SIMSCOPE®

USER MANUAL

SIMSCOPE®

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SIMSCOPE®

› 1. INTRODUCTION

1.1 Purpose of the Manual

This manual provides comprehensive guidance on setting up, connecting, and operating the SimScope® Auscultation Training Stethoscope across all compatible manikins and wearable products.

SimScope enables dynamic, scenario-based auscultation training for simulation labs, classrooms, and standardized patient sessions. This guide helps users confidently connect their SimScope to supported devices and begin practice.

> **NOTE:**
> This manual does not teach clinical auscultation or replace the product manuals of manikins or wearables. It is focused specifically on SimScope configuration and troubleshooting.

1.2 Intended Use

SimScope is intended for use in **medical simulation training** and **clinical skills education**. It supports instructional sessions in:
   • Nursing and paramedic programs
   • Objective Structured Clinical Examinations (OSCE)
   • Standardized patient scenarios
   • In-hospital training for auscultation skill refreshers

1.3 Supported Devices

SimScope is compatible with a variety of manikins and wearable trainers. All connection instructions in this manual apply equally across these devices:
   • **SAM Basic®** – Adult Auscultation Manikin
   • **PAT Basic®** – Pediatric Auscultation Manikin
   • **Nikki® Nursing Manikin with Auscultation**
   • **SimShirt® Auscultation System** (Wearable for SPs and manikins)
   • **Bionic Hybrid Simulator (BHS)** – Wearable Auscultation Trainer

For detailed product variants (e.g., versions with or without laptop, skin tone options) and their associated **SAP** and **MPN** codes, **see Section 9.1 : Product Codes & Variants.**

1.4 Disclaimer and Warranty

This manual provides guidance only for SimScope® operation and troubleshooting. It assumes that users are already trained in basic computer use and have access to the latest version of the SimScope® software — either pre-installed on the provided laptop, available on the included USB drive, or downloadable from the Cardionics website: https://cardionics.com/en/software-download/

For issues with laptops, manikin hardware, or accessories outside of SimScope®, refer to the respective device's manufacturer support or contact your 3B Scientific Representative.

Warranty terms are available in Section 8.2.

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⟩ 2. SAFETY PRECAUTIONS

! **ATTENTION: Read and understand all warnings and cautions before use.**

IPX0 **No degree of protection against ingress of water.**

! **CAUTION:**
- Before each use check the SimScope ear tips for secure fit. Do not use if missing or loose.
- Place patches on healthy skin. Do not place over sores or cuts. Excessive body hair may make removal uncomfortable.
- Use only Energizer Ultimate Lithium™ AAA batteries for optimal performance. Dispose of used batteries responsibly according to local recycling regulations.
- Use only the custom lithium battery provided by Cardionics with the Bionic Hybrid Simulator Tech Pack.
- Disconnect all cables and remove batteries before performing any cleaning procedures. Use standard alcohol swab or wipe (70% Isopropyl Alcohol). Do not immerse any part of the SimScope or Bionic Hybrid Simulator Tech Pack.
- The internal wireless module complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.
- For any service, support, or replacement needs, please reach out to your local 3B Scientific representative. Contact information can be found in the final section of this manual.
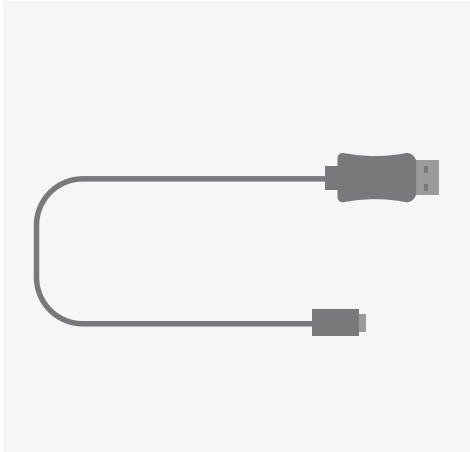
SIMSCOPE®

> 3. DELIVERY CONTENT

Simscope® Manual
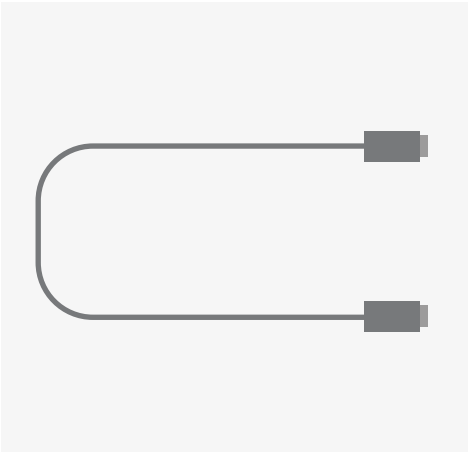
Simscope®

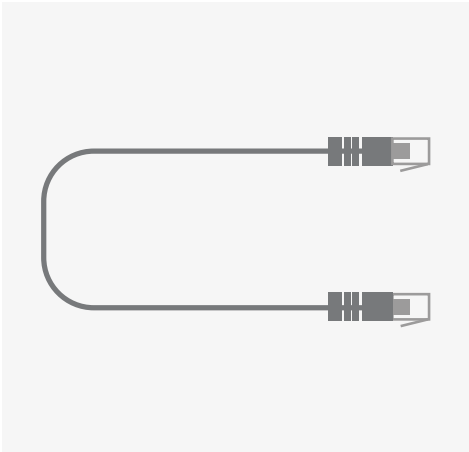USB Cable for Simscope®

USB Flash Drive with SimScope® Software

Simscope® Patch Kit
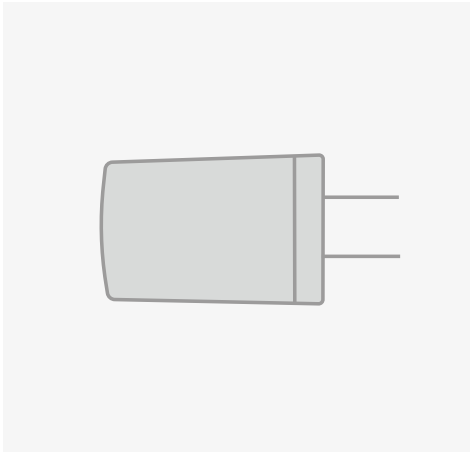(Supplied with selected products)

Router

USB Cable for Router

Ethernet cable for Router

USB Wall Charger for Router

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› 4. GETTING STARTED

If your product includes a laptop, the SimScope® software is already pre-installed – you can skip directly to **Section 4.2: USB Mode (Wired Connection)**.

4.1 Scenario A – You Received a Product Without Laptop

You must install the software using the USB flash drive or download it from the Cardionics website.

*A - **Insert USB Stick (Provided with SimScope) or Go to Website** – https://cardionics.com/en/software-download/*

*B - Open **File Explorer**, go to **This PC**, and look for the drive labeled **CARDIONICS – Double-click to open the USB***

*C - Double-click **SimScope** to begin installation.*
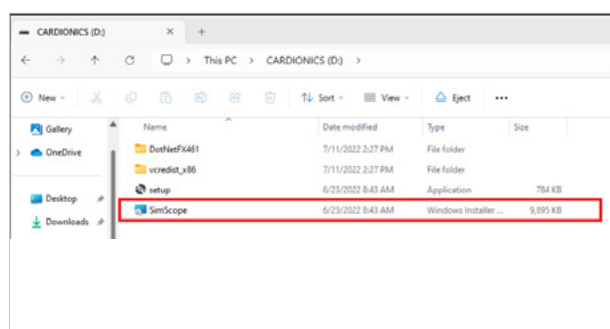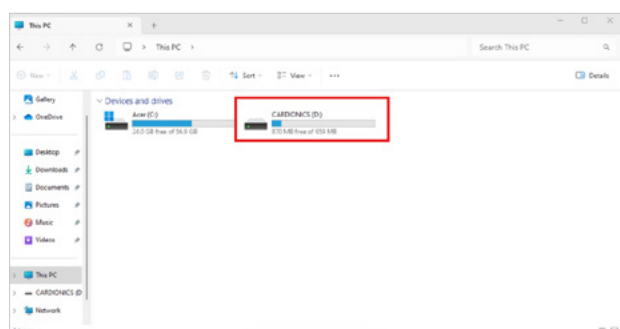
*D - **Select** I Agree to accept the license terms*

*E - Click **Next** to continue*

*F - Click **Next** to proceed with installation.*

SIMSCOPE®
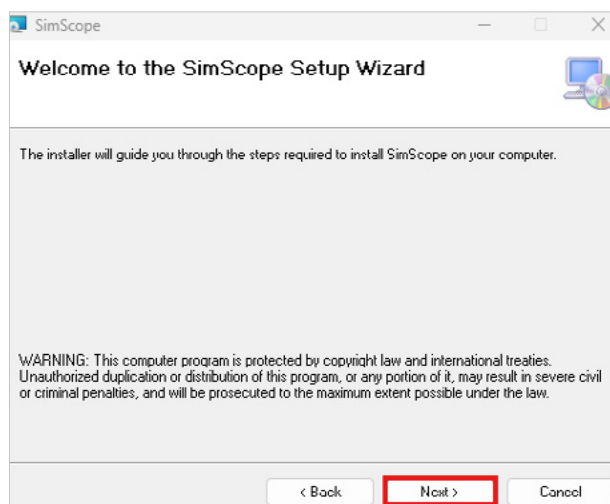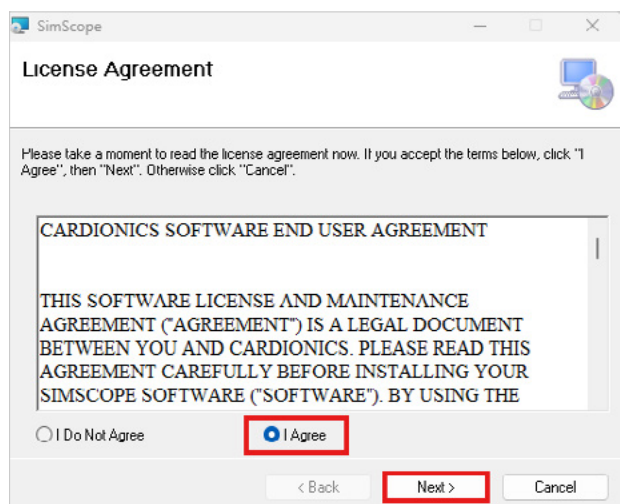
G - Keep the default path unless you must change it.

H - Select "Just me" or "Everyone" based on personal preference or institutional requirements

*I - Click "**Next>**" to continue.*

*J - Click "**Next>**" to confirm installation.*
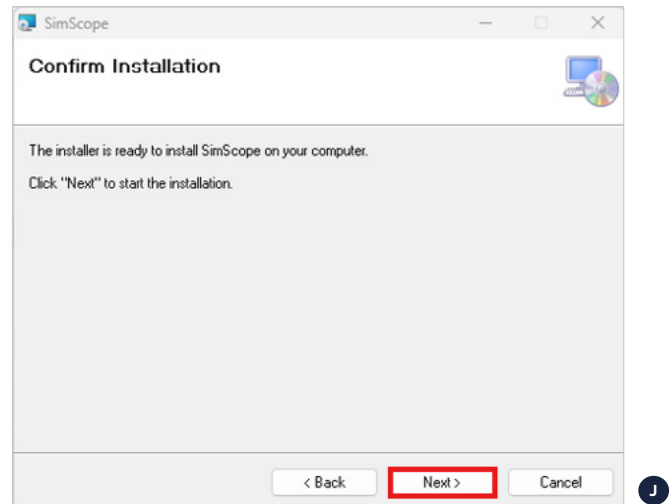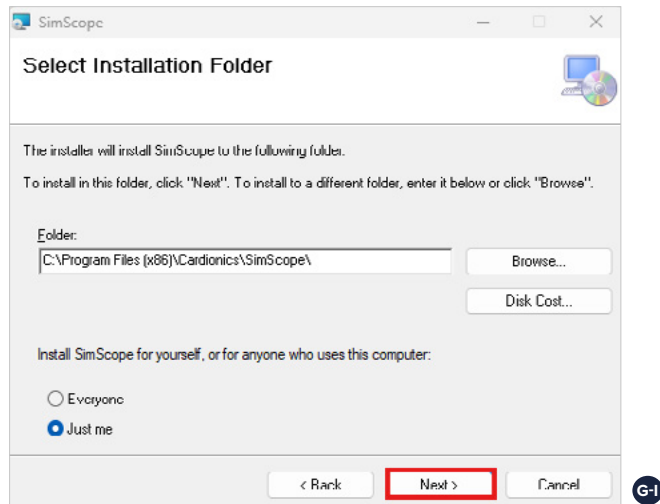
*K - Click "**Next>**" to continue.*
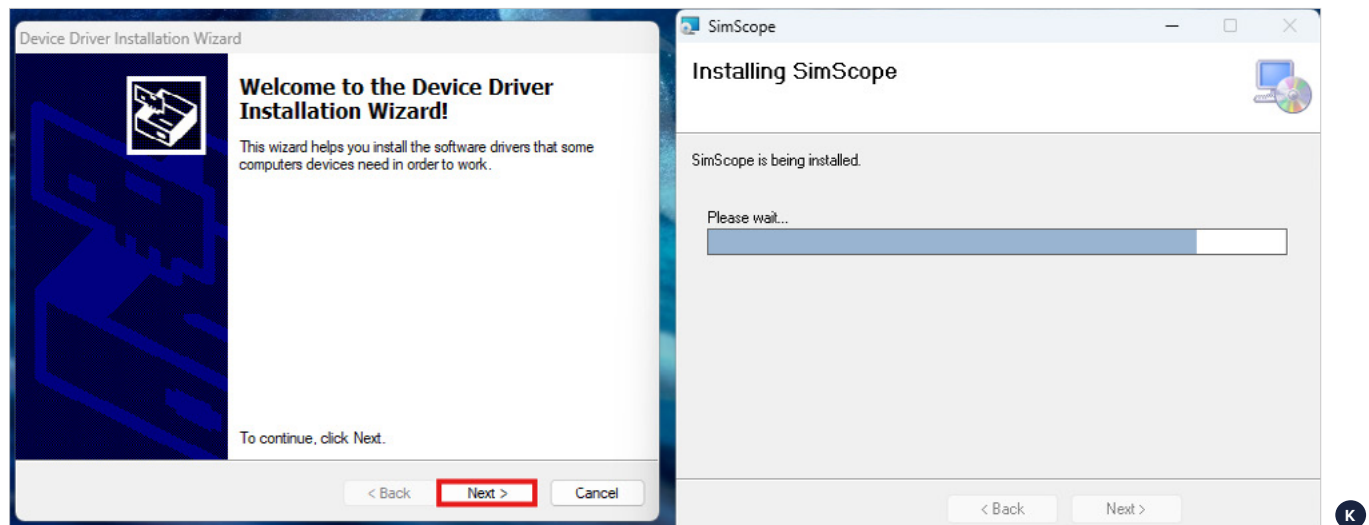
SIMSCOPE®

