

Newborn HAL[®]

S3010



Gaumard[®]
Simulators for Health Care Education

Newborn HAL is an interactive educational system developed to assist a certified instructor. It is not a substitute for a comprehensive understanding of the subject matter and not intended for clinical decision making.

User Guide 14.5.1

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Care and Cautions

Overall Warnings

Remember that damage caused by misuse is not covered by your warranty. It is critical to understand and comply with the following guidelines. Additional warnings are found throughout the documentation

If the simulator will not be used for an extended period, re-charge the battery at least once every 30 days to prevent damage to the battery.

Do not attempt to intubate without lubricating the airway adjunct with a silicone oil lubricant (provided). Failure to do so will make intubation very difficult and is likely to result in damage.

NEVER disconnect the communications module while the UNI software is running. The software will halt, and the module may be damaged.

When simulating drug administration via endotracheal tube, providers must use an empty syringe. Passing liquids into the trachea or esophagus may cause internal damage.

Newborn HAL should be cleaned with a cloth dampened with diluted liquid dishwashing soap. If medical adhesives remain on the skin, clean with alcohol wipes. **DO NOT USE “GOO GONE”** as the citric acid in the formula will cause pitting of the various materials comprising your simulator.

Store Newborn HAL in a cool, dry place. Extended storage above 85 degrees Fahrenheit (29 Celsius) will

cause the simulator to soften and slowly warp. It is acceptable to operate Newborn HAL at an ambient temperature of 95 degrees Fahrenheit (35 Celsius).

Newborn HAL is "splash-proof" but not water-proof. Do not submerge or allow a large volume of fluid to enter the interior of the simulator. Do not expose the tablet computer to water or excessive dust unless it is protected by a rugged case (available separately).

Mouth to mouth resuscitation without a barrier device is not recommended, as it will contaminate the airway. Treat Newborn HAL with the same precautions that would be used with a real patient.

The use of needles larger than 22 gauge will reduce the lifetime of the lower arms' skin and veins.

When the arm veins require replacement, contact Gaumard to arrange for a lower arm exchange. Refer to the Consumables and Replacement Parts section of this guide, and contact customer service for more information.

Do not inject fluids into the intramuscular sites. Intramuscular sites are for placement exercises only.

Do not remove or replace the umbilical cord while Newborn HAL is in operation. Doing so will cause damage to the system.

Do not pull or carry the simulator by the limbs. Handle Newborn HAL with the same care as a human patient.

Electrical Therapy

One of Newborn HAL's most exciting features is the accommodation of real monitoring and electrical therapy devices. In most cases, no special instruction is necessary to use such devices. Newborn HAL's conductive skin sites allow the attachment of real EKG electrodes. This feature permits the user to track cardiac rhythms with their own equipment just like with a human patient. A few special concerns are described below.

Newborn HAL does not accept real electrical therapy. **Do not pace or defibrillate Newborn HAL with real electrical equipment.**



The Gaumard User Interface features a virtual electrical therapy function to simulate defibrillation or pacing.

Getting Started

Overview

GENERAL

- Tetherless and fully responsive even while being transported
- Powered from an internal rechargeable battery or wall outlet
- Battery capable of 300 recharges
- Simulator receives commands from a wireless tablet PC and operate at distances up to 300 feet
- Option to operate automatically using Automatic mode or manually by the Instructor
- Training Guide with both basic and advanced interactive scenarios
- Use pre-programmed scenarios, modify them or create your own quickly and easily
- Installation and training worldwide
- Simulation Made Easy™

AIRWAY

- Calibrate head flexion to obstruct airflow and chest rise
- Oral and nasal intubation
- Use an ET tube or LMA
- Sensors detect depth of intubation
- Unilateral chest rise with right main stem intubation
- Multiple upper airway sounds synchronized with breathing

APPEARANCE

- Color responds to hypoxic events and interventions (healthy, mild cyanosis, severe cyanosis)
- Forearms movements reveal muscle tone (active, medium, limp)

BREATHING

- Control rate and depth of respiration and observe chest rise
- Ventilation is measured and logged
- Select independent left and right lung sounds
- Chest rise and lung sounds are synchronized with selectable breathing patterns
- Accommodates assisted ventilation, including BVM and mechanical support
- Unilateral chest rise

CIRCULATION

- Conductive skin regions allow for ECG monitoring with real equipment
- Multiple heart rhythms, rates and complications
- Heart sounds include a normal heart as well as atrial and ventricular septal defects
- Chest compressions are measured and logged
- Blood pressure can be taken bilaterally using a cuff, palpation, or auscultation
- Blood pressure sounds audible between systolic and diastolic pressures

- Umbilical pulse and bilateral brachial pulses operate continuously
- Pulse strengths vary with blood pressure and pulses are synchronized with ECG.

SIMULATOR

- Physical size is 50th percentile at 40 weeks gestational age
- Interchangeable genitalia
- Internal rechargeable NiMH battery
- Venous access
- Bilateral IV training arms
- Patent umbilicus
- Intraosseous access at tibia

CONTROL

- Wireless tablet PC with stylus control
- Communication modules are FCC and CE Compliant
- Communications module can be used simultaneously with the tablet computer's integrated wireless (IEEE 802.11b) networking device

ACCESSORIES

- 100-240 VAC Charger
- Power supply
- Battery Charger
- Blood pressure cuff
- Instructions
- Carrying case

OTHER

- One year limited warranty, extended warranty to three years
- Installation and training services available

Terminology

It is wise to spend a moment familiarizing yourself with some of the terminology that will be used to discuss simulation with the Newborn HAL system.

Automatic Mode - In this mode, vital signs respond automatically to caregiver participation, instructor specifications, and pharmacologic intervention. The model used in this operating mode was developed based on physiologic principles. Features unique to this mode include: a comprehensive list of drugs for easy administration, a drug profile editor for adding new drugs or editing existing ones, among other things.

Facilitator - the person conducting the simulation; an instructor or lab staff member.

GUI - the Gaumard User Interface - is the software application, used to control the simulator and evaluate care providers.

Palette - a collection of Palette Items. Each profile has its own palette.

Palette Item - Any full or partial set of physiological parameters that have been grouped and saved together under a single name.

Profile - a unique Newborn HAL software configuration, including custom Palette, Scenarios, and options. Each Profile acts as a separate program, in that changes

made to one profile have no effect on the others.

Provider - a person participating in the simulation as a healthcare provider.

Scenario - a saved sequence of physiological states, like a "playlist." Scenarios provide a level of automation that unburdens the facilitator and allows standardized presentation of symptoms.

Scenario Item - a Palette Item that is part of a scenario. Scenario Items may also represent a fixed delay period ("Wait") or a pause ("Wait Indefinitely").

Stylus - a special pointing device for the tablet computer. The stylus is the fastest and easiest means of controlling the Newborn HAL software. See the Equipment Set-up section of this guide for more information on working with the stylus.

Equipment Set-up

Newborn HAL

Battery

Newborn HAL (S/N B1010788 or higher) includes two separate power adapters labeled “Newborn HAL Charger” and “Newborn HAL Power Supply”. Please review the use for each adapter before using the simulator for the first time.

BATTERY LIFE

Newborn HAL has a maximum battery runtime of approximately 3 hrs. Total runtime is dependent on the breathing rate, volumes, seizures, and muscle tone.

The battery charge is displayed on the software panel after the connection with the simulator is established. For more information about the battery indicator, refer to Working with UNI section.

WARNING:

Do not store the simulator with a discharged battery. It is good practice to re-charge the battery at the end of every simulation session.

If the simulator will not be used for an extended period, re-charge the battery at least once every 30 days. Doing so will prevent a reduction of the battery’s total charge capacity to self-discharge.

CHARGING THE BATTERY

The simulator’s battery can only be recharged using the “battery charger”. In addition, the simulator must be off or in standby. The battery charger does not recharge the battery while the simulator is in use, nor does it keep the battery from discharging.

Turn the simulator off and connect the battery charger to recharge the battery.

To charge the battery:

1. Close the UNI software to turn the simulator off
2. Connect the adapter labeled “Newborn/Premie HAL Charger” to the battery port located on the simulator’s right side.
3. Allow the simulator to charge for 2-3 hours (or until the charger displays a green light). The charger indicator light will show red during the charge period and green once the process is complete.



4. After the charger indicator light turns green, disconnect the

charger. The simulator is ready for use.

Avoid using the simulator while the battery charger is connected. Please reference the troubleshooting guide for information on how to resolve battery issues.

USING THE POWER SUPPLY (SYSTEM S/N B1010788 OR HIGHER)

The “power supply” adapter allows the simulator to operate through long simulations sessions by drawing power from the wall outlet and not battery reserve. Use the power supply for simulation sessions lasting 2 hours or more. If simulation sessions are shorter than 2 hours, use the simulator’s battery reserve.

The “power supply” adapter will NOT re-charge the battery. Avoid using the “power supply” adapter when the simulator’s battery is completely depleted.

To operate the simulator from wall power using the power adapter:

1. Fully recharge the simulator’s battery using the “Battery Charger” adapter.
2. Disconnect the “Charger” and connect the “Power Supply” adapter.
3. Activate the UNI software.

4. The UNI battery icon will display a lightning icon when the power supply is connected.

Please contact Gaumard for information on the power supply upgrade for earlier Newborn HAL models.

Control Table PC

The tablet PC is preloaded with the UNI control software used by the facilitator to initialize the simulator and control the vital signs.

Before turning on the computer for the first time, please review the documentation included with the product for important care and warning information.

USING THE STYLUS

The tablet’s stylus is a pen-shaped input used to interact with files and programs.

- Left click - tap the screen with the pointer. Tap twice rapidly to double-click.
- Right click - tap and hold a highlighted item or hold the button near the pointer and tap the item or text.

CALIBRATING THE STYLUS

As part of the initial setup process, calibrate the stylus using the Tablet and Pen calibration tool in the Windows® control panel. Complete the calibration process while holding

the pen in a natural writing position for greater accuracy during normal use.

WIRELESS COMMUNICATION USB MODULE

The controlling computer transmits the startup and control commands to simulator through the USB RF communication module.

Connect the RF communication module to an available USB port on the tablet.



Secure the RF communication module to the tablet or PRO+ computer using the Velcro patch. The tablet is now ready to communicate with the simulator wirelessly. For information about the signal strength indicator, go to Working with UNI section

WARNING:

Never disconnect the communications module while the Newborn HAL software is running. Doing so can seriously damage the module.

Virtual Monitor

The Gaumard Monitors software displays NEWBORN HAL's simulated vital signs in real time. The interactive monitoring software is preloaded in to the virtual monitors PC.



VIRTUAL MONITOR PC SETUP

Refer to the manufacturer's documentation included with the virtual monitor system components for important safety, installation, and start-up information before turning on the computer for the first time.

To setup the virtual monitor PC:

1. Place the all-in-one PC within line of sight of the controlling computer
2. Connect the power supply
3. Connect the USB keyboard and mouse receiver
4. Turn on the computer

VIRTUAL MONITOR WIRELESS CONNECTIVITY

The control PC and the all-in-one virtual monitor PC automatically establish a wireless link at startup. The wireless connection allows the Gaumard control software to transmit the vital signs information to the Gaumard Monitors software.

To verify the wireless link between the two computers, click the wireless icon located on the task tray. The wireless network name is configured at the factory and may differ from the one seen below. To troubleshoot connection issues between the virtual monitor computer and the controlling tablet, please go to the Appendix.

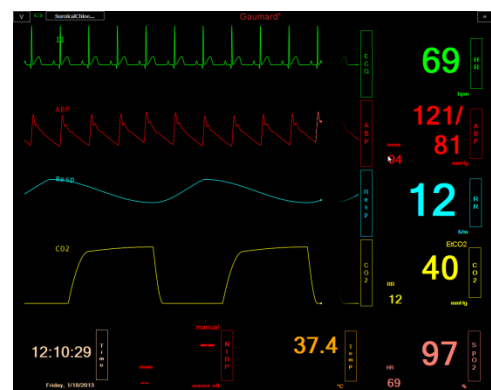


GAUMARD MONITORS

After the wireless connection is established, double click or tap the Gaumard Monitors icon to start the vital signs software.



The Gaumard Monitors software is now ready to receive the vital signs information generated by the UNI control software.



For more information about the Gaumard Monitors software, please refer to the Gaumard Monitors user guide.

