EN

SimPad

User Guide

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helping save lives

Intended Use

The SimPad 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 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 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
- Link Box
- SimPad PLUS
- Link Box PLUS

SimPad and Link Box, when used throughout this User Guide, applies to both SimPad PLUS and Link Box PLUS models, unless otherwise specified.

Items included may vary in appearance and are subject to change.

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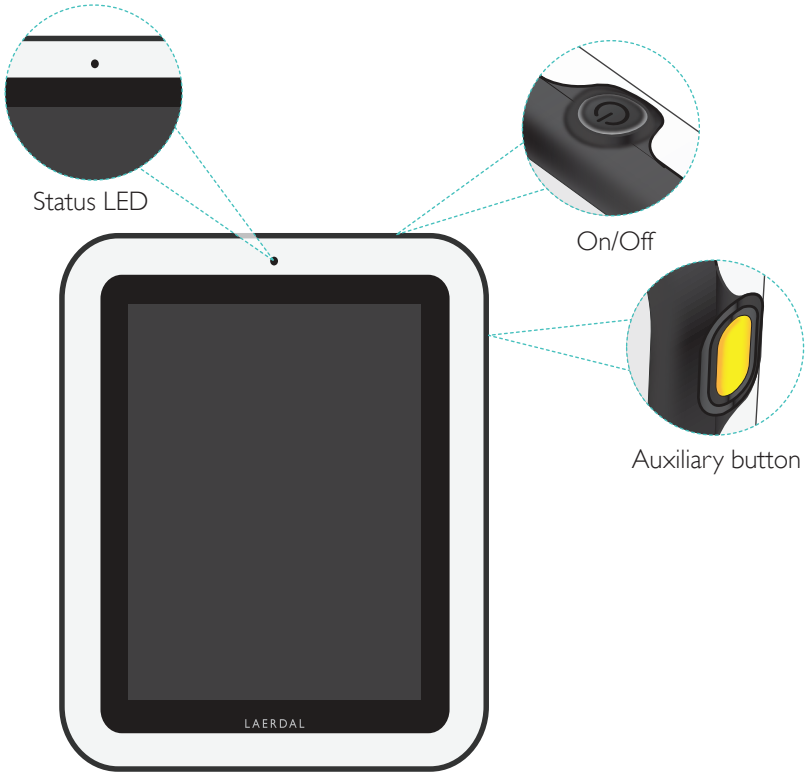
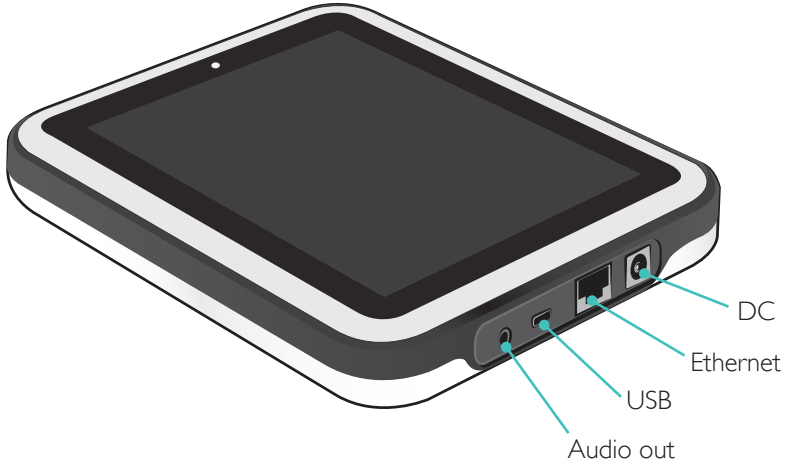
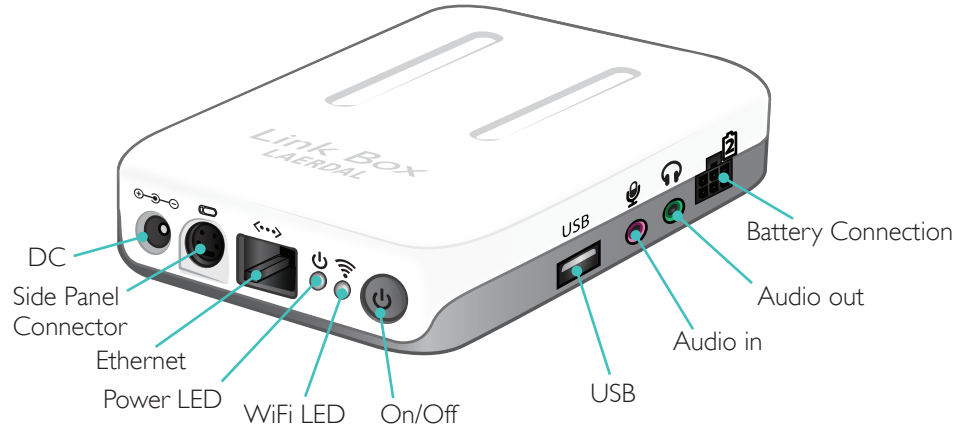
For further information and to access all product downloads visit www.laerdal.com/SimPad.