L - Click "Finish"
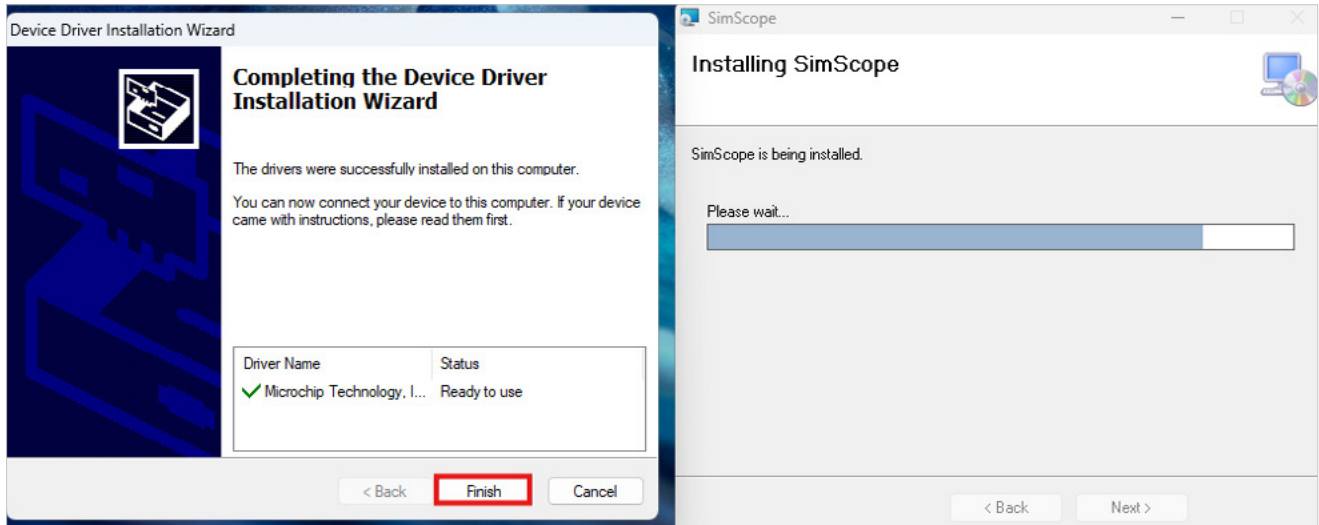
M - Click *"Close"* to exit the setup, when *"Installation Complete"* appears on the screen.
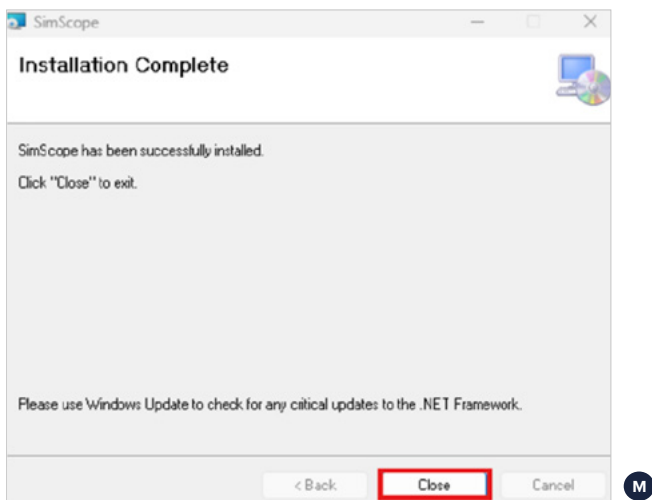
After successful installation, the **SimScope® software icon** will appear on your **Desktop**.

You can now double-click it to launch the application.

Next steps after installation can be found in **Section 4.2, point B**.

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4.2 Scenario B – You Received a Product With a Laptop

A - Turn on the supplied laptop; if prompted for a password, enter 12345.

B - Locate and Launch SimScope® Software
- On the desktop, you will find the SimScope® icon already installed.
- Double-click to open the program.

C - Registering the Software
- Fill out the registration form shown on screen (Internet connection required).
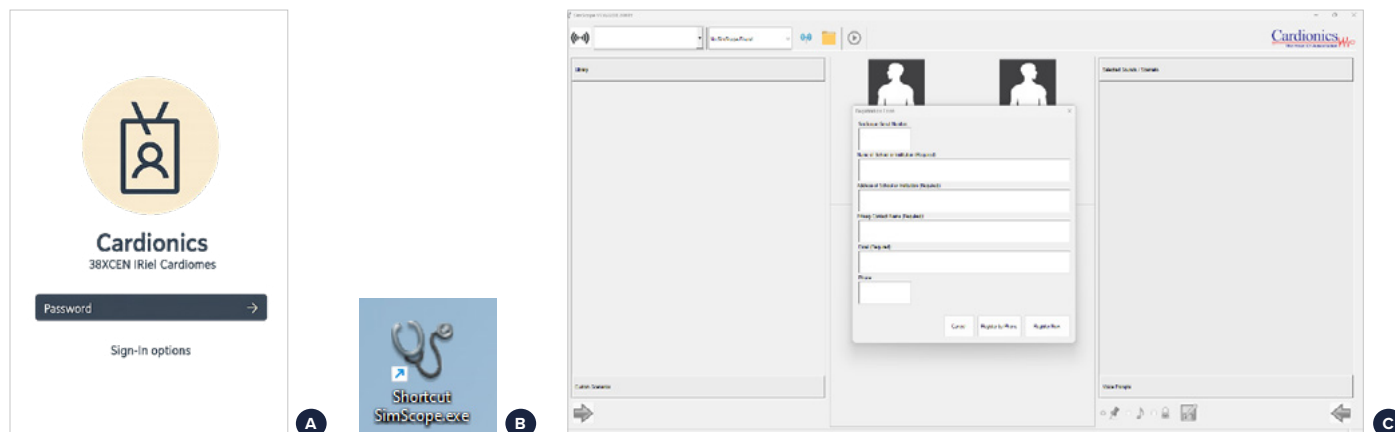
D - Connect Simscope vias USB
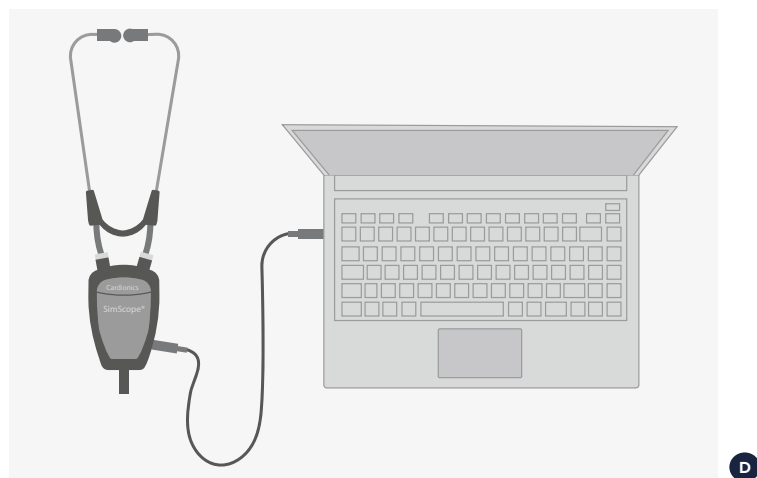
E - Assign a Name to Your SimScope®
- If you have multiple SimScope® units for different manikins or systems, we recommend giving each one a clear name followed by the serial number (e.g., Nikki_SimScope _1502345, SAM_SimScope _1501863) to avoid confusion during setup and training.
- You can find the product model number and serial number on the back of each SimScope® unit.
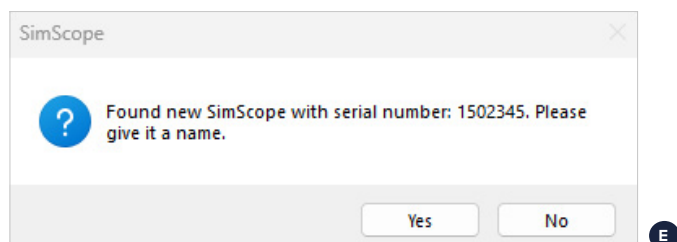
SIMSCOPE®

• Now that your SimScope® is connected, the uploaded sound library will appear in the **SimScope Library** panel (left side of the screen).
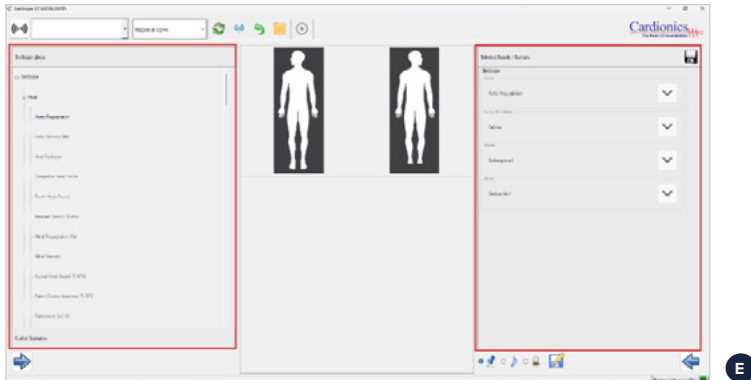
NOTE:
The SimScope should be connected via USB only during the setup process. To begin using it for auscultation, please refer to **Section 6: Using the SimScope**.

4.3 Setting Up the Wi-Fi Connection

Bionic Hybrid Simulator (BHS) requires a different step-by-step process for Wi-Fi setup, **please refer to Section 4.4 – Connecting to BHS**.

A - Power the Router
    • Plug the USB cable from the router into the laptop's USB port
    • OR connect it to a wall socket.

B - Launch SimScope Software
    • Double-click the **SimScope® icon** on the desktop.