Working with UNI

Initializing the Simulator

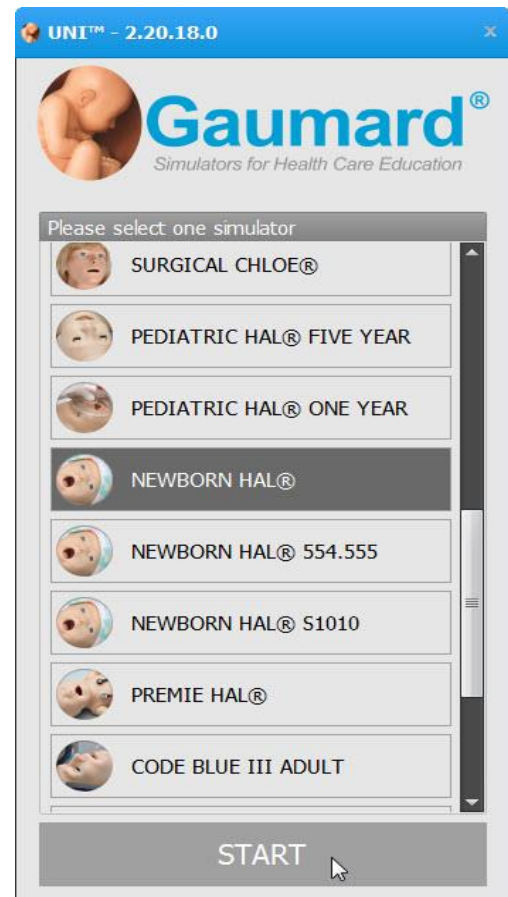
After reading the manufacturer's care and caution information, press the power button to turn on the Tablet PC.



The UNI software initializes the simulator. Double click the UNI icon on the tablet's home screen to start.



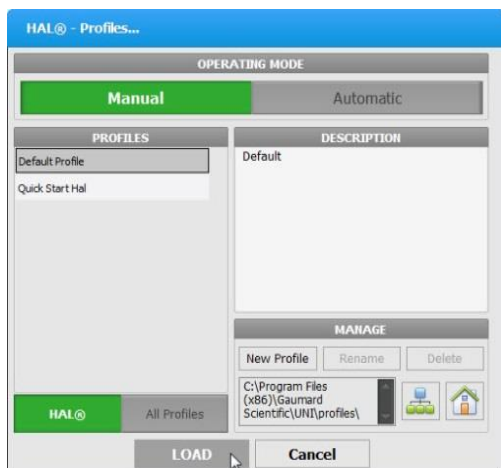
The simulator selection menu is shown. Select Newborn HAL and click "Start".



The wireless link between UNI and the simulator is established within 1 minute.

PROFILES AND OPERATING MODES

After the startup screen, the profile and operating mode selection menu is displayed.

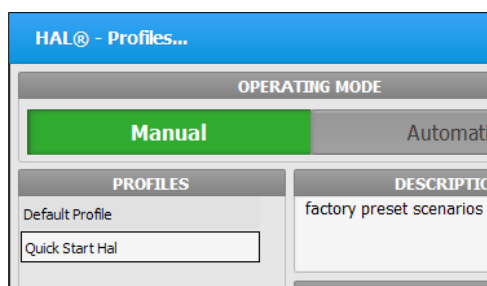


The UNI control software has two modes of operation: Manual and Automatic. Each mode includes a Quick Start profile with preprogrammed scenarios exercises created in conjunction with experienced healthcare instructors and working medical professionals. Continue to the next section to learn more about the each operating mode and the profiles included.

After selecting an operating mode and profile, click “Load” to continue.

MANUAL MODE

In the “Manual” operating mode, the facilitator fully controls the vital signs and physiologic responses.



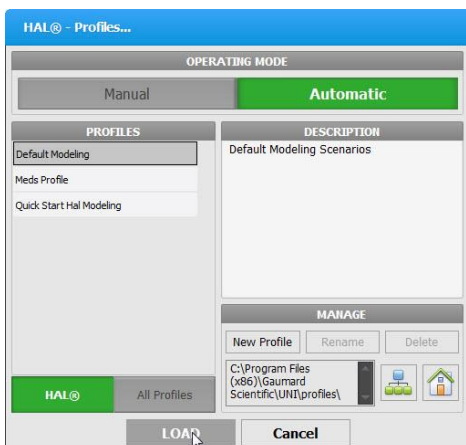
The Manual mode includes the following profiles:

Default Profile – includes one palette with healthy vital signs.

Quick Start Newborn HAL – includes eleven scenarios

AUTOMATIC MODE

The Automatic mode assists the facilitator by automatically adjusting vital signs in response to caregiver participation, pharmacologic intervention, and manual input. For example, when facilitator increases the heart rate, the Auto mode will calculate the response and adjust the blood pressure automatically. To activate the operating mode as an upgrade option, go to the digital UNI user guide.



The Automatic mode includes the following built-in profiles:

Default Modeling– includes one palette with healthy vital signs.

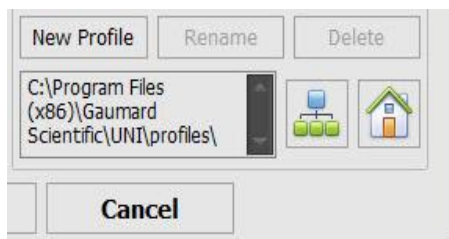
Meds Profile – This profile includes a library of pre-programmed drugs to be used on simulations.

Quick Start Newborn Hal Modeling – includes eight lineal scenarios and one branching scenario allowing instant simulation of a wide range of conditions

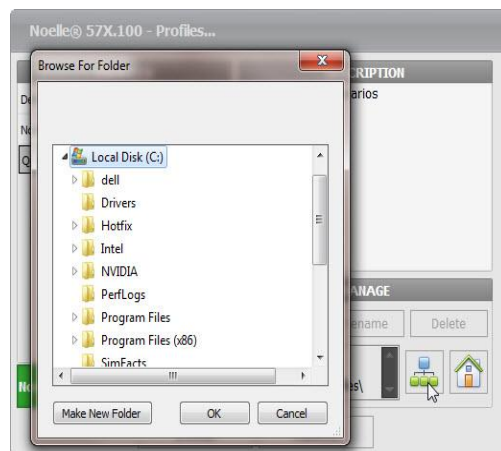
MANAGING PROFILES

Use the Manage Profile Menu to create a new profile and edit this profile.

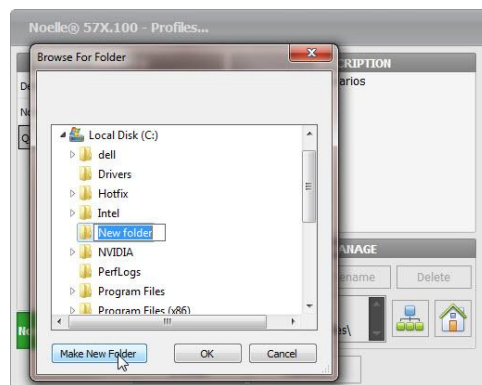
In addition, the profile folder location will be shown below the “New Profile” icon.



Use the “Map Profiles folder” icon to select the location of the new profile to be created on the server.

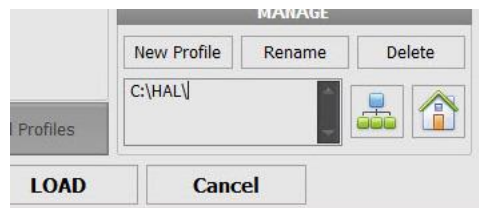


Select the server location and click “Make New Folder” to create the profile folder.



Assign a name to the folder and click “OK”

The new profile folder location will show up. Then proceed to create a new profile, see instructions detailed below.



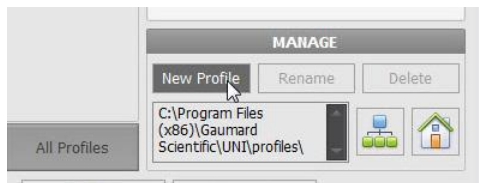
Use the “Home” icon to reset to default profiles folder.

CREATING A NEW PROFILE

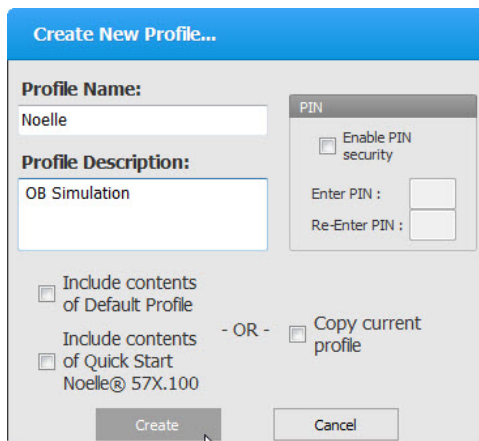
Profiles store palette, scenario, and option settings independently; changes made to one profile have no effect on the others. Below are some examples on how profiles are used.

- Assign one profile to each user of your Gaumard simulator system
- Use profiles to organize and protect palettes and scenarios
- Create a profile dedicated to a specific academic course taught by multiple instructors
- Devote an entire profile to one particular subject area, or even one particular scenario

To create a new profile, click “New Profile”.



Enter a name for the new profile followed by a description.

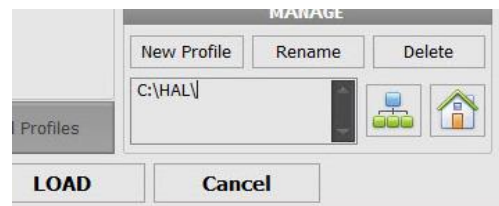


Enable the PIN protection to prevent unauthorized users from accessing

or making changes to this profile.

Lastly, click “Create” to save the new profile

Click “Rename” or “Delete” to change the name of delete this new profile.

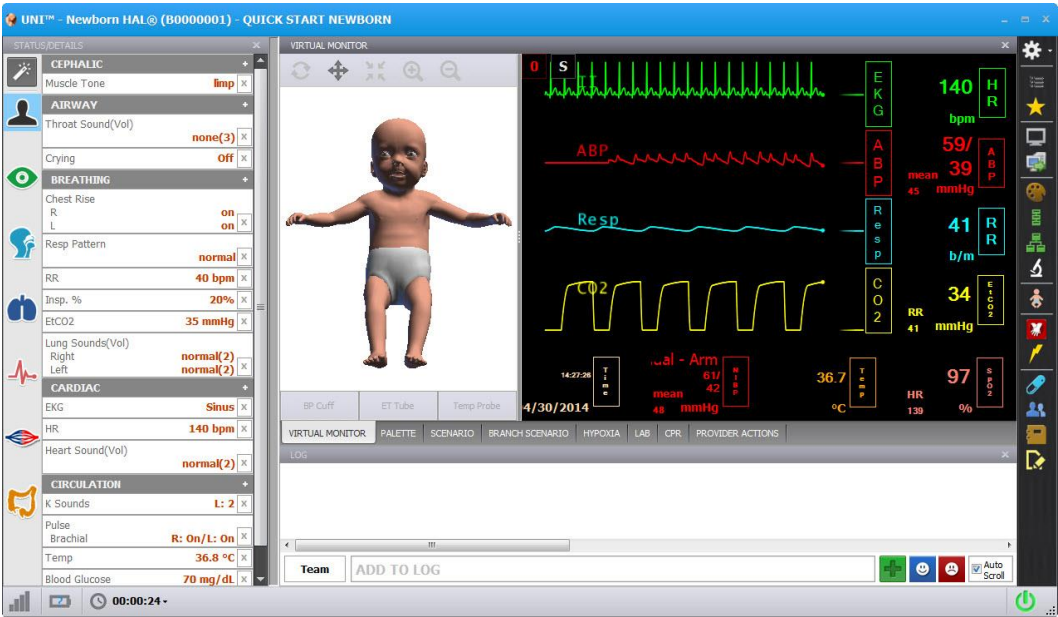


For more information about the UNI software, refer to the digital User Guide under Menu/Help/Instruction Manual.

UNI Interface

The UNI software is used control the simulator, monitor the vital signs, and evaluate the provider’s performance. The simulation technician or instructor carrying out the simulation operates the UNI software

The UNI control elements and scenario programming procedures are consistent throughout the Gaumard family of high fidelity simulators. Some software controls and features covered in this guide may be hidden depending on the simulator’s hardware configuration and optional upgrades.



CONNECTION STATUS

The communication indicator displays the status of the radio link between the tablet’s USB RF module and the simulator. Full bars indicate excellent communication (i.e., normal operation).



BATTERY INDICATOR

The battery indicator displays the battery charge information. An exclamation sign is shown when there is no communication with the

simulator and battery information cannot be retrieved.



When the battery icon is depleted, the simulator is set to STAND-BY mode automatically to protect some of the simulator’s internal components.

Simulator will not initialize until connected to the charger or the battery is replaced with a fully charged spare.

