ECOLAB HAND HYGIENE PROGRAM COMPLIANCE MONITORING SYSTEM

Ecolab
Hand Hygiene Program

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Bed Beacon and Floor Antenna Installation Users' Guide

92053072 Bed Beacon Assembly
50001428 Optional AC Power Supply
53003805 Adhesive-backed Floor Antenna
53003804 Rubber-backed floor Antenna

Ecolab Hand Hygiene Program Compliance Monitoring System

BED BEACON AND FLOOR ANTENNA INSTALLATION USERS' GUIDE

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COMPLIANCE MONITORING SYSTEM COMPONENTS

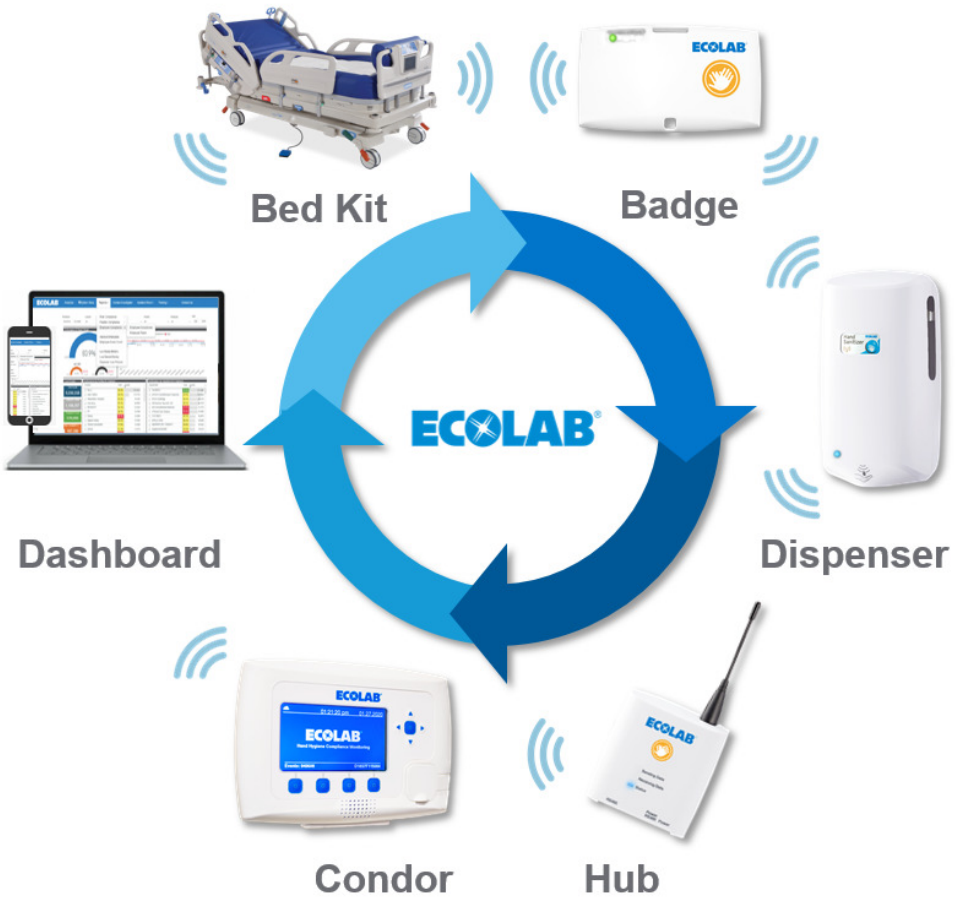


Figure 1. Ecolab Hand Hygiene Program Compliance Monitoring System Components

0. INTRODUCTION TO THE BED BEACON AND FLOOR ANTENNA

In full hospital implementations of the Ecolab Hand Hygiene Program Compliance Monitoring System (the **System**), the **Bed Beacon**, which contains an internal low frequency antenna, is mounted to a patient bed. Its function is to: (a) communicate with the system **Badge** worn by a HCW, when the HCW comes into close proximity with the patient bed ("bed event"); (b) collect bed event and hand hygiene status data from that Badge; and (c) transmit the collected data to the Ecolab Proprietary Wireless Network, where it will ultimately be sent to an offsite server for processing, display and archiving. Similarly, the "bed beacon" may be attached to stretchers, cribs, infusion chairs, etc.: anywhere you wish to establish the requirement for hand hygiene before and after patient contact. For simplicity, the examples of beds and stretchers will be used in this document, but the principals may be applied to installation around other patient-centered areas.

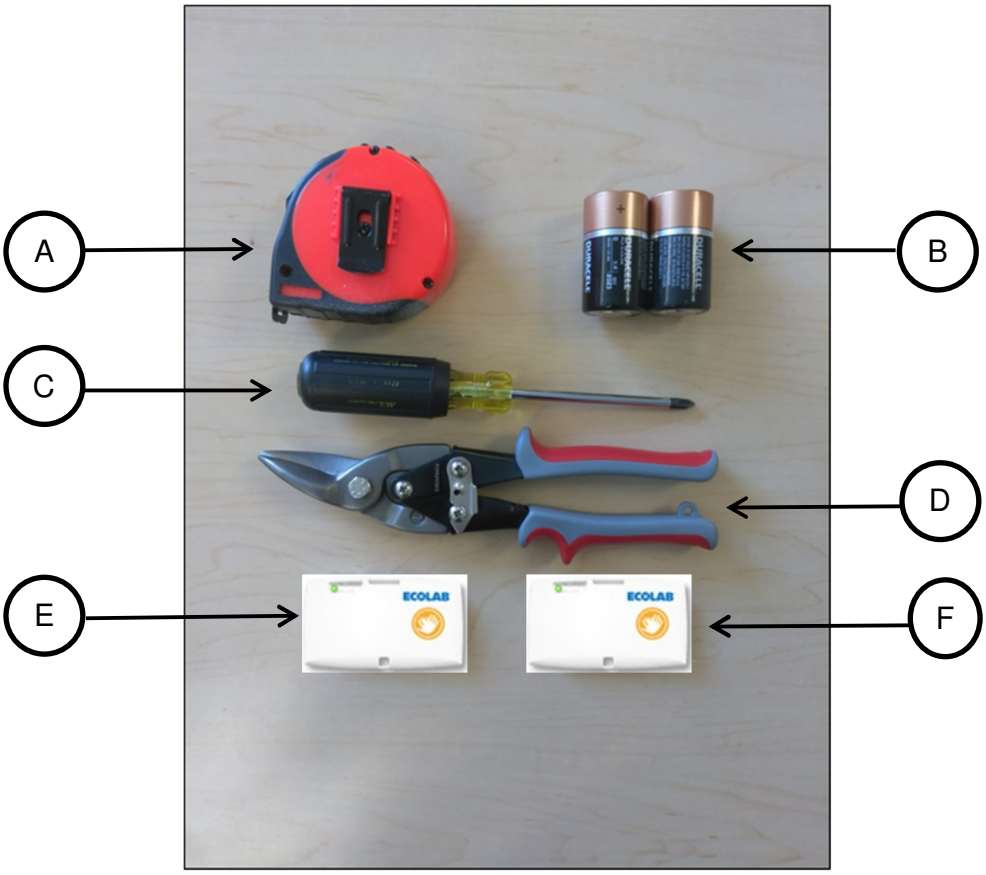
An alternative configuration for temporary installations (customer trials), in stretchered areas or, if desired by the customer, for full hospital implementations, is to install the bed beacon in a stationary location within the room, in combination with a floor antenna, with the bed beacon set to MODE 5 (see section 2 below for a full

description of bed beacon modes). In this configuration, the patient zone is created by the floor antenna, instead of by the internal antenna of the bed beacon. When the bed beacon is used together with the floor antenna in a stationary installation, an optional power supply can be used to power the bed beacon.

Ecolab Hand Hygiene Compliance Monitoring System: Bed Beacon, Mounting Bracket and AC Line Power Sensor

1. REQUIRED MATERIALS

1.1 Installation Materials



(A) Tape Measure	(B) Alkaline D cell batteries (2 ea.)
(B) Phillips screwdriver	(D) Wire cutters
(C) Range Test **Badge** with **Network**	(F) Range Test **Badge** Without **Network**

Items not pictured:

(G) Cable Tie 4in long (10ea.)
(H) Cable Tie Holder (10ea.)
(I) Cable Tie 18in long (4ea.)
Alcohol Wipe
Scotch-Brite™ (or similar) scouring pad
Spray bottle with a mixture of liquid dish soap and water (1 oz. soap per gallon of water)

1.2 Bed Beacon Components

The patient bed installation is comprised of three main components. The first component is the **Bed Beacon,** which is used to create and control the **Patient Zone** around the patient bed. The second component is the **AC Line Power Sensor** that senses when the bed is connected (turns the **Patient Zone** on) or disconnected (turns the **Patient Zone** off) from AC power. The third component is the quick release **Mounting Bracket** clip for attaching the **Bed Beacon** to a bed or stretcher.

Figure 2. Bed Beacon Installation Components

1.3 Additional Components for Stationary Patient Zone Installation

In some cases, it may be desirable to have the patient zone installation be stationary, rather than movable with the bed. Examples would include: (1) customer trial installation, where only one or two units are outfitted with the HHCM system, for a limited time, (2) stretchered areas, to prevent bed beacons in stretcher mode from unintentionally interacting with HCW badges when they are on stretchers stored in common areas, or are in transit, and (3) areas with a mix of room configurations, where it is desirable to have the patient zones tuned specifically for the specific room, rather than setting the zone size to the minimum needed to accommodate all rooms. For a stationary zone installation, the bed beacon and mounting bracket would be combined with a floor antenna. The installation could optionally include a 6V power adaptor for the bed beacon, to reduce or eliminate the need for battery replacement. In some cases, it may be desirable to continue to include batteries as a backup power source.

Figure 3. Floor Antenna and Optional 6V Power Supply (for use with stationary bed beacon and floor antenna installations only)

2. BED BEACON INSTALLATION FUNCTIONS

The **Bed Beacon** creates a modulated magnetic field around a patient bed, referred to as the **Patient Zone**. When a healthcare worker (HCW) wearing a System **Badge** enters the Patient Zone, the Bed Beacon wirelessly communicates with the Badge and signals to the Badge that it has entered the Patient Zone around a specific patient bed. The Bed Beacon will flash its status LED (Light Emitting Diode) green when it has successfully communicated with a Badge. If communication with the Badge is successful, the Bed Beacon sends information about its interaction with the Badge to the server via the System's proprietary wireless network. For more information about how the Badge will behave when interacting with the Patient Zone, please read the document entitled "*Ecolab™ Hand Hygiene Program Compliance Monitoring System Healthcare Worker Badge User's Guide*"

To verify which mode the Bed Beacon is in, or to change modes, press and hold both range buttons down. Immediately, the Beacon will flash three (3) times the green LED. With each flash, there will be an audible alert (beep). If the range buttons are released during or immediately after the three green flashes, the bed beacon is set to the default range (10 = maximum). One (1) second later, the Bed Beacon will flash red and beep once. The single red LED flash and audible alert corresponds to the Bed Beacon being set for mode number 1: bed mode. If both range buttons continue to be held down, the bed beacon will continue to cycle through the operation modes, at a rate of 1 every 500ms. The number of red LED flashes and audible beeps corresponds to the operation mode (see list below). **In order to select the mode, release the range buttons after the desired mode is reached.**

An alternative method for setting the bed mode is with the Ecolab **Beacon Installation Tool** (9250-3074). For more information about how the Beacon Installation Tool can change the Beacon mode, please read the document entitled, "*Ecolab® Hand Hygiene Program Compliance Monitoring System Beacon Installation Tool User's Guide"*.

Operation Modes:
1 = Bed Mode using Internal Antenna Only
2 = Bed Mode using External Antenna Only
3 = Bed Mode using Internal and External Antenna (toggles between internal and external antenna)
4 = Stretcher Mode using Internal Antenna Only
5 = Stretcher Mode using External Antenna Only **(NOTE: this is the correct mode to use with the floor antenna)**
6 = Stretcher Mode using Internal and External Antenna (toggles between internal and external antenna)

Note:
Bed Modes (1-3) - AC Power Cord Sensor must detect AC power to broadcast the 125kHz signal.
Stretcher Modes (4-6) – the 125kHz signal is always broadcast. No AC Power Cord Sensor required.

