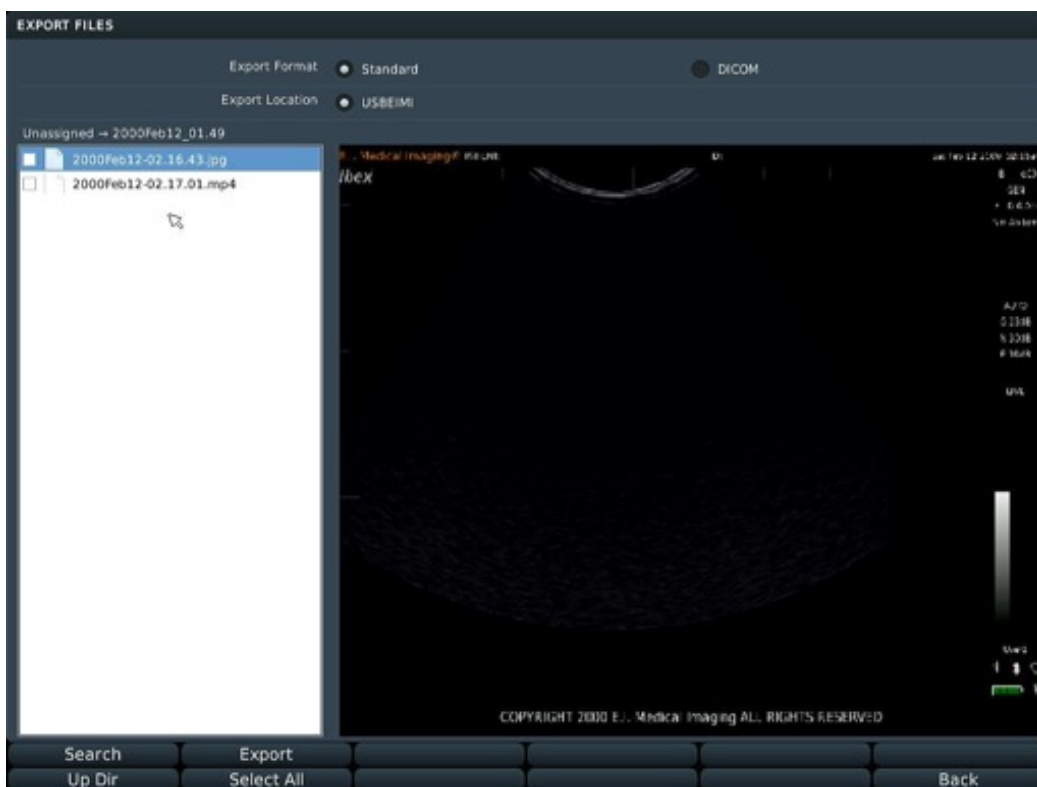
**NOTE** If you do not have a current **PATIENT**, the last option will not appear.



- 3 In this example, we were doing an exam for the patient *Otis*. To pick and choose which files to export, select the internal storage location and **Export Files**.

The next screen will appear.

You can select individual files from the list or check **Select All** at the top of the screen.



- 4 The files will save to the USB thumb drive in a folder structure by patient and date. If you save files without activating a patient record, they will be saved into a folder named **UNASSIGNED**.

