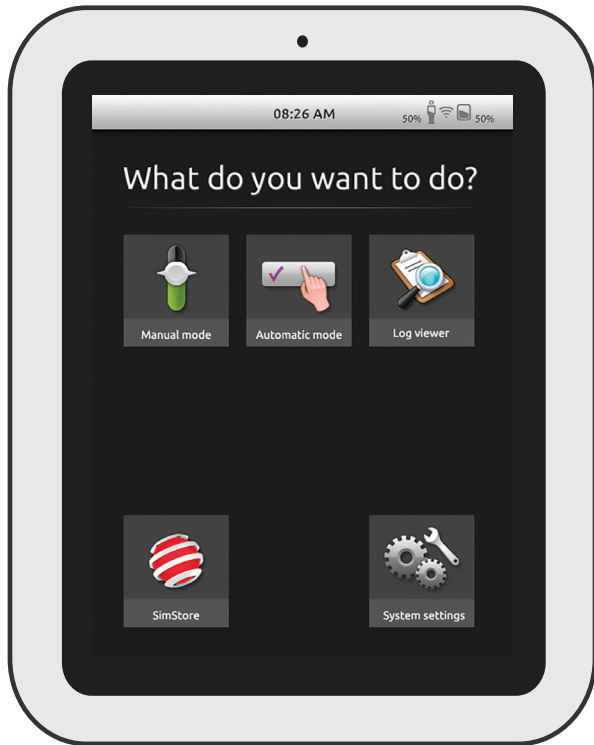


SimPad

User Guide



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.

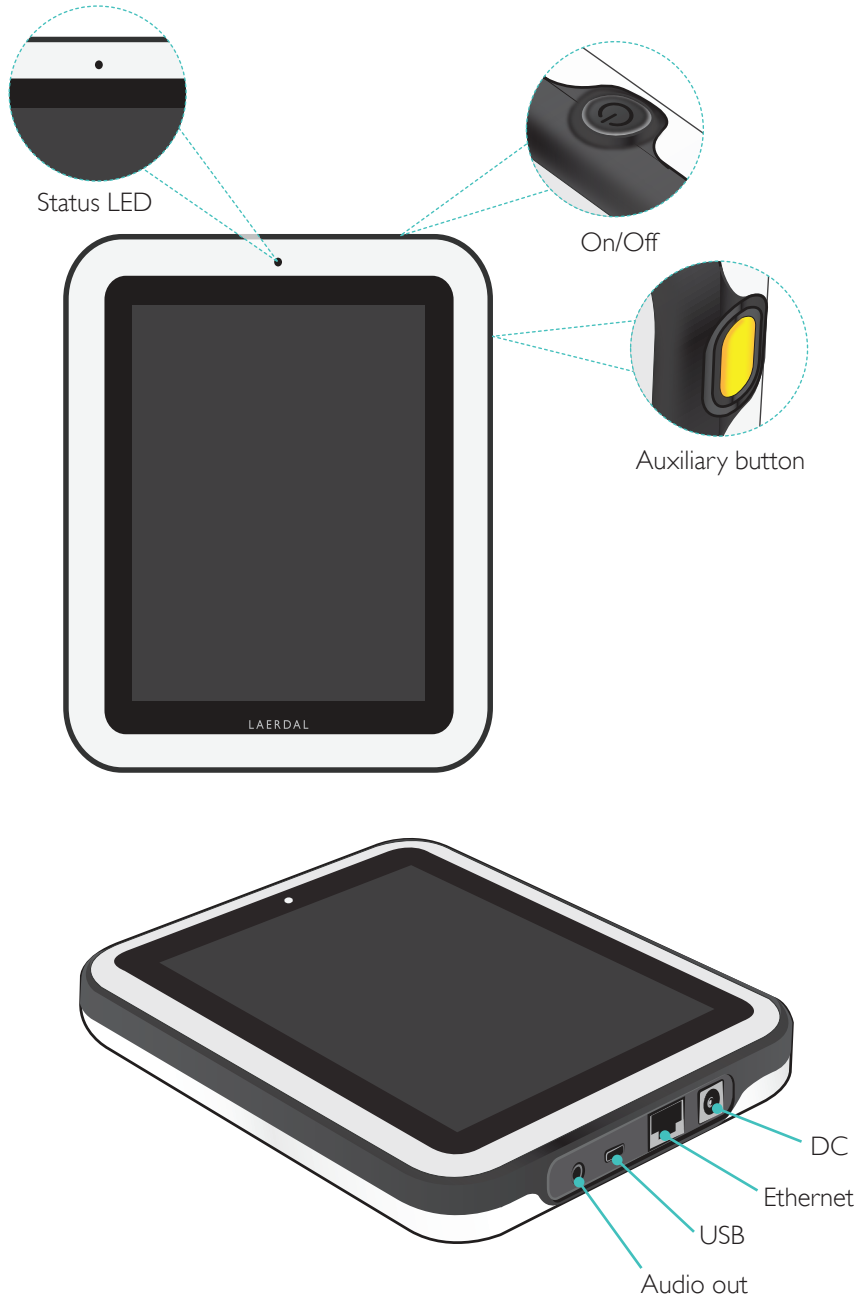
This User Guide describes operating instructions for the following models:

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

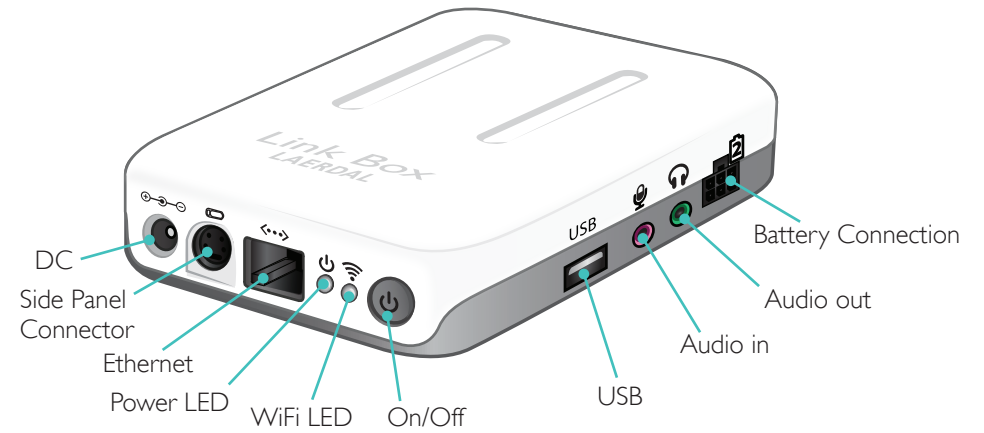
SimPad and Link Box, when used throughout this User Guide, applies to both SimPad PLUS and Link Box PLUS models, unless otherwise specified.

Contents

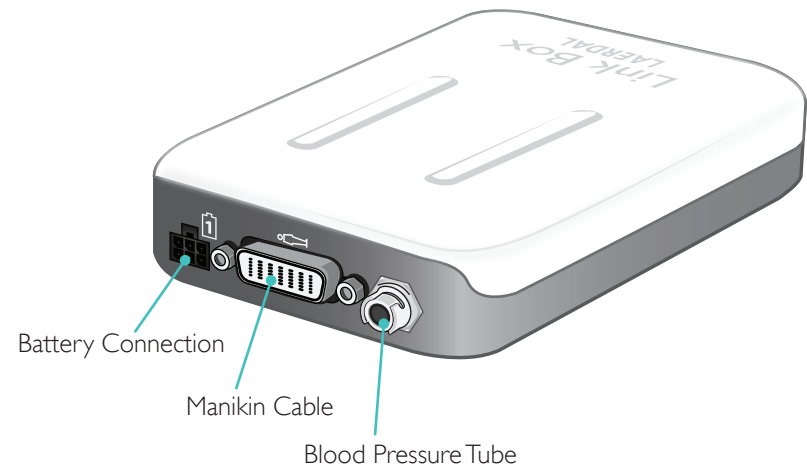
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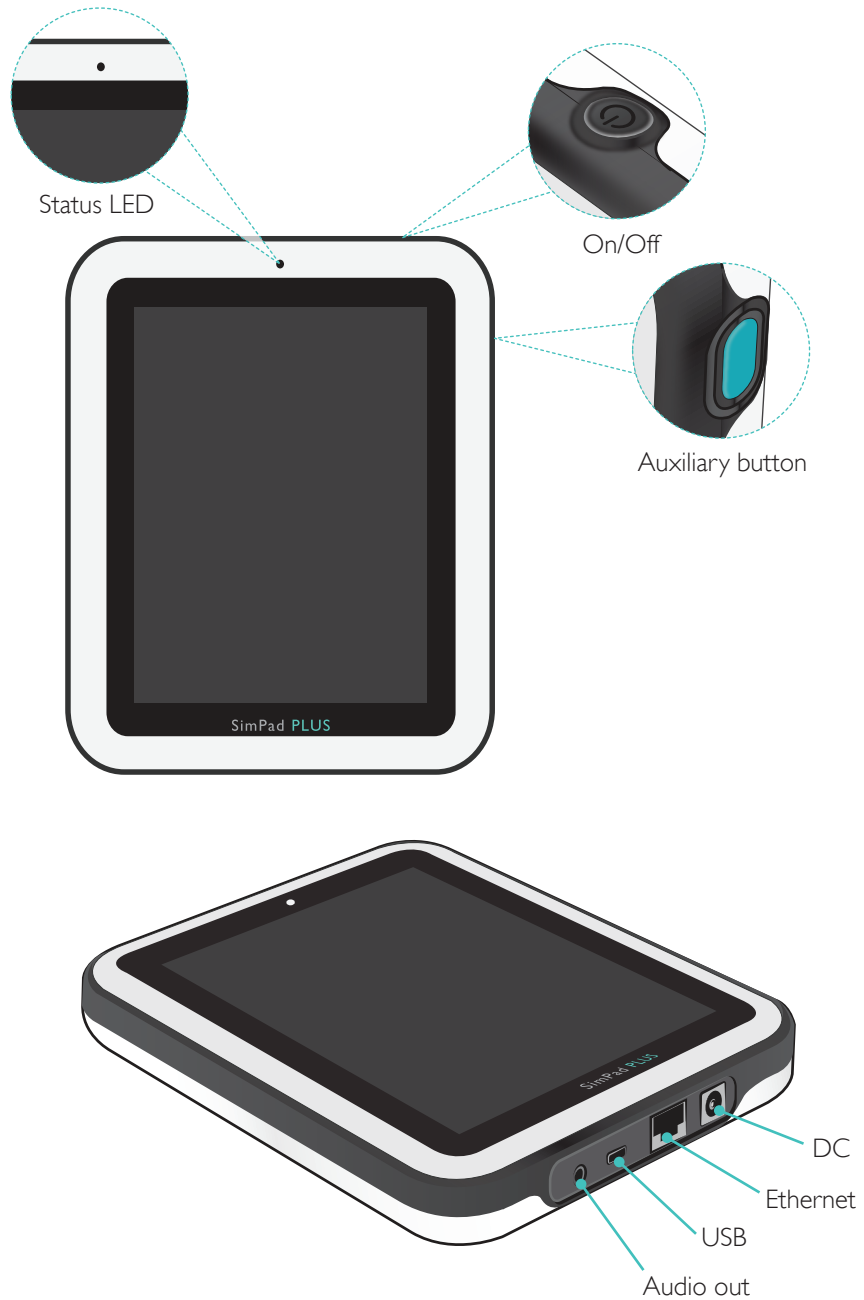