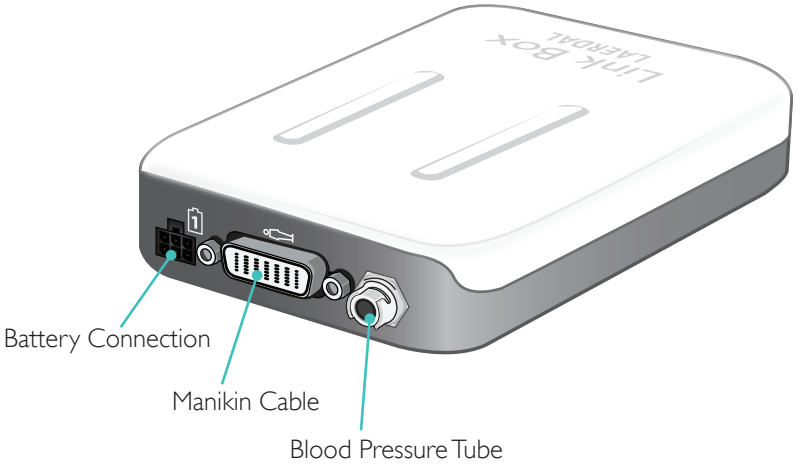


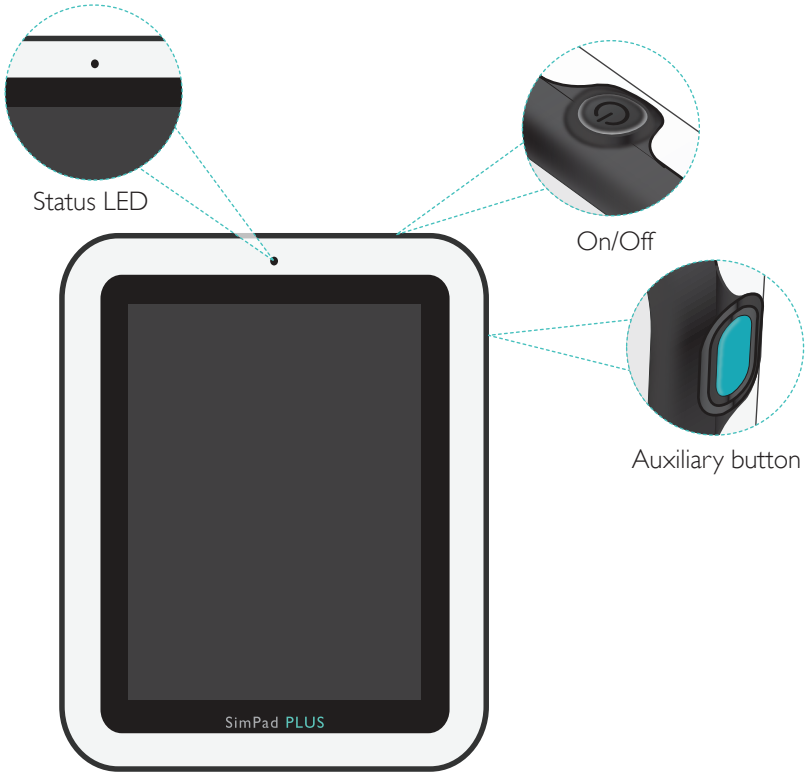


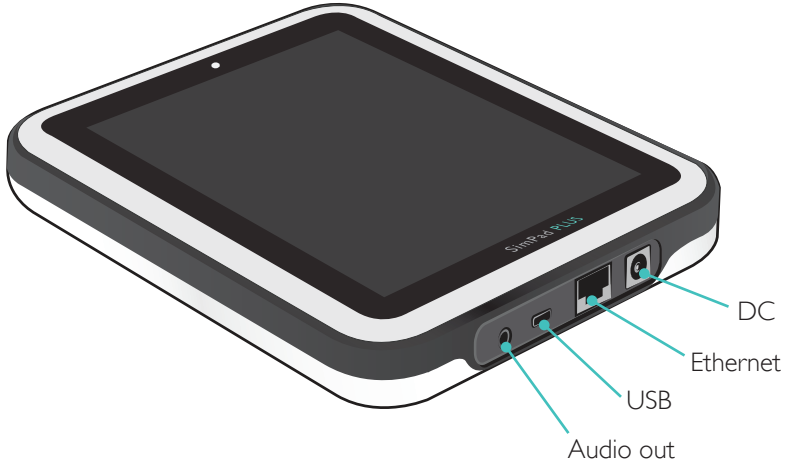
Front View



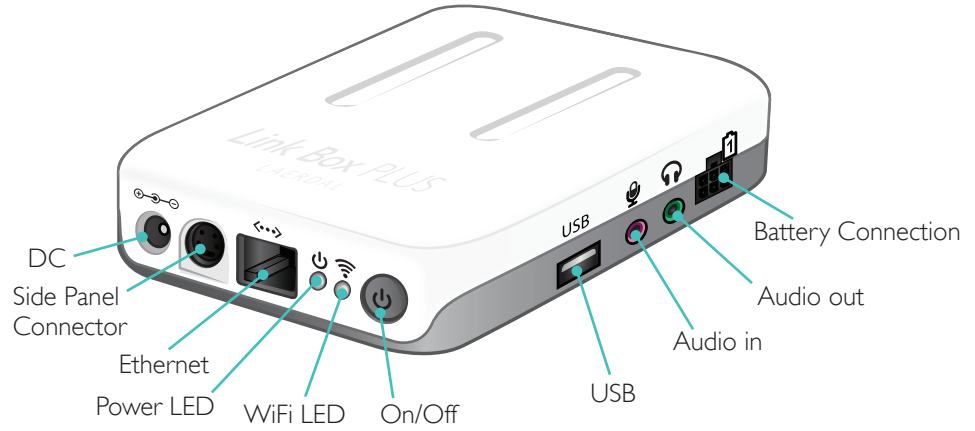
Back View



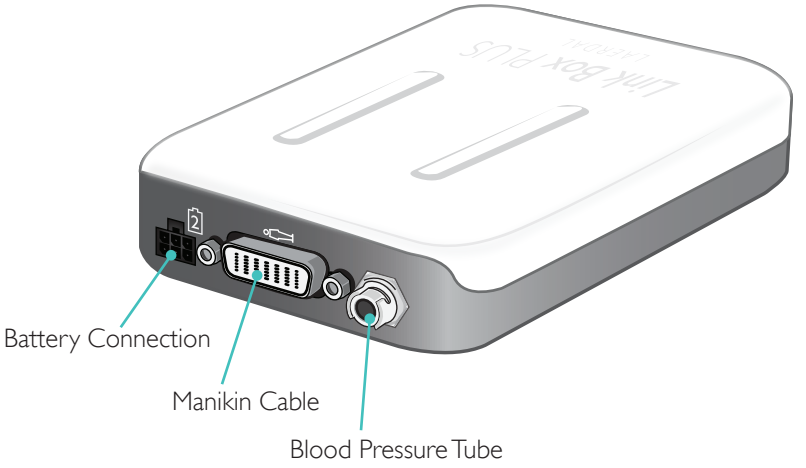




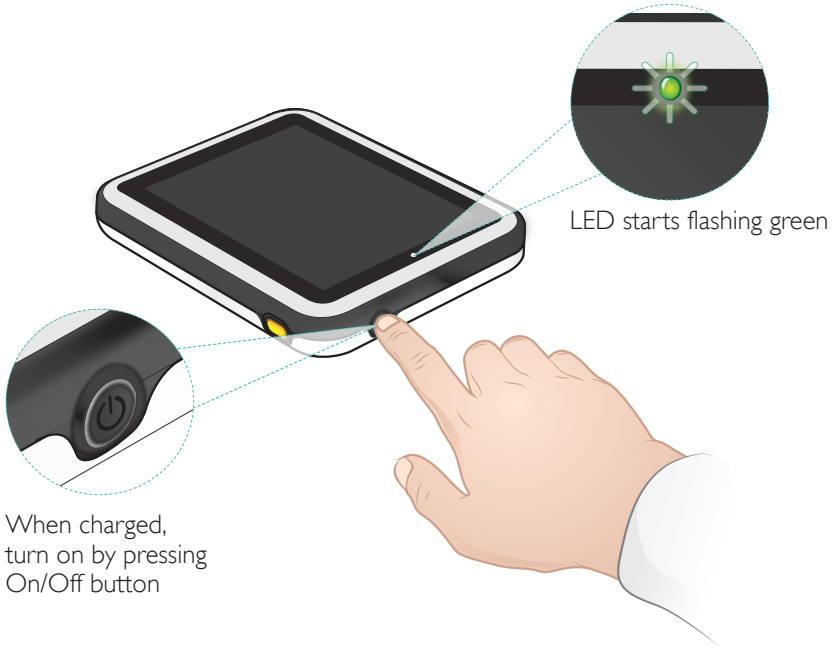
Front View

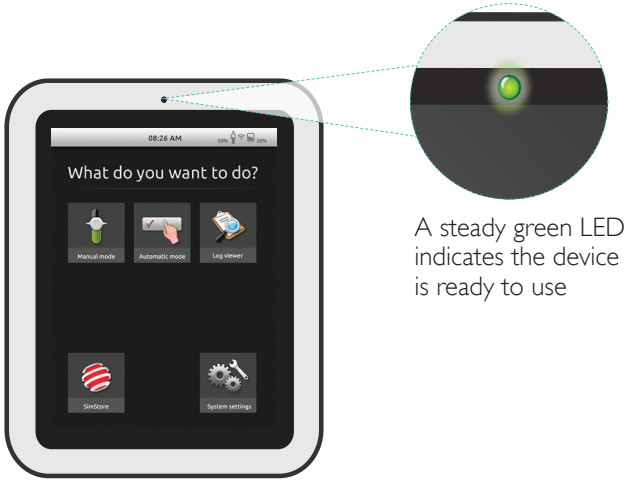


Back View

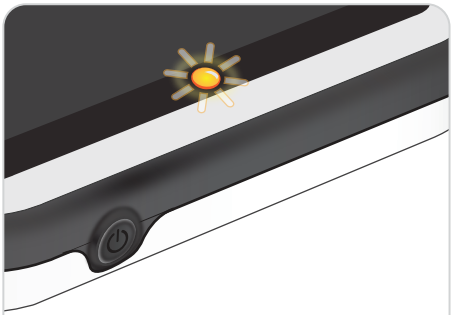


Turn On

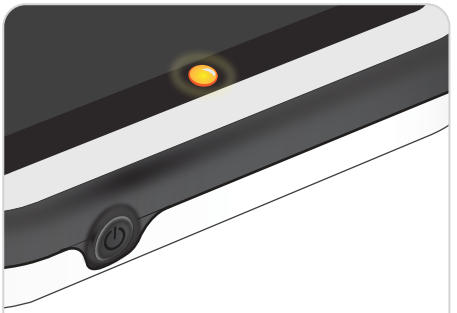




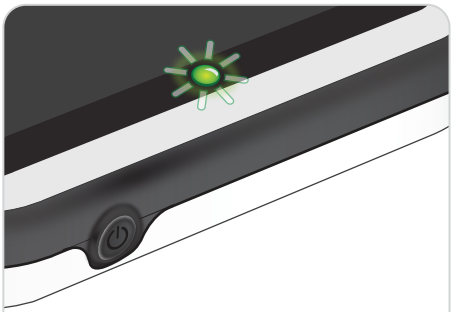
Status LED



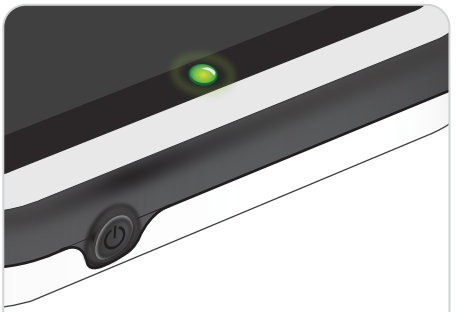
Off and charging battery -
flashing yellow light.



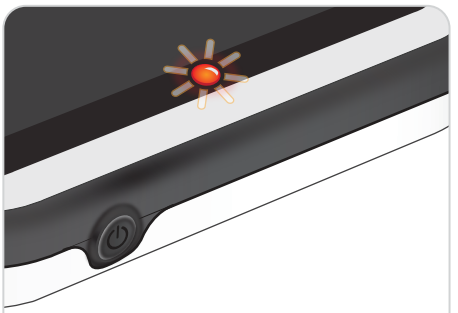
Off but battery charged -
steady yellow light.



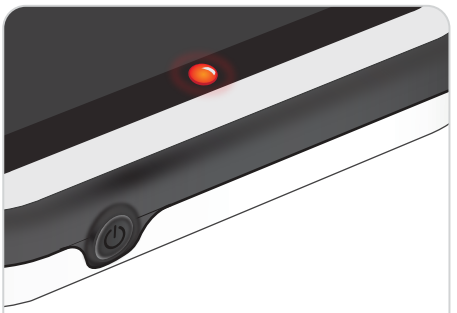
Starting and shutting down -
flashing green light.



On - steady green light.



Low battery - flashing red light.

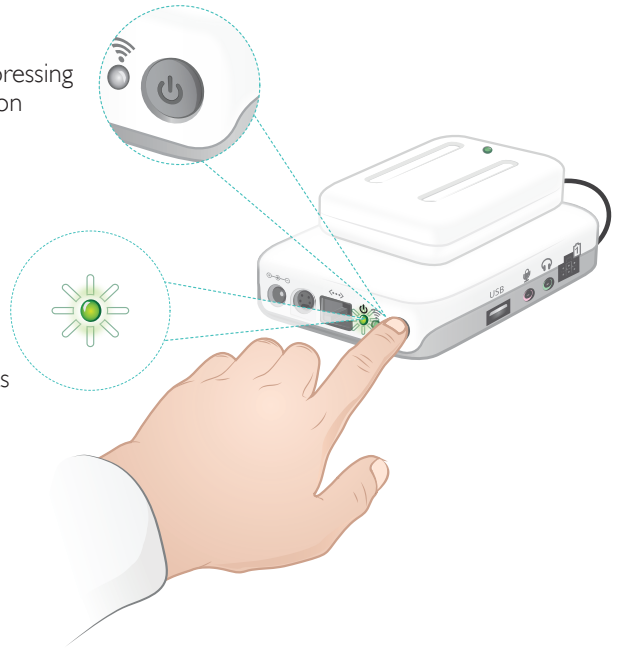


Error, needs service - steady red light.
Contact your local Laerdal representative.

