Welch Allyn
Connex 360
Vital Signs Monitor

Software version 1.1

Service manual

For information about any product, contact Baxter Technical Support: Technical Support.

Welch Allyn Patents: www.hillrom.com/patents

For Nellcor-equipped monitors, patents: www.covidien.com/patents

For Masimo-equipped monitors, patents: www.masimo.com/patents.htm

This manual applies to the # 901188 CONNEX 360 MONITOR

REF 80030240 C

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Contents

Symbols and definitions

For information on the origin of these symbols, see the symbols glossary: welchallyn.com/symbolsglossary.

Documentation symbols

	**WARNING**	The warning statements in this manual identify conditions or practice that could lead to illness, injury, or death.
	**CAUTION**	The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data. This definition applies to both yellow and black and white symbols.
		Follow the instructions for use (IFU) -- mandatory action. A copy of the IFU is available on this website. A printed copy of the IFU can be ordered from Baxter for delivery within 7 days.

Power symbols

	Stand-by		Equipotentiality
	Monitor is plugged into Alternating Current power		Battery absent or faulty
	Alternating Current power present, battery fully charged		Battery charge level
	Alternating Current power present, battery is charging		Battery cover
	Alternating Current (AC)		Rechargeable battery
	Rated power input, DC		AC input power
Li-ion	Lithium-ion battery		Direct current (DC)
	Protective Earth (PE)		

Connectivity symbols

	USB		Nurse call

Wireless signal strength

- Best (4 bands)
- Good (3 bands)
- Fair (2 bands)
- Weak (1 band)
- No signal (no bands)
- No connection (grayed out with an X)

Ethernet

Miscellaneous symbols

	Manufacturer		Defibrillation-proof Type BF applied parts
	Product Identifier		Serial Number
	Reorder number		China RoHS markings for control of pollution caused by electronic information products. XX indicates Environmentally Friendly Use Period in years.
	Do not reuse		Prescription only or "For Use by or on the order of a licensed medical professional"
	Nonionizing electromagnetic radiation		Call for maintenance
	This way up		Fragile; handle with care
IP22	IP = International Protection Marking First characteristic numeral 2 = Protected against solid objects > 12.5mm in diameter. Second characteristic numeral 2 = Protected against vertically falling water drops when enclosure tilted up to 15°		Australian Communications and Media Authority (ACMA) Radio Compliance Mark (RCM)
	Temperature limit		Global Trade Item Number
	Stacking limit by number		Keep dry
	Humidity limitation		Recycle

MD	Medical Device		Atmospheric pressure limitation
	Separate collection of Electrical and Electronic Equipment	MR	MR Unsafe items should not enter the MRI scanner room. Patients with MR Unsafe devices should not be scanned.

Mobile stand symbols

	Maximum safe working load limits		Mass in kilograms (kg)
	CAUTION The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data.		

Screen symbol

	Process indicator for activities like acquiring measurements and connecting to a laptop

Introduction

This manual describes the capabilities and operation of the **Connex 360** vital signs monitor. The information, including the illustrations, pertains to a monitor configured with noninvasive blood pressure (NIBP), pulse oximetry (SpO2), respiration rate (RESPIRATION RATE), pulse rate (PULSE RATE), and body temperature (TEMPERATURE). If your monitor configuration lacks any of these options, some information in this manual might not apply.

Before using the monitor, read the sections of the manual that pertain to your use of the monitor.

Safety

All users of the monitor must read and understand all safety information presented in this manual before using or repairing the monitor.

United States federal law restricts this device to sale, distribution, or use by or on the order of a licensed medical practitioner.

Warnings and cautions

WARNING Safety risk. Make frequent electrical and visual checks on cables, sensors, and electrode wires. All cables, sensors, and electrode wires must be inspected and properly maintained and in proper working order to allow the equipment to function properly and to protect patients.

WARNING Safety risk. Place the monitor and accessories in locations where they cannot harm the patient should they fall from a shelf or mount.

WARNING Fire and explosion hazard. Do not operate the monitor in the presence of a flammable anesthetic mixture with air, oxygen, or nitrous oxide; in oxygen-enriched environments; or in any other potentially explosive environment.

WARNING Inaccurate measurement risk. Dust and particle ingress can affect the accuracy of blood pressure measurements. Use the monitor in clean environments to ensure measurement accuracy. If you notice dust or lint build-up on the monitor's vent openings, have the monitor inspected and cleaned by a qualified service technician.

WARNING Defective batteries can damage the monitor. If the battery shows any signs of damage or cracking, it must be replaced immediately and only with a battery approved by Baxter.

CAUTION Before disassembling the device or installing options, disconnect the patient from the monitor, power down the device, and disconnect the AC power cord and any attached accessories (for example, SpO2 sensors, blood pressure hoses and cuffs, and temperature probes) from the device.

CAUTION To ensure that the monitor meets its performance specifications, store and use the monitor in an environment that maintains the specified temperature and humidity ranges.

CAUTION The monitor may not function properly if dropped or damaged. Protect it from severe impact and shock. Do not use the monitor if you notice any signs of damage.

CAUTION Do not connect more than one patient to a monitor or connect more than one monitor to a patient.

CAUTION Do not operate the monitor in the presence of magnetic resonance imaging (MRI) or hyperbaric chambers.

General safety considerations

- If the monitor detects an unrecoverable problem, it displays an error message. For more information, see "Troubleshooting."
- To ensure patient safety, use only accessories recommended or supplied by Baxter. (See the accessories list in the Appendix of the Instructions for use or see the Baxter website: baxter.com.) Always use accessories according to your facility's standards and according to the manufacturer's recommendations and instructions. Always follow the manufacturer's directions for use.
- Baxter recommends that only Baxter service personnel or an authorized repair center perform warranty service. Performing unauthorized service on a device that is within warranty may void the warranty.

Electrostatic discharge (ESD)

CAUTION Electrostatic discharge (ESD) can damage or destroy electronic components. Handle static-sensitive components only at static-safe workstation.

CAUTION Assume that all electrical and electronic components of the monitor are static-sensitive.

Electrostatic discharge is a sudden current flowing from a charged object to another object or to ground. Electrostatic charges can accumulate on common items such as foam drinking cups, cellophane tape, synthetic clothing, untreated foam packaging material, and untreated plastic bags and work folders, to name only a few.

Electronic components and assemblies, if not properly protected against ESD, can be permanently damaged or destroyed when near or in contact with electrostatically charged objects. When you handle components or assemblies that are not in protective bags and you are not sure whether they are static-sensitive, assume that they are static-sensitive and handle them accordingly.

- Perform all service procedures in a static-protected environment. Always use techniques and equipment designed to protect personnel and equipment from electrostatic discharge.
- Remove static-sensitive components and assemblies from their static-shielding bags only at static-safe workstations—a properly grounded table and grounded floor mat—and only when you are wearing a grounded wrist strap (with a resistor of at least 1 megohm in series) or other grounding device.
- Use only grounded tools when inserting, adjusting, or removing static-sensitive components and assemblies.
- Remove or insert static-sensitive components and assemblies only with monitor power turned off.
- Insert and seal static-sensitive components and assemblies into their original static-shielding bags before removing them from static-protected areas.
- Always test your ground strap, bench mat, conductive work surface, and ground cord before removing components and assemblies from their protective bags and before beginning any disassembly or assembly procedures.

Overview

This service manual is a reference for periodic preventive maintenance and corrective service procedures for the **Connex 360** monitor. It is intended for use only by trained and qualified service personnel.

Corrective service is supported to the level of field-replaceable units. These include circuit-board assemblies and some sub-assemblies, case parts, and other parts.

Purpose and scope

WARNING When performing a service procedure, follow the instructions exactly as presented in this manual. Failure to do so could damage the monitor, invalidate the product warranty, and lead to serious personal injury.

CAUTION No component-level repair of circuit boards and sub-assemblies is supported. Use only the repair procedures described in this manual.

Find instructions for functional testing and performance verification in the **Connex 360** Embedded Service Tool.

This manual applies only to this device. For servicing of any other vital signs monitor, see the service manual for the specific device.

Service work not described in this manual must be performed by qualified service personnel at the factory or at an authorized Baxter service center.

Related documents

When using this manual, refer to the following:

- **Connex 360** Instructions for use
- Baxter *9600 Plus Calibration Tester Directions for use* https://assets.hillrom.com/is/content/hillrom/80020333LITPDFpdf
- *Wireless Best Practices Guide*
- **Connex 360** Connectivity Guide
- Baxter website: baxter.com

Technical support services

Baxter offers the following technical support services:

- Telephone support
- Loaner equipment
- Service agreements
- Service training
- Replacement service parts
- Product service (Service Depot)

For information on any of these services, go to the Baxter website: baxter.com

Service loaners

For warranty or non-warranty repairs not covered under a support agreement, loaners are available for a nominal charge, subject to availability. Payment is required prior to shipment for all loaners not covered under a support agreement. The loaner fee can be found on the Baxter loaner price list.

Baxter Service Centers that provide repair service for this product can, on request, loan a device for use while the device is being repaired. Loaned devices are provided free of charge for products repaired while under a support agreement that includes a free loaner provision.

Service options

Baxter offers several service options to meet your needs.

Baxter Technical Services for maintenance and repair

While product warranties provide basic assurance of Baxter hardware quality, they may not include the full range of services and support you need. Baxter offers premium service and support through our Technical Services program. Whether you service your own devices and require a minimum of support or rely on us to service your device, Baxter provides a program that will meet your needs.

For more information, call your sales representative or visit the Baxter website: baxter.com.

Remote Management

Remote Management is a secure service platform that offers biomeds access to manage their Baxter connected devices remotely in a centralized portal. This includes deploying software update files and configuration files to your fleet of **Connex 360** devices.

For more information, contact your sales representative or visit the Baxter website: baxter.com.

Warranty service

All repairs on products under warranty must be performed or approved by Baxter. Refer all warranty service to Baxter Product Service or another authorized Baxter Service Center. Contact Customer Support to obtain a Return Material Authorization (RMA) number for all returns to Baxter Product Service.

CAUTION Unauthorized repairs will void the product warranty.

Non-warranty service

Baxter Product Service Centers and Authorized Service Providers support non-warranty repairs. Contact any Baxter regional service center for pricing and service options.

Baxter offers modular repair parts for sale to support non-warranty service. This service must be performed only by Baxter-certified technicians using this service manual.

More information on Service Training can be obtained from your sales representative or by visiting baxter.com.

Repairs

A Baxter Service Center or Authorized Service Provider must perform all repairs on products under warranty unless you are a Baxter-certified technician that has successfully completed a Baxter Service Training course. More information on Service Training can be obtained from your sales representative or by visiting baxter.com.

CAUTION Only Baxter-certified technicians, Authorized Service Providers, and Baxter Service Centers should repair products out of warranty.

CAUTION Unauthorized repairs will void the product warranty.

If you are advised to return a product to Baxter for repair or routine maintenance, schedule the repair with the service center nearest you. Baxter Technical Support will provide the Baxter Service Center address where the device can be shipped for service or repair.

Baxter *Technical Support*

If you have a problem with the device that you cannot resolve, call the Baxter Technical Support Center nearest you for assistance. A representative will assist you in troubleshooting the problem and will make every effort to solve the problem over the phone, potentially avoiding an unnecessary return.

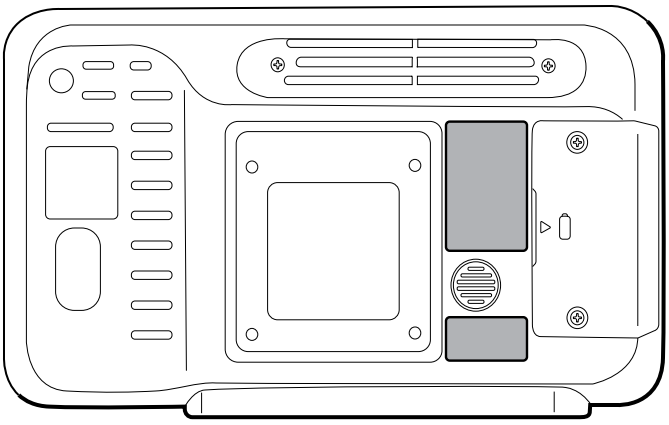
If your product requires warranty, extended warranty, or non-warranty repair service, a Baxter Technical Support representative will record all necessary information to issue an RMA number. The support representative will provide you with the address of the Baxter Service Center to send your device to.

Technical support is available during local business hours.

Returning products

When returning a product to Baxter for service, ensure that you have the following information:

- Product name, model number, and serial number. This information may be found on the product and serial number labels on the back housing.



- A complete return shipping address.
- A contact name and phone number.
- Any special shipping instructions.
- A purchase-order number or credit-card number if the product is not covered by a warranty.
- A full description of the problem or service request.

1. To obtain an RMA number contact Baxter Technical Support at baxter.com.

   NOTE Baxter does not accept returned products without an RMA.

2. Ship the device to Baxter, observing these packing guidelines:
   a. Remove from the package the battery, all hoses, connectors, cables, sensors, power cords, and other ancillary products and equipment, except those items that might be associated with the problem.

      Recommendations for returning Lithium-ion batteries

      - Use ground transportation to return batteries.
      - If returning multiple batteries, package each battery individually.
      - Do not consolidate multiple batteries in a single package.
      - Use packaging provided by Baxter or the battery manufacturer.
      - Do not pack a defective battery in checked or carry-on baggage if traveling by air.

      Packaging

      - If you return the battery with the device, remove the battery, seal the battery in an antistatic plastic bag, and place the battery in the position reserved for the battery near the device in the original shipping carton.

- If you return the battery separately, package the battery in the replacement battery's plastic bag and shipping box.

If the original shipping carton or replacement battery shipping box is unavailable, consult the manufacturer website for information about shipping Lithium-ion batteries.

WARNING Safety risk. Do not ship any battery that has been physically damaged or shows signs of leakage unless you receive specific instructions which meet the requirements for the shipment of Lithium-ion batteries. Dispose of damaged or leaking batteries in an environmentally safe manner consistent with local regulations.

NOTE In the United States, the applicable regulations can be found in the Code of Federal Regulations (CFR). Refer to 49 CFR 173.185 for shipping Lithium-ion batteries by air or ground. Use 49 CFR 172.102 sections A54 and A101 to find the special provisions for shipping Lithium-ion batteries.

b. Clean the device.

NOTE To ensure safe receipt of your device by the service center and to expedite processing and return of the device to you, *thoroughly clean all residues from the device before you ship it to* Baxter . For decontamination and cleaning requirements, see: Decontamination and cleaning requirements for returns in the Cleaning requirements section.

If a returned device is found to be contaminated with bodily fluids, it will be returned at the owner's expense. United States federal regulations prohibit the processing of any device contaminated with blood-borne pathogens. Baxter thoroughly cleans all returned devices on receipt, but any device that cannot be adequately cleaned cannot be repaired.

c. Put the device, enclosed in a plastic bag *with a packing list*, into the original shipping carton with the original packing materials or into another appropriate shipping carton.
d. Write the Baxter RMA number with the Baxter address on the outside of the shipping carton.

Recommended service intervals

Customers who have the **Connex 360** Embedded Service Tool can perform the basic functional verification and calibration procedures referenced in the table by following the instructions in this manual.

Component	Service interval	Service procedure
Battery	Annually	Basic functional verification[1]
NIBP module	Annually	Basic functional verification
SpO2 module	Annually	Basic functional verification
SureTemp Plus	Annually	Basic functional verification

[1] Battery performance is a function of clinical use and charge/discharge patterns. Baxter recommends replacing the battery when the remaining capacity no longer meets workflow requirements.

Use the **Connex 360** monitor Embedded Service Tool to perform a complete functional verification and calibration of the device. Perform a complete functional verification and calibration of the device whenever any of the following conditions exist:

- The device does not meet specifications
- The device has been dropped or otherwise damaged
- The device is malfunctioning
- The case has been opened

- An internal part has been replaced (battery excluded)

Battery performance

NOTE The battery in the device provides backup power during a power outage, not power for normal use. Except during cleaning and maintenance, the monitor should always be connected to AC power.

About the battery

WARNING Personal injury risk. Improper handling of the battery can lead to heat generation, smoke, explosion or fire. Do not short-circuit, crush, incinerate, disassemble the battery, or use an unapproved battery pack. Never dispose of batteries in refuse containers. Always recycle batteries according to national or local regulations.

The monitor uses a rechargeable Lithium-ion smart battery. Internal circuitry enables the battery to report its condition to the monitor. The monitor displays the battery status via the LED power indicator, icons on the screen, and status messages appearing in the Device Status area of the display. Battery information may be collected using the **Connex 360** Embedded Service Tool.

New batteries are shipped from the manufacturer with a 30 percent charge to extend shelf life. When installing a new battery in the device, you must plug the monitor into AC power to wake up the battery. If the AC power is not applied to the device, the new battery will appear discharged.

The Device Status area displays a low-battery status message when 30 minutes of power remain and again when 5 minutes remain.

Battery charging is provided by the device's external power supply.

For a complete list of battery specifications, see the device's Instructions for use.

Follow best practices to extend the life of the battery

The following practices help to extend the life of the battery and the device.

WARNING Safety risk. When handling and storing Lithium batteries: Avoid mechanical or electrical abuse. Batteries may explode or cause burns, if disassembled, crushed, or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

- Whenever possible, keep the monitor plugged in to charge the battery.
- Remove the battery when storing the monitor for an extended amount of time.
- Replace batteries that trigger a low battery status message when fully charged.
- Do not use damaged or leaking batteries.
- Store batteries with a 30 to 50 percent charge.
- Store batteries within the temperature range indicated for each period:
  - For storage less than 30 days: Maintain temperature between –4 °F and 122 °F (–20 °C and 50 °C).
  - For storage between 30 days and 90 days: Maintain temperature between –4 °F and 104 °F (–20 °C and 40 °C).
  - For storage more than 90 days up to 2 years: Maintain temperature between –4 °F and 95 °F (–20 °C and 35 °C).
- Recycle batteries where ever possible. In the United States call 1-877-723-1297 for information about recycling your Lithium-ion battery or go to the Call2Recycle website at http://www.call2recycle.org for additional information.
- When recycling is not an option dispose of batteries in an environmentally safe manner consistent with local regulations.

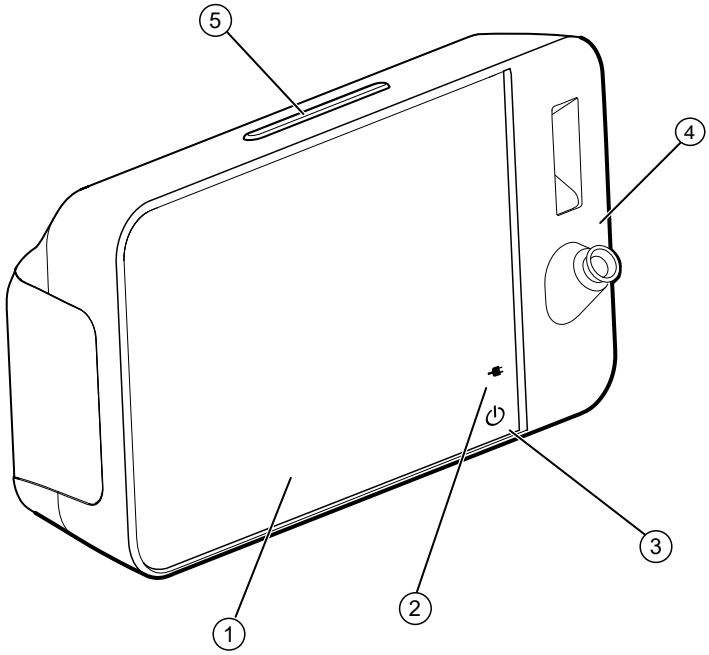
Factors affecting battery operating time

The following settings and conditions affect the battery operating time:

- The display brightness setting
- The display power-saver setting
- The device power-down setting
- Frequency and duration of alarms and alerts
- Amount of motion artifact during NIBP measurements
- Radio searching for an access point

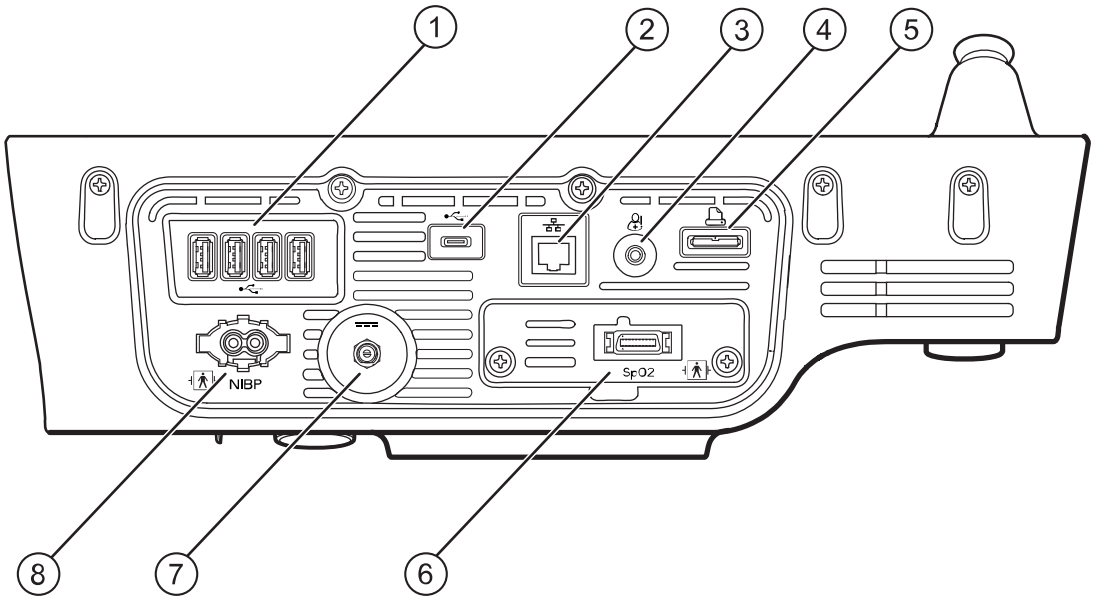
Controls, indicators, and connectors

NOTE Your model might not contain all of these features.



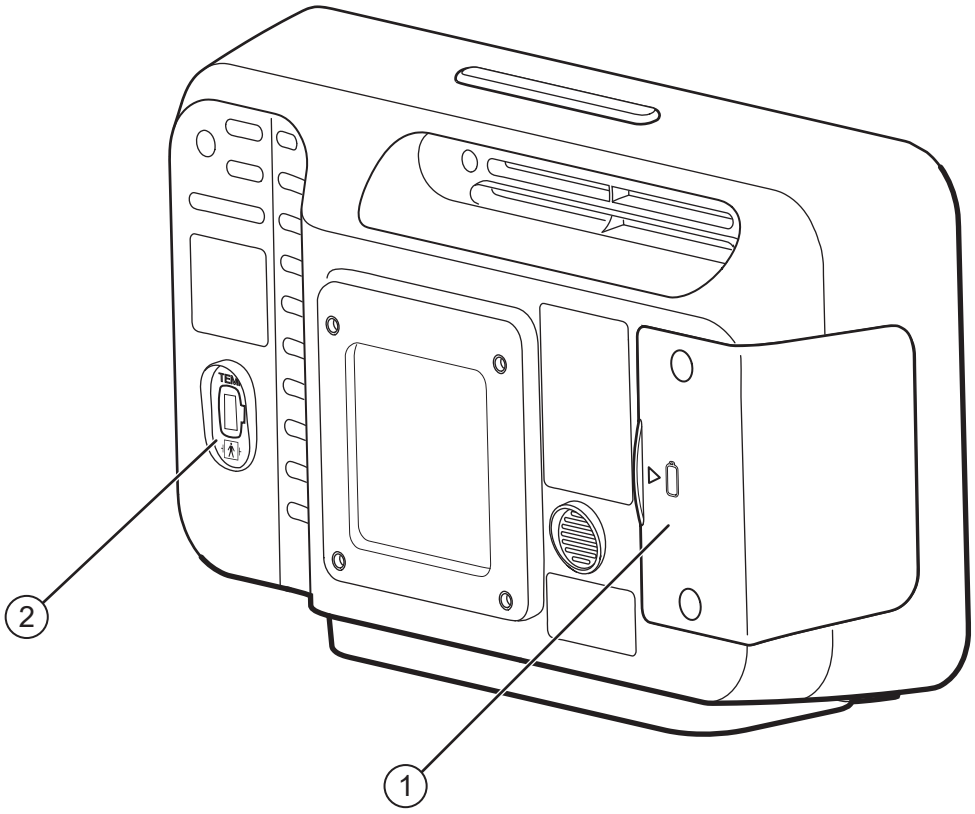
Front-Left view

No.	Feature	Description
1	LCD screen with branding	12.1" color touchscreen provides a graphical user interface
2	Battery charge and power-up status indicator	The LED indicates the charging and power-up status when connected to AC power: • Green: The battery is charged • Amber: The battery is charging • Flashing: The monitor is powering up
3	Power button	Button on lower-right of the monitor: • Powers on the monitor • Powers down the monitor • Places the monitor into Sleep mode with a short press, except when an alarm condition is active • Wakes up the monitor from Sleep mode
4	Thermometry	**SureTemp** Includes probe well and probe covers compartment
5	Light bar	Provides a visual alarm with red and amber LEDs.



Bottom view

No.	Feature	Description
1	USB ports (4)	Connect accessories to the monitor. Supported accessories include barcode scanners and RFID readers.
2	USB-C port	Provides a connection to an external computer
3	Ethernet RJ-45	Provides a hardwired connection to a network.
4	Nurse call	Provides a connection to a hospital nurse call system
5	Printer (future feature)	Connects to a printer (future release)
6	SpO2	Connects chosen SpO2 system to monitor (Type BF applied part, Masimo **SET** SpO2, or Nellcor SpO2)
7	Power connection	Connects to power supply
8	NIBP connection	Connects NIBP hose to monitor



Back view

No.	Feature	Description
1	Battery door	The battery door covers the battery compartment that houses the battery (The captive screws secure the battery door to the monitor.)
2	**SureTemp** thermometry connection port	Configuration shown features **SureTemp** module probe connection port

Advanced settings

Advanced settings provide access to device settings and service menu information with an access code. This section covers the following primary tabs:

- General. Settings for system language as well as date and time, open source software disclosure, and device identification.
- Parameter. Settings for physiological parameters, averaging, and intervals.
- Network. Settings for the internal Ethernet and security, as well as **Wi-Fi**® radio systems.
- Service. Settings and features that support installation and on-device troubleshooting.

NOTE Changes made in Advanced settings take effect immediately, but they do not change the configuration file and cannot be used to clone settings from one monitor to another.

Access Advanced settings

You cannot access Advanced settings if:

- Unsaved vital (including manual parameters) are displayed
- There are active sensors or physiological alarms
- The device is running averaging or intervals
- A patient identification number is displayed

1. From the Home tab, touch the Settings tab.
2. Touch the Advanced horizontal tab.
3. Enter a password with a minimum of 8-digits as the access code and touch OK. The General tab appears.

   NOTE The following are the access code password requirements:

   - Password length must be between 8 and 32 characters
   - The password must contain at least one uppercase and one lowercase letter.
   - The password must contain at least one number
   - The password must contain one symbol ('-!"#$%&()*,./:;?@[]^_`{|}~+<=>)

   NOTE This access code is configurable upon first boot, after a factory reset, or through a configuration file.
4. Perform service tasks by making selections or touching other tabs.

   NOTE Service tasks and how to do them are detailed in this section.
5. As a security measure when you are done, manually touch Exit.

   The Home tab appears.

Forgotten Access Code or Password

If you have forgotten the advanced setting access code you will have to consult with whomever set up the device within your organization.

The access code was either set during the first time boot or through use of a configuration file.

As a last resort, a factory reset could be performed, but this will wipe the device of all settings and data. To perform a factory reset outside the Advance Settings use the following steps:

1. Enter an incorrect password 10 times.

2. After the tenth time a Factory reset button will appear in the bottom-right of the screen.
3. Touch Factory reset.

If you decide against a factory reset, the advanced settings will be locked out for 5 minutes.

General tab

Specify the language

When you first access Advanced settings, the General tab appears, displaying the Language tab.

1. Select a language.
2. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit** .

Specify date and time settings

1. In Advanced settings, touch the **General** > **Date / Time** tabs.
2. Specify settings.

Setting	Action/Description
Date format	Select a date format for display.
Time zone	Displays UTC time zone (read only)
Enable NTP (Network Time Protocol)	Enable the monitor to query the correct date and time from a trusted time server. When enabled, manual date and time entry on the Settings tab is disabled. Touch **Change time server**, enter up to 20 characters, then touch **OK.** Touch Test network connection. Test results appear for the Time sync test, IP address, and DNS query status. Touch **Save**.

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Review the open source software disclosure

1. In Advanced settings, touch the **General** > **Legal** tabs.
2. Read Baxter's disclosure about its use of "free" or "open source" software.
3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Miscellaneous

Use this tab to define device identification.

1. In Advanced settings, touch the **General** > **Miscellaneous** tab.
2. Specify settings.

Setting	Action/Description
Asset tag	32 character max

Setting	Action/Description
Device location label	256 character max
EMR device location	256 character max

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Parameter tab

Specify advanced NIBP settings

1. In Advanced settings, touch the **Parameter** > **NIBP** tabs.
2. Specify settings.

Setting	Action/Description
Default view	Select default primary and secondary views. • SYS/DIA as primary • MAP as primary • SYS/DIA only
Unit of measure	Select the NIBP unit of measure for display. • kPa • mmHg
Tube type	Select the number of tubes that are connected to the NIBP cuff that is used with this monitor. If you select **Single**, the device sets the algorithm to **Step**, disabling other options. • Single • Double
Algorithm default	Select the default algorithm used to determine NIBP measurements. • **SureBP** • StepBP If **SureBP** is selected, the device inflates the cuff to the appropriate level, measuring the blood pressure as the cuff is inflating. The systolic display shows the pressure in the cuff as the blood pressure determination is in process. If StepBP is selected, the device will inflate the cuff, then measure the blood pressure while deflating the cuff. If the device is unable to determine a blood pressure while the cuff is inflating due to patient movement, excessive noise, or an arrhythmia, the device will use the StepBP algorithm to inflate the cuff to a higher pressure, then attempt to measure the blood pressure while deflating the cuff. The default NIBP algorithm is **SureBP**.

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Specify advanced temperature settings

1. In Advanced settings, touch the **Parameter** > **Temperature** tabs.

2. Specify settings.

Setting	Action/Description
Unit of measure	Select primary units of measure for the temperature display on the Home tab • °F • °C
Display temperature conversion	Enable to display primary units of measure and secondary units of measure for the temperature display on the Home tab.

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Specify advanced averaging interval settings

1. In Advanced settings, touch the **Parameter** > **Averaging** tabs.
2. Specify settings.

Setting	Action/Description
NIBP averaging program	Select the averaging program to view or modify. You can change the name of the averaging program.
Readings to average	Select which readings in a series to use for averaging (and the number of readings to average as a result).
Delay to start (minutes)	Enter the number of minutes to wait before the averaging program starts (after touching "Start intervals") and the start of the first reading.
Time between (minutes)	Enter the number of minutes to wait between readings.
Keep if + or – (mmHg)	Enter the range that the program uses as criteria to accept or reject readings and establish the baseline reading.
Summary display box	Displays currently selected settings.

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Specify advanced program interval settings

1. In Advanced settings, touch the **Parameter** > **Program** tabs.
2. Specify settings.

Setting	Action/Description
Program	Select the program to view or modify. You can change the name of the program.
Intervals	Specify up to five sets of interval readings for this program. For each set, specify the number of minutes between interval readings and the number of times that each interval should run (repetitions) before proceeding to the next set.

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Network tab

Specify device IP settings

A radio card must be installed and operational to specify the device radio IP settings.

1. In Advanced settings, touch the **Network** > **Device** tabs.
2. Specify settings.

Setting	Action/Description
Ethernet	Select **Use DHCP** or **Static ID**.
Radio	Select **Use DHCP** or **Static ID**.
IP address	If Static ID is selected, specify these settings.
	Subnet mask
	Gateway
	DNS IP address

3. Touch **Apply**.
4. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Specify radio settings

This task is applicable only to monitors that have a wireless radio installed.

1. In Advanced settings, touch the **Network** > **Radio** tabs.
2. Specify settings.

Setting	Action/Description
Enable radio	Enable the radio for **Wi-Fi** communications. When disabled, the radio is not available.
ESSID	Enter the service set identifier (SSID) for the enterprise. Enter a maximum of 32 characters.
Radio mode	Select the radio band. • Auto • 2.4 GHz • 5.0 GHz
Dynamic Frequency Selection	Enable to allow the site to transmit data on changing frequencies for added security. This option applies most frequently to military or government enterprises.
Enable radio network alarms	Activate radio network alarms when an wireless dropout alarm condition occurs. When disabled, radio network alarms are not available.
Roaming	Roaming settings (OKC/PKC, 802.11r, and fast BSS transition) can be configured through the Configuration Tool.
Update radio	Touch **Update** to activate all new radio settings not selected previously. Touch **OK** in the confirmation pop-up.

Setting	Action/Description
	NOTE None of the changed radio settings take effect until you touch Update. Navigating away from the Radio tab or Security tab without selecting Update will revert any unsaved changes.

3. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

NOTE For more information on radio specifications, please reference the *Wireless Best Practices Guide* by contacting Baxter Technical Support or visiting Baxter.com.

Specify security settings

1. In Advanced settings, touch the **Network** > **Security** tabs.
2. Select the encryption method to secure data transfer from the device.

NOTE Network server certificates are required for all EAP security options. Use the Embedded Service Tool to load these certificates. Refer to "Certificates" section for more information.

3. Specify settings.

Authentication type. Select the preferred encryption option, then touch **Update**. The default is Open or no encryption.

- **WPA2-Personal**
- **WPA2-Enterprise**
- **WPA2-Enterprise-Suite-B**
- **WPA2-Enterprise-Suite-B-192**
- **WPA3-Personal**
- **WPA3-Personal-Transition**
- **WPA3-Enterprise**
- **WPA3-Enterprise-Transition**
- **WPA3-Enterprise-Suite-B**
- **WPA3-Enterprise-Suite-B-192**
- **WPA3-Owe**

Specify additional settings

Setting	Action/Description
Anonymous identity	Enable this option to disable the User name field. This is disabled with EAP type TLS.
User name	Enter the EAP identity (maximum of 32 characters). This is disabled with EAP type TTLS.
Password	Enter the EAP password (maximum of 32 characters). This is disabled with EAP type TLS.
EAP type	In use with WPA2-Enterprise & WPA3-Enterprise. Select from the list of available authentication protocols (TLS, TTLS, PEAP-MSCHAPv2, PEAP-GTC, PEAP-TLS).

Setting	Action/Description
Inner EAP setting	MSCHAPv2, GTC, or TLS. Enabled for EAP type TTLS.
Update	Touch **Update** to activate all new radio settings not selected previously. Touch **OK** in the confirmation pop-up. **NOTE** None of the changed radio settings take effect until you touch **Update**. Navigating away from the Radio tab or Security tab without touching **Update** will revert any unsaved changes made.
Enable FIPS mode	Select **Enable FIPS mode** if you are connecting to a FIPS environment. Check the **Enable FIPS mode** box, and then touch **Update**. FIPS mode is not available for WPA2-Personal, WPA3-Personal & WPA3-Owe.

4. Do one of the following:
   - To continue specifying Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Specify server settings

1. In Advanced settings, touch the **Network** > **Server** tabs.
2. Select the method used to identify the IP address of the server with which the device will communicate.
3. Specify settings.

Setting	Action/Description
Host name or IP address	Enable the device to connect to a host server at a fixed IP address. In the Host address entry field, enter the IP address or DNS hostname. Enter the port number in the Host port entry field. The range of entry is 0 to 65535. Select either a Baxter host or a Direct EMR connection.
Encryption settings	Turn the security data encryption on or off, and enable or disable the server authentication.
Data encryption	Turn the security data encryption on or off, and enable or disable the Server authentication, Client authentication, and service host encryption.
Server authentication	Turn the server authentication on or off.
Certificates	• Display Subject/Issuer and expiration date. • Assign to EMR or Service. • Install additional certificates.
Load client certificate	Enable by inserting a USB flash drive with valid file names. Load client certificate from USB flash drive.

4. Touch **Test network connection**.

   The status of the server connections appears.
5. Touch **OK**.

6. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Specify **Active Directory** settings

Use the **Active Directory** settings to manage the device communication address and access settings.

NOTE See "Connectivity Options" for further information.

1. In Advanced settings, touch the **Network** > **Active Directory** tabs.
2. Select **Enable Active Directory**.
3. Specify settings.

Setting	Action/Description
Domain name	Enter the domain name.
Group	Enter the domain name group.
Clinician ID type	Select the clinician ID type (User name, Account name, or Employee ID.
Authentication user name	Enter the user name.
Authentication password	Enter the password.
Search subtree	Enter the subtree alpha-numeric characters.

4. Touch **Test network connection**.
   The device displays the Active Directory test status.
5. Click **OK**.
6. Do one of the following:
   - To continue in Advanced settings, touch another tab.
   - To exit Advanced settings and return to the Home tab, touch **Exit**.

Service tab

Enter general device information

1. In Advanced settings, touch the **Service** > **General** tabs.
2. Under Remote asset management, touch within a field to enable the keyboard, and enter up to 64 characters in the following data fields:
   - Service unit
   - Service room
   - Service bed
3. If desired, select **Allow Display Lock**.
   The display lock prevents clinician input, which may be useful when cleaning the display.
4. If desired, select **Disable USB ports**.

Ethernet status

In Advanced settings, touch the **Service** > **Ethernet status** tabs. This Ethernet status vertical tab displays read-only data about the Ethernet connection:

Network

- MAC address
- IP address
- Subnet mask
- Gateway
- DHCP server
- DHCP lease time

Radio status

In Advanced settings, touch the **Service** > **Radio status** tabs. This Radio status vertical tab displays the following read-only data about the **Wi-Fi** radio connection:

Network

- MAC address
- IP address
- Subnet mask
- Gateway
- DHCP server
- DHCP lease time

Radio settings

- Version
- Radio status string
- SSID
- Access point MAC
- Authentication type
- RSSI
- Radio band
- Frequency
- Power save mode
- FIPS mode
- Installed certificates

If the device cannot communicate with the radio through the internal radio IP address, the radio error 35002c appears. A Mac address text field appears on the Radio status tab approximately three to four minutes after the error message. Contact Baxter for assistance in entering the correct Mac address in this field.

Log file

In Advanced settings, touch the **Service** > **Log file** tabs. This screen allows download of the log file.

Config

In Advanced settings, touch the **Service** > **Config** tabs. This screen displays the current configuration and allows loading of a new configuration.

Restore factory default settings through a factory reset

Save service logs to a USB flash drive

This procedure enables you to save the active log files to a USB flash drive.

1. In Advanced settings, touch the **Service** > **Log file tabs**.

2. Connect a flash drive to the USB port.
3. Touch **Save to USB**.

Copies of the service log files are saved to the drive. You may remove the flash drive from the device.

NOTE This process does not restore the monitor to a custom configuration provided at delivery. Instead, it deletes all custom configuration data and restores factory default settings.

1. In Advanced settings, touch the **Service** > **System** tabs.
2. Reset to defaults:
   - To restore radio settings to factory default values, select **Radio settings only**.
   - To restore all current settings to factory default values, select **All settings**.
3. Touch **Reset** and follow the onscreen prompts.

   The factory default settings are restored.

   If you selected Radio settings only, the radio reboots, and the device remains powered on.

   If you selected All settings, the device reboots.

Review firmware status and load firmware from the network

1. In Advanced settings, touch the **Service** > **System** tabs.
2. In the right pane, review the firmware status information.

NOTE If the firmware is up-to-date, take no further action.

3. To update the firmware, touch **Load** and follow the onscreen prompts.

NOTE You can also load new firmware by shutting down the device.

NOTE The device will not initiate an update unless the device is plugged into AC power and has a minimum of 15 minutes worth of battery life.

If the update fails, contact Baxter Technical Support.

Disassembly and repair

These procedures provide instructions for device disassembly and board removal, as well as component replacement and reassembly.

Each part's disassembly instructions might include one or both of the following:

- *Reassembly notes*: This subsection contains information specific to reassembly. At a minimum, these notes indicate whether or not reassembly is the reverse of disassembly. The notes also list service kits of replacement parts where applicable.
- *When replacing the component*: This subsection contains additional instructions related to installing a new option or replacement part.

Each disassembly step includes drawings that illustrate the components to be removed. The reassembly notes could be as short as one or two lines when reassembly is the reverse of disassembly. When reassembly is more complicated, these notes alert you to any special care required to complete the repair or installation and sometimes introduce separate reassembly instructions. Line drawings appear in the reassembly notes only when they differ from the drawings in the disassembly instructions.

WARNING Electrical shock hazard. Disconnect AC power before opening the device. Disconnect and remove the battery before proceeding with disassembly. Failure to do this can cause serious personal injury and damage to the device.

WARNING Risk of fire, explosion and burns. Do not short-circuit, crush, incinerate, or disassemble the battery pack.

WARNING Safety risk. Do not attempt to service the device when the device is connected to a patient.

CAUTION Before disassembling the device or installing options, disconnect the patient from the monitor, power down the device, disconnect the AC power cord and any attached accessories (for example, SpO2 sensors, blood pressure hoses and cuffs, and temperature probes) from the device.

CAUTION If your device is configured with a SureTemp module, remove the probe well before disassembly.

CAUTION Perform all repair procedures at a static-protected station.

CAUTION When the device case is opened, regard all parts as extremely fragile. Execute all procedure steps with care and precision.

CAUTION Observe screw torque specifications, especially with screws that secure directly into plastic standoffs.

CAUTION To avoid mismatching screws and holes, keep the screws for each piece with that piece as you remove modules and circuit assemblies. It is possible to mistakenly install machine screws in locations intended for plastite screws. Plastite screws have a Torx-pan head.