The default operation mode is 1. To select a different mode, press and hold both range buttons simultaneously. The LEDs will flash and the piezo will beep to indicate the mode.

***	3 green flashes and beeps – default NFC range, which is 10 (maximum)
*	1 red flash and beep – operation mode 1
**	2 red flashes and beeps – operation mode 2
***	3 red flashes and beeps – operation mode 3
****	4 red flashes and beeps – operation mode 4
*****	5 red flashes and beeps – operation mode 5
******	6 red flashes and beeps – operation mode 6

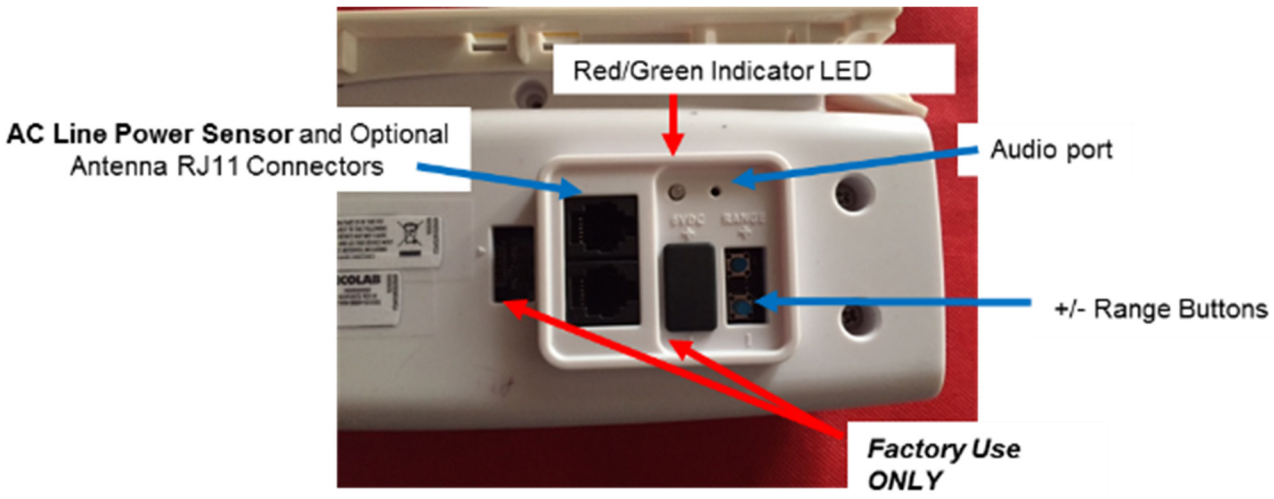


Figure 3. Bed Beacon Details

2.1 Bed Mode (Default) (Internal antenna only)

* 1 red flash and beep – operation mode 1

In "Bed Mode", the Bed Beacon is mounted on a patient bed and connected to an AC Line Power Sensor through either RJ11 connector. The Bed Beacon is then able to detect when the bed's AC power cord is connected to a wall outlet, causing the Bed Beacon to emit a beep and the LED to flash green. The state of the AC Line Power Sensor is included in the information sent when the Bed Beacon sends out a heartbeat message over the System's proprietary wireless network. If the bed's power cord is disconnected from AC wall power, the Patient Zone will be turned off and will remain off while the bed is in transit. When the AC Line Power (ALP) Sensor senses that the power is disconnected, the Bed Beacon will emit a beep and flash the red LED. When the bed's power cord is plugged in again, the Bed Beacon will emit a beep and flash the green LED (may take up to 3S for the Bed Beacon to acknowledge the change in state).

2.2 Bed Mode, Using External Antenna Only

** 2 red flashes and beeps – operation mode 2

To set the mode, press and hold both range buttons down. Immediately, the **Beacon** will flash the green LED three (3) times. With each flash, there will be an audible alert (beep). Continue to hold the range buttons down while the bed beacon continues to cycle through the operation modes, until you reach two (2) red LED flashes / 2 audible beeps. Release the range buttons to set.

In this mode, the patient zone is created by the External Antenna only. The Bed Beacon itself is used to communicate with badges and the System network hubs. In "Bed Mode, External Antenna Only", the **Bed Beacon** is mounted on a patient bed and connected to the **AC Line Power Sensor** through either RJ11 connector. The **External Antenna** is connected to the Bed Beacon using the remaining RJ11 connector and is then also attached to the bed, in a central location, as it will generate the patient zone. The Bed Beacon is then able to detect when the bed's AC power cord is connected to a wall outlet,

causing the Bed Beacon to emit a beep and the LED to flash green. If the bed's power cord is disconnected from AC wall power, the Patient Zone will be turned off and will remain off while the bed is in transit. When the AC Line Power (ALP) Sensor senses that the power is disconnected, the Bed Beacon will emit a beep and flash the red LED. When the bed's power cord is plugged in again, the Bed Beacon will emit a beep and flash the green LED.

2.3 Bed Beacon, Using Internal and External Antenna Mode

(Toggling back and forth between the internal and external antenna)

*** 3 red flashes and beeps – operation mode 3

To set the mode, press and hold both range buttons down. Immediately, the **Beacon** will flash three (3) times the green LED. With each flash, there will be an audible alert (beep). Continue to hold the range buttons down while the bed beacon continues to cycle through the operation modes, until you reach three (3) red LED flashes / 3 audible beeps. Release the range buttons to set.

In this mode, **External Antenna** is plugged into either RJ11 connector on the Bed Beacon, and both the Bed Beacon and the External Antenna are attached to the bed, likely one on each side, or one on each end of the bed. The patient zone is created by alternating between the Internal and the External Antenna, allowing for extension of the patient zone area. The Bed Beacon communicates with badges and the System network hubs. The AC Line Power Sensor is connected to the Bed Beacon through the remaining RJ11 connector. The Bed Beacon is then able to detect when the bed's AC power cord is connected to a wall outlet, causing the Bed Beacon to emit a beep and the LED to flash green. If the bed's power cord is disconnected from AC wall power, the Patient Zone will be turned off and will remain off while the bed is in transit. When the AC Line Power (ALP) Sensor senses that the power is disconnected, the Bed Beacon will emit a beep and flash the red LED. When the bed's power cord is plugged in again, the Bed Beacon will emit a beep and flash the green LED.

2.4 Stretcher Mode, using Internal Antenna Only

**** 4 red flashes and beeps – operation mode 4

"Stretcher Mode" is used when the **Bed Beacon** is mounted directly under a patient stretcher and there is no **AC Line Power Sensor** connected to it. In stretcher mode, the Bed Beacon will always have the Patient Zone "on". To set the Bed Beacon mode, press and hold both range buttons down. Immediately, the Beacon will flash three (3) times the green LED. With each flash, there will be an audible alert (beep). Continue to hold the range buttons down while the bed beacon continues to cycle through the operation modes, until you reach four (4) red LED flashes / 4 audible beeps. Release the range buttons to set.

2.5 Stretcher Mode, using External Antenna Only

(Mounted to stretcher OR stationary installation with floor antenna)

***** 5 red flashes and beeps – operation mode 5

"Stretcher Mode using External Antenna" can be used when the Bed Beacon and an External Antenna are both mounted directly under a patient stretcher and there is no AC Line Power Sensor connected to the Bed Beacon. In stretcher mode, the Bed Beacon will always have the Patient Zone "on", but in this mode the patient zone is created by the External Antenna only.

This mode can also be used to create a stationary patient zone, where the bed beacon is used together with a floor antenna, and the floor antenna creates the patient zone (one may optionally also use the 6V power supply for the bed beacon in this configuration).

To set the mode, press and hold both range buttons down. Immediately, the Beacon will flash three (3) times the green LED. With each flash, there will be an audible alert (beep). Continue to hold the range buttons down while the bed beacon continues to cycle through the operation modes, until you reach five (5) red LED flashes / 5 audible beeps. Release the range buttons to set.

2.6 Stretcher Mode Using Internal and External Antenna Mode

(Toggling back and forth between the internal and external antenna)

****** 6 red flashes and beeps – operation mode 6

"Stretcher Mode" is used when the Bed Beacon is mounted directly under a patient stretcher and there is no AC Line Power Sensor connected to it. In stretcher mode, the Bed Beacon will always have the Patient Zone "on". In this mode the patient zone is created alternatingly by the External Antenna and the Bed Beacon's internal antenna. This is used to extend the effective area of the patient zone. To set the mode, press and hold both range buttons down. Immediately, the Beacon will flash three (3) times the green LED. With each flash, there will be an audible alert (beep). Continue to hold the range buttons down while the bed beacon continues to cycle through the operation modes, until you reach six (6) red LED flashes / 6 audible beeps. Release the range buttons to set.

3. INSTALLATION

3.1 Stationary Patient Zone, with Floor Antenna

The floor antenna is available in two versions: rubber-backed or adhesive backed. The rubber-backed version is movable/repositionable, and it is the preferred version for use in temporary customer trial installations. The adhesive-backed floor antenna acts as a semi-permanent installation. It can be removed, without damage to the flooring, but cannot be repositioned and reused once taken up from its original installation site.

1) Stationary Patient Zone: Rubber-Backed Floor Antenna Plus Bed Beacon

The floor antenna should be centered on the floor underneath the bed. Once the antenna is correctly in place, the bed beacon mounting bracket can be mounted on the wall, close to floor level. The installer should consult with the hospital staff to determine the preferred location.

If the optional 6V power supply will be used to power the bed beacon, use of a nearby power outlet should be approved by the hospital staff, and that location should also be taken into consideration when determining placement of the mounting bracket.

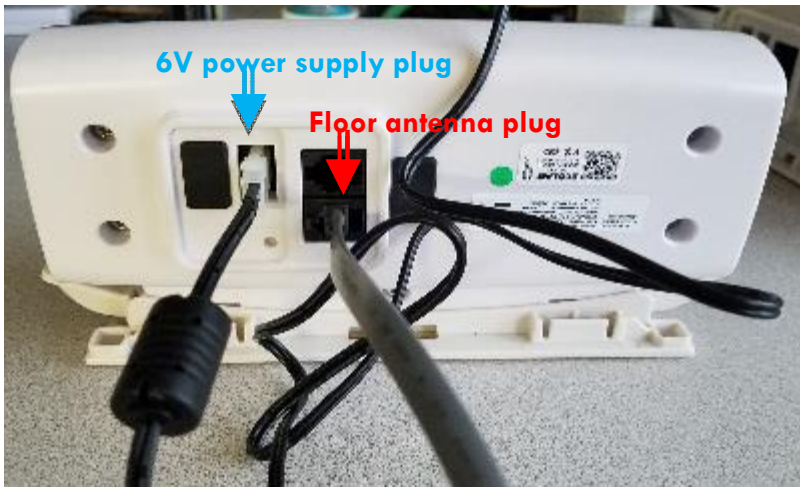
Wall anchors, Command Strips, double sided tape or Velcro are all optional methods to attach the mounting bracket to the wall.

After installing batteries in the bed beacon (see step 4.2), either as primary or backup power, install the bed beacon into the mounting bracket by pressing the flat side into the bracket until a click is heard. Pull gently on the bed beacon to check that the beacon is securely seated in the bracket. To remove the bed beacon from the mounting bracket, push on either release tab while holding the bed beacon and pull to remove (See figure 7 below).

2) Rubber-Backed Floor Antenna Plus Bed Beacon: Cable management

Measure and cut a piece of pressure sensitive adhesive tape long enough to reach from approximately 5 inches from the edge of the antenna, to the wall, and optionally up the wall to an appropriate spot. Cover the floor antenna cord with the tape, working away from the floor antenna, and being careful to achieve a flat seal with the floor on both sides. Take the remaining cord and wrap around the bed beacon mounting bracket, tucking it into the release tabs, and leaving enough free cable to insert the plug into the bed beacon's RJ-11 port. Use a cable tie to secure if needed.

If the optional 6V power supply will be used in the installation, plug the cable end into the bed beacon in the appropriate receptacle, as shown below. Plug the power supply into wall outlet specified by hospital staff. Use cable ties and/or cable tie holders to manage excess cord to avoid catching on bed or other hospital equipment.



3) Stationary Patient Zone: Adhesive-Backed Floor Antenna Plus Bed Beacon

The adhesive-backed floor antenna will be installed under the bed, so as to be roughly centered (slightly biased towards the upper end of the bed).

Begin the installation process by ensuring that the floor surface at the installation site is clean, dry and free of dust or other particles. If the area requires cleaning, this can be performed with a damp mop or cloth, then allowed to air dry or dry with a paper towel or cloth.

