CODE ALERT®
Senior Living Solutions

Quick Response Premiere Wireless Call System

Hardware Installation Guide

RF TECHNOLOGIES®

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Quick Response Premiere Wireless Call System

Hardware Installation Guide

PN 0510-1099-E

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Users must read this guide before using the product.

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Important Warnings

It is important for your facility to implement and enforce the following WARNINGS in order to keep all equipment functioning properly. Disregarding the information and instructions in this document is considered abnormal use and may result in injury or system failure.

WARNING

ACCESSORIES (SUPPLIES)—To ensure patient safety and proper operation of equipment, use only parts and accessories manufactured or recommended by RF Technologies, Inc. Parts and accessories not manufactured or recommended by RF Technologies, Inc. may not meet the requirements of the applicable safety and performance standards**.**

Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.

WARNING

EXPLOSION HAZARD—These devices should not be used in the presence of flammable gas mixtures. It should also not be used in oxygen enriched atmospheres.

WARNING

INSTALLATION AND CONFIGURATION—It is the responsibility of the facility to follow the installation instructions carefully, as outlined in the applicable system guides, and to use the components and supplies specified by RF Technologies, Inc. for all installations.

Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.

WARNING

INSTRUCTIONS FOR SET UP AND USE—It is the responsibility of the facility to follow the instructions for set up and use carefully, as outlined in this manual, and to use the components and supplies specified by RF Technologies, Inc. for set up and use. Do not attempt to use extension cords or other equipment not supplied by RF Technologies, Inc.

Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.

WARNING

PATIENT GENERATED ALARMS—Do not rely exclusively on patient generated alarms for patient care and safety. The alarm function of equipment in the possession of patients must be verified periodically and regular patient surveillance is recommended**.**

WARNING

PATIENT MONITORING—The most reliable method of patient monitoring combines close personal surveillance with correct operation of monitoring equipment. It is the responsibility of the facility to periodically check on patients in possession of RF Technologies, Inc.'s equipment (i.e. Pendants, Pull Cords, Control Units) to mitigate risk of inappropriate use of equipment or strangulation and stumbling hazards from cables and cords.

WARNING
PRODUCT WARRANTIES—Failure to follow the Warnings and Cautions in this guide voids any and all Product Warranties.

WARNING

STATIC DISCHARGE—Do not touch the conductor portion of any conductor or port. Damage to the device may result.

WARNING

STRANGULATIONS AND TRIPPING HAZARD—Due to the possibility of strangulation, all cables and cords should be routed away from the patient's throat. Cables and cords must be routed in a way to prevent tripping hazards.

WARNING

SYSTEM INSPECTION—It is the responsibility of the facility to establish and facilitate a regular inspection schedule for your system. RF Technologies, Inc. recommends quarterly inspections of your system for safety and performance by a qualified RF Technologies, Inc. representative.

To arrange for a quarterly inspection by RF Technologies, Inc., call our Technical Support Department at (800)-669-9946 or (262) 790-1771.

Failure to provide regular inspection of these products may result in equipment and/or system failure.

WARNING

SYSTEM MAINTENANCE AND TESTING—It is the responsibility of the facility to establish and facilitate a regular maintenance schedule for your system, as outlined in the applicable system guides. This includes regular inspection, testing, and cleaning. RF Technologies, Inc. recommends monthly maintenance and testing of your system. It is also recommended that your facility keep records of maintenance and test completions.

Failure to provide regular maintenance and testing of these products may result in equipment and/or system failure.

WARNING
SYSTEM WIRING—All permanent supply connections must be done in accordance with National Electric Code, NFPA 70.

WARNING
Wiring shall comply with the Standard for Thermoset-Insulated Wires and Cables, UL 44, or the Standard for Thermoplastic-Insulated Wires and Cables, UL 83.

WARNING

USER TRAINING—Only users who have received adequate training on the use of the system, as outlined in this manual, should use the system. It is the responsibility of the facility to ensure all users have been trained.

Failure to adequately train employees may cause system failure due to user error. In addition, incorrect use of the equipment may also result in system failure.

WARNING

WORN OR DAMAGED PARTS—If the control unit pads or cables are worn or damaged, you must have the product serviced. For more information, see the section entitled “Service and Return.”

WARNING

All RF Technologies transmitters, pendants and banding material “PRODUCT” have been determined to be MR Unsafe as defined by ASTM F 2503-05. Use of “PRODUCT” in a Magnetic Resonance Imaging system will cause injury to patients and staff, MR system malfunction or “PRODUCT” malfunction. Do not bring “PRODUCT” into the MR system area and follow your facilities policies to classify and label “PRODUCT” as MR Unsafe.

CAUTION

DISPOSAL—At the end of their service life the products described in this manual, as well as accessories (i.e. lithium batteries, banding material, disposable pads, etc.), must be disposed of in compliance with all applicable federal, state and local guidelines regulating the disposal of products containing potential environmental contaminants. Dispose of the packaging material by observing the applicable waste control regulations.

Bio-Incompatibility Notice

Do not use Pendants with people that have sensitivities or allergies to device materials. The device materials include Acrylonitrile butadiene styrene (ABS), Silicone Rubber and Neoprene.

Compliance

Federal Communication Commission (FCC) and Industry Canada (IC) Compliance

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

The Term “IC” before the radio certification number only signifies that Industry Canada technical specifications were met.

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 equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Changes or modifications not expressly approved by RF Technologies voids the user’s authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

Detachable Antenna Operation

The following radio transmitters: Extended Range Router models 0800-0351/0800-0445/0800-0550; Gateway with External Antenna models 0800-0354/0800-0446/0800-0551; have been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain 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 radioidentifier le dispositif par son numéro de certification a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur

External Antennas:

model 0330-0044 – 2.2dBi gain

FCC and IC Radiation Exposure Statement for Mobile Devices

The following equipment: Pull Cord model 0800-0285 and model 0800-0317; Universal Transceiver model 0800-0301/0800-0303/0800-0304; Extended Range Router model 0800-0351/0800-0445/0800-0550; Gateway with External Antenna model 0800-0354/0800-0446/0800-0551; Router model 0800-0364; Asset Transceivers model 0800-0286 and model 0800-0302 and Motion Control Unit model 0800-0350; complies with FCC and IC 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.

Cet équipement est conforme aux limites d'exposition aux radiations FCC et IC pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-située ni fonctionner en conjonction avec une autre antenne ou un autre émetteur

FCC and IC Radiation Exposure Statement for Portable Devices

The following equipment: Pendant Transceivers models 0800-0288/0800-0349; Call Pendant model 0800-0375; complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment is in direct contact with the body of the user under normal operating conditions. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

QR Premiere System Modules Names and Part Numbers

0490-0501	Single Station Cordset, 10 ft. Cord
0490-0502	Double Station Cordset, 10 ft. Cord
0490-0538	Nurse Call Cord Set, Single Station, 10 ft, Momentary
9450-0555	Central Power Supply
9600-0151	QR Premiere Router, Extended Range Internal Antenna
9600-0190	Quick Look Display
9600-0195	QR Premiere Corridor Dome Light, White and Red Lamp
9600-0251	QR Premiere Emergency Call Pendant
9600-0300	QR Premiere Emergency Pull Cord
9600-0305	QR Premiere Emergency Pull Cord w/ Internal Battery Pack
9600-0310	QR Premiere Pull Cord w/Battery Pack
9600-0320	QR Premiere Pull Cord w/Check In and Battery Pack
9600-0320K	QR Premiere, Pull Cord with Battery Pack, Surface Mount
9600-0321K	QR Premiere, Pull Cord with Battery Pack, Flush Mount
9600-0350	QR Premiere Emergency Pull Cord with Check-in
9600-0350K	QR Premiere, Pull Cord w/Check In and Battery Pack, Surf Mt
9600-0351K	QR Premiere, Pull Cord w/Check In and Battery Pack, Flush Mt
9600-0355	QR Premiere Emergency Pull Cord with Check-in w/ Internal Battery Pack
9600-0375	QR Premiere Push Button Call Station
9600-0377	QR Premiere Push Button Call Station w/ Internal Battery Pack
9600-0380	QR Premiere Nurse Call Jack
9600-0381	QR Premiere, Wireless Nurse Call Jack w/Battery Pack
9600-0383K	QR Premiere, Wireless Nurse Call Jack, Surface Mount
9600-0385K	QR Premiere, Wireless Nurse Call Jack, Flush Mount
9600-0386K	QR Premiere, Wireless Nurse Call Jack w/Battery Pack, SM
9600-0387K	QR Premiere, Wireless Nurse Call Jack w/Battery Pack, FM
9600-0388	QR Premiere Nurse Call Jack w/ Internal Battery Pack
9600-1085	Application Disruption Alarm
9600-1201	QR Premiere Gateway, Extended Range Whip Antenna
9600-1225K	QR Premiere Gateway, Extended Range for Serial Terminal Server
9600-1250K	QR Premiere Gateway, Extended Range for Serial Port
9600-1500	QR Premiere 32 Zone Relay Output Assembly

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Preface

Introduction

This guide provides detailed information about the hardware components and devices of the Quick Response Premiere Wireless Call System. It provides instructions about installation as well as specific requirements for mounting components that make up the system. The Quick Response Premiere Wireless Call System is to be professionally installed.

The Quick Response Premiere Wireless Call System immediately notifies staff when a resident requires attention, and provides details that are essential in responding quickly and competently to a resident's needs. The Quick Response Premiere Wireless Call System offers a variety of devices, each of which interfaces with the Central Server to ensure that when a resident is in need, staff is alerted.

A Quick Response Premiere device may be worn by a resident; it could be mounted to a wall where it is easy to access; it could even be used in conjunction with other systems such as the Wanderer Monitoring System (exit controllers and electromagnetic door locks).

Devices send data to the Central Server on a regular basis. When an event occurs that warrants a response, staff is alerted by an audible alarm from the Central Server, a message is displayed on-screen, and the designated staff is summoned to respond to the situation. Staff can also be notified of an event via pager or phone.

About this Guide

This Guide is intended for users who install components of the Quick Response Premiere Wireless Call System, in conjunction with the applicable Series Software. It includes detailed information about the hardware installation and setup of various components that interface with the applicable Series Software.

WARNING: Before you begin any new upgrades, repairs or maintenance, RF Technologies recommends that you back up the MSSQL and .DB Flat File databases on a removable media, such as an external drive, to be copied to a new or different computer if necessary. Refer to the Database Archive and Backup Service Guide (0510-0306).

Additional Detailed Documentation

Documentation for your system is available in Portable Document Format (PDF) on the System Documentation CD-ROM. Please contact your RF Technologies sales representative for replacement CD-ROMs.

Contact Information

For more information about RF Technologies, Inc. products, go to www.rft.com. For technical support, contact the Technical Support Team at (800) 669-9946 or (262) 790-1771. For questions or comments about the System Documentation, contact the RF Technologies Technical Publications team at techpubs@rft.com.

Product Warranty

Product Warranty information can be found on the System Documentation CD-ROM or with your original system proposal and invoice.

CHAPTER 1

Installing Hardware Components

Introduction

The basic components of the system consist of the Central Server, the Gateway, the Router and the transceiver devices. The Central Server is a RF Technologies configured computer that runs the software. It contains the database and provides communication with the devices in the system. The Computer Monitoring Station must be permanently located at the central nurse's station.

Depending on your configuration, the system can include several Client computers. The Client computers allow the user to perform such functions as admitting, discharging, and clearing alarms. Each Client computer includes a touchscreen monitor that displays alarms as they occur on a floor plan of the facility.