Connector types

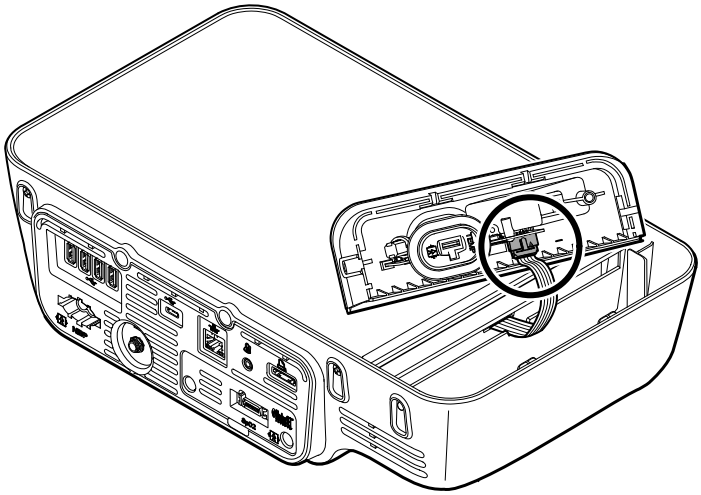
Disassembly and repair procedures require that you disconnect and reconnect the following connector types inside the device:

- *Locking (squeeze-release)*: Locking connectors use a latching mechanism to prevent accidental disconnection during assembly and use. The latch is located on one end of a tab so it may flex and lock into place when coupled with its matching connector. The tab provides a lever to release the latch. Some connectors have multiple latches that require you to press multiple tabs to release.

To remove a locking connector, squeeze the tab(s) to release the latch(es) and remove the cable.

To connect a locking connector, push the mating pieces together until the latch(es) lock in place.

- *Friction*: Friction connectors use a spring mechanism to create friction between the contacts.



To remove a pressure connector, grasp each connector mating half and pull the halves apart.

CAUTION Do not use excessive force to disconnect the connector. Excessive force may result in pulling the mounted connector off the circuit board.

To connect a friction connector, grasp each connector mating half and insert one half into the other.

- *ZIF (zero insertion force)*: The device uses flex cables and ZIF flex cable connectors. Flex cables and ZIF connectors require special care when handling.

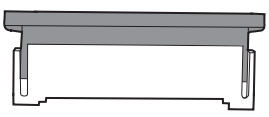
  ZIF connectors use a sliding outer piece that latches and unlatches to secure and release the flex cable. ZIF cables cannot be successfully connected or disconnected without properly unlatching and latching the sliding outer piece.

  CAUTION Do not use excessive force when releasing pressure on the connector. Excessive force may result in breaking the sliding outer piece.

  To remove a ZIF connector

  CAUTION Remove a flex cable only after the ZIF latch is open.

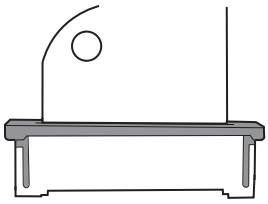
  1. Using a suitable tool (for example, a paper clip, small flat-head screwdriver, or needle-nose pliers), slide the latching piece of the connector away from the connector body.

  2. Remove the cable.

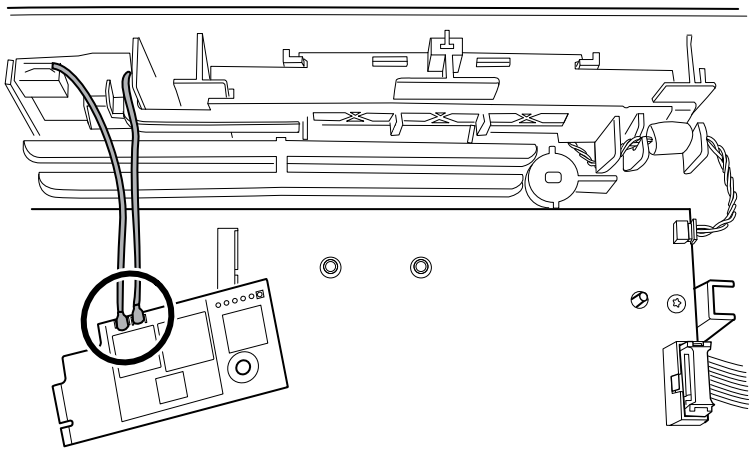
  To connect a ZIF connector

  1. Slide the latching piece of the connector away from the connector body.
  2. Insert the flex cable into the connector. This may require using a suitable tool to keep the latching piece elevated.
  3. Slide the latching piece toward the connector body until it locks into place.

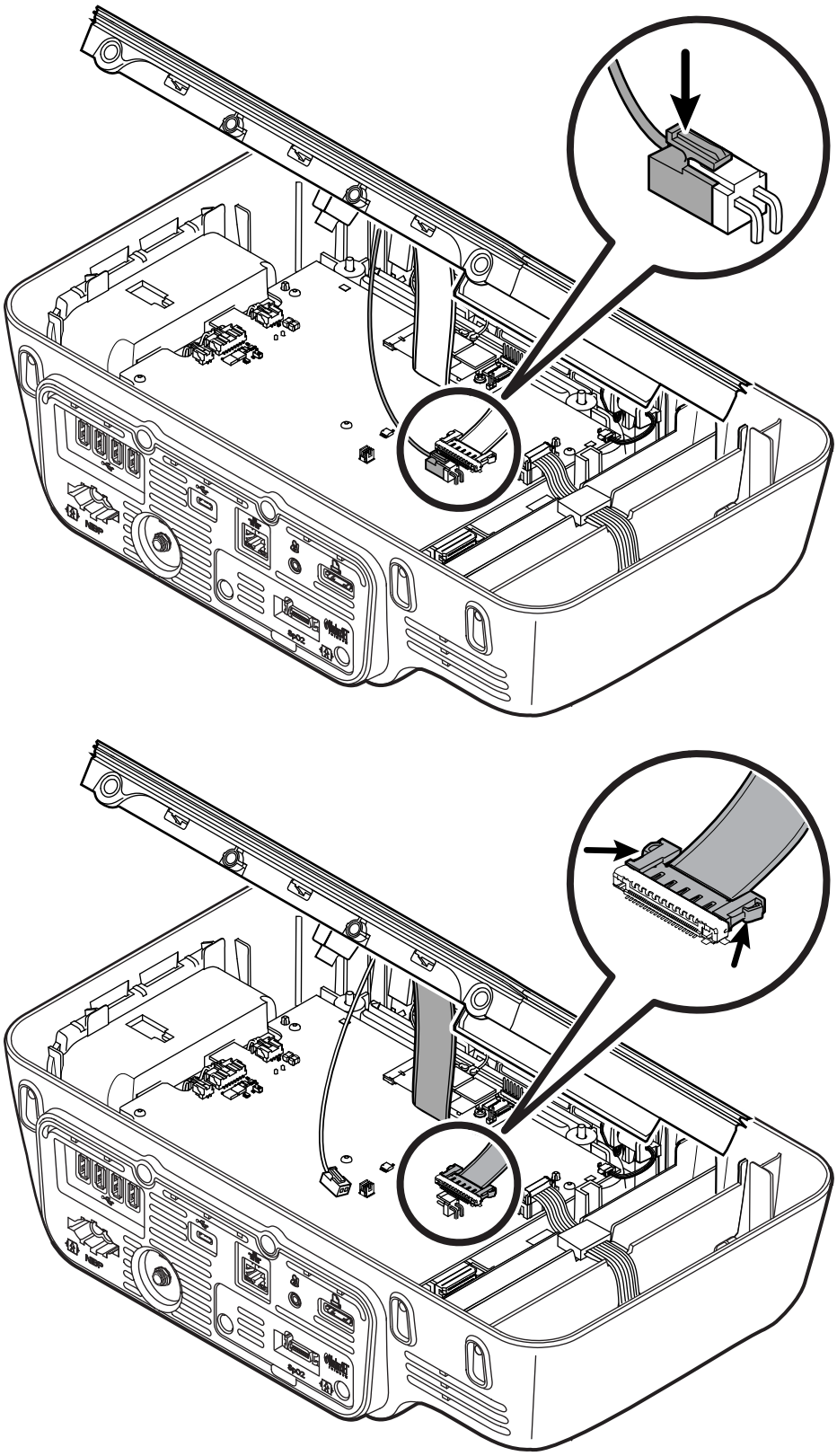


- *Coaxial*: Coaxial snap connectors, a type of pressure connector in this case, are components attached to the ends of a coax cable—they make it possible to connect to other devices. The connector has a wire conductor in the center, surrounded by an outer conductor, and an insulation between the two. In this device, the coaxial snap connector connects the antenna to the wireless radio board.

  To remove a coaxial connector, lift the snap connector away from the board.



  To connect a coaxial connector, align the connector over the mount on the board and press to snap it into place.



- *FHY connector (Self-Lock mechanism)*: The device uses Self-Lock mechanism cable connectors.

  A Self-Lock mechanism locks when the connector is inserted.

CAUTION Do not use excessive force when releasing pressure on the connector. Excessive force may result in breaking the locking mechanism.

To remove a Self-Lock mechanism

1. Squeeze and hold the two side clips to disengage the locking mechanisms.
2. Remove the cable.

Required tools and equipment

- Phillips #0 screwdriver
- Phillips #1 screwdriver. A magnetic tip will be helpful in some steps
- T-10 **Torx** screwdriver
- 3/8" socket wrench
- Plastic spudger

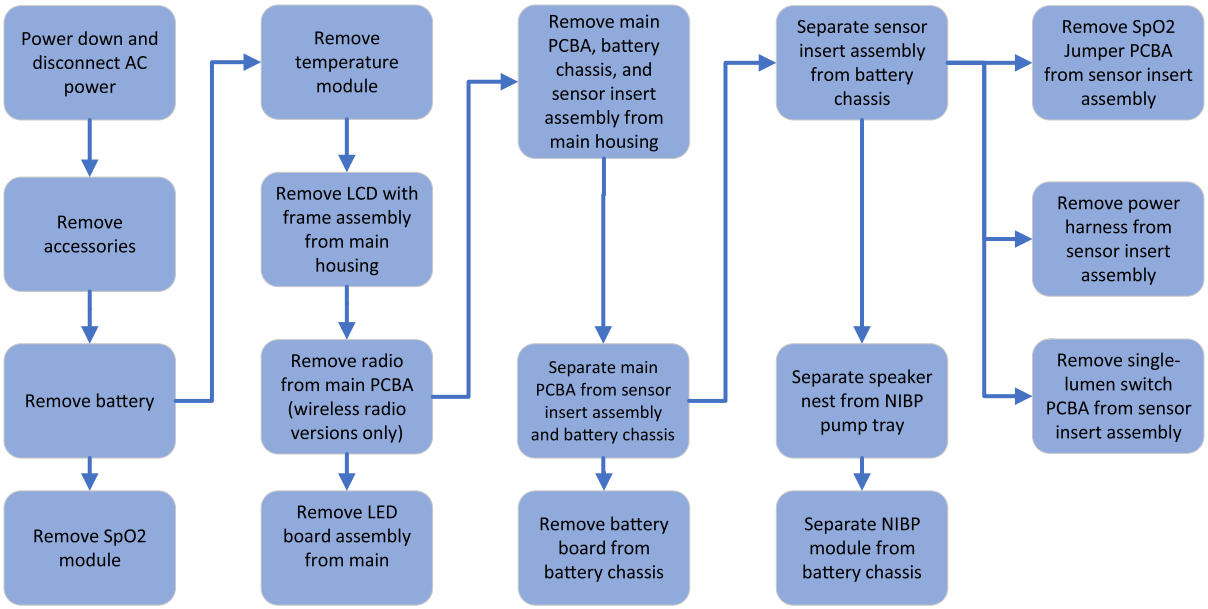
Torque value table

Use this table to determine how much torque to apply to screws by type and location when reassembling the device.

Description	Torque specification	Bit type	Where used
NUT, 5/16-32, THIN PROFILE	5.0 +/-0.5 in-lbs	3/8" Socket	• Sensor Insert Power Harness
SCR,4-20X .500 PHT PLASTITE PH TORX	4.5 +/-0.5 in-lbs	T-10 **Torx**	• PCA, Battery Connector Pattern B, MMF to Chassis Housing • SpO2 adapter PCBA to SpO2 Housing • SpO2 Interconnect PCBA to Insert Housing • Lumen Switch PCBA to Insert Housing
SCREW 4-40 .250 PAN PHILLIPS STEEL ZINC	4.5 +/-0.5 in-lbs	#0 Phillips	• SpO2 adapter PCBA to SpO2 OEM PCBA
SCR, M4 PAN HD, PHD, SHOULDER	7.5 +/-0.5 in-lbs	#1 Phillips	• SpO2 Insert Assy (all types) to Insert Housing • Battery Door

Disassembly overview

The following flow chart provides an overview of the complete disassembly of the device. Most disassembly activities require that you complete a subset of the steps detailed here. The flow chart indicates the steps which must be completed in sequence to remove a particular component. Because a different sequence of preliminary steps is required to remove certain components, you should use this flow chart as a reference at the start of every disassembly and component replacement procedure.



NOTE A Baxter Service Center or Authorized Service Provider must perform all repairs on products, unless you are a Baxter-certified technician that has successfully completed a Baxter Service Training course. You must use the Embedded Service Tool after performing any of these procedures and before returning the device to service. Complete the full suite of functional tests to ensure that all systems are operating within the design specifications. For more information about these tests and the service tool, see "Functional verification and calibration."

Power down the monitor

If you power down the monitor using ⏻, patient measurements are retained in the monitor memory for a maximum of 24 hours. These saved measurements are available for recall or electronic transmission to the network. This method also ensures that any configuration settings you have changed and saved will be maintained at the next startup.

1. Press ⏻.

   If there is a software update available, then a system message asks if you want to upgrade the software.
2. If you want to upgrade the software, touch **OK**.
3. If there is no system message, a dialog box appears with options.
   - Sign out (if you signed in with a Clinician ID)
   - Power down
   - Sleep
   - Cancel
4. Touch one of the options.

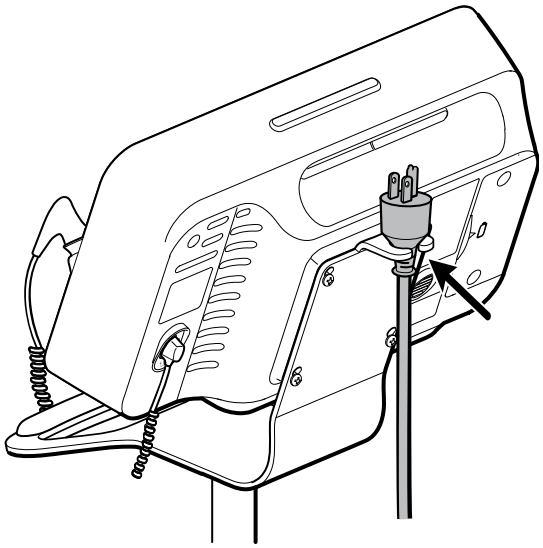
   The monitor will either sign you out as a clinician so that another clinician can sign in, power down, go into Sleep mode, or return to the prior screen, depending on the option you choose. The battery continues to charge when in Sleep mode.

Disconnect AC power

CAUTION Never move the monitor or mobile stand by pulling on any of the cords. This may cause the monitor to tip over or damage the cord. Never pull on the power cord when disconnecting the cord from

the mains outlet. When disconnecting the power cord, always grasp by the attachment plug. Keep the cord away from liquids, heat, and sharp edges. Replace the power cord if the strain relief, cord insulation, or metal prongs are damaged or begin to separate from the attachment plug.

1. Grasp the power cord by the attachment plug.
2. Pull the power cord attachment plug out from the mains outlet.
3. When not in use, set the power cord attachment plug into the catch on the top of the mobile stand support bracket to keep the power cord clear of the wheels and to minimize trip hazards.



Remove the temperature probe and probe well

Follow these steps to disconnect the probe cable and remove the probe well.

1. Press the spring tab on the **SureTemp** probe connector and pull it out of the connection port. The probe connector port is located on the back of the monitor.
2. Remove the **SureTemp** probe from the probe well.
3. Grasp the probe well and pull it up to remove it from the monitor.

Disconnect the NIBP hose

1. Place your thumb and forefinger on the hose connector spring tabs.

NOTE Always grasp the hose by the connector spring tabs. Do not pull on the hose itself.

2. Squeeze and pull the spring tabs until the connector releases.

Disconnect the SpO2 cable

1. Place your thumb and forefinger on the SpO2 cable connector. Do not grasp the cable.
2. Pull the SpO2 cable connector out of the connector port.

Detach an accessory

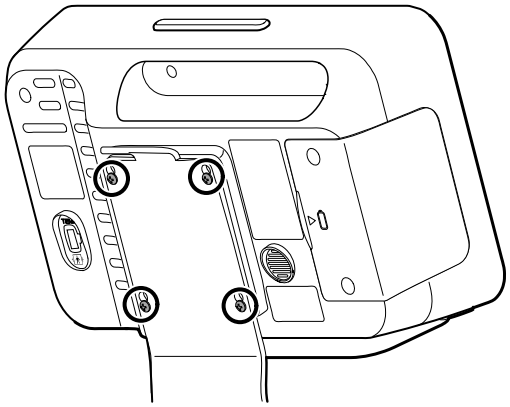
To detach an accessory from the monitor, follow the instructions that accompanied the accessory.

Remove the monitor from the stand

1. Disconnect the power cord from the wall.
2. Disconnect the power supply from the monitor.

CAUTION Prevent the monitor from falling. Before removing the 4 screws that hold the monitor to the support bracket, secure the monitor by holding the monitor by the recessed handle.

3. Loosen the 4 Phillips screws from the back of the support bracket enough to slide the monitor up into the 4 grooves of the support bracket.



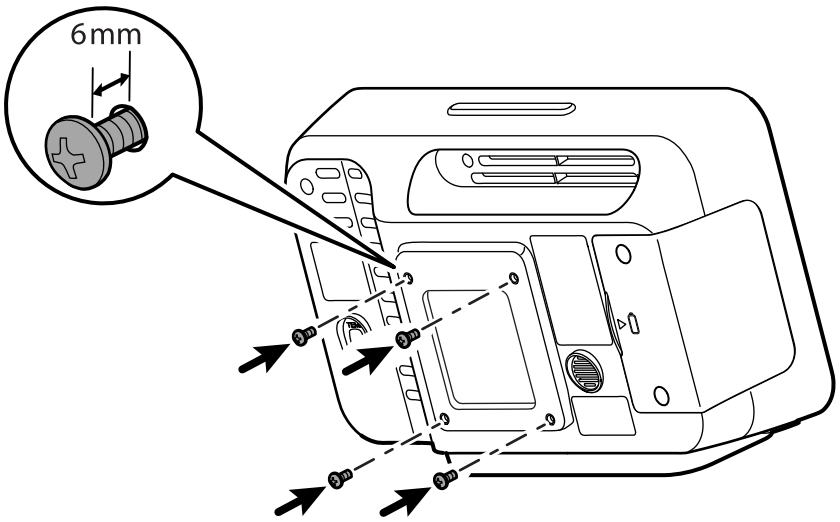
4. Lift the monitor off of the support bracket.
5. Remove the 4 screws from the monitor's mounting plate to enable any service or repair that needs to be performed on an appropriately prepared flat surface. Set the screws aside for reuse when remounting the monitor to the support bracket.

Reassembly notes

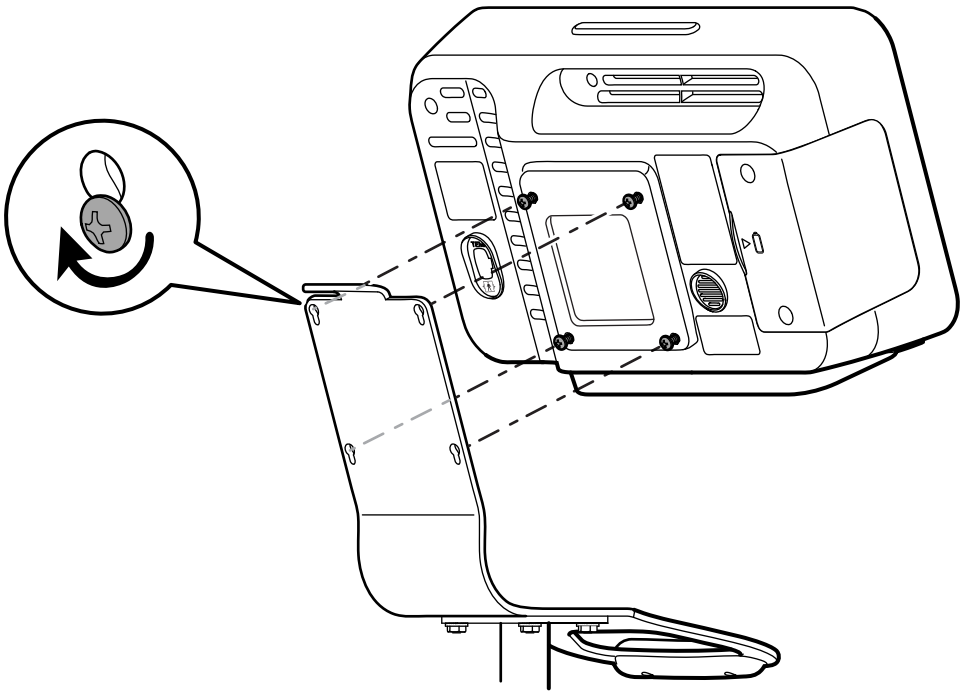
NOTE Reassembly is not the reverse of disassembly. See the instructions "Mount the monitor onto the mobile stand" that follow.

Mount the monitor onto the mobile stand

1. Thread each of the 4 supplied screws (8 mm) into the monitor's mounting plate leaving a gap of 6 mm. (The gap needs to be large enough to accommodate the thickness of the support bracket).



2. Attach the monitor onto the mobile stand support bracket by aligning the 4 mounting screws with the 4 openings of the bracket and then slide the monitor down into the 4 grooves of the bracket as illustrated.



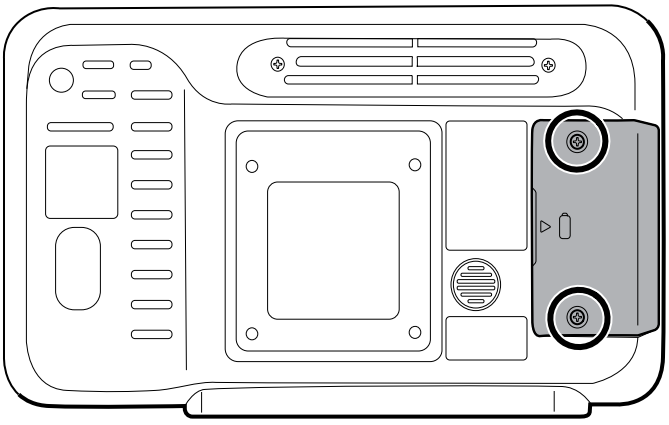
3. Tighten the 4 mounting screws until each of the screw heads are flush with the bracket and the monitor is secure.

Remove the battery

WARNING Personal injury risk. Improper handling of the battery can lead to heat generation, smoke, explosion or fire. Do not short-circuit, crush, incinerate, or disassemble the battery. Never dispose of batteries in refuse containers. Always recycle batteries according to national or local regulations.

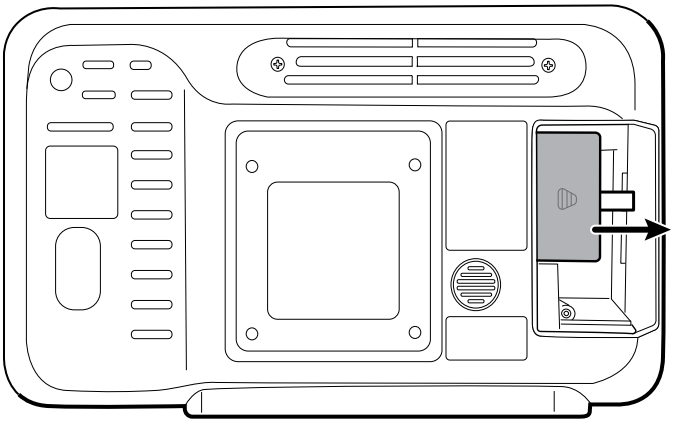
WARNING Use only approved accessories, and use them according to the manufacturer's instructions for use. Using unapproved accessories with the monitor can affect patient and operator safety and can compromise product performance and accuracy, and void the product warranty.

1. Locate the battery door, indicated by .



2. Using a double-slotted screwdriver, loosen the captive screws of the battery door, and then remove the door.

3. Remove the old battery from the battery compartment.



Reassembly notes

NOTE Reassembly is the reverse of disassembly.

WARNING Defective batteries can damage the monitor. If the battery shows any signs of damage or cracking, it must be replaced immediately and only with a battery approved by Baxter.

Kit item:

- BATT99, 9 CELL LITHIUM ION BAT SINGLE PACK

Remove the SpO2 module

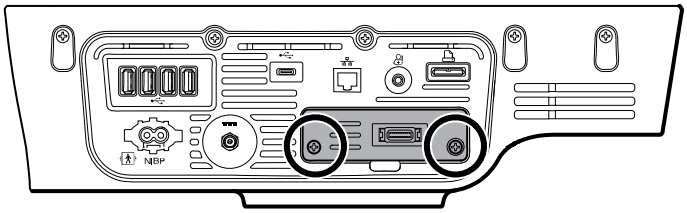
NOTE Removing the SpO2 module is not a required step to move forward in the disassembly process. See the "Remove the **SureTemp** temperature module".

The monitor is configured with either a Masimo **SET** or Nellcor SpO2 module. Proceed with the disassembly steps that apply to your monitor's configuration and see the monitor's labeling for the installed SpO2 module configuration.

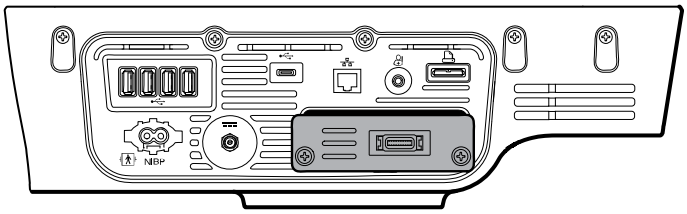
- Power down the monitor.
- Remove the power supply.
- Remove the battery.
- Remove the accessories.

NOTE The SpO2 module only needs to be removed if the module needs to be replaced.

1. Loosen the 2 Phillips screws holding the SpO2 module in place at the bottom of the monitor's sensor insert.



2. Slide the SpO2 module out to remove it from the sensor insert.



Reassembly notes

NOTE Reassembly is the reverse of disassembly.

Kit items:

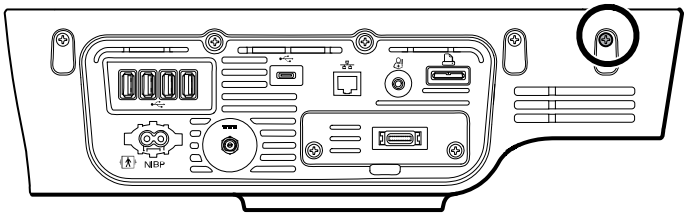
- 108877, SRV KIT-CNX360-ASSY SpO2 Masimo
- 108878, SRV KIT-CNX360-ASSY SpO2 Nellcor

Remove the **SureTemp** temperature module

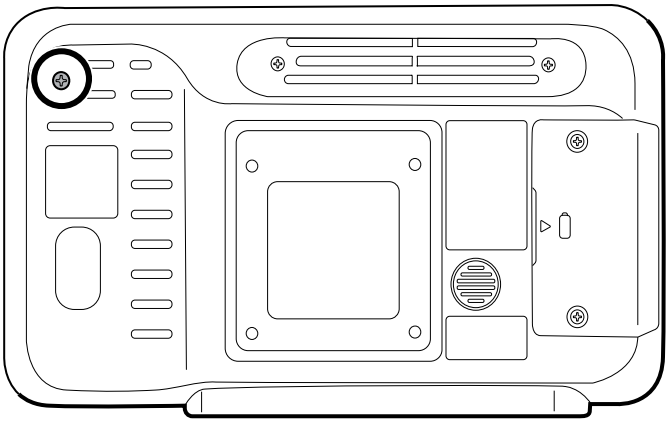
If the monitor is configured with a **SureTemp** module, proceed with the disassembly steps that apply to your monitor's configuration.

- Power down the monitor.
- Remove the power supply.
- Remove the accessories.
- Remove the battery.

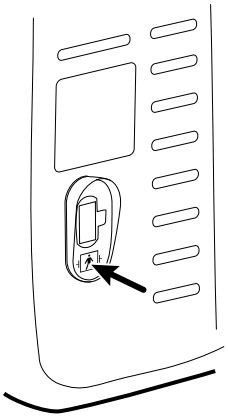
1. Flip the monitor over onto the monitor's back on a prepared work surface and then remove the 1 Phillips screw on the bottom right of the monitor housing to loosen the temperature module.



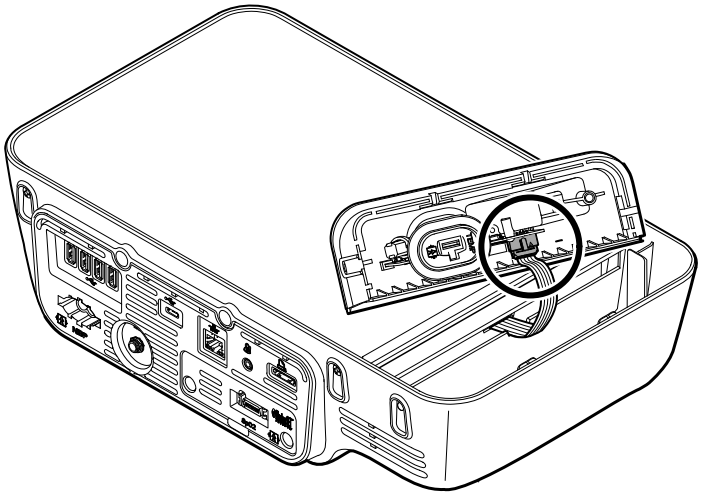
2. Remove the 1 Phillips screw on the top left of the monitor housing to begin removing the temperature module.



3. Using your thumb seated on the lower portion of the **SureTemp** connection port, push the temperature module forward to make it easier to loosen the temperature module by unseating the gasket.



4. With the gasket unseated, remove the temperature module by gasping the module and swinging the module to the left to access the harness connector. Disconnect the thermometer connector by grasping the friction fit connector.



Reassembly notes

NOTE Reassembly is the reverse of disassembly.

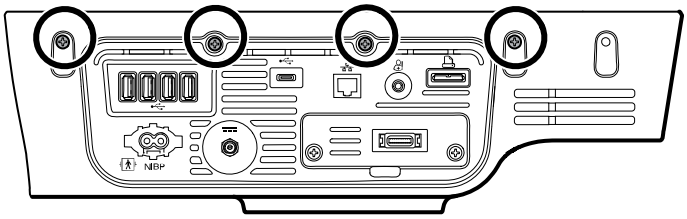
Kit items:

- 108880, SRV KIT-CNX360-MODULE SURE TEMP PLUS

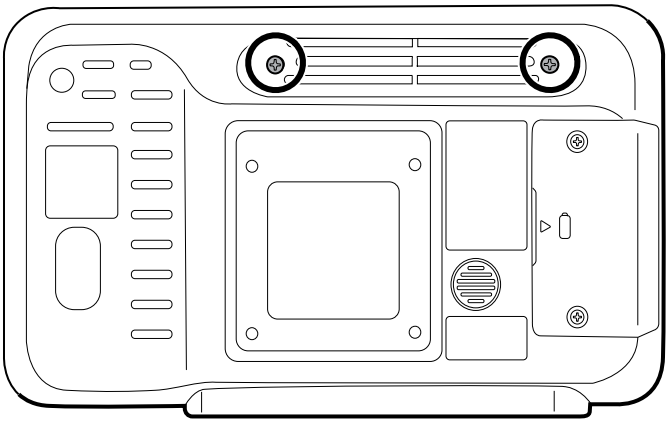
Remove the LCD with frame assembly from the main housing

Remove the temperature module before removing the LCD. Follow the disassembly steps above that apply to your monitor's temperature module.

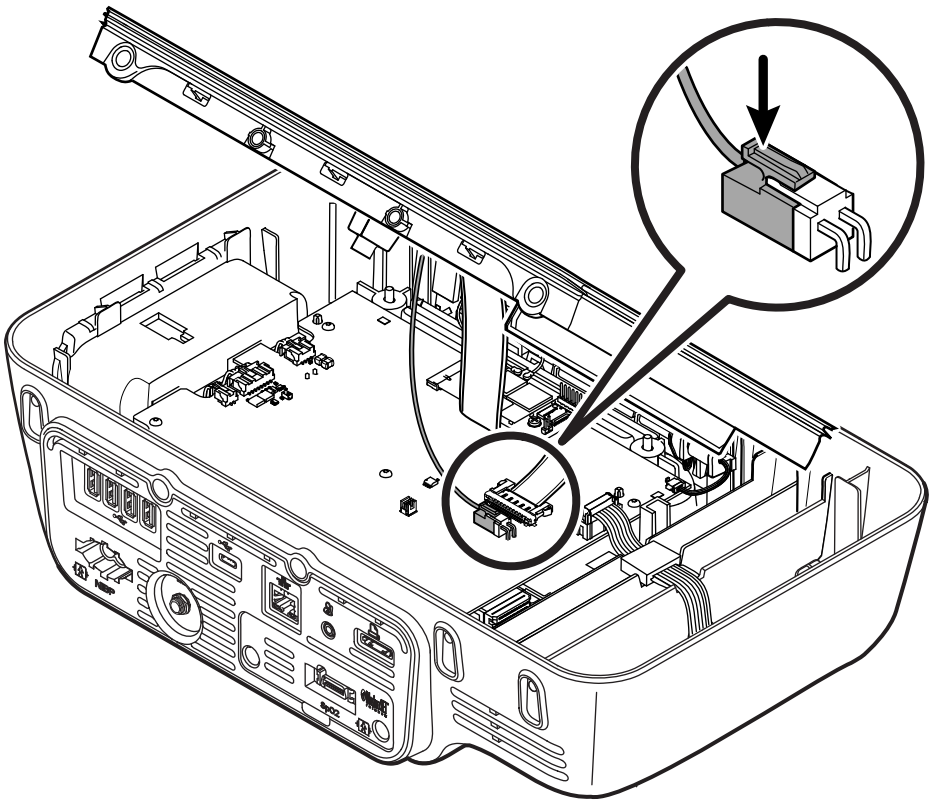
1. Loosen and remove the indicated 4 Phillips screws on the bottom of the monitor housing.



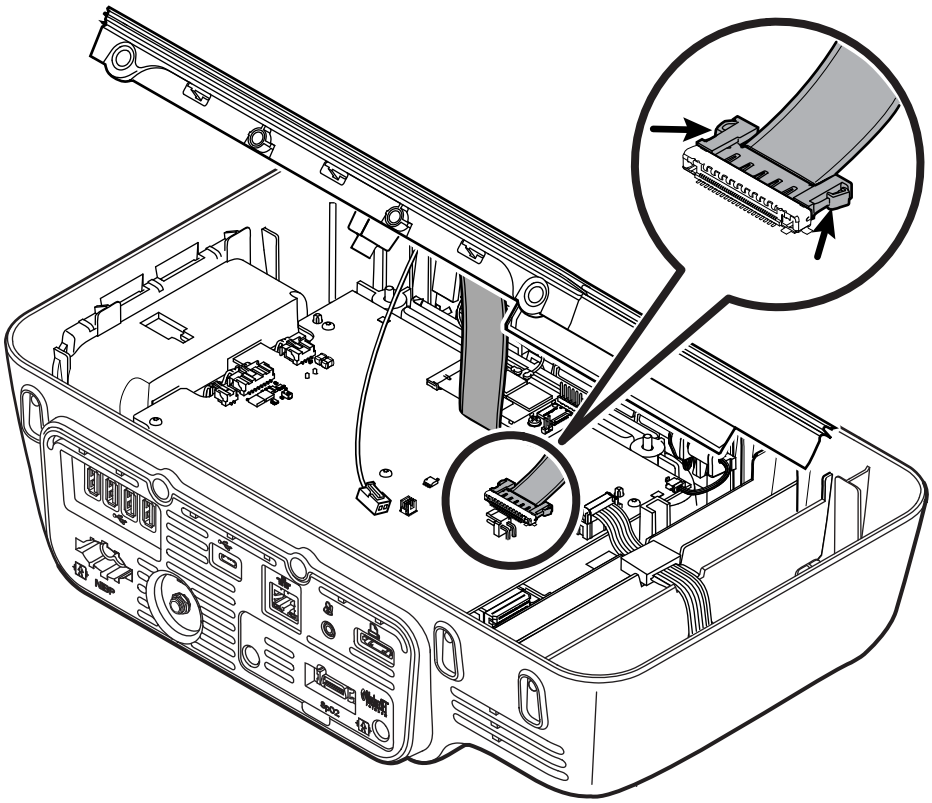
2. Loosen and remove the indicated 2 Phillips screws on the top of the monitor housing.



3. Gently tilt the LCD screen to access the connectors and cables.
4. Disconnect the green LCD ground cable at the locking connector by unlatching the connector from the connector body at the main printed circuit board assembly (PCBA).



5. Disconnect the LCD harness ribbon cable at the ZIF connector by squeezing the connector to unlatch the connector at the main printed circuit board assembly (PCBA). Set the LCD screen aside, face down on a clean, flat surface.



Reassembly notes

NOTE Reassembly is the reverse of disassembly.

Kit items:

- 108872, SRV KIT-CNX360-ASSY LCD TOUCH W FRAME

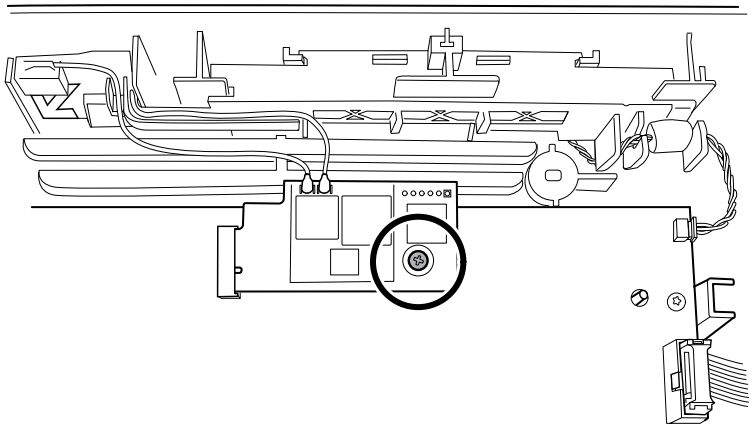
Remove the radio from the main printed circuit board assembly (wireless radio versions only)

Follow the previous instructions to:

- Remove the temperature module.
- Remove the LCD with frame assembly.

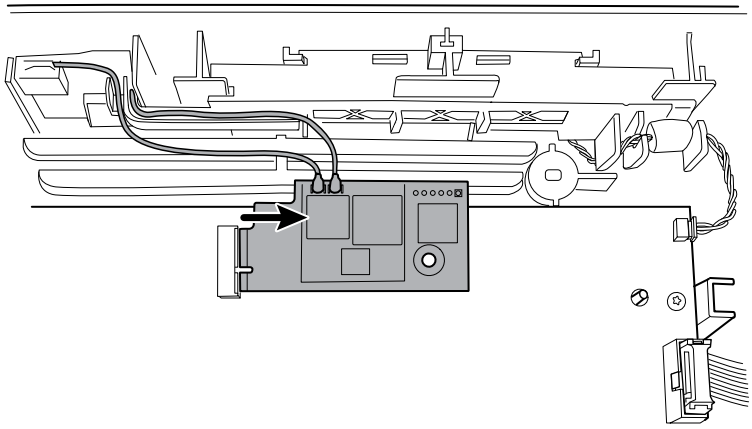
1. Remove the #0 Phillips screw that secures the wireless radio module to the main PCBA.

NOTE Observe the routing of the wiring for reassembly.

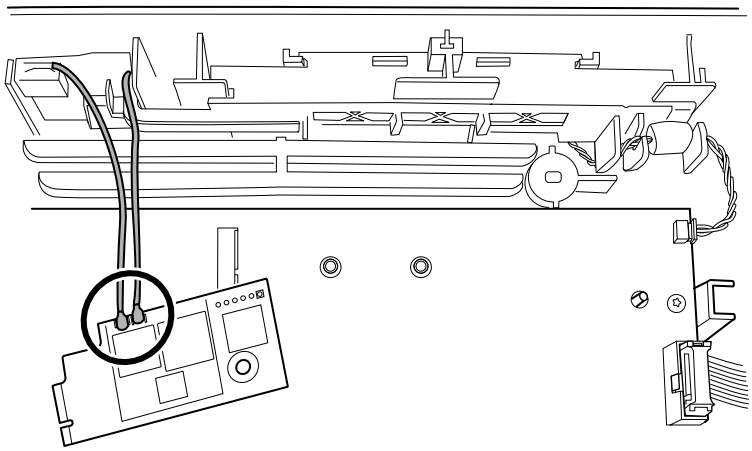


2. Slide the wireless radio module out of the connector of the main PCBA by grasping the wireless module with your hand and sliding the module to the right as illustrated.

NOTE Be careful when removing as the wires don't have much slack.



3. Remove the wireless radio antenna coaxial snap connectors from the wireless radio module. Place wireless radio module onto an ESD-protected surface.