WARNING

Turn Simulator OFF before replacing the battery. Failure to do so could result in serious damage to the system.

Feature	Runtime
Internal Battery	Approx. 3 hours

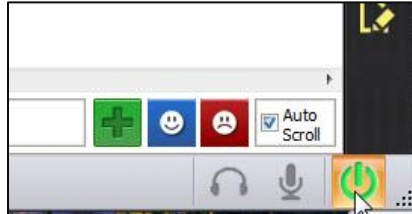
SESSION CLOCK

The session timer displays the duration of the current session. Click the timer to reset the clock or to start a new session. Event entries in the text log are synchronized with the session timer.



POWER/STAND BY

The power button is located at the bottom right corner of the UNI software. Toggle the power button to set the simulator to stand-by mode and then again to resume.



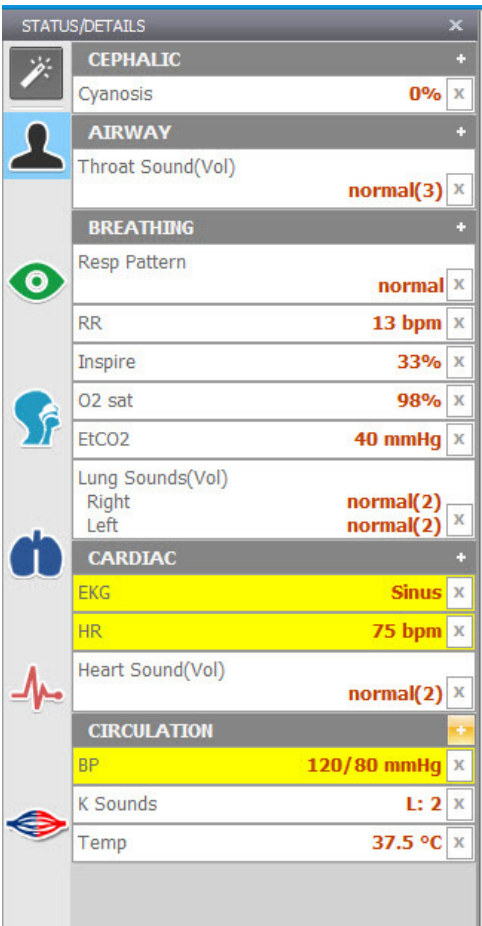
For more information about the UNI software, refer to the digital User Guide under Menu/Help/Instruction Manual.

Status / Details Controls

The Status/Details panel is used to monitor and control the simulator's vital signs. The individual parameter controls displayed on the details tab provide the simplest method for controlling the simulator's vital signs, sounds, and features.

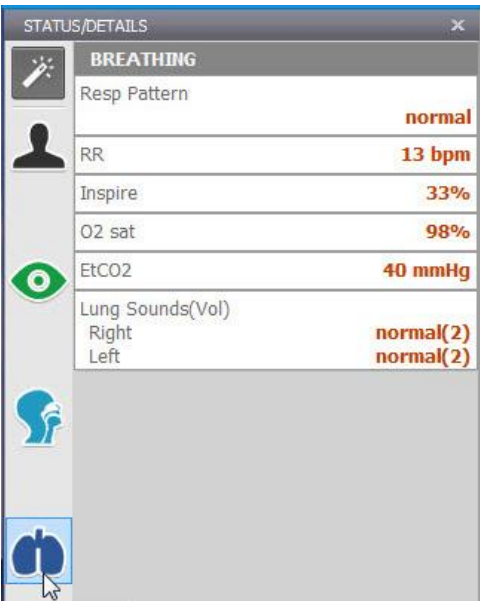
The Status/Details tab displays the vital signs controls in a list format.

SYSTEMS LIST VIEW



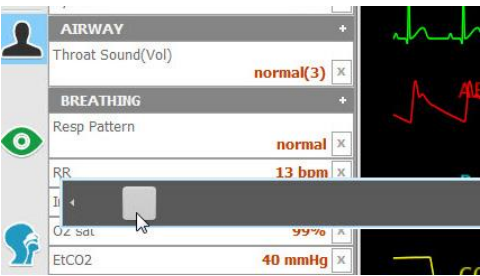
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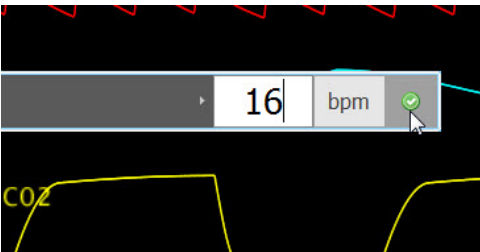


CHANGING VITAL SIGNS

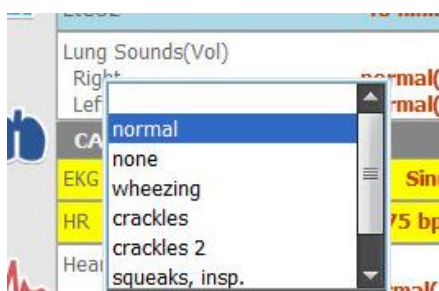
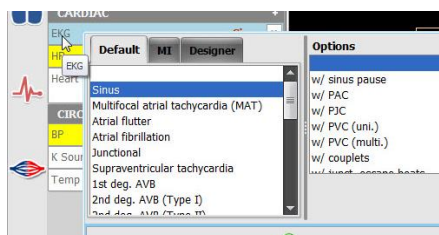
To adjust numerical values click the slider control. (e.g. heart rate, blood pressure, respiratory rate, etc.).



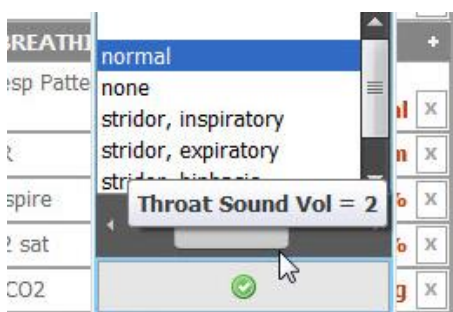
Alternatively, use the keyboard for manual entry and click the green checkmark to confirm the change.



To change patterns, sounds, and rhythms, click on the specific control to display the library (e.g. EKG rhythms, heart and lung sounds, respiratory patterns, etc.)



Click the slider control below the sound library to adjust the volume of the sounds.



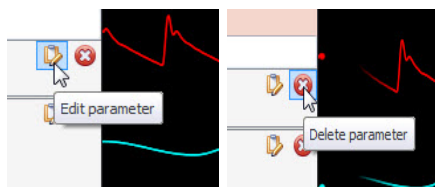
APPLYING CHANGES

No changes will be made to the simulator's condition until the new settings are submitted using the "Apply" panel.

After the list of changes is created, click "NOW" to update the vital signs instantly. Alternatively, click a trending timer to update numerical vital sign parameters (e.g. heart rate, blood pressure) gradually.



Vital sign parameters can be edited or removed using the edit and remove parameter tabs



Enable the "instant apply" option and click the control to change the vital

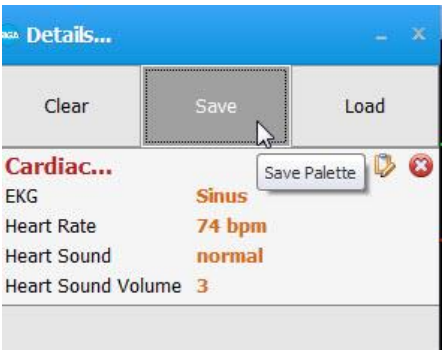
sign to a new value without the need to use “Apply” panel. Vital signs undergoing change blink yellow.



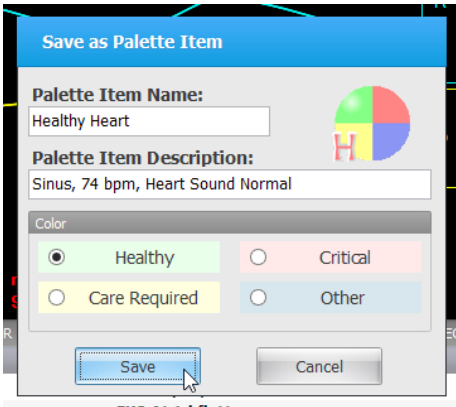
CREATING PALETTE ITEMS

A palette item stores one or more vital sign settings into a single loadable object. Use a palette item to update a set of vital signs quickly. For example, one palette item can be created to update all the cardiac parameters to a healthy state.

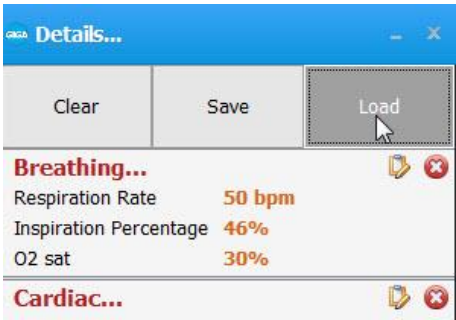
To create a new palette item, set the values for the desired vital signs parameters using the details controls and click “Save”.



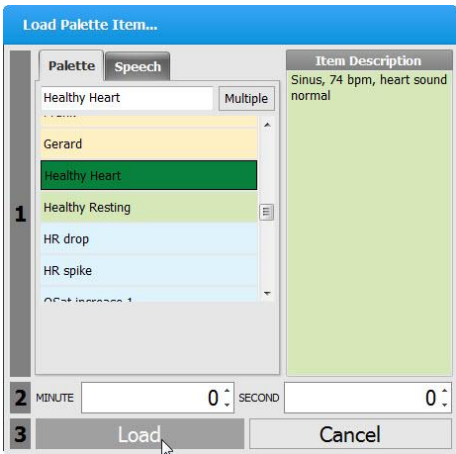
Enter a name for the palette, a description, and choose color code. Click “Save” to create the new palette item. Palette items are stored in the active profile.



When the palette is needed, click the Load button to select the palette from the library.



Select the palette item from the “Load Palette Item” menu and click “Load”

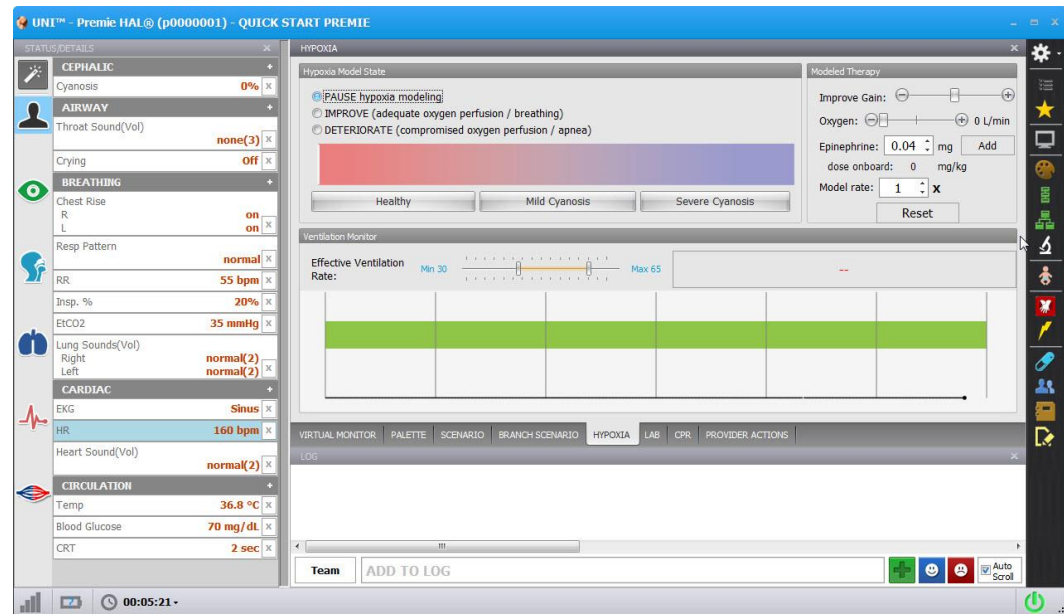


Click the apply option to submit the changes.

Clear	Save	Load				
Anthony						
asystole						
Airway...  						
Upper Airway Sound none						
Breathing...  						
Respiratory Pattern normal						
Respiration Rate 0 bpm						
Inspiration Percentage 33%						
O2 sat 50%						
Lung Sounds Upper Right none						
Lung Sounds Upper Left none						
Cardiac...  						
EKG Asystole						
Heart Rate 0 bpm						
Sinus Arrhythmia Off						
Heart Sound normal						
Circulation...  						
Blood Pressure 0 / 0 mmHg						
NOIN 	10 sec	30 sec	1 min	2 min	5 min	10 min
☐ On Apply: Clear and Close Details Window						

Modeling (Newborn/Premie)

Use the Hypoxia tab to evaluate the effectiveness of provider intervention on an apneic patient. The model adjusts the cardiac, oxygen saturation, and cyanosis dynamically in response to effective ventilations. The model also responds to the administration of epinephrine and oxygen.



