SimPad

User Guide

What do you want to do?

- Manual mode
- Automatic mode
- Log viewer
- SimStore
- System settings
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.

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

Status LED
On/Off
Auxiliary button

Front View

DC
Ethernet
USB
Audio out

Back View

Battery Connection
Manikin Cable
Blood Pressure Tube

Link Box PLUS Overview

Power LED
WiFi LED
On/Off
USB
Audio in
Audio out

Battery Connection

On/Off
Auxiliary button

Side Panel Connector

Ethernet
DC

Front View

Back View
SimPad Setup

Turn On

LED starts flashing green

When charged, turn on by pressing On/Off button

A steady green LED indicates the device is ready to use

Status LED

Off and charging battery - flashing yellow light.

Starting and shutting down - flashing green light.

Low battery - flashing red light.

Off but battery charged - steady yellow light.

On - steady green light.

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

When charged, turn on by pressing On/Off button.
Link Box Setup

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.
SimPad Setup

Starting for the First Time

Follow the on-screen prompts to configure the device.

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

Note

These configurations may be altered later.
SimPad Setup

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.
SimPad Setup

Turn Off

- Turn off by pressing On/Off button

SimPad

SimPad PLUS

Tap to shutdown SimPad and/or Link Box

Tap to shutdown SimPad and/or Simulator

Link Box Setup

WiFi Connection

- Connected to a network - steady green light

- Connected to a SimPad (or another instructor device) - steady blue light
Connection between SimPad and Link Box

SimPad communicates with the Link Box using WiFi.

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.

Select the appropriate Link Box/Simulator from the manikin connection menu.
Home Screen Overview

- Run pre-programmed Scenarios in Automatic Mode
- Battery status, connection and clock
- Select a log to facilitate debriefing with the Log Viewer
- Adjust display brightness, clock and more
- Register and synchronize with SimStore

Home screen may vary in appearance based on purchased licenses.

Automatic Mode

Select Scenario

- Select from Scenario menu
- Tap for detailed information on Scenario

Add Instructor

- Add Instructor
- Add Participant

Tap START to enter Session information

Add Participant

- Tap OK when ready
**Automatic Mode**

**End Session**
- Tap menu to End Session
- Open current Session log
- Display more or less information

**Select Theme**
- Folder of themes
- Tap to open
- Information about Session entered here will be added to log
- Tap to start Session

**Manual Mode**

**End Session**
- Tap menu to End Session
- Open current Session log
- Display more or less information

**Select Theme**
- Folder of themes
- Tap to open
- Information about Session entered here will be added to log
- Tap to start Session
Manual Mode

Change Parameters

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

Registering Interventions

- Tap to register participant’s interventions
- Time since Scenario was started
- Patient status
- Categories of interventions
- Tap to log interventions and events
- Set transition time
- The expanded state shows all parameters in the queue, ready to be activated
- Tap to activate State
- Last logged event
- Tap to add comment

White arrow indicates last activated state
Flag indicates start state
Tap to show detailed State information, before activating
Tap to activate State
Toggle On/Off shock activation
Tap to open State
Pressing "End" to finish session
Pressing "Pause" to stop session from running"
Manual Mode

Create New State for an Existing Theme

Tap to access Circulation Menu

Select desired parameter

Tap to create a new state

New state visible

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
3. Confirm
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

Current state: Higher HR

New state: Simple pneum

Press "RESUME" to continue session

Press "END / RESUME" to end session

Current state: Simple pneum

Current state: Higher HR

Current state: Simple pneum

Current state: Simple pneum

Current state: Simple pneum

Current state: Simple pneum

Current state: Simple pneum

Current state: Simple pneum

Current state: Simple pneum

Current state: Simple pneum
Manual Mode

View Log

Go to Log Viewer
Continue session
Tap to select new session
Toggle On/Off to view detailed log
Back to home screen

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

Full Session, with compressions and ventilations over time.

Chest release
Compression rate
Ventilation volume

Correct treatment
Related events
Correct hands
Communicate with patient
Identity patient
Comfort patient
Introduce self
Communicate clearly
Communicate effectively

06:00 State entered: Simple pneumonia
06:00 Effective communication
06:10 Team leadership
06:15 Check airway
06:20 Check breathing
06:41 Attach pulse oximeter

Compression depth

12/24/15 8:17
1 min 0 sec

16 Jun 2015 18:15
1 min 34 sec

06:18 Talk to patient
06:23 Effective communication
06:25 Standardize approach
06:30 Recall patient history
06:45 Attach pulse oximeter

06:00 Session started: Pneumothorax

06:00:00 State entered: Simple pneumonia
06:00:00 Effective communication
06:00:10 Team leadership
06:00:15 Check airway
06:00:20 Check breathing
06:00:41 Attach pulse oximeter

06:00:30 Check airway
06:00:35 Recall patient history
06:00:45 Attach pulse oximeter

Go to Log Viewer
Continue session
Tap to select new session
Toggle On/Off to view detailed log
Back to home screen

View Log

 QCPR
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

- Total time of this session: 11:46
- Number of cycles: 29
- Mean no flow time: 17 sec
- Compressions with correct hand position: 97%

Overall Score: 91%

Advanced CPR performer

Try to obtain a ventilation volume between 400 - 700 ml
Make sure you compress deep enough
CPR settings can be adjusted to individual needs. Laerdal recommends using settings compliant with ILCOR guidelines.