Remove the paper backing starting at the edge of the mat with the cord. This edge will need to be installed towards the bed beacon installation location (for example, the head wall of a bed or stretcher). Carefully lay down the adhesive edge in the desired install location, smoothing with your hand to ensure there are no wrinkles or bubbles. Gradually continue pulling off the paper backing from the adhesive side of the floor antenna, smoothing the surface as you go.

Once the antenna is correctly in place, the bed beacon mounting bracket can be mounted on the wall, close to floor level. The installer should consult with the hospital staff to determine the preferred location.

If the optional 6V power supply will be used to power the bed beacon, use of a nearby power outlet should be approved by the hospital staff, and that location should also be taken into consideration when determining placement of the mounting bracket.

Wall anchors, Command Strips, double sided tape or Velcro are all optional methods to attach the mounting bracket to the wall.

After installing batteries in the bed beacon (see step 4.2), either as primary or backup power, install the bed beacon into the mounting bracket by pressing the flat side into the bracket until a click is heard. Pull gently on the bed beacon to check that the beacon is securely seated in the bracket. To remove the bed beacon from the mounting bracket, push on either release tab while holding the bed beacon and pull to remove (See figure 7 below).

4) **Adhesive-Backed Floor Antenna Plus Bed Beacon: Cable management**

Measure and cut a piece of pressure sensitive adhesive tape long enough to reach from the edge of the antenna where the flat flexible cable emerges, to the wall, and optionally up the wall to an appropriate spot. Remove the paper backing from back of the flat flexible cable and adhere the cable to the floor and route up the wall. Attach the PCB box to the wall using Velcro or a Command Strip. Cover the floor antenna cord with the tape, working away from the floor antenna, and being careful to achieve a flat seal with the floor on both sides. Take the remaining cord and wrap around the bed beacon mounting bracket, tucking it into the release tabs, and leaving enough free cable to insert the plug into the bed beacon's RJ-11 port. Use a cable tie to secure if needed.

If the optional 6V power supply will be used in the installation, plug the cable end into the bed beacon in the appropriate receptacle, as shown below. Plug the power supply into wall outlet specified by hospital staff. Use cable ties and/or cable tie holders to manage excess cord to avoid catching on bed or other hospital equipment.

3.2 Mounting Bracket 9205-2337 Installation - Patient Bed

The **Mounting Bracket** can be mounted in the center of the lower bed frame *(see Figure 4)*.

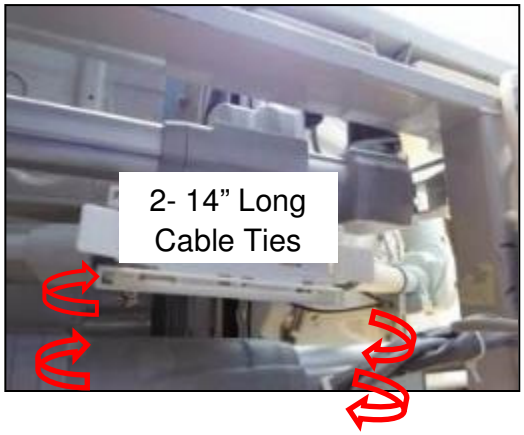


Figure 4. Mounting Bracket on Patient Bed Model Hill-Rom Versa Care P3200

Make sure the Mounting Bracket location surface is clean and free of dirt and oil. Spray a mixture of liquid dish soap (1% soap per gallon of water) and scrub the mounting surface with a plain Scotch-Brite scouring pad. Wipe the surface with a lint-free cloth to clean off any contaminants. Next, use a soft cloth dampened with isopropyl alcohol to further clean the mounting surface. Repeat the process as necessary. Ensure that the mounting surface is dry before attaching the Mounting Bracket. Peel off the double-sided tape liner on the Mounting Bracket. Firmly press and hold the Mounting Bracket in place for several minutes. Secure the Mounting Bracket with the two (2) 14 inch long cable ties, one (1) on each side of the Bracket. Finally, flush cut off the excess cable tie ends.

3.3 Bed Beacon Installation

Remove the front battery cover, using a Phillips head screwdriver. Correctly position battery polarity and insert two new alkaline D cell batteries (see Figure 4). After the Bed Beacon batteries are installed, the Bed Beacon will perform a POST (Power On Self-Test).
(a)*** - Three green LED flashes (Range Switch test). If only one green flash, + range switch is stuck closed (pressed). If only two green flashes, - range switch is stuck closed (pressed).
(b) Pause
(c)**** - Alternate between green and red LED 2 times (LED test)
(d) BEEP - Piezo test
(Note: If the POST LED flashes red three times, then the Bed Beacon is defective.)
Replace the Bed Beacon's battery door and re-tighten screw. Set the Bed Beacon in the desired Bed/Stretcher Mode.

Figure 5. Installing Batteries

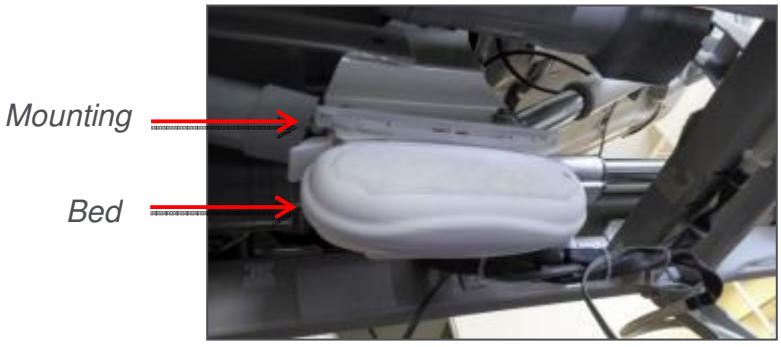


Figure 6. Version 1 Bed Beacon (9205-2185) Mounted on Patient Bed Model Hill-Rom Versa Care P3200

(*Note: Photographs showing the mounting of the Bed Beacon on Hospital Beds will depict an earlier version of the Bed Beacon, 9205-2185.)*

Before attaching the Bed Beacon to the Mounting Bracket, position the Bed Beacon based on AC Line Power Sensor cable management. Press the Bed Beacon (flat side) into the Bracket until a click is heard. Pull downward on the Bed Beacon to verify that the attachment is secure.

To unclip the Beacon, push up on either Mounting Bracket tab to release (See Figure 7).

Bed Beacon Release Tab  **Bed Beacon** Release Tab

Figure 7. Mounting Bracket Release Tabs

3.4 AC Line Power Sensor

The **AC Line Power Sensor** *(see Figure 7)* is strapped to the bed's AC power cord approximately three (3) inches from the bed cord's power connector. The **AC Line Power Sensor** senses if the bed is connected to AC power, and will activate or deactivate the **Bed Beacon** accordingly. The **AC Line Power Sensor** is connected to the **Bed Beacon**. It mounts to bed's power cord with two (2) cable ties. Make sure a service loop is left in the **AC Line Power Sensor's** cable run, allowing the bed to be raised and lowered. Note: Stretchers are installed without the **AC Line Power Sensor** when they don't have an AC power cord. In stretcher mode the bed beacon field is continuously on.

AC Line Power Sensor attached to power cord

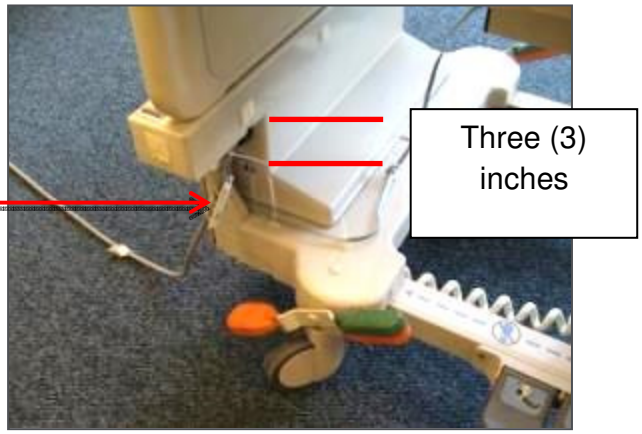


Figure 8. AC Line Power Sensor Attached to Power Cord

Cable Tie Mounting

Attach the AC Line Power Sensor to the patient bed's AC power cord using 2 cable ties *(see Figure 7)*. Use cable tie holders for routing the wire to the Bed Beacon, and make sure the mounting surface is clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces.

4. CABLE MANAGEMENT – HILL ROM VERSACARE P3200

1) Place cable tie holders and cable ties, then route cable to the **Bed Beacon** as shown *(see Figure 7, 8 & 9)*. Make sure the mounting surfaces are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean the mounting surfaces. Avoid routing cables near the bed's patient fall detect sensor IR beam path.

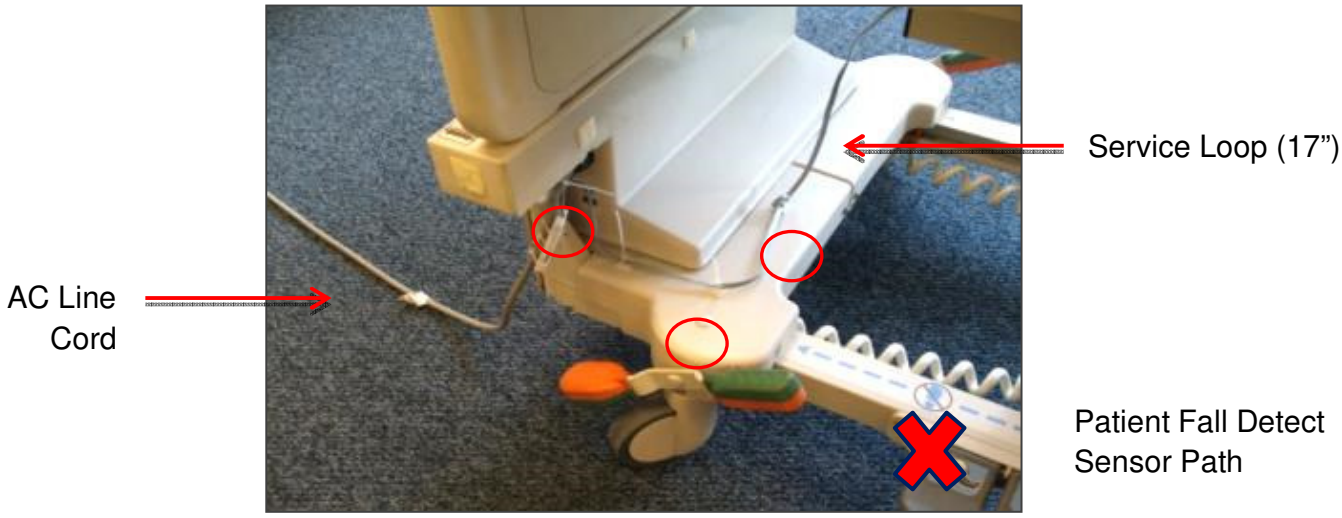


Figure 9. AC Line Power Sensor Cable Routing and Cable Tie Holder Placement

2) Place cable tie holders and route the **AC Line Power Sensor** cable along the inside rail and tie down any excess cable (service loop) as shown (see Figure 9).

Figure 10. AC Line Power Sensor Cable Routing and Cable Tie Holder Placement

3) Place a cable tie holder and route the **AC Line Power Sensor cable** as shown (see Figure 11).

Figure 11. AC Line Power Sensor Cable Routing to Bed Beacon and Cable Tie Holder Placement

5. ADJUSTING THE PATIENT ZONE

5.1 Range Adjustment on Beds

The **Bed Beacon** communication range is adjusted during installation to optimize communication with the healthcare worker **Badge**. To adjust the communication range, remove the rubber range cover (*see Figure 11*) located on the back of the **Bed Beacon**. After the range cover has been removed, the **Bed Beacon** communication range is adjusted by repeatedly pushing either the "+" increment or the "–" decrement range buttons (*see Figure 12)* to achieve the desired range. The total adjustable range of the **Bed Beacon** is from 1 to 10 increments between the lowest and the highest setting. Each push of the "+" button will produce an audible beep and the green LED will flash once indicating one (1) increment up. When the highest setting is reached, two (2) audible beeps will be heard and two (2) green LED flashes will be visible. Each push of the "-" button will produce an audible beep and the red LED will flash once indicating one (1) increment down. When the lowest setting is reached, two (2) audible beeps will be heard and two (2) red LED flashes will be visible. To reset a **Bed Beacon's** range back to the factory default setting, push and hold both the "+" and "-" buttons at the same time. Four (4) audible beeps will be heard and the LEDs will flash in an alternating pattern between green and red. The factory default range setting for the **Bed Beacon** is position 10. Replace the range button cover when the adjustment is complete. NOTE: The HHCM915 BEACON INSTALLATION TOOL (92053074) can also be used to adjust the bed beacon range, without need to touch the bed beacon controls. Please consult the Beacon installation tool user guide for further information.

