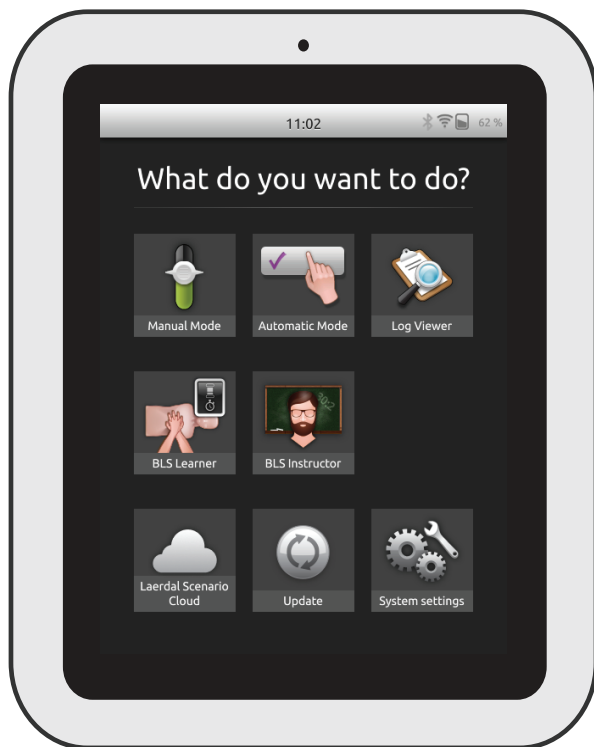


SimPad PLUS

User Guide



Intended Use

The SimPad PLUS System is an easy to use wireless tool that performs relevant medical simulation training, including debriefing, in various user settings. With a large, intuitive touch screen, SimPad PLUS is a “Pick up and Play” experience, delivering simulation-based education, easily and efficiently.

There are two ways to control simulations: Automatic Mode and Manual Mode. This allows customized simulations to meet specific needs.

The SimPad PLUS System is compatible with a broad range of Laerdal products including manikins, patient simulators, and task trainers as well as standardized patients.

This User Guide describes operating instructions for the following models:

- SimPad PLUS
- Link Box PLUS

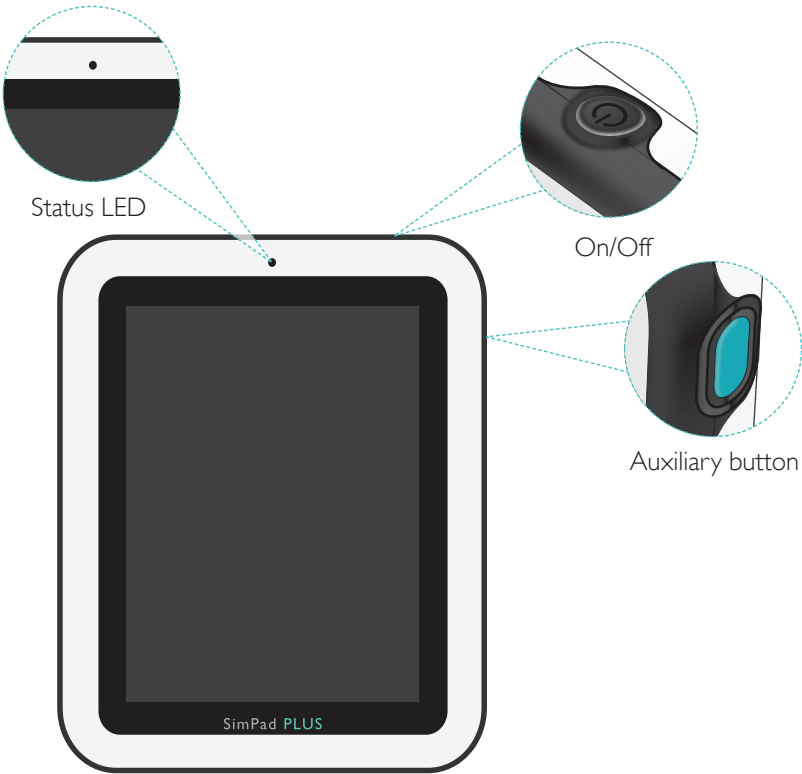


Notes

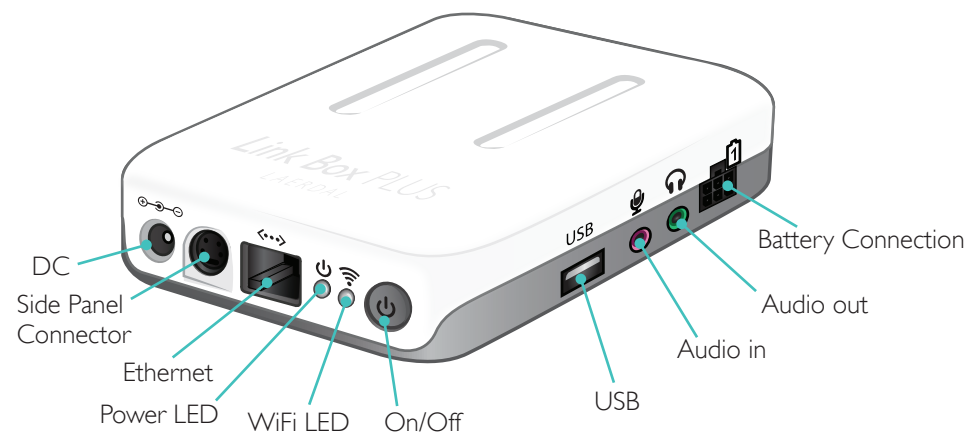
- *The products shown may vary in appearance and are subject to change.*
- *For further information and to access all product downloads visit [www.laerdal.com/SimPad PLUS](http://www.laerdal.com/SimPadPLUS).*

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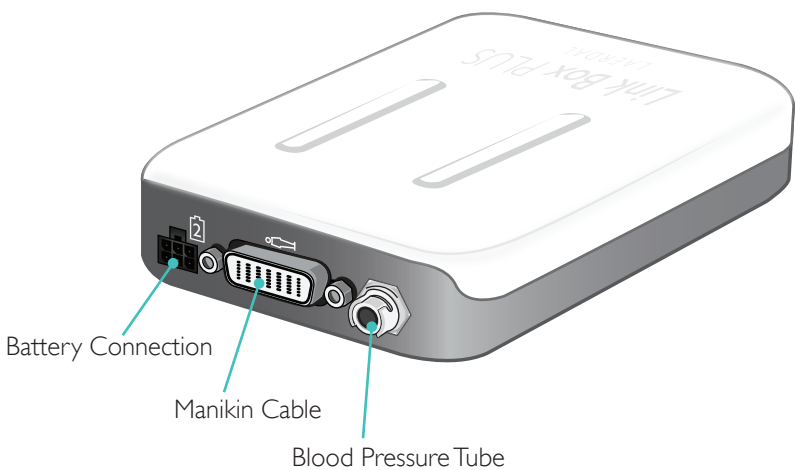
SimPad PLUS Overview



Front View

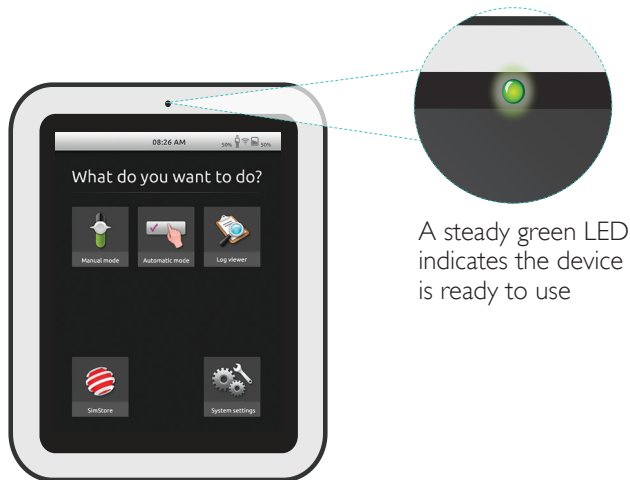
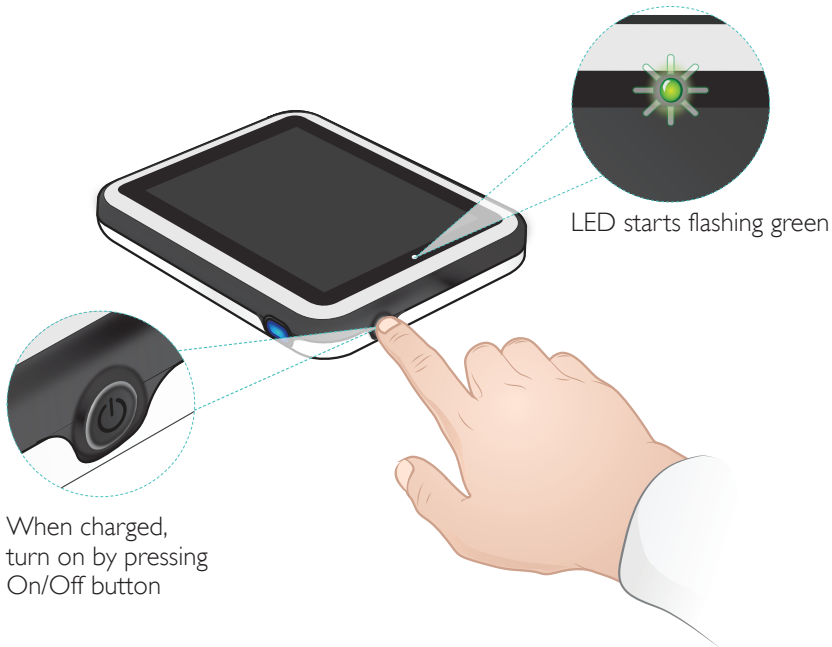


Back View



SimPad PLUS Setup

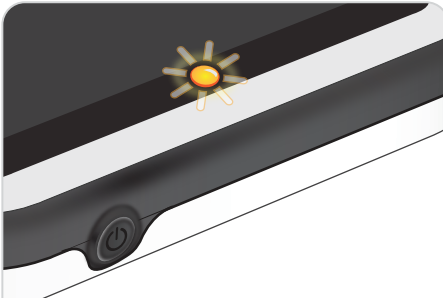
Turn On



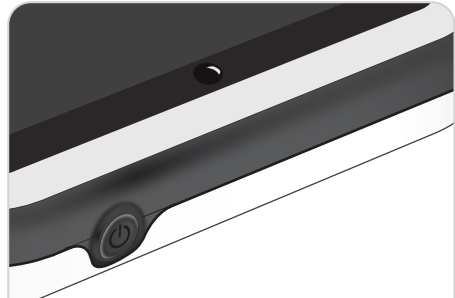
 Note

Make sure to use the SimPad PLUS charger.

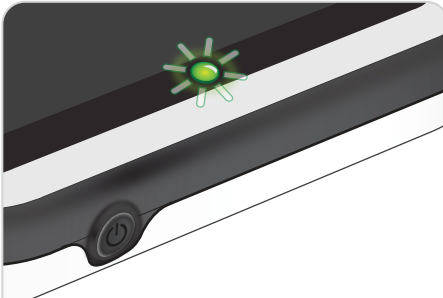
Status LED



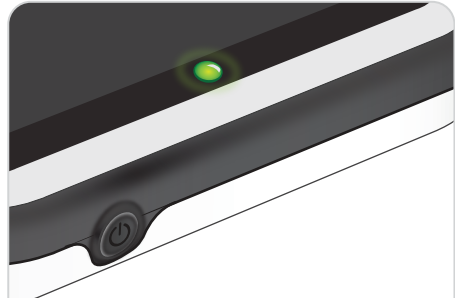
Off and charging battery - flashing yellow light.



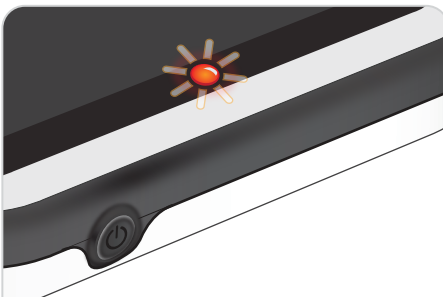
Finished charging but SimPad PLUS application is off and charger is connected.



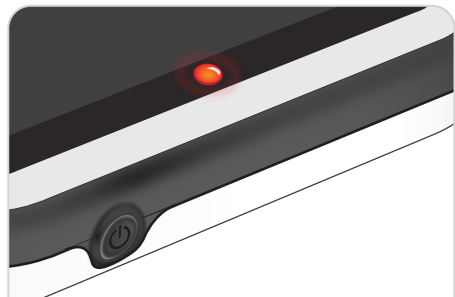
Starting and shutting down - flashing green light.



On - steady green light.



Low battery - flashing red light.

