Gaumard®
Simulators for Health Care Education

# S3040.10

# TRAUMA HAL®

## USER GUIDE


Trauma 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 17.9.4

www.gaumard.com

# TABLE OF CONTENTS

# END USER LICENSE AGREEMENT

This is a legal agreement between you, the end user, and Gaumard® scientific company, inc. ("Gaumard"). This software is protected by copyright laws and remains the sole property of Gaumard. By installing the OMNI® (the "software") media, you agree to be bound by the terms of this agreement. If you do not agree to the terms of this agreement, promptly return the uninstalled media and accompanying items to Gaumard at the address indicated below.

1. Grant of License: Gaumard hereby grants to you (an individual or institution) the right to install and activate the software on one computer for use with one interactive patient simulator system. The software may also be installed on any number of other computers at the same institution so that students may access the learning resources. One copy of the software may be made for backup purposes. You may not network this software, or allow multiple users unless you purchased a multi-user workstation license. Sharing this software with other individuals or allowing other individuals to view the contents of this software is in violation of this license.
2. Copyright: The software is owned by Gaumard and protected by United States copyright laws and international treaty provisions. Therefore, you must treat this software like any other copyrighted material. You may not make this software or copies thereof available in any manner or form or use, copy or transfer the software, in whole or in part, except as provided herein.
3. Other Restrictions: You may not rent or lease this software to any other party. You may not alter, merge, modify, adapt, reverse engineer, decompile or disassemble the software, or disclose the contents of this software to any other party.
4. Electronic Transmission of Software: If you received the software by electronic transmission or by internet delivery, by installation of the software, you acknowledge that you have read and understand this license agreement and agree to be bound by its terms and conditions.
5. Term of Agreement: The term of this agreement and the license granted to you pursuant hereto shall commence upon installation of this software. This agreement and the license granted herein may otherwise be terminated by Gaumard in the event that you are in breach of any provision of this agreement. In the event of termination, you agree to immediately return this software, accompanying items, and any copies thereof to Gaumard.
6. Limited Warranty:

(A) The CD-ROM media (the "media") which contains this software is warranted, for a period of 30 days from the date of purchase, to be free from defects in material and workmanship. Electronic transmission is warranted to be free from defects at the moment of transmission. Your sole and exclusive remedy, and Gaumard's sole liability, is to replace the defective media or to repeat the electronic transmission provided that you notify Gaumard in writing of such defect or defective transmission and return the defective media, if any, during the 30-day warranty period.

(B) Except and to the extent expressly provided in paragraph (a), the software and accompanying written materials are provided on an "as is" basis, without any warranties of any kind, including, but not limited to, any implied warranties of merchantability or fitness for any particular purpose. No oral or written information or advice given by Gaumard, its dealers, distributors, agents or employees shall create a warranty or in any way increase the scope of this warranty, and you may not rely on any such information or advice. Gaumard does not warrant, guarantee, or make any representations regarding the use or the results of use, of the software or written materials in terms of correctness, accuracy, reliability, currentness, or otherwise, and the entire risk as to the results and performance of the software is assumed by you. If the software or written materials are defective, you and not Gaumard or its dealers, distributors, agents, or employees, assume the entire cost of all necessary servicing, repair or correction other than expressly described above.

(C) Neither Gaumard nor anyone else who has been involved in the creation, production or delivery of this product shall be liable for any direct, indirect, consequential or incidental damages (including damages for loss of business profits, business interruption, loss of business information, and the like) arising out of the use or inability to use such product or related to this agreement even if Gaumard has been advised of the possibility of such damages. Gaumard shall not be liable to you for any indirect, special, incidental, or consequential damages or lost profits arising out of or related to this agreement or your use of the software and/or the related documentation, even if Gaumard has been advised of the possibility of such damages. In no event shall Gaumard's liability here under, if any, exceed the purchase price paid by you for the software.

All rights not expressly granted in this license agreement are reserved by Gaumard.

## ACKNOWLEDGMENT

**By installation of this software, you acknowledge that you have read and understand the foregoing and that you agree to be bound by its terms and conditions. You also agree that this agreement is the complete and exclusive statement of agreement between the parties and supersedes all proposed or prior agreements, oral or written, and any other communications between the parties relating to the license described herein.**

# 1. INTRODUCTION

## 1.1 SPECIFICATIONS

### Trauma HAL®

- 88 lbs.
- 70 inches
- 60″ x 30″ x 21″ inches

### OMNI® 2

- 5 lbs.
- 14″ x 12″ x 6″ inches

Trauma HAL® S3040.10 is a completely wireless and tetherless point of injury and extraction exercise simulator including interchangeable trauma leg and arm with programmable bleeding. The Trauma HAL integrates with the OMNI®2 controller making simulation easier than ever with tap-and-go simplicity.

## 1.2 TERMINOLOGY

Facilitator: The person conducting the simulation; an instructor or lab staff member

Provider: A person participating in the simulation as a healthcare provider

Palette: A collection of vital signs details that demonstrates a patient's progress or decline during a session.

Fill Kit: Syringe and tubes used to fill urinary and hemorrhage reservoir

## 1.3 CARE AND MAINTENANCE

The lubricant and other accessories provided are for use with the accompanying patient simulator only. The lubricant and other accessories are not suitable for human use or medical treatment/ diagnosis and should never be used for such purposes.

**CAUTION: Damage caused by misuse may void the manufacturer's warranty. Failure to comply with the following guidelines could result in damage to the equipment.**

### General

- Do not wrap this or any other Gaumard product in newsprint.
- Marks made with ballpoint pens, ink or marker cannot be removed.
- Replacement parts are available from Gaumard or from your distributor.

- Only use simulated blood provided by Gaumard. Other simulated blood containing sugars and other additives may cause blockage of the fluid system.

**WARNING: Defibrillation is only supported on the large sternum and apex sites. The warranty does not cover damage to the simulator caused by applying electrical therapy to other areas.**

## Operating Conditions

- Operating temperature: 50°-95° F (10°-35° C)
- Humidity: 5%-95% (non-condensing)

## Cautions

- Treat the simulator with the same precautions used with a real patient.
- Do not attempt to intubate without lubricating the airway adjunct with mineral oil lubricant. Failure to lubricate the device will make intubation very difficult and is likely to result in damage to the simulator.
- Mouth to mouth resuscitation without a barrier device is not recommended as it may contaminate the airway.
- Do not use povidone iodine on the simulator.

## Defibrillation

- Only deliver electrical therapy when the simulator is fully assembled, dry, and undamaged.
- Make sure the defibrillation patches on the simulator are in good condition, including removing any and all gel residue on the defibrillation patches from previous use(s).
- It is a good practice to remove gel residues after every use. Failure to do so will leave behind a film of electrode gel that hardens causing arcing and pitting.
- Do not re-use the gel-adhesive pads. Do not leave them on for next day use.
- Avoid using solid-gel pads since they present higher risk of burning the simulator's skin.
- Gel pads have a shelf life. Make sure they are not expired to avoid arcing.
- Make sure the simulator is not in contact with any electrically conductive surfaces.
- Use the simulator only in a well-ventilated area, free of all flammable gases.
- NEVER attempt to service or modify any of the electrical connections, especially those between conductive skin sites and the internal electronics.

- Electrode gel on the skin between any two electrode targets can become a pathway for electrical current, just as in real life. If this occurs, the simulator's skin can be burned.
- Should dark traces appear on the conductive patches due to gel residue or previous arcing, use a pencil eraser to remove the traces and then clean with alcohol.
- DO NOT SCRATCH the conductive patches with abrasive objects; doing so will cause irreversible damage to the conductive sites and subsequently cause arcing.