Reassembly notes

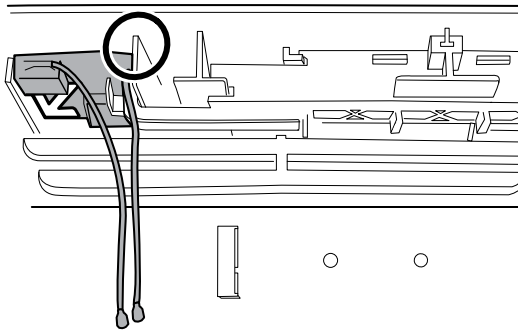
NOTE Reassembly is the reverse of disassembly.

Kit items:

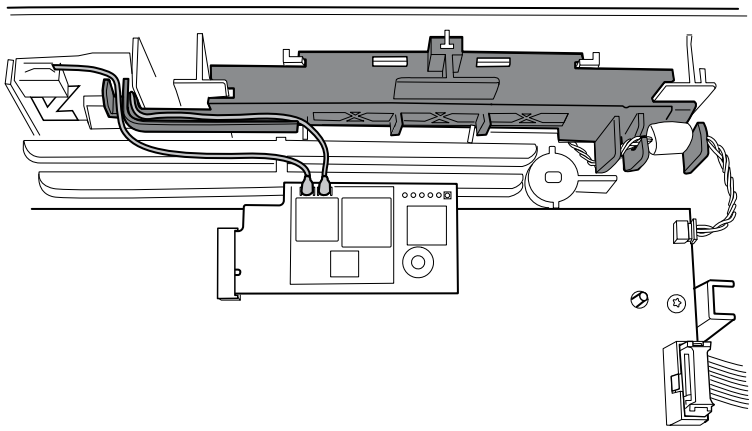
- 108873, SRV KIT-CNX360-WIRELESS RADIO PCBA-ANT

Installing Radio Antenna

1. The circled area in the diagram highlights the top edge of the monitor housing brace. Ensure the wireless radio antenna is placed below the top edge of the housing brace, as illustrated. Orient the wireless radio antenna so the arrow points to lower left area of monitor housing near the ribs. Remove the adhesive liner from the back of the wireless radio antenna. Secure the antenna to the monitor housing, referring to the illustration for proper placement.



2. When connecting the wireless radio antenna coaxial connectors, ensure that the wires are routed through the catch on the alarm bar bracket so that the wires do not cross. If wireless antenna wires are too tight to route, this may be an indication that the alarm bar bracket isn't fully seated. The wires need to be attached to the radio module PCBA before the PCBA is installed. See "Reassembly notes".



Remove the LED board assembly from the main housing

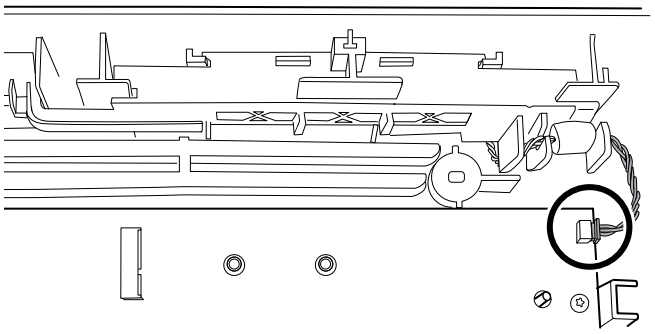
NOTE Removing the LED board assembly is not a required step to move forward in the disassembly process. See the "Remove main PCBA, battery chassis..." section next.

Follow the previous instructions to:

- Remove the temperature module.

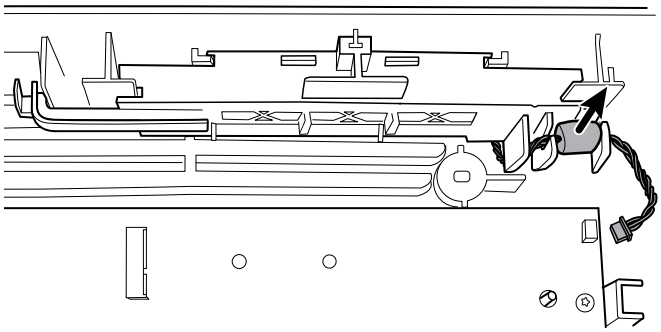
- Remove the LCD with frame assembly.
- Remove radio.

1. Starting at the top right, unlatch the LED alarm bar connector at the main PCBA.

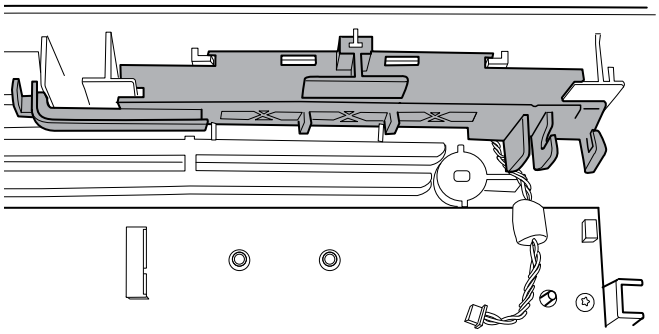


NOTE Take note of the wiring routing and the ferrite positioning of the LED board alarm bar connector for reassembly before removing the LED board alarm bar connector.

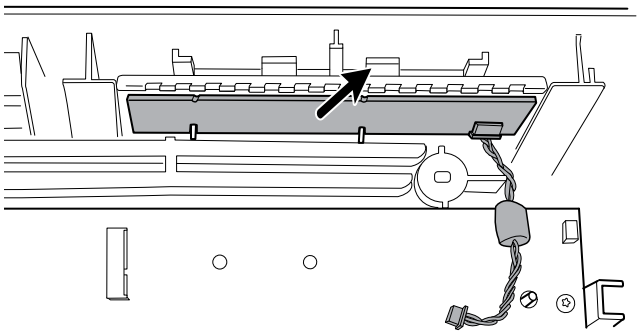
2. On the right side, unlatch the wiring from the LED board alarm bar support bracket.



3. Remove the black LED board alarm bar support bracket by grasping the extended tabs and sliding the bracket up and out of the channels.



4. Remove the LED alarm bar printed circuit board and set the support bracket aside for reuse. Leave the translucent white compression molded silicone material in place. This silicone part is not available for direct sale, therefore it's important not to damage or misplace it.

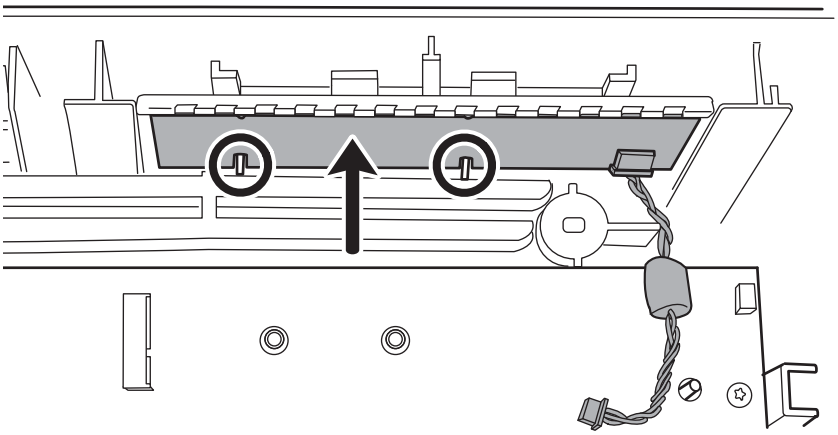


Reassembly notes

NOTE Reassembly is the reverse of disassembly.

NOTE The translucent white compression molded silicone material is not available for direct purchase. Baxter limits availability of certain parts to Authorized Service Personnel only. These limitations are required to maintain product safety or maintain current regulations.

NOTE Align the LED board alarm bar notches with the housing. Gently push the board flush with the white piece.



Kit items:

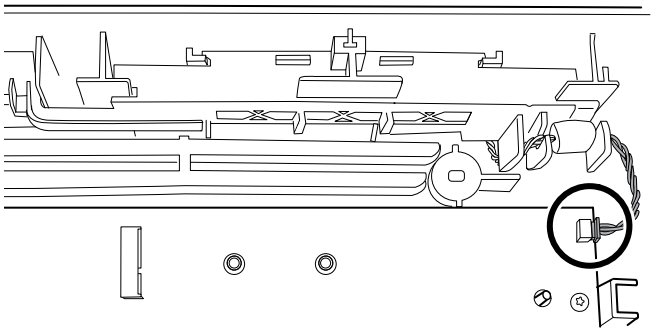
- 108947 SRV KIT-CNX360-LED PCBA ALRM BAR

Remove the main PCBA, battery chassis, and sensor insert assembly from the main housing

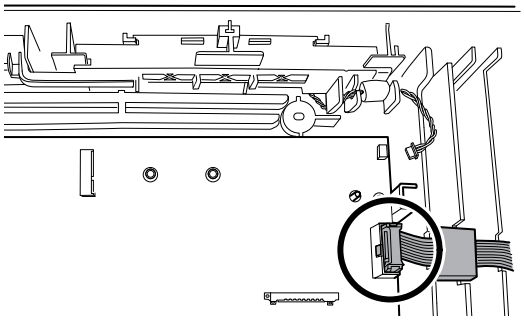
Follow the previous instructions to:

- Remove the temperature module.
- Remove the LCD with frame assembly.
- Remove the radio from the main PCBA.

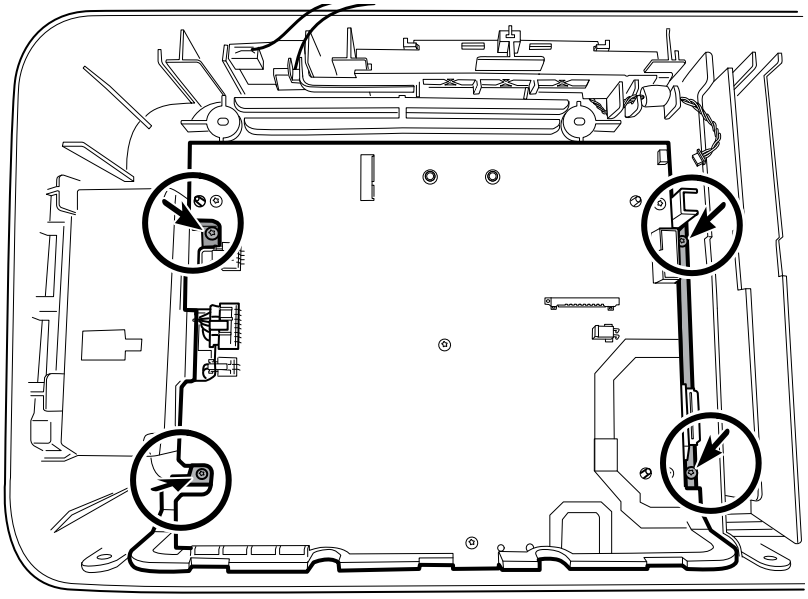
1. If you have not already done so, disconnect the LED alarm bar connector at the main PCBA.



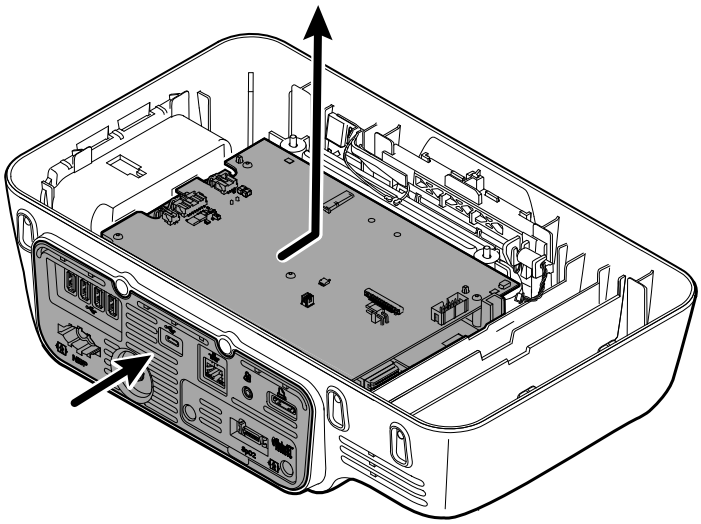
2. Disconnect the **SureTemp** friction fit connector at the main PCBA.



3. Remove the 4 Phillips screws holding the battery chassis in place. A magnetic tip screwdriver is very helpful for this step.



4. Remove the main PCBA, battery chassis, and insert together from main housing by pressing them forward toward the LED board to clear the main housing and then lift upward.



Reassembly notes

NOTE Reassembly is the reverse of disassembly.

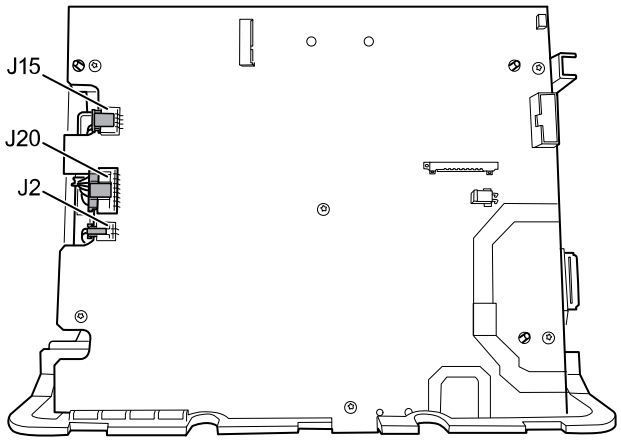
Separate the main PCBA from the sensor insert assembly

NOTE Decommissioning the current Main PCBA is required before ordering a replacement Main PCBA. Contact Baxter Technical Support with the serial number of the Main PCBA being replaced. Refer to the *Device disposal* section for additional details.

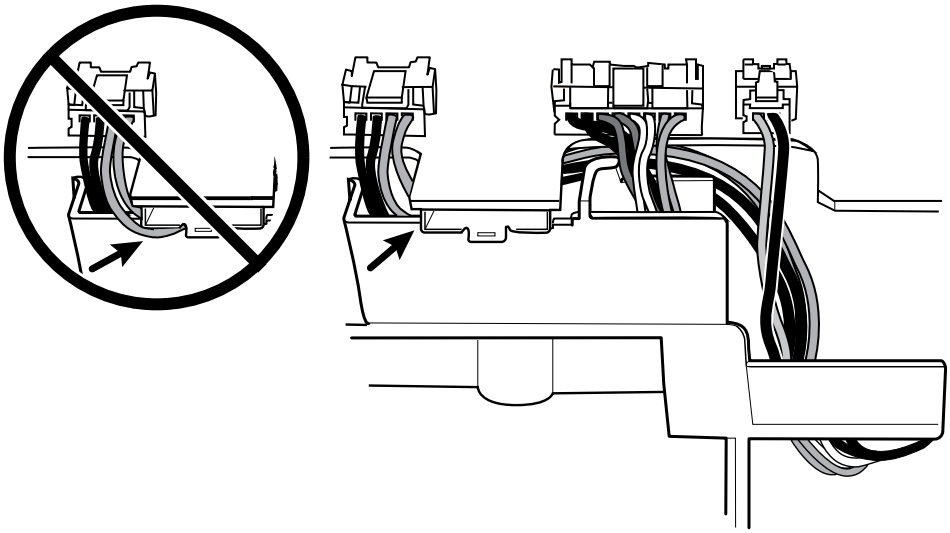
Follow the previous instructions to:

- Remove the temperature module.
- Remove the LCD with frame assembly.
- Remove the radio from the main circuit board, if applicable.
- Remove the main PCBA, battery chassis, and sensor insert assembly from the main housing.

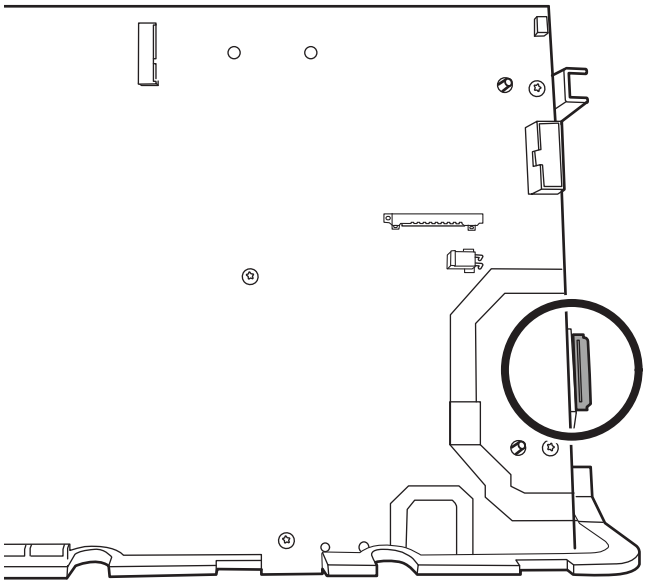
1. A plastic spudger will assist with the tiny connectors in this step. From the left side of the main printed circuit board assembly (PCBA), unlatch the connectors in the following order:
   a. the power connector at the main PCBA J15.
   b. the NIBP pump connector at the main PCBA J20.
   c. the speaker wire connector at the main PCBA J2.



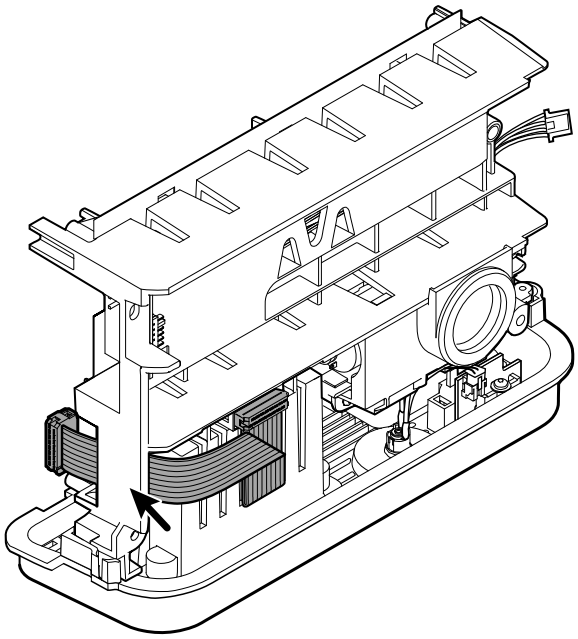
NOTE Note the position of the wiring and consider possible pinch points during reassembly.



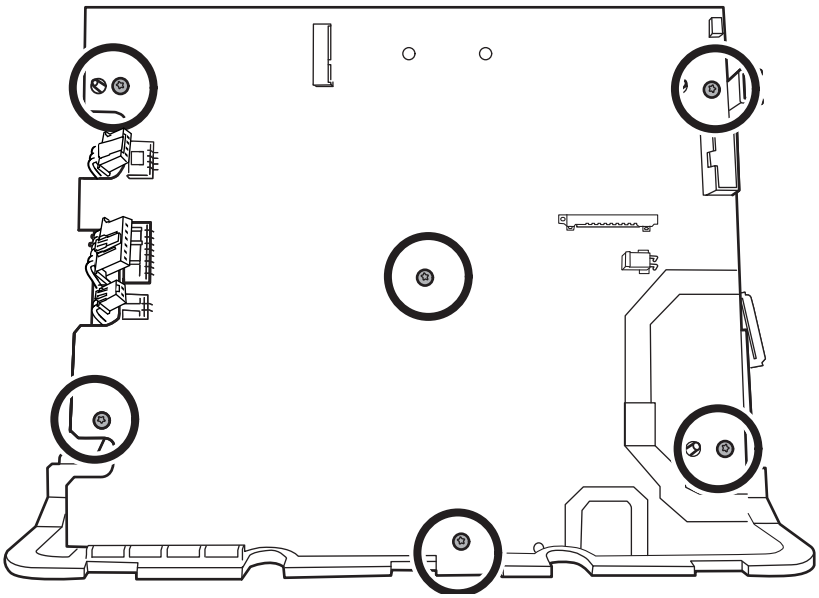
2. At the bottom right, disconnect the SpO2 friction fit connector on the side of the main PCBA.



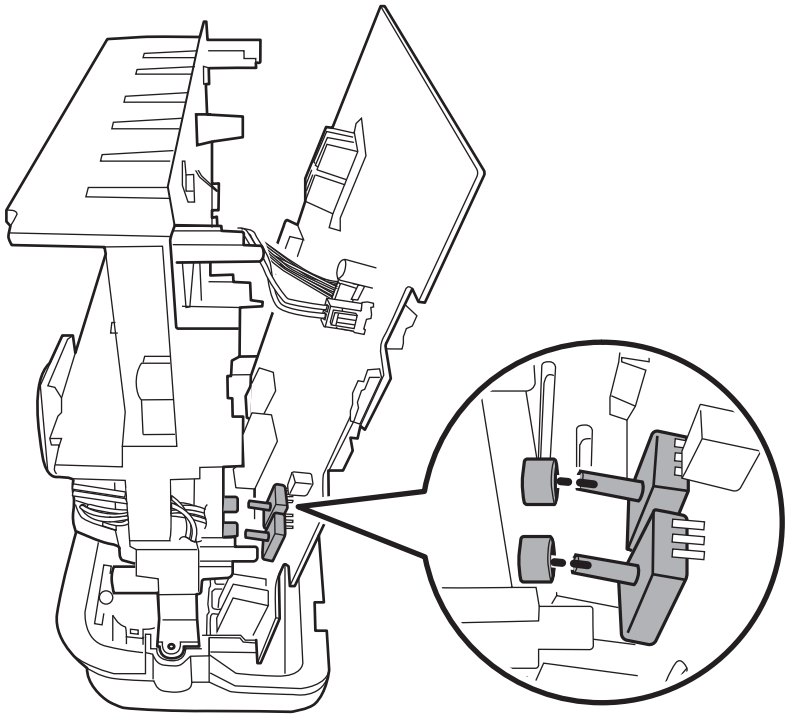
NOTE Note how the SpO2 cable is routed on the inside of the battery chassis.



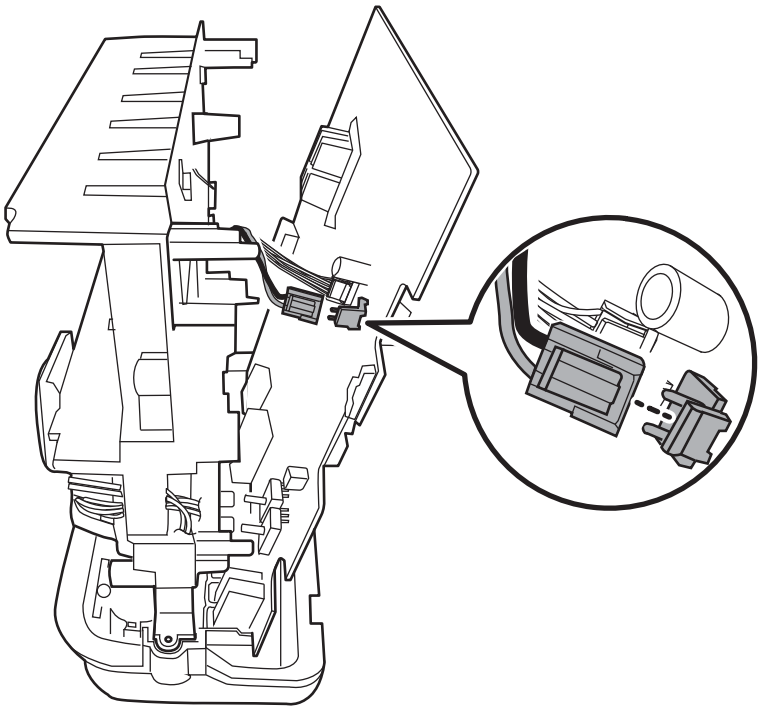
3. Remove the 6 T-10 screws holding the main PCBA in place.



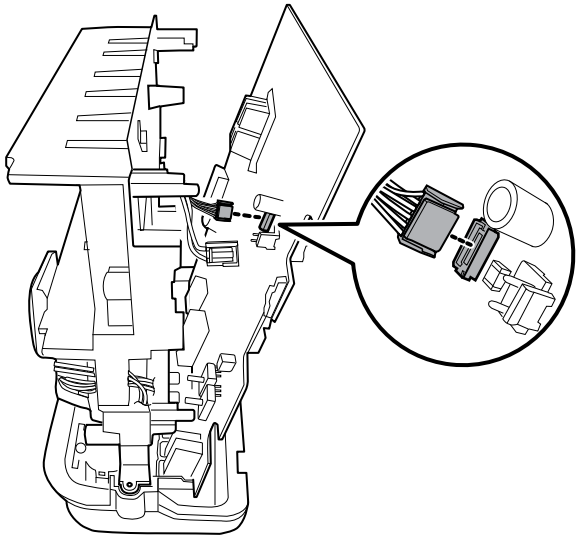
4. With the sensor insert assembly laying flat on the prepared surface; gently pull the top of the main PCBA away from the battery chassis. Stop when you have enough room to disconnect wires and the NIBP pump fittings are free of the pump hoses. As the NIBP tubes and hoses disconnect, you may feel some resistance.



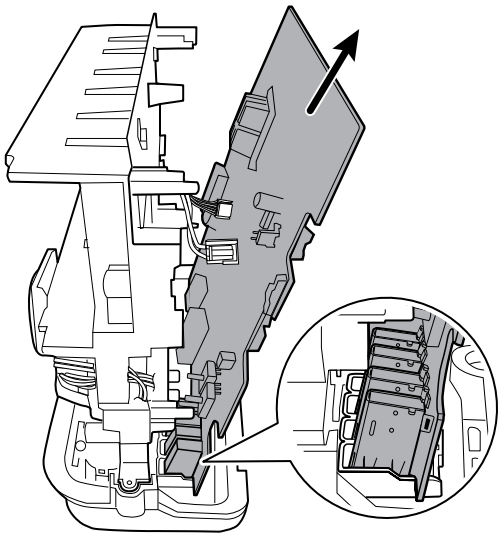
5. Disconnect the battery power harness by unlatching the connector at the main PCBA.



6. Disconnect the battery smart harness by unlatching the connector at the main PCBA.



7. Lift up and slide the main PCBA from the insert so that the USB ports, Mini-USB port, Ethernet port, power supply connector, and the printer port are no longer attached to the sensor insert.

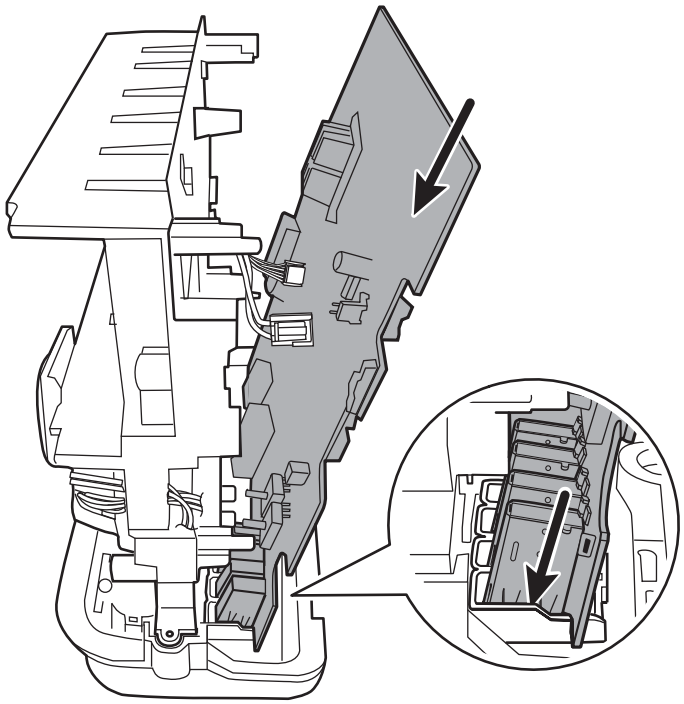


8. Set aside the main PCBA onto an ESD protective surface.

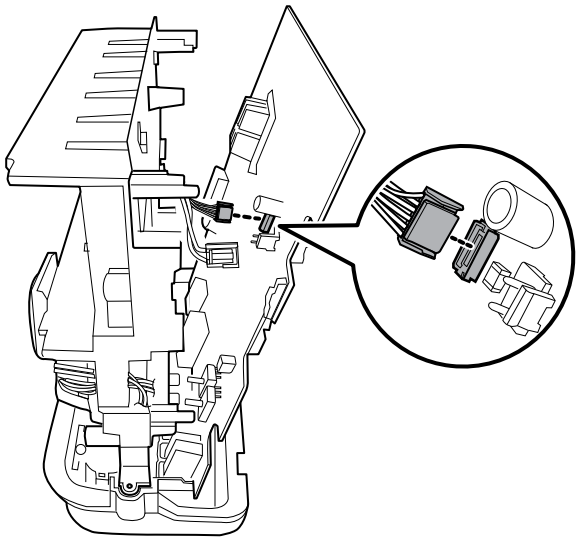
NOTE Decommissioning the current Main PCBA is required before ordering a replacement Main PCBA. Contact Baxter Technical Support with the serial number of the Main PCBA being replaced. Refer to "Device disposal" for additional details.

Reassembly notes to connect the main PCBA to the sensor insert assembly

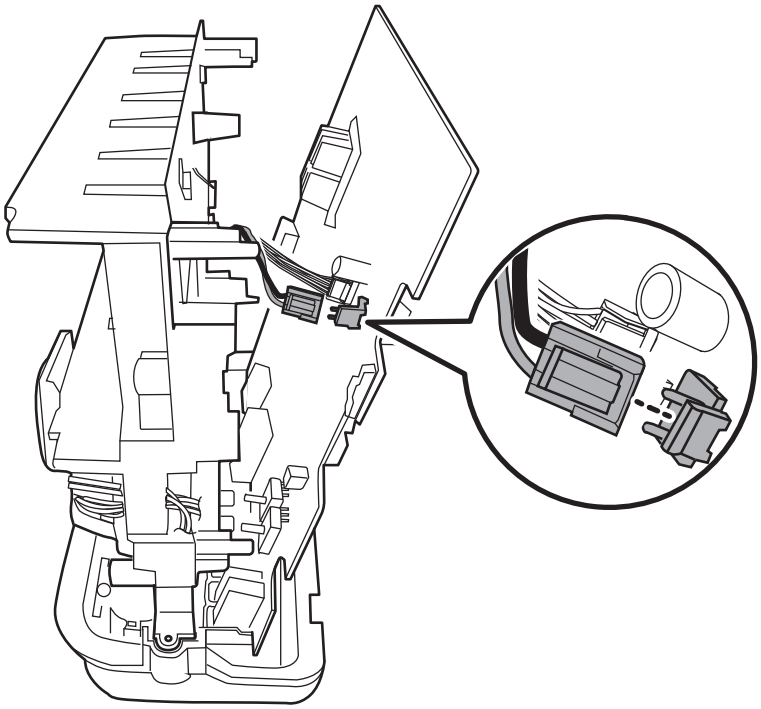
1. With the sensor insert assembly laying flat on a prepared flat surface, hold the main PCBA against the sensor insert assembly so that the USB ports, Mini-USB port, Ethernet port, power supply connector, and the printer port are aligned with the their respective receptacles and snug against the sensor insert.



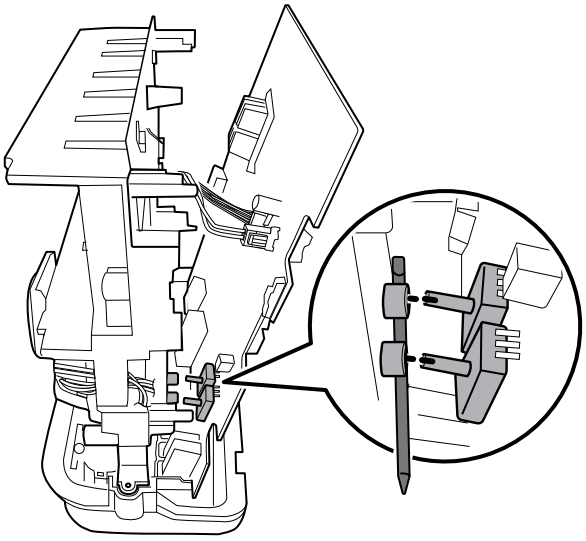
2. Connect the battery smart harness by latching the connector at the main PCBA.



3. Connect the battery smart harness by latching the connector at the main PCBA.

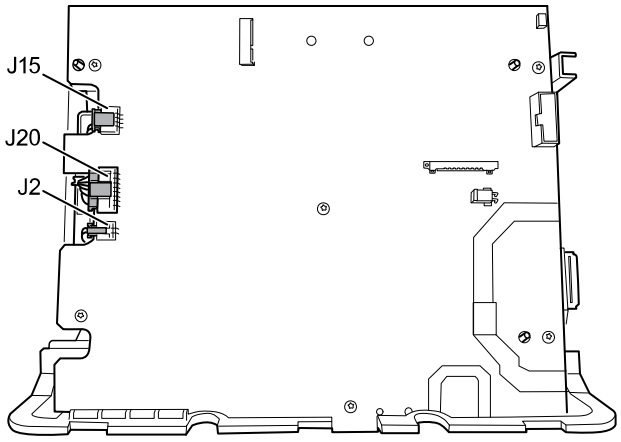


4. Slide the 2 NIBP pump fittings into the pump hoses by pressing the main PCBA toward the battery chassis.

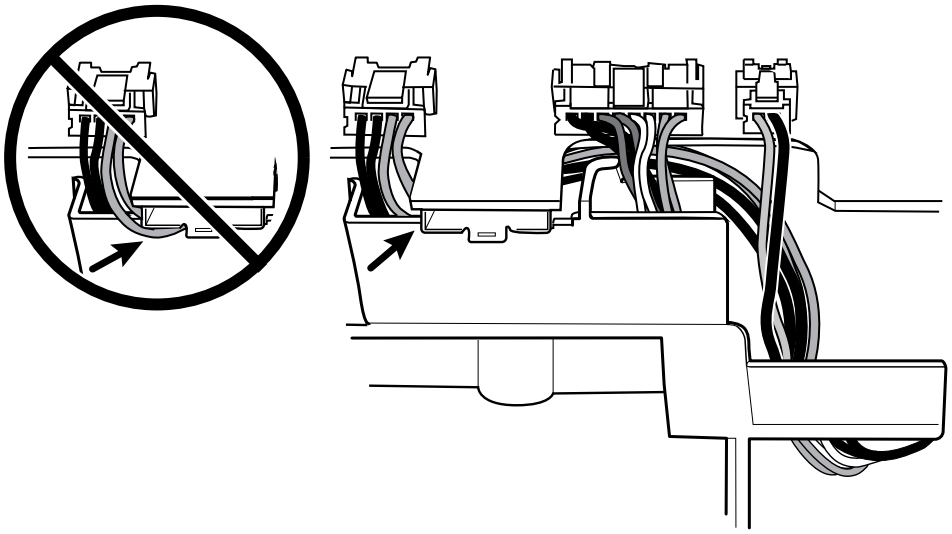


NOTE You may have to gently manipulate the hoses to align them with the fittings. A plastic spudger is helpful for this step.

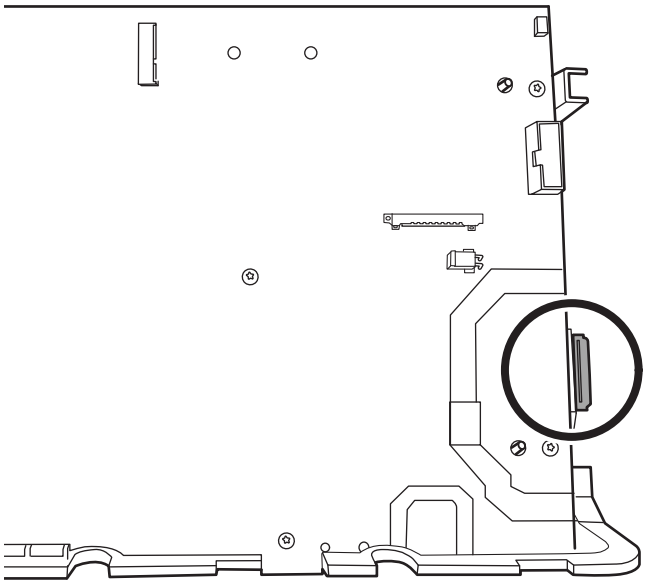
5. Lay the battery chassis flat on a prepared surface and rotate the insert assembly to face you.
6. Use the locating pins to position the PCBA onto the battery chassis and check again to ensure the wires are routed through the PCBA cutouts and not pinched against the chassis.
7. From the left side of the main printed circuit board assembly (PCBA), latch the connectors in the following order:
   - the power connector at the main PCBA J15.
   - the NIBP pump connector at the main PCBA J20.
   - the speaker wire connector at the main PCBA J2.



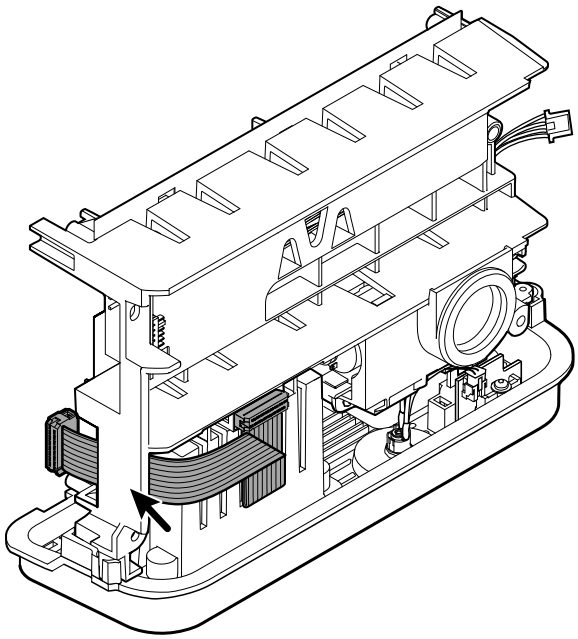
NOTE Ensure that the power connector wire, the NIBP pump connector wire, and the speaker connector wire are routed through the catches within the battery chassis and the speaker nest so that these wires are not pinched against the monitor housing when reassembly is complete.



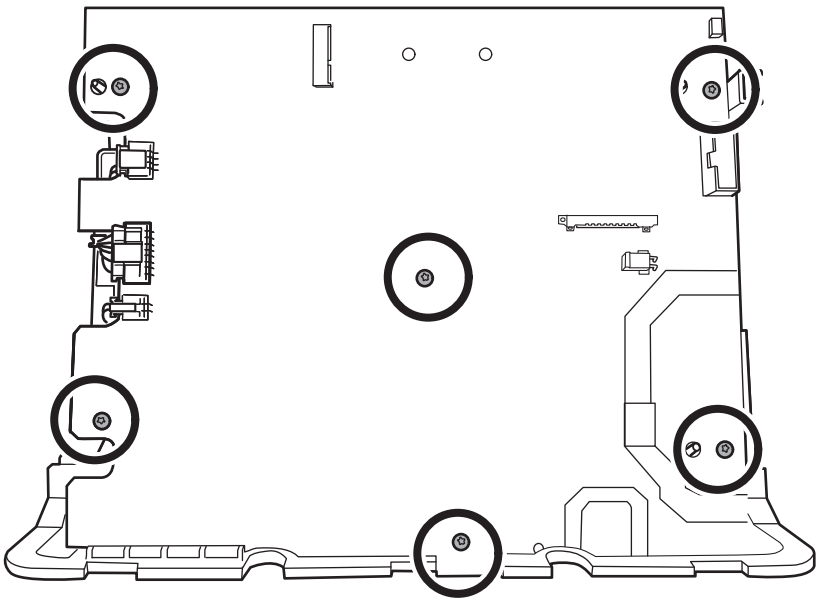
8. At the bottom right, connect the SpO2 friction fit connector to the main PCBA.



NOTE Ensure the SpO2 cable is routed on the inside of the battery chassis.



9. Secure the 6 T-10 screws to hold the main PCBA in place.



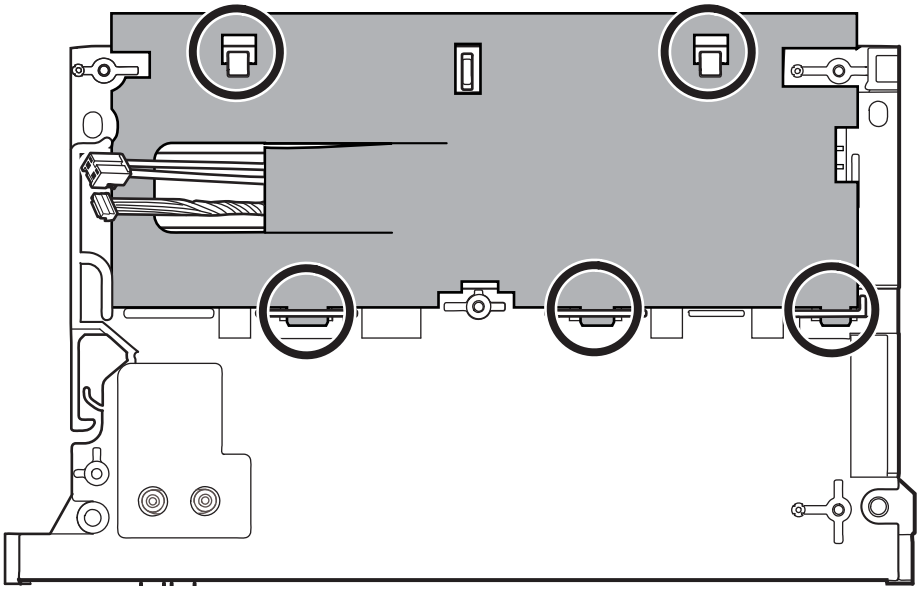
Remove the battery board from the battery chassis

NOTE Removing the battery board is not a required step to move forward in the disassembly process. Go to the "Separate sensor insert assembly..." section if skipping this step.