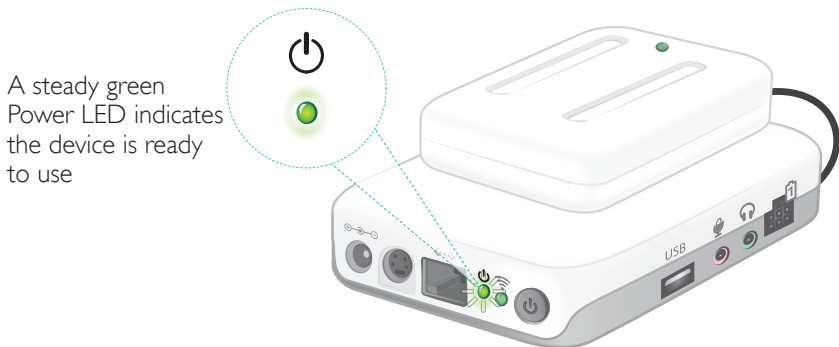
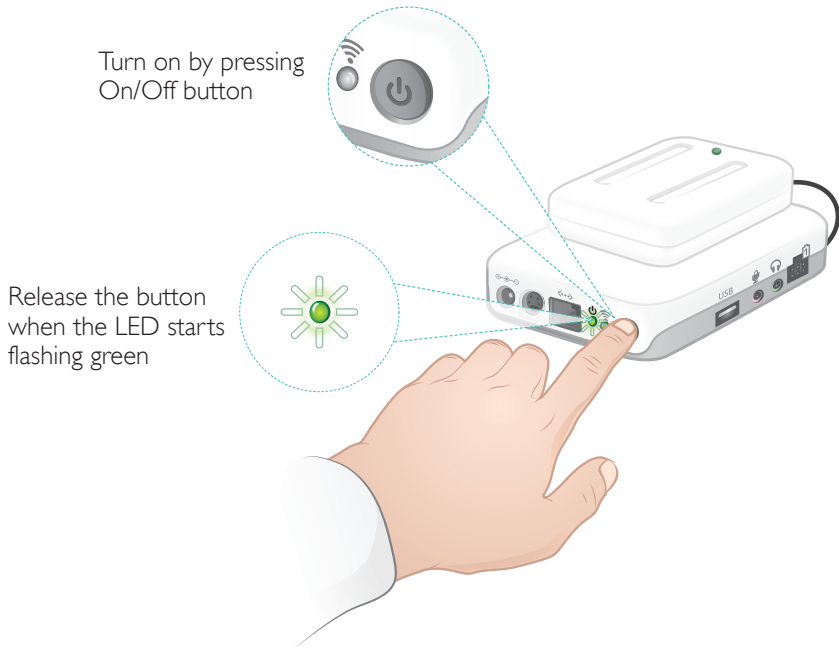


Error; needs service - steady red light.
Contact your local Laerdal representative.

Link Box PLUS Setup

Turn On

Link Box PLUS can be located on the inside or the outside for the simulator. This illustration is of the simulators with the Link Box PLUS on the outside



Status Power LED



Charger connected but Link Box PLUS is turned off



Batteries charged - steady yellow light.



Starting and shutting down - flashing green light.



On - steady green light.



Error, needs service - steady red light.
Contact your local Laerdal representative.

SimPad PLUS Setup

Starting for the First Time

Follow the on-screen prompts to configure the device.

Select language



SimPad language
English

Manikin voice language
English

Celsius or Fahrenheit
Celsius

etCO₂ unit
kPa

Region
United States

Country
United Kingdom



SimPad language

English

Nederlands

Deutsch

Choose country



Country
United Kingdom

Time zone
London (GMT+01:00)

Set time automatically

Time server settings

Set time
11:05

Set date
15. Sep 2021

Clock format
Use 24-hour clock

Enter a name for the SimPad PLUS (Optional)



System settings
About SimPad

Name
SimPad

Serial number
TSBF12001620

ID
204-30150

Software version
6.0.0-152

Network Information

Host name
simpad-BF121620

WiFi information

Network
SimLink

IP Address
172.26.127.244/16

LAN
192.168.1.1

OK ✓

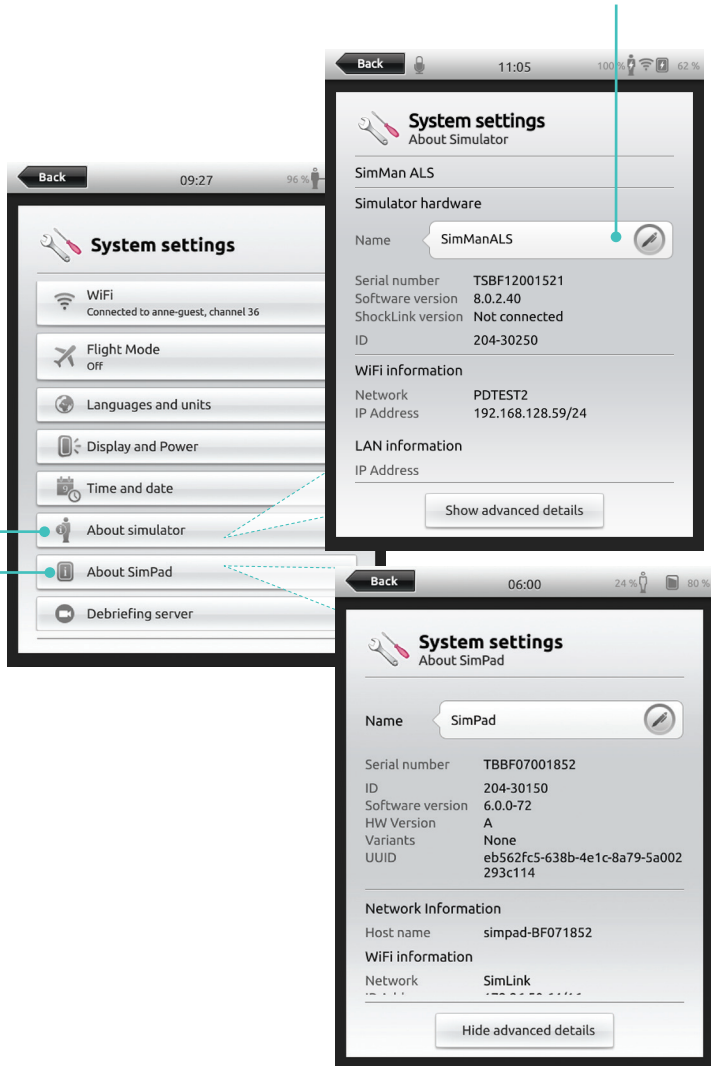
Configuration

Connect the simulator to the SimPad PLUS before configuration.

Enter a name for the Link Box PLUS (optional)

About Simulator

About SimPad



SimPad PLUS Setup

Setting Up A Password

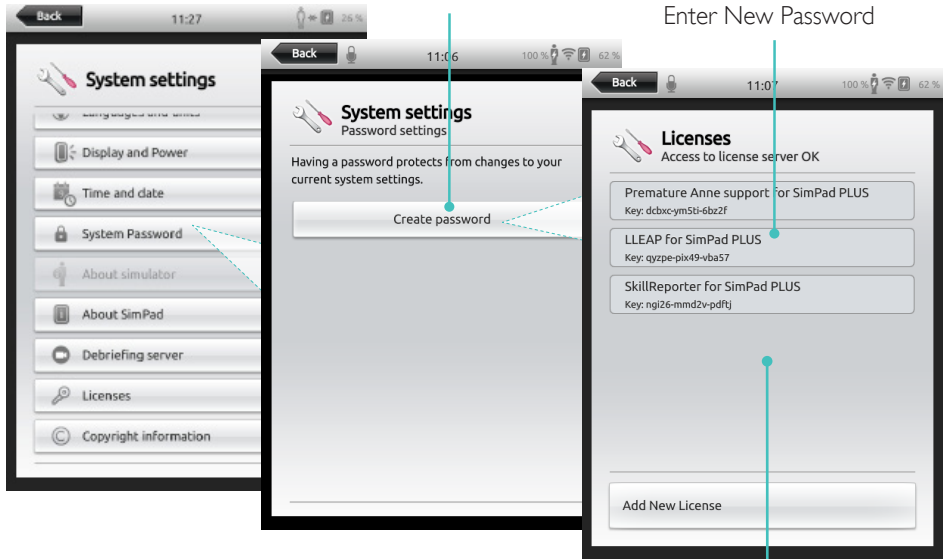


Note

Creating a new password will make future changes in System Settings require password authentication.

Select Create password

Enter New Password



Select Submit

Password Reset



Note

To reset the password, the SimPad PLUS must be sent to Laerdal Technical Center.

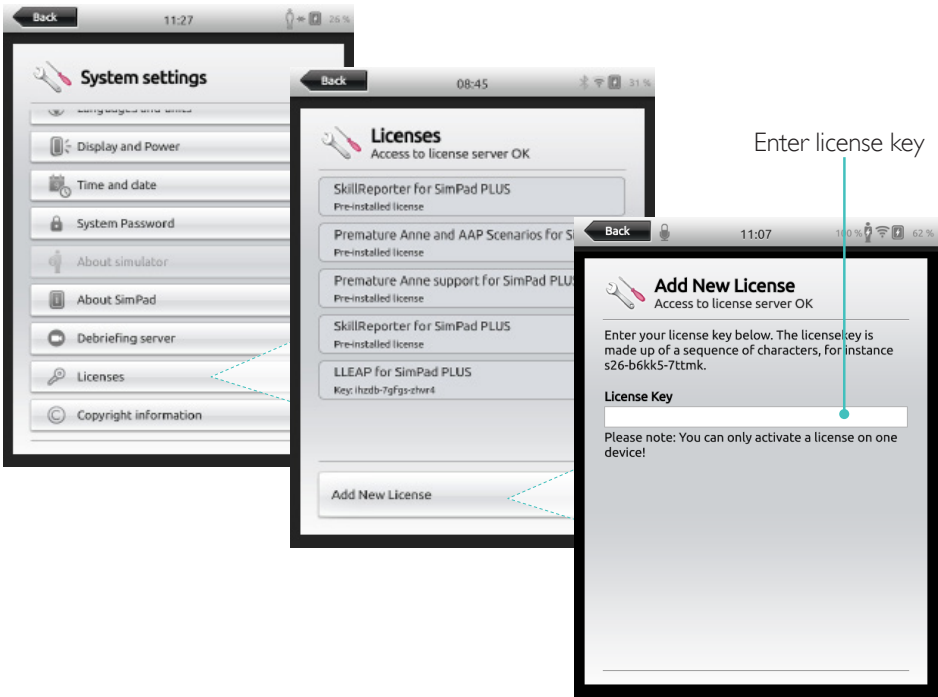
Anonymous Data Collection

Non-personal usage data can automatically be sent to Laerdal. When first turned on, the SimPad PLUS asks permission to share those data. The setting can later be changed in the System settings.

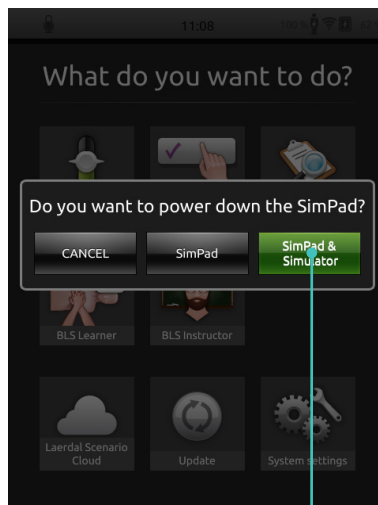
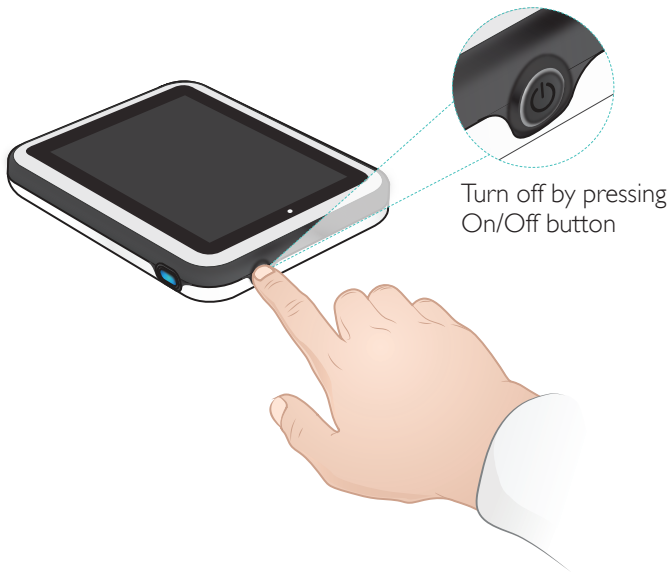


SimPad PLUS Setup

Add a New License



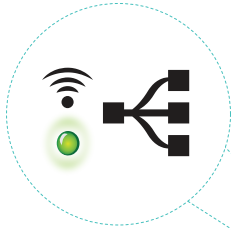
Turn Off



Tap to shutdown SimPad PLUS
and/or Simulator

Link Box PLUS Setup

WiFi Connection



Connected to a network -
steady green light



Connected to a SimPad PLUS
(or another instructor device) -
steady blue light



Connection between SimPad PLUS and Simulator

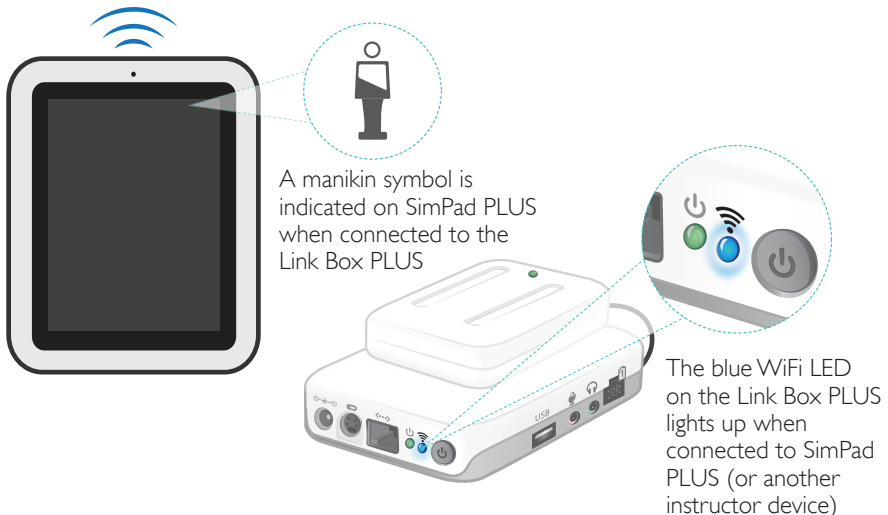
SimPad PLUS communicates with the Link Box PLUS using WiFi.