OR
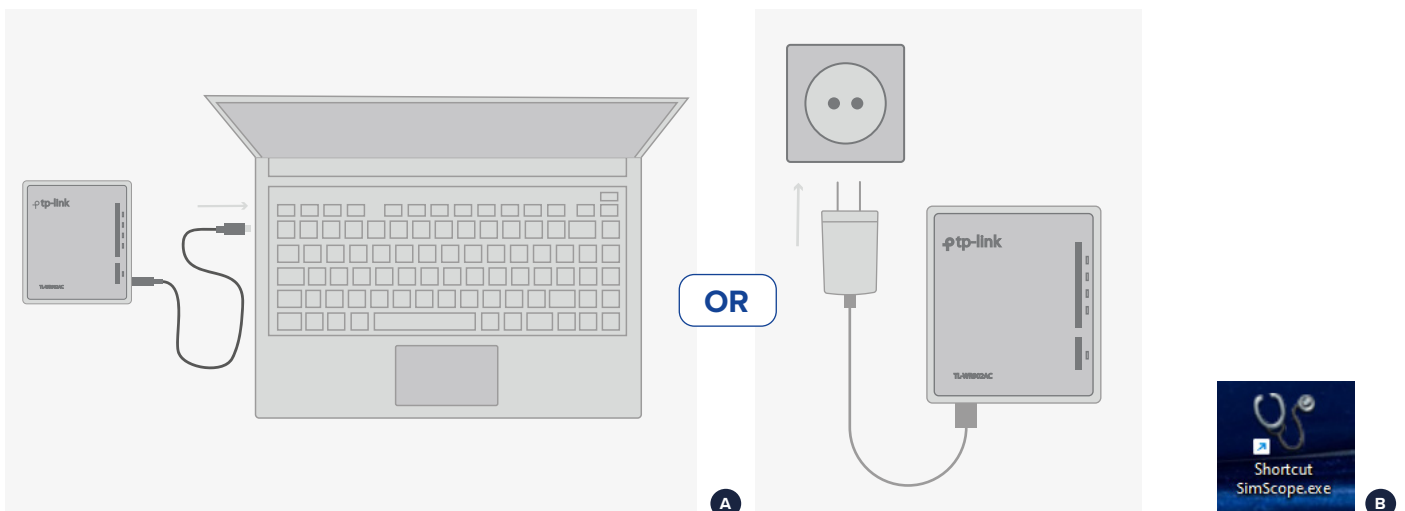
SIMSCOPE®

C - Connect the SimScope® via USB — this step is essential for your laptop to detect the device during Wi-Fi setup.
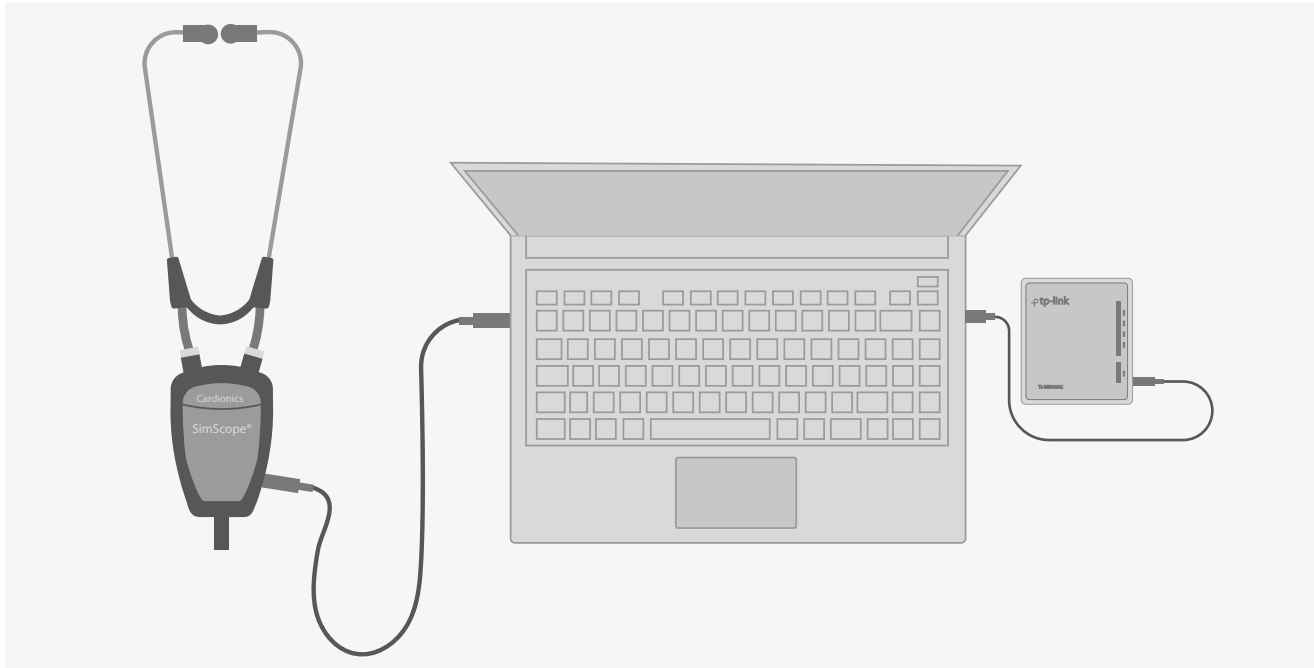
D - Connect to the SimScope Wi-Fi Network

Option 1: SimScope Network (Default)
- Open your laptop's **Wi-Fi settings**.
- **Select the Wi-Fi network provided with your kit** (e.g., SimScope). See Picture 1.
- Use the **password printed on the router box to connect** — the default password is "Cardionics" as printed on the box.
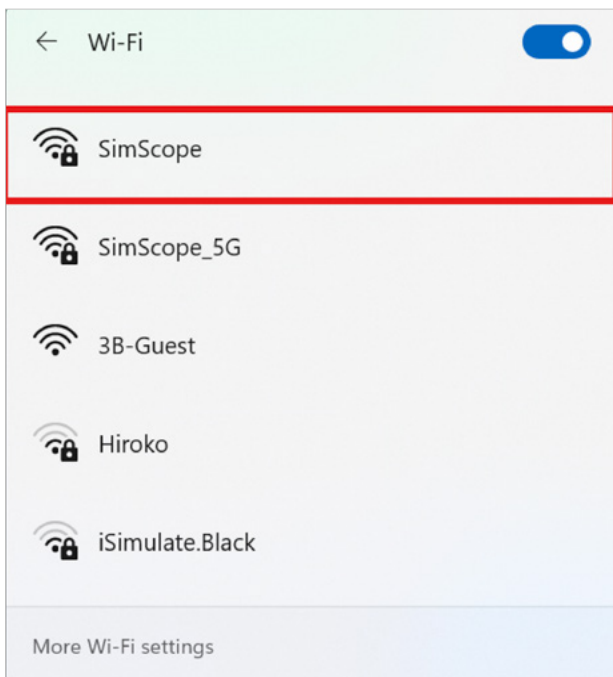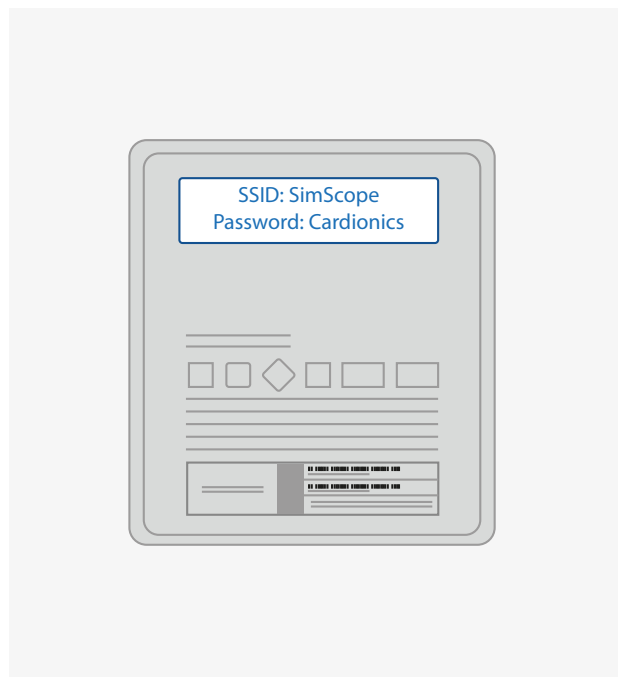
- If the default Wi-Fi network (e.g., **SimScope_5G or Simscope**) does **not** appear in the list of available Wi-Fi connections:
- **Check the back side of your router and use this instructions instead:**

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- Look for the **SSID** (network name) listed on your available networks, select and use the password printed on the label.
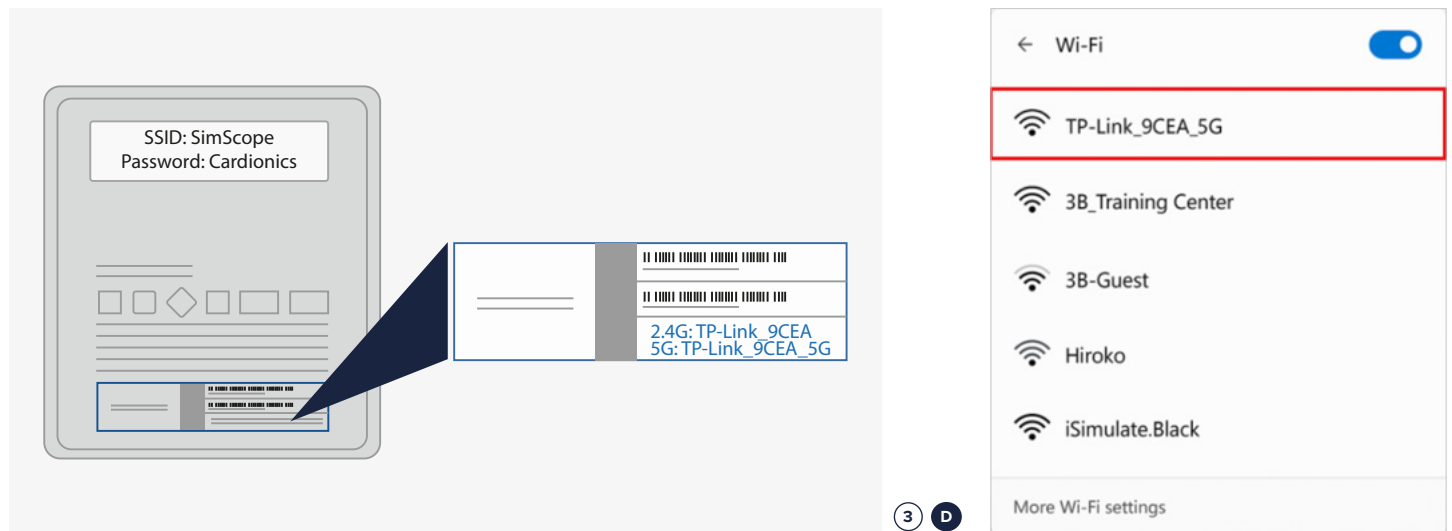
IMPORTANT NOTE:
These names and passwords are just examples. Your router may have different numbers, so **always use the information printed on your specific device**.

E - Once you have completed steps A-D, return to the SimScope® software and do the following.
- Make sure your software shows the correct Wi-Fi network name **(e.g., SimScope or TP-Link_XXXX_)** in the top-left dropdown under WLAN.
- If it's not visible, click the dropdown and select it manually.
- This confirms your PC and SimScope App are communicating over Wi-Fi.

F - Wi-Fi Configuration and Verifying All Settings
- Open the Wi-Fi Configuration window in the SimScope software and make sure all parameters match your setup.

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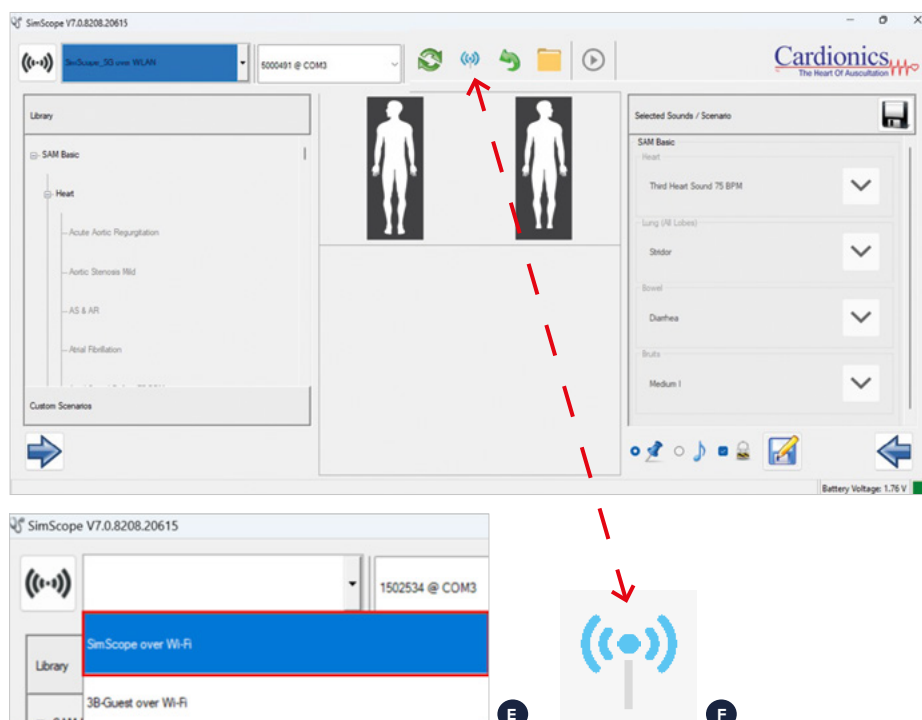
- Check that all **Conditions Parameters** are matching with default settings:
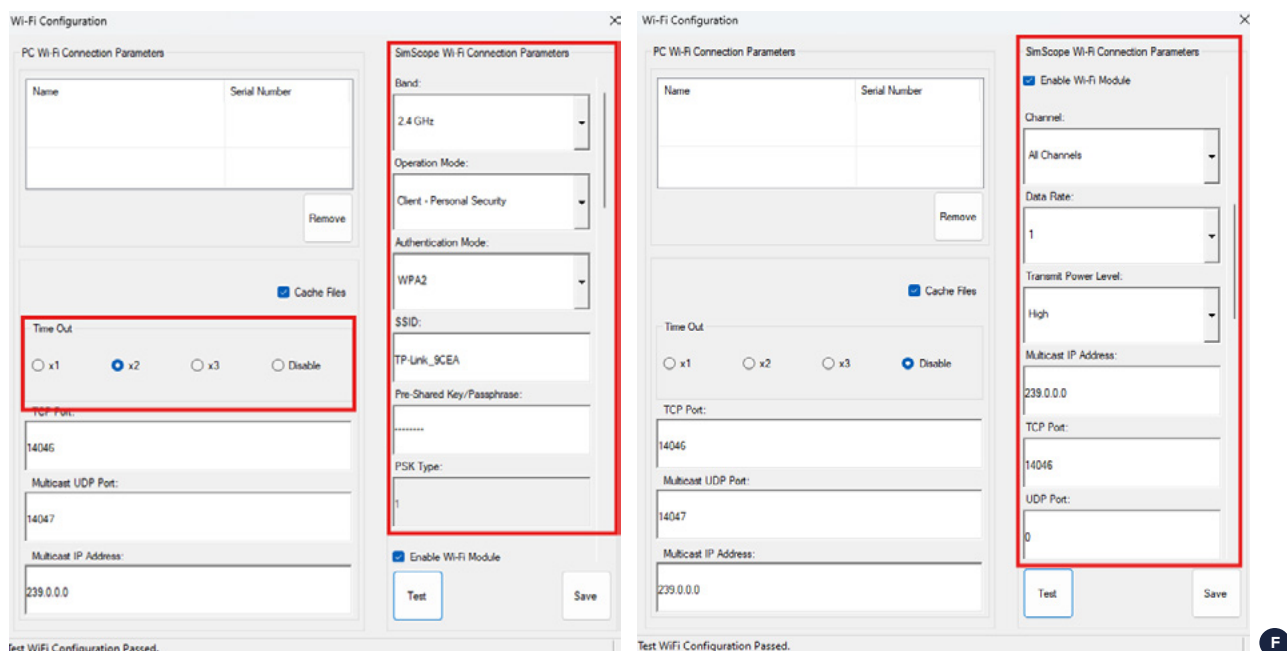
→ **IMPORTANT NOTE:**
To avoid automatic powering off during usage, disable the Time Out option. Warning: using "Disable" mode will drain the battery faster.