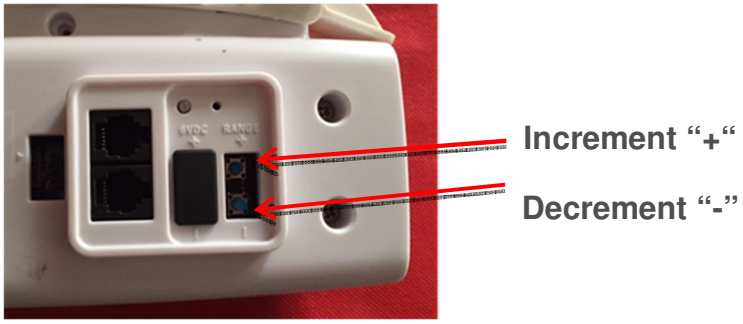


Figure 12. Bed Beacon Range Adjustments

5.2 Test Badge Range Adjustment

1) Bed Installs - Adjust the bed and mattress height to the average height for beds in the facility.

2) Stretcher Installs - Adjust the stretcher and mattress height to the average height for stretchers in the facility.

3) Bed Installs - While holding the Test **Badge** (LTF1005 without **Network**) 50 inches from the floor and 18 inches from the bed's handrail center location (side of bed) (*see Figures 13 & 14)*, the Test **Badge's** red and yellow LEDs should flash once a second, indicating that the proper activation range and communication have been successfully established. If range is not 18" adjust the **Bed Beacon's** range buttons until the **Badge** activation range is 18 inches (*see Figure 13).* Once the range has been set, use the Test **Badge** (LTF1005 with **Network**) to verify the **Bed Beacon** communication to **CompassNet** by placing the **Badge** in the field.

4) Stretcher Installs - While holding the Test **Badge** (LTF1005 Network) 50 inches from the floor (*Figure 13*) and at the edge of the stretcher handrail center location (side of stretcher), the Test **Badge's** red and yellow LEDs should flash once a second, indicating that the proper activation range and communication have been successfully established. If range is not at the edge of the handrail adjust the **Bed Beacon's** range buttons until the **Badge** activation range is at the edge. Once the range has been set, use the Test **Badge** (LTF1005 with **Network** to verify the **Bed Beacon** communication to **Network** by placing the **Badge** in the field.

Figure 13. Test Badge Height Is 50 Inches From the floor

Figure 14. Test Badge Activation Distance from Bed's Handrail Center is 18" (at edge for stretcher installations)

5.3 Ecolab Dashboard Test with the Network Badge and Bed Beacon

If needed, please refer to *"Ecolab™ Hand Hygiene Program Compliance Monitoring System Dashboard Directions for Use*" for further information on how to use the **Dashboard**.

1) Using a HCW **Badge**, verify that the **Bed Beacon** and **Badge** activate at 18 x 50 inches. Also verify that the **Bed Beacon's** device address appears on the **Dashboard**.

2) Using a web browser, type the facility's **Dashboard** URL and you should see login screen shown in *Figure* 14.

3) Type in the correct email address and password to login to the **Dashboard**.

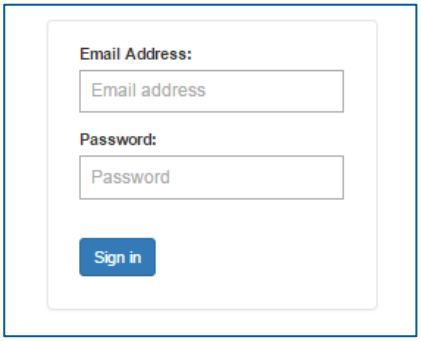


Figure 15. Dashboard Entry Screen

4) When access is granted you should see the screen shown in Figure 16.

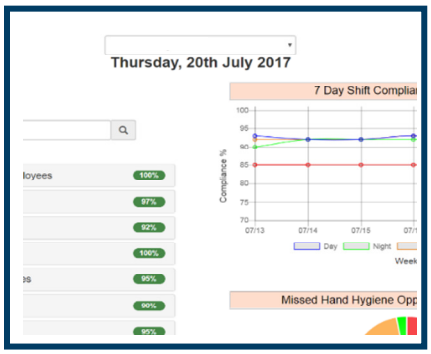


Figure 16. Main Dashboard Page

5) Click on "System Menu" under the System Tab as shown in Figure 17.

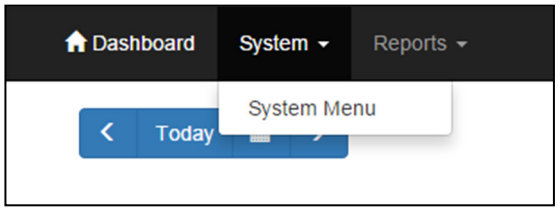


Figure 17. Choose System Menu Screen

Click on **Bed Beacons** and a list of all current active **Bed Beacons** will be displayed as shown in *Figure 18.*

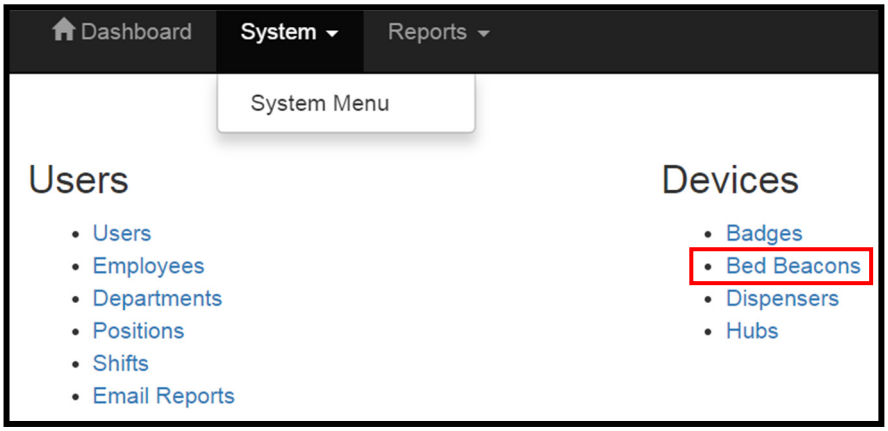


Figure 18. System Menu Screen

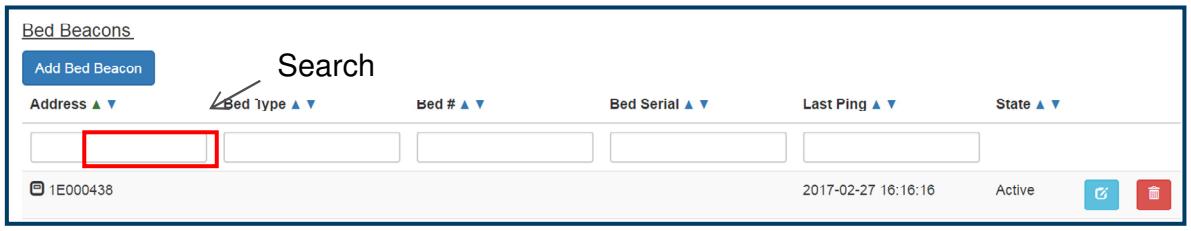


Figure 19. Search for Bed Beacon address

6) Enter the **Bed Beacon's** device address number as shown in *Figure 19* and click the enter key. The list will automatically display the results.

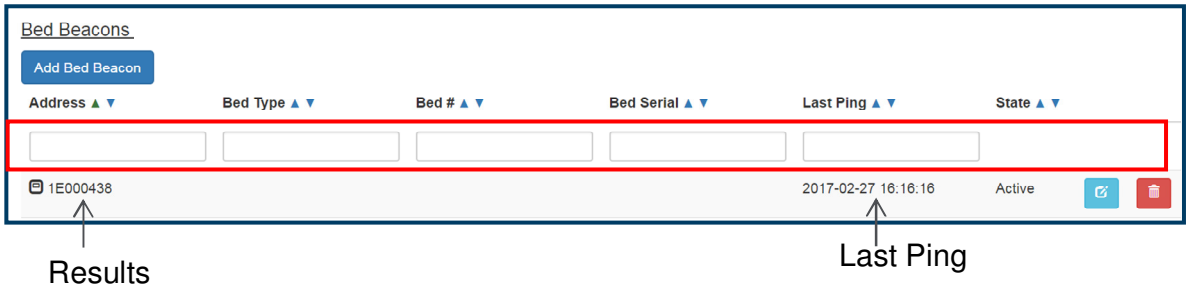


Figure 20. Device Screen Results

7) If the **Bed Beacon** address appears in the results and has a recent "Ping Time", this confirms that the **Bed Beacon** successfully communicated with **the Network** (*see Figure 20*). If the **Bed Beacon** address does not appear in the results, retest with a **Badge**.

There may be circumstances which require a **Bed Beacon's** range to be adjusted, after the initial installation, to properly communicate with a **Badge**. Examples of why a **Bed Beacon's** range may need to be adjusted are explained below.

Cases for **Bed Beacon** Range Adjustment

1. Two beds with **Bed Beacons** in one room.

2. Two beds with **Bed Beacons** in separate but adjacent rooms separated by a wall.

In both cases, the range of communication of a given Bed Beacon may overlap or interfere with a nearby Bed Beacon. If this occurs, the HCW's Badge may communicate with a nearby Bed Beacon instead of the intended Bed Beacon. This miscommunication can result in the System reporting contact with the wrong patient. To eliminate the possibility of miscommunication, the range of Bed Beacons in close proximity may be decreased, at any time, to ensure that a HCW's Badge will communicate with the intended Bed Beacon.

6. METADATA ENTRY

6.1 New Bed Beacon Metadata Entry

NOTE: Metadata may also be entered directly through the Ecolab Encompass Mobile App.

Activate the **Bed Beacon** with a **Badge**, twice, at the hospital. The events will be transmitted to the server to be viewed on the **Dashboard**. To locate the active **Bed Beacon**, login to the **Dashboard** and select the "**Bed Beacon**" option under the **System** menu.

The metadata can only be accessed by restricted logins. Read the **Bed Beacon** address on the product label. The **Bed Beacon's** hexadecimal address will start with a 1E. The 1E at the beginning of the address is the device type and tells the **Dashboard** that this is a **Bed Beacon**. Enter the full address into the "Address" column search window. In the example below, the address is 1E000767 (*see Figure 21*). Click the "Click to Edit Device" icon under the "State" column to open the device's metadata page.

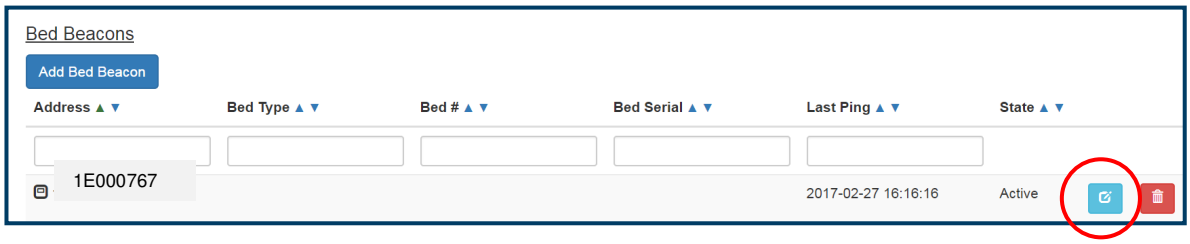


Figure 21. Active Bed Beacon List

Device Information (*see Figure 22*)
The **Bed Beacon** device information is optional. The device information can be found on the product label. An example from the product label can be located on the same page (*see Figure 22*)

Bed Type: example – "Hill Rom/VersaCare" (optional metadata). The bed manufacturer and model information can assist staff in identifying a bed

Bed Number: example – "001" (required metadata). The installer can choose to place a numbered label at the bed's footboard frame to easily identify beds since the **Bed Beacon** label may not be in a convenient location to easily view.