## Storage

- Store the simulator in a cool, dry place. Extended storage should be between 32 - 85° F (0 - 29° C). Storage above 85° F (29° C) will cause the simulator to soften and slowly warp.
- Humidity: 40%-60% (non-condensing)
- Do not stack or store heavy materials on top of the box. Please store and ship in the case provided.

**CAUTION: Do not store the simulator with a discharged battery. It is good practice to recharge the battery at the end of every simulation session. In addition, make sure the battery is recharged at least once every 2 months even if the simulator is not being used.**

## Cleaning

- Remove all traces of lubricant at the end of each simulation session.
- If the defibrillation pad's adhesive is difficult to remove, a gentle, degreasing cleanser may be needed.
- Remove the fluid using the fill kit provided.
- Flush the fluid reservoirs with a 30:70 mix of isopropyl alcohol to water after each day of simulation then suction all fluid out.
- The simulator is "splash-proof" but not water proof. Do not submerge in water.
- The simulator should be cleaned with a cloth dampened with diluted liquid dishwashing soap. Do not clean with harsh abrasives.
- Dry thoroughly after every cleaning.

# 2. OVERVIEW

## 2.1 HIGHLIGHTS

- Realistic airway allows for intubation exercises.
- Use real energy to defibrillate.
- Bleeding wounds detect applied pressure.
- Trauma sites are synced with blood pressure.
- Trauma HAL is splash proof for CBRNe decontamination.

## 2.2 FEATURES

### General

- Full body adult with rugged shoulder and hip joints for dragging or carrying
- All operating components and reservoirs are stored inside
- Wireless and tetherless control at a distance of up to 12 meters
- Preprogrammed speech responses included
- Fully operational on battery power for up to 10 hours
- Interchangeable trauma/healthy lower left arm and leg
- Automatic self-refilling reservoir system
- Palpable landmarks including ribs and xiphoidal process
- The OMNI® 2 operating system controls the simulator wirelessly with the touch of a button

### Procedures

#### Airway

- Simulate realistic resuscitation procedures with the articulating neck and jaw with head tilt/ chin lift/ jaw thrust
- Realistic airway with teeth, tongue, epiglottis, and vocal cords to practice placement
- Oral and nasal intubation (ETT, Supraglottic Airway, King LT®)
- Tracheal suctioning

#### Respiratory

- Bilateral lung expansion with bag valve mask ventilation
- Ventilations are measured and logged
- Unilateral chest rise with right mainstem intubation

#### Circulatory

- Palpable bilateral carotid pulse, right radial pulse and bilateral femoral pulses synchronized with the heart rate
- Bilateral intramuscular injection sites in quadriceps and deltoids

### Cardiac

- Compression depth and rate measured and logged
- Effective compressions generate palpable pulses

### Gastrointestinal

- Esophageal/ gastric suctioning
- Gastric distension with excessive BVM

### Trauma

- Left arm and left leg trauma limbs with bleeding
- Trauma HAL includes pressure sensors control bleeding at the trauma sites and in the groin wound site.
- Wound packing capability

## OMNI® 2

- The home screen consists of the Favorites page, Vitals page, CPR page.
- Reference the OMNI 2 user guide provided for more details.
- The session time will automatically run once the simulator is connected. Reset the session by tapping “Reset Session Time” in the Menu.

### Favorites Page

- The Favorites page consists of the most commonly used vital signs
- Reference the OMNI 2 user guide provided to edit the vitals shown on this page.

### Vitals Page

The Vitals Page includes breathing, cardiac, circulation and trauma. Each change in vitals can be applied instantly or added to a queue.

### CPR Page

- The CPR page includes feedback for compression rate and depth, and ventilation rate and PIP.
- Train using the metronome to coach the provider.

### Speech

Access the different categories of preprogrammed phrase items to simulate realistic patient responses.

### Palette Items

- Use a palette item to update a set of vital signs quickly.
- To view palette items, tap on the palette icon.

### Log

- View event log and filter based on the event.
- Add notes during debriefing and save or print the log.

## 2.3 OPTION

### Mobile Virtual Patient Monitor

The Mobile Virtual Patient Monitor is a vital signs monitor connected to the simulator. The vital signs are synced with and controlled by the OMNI 2 tablet.

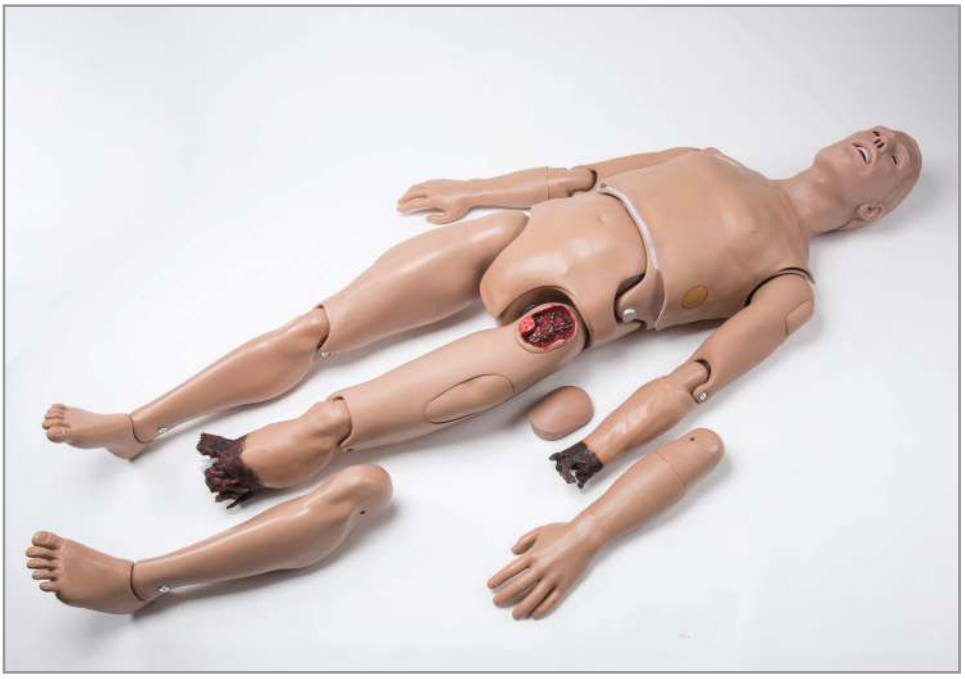
# 3. INITIAL SETUP

## 3.1 CARE AND CAUTIONS DURING UNBOXING

- Remove the simulator from the box with at least two people. Hold and lift out of the protective case from both sides of the torso.
- Rest the simulator on a bed or clean, flat surface capable of supporting the weight of a real adult patient.

NOTE: Remove the legs when transporting Trauma HAL inside the protective case.