G - Test and Save the Configuration
Ensure the router is powered ON before beginning this test.
- Once all parameters are set:
    1. Click the **Test** button at the bottom.
    2. If everything is correct, you'll see "**Test WiFi Configuration Passed**" at the bottom left of the window.
    3. After a successful test, click **Save** to store the settings.
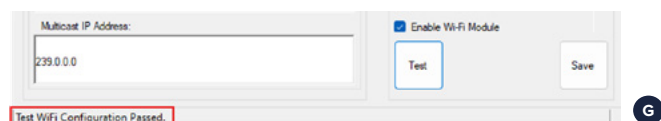
*F - You can now close this window and proceed to **Section 6.2 – SimScope® Operation Modes Overview, specifically point 3: Wi-Fi Mode (Router Connection / Live Setup).***

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4.4 Setting Up the Wi-Fi Connection on a Bionic Hybrid Simulator (BHS)

A - Charge and Insert the Battery

Make sure the battery is fully charged before use.
- To charge it, insert the battery into the charging case provided with your BHS kit and connect it using the USB cable included in the delivery.
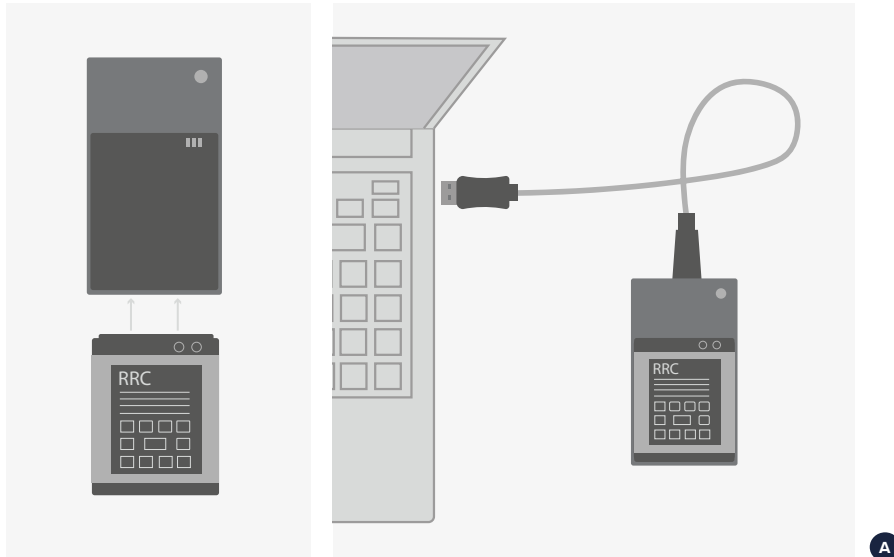
- Once fully charged, insert the battery into the Tech Pack securely, as shown in the images provided.
- Connect the cable from the BHS shirt to the Tech Pack.
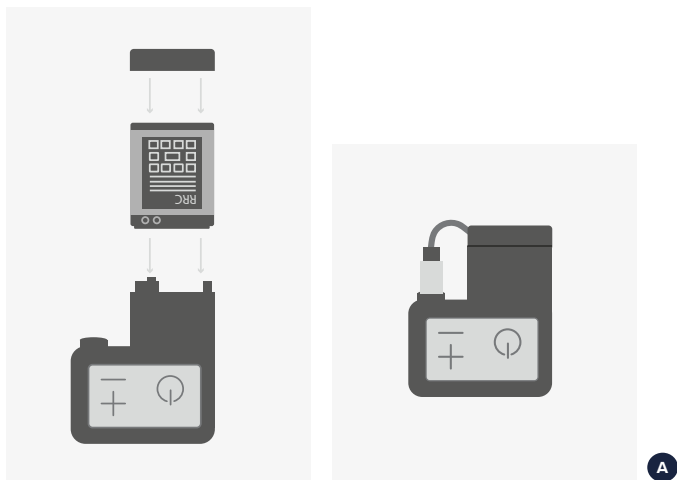
B - Power the Tech Pack
- Press Power Button on Tech Pack.
- Wait for about 60 seconds for the BHS to broadcast its private Wi-Fi network.

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C - Connect to BHS Wi-Fi
- On your laptop, click the Wi-Fi icon in the taskbar.
- Select the network named Bionic Hybrid Simulator_XXX (XXX = last 3 digits of the serial number).
- Click on "Connect using a security key instead" and enter the password which is written on the back side of Tech Pack Battery
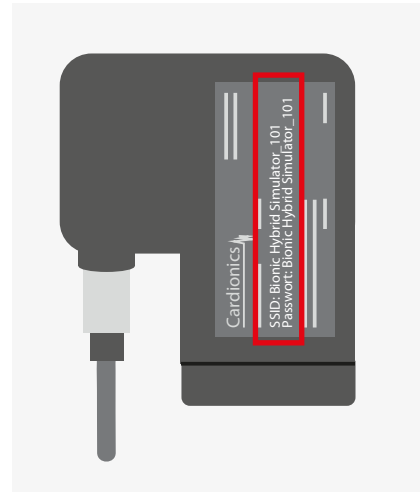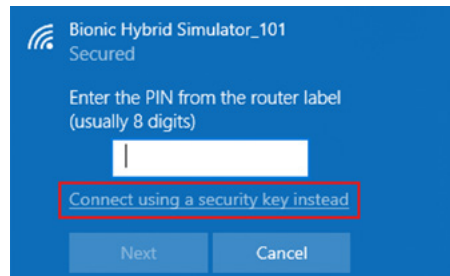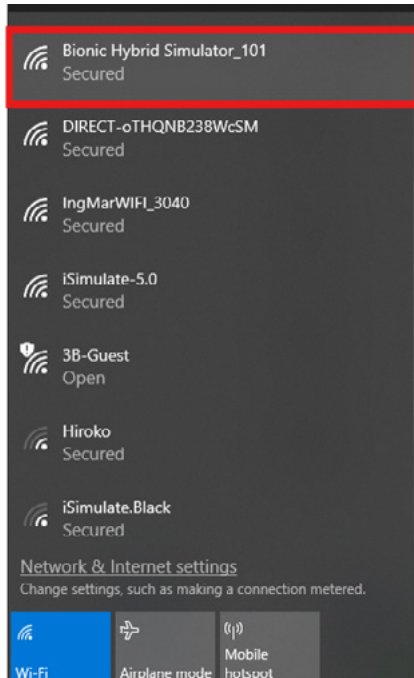
D - Launch the SimScope Software
- On your laptop, open the SimScope application.
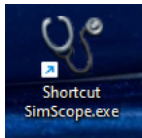
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E - Select the BHS in the Software
- In the top-left corner of the SimScope software, open the dropdown menu.
- Choose the same BHS network name you just connected to.
- Wait for the countdown at the bottom left of the software or connection indicator to complete.
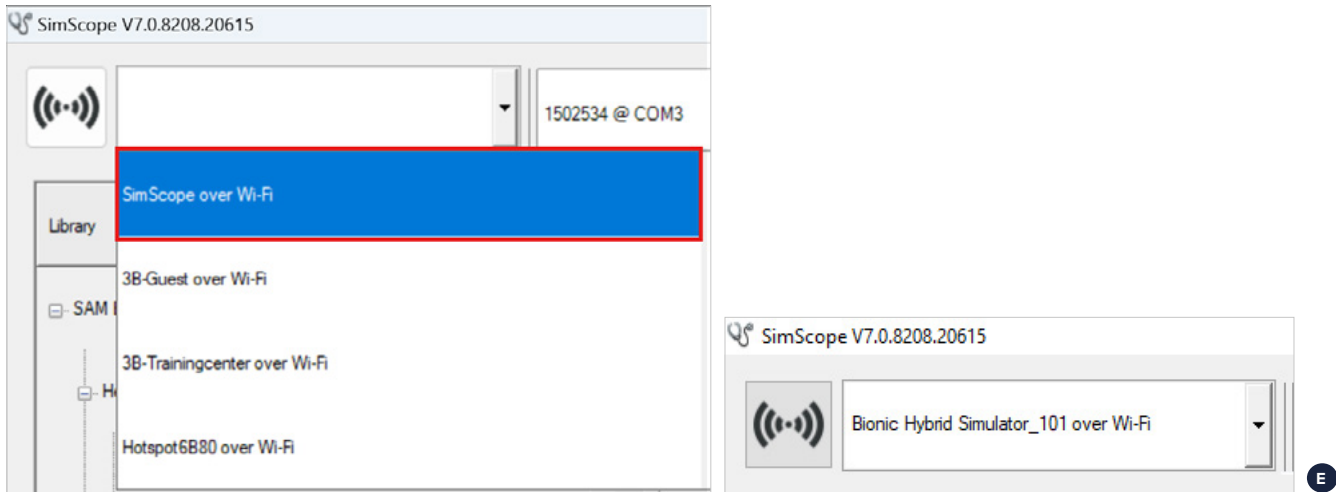
F - *You can now proceed to* **Section 6.2 – SimScope® Operation Modes Overview, specifically point 3: Wi-Fi Mode (Router Connection / Live Setup).**

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5. SIMSCOPE® SOFTWARE INTERFACE

The SimScope® software is the control hub for all auscultation training activities. This section explains the layout, functionality, and how to effectively operate the interface to enhance your training sessions.

5.1 Dashboard Overview (Icon Legend)

Once the software is launched, you will see a clean dashboard with intuitive icons. Here's what each represents:

1. Upgrade Scenarios

What it does:
Uploads new sound libraries (.zip files) into SimScope® or the Bionic Hybrid Simulator.

When to use it:
Contact your sales representative to check whether an Extended Library is available for purchase.

2. Wi-Fi Configuration

What it does:
Opens a settings window to access the attached SimScope®, Tech Pack, or SimBP Wi-Fi configurations and view saved network info.

When to use it:
Use this to enter your router's SSID and password or switch between Wi-Fi networks.

3. File Restore

What it does:
Fixes SimScope® if it's not recognized due to corrupted files. This action restores your SimScope® to default factory settings.

!   **Be aware: if your SimScope® had an upgraded sound library, this process will erase it.**

When to use it:
Use this option if the device won't connect after an improper USB disconnection, a software crash, or if it becomes unresponsive.

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4. Log Folder

What it does:
Opens the folder where SimScope® stores technical logs and session data.

When to use:
Only needed for troubleshooting or when asked by technical support. You'll find files like debug logs and session history inside.

5. Start Log

What it does:
Begins recording all activity in the SimScope® software. Tool for logging actions taken during an auscultation session.

When to Use:
Use the **Start Log** button at the beginning of any session where you want to record activity – such as a student's interaction with the SimScope®, assessment scenarios, or training exercises. This ensures all steps are tracked for evaluation and documentation.