Bed Serial Number: example – "123456" (optional metadata). The bed serial number information can assist staff in identifying a bed.

State:

Active- Device is currently active within the **System**.

Inactive- Device will be removed from any reports.

RMA- Repair

Figure 22. Bed Beacon Metadata

6.2 Replacing an Existing Bed Beacon – Swapping Metadata

Remove the **Bed Beacon** and read the address from the product label. Select the "Replace Device" function under system menu (*see Figure 23*). The replacement tab will open as shown in *Figure* 24. Enter or scan via bar code reader the old **Bed Beacon's** address into the first box labeled "old device address". Next, enter or scan via bar code reader the new **Bed Beacon's** address into the second box labeled "new device address". Finally, click the "submit button" to complete replacing the existing **Bed Beacon**.

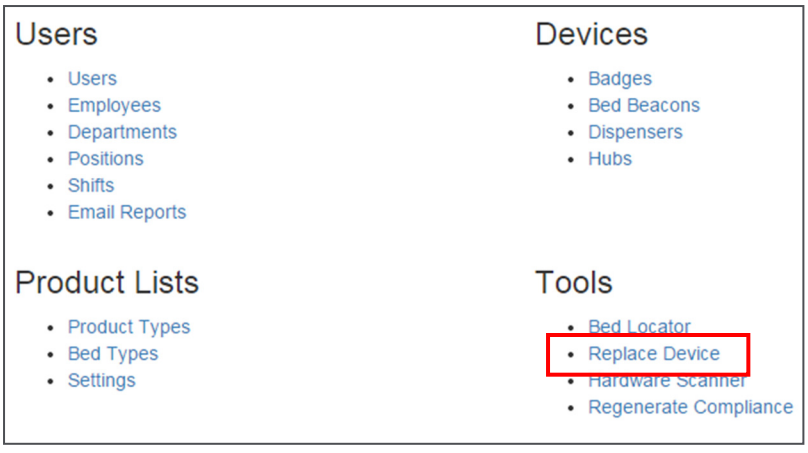


Figure 23. Replace Device

Figure 24. Replace Device Tab

7. TROUBLESHOOTING

7.1 No Bed Beacon Heartbeats on the Dashboard

If the **Bed Beacon** has stopped transmitting heartbeats to the **Dashboard,** there are three possible causes:

1) The batteries have died. Place a new set of D batteries in the **Bed Beacon** and test the **Bed Beacon's** other function, communications with a **Badge** as described in section 6.3. If the unit tests well, then give the **Bed Beacon** a couple of hours to transmit a few heartbeats to the **Dashboard**.

2) If new batteries do not fix the problem, there may be a problem with the **Bed Beacon** hardware. Remove and replace the **Bed Beacon**. Refer to section 7.2 – *Replacing an Existing **Bed Beacon** – Swapping Metadata* **--** for instructions on how to replace/update device information on the **Dashboard**.

3) If replacing the **Bed Beacon** does not remedy the problem, there may be a problem with **the Network** Contact your Ecolab representative for further assistance.

7.2 The Bed Installation Does Not Communicate with a Badge

Verify that the bed's AC power cord is plugged into an active power source and that the **AC Line Power Sensor** is connected to the bed's power cord.

Note*: If any of the components of the Bed Installation are replaced, the bed's range will have to be re-checked and readjusted as needed.*

8. SYSTEM COMPONENT CARE AND MAINTENANCE

8.1 Cleaning the Components

The components may be cleaned by wiping with a soft cloth. The cloth should be damp but not wet. A soft cloth dampened with isopropyl alcohol works well to clean the external surfaces. Only the exterior of the components may be cleaned. Do not attempt to clean any interior surface of these components as this will damage the component's circuitry. Do not use abrasive cleaners or cleaning products in aerosol cans as they will damage the component's finish.

8.2 Handling the Bed Beacon

The **Bed Beacon** is an electronic device and should be handled with care. Like other electronic devices such as cell phones, the **Bed Beacon** must be protected from extreme heat, cold and moisture. Avoid handling the **Bed Beacon** with wet hands or exposing it to rain. Avoid dropping or tossing the **Bed Beacon**. The shock can damage the **Beacon's** sensitive internal electronics.

8.3 Replacement Batteries

Replacement batteries for **Bed Beacons** must be Energizer Max alkaline D batteries. Use of any other brand batteries will result in suboptimal performance.

9. APPENDIX A - CERTIFICATION AND SAFETY APPROVALS

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Changes or modifications not expressly approved by Ecolab could void the user's authority to operate the equipment.

RF EXPOSURE:
"This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."

Industry Canada

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This radio transmitter (IC:10060A-92053072) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC:10060A-92053072) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour
l'exploitation de l'émetteur.

Magnetic Loop Antenna
Ceramic Chip Antenna: -2.5 dBi

RF Exposure: This equipment complies with Industry Canada radiation exposure limits set forth for an Uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Exposition aux radiofréquences : Cet équipement est conforme aux limites d'exposition par rayonnements définies par l'industrie du Canada pour une utilisation dans un environnement non clos. Cet équipement doit être utilisé à une distance minimale de 20 cm entre l'émetteur de radiation et votre corps. Cet émetteur ne doit pas être situe au même endroit qu'un autre émetteur et ne doit pas être connecté à une antenne différente.

10. APPENDIX C – BED LABEL

The bed label (*see Figure* 1) is used to quickly indicate to staff or Ecolab Service Technicians that a bed beacon is installed on the bed. During installation, the bed labels are applied on or near the foot-board frame of the patient bed (*see Figure* 2).

Figure 1. Bed Installation Label

Figure 2. Bed Label Location

11. APPENDIX D- Z BRACKET (9205-2236)

The **Z Bracket** (*see Figure 1*) is an optional mounting brace for the **Bed Beacon** to be mounted onto the VersaCare model bed. The **Z Bracket** helps to elevate the **Bed Beacon** from the ground when the bed is at its lowest point.

Mounting
Mount the **Z Bracket** under the bed on the metal surface shown in *Figure 2* with double-sided tape and cable tie. Make sure the mounting surface is clean and free of dirt and oil. First, spray a mixture of liquid dish soap (1% of soap per gallon of water) and scrub the mounting surface with a plain Scotch-Brite scouring pad. Wipe the surface with a lint free cloth to clean off any contaminants. Second, use a soft cloth dampened with isopropyl alcohol to further clean the mounting surface. Repeat the process as necessary. Ensure the mounting surface is dry before attaching the **Z Bracket** and firmly push and hold in place for several minutes (*see Figure 2*). Once the **Z Bracket** is firmly mounted, secure the **Bracket** by cable tying it to the bed frame (*see Figure 2*), use small wire cutters to carefully flush cut off and dispose of all cable tie ends. Finally, place the **Bed Beacon** onto the **Z Bracket** as shown in *Figure 2* with double-sided tape.

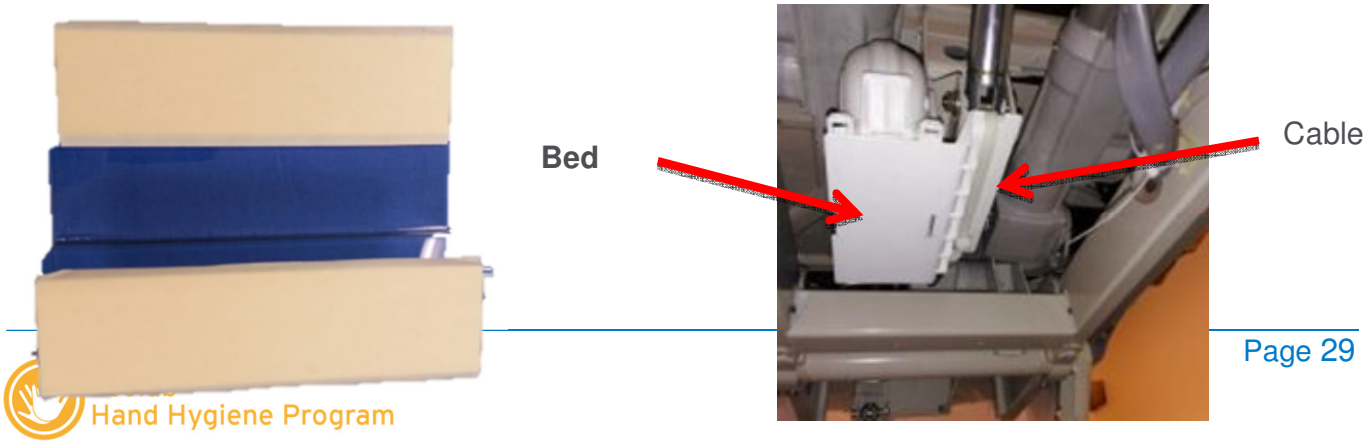


Figure 2. Mounting the Z

Figure 1. Z Bracket

12. APPENDIX E - PATIENT BED

13. HILL-ROM ADVANTA INSTALLATION

14. INSTALLATION

14.1 Step 1: Bed Mode Configuration

Install 2 Energizer Max alkaline D cell batteries into the Bed Beacon. The Bed Beacon needs to be configured to bed mode before installing the Bed Beacon onto the bed. To verify the Beacon's mode, hold both range buttons down. Immediately, the Beacon will alternate four (4) times between green and red flashes. With each flash, there will be an audio alert. Two (2) seconds later, the Bed Beacon should flash green and beep once. The green flash and audio alert confirms that the Beacon is set for bed mode. If there is one (1) red LED flash and one (1) beep, the Bed Beacon was already in bed mode and is now in stretcher mode. Repeat the process to get the Bed Beacon back into bed mode.

14.2 Step 2: Installing the Bed Beacon (92053072)

The patient bed must be raised to a height of 32 inches from the floor to gain access to all the mounting locations.

Bed Beacon Mounting
Mount the **Bed Beacon** underneath the bed frame with double-sided tape as shown in *Figure 1*. Make sure the **Bed Beacon** and the mounting surface are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces. Firmly push and hold in place for several minutes (*see Figure 1*).

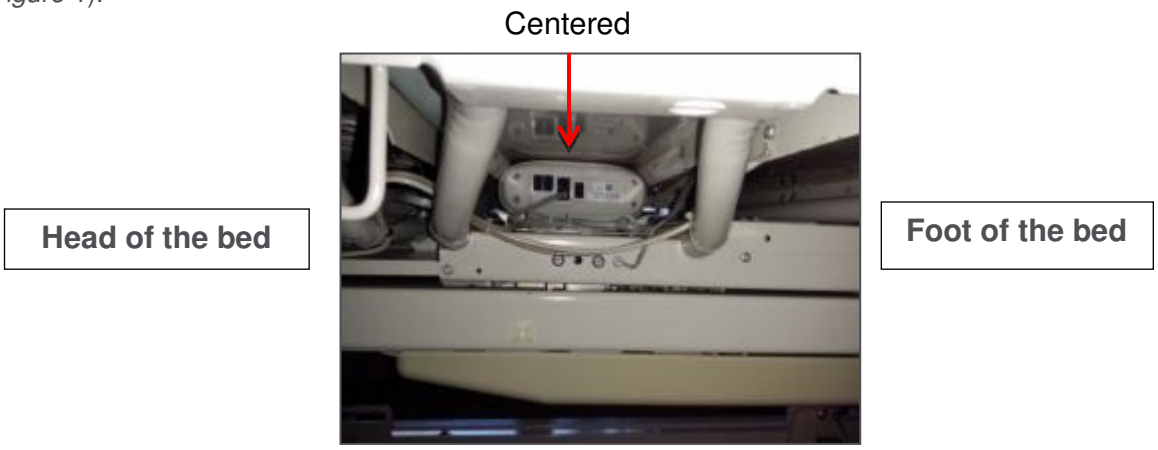


Figure 1. Bed Beacon Installation Location

14.3 Step 3: Installing AC Line Power Sensor on Bed's AC Power Cord

The **AC Line Power Sensor** *(see Figure 2)* is mounted onto the bed's gray AC power cord located underneath the bed. Use the supplied cable ties to secure the **AC Line Power Sensor** to the bed's power cord as shown. The **Bed Beacon** Patient Zone is only enabled when the **Sensor** detects AC power on the bed's line cord after it is plugged into an AC outlet. The **Bed Beacon** Patient Zone will be disabled while the bed is unplugged. The **Bed Beacon** will send heartbeats in both the enabled and disabled modes.