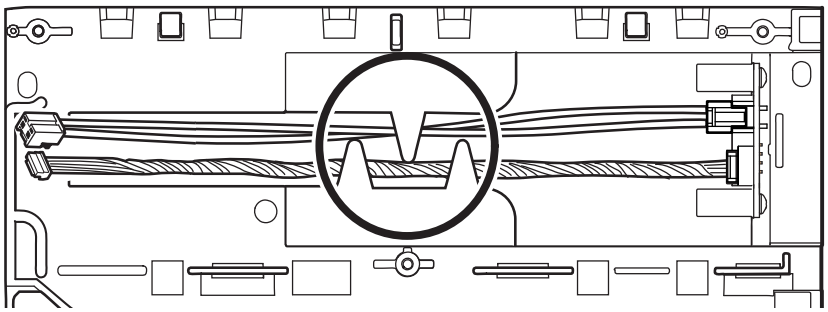
Once the battery chassis is removed from the main housing, the battery board can be removed from the battery chassis.

1. Place the battery chassis on an appropriately prepared flat surface to prevent damage to any of the components.

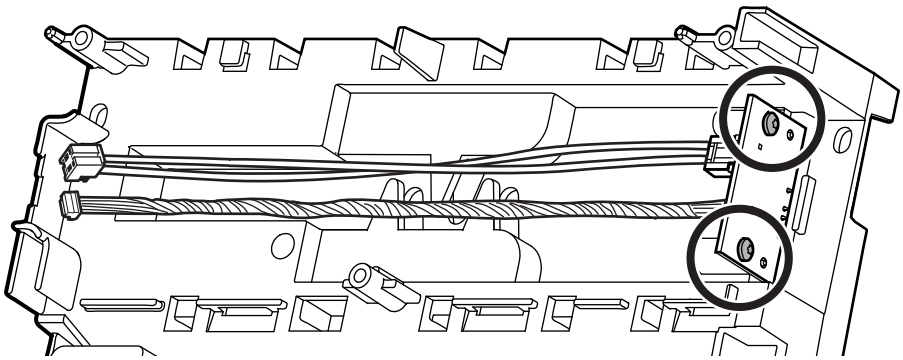
2. Remove the insulation by following the illustration to pull back the tabs noted and then take note of the battery power connector and ground cable routing.



3. Remove the battery power harness and battery smart harness from the retaining catch of the battery chassis.



4. Remove the 2 T-10 screws from the battery board and set them aside for reuse.



5. Remove the battery board.

Reassembly notes

NOTE Reassembly is the reverse of disassembly.

Kit items:

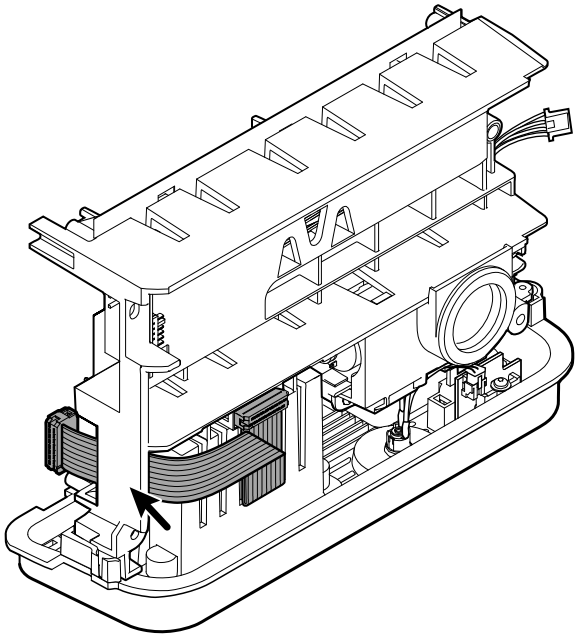
- 108838 - SRV KIT-CNX360-ASSY BATTERY CHASSIS
- 108965 - SRV KIT-CNX360-HEAT SHIELD
- 108962 - SRV KIT-CNX360-BATTERY PCBA
- 109371 SRV KIT-CNX360-BATT_MAIN SMART HARNESS
- 108964 SRV KIT-CNX360-BATT_MAIN POWER HARNESS

Separate the sensor insert assembly from the battery chassis

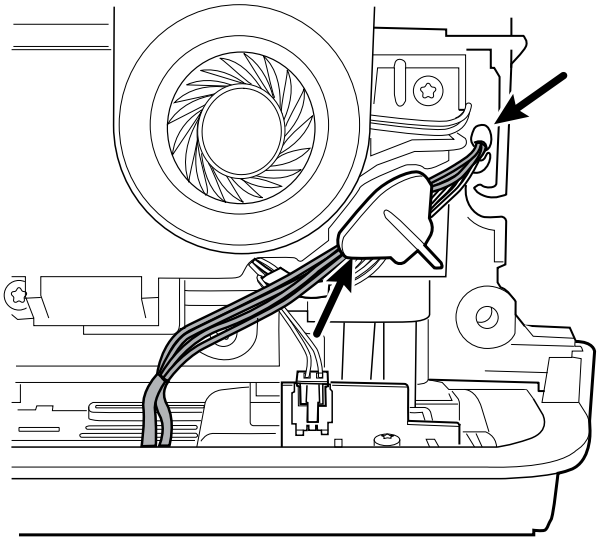
Follow the previous instructions to:

- Remove the temperature module.
- Remove the LCD with frame assembly.
- Remove the radio from the main circuit board, if applicable.
- Remove the main PCBA, battery chassis, and sensor insert assembly from the main housing.
- Separate the main PCBA sensor insert assembly and battery chassis.

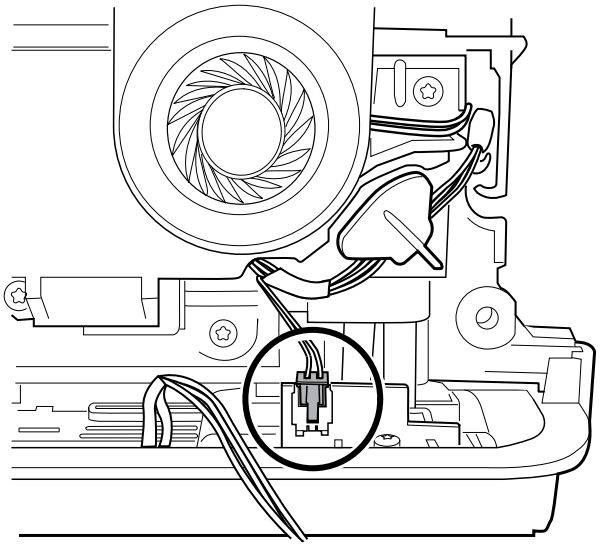
1. Tilt the assembly up so it lays flat on the face of the insert assembly and then rotate it so that the speaker assembly is facing you.
2. Free the SpO2 harness from the battery chassis.



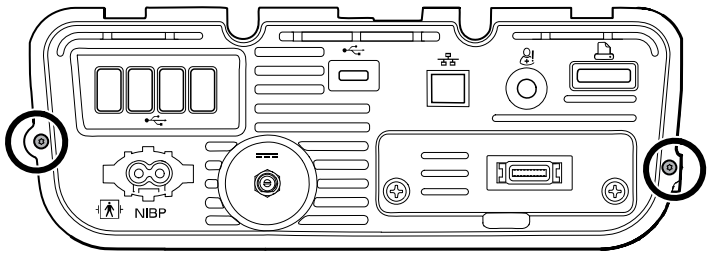
3. Free the power harness from the battery chassis.



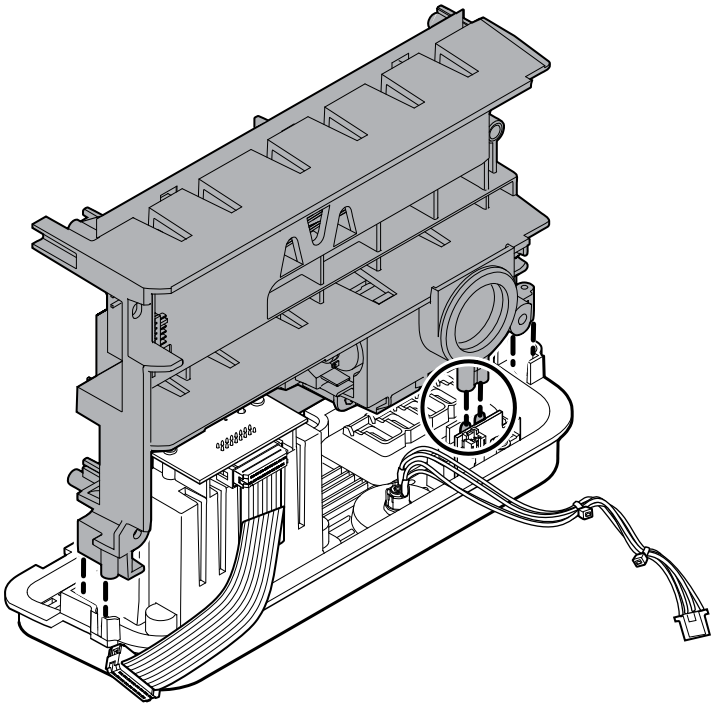
4. Remove the single lumen switch connector from the sensor insert.



5. Place the battery chassis on an appropriately prepared flat surface to prevent damage to any of the components.
6. Remove the T-10 retaining screws from the left and right side of the insert.



7. Pull the battery chassis up from the insert assembly to remove the pump manifold tubes from the single lumen switch.



NOTE There may be some resistance as the NIBP hoses and tubes disconnect.

Reassembly notes

NOTE Reassembly is the reverse of disassembly.

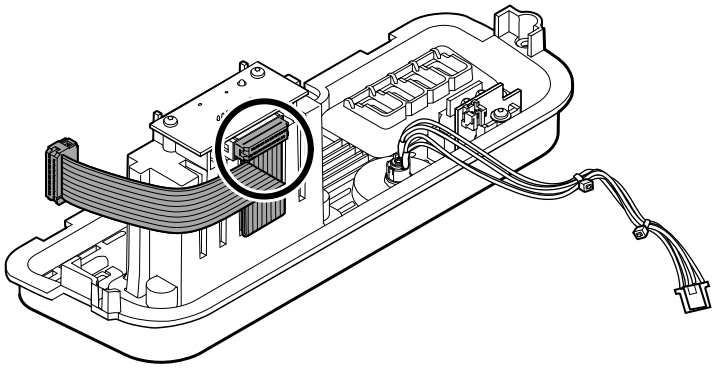
Kit items

Kit items:

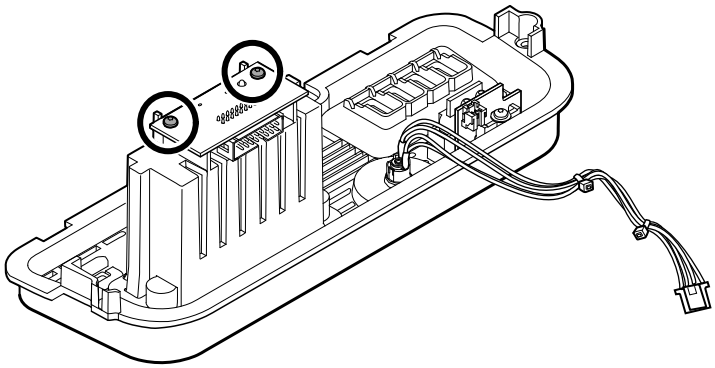
- 108839, SRV KIT-CNX360-ASSY SENSOR INSERT

Remove the SpO2 jumper PCBA

1. Disconnect the harness connector of the ribbon cable by squeezing the tab of the lock connector to release the latch and then remove the ribbon cable.



2. Remove the 2 T-10 **Torx** screws attaching the SpO2 interface board to the SpO2 module and remove the SpO2 jumper PCBA.



3. Remove the SpO2 jumper PCBA and set the 2 T-10 **Torx** screws aside for reuse during reassembly.

Reassembly notes

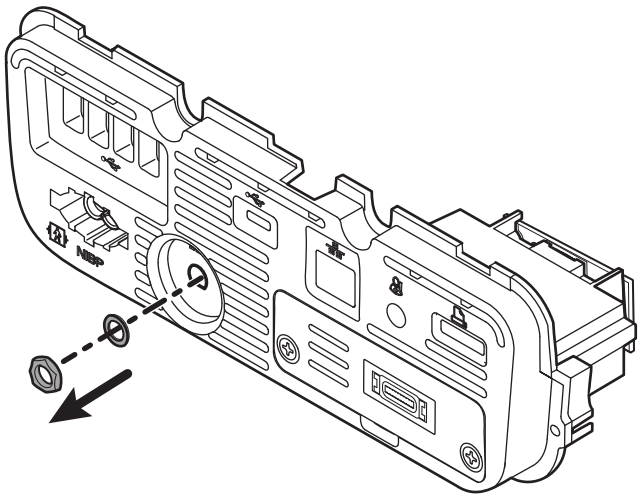
NOTE Reassembly is the reverse of disassembly.

Kit items:

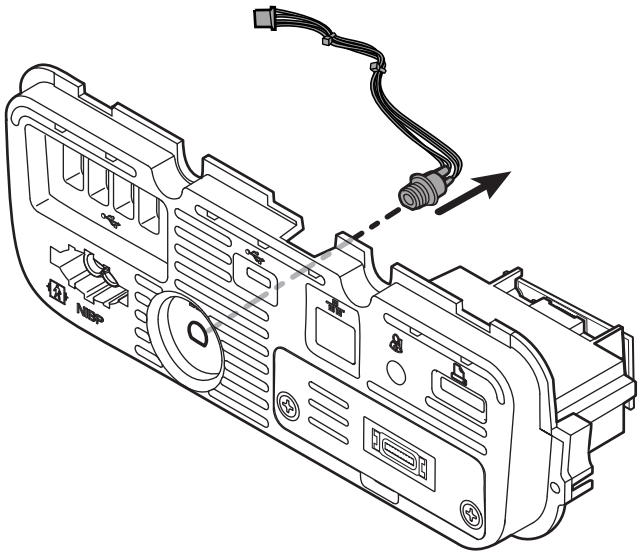
- 108966, SRV KIT-CNX360-SPO2 JUMPER PCBA
- 108870, SRV KIT-CNX360-HARNESS-FOLDED SPO2

Remove the power harness from the sensor insert assembly

1. Remove the power harness retaining nut (5/16-32) and washer from the sensor insert assembly using a 3/8-inch thin-walled socket.

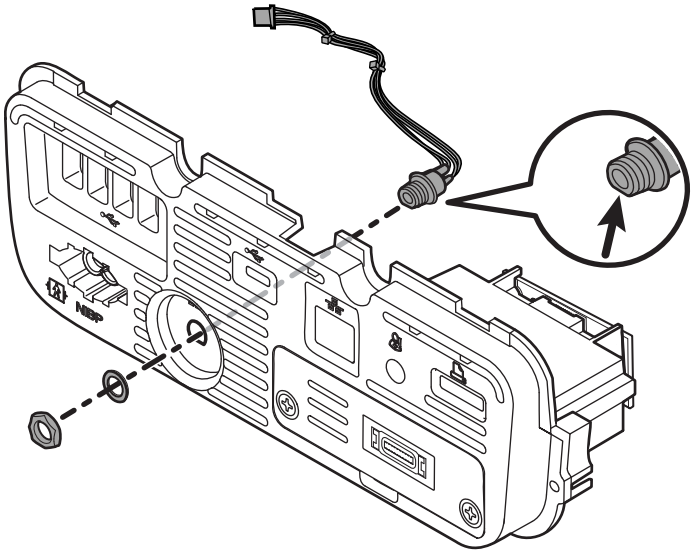


2. Feed the power harness and power supply connector through the sensor insert assembly to begin removal.



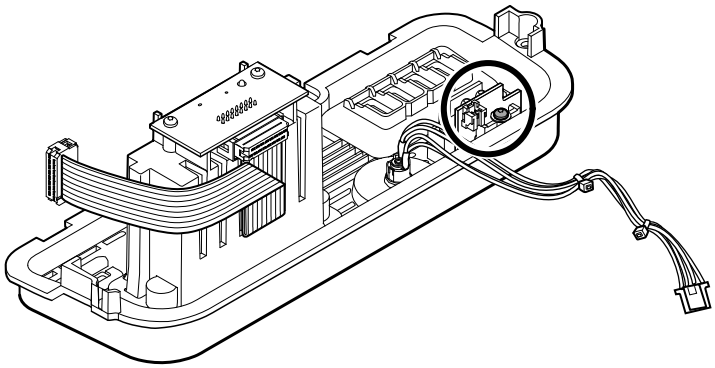
Reassembly notes

NOTE Reassembly is the reverse of disassembly. Notice the power harness end is keyed with a flat edge.



Remove the single lumen switch PCBA from the sensor insert assembly

1. Remove the single T-10 Torx screw attaching the single lumen switch PCBA to the sensor insert assembly.



2. Remove the single lumen switch PCBA.

Reassembly notes

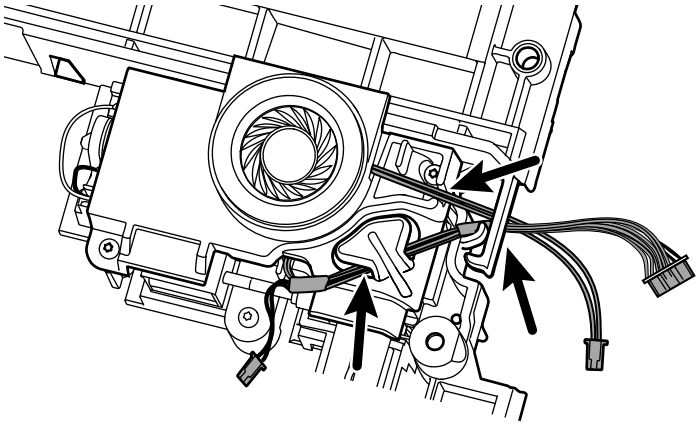
NOTE Reassembly is the reverse of disassembly.

Kit items:

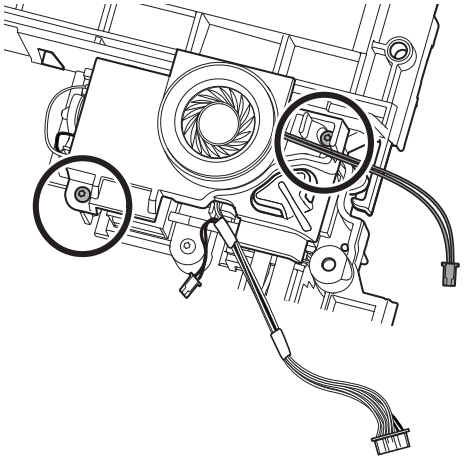
- 108963, SRV KIT-CNX360-SWITCH SINGLE LUMEN PCBA

Separate the speaker nest from the NIBP pump tray

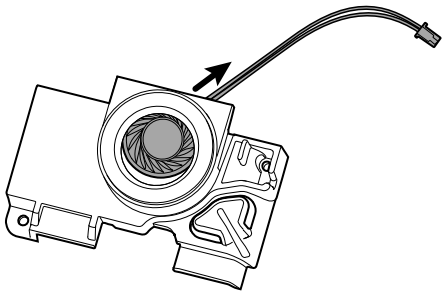
1. If you have not already done so, remove the speaker wires and the NIBP pump wires from the speaker housing channel and the battery chassis.



2. Remove the speaker nest by removing the 2 T-10 **Torx** screws attaching the speaker nest to the NIBP pump tray.



3. Remove the speaker from the speaker nest by grasping the speaker wires and pulling the speaker out of the nest. Turn the speaker 45 degrees.



Reassembly notes

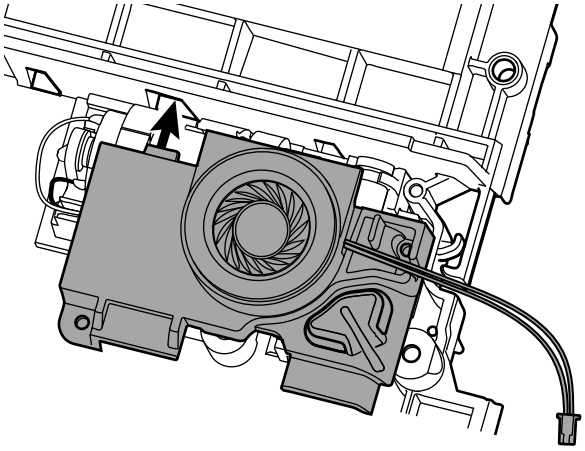
NOTE Reassembly is not the reverse of disassembly.

Kit item:

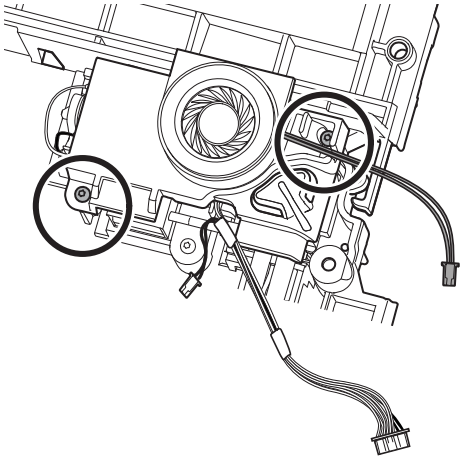
- 108945, SRV KIT-CNX360-ASSY SPEAKER

Reinstalling the speaker

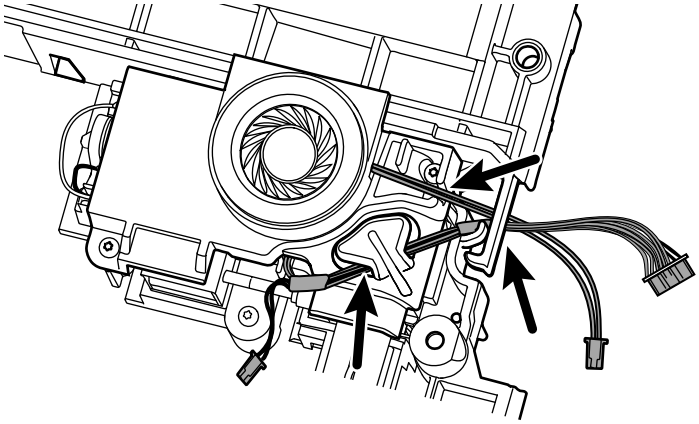
1. Install the speaker into speaker nest.
2. Align the speaker nest with the screw holes of the NIBP pump tray. Ensure the white notch of the speaker nest slides into the battery chassis.



3. Once aligned, tighten the 2 T-10 Torx screws to attach the speaker nest to the NIBP pump tray.



4. Guide the speaker wire and the NIBP wires through the catch in the speaker nest and also through the catches on the battery chassis.



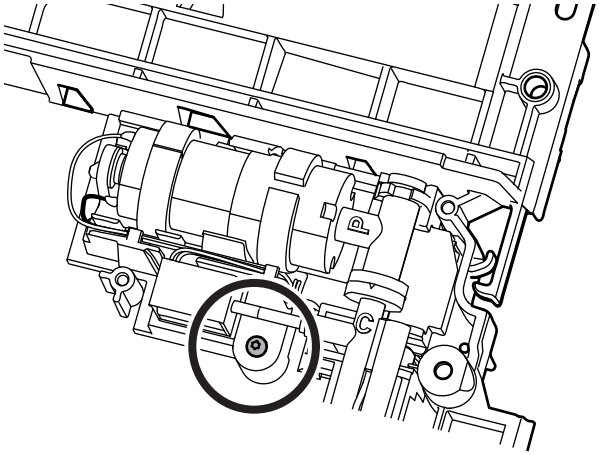
Separate the NIBP module from the battery chassis

Follow the previous instructions to:

- Remove the speaker nest.

- Remove the pump manifold tubes from the single lumen switch.
- Remove the lumen connector.

1. Loosen and remove the 1 T-10 **Torx** screw.



2. Remove the NIBP pump tray from the battery chassis.

Reassembly notes

NOTE Reassembly is the reverse of disassembly.

Kit items:

- 108837, SRV KIT-CNX360-MODULE NIBP

Field replaceable units

This listing includes only field-replaceable service parts. Product accessories—including patient sensors, probes, cables, batteries, probe covers, and other consumable items—are listed separately in the accessories list in the Appendix of the Instructions for use.

This section begins with an illustration of the entire device followed by lists of service kits.

Repair parts/kits can be purchased through Baxter sales channels.

NOTE Baxter may limit availability of certain parts to Authorized Service Personnel only. These limitations are required to maintain product safety, or maintain current regulations. After the End of Manufacturing (EoM) date, repair and service parts will be provided for 5 years or until parts are no longer available. The Expected Service Life, per IEC60601-1 3rd Edition Sub-clause 4.4, is defined as a period of 5 years.

Manufacture date: how to decode a serial number

The Serial number (SN) of a device reveals many details about its manufacture. The first four digits of the device SN reveal the device's location of manufacture and the last four digits indicate the date of manufacture.

SN: 1YYWW#######

where

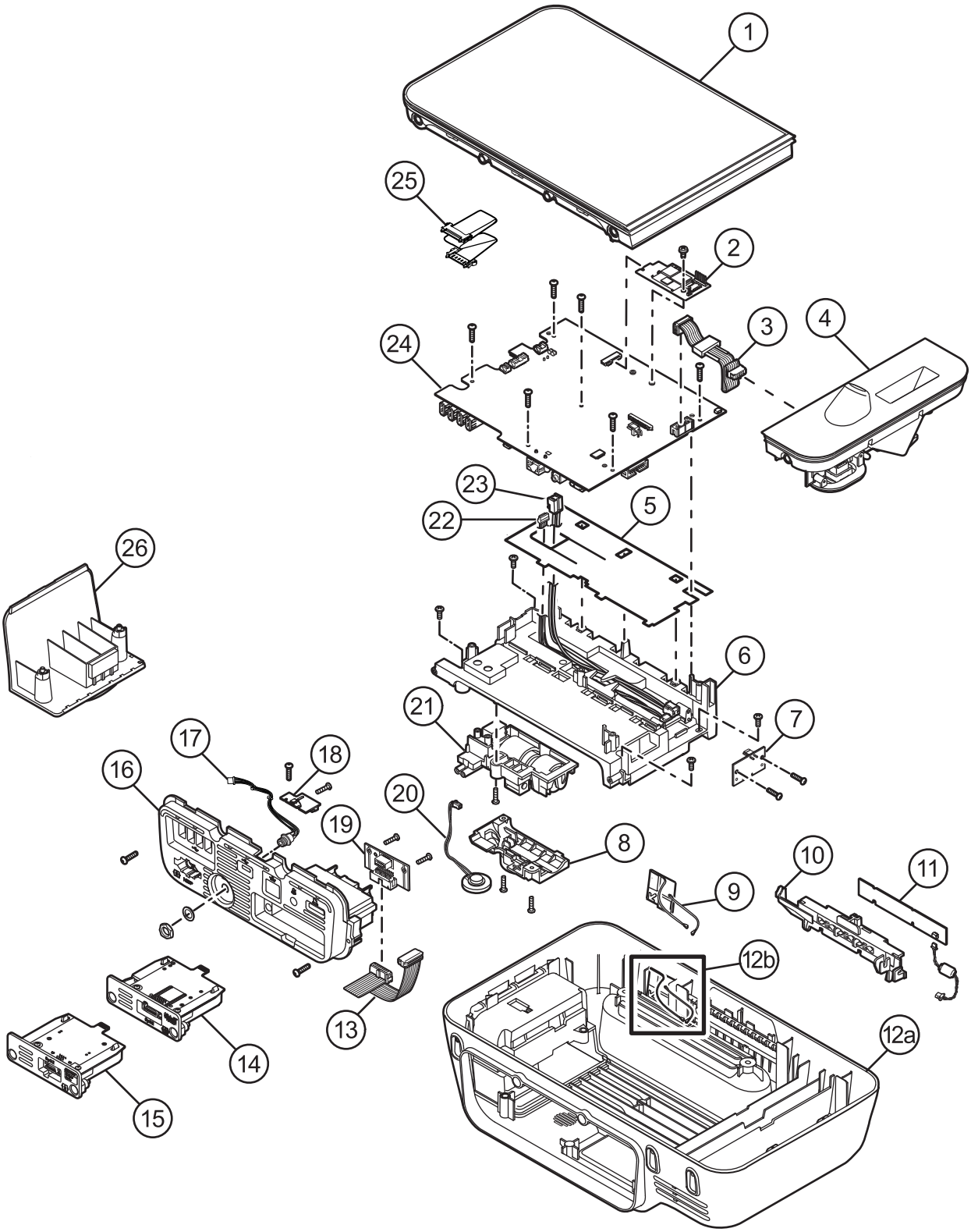
YY = the 2-digit year

WW = the 2-digit year ISO week

####### is a sequential/incremental number that resets at the new year or when the value exceeds "9999999".

Exploded view diagram

The drawing below shows individual components of the device and their relationships to one another.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12a
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List of service kits

To determine the correct replacement part for your unit, always provide the serial number and model when ordering.

Exploded view drawing number	Service Kit Material Number	Description
1	108872	SRV KIT-CNX360-ASSY LCD TOUCH W FRAME
2	108873	SRV KIT-CNX360-WIRELESS RADIO PCBA-ANT
3	108960	SRV KIT-CNX360-TEMP HARNESS KIT
4	108880	SRV KIT-CNX360-MODULE SURE TEMP PLUS
5	108965	SRV KIT-CNX360-HEAT SHIELD
6	108838	SRV KIT-CNX360-ASSY BATTERY CHASSIS
7	108962	SRV KIT-CNX360-BATTERY PCBA
8	N/A[1]	SPEAKER NEST
9	109724[2]	SRV KIT-CNX360-RADIO ANTENNA ONLY
10	N/A[3]	ALARM BAR BRACKET
11	108947	SRV KIT-CNX360-LED PCBA
12a	108874[4]	SRV KIT-CNX360-MN HSNG ALRM BAR
12b	108875 [4]	SRV KIT-CNX360-MN HSNG ALRM BAR, ALARM BAR BRACKET, WIRELESS RADIO ANTENNA
13	108870	SRV KIT-CNX360-HARNESS-FOLDED SPO2
14	108877	SRV KIT-CNX360-ASSY SPO2 MASIMO
15	108878	SRV KIT-CNX360-ASSY SPO2 NELLCOR
16	108839	SRV KIT-CNX360-ASSY SENSOR INSERT
17	109370[5]	SRV KIT-CNX360-DC_MAIN POWER HARNESS
18	108963	SRV KIT-CNX360-SWITCH SINGLE LUMEN PCBA
19	108966	SRV KIT-CNX360-SPO2 JUMPER PCBA
20	108945	SRV KIT-CNX360-ASSY SPEAKER
21	108837	SRV KIT-CNX360-MODULE NIBP
22	109371[6]	SRV KIT-CNX360-BATT_MAIN SMART HARNESS
23	108964 [6]	SRV KIT-CNX360-BATT_MAIN POWER HARNESS
24	See note	SRV KIT-CNX360-PCBA MAIN
25	109231	SRV KIT-CNX360-LVDS CABLE
26	108876	SRV KIT-CNX360-ASSY BATTERY DOOR

Exploded view drawing number	Service Kit Material Number	Description
Not Pictured	108961	SRV KIT-CNX360-HARDWARE KIT

NOTE Decommission of the current Main PCBA is required before ordering 108871 - SRV KIT-CNX360-PCBA MAIN. Contact Baxter Technical Support with the Main PCBA serial number. The Main PCBA serial number can be located using the below methods:

- **Embedded Service Tool** > **Components tab**
- **Remote Management** > **Assets** > **Component Information**
- Stickers directly on both sides of the Main PCBA. Format will be similar to 00000000AA-0A0A.

Additionally the new Main PCBA (108871) will need device software to be installed via a USB drive. Contact Baxter Technical Support for the latest device software.

1 Part of the 108945 assembly
2 The radio antenna is also included in the 108873 assembly
3 Part of the 108874 or 108875 assembly
4 Restricted to Service Depot
5 Included with 108839
6 Part of the 108838 assembly

Maintenance and service

Perform periodic checks

1. Verify the following at least daily:
   - The audio speaker tone, especially at startup
   - The touchscreen alignment
   - The date
   - The time
2. Visually inspect the following at least weekly:
   - The monitor for any damage or contamination
   - All cables, cords, and connector ends for damage or contamination
   - All mechanical parts, including covers, for integrity
   - All safety-related labeling for legibility and adhesion to the monitor
   - All accessories (cuffs, tubing, probes, sensors) for wear or damage
   - Documentation for current revision of the monitor
3. Visually inspect the following at least monthly:
   - The mobile stand wheels for wear and faulty operation
   - The mounting screws on wall units or carts for looseness and wear

Inspection

Routinely inspect the **Connex 360** monitor and accessories for wear, fraying, or other damage. Do not use if you see signs of damage, if the monitor malfunctions, appears not to be working properly, or if you notice a change in performance. Contact Baxter Technical Support: Technical Support for assistance.

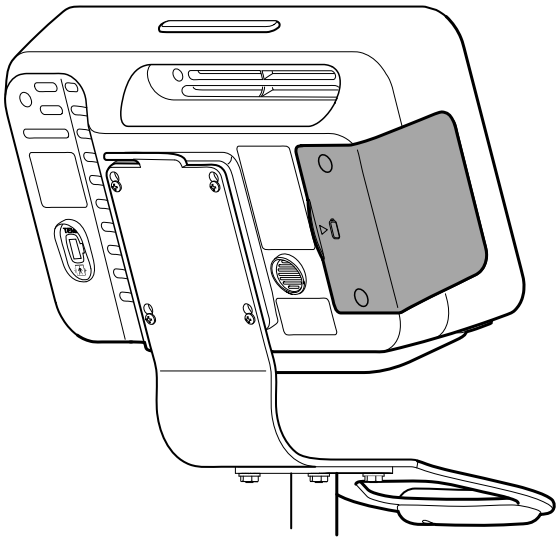
NOTE Battery Care - When the device is stored for an extended period, the battery must be maintained to prevent deep discharge, which will shorten the life of the battery. Prior to storage, charge the battery to 100%. Every 30 days, remove the device from storage and recharge the battery.

Replace the monitor battery

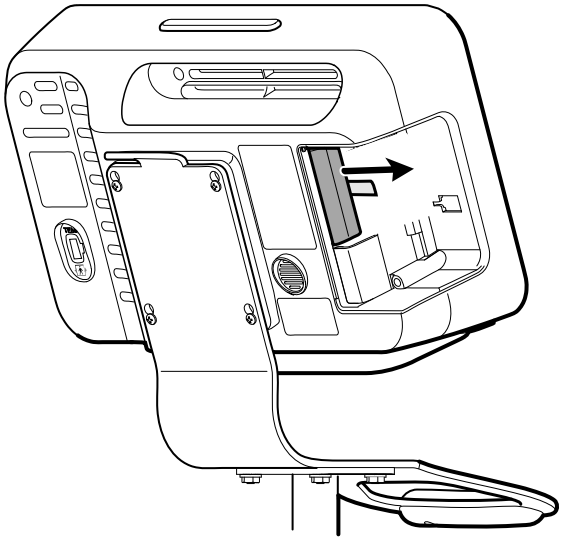
WARNING Personal injury risk. Improper handling of the battery can lead to heat generation, smoke, explosion or fire. Do not short-circuit, crush, incinerate, disassemble the battery, or use an unapproved battery pack. Never dispose of batteries in refuse containers. Always recycle batteries according to national or local regulations.

WARNING Use only approved accessories, and use them according to the manufacturer's instructions for use. Using unapproved accessories with the monitor can affect patient and operator safety and can compromise product performance and accuracy, and void the product warranty.

1. Locate the battery cover, indicated by .

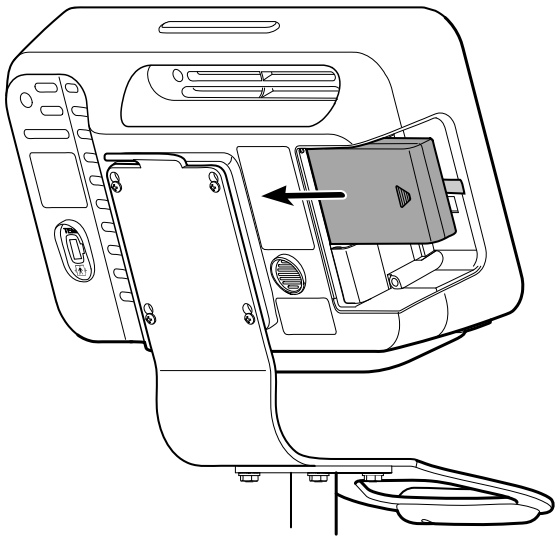


2. Using a double-slotted screwdriver, loosen the captive screws of the battery cover, and then remove the cover.
3. Remove the old battery from the battery compartment.



4. Insert the new battery into the battery compartment.

NOTE Do not remove the tab label from the battery. This tab helps you remove the battery from the compartment when you need to replace it.



5. Replace the battery cover, and then tighten the captive screws of the battery cover.

NOTE Do not overtighten the screws.

Clean and disinfect the equipment

This section presents procedures for cleaning and disinfecting the device (including the device, stand, accessories, and accessory basket and bins).

Cleaning refers to the removal of dirt, germs (microorganisms), and impurities from surfaces. Cleaning does not kill germs, but by removing many of them and lowering their numbers, it reduces the risk of spreading infection.

Disinfecting is the process of cleaning a surface to eliminate pathogenic microorganisms, such as bacteria, viruses, and fungi, to a level that is considered safe according to public health standards. This is typically achieved using chemical agents known as disinfectants, which are specifically designed to kill harmful microorganisms. Disinfecting is distinct from cleaning, which involves removing dirt and debris, and some germs, and it is different from sterilizing, which involves killing all forms of microbial life.

Baxter has validated these instructions to be capable of preparing your device and above accessories for re-use. Clean and disinfect on a routine basis according to your facility's protocols and standards or local regulations.

WARNING Patient injury risk. Clean all accessories, including cables and tubes, before storing the accessories on the device or stand. This helps reduce the risk of cross contamination and nosocomial infection.

WARNING Electric shock hazard. Before cleaning and disinfecting the monitor, disconnect the AC power cord from the mains outlet and the power source.

WARNING Electric shock hazard. DO NOT immerse or autoclave the monitor or accessories. The monitor and the accessories are not heat-resistant.

WARNING Electric shock hazard. DO NOT open the monitor or attempt repairs. The monitor has no user-serviceable internal parts. Only perform routine cleaning and maintenance procedures specifically described in this manual. Inspection and servicing of internal parts shall only be performed by qualified service personnel.

CAUTION Liquids can damage electronics inside the device and accessories. Prevent liquids from spilling on the device.

CAUTION Clean and disinfect all accessories, including cables and hoses, before storing the accessories on the device or stand. This helps reduce the risk of cross contamination and nosocomial infection.

Cleaning

Cleaning refers to the removal of germs, dirt, and impurities from surfaces. It does not kill germs, but by removing them, it lowers their numbers and the risk of spreading infection.

Disinfecting

Disinfecting refers to using chemicals, for example, EPA registered disinfectants, to kill germs on surfaces. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface after cleaning, it can further lower the risk of spreading infection.

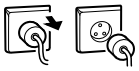
Power down the monitor

1. Press ⏻.

   If there is no system message, a dialog box appears with options.

   - Sign out (if you signed in with a Clinician ID)
   - Power down
   - Sleep
   - Cancel
2. Touch **Power down**.

Prepare the device for cleaning and disinfection

1. Unplug the device from the electrical mains outlet. 
2. Use as many disinfecting wipes as necessary to ensure the wipe remains wet, but not dripping during both the cleaning and disinfection steps.
3. Follow the directions on the disinfecting wipes manufacturing label.
4. Do not clean or disinfect the Disposable blood pressure cuff. Replace it if soiled.
5. Remove the oximetry sensor for separate cleaning instructions according to the manufacturer's instructions for use.

Step 1: Cleaning

1. Remove the wipe from the disinfecting wipes container.
2. Wipe all surfaces of the device, including the top, sides, front, rear, and bottom of the device. Use as many wipes as needed to wipe all surfaces.
3. Wipe cords and stand.
4. Discard any used wipe(s).
5. Wash your hands thoroughly.

Step 2: Disinfection

1. Use a new disinfecting wipe, wipe down all surfaces of the device, including the top, sides, front, rear, and bottom of the device.

2. Use enough wipes for all treated surfaces to remain visibly wet per the disinfectant manufacturer's instructions for use. Reapply disinfectant as needed to keep the area visibly wet.
3. Wipe cords and stand. Make sure all wiped surfaces remain visibly wet per the disinfectant manufacturer's instructions for use .
4. Discard any used wipe(s).
5. Wash your hands thoroughly.

Approved cleaning and disinfecting agents

Section 1. Approved cleaning agents for **Connex 360** monitor surface

NOTE Follow the "Step 1: Cleaning" instructions using a cleaning agent from the following table. If one of the following cleaning agents come as a solution rather than as a wipe, apply to a clean cloth.

Cleaning agent
CaviWipes
Clinell Universal Wipes
Sani-Cloth Plus
Super **Sani-Cloth**
70 percent isopropyl alcohol solution
Bacillol AF Wipes
CleanCide
Clorox Healthcare Fuzion
Clorox Dispatch
Clorox Healthcare Bleach Germicidal Cleaner
Mikrozid AF Wipes
Oxivir TB
Oxivir 1 Wipes
Oxivir Plus 1:40 Solution
Reynard Neutral Detergent Wipes
Reynard Premier Detergent Wipes
Sani-Cloth Bleach
Sani-Cloth Prime Wipes
Tuffie5 Cleaning Wipes
Virex II (256)
Bleach solution (5% - 8.25% Sodium Hypochlorite diluted according to the manufacturer's instructions[1])

[1] Up to 2,400 parts per million (ppm) available chlorine

Section 2. Approved disinfecting agents for **Connex 360** *monitor components*

NOTE The following disinfecting agents are approved for low level disinfection of the **Connex 360** components.

1. Follow the "Step 2: Disinfection" instructions using a disinfecting agent from the following table. If one of the following disinfecting agents comes as a solution rather than as a wipe, apply to a clean cloth.

Disinfecting agent	**Dwell time**
Clinell Universal Wipes	As specified by the manufacturer
70% isopropyl alcohol solution	2 minutes
Super **Sani-Cloth**	As specified by the manufacturer

When cleaning residue is present on the display, clean with a 5-8% acetic acid solution.