Although this manual describes the many various devices that can be included, the minimum system configuration must consist of no less than the following devices:

- One patient station (Pull Cord or Nurse Call Jack and Cord or Pendant)
- Dome Light
- QR Premiere Gateway
- QR Premiere Router
- 32 Zone Relay Output Assembly
- Computer Monitoring Station

This chapter provides detailed information about setting up the Central Server and installing hardware components to use in conjunction with the software. It also provides an Installation Checklist to assist with the installation process.

WARNING: When installing product, you must follow standard accepted safety practices such as wearing safety glasses.

WARNING: Before cutting openings or drilling holes through walls, you must verify that you will not strike any wiring or plumbing.

Installation Checklist

1. Read this guide in its entirety before proceeding with the installation.
2. Review the floor plan of the facility and make sure the equipment shipped to you matches what is shown on the floor plan.
3. Walk through the facility and determine the physical location of all components of your system, compared to the floor plan.
4. Determine how the Gateway(s) and Routers are going to be powered.
    a. If the device is going to be powered by the CPS (refer to Figure 4.1 on page 65 to choose the appropriate wire size).
    b. If the device is powered using wall outlet power supply, an available outlet must be located near the device (refer to Figure 4.2 on page 65 to choose the appropriate wire size).
5. Install System Components
    - Install the Central Server
    - If applicable in your facility, install the Client computer(s)
    - Install the Gateway
    - Install the Routers
6. Install transceiver devices. Transceiver devices transmit and receive data.
    - Mount all fixed devices (i.e. Pull-Cords, Smoke Detectors, Door/Window transceivers).
    - Enter transceiver information into the software (refer to the applicable *Series Software User* and *Administrator Guides*).
7. Using the software, define the options, or system-wide settings to be applied to your facility's Quick Response Premiere Wireless Call System.
8. Test the operation of the system.
    - Test the software.
    - Test the system for sufficient coverage.
    - Test the operation of the Supervision function.

Installing Components

Install the Central Server

The first step in the installation of the hardware components is to set up the Central Server. The Central Server computer can be placed on a flat surface, and the monitor may be mounted on a wall. Optional wall mounting kits are available from RF Technologies (PN 0120-0097 and 0120-0098). These mounting kits comply with VESA mounting standards. Please follow the manufacturer's instructions for mounting the monitor.

WARNING: When installing the Central Server, proper placement/mounting of the server is important. Adequate precautions must be taken to prevent the server from falling, causing injury to persons. Cables must be routed in a way to prevent tripping hazards.

Any rack mounted Central Server must be installed in a controlled environment that maintains temperature between 50°F and 95°F and humidity between 20% and 50%.

1. Check to see that you have all the required equipment for setting up the Central Server.
   - 15 Gigabytes (GB) of free hard disk space
   - RF Technologies configured computer
   - Monitor
   - Keyboard
   - Mouse
   - UPS (uninterruptable power supply)
   - Printer (optional)
   - Remote connection hardware (if applicable)
2. Set up all the components of the Central Server.
3. Plug the components into the back of the Central Server (monitor, keyboard, mouse, printer).
4. Power the Central Server using a Plug-in Power Supply with a battery backup unit (UPS). The UPS should be plugged into a backup generator outlet.

Install the Gateway

The Gateway receives signals from Routers and transceiver devices and sends them to the Central Server. The Gateway can be supervised; if no information is received by the system from the Gateway for a specified amount of time, a Device Fault alarm is generated in the Event List at the computer.

NOTE: Antenna PN 0330-0044 must be used with the installation of the Gateway.

The Gateway has four (4) single-color LED lights; two green and two red. For more information on LED lights and LED sequence refer to "LED Sequence" on page 25.

NOTE: The RF lights do not flash on the Router or Gateway in response to end device activity.

The two set of lights furthest from the Reset Button indicate transceiver device communication status. These set of lights flashes briefly (once) every check-in (15 seconds by default) and when data is received or transmitted.

- Green indicates communication is good (received data is formatted properly or the transmitted data was sent successfully).
- Red indicates communication failure (received data has an error or the transmitted data was NOT sent successfully).

The two set of lights closest to the Reset Button indicate RS232 communication status with the Central Server. These set of flights flashes briefly (once) when data is transmitted via an external RS232 device to the Central Server.

- Green indicates communication is good (transmission data acknowledged by the Central Server).
- Red indicates communication failure (transmission data NOT acknowledged by the Central Server).
- A repeating, dim red LED flash (flashes once per second) indicates the device operating normally. Refer to "LED Sequence" on page 25.

NOTE: The Gateway must be mounted as high as possible from the ground and situated where reception to affiliated Routers is not impaired.

To install the Gateway directly to Server computer

1. Locate a mounting site for the Gateway that is within a 12-foot reach of the Central Server. To minimize noise interference, the Gateway should be a minimum of 10-feet away from the paging base or any high powered electrical device.

   Placement of the Gateway should not be located over a stud. The Gateway should be at a one-foot distance from the bottom of the enclosure to the ceiling.

2. Using the rear plate of the Gateway as a template, place it level against the wall and mark the location of the two mounting holes.
3. Center punch each hole and insert two nylon wall anchors (included).
4. Make certain that the RS232/Power Cable is plugged into the Gateway and that the ON/Off switch is in the ON position. After the ON/Off switch is turned to the ON position, the LED's at the bottom of the device should flicker. If they do not flicker then turn the switch to the OFF position and then turn it back ON.
5. Place the rear plate of the Gateway into the recess on the back of the Gateway enclosure.
6. With the antenna pointing upwards, place the Gateway over the wall anchors in alignment with the holes in the enclosure and insert two screws (included).
7. If preferred, mount the raceway for containing and concealing the wires leading from the underside of the Gateway down to the Central Server.
8. Connect the 9-Pin serial connector from the Gateway to the serial port on the Central Server.
9. Plug the power supply into a standard outlet. Using an uninterruptable power supply (UPS) is recommended.
10. If the power supply has a mounting tab, secure it to the outlet.
11. Using the software loaded on the Central Server, select the COM port assigned to the Gateway. Refer to the section "Poll Server Settings" in the applicable *Series Software Administrator Guide* (PN 0510-1118).

To install the Gateway in or near a wiring closet

1. Locate a mounting site for the Gateway within the wiring closet. Placement of the Gateway should not be located over a stud. The Gateway should be at a one-foot distance from the bottom of the enclosure to the ceiling.

   NOTE: In some circumstances where RF performance is impaired by a shielded wiring closets or the location of the covered area is at a significant distance from the wiring closet, the Gateway can be located outside the wiring closet by making use of the provided 50 foot RS232/Power Cable.

2. Using the rear plate of the Gateway as a template, place it level against the wall and mark the location of the two mounting holes.
3. Center punch each hole and insert two nylon wall anchors (included).

4. Make certain that the RS232/Power Cable is plugged into the Gateway and that the ON/OFF switch is in the ON position. After the ON/Off switch is turned to the ON position, the LED's at the bottom of the device should flicker. If they do not flicker then turn the switch to the OFF position and then turn it back ON.
5. Depending on which serial port server you use, do one of the following:
   a. When using a 4-port serial port server (PN 9450-0910) with cable (PN 0460-0101), connect the RJ45 connector from the Gateway to the top side of the serial port server. The serial port server is located within the black box mounting assembly.
   b. When using a single serial port server (PN 9600-0002) with cable (PN 0460-0124), connect the 9-Pin connector from the Gateway to the single serial port server. Run Cat-5 wiring using standard 568B and terminate each end with a RJ45 connector. Connect one end to the
   c. Ethernet connector on the bottom of the single serial port server and the other end to the Ethernet switch.

   Then, either plug the serial port into the CPS observing the polarity of the cable, red to (+) and black to (-) or plug the power supply into a standard outlet. Using an uninterruptable power supply (UPS) is recommended for standard output power.
6. Ensure that the wires are pulled through the wire tie wrap, secure them tightly with the wire tie and cut off excess.
7. Place the rear plate of the Gateway into the recess on the back of the Gateway enclosure.
8. With the antenna pointing upwards, place the Gateway over the wall anchors in alignment with the holes in the enclosure and insert two screws (included). Verify Gateway is firmly secured to the wall to prevent device from falling.
9. Using the software loaded on the Central Server select the COM port assigned to the Gateway. Refer to the section "Poll Server Settings" in the applicable *Series Software Administrative Guide*.

To test the Gateway

1. From Server Management home page, select **Scan Devices**.
2. From the Configuration home page, select **Devices**.
3. Verify the Gateway appears in the device list.
4. Activate a transceiver and initiate an alarm event.
5. The transceiver should now appear in the device list under the same Com Port as the Gateway.
6. If the transceiver does not populate in the device list, verify that the appropriate communications port is selected and the Gateway is powered.

Install Routers

Routers receive signals from transceivers and re-transmit them to the Gateway. There are two models of Routers, one with an internal antenna and one with an external antenna for greater range. Routers can be supervised; a routine signal is sent from each Router and if the signal is not received by the system, a Device Fault event is generated in the Event List at the computer.

The Router has four (4) single-color LED lights; two green and two red. For more information on LED lights and LED sequence refer to "LED Sequence" on page 25.

The two lights furthest from the Reset Button indicate device transceiver communication status These set of lights flashes briefly (once) every check-in (30 seconds by default), when a tamper alarm is triggered or cleared, and when a data is forwarded.

- Green indicates communication is good and data is forwarded OK to the next Router.
- Red indicates communication failure and data is NOT forwarded to the next Router.

The two lights closest to the Reset Button indicate RS232 communication status. These set of lights flashes briefly (once) when data is transmitted to an external RS232 device (i.e. Quick Look™).

- Green indicates that the external RS232 device loopback is detected.
- Red indicates that the external RS232 device loopback is not detected.

Place a Pendant into Survey Mode

A Pendant in Survey Mode is used to survey the coverage area when installing Routers. Any Pendant transceiver can be configured for Survey Mode. While in Survey Mode the Pendant periodically blinks either green or red, depending on whether or not it is in range of a Router. Pressing the button on a Pendant in Survey Mode does not generate or clear alarms.

Prepare Pendant for Survey Mode configuration

1. Insert the 3V Lithium coin cell battery into the Pendant.
2. Allow the Pendant to sit "untouched" for two minutes while it downloads the site's channels.
3. Remove the battery from the Pendant.

To configure a Pendant for Survey Mode

1. Hold down the button on the Pendant transceiver.
2. While holding the button down, insert a 3V Lithium coin cell battery into the battery holder of the Pendant transceiver.
3. Continue holding the button down until you see the light blink (approximately 2 seconds).

   The Pendant blinks green or red every 1 1/2 seconds. Green indicates that the Pendant is within range of a Router; red indicates the Pendant is outside of the coverage area.

To take a Pendant out of Survey Mode

1. Remove the 3V Lithium coin cell battery from the Pendant
2. Insert a "new" battery into battery holder of the Pendant. Do NOT hold the button down.

   The Pendant is now ready for normal use (refer to "Pendant Transceivers" on page 55).

CAUTION: A Pendant in Survey Node depletes the battery quickly. It is important to insert a new battery into the Pendant for use after Survey Mode is completed.

Determine Placement of Routers

NOTE: A configuration map or floor plan of the facility is pre-determined with most Quick Response Premiere Wireless Call Systems. Please rely on the configuration map or floor plan in conjunction with the information provided below to determine Router placement.

Routers are powered by a plug-in power supply or central power supply. A backup battery is also included in the Router enclosure. Routers can be placed on either the wall or on the ceiling. If mounting to the ceiling, the issue of bleeding through to the floor above must be considered. Other factors that affect the placement of Routers are the availability of a power source and sufficient coverage for the supervision of transceivers.