AC Line Power Sensor attached to the bed's power cord

Figure 2. The AC Line Power Sensor Installation Location on the Bed

14.4 Step 4: Adjusting the Bed Beacon to Proper Field Range

1. Connect the **AC Line Power Sensor** to the **Bed Beacon** via any RJ11 jacks as shown in *Figure* 3.

Figure 3. Connecting the AC Line Power Sensor to the Bed Beacon via the RJ11 connector

2. Plug the patient bed's AC power cord into a 120vAC power source. This will activate the **Bed Beacon** so that the range setting and all testing can be performed. Refer to section 6 - *Adjusting the* ***Patient Zone*** -- in the main section of this document for instructions on adjusting the communication range.

15. CABLE MANAGEMENT

15.1 Step 5: AC Line Power Sensor Cable Routing

1. Place cable tie holders, cable ties and route **AC Line Power Sensor** cable to the **Bed Beacon** as shown *(see Figure 4 & 5)*. Make sure the mounting surfaces are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean mounting surfaces.

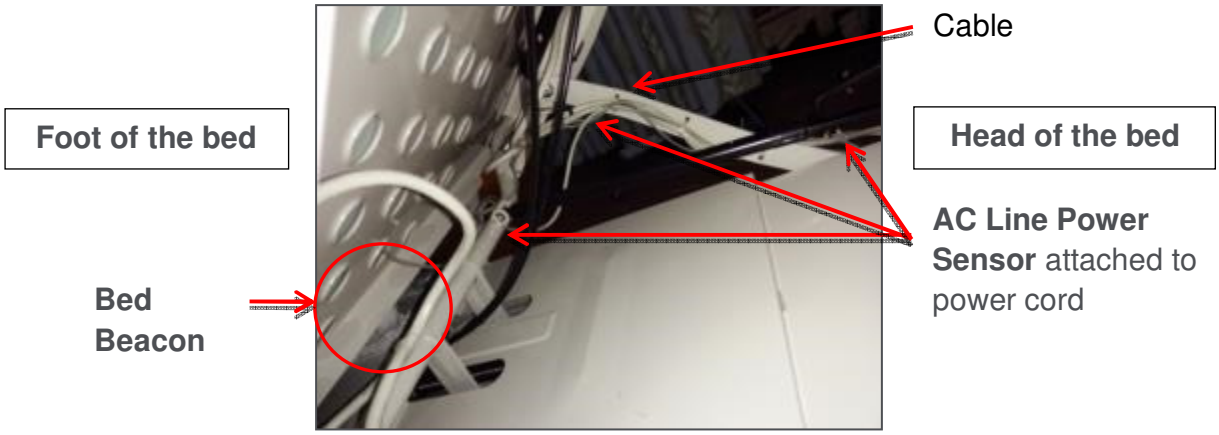


Figure 4. AC Line Power Sensor Cable Routing to the Bed Beacon

2. Route the **AC Line Power Sensor** cable underneath the headboard along the metal rail frame. Secure the cable with cable ties shown in *Figure* 4 & 5.

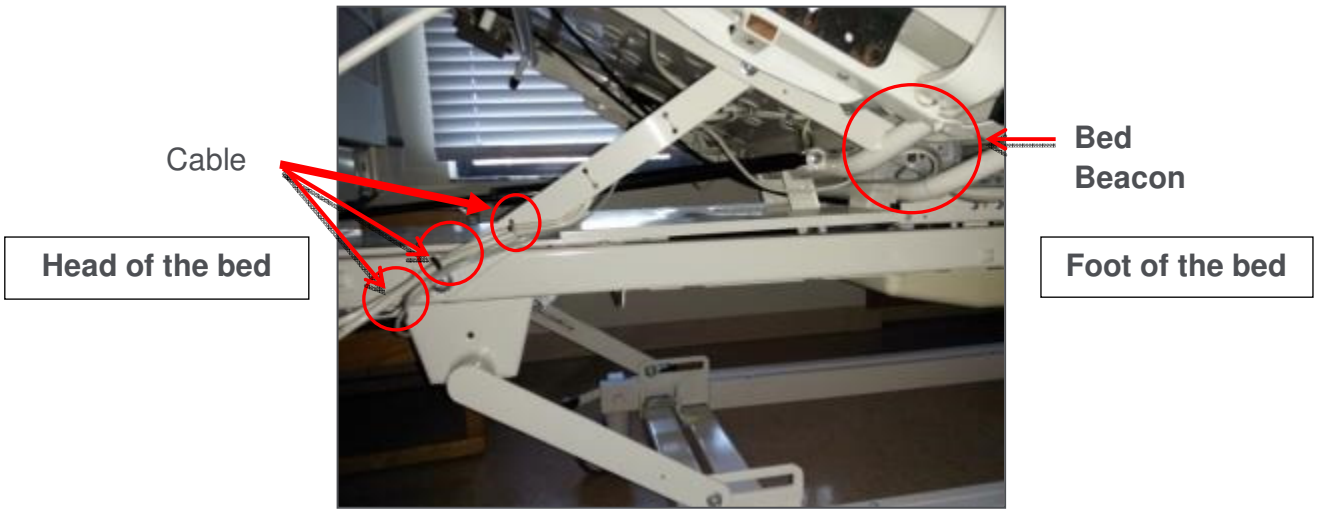


Figure 5. AC Line Power Sensor Cable Routing

3. Place cable tie holders, route and tie down any excess cable from the **AC Line Power Sensor** as shown (*see Figure 5).* After all cable management is complete, use small wire cutters to carefully flush cut off and dispose of all cable tie ends.

16. STEP 6: FINAL TEST

16.1 Disconnect and Reconnect the Bed's AC Power Cord

Confirm that the bed's AC power cord is connected into a 120vAC power source. Disconnect the bed's AC power cord and within 5 seconds you will hear one beep and the **Bed Beacon** LED will flash red once. Reconnect the bed's AC power cord and within 5 seconds you will hear one beep and the **Bed Beacon** LED will flash green once. This will confirm that everything is working properly. Complete the installation by following the instructions on metadata entry in section 7 – *Metadata Entry* -- in the main section of this document.

17. BED INSTALLATION CHECKLIST

Organize all required equipment & tools

1. **For installation adjust the bed mattress height to 32 inches**
2. **For safetly reasons disconnect the bed AC power cord from 120vAC source**
3. **Step 1 - Bed Beacon Mode Configuration**
4. **Step 2 - Installing the Bed Beacon (92053072)**
5. **Step 3 - Install the AC Line Power Sensor (9205-2186)**
6. **Step 4 - Adjusting the Bed Beacon to Proper Field Range Refer to section 6**
7. **Step 5 - AC Line Power Sensor Cable Management**
8. **Step 6 - Final Test: Disconnect and Reconnect the Bed's AC Power Cord**
9. **Step 7 - Metadata Entry**

18. APPENDIX F - PATIENT BED HILL-ROM 1000/ADVANTA 2 INSTALLATION

19. INSTALLATION

19.1 Step 1: Bed Mode Configuration

Install 2 Energizer Max alkaline D cell batteries into the **Bed Beacon**. The **Bed Beacon** needs to be configured to bed mode before installing the **Bed Beacon** onto the bed. To verify the **Beacon's** mode, hold both range buttons down. Immediately, the **Beacon's** LED will alternate four (4) times between green and red flashes. With each flash, there will be an audio alert. Two (2) seconds later, the **Bed Beacon** should flash green and beep once. The green flash and audio alert confirms that the **Beacon** is set for bed mode. If there is one (1) red LED flash and one (1) beep, the **Bed Beacon** was already in bed mode and is now in stretcher mode. Repeat the process to get the **Bed Beacon** back into bed mode.

19.2 Step 2: Installing the Bed Beacon (92053072)

The patient bed must be raised to a height of 32 inches from the floor to gain access to all of the mounting locations.

Bed Beacon Mounting

Mount the **Bed Beacon** on the center rail and secure the **Bed Beacon** with two 18" natural cable ties as shown in *Figure 1*. Make sure the **Bed Beacon** and the mounting surface are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces.

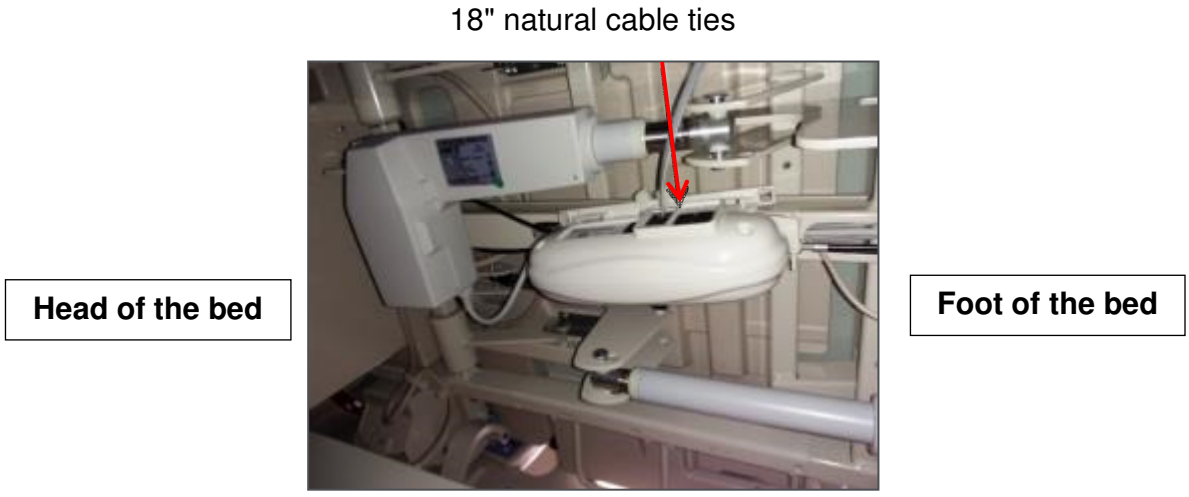


Figure 1. Bed Beacon Installation Location

19.3 Step 3: Installing AC Line Power Sensor on Bed's AC Power Cord

The **AC Line Power Sensor** *(see Figure 2)* is mounted onto the bed's black AC power cord located underneath the bed. Use the supplied cable ties to secure the **AC Line Power Sensor** to the bed's power cord as shown. The **Bed Beacon** Patient Zone is only enabled when the **Sensor** detects AC power on the bed's line cord after it is plugged into an AC outlet. The **Bed Beacon** Patient Zone will be disabled while the bed is unplugged. The **Bed Beacon** will send heartbeats in both the enabled and disabled modes.

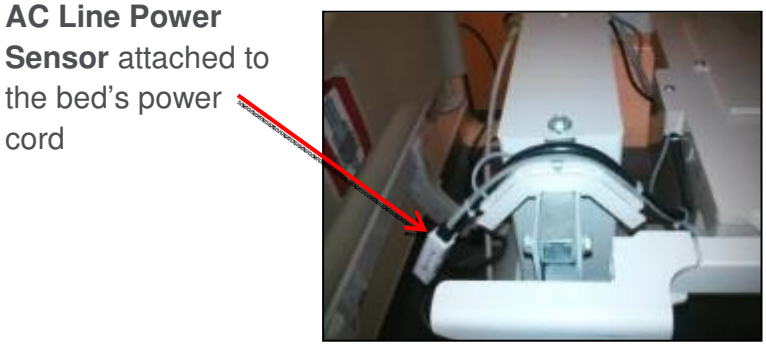


Figure 2. The AC Line Power Sensor Installation Location on the Bed

19.4 Step 4: Adjusting the Bed Beacon to Proper Field Range

1. Connect the **AC Line Power Sensor** to the **Bed Beacon** via any RJ11 jack as shown in Figure 3.

Figure 3. Connecting the AC Line Power Sensor to the Bed Beacon via the RJ11 connector

2. Plug the patient bed's AC power cord into a 120vAC power source. This will activate the **Bed Beacon** so that the range setting and all testing can be performed. Refer to section 6 - Adjusting the **Patient Zone** in the main section of this document for instructions on adjusting the communication range.

20. CABLE MANAGEMENT

20.1 Step 5: AC Line Power Sensor Cable Routing

1. Place cable tie holders, cable ties and route **AC Line Power Sensor** cable to the **Bed Beacon** as shown *(see Figure 4 & 5)*. Make sure the mounting surfaces are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean mounting surfaces.