CAUTION Some cleaning and disinfecting agents are not appropriate for all components of the device and accessories. Use only approved cleaning and disinfecting agents, and observe any restrictions noted for some components in the tables. Using unapproved cleaning and disinfecting agents may cause damage to components.

CAUTION Do not spray any cleaning or disinfecting agent solution directly onto the monitor. Excess solution entering the monitor assembly could damage internal components. Also use caution to ensure that any cleaning or disinfecting cloth is not saturated with solution.

CAUTION Do not use bleach solutions of any kind when cleaning metal electrical contacts. They will damage the device and accessories.

Cleaning accessories

Accessories include components like blood pressure cuffs and hoses, SpO2 sensors and cables, thermometers, and the barcode scanner. Follow accessory manufacturer's instructions for cleaning and disinfection.

For cleaning the VESA mount use only 70 percent isopropyl alcohol solution applied to a clean cloth.

Store the device

Store the device according to facility guidelines to keep the device clean, dry, and ready for service.

Remove liquid spills from the monitor

Liquids can damage electronics inside the monitor. Follow these steps if liquids spill on the monitor.

1. Power down the monitor.
2. Disconnect the power cord from the mains outlet and the power source.
3. Remove battery pack from the monitor.
4. Dry excess liquid from the monitor.
5. Reinstall battery pack.
6. Reconnect the power cord.
7. Power on the monitor and verify that the monitor functions normally before using it.

If liquids possibly entered the monitor, remove the monitor from use until it has been properly dried, inspected, and tested by qualified service personnel.

Device decommission and disposal

Disposal of the device must be in accordance with the following steps:

1. Follow cleaning instructions per instructions in this user manual section.
2. Delete all existing data related to patients/hospital/clinic/clinicians.
3. For security purposes, take a hammer, or other suitable tool, and destroy all the micro-controller chips on the Printed Circuit Board Assembly (PCBA) of the device before recycling the device.

   See "Disassembly and repair" for further details about disassembling the device and removing the PCBA.

   NOTE Decommissioning the current Main PCBA is required as part of disposal. Contact Baxter Technical Support with the serial number of the Main PCBA being disposed. The Main PCBA serial number can be located using the below methods:

   - **Embedded Service Tool > Components tab**
   - **Remote Management > Assets > Component Information**
   - Stickers directly on both sides of the Main PCBA. Format will be similar to 00000000AA-0A0A.
4. Segregate material in preparation for the recycling process
   - Components are to be disassembled and recycled based on type of material
     - Plastic to be recycled as plastic waste
     - Metal to be recycled as metal
       - — Includes loose components containing more than 90% metal by weight
       - — Includes screws and fasteners
     - Electronic components, including the power cord, to be disassembled and recycled as Waste of Electrical and Electronic Equipment (WEEE)
     - Batteries to be dismantled from the device and recycled as per WEEE

Users must adhere to all federal, state, regional, and/or local laws and regulations as they pertain to the safe disposal of medical devices and accessories. If in doubt, the user of the device should first contact Baxter Technical Support: Technical Support for guidance on safe disposal protocols.

For more specific disposal or compliance information, follow the Baxter link for WEEE recycling information: WEEE recycling information.

Electrical safety testing

Baxter recommends performing ground continuity and leakage current tests after all open-case repairs. Dielectric strength testing is not recommended.

NOTE Perform dielectric strength testing only if there is a reason to doubt the integrity of the electrical insulation (e.g. multiple trips of a residual-current device or liquid ingress of a saline solution). If you determine this test should be performed, return the device to Baxter for service.

These recommendations trace to EN/IEC 60601-1 – Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance or EN/IEC 62353 – Medical Electrical Equipment – Recurrent Test and Test After Repair of Medical Electrical Equipment.

Because of the variability of test equipment in the field, Baxter does not include specific instructions to perform electrical safety tests. When performing electrical safety tests, refer to your test equipment manuals for detailed instructions to ensure proper test equipment setup that aligns with the appropriate standard.

Devices with an external power supply

The power bricks are CB Certified and UL Listed; they meet ALL of the requirements that the Medical Device standard requires for power supplies. The manufacturer is required to perform 100% electrical safety testing on all of their power bricks prior to shipment. Baxter does not perform nor recommend testing on these external power bricks because additional testing would put undue stress on the insulation system and possibly cause premature failures in the field. Open case repairs of devices with external power supplies are only dealing with DC circuitry and robust isolation circuits built into the printed circuit boards. No additional after-servicing testing is required in that instance. The patient isolation systems within the device (Temperature Probe, SpO2 sensor, etc.) all have visible isolation gaps built into the printed circuit board. The quality control on the PCB and the thorough type-testing performed by the testing agency (ETL) eliminates the need for further testing on the devices that are downstream from the mains isolation device.

Options and upgrades

Baxter supports option and software upgrades for most models.

Option upgrades for devices still under warranty that require any installation inside the device must be performed by a Baxter Service Center unless you are Baxter-certified through the Baxter Service Training. If you want to install the options, we recommend you attend the Baxter Service Training course for the device. The training is required to be eligible to use the **Connex 360** Embedded Service Tool to verify that the monitor is functioning correctly after it has been serviced. Although all of the option upgrades are calibrated and tested before leaving the factory, Baxter recommends performing a complete functional test whenever the device is serviced.

Software upgrades, when available, can be purchased or provided at no charge if your device is covered by a Baxter Service Agreement. The upgrades can be installed by a Baxter Service Center.

If you choose to install software upgrades on your own, you will receive the software through the internet. When ordering software, provide the serial number of the device you want to install the software on.

NOTE The monitor will not initiate updates unless the device has a minimum of 15 minutes worth of battery life. Ensure the device is plugged into AC power and has enough battery life before initiating a software update. If the update fails, contact Baxter Technical Support.

Available options

The following options can be added to each model's base configuration.

CAUTION Before installing any option, disconnect the patient from the monitor and power down the device.

NOTE Some model numbers and product features described in this publication might not be available in your country. For the latest information about products and features, please contact Baxter Customer Care.

Model	**Parameter**	
	SpO2	**Temperature**
94 = 9400 Ethernet only series *95* = 9500 **Wi-Fi** + Ethernet series	*C* = Nellcor *M* = Masimo [1] *R* = Masimo SpO2/ **RRp**	*T* = **SureTemp Plus**

[1] Contact Baxter Customer Care to purchase the optional respiration rate software license: 9000-RRP Masimo RRP C360 LICENSE

Model	**Temperature**	**SpO2**	**NIBP**	**Connectivity**
94CXT-B	**SureTemp Plus**	Nellcor	**SureBP**	Ethernet Only
94MXT-B	**SureTemp Plus**	Masimo	**SureBP**	Ethernet Only
94RXT-B	**SureTemp Plus**	Masimo and **RRp**	**SureBP**	Ethernet Only
95CXT-B	**SureTemp Plus**	Nellcor	**SureBP**	**Wi-Fi** + Ethernet
95MXT-B	**SureTemp Plus**	Masimo	**SureBP**	**Wi-Fi** + Ethernet

Model	Temperature	SpO2	NIBP	Connectivity
95RXT-B	**SureTemp Plus**	Masimo and **RRp**	**SureBP**	**Wi-Fi** + Ethernet

Install options

All internal option installations entail opening the device case and performing some disassembly. Because this process requires disconnecting internal components, Baxter requires that the device undergo a full functional test after reassembly and before placing the device back in service.

Before installing a new option, read information about removing the option in "Disassembly and repair." After familiarizing yourself with the process, follow the instructions in the disassembly section.

Update the device software

Requires a PC and a USB flash drive.

1. Save the software update file onto the root directory of a compatible USB flash drive.
2. Insert the USB flash drive into the device.
3. A prompt will pop up on the device screen requesting the advanced settings password to continue.
4. The device screen will then present the following options:

   - Install firmware
   - Install configuration
   - Install radio certificate
   - Manage client certificates

   Touch **Install firmware**.
5. The device screen will then display a list of valid software update files found on the inserted USB flash drive.
6. Select the desired software update file and then touch **Continue**.
7. The device screen will display another confirmation message, touch Continue to proceed.
8. The device will display an `Installing Connex360_v1.xx.xx.swu...` screen.
9. Once complete the device will reboot.
10. The device will display an `Update in progress`... screen.
11. Once complete, the device will reboot and will display an `Update successful` banner message.

NOTE Firmware and configuration updates will not initiate while the device is in use. The device will not initiate update unless the device has a minimum of 15 minutes worth of battery life. Ensure the device is plugged into AC and has enough battery life before initiating a software update. If the update fails, contact Baxter Technical Support.

Apply a configuration file to the device

Requires a PC and a USB flash drive.

1. Save the configuration file onto the root directory of a compatible USB flash drive.
2. Insert the USB flash drive into the device.
3. A prompt will pop up on the device screen requesting the advanced settings password to continue.
4. The device screen will then present the following options:

   - Install firmware
   - Install configuration
   - Install radio certificate

- Manage client certificates

Touch **Install configuration**.

5. The device screen will then display a list of valid configuration files found on the inserted USB flash drive.
6. Select the desired configuration file and then touch **Continue**.
7. The device screen will display another confirmation message, touch **Continue** to proceed.
8. Once complete, the device screen will display a success confirmation prompt and banner message.

NOTE Firmware and configuration updates will not initiate while the device is in use. The device will not initiate update unless the device has a minimum of 15 minutes worth of battery life. Ensure the device is plugged into AC and has enough battery life before initiating a software update. If the update fails, contact Baxter Technical Support.

Remote management (optional)

Remote Management is a secure service platform that offers authorized users access to manage their fleet of Baxter connected devices remotely in a centralized portal. This includes deploying software update files and configuration files to your fleet of **Connex 360** devices.

NOTE All remote updates must be deployed at the discretion of authorized users.

Devices can be configured for manual or automatic remote updates through a configuration file:

- Automatic – Updates will initiate without user interaction, including scheduled updates.
- Manual - Updates will require user interaction. Manual updates can always be initiated within advanced settings.

In addition, a confirmation prompt can be enabled to allow users to initiate manual updates on shutdown. This confirmation prompt can be enabled or disabled through a configuration file.

Refer to the "Review firmware status and load firmware from the network" section for additional instructions.

For more information, contact your sales representative or visit the Baxter website: baxter.com.

NOTE Firmware and configuration updates will not initiate while the device is in use. The device will not initiate update unless the device has a minimum of 15 minutes worth of battery life. Ensure the device is plugged into AC and has enough battery life before initiating a software update. If the update fails, contact Baxter Technical Support.

Service and repair training

NOTE Required to perform a complete functional verification and calibration of the monitor.

Part number	Description
CNX360REP-TRN	CNX360 repair training
CNX360REPW-TRN	CNX360 repair web training
CNX360REPRCW-TRN	CNX360 repair recert web training

Upgrade options

Part number	Description
108970	UPGD KIT-CNX360-ASSY SPO2 NELLCOR CONVERSION UPGRADE
108971	UPGD KIT-CNX360-ASSY SPO2 MASIMO CONVERSION UPGRADE
108873	SRV KIT-CNX360-WIRELESS RADIO PCBA-ANT

Connectivity Options

Introduction

The **Connex 360** is capable of the following system connections:

- LDAP/ **Active Directory** – Used for clinician authentication.
- Direct **HL7** EMR (Connex Direct) – Directly send patient queries and vitals to an EMR.
- NTP – Used for date/time synchronization through a network.
- DeviceBridge
- Remote Management
- **Welch Allyn** Gateway – Used in conjunction with ConnexCS or NCE.

NOTE For more information on connecting the **Connex 360** to the above systems, please reference the *Connectivity Guide* by contacting Baxter Technical Support or visiting https://baxter.com.

Definitions

Acronym/Term	Description
AD (**Active Directory**)	A directory service developed by Microsoft for providing tree-structured information. Used for authenticating and authorizing users of the device.
Clinician Authentication	Workflow feature where a clinician is required to log in to the device. The device will assure a clinician's credentials are valid by providing an interface where the clinician logs in to the device using their ID and password, and the ID and password are validated by an authority system on the network (e.g. Active Directory).
Clinician Identification	Workflow feature where the clinician enters their ID into the device so the clinician ID can be logged with the vitals.
Clinician Identifier	Configurable to be the clinician's Username, Account name, or Employee ID.
Connex 360	**Connex 360**: A **Welch Allyn** device that supports NIBP; Temperature (**SureTemp Plus**); SpO2; (Nellcor and Masimo); Weight, Height, and BMI; Pain; and other configured parameters.
DC	Domain Component – In LDAP servers and Active Directory, a dotted domain name is split into domain components that form "dc=component" pairs separated by commas. Example: ad.welchallyn.com in an AD server will be "dc=ad,dc=welchallyn,dc=com"
FQDN	Fully Qualified Domain Name. The complete domain name of a computer on the Internet. Contains the host name and the full domain.

Acronym/Term	Description
Gateway Software	A software application that can receive data from a device and communicates data to
HIS (Hospital Information System)	The IT applications used to manage hospital operations (i.e., patient financials, registration, scheduling, general financials, back-office systems and order communications).
HL7	Health Level 7 – A framework for the exchange, integration, sharing, and retrieval of electronic health information.
HL7 EMR System	Software System that receives the **HL7** data from the device.
IDS	Interface Design Specification
LDAP	Lightweight Directory Access Protocol – An industry standard protocol for maintaining distributed directory information. Often used for usernames and password information.
Patient Confirmation	The act of the device configuration/behavior ensuring that the vitals record contains the patient context.
Patient Identification	The act of the device configuration/behavior that displays the patient context on the device and that allows the clinician to ensure the right vitals go to the right patient.
Remote Management	Used by customers to view the status of their devices and deploy firmware upgrades and device configurations. The portal requires prior account setup.
SSL	Secure Sockets Layer– A set of cryptographic protocols to provide security of communications over a network. SSL is a predecessor to TLS.
Vitals Device	Generic names for CSM, CVSM, and CIWS.
X.509 Certificate	An X.509 certificate is a digital certificate that uses the widely accepted international X.509 public key infrastructure (PKI) standard to verify that a public key belongs to the user, computer or service identity contained within the certificate.

Network Services and Data Flow

Service Name	Description	Default Port	Ingoing / Outgoing	Protocol	Encryption	Open/ Closed
NTP	Time synchronization using Network Time Protocol	123	Both	UDP	No	Open when in use
Gateway Connection	Host for sending Episodic monitoring data to Gateway	281 (Configurable)	Both	TCP	Data Encryption is enabled by default (TLS 1.2, TLS 1.3).	Open when in use
Direct EMR Connection	Host for sending Episodic monitoring data to EMR using HL7v2	281 (Configurable)	Both	TCP	Data Encryption is enabled by default (TLS 1.2, TLS 1.3).	Open when in use
LDAP	**Active Directory** for user authentication	389	Both	TCP	TLS 1.2	Open when in use
Embedded Service Tool (EST) Service	Web Server hosted on the device for EST application and accessible over the USB wired link.	80*	Both	HTTPS (Ethernet over USB wired link)	TLS 1.2, TLS 1.3	Open when in use
Remote Management	Service Host for remote configuration and software install, log file transfers, device health monitoring, and more.	443*	Both	HTTPS	TLS 1.3	Open when in use
Device communication ports	Ports	Blackwell radio:	Both	TCP/UDP	WPA2-Personal, WPA2-Enterprise, WPA2-Enterprise Suite-B, WPA2-Enterprise Suite B 192-bit, WPA3-Personal, WPA-3 Personal transition, WPA3-Enterprise, WPA3-enterprise transition	Open when in use

Certificates

TLS (Transport Layer Security) certificates are digital documents that verify the identity of a website or server. They are essential for securing online communications, particularly when sensitive data is being transmitted.

It is crucial to minimize the list of trusted TLS certificates to strongly trusted hosts. This helps prevent unauthorized access to sensitive data, such as patient records, by ensuring that only trusted servers can establish secure connections.

The **Connex 360** has four trust stores:

- EMR
- Baxter Service Solutions
- Active Directory
- Wireless Radio **Wi-Fi**

Each trust store contains a list of trusted TLS certificates for the corresponding host system. When the device connects to a host using TLS, it checks the host's TLS certificate against the list in the appropriate trust store. If the certificate matches one on the trusted list, the connection is established, and data can be securely exchanged.

By default, these trust stores will contain Baxter Trusted Certificates. Additional certificates can be added using the following methods.

Method	EMR	Service	Active Directory
USB	Client Cert	Client Cert	N/A
Embedded Service Tool (EST)	N/A	N/A	N/A
Configuration File	Server Root CA Cert	Server Root CA Cert	Server Root CA Cert

Additional certificates for the Wireless Radio can be added using the Embedded Service Tool or directly onto the device via a USB drive. The following can be added and configured:

- Outer TLS Host Certificate
- Inner TLS Host Certificate
- TLS Client Certificate, Public Key, and Private Key
- TLS Private Key Password

NOTE For more information on implementing certificates on the **Connex 360** monitor, please reference the *Connectivity Guide* by contacting Baxter Technical Support or visiting Baxter.com.

The Connex 360 Embedded Service Tool

About the **Connex 360** Embedded Service Tool

The **Connex 360** Embedded Service Tool is required to complete functional verification and calibration tests. The **Connex 360** Embedded Service Tool enables NIBP functional verification tests to satisfy the recommended annual service and also checks the functionality and calibration of the monitor. As it checks the monitor it also performs any needed calibration to bring the monitor within specifications. This full suite of tests is required to complete a repair. Each time you open the case, you must test the monitor before returning the monitor to normal use.

Launch the **Connex 360** Embedded Service Tool

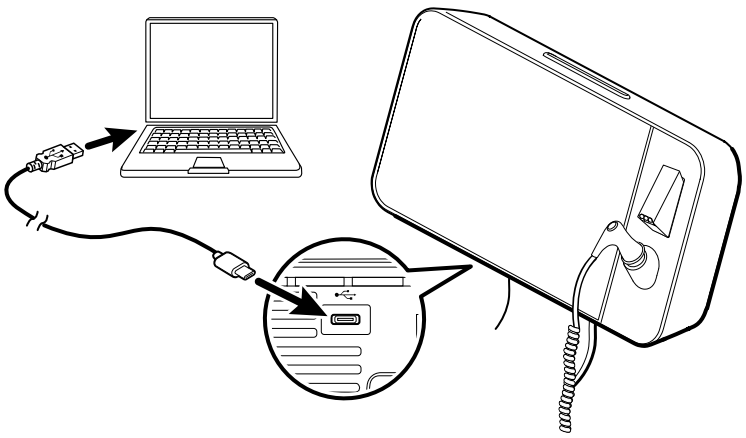
Before you begin, check the operating system and web browser for compatibility.

Compatible systems

PC Operating Systems	Web Browsers
Windows 11 (preferred)	**Google Chrome** version 110 or later
Windows 10 (requires additional steps, see Appendix A)	**Microsoft Edge** version 114 or later

1. From the Home screen, touch **Settings**.
2. From the Settings screen, touch the **Advanced** tab.
3. Enter the advanced settings code and touch **OK**.

   At the General settings screen Language tab, the default language displays.
4. Touch the **Service** tab.
5. From the Advanced Settings screen, **Service** tab, then touch the **General** tab .
6. Plug the USB cable into the USB type-C communication port located at the bottom-middle of the front of the monitor.
7. Plug the other end of the USB cable into the USB port of a computer.

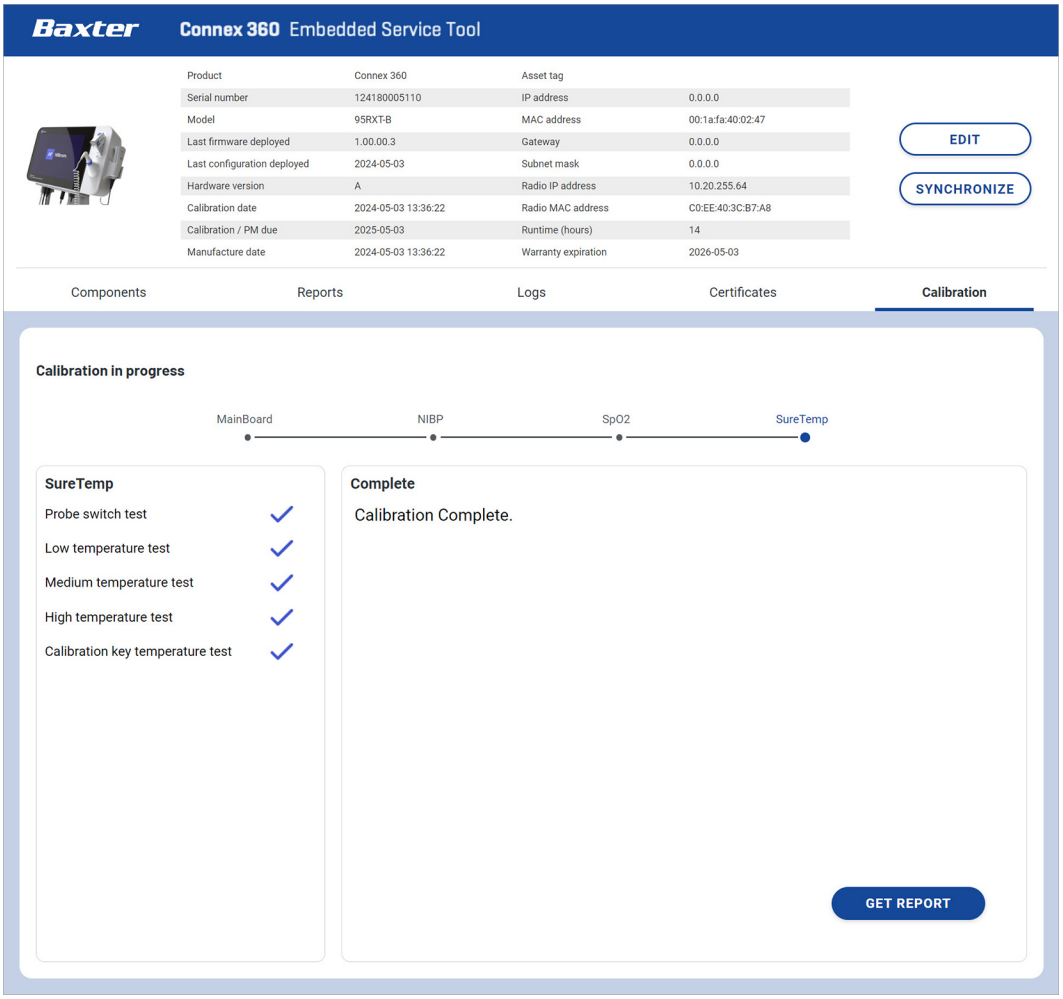


8. At the System settings screen within the Embedded Service Tool frame touch **Activate**.

   The monitor displays an address in the format of `http://172.16.1.1`.
9. On the connected computer, launch your web browser and enter the address into the browser on your computer as it appears on the monitor.

Using the **Connex 360** Embedded Service Tool

The link to the web browser based **Connex 360** Embedded Service Tool is available within the monitor:



The **Connex 360** Embedded Service Tool is required to perform complete functional verification and calibration. Refer to the calibration section for more information on setup and procedure. Calibrations should be performed by Baxter-certified technicians.

Baxter-certified technicians can use the **Connex 360** Embedded Service Tool to manage and maintain supported **Connex 360** devices. You can use the **Connex 360** Embedded Service Tool to do the following:

- *Components*. The **Connex 360** Embedded Service Tool lists installed modules, installed firmware and hardware versions, warranty and repair information, status, and usage history.
- *Reports*. From your PC you can view, print, and save reports obtained from the monitor.
- *Logs*. From your PC you can download and save log files obtained from the monitor for analysis to help diagnose and identify reported issues.
- *Certificates*. The **Connex 360** Embedded Service Tool can load monitor and wireless radio certificates.
- *Calibration*. The **Connex 360** Embedded Service Tool can check any device requiring calibration and, if necessary, calibrate the device to match the design specifications.
- *Edit*. Edit Device information such as asset tag.
- *Synchronize*. Synchronize updates the device's date and time based on the date and time set on the PC being used. The PC must be set to the same time zone as the device for the sync to be successful.

Connex 360 Embedded Service Tool tests performed

The Embedded Service Tool tests the host device and installed options as listed in the following table.

Test	Description	NIBP	Temp	SpO2	Host
Power LED Test	Verifies the power LED				✓
LCD Display Test	Verifies the LCD display				✓
Back light interface Test	Verifies display LCD back light				✓
Touchscreen Test	Verifies touchscreen calibration				✓
Alarm Bar Test	Verifies Alarm Bar functionality				✓
Beeper	Verifies the audible tone				✓
Nurse Call Relay Test	Verifies the nurse call relay				✓
Battery Test (Charge Circuit, LED, Operation)	Verifies the internal battery				✓
Speaker Interface Test	Verifies the speaker functionality				✓
USB Host Port Communication Test	Verifies the 4 USB ports				✓
Ethernet communication	Verifies the Ethernet port				✓
Radio Test	Verifies the wireless radio				✓
POST	Performs the power-on self test (POST)[1]	✓	✓	✓	✓
Pressure accuracy (NIBP)	Checks the accuracy of transducers across the pressure range (50, 150, 250)	✓			
A-D noise	Checks noise on the pressure channel	✓			
Leak Test	Verifies leaks using 100 cc volume	✓			
Pressure calibration - primary /safety Test (NIBP)	Checks the accuracy of transducers across the pressure range (50, 150, 250)	✓			
Calibration	Calibrates pressure transducers	✓			
Accuracy (NIBP)	Checks the accuracy of transducers across the pressure range	✓			
Pump inflation Test	Verifies the pneumatic pump	✓			
Dump Test	Checks dump valves	✓			
Pneumatic config Test - single	Checks single tube hose	✓			
Pneumatic config Test - dual	Checks dual tube hose	✓			
SpO2 functional check	Verifies module operation with an SpO2 simulator			✓	

Test	Description	NIBP	Temp	SpO2	Host
SureTemp Probe switch Test	Verifies temperature module with probe [2]		✓		
Overpressure	Verifies pump limits	✓			
Probe detect	Verifies the operation of the probe detect switch[2]		✓		
Accuracy for Low temperature Test, Medium Temperature Test, High Temperature Test	Verifies the accuracy of the thermometer across ranges		✓		
Calibration key temperature Test	Verifies temperature module with cal-key [2]		✓		

[1] POST testing checks the following:

- *NIBP*: ROM, RAM, A/D channels, calibration, and user configuration.
- *Temperature*: ROM, RAM, calibration, and heater.
- SpO2 : ROM and RAM, and connection to the SpO2 board.

[2] **SureTemp Plus** only.

Functional verification and calibration overview

Functional verification tests

The functional verification tests help to confirm the proper operation of the device and its options. The tests may also be useful as a diagnostic tool to help isolate a malfunction. It is not necessary to disassemble the device to perform these tests.

For periodic service, you can—at a minimum—perform the basic functional verification tests described in this manual. You also have the additional capability to perform a complete functional verification and calibration of the device, but this is not required for minimal periodic service.

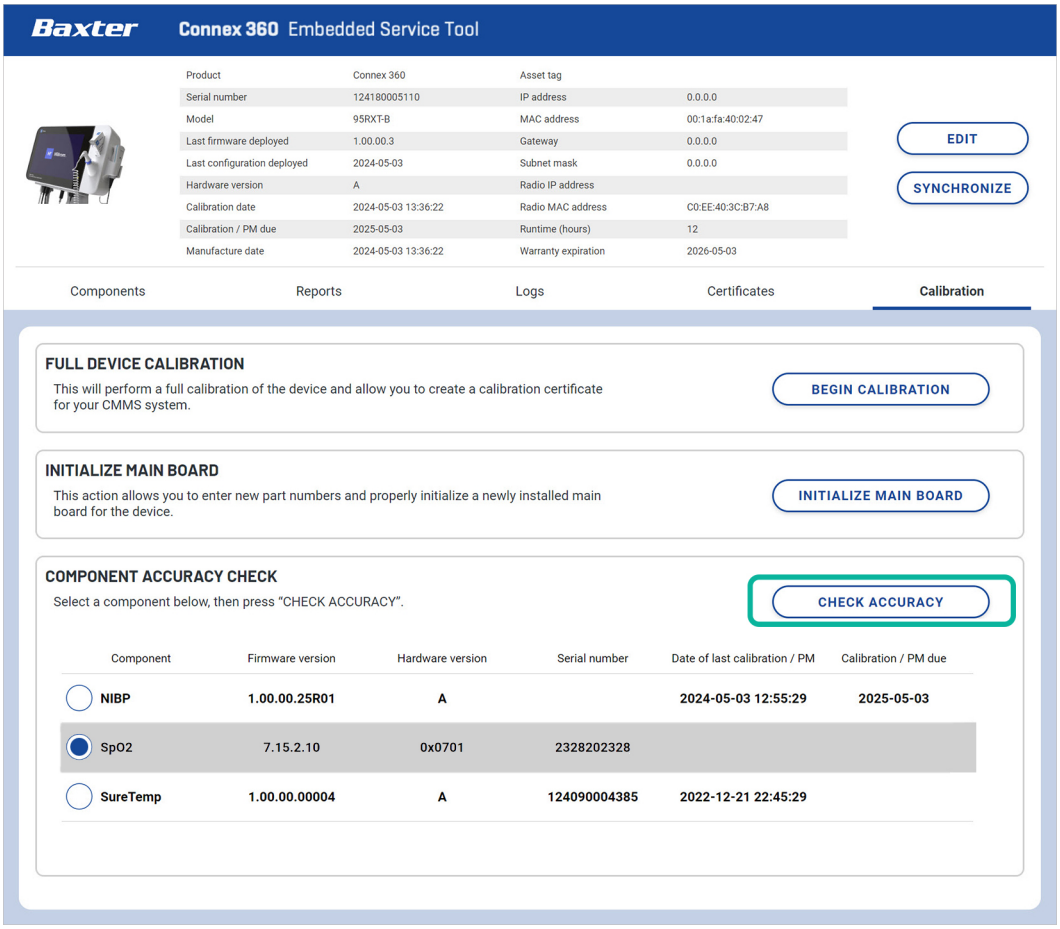
In contrast, any time you open the device case, you must use the Embedded Service Tool to perform a complete functional verification and calibration of the device before returning the monitor to service.

Basic functional verification checks

These tests verify basic functionality of the NIBP, Baxter SpO2, and thermometry parameters. These tests support the requirements of routine preventive maintenance. However, they are not a substitute for the complete functional tests. Baxter recommends using the Embedded service tool to perform preventive maintenance and verification of the monitor when completing a repair.

Component accuracy check

1. From the Embedded Service Tool Calibration tab, select NIBP, SpO2 (shown in the example) , or Thermometry and then click **CHECK ACCURACY** at the right of the screen to check any or all of these components.



2. At the Individual test selection screen, select the desired individual accuracy check and then click **BEGIN**.
3. Follow the on screen instructions and as each test completes, confirm results by clicking **NEXT**. At the final test complete screen click **NEXT**, then click **GET REPORT**.

Basic functional verification tools

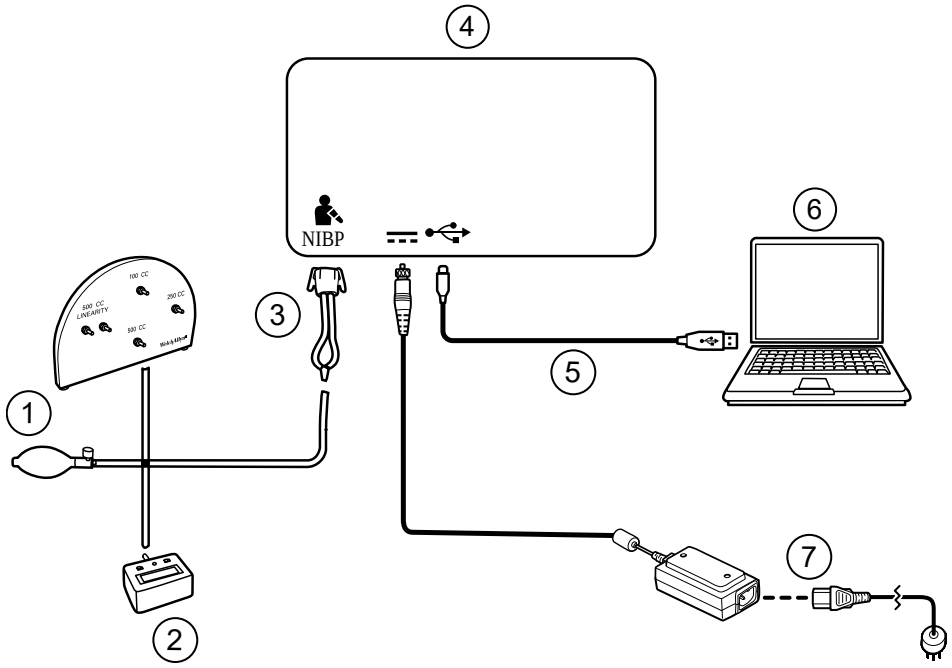
The list of tools below is what Baxter uses to perform a basic device functionality check. Most facilities use a device simulator or equivalent products to perform this test.

Material no.	Description	Qty	Component
407672	BP test volume repair fixture 113670	1	NIBP
N/A	SpO2 simulator (must be able to simulate the following: • Nellcor = 60 BPM and the O2 percentage of 90% • Masimo = 60 BPM and the O2 percentage of 80%)	1	SpO2
DOC-10	Nellcor SpO2 extension cable	1	Nellcor SpO2
06138-000	Cal-key, assembly, M690/692	1	**SureTemp** Thermometry Module

Material no.	Description	Qty	Component
N/A	Pressure meter (must include at least two decimal points and be accurate to within ±0.5 mmHg)	1	NIBP
6000-30	Single-tube blood pressure hose, 5 feet	1	NIBP
N/A	PC running **Windows** 11	1	All
N/A	Blood Pressure Y-tube	1	NIBP
620216	Fitting "Y" 1/8 X 1/8 X 1/8	1	NIBP

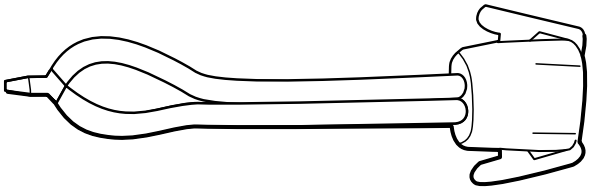
NIBP test setup

For the NIBP leak test, overpressure test, or accuracy check, connect the test equipment shown below. Connect the manifold to the volume repair fixture as indicated by the service tool or the test procedure.



No.	Item	No.	Item
1	Test volume repair fixture with test manifold, bulb, and valve	5	USB-C (**Connex 360**monitor) to USB-A cable (PC)
2	Pressure meter (must include at least two decimal points and be accurate to within ±0.5 mmHg)	6	PC with **Windows** 11
3	Blood pressure Y-tube	7	Power supply 65w
4	**Connex 360** monitor		

Create a blood pressure Y-tube



The blood pressure Y-tube is a piece of custom test equipment that connects the device to the test setup. The Y-tube is composed of a modified blood pressure hose and a Y-type fitting. Follow these instructions to create a Y-tube.

1. Cut a 4500-30 blood pressure hose approximately *6 inches* from the connector that connects to the device.
2. Split the end of the dual-lumen hose to create two separate hoses. Make sure not to puncture either hose.
3. Insert one end of the Y-type fitting into each end of the hose.

NIBP tests

For the NIBP leak test, overpressure test, or accuracy check, connect the test equipment according to the test setup diagram for your configuration presented in the next section. Connect the manifold to the volume repair fixture as indicated by the service tool or the test procedure.

NIBP leak test

The NIBP leak test is performed automatically using Embedded Service Tool. The leak test pressurizes the system with a start pressure (P_s) of 250 mmHg ± 10 mmHg. After 15 seconds (T_t) the end pressure (P_e) is measured. The leak rate is calculated using the formula $L = (P_s – P_e)/ T_t$. The test fails if the leak rate exceeds 5 mmHg in 15 seconds.

NIBP overpressure test

The NIBP overpressure test can be performed under the NIBP Accuracy Check using the Embedded Service Tool.

1. Launch the Embedded Service Tool.
2. Select the Calibration tab.
3. Select NIBP.
4. Select CHECK ACCURACY.
5. Ensure the overpressure test is selected among other NIBP tests that can be performed.

The overpressure test verifies that the NIBP system will prevent the pressure from exceeding 329 mmHg in adult mode and 164 mmHg in neonate mode. To pass this test, the device must shut down the pump and open the valves when the pressure is between 280 mmHg and 329 mmHg in adult mode, or 130 mmHg to 164 mmHg in Neonate mode.

NIBP accuracy check

The NIBP accuracy check is performed manually using the Embedded Service Tool to control the valves. The accuracy check compares the reading from the primary transducer pressure shown in the service tool window with the reading from an external calibrated digital pressure meter.

WARNING Patient safety risk. If the primary transducer fails, the system might not identify an overpressure condition at the right limit, causing injury when the device is re-connected to a patient. To ensure patient safety, Baxter recommends that a qualified service technician perform a full functional verification and calibration on an annual basis.

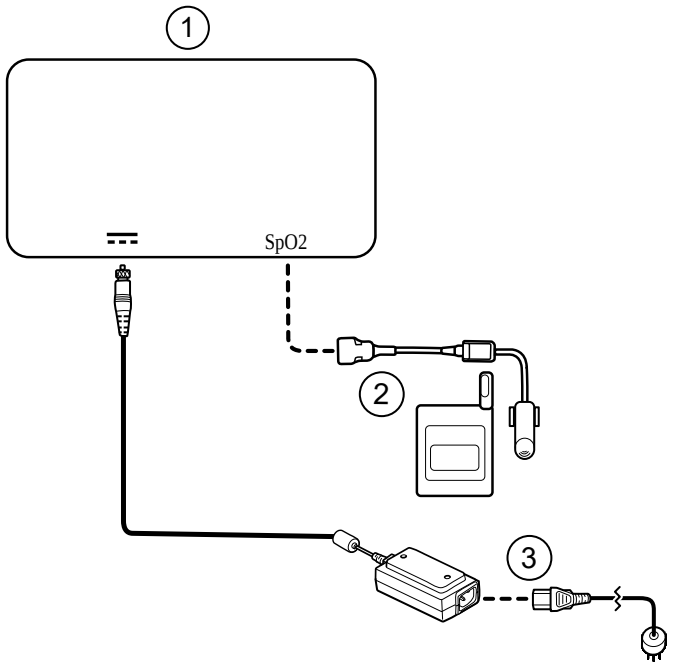
CAUTION Equipment calibration error can occur. This accuracy check verifies only the accuracy of the primary transducer. If the safety transducer is out of calibration, a calibration error can occur due to the pressure difference between the primary transducer and the safety transducer. To avoid equipment calibration errors, Baxter recommends that a qualified service technician perform a full functional verification and calibration on an annual basis.

SpO2 test

Select the procedure here that applies to your configuration to test the device's SpO2 function. Connect the test equipment according to the test setup diagram for your configuration presented here.

SpO2 test setup

For the SpO2 test, connect the test equipment shown below.



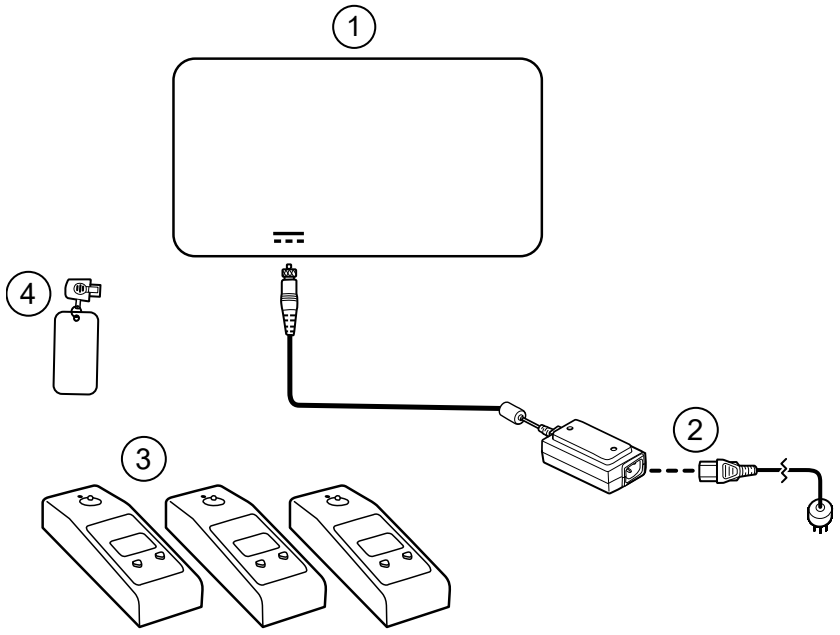
No.	Item
1	**Connex 360** monitor
2	SpO2 simulator (must be able to simulate the following: • Nellcor = 60 BPM and the O2 percentage of 90% • Masimo = 60 BPM and the O2 percentage of 80%)
3	Power supply 65w

Thermometry tests

Thermometry test setup

For the thermometry test, connect the test equipment shown below.

NOTE The drawing shows a **SureTemp Plus** configuration.



No.	Item	No.	Item
1	**Connex 360** monitor	2	Power supply 65w
3	Tester, calibration, 9600 Plus	4	Cal-key, assembly, M690/692 (used only with **SureTemp**)

SureTemp temperature system test

The **SureTemp** temperature system test is performed using a calibration key (cal-key). The calibration key tests the system using a fixed resistance to display a temperature of 97.3 ± 0.2 °F (36.3 ± 0.1 °C).

NOTE If your facility requires you to test the temperature probes, you will also need to have heaters at three temperature settings to test the probes. See " **SureTemp** temperature probe and system test."

SureTemp probe and system test

Use this procedure to test the temperature function while verifying the temperature probe. To achieve accurate results, you must perform this test with the device in Direct mode.