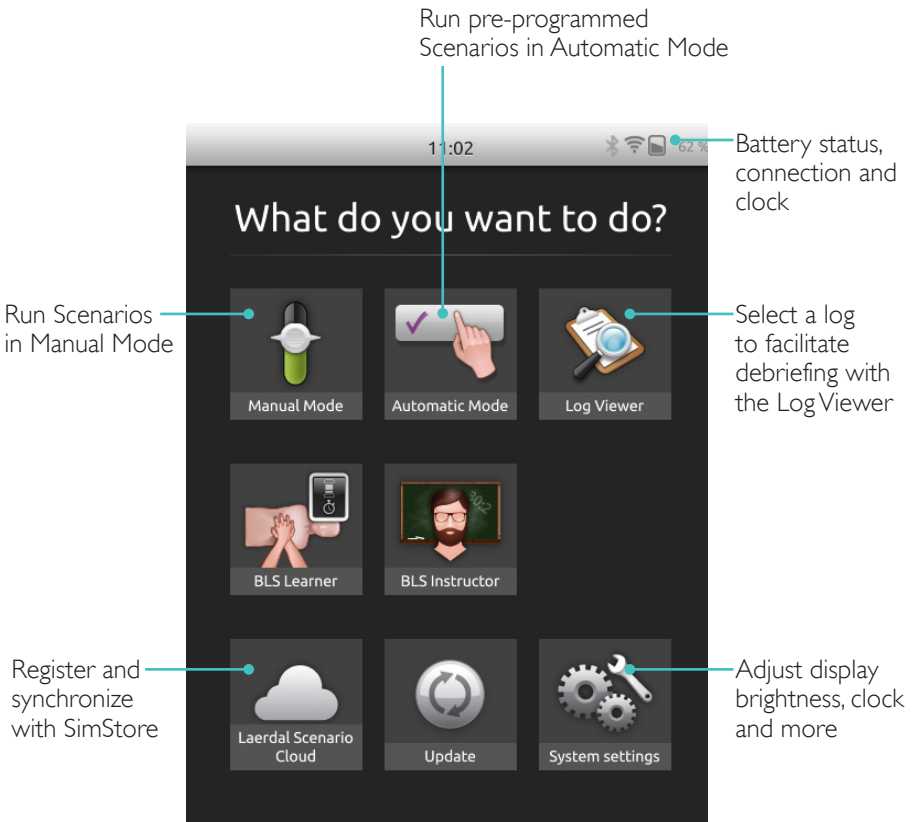
Note

When both devices are turned on for the first time, they connect to an ad hoc network. This pairing is remembered and the units will reconnect when turned on again. When multiple Link Box/Simulator are available, choose the preferred option.

This is what the system will look like when connection to simulator is established.



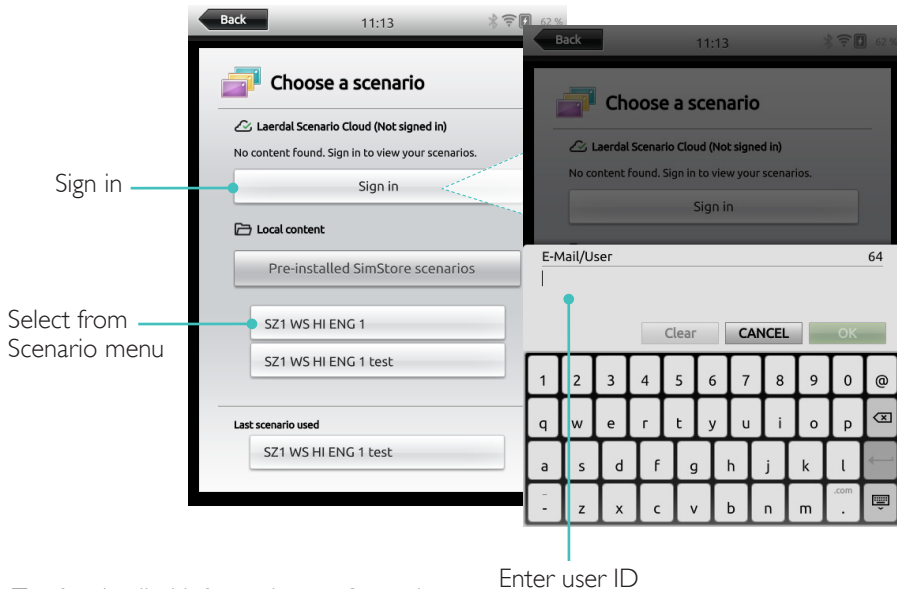
Home Screen Overview



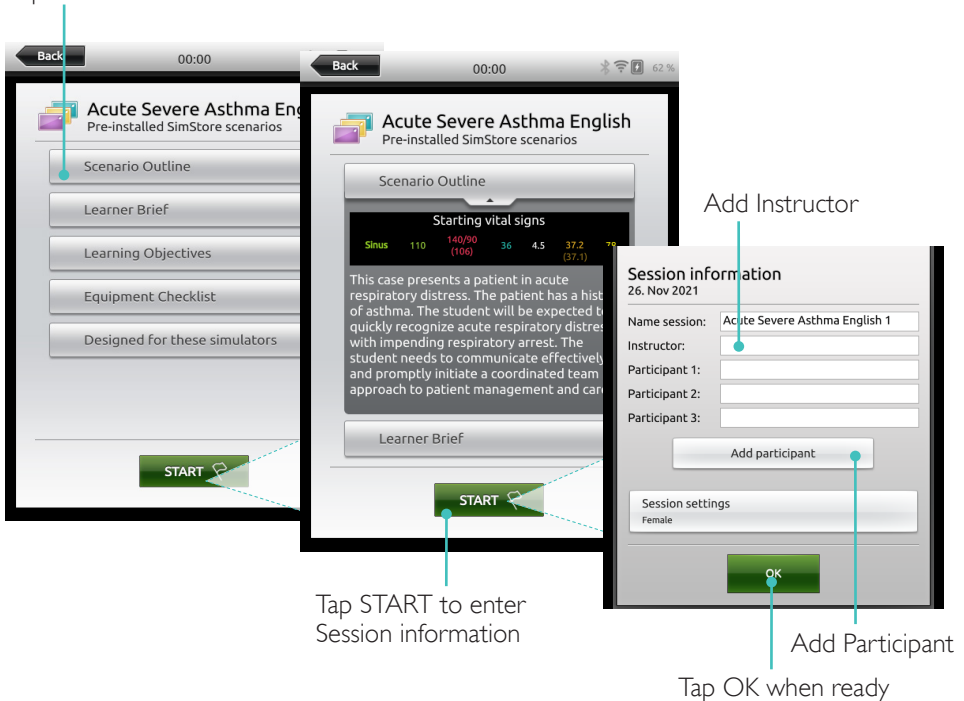
Note

Home screen may vary in appearance based on purchased licenses.

Select Scenario



Tap for detailed information on Scenario



Automatic Mode

Run Session

Time since Scenario was started

Patient status

Tap to log interventions and events

Last logged event

Categories of interventions

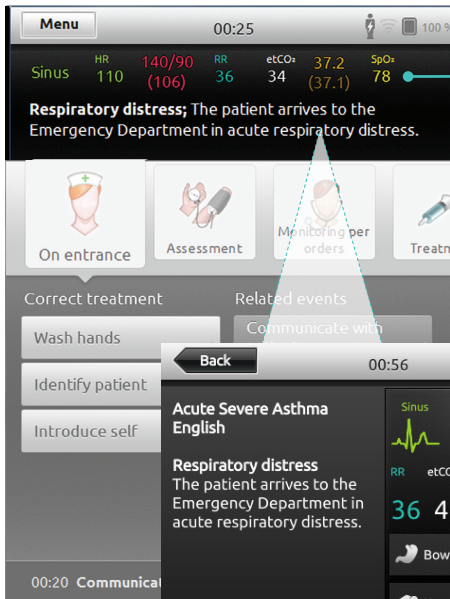
Tap to add comment

The screenshot displays a medical simulation interface. At the top, a 'Menu' button is on the left, and a timer shows '00:25'. The patient status section includes 'Sinus' (HR 110, BP 140/90 (106), RR 36, etCO2 34, SpO2 37.2 (37.1), 78). A central text box reads 'Respiratory distress; The patient arrives to the Emergency Department in acute respiratory distress.' Below this are four intervention categories: 'On entrance' (nurse icon), 'Assessment' (stethoscope icon), 'Monitoring per orders' (monitor icon), and 'Treatment' (syringe icon). The 'Correct treatment' section lists 'Wash hands' (1), 'Identify patient' (0), and 'Introduce self' (1). The 'Related events' section lists 'Communicate with patient' (1), 'Comfort patient' (1), 'Communicate clearly' (0), and 'Communicate effectively' (0). The bottom status bar shows '00:20 Communicate with patient' and a keyboard icon.

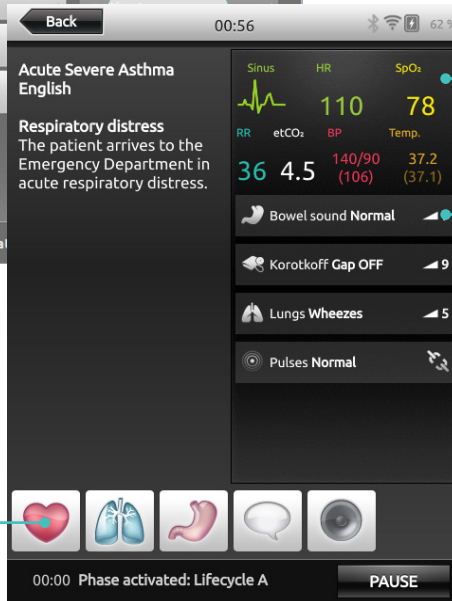
Category	Item	Count
Correct treatment	Wash hands	1
	Identify patient	0
	Introduce self	1
Related events	Communicate with patient	1
	Comfort patient	1
	Communicate clearly	0
	Communicate effectively	0

00:20 Communicate with patient

Override Pre-programmed Behaviour



Tap here to display more patient state information



Access to vital signs adjustments

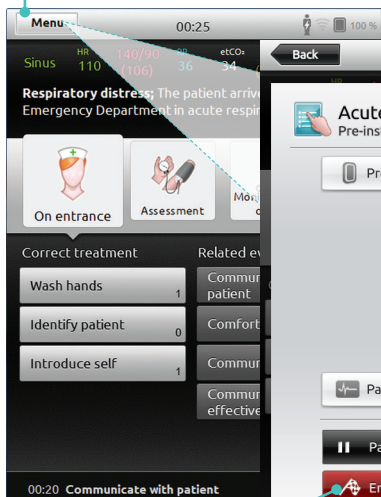
Abnormal parameter values displayed here