Turn On

Turn on by pressing On/Off button

Release the button when the LED starts flashing green



A steady green LED indicates the device is ready to use

Status LED

The Power LED also indicates status.

Charging batteries - flashing yellow light.

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.

Starting for the First Time

Follow the on-screen prompts to configure the device.

Configuration

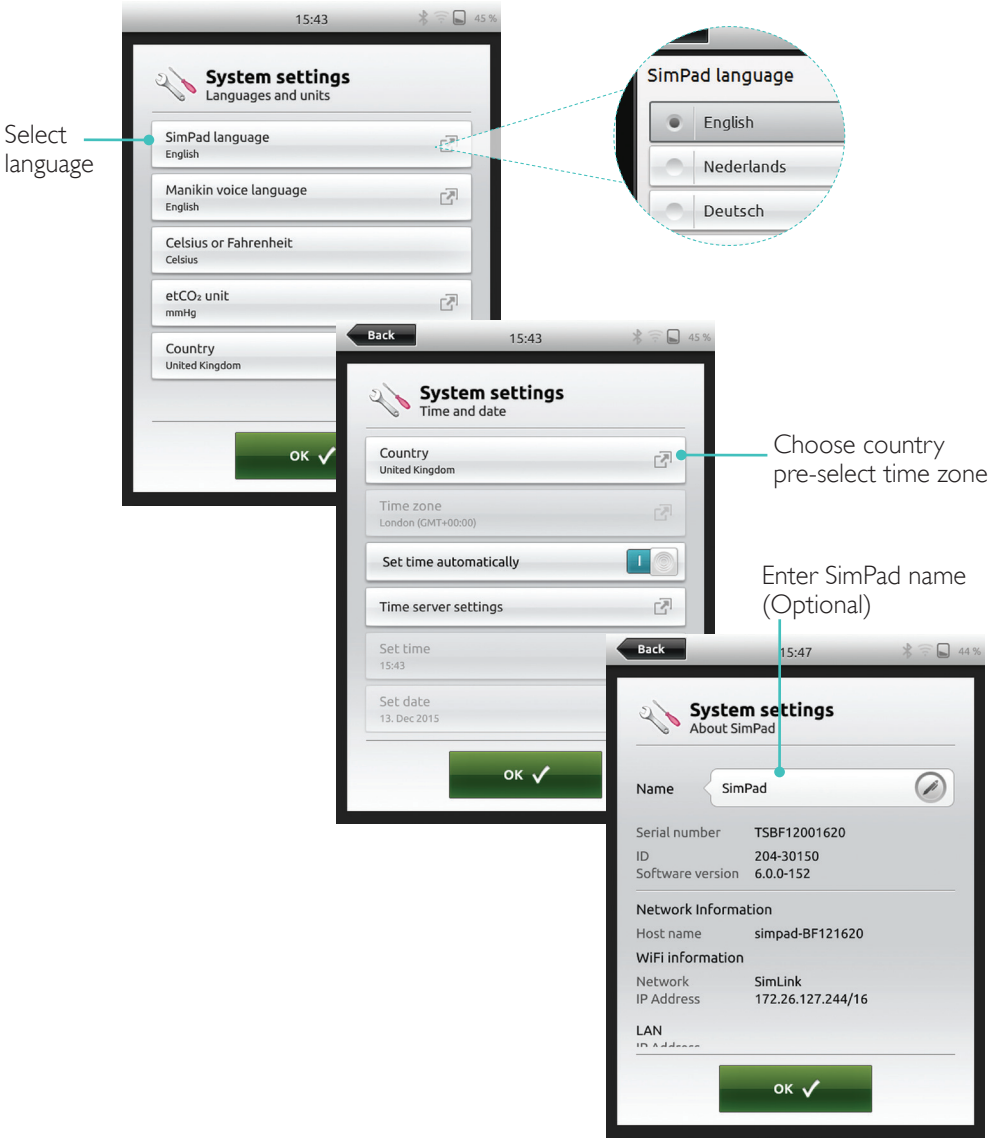
Configuration can only be done when the simulator, manikin or task trainer is connected to SimPad.

Note

These configurations may be altered later.

Starting for the First Time

Follow the on-screen prompts to configure the device.



Configuration

Configuration can only be done when the simulator, manikin or task trainer is connected to SimPad PLUS.

Note

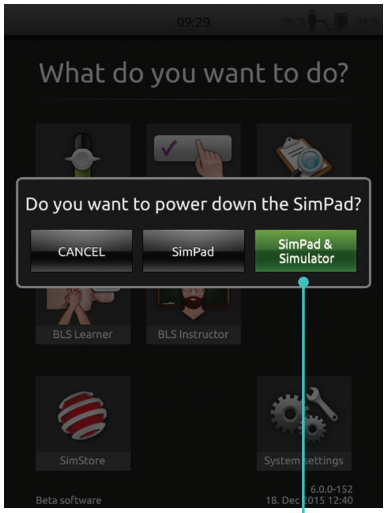
These configurations may be altered later.

Turn Off

SimPad

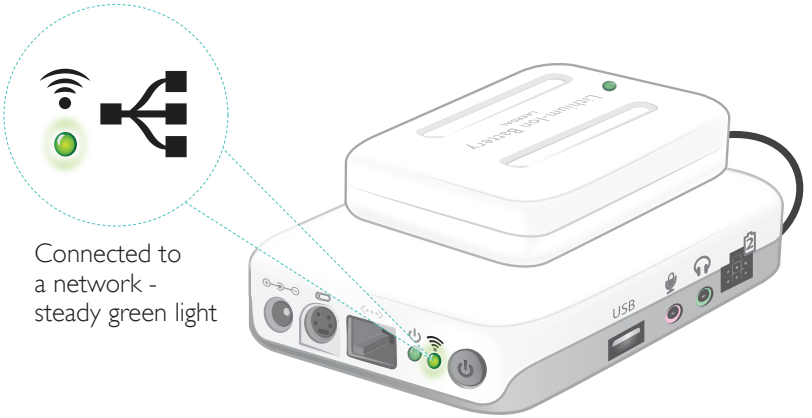
Tap to shutdown SimPad and/or Link Box

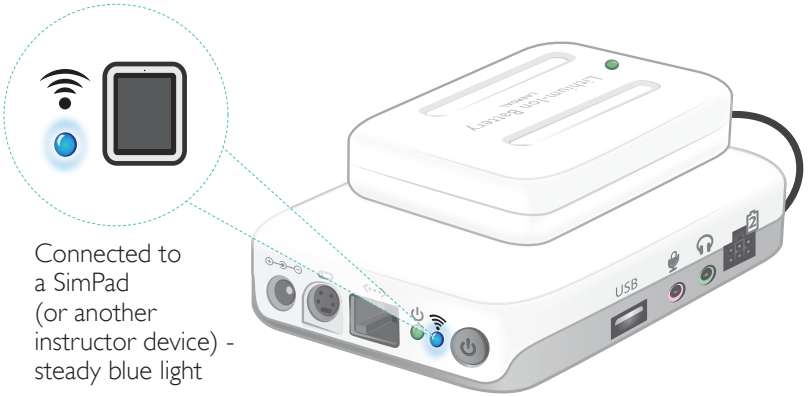
SimPad PLUS



Tap to shutdown SimPad and/or Simulator

WiFi Connection

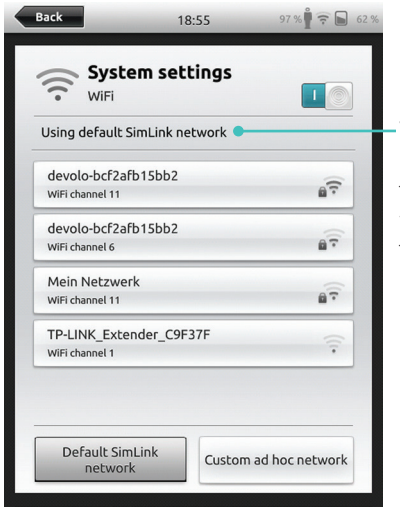




Connection between SimPad and Link Box

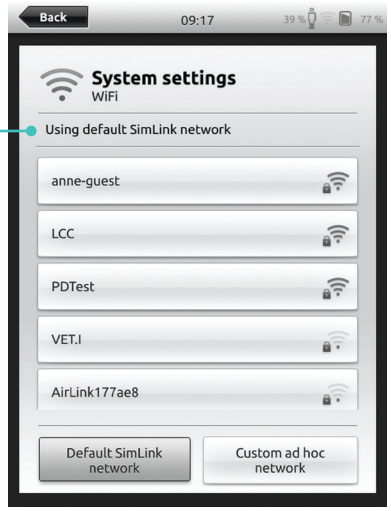
SimPad communicates with the Link Box using WiFi.

SimPad



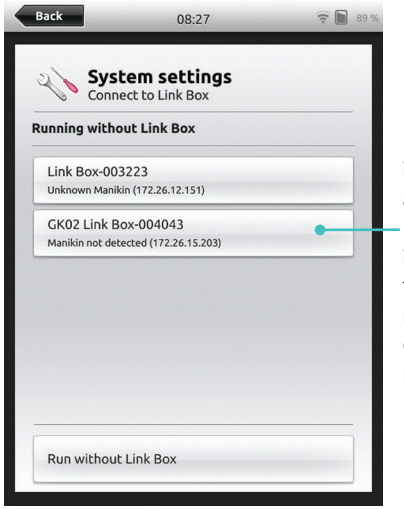
When the units are turned on for the first time they will set up an ad hoc network called SimLink

SimPad PLUS



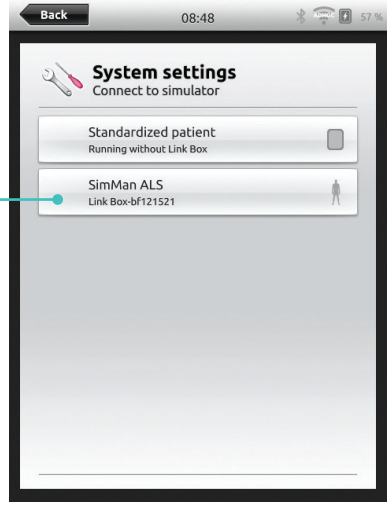
If no other Link Box is visible on the default SimLink network, the SimPad will automatically connect to the available one. This pairing is remembered and the units will reconnect when turned on again. When multiple Link Box/Simulator are available, choose the preferred option.