HYPOXIA MODEL STATE

The hypoxia model options improve or deteriorate the cardiac and respiratory vital signs gradually.

- Pause - Model will pause at the current state.
- Improve - Trend the vital signs to a healthy state.
- Deteriorate - Trend the vital signs to a severe cyanotic state. Ventilations are detected when the respiratory rate is at 0.

CYANOSIS LEVELS

Select the cyanosis level to move to any of the following states immediately:

- Healthy - Pedi is pink with adequate oxygenation.
- Mild Cyanosis - Pedi is slightly blue, and the vital signs are starting to deteriorate.

- Severe Cyanosis - Pedi is blue, apneic, and vital signs are rapidly worsening.

MODELED THERAPY

The modeled therapy menu provides additional intervention options.

- Improve Gain - Adjust the slider to increase or decrease the cyanotic response to ventilations.
- Oxygen - Adjust the slider to administer oxygen to the fetus in liters per minute.
- Epinephrine - Administer epinephrine to the model. Set the epinephrine dose and then click “add”. Administering epinephrine increases the heart rate.
- Reset - Click “Reset” to clear the oxygen flow and the epinephrine dose onboard

Working with Newborn HAL

Disclaimer: The section below describes all possible features in the Newborn HAL® simulator. The content of this table are subject to change without prior notice. Please contact Gaumard Scientific for the most current information.

Legend: Y = Yes N = No O = Optional

Airway	Nasal Intubation	Y	
	Oral Intubation	Y	
	Breathing/Airway Sounds	Y	
Breathing	Independent Chest Rise*	Y	
	Lung Sounds	Y	
Cardiac	Heart Sounds	Y	
	Chest Compressions	Y	
	ECG generated in real time	Y	4 patches
Circulation	Bilateral IV	Y	
	Bilateral virtual BP	Y	
	Pulses	Y	Fontanel, Brachial, Umbilical
	Cyanosis	Y	
	Disable Pulses	Y	Brachial
Systemic	Bowel Sounds	Y	Starting with SN: B0906425
	Male/Female Catheterization	Y	
	Head Position Sensor	Y	Hyper flexion disables chest rise
	Seizures	Y	
	Intraosseous access	Y	
Other	Physiologic Model	O	
	Instructor control/data change	Y	300 feet
	ETC Pro+	O	Audio/Video recording and debriefing
	Gaumard Virtual Monitor	O	

Airway

INTUBATION

Newborn HAL’s airway can be intubated orally using LMA or endotracheal tubes and nasally using a nasogastric tube.



Procedure	Recommended Device Size
Intubation (Blade size)	Miller 0
LMA	Size 1
Nasal Intubation	8 Fr catheter
Oral Intubation	ETT 3.0 no cuff, 6 Fr suction catheter

Once intubated, sensors detect the depth of the intubation tube. Should the tube be inserted too deep, the left lung is automatically disabled

realistically demonstrating right mainstem intubation. Correcting the tube position re-enables the left lung.

Warning:

Always lubricate tubing, airway, and nasal opening prior to performing any nasal or oral intubation. Failure to do so will make intubation very difficult and is likely to result in damage.

Do not insert liquids or spray silicone oil into the mouth and airway.

AIRWAY SOUNDS

HAL has multiple upper airway sounds synchronized with his breathing.

Breathing

BREATHING PATTERN

Control rate and depth of respiration and choose independent quadrant lung sounds synchronized with the available breathing patterns.

LUNG SOUNDS

Listen to the lung sounds using a stethoscope. Use the vital sign parameter controls to change between the available sound types. Volume controls for the lung sounds are located on the status panel.

BILATERAL CHEST RISE

Enable or disable the right or left lung independently.

PULMONARY VENTILATION

Ventilate using a BVM or a mechanical ventilator. To display chest rise during ventilation and receive feedback on the CPR window, set the lungs to the “Enabled” state and the respiratory rate to 0. For more information on the CPR trainer, go to the digital UNI User Guide under Software Menu/Help/Instruction Manual.



Cardiac

HEART SOUNDS

Auscultate realistic heart sounds synchronized to the heart rate and heart rhythms.

CHEST COMPRESSIONS

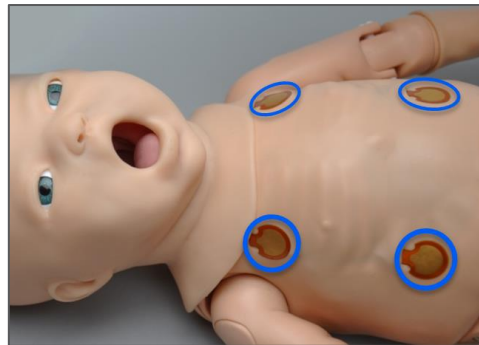
During cardiac arrest, chest compressions are measured and logged. Use the CPR window to assess CPR technique and effectiveness by monitoring cadence and depth in real time. For more information on the CPR trainer, go to digital UNI User Guide under Software Menu/Help/Instruction Manual.

ECG MONITORING AND ELECTRICAL THERAPY

The conductive skin sites allow the use of real EKG electrodes. Track the cardiac rhythm with real equipment just like with a human patient.

Warning:

Do not pace or defibrillate the simulator. Doing so will result in damage to the simulator.



Use the virtual shock panel to simulate the administration of electrical therapy via software. To enable the virtual shock panel feature, go to digital UNI User Guide under Software Menu/Help/Instruction Manual.

Circulation

PALPABLE PULSES

Palpable pulses are dependent on blood pressure. Use the software controls to disable distal pulses and simulate severe hypotension.

PROGRAMMABLE BLOOD PRESSURE

Use the modified sphygmomanometer included with the system to get blood pressure readings controlled by UNI. In addition, auscultate the Korotkoff sounds using a stethoscope.

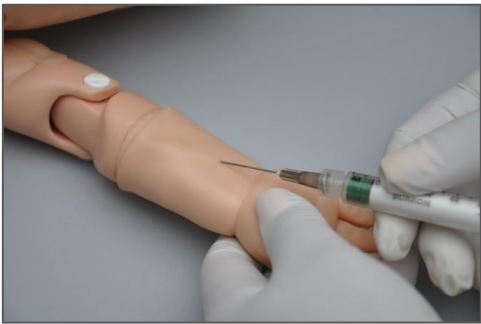
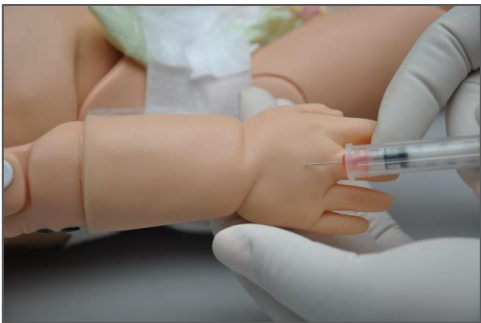
CONNECTING THE MODIFIED CUFF

Connect the Luer-Lok fitting on the end of the extra branch to the Luer-Lok port on the simulator's left shoulder.



INTRAVENOUS EXTREMITIES

Bilateral IV training arms allow intravenous infusions as well as drawing fluids.



Procedure	Recommended Device Size
IV Access	23 gauge needle

FILLING THE IV VASCULATURE

Follow the steps below to fill the IV vasculature for drawing fluids.

1. First, locate the fill syringe with fill tubing, the drain tube with pinch-clamp, the luer-connectors, and stoppers (included in your simulator packaging).



The threaded ports, located on both lower arms and left lower leg of the newborn, are used for filling and draining the IV system.

2. Fill the modified syringe and the fill tubing with water or diluted, Gaumard, simulated blood.



3. Connect the fill and drain luer-connectors to lower

arm/leg threaded ports as shown below

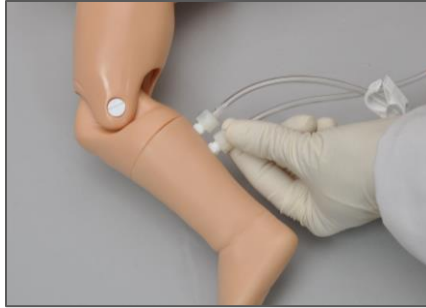


Warning:

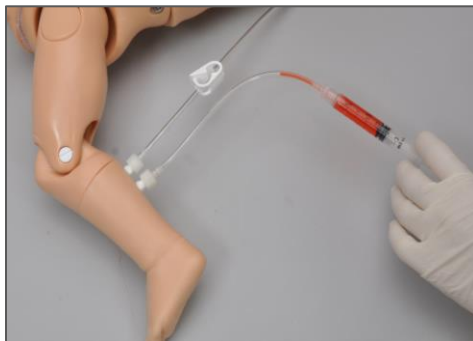
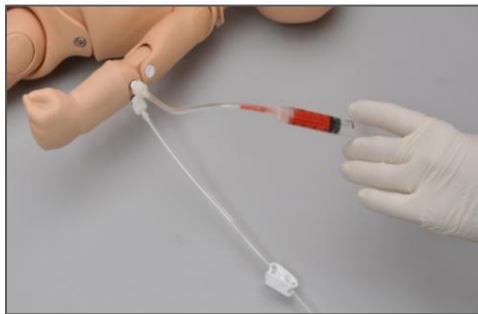
Do not over tighten the luer-connectors into the newborn's ports.

4. Connect the drain tube with clamp to one of the connectors and the fill tubing with syringe to the other connector.

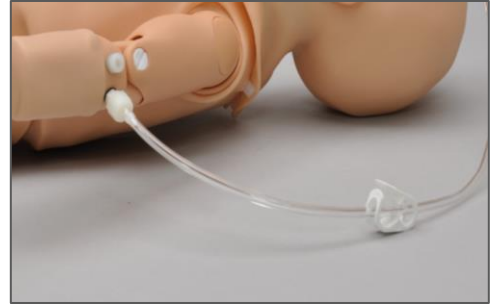




5. Leave the drain tube's clamp open and depress the syringe until air has been purged from the IV system and fluid runs from the drain.



During infusion exercises, always connect the stopper to one port and leave the drain tube attached to the other port. Direct the outflow into a collection container.



Use flashlight to detect dorsal pedal injection site on the left foot veins. (simulators with serial number B0906424 or higher ONLY).

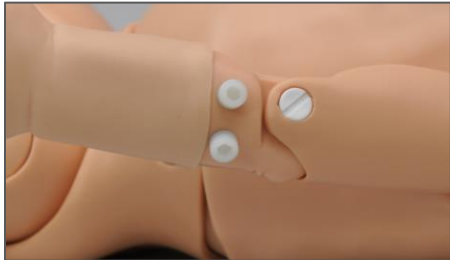


Warning:

Fill the IV vasculature with diluted Gaumard simulated blood only. Any other simulated blood brand containing sugar or additives may cause blockage and/or interruption of the vasculature system.

Do not fill IV systems without the drain connector in place. Doing so could result in damage to the self-healing ports.

When finished with the IV simulations, flush and drain the IV vasculature and leave the stoppers connected to avoid leakage of any residual fluids.

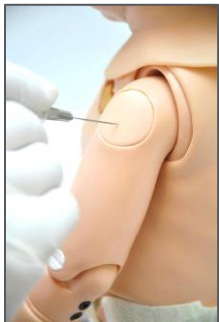


INTRAMUSCULAR INJECTION SITES

IM sites are located on both deltoids and quadriceps for placement and technique exercises.

Warning:

Do not inject fluids into the intramuscular sites.



INTRAOSSEOUS ACCESS

The intraosseous access allows for infusing fluids, blood and/or drugs directly into the bone marrow of the tibia.



Remove the skin and the bone inserts to drain the fluid infused during an exercise. To get more uses from every bone insert, reseal the needle holes using cement glue.



Procedure	Recommended Device Size
IO Access	18 gauge

Cephalic

CYANOSIS

Control and program the cyanosis visible on the simulator. Use the Model tab to automate the change in cyanosis as the provider performs CPR intervention. For more information on the Model feature, go to digital UNI User Guide under Software Menu/Help/Instruction Manual.