AC Line Power Sensor attached to power cord

Cable Tie Holders

Figure 4. AC Line Power Sensor Cable Routing to the Bed Beacon

2. Route the **AC Line Power Sensor** cable underneath the bed along the metal rail frame. Secure the cable with cable ties shown in *Figure* 4 & 5.

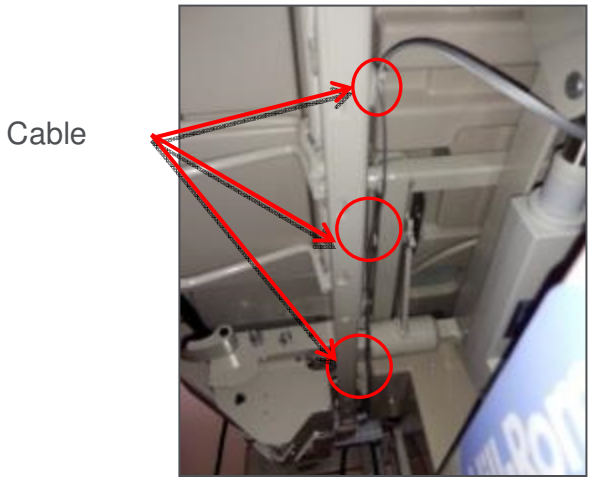


Figure 5. AC Line Power Sensor Cable Routing

3. Place cable tie holders, route and tie down any excess cable from the **AC Line Power Sensor** as shown (*see Figure 5).* After all cable management is complete, use small wire cutters to carefully flush cut off and dispose of all cable tie ends.

21. STEP 6: FINAL TEST

21.1 Disconnect and Reconnect the Bed's AC Power Cord

Confirm that the bed's AC power cord is connected into a 120vAC power source. Disconnect the bed's AC power cord and within 5 seconds you will hear one beep and the **Bed Beacon** LED will flash red once. Reconnect the bed's AC power cord and within 5 seconds you will hear one beep and the **Bed Beacon** LED will flash green once. This will confirm that everything is working properly. Complete the installation by following the instructions on metadata entry in section 7 **–** Metadata Entry in the main section of this document.

22. BED INSTALLATION CHECKLIST

Organize all required equipment & tools

1. **For installation adjust the bed mattress height to 32 inches**
2. **For safetly reasons disconnect the bed AC power cord from 120vAC source**
3. **Step 1 - Bed Beacon Mode Configuration**
4. **Step 2 - Installing the Bed Beacon (92053072)**
5. **Step 3 - Install the AC Line Power Sensor (9205-2186)**
6. **Step 4 - Adjusting the Bed Beacon to Proper Field Range Refer to section 6**
7. **Step 5 - AC Line Power Sensor Cable Management**
8. **Step 6 - Final Test: Disconnect and Reconnect the Bed's AC Power Cord**
9. **Step 7 - Metadata Entry**

23. APPENDIX G - PATIENT BED STRYKER INSTALLATION

24. INSTALLATION

24.1 Step 1: Bed Mode Configuration

Install 2 Energizer Max alkaline D cell batteries into the **Bed Beacon**. The **Bed Beacon** needs to be configured to bed mode before installing the **Bed Beacon** onto the bed. To verify the **Beacon's** mode, hold both range buttons down. Immediately, the **Beacon** will alternate four (4) times between green and red flashes. With each flash there will be an audio alert. Two (2) seconds later, the **Bed Beacon** LED should flash green and beep once. The green flash and beep confirms that the **Beacon** is set for bed mode. If there is one (1) red LED flash and one (1) beep, the **Bed Beacon** was already in bed mode and is now in stretcher mode. Repeat the process to get the **Bed Beacon** back into bed mode.

24.2 Step 2: Installing the Bed Beacon (92053072)

The patient bed must be raised to a height of 32 inches from the floor to gain access to all the mounting locations.

Bed Beacon Mounting

Mount the **Bed Beacon** directly underneath the bed's headboard with double-sided tape as shown in *Figure* 1. Make sure the **Bed Beacon** and the mounting surface are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces.

Figure 1. Bed Beacon Installation Location

24.3 Step 3: Installing AC Line Power Sensor the Bed's AC Power Cord

The **AC Line Power Sensor** *(see Figure 2)* is mounted onto the bed's black AC power cord located underneath the bed. Use the supplied cable ties to secure the **AC Line Power Sensor** to the bed's power cord as shown. The **Bed Beacon** field is only enabled when the **Sensor** detects AC power on the bed's line cord after it is plugged into an AC outlet. The **Bed Beacon** field will be disabled while the bed is unplugged. The **Bed Beacon** will send heartbeats in both the enabled and disabled modes.

Figure 2. The AC Line Power Sensor Installation Location on the Bed

24.4 Step 4: Adjusting the Bed Beacon to Proper Field Range

1. Connect the **AC Line Power Sensor** to the **Bed Beacon** via any RJ11 jacks as shown in *Figure* 3.

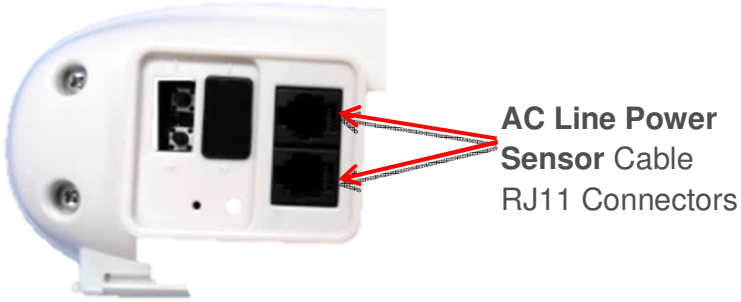


Figure 3. Connecting the AC Line Power Sensor to the Bed Beacon via the RJ11

2. Plug the patient bed's AC power cord into a 120vAC power source. This will activate the **Bed Beacon** so that the range setting and all testing can be performed. Refer to section 6 - Adjusting the **Patient Zone** in the main section of this document for instructions on adjusting the communication range.

25. CABLE MANAGEMENT

25.1 Step 5: AC Line Power Sensor Cable Routing

1. Place cable tie holders, cable ties and route **AC Line Power Sensor** cable to the **Bed Beacon** as shown *(see Figure 4 & 5)*. Make sure the mounting surfaces are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean mounting surfaces.

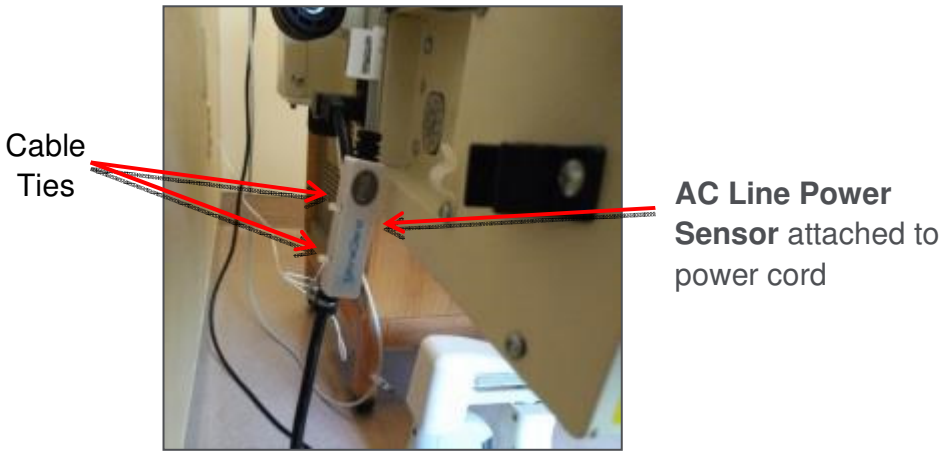


Figure 4. AC Line Power Sensor Cable Routing to the Bed Beacon

2. Route the **AC Line Power Sensor** cable underneath the headboard along the metal rail frame. Secure the cable with cable ties shown in *Figure* 4 & 5.

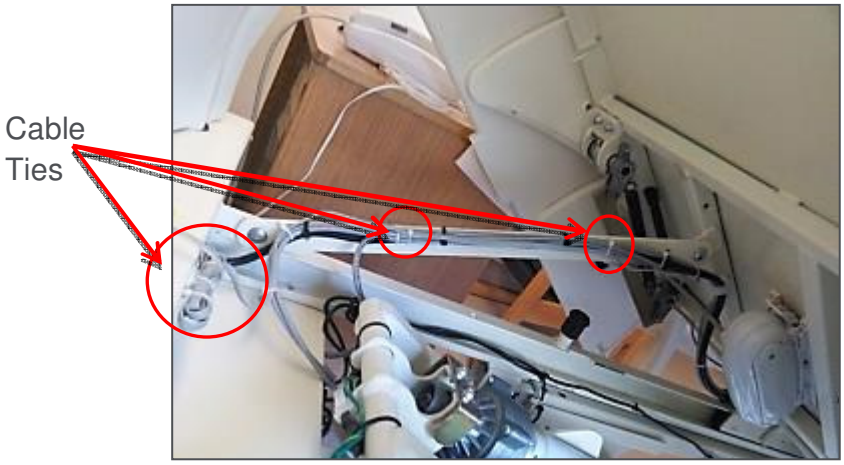


Figure 5. AC Line Power Sensor Cable Routing

3. Place cable tie holders, route and tie down any excess cable from the **AC Line Power Sensor** as shown (*see Figure 5).* After all cable management is complete, use small wire cutters to carefully flush cut off and dispose of all cable tie ends.

26. STEP 6: FINAL TEST

26.1 Disconnect and Reconnect the Bed's AC Power Cord

Confirm that the bed's AC power cord is connected into a 120vAC power source. Disconnect the bed's AC power cord and within 5 seconds you will hear one audio alert and the **Bed Beacon** LED will flash red once. Reconnect the bed's AC power cord and within 5 seconds you will hear one audio alert and the **Bed Beacon** LED will flash green once. This will confirm that everything is working properly. Complete the installation by following the instructions on metadata entry in section 7 **–** Metadata Entry in the main section of this document.

27. BED INSTALLATION CHECKLIST

Organize all required equipment & tools

1. **For installation adjust the bed mattress height to 32 inches**
2. **For safetly reasons disconnect the bed AC power cord from 120vAC source**
3. **Step 1 - Bed Beacon Mode Configuration**
4. **Step 2 - Installing the Bed Beacon (92053072)**
5. **Step 3 - Install the AC Line Power Sensor (9205-2186)**
6. **Step 4 - Adjusting the Bed Beacon to Proper Field Range Refer to section 6**
7. **Step 5 - AC Line Power Sensor Cable Management**
8. **Step 6 - Final Test: Disconnect and Reconnect the Bed's AC Power Cord**
9. **Step 7 - Metadata Entry**

28. APPENDIX H - PATIENT BED HILL-ROM TOTALCARE INSTALLATION

29. INSTALLATION

29.1 Step 1: Bed Mode Configuration

Install 2 Energizer Max alkaline D cell batteries into the **Bed Beacon**. The **Bed Beacon** needs to be configured to bed mode before installing the **Bed Beacon** onto the bed. To verify the **Beacon's** mode, hold both range buttons down. Immediately, the **Beacon** will alternate four (4) times between green and red flashes. With each flash there will be an audio alert. Two (2) seconds later, the **Bed Beacon** should flash green and beep once. The green flash and audio alert confirms that the **Beacon** is set for bed mode. If there is one (1) red LED flash and one (1) beep, the **Bed Beacon** was already in bed mode and is now in stretcher mode. Repeat the process to get the **Bed Beacon** back into bed mode.

29.2 Step 2: Installing the Bed Beacon (92053072)

The patient bed must be raised to a height of 32 inches from the floor to gain access to all of the mounting locations.

Bed Beacon Mounting

Mount the **Bed Beacon**, with double-sided tape, centered (10in x 9in) under the bed on the plastic surface as shown in *Figure 1*. Make sure the **Bed Beacon** and the mounting surface are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces. Firmly push and hold in place for several minutes (*see Figure 2*).