Front View

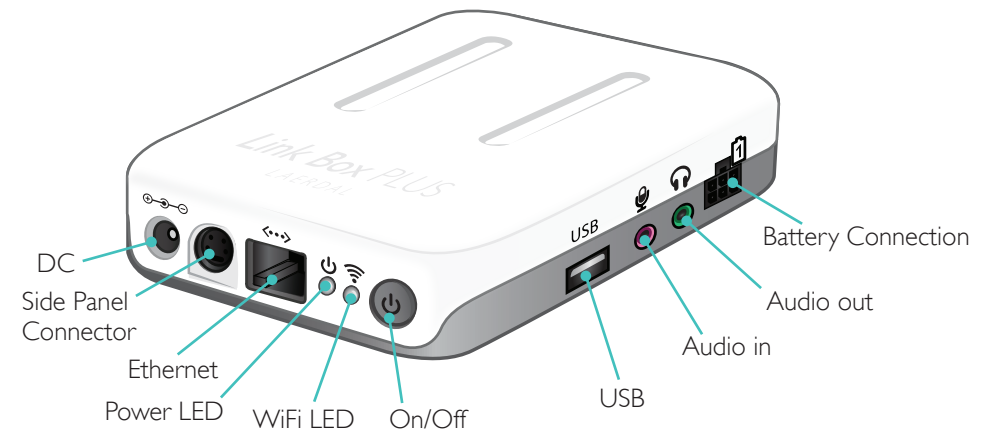


Back View

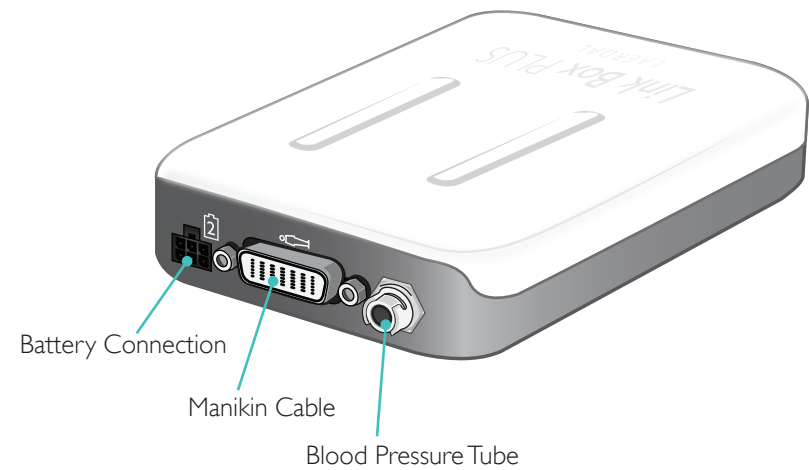




Front View



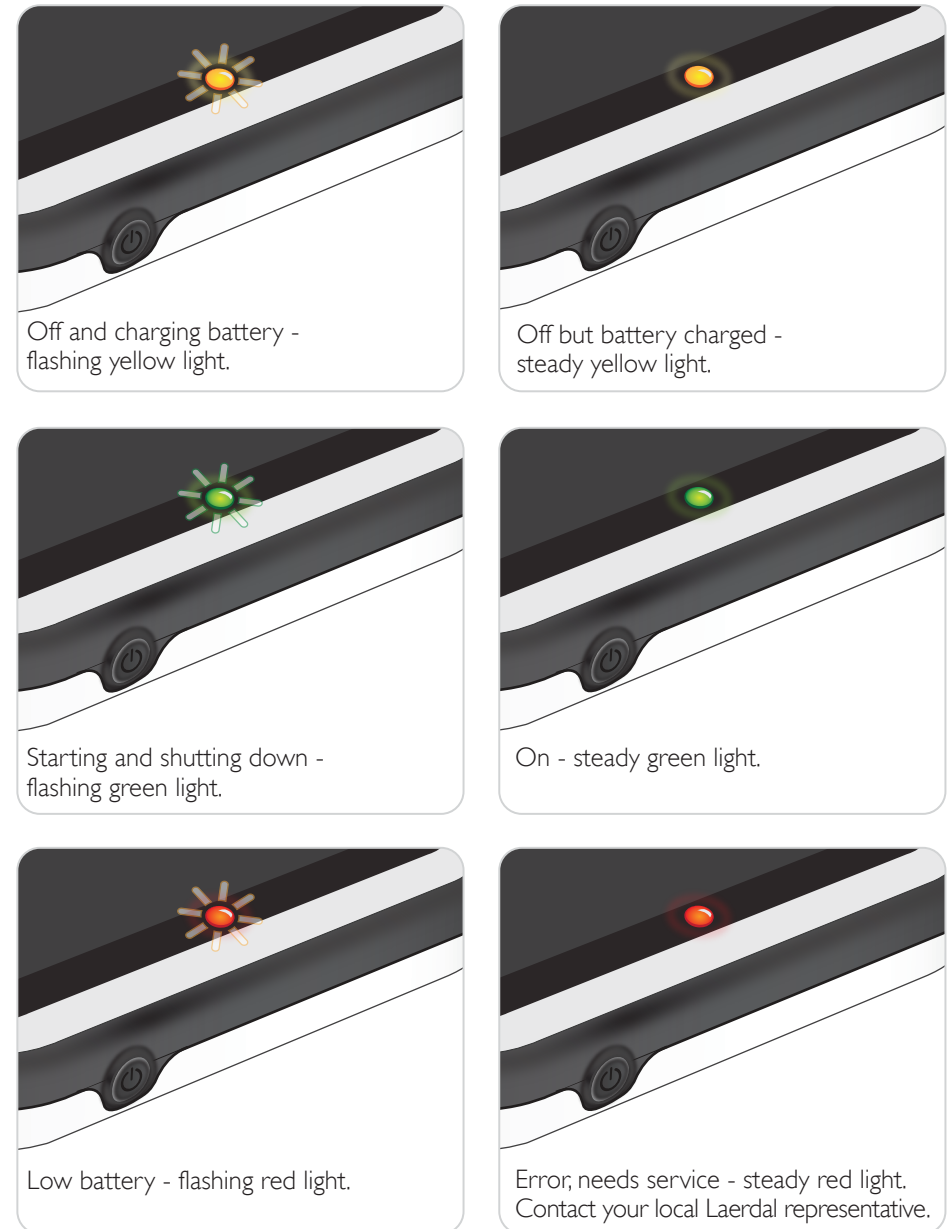
Back View



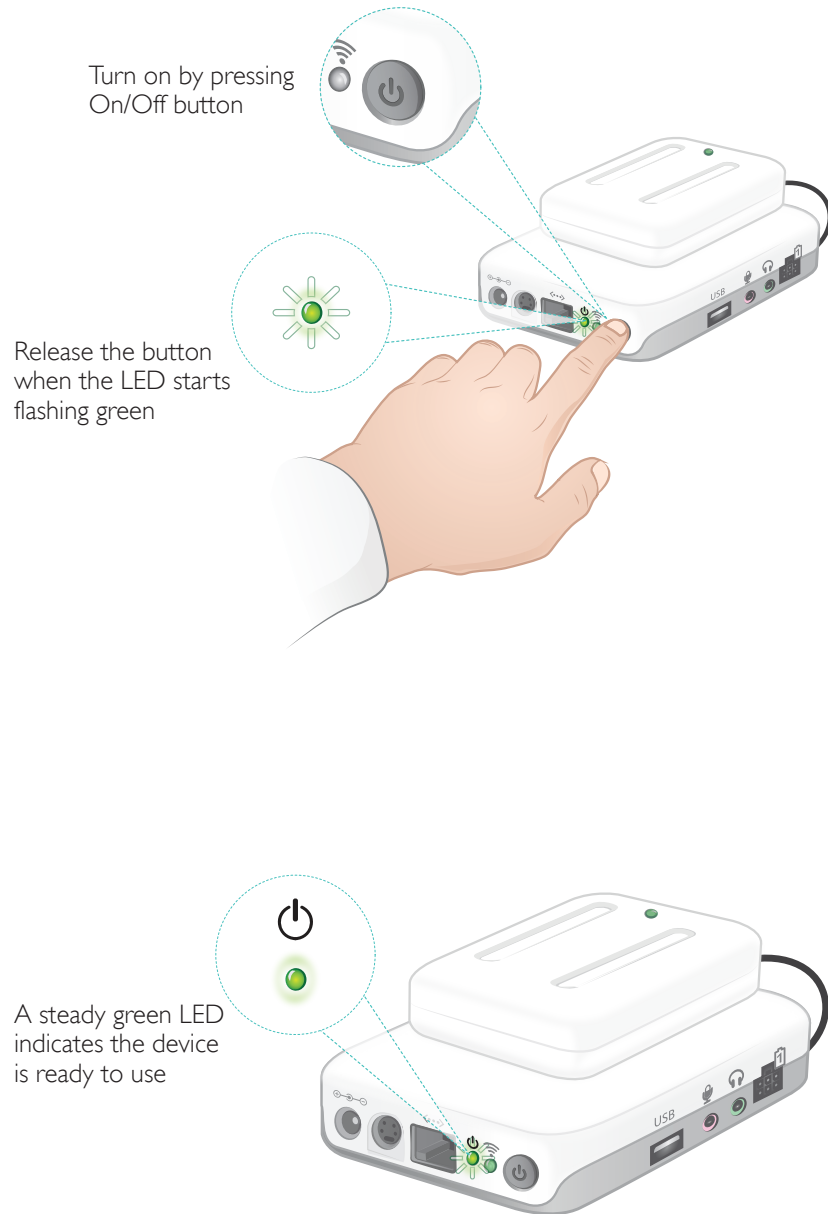
Turn On



Status LED

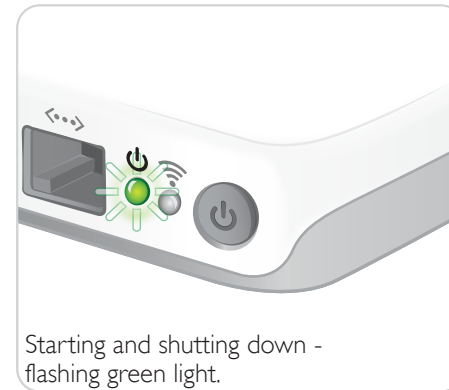
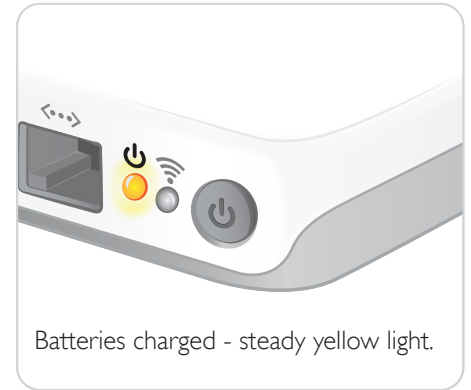
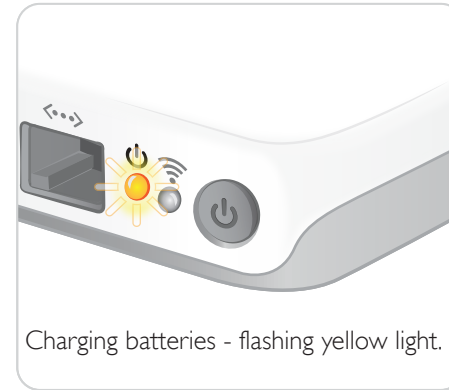


Turn On



Status LED

The Power LED also indicates status.



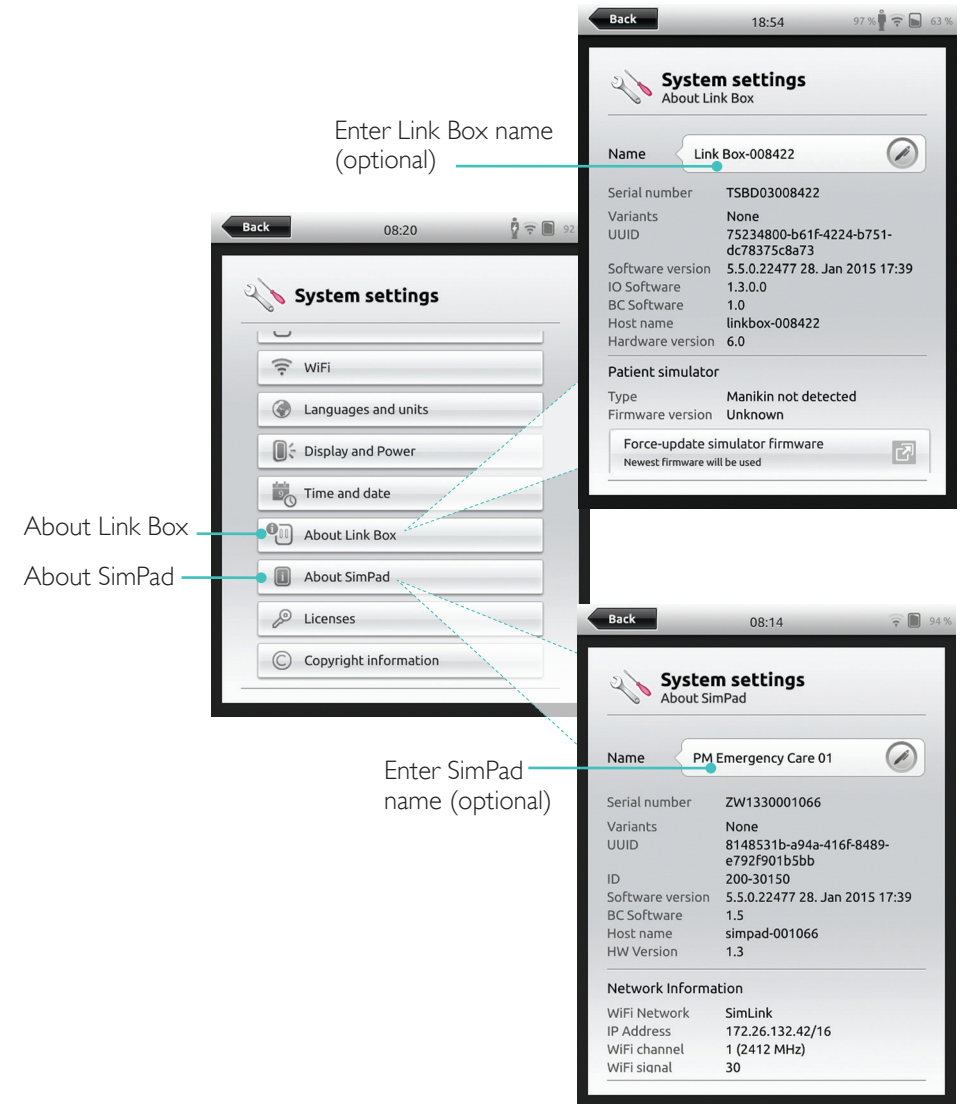
Starting for the First Time

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.

Select language

SimPad language

Choose country pre-select time zone

Enter SimPad name (Optional)

System settings
Languages and units

SimPad language
English

Manikin voice language
English

Celsius or Fahrenheit
Celsius

etCO₂ unit
mmHg

Country
United Kingdom

System settings
Time and date

Country
United Kingdom

Time zone
London (GMT+00:00)

Set time automatically

Time server settings

Set time
15:43

Set date
13. Dec 2015

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
IP Address

System settings
About Simulator

Not connected to simulator

Firmware version
Unknown

Force-update simulator firmware
Newest firmware will be used

Link Box

Name
Link Box-bf087823

Serial number
TBBF08027823

Software version
6.0.0-72

ID
204-30250

Variants
None

UUID
0472f280-f15a-49f6-8e02-45213fb0e94b

IO Software
1.5.0.17