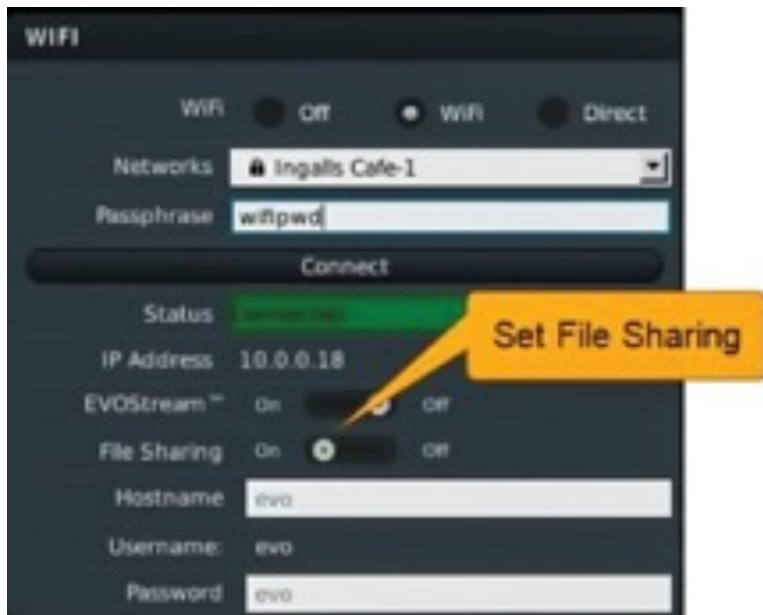
## FILE SHARING

You can share files from the SA<sup>2</sup> across a wireless network.

### Setting Up the SA<sup>2</sup>

- 1 On the SA<sup>2</sup>, enable **WiFi**. You can connect to a local network or use direct connection. In this example, we're connecting to a local network.

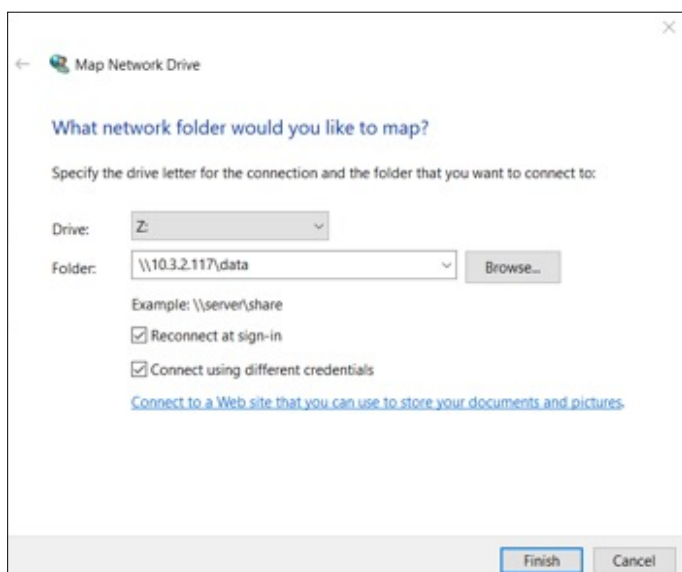
Once the EVO is connected to the wireless, set **File Sharing**.



### From Your Computer

Once wireless is enabled on your SA<sup>2</sup>, you'll be able to see it from your computer. Access it by mapping a drive to the device.

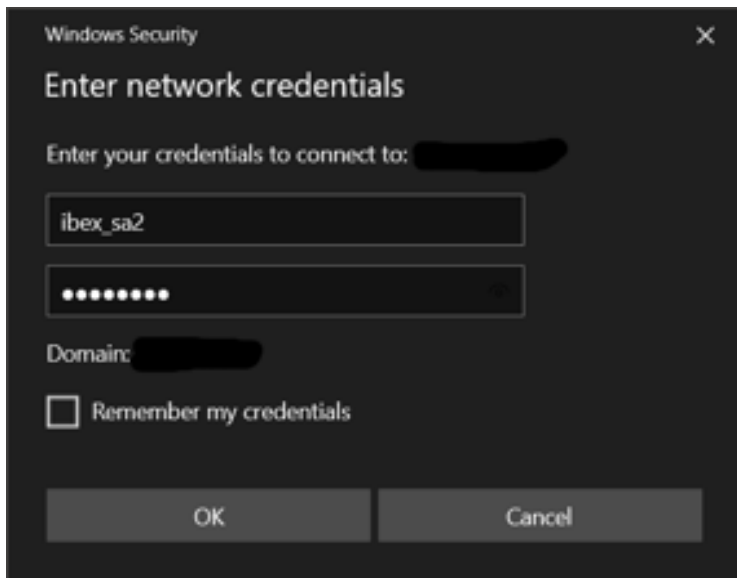
- 1 On your PC, go to **This PC > Map Network Drive** [right-click on **This PC** and select **Map Network Drive**].