1. The first Router's location is in the proximity of the Gateway as specified on the floor plan. Using a Pendant that is in Survey Mode, walk a distance from the Gateway until the light on the Pendant starts blinking red. This indicates that the Router is out of range of the Gateway.
2. Walk back into range.
3. Mount Router within range of the Gateway and near a 110 VAC wall outlet or at the termination point from the central power supply. Repeat steps 1 and 2 to mount subsequent Routers.

   NOTE: If using a 9V power supply, wiring from the power supply can be routed inside the wall or (if preferred) mount the raceway for containing and concealing the wires leading from the underside of the Router down to the 110 VAC wall outlet.
4. For wall placement, the Router should not be located over a stud and should be at a distance of one foot from the bottom of the enclosure to the ceiling.
5. For ceiling placement, the Router should mounted down the center of the hallway or centered in a room. Its orientation can be parallel or perpendicular to the walls of the hallway. For optimal location, mount Router in the center of the ceiling tile.
6. Using the rear plate of the Router as a template, place it level against the intended mounting surface and mark the location of the two mounting holes. If the wiring from the wall outlet power supply or central power supply exits from the intended mounting surface then locate the lower right corner of the rear plate (corner is cut out) over the exit hole.
7. Center punch each hole and drill in two nylon wall anchors (included). If the Router is located on a concrete mounting surface then you must use the wall anchors designed for use with concrete (not included). If the Router is to be installed on drop ceiling tiles use the threaded drywall anchor taking care to not damage ceiling tile during installation process.

8. Once the wiring has been run to the location of the Router attach the power supply wires to the terminal block in the corner of the Router. If using a central power supply up to seven (7) Routers may be daisy chained by terminating the next Router to the second terminal block. The minimum field wire size to be employed shall be 18 AWG (0.36 mm2).
9. Insure that the wires are pulled tight through the wire tie wrap and cut excess.
10. Make certain that the Router's ON/Off switch is in the ON position. After the ON/Off switch is turned to the ON position, the LED's at the bottom of the device should flicker. If they do not flicker then turn the switch to the OFF position and then turn it back ON.
11. Place the rear plate of the Router into the recess on the back of the Router enclosure.
12. Place the Router over the wall anchors in alignment with the holes in the enclosure and insert two screws (included). Verify Router is firmly secured to the intended mounting surface to prevent the device from falling.
13. For extended range Routers make certain that the external antenna points over the top edge of the enclosure. Any other orientation will reduce device performance.
14. If raceway is being used now is the time to apply it.
15. If the power is supplied by a wall outlet power supply, then plug in the power supply.
16. If the power supply has a mounting tab, secure it to the outlet using the screw provided.
17. Repeat the above steps for the remaining Routers.

Router Configuration in Multi-story Buildings

When configuring a multi-story facility the Routers should be placed directly above one another as much as possible to provide accurate location even in non-location required facilities.

Quick Look Router

A Quick Look Router is a Quick Response Premiere Router connected to a wireless Quick Look Display or High Visibility Display. When an alarm is sent from the Server to the Router, the wireless display shows the type of alarm, location data and transceiver number. As new alarms occur, they appear immediately; the display then begins scrolling through each active alarm.

NOTE: The location data displayed depends on configuration. If a Gateway/Router is assigned to a room, the Quick Look displays the room and unit data. If the Router/ Gateway is assigned to a unit only and not individual rooms, the nearest location data is displayed.

The Quick Look Router also acts as an integral part of the back-up reflector mode. This reflector mode functionally allows the Quick Response Premiere network to take over the responsibility of distributing alarm information (transceiver number only) to the Quick Look Routers in the event of an inoperable Server. In reflector mode it will display device names and the nearest Router that received the alarm.

Quick Look Routers are supervised; a routine signal is sent from each Quick Look Router and if the signal is not received by the system, a Device Fault event is generated in the Event List at the computer.

WARNING: Quick Look Routers should not be added to multiple units. Since Routers are used to determine location, inaccurate location data could result.

To install the Quick Look Router with High Visibility Display

WARNING: When installing a product, you must follow standard, accepted safety practices, such as wearing safety glasses.

Mount the High Visibility Display in the desired location, near a 110 VAC wall outlet. Use the following steps for mounting the High Visibility Display as a wall-mount or counter-mount display.

WARNING: It is crucial that the following steps be carried out in the order listed. If the display is not powered and connected properly to the Router when the Router is initially powered on, the display will not function.

1. Attach mounting brackets 281/8 inches apart, in desired location. If mounting in drywall, screw anchors must be used.
2. Once brackets are in place, put the display between the two brackets and secure it to the brackets with the two thumb screws provided.
3. To maximize visibility, first adjust the tilt of the display and then tighten the thumb screws.
4. Plug the 7 VAC 4.8A power supply into the High Visibility Display and connect it to wall power outlet.
5. Connect the Router to the High Visibility Display.
   - Plug the RJ-45 end of the 10-foot connector cable into the RJ-45 port on the back of the High Visibility Display.

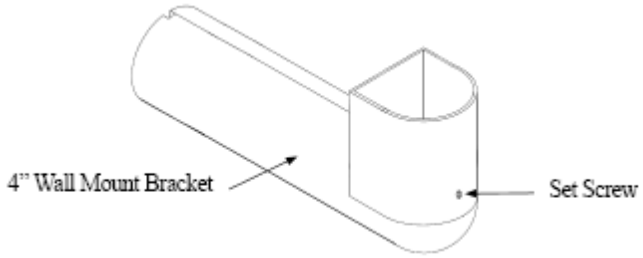
   - Plug the RS-232 end of the 10-foot connector cable into the RS-232 terminal on the lower right hand corner of the Router.
6. Wire the Router for power via the power terminal in the Router, noting the correct polarity.
7. Mount the Router within 10-feet of the High Visibility Display, near a 110 VAC wall outlet.
8. Connect the Router's power supply to a 110 VAC wall power outlet.

To install the Quick Look Router with Quick Look Display

Use the following steps to mount the Quick Look Display.

WARNING: When installing a product, you must follow standard, accepted safety practices, such as wearing safety glasses.

1. Feed the wire attached to the head assembly of the Quick Look Display through the un-notched end of the 4" wall-mount bracket.
2. Slide the head assembly onto the end of the 4" wall-mount bracket.
3. Secure it in place by tightening the set screw located on the end of the post or bracket.
4. Align the notches in the Quick Look base with the notches in the 4" wall-mount bracket and hold together.
5. Feed the retaining nut over the wires leading out of the bottom of the base.
6. Tighten the retaining nut.
7. Be careful not to strip or damage the mounting base assembly.
8. Screw the base into the wall using the four screws provided.



9. Wire the Router for power via the power terminal in the Router, noting the correct polarity.
10. Make certain that the Router's ON/OFF switch is in the ON position. After the ON/Off switch is turned to the ON position, the LED's at the bottom of the device should flicker. If they do not flicker then turn the switch to the OFF position and then turn it back ON.
11. Mount the Router within 4-feet of the Quick Look Display, near a 110 VAC wall outlet.
12. Connect the Router's power supply to a 110 VAC wall power outlet.

To test the Routers

1. For each Router use a Pendant that is in Survey Mode to test reception. Walk to the far reaches of adjacent rooms and covered area to ensure that acceptable coverage is achieved.
2. For Quick Look Routers, verify location data and alarm information appears on the display when an alarm is generated.
3. For more information contact or for technical support, contact the Technical Support Team at (800) 669-9946 or (262) 790-1771.

32 Channel Controller

The 32 Channel Controller consists of a Quick Response Premiere Router, a 32 Channel Controller relay board and up to 16 bi-color Dome Lights.

The 32 Channel Controllers are supervised; a routine signal is sent from each Quick Response Premiere Router and if the signal is not received by the system, a Device Fault event is generated in the Event List at the computer.

WARNING: It is crucial that the following steps be carried out in the order listed. If the 32 Channel Controller is not powered and connected properly to the Router when the Router is initially powered on, the controller will not function. The 32 Channel Controller must be set to its assigned channel prior to assigning devices.

Central Power Supply (CPS)

The Central Power Supply is used to connect the 32 Channel Controller and Dome Lights to a single power source. The Central Power Supply eliminates the need to run 120VAC to each detection zone. Note that the Router is powered by the 32 Channel Controller.

Refer to the *Class II Central Power Supply Installation Guide* (0510-1036) for detailed information on installing the Central Power Supply.

Install the 32 Channel Controller

Installing the 32 Channel Controller consists of first running the wires from all the Dome Lights to the 32 Channel Controller and CPS Power, of installing the 32 Channel Controller, the Router and the Dome Lights. The units must be wired per the wiring diagram (see page 19).

WARNING: When installing a product, you must follow standard, accepted safety practices, such as wearing safety glasses.

To flush mount the single gang enclosure for the 32 Channel Controller

1. Locate a mounting site for the 32 Channel Controller, preferably on a wall that a single gang electrical box can be mounted.
2. Hold the single gang mounting enclosure against the wall. Use standard installation practices to position and level the enclosure then mark out the area around the enclosure.

> **WARNING**: Before cutting openings or drilling holes through walls, you must verify that you will not strike any wiring or plumbing.

3. Using a drywall hole saw, cut out the area where the enclosure is to be placed. Be sure that the area is only as big as the enclosure or the clamps will not attach securely to the wall.
4. Run the wires from the CPS and Dome Lights to the hole.
5. After routing the wires through the single gang electrical box place the clamps flat against the box and insert the unit into the wall.
6. Tighten the clamps using the provided screws.
7. Where necessary, mount the enclosure to a wall stud by screwing or nailing the enclosure to the side of the stud through the two provided holes.

Mounting the 32 Channel Controller

To mount the 32 Channel Controller enclosure

1. Using an Phillips screwdriver, remove the six screws that hold the face plate to the enclosure.
2. Remove the faceplate.
3. Thread wires through the hole in the back of the enclosure.
4. Secure the enclosure to the single gang mounting enclosure with two screws (the third hole on the enclosure is for extra mounting security).
5. Terminate the wires from the CPS and Dome Lights per Wiring Diagram on page 19.
6. Route the Router to the 32 Channel Controller Cable Harness from inside the 32 Channel Controller to just outside the enclosure.
7. Connect the Router cable harness. At this point do not power up Router and allow it hang free. It will be mounted to the wall following system power up.

Mounting the Dome Light

Dome Lights are mounted in the corridor above or beside the door of an associated room. The red light should be mounted up. Location should provide for unobstructed visibility of the Dome Light in both directions. Dome Lights can either be flush mounted or surface mounted based on wall construction and wire routing. When flush mounting, the wiring can be routed through a 3/4" hole in the wall. In this case the Dome Light will be directly mounted to the wall.

WARNING: Before cutting openings or drilling holes through walls, you must verify that you will not strike any wiring or plumbing.