Configuration

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

Enter Link Box name (optional)

About Simulator

About SimPad

Enter SimPad name (optional)

System settings
About Simulator

Not connected to simulator

Firmware version
Unknown

Force-update simulator firmware
Newest firmware will be used

Link Box

Name
Link Box-bf087823

Serial number
TBBF08027823

Software version
6.0.0-72

ID
204-30250

Variants
None

UUID
0472f280-f15a-49f6-8e02-45213fb0e94b

IO Software
1.5.0.17

System settings

WIFI
Connected to anne-guest, channel 36

Flight Mode
Off

Languages and units

Display and Power

Time and date

About simulator

About SimPad

Debriefing server

System settings
About SimPad

Name
SimPad

Serial number
TBBF07001852

ID
204-30150

Software version
6.0.0-72

HW Version
A

Variants
None

UUID
eb562fc5-638b-4e1c-8a79-5a002293c114

Network Information

Host name
simpad-BF071852

WiFi information

Network
SimLink

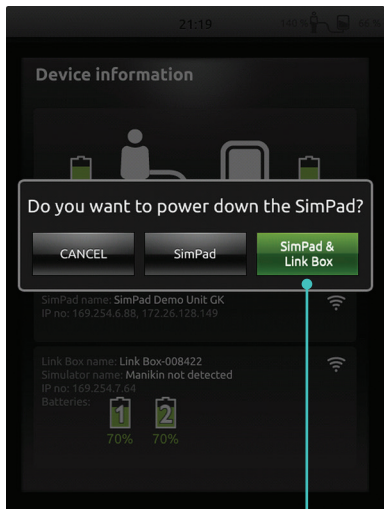
Note

These configurations may be altered later.

Turn Off

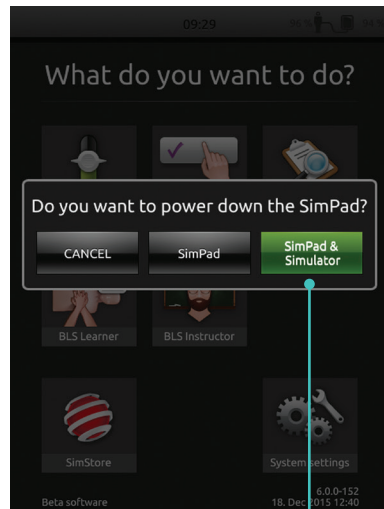


SimPad



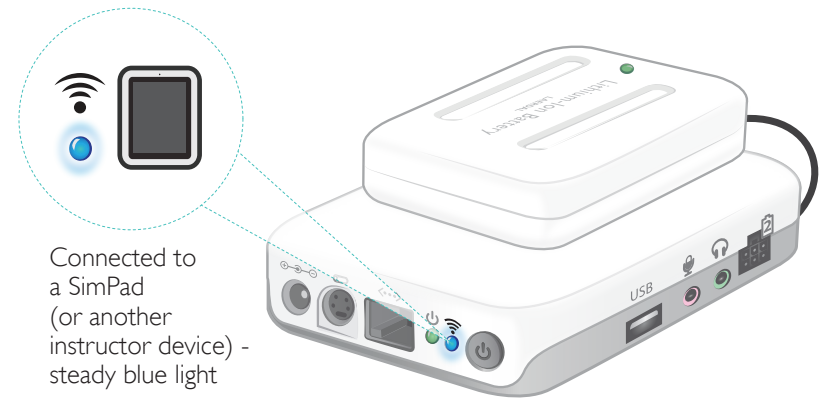
Tap to shutdown SimPad and/or Link Box

SimPad PLUS



Tap to shutdown SimPad and/or Simulator

WiFi Connection



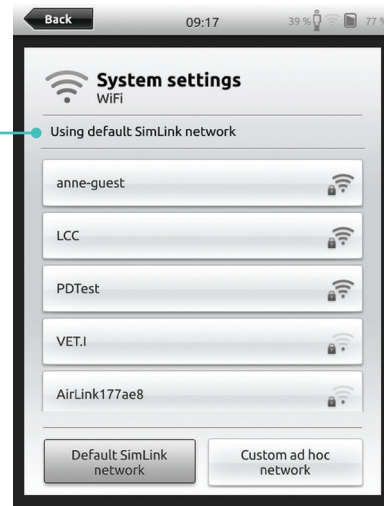
Connection between SimPad and Link Box

SimPad communicates with the Link Box using WiFi.