- 2 Fill in folder as \\<ip address>\data, using the IP address of the SA<sup>2</sup>. For example: \\10.3.2.117\data
- 3 Select **Connect using different credentials**; click **Finish**.

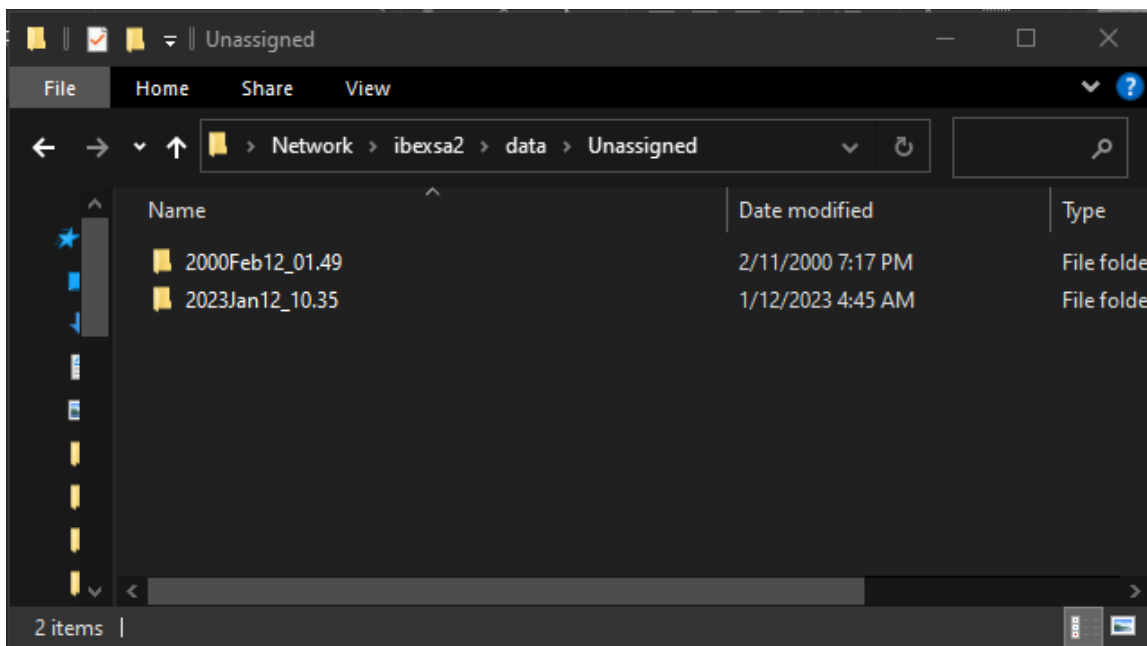


- 4 You'll be prompted to authenticate to the SA<sup>2</sup>. Log in with the WiFi username and password. Below we show the defaults. Click **OK** and the drive will display the directories on the SA<sup>2</sup> where images and cineloops are stored.



**NOTE** For Windows 10 and later, the username should have a \ (backslash) to remove domain login.

- 5 The drive will appear with directories as shown.



**NOTE** If your windows explorer settings are set to display hidden folders, you may see additional folders.

## EVOStream™—Sharing Live Images

EVOStream lets you share the live video feed to an iOS or Android™ device. It will connect up to 4 devices at a time.

There are two ways of connecting to an SA<sup>2</sup> from your wireless device.

- Configure your phone and SA<sup>2</sup> to connect to the same WiFi network
- Or configure the SA<sup>2</sup> to supply its own WiFi [**WiFi Direct**] and have your device connect to that network.

*Sample view on an iPad*



## Connecting Over WiFi Direct

1 Power on the SA<sup>2</sup>.

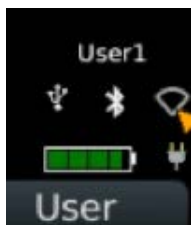
2 Enable **WiFi**.

To access the **WiFi** settings:

Press the **MENU** key, **SETUP** > **WiFi**. The **WiFi** dialog will appear...



You can also click on the **WiFi** icon in the status panel: tap on the touch pad to launch the WiFi dialog.