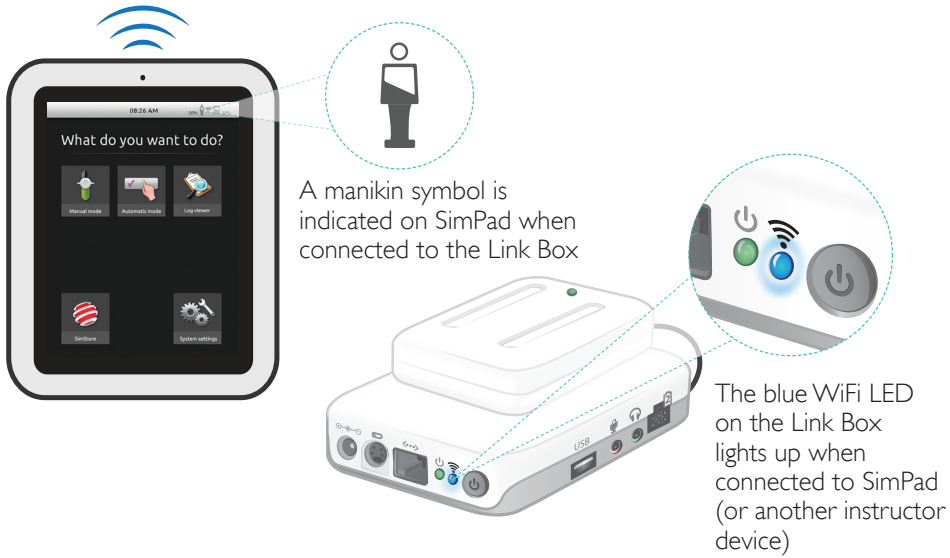
SimPad

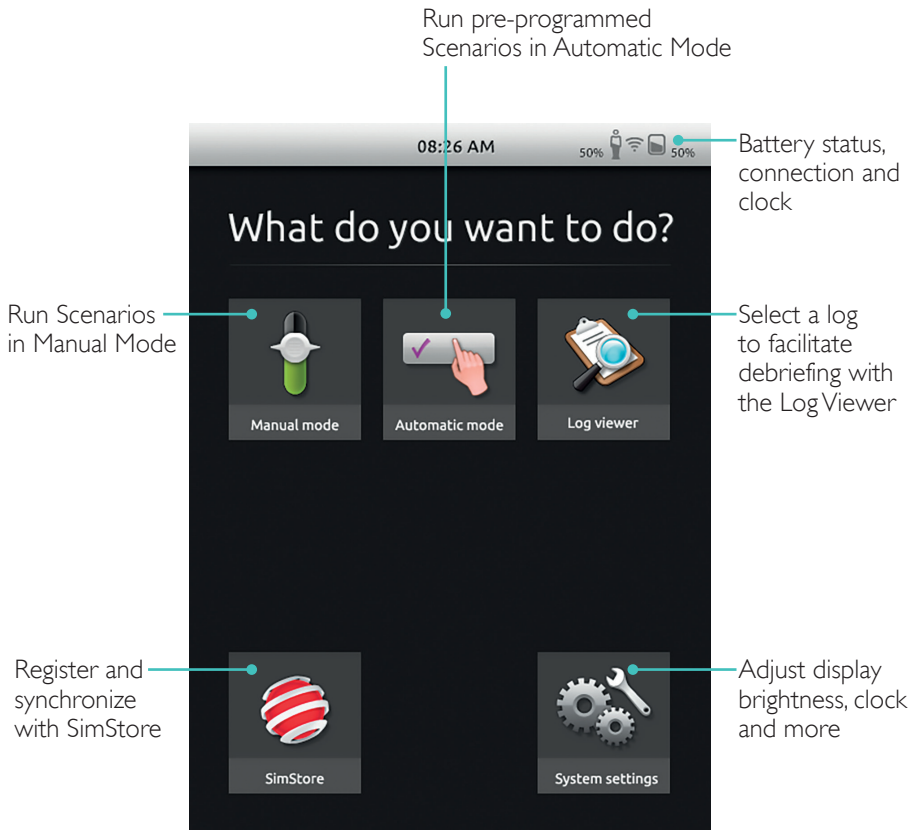


Select the appropriate Link Box/ Simulator from the manikin connection menu

SimPad PLUS

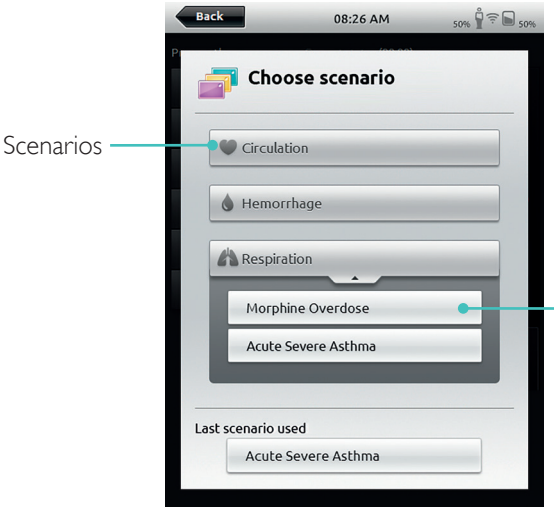


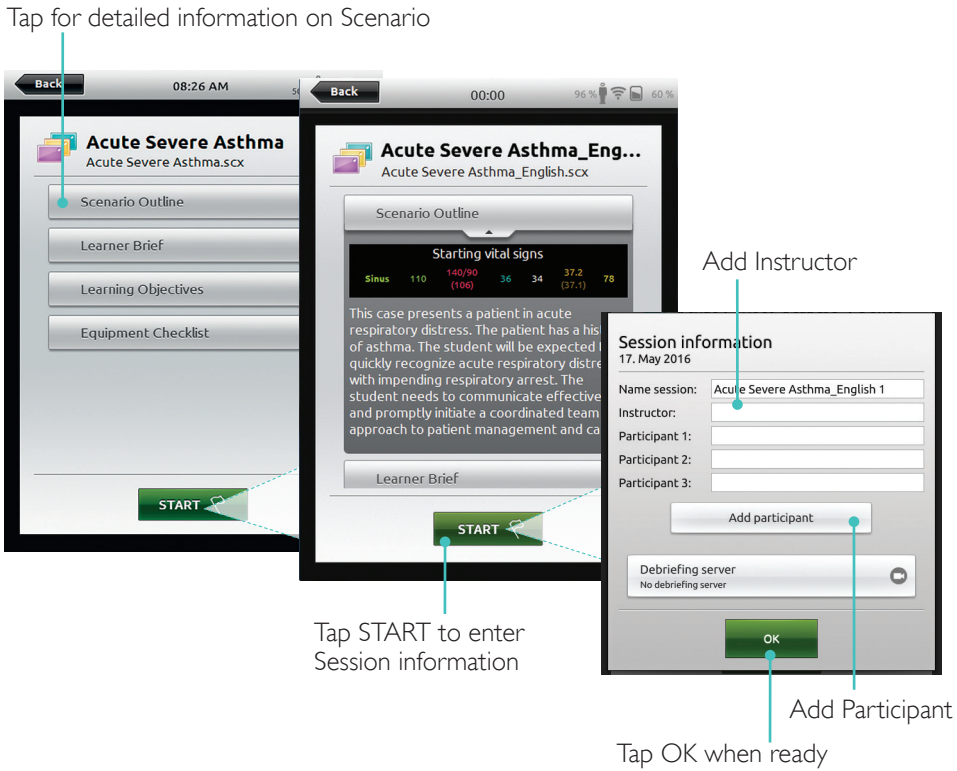




Home screen may vary in appearance based on purchased licenses.