Select other parameters to adjust

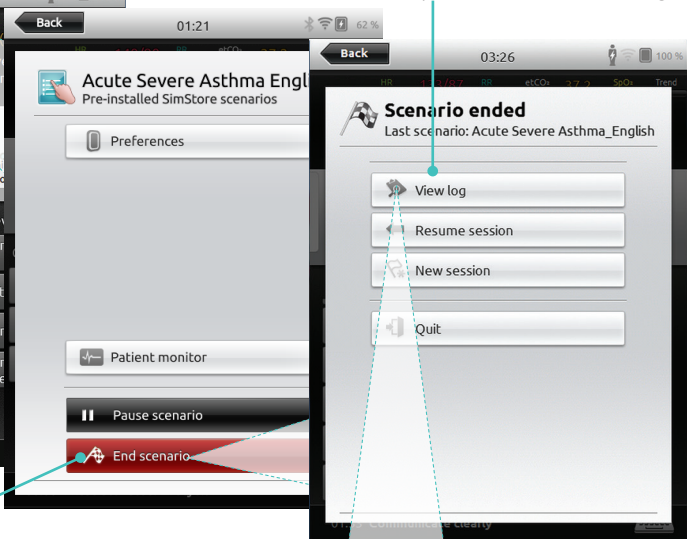
Automatic Mode

End Session

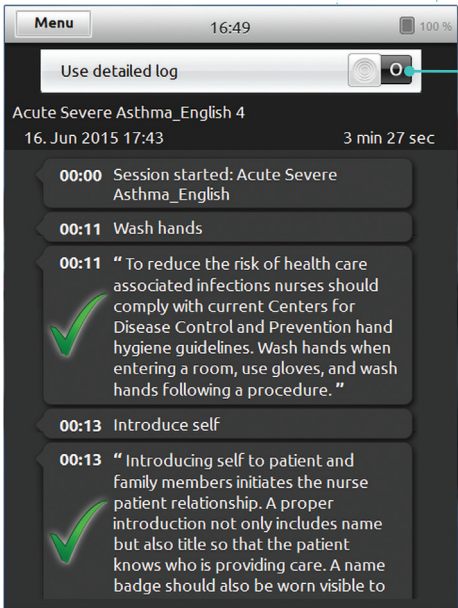
Tap menu to End Session



Open current Session log

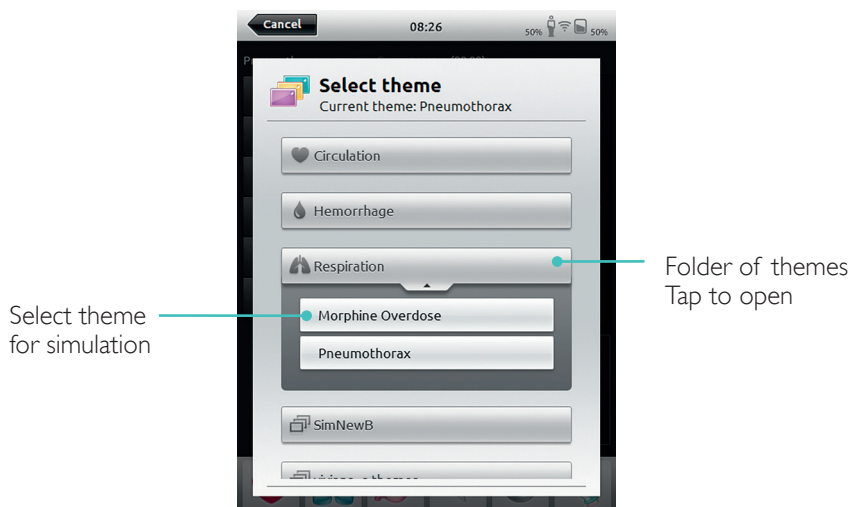


End Scenario

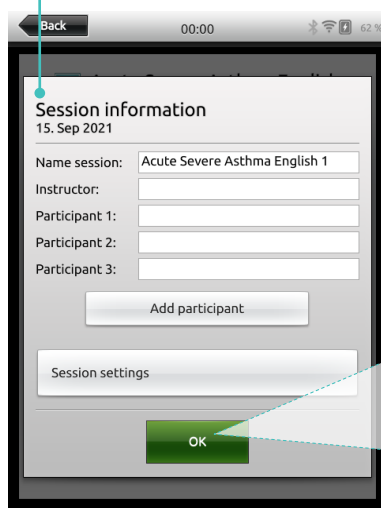


Display more or less information

Select Theme



Information about Session entered here will be added to log



Tap to start Session

Manual Mode

Change Parameters

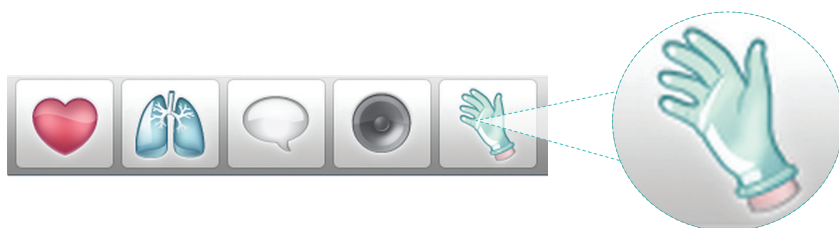
This screenshot shows the 'Pneumothorax' menu on the left, with 'Simple pneum' selected. The main display shows patient vital signs: Sinus HR 100, SpO₂ 96, RR 18, etCO₂ 32, BP 130/84 (99), and Temp 37.2 (36.1). The 'Right lung' status is 'Normal'. A 'Collapse mini-log' shows '00:00 Session started: Pneumo...'. At the bottom, there are buttons for 'PAUSE' and 'END', and a row of icons for heart, lungs, speech, camera, and gloves.

Current state
States
Flag indicates start state
White arrow indicates last activated state
Select other parameters to adjust
Time since current state was activated
Patient vital signs
Abnormal values
Collapse mini-log
End Session
Register participant's interventions
Pause Session

This screenshot shows the 'Chest tube' menu selected. The main display shows patient vital signs: Sinus HR 100, SpO₂ 96, RR 18, etCO₂ 32, BP 130/84 (99), and Temp 37.2 (36.1). The 'Right lung' status is 'Normal'. A 'Collapse mini-log' shows '00:00 Session started: P...'. At the bottom, there are buttons for 'PAUSE' and 'END', and a row of icons for heart, lungs, speech, camera, and gloves.

Time since Session started
Tap to open State
Tap to show detailed State information, before activating
Toggle On/Off shock activation
Set transition time
The expanded state shows all parameters in the queue, ready to be activated
Tap to activate State

Registering Interventions



Tap to register participant's interventions

Time since Scenario was started

00:15

Back

Patient status

Sinus HR 100 130/84 (99) RR 18 etCO₂ 32 (36.1) SpO₂ 96

Tap to log interventions and events

Initial Airway Breathing Circulation

Categories of interventions

Initial

CRM Skills

Talk to patient 1

Tap and shout 0

Call for help 0

Effective communication 1

Team leadership 1

Resource utilization 0

Problem-solving 0

Closed-loop communication 0

Situational awareness 1

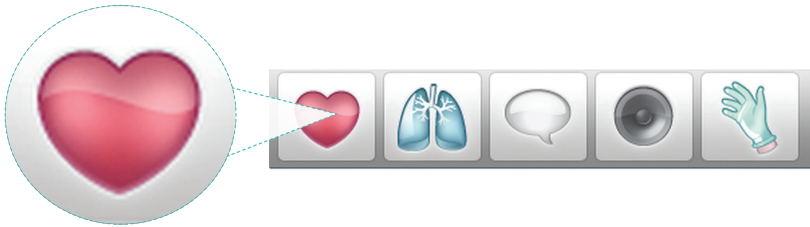
Last logged event

00:12 Situational awareness

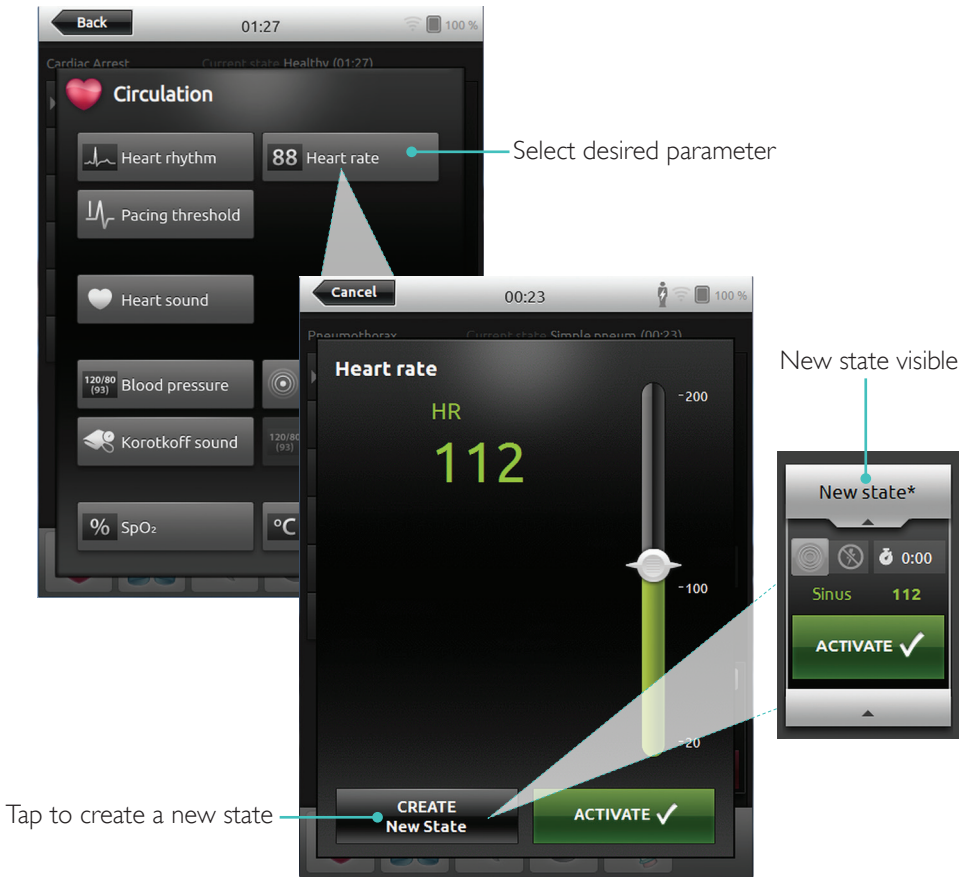
Tap to add comment

Manual Mode

Create New State for an Existing Theme



Tap to access Circulation Menu



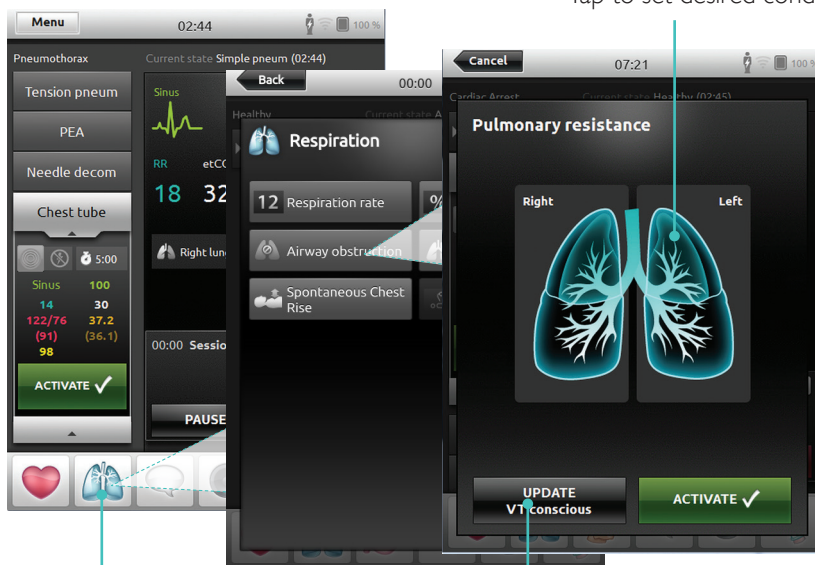
Adjust Parameters Manually

Tap to adjust values (e.g. respiration rate)