3 By default, **WiFi** is disabled; click **ON** to enable.

4 In the **WiFi** dialog, select the **Direct** radio button on the first line.

This will auto-populate the SSID with SA<sup>2</sup> and the passphrase **Galileo1**. These are default values that you may change if you want customize your network [for example, if you don't want other people to connect to your SA<sup>2</sup>, you may want to select a different password, or if you have multiple SA<sup>2</sup>s, you may each give them a different SSID], but you don't need to.

5 Click the **Activate Network** button. The status line should change to **Connected**.

6 Set **Streaming** to **On** to enable video streaming.

7 At this point your SA<sup>2</sup> is configured to stream over **WiFi Direct**.

## Configuring iPhone or iPad

Download **EVOStream™ App** from *Apple iTunes*.

- 1 Click **Settings** on your iPhone or iPad.
- 2 Select **WiFi**; this should bring up a list of networks.
- 3 You should see **IbexSA2** [unless you changed the SSID in step 3 above] from that list. Select it.
- 4 You'll be prompted for the network passphrase [**IbexSA21**, unless changed]. Once you have entered the correct passphrase, your iPhone or iPad should connect to the SA<sup>2</sup> network. Exit **Settings**.
- 5 Launch the **EVOStream App**.
- 6 It should auto-detect the unit and start display the video stream from the SA<sup>2</sup>.

## Configuring an Android™ Device

Download **EVOStream App** from *Google Play*.

- 1 Click the **Settings** icon on your Android device.
- 2 Select **WiFi**; this should bring up a list of networks.
- 3 You should see **IbexSA2** [unless you changed the SSID in step 3 above] from that list. Select it.
- 4 You'll be prompted for the network passphrase [**IbexSA21**, unless changed]. Once you have entered the correct passphrase, your Android™ device should connect to the EVO network. Exit **Settings**.
- 5 Launch the **EVOStream App**.
- 6 It should auto-detect the unit and start display the video stream from the SA<sup>2</sup>.

## Enabling Bluetooth

The SA<sup>2</sup> uses Bluetooth

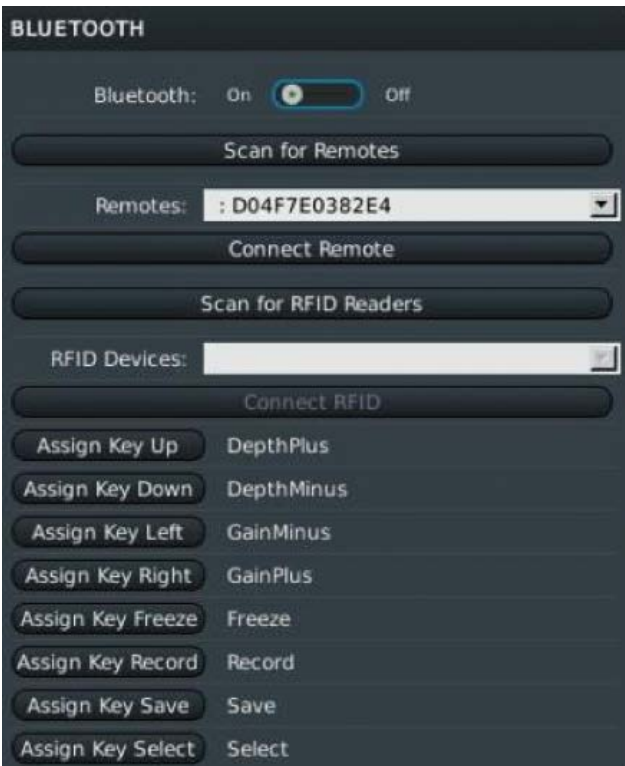
- to work with Bluetooth RFID readers
- for remote control

To access the Bluetooth settings, press: **MENU** key > **SETUP** > **BLUETOOTH**.

You can also click on the **Bluetooth icon** in the status panel; just tap on the touch pad to launch the Bluetooth dialog.



The Bluetooth dialog opens...