## 3.2 PACKAGE CONTENTS



1. Full body adult simulator
2. OMNI 2 Controller device (with protective case and charger)
3. Battery (installed)
4. Power supply
5. Left and right healthy arms and legs
6. Left lower trauma arm
7. Left lower trauma leg
8. Left groin wound insert (1 installed, 1 additional)
9. Healthy groin wound insert
10. External blood filling kit
11. Blood concentrate
12. Talcum powder
13. Mineral Oil Lubricant
14. Soft rolling case

## 3.3 HEALTHY LEG ASSEMBLY

1. Remove the bolts from the knee joints using the hexagonal wrenches provided.

2. Make sure to tuck the fluid line on the left leg out of the way before positioning the new leg in the socket.

3. Position the lower legs at the knee and insert the knee joint bolt.

4. Use the two hexagonal wrenches provided to secure the knee bolt

## 3.4 CONNECTING THE BATTERY

1. Gently lift the lower right corner of the chest skin to reveal the battery clips.

2. Connect the battery clips and place them into the abdominal cavity and place the skin back in its assembled position.

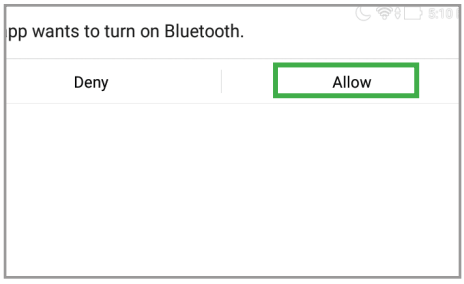
3. Connect the power supply to the power supply port.

NOTE: The simulator can operate without connecting it to a power source once it is fully charged. The tablet displays the battery life on the main screen. Battery life is approximately 10 hours.

**WARNING: Turn the simulator off before replacing the battery. Failure to do so could result in serious damage to the system.**

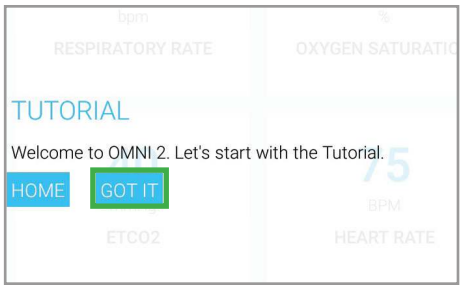
## 3.5 CONNECTING OMNI® 2

1. Turn on the OMNI 2 controller by pressing and holding the ON button on the right side of the tablet.




2. Select “Allow” for turning on Bluetooth for the tablet.

NOTE: A startup screen is shown while OMNI 2 is detecting the simulator’s features. Bluetooth will connect automatically after powering on in the future.




3. Follow the tutorial for a brief overview of the features of OMNI 2.
4. Tap “GOT IT” to move on to the next steps of the tutorial.

   Exit the tutorial at any time by selecting “HOME.”

   Completing the tutorial one time will avoid it from appearing at start-up in the future. After the tutorial, OMNI 2 will automatically proceed to the “Favorites” page and establish a connection to the simulator.

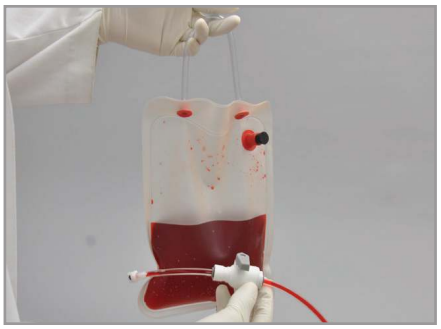

**WARNING: Do not connect the simulator or OMNI 2 to a computer, LAN network, or unauthorized diagnostic equipment. Doing so will cause serious damage to the equipment.**

## 3.6 FILLING THE FLUID RESERVOIR

The 1 Liter reservoir is located in the upper left leg.

1. Connect the simulator to OMNI 2 by following steps in Section 3.6 “Connecting OMNI 2.”


2. Fill the external blood bag with the desired amount of simulated blood.



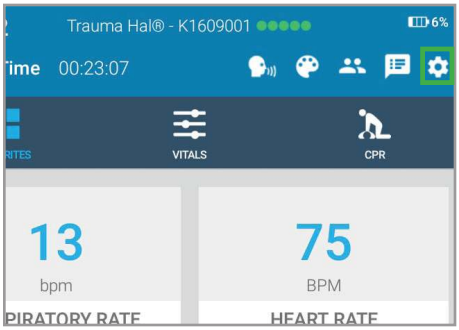
3. Close the external blood filling bag flow valve and fill the bag with the artificial blood solution.

NOTE: Follow the directions on the bottle for the blood concentrate to make the simulated blood.

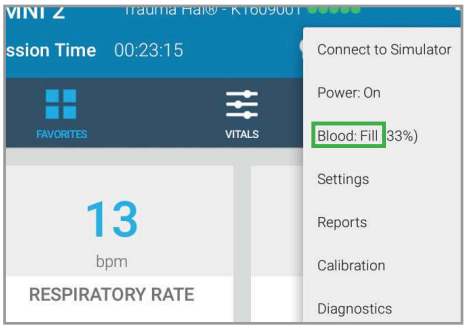
4. Connect the tube from the external blood bag to the port in the simulator’s inner left thigh. Hold the fluid tank at least 2 feet above the simulator's internal reservoir to prevent back pressure in the line.

5. Open the flow valve.

6. Tap the Menu icon in the upper right hand corner of the screen.



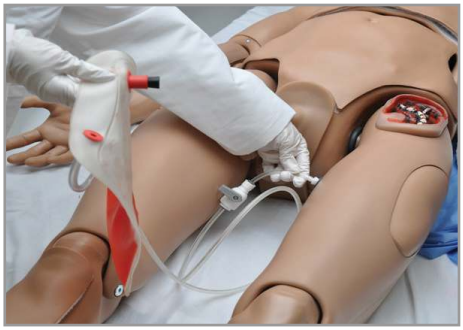

7. Select “Blood Fill.”




- The filling process may be stopped at any time by tapping on the Menu icon and selecting “Blood: Stop”.

  NOTE: As the reservoir is filling, OMNI 2 will detect the percentage of fluid in the reservoir and will show the status periodically.

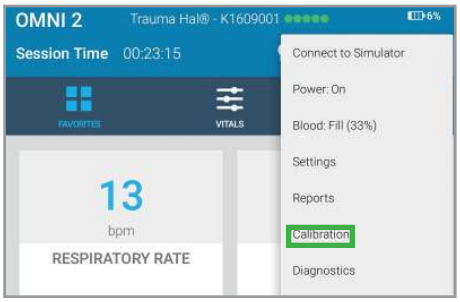

- Once the reservoir is filled, it will stop automatically.
- If needed, after filling the reservoir, add more blood to the external blood bag and connect it to the fill port on the inner left thigh for continuous blood flow.



**WARNING: If you are using simulated blood, use only Gaumard simulated blood provided with the simulator. Any other brands of simulated blood may contain sugar and other additives that may cause blockage and/or interruption of the vasculature system**

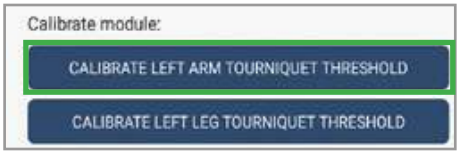
## 3.7 CALIBRATE THE LEFT ARM TOURNIQUET THRESHOLD

1. Connect the simulator to OMNI 2 by following the steps in Section 3.6 "Connecting OMNI 2." Tap the Menu icon in the upper right hand corner of the screen and select “Calibration.”