To surface mount the Dome Light

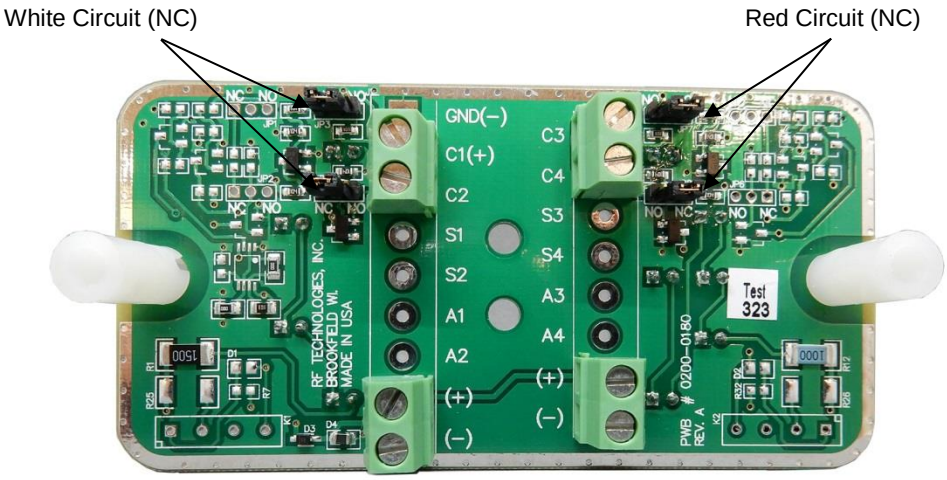
1. Hold the base of the surface mount enclosure against the wall at the desired mounting height with the sharpened side parallel and square to the floor.
2. Mark the location of the two mounting holes.
3. Drill holes where the marks were made. If the drilled holes do not hit a stud wall you must use wall anchors (not included).
4. Line up the holes on the base of the enclosure with the newly drilled holes.
5. Mount the base of the enclosure to the wall using two drywall screws.
6. Snap the surface mount enclosure onto the base previously attached to the wall.
7. Terminate the wires per the instructions following this section.
8. Once the Dome Light has been wired route any excess wiring back into the enclosure as the Dome Light is placed over it.
9. Secure the Dome Light to the surface

To flush mount the Dome Light

1. Terminate the wiring per the instructions following this section.
2. Route any excess wiring back into the wall, as the Dome Light is placed over the hole and against the wall.
3. Once the Dome Light is square to the floor, secure it to the wall with the two screws provided.
4. If screws do not hit a stud, then drywall anchors (not included) will be necessary.

Wiring Dome Lights

The illustration below shows the option jumpers for the Dome Light used with the 32 Channel Controller. Verify that all 4 jumpers are set to NC.



To wire power to Dome Lights

1. Run wiring conduit from Dome Light to Dome Light and terminate at the Central Power Supply. The current requirement for the Dome Light is 50mA. Each circuit should be limited to 8 or fewer Dome Lights. Use 16 AWG 2-conductor cable to connect the Dome Light power terminals to the Central Power Supply.
2. Terminate the wires per the Wiring Diagram on page 21.

To wire Dome Lights to the 32 Channel Controller

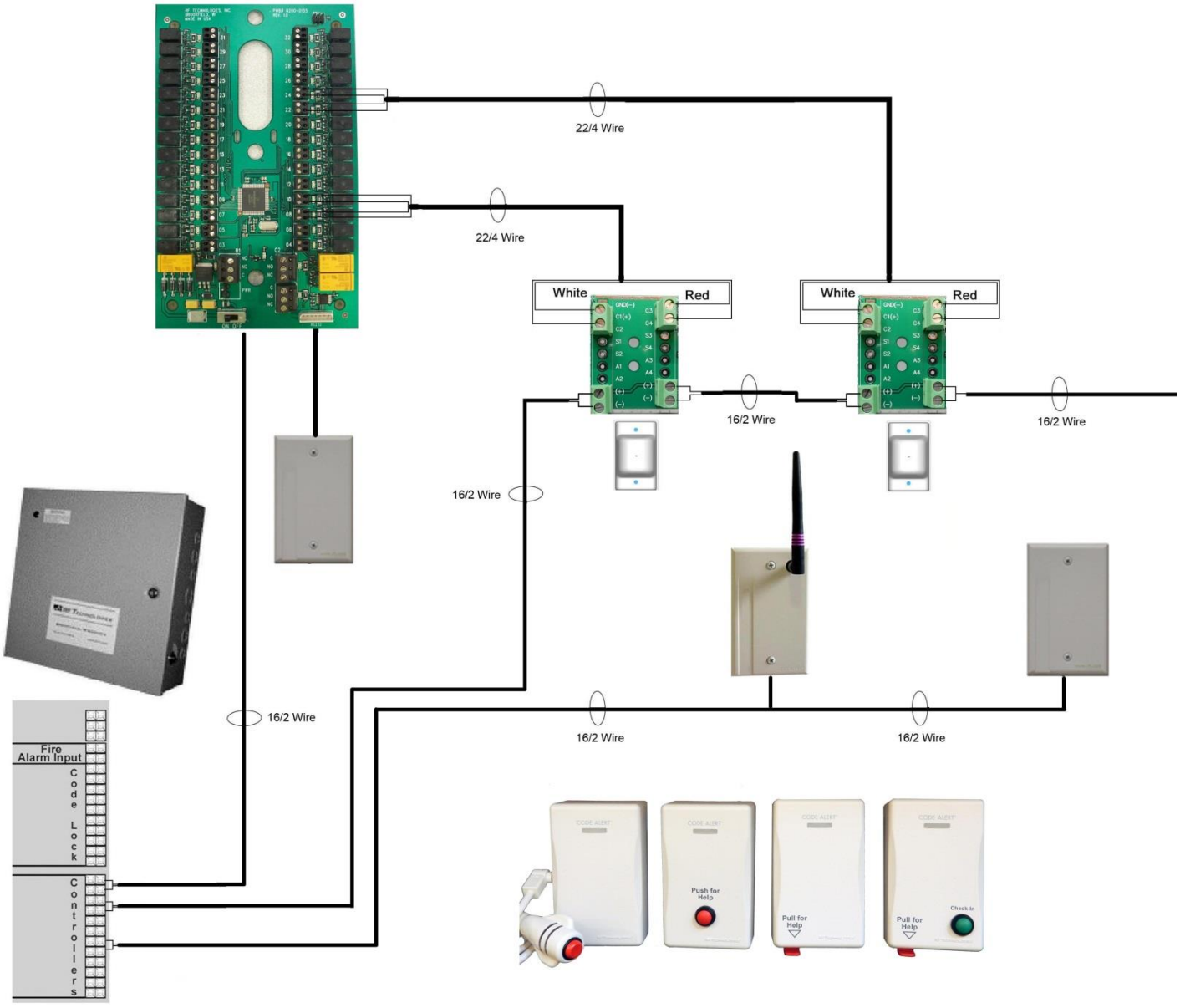
1. Run a 22 AWG 4-conductor or 8-conductor cable to connect one of the Dome Light circuit's terminals to the 32 Channel Controller.
2. Connect one pair of the cable conductors from the Dome Light's C1(+) and C2 terminals to one of the 32 Channel Controller's relay output circuits. The 32 Channel Controller's circuits 01 and 02 have both Normally Open (NO) and Normally Closed (NC) contacts; if these circuits are utilized, wire to the C and NO terminals. The 32 Channel Controller's circuits 03 thru 32 have Normally Open (NO) contacts.
3. Repeat the above step for the second Dome Light circuit (C3 and C4) using either another 4-conductor cable or the 3rd and 4th pairs of the 8-conductor cable, if used.
4. Use the tie wrap provided to wrap around the terminated wires and tightly attach it to the holes in the 32 Channel Controller circuit board.
5. Once the Dome Light has been wired, slip the wires back into the wall until the two support posts on the circuit board rest against the mounting surface.

32 Channel Controller System Power Up

1. Make certain that the power switch on the Router is OFF.
2. Turn the power switch on the 32 Channel Controller to OFF.
3. Turn the power switch on the 32 Channel Controller to ON.
4. Turn the power switch on the Router to ON. After the ON/OFF switch is turned to the ON position the LED's at the bottom of the device should flicker. If they don't flicker then turn the switch to the OFF position and then turn it back ON.
5. Secure faceplate of the 32 Channel Controller with six screws.
6. Proceed to configuring the 32 Channel Controller.

Wiring Diagram

This Wiring Diagram shows how the 32 Channel Controller is to be wired with a CPS.



Wiring Table

Central Power Supply	Red or White Dome Light
+	+
–	–

Central Power Supply	White Dome Light	Red Dome Light
Zones 1–32 Contact 1	**C1**	**C3**
Zones 1–32 Contact 2	**C2**	**C4**

Power Cable Run Lengths

Number of Dome Lights*	CPS 16/2AWG
8	390'
7	450'
6	525'
5	630'
4	785'
3	1050'
2	1575'
1	3150'

***Maximum lengths for signal wire is 1000'**

Configuring the 32 Channel Controller

Configure Units

When each device installed in your facility has been added to the software database, units must be defined and added. A Unit represents a protected area in your facility that will be monitored as a unit. All devices associated with a 32 Channel Controller must be in the same unit. Refer to the applicable *Series Software Administrator Guide*.

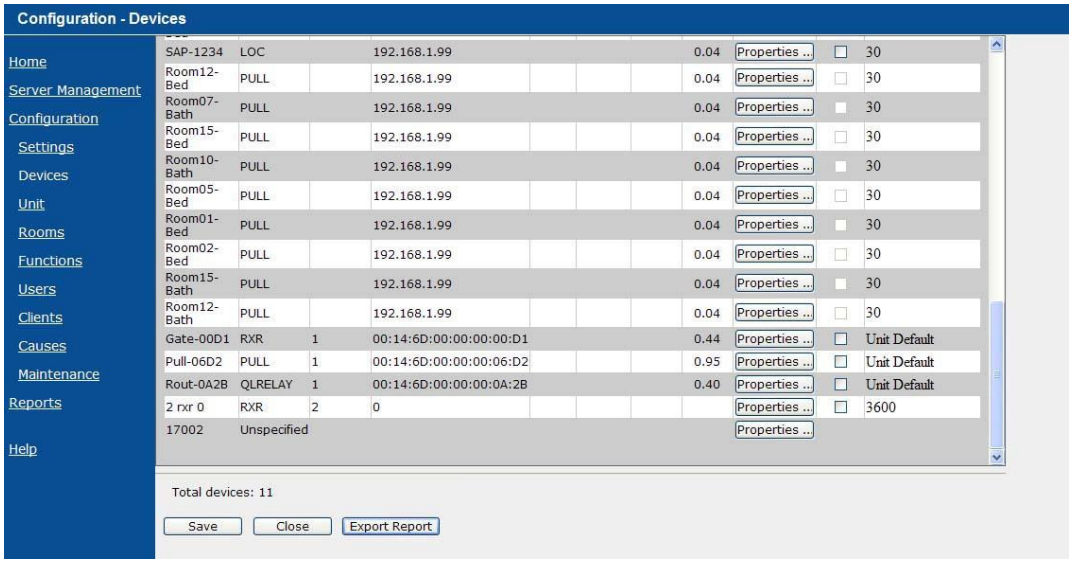
Configure 32 Channel Controller

All devices recognized by the system are listed in the Configuration Device window. Once the 32 Channel Controller has been installed and properly wired, the affiliated Router must be configured in the system.