Test each probe at the low, medium, and high set points on the tester. Repeat the procedure for each thermometer and temperature to test.

Set up the 9600 Plus calibration tester

Place the tester on a level surface away from sunlight, drafts, and other sources of heat or cold.

The tester takes approximately 20 minutes to heat to the lowest set point.

To expedite testing, Baxter recommends the following practices:

- To eliminate waiting for the tester to heat to the next set point, use three testers, each set to one of three different set points.
- When using only one tester to test several thermometers at all three temperatures, test all thermometers at one set point before proceeding to the next set point.
- To eliminate waiting for the tester to cool down, start at the lowest set point. Because the tester does not have an internal fan, it requires more time to cool down than to heat up.

Change the 9600 Plus set point

To scroll from one set point to the next, press and hold the **Temperature Selection** button until a beep sounds.

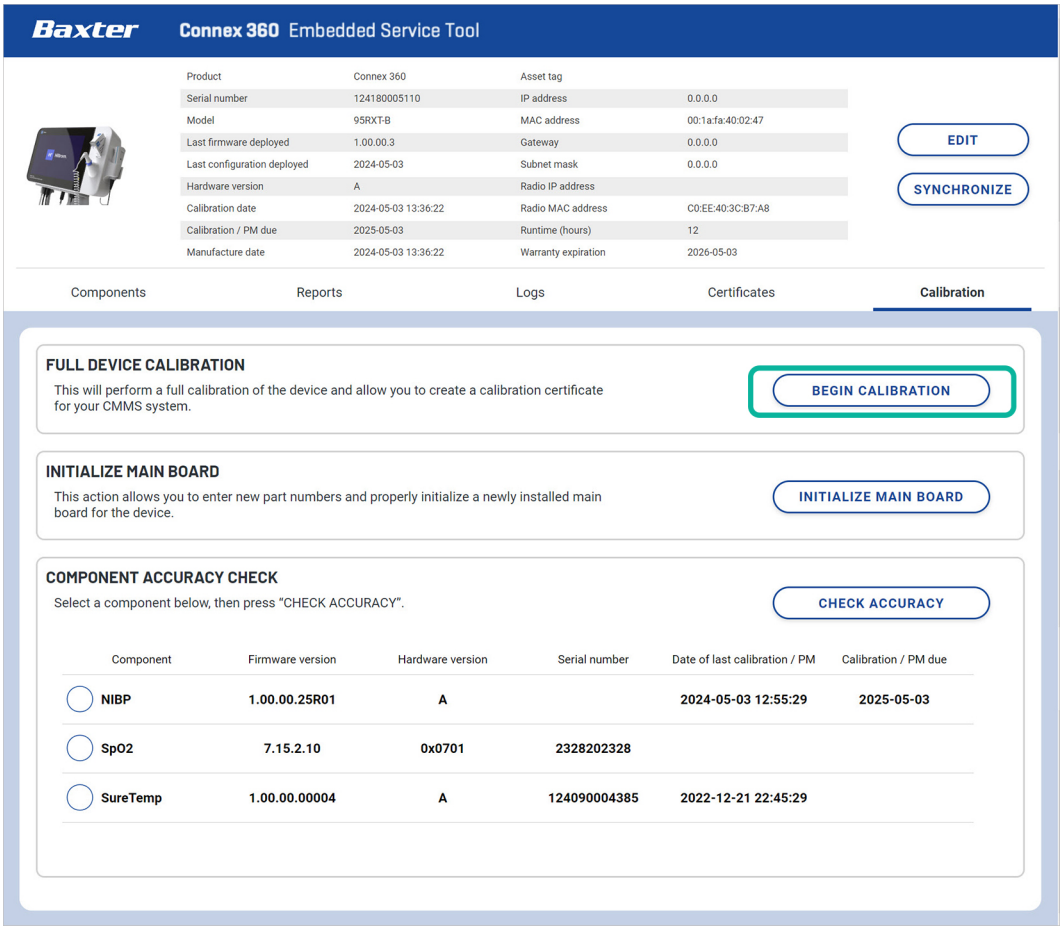
The new set point appears in the upper left corner of the display. The device's current temperature appears, flashes, and continues flashing until the cavity reaches equilibrium at the new set point. The 9600 Plus beeps when the set point is reached.

Full functional verification and calibration

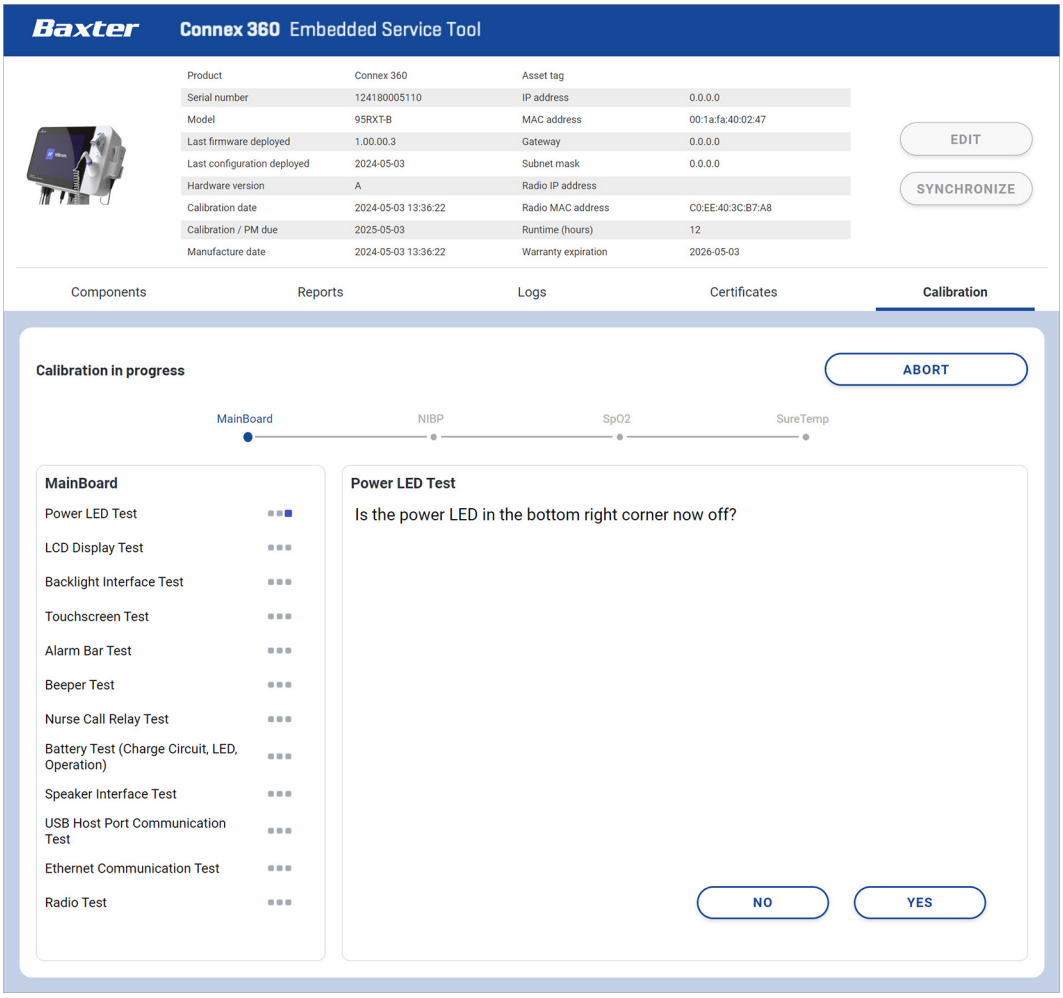
Complete a full device calibration and download report using the **Connex 360** Embedded Service Tool

See "Launch the **Connex 360** Embedded Service Tool" for instructions to connect the monitor to the computer.

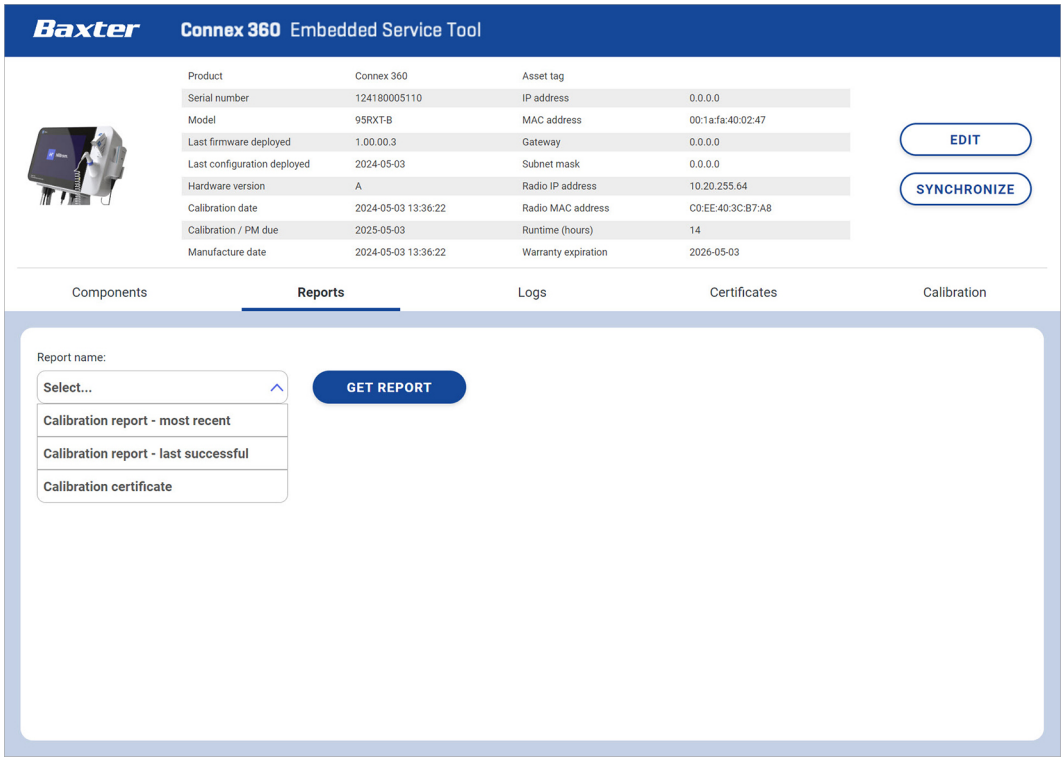
1. From within the Baxter **Connex 360** Embedded Service Tool web browser click **Calibration** .
2. From the **Connex 360** Embedded Service Tool Calibration tab, click **BEGIN CALIBRATION**.



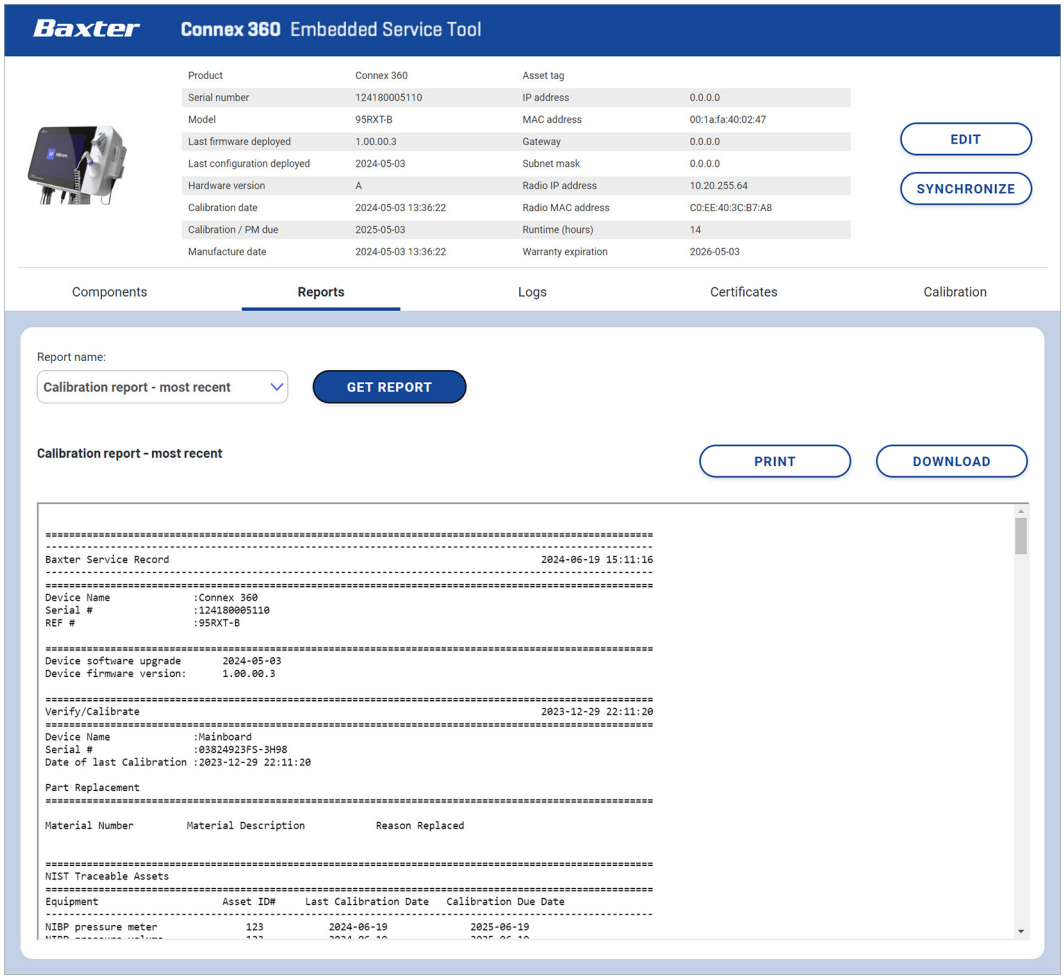
3. From the Full device calibration screen, follow the on screen instructions and enter replacement part numbers and reason for replacement.
4. Click **NEXT**.
5. Follow the on the screen instructions on the Equipment log screen and enter the asset numbers, calibration date and calibration due date.
6. Click **CONTINUE** and answer **YES** or **NO** at each prompt until all the tests are complete.



7. From the Reports tab, click **GET REPORT** and then select the best option from the drop down menu on the reports tab. Choices include: Calibration report - most recent, Calibration report- last successful, and Calibration certificate.

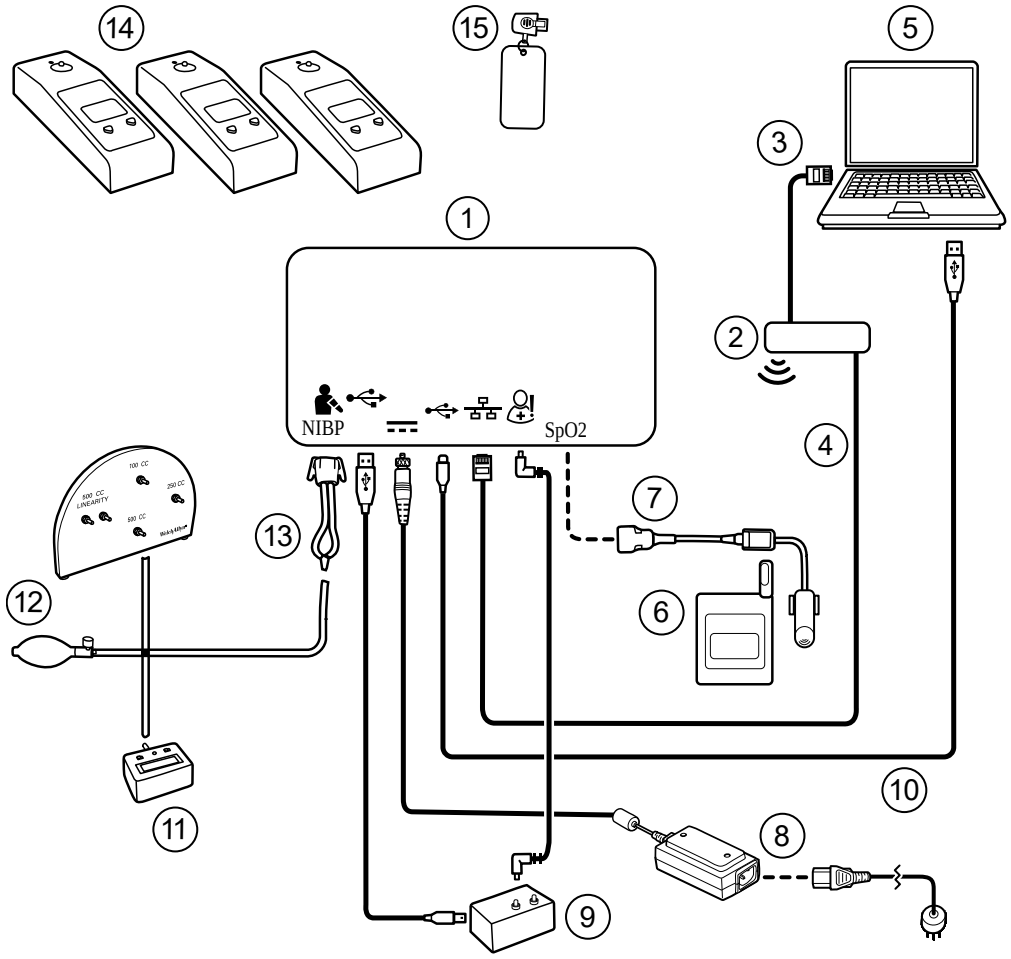

Baxter
Connex 360 Embedded Service Tool
Product
Connex 360
Asset tag
Serial number
124180005110
IP address
0.0.0.0
Model
95RXT-B
MAC address
00:1a:fa:40:02:47
Last firmware deployed
1.00.00.3
Gateway
0.0.0.0
Last configuration deployed
2024-05-03
Subnet mask
0.0.0.0
Hardware version
A
Radio IP address
10.20.255.64
Calibration date
2024-05-03 13:36:22
Radio MAC address
C0:EE:40:3C:B7:A8
Calibration / PM due
2025-05-03
Runtime (hours)
14
Manufacture date
2024-05-03 13:36:22
Warranty expiration
2026-05-03
EDIT
SYNCHRONIZE
Components
Reports
Logs
Certificates
Calibration
Report name:
Select...
GET REPORT
Calibration report - most recent
Calibration report - last successful
Calibration certificate

8. From the Reports tab, click **PRINT** to print the calibration report or click **DOWNLOAD** to download a copy.



Full functional verification and calibration test setup

Connect the test equipment to your device as shown in these drawings to complete the functional tests described in this section.



Item No.	Material No.	Description	Qty	Required Baxter purchase	Optional Baxter purchase
				(see Notes)	
1	Varies	**Connex 360**	1	X	
2	N/A	Wireless router	1		
3	N/A	Ethernet cable	1		
4	N/A	Ethernet cable	1		
5	N/A	PC running **Windows** 11	1		

Item No.	Material No.	Description	Qty	Required Baxter purchase (see Notes)	Optional Baxter purchase
6	N/A	SpO2 simulator (must be able to simulate the following: • Nellcor = 60 BPM and the O2 percentage of 90% • Masimo = 60 BPM and the O2 percentage of 80%)	1		
7	N/A	SpO2 extension cable and finger sensor	1		X
8	108761	Power supply 65w	1	X	
9	106270	Service test box	1	X	
10	N/A	USB-C (**Connex 360** monitor) to USB-A cable (PC)	1		X
11	N/A	Pressure meter (must include at least two decimal points and be accurate to within ±0.5 mmHg)	1		
12	407672	Test volume repair fixture (113670) with test manifold, bulb, and valve	1		X
13	N/A	Blood pressure Y-tube	1	See instructions for creating the Y-tube in the Basic functional verification section.	
14	01802-110	Tester, calibration, 9600 Plus	3		X
15	06138-000	Cal-key, assembly, M690/692	1		X

NOTE All items listed in this table are required to complete a full functional verification and calibration. If Baxter does not make an item available for purchase, you must provide it yourself.

NOTE You may substitute items marked as an optional Baxter purchase with comparable OEM products.

Full functional verification check and calibration tools

The list of tools below is what is required to perform a full device functionality check and calibration. The tools are used in conjunction with the Baxter Embedded Service Tool to perform a device calibration.

Material no.	Description	Qty	Component
01802-110	Tester, calibration, 9600 Plus	3	**SureTemp Plus** probes
407672	BP test volume repair fixture 113670	1	NIBP
N/A	SpO2 simulator (must be able to simulate the following: • Nellcor = 60 BPM and the O2 percentage of 90% • Masimo = 60 BPM and the O2 percentage of 80%)	1	SpO2

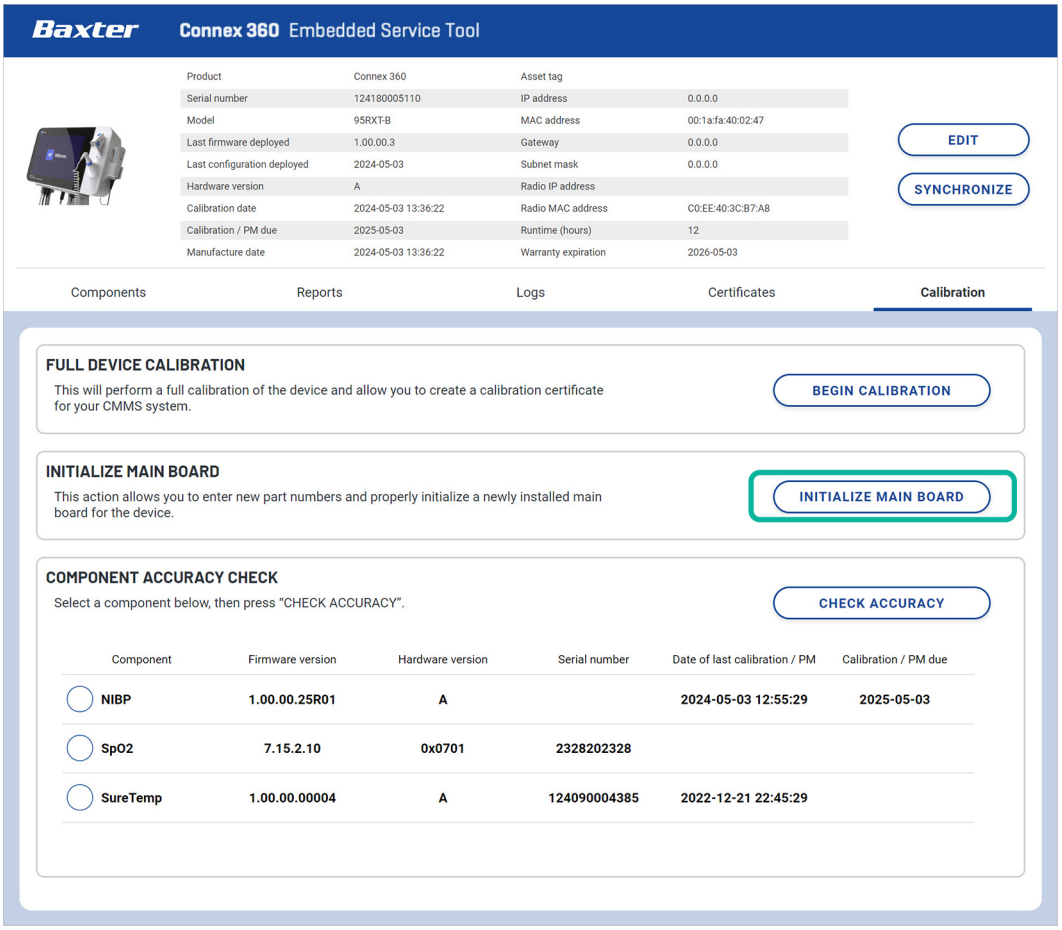
Material no.	Description	Qty	Component
06138-000	Cal-key, assembly, M690/692	1	**SureTemp Plus** Thermometry Module
N/A	Pressure meter (must include at least two decimal points and be accurate to within ±0.5 mmHg)	1	NIBP
N/A	SpO2 extension cable and finger sensor	1	SpO2
106270	Service test box	1	Nurse Call, USB ports
N/A	Ethernet cable	1	Ethernet Test
N/A	USB-C (Connex 360) to USB-A cable (PC)	1	All
6000-30	Single tube blood pressure hose, 5 feet	1	NIBP
N/A	Wireless router or equivalent	1	Wired & Wireless Test
N/A	PC with **Windows** 11	1	All
4500-30	Blood pressure hose, 5 ft.	1	NIBP
620216	Fitting "Y" 1/8 X 1/8 X 1/8	1	NIBP
N/A	Blood pressure Y-tube	1	NIBP

Initialize the Main board

Functional verification and calibration must be performed each time the device is disassembled or more frequently if your facility's procedures require a full calibration on a specified basis. If you have just replaced a Main PCBA board, your first step is to initialize the Main Board, which includes full verification and calibration. More information on the equipment setup for full calibration can be found in the "Full functional verification and calibration test setup" section. Full calibration should be performed by Baxter or Baxter-certified technicians only.

1. Set up the equipment for full functional verification as shown earlier in this section.

2. From the Embedded Service Tool Calibration tab, click **INITIALIZE MAIN BOARD**.



3. Look to the Embedded Service Tool prompts and instructions to complete the testing.

NOTE More information on the equipment setup for full calibration can be found in the "Full functional verification and calibration test setup" section.

Troubleshooting

This section provides the following tables to help troubleshoot the device.

- *Interpreting log file output*: The tables and sample calculations in this topic show you how to parse and interpret error log messages.
- *Symptoms and solutions*: This simple table lists symptoms you might observe, possible causes, and suggested actions that might eliminate the problem.
- *Technical alarm messages*: These tables list messages generated by the device software when a problem is detected. The tables explain possible causes and suggest actions that can resolve the problem. Compared to the Symptoms and solutions table, these tables are much more exhaustive.

These tables can help you diagnose and fix a problem. They do not replace basic troubleshooting skills. You must still trace the source of the problem to the board or module level to decide the best course of action. Baxter does not support component-level repair to the board or module. For available replacement parts, see "Field Replaceable Units."

WARNING Do not perform troubleshooting on a device that is emitting smoke or exhibits other signs of excessive overheating. Disconnect the device from AC power and call Baxter Technical Support immediately.

CAUTION Replace parts, components, or accessories only with parts supplied or approved by Baxter. The use of any other parts can lead to inferior device performance and will void the product warranty.

Interpreting log file output

The device supports saving log files to a USB flash drive. You can then read saved log files on a PC to assist in analysis. This method allows access to the log files without having to connect the device to a PC.

Save log files

Complete the following steps to save a log file to a USB flash drive:

1. Insert a compatible USB flash drive into one of the USB ports of the monitor.
2. Access Advanced settings.
3. Navigate to **Service** > **Log file**.
4. Touch Save to USB.

   A "Save successful" message appears after a successful save.
5. Remove the USB flash drive from the USB port.

Access log files

Complete the following steps to access and start working with log files saved to a USB flash drive:

1. Insert the USB flash drive into a USB port on your PC.
2. Open the USB flash drive and identify the saved log files.

   Look for the `.zip` folder that resembles this example. The first set of numbers is the device serial number and the second set of numbers is the date stamp in the YYYYMMDD format:`124180005110_20250823_163707.zip`
3. Extract the zipped folder and open the extracted folder.

   Multiple messages files might be saved in the extracted folder, so check the date stamp in the file name to select the desired `.gz` file. For example, `messages-20240821-1724273572.gz`

4. Extract the desired messages folder. Right-click the desired message file to open the file with a text editor such as Notepad or Wordpad. The log file opens and is ready for analysis.

Symptoms and solutions

General

Condition	Cause	Remedy
The device does not power up.	A new battery was installed.	Connect AC power to wake up the battery.
	The battery is discharged.	Connect AC power to charge the battery.
	The power switch is defective.	Replace the power switch.
	The power supply is defective.	Check the output voltage on the power supply. The voltage should be 15 V ± 0.45V DC. If it is not, replace the power supply.
	The battery is dead or defective.	Charge the battery for 5 hours. If the battery icon on the display still shows an empty battery symbol, replace the battery.
	The main board is defective.	Replace the main board.
The touchscreen is unresponsive.	Touchscreen needs calibration.	Calibrate the touchscreen. Run the Host Calibration Sequence from the Service Tool. Replace the LCD / touchscreen. Replace the main board.
The device does not signal alarm conditions for the Nurse Call option.	Alarm limit settings are set too high or too low.	Adjust the alarm limit settings.
	Audio alarms have been silenced.	Turn on audio alarms.
	A hardware component has failed.	Run the Host Calibration Sequence from the Service Tool. Replace the main board.
The device is powered on but the display is blank.	The device is in Sleep mode.	Touch the screen.
	A hardware component has failed.	Run the Host Calibration Sequence from the Service Tool. Replace the LCD / touchscreen. Replace the main board.

Wireless radio

Condition	Cause	Remedy
The monitor cannot connect with a Wireless network.	A connectivity issue occurred.	Configure monitor to network settings. Verify local network settings. Ensure that the monitor and the device are within range. Perform a Blackwell radio functional check. Update the device software. Replace the Blackwell radio. Replace the main board.
	A hardware component has failed.	Perform a Blackwell radio functional check. Replace the Blackwell radio. Replace the main board.
	The software has failed.	Update the software. Replace the Blackwell radio. Replace the main board.
Attempt to upgrade the software failed.	The hardware or software between the Host and the Blackwell radio is incompatible.	Retry software update. Replace Blackwell radio. Replace main board.
	The monitor lost communication with the network or a timing issue occurred during the upgrade.	Retry software update. Replace Blackwell radio. Replace the main board.
	The Blackwell radio malfunctioned.	Update the software. Replace Blackwell radio. Replace the main board.
	The main board malfunctioned.	Update the software. Replace the main board.

Ethernet

Condition	Cause	Remedy
The monitor cannot connect to the network.	A connectivity issue occurred.	Verify local network settings. Verify that the port on the network is configured and functional. Perform an Ethernet functional check. Update the software. Replace the main board.
	A hardware failure occurred.	Perform an Ethernet functional check. Replace the main board.
	A software failure occurred.	Update the software. Replace the main board.
Attempt to upgrade the software failed.	The hardware or software between the Host and the Ethernet module is incompatible.	Retry software update. Replace the main board.
	The monitor lost communication with the network or a timing issue occurred during the upgrade.	Retry software update. Replace the main board.
	The Ethernet module malfunctioned.	Update the software. Replace the main board.
	The main board malfunctioned.	Update the software. Replace the main board.

NIBP

Condition	Cause	Remedy
Blood pressure readings are inaccurate.	Incorrect cuff size, improperly placed cuff, or incompatible cuff.	Determine correct cuff size by measuring patient's arm circumference midway between the elbow and the shoulder. Then use a properly sized cuff. Use reference markings on the cuff to place it properly. Use only Baxter cuffs.
	Patient's arm is not positioned properly or moves during blood pressure cycle.	Ensure patient's arm is resting on a surface at heart level. Keep arm still to reduce artifact.

Condition	Cause	Remedy
	Blood pressure cuff is placed over clothing.	Take blood pressure on a bare arm.
	The patient is experiencing arrhythmia.	Check for regularity of heart rate (palpate pulse or check device).
	There is a leak in the pneumatic system.	Ensure all cuff attachments are tight. Carefully check for leaks in blood pressure cuff and tubing attached to the device. Replace the cuff. Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
	The NIBP module needs calibration.	Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
	The NIBP module malfunctioned.	Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
	The single or dual lumen switch failed.	Ensure that the cuff is the properly sized. Clean the cuff connections. Replace the cuff and tubing. Replace the main board.

Condition	Cause	Remedy
The NIBP cuff does not inflate. NIBP is not functioning.	There is a leak in the pneumatic system.	Ensure all cuff attachments are tight. Carefully check for leaks in blood pressure cuff and tubing attached to the device. Replace the cuff. Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
	The NIBP module malfunctioned.	Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
	The main board malfunctioned.	Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
	The single or dual lumen switch failed.	Ensure that the cuff is the properly sized. Clean the cuff connections. Replace the cuff and tubing. Replace the main board.
	The NIBP module needs calibration.	Update the software. Perform NIBP functional checks. Perform NIBP calibration checks. Replace the pump assembly. Replace the main board.
Attempt to upgrade the software failed.	The hardware or software between the Host and the Ethernet module is incompatible.	Retry software update. Replace the main board.
	The monitor lost communication with the network or a timing issue occurred during the upgrade.	Retry software update. Replace the main board.

Temperature

Condition	Cause	Remedy
Temperature measurements are inaccurate.	Probe is placed improperly.	Ensure that the probe is properly placed in the measurement site. For oral temps, place the probe in the most posterior sublingual pocket.
	The probe malfunctioned.	Replace the probe. Perform temperature functional checks.
	The probe cover is faulty or incorrectly attached.	Verify the condition of the probe cover and that it covers the probe completely. Replace the probe cover.
	The probe or the window is dirty or contaminated.	Clean the probe or window. Replace the probe.
	The temperature module malfunctioned.	Update the software. Replace the temperature module. Replace the main board.
	The main board malfunctioned.	Update the software. Replace the main board.
Temperature measurements are not displayed.	The probe is disconnected from the monitor.	Ensure that the temperature probe is connected and seated in the probe well before taking a measurement.
	Probe is placed improperly.	Ensure that the probe is properly placed in the measurement site. For oral temps, place the probe in the most posterior sublingual pocket.
	The probe malfunctioned.	Replace the probe. Perform temperature functional checks.
	The temperature module malfunctioned.	Update the software. Replace the temperature module. Replace the main board.
	A software issue occurred.	Update the software. Replace the temperature module. Replace the main board.

Condition	Cause	Remedy
	The probe or the window is dirty or contaminated.	Clean the probe or window. Replace the probe.
	The main board malfunctioned.	Update the software. Replace the main board.
Attempt to upgrade the software failed.	The hardware or software between the Host and the Ethernet module is incompatible.	Retry software update. Replace the temperature module. Replace the main board.
	The monitor lost communication with the network or a timing issue occurred during the upgrade.	Retry software update. Replace the temperature module. Replace the main board.
	The temperature module malfunctioned.	Update the software. Replace the temperature module. Replace the main board.
	The main board malfunctioned.	Update the software. Replace the main board.
	The temperature module malfunctioned.	Perform temperature functional checks. Update the software. Replace the temperature module. Replace the main board.
	The probe or the window is dirty or contaminated.	Clean the probe or window. Perform temperature functional checks. Replace the probe.
	The main board malfunctioned.	Update the software. Replace the main board.

SpO2

Condition	Cause	Remedy
SpO2 measurements are not displayed.	The sensor is faulty or incorrectly attached.	Connect the sensor to the patient and the device. Replace the sensor. Perform SpO2 functional checks.

Condition	Cause	Remedy
	The sensor is contaminated or dirty.	Clean the optical area of the sensor. Replace the sensor. Perform SpO2 functional checks.
	The SpO2 module malfunctioned.	Perform SpO2 functional checks. Update the software. Replace the SpO2 module. Replace the main board.
	The main board malfunctioned.	Update the software. Replace the main board.
SpO2 measurements are inaccurate.	The sensor is faulty or incorrectly attached.	Connect the sensor to the patient and the device. Replace the sensor. Perform SpO2 functional checks.
	The sensor is contaminated or dirty.	Clean the optical area of the sensor. Replace the sensor. Perform SpO2 functional checks.
	The SpO2 module malfunctioned.	Perform SpO2 functional checks. Update the software. Replace the SpO2 module. Replace the main board.
	The main board malfunctioned.	Update the software. Replace the main board.
Attempt to upgrade the software failed.	The hardware or software between the Host and the SpO2 module is incompatible.	Retry software update. Replace the SpO2 module. Replace the main board.
	The monitor lost communication with the network or a timing issue occurred during the upgrade.	Retry software update. Replace the SpO2 module. Replace the main board.
	The temperature module malfunctioned.	Update the software. Replace the temperature module. Replace the main board.

Condition	Cause	Remedy
	The main board malfunctioned.	Update the software. Replace the main board.
	The device will not initiate update unless the device is plugged into AC power and has a minimum of 15 minutes worth of battery charge.	Plug the device into AC power and let the device charge to a minimum level that supports 15 minutes of use.

Technical alarm and information messages

This section presents tables of technical alarm and information messages, as well as problem descriptions that do not generate messages, to help you troubleshoot issues on the monitor.

NOTE Problem descriptions without messages appear at the end of this section.

When the monitor detects certain events, a message appears in the Device Status area at the top of the screen. Below are the message types.

- Information messages, which appear on a blue background.
- Very low-priority alarms, which appear on a cyan background.
- Low- and medium-priority alarms, which appear on an amber background.
- High-priority alarms, which appear on a red background.

Technical alarm messages are low or very low priority unless noted in the Message column.

Alarm logs are not viewable by clinicians. In the event of an unplanned power failure, all information, including device logs and patient data, are retained on the system.

You can dismiss a message by touching the message on the screen or, for some messages, you can wait for the message to time out.

To use these tables, locate the message that displays on the monitor in the left column of the table. The remainder of the row explains possible causes and suggests actions that can resolve the issue.

NOTE Instructions to "Call for service" in the following tables mean that you should contact qualified service personnel in your facility to investigate the issue.

NIBP messages

Condition	Cause	Remedy	Priority
Alarm limit exceeded. NIBP diastolic High. 050049	Diastolic pressure exceeded the rated measurement range	N/A	High
Alarm limit exceeded. NIBP diastolic Low. 05004A	Diastolic pressure is below the rated measurement range	N/A	High
Alarm limit exceeded. NIBP MAP High. 05004B	MAP pressure exceeded the rated measurement range	N/A	High

Condition	Cause	Remedy	Priority
Alarm limit exceeded. NIBP MAP Low. 05004C	MAP pressure is below the rated measurement range	N/A	High
Alarm limit exceeded. NIBP systolic High. 050047	Systolic pressure exceeded the rated measurement range	N/A	High
Alarm limit exceeded. NIBP systolic Low. 050048	Systolic pressure is below the rated measurement range	N/A	High
User canceled NIBP reading.	The NIBP measurement was canceled by user	Clear the alarm and retry NIBP.	Information
NIBP not functional. 050002	The NIBP measurement is not available	Internal malfunction. If the problem persists, replace the module.	Medium
Unable to determine NIBP; check connections; limit patient movement. 050003	The NIBP measurement may be inaccurate, patient motion occurred, or the settings for patient readings obtained might not be accurate	Make sure the NIBP settings/patient mode is appropriate. If the problem persists, replace the module.	Medium
Unable to determine NIBP; check connections; limit patient movement. 050004	Excessive artifact, no blood pressure parameters could be calculated	Unable to determine blood pressure. Check connections; restrict patient movement. If problem persists, replace module.	Low
Unable to determine NIBP; check inflation settings. 050005	Low inflation on blood pressure measurement attempt	Make sure the NIBP settings/patient mode is appropriate. If the problem persists, replace the module.	Low
Unable to determine NIBP; check connections and tubing for kinks. 050006	The NIBP tubing has a kink, or there is a NIBP transducer calibration failure	Internal malfunction. If the problem persists, replace the module.	Medium
Unable to determine NIBP; check connections; limit patient movement. 050007	The blood pressure measurement dumped too soon	Make sure the NIBP settings/patient mode is appropriate. If the problem persists, replace the module.	Low
Unable to determine NIBP; check connections; limit patient movement. 050008	There were not enough steps on the measurement attempt	Unable to determine blood pressure. Check connections; restrict patient movement.	Low

Condition	Cause	Remedy	Priority
Unable to determine NIBP; check inflation settings. 050009	There is invalid patient information for the selected mode	Make sure the NIBP settings/patient mode is appropriate. If the problem persists, replace the module.	Medium
Unable to determine NIBP; check connections; limit patient movement. 05000A	The re-inflation was too late on the measurement attempt	Unable to determine blood pressure. Check connections; restrict patient movement.	Low
Unable to determine NIBP; check inflation settings. 05000B	There were many re-inflate attempts on the measurement attempt	Unable to determine blood pressure. Check connections; restrict patient movement.	Low
Unable to determine NIBP; check connections and tubing for kinks. 05000C	Couldn't bleed pressure below safe venous return pressure	Unable to release cuff pressure. Check tubing for kinks and connection integrity.	Medium
NIBP air leak; check cuff and tubing connections. 05000D	Leak was detected in BP cycle.	Check the tubing and connections.	Low
No display	The safety check failed on the measurement attempt	Internal malfunction. If the problem persists, replace the module.	
Unable to determine NIBP; check connections; limit patient movement. 05000F	Auto Zero check failure. The NIBP pressure is not stable and the transducer zero value cannot be set	The NIBP pressure is not stable and the transducer zero value cannot be set. If problem persists, replace module.	Medium
NIBP not functional. 050105	WACP message CRC mismatch on NIBP module	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050201	This message is not implemented by the NIBP module	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050202	This message is not supported by the NIBP module	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050203	The NIBP module has run out of memory	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050205	The NIBP module has received a invalid parameter	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
NIBP not functional. 050206	The parameter provided by the NIBP module is outside of the allowable range for the specified message	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050207	The NIBP module message requires an object, but did not contain one	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050208	The NIBP module object provided with the message could not be deserialized	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050209	The NIBP module object could not be serialized	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05020A	The NIBP module message is performing a request or action when the module state prohibits the request or action.	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not calibrated. 050503	Factory EEPROM checksum error on NIBP. Units internal configuration was corrupted	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050504	User EEPROM checksum error. Configuration data which can be set in the user's configuration menu was damaged or lost on NIBP	Calibrate the NIBP Module. If problem persists, replace module.	Very low
NIBP not functional. 050505	Post failure of A/D convertor	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not calibrated. Calibrate the module. 050509	NIBP module calibration failure, the calibration signature is zero	Calibrate the NIBP module.	Very low
Invalid algorithm. Select correct algorithm and retry. 05050A	Invalid NIBP Algorithm. NIBP component software tried to configure the sensor in an illegal manner	Verify the correct algorithm. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
NIBP not functional. 050513	Invalid NIBP initiation code	Internal malfunction. If the problem persists, replace the module.	Very low
Invalid patient mode. Select correct patient mode and retry. 050514	Invalid patient mode on NIBP. The NIBP component software tried to configure the sensor in an illegal manner	Verify correct patient mode. If the problem persists, replace the module.	Very low
NIBP not functional. 050515	Invalid module configuration for NIBP	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050516	NIBP module malfunction	Internal malfunction. If the problem persists, replace the module.	Very low
Ambient temperature out of range. Clear error and retry. 050517	Ambient temp out of range on NIBP	Restore device to normal temperature ranges and try again.	Very low
Low battery. Plug into outlet. 050518	The NIBP module power rail is too low	Plug device into an AC outlet to charge the battery.	Very low
Battery overcharged. Disconnect from outlet. 050519	The NIBP module power rail is too high.	Battery is overcharged. Remove from charging source.	Very low
NIBP not calibrated. Calibrate the module. 050601	NIBP failed to load safety processors calibration record from EEPROM	Calibrate the NIBP module. If the problem persists, replace the module.	Very low
NIBP not functional. 050602	NIBP safety processor failed ROM checksum	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not calibrated. Calibrate the module. 050603	NIBP safety processor not calibrated, missing calibration signature	Calibrate the NIBP module. If the problem persists, replace the module.	Very low
Cuff pressure limits exceeded. 050604	NIBP system failure. Overpressure	Restrict patient movement.	Medium
Premature auto cycle skipped. 050605	NIBP auto cycle skipped, SVRP requirement not satisfied	Cuff pressure is not below safety return pressure long enough to allow a cycle to occur.	Very low
Cuff pressure too high. Clear error to retry. 050606	NIBP cuff pressure above SVRP for too long	Verify cuff connections. If the problem persists, replace the module.	Medium
NIBP not functional. 050607	NIBP cannot clear the failsafe alerts	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
NIBP not functional. 050608	NIBP safety processor has stopped responding	Internal malfunction. If the problem persists, replace the module.	Very low
Stat mode requested too soon. Clear to retry. 050609	NIBP excessive stat mode time. The time between readings is less than one minute and the readings plus time between readings result in the device taking over 15 minutes to complete the averaging cycle.	Internal malfunction. If the problem persists, replace the module.	Very low
Unable to determine NIBP; check connections and tubing for kinks. 05060A	NIBP transducers are not matched	The transducers are above 5 mmHg and the difference in pressure is greater than 40 mmHg. Check cuff for pinched or obstructed tubing. If the problem persists, replace the module.	Medium
NIBP not calibrated. Calibrate the module. 05060B	Factory EEPROM checksum error on NIBP. Units internal configuration was corrupted	Calibrate the NIBP module. If the problem persists, replace the module.	Very low
NIBP not functional. 05060C	NIBP command not implemented	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05060D	NIBP wrong data count	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05060E	NIBP data range error	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05060F	NIBP no POST error to clear	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050610	NIBP cannot clear this POST error	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050611	NIBP command not command type	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050612	NIBP communication timeout	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050613	NIBP response header wrong	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
NIBP not functional. 050614	NIBP response checksum wrong	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050615	Too much NIBP data was received	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050616	NIBP FPROM erase error	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050617	NIBP FPROM programming error	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 050618	Invalid NIBP target pressure	Internal malfunction. If the problem persists, replace the module.	Very low
Tube type does not match device configuration.	Tube type settings and actual type do not match	Change tube type setting to match actual tube type	Information
NIBP not functional. 05FF01	Unrecognized WACP parameter received from sensor	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF02	Timeout waiting for sensor response	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF03	Error deserializing the WACP message received from the sensor	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF04	WACP stack send message failure	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF05	Timeout waiting for asynchronous sensor message	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF06	One or more undetermined numerics when reading status indicates OK	Check connections. Restrict patient movement.	Very low
NIBP not functional. 05FF07	Unrecognized sensor reading status code	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF08	Sensor power up failure	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF09	WACP rendezvous failure	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
NIBP not functional. 05FF0A	Application firmware retrieval error during POST	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF0B	Upgrade `.pim` file is corrupt	Internal malfunction. If the problem persists, replace the module.	Very low
NIBP not functional. 05FF0C	Configured upgrade firmware directory cannot be accessed	Internal malfunction. If the problem persists, replace the module.	Very low
Device configuration issue. 05FF0D	Configured parameter (NIBP or SpO2) used in Intervals is missing	Use configured parameters for Intervals	Very low
NIBP not functional. 05FF0E	The NIBP sensor unexpectedly reset	Clear the error and try again	Very low
NIBP not functional. 05FF0F	The NIBP sensor firmware failed to upgrade	Internal malfunction. If the problem persists, replace the module.	Very low
Tube type does not match device configuration.	The tube type settings and the actual tube type do not match	Change the tube type setting to match the actual tube type.	Information

SpO2 messages

General SpO2 messages

NOTE If the SpO2 measurement value does not change or remains blank after measuring for 30 seconds, replace the SpO2 sensor and extension cable.