SimPad



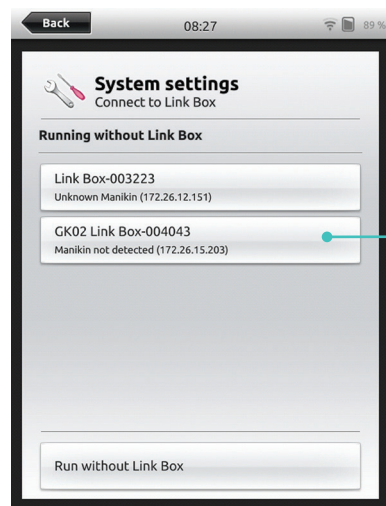
SimPad PLUS



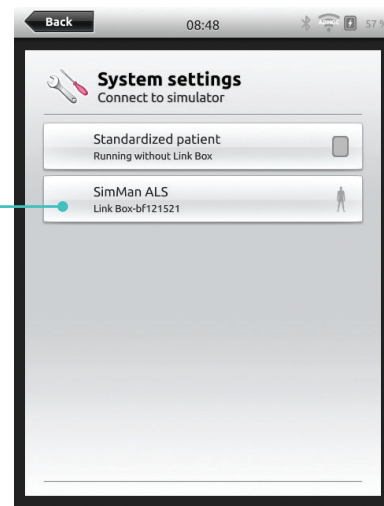
When the units are turned on for the first time they will set up an ad hoc network called SimLink

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.

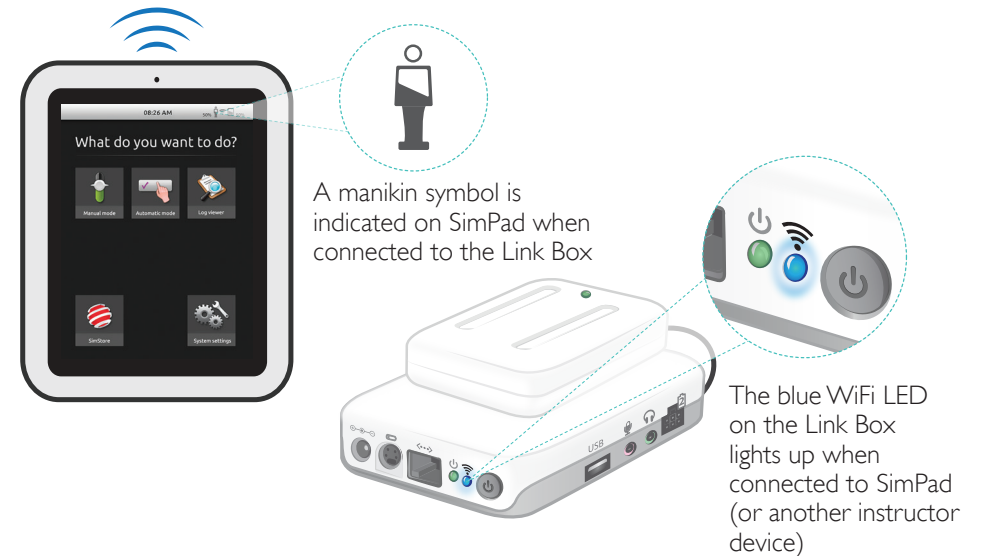
SimPad

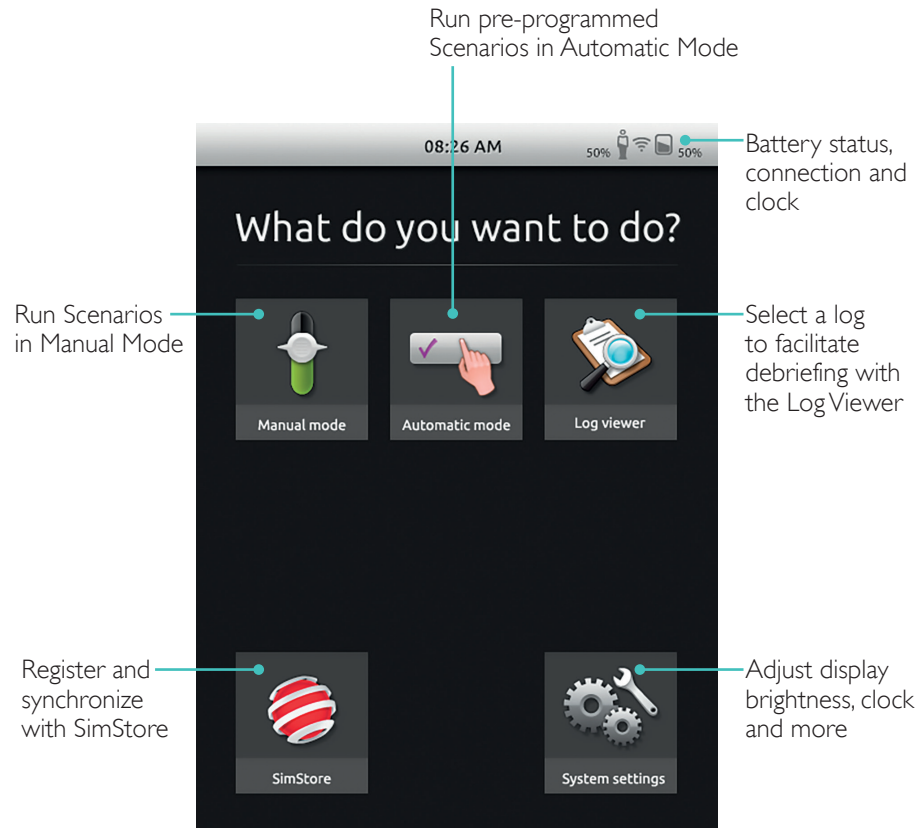


SimPad PLUS



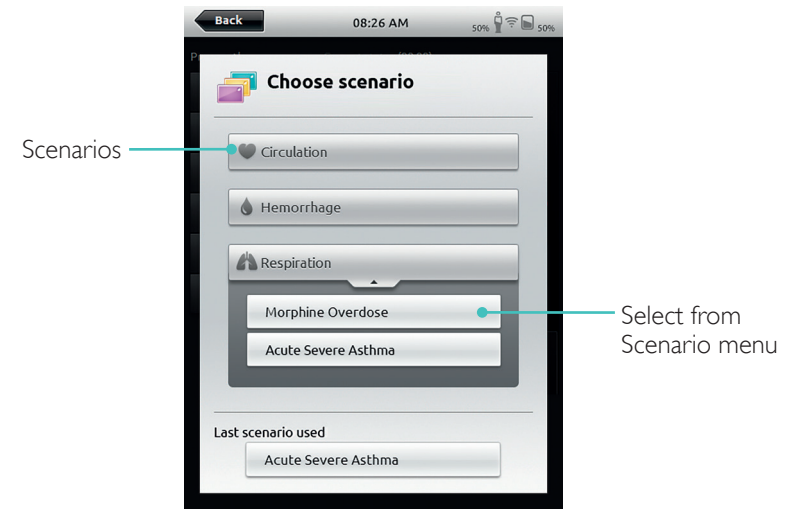
Select the appropriate Link Box/Simulator from the manikin connection menu



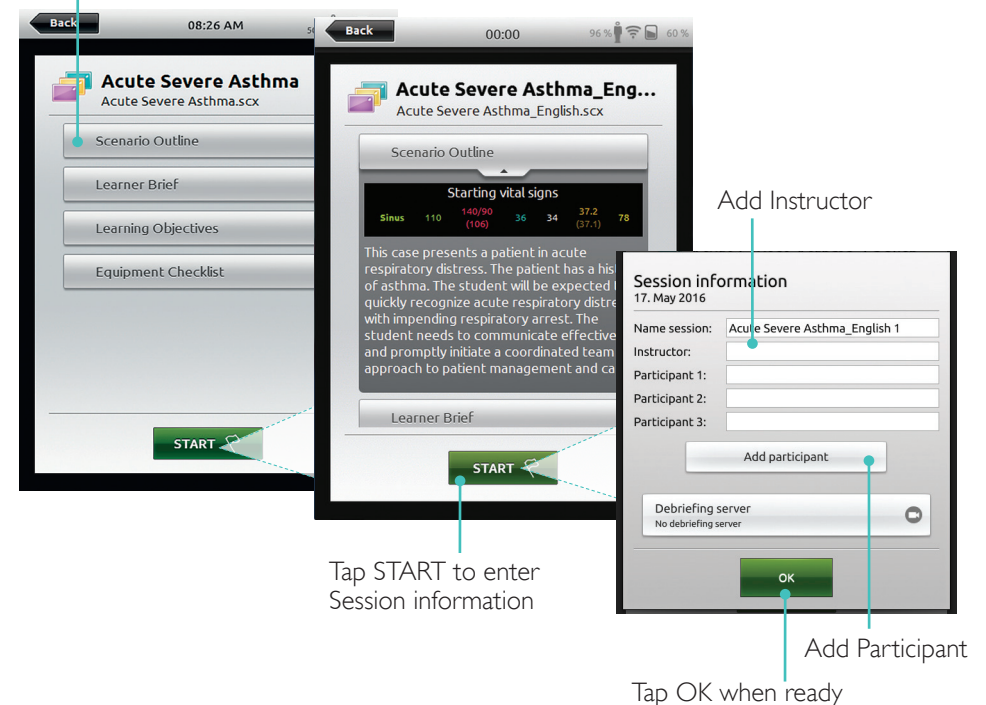


Home screen may vary in appearance based on purchased licenses.