Advanced Adjustments

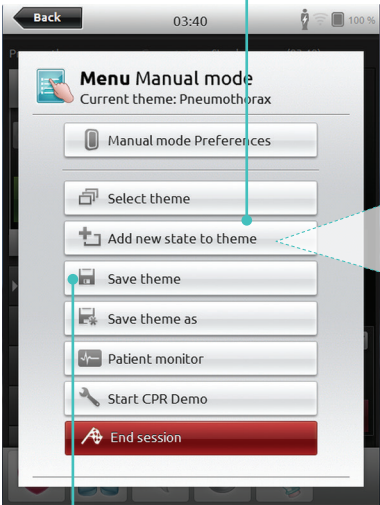
Tap to set desired condition



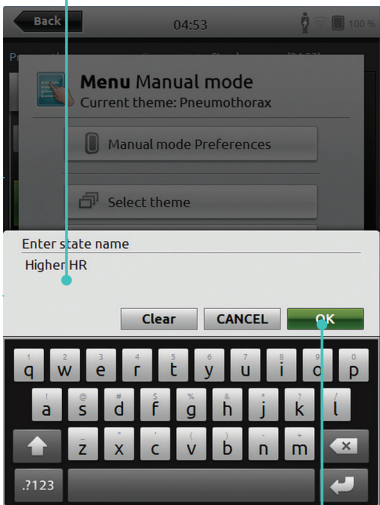
Manual Mode

Add New State to an Existing Theme

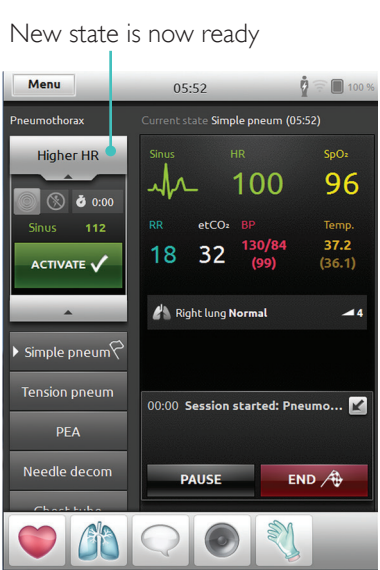
Tap to add new state to theme



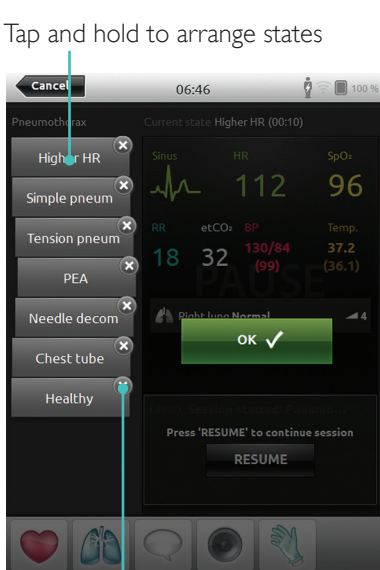
Enter new state name



Tap to save state to theme



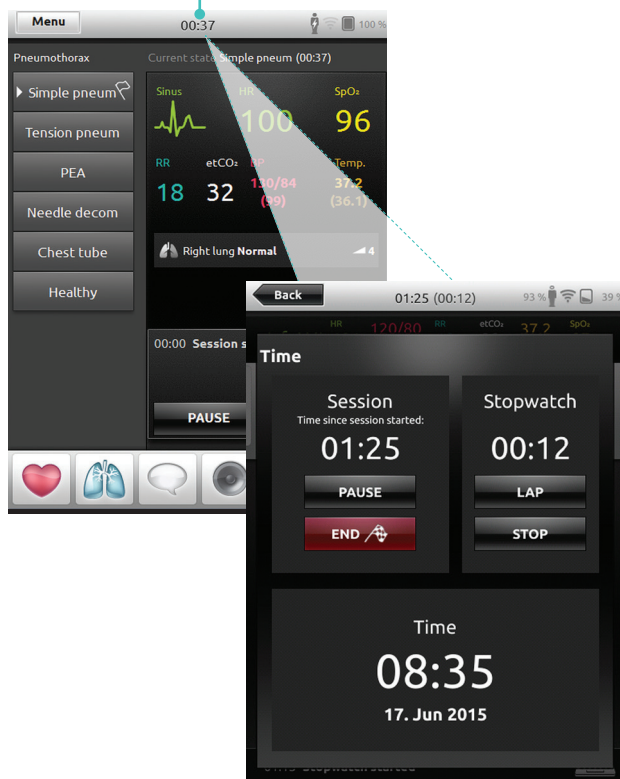
Confirm



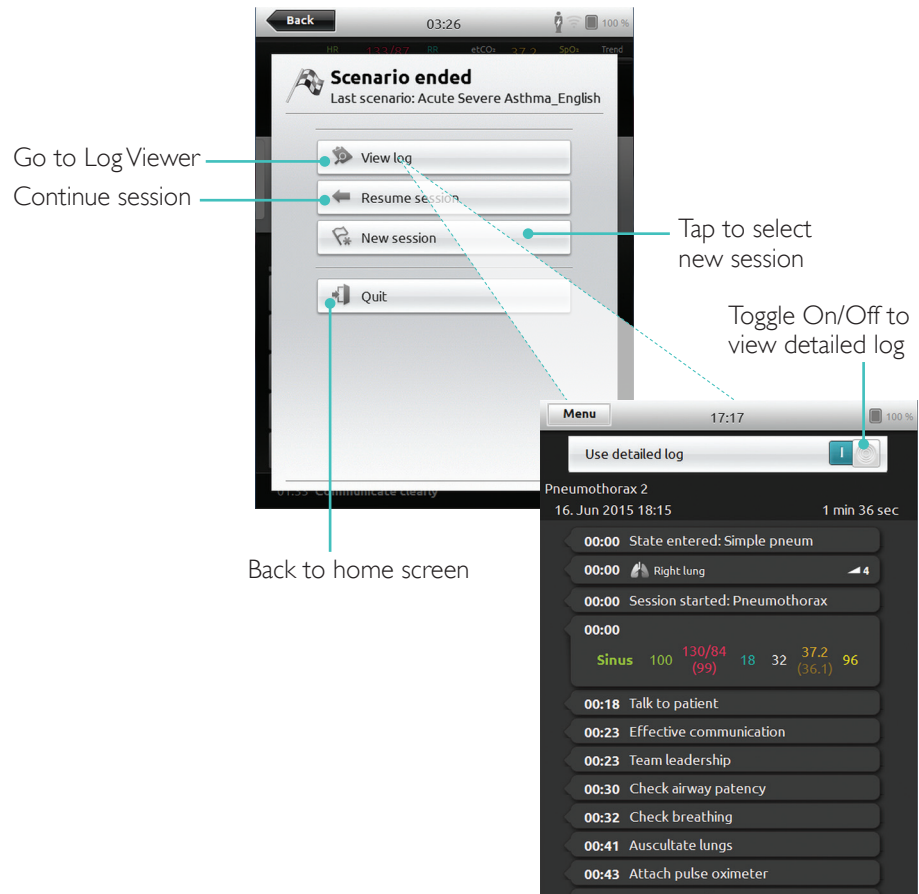
Tap x to delete

Stopwatch

Tap to display and activate the Stopwatch



View Log

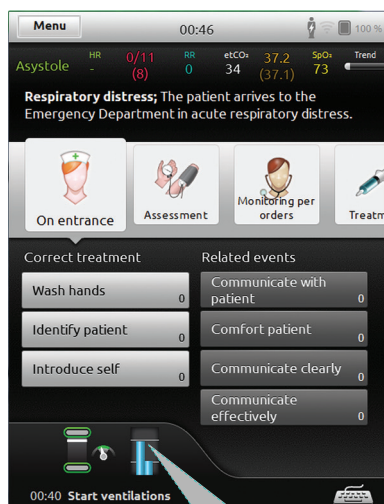


Q CPR Feedback

When CPR is performed on a CPR capable manikin, SimPad PLUS displays real time CPR feedback.

Automatic Mode -

Tap to enlarge Q CPR feedback



Manual Mode -

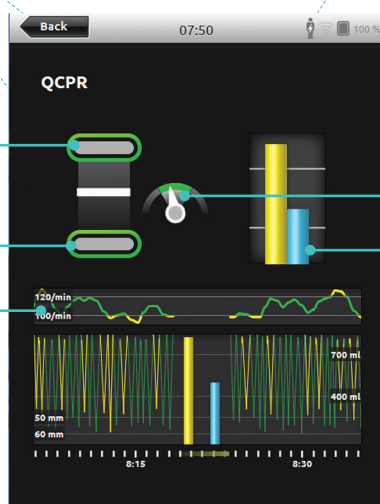
Tap to enlarge Q CPR feedback



Chest release

Compression depth

Full Session, with compressions and ventilations over time.

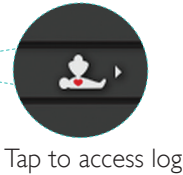


Compression rate

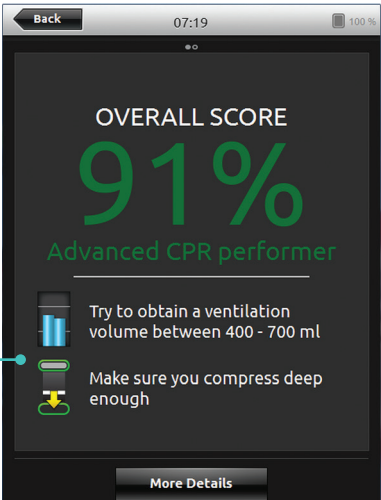
Ventilation volume

QCPR Log File

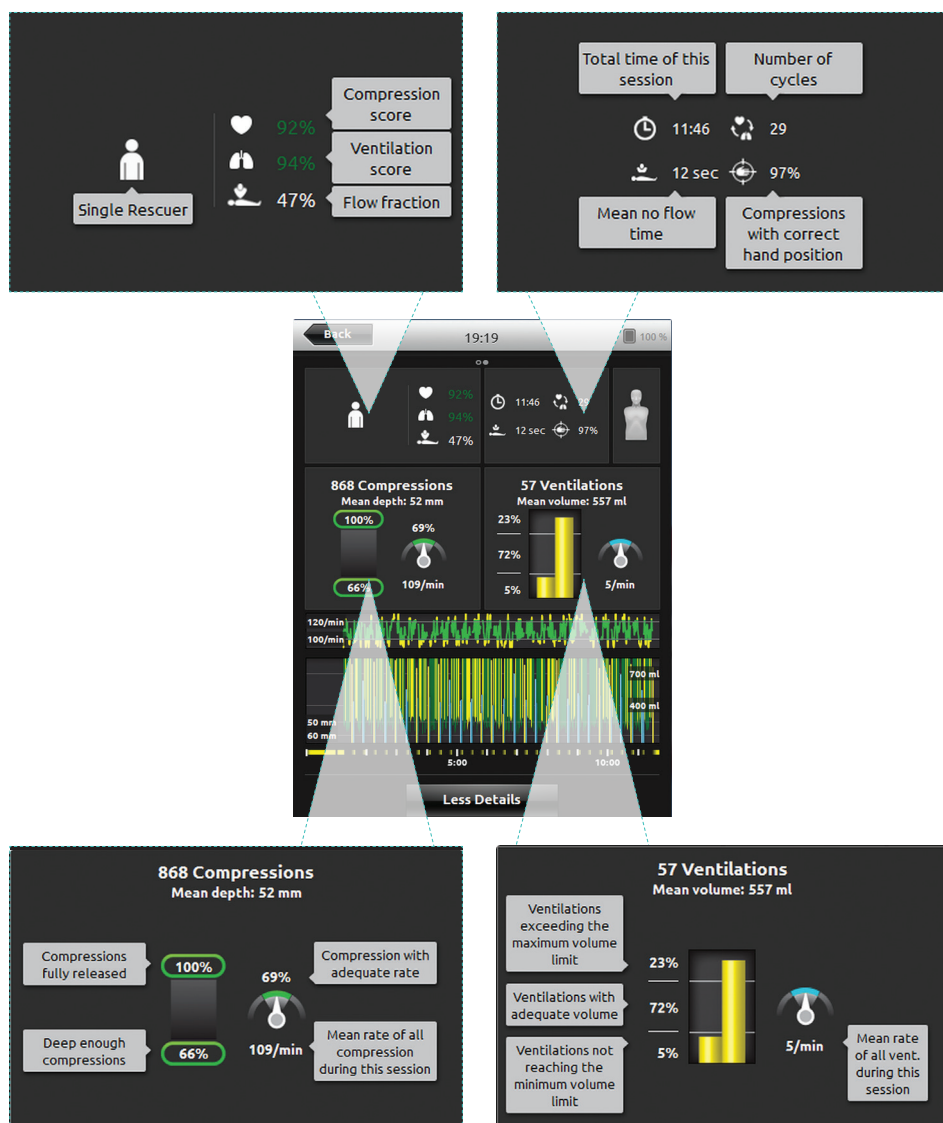
Debriefing mode provides an additional log file with data from CPR training.



Indicates two main findings from the CPR performance



QCPR Summary



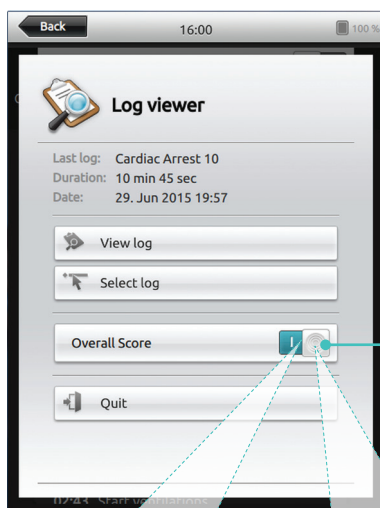
For more information about QCPR scoring, visit www.laerdal.com/no/support/cpr-scoring/

Compression Analysis Over Time

CPR settings can be adjusted to individual needs. Laerdal recommends using settings compliant with ILCOR guidelines.