To configure the 32 Channel Controller

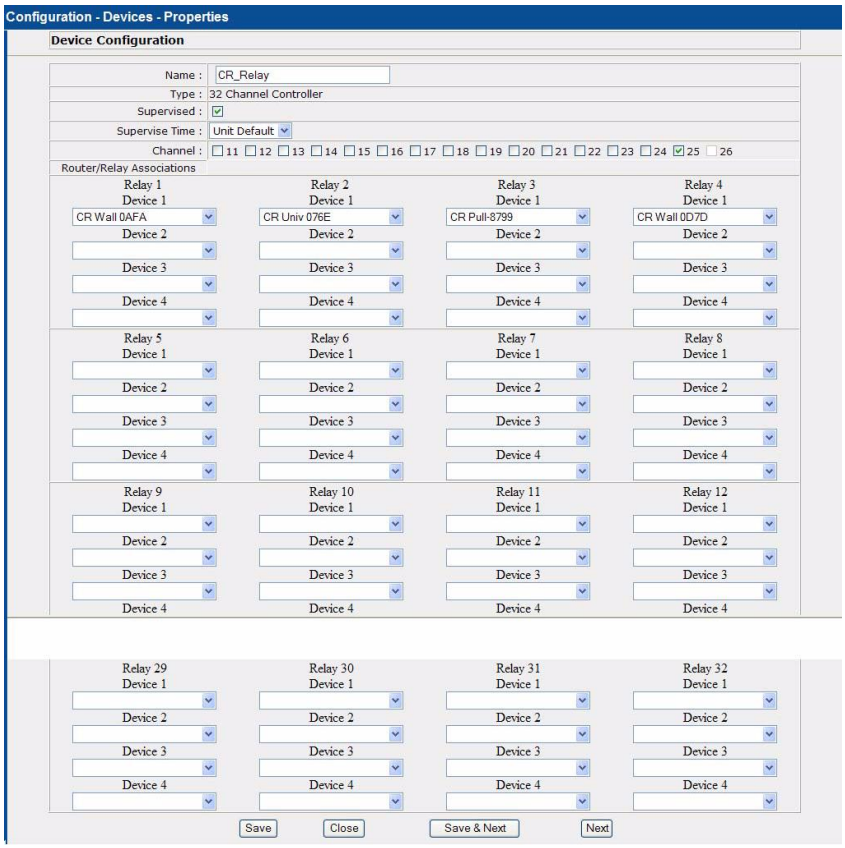
1. Go to the **Configuration** home page.
2. Select **Devices**.

   The Configuration Devices window opens.



3. Click the **Properties** box next to the device you wish to update. In this example the 32 Channel Controller type is displayed as: QLRELAY.

The Configuration Rooms Properties window opens.



a. **Name**—enter the 32 Channel Controller name.

b. **Supervised**—select this check box if you wish to have the device supervised.

c. **Supervised Time**—select the amount of time, from the drop-down list, that the system should wait before it initiates a Device Fault alarm. The Unit Default time is the Transmitter Supervise Time set during Unit Properties configuration.

d. **Type**—the type of device is provided for you.

e. **Channel**—choose the channel assigned to the Gateway/Router (default 25). Channel selection is site specific and dependent on the sites environmental issues.

f. **Router/Relay Association**—select the devices associated with a relay. There are 32 relays; each relay is capable of monitoring four devices. The Dome Light is triggered if any of the devices associated with that relay goes in alarm. Devices selected must be from the same unit as the 32 Channel Controller.

g. Click **Save** to save your changes

h. Click **Close** to close the window without saving your changes.

Test the 32 Chanel Controller

When an alarm is sent from the Server to the Router, the 32 Channel Controller acts as a relay switch and turns on the Dome Light mounted outside the patient's room. Once the 32 Channel Controller /Dome Light setup has been configured and wired properly, you must test its operation.

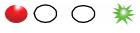
1. Position yourself where you can see the Dome Light.
2. Have someone activate a transceiver device.
3. If the 32 Channel Controller and Dome Light have been wired correctly, the Dome Light will illuminate and an Alarm event will be listed on the Event List at the Central Server.
4. Reset the transceiver device and follow step 1– 3 to test all 32 Channel Controller/Dome Light setups.

NOTE: The Dome Light includes two indicator lights: a white indicator light for low priority alarms and a red indicator light for high priority alarms.

- Emergency Calls—Emergency calls are indicated by steady illumination of the red Dome Light associated with the zone or area from which an emergency call has been placed.
- Normal Calls—Normal calls are indicated by steady illumination of the white Dome Light associated with the zone or area from which a normal call has been placed.
- Concurrent Emergency and Normal Calls—If emergency and normal calls are placed at the same time, the red light connected to the emergency station from which a call was placed will illuminate at the same time as the white light associated with the normal call.

Gateway/Router Reset Button

The Router has four types of reset. Respectively, the Gateway supports the first three. By using the reset button on the bottom edge of the Router/Gateway you can perform the resets described in the chart below.

			Action Upon Release of Reset Button					
Reset Type	**To Execute Press and Hold Reset Button**	**Release Reset Button When LED Illuminates**	**Associated (child) End-devices**	**Associated (child) Routers**	**Routing Table**	**Device Name**	**Channel**	**LED Sequence After Release of Reset Button**
1-second	Hold until 1 LED comes on solid (about 1 second)		No change	No change	Clear	No change	Same	1. L1, L2, L3, L4 (sequentially) 2. All LEDs on 3. Green LEDs flash 4. Single green flash if communication is successful
5-second	Hold until 2 LED comes on solid (about 5 seconds)		Clear	No change[1]	Clear	No change	Same	1. L1, L2, L3, L4 (sequentially) 2. All LEDs on 3. Green LEDs flash 4. Single green flash if communication is successful
10-second	Hold until 3 LED comes on solid (about 10 seconds)		Clear	Clear	Clear	Default[2]	25	1. L1, L2, L3, L4 (sequentially) 2. All LEDs on 3. Green LEDs flash 4. Single green flash if communication is successful
15-second	Hold until 4 LED comes on solid (about 15 seconds)		Clear	Clear	Clear	Default[2]	Scan[3]	1. L1, L2, L3, L4 (sequentially) 2. All LEDs on 3. No LED activity for 30 seconds while channels are scanned 4. Green LEDs flash 5. Blink red RF 30 seconds 6. Single green LED flash and red RF LED flashes for 15 seconds

1. If a Router/Gateway does not have child Routers (at the end of a branch in the tree structure), a 5-second reset will cause the Router/Gateway to leave the network, and then rejoin the network. On the Router, this is indicated by observing the L2 flash off and back on after 5-seconds.
2. A 10-second or 15-second reset will cause a Router/Gateway name to revert to factory default; Rout-xxxx/Gatexxxx, where xxxx are the last 4 characters of the Router/Gateway MAC ID.
3. The Router will scan all channels and will join the first channel that replied with the highest RSSI (and stay on that channel indefinitely unless another 15-second reset is done).

LED Sequence

Below is an explanation of the LED sequence.

LED Power Up Sequence	Explanation of LED
L1, L2, L3, L4 (sequentially)	Device executing normal firmware.
All LEDs On (not maintained)	Device executing normal firmware.
NOTE: If power up sequence does not occur and the green light is blinking every second, than the device is in manufacturer's mode.	

LED Display Sequence	Explanation of LED
Dual Green LED Flash (10 times)	Device is attempting to identify a Router/Gateway parent.
Single Green LED Flash (L2)	Successfully joined with and checked in with identified parent.
Single Red LED Flash (L1)	No response from identified parent.
Repeating (dim) Red LED Flash (L3)	Device operating normally, flashes once per second (heart beat indicator).
Dual Green LED Flash (one time)	Router/Gateway Successfully forwarded packet from a child to the Central Server or display.
Single Green LED Flash (L4)	Gateway received the check in message sent by Server every 15 seconds.
L3 and L4 Solid Illumination	Battery switch turned off or battery fully discharged and requiring the Quick Response Premiere Router Battery Recharger procedure (PN 0510-0336).

Gateway/Router Channel Default

The Gateway and Router default to channel 25. In a facility with a single Gateway, it is recommended to leave the Gateway and Routers on channel 25. In a facility with multiple Gateways, it is recommended to power-up only one Gateway system at a time during installation. Once the first Gateway/Router system is up and running, switch that system to another channel, then commission the next Gateway system (refer to "Additional Gateway/Router Installation" on page 26).

Additional Gateway/Router Installation

In some instances, it may be necessary to install an additional Gateway to support additional Routers. By default, the Gateway and Routers are automatically assigned to channel 25. Once the first installation of Gateway/Routers is complete and configured into the system, you must change the channel to install the second set.

Channel selection will be site specific and dependent on the sites environmental issues. Environmental issues include WiFi, 2.4 cordless phones, microwave ovens, and architecture (multiple Gateways). There are 16 ZigBee channels in the 2.4 spectrums numbered 11 to 26 (1–9 are in the 900MHz spectrum). Channel 26 is unusable as the power output is limited to half of the other channels due to its proximity to the edge of the 2.4. spectrums, and is configured "off" in our systems.

NOTE: Channel 25 is the default for all our devices. The preferred channels are: 25, 20, 15 and 11.

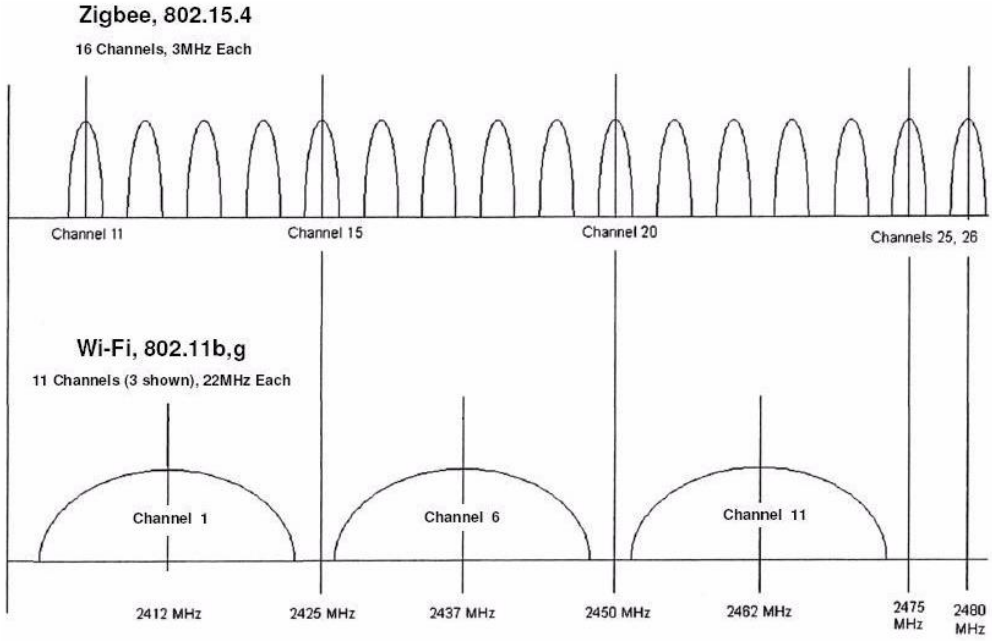


FIGURE 1.1: IEEE802.15.4 AND IEEE802.11 Channels

Changing Channels

To change the channel to the Gateway and Routers you must access the Configuration-Device page.

1. Select **Login** (or **Functions** if password protection is disabled).
2. Enter your Login and Password or use your identification card.
3. Press **Enter** or click **OK**.
4. Select **Administrative Functions**.
5. Select **Configuration**.

   The Configuration page opens with links to the Configuration menus. All devices recognized by the system are listed in the Configuration Device window.

6. Select **Devices**.

   The Configuration Devices window opens.

FIGURE 1.2: Configuration Device Window

7. Click the Properties box next to the Gateway.
8. Deselect the default channel (25) and select the new channel. Selecting a new channel for the Gateway will also change the channel for all associated Routers.

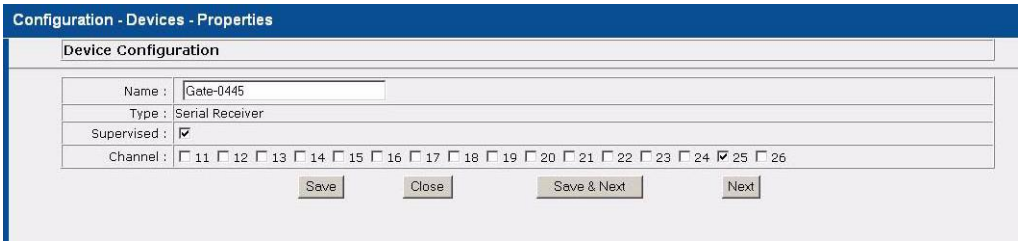


FIGURE 1.3: Device Properties Window

9. Click **Save** and then **Close** the window.

> **WARNING**: WAIT! You must wait at least 60 seconds before using the Scan Devices function.

