



SonoSim® Ultrasound Training Solution
User Guide

www.sonosim.com

Thank you for purchasing the
SonoSim® Ultrasound Training Solution.
We hope you enjoy your learning experience.

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USING YOUR SYSTEM

Getting Started

1 Plug in your probe

Plug your SonoSim® Probe into an active USB port on your computer.



2 Launch software

Double-click on the SonoSim® icon on desktop screen to launch the SonoSim® Ultrasound Training Solution.



3 Make a selection

Choose either SonoSim® Courses for didactic instruction or SonoSimulator® for hands-on training from the SonoSim® Ultrasound Training Solution Main Menu.



Main Navigation Menu Items

SonoSim® Courses	SonoSim® Courses provide didactic information on a variety of ultrasound topics using text, video, audio narration, and animation, and include in-course questions and answers and end-of-course assessments.
SonoSimulator®	The SonoSimulator® enables hands-on training and allows you to scan through a variety of real-patient cases using the SonoSim® Sensor.
SonoSim® Case Legend	The case legend summarizes pathologic findings for each ultrasound case included in the SonoSim® Case Library.
Knobology	The knobology section provides knobology tutorials for various ultrasound machines.
Claim Certificate (CME)	The claim certificate (CME) menu item allows you to print a certificate for completed SonoSim® modules and claim CME credit (if applicable).
Product Information	The product information section provides video descriptions of the SonoSim® Ultrasound Training Solution, a user guide, FAQ information, and technical support.

SonoSim® Courses

Users can access didactic content presented in an interactive multimedia format using still ultrasound imagery, audio narration, computer graphic imagery, and animation. The time required to successfully complete and master each course will vary. An internet connection is required to access the SonoSim® Courses.

To access online SonoSim® Courses, please follow these steps:

1 Select your course

Upon selecting SonoSim® Courses from the main menu, a Course Menu will appear. This Course Menu displays the courses you have purchased. Select a course and begin learning.



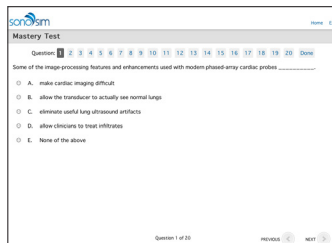
2 Complete your lessons

Each course is divided into lessons. Complete each course at your own pace. You can exit the course anytime and return to it in the future.



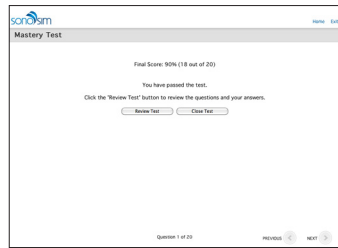
3 Take your test

Following SonoSim® Course completion, you will be provided a Mastery Test. Answer each question. Upon test completion, your results will be immediately displayed.



4 Review performance

You can review your performance by clicking on the REVIEW TEST button. If you would like to print your results you can choose PRINT from your browser window.



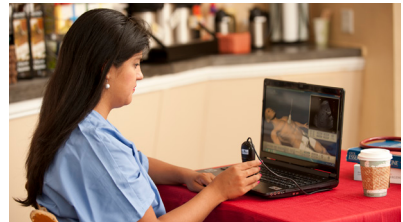
Using the SonoSimulator®

The SonoSimulator® allows you to scan through a variety of real-patient cases using the SonoSim® Probe in a virtual ultrasound imaging environment. The virtual probe on the desktop screen will precisely mirror the rotational movement of the physical probe you are holding in your hand.

To begin using the SonoSimulator®, please follow these steps:

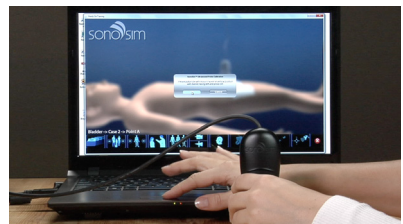
1 Position yourself

Following selection of the SonoSimulator®, center yourself in front of the screen.



2 Calibrate the probe

Click on the CALIBRATE button. You will be prompted to hold the sensor perpendicular to the flat surface in front of your computer with the indicator facing your anatomic left. Click OK. Your sensor is now ready for use.



3 Choose your first case

To start your hands-on training, click on the CASE LIST button. This will allow you to select a real-patient case from the SonoSim® Case Library. Click on your selected patient and his or her ultrasound study will be uploaded into the virtual patient.



4 Review case history

Press the HISTORY button to learn pertinent information about the selected patient.



5 Start scanning

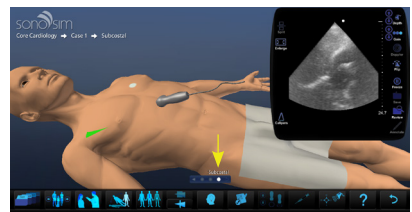
Orient your hand or preferred scanning surface (live volunteer, mannequin, or scanning pad) along an axis that is parallel to the virtual body on the screen. Place the probe on your imaging surface and start scanning.