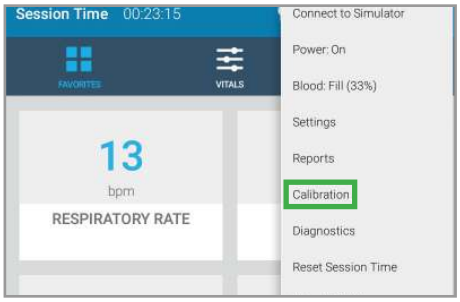

2. Wrap a tourniquet around the trauma arm and tighten to the desired pressure

3. Select "Calibrate Left Arm Tourniquet Threshold" and the word “OK” will appear.



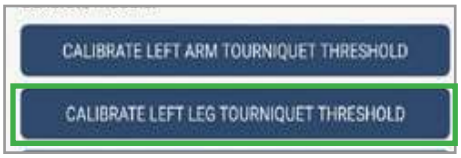

## 3.8 CALIBRATE THE LEFT LEG TOURNIQUET THRESHOLD

1. Tap the Menu icon in the upper right hand corner of the screen and select “Calibration.”




2. Wrap a tourniquet around the trauma arm and tighten to the desired pressure

3. Select "Calibrate Left Leg Tourniquet Threshold" and the word “OK” will appear.



## 3.9 CALIBRATE THE LOWER ABDOMEN PRESSURE THRESHOLD

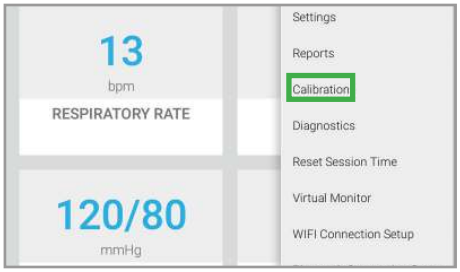
1. Tap the Menu icon in the upper right hand corner of the screen and select “Calibration.”


2. Apply the desired amount of pressure to the lower abdominal sensor with your hands, or knee if preferred.

3. Select "Calibrate Lower Abdomen Pressure Threshold" and the word “OK” will appear.

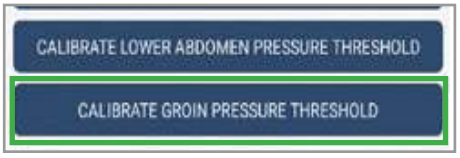

## 3.10 CALIBRATE THE GROIN PRESSURE THRESHOLD

1. Tap the Menu icon in the upper right hand corner of the screen and select “Calibration.”




2. Apply pressure to the groin region.

3. Select "Calibrate Groin Pressure Threshold" and the word “OK” will appear.



# 4. WORKING WITH THE SIMULATOR

## 4.1 INSTALLING THE TRAUMA ARM

1. Remove the elbow bolt from the arm using the hexagonal wrenches on each side.

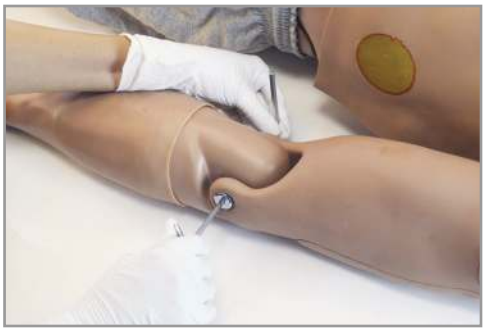
2. Separate the healthy lower arm and set it aside.

3. Connect the clear fluid line to the trauma arm by turning it to lock it in place.

4. Position the trauma arm in the elbow joint.

5. Insert the bolts in the arm.

6. Use the two hexagonal wrenches provided on each side of the joint to secure the elbow bolt.



## 4.2 INSTALLING THE TRAUMA LEG

1. Remove the knee bolts using the hexagonal wrench.

2. Separate the healthy lower leg and set it aside.

3. Connect the clear fluid line to the trauma leg by turning it to lock it in place.

4. Position the trauma leg in the knee joint.

5. Use the two hexagonal wrenches provided to secure the knee bolt.

## 4.3 INTRAMUSCULAR INJECTION SITE

- IM sites to practice placement are located on both deltoids and quadriceps.

**CAUTION: Do not inject fluids into the IM sites.**

## 4.4 AIRWAY

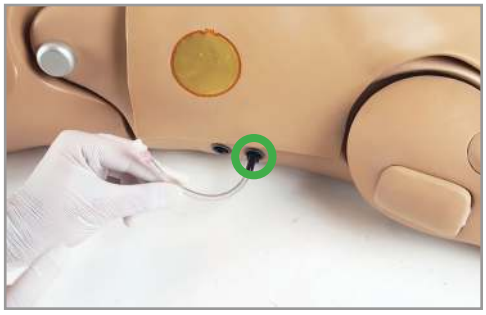
- Lubricate the tools used in these exercises to ensure easy insertion and avoid damage to the simulator.
- Mouth to mouth resuscitation without a barrier device is not recommended as it may contaminate the airway.

| Procedure | Recommended Device Size |
|---|---|
| Intubation (Blade size) | Miller4 or MAC 3.5 |
| LMA | Size 4 or 5 |
| Nasal Intubation | 8 Fr catheter |
| Oral Intubation | ETT 7.0 or 7.5 no cuff |

### Tracheal Suctioning

1. To prepare for the airway for suctioning procedures, fill the trachea area with fluid.
2. Pour up to 25 mL of fluid into the mouth of the simulator using a funnel or the syringe.

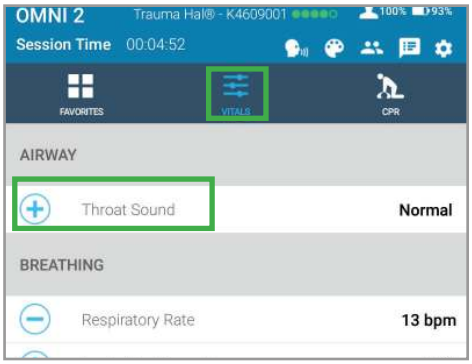
3. When the procedure is complete, drain the excess fluid by connecting the drainage hose to top drain port.



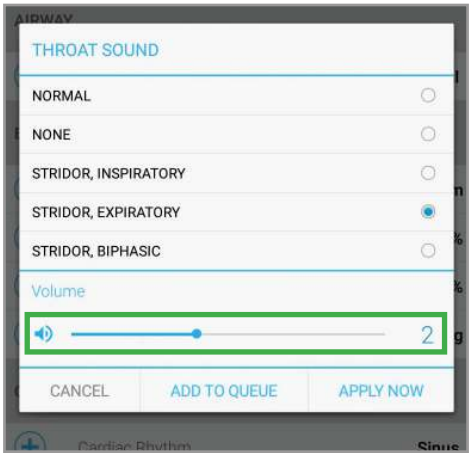
4. Connect the syringe and suction the remaining fluid.

## Airway Sounds

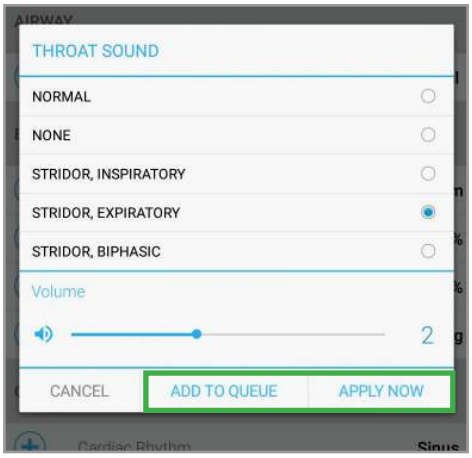
1. To activate airway sounds, tap the "Vitals" page and select "Throat Sound." A pop- up menu will appear with 5 different sounds.