Select Scenario





Run Session

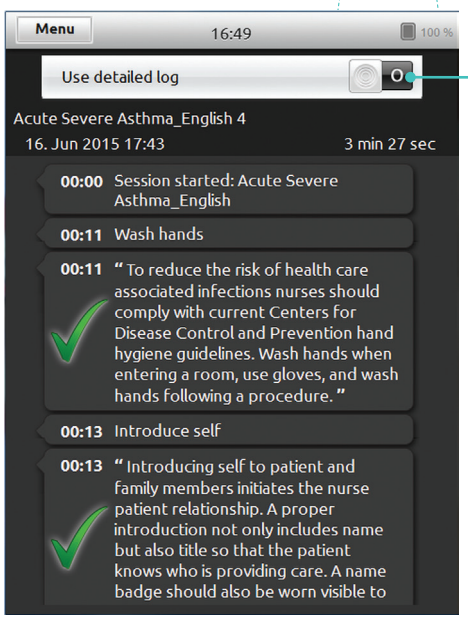
Change Parameters

End Session

Tap menu to End Session

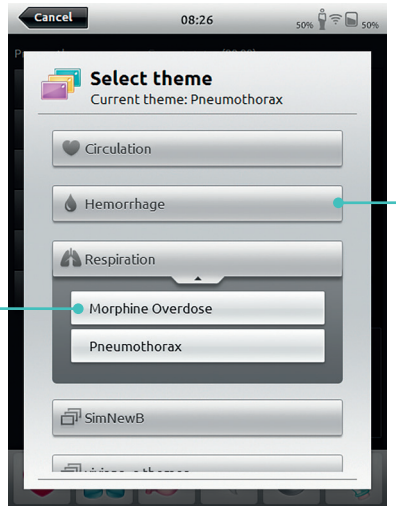
Open current Session log

End Scenario



Display more or less information

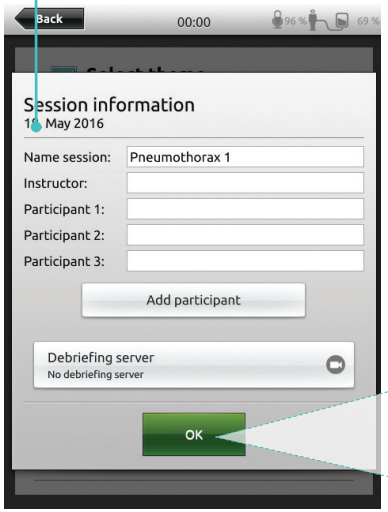
Select Theme



Folder of themes
Tap to open

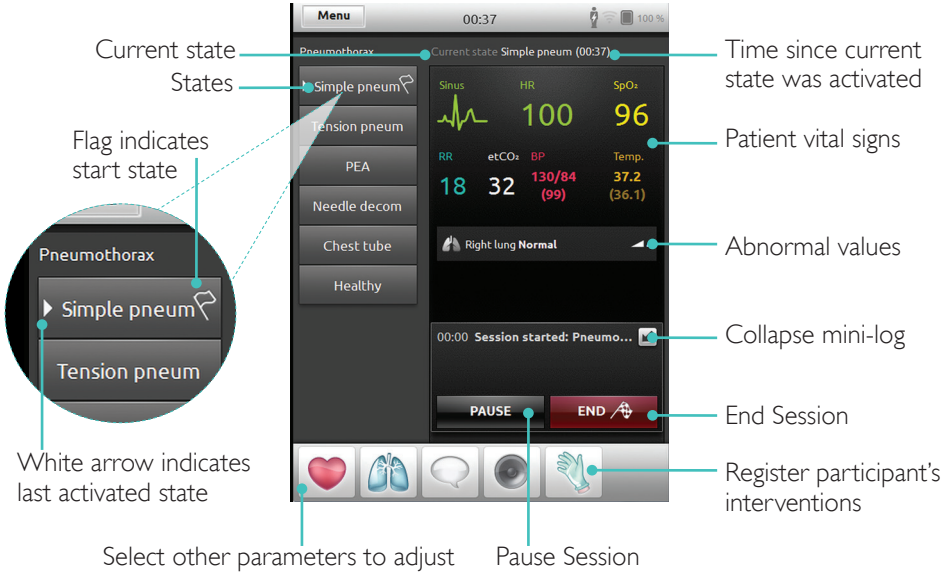
Select theme
for simulation

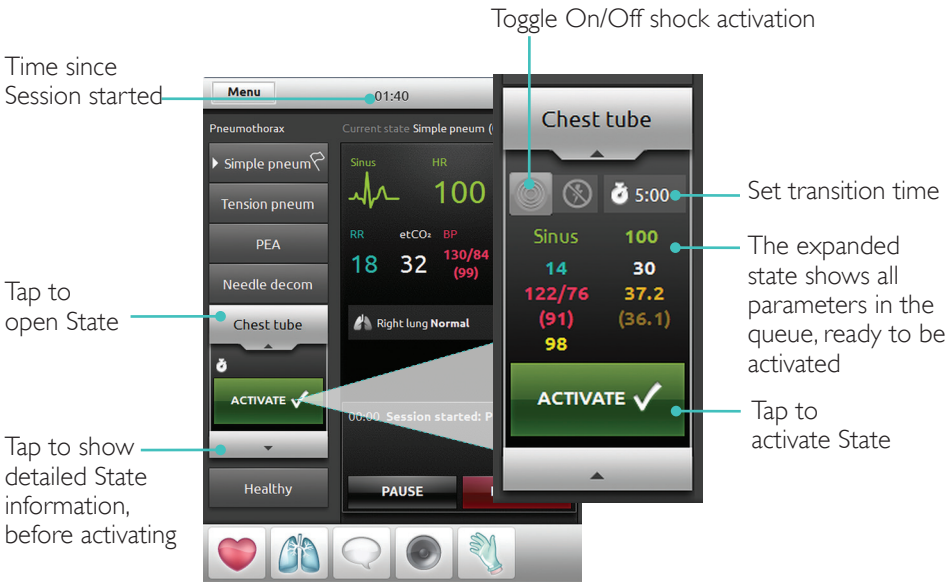
Information about Session entered here will be added to log