<b>Bluetooth</b>	By default, Bluetooth is disabled. Turn it on here. Bluetooth will continue to be enabled after a system reboot.
<b>Scan for Remotes</b>	Click this to initiate a search for remote devices.
<b>Remotes</b>	Available remote devices are listed here. Select the one you want to use.
<b>Connect Remote</b>	Click this to establish a connection between the SA <sup>2</sup> and the selected device.
<b>Scan for RFID Readers</b>	Click this to initiate a search for RFID Readers.
<b>RFID Devices</b>	Available RFID Readers are listed here. Select the one you want to use.
<b>Connect RFID</b>	Click this to establish a connection between the SA <sup>2</sup> and the selected RFID reader.
<b>Assign Key</b>	All remote keys can be reassigned to work as any key on the SA <sup>2</sup> . Select the key you want to reassign from the list, then physically press the new key.

## RFID Support

The SA<sup>2</sup> supports the following RFID string formats: ISO, Hex and Decimal 2.

## APPENDIX



## FCC Regulatory Information



Contains FCC ID: Z64-WL18SBMOD

Contains IC: 4511-WL18SBMOD

This device complies with Part 15 of the FCC Rules subject to the following two conditions:

- 1) This device must not cause interference, and;
- 2) This device must accept all interference, including interference that may cause undesirable operation.

### **WARNING**

Modification of this device without consent of the responsible party may void the users right to operate this device.

### **NOTES**

a) USA-Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **Caution: Exposure to Radio Frequency Radiation**

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

## b) Canada—Industry Canada (IC)

This device complies with RSS 210 of Industry Canada. Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of this device.

L' utilisation de ce dispositif est autorisée seulement aux conditions suivantes:

- (1) Il ne doit pas produire d'interférence et
- (3) L' utilisateur du dispositif doit être prêt? Accepter toute interférence radioélectrique reçue, même si celle-ci est susceptible de compromettre le fonctionnement du dispositif.

**Caution: Exposure to Radio Frequency Radiation**

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website <http://www.hc-sc.gc.ca/rpb>.

**CE EU Compliance** Usage restrictions apply—see documentation

AT	BE	CY	CZ	DK	EE	FI	FR
DE	GR	HU	IE	IT	IV	LT	LU
MT	NL	PL	PT	SK	SI	ES	SE
GB	IS	LI	NO	CH	BG	RO	TR

**EU Restrictions for Use in the 2.4 GHz Band**

This device may be operated indoors or outdoors in all countries of the European Community using the 2.4 GHz Band: Channels 1-13 except where noted.



**EU Declaration of Conformity No. 060116**

(Manufacturer): E.I. Medical Imaging

(Address): 815 14<sup>th</sup> St, SW Unit C210

Loveland, Colorado 80537, USA

**Declares that the product:**

Portable Ultrasound Device for Veterinary Use: **Ibex EVO I3 OLED and LCD Models**

**Conforms to the following Directives:**

- 1. Low Voltage Directive 2014/35/EU, Test Report No. EIMI-Ibex-EVO-60601-1
- 2. Electromagnetic Compatibility Directive 2014/30/EU Test Report No. EI19032016IEC 04/06
- 3. R&TTE Directive 1999/5/EC Test Report No. ER3N2752 TI Module WL1835MODCOM8B
- 4. EMF Directive 1999/519/EC Test Report No. TBD
- 5. RoHS 2 Directive 2011/65/EU

This declaration has been issued under the sole responsibility of EI Medical Imaging.  
The object of the declaration is in conformity with the relevant Union harmonization Legislation.

**Using the following primary standards:**

**Safety Standards (used as a guide)**

EN 60601-1: 2012- Medical Electrical Equipment - Part 1: General Requirements For Basic Safety & Essential Performance