6 Change probe position

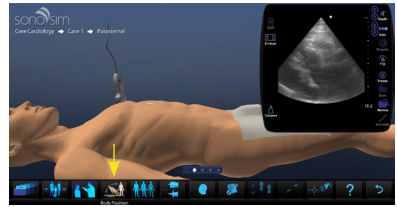
You may change the position of the probe by any of the following ways:

- 1) Click on the dot bar as indicated in the image to the right.
- 2) Click on the highlights spots on the body model.
- 3) Click and drag the on-screen probe to a highlighted spot.



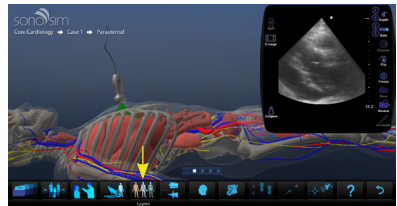
7 Change body position

Reposition the on-screen virtual body by clicking on the BODY POSITION button.



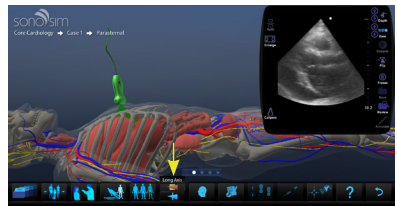
8 Remove body layers

Remove anatomic layers of the body to better understand how the probe beam traverses underlying anatomy to create resultant ultrasound imagery by clicking on the LAYERS button.



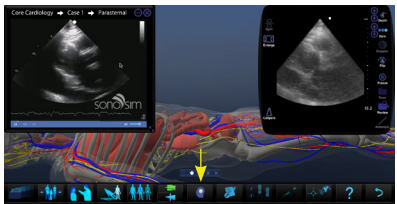
9 Get probe guidance

Click on the LONG AXIS or SHORT AXIS expert window buttons to get immediate assistance orienting the probe along the long or short axis of the area of interest.

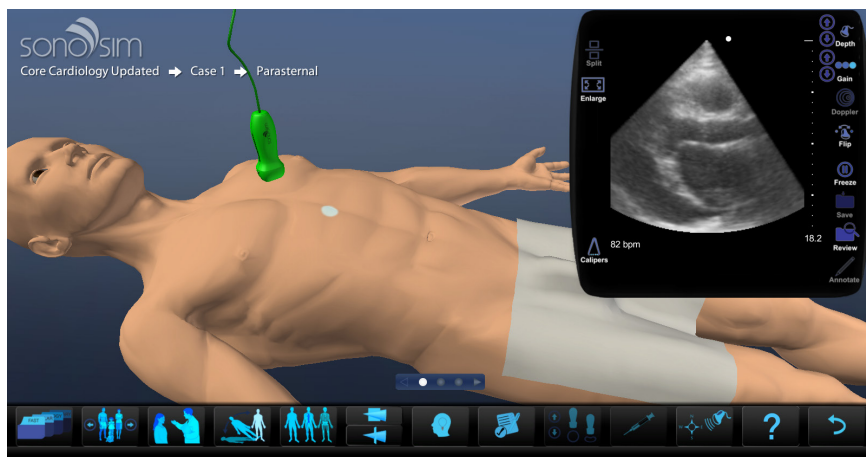


10 Listen to experts

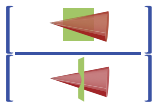
Press the FINDINGS button to watch a narrated video review of relevant ultrasound findings from expert sonographers.



SonoSimulator® Button Definitions



Case List		Selecting the Case List allows you to view a list of available training cases sorted by topic.
Case		This feature allows you to navigate forward or backward to the next hands-on training case by clicking on the arrow icons in the CASE button.
History		The History button provides a brief patient history including information such as age, gender, vital signs, and chief complaint.
Body Position*		Clicking on this button will change the position of the virtual body on screen.
Layers*		Clicking on this button will remove the skin from the virtual patient and reveal underlying anatomy. A subsequent click will remove an additional layer of anatomy and another click will restore the original skin layer.

Long Axis / Short Axis*		These buttons provide assistance orienting the probe along the optimal longitudinal axis (long-axis view) or the optimal transverse axis (short-axis view) of the structure of interest.
Findings		The Findings button provides immediate expert feedback. A narrated version of the original ultrasound clip describes what users should recognize while scanning a corresponding SonoSim® Case.
Test Mode		Test mode disables educational features such as Layers, Long Axis, Short Axis, and Findings for assessment purposes.
Compression*		This feature is available on select cases and allows a user to compress a target vessel with successive clicks on the up (less compression) or down (more compression) arrow icons in the Compression Button. This feature is inactive if it remains dim in appearance when you move your cursor over it.
Needle*		The needle feature enables ultrasound-guided needle-based procedure training. Clicking this button activates the insertion feature and places the virtual probe and needle over the point of interest.
Calibrate		This feature allows you to calibrate the SonoSim® Probe prior to use. Upon clicking the calibrate button, you will be prompted to hold the probe perpendicular to the flat surface in front of the computer with the probe indicator facing towards your anatomic-left side. Once “OK” is selected the SonoSim® Probe is ready for use.
Help		Clicking on this button will open the SonoSim® User Guide.
Main Menu		Clicking on this button exits the SonoSimulator® and returns the user to the Main Menu.