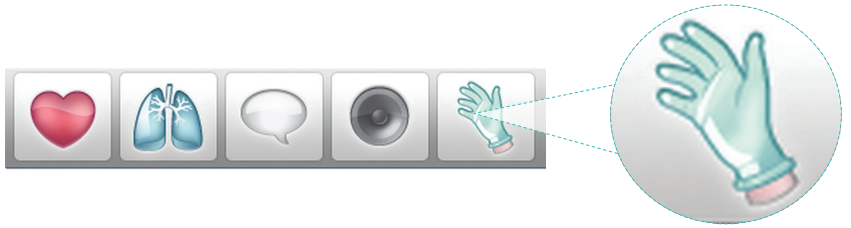
Tap to start Session

Change Parameters



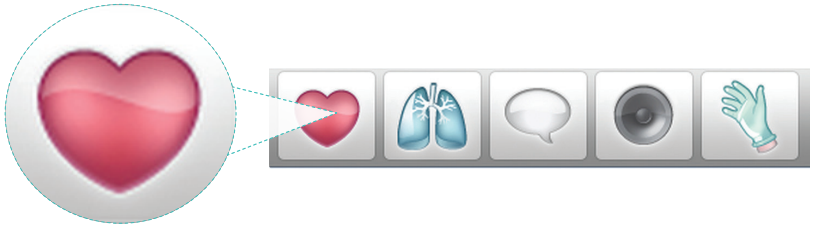


Registering Interventions



Tap to register participant's interventions

Create New State for an Existing Theme



Tap to access Circulation Menu

Select desired parameter

New state visible

Tap to create a new state

Adjust Parameters Manually

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

For fine adjustments, hold finger over slider

Drag to adjust parameters

Activate the new value

Advanced Adjustments

Tap to set desired condition

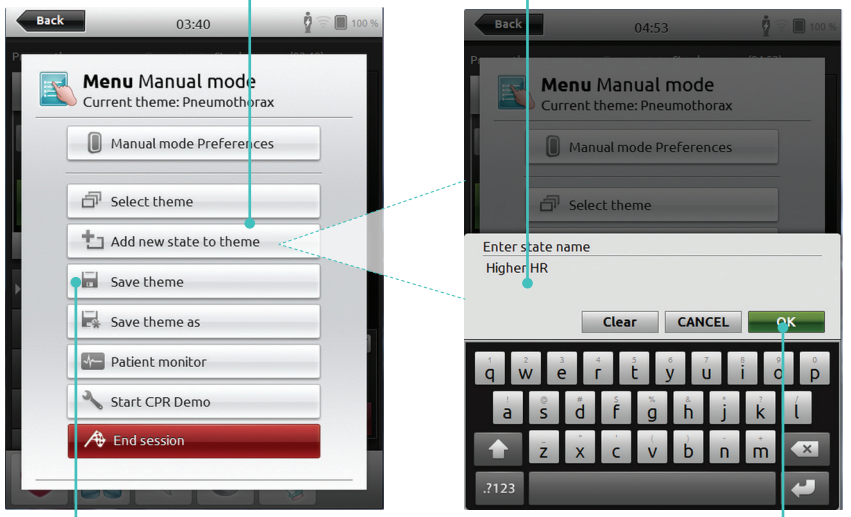
Select a parameter from the menu

Update the currently open state

Add New State to an Existing Theme

1. Tap to add new state to theme

2. Enter new state name



4. Tap to save state to theme

3. Confirm

New state is now ready

Tap and hold to arrange states

Tap x to delete

Stopwatch

Tap to display and activate the Stopwatch

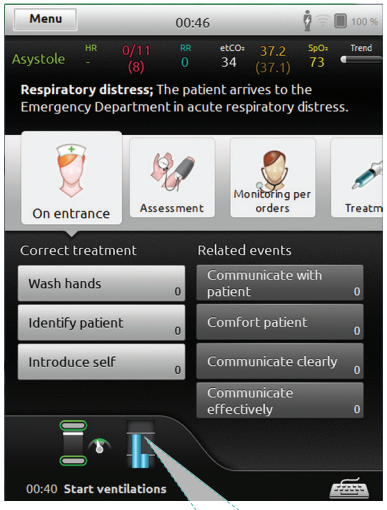
View Log

QCPR Feedback

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

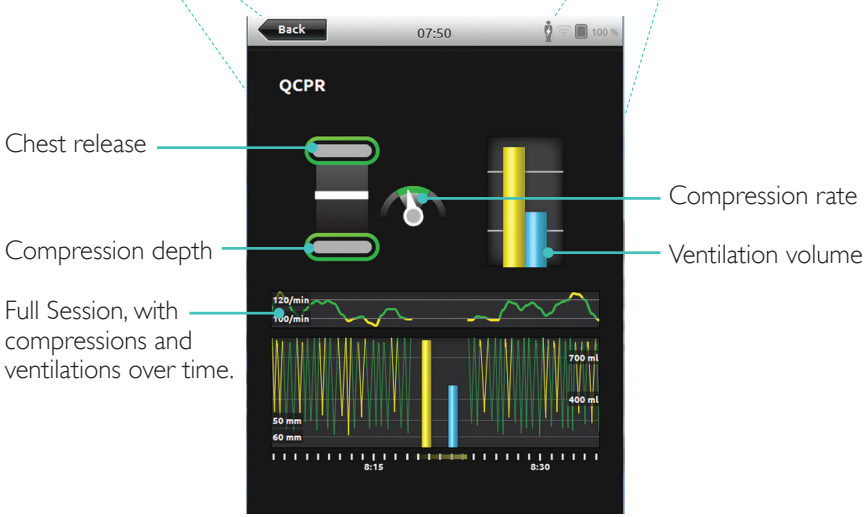
Automatic Mode -

Tap to enlarge QCPR feedback



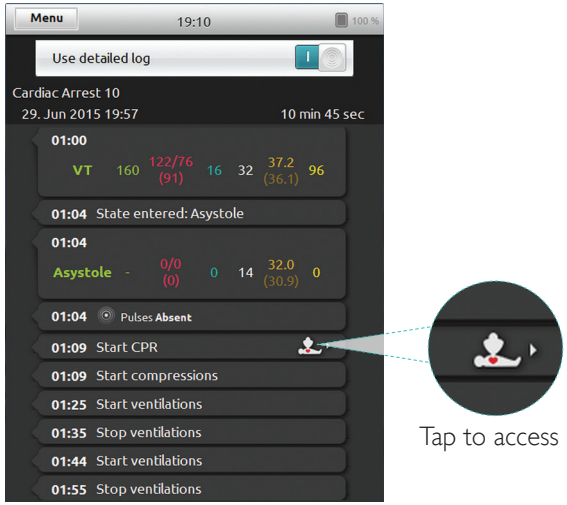
Manual Mode -

Tap to enlarge QCPR feedback

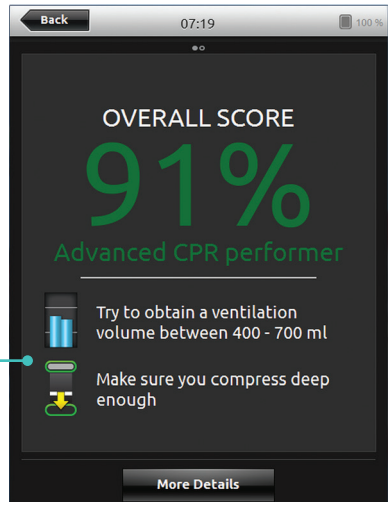


QCPR Log File

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

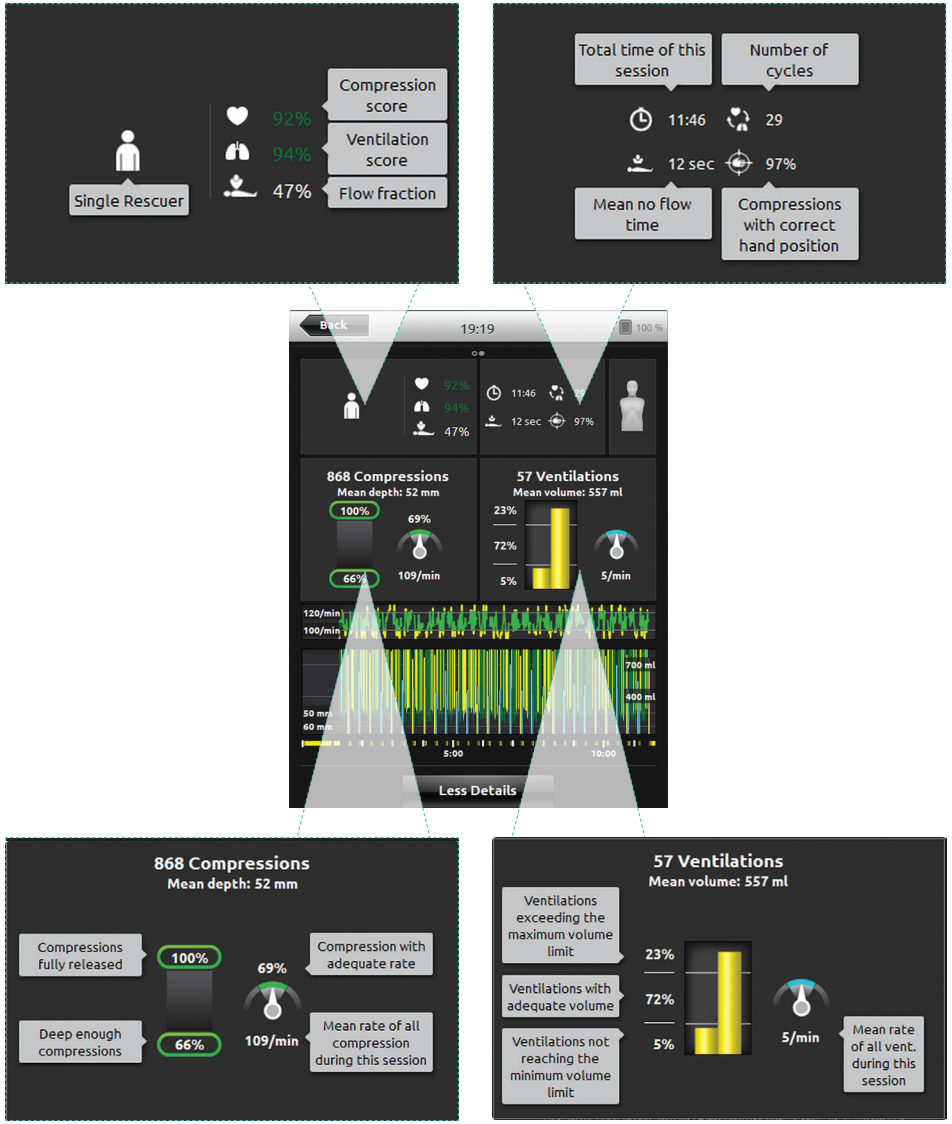


Tap to access log



Indicates two main findings from the CPR performance

QCPR Summary



Compression Analysis Over Time

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

Display Choices

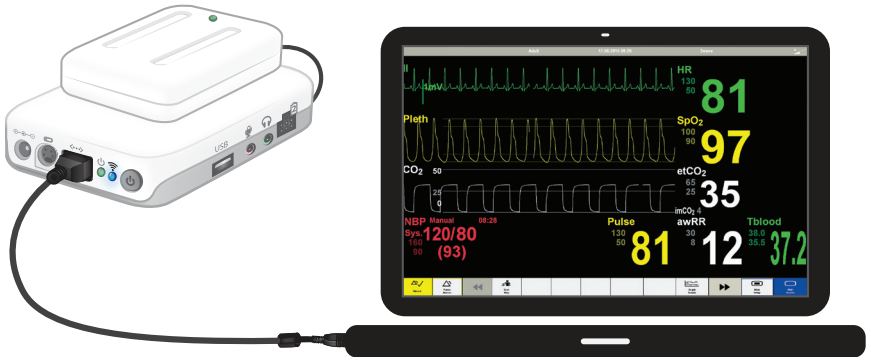
With overall score

Without overall score

Connect a Simulated Patient Monitor

Ensure the Simulated Patient Monitor PC and the SimPad System are connected to the same network.

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

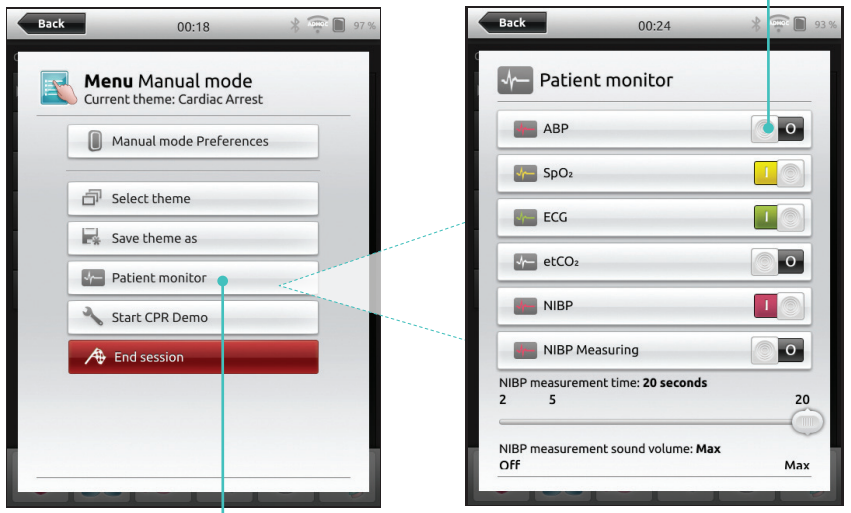


Using a direct network cable to connect the Link Box to the Simulated Patient Monitor is recommended to minimize WiFi traffic.

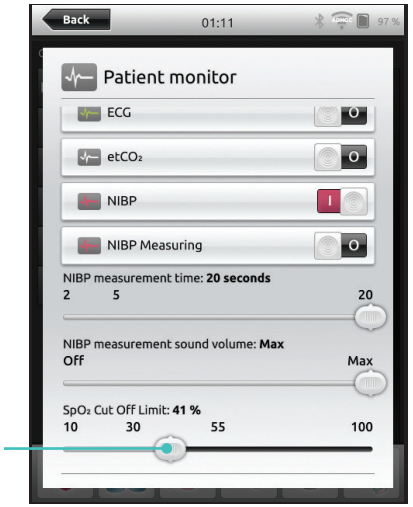
Instructor Control of Simulated Patient Monitor

When the Simulated Patient Monitor (optional item) is connected to SimPad, the instructor can toggle the display of vital signs. Navigate to manual mode and select Patient Monitor.

Toggle On/Off vital signs



Navigate to menu and select Patient Monitor



Select Cut Off limits

Patient Simulator Firmware Update

When Link Box 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.

⚠ Caution

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

SimPad

From Home Screen, go to:
System Settings > About Link Box > Force-update simulator firmware.

SimPad PLUS

From Home Screen, go to:
System Settings>About simulator>Force-update simulator firmware.