Select Scenario



Tap for detailed information on Scenario



Run Session

Time since Scenario was started

Patient status

Categories of interventions

Tap to log interventions and events

Last logged event

Tap to add comment

Change Parameters

Tap here to display more patient state information

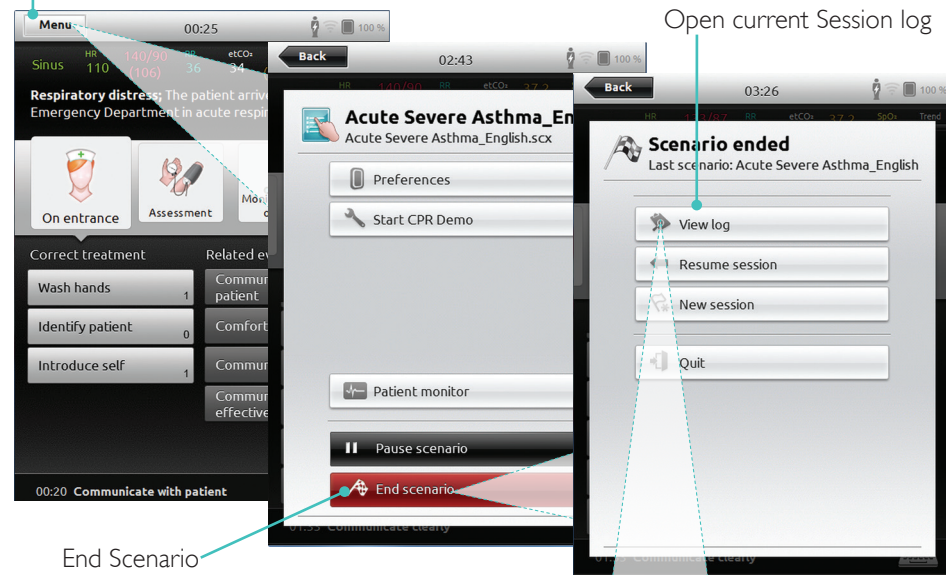
Access to vital signs adjustments

Abnormal parameter values displayed here

Select other parameters to adjust

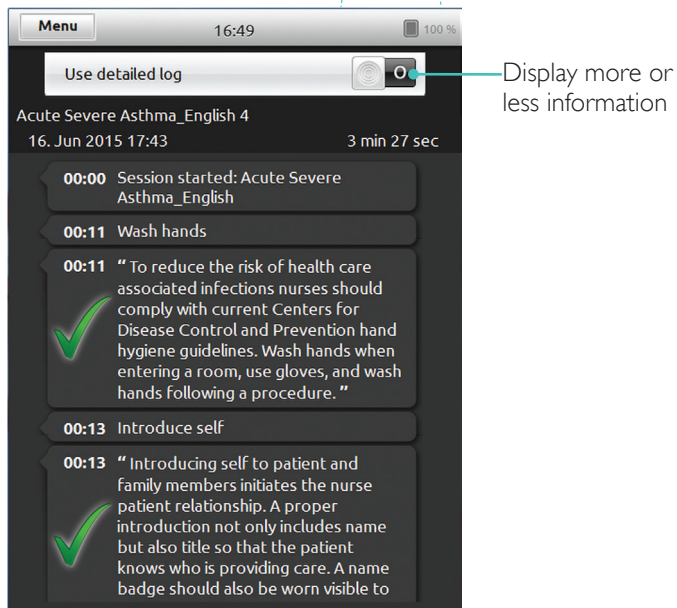
End Session

Tap menu to End Session



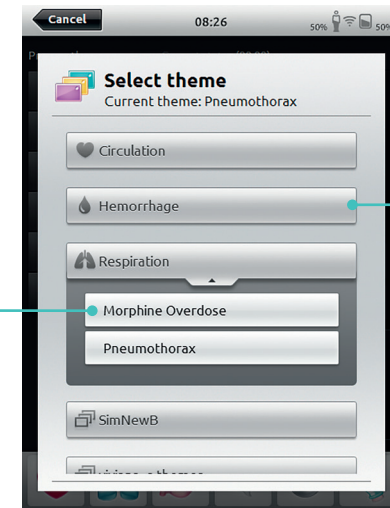
Open current Session log

End Scenario



Display more or less information

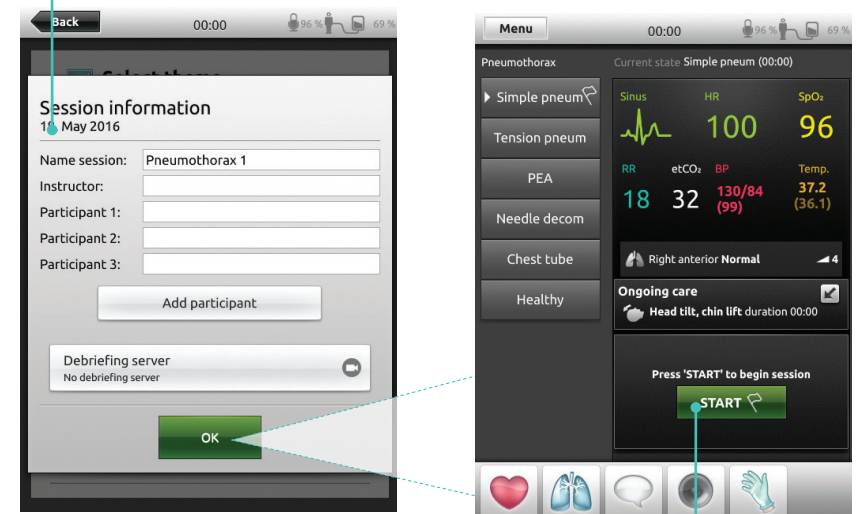
Select Theme



Select theme for simulation

Folder of themes Tap to open

Information about Session entered here will be added to log



Tap to start Session

Change Parameters

Current state

States

Flag indicates start state

White arrow indicates last activated state

Select other parameters to adjust

Pause Session

Toggle On/Off shock activation

Time since current state was activated

Patient vital signs

Abnormal values

Collapse mini-log

End Session

Register participant's interventions

00:37

00:00 Session started: Pneumo...

PAUSE END

Heart, Lungs, Speech, Camera, Gloves icons

Current state: Simple pneum (00:37)

Sinus HR 100 SpO₂ 96

RR 18 etCO₂ 32 BP 130/84 (99) Temp. 37.2 (36.1)

Right lung Normal

Simple pneum (with white arrow)

Tension pneum

PEA

Needle decom

Chest tube

Healthy

Time since Session started

Tap to open State

Tap to show detailed State information, before activating

Set transition time

The expanded state shows all parameters in the queue, ready to be activated

Tap to activate State

01:40

00:00 Session started: P

PAUSE

Heart, Lungs, Speech, Camera, Gloves icons

Chest tube

5:00

Sinus HR 100

RR 14 etCO₂ 30 BP 122/76 (91) Temp. 37.2 (36.1)

98

ACTIVATE ✓

Registering Interventions

Tap to register participant's interventions

Time since Scenario was started

Patient status

Tap to log interventions and events

Categories of interventions

Last logged event

Tap to add comment

00:15

00:12 Situational awareness

Heart, Lungs, Speech, Camera, Gloves icons

Sinus HR 100 SpO₂ 96

RR 18 etCO₂ 32 BP 130/84 (99) Temp. 37.2 (36.1)