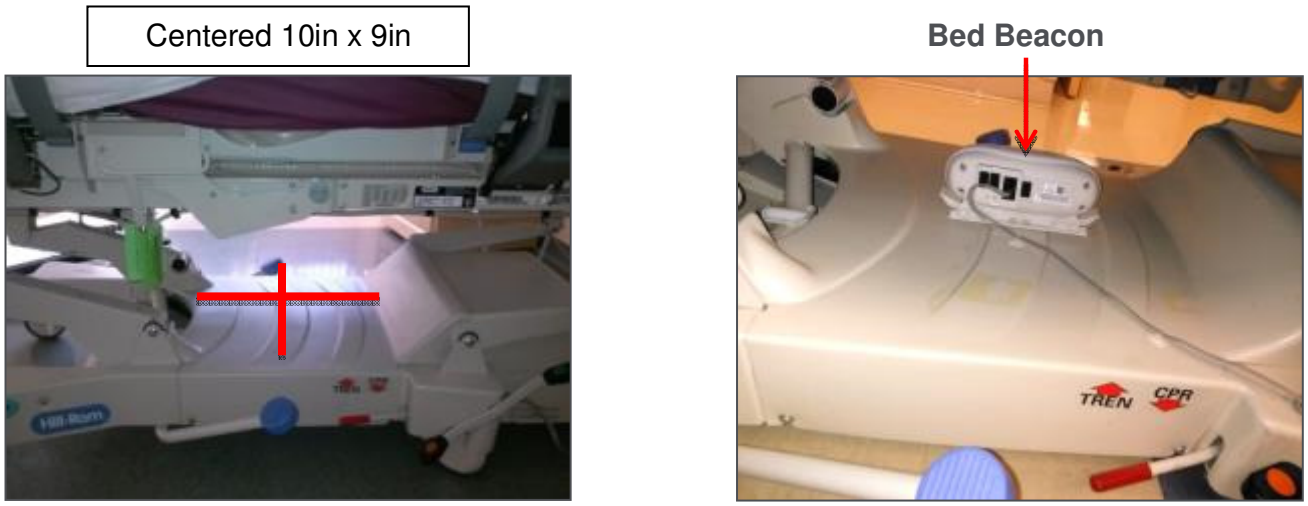


Figure 1 & 2. Bed Beacon Installation Location on the Bed

29.3 Step 3: Installing AC Line Power Sensor on Bed's AC Power Cord

The AC Line Power Sensor *(see Figure 3)* is mounted onto the bed's gray AC power cord located underneath the bed. Use the supplied cable ties to secure the AC Line Power Sensor to the bed's power cord as shown. The Bed Beacon field is only enabled when the Sensor detects AC power on the bed's line cord after it is plugged into an AC outlet. The Bed Beacon field will be disabled while the bed is unplugged. The Bed Beacon will send heartbeats in both the enabled and disabled modes.

Figure 3. The AC Line Power Sensor Installation Location on the Bed

29.4 Step 4: Adjusting the Bed Beacon to Proper Field Range

1. Connect the **AC Line Power Sensor** to the **Bed Beacon** via any RJ11 jacks as shown in *Figure* 4.

Figure 4. Connecting the AC Line Power Sensor to the Bed Beacon via the RJ11

2. Plug the patient bed's AC power cord into a 120vAC power source. This will activate the **Bed Beacon** so that the range setting and all testing can be performed. Refer to section 6 - Adjusting the **Patient Zone** in the main section of this document for instructions on adjusting the communication range.

30. CABLE MANAGEMENT

30.1 Step 5: AC Line Power Sensor Cable Routing

1. Place cable tie holders, cable ties and route **AC Line Power Sensor** cable to the **Bed Beacon** as shown *(see Figure 5 & 6)*. Make sure the mounting surfaces are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean mounting surfaces.

Figure 5. AC Line Power Sensor Cable Routing to the Bed Beacon

2. Place cable tie holders and route the **AC Line Power Sensor** cable on the bottom frame of the bed shown in *Figure* 5 & 6.

Figure 6. AC Line Power Sensor Cable Routing

3. Place cable tie holders, route and tie down any excess cable from the **AC Line Power Sensor** as shown (*see Figure 6).* After all cable management is complete, use small wire cutters to carefully flush cut off and dispose of all cable tie ends.

31. STEP 6: FINAL TEST

31.1 Disconnect and Reconnect the Bed's AC Power Cord

Confirm that the bed's AC power cord is connected into a 120vAC power source. Disconnect the bed's AC power cord and within 5 seconds you will hear one audio alert and the **Bed Beacon** LED will flash red once. Reconnect the bed's AC power cord and within 5 seconds you will hear one audio alert and the **Bed Beacon** LED will flash green once. This will confirm that everything is working properly. Complete the installation by following the instructions on metadata entry in section 7 **–** Metadata Entry in the main section of this document.

32. BED INSTALLATION CHECKLIST

Organize all required equipment & tools

1. **For installation adjust the bed mattress height to 32 inches**
2. **For safetly reasons disconnect the bed AC power cord from 120vAC source**
3. **Step 1 - Bed Beacon Mode Configuration**
4. **Step 2 - Installing the Bed Beacon (92053072)**
5. **Step 3 - Install the AC Line Power Sensor (9205-2186)**
6. **Step 4 - Adjusting the Bed Beacon to Proper Field Range Refer to section 6**
7. **Step 5 - AC Line Power Sensor Cable Management**
8. **Step 6 - Final Test: Disconnect and Reconnect the Bed's AC Power Cord**
9. **Step 7 - Metadata Entry**

33. APPENDIX I - PATIENT BED HILL-ROM AFFINITY 2 INSTALLATION

34. INSTALLATION

34.1 Step 1: Bed Mode Configuration

Install 2 Energizer Max alkaline D cell batteries into the **Bed Beacon**. The **Bed Beacon** needs to be configured to bed mode before installing the **Bed Beacon** onto the bed. To verify the **Beacon's** mode, hold both range buttons down. Immediately, the **Beacon** will alternate four (4) times between green and red flashes. With each flash there will be an audio alert. Two (2) seconds later, the **Bed Beacon** should flash green and beep once. The green flash and audio alert confirms that the **Beacon** is set for bed mode. If there

is one (1) red LED flash and one (1) beep, the **Bed Beacon** was already in bed mode and is now in stretcher mode. Repeat the process to get the **Bed Beacon** back into bed mode.

34.2 Step 2: Installing the Bed Beacon (92053072)

The patient bed must be raised to a height of 32 inches from the floor to gain access to all of the mounting locations.

Bed Beacon Mounting
Mount the **Bed Beacon** directly centered underneath the bed with double-sided tape as shown in *Figure* 1. Make sure the **Bed Beacon** and the mounting surface are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces.

Figure 1. Bed Beacon Installation Location

34.3 Step 3: Installing the AC Line Power Sensor on the Bed's AC Power Cord

The **AC Line Power Sensor** *(see Figure 2)* is mounted onto the bed's gray AC power cord located underneath the bed. Use the supplied cable ties to secure the **AC Line Power Sensor** to the bed's power cord as shown. The **Bed Beacon** field is only enabled when the **Sensor** detects AC power on the bed's line cord after it is plugged into an AC outlet. The **Bed Beacon** field will be disabled while the bed is unplugged. The **Bed Beacon** will send heartbeats in both the enabled and disabled modes.

AC Line Power Sensor attached to the bed's power cord

Figure 2. The AC Line Power Sensor Installation Location on the Bed

34.4 Step 4: Adjusting the Bed Beacon to Proper Field Range

1. Connect the **AC Line Power Sensor** to the **Bed Beacon** via any RJ11 jacks as shown in *Figure* 3.

Figure 3. Connecting the AC Line Power Sensor to the Bed Beacon via the RJ11

2. Plug the patient bed's AC power cord into a 120vAC power source. This will activate the **Bed Beacon** so that the range setting and all testing can be performed. Refer to section 6 - Adjusting the **Patient Zone** in the main section of this document for instructions on adjusting the communication range.

35. CABLE MANAGEMENT

35.1 Step 5: AC Line Power Sensor Cable Routing

1. Place cable tie holders, cable ties and route **AC Line Power Sensor** cable to the **Bed Beacon** as shown *(see Figure 4 & 5)*. Make sure the mounting surfaces are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean mounting surfaces.

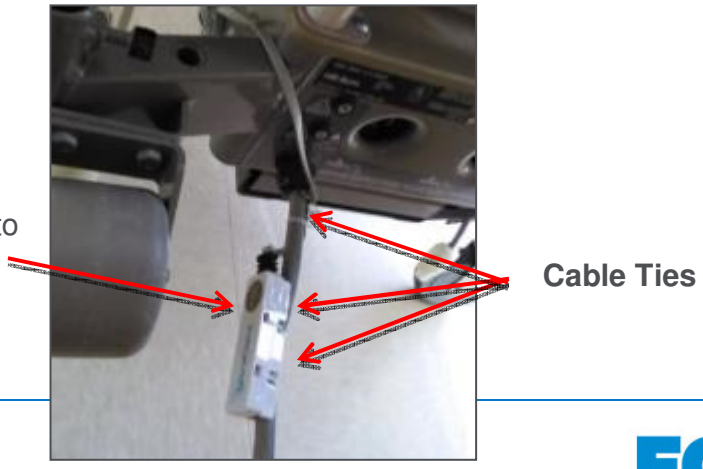


Figure 4. AC Line Power Sensor Cable Routing to the Bed Beacon

2. Route the **AC Line Power Sensor** cable underneath the headboard along the metal rail frame. Secure the cable with cable ties shown in *Figure* 4 & 5.

Figure 5. AC Line Power Sensor Cable Routing

3. Place cable tie holders, route and tie down any excess cable from the **AC Line Power Sensor** as shown (*see Figure 5).* After all cable management is complete, use small wire cutters to carefully flush cut off and dispose of all cable tie ends.

36. STEP 6: FINAL TEST

36.1 Disconnect and Reconnect the Bed's AC Power Cord

Confirm that the bed's AC power cord is connected into a 120vAC power source. Disconnect the bed's AC power cord and within 5 seconds you will hear one audio alert and the **Bed Beacon** LED will flash red once. Reconnect the bed's AC power cord and within 5 seconds you will hear one audio alert and the **Bed Beacon** LED will flash green once. This will confirm that everything is working properly. Complete the installation by following the instructions on metadata entry in section 7 **–** Metadata Entry in the main section of this document.

37. BED INSTALLATION CHECKLIST

Organize all required equipment & tools

1. **For installation adjust the bed mattress height to 32 inches**
2. **For safetly reasons disconnect the bed AC power cord from 120vAC source**
3. **Step 1 - Bed Beacon Mode Configuration**
4. **Step 2 - Installing the Bed Beacon (92053072)**
5. **Step 3 - Install the AC Line Power Sensor (9205-2186)**
6. **Step 4 - Adjusting the Bed Beacon to Proper Field Range Refer to section 6**

38. APPENDIX J – STRYKER RENAISSANCE STRETCHER

39. INSTALLATION

39.1 Step 1: Bed Mode Configuration

Install 2 Energizer Max alkaline D cell batteries into the **Bed Beacon**. The **Bed Beacon** needs to be configured to stretcher mode before installing the **Bed Beacon** onto the stretcher. To get the **Bed Beacon** into stretcher mode, hold both range buttons down. Immediately, the **Bed Beacon** will alternate 4 times between green and red flashes with each flash there will be an audio alert. Two (2) seconds later, the **Bed Beacon** should flash red and beep twice. The two red flashes and audio alert confirms that the **Bed Beacon** is set for stretcher mode. If there is one (1) green LED flash and one (1) beep, the **Bed Beacon** was already in stretcher mode and is now in bed mode. Repeat the process to get the **Bed Beacon** back into stretcher mode.

39.2 Step 2: Installing the Bed Beacon (92053072)

The patient stretcher must be raised to a height of 32 inches from the floor to gain access to all of the mounting locations.

Bed Beacon Mounting
Mount the **Bed Beacon** directly centered underneath the stretcher with double-sided tape as shown in *Figure* 1. Make sure the **Bed Beacon** and the mounting surface are clean and free of dirt and oil. A soft cloth dampened with isopropyl alcohol works well to clean both surfaces.

39.3 Step 3: Adjusting the Bed Beacon to Proper Field Range

1. Refer to section 6 - Adjusting the **Patient Zone** in the main section of this document for instructions on adjusting the communication range.

40. STRETCHER INSTALLATION CHECKLIST

Organize all required equipment & tools
1. For installation adjust the stretcher mattress height to 32 inches
2. Step 1 - Bed Beacon Mode Configuration
3. Step 2 - Install the Bed Beacon (92053072)
4. Step 3 - Adjusting the Bed Beacon to Proper Field Range Refer to section 6
5. Step 4 - Metadata Entry