Split		When available, this button will cause two images to display: the ultrasound image plus a corresponding MRI, CT, or X-Ray. Subsequent click will return display to ultrasound image only.
Enlarge		Clicking on this button will make the ultrasound window larger. Subsequent click will return window to original size.
Calipers		The calipers button activates the D1-D2-D3 measurement dimensions within the ultrasound window. This allows you to measure length, area, and volume of structures of interest.
Depth		Clicking these arrows adjusts the image depth displayed within the virtual ultrasound window.
Gain		Clicking these arrows makes the displayed ultrasound image brighter or darker.
Doppler		When available, this button will turn on Power Doppler display within the ultrasound image.
Flip		Clicking on this icon will flip the probe indicator to the opposite side of the virtual ultrasound screen (e.g., cardiac versus abdominal imaging preset mode) and display the mirror ultrasound image.
Freeze		Clicking this button will freeze the current obtained ultrasound window, and a subsequent click will unfreeze the image.
Save		Clicking this button saves the frozen ultrasound windows.
Review		This button allows you to review saved windows.
Annotate		This feature allows the user to type annotations associated with the ultrasound window. This button is only available when the image is frozen.

**This feature is inactive if it remains dim in appearance when you move your cursor over it.*

USING SONOSIM LIVESCAN™

SonoSim LiveScan™ instantly transforms healthy volunteers or mannequins into ultrasound training cases with real pathologic conditions.

To begin using the SonoSim LiveScan™, please follow these steps:

1 Plug in your probe

Plug your SonoSim LiveScan™ Probe into an active USB port on your computer. The SonoSim LiveScan™ Probe is designed to work specifically with SonoSim LiveScan™ modules.



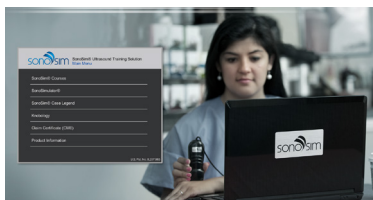
2 Launch software

Double-click on the SonoSim® icon on desktop screen to launch the SonoSim® Ultrasound Training Solution.



3 Open SonoSimulator®

Choose SonoSimulator® from the SonoSim® Ultrasound Training Solution Main Menu.



4 Choose your tags

Choose either semi-permanent or disposable SonoSim LiveScan™ tags, depending on whether the tags will be applied to a mannequin or human volunteer.



**Note:*

The semi-permanent tags (blue) are designed for long-term application onto mannequins, and are compatible with polycarbonate, polyvinyl chloride, and similar surfaces.

The disposable tags (silver) have a hypoallergenic adhesive and are specifically designed for single use application onto human skin.

5 Select a case

Click on the CASE LIST button and select a module with the SonoSim LiveScan™ logo.



6 Apply your tags

Review the SonoSim LiveScan™ tag placement tutorial. It will instruct you on how to correctly place the tags.



⚠ WARNING ⚠

SonoSim LiveScan tags must NOT be used on anyone using a pacemaker, implantable cardioverter defibrillator, or other electronic medical device. Components of the technology may interfere with such medical devices.

7 Start scanning

Place the SonoSim® Probe on your imaging surface and start scanning. To change the position of the probe, simply lift and position the probe over another SonoSim LiveScan™ tag.



For more detailed information on how to use your SonoSim LiveScan™, please refer to the “How to Use SonoSim LiveScan™” video available from the Product Information section of the main menu.

TROUBLESHOOTING

Optimizing System Performance

Do NOT operate your SonoSim® Ultrasound Training Solution near metallic objects such as cellphones, watches, or metal surfaces (e.g., directly over the metal frame or metal legs of a table).



Services and Support

Online Resources:

For online service and support information, go to www.sonosim.com/contact or you can email us at support@sonosim.com.

Phone Support:

Your SonoSim® Ultrasound Training Solution comes with one year of SonoSimulator® Technical Support and one year of hardware repair warranty coverage. If you need assistance, SonoSim telephone support representatives can help you with technical issues.

SonoSim® Ultrasound Training Solution Technical Support:

Phone: 855-873-7666 (toll-free)

Hours of Operation: Monday to Friday; 9am to 5pm Pacific Standard Time

Please prepare to provide our technical support representatives with your SonoSim® Ultrasound Training Solution customer number or order number.

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Federal Communications Commission Statement

FCC ID: 2AEMESSLS

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

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

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the 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 and if not installed and used in accordance with the instructions, 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 to correct the interference by one or more of the following measures:

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

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Waste Handling



Dispose of in accordance with local requirements and regulations.

Certification



The product is in compliance with the essential requirements of Council Directive 1999/5/EC on radio and telecommunications terminal equipment (R&TTE). The product is in compliance with Council Directive 2011/65/EU on restriction of the use of certain hazardous substances (RoHS).

Industry Canada Information

IC: 20197-SSLS

This device complies with Industry Canada licence-exempt RSS standard(s). 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 the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



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