Initial Airway Breathing Circula

Initial CRM Skills

Talk to patient 1

Effective communication 1

Tap and shout 0

Team leadership 1

Call for help 0

Resource utilization 0

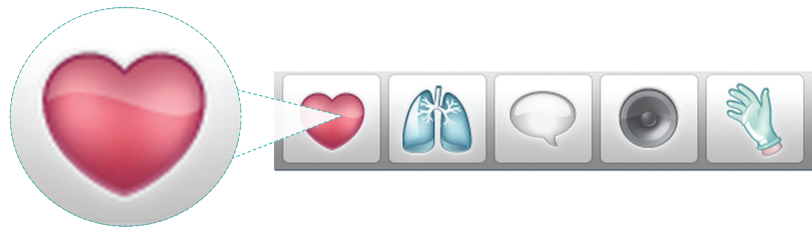
Problem-solving 0

Closed-loop communication 0

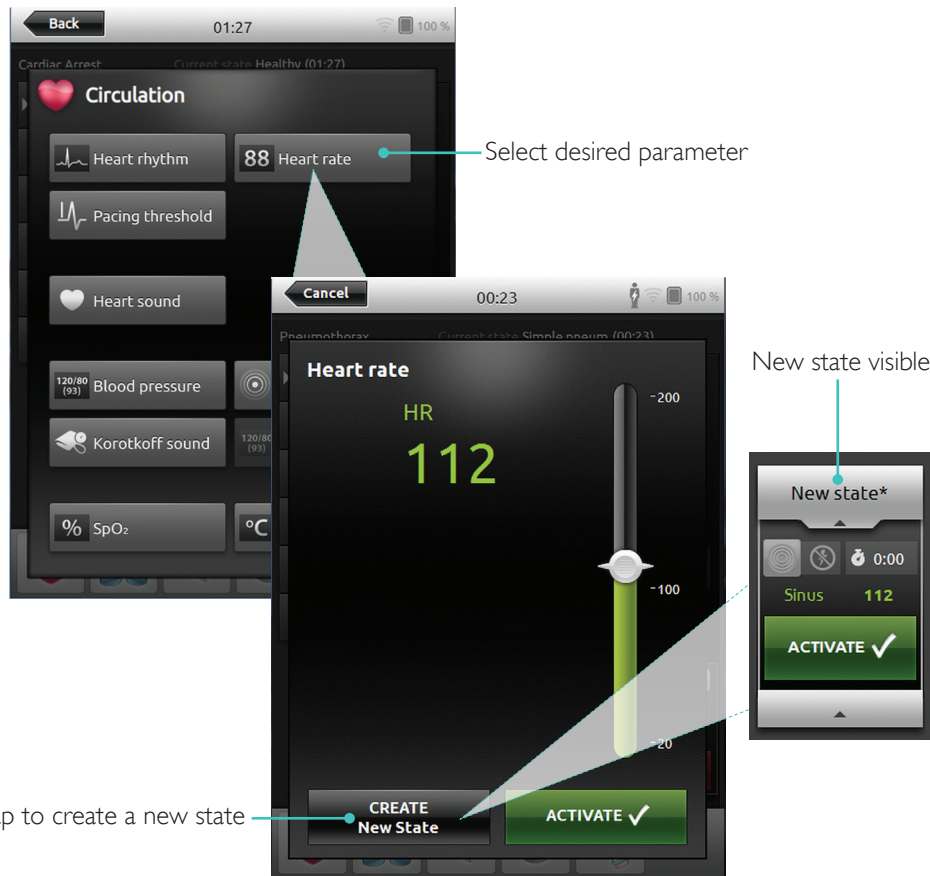
Situational awareness 1

00:12 Situational awareness

Create New State for an Existing Theme



Tap to access Circulation Menu



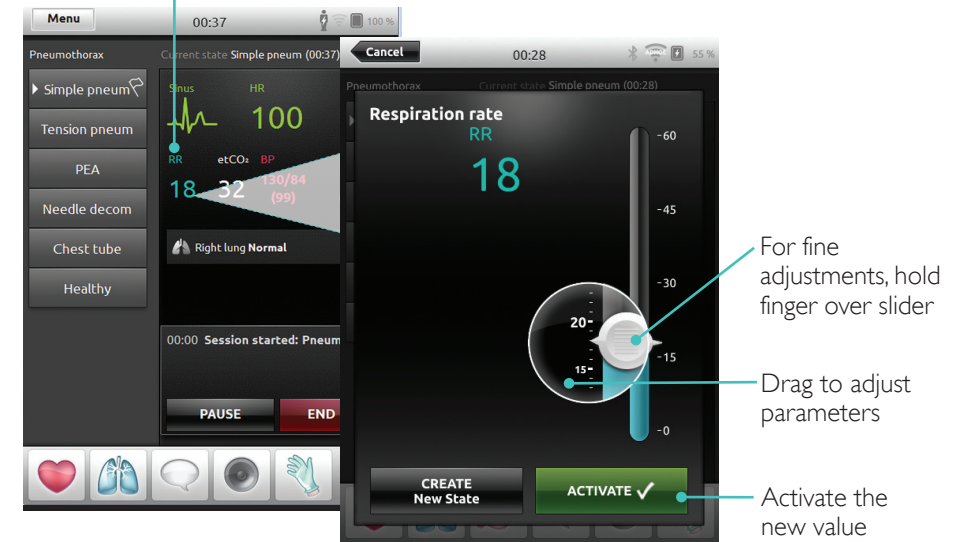
Select desired parameter

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

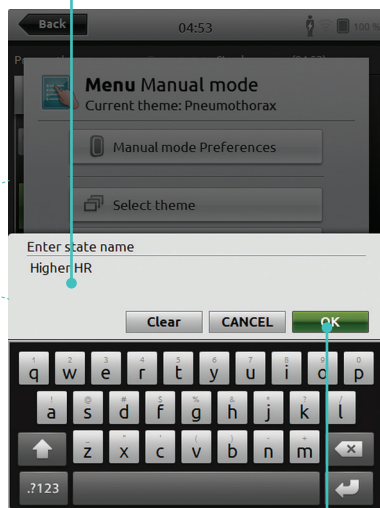
Update the currently open state

Add New State to an Existing Theme

1. Tap to add new state to theme

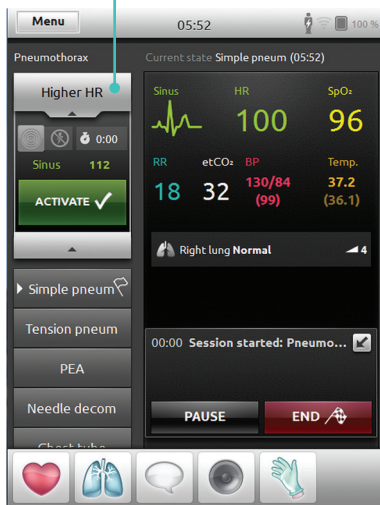


2. Enter new state name

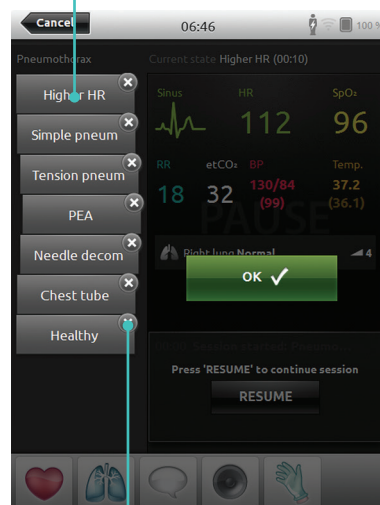


4. Tap to save state to theme

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

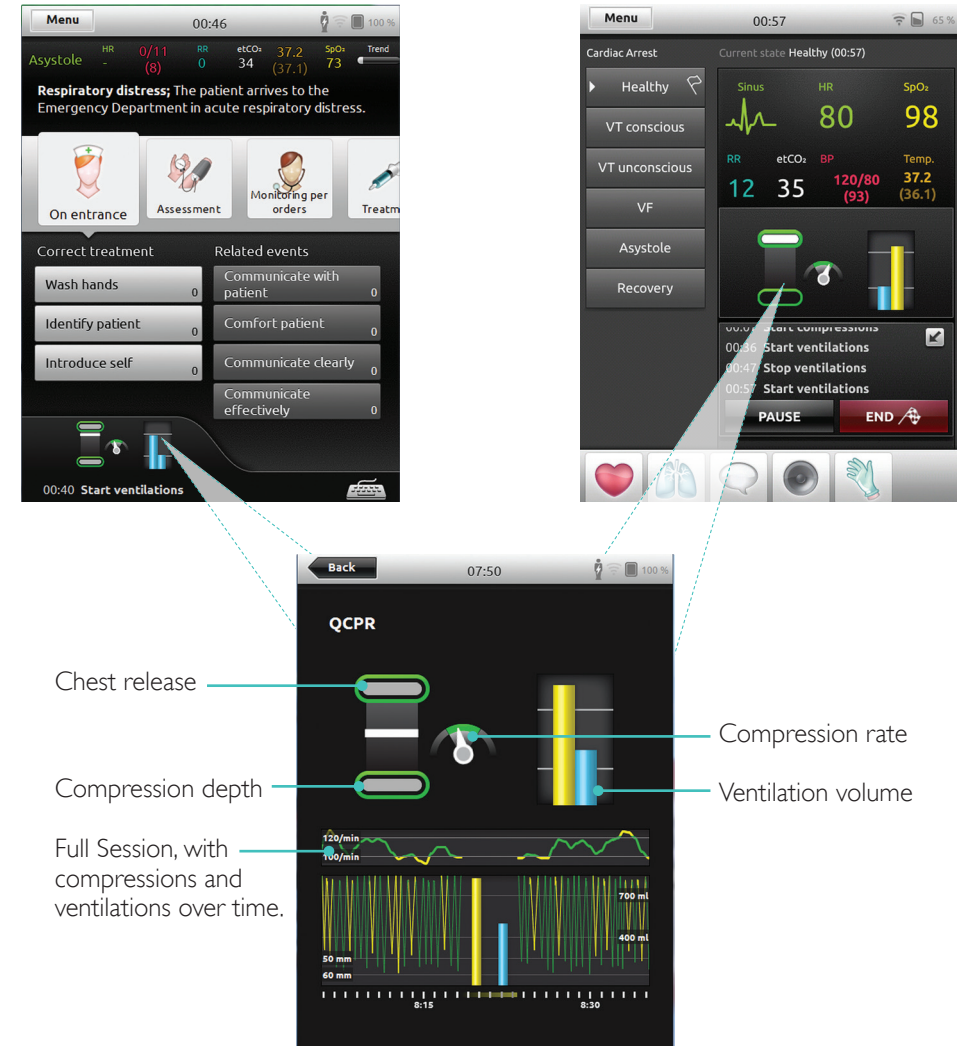
When CPR is performed on a CPR capable manikin, SimPad displays real time CPR feedback.

Automatic Mode -

Tap to enlarge QCPR feedback

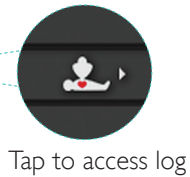
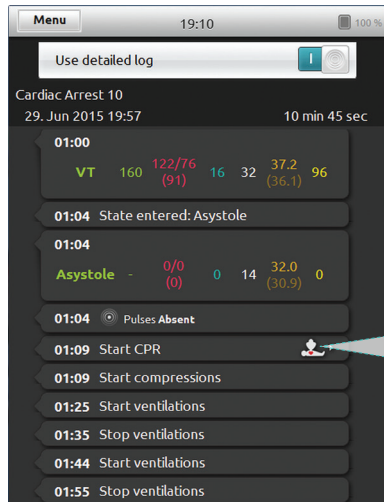
Manual Mode -

Tap to enlarge QCPR feedback

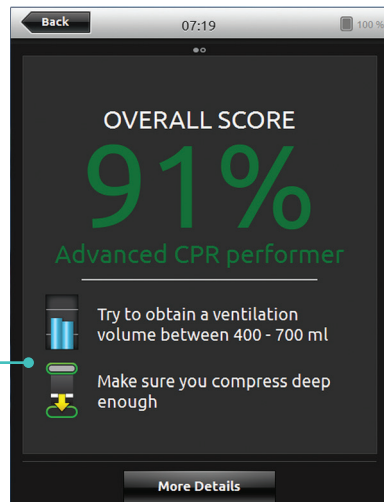


QCPR Log File

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

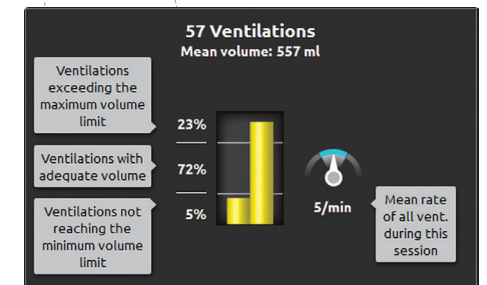
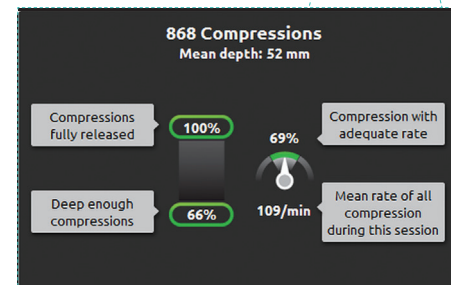
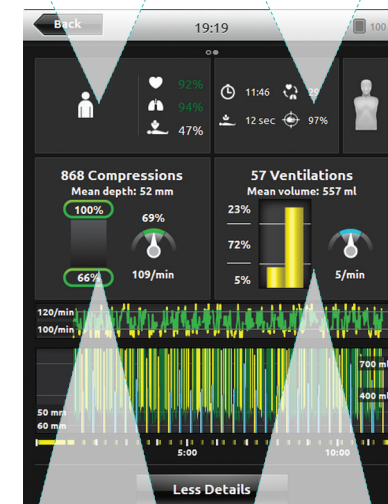
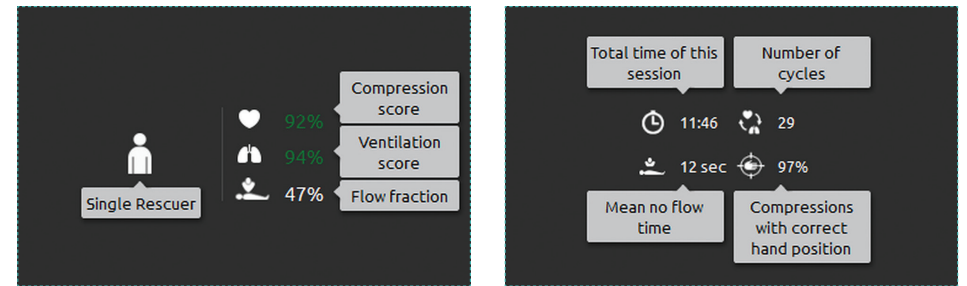


Tap to access log



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

The image illustrates three different display choices for the CPR analysis results:

- Log viewer:** A screen showing log details for a 'Cardiac Arrest 10' event. It includes buttons for 'View log', 'Select log', 'Overall Score', and 'Quit'. A toggle switch is present next to the 'Overall Score' button, with a callout line pointing to it and the text 'Toggle between displays'.
- With overall score:** A screen displaying an 'OVERALL SCORE' of 91% and the text 'Advanced CPR performer'. It includes two feedback items: 'Try to obtain a ventilation volume between 400 - 700 ml' and 'Make sure you compress deep enough'. A 'More Details' button is at the bottom.
- Without overall score:** A screen displaying two feedback items: 'Try to minimize interruptions in each cycle' and 'Try to obtain a ventilation volume between 400 - 700 ml'. A 'More Details' button is at the bottom.