**EMC Standards:**

EN 60601-1-2: 2007	: Electromagnetic Compatibility (EMC)
EN 55011: 2009 + A1:2010	: Radiated Emissions- Class B, Group 1
EN 61000-4-2	: Electrostatic Discharge
EN 61000-4-3	: Radiated RF Immunity
EN 61000-4-4	: Electrical Fast Transients/Burst
EN 61000-4-5	: Surge Immunity
EN 61000-4-6	: Conducted RF Immunity
EN 61000-4-8	: Power Frequency H-Field Immunity
EN 61000-4-11	: Voltage Dips, Interruptions
EN 61000-3-2	: Power Line Harmonics and Interharmonics
EN 61000-3-3	: Flicker
EN 300 328 v1.8.1, TI Module Cert WL1835MODCOM8B	: ERM Data Transmission in 2.4 GHz Band
EN310 489-1 v1.9.2, TI Module Cert WL1835MODCOM8B	: Common Technical Requirements (Radio)
EN310 489-17 v2.2.1, TI Module Cert WL1835MODCOM8B	: Specific conditions Broadband Data Transmission










**And complies with the relevant Essential Health and Safety Requirements**

I, undersigned, hereby declare that the equipment specified above fulfills the safety objectives referred to in Article 3 and set out in Annex I, has been demonstrated and conforms to the above Directives and Standards and is therefore eligible to carry the CE Marking.

Patrick Nefos

Digitally signed by Patrick Nefos  
DN: cn=Patrick Nefos, o=EI Medical, ou=Engineering, email=patrick@eimedical.com, c=US  
Date: 2023.04.03 07:43:37 -06'00'

<u>Patrick Nefos</u> (Name)	<u>Engineering, E.I. Medical Imaging</u> (Position)	<div>Patrick Nefos</div>
<u>Loveland, CO</u> (Signed at place)	<u>March 22, 2023</u> (Date)	

SYMBOL	NAME	DESCRIPTION
	<b>Caution</b>	<p>You must read, understand, and follow all instructions in this manual including all warnings, cautions, and precautions before using the medical device in veterinary practice.</p> <p><b>Scanner</b></p> <ul style="list-style-type: none"> <li>• Is for veterinary use only.</li> <li>• Is not user serviceable. Contact E.I. Medical Imaging if defective or damaged.</li> <li>• Use only specified AC adapter/charger.</li> </ul>
	<b>Type BF Equipment</b>	The Probe (Patient Applied Part) is Type BF (floating from electrical ground) per the Standard EN 60601-1, which offers a specific level of safety.
	<b>RoHS Compliant</b>	The system is compliant with the RoHS guideline 2002/95/EC
	<b>CE</b>	Device complies with the European Union Low Voltage Directive (LVD) and EMC directive.
	<b>Standby</b>	Alternately switch the device between the power-on and standby states.
	<b>USB</b>	USB 2.0 Host I/O Port current limited (100ma per port) for connection to USB FLASH DRIVE file storage and supported peripherals.
	<b>Lead Free</b>	All components (e.g. PCBs) are lead free and can be used in lead free solder processes.
<b>IP54</b>	<b>Ingress Protection</b>	<p>Protection from dust and splashing from any direction.</p> <p>Protection from dust and low pressure jets of water from any direction.</p>
	<b>Do not dispose</b>	This device is not allowed to be disposed in domestic waste.
	<b>Read Manual</b>	Before attempting to use this device, consult the manual and/or the quick start guide.

## System Specifications

The following table lists the system specifications for the SA<sup>2</sup> scanner.

<b>Applications</b>	Equine, Companion Animal, Bovine, Exotic, Marine, Small Ruminants, Swine
<b>Imaging Modes</b>	B, B+M, M, PW, Color, Power Doppler
<b>System Dimensions</b>	11.25 x 23 x 3 inches 28.5 x 30 x 7.5 cm Lightweight 8.6 lbs (3.9 kg)
<b>Transducer</b>	Ruggedized DuraScan® transducers 2.0MHz – 14.0MHz Support for 2.0 MHz to 14 MHz 128 Element Linear/Curved Linear probes Support for user selectable scan directions
<b>Connectivity</b>	USB 2.0 image storage and recall Wireless (802.11) connectivity and Bluetooth connectivity
<b>Display</b>	12.1" diagonal LCD XGA resolution. 30.73 cm 1080 HDMI, NTSC, EVOSstream
<b>Power</b>	Li-ion battery 3 hours Stand alone external battery charger available; AC Power Adapter for charging or operating; Output: 15V DC 4A
<b>Scan Measurements</b>	Unlimited caliper sets for distance measurements Continuous area of circumference Grid option for quick measurements Touch pad for navigation Calculation tables On-screen text annotations and arrows Dual image feature for side-by-side comparisons Tendon calculations: % Lesion   % change   % difference Cardiac calculations: FS   LA/AO
<b>Image Storage</b>	250 frame cineloop memory (60 frames/second frame rate recording) Audio Tags can be stored with image Static images can be saved from cine-loops Measure and recalculate from saved images