2. Slide the Volume bar to increase or decrease the volume.



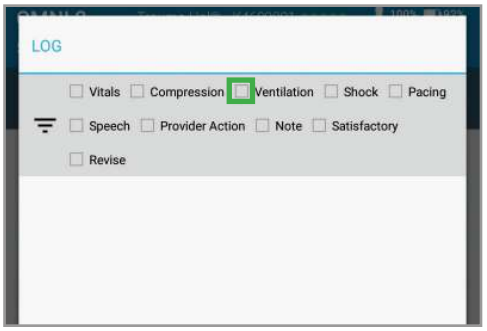

3. Select a throat sound and tap on "APPLY NOW" or "ADD TO QUEUE."



## 4.5 RESPIRATORY

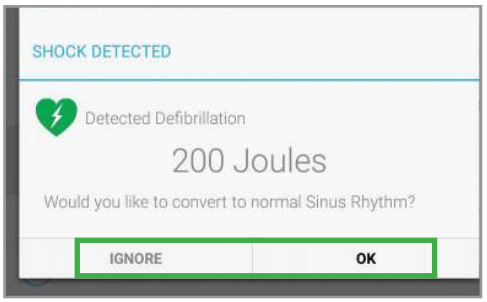
- To access the measured and logged ventilations, tap on the Log icon.


- Filter ventilations recorded by checking the "Ventilations" box.




## 4.6 CARDIAC

- Defibrillate and pace using real devices when the heart rate is set to a shockable rhythm.
- When a shock is delivered, it is detected and logged.
- A prompt will appear on the tablet with the detected defibrillation and value in Joules.
- Tap "OK" to convert to a normal Sinus Rhythm. Tap "IGNORE" to continue with the scenario.
- To auto convert to a normal sinus rhythm after a shock, the setting on the OMNI 2 may be changed. Reference the OMNI 2 user guide for more details.
- Defibrillation is only allowed on the large sternum and apex sites.




**CAUTION: Defibrillation is only allowed on the large sternum and apex sites. Follow the safety guidelines and operating procedures outlined in the defibrillator's manual. Use the same cautions as with a real patient.**

## 4.7 CIRCULATORY

Palpable pulse sites:

- Bilateral Carotid
  - » Compressions generate palpable carotid pulses and are recorded in OMNI 2.

- Right radial

- Bilateral Femoral

## 4.8 GASTROINTESTINAL

- When using any tools for esophageal or gastric suctioning, lubricate the tools to ensure easy insertion and avoid damage to the simulator.

- When the simulator displays gastric distension, the stomach bag is filled with air automatically. To release the air from the stomach bag, gently press down on the stomach.

## Gastric Suctioning

1. To prepare for gastric suctioning fill the esophagus with fluid using an NG tube.

   Make sure to lubricate the NG tube before inserting it.

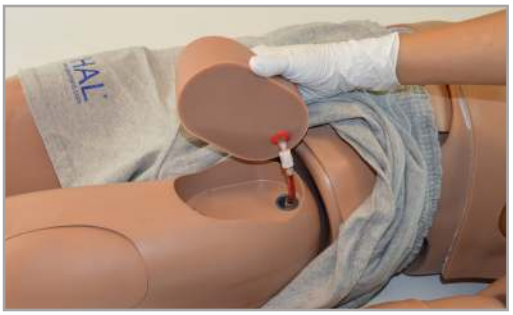
2. Use the syringe and funnel to fill the stomach with a max of 100 mL.

3. When the procedure is complete, drain the excess fluid by connecting the drainage hose to the bottom drain port.

4. Connect the syringe and suction the remaining fluid.

## 4.9 TRAUMA: CHANGING THE WOUND SITE INSERT

1. Gently lift the insert out of the cavity to expose the fluid line.



2. Unlock the connector by turning it counterclockwise to detach the fluid line from the wound site.

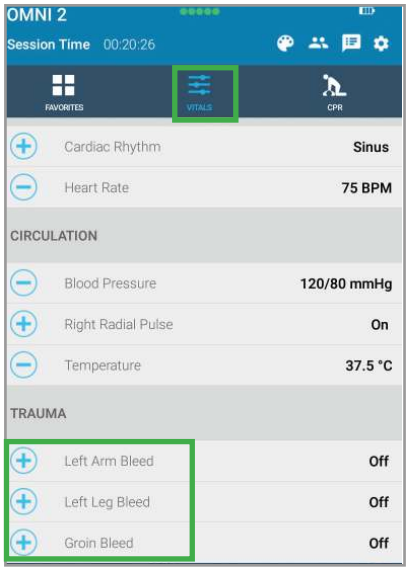
3. Press the new insert into the cavity.

4. If the insert is a wound site insert, lock the fluid line by turning the connector clockwise.

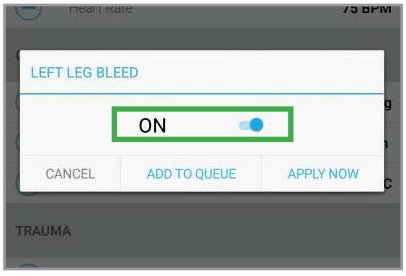
5. Once the fluid line is secure, press the fluid line into the cavity and then the new wound site insert into the cavity.

## 4.10 ACTIVATING BLEEDING IN THE TRAUMA LIMB & WOUND SITE

1. If the blood reservoir is not filled, follow the steps in Section 3.7 “Filling the Fluid Reservoir” to fill the blood reservoir.
2. Tap on the “Vitals” page and select a wound site.



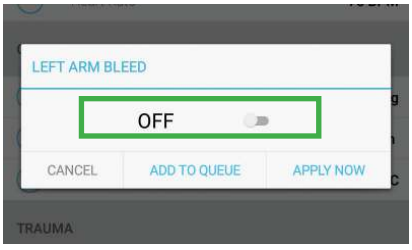

3. Switch the selected wound site to ON by tapping on the OFF/ON button on the pop-up screen.




4. Tap "APPLY NOW" to activate

The bleeding will stop when pressure or a tourniquet is applied.


5. Bleeding can be stopped by re-selecting the correct wound site and tapping the OFF button on the pop-up screen.



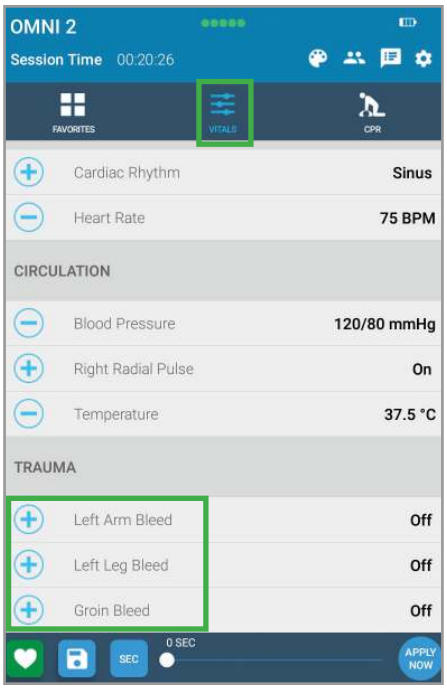
## 4.11 DRAINING THE FLUID RESERVOIR

1. Connect the syringe and fill tube provided with the fill kit to the port on the simulator's left thigh.

2. Suction all fluid (or simulated blood) from the reservoir.

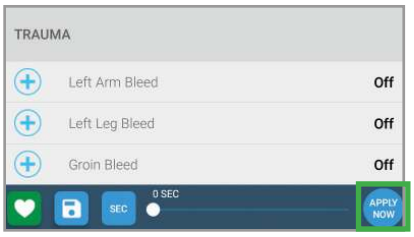
3. Fill the fluid reservoirs with a 30:70 mix of isopropyl alcohol and water.