10. Once the channel for the Gateway and Routers has been changed, you must Scan Devices on that comport to establish the change in the system. The Gateway will not use the new channel until the Scan Devices function is complete.

Router Depth

It is important to install Routers efficiently as to minimize the number of hops to the Gateway while still providing coverage at the furthest point from the Gateway. The Router Depth option allows you to adjust Router Depth by staggering 5-second Router resets by one, two, three or four minutes. Each Router has an association limit of 6 Routers; the hop limit for each Router is 4.

To select the Router Depth

1. Select **Login** (or **Functions** if password protection is disabled).
2. Enter your Login and Password or use your identification card.
3. Press **Enter** or click **OK**.
4. Select **Administrative Functions**.
5. Select **Configuration**. The Configuration page opens with links to the Configuration menus.

   All devices recognized by the system are listed in the Configuration Device window.
6. Select **Devices**.

   The Configuration devices window opens.
7. Click the **Properties** box next to the Router.

   The Configuration Device Properties window opens.

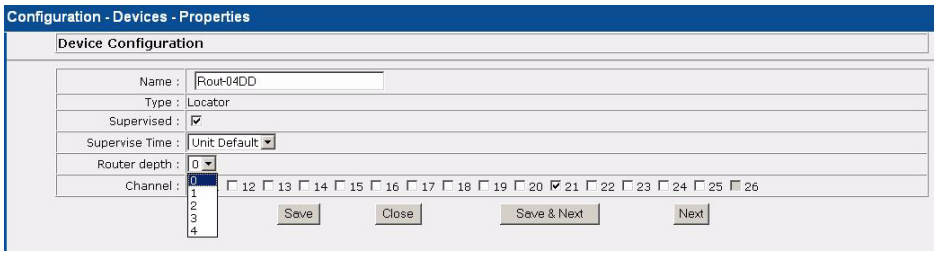


FIGURE 1.4: Configuration Device Properties

8. Select the Router depth from the pull-down.
9. Click **Save** and the **Close** the window.
10. Once the Router Depth is selected, you must do a rebuild the subnet on scanned devices. (See “Rebuild Subnet on Scanned Devices” on page 30.)

Rebuild Subnet on Scanned Devices

This option is used to rebuild the subnet on scanned devices.

1. Select **Login** (or **Functions** if password protection is disabled).
2. Enter your Login and Password or use your identification card.
3. Press **Enter** or click **OK**.
4. Select **Administrative Functions**.
5. Select **Configuration**. The Configuration page opens with links to the Configuration menus.

   All devices recognized by the system are listed in the Configuration Device window.
6. Select **Devices**.

   The Configuration devices window opens.
7. Click the **Properties** box next to the Gateway.

   The Configuration Device Properties window opens.

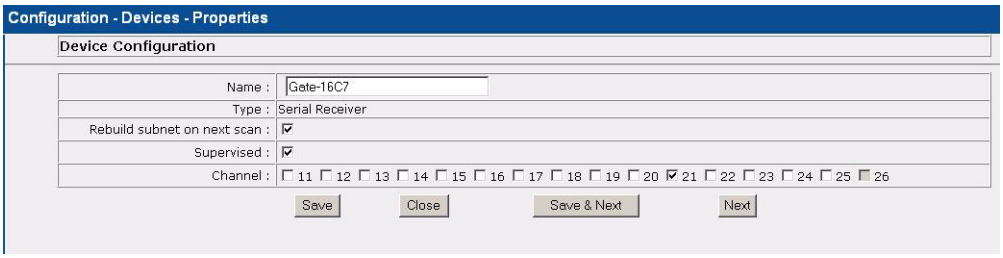


FIGURE 1.5: Configuration Device Properties

8. Click the checkbox next to **Rebuild subnet on next scan**.
9. Click **Save** and then **Close** the window.
10. You must execute the Scan command on that Gateway's comport to begin.

WARNING: Rebuilding the subnet should only be done when end devices are not present during installation. During the Rebuild, the system will be down for up to 10 minutes.

Scan Devices

The Server Management window allows you to Scan devices.

1. Select **Login** (or **Functions** if password protection is disabled).
2. Enter your Login and Password or use your identification card.
3. Press **Enter** or click **OK**.
4. Select **Administrative Functions**.
5. Select **Configuration**.

   The System Management Home page opens.
6. Select **Server Management**.

   The Configuration Server Management home page opens.

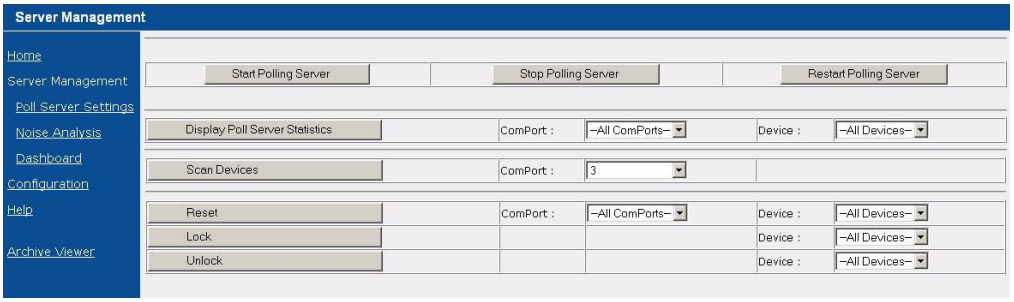


FIGURE 1.6: Configuration Server Management Home Page

7. Next to the **Scan Devices** button, select the ComPort assigned to the Gateway/Router from the ComPort pull-down.
8. Click **Scan Devices**, a Scan Status window opens verifying the successful completion of the scan.
9. Click **Close** to close the Scan Status window and return to the Server Management home page.
10. Open the Dashboard and verify the Gateway and each of the Routers are communicating.
11. Install the next Gateway and Routers.

CHAPTER 2

Installing Transceiver Devices

Introduction

This chapter provides detailed information about installing transceiver devices and testing the operations of the Quick Response Premiere Wireless Call System with supported devices. Transceivers are devices that transmit and receive alarm data. The transceiver devices listed in this section are supported by the Quick Response Premiere Wireless Call System running the applicable 6.0 Series or above Software application. The Quick Response Premiere Wireless Call System includes transceivers that are carried by the patient and fixed devices. A fixed device is a stationary device that is assigned to a room or a unit. Fixed devices are not transported with the patient but stay in the room or unit to which they are assigned.

WARNING: Before cutting openings or drilling holes through walls, you must verify that you will not strike any wiring or plumbing.

Transceiver Devices

The transceiver devices are entered into the system by placing the device. Upon power up the device will join the Zigbee network. The devices will then appear in the device list under Configuration Devices.

NOTE: Pull Cords and Universal Transceivers check in every 20 minutes; Pendants check-in every 100 seconds by default.

The user must then update the device information; for example, give the device a name and/or enable features (refer to the applicable *Series System Administrator Guide*).

The Quick Response Premiere Wireless Call System transceiver devices consist of the following:

- Call Stations
  - Pull Cord/Emergency Call
  - Pull Cord with Check-In
  - Push Button Emergency Call
  - Nurse Call
- Universal Transceiver
- Door/Window Transceiver
- Pendant Transceiver

NOTE: Any transceiver devices that are to be assigned to a 32 Channel Controller must be on the same PAN as the 32 Channel Controller.

Universal and Pendant Transceivers LED Light Indicator

The Universal and Pendant transceivers contain a two-color indicator light. In general, green indicates good and red indicates bad.

- **No light**—if the LED indicator does not blink within a few seconds of alarming or clearing an alarm, this may indicate a dead battery; try replacing the battery. If the problem persists, contact Technical Support.
- **3 green blinks**—alarm, clear, or check-in had been transmitted and a confirmation has been received from the Gateway.
- **10 green blinks**—device has successfully received new configuration data from the computer.
- **1 green blink**—alarm, clear or check-in has been transmitted but the device has not yet received a confirmation from the Gateway. Wait up to 15 seconds for the device to try again by itself; do not re-alarm the device. The Pendant will also blink green once each time the blue button is pressed; as visual feedback that the button press was recognized.
- **1 red blink**—device cannot find a Router to communicate with; device may be out of range or on the wrong channel. For the Pendant model #9600-0251, the battery maybe too weak.
- **2 red blinks**—join failed; the device found one or more Routers, but Routers indicate they cannot accept any additional devices. An additional Router may need to be added to support a large number of devices in the same area.
- **3 red blinks (Pendant model #9600-0251)**— message sent to local Router parent, but device did not get an acknowledgement back from the Gateway. Gateway may have lost power, or all communication paths to Gateway are broken.

Call Stations

There are 4 models of QR Premiere Call Stations.

Nurse Call | **Push Button Emergency Call** | **Pull Cord** | **Pull Cord with Check-In**

Call Stations have (2) LED lights that are visible from the front of the device. The first LED light is red and is visible whenever there is a call for assistance. When an alarm is initiated, the red LED will blink quickly. When the alarm has been confirmed as received, the red LED will then blink slower. If for some reason the alarm is not confirmed in 15 seconds the red LED will stay on for 3 seconds and then shut off. At this point the device will continue to try and contact the network.

The second light is a green LED and is only activated by moving a jumper (JP3) in place on the electronics inside the device. It is only recommended that this be activated for service purposes only by trained service personnel as its blinks are used for diagnostic purposes. When the jumper is in place and the unit reinstalled in its original location the green light will blink much fainter than the red alarm LED. The following is how the green LED is coded:

- One green blink = message sent, but no acknowledgment was received from Gateway
- Two green blinks = all nearby Routers full
- Three green blinks = checkin/alarm message was sent successfully with an acknowledgment received from Gateway
- Ten green blinks = device received new configuration data

Installing Call Stations

Nurse Call Transceiver

A Nurse Call transceiver is affixed near the bed of the patient. An Assistance Required alarm event is reported in the Event List when a patient pushes the button on the Nurse Call cord. The Nurse Call transceiver is supervised; a routine check in message is sent from the transceiver and if the signal is not received by the system, a Device Fault event is generated in the Event List at the computer.

Push Button Emergency Call

A Push Button Emergency Call is mounted on the wall. This device is used to request staff assistance and is commonly used in common areas and lunch rooms.

An Assistance Required alarm event is reported in the Event List when a patient pushes the red button. The Push Button Emergency Call is supervised; a routine check in message is sent from the Push Button Emergency Call and if the signal is not received by the system, a Device Fault event is generated in the Event List at the computer

Pull Cords/Emergency Call

A Pull Cord is mounted on the wall. This device is used to request staff assistance and is commonly used in bedrooms and bathrooms. It is suitable for use in close proximity to showers or baths; however to prevent damage, avoid any submersion.

An Assistance Required alarm event is reported in the Event List when a patient pulls a cord. The Pull Cord is supervised; a routine check in message is sent from the transceiver and if the signal is not received by the system, a Device Fault event is generated in the Event List at the computer.

Pull Cord with Check In

A Pull Cord with Check In enables the staff or patient to push a green button to check-in. Pressing the green button indicates to the system that the patient has checked in or been visited by staff. The type of check-in depends on how your Pull Cord with Check In is configured (refer to the applicable *Series Software Administrator Guide*). For various types of check in see below.