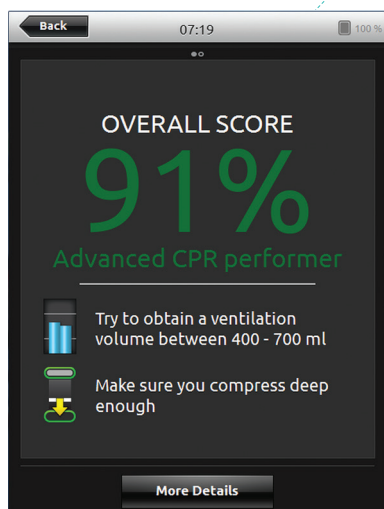


Display Choices

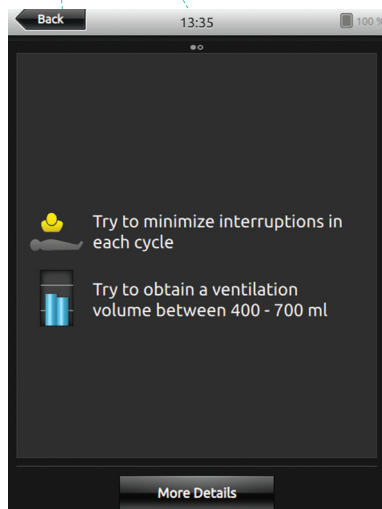


Toggle between displays
(only available on CPR
score sessions)

With overall score



Without overall score



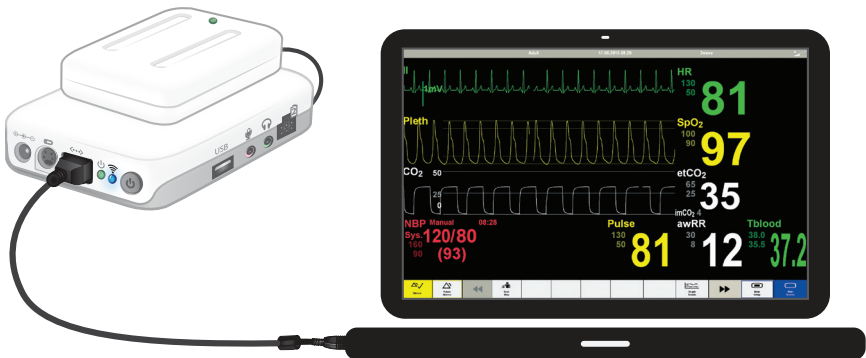
Simulated Patient Monitor

Connect a Simulated Patient Monitor

Ensure the Simulated Patient Monitor PC and the SimPad PLUS System are connected to the same network. Using a direct network cable to connect the Link Box PLUS to the Simulated Patient Monitor is recommended to minimize WiFi traffic.

 Note

Refer to Network section for more information about other network connections.



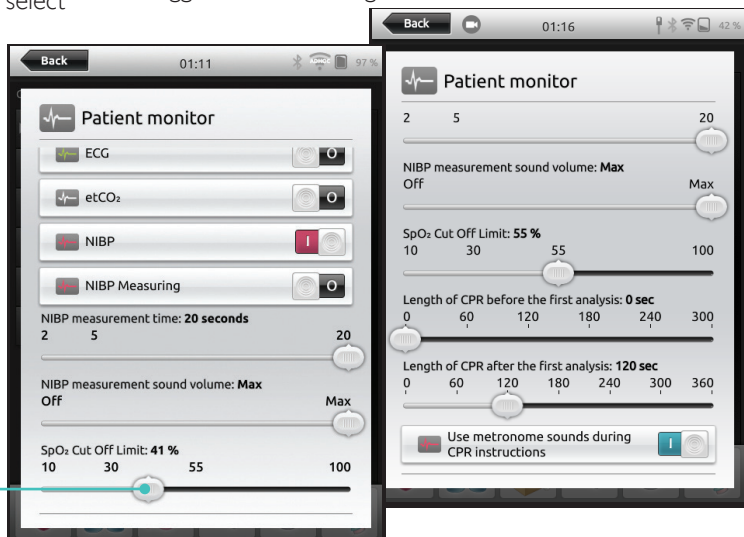
Instructor Control of Simulated Patient Monitor (optional item)

When the Simulated Patient Monitor is connected to SimPad PLUS, the instructor can toggle the display of vital signs. Navigate to Manual Mode and select Patient Monitor.



Navigate to Menu and select Patient Monitor

Toggle On/Off vital signs



Select Cut Off limits

Simulated Patient Monitor

Patient Simulator Firmware Update

When Link Box PLUS is connected to a Patient Simulator with internal firmware it will be automatically updated, if necessary.

If an automatic update is interrupted, a forced update is necessary.

From Home Screen, go to:

System Settings>About simulator>Force-update simulator firmware.



Caution

Ensure that the correct Simulator is selected. Selecting the wrong simulator may cause malfunction and require service.

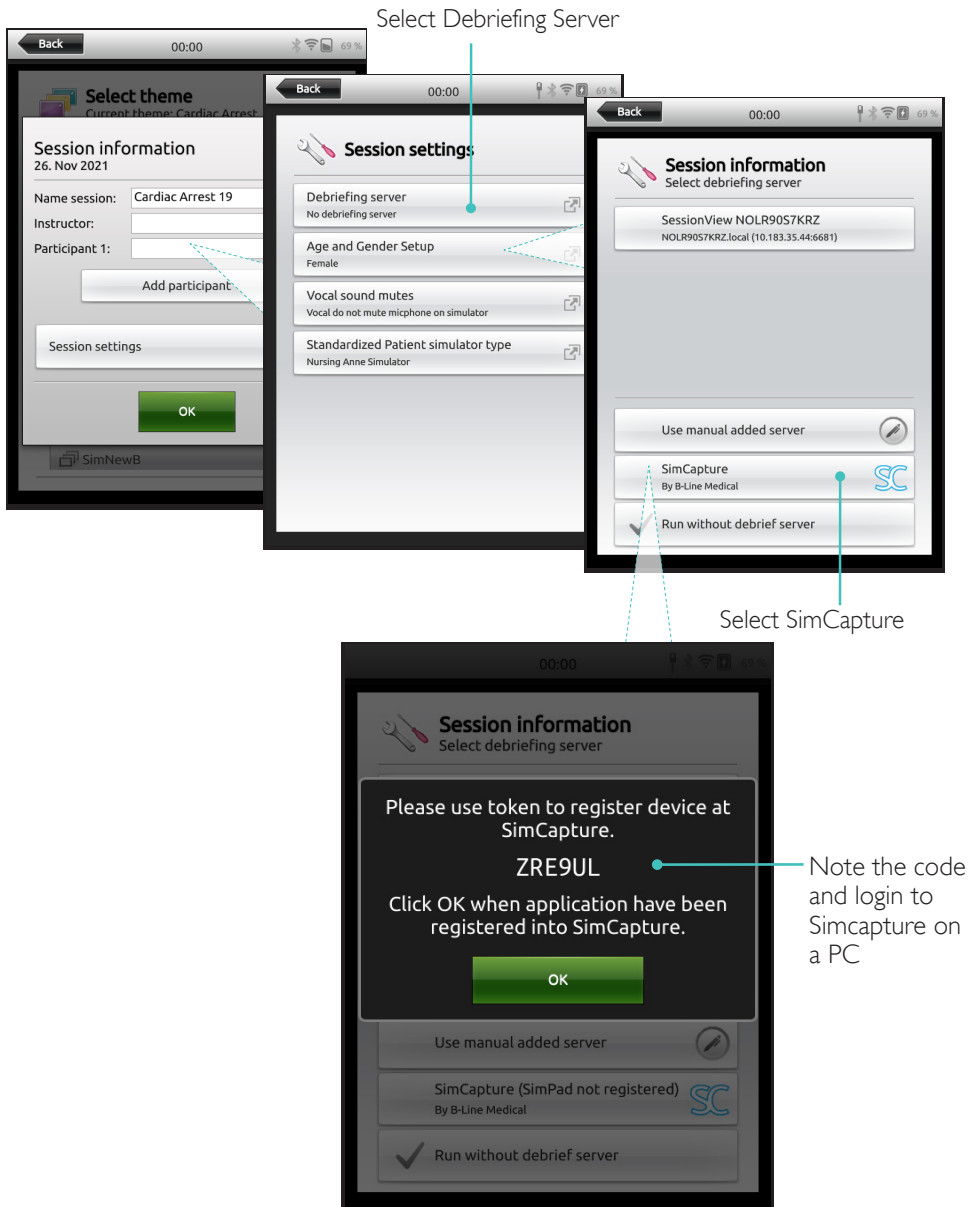
Session Viewer

Session Viewer is a free software solution that enables instructors or students to view debriefing from the SimPad PLUS System. Use Session Viewer to annotate, print and save the SimPad PLUS data log. Session Viewer also enables capture of audio and video from 1 HD USB web camera synchronized with the SimPad PLUS data log.

To download, visit www.laerdal.com/downloads

First Time Registration and Use

Check that both SimPad PLUS and Simulator are connected to the same steady network.



SimCapture Setup

Before registering to SimCapture check that the SimPad PLUS is set up to the correct region.



Register SimPad PLUS in SimCapture

1. Open SimCapture on a computer.
2. Log in.

Once logged in to SimCapture
click on the cog wheel

The screenshot shows the SimCapture web interface. On the left is a navigation menu with categories like Configuration, Users & Security, and Recording & Sessions. The 'Applications' link under 'Recording & Sessions' is highlighted. The main content area is titled 'System Setup' and contains a 'Register' form. The form has a 'Settings' section with the following fields: 'Application Name' (containing 'SimPad-001043'), 'Token' (containing 'ZRE9UL'), 'Owner' (a dropdown menu showing 'SW&S Technical Tech'), and 'Recording Device' (a dropdown menu showing 'Capture Node EU'). Each field has a small text prompt. At the top right of the form is a 'Save' button. A red line points from the 'Save' button to the word 'Save' on the right. Another red line points from the 'Token' field to the text 'Type in the code displayed on the SimPad PLUS'.

Type in the code displayed
on the SimPad PLUS

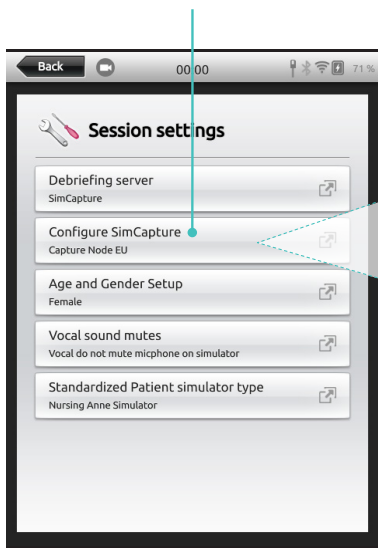
Click on Applications

Tap OK on the SimPad PLUS

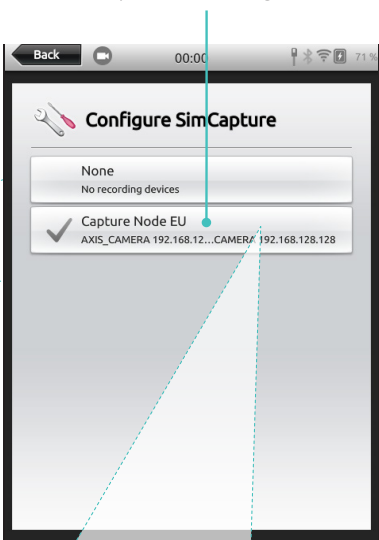
The screenshot shows the SimPad PLUS mobile application interface. At the top, it says 'Session information' and 'Select debriefing server'. Below this, a large text box contains the message: 'Please use token to register device at SimCapture. ZRE9UL. Click OK when application have been registered into SimCapture.' There is a green 'OK' button at the bottom of this text box. Below the text box are three options: 'Use manual added server', 'SimCapture (SimPad not registered) By B-Line Medical' (with a logo), and 'Run without debrief server' (with a checkmark). A red line points from the 'OK' button to the text 'Tap OK on the SimPad PLUS'.

SimCapture Setup

Select Configure SimCapture



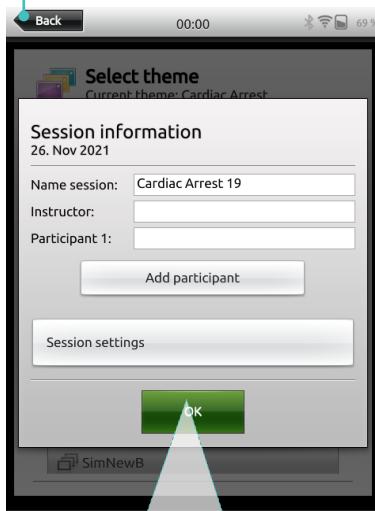
Select your recording location



Select your recording cameras



Select Back until the Session information screen is displayed.



Start a session and see the recording icon turn green when cameras start recording



Note

When ending the session the logfiles will automatically be uploaded to your SimCapture account and merged with the video recording.

SimPad PLUS - Options

Connect SimPad PLUS to a different Link Box PLUS

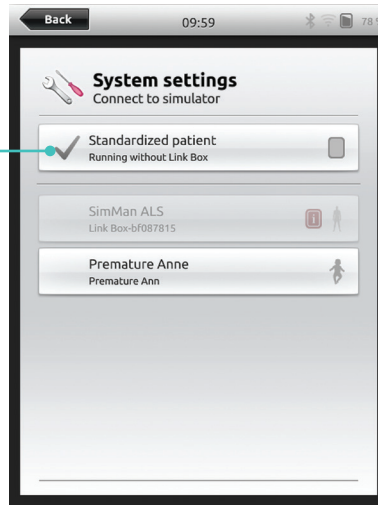
SimPad PLUS can only be connected to one simulator at a time. SimPad PLUS will try to re-establish a connection to the previous Link Box PLUS that it was connected to.