6. Stop Log

What is does:
Ends the recording session and saves the log automatically.

When to Use:
Use the **Stop Log** button at the end of each training session or scenario to save the recorded data for review or assessment. This ensures all user interactions are properly logged and stored.

7. Disconnect Wi-Fi

What it does:
Stops the current wireless connection between SimScope® and the router.

8. Wi-Fi Network Selector

What it does:
Lets you select the wireless router SimScope® will connect to.

When to use it:
Before initiating a Wi-Fi connection, choose the correct router from this dropdown list.

9. Connected SimScope® Indicator

What it does:
Displays the current SimScope device connected.

When to use it:
Use this to confirm your SimScope® is properly detected by the software. Select from multiple SimScope® devices to display.

10. SimScope Library

What it does:
Displays all sound libraries available on the device.

How to Use:
- **Bold** items = currently assigned sounds.
- **Gray** items = unassigned; double-click to assign them to the active scenario.

When to Use:
Use this panel to preview, assign, or switch sounds during scenario setup or live training.

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11. Custom Scenarios

What it does:
Displays the list of saved custom sound scenarios you've created.

When to use it:
Use this section to quickly access and apply your pre-configured combinations of sounds during a session. Double-click a scenario to transfer it to the right pane.

12. Selected Sounds / Scenario

What it does:
Shows all active sounds currently assigned to anatomical locations.

How to Use:
- Sounds from the **SimScope Library** (left pane) appear here once selected.
- This is what the SimScope will play when placed on RFID-tagged sites.

When to Use:
Use this panel to review or update your active scenario before or during training.

13. Sound Area Control Dropdown

What it does:
Allows you to manually adjust the sound volume in a specific area.

When to use:
Use this function if you want to precisely adjust or override the default sound assigned to a specific area of the manikin during a scenario.

14. Save Scenario to Selected Scenarios

What it does:
Moves a selected sound to the right pane.

When to Use:
Click this after selecting a sound from the left pane to include it in your current scenario.

> **NOTE:**
> You can also select the sound by double clicking it.

15. Remove Scenario from Selected Scenarios

What it does:
Unassigns a selected sound from the **Selected Sounds / Scenario** pane (right side) and returns it to the **SimScope Library** (left side).

When to Use:
Use this if you want to remove a sound from your active scenario and replace or discard it.

> **NOTE:**
> You can also select the sound by double clicking it.

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16. Play by Location

What it does:
SimScope plays sounds based on tag locations assigned by the instructor.

Voice Prompt:
"Mode one"

When to Use:
Standard training setup.

17. Play by Sound File

What it does:
SimScope plays specific sounds based on customized patches (not by location).

Voice Prompt:
"Mode two"

When to Use:
Custom orders with tailored RFID tags.

18. Lock Verification Mode

What it does:
Prevents learners from switching the SimScope to Verification mode.

When to Use:
Assessment or practice where students must memorize locations.

19. Save Selected Scenarios to SimScope

What it does:
Saves right pane as the new sound assignments.

When to Use:
Update the SimScope product with a new or different sound assignment.

20. Cardionics Logo Button

What it does:
Opens the Cardionics Online Learning Portal in your default web browser.

When to Use:
Click when you want to access learning resources, manuals, or updates online.

21. Standardized Patient Manikin Views

What it does:
Displays front and back diagrams of the Standardized Patient or manikin. As the SimScope® touches RFID-tagged areas, the corresponding body region lights up in real time.

When to Use:
Use this view to verify correct stethoscope placement and confirm the RFID tag is being detected. Especially helpful during live training, assessments, or technical troubleshooting.
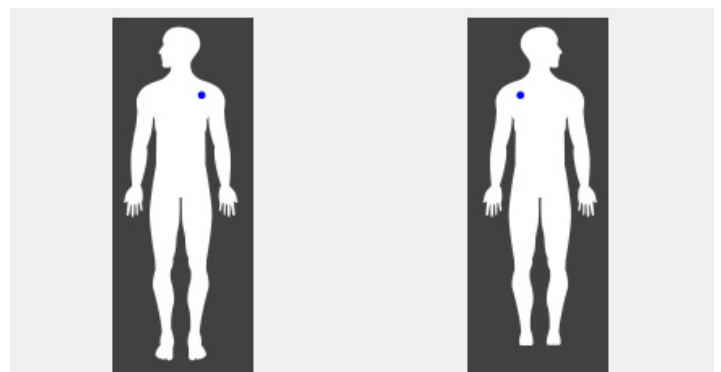
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5.2 How to Change and Save Sounds

From the moment your SimScope® is connected to the laptop via USB or Wi-Fi, the sound library will appear on the left side of the screen.

A - Explore the sound library
Scroll through categories like Heart, Lung, Bowel, etc. to find the sound you want to use.
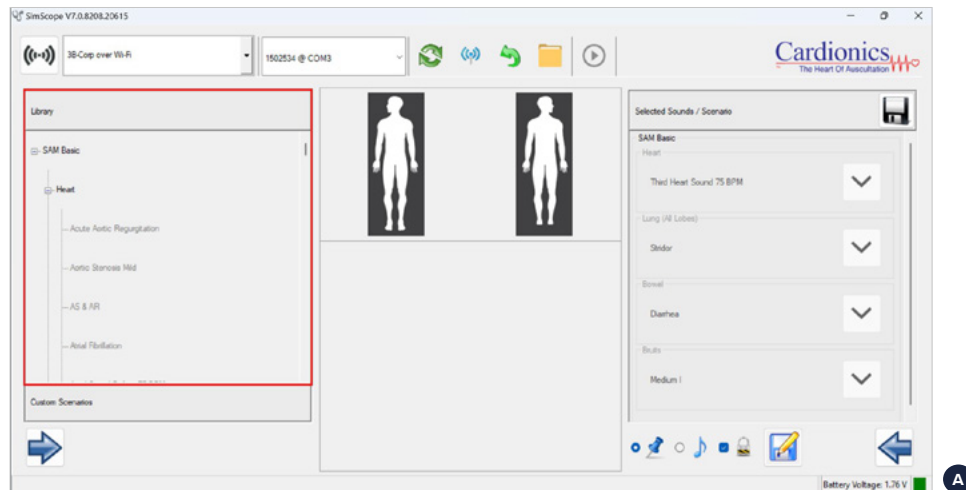
B - Select a desired sound
Click on the sound you want to assign (e.g., Aortic Stenosis Mild).

C - Transfer the sound to active scenario
Click the blue arrow button or double click the sound to move the selected sound into the right-hand panel ("Selected Sounds / Scenario").

D - Save your configuration
Once the correct sounds are listed on the right, click the save icon in the bottom-right corner to store your settings.

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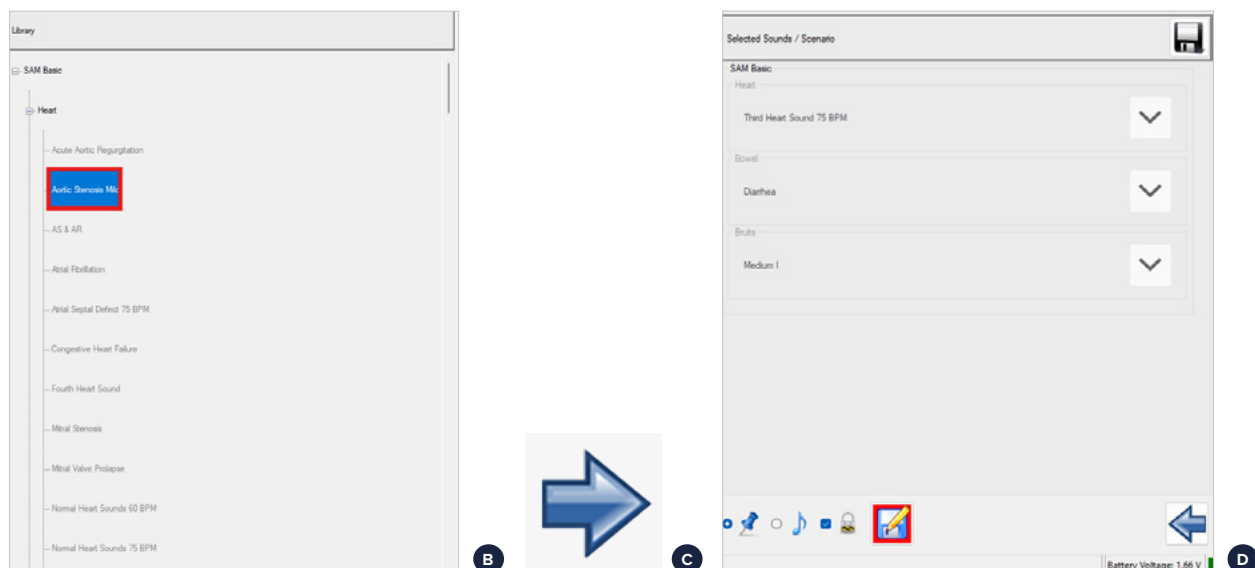
5.3 How to create a Custom Scenario

A - Save your scenario:
Click the **Save icon** (floppy disk) in the top-right corner. A pop-up window will appear — enter a name for your scenario and click **Save**.
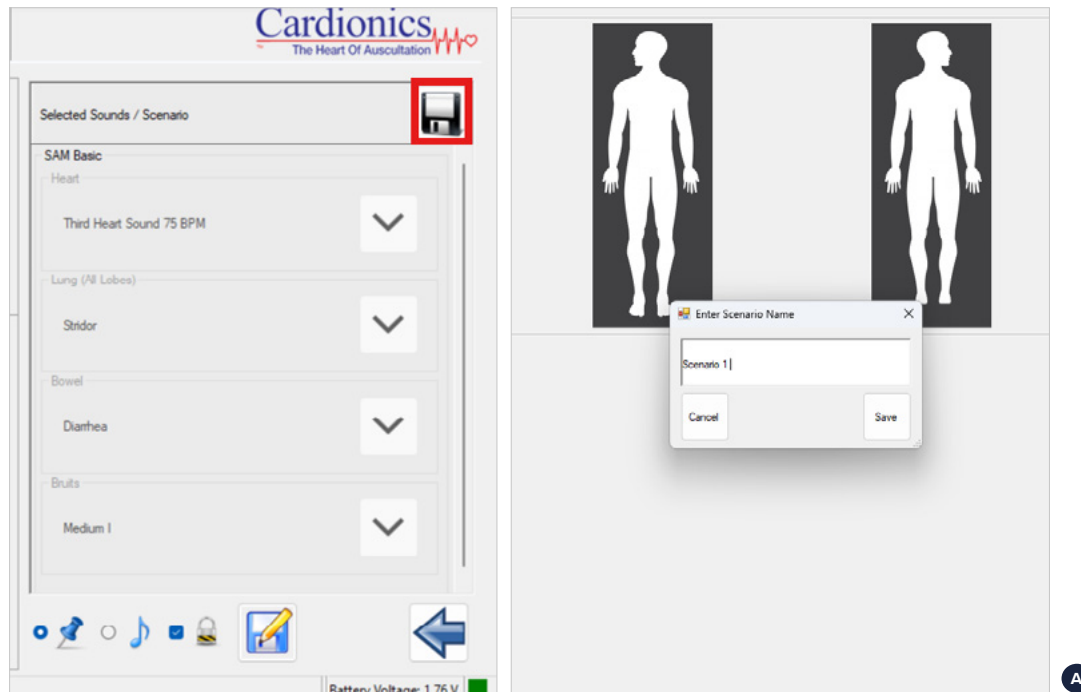
B - Access your scenario:
After saving, scroll down on the left panel and click **Custom Scenarios**. You'll now see your newly created scenario listed.