Check-in types

- Patient Check In—A patient pushes the button to notify the staff that he/she is awake and does not require assistance.
- Staff Check In—A staff member pushes the check-in button once they have checked on a patient.
- Staff Care Complete—A staff member pushes the check-in button in response to an Assistance Required alarm once the patient has been checked on and the alarming device is reset. If Joint Commission is enforced, this will clear the White alarm from the Client computer

Mount the Call Stations

The QR Premiere Call stations are surface mounted. A height of 48 inches is standard, however; mounting heights may vary. Before mounting to the wall, pull the plastic battery tabs to activate the battery pack.

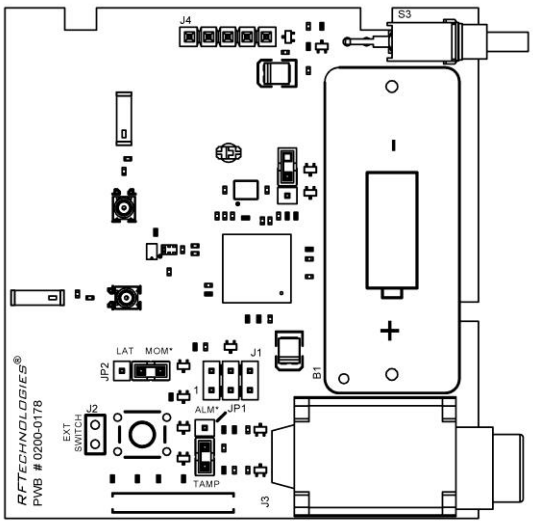
1. Using the rear plate of the call station as a template, place it level against the wall at the desired mounting height and mark the location of the two mounting holes.

NOTE: For Pull Cords, determine the desired length of the red Pull Cord string. The standard length of a Pull Cord strings is six feet long. However, as mounting heights vary, the length of the string may need to be adjusted.

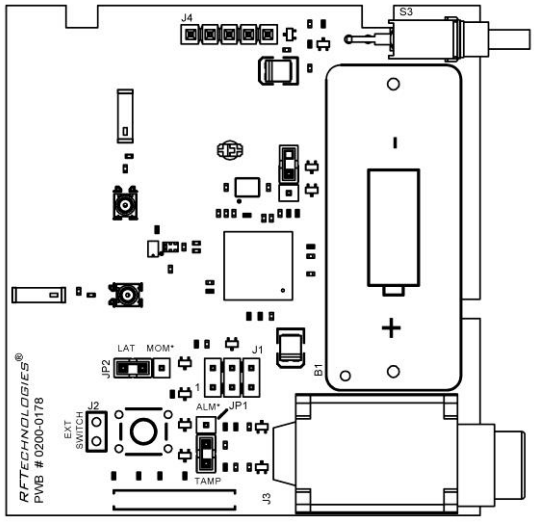
To adjust the length of the Pull Cord string:

- Gently pop the red alarm lever free from the enclosure and remove the string.
- Cut the string to the desired length and rewind it on the alarm lever in the reverse order it was removed. There are instructions printed on the side of the red alarm lever for assistance in winding the string.
- Press the red alarm lever back onto the enclosure and route the pull cord string through the small slit in the bottom corner of the enclosure.

NOTE: To configure the Nurse Call transceiver for momentary or latching style call cords set the jumper JP2 as shown in the following diagram:



Momentary Style



Latching Style

3. Center punch each hole and install two nylon wall anchors (included). If the call station is located on a concrete wall then you must use the wall anchors designed for use with concrete (not included).

4. Snap the front assembly over the rear plate and place a screw (included) into the bottom of the assembly (as shown below) to secure.

Setting the Call Stations Up For Use

To set up the Nurse Call transceiver for use

> **NOTE:** Prior to any Call Device set up the devices must be assigned to a unit. This is what allows the device to be seen in the Event List. Refer to *Series Software Administrator Guide*.

1. Plug in the desired Nurse Call Cord set into the Nurse Call transceiver.
2. Activate the Nurse Call transceiver by pressing the button on the cord set.
3. If the Nurse Call transceiver is working properly, an Assistance Required alarm event will be listed on the Event List at the Central Server. The system senses the Nurse Call transceiver when it goes into alarm and adds it to its list of devices.

   For latching type cord sets reset the Nurse Call transceiver by pulling the button back to the UP position. Momentary type cord sets can be reset by pressing the reset button on the side of the device. The alarm event will automatically clear from the Event List at the Central Server. If Enforce Joint Commission is enabled, you must clear the alarm at the Central Server or Client computer by selecting a reason.
4. At the Central Server, update the Nurse Call transceiver information, for example, giving the Nurse Call a name and/or assigning it to a room or unit. Refer to the "Update Devices" section in the applicable *Series Software Administrator Guide*.

To set up the Push Button Emergency Call transceiver for use

1. Activate the Push Button Emergency Call transceiver by pushing the red button. When pushed, the button remains in a recessed position indicating the device is in an alarm state.

   If the Push Button Emergency Call transceiver is working properly, an Assistance Required alarm event will be listed on the Event List at the Central Server. The system senses the Push Button Emergency Call when it goes into alarm and adds it to its list of devices.
2. Reset the Push Button Emergency Call by pushing the red button again, the button pops out indicating the transceiver has changes states and is now idle and ready for its next usage.

   The alarm event will automatically clear from the Event List at the Central Server. If Enforce Joint Commission is enabled, you must clear the alarm at the Central Server by selecting a reason.
3. At the Central Server, update the Push Button Emergency Call information, for example, giving the Push Button Emergency Call a name and/or assigning it to a room or unit. Refer to the "Update Devices" section in the applicable *Series Software Administrator Guide*.

To set up the Pull Cord or Pull Cord with Check In for use

1. Activate the Pull Cord by pulling the cord.
2. If the transceiver is working properly, an Assistance Required alarm event will be listed on the
3. Event List at the Central Server. The system senses the transceiver when it goes into alarm and adds it to its list of devices.
4. Reset the Pull Cord by rotating the red HELP lever back to the UP position.
5. The alarm event will automatically clear from the Event List at the Central Server. If Enforce Joint Commission is enabled, you must clear the white alarm at the Central Server by selecting a reason.
6. At the Central Server, update the Pull Cord information, for example, giving the Pull Cord a name and/or assigning it to a room or unit. Refer to the "Update Devices" section in the applicable Series Software Administrator Guide.

Replacing the Call Station Batteries

The QR Premiere Call Stations are powered by 4 replaceable AA batteries.

To replace the AA Batteries for the Call Stations

1. Remove the Nurse Call transceiver from its mounted location by first removing the screw on the bottom of the enclosure.
2. Rotate the enclosure upward and remove from wall. The four AA batteries will be visible. There is no need to disassemble anything as the batteries are removable as they are. Pull all four batteries free from the battery holder.

   NOTE: Do not use a metal screwdriver or metallic instrument to remove the battery. This may damage the device.
3. Insert four new AA Lithium Ion batteries into the battery holder. Make sure to pay attention to the polarity of the batteries within their holder.
4. Verify communication is resumed by alarming the Nurse Call transceiver and observing the LED through the front of the Nurse Call transceiver. It should be blinking red.
5. Once communication is verified replace the front cover of the Nurse Call transceiver and remount it to the wall mounting plate.

Universal Transceiver

A Universal transceiver can be used to integrate your facility's existing equipment such as backup generators or other devices that can be integrated with the software. Universal transceivers can be programmed as either NO (normally open) or NC (normally closed) devices. They automatically activate when the input from a monitored device has a contact close or open. When this happens, the Universal transceiver sends event information to the Central Server. The Universal transceiver is powered by a replaceable 3V coin cell battery.

The Universal has one (1) LED light. The light is visible when enclosure door is open (i.e. during installation), but not visible during normal operation when the enclosure door is closed. The light flashes briefly once every check-in (20 minutes by default) and once each time the device alarm is triggered or cleared. Green indicates communication with the Router is good; red indicates communication failure and device is not able to transmit to the Router.

Tamper

The Universal transceiver's tamper functionality operates in several modes depending on the device and the type of tamper interference. In either case, when initiated, a Tamper alarm event will be listed on the Event List at the Central Server. The types of tamper events are:

- Case Open Tamper— initiated when the case to the Universal transceiver is opened.
- Externals Enclosure Tamper —initiated when the external closure of the PIR Sensor is opened.

Below is a table showing the type of tamper event associated with a particular device.

	Nurse Call	EAC	Door/ Window	Door Manual Reset	Door Check-in	PIR	Smoke	CO
Case Open Tamper	X	X	X	X	X	X		
External Enclosure Tamper						X		

Installing the Universal Transceiver

To wire the Universal transceiver connect the two 22-gauge, 2-conductor stranded wire into the appropriate terminals on the existing device. Refer to the device manufacturer's instructions or contact the RF Technologies, Inc. Technical Support Team at (800)-669-9946 or (262) 790-1771 to identify the correct terminals.

The Universal transceiver can be mounted with a screw using a mounting hole; it can be applied with the attached adhesive pad; or it can be mounted with a lanyard or zip tie through the opening at the top of the transceiver.

Mounting the Universal Transceiver

To mount the Universal transceiver using mounting hole

1. Use your fingers to open the front cover of the transceiver by pushing the retaining clip on the top downward. This allows the hinged cover to drop down and expose the circuit board.
2. Carefully pull the circuit board free from the pins on the enclosure.
3. Drill a 1/8 inch mounting hole through the indentation in the transceiver enclosure.
4. Using the enclosure of the Universal transceiver as a template, place it level against the wall and mark the location of the mounting hole.
5. Mark out the mounting hole and drill a 1/16 inch diameter hole where you made the mark.
6. Line up the hole on the transceiver enclosure with the newly drilled hole and mount the enclosure to the door frame using a number 6 screw (not included).
7. Pull the plastic battery tab to activate the battery or refer to the section entitled "To replace the battery in a Universal transceiver" on page 46 to insert a new battery.
8. Return the circuit board onto the two pins.
9. Snap the front cover of the transceiver back into place.

To mount the Universal transceivers with adhesive pad

The Universal transceiver can be attached using an adhesive pad that can be purchased with the transceiver.

1. Remove an adhesive pad from the strip of paper.
2. Place the transceiver face down.
3. Line the adhesive pad up with the back of the transceiver.
4. Apply the adhesive pad.
5. Verify that the pad is applied correctly and is not hanging over the sides of the transceiver.
6. Determine where you want to apply the transceiver. The surface must be clean, dry and free of condensed moisture.
7. the plastic battery tab to activate the battery or refer to the section entitled "To replace the battery in a Universal transceiver" on page 46 to insert a new battery.
8. Remove the adhesive plastic guard.
9. Firmly attach the transceiver to the mounting surface. Ideal application temperature range is 70°F to 100°F (21°C to 38°C).
10. Press firmly and hold for approximately 10 seconds to activate the pressure sensitive adhesive.
11. After application, the bond strength will increase as the adhesive flows onto the surface. At room temperature, approximately 50% of ultimate bond strength will be achieved after 20 minutes, 90% after 24 hours and 100% after 72 hours.

Setting the Universal Transceiver Up for Use

To set up the Universal transceiver for use

1. Activate the Universal transceiver by inserting the battery or remove the plastic battery tab.
2. Test the transceiver by activating the existing device.
3. If the transceiver is working properly, the Central Server will sense the Universal when it goes into alarm and add it to the list of devices.
4. At the Central Server, update the transceiver information, for example, giving it a name and/or assigning it to a room or unit. Refer to the "Update Devices" section in the Series 6.0 Software Administrator Guide (PN0510-1080).