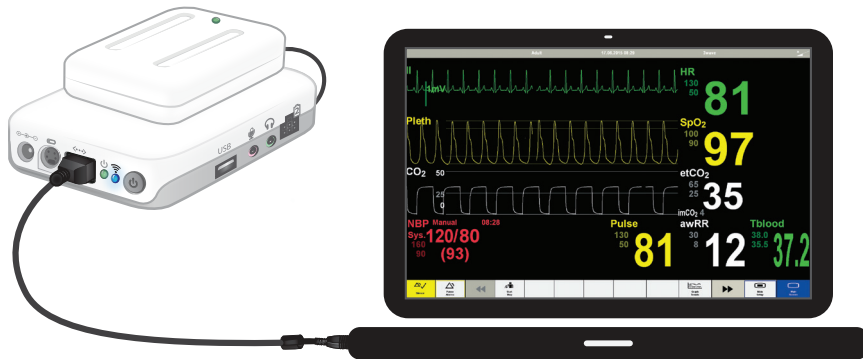
With overall score

Without overall score

Connect a Simulated Patient Monitor

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

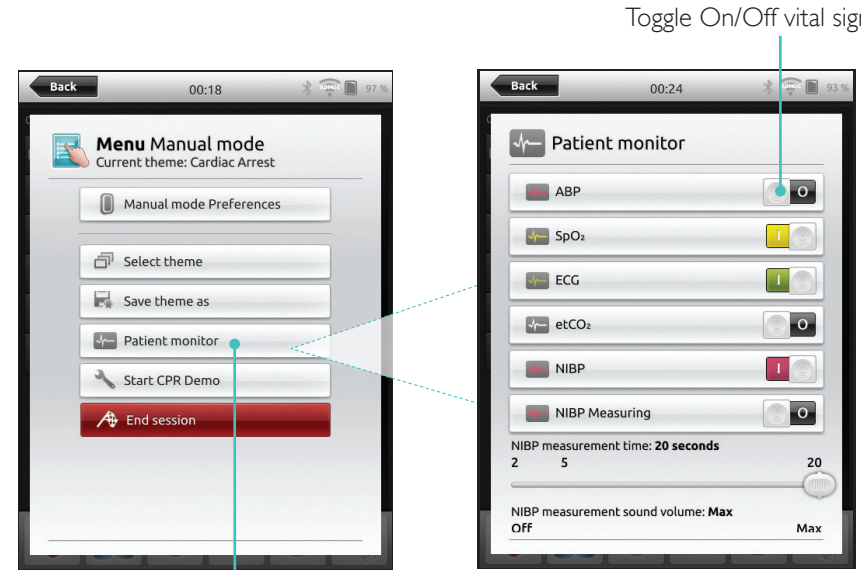
Refer to Network section for more information about other network connections.



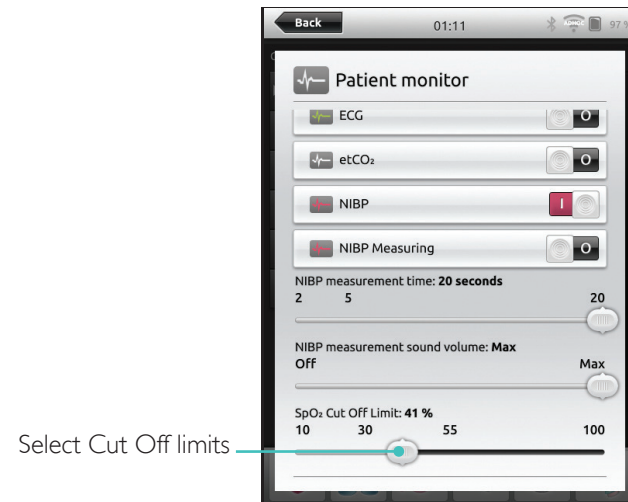
Using a direct network cable to connect the Link Box to the Simulated Patient Monitor is recommended to minimize WiFi traffic.

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:



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.



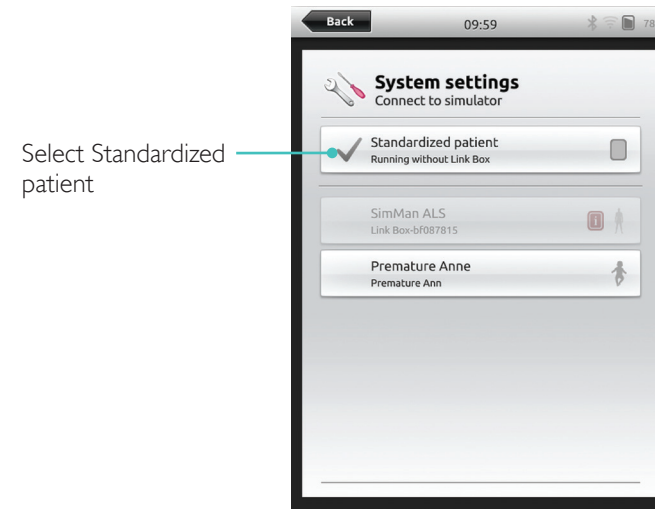
Connect SimPad PLUS to a different Link Box PLUS

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



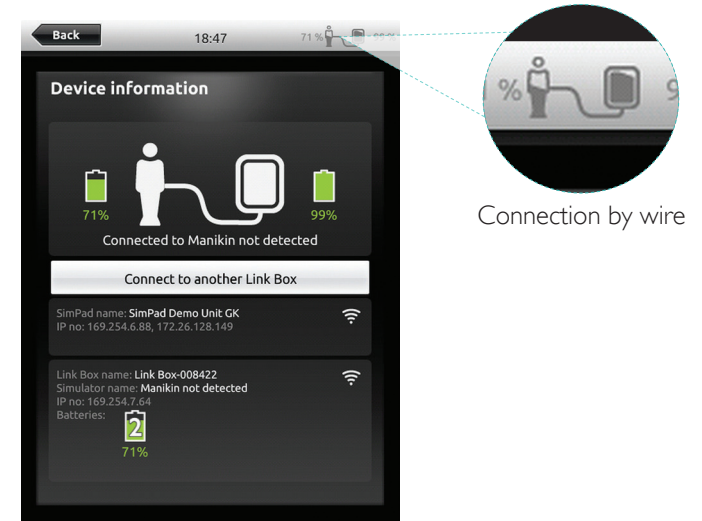
Connect to Wired Ethernet Network

Note

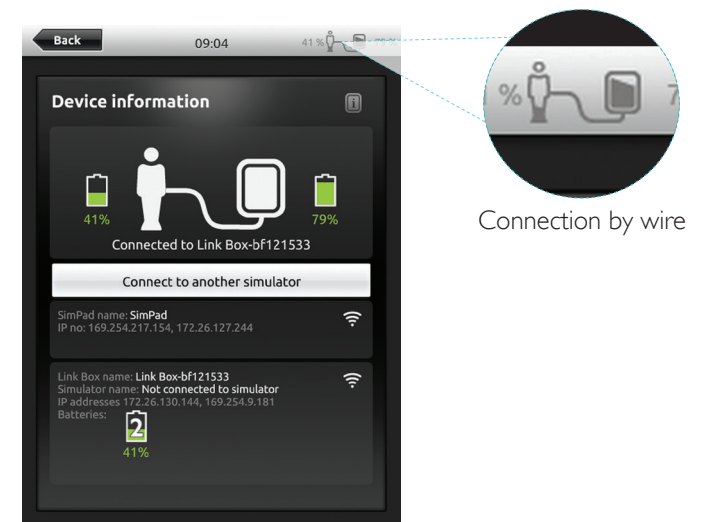
It is possible to be on a wired network and a WiFi network simultaneously.

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

SimPad



SimPad PLUS



Connect to a WiFi Network



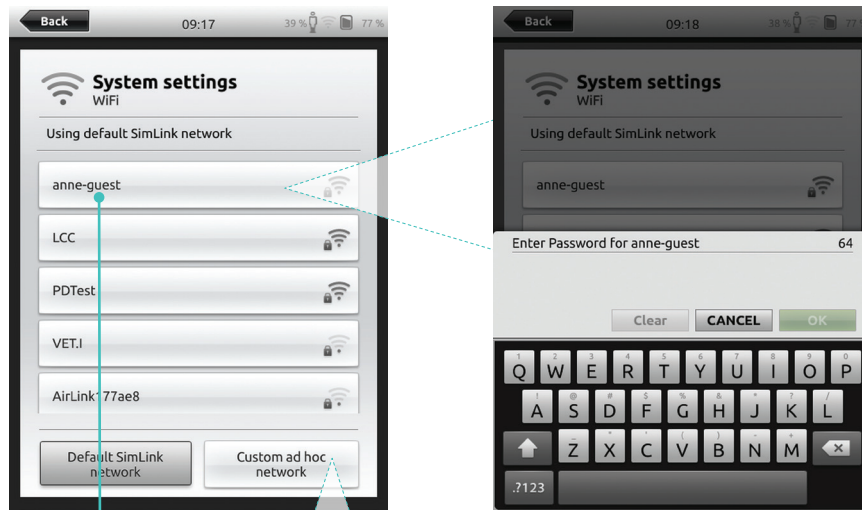
Note
 Before moving Link Box to another WiFi network, ensure it is connected to SimPad with a network cable.

Connect to a WiFi Network

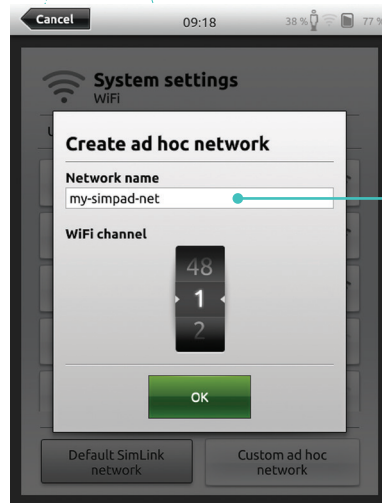


Note
 Before moving Link Box PLUS to another WiFi network, ensure it is connected to SimPad PLUS with a network cable.