Session Viewer

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

To download, visit www.laerdal.com/downloads

Connect SimPad to a different Link Box

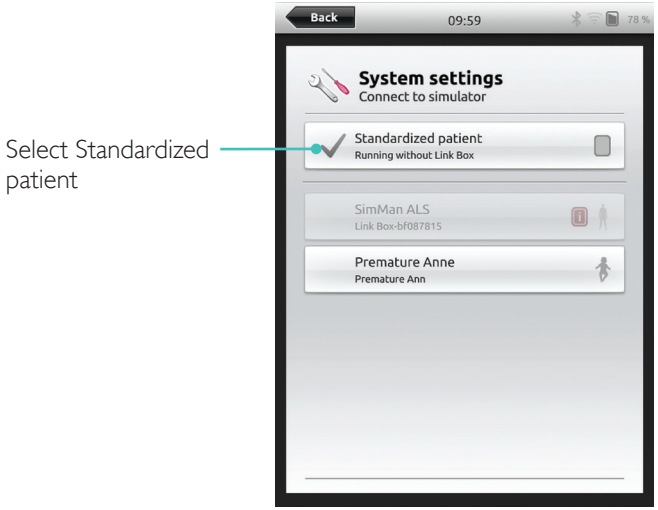
SimPad can only be connected to one Link Box at a time. SimPad will try to re-establish a connection to any previous Link Box that it was connected to.

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.

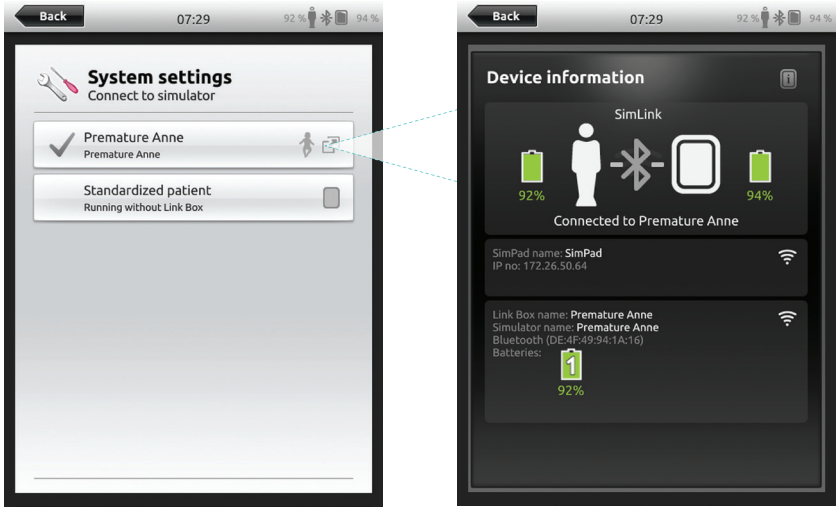
Use SimPad PLUS without a Link Box PLUS

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



Bluetooth

SimPad PLUS can also connect to bluetooth enabled simulators.



Connect to a Network

All models of SimPad and Link Box are connected via SimLink (ad hoc network) by default.

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.

Connect SimPad and Link Box to network outlets. The network needs to have DHCP service.

SimPad

Connection by wire

SimPad PLUS

Connection by wire

Connect to a WiFi Network

Note

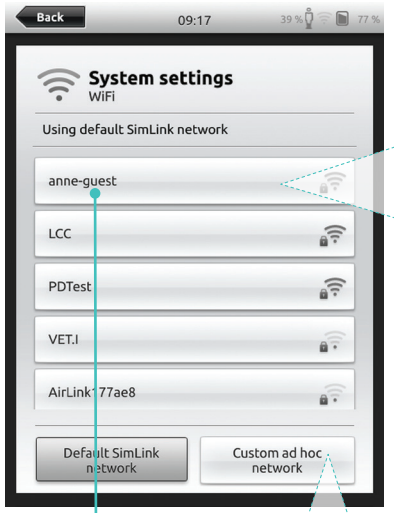
Before moving Link Box to another WiFi network, ensure it is connected to SimPad with a network cable.

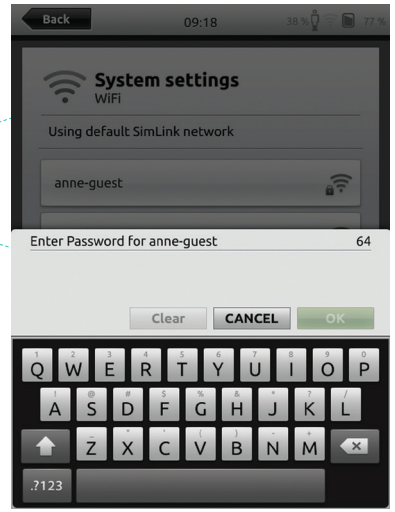
Connect to a WiFi Network

Note

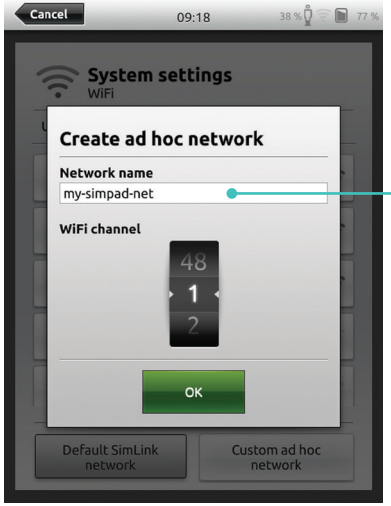
Before moving Link Box PLUS to another WiFi network, ensure it is connected to SimPad PLUS with a network cable.

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)

SimStore is the place to find peer validated content to standardize your simulation education. Unlock the full potential of SimPad manikins, education staff and students.

SimStore offers pre-programmed content mapped to clinical guidelines and developed by industry-leading experts. Reducing on-the-fly operation and using pre-programmed scenarios can help present a more realistic clinical encounter and increase the simulation investment.

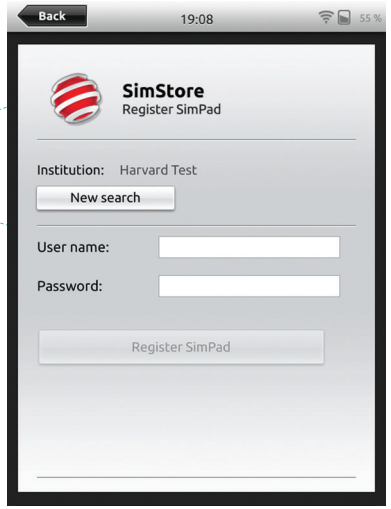
To access, visit www.mysimcenter.com

Visit SimStore to find:

- Immediate online access to world wide, validated content
- Standardized and repeatable training measures
- Easy search, find, and pay navigation
- Flexibility to purchase only what is required

Register SimPad on SimStore

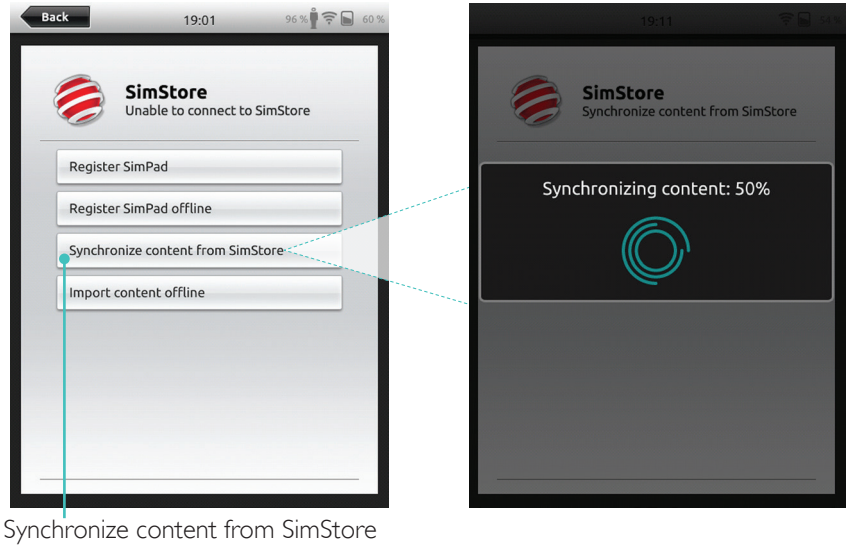
SimPad needs to be connected to a network in order to register with SimStore online. See *Network* section.



SimPad can also be registered offline. A device key will be generated. Register the device from a PC.

Synchronize SimPad with SimStore

After SimPad has been registered on SimStore, administration of SimStore content for SimPad and purchasing Scenarios on SimStore must be done from a PC.



Synchronize content from SimStore

For more information visit www.mysimcenter.com

Theme Editor

Theme Editor creates new themes with states and interventions for the SimPad System. Theme Editor can be downloaded from www.laerdal.com/themeeditor/ and be used offline.

Note

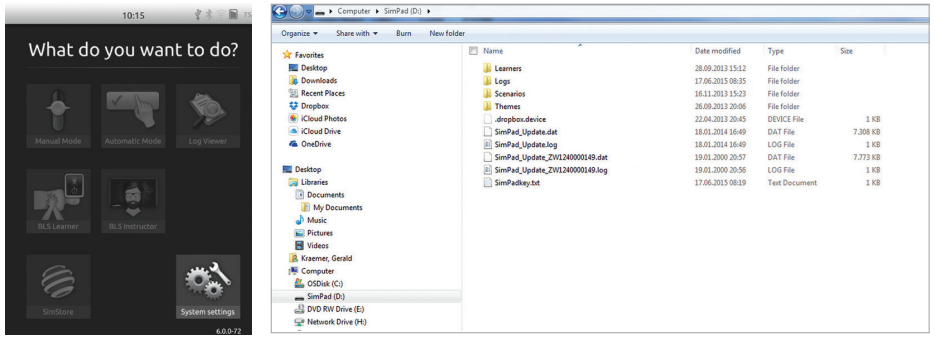
Theme Editor will only be accessible using Internet Explorer.