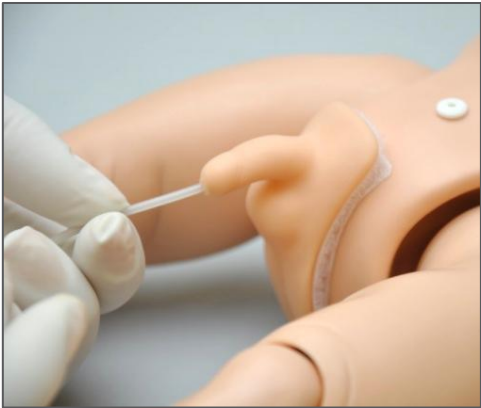
MUSCLE TONE AND SEIZURES

Control the movement of the simulator’s arms by enabling any of the available muscle tone settings: limp, reduced, active, left arm only, right arm only, jittery or seizures. For a more pronounced movement effect, lay the simulator on a flat surface with the arms parallel to the ground.

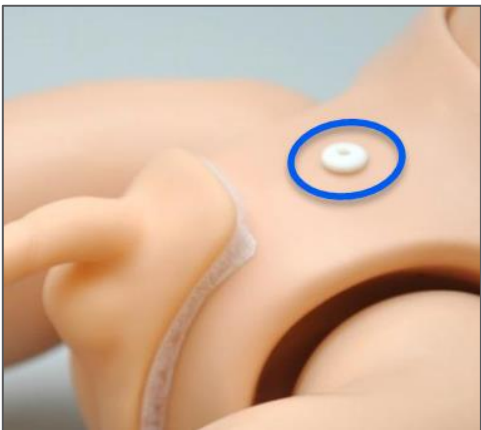
Systemic

CATHETERIZATION

Perform catheterization exercises via exchangeable male and female genitalia.



To fill the urine reservoir, remove the white cap and use the modified syringe to fill the bladder reservoir.



Procedure	Recommended Device Size
Urinary catheterization	Lubricated 5 to 8 Fr
Infusion	4 ml

UMBILICAL CORD (SYSTEM S/N B0906424 OR HIGHER)

Catheterize or inject the umbilical cord. To fill the umbilical cord with fluid, inject any of the three blood vessels with 2 mL of water using the syringe. For catheterization exercises, use a 6 Fr urethral round

tip catheter lubricated with silicon oil.



Procedure	Recommended Device Size
Umbilical Vein Catheterization	Lubricated 6 Fr urethral round tip
Infusion	2 ml

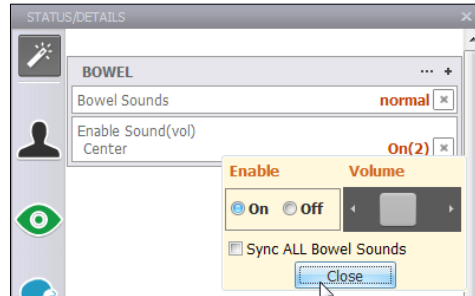
The replaceable umbilical cord can be trimmed or cut. Before removing or replacing the umbilical cord after an exercise, turn off the simulator by exiting the software (File>Exit), or set the simulator on STAND-BY mode. After the simulator is powered down, the umbilical cord can be safely unplugged. For information about ordering replacement umbilical cords, go to the Appendix.

Warning:

Do not remove umbilical cord while Newborn HAL is in operation. Doing so will cause damage to the system.

BOWEL SOUNDS (SYSTEMS S/N B0906424 OR HIGHER)

Auscultate the abdomen for normal and hyperactive bowel sounds.



Other

TEMPERATURE PROBE PLACEMENT DETECTION

The temperature reading on the vital signs monitor is displayed when a temperature probe is placed on the lower right quadrant of the abdominal area.



To enable the temperature sensor detection feature, go to Setup>Options>Neonate features Tab. Checkmark "Use temp. sensor" and click OK to save. The log panel detects the placement of the sensor.

VITAL SIGNS MONITOR

The virtual monitor touchscreen display simulates the functionality of a patient vital signs monitor. Users

can customize the type of waveforms and scalars displayed, set alarms, and display lab reports, x-rays, and other files for the provider to access during simulation.



For information on how to setup Gaumard Monitors with GUI, please refer to the help File included with the Gaumard Monitors software.

PRO + (OPTIONAL)

The Pro+ system is an all-in-one session recording and simulator control solution for facilitators in a lab or mobile environment. The built in UNI software allows the facilitator to control Newborn HAL while recording care provider interaction and event logs. The upgrade replaces the standard tablet with a convertible touchscreen laptop loaded with the Pro+ environment and UNI, (2) WI-FI enabled cameras, (1) motorized 180 view USB camera and carrying case.



For more information on using the Pro + system, refer to the documentation included with the upgrade option.

Appendix

More about Scenarios

Factory Preset Scenarios

Newborn Scenarios	
Quick Start Newborn Profile	MANUAL - LINEAR
1	Alice's Baby
2	Asphyxia
3	Beth's (Dona's) Baby
4	Cynthia's Baby
5	Elaine's Baby
6	Francine's Baby
7	Gloria's Baby
8	Helen's (Irene's) Baby
9	MAS
10	RDS
11	TTN

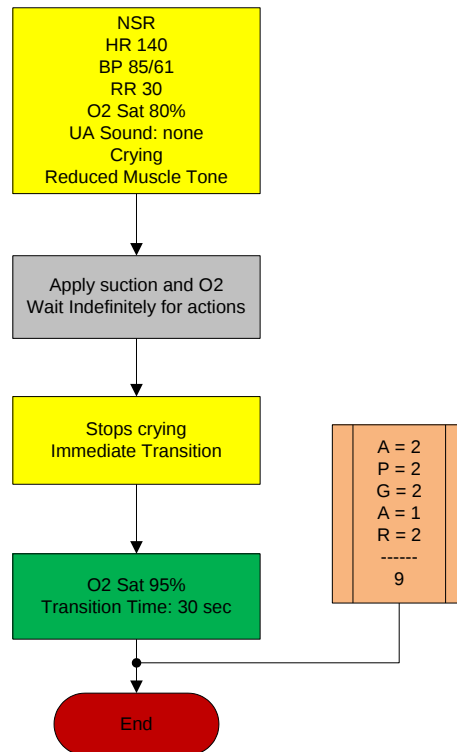
Meds Profile		Automatic - Linear
1	Adenosine OD	
2	Adenosine SD	
3	Adenosine UD	
Quick Start Newborn Modeling		Automatic - Linear
1	Variations A	
2	Uterine Rupture A	
3	Shoulder Dystocia A	
4	Preeclampsia A	
5	Healthy Baby B	Baby was delivered SVD and is fairly vigorous
6	Healthy Baby A	is vigorous and earns good APGARS.
7	Faye baby	
8	Embolism Baby A	
Quick Start Newborn Modeling		Automatic - Branching
1	Variations branching	



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Simulators for Health Care Education

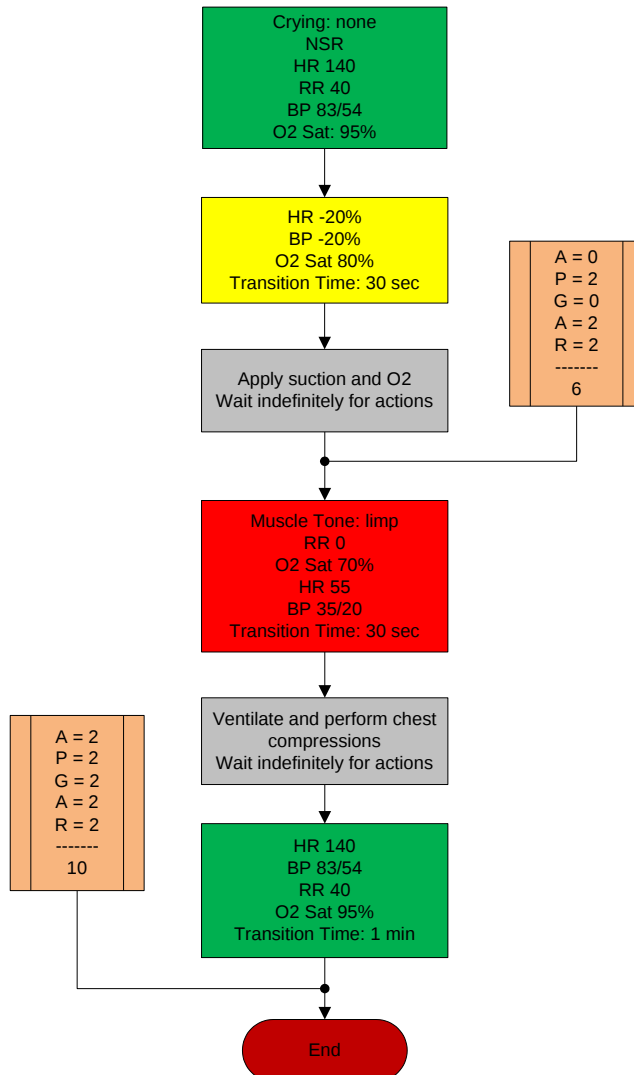
Newborn HAL®
Alice's Baby

Healthy baby





Baby has an asphyxia attack and the providers need to give ventilations to help bring back the vitals to a healthy state.

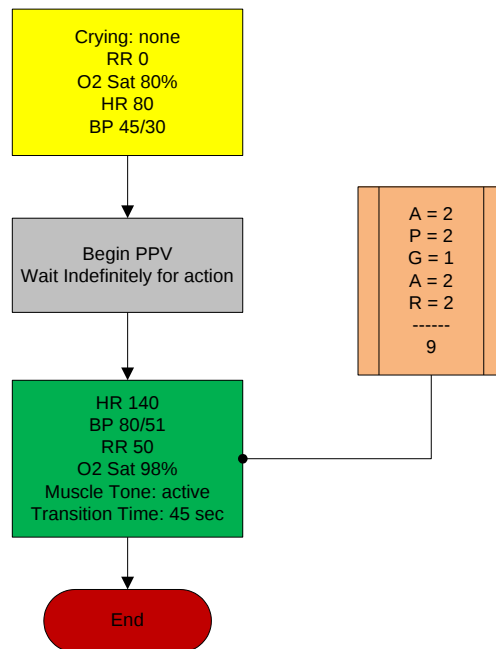




Gaumard®
Simulators for Health Care Education

Newborn HAL®
Beth's (Donna's) Baby

Baby is born with a mild asphyxia that needs attention. Once ventilations are started, the baby's vitals go to a healthy state.

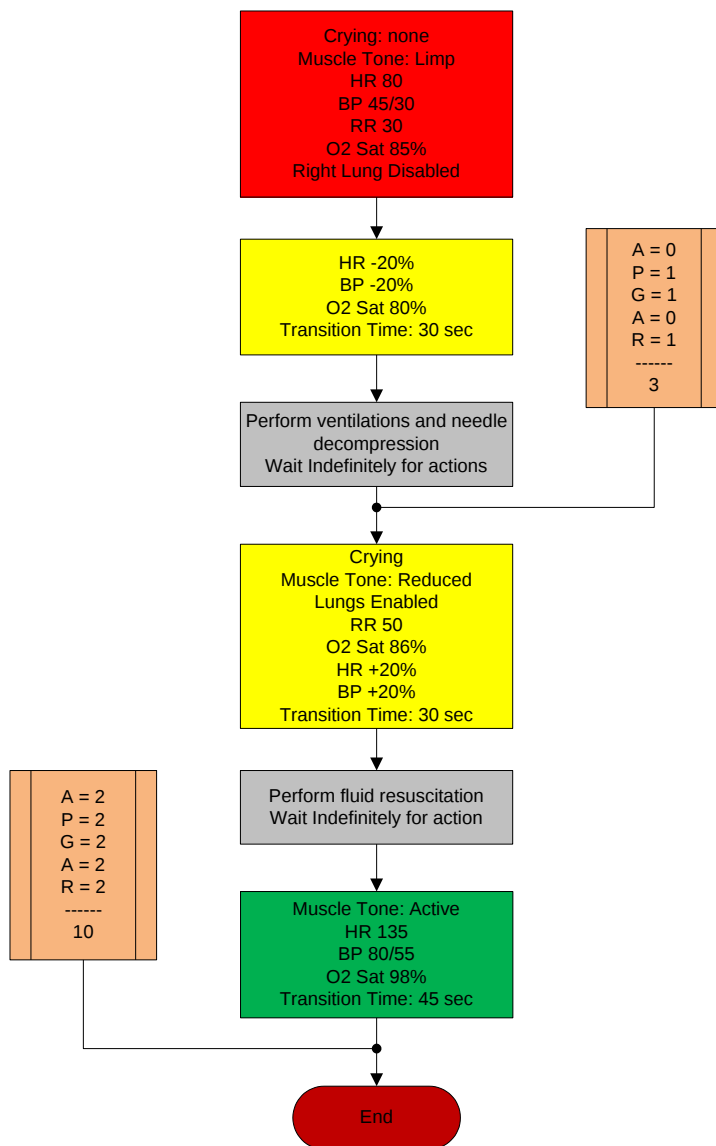




Gaumard®
Simulators for Health Care Education

Newborn HAL® Cynthia's Baby

Male infant with central cyanosis, limp, flaccid and requires immediate resuscitation. No spontaneous movement of right arm is noted. Stat CXR reveals a fractured right clavicle and right pneumothorax.