4. Activate the bleeding to flush through the reservoir until it is completely empty. Tap the "Vitals" page and select a wound site.



5. Switch the selected wound site to ON by tapping on the OFF/ON button on the pop-up screen.

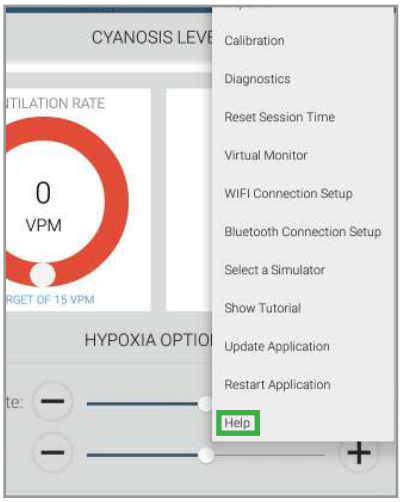

6. Tap "APPLY NOW" to activate.
Once the reservoir is empty, the flow will stop on its own.




7. Suction the remaining fluid from the reservoir to make sure it is completely empty.

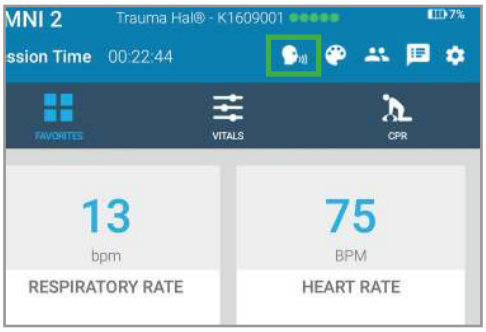
## 5. USING OMNI® 2

- Reference the OMNI 2 user guide provided for more instructions.
- You may also locate it in PDF form by tapping on the Menu icon and then tapping on “HELP.” The OMNI 2 user guide will appear.

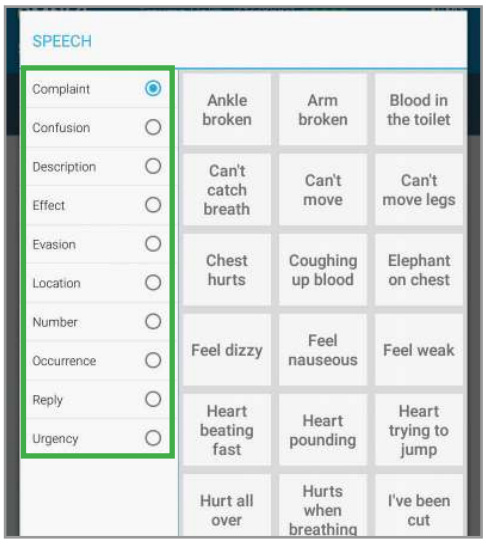


## 5.1 ACTIVATING SPEECH

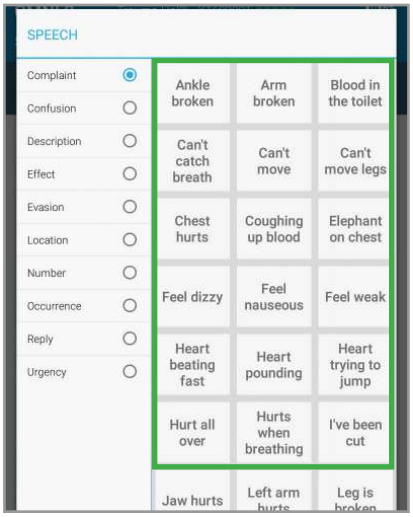
1. Tap on the speech icon.




2. Select a speech category.




3. Tap on a phrase item to prompt the simulator to speak the phrase aloud and tap on "Done" to exit the menu.

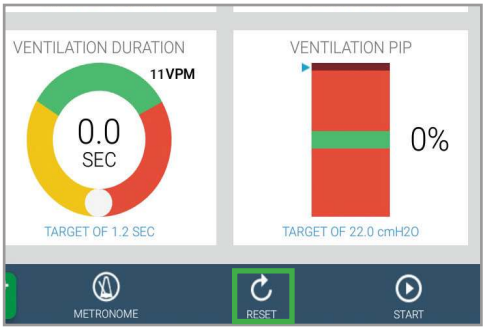


## 5.2 CPR

To monitor and evaluate chest compressions and ventilations in real time, follow the steps in the OMNI 2 user guide provided.

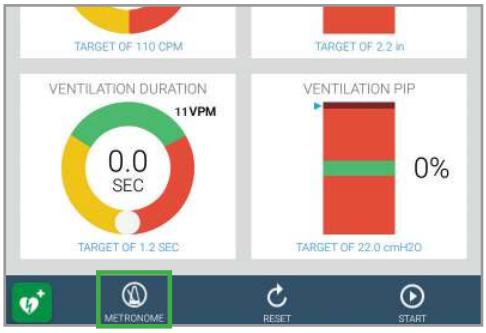
To begin and end a CPR session, tap on the CPR icon and the START/STOP button.


To reset a CPR session, tap the Reset icon.



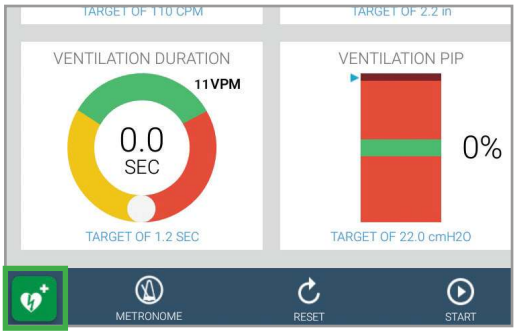

To activate an audible rhythm to aid in compression training, tap on the metronome button.

NOTE: CPR settings are AHA compliant by default.

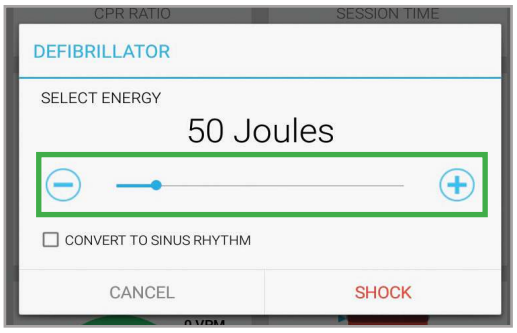


## 5.3 VIRTUAL DEFIBRILLATION

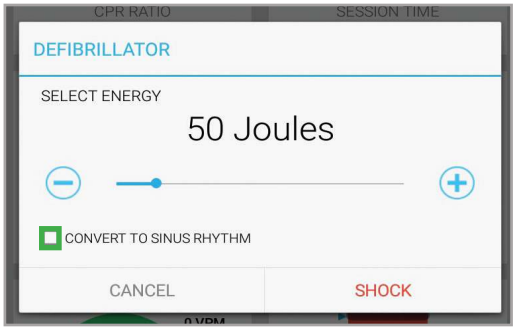
1. After setting the simulator on to a shockable heart rhythm, tap the green heart on the lower left side of the screen.