With overall score

Without overall score
Simulated Patient Monitor

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.

Select Cut Off limits

Navigate to menu and select Patient Monitor

Toggle On/Off vital signs
Simulated Patient Monitor

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.

Select WiFi
Tap to connect SimPad to a different Link Box
Options - SimPad PLUS

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.

Select WiFi

Tap to connect SimPad PLUS to a different simulator

Use SimPad PLUS without a Link Box PLUS

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

Select Standardized patient

Bluetooth

SimPad PLUS can also connect to bluetooth enabled simulators.
Network

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
Network - SimPad

Connect to a WiFi Network

Select WiFi

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

Network - SimPad PLUS

Connect to a WiFi Network

Select WiFi

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

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

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/](http://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](http://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.
Sounds

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

Green = From instructor to manikin
Red = 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.

Press and hold to speak
(In default activate microphone mode)

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

Configure the Auxiliary Button
Connect Two Laerdal Li-Ion Batteries

Laerdal Li-Ion Battery - SimPad

Connect Two Laerdal Li-Ion Batteries

Laerdal Li-Ion Battery - SimPad PLUS

Batteries are discharged in parallel

Remaining battery capacity

50% 50%

Tap to view Device information

Batteries are discharged independently

Remaining battery capacity

44% 53%

Tap to view Device information
Laerdal Li-Ion Battery - SimPad

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.

Charging batteries - flashing yellow light
Batteries charged - steady yellow light

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.

Available ECG in SimPad System

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

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

Blood Pressure

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>Systolic 0-300 mmHg / Diastolic 0-200 mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>+/- 4 mmHg</td>
</tr>
<tr>
<td>Calibration</td>
<td>Pressure sensor must be calibrated to sphygmomanometer. See Preferences menu.</td>
</tr>
</tbody>
</table>

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 Blood Pressures (mmHg)

<table>
<thead>
<tr>
<th>Default Blood Pressures (mmHg)</th>
<th>Adult Manikin</th>
<th>Child Manikin</th>
<th>Infant Manikin</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/80</td>
<td>100/70</td>
<td>94/66 (SimPad)</td>
<td>60/40 (SimPad PLUS)</td>
</tr>
</tbody>
</table>

Adult pulses are automatically adjusted to BP as follows:

<table>
<thead>
<tr>
<th>Systolic BP</th>
<th>Carotid Pulse</th>
<th>Radial/Brachial Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 88</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>&lt; 88</td>
<td>Normal</td>
<td>Weak</td>
</tr>
<tr>
<td>&lt; 80</td>
<td>Normal</td>
<td>Absent</td>
</tr>
<tr>
<td>&lt; 70</td>
<td>Weak</td>
<td>Absent</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>Absent</td>
<td>Absent</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Systolic BP</th>
<th>Carotid Pulse</th>
<th>Radial/Brachial Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;= 88</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>&lt; 88</td>
<td>Normal</td>
<td>Weak</td>
</tr>
<tr>
<td>&lt; 80</td>
<td>Normal</td>
<td>Absent</td>
</tr>
<tr>
<td>&lt; 70</td>
<td>Weak</td>
<td>Absent</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>Absent</td>
<td>Absent</td>
</tr>
</tbody>
</table>

Heart Sounds

Heart sounds are synchronized to ECG.

<table>
<thead>
<tr>
<th>Heart Sounds</th>
<th>Adult Manikin</th>
<th>Child Manikin</th>
<th>Infant Manikin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Aortic Stenosis</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Austin Flint Murmur</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Mitral Valve Prolapse</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Systolic Murmur</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Diastolic Murmur</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Friction Rub</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Opening Snap @70 msec</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Stills Murmur</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Atrial Septal Defect (ASD)</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Ventricular Septal Defect (VSD)</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Pulmonary Stenosis</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Lung Sounds

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

<table>
<thead>
<tr>
<th>Lung sounds</th>
<th>Adult Manikin</th>
<th>Child Manikin</th>
<th>Infant Manikin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Breath Sounds</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Fine Crackles</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Coarse Crackles</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Wheeze</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Stridor</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Pleural Rub</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Rhonchi</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>
### Features

#### Bowel Sounds

<table>
<thead>
<tr>
<th>Bowel sounds</th>
<th>Adult Male</th>
<th>Adult Female</th>
<th>Child Manikin</th>
<th>Infant Manikin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Borborygmus</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Hyperactive</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Hypoactive</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Fetal Normal 140 BPM</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Fetal Brady 100 BPM</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Fetal Tachy 200 BPM</td>
<td></td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>No sound</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

#### Vocal Sounds

Vocal sounds are adjusted for age and gender of manikin.

<table>
<thead>
<tr>
<th>Male Manikin</th>
<th>Female Manikin</th>
<th>Child Manikin</th>
<th>Infant Manikin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vomit</td>
<td>Vomit</td>
<td>Vomit</td>
<td>Cry</td>
</tr>
<tr>
<td>Cough</td>
<td>Cough</td>
<td>Cough</td>
<td>Cough</td>
</tr>
<tr>
<td>Moan</td>
<td>Moan</td>
<td>Moan</td>
<td>Content</td>
</tr>
<tr>
<td>SOB Breathing</td>
<td>SOB Breathing</td>
<td>SOB Breathing</td>
<td>Hiccups</td>
</tr>
<tr>
<td>Scream</td>
<td>Scream</td>
<td>Scream</td>
<td>Scream</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

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.