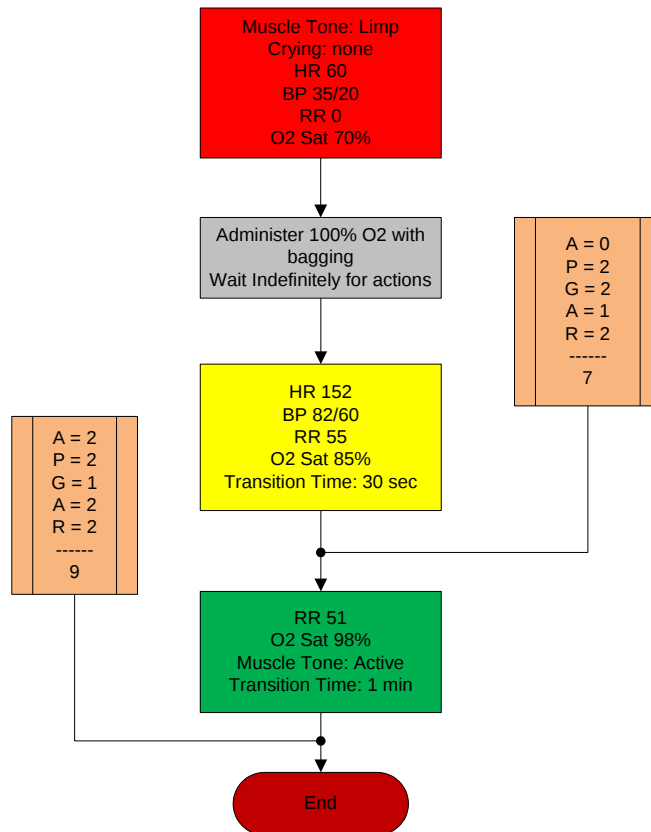




Gaumard®
Simulators for Health Care Education

Newborn HAL®
Elaine's Baby

This baby is born with moderate asphyxia, and will require CPR and oxygen to bring the vitals to a healthy state.

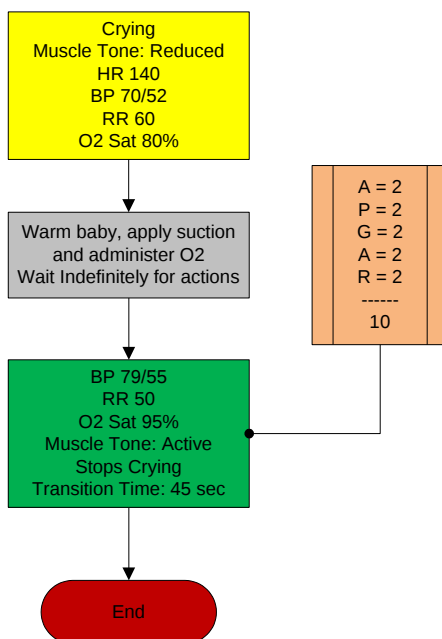




Gauguard®
Simulators for Health Care Education

Newborn HAL®
Francines's Baby

This baby was born through a C-Section and is responsive but needs some attention, after a while all vitals go to a healthy state.

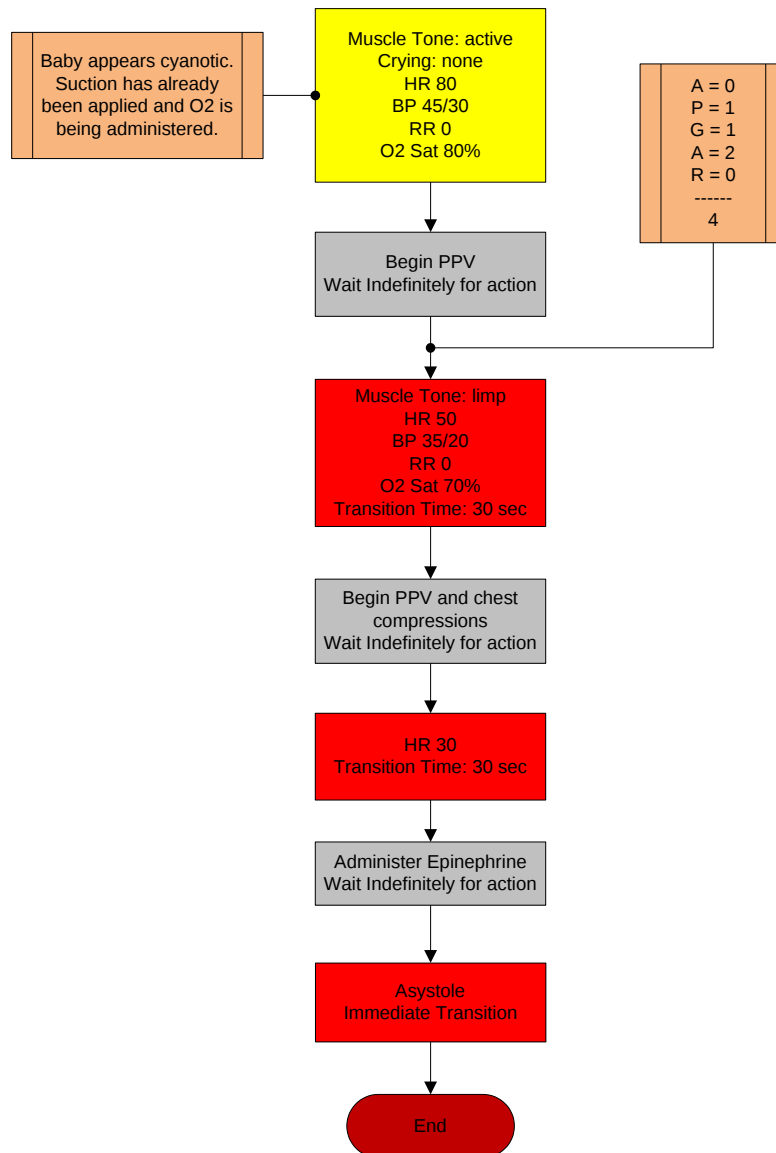




Gaubard®
Simulators for Health Care Education

Newborn HAL® Gloria's Baby

This baby is born with mild asphyxia, but no matter how good the interventions are, this disastrous intrapartum complication results in neonatal death.

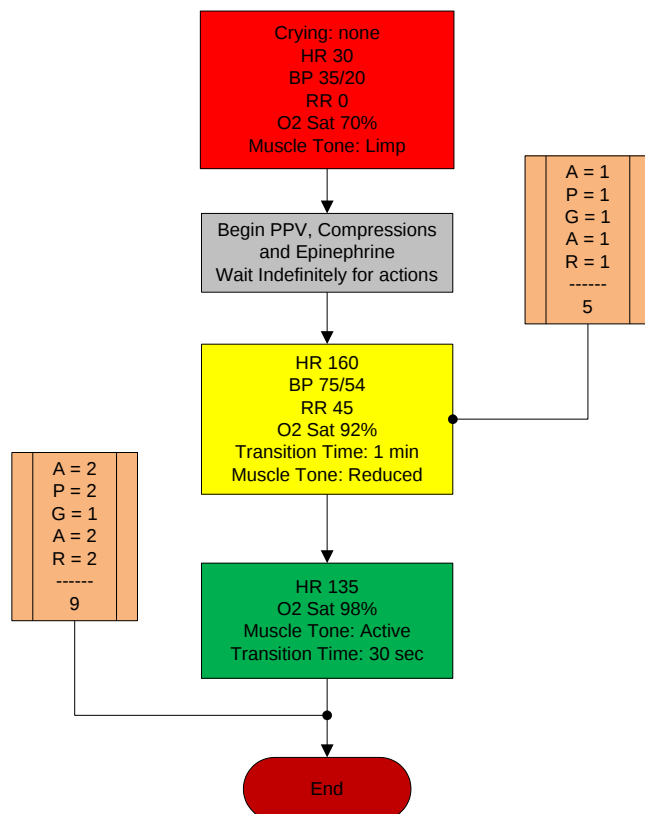




Gaumard®
Simulators for Health Care Education

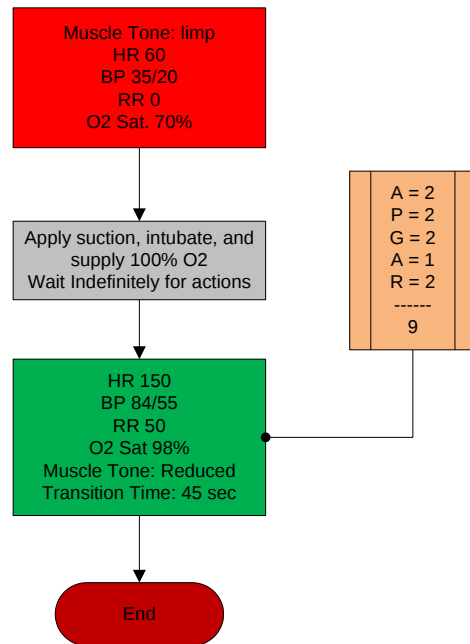
Newborn HAL®
Helen's (Irene's) Baby

This baby is born with a severe asphyxia that has to be treated immediately. After ventilations and EPI have been given, the baby's vitals go towards a good outcome.



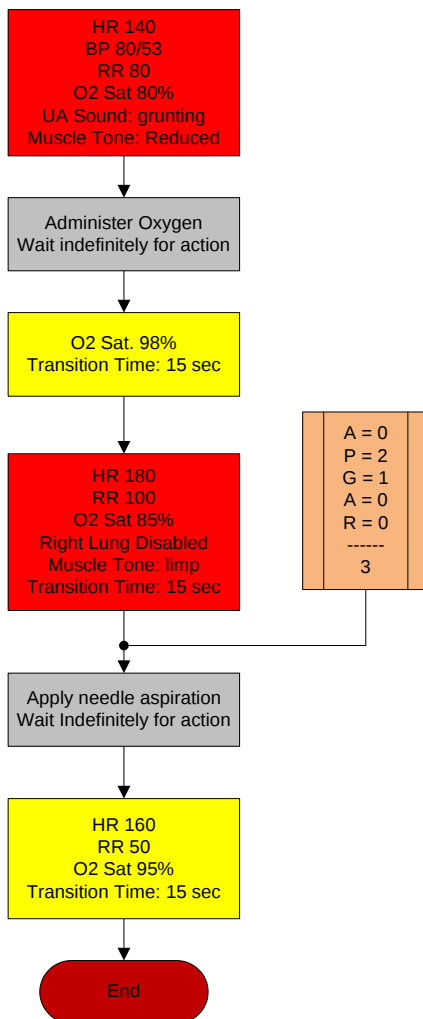


Meconium Aspiration Syndrome



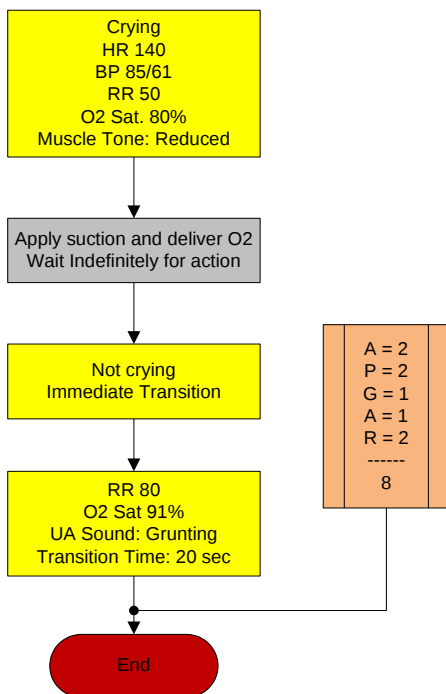


Newborn with mild Respiratory Distress Syndrome gets a pneumothorax after oxygen is given.





Transient Tachypnea of the Newborn



More about scenarios

THINKING IN TERMS OF PALETTE ITEMS

As described previously, palette items represent complete or partial groups of settings that have been stored as a single item. Applying partial states will hold constant all settings that are left unspecified.

Not only does it take time to customize the palette, but a very large palette becomes difficult to navigate. So, it is desirable to minimize the number of Palette Items in each Profile. To accomplish this, an experienced facilitator tries to create items that are as generally applicable as possible and can therefore be applied to a wide range of scenarios. The key is to include only in your palette items the settings that are directly related to the physiological event represented by that palette item.