Use SimPad PLUS without a Link Box PLUS

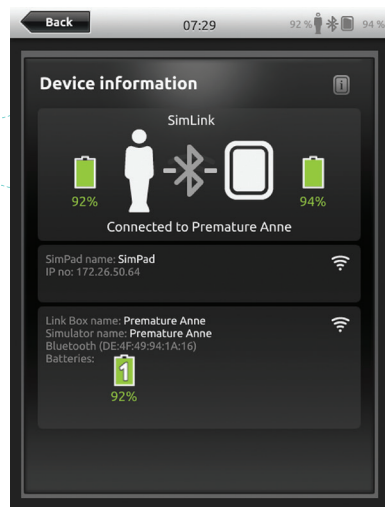
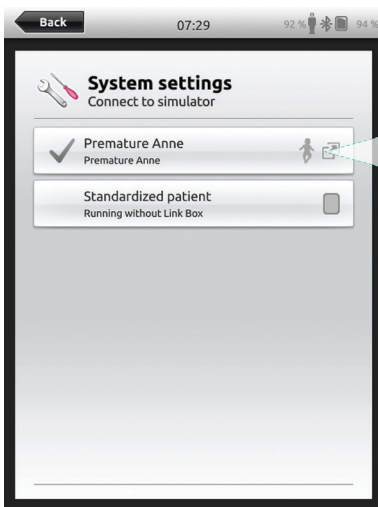
SimPad PLUS can be used with a standardized patient without connecting to the Link Box.

Select Standardized patient



Bluetooth

SimPad PLUS can also connect to Bluetooth enabled simulators.



SimPad PLUS - Network

Connect to a Network

All models of SimPad PLUS and Link Box PLUS are WiFi connected via SimLink (ad hoc network) by default. It is recommended to change it to a more suited network.

They can also be connected in the following ways:

- Using a standard network cable
- On a wired Ethernet network
- On a WiFi network

Using a Standard Network Cable



Connect to Wired Ethernet Network



Note

It is possible to be on a wired network and a WiFi network simultaneously. The network needs to have DHCP service.

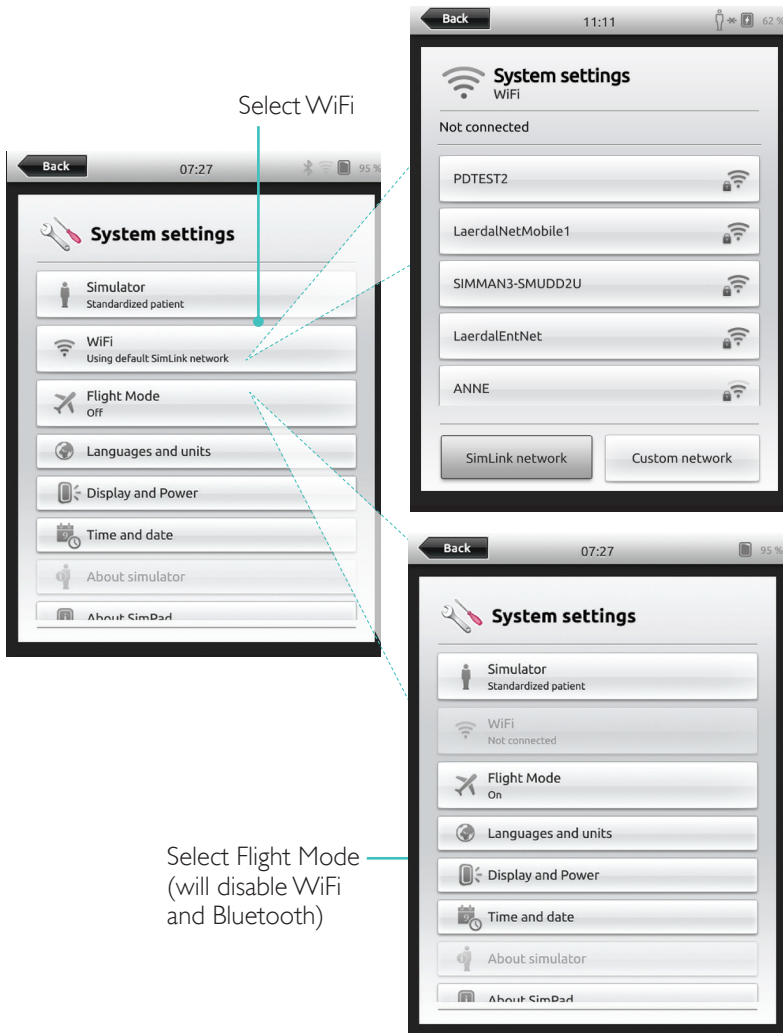
Connect SimPad PLUS and Link Box PLUS to network outlets.



Connection by wire

SimPad PLUS - Network

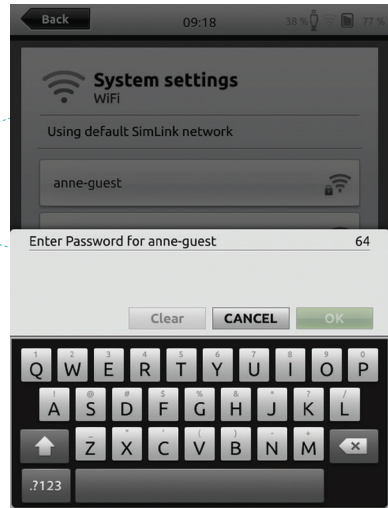
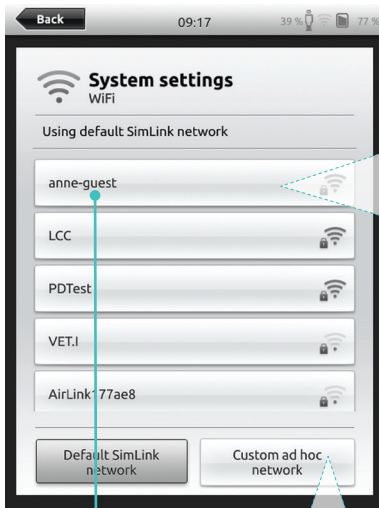
Connect to a WiFi Network



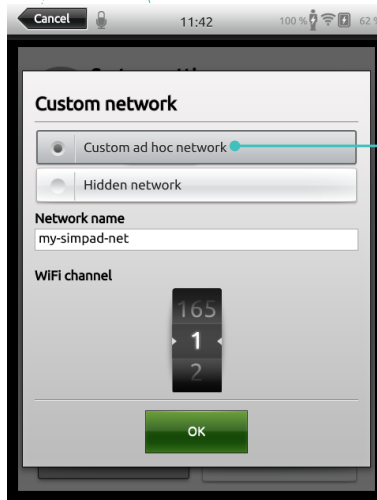
Note

Before moving Link Box PLUS to another WiFi network, ensure it is connected to SimPad PLUS with a network cable.

Connect to Another Network



Select the desired WiFi network from the list and enter the network password



Any other ad-hoc network can be created (optional)

SimPad PLUS - Software

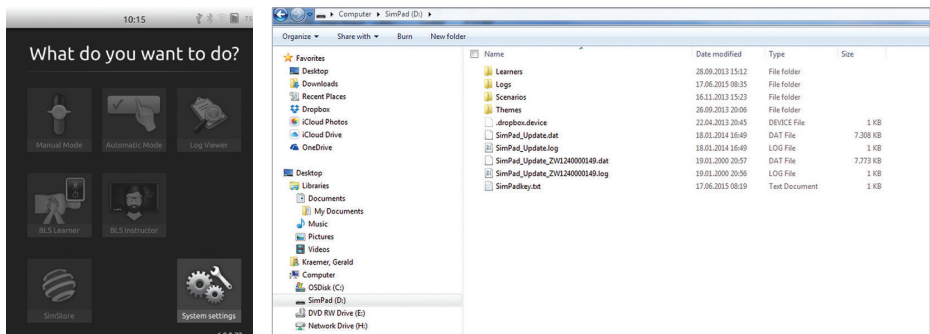
Update SimPad PLUS

Go to laerdal.com/simpadplus and check the Download section to find:

- Firmware updates, both via WiFi and USB
- Theme editor, to create new themes with states and interventions for the SimPad System.
- SimDesigner, to create new scenarios with states and interventions for the SimPad System.

Transferring Logs, Themes and Scenarios to and from a PC

Connect SimPad PLUS to the PC using the included USB cable.

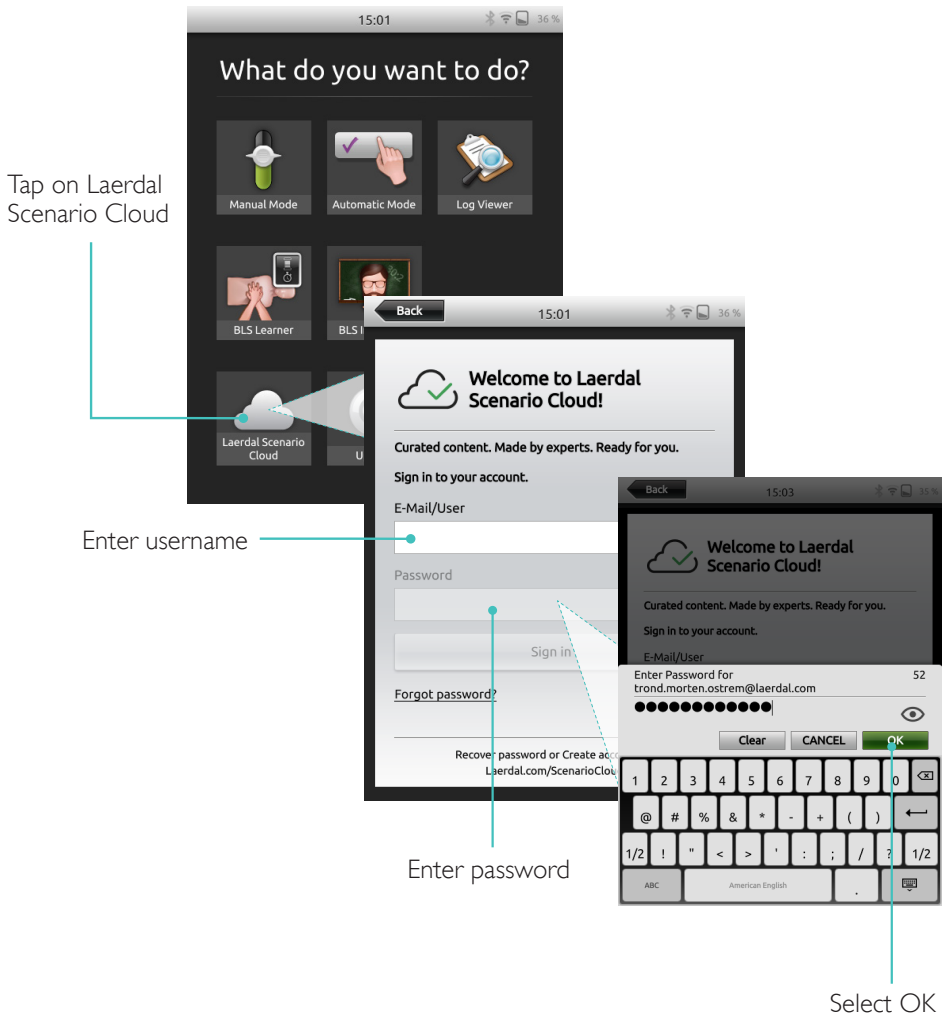


- Save new Scenarios in the Scenarios folder.
- Save new Themes in the Themes folder.
- Upload logs from the Logs folder.
- To safely disconnect SimPad PLUS, right click the SimPad PLUS drive and select Eject before removing the USB cable.