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.

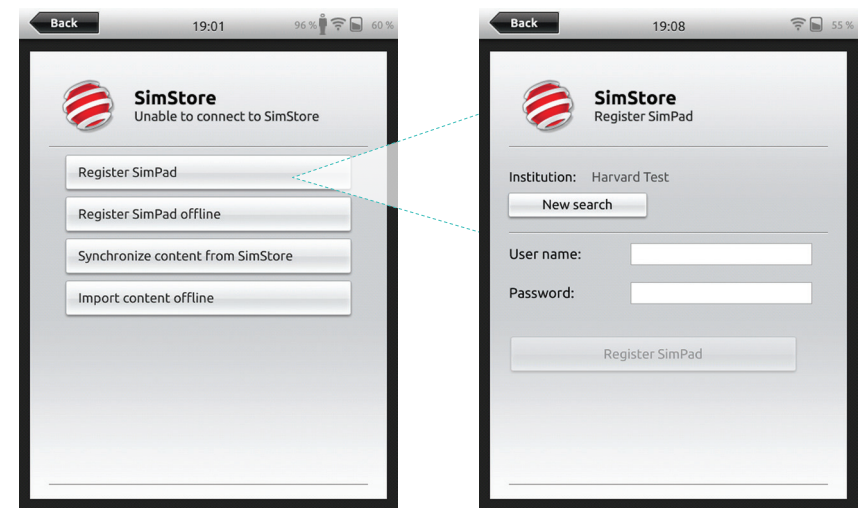
To access, visit www.mysimcenter.com

Visit SimStore to find:

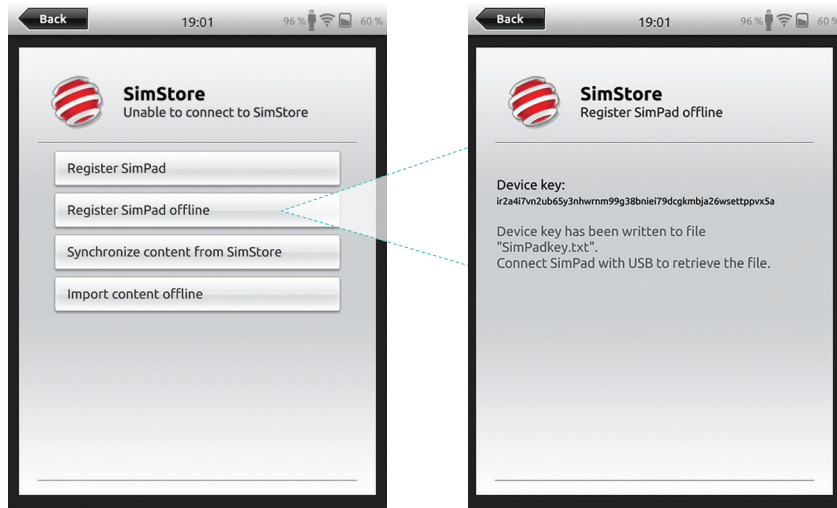
- Immediate online access to world wide, validated content
- Standardized and repeatable training measures
- Easy search, find, and pay navigation
- Flexibility to purchase only what is required

Register SimPad on SimStore

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

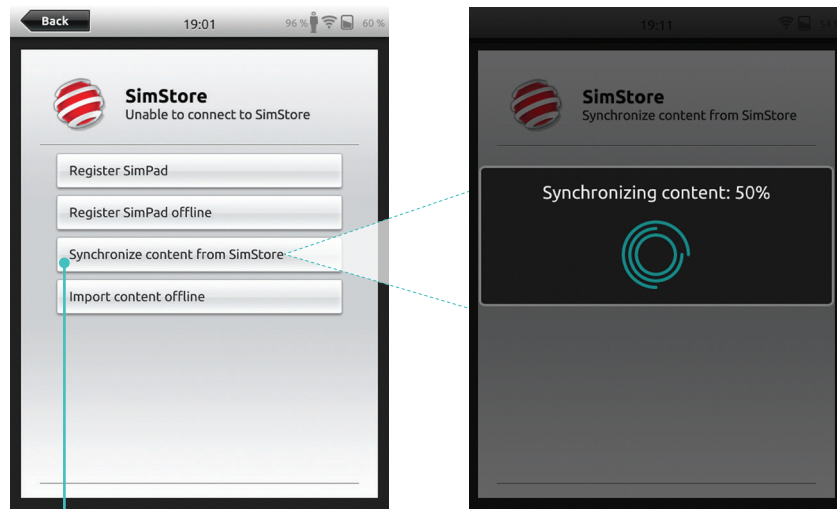


SimPad can also be registered offline. A device key will be generated. Register the device from a PC.



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/themeditor/ and be used offline.



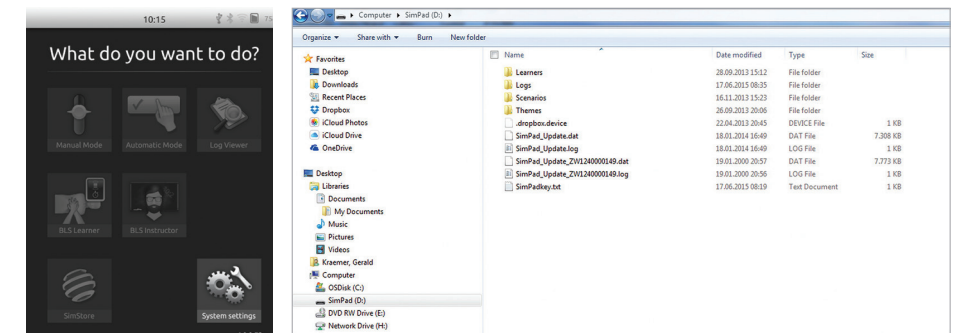
Note
Theme Editor will only be accessible using Internet Explorer.

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.

Plug headset into SimPad

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 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.

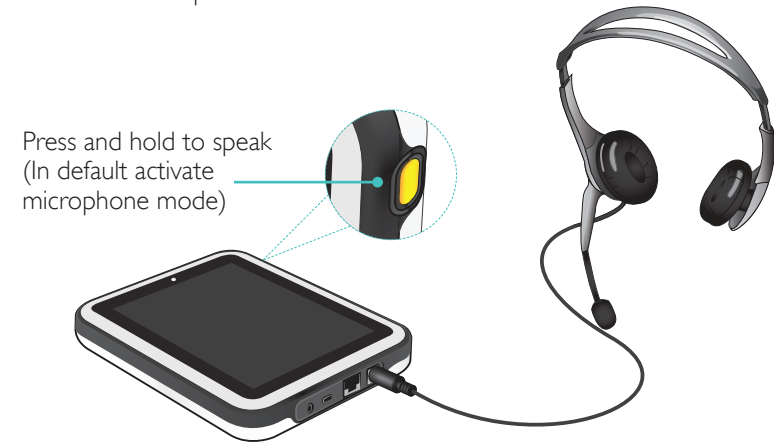
Vocal Sounds

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.

Configure the Auxiliary Button

Press and hold to speak

Press and hold to mute

Return to Session Overview

Connect Two Laerdal Li-Ion Batteries



Connect Two Laerdal Li-Ion Batteries



50% 50%

Tap to view Device information

Batteries are discharged in parallel

Link Box name: Bob
Simulator name: MegaCode Kelly Advanced
IP no: 172.56.254.1
Battery:
50% 50%

Link Box name: Arild's SimPad
IP no: 172.56.254.1

Link Box name: Bob
Simulator name: MegaCode Kelly Advanced
IP no: 172.56.254.1
Battery:
50% 50%

44% 53%

Tap to view Device information

Batteries are discharged independently

Device information

44% 53%

Connected to Link Box-bf108306

Connect to another simulator

SimPad name: SimPad
IP no: 10.183.40.89, 10.184.35.25

Link Box name: Link Box-bf108306
Simulator name: MegaCode Kelly Advanced
IP addresses 10.183.40.90, 10.184.35.27
Batteries:
4% 40%

Link Box name: Link Box-bf108306
Simulator name: MegaCode Kelly Advanced
IP addresses 10.183.40.90, 10.184.35.27
Batteries:
4% 40%

Remaining battery capacity

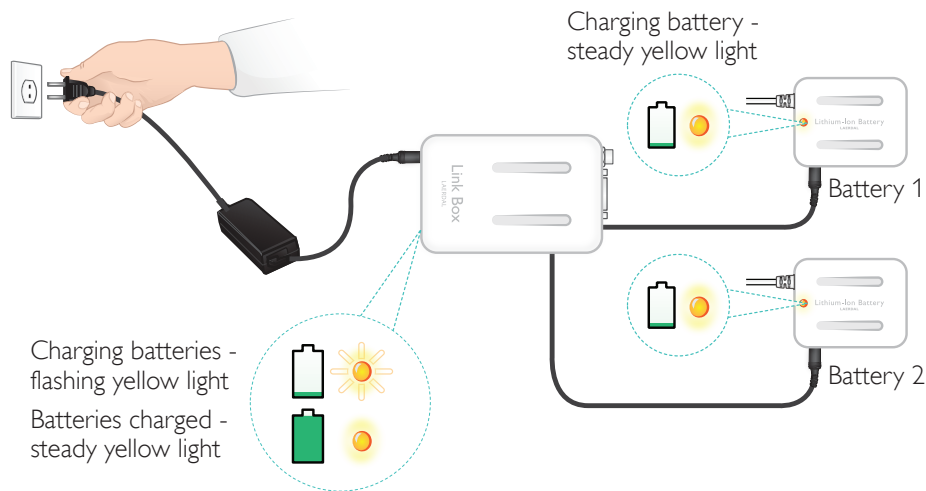
Charge Batteries

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	
Righth Bundle Branch Block (RBBB)	20 – 200	20 – 240	
Atrial Tachycardia (Atrach.)	140 – 260	90 – 320	
Supra Vent. Tachycardia (SVT)	140 – 260	90 – 320	
Atrial Flutter	75, 100, 150	75, 100, 150	PVC PVC RonT Couplet PVC PAC/PJC
Atrial Fibrillation (AFib.)	50 – 240	50 – 240	
Junctional	40 – 220	40 – 220	
1° AV-Block	20 – 135	20 – 135	
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	•	•	•

Features

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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