C - Activate the scenario:
After you choose the scenario - double click the sound to load it to the right panel for playback.
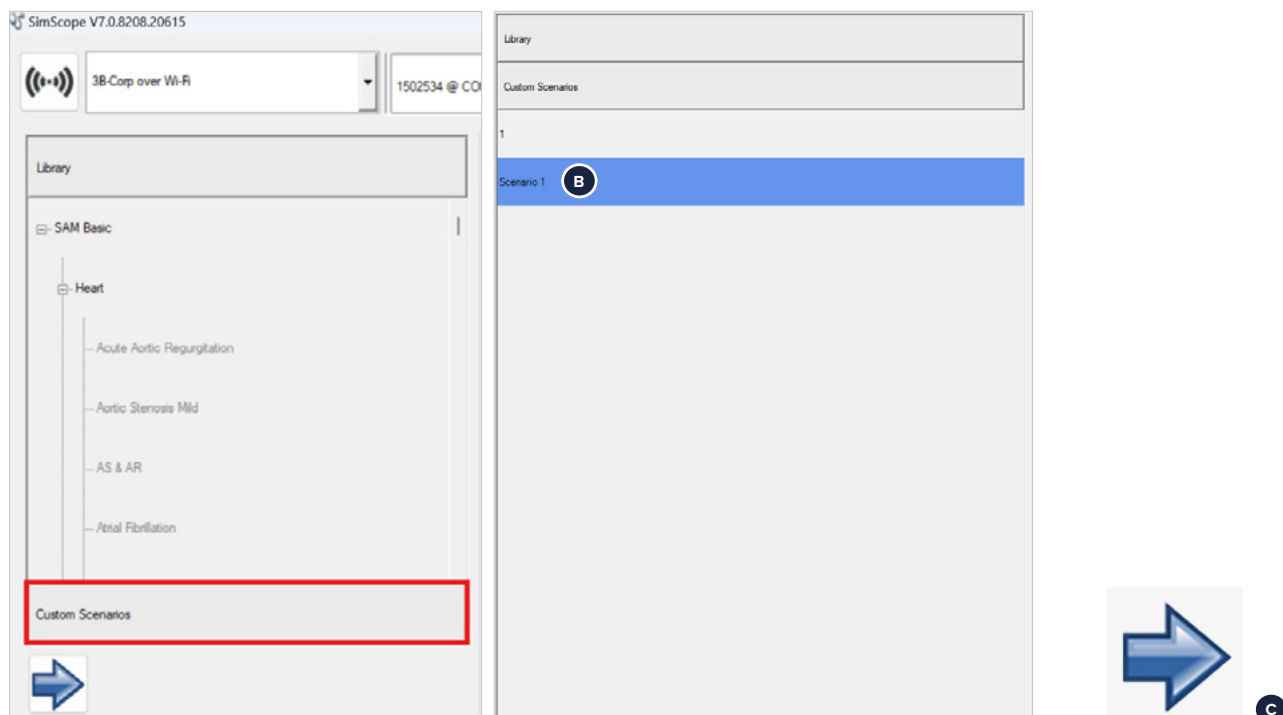
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› 6. USING THE SIMSCOPE®

Understand how to interact with the SimScope device physically — including turning it on/off, adjusting volume, using it on various simulators, and handling advanced features like Verification Mode and BHS system power.

6.1 SimScope® Hardware Overview
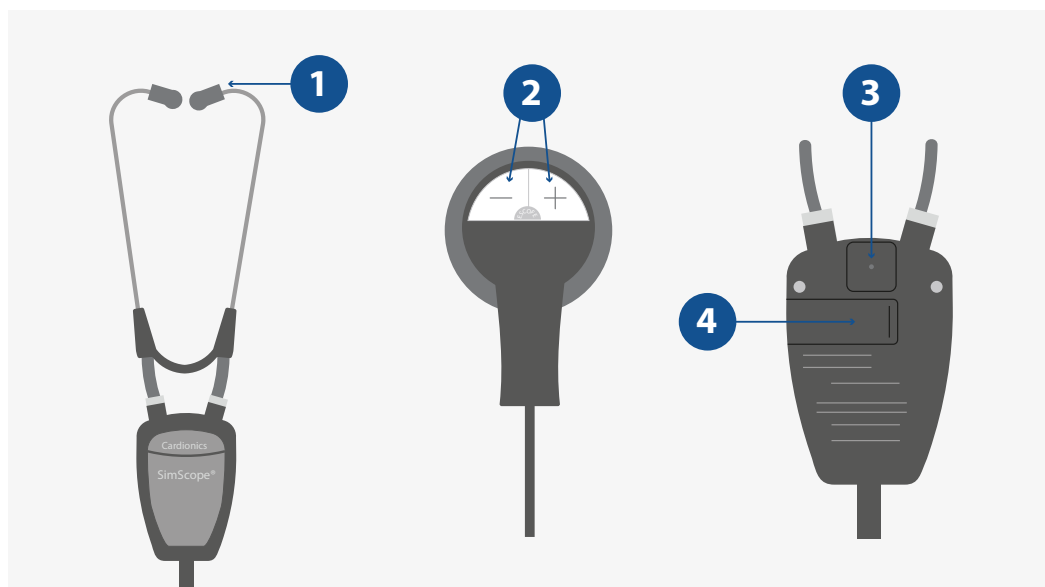
1. - Ear Tips
These deliver the auscultation sound directly to the user's ears. They are the primary output for listening to heart, lungs, bowel, and bruit sounds during simulation.

2. - Volume Buttons (- / +)
- Pressing either button powers on the SimScope®.
- + increases the volume.
- – decreases the volume.
- Pressing both buttons at the same time activates **Verification Mode**, which allows you to test if RFID patches are properly placed.

3. - Additional Sound Output (Rear Speaker)
This small built-in speaker on the back of the SimScope® plays the same auscultation sounds as the ear tips. It is **not a headphone jack**. For best results, hold it close to your ear. Helpful for quick checks without inserting the ear tips.

> **NOTE:**
> Do not cover the rear speaker's vent hole with labels, tape, or other materials.

4. - Battery Compartment
Located on the back of the SimScope®, this compartment holds the AAA battery that powers the device. Always ensure the battery is properly seated before use.

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6.2 SimScope® Hardware Overview

SimScope® can be used in three different ways depending on your setup. Each method offers different levels of control and flexibility.

Mode	Best For	Connection Type	Sound Control	Scenario Saving	Live Sound Changes
1. Standalone Mode	Fast demos, repeated drills, exams	No USB or Wi-Fi connection	Cannot change sounds	Uses previously saved scenario only	No live interaction
2. USB Mode	Pre-planned, consistent sessions	SimScope® connected to laptop via USB	Full control via software	Save to SimScope® for offline use	Changes not live (must save & disconnect USB)
3. Wi-Fi Mode	Live trainings, dynamic instruction	SimScope® connects to laptop via router	Full control via software	Temporary only (restores on restart)	Change sounds instantly

1. Standalone Mode (No Router / No USB)

How it works:
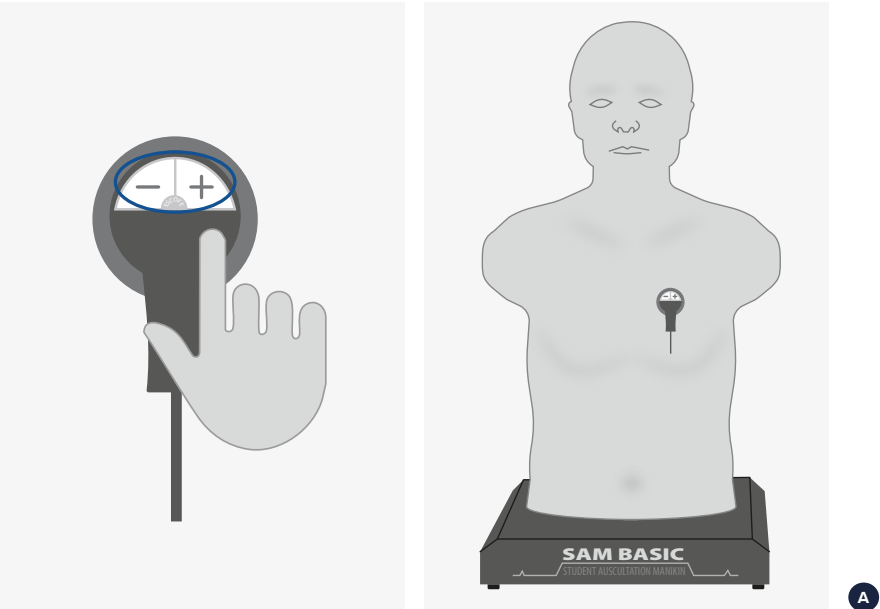
Press the + or – button on SimScope®

Place it on an RFID-tagged manikin or SimShirt®

A pre-selected sound will automatically play.

Key Details:

  • No connection to a laptop or router required

  • Sounds cannot be changed in this mode

  • Useful for repetitive demos or quick practice

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2. USB Connection Mode (Permanent Setup)

How it works:

- Open the SimScope® software.

- Connect SimScope® to a laptop via USB.
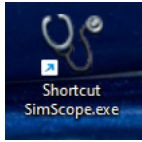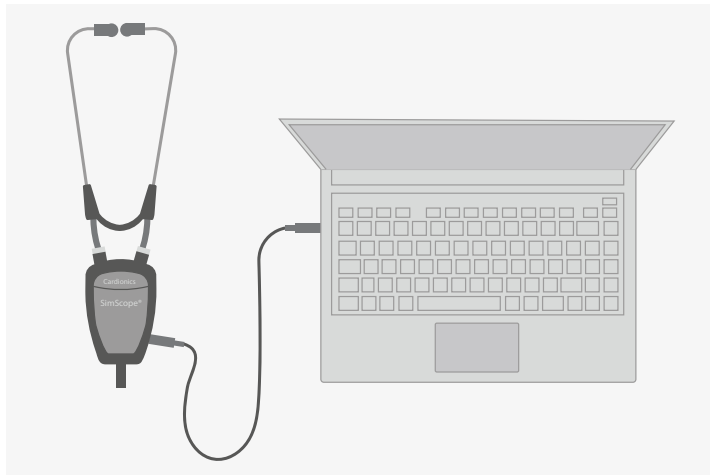

- Now you can make permanent changes to your SimScope, referring to **Section 5.2 – How to Change and Save Sounds**.
- Detach USB, press + or –, and place on a tagged site as shown in previous section.

Key Details:

- Sound changes are saved directly to SimScope®

- No need to reconnect USB after setup

- Best for consistent, pre-planned sessions

3. Wi-Fi Mode (Router Connection) (Live Setup) - Considering that the steps on section Section 4.3 are done.

How it works:

- Connect to the Wi-Fi as explained in **Section 4.3 – Setting Up the Wi-Fi Connection or for BHS users in Section 4.4**.

- Once the Wi-Fi is connected and the SimScope® is no longer connected via USB, power it on by pressing either the '+' or '–' button

- **Wait for SimScope® to announce:**
  "System activation". Mode 1. Connecting to default network."
  Followed by a series of beeps
  Then: "Wi-Fi connected."

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You can hear these voice prompts either by inserting the earpieces into your ears or by listening to the sound output speaker on the back side of the SimScope®.

- If it says, "Connection failed," refer to the **Section 9: Troubleshooting**.
- When connected, the **full sound library** will appear in the software. You can now assign and change sounds **live** without reconnecting via USB.

Key Details:

- Change sounds instantly during a training session
- Requires active Wi-Fi connection
- Ideal for dynamic, instructor-led scenarios

Sounds changed on the fly are temporary. The next time SimScope is powered on, the original pre-set sound scenario will be restored.

6.3 Verification Mode

To toggle Verification Mode:

Hold both + and – buttons **simultaneously** for 2 seconds.

- In this mode, SimScope® plays **spoken prompts** naming the location or tag being scanned.
- It helps validate tag placement on manikins or Standardized Patients.
- To exit, repeat the same button press.

Tip: You can disable this feature via the SimScope PC software.

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❯ 7. TECHNICAL INFORMATION

This section covers technical specifications, system requirements, update/reset guidance, and basic maintenance best practices for SimScope® and associated components.

7.1 Specifications

Feature	Description
Device Type	Electronic auscultation training stethoscope
Connectivity	USB 2.0 / Wi-Fi (via external router)
Power Supply	1 × AAA Battery (replaceable)
Battery Life	Up to 4 hours continuous use
Audio Output	Internal headphone playback
Compatible OS	Windows 11 (64-bit)

7.2 Battery Use and Replacement

A. - Timeout Setting:
To avoid automatic powering off during use, disable the "Timeout" option in SimScope® Wi-Fi configuration settings.

> ⚠ **WARNING: Using the "Disable" setting will drain the battery faster. Expect reduced battery life in this mode.**

B. - Replacement Instructions:
1. **Open** the battery compartment on the SimScope® handle.
2. **Insert** a new **lithium AAA battery**, ensuring correct **polarity (+/–)**.
3. **Close** the compartment securely.

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7.3 Basic Maintenance (SimScope® + Compatible Products)

Component	Maintenance Guidelines
A. - SimScope® Device • Disinfect the chest piece using isopropyl alcohol wipes. • Avoid exposing the device to extreme heat, moisture, or magnetic fields.	• Wipe with a slightly damp cloth (do not submerge)
B. - Manikins (SAM, PAT, Nikki) • Do not use solvent-based cleaners that could damage the skin material. • Always store the manikins in their designated carrying cases after use. • For Nikki: Ensure all joints and connection ports are kept clean and dry. Do not immerse in water.	• Clean with mild detergent and water
C. - SimShirt® & BHS Garment • Do not dry clean, iron, bleach, machine dry, or wring • Machine wash, gentle cycle, maximum 30 degrees. • Line dry only	
D. - Wi-Fi Router • Avoid placing it near liquids or heat sources. • Reboot the router periodically to maintain optimal performance. • Always use the provided USB cable or a certified power adapter.	• Keep the router clean and dust-free.

7.4 SimScope and Bionic Hybrid Simulator Tech Pack Cleaning

The SimScope and Tech Pack can be cleaned using a standard alcohol swab or wipe (70% Isopropyl Alcohol). Do not use excessive liquid or immerse any part of the device. Doing so may result in moisture getting inside the unit.