SimDesigner

SimDesigner creates new scenarios with states and interventions for the SimPad System. SimDesigner can be downloaded from www.laerdal.com/SimPad.

Transferring Logs, Themes and Scenarios to and from a PC

Connect SimPad to the PC using the included USB cable.



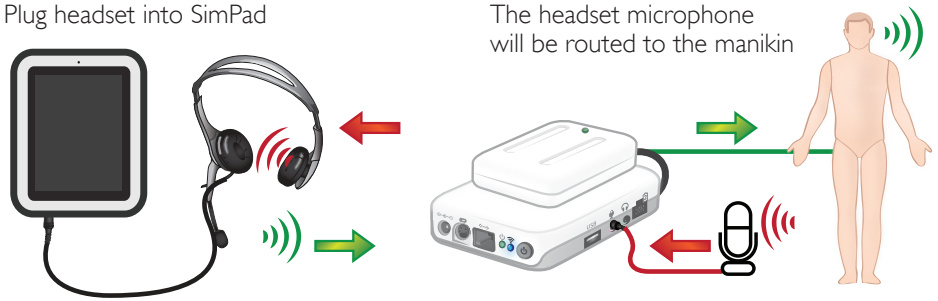
- Save new Scenarios in the Scenarios folder.
- Save new Themes in the Themes folder.
- Upload logs from the Logs folder.
- To safely disconnect SimPad, right click the SimPad drive and select Eject before removing the USB cable.

Note

If SimPad is turned off, the battery can be charged from the USB connection.

Headset

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



= From instructor to manikin
= From manikin (separate microphone) to instructor.

Note

- *The headset output on the Link Box 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 setup.*

Vocal Sounds

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

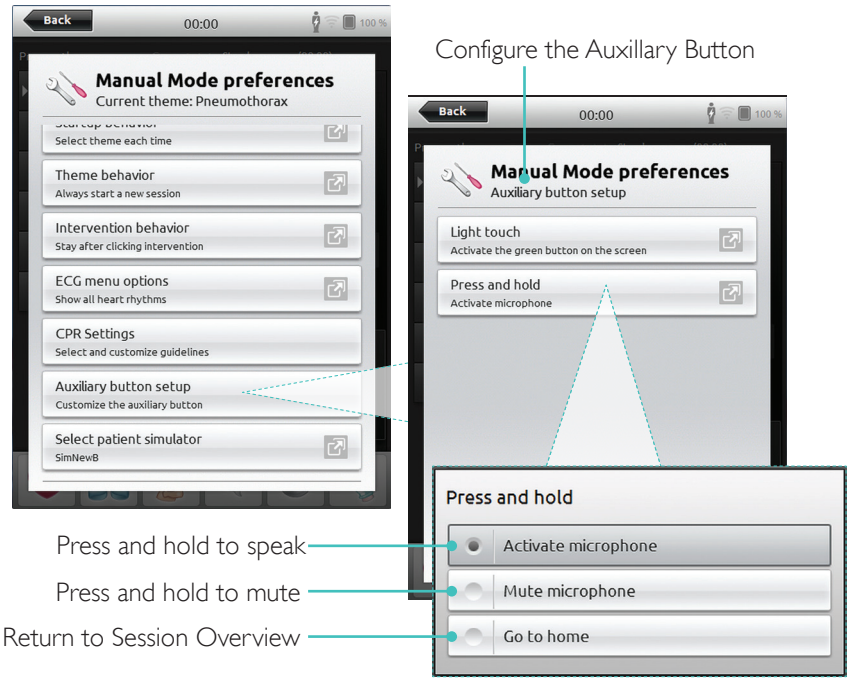
For more information about vocal sounds and to create user defined vocal sounds see *Feature* section.

Auxiliary Button

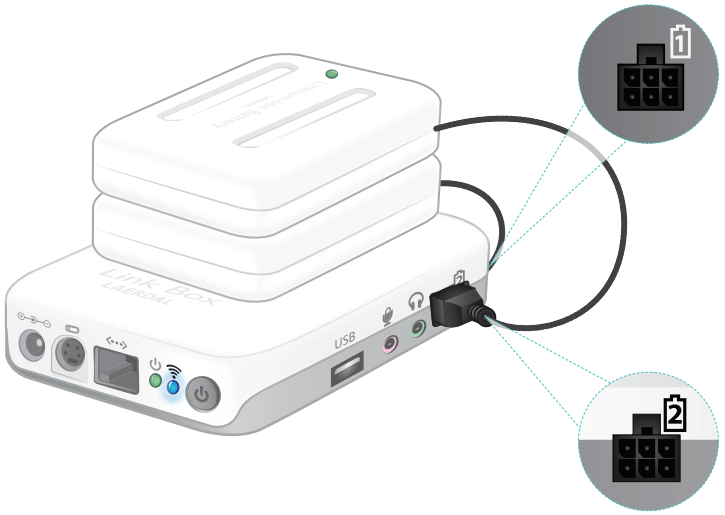
The Auxiliary Button can be configured in Manual Mode or Automatic Mode preferences to enable and disable input from the headset.

Note

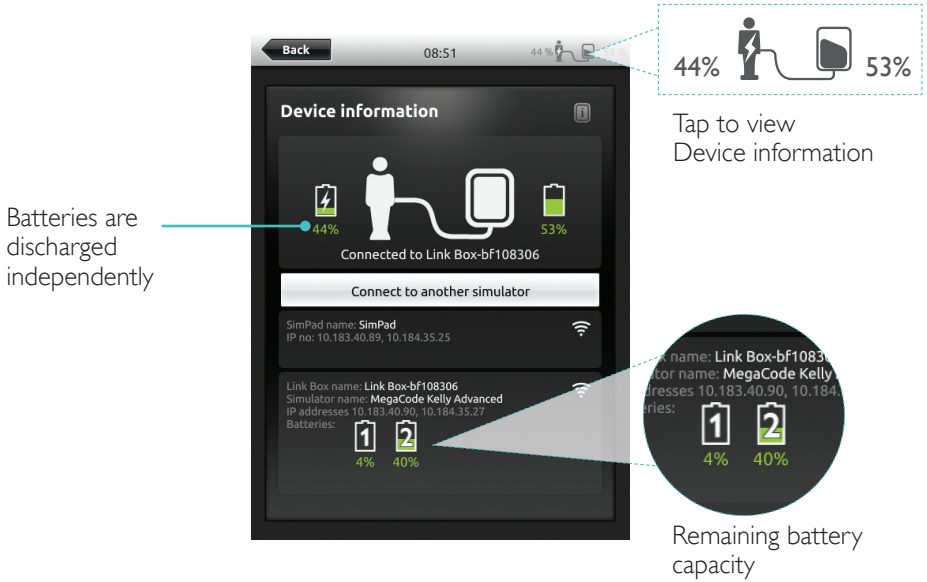
When the device is used wirelessly there will be a short voice delay.



Connect Two Laerdal Li-Ion Batteries



Connect Two Laerdal Li-Ion Batteries

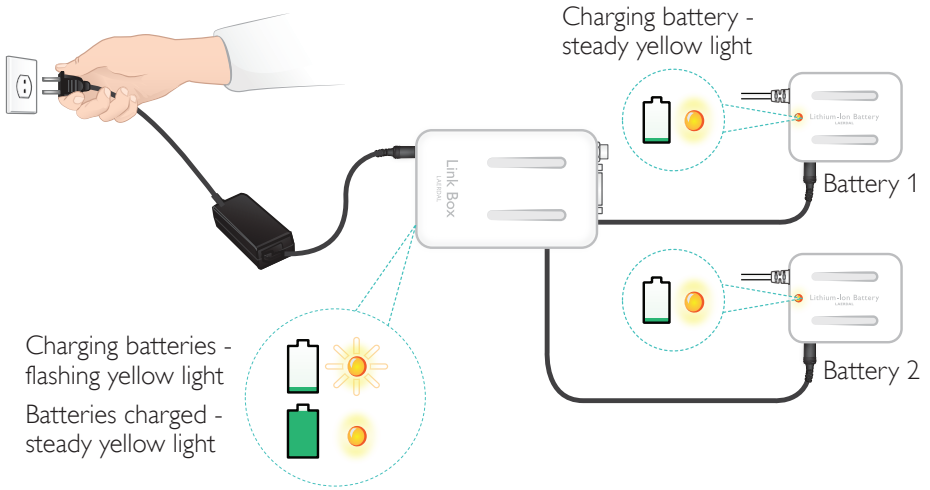


Charge Batteries

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

Note
The AC Adapter can only be used with SimPad or SimPad PLUS and Link Box or Link Box PLUS.

For more information about Charging Batteries see *Quick Setup Guide*.



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.*

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

Available ECG in SimPad 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	
Rigth 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	94/66 (SimPad) 60/40 (SimPad PLUS)

Adult 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 set to absent when Systolic BP is below 10 mm Hg. Otherwise infant pulses are normal.

Adult 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

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	•		
Stills 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	•	•	•

Bowel Sounds

Bowel sounds	Adult Male	Adult Female	Child Manikin	Infant Manikin
Normal	•	•	•	•
Borborygmus	•	•	•	•
Hyperactive	•	•	•	•
Hypoactive	•	•	•	•
Fetal Normal 140 BPM		•		
Fetal Brady 100 BPM		•		
Fetal Tachy 200 BPM		•		
No sound	•	•	•	•

Vocal Sounds

Vocal sounds are adjusted for age and gender of manikin.

Male Manikin	Female Manikin	Child Manikin	Infant Manikin
Vomit	Vomit	Vomit	Cry
Cough	Cough	Cough	Cough
Moan	Moan	Moan	Content
SOB Breathing	SOB Breathing	SOB Breathing	Hiccups
Scream	Scream	Scream	Scream
Yes	Yes	Yes	
No	No	No	

User defined vocal sounds can replace the included vocal sounds.
Sound format for user defined sound files must be raw format 16KHz, 16 bits signed, little endian.

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