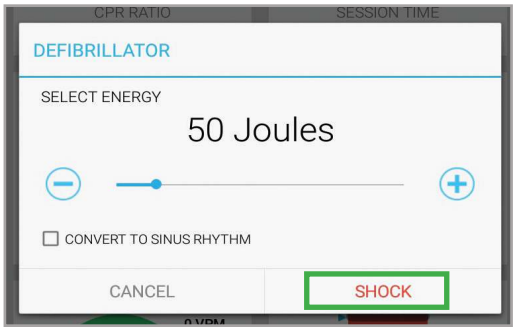

2. Adjust the value in the Defibrillation pop-up by adjusting the slider or pressing + or - on the screen.




3. Tap on the “CONVERT THE SINUS RHYTHM” box and it will put the simulator in sinus rhythm after shock.

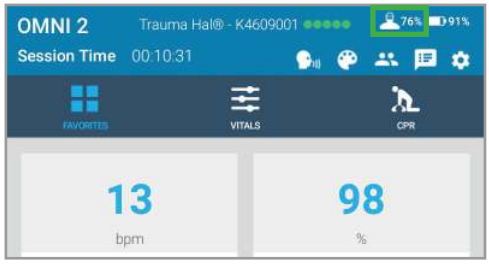



4. Tap on “Shock” and the shock notification will appear on the bottom of the screen.

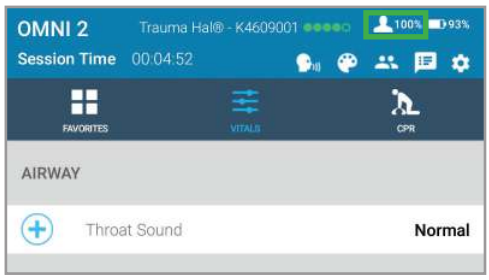


## 5.4 BATTERY USAGE

- The battery life of the simulator is displayed on the top right next to the OMNI 2 battery life.




- If it is plugged in to the power supply, it will remain at 100%.

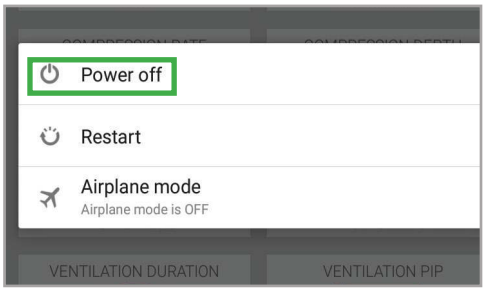


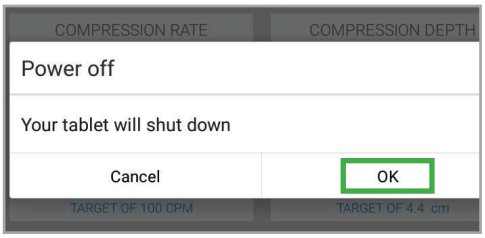

## 5.5 TURNING OFF THE SIMULATOR

1. Disconnect the simulator from the power supply and hold the power button on the tablet

2. Select “Power off” and then “OK” to shut down the tablet.

- The simulator’s breath sounds will stop after a few seconds.



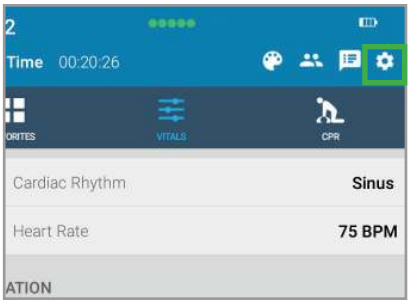



# 6. OPTION: VIRTUAL PATIENT MONITOR

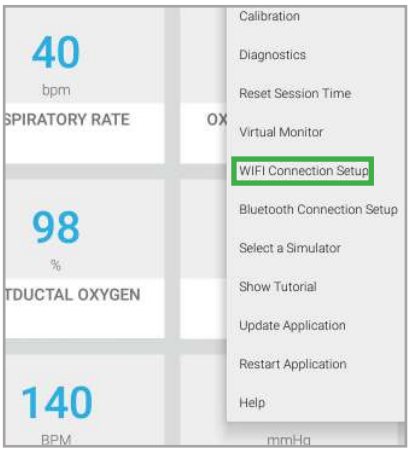
## 6.1 ACTIVATING PATIENT MONITOR

- The virtual monitor is controlled via the wireless touchscreen OMNI® 2 tablet
- OMNI® 2 provides the ability to use selected configuration or create your own configuration to mimic the monitors used in your facility. The parameters controlled in the OMNI® 2 appear on the virtual monitor.

1. Connect the router to the USB port on the mobile patient monitor.
2. Tap the Menu icon on the upper right of the screen



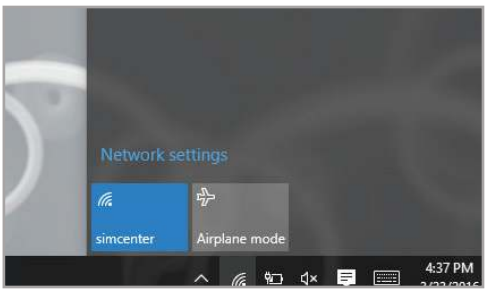

3. Select the "WiFi Connection Setup"




4. Connect to a wireless network. The network name will be Gaumard_SimulatSerialNumber
5. Exit the page by tapping the back button

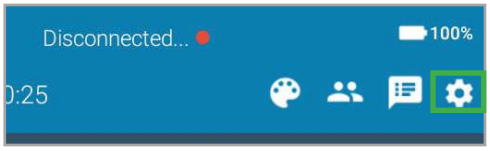
NOTE: The simulator must be connected to OMNI 2 to establish connection with the Virtual Monitor.

6. Ensure that the monitor is connected to the same network as OMNI 2.

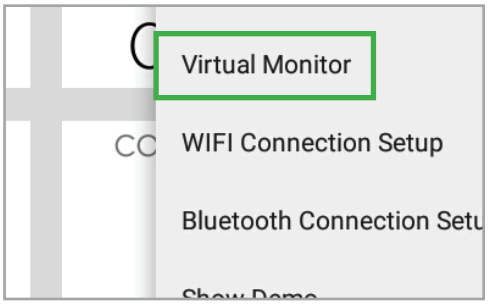



7. Once WiFi connectivity is confirmed, open the Gaumard Monitors software.

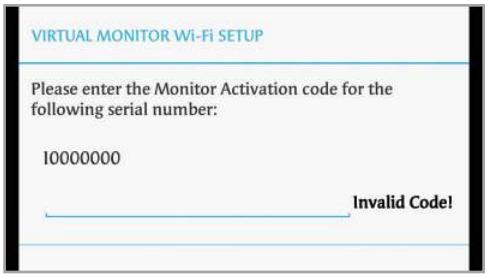

8. On the tablet, tap the gear on the upper right.



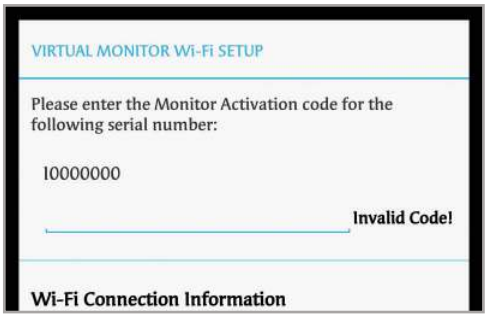

9. Select"Virtual Monitor."




10. Verify that the serial number corresponds to the manikin.



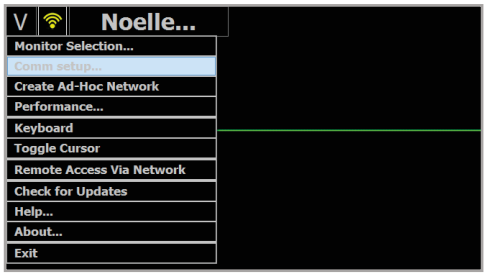
11. The "VIRTUAL MONITOR WI-FI SETUP" window will prompt you to input a valid activation code.