7.5 Transport and Storage

The SimScope and Bionic Hybrid Simulator can be safely stored or transported without batteries with the following environmental conditions:
1°C – 50°C (33°F – 122°F).

7.6 Operating Conditions

- Operating Temperature: 10°C - 40°C (50°F - 104°F). Do not freeze.
- Humidity: 0-95% Relaitve Humidity
- Attitude: <6,561 Ft. (<2,000 Meters)

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〉 8. APPENDIX

8.1 Product Codes & Variants

The following table provides official product codes for all manikins and wearable devices compatible with the SimScope® Auscultation Training Stethoscope. Use these references when ordering accessories, requesting support, or verifying configuration details.

Product Name	Skin Tone / Version	SAP (3B Scientific)	MPN (Cardionics)
SAM Basic® – Adult Auscultation Manikin	With Laptop, Light Skin	1024090	–
	With Laptop, Dark Skin	1023422	–
	Without Laptop, Light Skin	1020097	718-8830
	Without Laptop, Dark Skin	1022474	718-8832
PAT Basic® – Pediatric Auscultation Manikin	With Laptop, Light Skin	1023423	–
	With Laptop, Dark Skin	1023424	–
	Without Laptop, Light Skin	1020098	718-8835
	Without Laptop, Dark Skin	1022471	718-8837
Nikki® – Nursing Manikin with Auscultation	Light Skin	1022952	718-3413
	Dark Skin	1023318	–
SimShirt® – Auscultation System	Size M	1021552	718-3417
	Size L	1022827	718-3420
	Size XL	1022828	718-3418
	Size XXL	1022829	718-3419
Bionic Hybrid Simulator (BHS) – Wearable Auscultation Trainer	Size M–L	1024480	718-3806
	Size XL–XXL	1024482	718-3807

8.2 Limited Warranty

A. – What This Warranty Covers

1. SimScope® Device
Cardionics warrants the SimScope® device to be free from manufacturing defects in materials and workmanship for a period of one (1) year from the date of original purchase from Cardionics or an authorized dealer. Contact your local representative to check extended warranty options.

2. Wearable Products (SimShirt® and BHS)
The RFID components (tags and electronics) in the SimShirt® and Bionic Hybrid Simulator (BHS) wearable shirts are covered under warranty for one (1) year. The fabric shirts themselves are not covered under warranty.

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1. Laptops and Routers
Laptops and Wi-Fi routers are not covered under the Cardionics warranty. These items are covered exclusively by the warranty policies of their original manufacturers.

2. Warranty Eligibility and Transferability
This warranty is limited to the original purchaser and may only be transferred with prior written authorization from Cardionics.

3. Scope of Warranty
Cardionics' responsibility under this warranty is limited to repair or replacement of the defective product, at the company's discretion.

4. Limitations
All warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, are limited to the stated duration of the warranty.

IMPORTANT NOTE:
Some jurisdictions do not allow limitations on the duration of implied warranties, so these restrictions may not apply in all cases.

B. – What this warranty does not cover

1. This warranty does **not** cover defects or damage resulting from use of the product outside its **normal, intended, and customary operation**.

2. The warranty is void if damage results from:
   - **Improper or abnormal use**
   - **Improper storage or handling**
   - **Exposure to moisture or liquid**
   - **Unauthorized modifications**
   - **Repairs or servicing performed by unauthorized personnel**
   - **Connections or configurations not described in this manual**
   - **Neglect, misuse, abuse, or accidents**
   - **Improper installation**
   - **Alterations**
   - **Damage caused during shipping**

3. This warranty does not cover issues **clearly indicated as excluded** elsewhere in this manual (e.g., fabric shirts, batteries, accessories not manufactured by Cardionics, etc.).

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❯ 9. TROUBLESHOOTING

9.1 Library Issues

There are two ways to solve the library issue with SimScope®:
- The first method is a quick fix and usually works if a Windows prompt appears automatically.
- If this option is not available or fails to restore the library, please proceed to the next section for a full manual recovery using the backup .zip file.

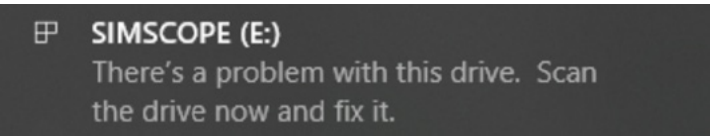## 1. Quick Fix: Sounds Not Loading After USB Disconnection

How to Fix:
A. Close the SimScope® software completely.
Ensure it is not running in the background.

B. Reconnect the SimScope® via USB.
Use the USB cable provided to plug the SimScope® into the laptop.
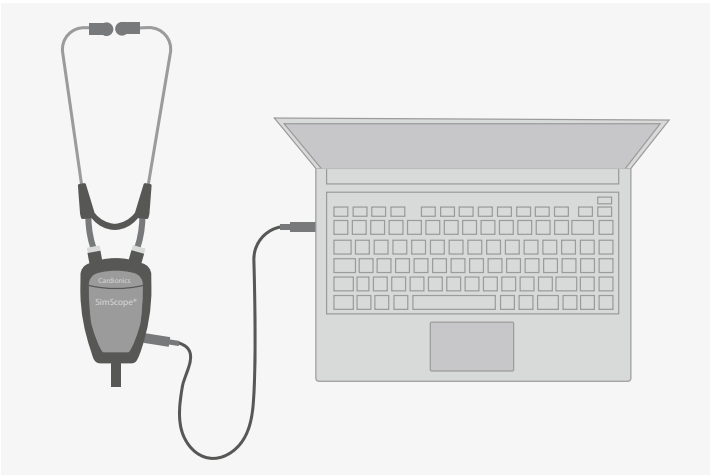
C. Respond to any Windows pop-up.
If a Windows error message appears (e.g., "There is a problem with this drive"), click on it.

D. Agree to fix the SimScope® drive.
Windows may ask to scan and repair the drive. Click Yes or Fix and allow the process to complete (may take a few minutes).
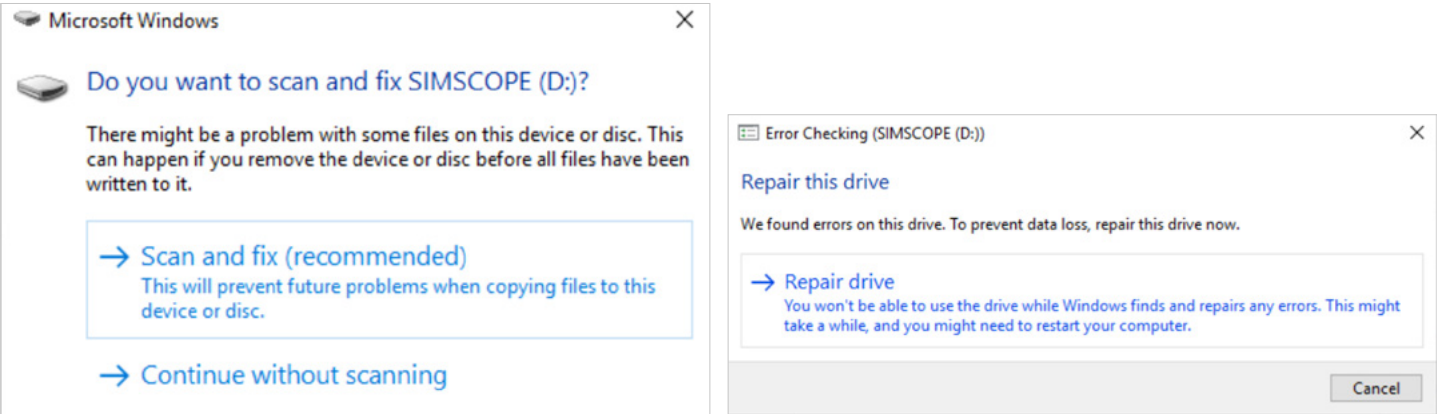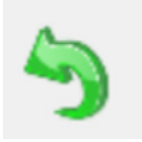
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E. Launch the SimScope® software again.
After the repair is complete, reopen the SimScope® software.

F. Check for sound library recovery.
  • If the sound library still does not appear on the left side, look for a "Restore" icon at the top of the window.

  • Click Restore and follow the on-screen prompts.

G. If no restore option is shown:
If the library still doesn't appear and no pop-up is shown, proceed to the next section.

2. Full Recovery: No Pop-Up Appears or Library Still Missing

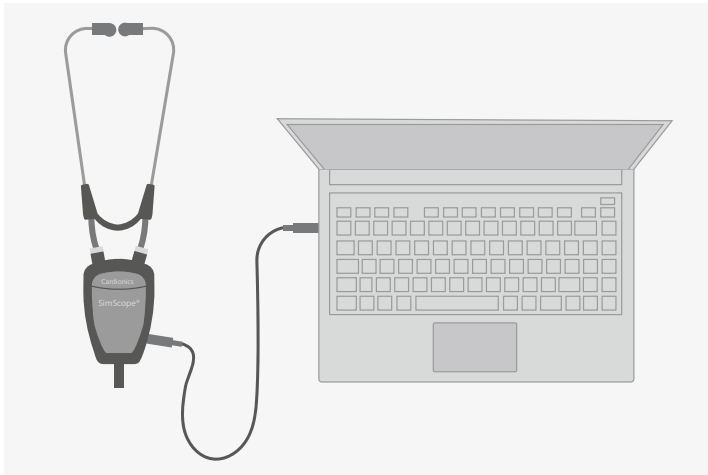How to Fix:
A. Close the SimScope® Software
If the SimScope® app is running, close it.
Make sure to have installed the latest version of the software. You can use the link below to download it.
https://cardionics.com/en/software-download

B. Connect SimScope® via USB
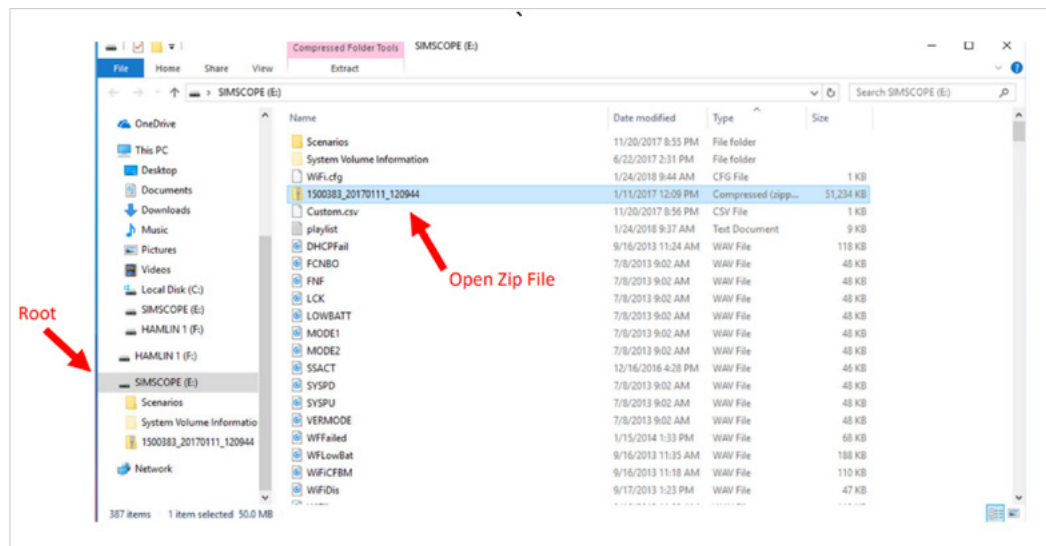Plug the SimScope® into your computer using the provided USB cable.

C. Open File Explorer
Do not open Internet Explorer. Use Windows File Explorer and navigate to the SimScope® drive (root directory).

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D. Locate and Open the ZIP File
Find the .zip file named after your SimScope® serial number (e.g., 1502534_backup.zip).
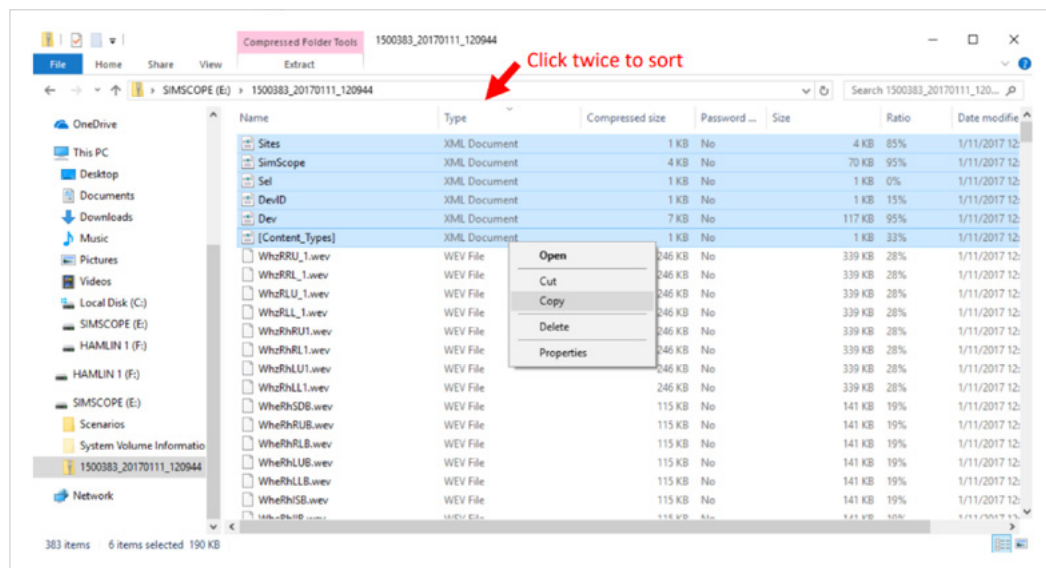Double-click to open it.