Condition	Cause	Remedy	Priority
SpO2 not functional. 044900	SpO2 module is not responding	Internal Hardware malfunction in SpO2 module. Replace module.	Very low
SpO2 not functional. SpO2 rebooting. 044a00	SpO2 module is not responding	Informational error. Indicates that host software is attempting to clear an error by rebooting the SpO2 module. No action required.	Very low
SpO2 not functional. SpO2 rebooting. 044b00	The SpO2 module stopped sending data	Informational error. The host software is attempting to clear an error by rebooting the SpO2 module. No action required.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 044c00	SpO2 received a packet with bad CRC from module	Informational error. The host has received a packet with bad CRC from the SpO2 module. The packet in question is ignored. No action required.	Very low
SpO2 not functional. SpO2 rebooting. 044d00	The SpO2 power on self test failed	Internal hardware malfunction in SpO2 module. Replace the module.	Very low
SpO2 not functional. SpO2 rebooting. 044e00	The SpO2 power on self test timed out	Internal hardware malfunction in SpO2 module. Replace the module.	Very low

Masimo messages

Condition	Cause	Remedy	Priority
SpO2 cable is not connected. 040600	The SpO2 cable is not connected	Connect SpO2 cable. If the problem is still present, replace the SpO2 sensor. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Replace the SpO2 cable. 040700	The SpO2 cable life has expired	Replace the SpO2 cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Replace the SpO2 cable. 040800	The SpO2 cable is incompatible with the monitor	Replace the SpO2 cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Replace the SpO2 cable. 040900	The SpO2 cable is not recognized by the monitor	Replace the SpO2 cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Replace the SpO2 cable. 040a00	The SpO2 cable is defective	Replace the SpO2 cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Attach SpO2 sensor to monitor. 040b00	The SpO2 sensor is not connected to the monitor	Connect SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
The sensor has expired. Replace the SpO2 sensor. 040c00	The SpO2 sensor has expired	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Incompatible sensor. Replace the SpO2 sensor. 040d00	The SpO2 sensor is not recognized by the monitor	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Incompatible sensor. Replace the SpO2 sensor. 040e00	The SpO2 sensor is not recognized	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Replace the SpO2 sensor. 040f00	The SpO2 sensor is defective	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Replace the SpO2 sensor. Replace the SpO2 cable. 041000	There was a fault with the SpO2 sensor and cable.	Check the sensor and cable connection. If the problem is still present, replace the SpO2 sensor. If the problem is still present, replace the cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists replace the module.	Very low
Attach SpO2 sensor to monitor. 041100	An adhesive SpO2 sensor is not connected	Connect SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
The sensor has expired. Replace the SpO2 sensor. 041200	The adhesive SpO2 sensor is expired	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Incompatible sensor. Replace the SpO2 sensor. 041300	The adhesive SpO2 sensor is incompatible	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Incompatible sensor. Replace the SpO2 sensor. 041400	The adhesive SpO2 sensor is not recognized	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Replace the SpO2 sensor. 041500	The adhesive SpO2 sensor is defective	Replace SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
Searching for pulse signal. 041800	SpO2 pulse search	Pulse search is part of normal operation, and does not have an associated corrective action.	High
SpO2 interference detected. Clear to retry. 041900	SpO2 module interference detected.	Reapply the sensor to the patient. If problem is still present replace SpO2 sensor. If the problem is still present, replace cable. If the problem is still present, verify the module functionality by replacing the sensor with the applicable SpO2 tester. If the message persists, replace the module.	Very low
Low perfusion index. Clear to retry. 041a00	There is marginal SpO2 pulse quality or artifact.	Reapply the sensor to the patient. If problem still present replace SpO2 sensor, if problem still present replace cable, if problem still present verify module functionality by replacing the sensor with the applicable SpO2 tester. If the message persists replace the module.	Very low
Demo mode active. 041b00	The SpO2 parameter is in demo mode	None. [1]	Very low
Sensor not connected. Clear to retry. 041c00	Check the SpO2 sensor connection	Check the sensor and cable connection. If the problem is still present, replace the SpO2 sensor. If the problem is still present, replace the cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists replace the module.	Very low

[1] Demo mode is reported when you plug a Masimo demo tool into the patient cable connector. This tool simulates a patient being connected, and is only used in a development environment. Because this tool simulates a patient without a patient actually being connected, it should NEVER be present in a clinical setting.

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 041e00	There is an SpO2 raw queue overrun	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 041f00	There is an SpO2 hardware failure	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042000	There is an SpO2 MCU failure	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042100	There is an SpO2 watchdog failure	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 042200	SpO2 not functional or there is an invalid SpO2 board type	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042300	There is an invalid SpO2 master control state	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042400	There is an SpO2 SRAM transfer failure	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042500	There is an SpO2 SRAM task queue overrun	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 042600	There is an SpO2 database failure	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042700	There is an invalid SpO2 flash memory device	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042800	There is an SpO2 anode voltage configuration failure	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042900	There is a problem with the SpO2 analog ground	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 042a00	There is a problem with the SpO2 digital ground	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042b00	There is a problem with the SpO2 LED ground	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042c00	There is a problem with the SpO2 reference voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042d00	There is a problem with the SpO2 DSP core voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 042e00	There is a problem with the SpO2 filtered input voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 042f00	There is a problem with the SpO2 DSP I/O voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043000	There is a problem with the SpO2 positive detector voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043100	There is a problem with the SpO2 negative detector voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 043200	There is a problem with the SpO2 positive LED Voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043300	There is a problem with the SpO2 LED drive voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043400	There is a problem with the SpO2 positive preamp voltage	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043500	There is a problem with the SpO2 Sensor ID	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 043600	There is a problem with the SpO2 thermistor	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043700	There is a problem with the SpO2 LED current	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 043800	There is a problem with the SpO2 preamp	A malfunction is detected. There are two possible causes of these failures. First, the power provided to the board is out of specification. In this case, the failure may be cleared once the underlying cause is removed. Second, the board has an actual hardware failure and recovery is not possible. It is recommended that the SpO2 module be replaced, and if problem is still present replace the monitor's main board.	Very low
SpO2 not functional. SpO2 rebooting. 044300	The SpO2 module received bad packet	There is an internal software malfunction in the main PCBA. Update the software. If the problem persists, replace the module.	Very low
SpO2 not functional. SpO2 rebooting. 044400	The SpO2 module received an invalid command	There is an internal software malfunction in the main PCBA. Update the software. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
SpO2 not functional. SpO2 rebooting. 044500	The SpO2 module received a command that would result in more output than the baud rate can support	There is an internal software malfunction in the main PCBA. Update the software. If the problem persists, replace the module.	Very low
SpO2 not functional. SpO2 rebooting. 044600	The SpO2 module received a command that requires an application that is not present	There is an internal software malfunction in the main PCBA. Update the software. If the problem persists, replace the module.	Very low
SpO2 not functional. SpO2 rebooting. 044700	The SpO2 module received a command while still locked	There is an internal software malfunction in the main PCBA. Update the software. If the problem persists, replace the module.	Very low
SpO2 low signal quality. Check sensor. 044F00	SpO2 low Sat signal quality	Reapply the sensor to the patient. If the problem is still present, replace the SpO2 sensor. If the problem is still present, replace the cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
SpO2 low signal quality. Check sensor. 045000	Low PR confidence	Reapply the sensor to the patient. If the problem is still present, replace the SpO2 sensor. If the problem is still present, replace the cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
SpO2 low signal quality. Check sensor. 045100	Low PI confidence	Reapply the sensor to the patient. If the problem is still present, replace the SpO2 sensor. If the problem is still present, replace the cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
SpO2 sensor near expiration. Replace the SpO2 sensor. 045200	SpO2 cable near expiration.	Replace SpO2 cable, if problem still present verify module functionality by replacing the sensor with the applicable SpO2 tester. If the message persists replace the module.	Very low
SpO2 sensor near expiration. Replace the SpO2 sensor. 045300	SpO2 sensor near expiration.	Replace SpO2 sensor, if problem still present replace cable, if problem still present verify module functionality by replacing the sensor with the applicable SpO2 tester. If the message persists replace the module.	Very low
SpO2 sensor near expiration. Replace the SpO2 sensor. 045400	SpO2 adhesive sensor near expiration.	Replace SpO2 sensor, if problem still present replace cable, if problem still present verify module functionality by replacing the sensor with the applicable SpO2 tester. If the message persists replace the module.	Very low
Masimo programming mode started.	Masimo upgrade tool was connected and programming mode was requested by the tool. Masimo programming mode started.	Masimo programming mode started.	Information
Masimo programming mode complete.	Masimo programming mode complete.	Masimo programming mode complete.	Information
Masimo programming mode failed.	Masimo programming mode failed `<error condition>`.	Retry programming.	Information

Nellcor messages

Condition	Cause	Remedy	Priority
Sensor not connected. Clear to retry. 043900	The SpO2 sensor is not connected	Connect SpO2 sensor. If the problem is still present, replace the SpO2 cable. If the problem is still present, verify the module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Searching for pulse signal. 043a00	SpO2 pulse search	None[2]	High
SpO2 interference detected. Clear to retry. 043c00	SpO2 module interference detected.	Reapply the sensor to the patient. If the problem is still present, replace the SpO2 sensor. If the problem is still present, replace the cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
SpO2 not functional. SpO2 rebooting. 043d00	SpO2 module hardware error	A module hardware error is detected. Replace module.	Very low
SpO2 not functional. SpO2 rebooting. 043e00	SpO2 module hardware error	A module hardware error is detected. Replace module.	Very low
SpO2 rebooting. 043f00	SpO2 module software error	A module software error is detected. Wait for module to reset itself.	Very low
SpO2 not functional. SpO2 rebooting. 044000	SpO2 module received a bad message	Error indicates bug in main board software. If the problem persists, attempt to update the software or replace the module.	Very low
Replace the SpO2 sensor. 044100	SpO2 defective sensor.	Replace the SpO2 sensor. If the problem is still present, replace the SpO2 sensor a second time. If the problem is still present, replace the cable. If the problem is still present, verify module functionality by replacing the sensor with an applicable SpO2 tester. If the message persists, replace the module.	Very low
SpO2 not functional. SpO2 rebooting. 044200	The SpO2 module received a bad message	Error indicates bug in main board software. If the problem persists, attempt to update the software or replace the module.	Very low

[2] Pulse search is a normal part of operation and does not have an associated corrective action.

Temperature messages

SureTemp thermometer messages

Condition	Cause	Remedy	Priority
Alarm limit exceeded. Temperature High. 03000D	Temperature exceeded the rated measurement range	N/A	Medium
Alarm limit exceeded. Temperature Low. 03000E	Temperature is below the rated measurement range	N/A	Medium
Temperature not functional. 030105	WACP message CRC mismatch on temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030201	This message is not implemented by the temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030202	This message is not supported by the temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030203	The temperature module has run out of memory.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030204	No parameter provided for the specified message.	Internal malfunction. If the problem persists, replace the module.	
Temperature not functional. 030205	The temperature module received a invalid parameter	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030206	The parameter provided by the temperature module is outside of the allowable range for the specified message.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030207	The temperature module message requires an object, but did not contain one.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030208	The temperature module object provided with the message could not be deserialized.	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Temperature not functional. 030209	The temperature module object could not be serialized.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03020A	The temperature module message is performing a request/action when the module state prohibits the request/action.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03020B	The temperature module requested item is not currently available due to the module state.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030503	The temperature module factory settings, and calibration information is corrupt.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030504	The temperature module user settings are corrupt.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030509	The temperature module calibration is not set.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03050C	The temperature module error log is corrupt.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030516	A hardware malfunction on the temperature module has been detected.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030518	The temperature module power rail is too low.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030519	The temperature module power rail is too high.	Internal malfunction. If the problem persists, replace the module.	Very low
Unable to detect new temperature. Retry measurement. 03051A	The temperature module reference voltage circuit was detected to be under voltage or unstable.	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Ambient temperature out of range. Clear to retry. 030801	The temperature module measurement is below the allowable temperature values and beyond the low ambient or patient limits.	Verify conditions are greater than 50 °F or 10 °C. If conditions are valid and the problem persists, replace the probe. If the problem still persists, replace the module.	Very low
Ambient temperature out of range. Clear to retry. 030802	The temperature module measurement is above the allowable temperature values and beyond the high ambient or patient limits.	Verify conditions are less than 104 °F or 40 °C. If conditions are valid and the problem persists, replace the probe. If the problem still persists, replace the module.	Very low
Temperature not functional. 030803	The temperature module internal calibration resistor (RCAL) on the board is damaged or contaminated (pulse too long).	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030804	The temperature module internal calibration resistor (RCAL) on the board is damaged or contaminated (pulse too short).	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030805	The temperature module internal circuit validation resistor (PTB) on the board is damaged (value is over).	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030806	The temperature module internal circuit validation resistor (PTB) on the board is damaged (value is under).	Internal malfunction. If the problem persists, replace the module.	Very low
Ambient temperature out of range. Clear to retry. 030807	The temperature module A/D measurement timed out	Verify conditions are greater than 50 °F or 10 °C. If conditions are valid and the problem persists, replace the probe. If the problem still persists, replace the module.	Very low
Replace temperature probe. 030808	The temperature module probe was not characterized/calibrated	Probe malfunction. Replace the probe. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Temperature not functional. 03080A	The temperature module has a problem saving to the monitor EEPROM in biotech mode	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03080B	The temperature module error detection mechanism detected an error	Internal malfunction. If the problem persists, replace the module.	Very low
Replace temperature probe. 03080C	The temperature module probe error detection mechanism detected an error	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 03080D	The temperature module log error detection mechanism detected an error	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 03080E	The temperature module calibration error detection mechanism detected an error	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Connect temperature probe. 03080F	The temperature module detected no probe connected	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Replace temperature probe. 030810	The temperature module cannot read the probe's EEPROM correctly.	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 030811	The temperature module has an invalid events index	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030812	There is a problem reading the temperature module EEPROM or saving to the monitor EEPROM in biotech mode.	Internal malfunction. If the problem persists, replace the module.	Very low
Replace temperature probe. 030813	The temperature module has a problem reading the probe EEPROM.	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 030814	The temperature module TEMP CONFIG ACQUIRE FAILURE	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Temperature not functional. 030815	The temperature module TEMP CONFIG RELEASE FAILURE	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030816	The temperature module TEMP CONFIG INVALID PTR FAILURE	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030817	The temperature module internal error. EEPROM not initialized	Internal malfunction. If the problem persists, replace the module.	Very low
Unable to detect new temperature. Retry measurement. 030818	The temperature module heater indicates on when turned off.	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Unable to detect new temperature. Retry measurement. 030819	The temperature module heater indicates off when turned on.	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 03081A	The temperature module HTR_Q is on and HTRC is off but still has voltage.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03081B	The temperature module HTR_Q is tri-stated with HTRC enabled and has heater power.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03081C	The temperature module turned Q&C on and the heater voltage is not high enough.	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03081D	The temperature module heater hardware failsafe should have turned off but did not.	Internal malfunction. If the problem persists, replace the module.	Very low
Replace temperature probe. 03081E	The temperature module probe is above 112°F or 44.4°C.	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Replace temperature probe. 03081F	The temperature module has excessive heater energy	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 030820	Temperature module host interface error	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Ambient temperature out of range. Clear to retry. 030821	The temperature module is over ambient 45 °C temp	Verify conditions are less than 104 °F or 40 °C. If conditions are valid and the problem persists, replace the probe. If the problem still persists, replace the module.	Very low
Ambient temperature out of range. Clear to retry. 030822	The temperature module is under ambient temp	Verify conditions are greater than 50 °F or 10 °C. If conditions are valid and the problem persists, replace the probe. If the problem still persists, replace the module.	Very low
Temperature not functional. 030823	The temperature module has an invalid **SureTemp** algorithm	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030824	The temperature module is over max battery volts	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030825	The temperature module is under min battery volts	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030826	The temperature module battery volts not set	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030827	The temperature module predict algorithm is not set	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 030828	The temperature module ambient temp is not set	Internal malfunction. If the problem persists, replace the module.	Very low
Replace temperature probe. 030829	The temperature module has a non-responsive probe. The thermistor has pulled away from the tip or the heater is broken.	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Replace temperature probe. 03082A	The temperature module is experiencing bad probe gain	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Replace temperature probe. 03082B	The temperature module has a bad probe response value	Probe malfunction. Replace probe. If the problem persists, replace the module.	Very low
Temperature not functional. 03C800	The temperature module is not functional	Internal malfunction. If the problem persists, replace the module.	Very low

Condition	Cause	Remedy	Priority
Temperature not functional. 03C900	Unable to deserialize messages from the temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03CA00	Unsupported message received from the Temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03CB00	Unable to send message to the Temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03CC00	Temperature module communication times out	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03CD00	Failed to upgrade the temperature module	Internal malfunction. If the problem persists, replace the module.	Very low
Temperature not functional. 03CE00	Unable to read PIM file	Retry the device update.	Very low
Temperature not functional. 03CE01	Upgrade file directory could not be accessed	Retry the device update.	Very low
Direct mode reading timed out	Direct mode reading times out	Direction mode reading times out	Information
Tissue contact lost.	Lost tissue contact while attempting to acquire a temperature measurement or acquired measurement was performed with limited tissue contact.	Check the tissue contact and try the measurement again.	Information
Temperature module reset. 03D000	Temperature sensor reset unexpectedly	Information status message; press OK button to dismiss.	Very low

Patient and Clinician data messages

Condition	Cause	Remedy	Priority
Patient list update successful.	The patient list was successfully updated from the host system.	Information status message; press OK button to dismiss.	Information
Patient list query timeout exceeded.	The patient list retrieval was aborted as it exceeded the maximum allowed time.	Check your network connectivity settings and ensure the device location ID matches your host system.	Information

Condition	Cause	Remedy	Priority
Unable to retrieve list.	Unable to retrieve or update the patient list.	Check your network connectivity settings and ensure the device location ID matches your host system.	Information
Your login time has expired. Re-enter your password.	Single Sign-on login time expired.	Password authentication is required.	Information
Your login time has expired. Re-enter your PIN.	Single Sign-on login time expired.	PIN authentication is required.	Information
Clinician logout is not allowed during intervals.	Clinician logout not allowed when intervals are running.	Stop intervals program and attempt logout again.	Information
Unable to identify clinician. No provider configured at host.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician. Security provider error.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician. User not found.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician. Invalid ID or system password.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician. Account disabled/expired.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician. Password expired/reset required.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician. Group membership error.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify clinician.	Clinician authentication failure	Information status message; press OK button to dismiss.	Information
Unable to identify patient.	Patient authentication failure	Information status message; press OK button to dismiss.	Information

Condition	Cause	Remedy	Priority
Badge not accepted. Rescan badge on the login screen.	Badge scan not accepted	Rescan badge on the login screen.	Very Low
Database schema out of date; recreating.	The database was cleared due to a schema update	Information status message; press OK button to dismiss.	Information
Database is unreadable during startup; recreating. 1F0001	The database was unreadable during startup	Press OK button to dismiss.	Very low
Error accessing PDM database; restarting PDM. 1F0002	Error accessing PDM database; restarting PDM	Press OK button to dismiss.	Very low
Maximum number of patient records + Oldest record overwritten.	Maximum number of patient records + Oldest record overwritten	Information status message; press OK button to dismiss.	Information
No data saved.	A manual save is not allowed	Information status message; press OK button to dismiss.	Information
Save successful.	Log saved successfully	Information status message; press OK button to dismiss.	Information
Patient ID required to save data.	A Patient ID is required to save data	Information status message; press OK button to dismiss.	Information
Patient ID required to start intervals.	A Patient ID is required to start intervals	Information status message; press OK button to dismiss.	Information
Clinician ID required to save data.	A Clinician ID is required to save data	Information status message; press OK button to dismiss.	Information
Clinician ID required to start intervals.	A Clinician ID is required to start intervals	Information status message; press OK button to dismiss.	Information
Patient ID match required to save data.	A Patient ID match is required to save data	Information status message; press OK button to dismiss.	Information
Patient ID match required to start intervals.	A Patient ID match is required to start intervals	Information status message; press OK button to dismiss.	Information
Clinician ID match required to save data.	A Clinician ID match is required to save data	N/A	Information
Clinician ID match required to start intervals.	A Clinician ID match is required to start intervals	N/A	Information

Condition	Cause	Remedy	Priority
Unable to auto save.	The device was unable to auto save	Information status message; press OK button to dismiss.	Information
Barcode scan not accepted.	Barcode scanning is not available	Information status message; press OK button to dismiss.	Information
Invalid NIBP interval parameter during interval capture.	An invalid interval parameter was detected.	Information status message; press OK button to dismiss.	Information
Save successful.	The auto save is successful	Information status message; press OK button to dismiss.	Information
Unsent records: N of M	There are unsent records waiting when the device is powered down	Information status message; press OK button to dismiss.	Information
Invalid SpO2 interval parameter during interval capture.	An invalid interval parameter was detected. SpO2 intervals are enabled or SpO2 sensor was removed	Either stop the intervals or reattach the SpO2 sensor. Information status message; press OK button to dismiss.	Information

Radio messages

Condition	Cause	Remedy	Priority
Radio not functional. 350000	Internal software error on the radio	Check for a software update and apply it. If still present, replace the radio.	Very low
Lost network communications. 350400	Radio lost association	Ensure the access point is still powered on and in range. If your facility has turned off radio alarms, an Information message will display instead of an alarm message.	Very low
Lost network communications.	Radio lost association	Ensure the access point is still powered on and in range. Ensure the radio/network settings are configured correctly.	Information
Invalid radio configuration. Reconfigure and try again. 350700	Radio configuration is invalid.	Check the radio configuration. If problem is still present, reset the radio to factory defaults. If the problem persists, check for software update and apply it. If still present, replace the radio.	Very low

Condition	Cause	Remedy	Priority
Radio certificate is out of date. 350800	Indicates that the radio certificate is out of date. The date, time, or time zone may be incorrect causing the certificate to not be in the valid date range.	Date, time, or time zone needs to be set properly, or the certificate needs to be updated.	Very low

Connectivity messages

Condition	Cause	Remedy	Priority
Error in record. Try again.	Connectivity NACK received for NRS/ECS/CS/NCE	NRS/ECS/CS/NCE NACK that is record specific and can be fixed by a clinician in the next record	Information
Unable to obtain wired device IP address. 210000	No wired connection	Verify DHCP functionality and configuration.	Very low
Network not found; check network cable connection. 210100	Lost ethernet DHCP address	Check wired connection into device then verify DHCP functionality and configuration.	Very low
Communication error with host. 1A0000	Communication timeout failure with external Host	Verify the external host services are loaded and started on the server. If the problem persists, check for available software upgrades of the monitor or the system.	Very low
Data rejected. CRC mismatch. 1A0001	External Host NACK - The WACP stack has detected a CRC mismatch in the message	Check the data and try again. If the problem persists, contact your system administrator.	Very low
Data rejected. Unsupported message. 1A0002	External Host NACK - The host does not support the message/object.	Check the monitor and try again. If the problem persists, contact your system administrator.	Very low
Data rejected. Invalid parameter. 1A0003	External Host NACK - The message has an invalid parameter	Check the data and try again. If the problem persists, contact your system administrator.	Very low
Data rejected. Deserialize the object. 1A0004	External Host NACK - The device failed to deserialize the object	Check the data and try again. If the problem persists, contact your system administrator.	Very low
Data rejected. Unsupported message. 1A0005	External Host NACK - The host is in a state that can't accept the message	Check the data and try again. If the problem persists, contact your system administrator.	Very low

Condition	Cause	Remedy	Priority
Data rejected. Patient ID required. 1A0006	External Host NACK - The message has a missing patient ID	Add the patient ID to the record.	Very low
Data rejected. Clinician ID required. 1A0007	External Host NACK - The message has a missing clinician ID	Add the clinician ID to the record.	Very low
Data rejected. Time mismatch. 1A0008	External Host NACK - The message has a mismatch time	Ensure the date or time on the monitor and the server match.	Very low
Unable to establish network communications. 1A0009	No network connection is available	Connect the device to an active network so that the clinician ID can be imported.	Very low
No connection for send.	No connection for send.	Information status message; press OK button to dismiss.	Information
Send successful.	Data was successfully sent	Information status message; press OK button to dismiss.	Information
Send not successful.	Send not successful.	Information status message; press OK button to dismiss.	Information
Client certificate used for Service Host connection expired.	Client certificate used for EMR Host connection expired.	Client certificate used for Service Host connection expired.	Information
Client certificate used for EMR Host connection expired. 1A000B	Client certificate used for EMR Host connection expired.	Update the client certificate for Service Host connection.	Very low
Unable to connect due to invalid client certificate. 1A000A	Unable to connect due to invalid client certificate	Update the client certificate.	Very Low
Client certificate for Service Host expires within 30 days.	Client certificate used for Service Host connection expires within 30 days.	Update the client certificate for Service Host connection.	Information
Client certificate expires within 30 days.	Client certificate expires within 30 days.	Client certificate used for EMR Host connection expires within 30 days.	Information
Client certificate not loaded.	N/A	Load a valid client certificate.	Information
Client certificate load successful.	Client certificate successfully loaded.	Information status message; press OK button to dismiss.	Information

Condition	Cause	Remedy	Priority
Client certificate was not successfully loaded. Invalid certificate format.	Client certificate was not successfully loaded. Invalid certificate format.	Information status message; press OK button to dismiss.	Information
Client certificate was not successfully loaded. Outside of valid date range.	Client certificate load failed. Outside of valid date range.	Information status message; press OK button to dismiss.	Information
Synchronize successful.	Synchronize successful.	Information status message; press OK button to dismiss.	Information
Synchronize failed.	Synchronize failed.	Information status message; press OK button to dismiss.	Information

System messages

Condition	Cause	Remedy	Priority
Internal hardware failure.	Nurse call port failed to activate.	Internal malfunction. If the problem persists, check cable connections. If the problem is still present, perform functional checks for the host. If the problem is still present, replace main board and nurse call relay.	High
The scanner is not properly configured.	Barcode/RFID scanner is not configured as expected for Single Sign-on.	Device software detects a Jadak HS1R scanner attached and the scan data received does not have the correct identifiers then this alert is triggered. Reconfigure the Scanners for Single Sign on.	Very Low
	System failure	Press and hold the power button or remove the AC power and battery to reboot the monitor.	N/A
000000	System failure	Restart the monitor	N/A
Device is operating in battery mode.	Operating on Battery Mode	AC power cord has been disconnected	Information
Sleep mode is unavailable. Intervals monitoring is in progress.	Sleep mode is not allowed when intervals are in progress.	Stop any active intervals.	Information
Sleep mode is unavailable. An alarm is active.	Sleep mode is not allowed when alarms are active.	Clear all active alarms.	Information

Condition	Cause	Remedy	Priority
Internal hardware failure.	The root file system is corrupted; restart not possible	Restart the monitor. If the problem persists, replace the main PCBA.	N/A
Internal hardware failure.	SPL memory test failure, the monitor will sound an SOS pattern	Restart the monitor. If the problem persists, replace the main PCBA.	N/A
Internal hardware failure. 1C1000	The monitor PIC communications never starts or quits. The communication won't reasonably recover at startup or during operation	Restart the monitor. If the problem persists, replace the main PCBA.	N/A
Low battery 30 minutes or less remaining. 1C1005	The battery power is low	Connect the power supply to AC power to charge the monitor.	Very low
Low battery 5 minutes or less remaining. 1C1006	The battery power is extremely low	Connect the power supply to AC power to charge the monitor.	High
Battery is critically low; plug into outlet. Device is shutting down. 1C1007	The battery power is critically low	Connect the power supply to AC power to charge the monitor.	High
Update unsuccessful. Reboot and retry. 1C1008	The software update failed	Restart the monitor. If the problem is still present, replace the main PCBA.	Very low
Host battery not charging. 1C100A	The host battery is not charging	Restart the monitor. If the problem is still present, check cable connections. If the problem is still present, perform functional checks for host. If the problem is still present, replace battery. If the problem persists, replace the main PCBA.	Very low
Factory default settings now active. 3A0001	The factory configuration settings are active	The monitor has been configured to factory defaults, any user settings have been reset.	Very low
Unable to read configuration from USB. 3A0002	Unable to load file from the external USB memory device.	Retry the USB connection. If the problem is still present, check for a proper format of the USB drive. If the problem is still present, replace the USB device. If the problem persists, replace the main PCBA.	Very low

Condition	Cause	Remedy	Priority
Internal hardware failure. Device will shut down. 1C100D	Power supply issue. The PMIC is too hot	Check the operating environment temperature. Allow the monitor to cool down before operating again. If the problem is still present, check the cable connections. If the problem is still present, perform functional checks for host. If the problem is still present, replace the battery. If the problem is still present, replace the main PCBA.	High
Unexpected restart occurred. 1C1012	The monitor unexpectedly restarted	Continue normal operation	High
Audio system not functional 1D0100	The speaker or audio codec is faulty	Replace speaker. If the problem is still present, replace the main PCBA.	High
Connex 360 battery is not installed. 1C100E	There is no battery in the monitor	Check the monitor for a battery and install one if it is missing. If the problem is still present, perform diagnostic checks on the monitor. If the problem persists, replace the main PCBA.	Very low
No valid files found	No valid files were found on the USB flash drive	Re-insert the USB flash drive with valid files.	Information
Firmware update successful.	The software successfully updated	Information status message; press OK button to dismiss.	Information
Audio alarms are off.	The monitor alarm audio is off	Information status message; press OK button to dismiss.	Information
Advanced settings unavailable.	The advanced settings are unavailable because the monitor is not in an idle state	Confirm that no sensors are attached to the monitor, no alarms are active, and there is no unsaved data.	Information
USB accessory disconnected.	The USB device was disconnected from the monitor	Information status message; press OK button to dismiss	Information
Advanced settings	The Advanced settings code was entered correctly	Information status message; Exit Advanced settings to dismiss.	Information
Save not successful.	The device configuration or logs were not saved to the USB device	Information status message; press OK button to dismiss	Information

Condition	Cause	Remedy	Priority
Save successful.	The device configuration or logs were saved to the USB device	Information status message; press OK button to dismiss	Information
Factory reset failed. Custom configuration file not deleted.	The monitor factory reset has failed.	Information status message; Exit Advanced settings to dismiss.	Information
Configuration upload successful.	The device configuration has successfully uploaded	Information status message; press OK button to dismiss	Information
Unable to load configuration.	The device configuration was not successfully uploaded	N/A	Information

Software update messages

Condition	Cause	Remedy	Priority
Software Update: Installation failed. Reboot and retry.	Failure to install subsystem	Restart the monitor.	Information
Software Update: Manager internal error	Software update manager internal error	Information status message; click OK button to dismiss.	Information

Specifications

Physical specifications

Protection classifications, all monitor configurations

Characteristic	Specification
Electrical rating	Input: 100 – 240 V AC, 50/60 Hz, 1.5 A Output: 15 V DC, 4.33 A , 65 W MAX
Duty cycle	Continuous operation
Type of protection against electric shock	Class I external power supply
Degree of protection against electric shock, for parts applied to patients	Type BF defibrillator proof IEC EN 60601-1, 2nd and 3rd Editions
Recovery time following defibrillator discharge	Less than or equal to 15 seconds
Flammable anesthetics	**WARNING** Not suitable for use with flammable anesthetics.
Degree of protection provided by the enclosure with respect to harmful ingress of liquids	IP22 protection against vertically falling water drops when enclosure tilted up to 15°
Degree of protection provided by the enclosure with respect to harmful ingress of solid objects	IP22 protection against ingress of solid objects > 12.5mm in diameter
Height	Standard chassis: 9.43 in. (239.4 mm)
Width	Standard chassis: 15.96 in. (405.5 mm)
Depth	Standard chassis: 6.07 in. (154.3 mm)
Weight (including battery)	Standard chassis with **SureTemp**: 12 lb 5.44 kg

Graphical display resolution

Characteristic	Specification
Dimensional outline	12.5 in. (W) x 8.7 in. (H) x 0.65 in. (D) (318.50 mm [W] x 221.70 mm [H] x 16.6 mm [D])
Active area	10.32 in. (W) x 6.46 in. (H) (262.12 mm [W] x 164.20 mm [H])
Resolution	1280 x 800 pixels
Pixel arrangement	RGB (red, green, blue)
Pixel pitch (mm)	0.204 x 0.204
Color depth	16.7 M

Speaker volume

See *Alarm signals sound pressure levels* table, which follows.

Alarm and pulse tones, per IEC 60601-1-8

Characteristic	Specification
Pulse frequency (f_0)	high priority alarm - 1.4 Hz and 2.8 Hz duty cycle of 20-60% medium priority alarm - 0.4 Hz and 0.8 Hz duty cycle of 20-60%
Number of harmonic components in the range 300 Hz to 4000 Hz	minimum of 4
Effective pulse duration (t_d)	high priority: 75 –200 ms medium and low priority: 125 – 250 ms
Rise time (t_r)	10 – 20% of t_d
Fall time [1] (t_f)	$t_f < t_s - t_r$

NOTE The range of the relative sound pressure level of the harmonic components should be between a minimum of at least 53 dBa and a maximum of at least 80 dBa at the pulse frequency.

[1] Prevents overlap of pulses

Environmental specifications

Operating temperature	50 °F to 104 °F (10 °C to 40 °C)
Storage and transport temperature	-4 °F to 122 °F (-20 °C to 50 °C) for 30 days
Operating altitude and atmospheric pressure	-1250 to 10,000 ft (-381 m to 3,048 m) 70 kPa to 106 kPa
Storage and transport altitude and atmospheric pressure	-1250 to 18,300 ft (-381 m to 5,578 m) 50 kPa to 106 kPa for 1 day
Operating humidity	15% to 95% noncondensing
Storage and transport humidity	15% to 95% noncondensing for 30 days

Radio specifications

The monitor's radio operates on 802.11 networks.

Wireless network interface	IEEE 802.11 a/b/g/n/ac

Frequency	*2.4 GHz frequency bands*
	2.4 GHz to 2.483 GHz
	5 GHz frequency bands
	5.15 GHz to 5.35 GHz, 5.47 GHz to 5.725 GHz, and 5.725 GHz to 5.825 GHz
Channels	*2.4 GHz channels*
	11 (3 non-overlapping)
	5 GHz channels
	5.15 GHz to 5.35 GHz (Ch 36/40/44/48/52/56/60/64)
	5.47 GHz to 5.725 GHz (Ch 100/104/108/112/116/120/124/128/132/136/140/144)
	5.725 GHz to 5.825 GHz (Ch 149/153/157/161/165)
Encryption	Advanced Encryption Standard (AES CCM Algorithm), Encryption Key Provisioning, Static (40-bit and 128-bit lengths), Pre-Shared (PSK)
Dynamic encryption	EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, PEAP-TLS
Antenna	FlexMIMO Dual-Band Flexible MIMO Antenna
Wireless data rates	Support 802.11 ac/a/b/g/n 2X2 MIMO Mbps
	802.11b (DSSS, CCK) 1, 2, 5.5, 11 Mbps
	802.11a/g (OFDM) 6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11n (OFDM, HT20/HT40, MCS 0-15)
	802.11ac (OFDM, HT20, MCS0-8; OFDM HT40/HT80, MCS 0-9)
Compliance	FCC Regulatory ID: SQG-SU60SOMC FCC Regulatory: 47 CFR FCC Part 15.247, 47 CFR FCC Part 15.407, 47 CFR FCC Part 2.1091, FCC Part 15 Subpart B Class B, AS/NZS Regulatory AS/NZS 2772.2:2011 AS/NZS 4268:2017, 62311:2008, EN 50665:2017, EN 50385:2017, EU 2015/863 (RoHS 3)
	Canada (ISED) Regulatory ID: 3147A-SU60SOMCCanada: ICES-003 ANSI C63.4:2014 RSS-102 RSS-247.
	• TRNG: True random number generator • AES: 256-bit, 192-bit, 128-bit key algorithm, compliant with FIPS PUB 197 Specifications • TDES: Two-key or three-key algorithms, compliant with FIPS PUB 46-3 Specifications • Atmel/Microchip secure boot solution

WLAN TX power	802.11a	
	6 Mbps	18 dBm (63 mW)
	54 Mbps	16 dBm (40 mW)
	802.11b	
	1 Mbps	18 dBm (63 mW)
	11 Mbps	18 dBm (63 mW)
	802.11g	
	6 Mbps	18 dBm (63 mW)
	54 Mbps	16 dBm (40 mW)
	802.11n (2.4/5 GHz)	
	6.5 Mbps (MCS0-5/MCS8-13; HT20)	18 dBm (63 mW)
	65 Mbps (MCS6-7/MCS14-15; HT20)	16 dBm (40 mW)
	13.5 Mbps (MCS0-5/MCS8-13; HT40)	16 dBm (40 mW)
	135 Mbps (MCS6-7/MCS14-15; HT40)	14 dBm (25 mW)
	802.11ac (5 GHz)	
	6.5/13 Mbps (MCS0-6; Ntst=1,2; HT20)	18 dBm (63 mW)
	78/156 Mbps (MCS7-8; Ntst=1,2; HT20)	16 dBm (40 mW)
	13.5/27Mbps (MCS0-6; Ntst=1,2; HT40)	16 dBm (40 mW)
	180/360Mbps (MCS7-9; Ntst=1,2; HT40)	12 dBm (25 mW)
	29.3/58.5 Mbps (MCS0-5; Ntst=1,2; HT80)	14 dBm (25 mW)
	263.3/526.5 Mbps (MCS6-8; Ntst=1,2; HT80)	12 dBm (15.8 mW)
	390/780 Mbps (MCS9; Ntst=1,2; HT80)	10 dBm (10 mW)
Wi-Fi standards	IEEE 802.11a, 802.11b, 802.11d, 802.11e, 802.11g, 802.11h, 802.11i, 802.11n, 802.11r, 802.11ac, 802.11w, 802.11k, 802.11v	
WLAN security	WPA2-Personal, WPA2-Enterprise, WPA2-Enterprise Suite-B, WPA2-Enterprise Suite-B 192-bit, WPA3-Personal, WPA3-Personal transition, WPA3-Enterprise, WPA3-Enterprise transition, WPA3-Enterprise Suite-B, WPA3-Enterprise Suite-B 192-bit, and WPA3-OWE	
Dynamic 802.1X Extensible Authentication Protocol Types	EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, PEAP-TLS	

To ensure compliance with local regulations, be sure the correct country in which the access point is installed is selected. This product can be used with the following restriction(s):

Norway - Does not apply for the geographical area within a radius of 20 km from the center of Ny-Ålesund.