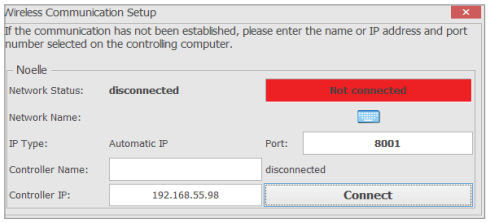

12. Type in a valid activation code.
Note: The activation code in this picture is just an example. It is not a valid code. The activation code is case-sensitive.


13. Take note of the OMNI IP and OMNI Port

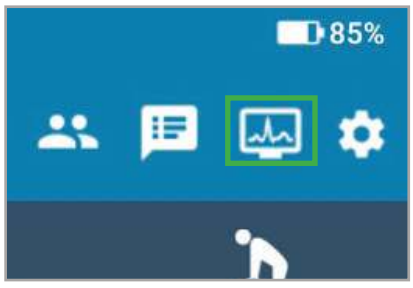
14. Select connect




15. In the Gaumard Monitors software, tap the V on the upper left hand and then select the "Comm Setup..."
Verify that the IP address and port number in the "wireless communication Setup" matches the OMNI IP and port number noted before




16. Select "Connect"
The vital signs monitor icon will appear on the top right when it is connected.
Refer to the OMNI 2 user guide for more details on using the Virtual monitor.



# 7. TROUBLESHOOTING

## 7.1 CONNECTIVITY TO THE SIMULATOR IS NOT ESTABLISHED

| Probable Cause | Solution |
|---|---|
| Control tablet is too far away from the simulator | Minimize the distance between the tablet and the simulator.<br>The distance should not be more than 12 meters away. |
| More than one device is paired | Open the Bluetooth connection setup. Select the menu icon and tap “Forget” for the unwanted connection. |
| The simulator is not paired | Tap the Menu icon and select "Bluetooth Connection Setup and tap the serial number. It will appear under "Paired devices." |

## 7.2 CPR IS NOT DETECTED

| Probable Cause | Solution |
|---|---|
| Reset the compression sensor | Tap the menu icon, then tap on “Reset Compressions Sensor” |
| Reset the ventilations sensor | Tap the menu icon, then tap on “Reset Ventilations Sensor” |

## 7.3 THE SIMULATOR DOES NOT BLEED

| Probable Cause | Solution |
|---|---|
| Fluid reservoir level is not detected | Empty the hemorrhage reservoir.<br>Tap the menu icon, then tap "Calibration," then "Reset Fluid Reservoir" |
| Fluid reservoir level is low | Refill fluid reservoir. Follow Section # "Filling the Fluid Reservoir" |
| Tourniquet pressure not detected | Tap menu, calibration, apply desired amount of pressure to reset particular sensor |
| Blood pressure is below the pulse threshold | Tap the menu icon, then "Settings", and ensure the active BP is higher than that "systolic minimum threshold" for the selected site.<br>Bleeding is blood pressure and heart rate dependent. Ensure the simulator's heart rate is above 0. |

Review the OMNI 2 user guide for the most common troubleshooting topics regarding the OMNI 2 tablet.

# 8. APPENDIX

## 8.1 TRAUMA HAL FEATURES

| FEATURES | S3040.10 |
|---|---|
| **TACTICAL PROTOCOLS** | |
| Care under fire | ● |
| Tactical evacuation | ● |
| Decontamination | ● |
| **ANATOMY** | |
| Age | Adult |
| Palpable landmarks including ribs and xiphoidal process | ● |
| Ruggedized, articulating joints for dragging or carrying | ● |
| Water Resistance | Spray |
| **NEUROLOGIC RESPONSE** | |
| Preprogrammed speech responses | ● |
| **AIRWAY** | |
| Programmable airway sounds | ● |
| Realistic airway with teeth, tongue, epiglottis, and vocal cords | ● |
| Articulating neck and jaw for head tilt / chin lift/ jaw thrust | ● |
| Oral and nasal Intubation (ETT, Supraglottic Airway, King LT®) | ● |
| Tracheal suctioning (fluids) | ● |
| **RESPIRATORY** | |
| Bilateral lung expansion with bag valve mask ventilation | ● |
| Ventilations are measured and logged | ● |
| Unilateral chest rise with right mainstem intubation | ● |
| **CIRCULATORY** | |
| Spontaneous pulses (Automatic using internal compressor) | ● |
| Bilateral carotid | ● |
| Bilateral radial | Right only |
| Bilateral femoral | ● |
| Femoral artery pressure sensor | ● |
| Bilateral intramuscular injection sites in quadriceps & deltoids | ● |
| **CARDIAC** | |
| eCPR™ Compression depth and rate measured and logged | ● |
| Effective compressions generate palpable pulses | ● |
| Defibrillate and pace using real devices | ● |
| Esophageal / gastric suctioning | ● |
| Gastric distension with excessive BVM | ● |
| **TRAUMA** | |
| Trauma limbs with bleeding | ● |
| Bilateral trauma arm | Left only |
| Bilateral trauma leg | Left only |
| Groin trauma wound with pressure sensor | ● |
| Healthy lower arms and legs | ● |
| Automatically filling blood reservoir | 1 Liter |

| | |
|---|---|
| **POWER** | |
| Wireless communication | (up to 90ft) |
| Internal battery | ● |
| Battery life (hours) | 8 |
| **OTHER** | |
| Software | OMNI® OS |
| Controller | OMNI®2 |
| Mobile patient monitor | O |
| Rolling travel case | ● |

## 8.2 PARTS LIST

| Product | Item Number | Contents |
|---|---|---|
| Trauma HAL | S3040.10 | » Full body adult simulator<br>» OMNI 2 Controller device<br>» Battery charger/ power supply<br>» Trauma left lower arm and leg<br>» Groin wound insert<br>» External blood filling kit<br>» Rolling case |
| Option:<br>Mobile Virtual Patient Monitor | S3040.10.250.002 | » 12" Touch screen mobile monitor with stylus.<br>» Virtual monitor software |
| OMNI® 2 replacement controller | S3040.10.250.184.R2 | » Control tablet<br>» OMNI® 2 Software<br>» Protective case |

## 8.3 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:

- Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
- 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
- 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. However, third-party products are covered by the warranties provided by the respective third-party manufacturers and such warranties are transferred from Gaumard to purchaser upon purchase of the Gaumard product. Defects in third-party products are covered exclusively by the warranties provided by the third-parties. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Please contact the third-party manufacturer for information regarding the availability of extended warranties for third-party products.
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
2. Gaumard product to Gaumard without prior authorization.
3. 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.

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.

## 8.4 CONTACT GAUMARD

Before contacting technical support, please make sure to have your simulator and user guide readily available.

Email: support@gaumard.com
USA: 800-882-6655
INT: 01-786-478-3838

## 8.5 GENERAL INFORMATION

E-mail: sales@gaumard.com
USA: 800-882-6655
INT: 01-305-971-3790
Fax: 305-252-0755

Gaumard Scientific
14700 SW 136 Street
Miami, FL 33196-5691
USA

### Office Hours

Monday-Friday, 8:00am - 7:30pm EST (GMT-5)

Gaumard®

Simulators for Health Care Education



Always dispose of this product and its components in compliance with local laws and regulations.

www.gaumard.com | 800-882-6655 | 305-971-3790 | Fax: 305-252-0755 | sales@gaumard.com



MADE IN THE U.S.A.

User Guide 17.9.4 UG.S3040.10