E. Find the XML Files
Inside the .zip, sort the files by clicking the "Type" column twice. This will group all .xml files at the top.
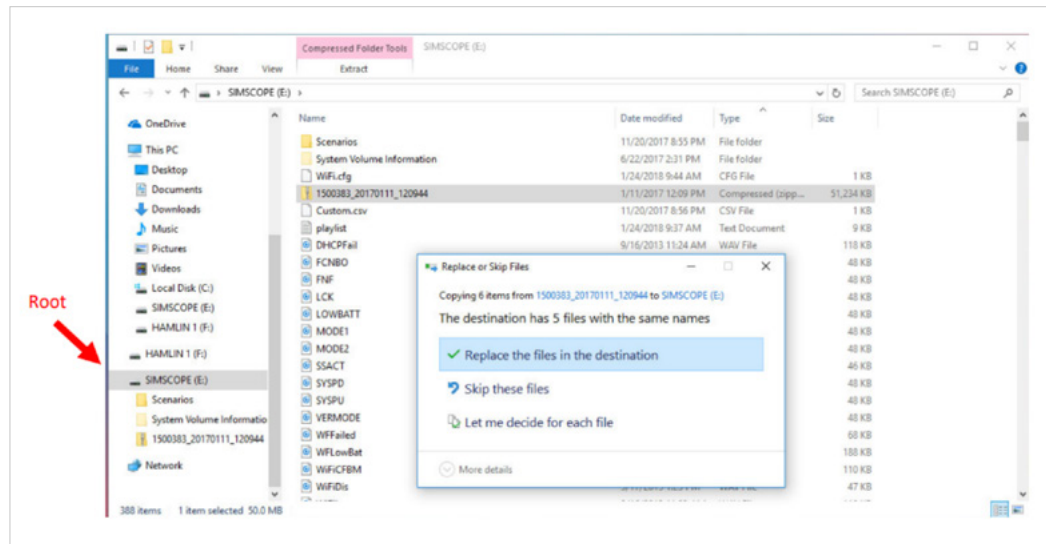
F. Copy All .xml Files
Select and copy all .xml files inside the ZIP archive.

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G. Paste into the SimScope® Root Directory
Return to the SimScope® drive and paste the copied .xml files into the root.
Choose to replace existing files if prompted.

H. Launch SimScope® Software
Open the SimScope® application. The sound library should now load correctly on the left panel.

I. Reconfigure Your Setup
- Reassign your auscultation sound positions.
- Reconnect the device to Wi-Fi (if needed).
- Click Save and wait until the save process is fully complete.
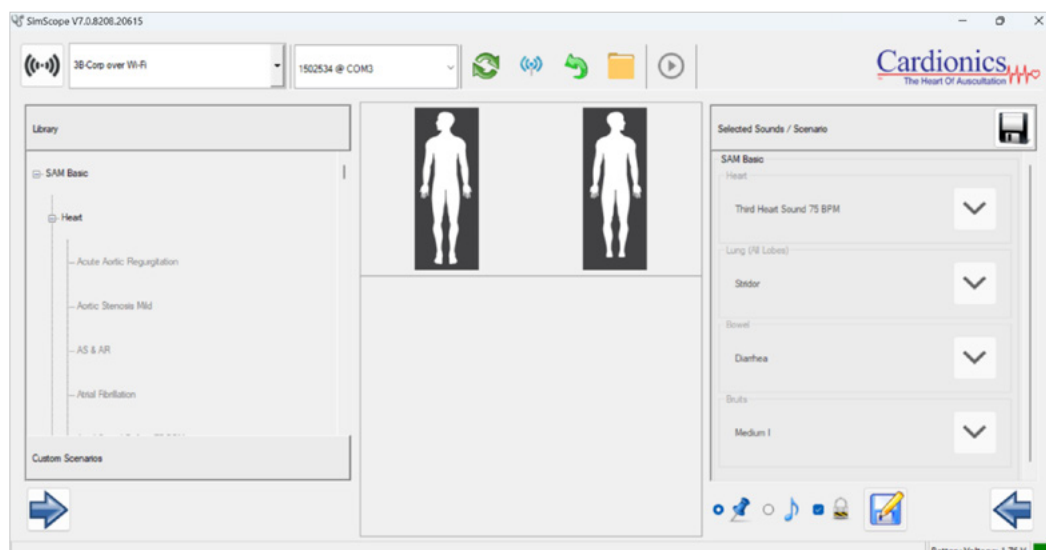
J. Test the SimScope®
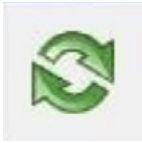Once saved, SimScope will start working properly.

9.2 I have acquired an Extended Library for my SimScope and would like to install the new sounds.
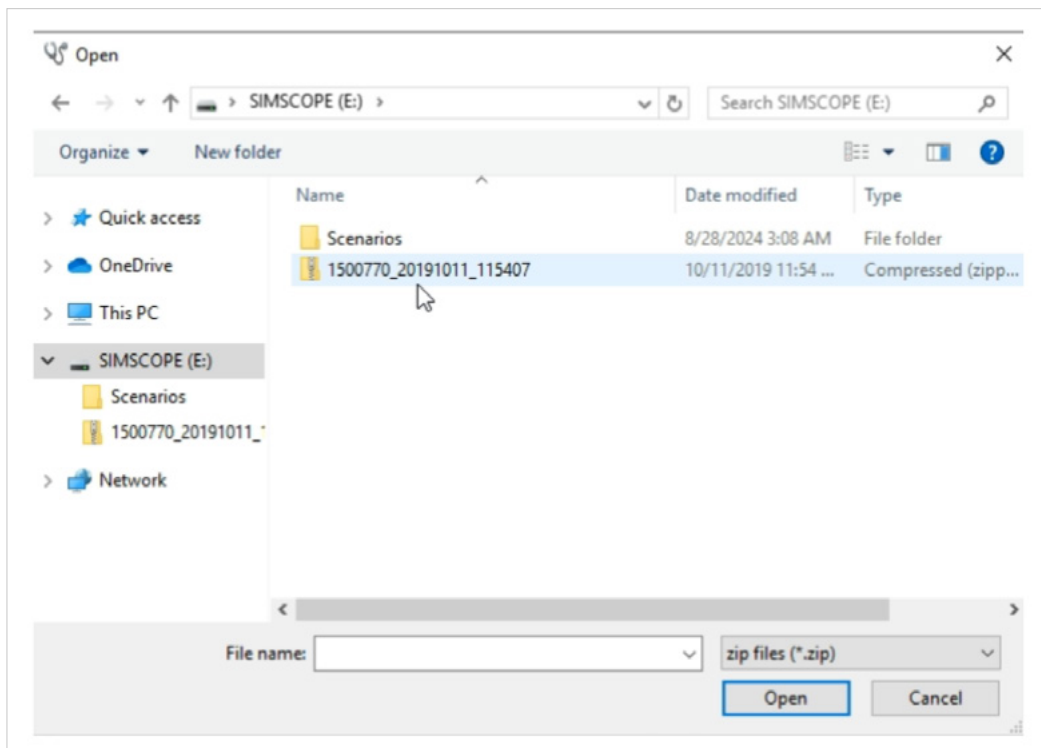
A. Start SimScope Software.
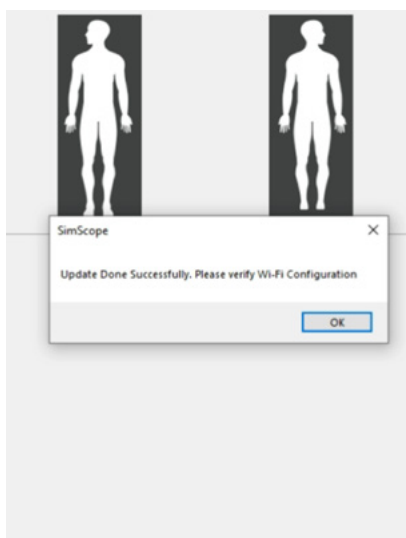
B. Connect SimScope to Computer:

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C. Click on the upgrade scenario button:

D. Open location where Update file is located. Select file that corresponds to the SimScope (Serial Number) Unit that is connected to the unit and then open it to start the update.

E. Message will appear when Update is successful:

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9.3 Wi-Fi Issues with BHS

1. Devices Keep Dropping or Disappearing from the SimScope Software

Cause:
Wi-Fi interference or network congestion may disrupt the connection between SimScope and other devices (e.g., BHS or SIM BP).
To fix this, try adjusting the **Wi-Fi channel** or **Wi-Fi band** using the SimScope software.

Step 1 – Power On and Connect to the Network
A. Ensure your router or BHS Tech Pack is powered on.
B. Connect your laptop to the correct **Cardionics Wi-Fi network** e.g., SimScope or Bionic Hybrid Simulator_101.
C. Then, open the **SimScope software**.
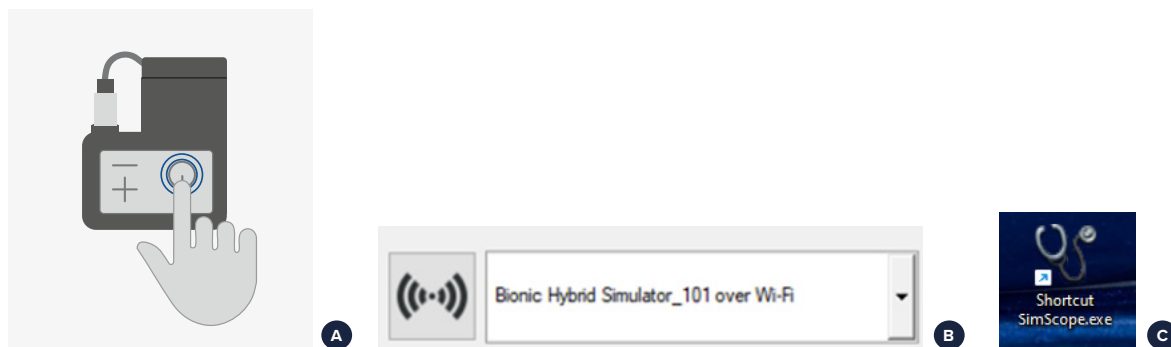
Step 2 – Open Wi-Fi Configuration Panel
In the SimScope software, click the Wi-Fi configuration icon to open network settings.

Step 3 – Change the Wi-Fi Band (Optional)

If connection issues continue:
    1. In the same configuration panel, locate the "**Band**" setting.
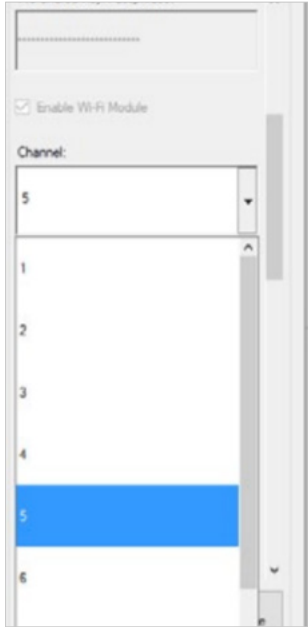   2. Switch between **2.4 GHz** and **5 GHz**.

> **NOTE:**
> Not all laptops support 5 GHz Wi-Fi. Ensure your laptop is compatible before changing the band.

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Step 4 – Change the Wi-Fi Channel
A. Scroll to the "**Channel**" dropdown menu.
B. Select a different channel (e.g., switch from Channel 1 to Channel 5).
C. Click **Save** and wait for confirmation.
D. Test if the connection becomes more stable.

Step 5 – Make Sure Devices Are on the Same Band and Channel

To ensure a stable connection:
• All devices (SimScope, SIM BP, etc.) must use the same Wi-Fi band.
• For channels:
   • Either set each device to "All Channels",
   • Or manually match their channel to the router or Tech Pack.

Using "All Channels" is usually the most reliable and user-friendly option
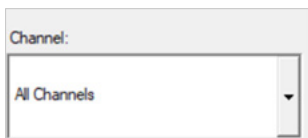
Fix: "Low Battery" – SimScope Won't Connect Over Wi-Fi
SimScope requires high-drain batteries to power Wi-Fi.

Use only:
Energizer Ultimate Lithium AAA
– Reliable for 100+ Wi-Fi uses.

Avoid:
• Alkaline batteries — not powerful enough
• Rechargeables — short runtime

If issues persist with lithium batteries, check for corrosion or weak contact points in the battery compartment.

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