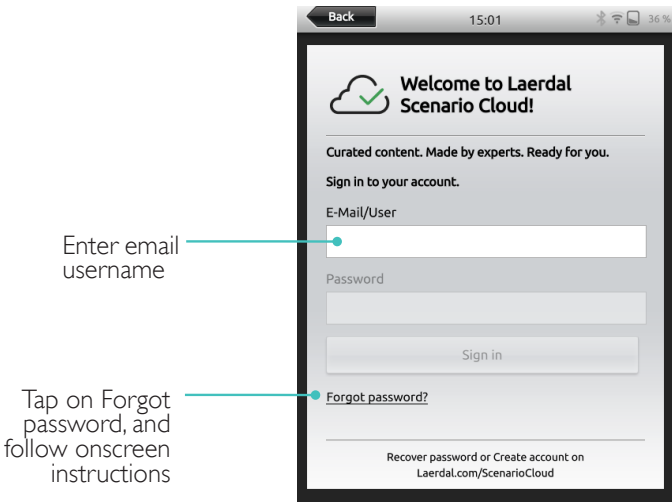
Laerdal Scenario Cloud

Laerdal Scenario Cloud is an online repository for curated Laerdal simulation scenarios. Sign up at <https://scenariocloud.laerdal.com/>

Log into Laerdal Scenario Cloud



Password Reset

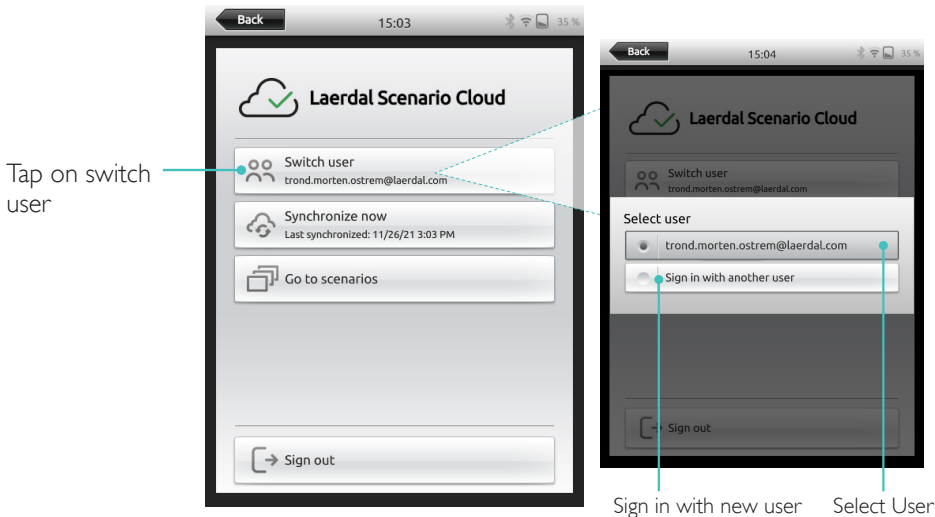


Note

You will be sent an email to complete the password reset process.
Check the inbox for the reset e-mail.

Switch User

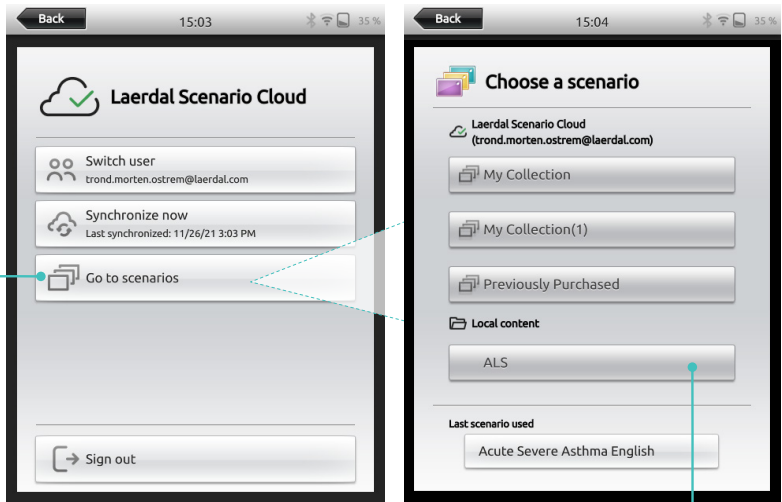
It is possible to change users in Laerdal Scenario Cloud.



Choose A Scenario

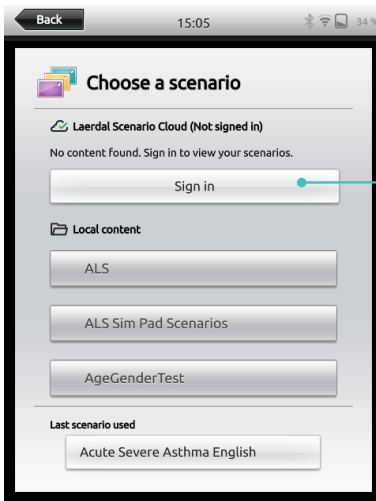
Laerdal Scenario Cloud has a collection of scenario ready to use.

Tap to open the scenario collections



Files uploaded from the computer via USB

Log in to Laerdal Scenario Cloud from Automatic mode



Sign in to Laerdal Scenario Cloud

Content will be synchronized with your online collections found in <https://scenariocloud.laerdal.com/myscenarios/>

Sounds

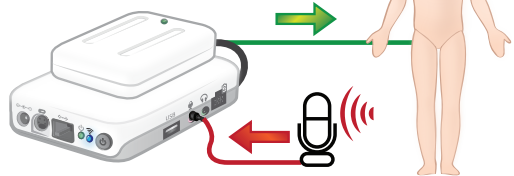
Headset

Create two-way communication between the operator and simulator by connecting a headset.

Plug headset into SimPad PLUS



The headset microphone will be routed to the manikin



■ = From instructor to manikin

■ = From manikin (separate microphone) to instructor.

Note

- The headset output on the Link Box PLUS duplicates the sound to the manikin. It can be used to improve the sound by adding additional speakers around the manikin.
- Some simulators have an internal microphone, and don't require a Link Box W setup.

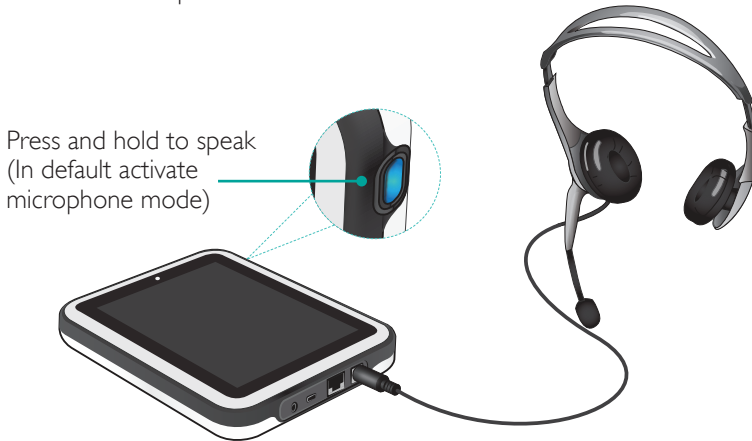
Vocal Sounds

Vocal sounds from the Patient Simulator such as crying, moaning etc. can be activated from the SimPad PLUS directly or via Themes and Scenarios.

For more information about vocal sounds and to create user defined vocal sounds see *Feature* section.

Auxiliary Button

The Auxiliary Button can be configured in Manual Mode or Automatic Mode preferences to enable and disable input from the headset.



Note

When the device is used wirelessly there will be a short voice delay.

SimPad PLUS - Laerdal Li-Ion Battery

Connect Two Laerdal Li-Ion Batteries



Batteries are discharged independently



Remaining battery capacity

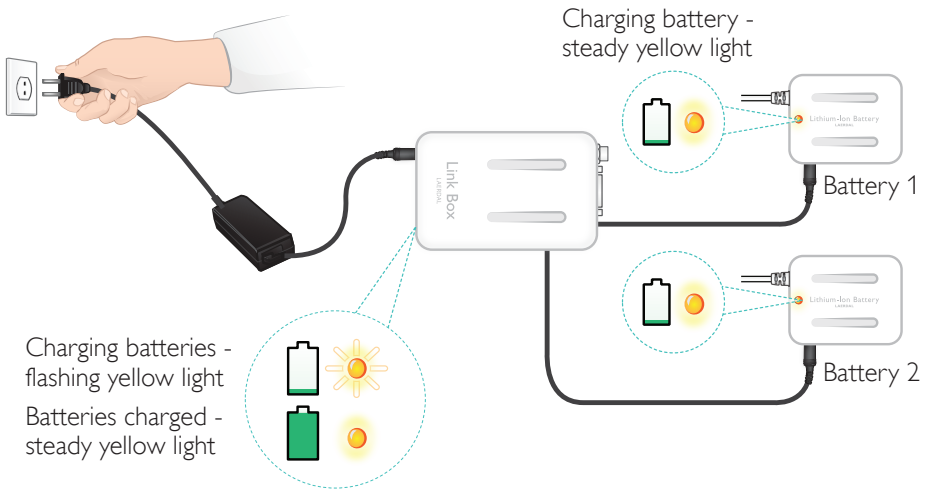
Charge Batteries

The batteries can be charged through the Link Box PLUS when the power is turned off and the Link Box PLUS is connected to the AC adapter.



Note

- The AC Adapter can only be used with SimPad PLUS and Link Box.
- For more information about Charging Batteries see Quick Setup Guide.



Note

Cannot use USB to charge

⚠ Warnings

- Do not use the Laerdal Li-Ion Battery for other purposes than specified.
- Use only the AC charger adapter supplied with the product.
- Do not use the battery in temperatures above what is specified in this User Guide or Important Product Information.
- Do not heat or incinerate.
- Do not crush the battery.
- Do not short circuit the battery contact.
- Do not immerse in water.
- The battery must be recycled and disposed of in accordance with local rules.
- Do not handle damaged or leaking Li-Ion batteries.
- Do not leave device in sleeve when charging.
- Do not leave battery drained. Recharge before storage.

Features

The available rhythms and rhythm parameters may vary from simulator to simulator.

Available ECG in SimPad PLUS System

Basic Rhythms	Rates Adult and Child	Rates Infant	Extra-systoles
Sinus	20 – 200	20 – 240	PVC PVC RonT Couplet PVC PAC/PJC
WPW	20 – 200	20 – 240	
Hyperkalemia	20 – 200	20 – 240	
Long QT	20 – 200	20 – 240	
Ischemia	20 – 200	20 – 240	
Inferior AMI, ST elevation	20 – 200	20 – 240	
Left Bundle Branch Block (LBBB)	20 – 200	20 – 240	
Righ Bundle Branch Block (RBBB)	20 – 200	20 – 240	
Atrial Tachycardia (Atach.)	140 – 260	90 – 320	
Supra Vent. Tachycardia (SVT)	140 – 260	90 – 320	
Atrial Flutter	75, 100, 150	75, 100, 150	
Atrial Fibrillation (AFib.)	50 – 240	50 – 240	
Junctional	40 – 220	40 – 220	
1° AV-Block	20 – 135	20 – 135	PVC PVC RonT Couplet PVC PAC/PJC
2° AV Block type #1	3:2,4:3, 5:4	3:2,4:3, 5:4	
2° AV Block type #2	4:3, 3:2, 2:1	4:3, 3:2, 2:1	
3° AV Block	10 – 50	20 – 100	
Ventricular Tachycardia (VT)	120 – 240	120 – 320	
Torsade de pointes	180	180	
Idioventricular	10 – 100	14 – 100	
Ventricular Fibrillation (VF)	0.1 – 1 mV	0.1 – 1 mV	
Asystole			
Ventricular Standstill			
Ventricular Pacemaker	50 – 150	50 – 150	

Blood Pressure

Blood Pressure			
Pressure range	Systolic: 0-300 mmHg / Diastolic 0-200 mmHg		
Accuracy	+/- 4 mmHg		
Calibration	Pressure sensor must be calibrated to sphygmomanometer: See Preferences menu.		
Pulse			
Available pulses	Carotid, Brachial, Radial and Umbilical (SimNewB) Only 3 pulses can be palpated simultaneously. (Power considerations).		
Palpated BP	Radial pulse turns off at systolic BP. Brachial pulse turns off at 20 mmHg, to prevent noise generation in auscultation area.		
Default	Adult Manikin	Child Manikin	Infant Manikin
Default Blood Pressures (mmHg)	120/80	100/70	60/40 (SimPad PLUS)

Adult and Child pulses are automatically adjusted to BP as follows:

Systolic BP	Carotid Pulse	Radial/Brachial Pulse
>= 88	Normal	Normal
< 88	Normal	Weak
< 80	Normal	Absent
< 70	Weak	Absent
< 60	Absent	Absent

Infant pulses are automatically adjusted to BP as follows:

Systolic BP	Carotid Pulse	Radial/Brachial Pulse
>=80	Normal	Normal
< 80	Weak	Weak
< 76	Weak	Absent
< 40	Absent	Absent

Newborn pulses are automatically set to absent when Systolic BP is below 10 mm Hg. Otherwise newborn pulses are normal.

Features

Heart Sounds

Heart sounds are synchronized to ECG.

Heart Sounds	Adult Manikin	Child Manikin	Infant Manikin
Normal	•	•	•
Aortic Stenosis	•	•	•
Austin Flint Murmur	•	•	•
Mitral Valve Prolapse	•	•	
Systolic Murmur	•	•	•
Diastolic Murmur	•		
Friction Rub	•		
Opening Snap @70 msec	•		
Still's Murmur		•	•
Atrial Septal Defect (ASD)		•	•
Ventricular Septal Defect (VSD)		•	•
Pulmonary Stenosis			•

Lung Sounds

Lung sounds are synchronized to breathing rates, adjustable from 0 – 60 breaths per minute.

Lung sounds	Adult Manikin	Child Manikin	Infant Manikin
Normal Breath Sounds	•	•	•
Fine Crackles	•	•	•
Coarse Crackles	•	•	•
Pneumonia	•	•	•
Wheeze	•	•	•
Stridor	•	•	•
Pleural Rub	•		
Rhonchi	•	•	•

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