SMART SCENARIOS

After reading the Details, Palette, and Scenarios sections of this guide, it should be clear how to build a scenario. You may have already tried building your own or modifying some of the factory presets. The following four guidelines will refine your ability to build the best possible scenarios.

1. How will the scenario begin?

The first thing to consider is the initial condition of the patient. Create a Palette Item to describe this condition. Make sure that this first step in the scenario is a complete state. That is, indicate some selection for each available setting on the Status/Details panel. Remember that only the settings you specify will cause a change in the simulator, and all other settings will remain constant. Therefore, by starting with a complete state, the simulator's condition will always be the same when the scenario starts, regardless of what she was doing previously.

Likewise, the "transition duration" of the first step in the scenario should be zero, indicating that changes are applied immediately.

There is one point that can cause confusion and warrants further explanation. It UNIs an extension of the above discussion of partial states. The issue is best illustrated through the following example:

Suppose that you are creating a Palette Item to start your scenario. In this case, you have decided that the patient will be apneic. The question is, "How should the lung sounds be set?"

Most people's first inclination is to set the lung sounds to "none." This is incorrect, despite apnea. Obviously, no lung sounds should be heard during apnea, but

since you have already set respiratory rate to zero, none will be. (Sounds are synchronized to the breathing cycle.)

What you are really setting here when you choose a lung sound is the condition of the lungs, given respiratory drive. That is, if the patient's respiratory rate were changed from zero, what sound would be heard? Assuming that the lungs themselves are normal in this scenario, you would choose "normal" for the lung sound setting.

Then, as the scenario progresses, if the patient starts breathing, there will be no need to set the lung sound again. It will already be set. The same principle applies to the heart sound and other settings.

2. Include notes to guide the facilitator during the simulation.

It is common for scenario designers, especially those who act as facilitators, to neglect the importance of notes in the scenario. They think that they will remember the learning objectives, patient history, and other details at the time they are ready to conduct the simulation. They usually do not, especially when revisiting a scenario months after creating it.

When you add "Wait" and "Wait Indefinitely" steps to a scenario, you have an opportunity to edit the item description. Use this description field to hold notes to the facilitator. Typically, scenario designers write notes in that space to indicate what the provider(s) or facilitator should be doing at that point.

Further, when saving the scenario, you may edit the scenario description. This is the best place to put patient history and any other longer notes and instructions.

3. Assume that providers will do the right thing.

Usually a scenario should be created with the assumption that the providers will perform correctly. As long as they do, the scenario can be allowed to continue.

Naturally, preparation must be made for what might happen to the simulator when providers deviate from expectations. The consequences of such deviations can sometimes be included in the scenario, punctuated by "Wait Indefinitely" items. In other cases, the simulation will require more direct control by the facilitator via either the Palette or Status/Details panel.

4. Choose auto-response settings based on the scenario content and the objectives.

As seen, auto-responses can be used to free the facilitators' attention. They also enhance realism by presenting instant reactions to the care providers. On the other hand, sometimes it is not possible or desirable to determine the responses before the simulation begins. Different environments and applications call for different settings.

Some teaching practices are best done with the auto-response settings in Prompt mode. Responses must be triggered by a vigilant facilitator. Though it is slower and requires more attention, the benefit of Prompt over other modes is that the simulation can be allowed to go in any direction, and it will be possible to choose the response on a case-by-case basis.

Other learning exercises require a higher degree of automation. For such applications, most facilitators choose Auto mode for the auto-response settings. The key issue is standardized timing of symptom presentation. A consistent, repeatable simulation is essential for fair assessment of that care provider in relation to others and for the broader interpretation of results in the context of training validation studies.

When in doubt, it is best to choose Prompt mode, in which the facilitator will be given direct control of the responses as events are detected

Troubleshooting

Use the following table to find causes and solutions to a number of possible problems.

Symptom	Possible Cause	Solution
Battery does not recharge. Simulator turns off even after a full charge.	Attempting to recharge simulator using the “power supply”	Turn off the simulator and connect the battery charger. Reset the charger if necessary, see below.
	Simulator is on	The simulator does not charge while it is powered on. Turn off the simulator and connect the battery charger.
	The battery charger is stuck on the “charged/Green” state; charger requires reset.	If the battery charger indicator light goes to green immediately, reset the charger using the steps below: 1. Turn off the simulator 2. Disconnect the charger from the wall and the simulator. 3. Please wait 60 seconds while the charger resets 4. Reconnect the charger to the wall only. Please wait approximately 30 seconds for the charger to initialize 5. Reconnect the charger to the simulator 6. Keep the simulator off until the battery is fully recharged.
	Charger is broken	Check the charger connector that goes into the simulator. The charger should have 3 pins. If any pins are bent or broken, please contact Gaumard for a replacement.

Symptom	Possible Cause	Solution
Communication never gets established or is lost (blinking communication indicator is consistently red)	Battery is discharged	Turn off the software and plug “charger” adapter to the simulator. The charger’s LED will turn green when the simulator is completely charged. Do not turn on the UNI software until the charging process is complete. The adapter labeled “Power Supply” does not recharge the battery. Disconnect the “Power Supply” and follow the charging procedure explained above.
	Computer is too far away from simulator	Get simulator closer to computer.
	RF module is not connected	Close the UNI software and connect the USB RF module to the tablet computer.
	Trying to communicate with a different simulator	After clicking the UNI icon, select the name of the applicable simulator and click “Start”. On the menu bar go to Setup> Options> Environment and select FIXED. Then, enter the simulator’s serial number in the text box. Finally, restart the software.
	Multiple simulators are on at the same time.	Select different channels for each of the simulators, and then turn them on one at a time, meaning: Wait until a link has been established between the tablet and the simulator (the yellow window goes away). Only after that, start running the UNI software in the second tablet, and so on for the rest of the

Symptom	Possible Cause	Solution
		simulators. To do so, go to menu Setup → Options → Environment → Select “Auto change to channel: #” (# = number from 1 – 11).
	All others	Close the UNI software and unplug the RF module for at least 5 seconds, then plug it back in. Restart the software and wait for initialization. On the menu bar go to Setup>Options>Environment and select FIXED. Then, enter the simulator’s serial number in the text box. Finally, restart the software.
Simulator doesn’t run for the time specified on the manual	Battery not charged properly	Turn off the software and unplug “charger” adapter from the wall and the simulator for 1 minute. Reconnect the “charger” to the wall and the simulator. Unplug the charger when the charger’s LED turns green indicating that the simulator is completely charged. Do not turn on the UNI software until the charging process is complete.
Simulator doesn’t respond to any command even that blinking communication indicator is consistently green	The computer is properly communicating with a different simulator.	On the menu bar go to Setup>Options>Environment and select FIXED. Then, enter the simulator’s serial number in the text box. Finally, restart the software.
Commands are taking longer than usual to take effect or simulator is not reporting every action (blinking	Distance between computer and simulator is reaching its limit or there are too many	Get simulator closer to computer or move away from obstructions

Symptom	Possible Cause	Solution
communication indicator is consistently yellow)	obstructions between (walls, etc)	
	There's too much RF interference either from another Gaumard tetherless simulator in the vicinity or an RF radiator.	Try changing the RF channel by going to the menu for Setup → Options → Environment → Select "Auto change to channel: #" (# = number from 1 – 11).
UNI has set the power mode to STAND-BY automatically	The battery on the simulator is depleted	Turn off the software and plug "charger" adapter to the simulator. The charger's LED will turn green when the simulator is completely charged. Do not turn on the UNI software until the charging process is complete. The adapter labeled "Power Supply" does not recharge the battery.
"RF module not found" message is displayed when UNI is started	RF module not connected	Connect the RF module to any USB port.
	RF module not identified by the computer	Close the software and disconnect the RF module for at least five seconds, then plug it back in and restart the software
Chest compressions are not properly detected or not detected at all	Is the communication indicator panel consistently yellow?	See solution above in section making reference to "blinking communication indicator is consistently yellow"
	Is the respiratory rate set to "0 / min"? Chest compressions are only detected when the respiratory	Set respiration rate to zero

Symptom	Possible Cause	Solution
	rate is set to 0 per minute (0 / min). Otherwise they are ignored	
	Neck is hyper flexed	Return the head to a normal position. Recalibrate the “Head Position” sensor.
	All others	See “Calibration Wizard” section inside User’s Manual
Artificial ventilations are not properly detected or not detected at all	Is the communication indicator panel consistently yellow?	See solution above in section making reference to “blinking communication indicator is consistently yellow”
	All others	See “Calibration Wizard” section inside User’s Manual
Simulator’s chest does not rise with artificial ventilation (e.g. BVM)	Simulator not running	In some simulators, the trachea is disconnected from the lungs when they are not on.
	Lungs are disabled	Enable the lungs from “Status/Detail” on the UNI software
Low chest rise (or no chest rise at all) while breathing	Wrong settings or disabled lungs	Make sure lungs are enabled and both respiration rate and inspiration percent are different than “0”. Try changing the respiration rate to a different value, and if still nothing happens, try turning the restart the simulator.
Loss of brachial pulse	Brachial pulses disabled	Make sure to enable brachial pulse on “Status/Details” section

Symptom	Possible Cause	Solution
Pre-built scenarios don't show up		Select "Quick Start Scenarios" when starting the software. Should user forget to do so, there's no need to shut down the software and open it again in order to load the pre-built scenarios. Go to "File/Profile" menu and then select "Modeled Scenarios"
A sound is absent or is not heard at desired volume level	Volume not set to user's criterion.	Every sound has a volume control. Play with the volume control to get it to the desired level.

Wireless Network

UNI generates the vital signs information displayed on the virtual monitor PC. The information is transmitted through a wireless ad-hoc connection between the two computers in real time.

The wireless settings are configured at the factory, so no additional configuration is required.

Use the “Create an ad-hoc Wireless network” tool to configure the wireless ad-hoc link between the two computers. Then, configure the connection between UNI and the Gaumard Monitors software.

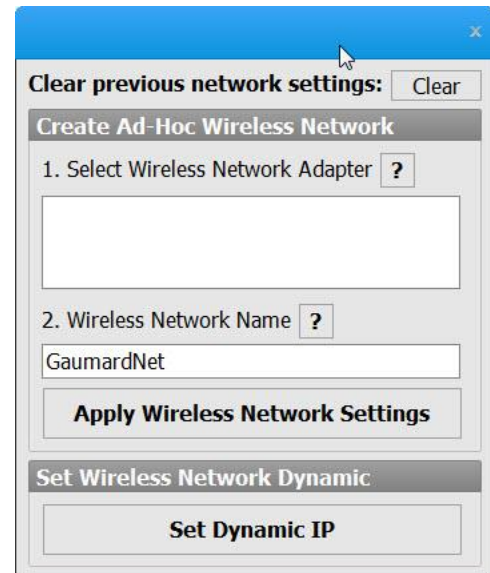
UNI NETWORK CONFIGURATION

Complete the next steps using the “Controller - Create Ad-Hoc Wireless Network” tool built in to UNI software.

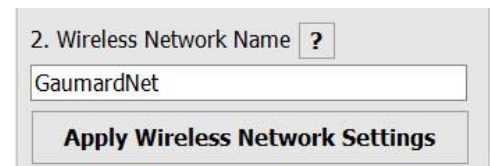
1. From the menu bar, go to Help > “Create ad-hoc Wireless Network”

The “Controller - Create Ad-hoc Wireless Network” window is displayed

2. Select the “Wireless Network Adapter”. If the wireless adapter is not listed, first enable the adapter using the Windows® network menu and then return to this window.



3. Enter a wireless network name (case sensitive). Use the same wireless network name to configure the Gaumard Monitors PC. “GaumardNet” is the required name for Windows® 7 computers.



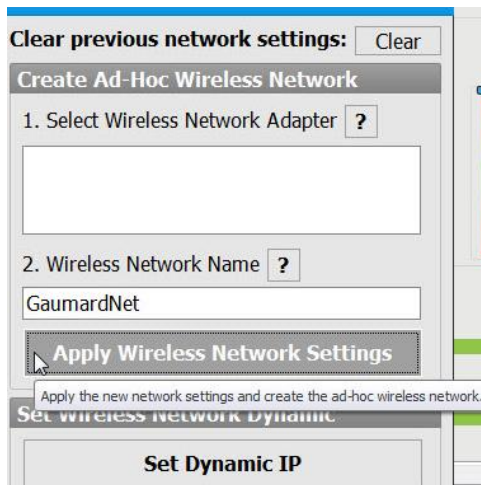
4. Click “Set Dynamic IP”.to set the wireless network dynamic.