*System Specifications cont.*

<b>Additional Features</b>	System Dynamic Range 156 db Auto-Optimize image (Auto Gain and TGC) Software field upgradable LED backlit keyboard DuraScan® technology for system durability Streaming Video via 802.11x using H.264 codec to iOS and Android devices. EVOStream™ WiFi Remote Scanning App Customized, veterinary-specific exam presets
<b>Operating Environment</b>	0° to 40° C
<b>Storage, Transportation Environment</b>	-20° to 50° C



## WARRANTY

This Limited Warranty is provided only to you as the original retail purchaser of the shipped E.I. Medical Imaging SA<sup>2</sup> Diagnostic Ultrasound Scanner (the Product), and to no other person. E.I. Medical Imaging warrants to you that for a period of one (1) year with respect to labor and for a period of one (1) year with respect to parts, the Product will be free from defects in materials and/or workmanship.

### ***Limited Warranty***

Transducers, batteries and associated accessories all carry a one (1) year limited warranty from the date of purchase. E.I. Medical Imaging warrants to you that for a period of one (1) year with respect to labor and for a period of one (1) year with respect to parts, the Product will be free from defects in materials and/or workmanship.

Your Exclusive Remedy, E.I. Medical Imaging's entire liability and your exclusive remedy under this Limited Warranty shall be, at E.I. Medical Imaging's option, either Repair or Replacement of the Product within the specified warranty period. IN NO EVENT DOES THIS WARRANTY COVER DEFECTS OR MALFUNCTIONS DUE DIRECTLY OR INDIRECTLY TO ACCIDENT, MISUSE, OR NEGLIGENCE OF THE PRODUCT, TAMPERING WITH OR ANY INDICATION THAT THE SYSTEM HAS BEEN OPENED BY ANY NON-COMPANY APPROVED INDIVIDUAL OR SERVICE CENTER, OR AN ACT OF GOD.

### ***Disclaimer of All Other Warranties***

Except as specifically provided above, there are no express warranties or claims or representations made by E.I. Medical Imaging regarding the Product. Any implied warranties, including implied warranties against claims that the product infringes on property rights of third parties, patent rights, implied warranties of fitness for a particular purpose or use, and implied warranties of merchantability, shall terminate one (1) year from the date of purchase.

### ***Limitation of Liability***

To the maximum extent allowed by applicable law, in no event will E.I. Medical Imaging nor anyone else who has been involved in the creation, production or delivery of the product be liable to you or any other person for any direct, indirect, consequential or incidental damages, or any special or punitive damages (for example, damages for loss of profits or business interruption) arising out of the use of or inability to use the Product, a defect in the Product, or the failure of the product to perform, even if E.I. Medical Imaging has been advised of the possibility of such claims or damages. In no event will E. I. Medical Imaging be liable, regardless of the basis of the claim or action, for any amount exceeding the purchase price actually paid for the Product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

### ***Repair Warranty***

Any repair work preformed by E.I. Medical Imaging shall be warranted with respect to parts and labor to be free from defect for a period of (30) thirty days.

***Obtaining Warranty Service***

All Warranty repair work shall be performed by E. I. Medical Imaging's employees at the factory or by an Authorized Service Center. In the event that the Product requires service, please contact E.I. Medical Imaging, or other authorized service provider, to obtain a Return Materials Authorization (RMA) number. This number must accompany your Product upon return in order to obtain service on your unit. You the purchaser are responsible FOR ALL FREIGHT CHARGES ASSOCIATED WITH WARRANTY SERVICE.

This Limited Warranty gives you specific Legal Rights; you may also have other rights which vary from state to state.