France - Outdoor use is limited to 10 mW EIRP within the band 2454 to 2483.5 MHz.

NOTE Effective Isotropic Radiated Power (EIRP).

NOTE Some countries restrict the use of 5 GHz bands. The 802.11a radio in the monitor uses only the channels indicated by the access point with which the radio associates. The hospital IT department must configure access points to operate with approved domains.

NOTE For more information on radio specifications, please reference the *Wireless Best Practices Overview* by contacting Baxter Technical Support or visiting Baxter.com.

Configuration options

NOTE Some model numbers and product features described in this publication might not be available in your country. For the latest information about products and features, please contact Baxter Technical Support: Technical Support.

NOTE If options have been added to the device, the actual configuration will not match the model description.

The device has multiple configurations. Use the following table to determine model configurations. Not all configurations may be available. Model numbers include one item from each column.

Example

95MXT-B (North America)

See "Approved accessories" for power cord options available for each configuration.

Model	**Parameter**	
	SpO2	**Temperature**
95 = 9500 **Wi-Fi** + Ethernet series	*C* = Nellcor	*T* = **SureTemp Plus**
94 = 9400 Ethernet only series	*M* = Masimo	
	R = Masimo SpO2/ **RRp** [1]	

[1] Contact Baxter Customer Care to purchase the optional respiration rate software license: 9000-RRP Masimo RRP C360 LICENSE

Model	**Temperature**	**SpO2**	**NIBP**	**Connectivity**
94CXT-B	**SureTemp Plus**	Nellcor	**SureBP**	Ethernet only
94MXT-B	**SureTemp Plus**	Masimo	**SureBP**	Ethernet only
94RXT-B	**SureTemp Plus**	Masimo with **RRp**	**SureBP**	Ethernet only
95CXT-B	**SureTemp Plus**	Nellcor	**SureBP**	**Wi-Fi** + Ethernet
95MXT-B	**SureTemp Plus**	Masimo	**SureBP**	**Wi-Fi** + Ethernet
95RXT-B	**SureTemp Plus**	Masimo with **RRp**	**SureBP**	**Wi-Fi** + Ethernet

NOTE For more information on radio specifications, please reference the *Wireless Best Practices Overview* by contacting Baxter Technical Support or visiting https://baxter.com.

Upgrade options

Part number	Description
108970	UPGD KIT-CNX360-ASSY SPO2 NELLCOR CONVERSION UPGRADE
108971	UPGD KIT-CNX360-ASSY SPO2 MASIMO CONVERSION UPGRADE
108873	SRV KIT-CNX360-WIRELESS RADIO PCBA-ANT

USB flash drive requirements

The multiple vendor technologies used in the manufacture of USB flash drives make some of them incompatible with this monitor. Common issues that cause flash drives not to function are NTFS formatting, proprietary drive security, and the need for **Windows** drivers to run or access them.

The requirements for a USB flash drive to work with this monitor are the following:

- Linux compatibility
- Up to 32 GB storage
- FAT 32 formatting
- USB 2.0 compliant

Dimensions: Assuming the USB flash drive will be inserted in the USB port, the length of the stick does not matter. The size of the stick surrounding the USB metal head should be no larger than 9.5 mm x 18.5 mm to fit in the USB port.

Calibration

The device has no specific use time limitation. The device may remain in service until repair is required or operation indicates that it is out of calibration. However, if an error code appears on the device, stop using the device and have it inspected by a Baxter-certified technician.

Accuracy checks and calibration are only recommended if the device case is opened or if issues are suspected. In cases where the device case is opened or if issues are suspected, send the device in for repair.

Baxter recommends that a qualified service technician perform a full functional verification and calibration on an annual basis.

Battery specifications

Battery specifications[1]	9 Cell
Composition	Lithium-ion
Age to 70% capacity [1]	300

Battery specifications[1]	9 Cell
Charge time to 100% capacity	6 hr

[1] After this many full charge and discharge cycles, the battery has aged to where its total capacity has been reduced to 70% of its rating.

Mobile stand specifications

Mobile stand	Per bin maximum weight limit	Total bins maximum weight limit	Mobile stand maximum weight limit
9000-C360	Front Bins (left and right: 1.0 lb/0.45 kg) Front Bin (middle: 3.0 lb/1.36 kg) Rear Bin: 3.0 lb/1.36 kg	8.0 lb /3.63 kg	48.3 lb /22.06 kg

Nurse Call connection specifications

Nurse Call	24V at 500mA maximum

NIBP specifications

NIBP specifications

Cuff pressure range	Meets or exceeds IEC/ISO 80601-2-30 standards for cuff pressure range
Systolic range	Adult: 30 to 260 mmHg (StepBP, **SureBP**)
	Pediatric: 30 to 260 mmHg (StepBP, **SureBP**)
	Neonate: 20 to 120 mmHg (StepBP)
Diastolic range	Adult: 20 to 220 mmHg (StepBP, **SureBP**)
	Pediatric: 20 to 220 mmHg (StepBP, **SureBP**)
	Neonate: 10 to 110 mmHg (StepBP)
Cuff Inflation Target	Adult:160 mmHg (StepBP)
	Pediatric: 140 mmHg (StepBP)
	Neonate: 90 mmHg (StepBP)

Maximum Target Pressure	Adult: 300 mmHg (StepBP, **SureBP**)
	Pediatric: 300 mmHg (StepBP, **SureBP**)
	Neonate: 130 mmHg (StepBP)
Blood pressure determination time	Typical: 15 seconds
	Maximum: 150 seconds
Blood pressure accuracy	Meets or exceeds ANSI/AAMI/ ISO 81060-2:2019 standards for noninvasive blood pressure accuracy (±5 mmHg mean error, 8 mmHg standard deviation)
Mean Arterial Pressure (MAP) range The formula used to calculate MAP yields an approximate value.	Adult: 23 to 230 mmHg (StepBP, **SureBP**)
	Pediatric: 23 to 230 mmHg (StepBP, **SureBP**)
	Neonate: 13 to 110 mmHg (StepBP)
Pulse rate range (using blood pressure determination)	Adult: 30 to 200 bpm (StepBP, **SureBP**)
	Pediatric: 30 to 200 bpm (StepBP, **SureBP**)
	Neonate: 35 to 220 bpm (StepBP)
Pulse rate accuracy (using blood pressure determination)	±5.0% (±3 bpm)
Overpressure cutoff	Adult: 300 mmHg ±15 mmHg
	Pediatric: 300 mmHg ±15 mmHg
	Neonate: 150 mmHg maximum

SureTemp Plus temperature module specifications

SURETEMP PLUS temperature range	**Calibration accuracy**
26.7 °C to less than 35.8 °C	±0.3 °C (Direct mode)
35.8 °C to less than 37.0 °C	±0.2 °C (Direct mode)
37.0 °C to 39.0 °C	±0.1 °C (Direct mode)
Greater than 39.0 °C to 41.0 °C	±0.2 °C (Direct mode)
Greater than 41.0 °C to 43.3 °C	±0.3 °C (Direct mode)
80.0 °F to less than 96.4 °F	±0.5 °F (Direct mode)
96.4 °F to less than 98.0 °F	±0.3 °F (Direct mode)
98.0 °F to 102.0 °F	±0.2 °F (Direct mode)
Greater than 102.0 °F to 106.0 °F	±0.3 °F (Direct mode)
Greater than 106.0 °F to 110.0 °F	±0.5 °F (Direct mode)

Direct Mode stabilization time

Oral and rectal	Axillary
Until the temperature stabilizes or 3 minutes	Until the temperature stabilizes or 5 minutes

Transient response time

Heating	Cooling
10.8 seconds	11.5 seconds

NOTE Per 80601-2-56 clause 201.101.3

SURETEMP PLUS Predictive Mode	Clinical Bias (°C)	Limit of Agreement (°C)	Clinical Repeatability (°C)
Oral	-0.3 – 0.3	≤1.0	≤ 0.3
Rectal	-0.3 – 0.3	≤1.0	≤ 0.3
Pediatric Axillary	-0.3 – 0.3	≤1.0	≤ 0.3
Adult Axillary	-0.3 – 0.3	≤1.0	≤ 0.3

SureTemp Plus temperature module predictive mode

SURETEMP PLUS Predictive Mode	Clinical Bias (°C)	Limit of Agreement (°C)	Clinical Repeatability (°C)
Oral	-0.3 – 0.3	≤1.0	≤ 0.3
Rectal	-0.3 – 0.3	≤1.0	≤ 0.3
Pediatric Axillary	-0.3 – 0.3	≤1.0	≤ 0.3
Adult Axillary	-0.3 – 0.3	≤1.0	≤ 0.3

SpO2 specifications

Refer to sensor manufacturer's instructions for use for additional information.

NOTE Functional testers cannot be used to assess the accuracy of a pulse oximeter monitor.

While functional testers may be useful for verifying that the pulse oximeter sensor, cabling, and monitor are functional, they are incapable of providing the data required to properly evaluate the accuracy of a system's SpO2 measurements. Fully evaluating the accuracy of the SpO2 measurements requires, at a minimum, accommodating the wavelength characteristics of the sensor and reproducing the complex optical interaction of the sensor and the patient's tissue. These capabilities are beyond the scope of known bench-top testers. SpO2 measurement accuracy can only be evaluated in vivo by comparing pulse oximeter readings with SaO2 measurements obtained from simultaneously sampled arterial blood made using a laboratory CO-oximeter.

NOTE Contact the sensor manufacturer for further SpO2 clinical testing information.

NOTE Refer to sensor manufacturer's instructions for use for further accuracy information.

NOTE This information might be useful to clinicians, such as those performing photodynamic therapy.

For Masimo, the range of the peak wavelengths and maximum optical output power of the light emitted by the SpO2 probe is approximately 500 nm to approximately 1000 nm. The maximum radiant power of the strongest light is less than or equal to 25 mW.

For Nellcor, the range of the peak wavelengths and maximum optical output power of the light emitted by the SpO2 probe is approximately 660 nm, to approximately 900 nm. The total optical output power of the sensor LEDs is less than 15 mW.

SpO2 specifications (Masimo specifications[1 2 3 4 5 6 7])	
SpO2 performance measurement range	1 to 100%
Masimo SpO2 *specifications*	Accuracy specified when used with Masimo **SET** pulse oximetry monitors or with licensed Masimo **SET** pulse oximetry modules using PC series patient cables, during no motion. Numbers present ± 1 standard deviation. Plus or minus one standard deviation represents 68% of the population.
Masimo SpO2, No Motion	60 – 80 ± 3%, adults/pediatrics/infants
	70 – 100 ± 2%, adults/pediatrics/infants; ± 3%, neonates
Masimo SpO2, Motion	70 – 100 ± 3%, adults/pediatrics/infants/neonates
Masimo SpO2, Low perfusion	70 – 100 ± 2%, adults/pediatrics/infants/neonates
Perfusion	0.02 % to 20 %
Masimo pulse rate , No Motion	25 – 240 ± 3 bpm, adults/pediatrics/infants/neonates
Masimo pulse rate, Motion	25 – 240 ± 5 bpm, adults/pediatrics/infants/neonates
Masimo pulse rate, Low perfusion	25 – 240 ± 3 bpm, adults/pediatrics/infants/neonates
Pulse rate	25 to 240 beats per minute (bpm)
	No motion: ± 3 digits
	Motion: ± 5 digits
Saturation	60% to 70%
NOTE Saturation accuracy varies by sensor type. Refer to the sensor Instructions for use for additional accuracy information.	Adults, Neonates: ± 3 digits
Masimo *respiration rate specifications*	4 to 70 respirations per minute (rpm),
	3 RPM ARMS
	1 RPM Mean Error
	Adult and pediatric patients

SpO2 specifications (Masimo specifications[1 2 3 4 5 6 7])	
Pulse rate	25 to 240 beats per minute (bpm) ± 3 digits (no motion)
Saturation	70% to 100%
NOTE Saturation accuracy varies by sensor type.	Adult, neonate: ± 3 digits
	Low Perfusion: 0.02 % to 20 % ± 2 digits
Detected pulse rate	20 to 250 beats per minute (bpm) ± 3 digits

1 SpO2, accuracy was determined by testing on healthy adult volunteers in the range of 60-100% SpO2 against a laboratory pulse oximeter. SpO2 accuracy was determined on 16 neonatal NICU patients ranging in age from 7-135 days old and weighing between 0.5-4.25 kg. Seventy-nine (79) data samples were collected over a range of 70-100% SaO2 with a resultant accuracy of 2.9% SpO2.

2 The Masimo sensors have been validated for no motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies in the range of 70-100% SpO2 against a laboratory pulse oximeter and ECG monitor. This variation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population.

3 The Masimo sensors have been validated for motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies in the range of 70-100% SpO2 against a laboratory CO-oximeter and ECG monitor. This variation equals plus or minus one standard deviation which encompasses 68% of the population.

4 The Masimo **SET** Technology has been validated for low perfusion accuracy in bench top testing against a BioTek Index 2 simulator and the Masimo simulator with signal strengths of greater than 0.02% and transmission of greater than 5% for saturations ranging from 70–100%. This variation equals plus or minus one standard deviation which encompasses 68% of the population.

5 The Masimo sensors have been validated for pulse rate accuracy for the range of 25-240 bpm in bench top testing against a BioTek Index 2 simulator. This variation equals plus or minus one standard deviation which encompasses 68% of the population.

6 The following substances may interfere with pulse oximetry measurements:

- Elevated levels of Methemoglobin (MetHb) may lead to inaccurate SpO2 measurements
- Elevated levels of Carboxyhemoglobin (COHb) may lead to inaccurate SpO2 measurements
- Severe anemia may cause erroneous SpO2 readings
- Dyes, or any substance containing dyes, that change usual blood pigmentation may cause erroneous readings
- Elevated levels of total bilirubin may lead to inaccurate SpO2 reading

7 Because Masimo measurements are statistically distributed, only about two-thirds of Masimo measurements can be expected to fall within ±Arms of the value measured by a CO-OXIMETER.

SpO2 specifications (Nellcor specifications)	
Nellcor *sensor accuracy guide* [1] [2] [3]	SpO2 measurement accuracy can only be evaluated in vivo by comparing pulse oximeter readings with SpO2 measurements obtained from simultaneously sampled arterial blood made using a laboratory CO-oximeter. SpO2 accuracy was validated through breathe-down-equivalent testing by Covidien using electronic measurements to prove equivalence to the Nellcor **N-600x** predicate device. The Nellcor **N-600x** predicate device was validated by performing human-subject, "breathe-down" clinical trials.

1 Some models of commercially available bench-top functional testers and patient simulators can be used to verify the proper functionality of Nellcor pulse oximeter sensors, cables and monitors. See the individual testing device's operator's directions for use for the procedures specific to the model of tester being used.

2 Many functional testers and patient simulators have been designed to interface with the pulse oximeter's expected calibration curves and may be suitable for use with Nellcor monitors and/or sensors. Not all such devices, however, are adapted for use with the Nellcor **OxiMax** digital calibration system. While this will not affect use of the simulator for verifying system functionality, displayed SpO2 measurement values may differ from the setting of the test device. For a properly functioning monitor, this difference will be reproducible over time and from monitor to monitor within the performance specifications of the test device.

3 Because Nellcor measurements are statistically distributed, only about two-thirds of Nellcor measurements can be expected to fall within ±Arms of the value measured by a co-oximeter.

Nellcor

Characteristic	**Specification**	
SpO2 performance measurement range	1 to 100%	
Saturation accuracy (module)	±3 digits 70–100% Adult, pediatrics: ±2 digits Neonate: ±3 digits Low perfusion: 0.02–20% ± 2 digits	
Saturation accuracy by sensor: 60-80%	Sensor: MAX-AI, MAX-PI, MAX-II MAX-A, MAX-P, MAX-I	Accuracy: ±3 digits
70–100%	DS-100A	±3 digits
	D-YS	Infants, pediatrics, adults: ±3 digits Neonates: ±4 digits
	D-YSE	±4 digits
	D-YSPD	±4 digits
	MAX-AI, MAX-PI, MAX-II MAX-A, MAX-P, MAX-I	±2 digits

Characteristic	Specification	
	OXI-A/N	Adults: ±3 digits Neonates: ±4 digits
	OXI-P/I	±3 digits
Pulse rate: Unit of measure Measurement range Accuracy	Pulse rate: Beats per minute 20-250 beats per minute ±3 digits	

Factory defaults

NOTE Factory defaults are the settings in the device when it comes off the manufacturing floor. Customized configuration files modify these defaults based on preferences for specific sites. Restoring default settings on a device returns it to its manufacturing floor defaults, not the custom configuration.

Device

Settings	Default value
Active Config file name	Factory
Device location displayed	Yes
First-time startup screen displayed	Yes
Touchscreen lockout interval	2 minutes
Auto sleep mode allowed	Yes
Sleep mode duration	2 minutes
Auto shutdown allowed	Yes
Auto shutdown timeout	15 minutes
Display brightness	8
Splash screen	Baxter logo
Load new software on power cycle enabled	No
Load new software to device	Greyed out
Lock screen timeout allowed	No
Lock screen timeout	2 minute
Power line frequency	60

Data management

Settings	Default value
Date format	MM/DD/YYYY
Prevent date and time changes	No
Display date and time	Yes
Daylight savings time (DST) enabled	Yes
Device time zone offset (minutes)	0
Configured language	English
Automatically send confirmed readings on Save	No
Delete confirmed readings after successful send	No

Settings	Default value
Automatically send unconfirmed interval readings	No

General alarms

Settings	Default value
Alarm volume level, minimum:	
Low	Medium
Medium	Medium
High	High
Audio pause time	120 seconds
Minimum alarm volume	Low
Alarm condition priority to activate Nurse call	Medium
Allow global audio off (Note: Must be enabled in configuration file for option to be available,)	No
Alarm audio on and Alarm audio off controls available	Yes (if "Allow global audio off" is enabled in configuration)
Allow alarms to be disabled	Yes

Patient and Clinician information

Patient

Settings	Default value
Default patient type	Adult
Name format	Full name
Primary label	Name
Secondary label	Patient ID
Require patient ID to save readings	No
Clear patient information on manual save	Yes
Patient ID match required for save	No
Search/Query by patient ID	No

Clinician

Settings	Default value
Clinician ID display format	Clinician ID

Settings	Default value
Require clinician ID to save readings	No
Require clinician ID match to save readings	No
Retrieve clinician information from clinician ID	No
Require password to save readings	No
Clear clinician information on manual save	No
Require entry of "required modifiers" to save readings	No
Require prescribed login	No

NIBP

Settings	Default value
Systolic upper limit enabled	Yes
Systolic: Upper limit	Adult: 220 mmHg (29.3 kPa)
	Pediatric: 145 mmHg (19.3 kPa)
	Neonate: 100 mmHg (13.3 kPa)
Systolic lower limit enabled	Yes
Systolic: Lower limit	Adult: 75 mmHg (10.0 kPa)
	Pediatric: 75 mmHg (10.0 kPa)
	Neonate: 50 mmHg (6.7 kPa)
Diastolic upper limit enabled	Yes
Diastolic: Upper limit	Adult: 110 mmHg (14.7 kPa)
	Pediatric: 100 mmHg (13.3 kPa)
	Neonate: 70 mmHg (9.3 kPa)
Diastolic lower limit enabled	Yes
Diastolic: Lower limit	Adult: 35 mmHg (4.7 kPa)
	Pediatric: 35 mmHg (4.7 kPa)
	Neonate: 30 mmHg (4.0 kPa)
MAP upper limit enabled	No
MAP: Upper limit	Adult: 120 mmHg (16 kPa)
	Pediatric: 110 mmHg (14.7 kPa)
	Neonate: 80 mmHg (10.7 kPa)
MAP lower limit enabled	No

Settings		Default value
MAP: Lower limit		Adult: 50 mmHg (6. 7 kPa)
		Pediatric: 50 mmHg (6.7 kPa)
		Neonate: 35 mmHg (4.7 kPa)
Advanced		
Default view		sys_dia_map
Tube type		2 tubes
Unit of measure		mmHg
Algorithm default		**SureBP**
Cuff inflation target (step algorithm)		
	Adult	160 mmHg (21.3 kPa)
	Pediatric	140 mmHg (18.7 kPa)
	Neonate	90 mmHg (12.0 kPa)
Maximum cycle pressure		
	Adult	Automatic
	Pediatric	Automatic

Intervals

Settings	Default value
Time between each Automatic interval	15 minutes
Default intervals mode	Automatic
Selected interval parameter	NIBP
Automatic mode time interval	15 minutes

SpO2

Settings	Default value
SpO2 upper limit enabled	Yes
Upper limit	Adult: 100%
	Pediatric: 100%
	Neonate: 100%
SpO2 lower limit enabled	Yes

Settings	Default value
Lower limit	Adult: 90%
	Pediatric: 90%
	Neonate: 90%
Default view	% SpO2
Advanced	
SpO2 alarm condition delay	10 seconds
SatSeconds (Nellcor only)	25 seconds

RR

RRp alarm condition delay - The quickest detection of a change in respiratory rate would take at least two breaths. Depending on respiratory rate, anything less than 6 breaths per minute must be greater than 10 seconds.

Settings	Default value
RR upper limit enabled	Yes
Upper limit	Adult: 30
	Pediatric: 30
	Neonate: 80
RR lower limit enabled	Yes
Lower limit	Adult: 6
	Pediatric: 6
	Neonate: 12
Default view	BPM

Temperature

Settings	Default value
Temperature upper limit enabled	No
Upper limit	101 °F (38.3 °C)
Temperature lower limit enabled	No
Lower limit	94 °F (34.4 °C)
Advanced	
Unit of measure	°F (Fahrenheit)
Display temperature conversion	Yes

Settings	Default value
Default SureTemp Plus site	Oral

Manual parameters

Settings	Default value
Custom Score feature active	No
Display height	Yes
Display weight	Yes
Display pain	Yes
Display respiration	Yes
Display BMI	Yes
Height units	in
Weight units	lb
Enable manual override NIBP	Yes
Enable manual override Pulse rate	Yes
Enable manual override Respiration rate	Yes
Enable manual override Temperature	Yes
Enable manual override SpO2	Yes

Network

Settings	Options	Default value
ESSID selection	Alphanumeric entry (32)	`com.welchallyn`
Radio mode	2.4 GHz, 5 GHz, or AUTO	AUTO
Radio enabled	Yes / No	Yes
Radio alarms enabled	Yes / No	No
Ethernet MAC address	MAC address	00:1A:FA:FF:FC:00
Wireless MAC	Alphanumeric entry (18)	
Authentication/Encryption type	WPA2-Personal, WPA2-Enterprise, WPA2-Enterprise-Suite-B, WPA2-Enterprise-Suite-B-192, WPA3-Personal,WPA3-Enterprise, WPA3-Enterprise-Suite-B, WPA3-Enterprise-Suite-B-192, WPA3-OWE	WPA2-Personal

Settings	Options	Default value
Authentication/Encryption method	Alphanumeric entry (64)	1234567890ABCDEF1234567890 ABCDEF1234567890ABCDEF 1234567890ABCDEF
Enhanced Auth Protocol (EAP) type	NONE, EAP-TLS, EAP-TTLS, PEAP-MSCHAPv2, PEAP-GTC, PEAP-TLS	NONE
Enhanced Auth Protocol (EAP) identity	Alphanumeric entry (32)	vitalsigns
Enhanced Auth Protocol (EAP) password	Alphanumeric entry (32)	
Dynamic Frequency Selection	Yes / No	Yes
Roaming type	OKC\\PMK,802.11r	OKC\\PMK
Auth server type	Yes / No	No

Network Connectivity Method

Options	Default value
Host IP	Host IP address: 127.0.0.1
	Port: 281
Data Encryption	Yes
Radio Static IP Enabled	No
Radio Static IP Address	0.0.0.0
Radio Static IP Mask	255.255.255.0
Radio Static IP Gateway	0.0.0.0
Radio Static IP DNS	0.0.0.0
Ethernet Static IP Enabled	No
Ethernet Static IP Address	0.0.0.0
Ethernet Static IP Mask	255.255.255.0
Ethernet Static IP Gateway	0.0.0.0
Ethernet Static IP DNS	0.0.0.0
Time Zone	Europe/London
NTP Enable	No
NTP DNS Name	blank
Enable **HL7**	No
HL7 DNS Name	127.0.0.1
HL7 IP port	281
Server Authentication Enable	Yes

Options	Default value
FIPS Enable	No
Wi-Fi Power Save Poll Mode	True

Approved accessories

The following tables list approved monitor accessories and applied parts. For information about options, upgrades, and licenses, refer to the service manual.

WARNING Use only Baxter approved accessories and applied parts, and use them according to the manufacturer's directions for use. Using unapproved accessories with the monitor or applied parts can affect patient and operator safety and can compromise product performance and accuracy, and void the product warranty.

Accessories

Blood pressure accessories (not made with natural rubber latex)

Part number	Model	Description
4500-34	BP	Fast BP hose w Fport, 5 ft
4500-35	BP	Fast BP hose w Fport, 10 ft
7000-33	BP	Neonatal blood pressure hose (10 ft)
6000-30	BP	Single tube blood pressure hose (5 ft)
6000-31	BP	Single tube blood pressure hose (10 ft)

Nellcor pulse oximetry

Part number	Model	Description
DS-100A	**OxiMax**	**Durasensor** adult oxygen transducer
DOC-10	**OxiMax**	Extension cable (10 feet)
DOC-4	**OxiMax**	Extension cable (4 feet)
OXY-A/N	**OxiMax**	**Oxiband** adult/neonatal transducer (1 sensor, 50 wraps)
OXY-P/I	**OxiMax**	**Oxiband** pediatric/infant transducer (1 sensor, 50 wraps)
D-YS	**OxiMax**	**Dura-Y** oxygen transducer (1 sensor, 40 wraps)
D-YSE	**OxiMax**	Ear clip (use with **Dura-Y** sensor)
D-YSPD	**OxiMax**	**PediCheck** pediatric spot check (use with **Dura-Y** sensor)
MAX-AI	**OxiMax**	Adult sensor (single use, case of 24)
MAX-A	**OxiMax**	Adult sensor (single use, case of 24)
MAX-PI	**OxiMax**	Pediatric sensor (single use, case of 24)
MAX-P	**OxiMax**	Pediatric sensor (single use, case of 24)
MAX-II	**OxiMax**	Infant sensor (single use, case of 24)
MAX-I	**OxiMax**	Infant sensor (single use, case of 24)

Masimo pulse oximetry (for use with devices with SpO2)

Masimo **RD SET** sensors and cables have been tested for biocompatibility in accordance with ISO 10993 and are approved accessories. They are available only from Masimo. To find a Masimo distributor, refer to www.masimo.com.

Part Number	*Model*	*Description*
LNCS-DCI	LNCS	Reusable finger sensor - Adult
LNCS-DCIP	LNCS	Reusable finger sensor - Pediatric
LNCS-ADTX	LNCS	Disposable adhesive finger sensor - Adult (20 per case)
LNCS-PDTX	LNCS	Disposable adhesive finger sensor - Pediatric (20 per case)
RED LNC-10	LNCS	10-foot cable with sensor connector
LNCS-YI	LNCS	Multisite reusable sensor (1 sensor, 6 adhesive wraps)
LNCS-TC-I	LNCS	Reusable ear sensor
LNCS-NEO-L-3	LNCS	Disposable adhesive finger sensor - Neonate/Adult (20 per case)
NEO-WRAP-RP	LNCS	Replacement wrap for neonatal adhesives (100 per case)
LNCS-INF-3	LNCS	Disposable adhesive finger sensor - Infant (20 per case)
INF-WRAP-RP	LNCS	Replacement wrap for infant adhesives (100 per case)
YI-AD	LNCS	Multisite adhesive wrap adult/pediatric/neonatal for YI sensor (100 per case)
YI-FM	LNCS	Multisite foam wrap adult/pediatric/neonatal for YI sensor (12 per case)

Mounting options

Part number	**Description**
9000-C360	**Connex 360** monitor Mobile Stand
9000-GCX	**Connex 360** monitor Wall Mount Kit

Miscellaneous items

Part number	**Description**
BATT99	Lithium-ion battery 9 Cell — Extended Life
PWCD-B	Line cord B, North America
6000-NC	Nurse call cable
6000-916HS	Jadak 2D Scanner
7000-916HS	Jadak 2D Scanner
6000-916HSR	Jadak 2D/HF RFID Scanner
7000-916HSR	Jadak 2D/HF RFID Scanner
7000-916HS 1RS	Jadak 2D/HF RFID Scanner

Part number	Description
7000-CS6080	Zebra 2D/HF RFID Scanner
9000-PS	**Connex 360** Power Supply, External, 65W

Upgrade options

Part number	Description
108970	UPGD KIT-CNX360-ASSY SPO2 NELLCOR CONVERSION UPGRADE
108971	UPGD KIT-CNX360-ASSY SPO2 MASIMO CONVERSION UPGRADE
108873	SRV KIT-CNX360-WIRELESS RADIO PCBA-ANT

Applied parts

Blood pressure cuffs

NOTE Some model numbers and product features described in this publication might not be available in your country. For the latest information about products and features, contact Baxter Customer Care.

Blood pressure cuffs (not made with natural rubber latex)

Part Number	Model	Description
Neo-1-1	Disposable	Cuff, soft, NEO 1, 1-TUBE, NQ (box of 10)
Neo-2-1	Disposable	Cuff, soft, NEO 2, 1-TUBE, NQ (box of 10)
Neo-3-1	Disposable	Cuff, soft, NEO 3, 1-TUBE, NQ (box of 10)
Neo-4-1	Disposable	Cuff, soft, NEO 4, 1-TUBE, NQ (box of 10)
Neo-5-1	Disposable	Cuff, soft, NEO 5, 1-TUBE, NQ (box of 10)
REUSE-08	Reusable	Cuff, reusable, sm child
REUSE-09	Reusable	Cuff, reusable, child
REUSE-10	Reusable	Cuff, reusable, sm adult
REUSE-11	Reusable	Cuff, reusable, adult
REUSE-11L	Reusable	Cuff, reusable adult long
REUSE-12	Reusable	Cuff, reusable, lg adult
REUSE-12L	Reusable	Cuff, reusable, lg adult long
REUSE-13	Reusable	Cuff, reusable, thigh
SOFT-07	Disposable	Cuff, infant
SOFT-08	Disposable	Cuff, small child
SOFT-09	Disposable	Cuff, child
SOFT-10	Disposable	Cuff, small adult

Part Number	Model	Description
SOFT-11	Disposable	Cuff, adult
SOFT-11L	Disposable	Cuff, adult long
SOFT-12	Disposable	Cuff, lg adult
SOFT-12L	Disposable	Cuff, lg adult long
SOFT-13	Disposable	Cuff, thigh
ECOCUFF--09	Disposable	Cuff, child
ECOCUFF--10	Disposable	Cuff, small adult
ECOCUFF--11	Disposable	Cuff, adult
ECOCUFF--12	Disposable	Cuff, adult large

Masimo pulse oximetry

Baxter part number	Masimo part number	Description
LNCS-DCI	1863	Reusable finger sensor - Adult
LNCS-DCIP	1864	Reusable finger sensor - Pediatric
LNCS-ADTX	1859	Disposable adhesive finger sensor - Adult (20 per case)
LNCS-PDTX	1860	Disposable adhesive finger sensor - Pediatric (20 per case)
RED LNC-04	2055	4' Cable w/ MINID Connector
RED LNC-10	2056	10' Cable w/ MINID Connector
LNCS-YI	2258	Multisite reusable sensor (1 sensor, 6 adhesive wraps)
LNCS-TC-I	1895	Reusable ear sensor
LNCS-NEO-L-3	2320	Disposable adhesive finger sensor - Neonate/Adult (20 per case)
NEO-WRAP-RP	2308	Replacement wrap for neonatal adhesives (100 per case)
LNCS-INF-3	2319	Disposable adhesive finger sensor - Infant (20 per case)
INF-WRAP-RP	2307	Replacement wrap for infant adhesives (100 per case)
YI-AD	1597	Multisite adhesive wrap adult/pediatric/neonatal for YI sensor (100 per case)
YI-FM	1602	Multisite foam wrap adult/pediatric/neonatal for YI sensor (12 per case)
RDSETDCI	4050	Reusable finger sensor - Adult
RDSETDCIP	4051	Reusable finger sensor - Pediatric
RDSETADT	4000	Disposable adhesive finger sensor - Adult (20 per case)
RDSETPDT	4001	Disposable adhesive finger sensor - Pediatric (20 per case)
RDSETYI	4054	Multisite reusable sensor (1 sensor, 6 adhesive wraps)

Baxter part number	Masimo part number	Description
RDSETTCI	4053	Reusable ear sensor
RDSETNEO	4003	Disposable adhesive finger sensor - Neonate (20 per case)
RDSETINF	4002	Disposable adhesive finger sensor - Infant (20 per case)
RDSETDBI	4052	Adult Soft Sensor
RDSET5	4072	5' 20-Pin Patient Extension Cable with Sensor Connector
RDSET12	4073	12' 20-Pin Patient Extension Cable with Sensor Connector

Nellcor pulse oximetry

Part number	Model	Description
DS-100A	**OxiMax**	**Durasensor** adult oxygen transducer
DOC-10	**OxiMax**	Extension cable (10 feet)
DOC-4	**OxiMax**	Extension cable (4 feet)
OXY-A/N	**OxiMax**	**Oxiband** adult/neonatal transducer (1 sensor, 50 wraps)
OXY-P/I	**OxiMax**	**Oxiband** pediatric/infant transducer (1 sensor, 50 wraps)
D-YS	**OxiMax**	**Dura-Y** oxygen transducer (1 sensor, 40 wraps)
D-YSE	**OxiMax**	Ear clip (use with **Dura-Y** sensor)
D-YSPD	**OxiMax**	**PediCheck** pediatric spot check (use with **Dura-Y** sensor)
MAX-AI	**OxiMax**	Adult sensor (single use, case of 24)
MAX-A	**OxiMax**	Adult sensor (single use, case of 24)
MAX-PI	**OxiMax**	Pediatric sensor (single use, case of 24)
MAX-P	**OxiMax**	Pediatric sensor (single use, case of 24)
MAX-II	**OxiMax**	Infant sensor (single use, case of 24)
MAX-I	**OxiMax**	Infant sensor (single use, case of 24)

SureTemp Plus thermometry

Part number	Description
02895-000	Oral probe and well kit (9ft. / 2.7M)
02895-100	Rectal probe and well kit (9ft. / 2.7M)
02894-0000	Oral probe well (blue)
02894-1000	Rectal probe well (red)
05031-101	**SureTemp Plus** disposable probe covers (1,000 covers, packaged 25/box)
05031-110	**SureTemp Plus** disposable probe covers (10,000 covers, packaged 25/box)

Part number	Description
06138-000	Temperature calibration key
01802-110	9600 Plus calibration tester

Warranty

Welch Allyn warrants the product to be free of defects in material and workmanship and to perform in accordance with manufacturer's specifications for the period of two years from the date of purchase from Welch Allyn or its authorized distributors or agents.

The warranty period shall start on the date of purchase. The date of purchase is: 1) the invoiced ship date if the device was purchased directly from Welch Allyn, 2) the date specified during product registration, 3) the date of purchase of the product from a Welch Allyn authorized distributor as documented from a receipt from said distributor.

This warranty does not cover damage caused by 1) handling during shipping, 2) use or maintenance contrary to labeled instructions, 3) alteration or repair by anyone not authorized by Welch Allyn, and 4) accidents.

The product warranty is also subject to the following terms and limitations: Accessories are not covered by the warranty. Refer to the instructions for use provided with individual accessories for warranty information.

Shipping cost to return a device to a Welch Allyn Service center is not included.

A service notification number must be obtained from Welch Allyn prior to returning any products or accessories to Welch Allyn's designated service centers for repair. To obtain a service notification number, contact Welch Allyn Technical Support.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BAXTER'S OBLIGATION UNDER THIS WARRANTY IS LIMITED TO REPAIR OR REPLACEMENT OF PRODUCTS CONTAINING A DEFECT. BAXTER IS NOT RESPONSIBLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM A PRODUCT DEFECT COVERED BY THE WARRANTY.

Appendix A: Updating NCM Driver

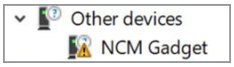
Introduction

Updating the NCM Driver for use of the Embedded Service Tool with **Windows** 10.

Instructions to update the NCM Driver

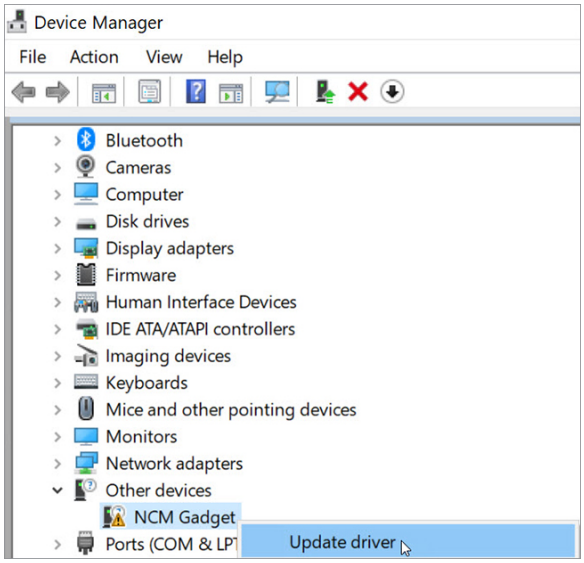
Before you update the NCM Driver, the **Connex 360** appears as a generic NCM Gadget.

NOTE The Embedded Service Tool must be activated to appear on Device Manager. See the "Launch the **Connex 360** Embedded Service Tool" section for more information.

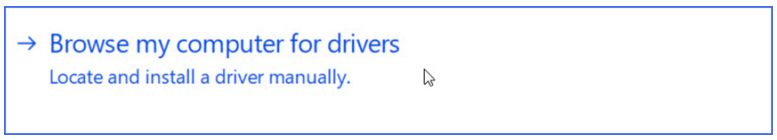


Instructions to update the NCM Driver:

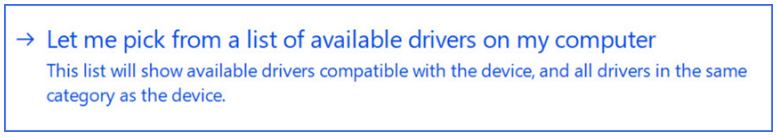
1. Open Device Manager on a **Windows** 10 computer.
2. Locate the **Connex 360** device. It will be labeled as **NCM Gadget**.
3. Right-click **NCM Gadget** and select **Update driver**.



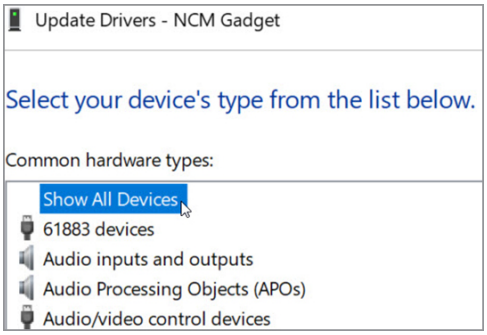
4. Select **Browse my computer for drivers**.



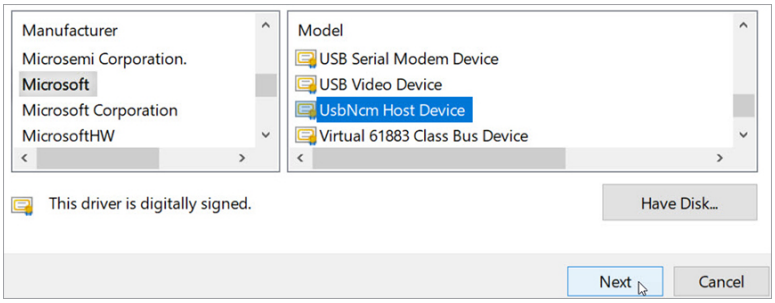
5. Select **Let me pick from a list of available drivers on my computer**.



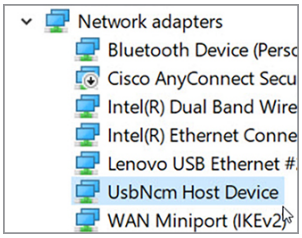
6. Double-click **Show All Devices**.



7. Select **Microsoft** > **UsbNcm Host Device** > **Next** .



8. An **Update driver** warning will appear. If you want to continue, select Yes.
9. Once **Windows has successfully updated your drivers**, select **Close**.
10. How the **Connex 360** shows up and behaves after updating the NCM Driver:

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