5. Click “Apply Wireless Network Settings” to save the settings.



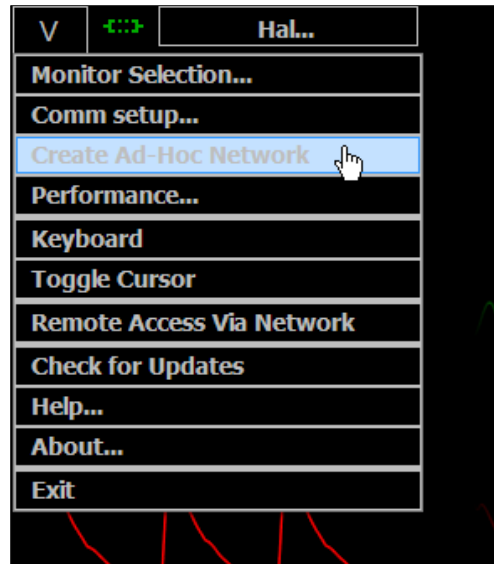
6. Restart the computer.



GAUMARD MONITORS NETWORK CONFIGURATION

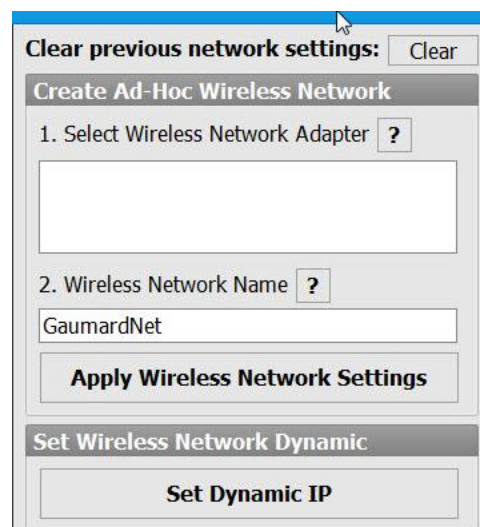
After the UNI control computer is configured, complete the next steps using the “Create an ad-hoc network tool” included in Gaumard Monitors software.

1. On the virtual monitor computer, click the Gaumard Monitors icon to start the vital signs software.
2. Click the V menu near the top left corner and select “Create Ad-Hoc Network”.

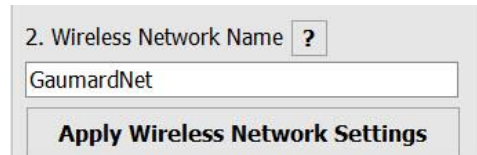


The “Virtual Monitor - Create ad-hoc Wireless Network” window is displayed.

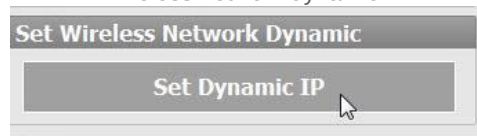
3. Select “Wireless Network Adapter”. If the wireless adapter is not listed, first enable the adapter using the Windows® network menu and then return to this window.



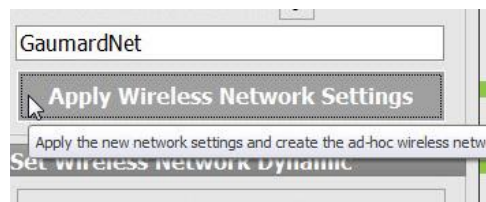
4. Enter a wireless network name (case sensitive). Use the same name entered in the controller computer. “GaumardNet” is the required name for Windows® 7 computers.



5. Click “Set Dynamic IP”.to set the wireless network dynamic.



6. Click “Apply Wireless Network Settings” to save the settings.



7. Restart the computer.

CONFIGURE THE VITAL SIGNS BROADCAST

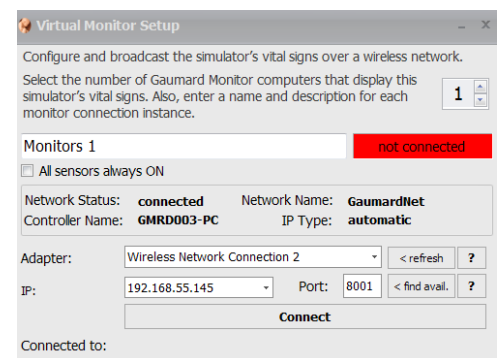
After the wireless ad-hoc link is established between both computers, complete next steps to configure the transmission of the vital signs information.

1. Verify that both computers are connected to the GaumardNet network using Windows® wireless connection menu. If the computers are not connected, select the “GaumardNet” network and click “Connect” manually.



2. Start the UNI control software.
3. On the UNI menu bar, click Monitors> Configuration. The “HAL Virtual Monitor Setup” window is displayed on the UNI menu bar, click Monitors> Configuration.

The “HAL Virtual Monitor Setup” window is displayed.

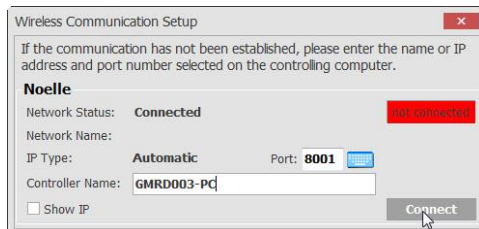


4. Set the adapter to “Wireless network connection”
5. Verify the network status and network name, then click “Connect” to begin

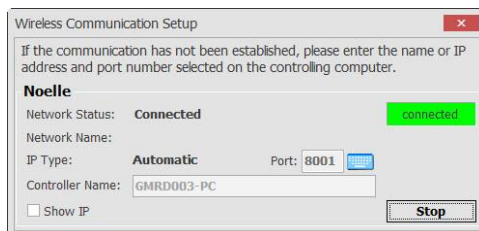
transmitting the vital signs information.

6. Write down the “Controller Name” and “Port number”.
7. Start the Gaumard Monitors software on the virtual monitor PC.
8. Click the “V” menu near the top left corner, and then select “Comm Setup”.

The “TCP Comm Setup” window is displayed



9. Click “Connect” to accept the incoming connection.



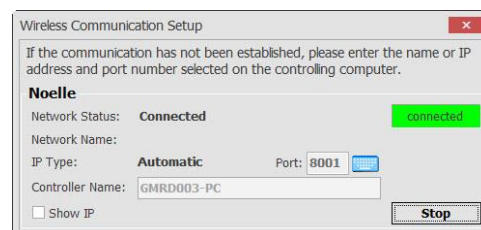
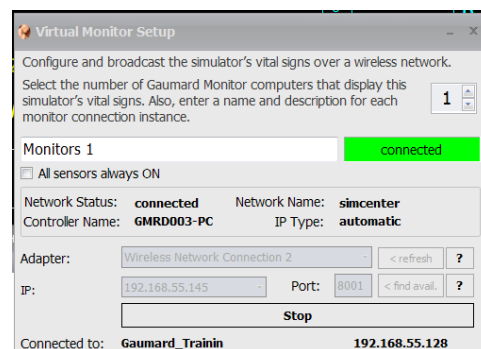
To connect both computers using a local internet network, follow the steps below:

1. Verify that both computers have applied “Set Wireless Network Dynamic”. Refer to UNI and Gaumard Monitors network configuration sections for instructions.
2. Disconnect both computers to the GaumardNet network and connect them to the local network manually using Windows® wireless connection menu.
3. Repeat the same steps listed above to connect the UNI

software to the Gaumard Monitors software.



4. Repeat the same steps listed above to connect the UNI software to the Gaumard Monitors software.



Consumables, Replacements, and Optional Parts

Contact Gaumard Scientific for a **complete list** of consumables and replacement parts and their prices. C=Consumables; R=Replacements; A=Accessories; U=Upgrades; M = Factory Repair ONLY

S3010.001	A/C Virtual Monitor	A	17" Touch Screen monitor and desktop
S3010.002	D/C Virtual Monitor	A	D/C Powered 12" Touch Screen Mobile Monitor with stylus
S3010.010	Battery	C	Rechargeable battery
S3010.011	Battery Charger	R	100-240 V AC external battery charger
S3010.013	Power Cord	R	
S3010.020	Umbilical Cord Kit	C	
S3010.023L .L	Lower Left Arm	C	Lower left arm assembly
S3010.023R .L	Lower Right Arm	C	Lower right arm assembly
S3010.027L .L	Lower Left Leg		Light color lower left leg. No IV access.
S3010.027L .R2.L	Lower Left Leg	R	Includes knee plastic connectors.
S3010.029R .L	I/O Leg Skin Cover	C	Light color skin cover for right leg tibia bone
S3010.031	I/O Tibia bones	C	I/O leg tibia reservoir bones
S3010.060	Simulator Transport Case	R	Soft storage and transport case
S3010.061	Simulator Transport Case	A	Hard storage and transport case
S3010.080	Simulated Blood	C	

Concentrate			
S3010.081	Silicone Oil	C	Oil-based Silicone lubricant
S3010.085	Modified Neonatal Blood Pressure Cuff	R	BP Cuff for Newborn Hal S3010
S3010.200	Audio & Video Recording System	A	
S3010.204	Tablet PC	R	Wireless tablet PC with stylus control
S3010.205	Bump Case	R	Bump case for tablet PC
S3010.206	RF Module	R	Radio Frequency Module with USB connector
S3010.EXW	Two Year Extended Warranty	A	Extended warranty for years Two AND Three
S3010.INST	In-Service Training	A	Day of in-service training and installation

C=Consumables; R=Replacements; A=Accessories; U=Upgrades; M=Replace in Miami Factory ONLY

Warranty

EXCLUSIVE ONE-YEAR LIMITED WARRANTY

Gaumard warrants that if the accompanying Gaumard product proves to be defective in material or workmanship within one year from the date on which the product is shipped from Gaumard to the customer, Gaumard will, at Gaumard's option, repair or replace the Gaumard product.

This limited warranty covers all defects in material and workmanship in the Gaumard product, except:

1. Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
2. Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to properly clean the Gaumard product; and
3. Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative.

This one-year limited warranty is the sole and exclusive warranty provided by Gaumard for the accompanying Gaumard product, and Gaumard hereby explicitly disclaims the implied warranties of merchantability, satisfactory quality, and fitness for a particular purpose. Except for the limited obligations specifically set forth in this one-year limited warranty, Gaumard will not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory regardless of whether Gaumard has been advised of the possibilities of such damages. Some jurisdictions do not allow disclaimers of implied warranties or the exclusion or limitation of consequential damages, so the above disclaimers and exclusions may not apply and the first purchaser may have other legal rights.

This limited warranty applies only to the first purchaser of the product and is not transferable. Any subsequent purchasers or users of the product acquire the product "as is" and this limited warranty does not apply.

This limited warranty applies only to the products manufactured and produced by Gaumard. This limited warranty does not apply to any products provided along with the Gaumard product that are manufactured by third-parties. For example, third-party products such as computers (desktop, laptop, tablet, or handheld) and monitors (standard or touch-screen) are not covered by this limited warranty. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Defects in third-party products are covered exclusively by the warranty, if any, provided by the third-party.

Any waiver or amendment of this warranty must be in writing and signed by an officer of Gaumard. In the event of a perceived defect in material or workmanship of the Gaumard product, the first purchaser must:

1. Contact Gaumard and request authorization to return the Gaumard product. Do NOT return the Gaumard product to Gaumard without prior authorization.
2. Upon receiving authorization from Gaumard, send the Gaumard product along with copies of (1) the original bill of sale or receipt and (2) this limited warranty document to Gaumard at 14700 SW 136 Street, Miami, FL, 33196-5691 USA.
3. If the necessary repairs to the Gaumard product are covered by this limited warranty, then the first purchaser will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then the first purchaser will be liable for all repair costs in addition to costs of shipping and handling.

EXTENDED WARRANTY

In addition to the standard one year of coverage, the following support plans are available:

- Two-Year Extension (covers second and third years)
- Call for pricing (USA only)



Contact Us

E-mail Technical Support: support@gaumard.com

E-mail Sales and Customer Service: sales@gaumard.com

Phone:

Toll-free in the USA: (800) 882-6655

Worldwide: 01 (305) 971-3790

Fax: (305) 667-6085

Before contacting Tech Support **you must:**

1. Have the simulator's Serial Number (located in the left leg under the IM site)
2. Access to the simulator and the control computer if troubleshooting is needed.

Post: Gaumard Scientific

14700 SW 136 Street

Miami, FL 33196-5691

USA

Office hours: Monday-Friday, 8:30am - 4:30pm EST (GMT -4 Summer Time)

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