Replacing the Universal Transceiver Battery

1. To replace the battery in a Universal transceiver
2. Use your fingers to open the front cover of the transceiver by pushing the retaining clip on the top downward. This allows the hinged cover to drop down and expose the circuit board.
3. Carefully pull the circuit board free from the pins on enclosure.
4. If changing the battery, use a small, non-conductive piece of plastic or wood to push the 3V Lithium coin cell battery from the rear of the battery clip until it pops free.

NOTE: Do not use a metal screwdriver or metallic instrument to remove the battery. This may damage the device.

5. Insert the 3V Lithium coin cell battery into the battery holder as shown. Be sure to align the positive (+) end of the battery as marked on the battery and battery holder.
6. Verify communication by observing the LED light.
7. Return the circuit board onto the two pins.
8. Once communication is verified, snap the front cover of the transceiver back into place.

Door/Window Transceiver

A Door/Window transceiver is used to protect a door or window against unauthorized egress. An Exit alarm event is reported in the Event List when a monitored door or window is opened. The alarm automatically clears when the door or window is closed. The Door/Window transceiver is supervised; if no information is received by the system from the transceiver for a specified number of minutes, a Device Fault alarm is generated in the Event List at the computer.

The Door/Window transceiver has one (1) LED light. The light is visible when enclosure door is open (i.e. during installation), but not visible during normal operation when the enclosure door is closed. The light flashes briefly once every check-in (20 minutes by default) and once each time the device alarm is triggered or cleared. Green indicates communication with the Router is good; red indicates communication failure and device is not transmitting to the Router.

Installing the Door/Window Transceiver

The Door/Window transceiver comes in two pieces: the transceiver enclosure and a magnet. The magnet is attached directly to the door or window. The transceiver enclosure is mounted on the door or window frame and can be mounting with the attached adhesive pad or a screw. An alarm triggers when the devices are separated. The Door/Window transceiver is powered by a replaceable 3V coin cell battery.

Mounting the Door/Window Transceiver

To mount the Door/Window magnet to the door or window

> **NOTE:** When mounting the Door/Window magnet on a door, there is a better sensitivity if the magnet is mounted closer to the opposite edge from the hinges.

1. Determine placement of the magnet. The distance between the reed switch in the transceiver and the magnet must be no more than 1/2 inch.
2. Using the Door/Window transceiver magnet as a template, place it level against the door or window and mark the location of the two mounting holes.
3. Drill holes where you made the marks.
4. Line up the holes on the magnet with the newly drilled holes and mount the magnet using the screws provided.

To mount the Door/Window transceiver using mounting hole

NOTE: Orientate the internal reed switch next to magnet 3/8 inch away. The Universal transmitter has been tested and shown to work as far as 1/2 inch.

1. Use your fingers to open the front cover of the transceiver by pushing the retaining clip on the top downward. This allows the hinged cover to drop down and expose the circuit board.
2. Carefully pull the circuit board free from the pins on the enclosure.
3. Drill a 1/8 inch mounting hole through the indentation in the transceiver enclosure.
4. Hold the enclosure against the door/window frame so that when the circuit board is in place, the internal reed switch faces the magnet on the door.
5. Mark out the mounting hole and drill a 1/16 inch diameter hole where you made the mark.
6. Line up the hole on the transceiver enclosure with the newly drilled hole and mount the enclosure to the door frame with a number 6 screw (not included).
7. Pull the plastic battery tab to activate the battery or refer to the section entitled "To replace the battery on a Door/Window transceiver" on page 51.
8. Return the circuit board onto the two pins.
9. Snap the front cover of the transceiver back into place.

To mount the Door/Window transceiver using mounting Plate

When mounting to a door or window jamb whose width is less than the width of the Door/Window transceiver, use the provided plastic mounting plate.

1. Determine the location of the Door/Window transceiver.
2. Place the mounting plate in this location and mark the two mounting holes on the jamb.
3. Pre-drill the two holes using a 9/64" drill in the two marked locations.
4. Mount the plate using the screws provided.
5. Proceeded to the step 2 of the next procedure, To mount the Door/Window transceivers with adhesive pad.

To mount the Door/Window transceivers with adhesive pad

The Door/Window transceiver can be attached using an adhesive pad that can be purchased with the transceiver.

1. Determine where you want to mount the transceiver. The mounting surface must be clean, dry and free of condensed moisture.
2. Pull the plastic battery tab to activate the battery or refer to the section entitled "To replace the battery on a Door/Window transceiver" on page 51 to insert a new battery.
3. Remove the adhesive plastic guard.
4. Hold the enclosure against the door/window frame so that when the circuit board is in place, the internal reed switch faces the magnet on the door.
5. Firmly attach the transceiver to the door/window frame (or mounting plate). Ideal application temperature range is 70°F to 100°F (21°C to 38°C).
6. Press firmly and hold for approximately 10 seconds to activate the pressure sensitive adhesive.
7. After application, the bond strength will increase as the adhesive flows onto the surface. At room temperature, approximately 50% of ultimate bond strength will be achieved after 20 minutes, 90% after 24 hours and 100% after 72 hours.

Door/Window Transceiver with Reset Button

If your Door/Window transceiver comes with a reset button, the alarm must be reset at the door by pressing the reset button once the door/window is closed. The Door/Window transceiver comes in three pieces: the transceiver enclosure, a magnet and a reset button. There are two types of reset buttons.

To mount the Door/Window transceiver with Reset Button

1. Mount the Door/Window magnet (refer to "To mount the Door/Window magnet to the door or window" on page 47). The distance between the reed switch in the transceiver and the magnet must be no more than 1/2 inch.
2. Mount the Door/Window transceiver (refer to "To mount the Door/Window transceivers using mounting hole or "To mount the Door/Window transceivers with adhesive pad" on page 49). Orientate the internal reed switch next to the magnet 3/8 inch away.
3. Mount the reset button.

To mount the Reset buttons

There are two types of reset buttons. The Universal transceiver comes pre-wired with 4 feet of 2- conductor 22 gauge wire. Route wire into door or window jamb and to the desired reset button location.

To mount the reset button that has the round push button:

1. Use your fingers to remove the front cover.
2. Using the base of the reset button as a template, place it level against the door or wall and mark the location of the two mounting holes.
3. Drill holes where you made the marks.
4. Line up the holes on the base of the reset button with the newly drilled holes and mount the base using the screws provided.
5. Snap the front cover of the reset button back onto the base.

To mount the reset button that is labeled EMERGENCY:

1. Using the reset button as a template, place it level against the wall or door and mark the location of the two mounting holes.
2. Drill holes where you made the marks.
3. Line up the holes on the base of the reset button with the newly drilled holes and mount the reset button using the screws provided.

Setting Up the Door/Window Transceiver For Use

To set up the Door/Window transceiver for use

1. Activate the Door/Window transceiver by opening the door or window.

   If the transceiver is working properly, an Exit alarm event will be listed on the Event List at the Central Server. The system senses the Door/Window transceiver when it goes into alarm and adds it to its list of devices.
2. Reset the Door/Window transceiver by closing the door or window and pressing the reset button if applicable.

   If the transceiver is reset properly, the alarm event will automatically clear from the Event List at the Central Server. If Enforce Joint Commission is enabled, you must clear the alarm at the Central Server by selecting a reason.
3. At the Central Server, update the Door/Window transceiver information, for example, giving it a name and/or assigning it to a room or unit. Be sure to enable the Inactivity Check-In feature and select beginning and end times. Refer to the "Update Devices" section in the applicable *Series Software Administrator Guide*.

Replacing the Door/Window Transceiver Battery

To replace the battery on a Door/Window transceiver

1. Use your fingers to open the front cover of the transceiver by pushing the retaining clip on the top downward. This allows the hinged cover to drop down and expose the circuit board.
2. Carefully pull the circuit board free from the pins on enclosure.
3. If changing the battery, use a small, non-conductive piece of plastic or wood to push the 3V Lithium coin cell battery from the rear of the battery clip until it pops free.

   NOTE: Do not use a metal screwdriver or metallic instrument to remove the battery. This May damage the device.

4. Insert the 3V Lithium coin cell battery into the battery holder as shown. Be sure to align the positive (+) end of the battery as marked on the battery and battery holder.
5. Verify LED light communication.
6. Once communication is verified, return the circuit board onto the two pins.
7. Snap the front cover of the transceiver back into place.

Pendant Transceivers

The Pendant transceiver is a wireless, mobile transceiver that can be worn around the neck or wrist, or attached to a belt. The protective boot protects the Pendant transceiver against dropping and water ingress. However, to prevent water damage, avoid prolonged submersion and direct contact with a water stream.

The Pendant has one (1) light that is visible from the outside of the enclosure. The light flashes 3 times in rapid succession when the alarm is triggered or cleared. A green light indicates communication with the Gateway/Router is good; red indicates communication failure and the device is not transmitting to the Gateway/Router.

The Pendant can be supervised; if no information is received by the system from the Gateway for a specified supervision time, a No Signal alarm is generated in the Event List at the computer. Since the Pendant is a mobile device, no installation is required.

Activate the Pendant Battery

The Pendant is shipped with a replaceable 3V coin cell battery. To activate the battery, use your fingers to re-move the back cover and pull out the plastic battery tab. Be sure the battery stays in the battery holder while the plastic tab is removed. Additionally, make certain that you are not pressing on the blue button while activating the battery.

Set up the Pendant

With the Pendant transceiver within range of the system, alarm the Pendant by pressing and releasing the blue button. If the alarm message has been delivered successfully, the green light will flash 3 times.

The green light will then blink once every 3 seconds while the Pendant remains in alarm. The system senses the Pendant when it goes into alarm.

Reset the Pendant

Reset the Pendant by pressing the button six times with less than 1 second between presses. The green light will flash each time the button is pressed.

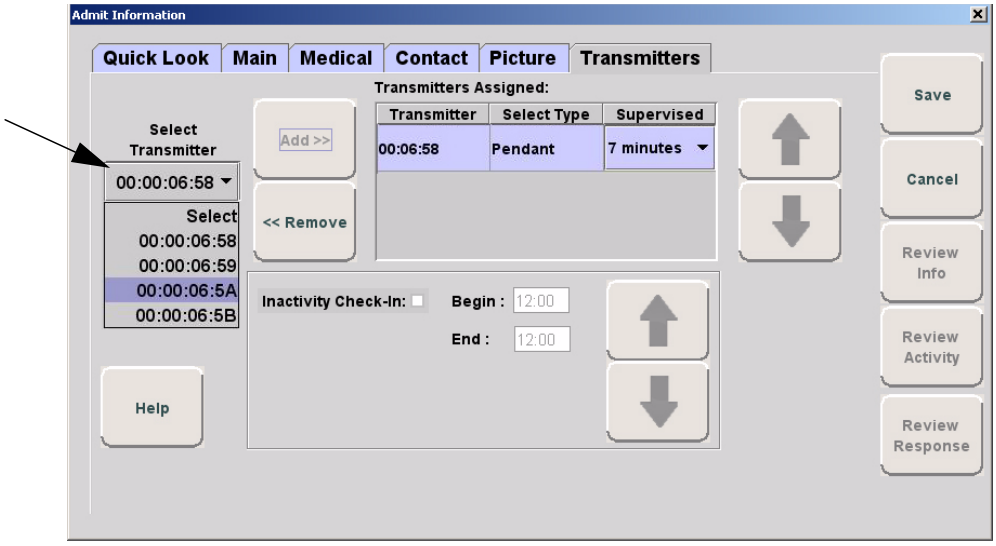
If the alarm clear message has been delivered successfully, the green light will flash 3 times. The green light will no longer blink once every 3 seconds.

Verify the Pendant Appears in the System

The pendant is now ready to be assigned. Verify the Pendant appears in the Select Transmitter pull-down in the patient's Admit Information window, Transmitter tab.

To verify Pendant transceiver appears in the system

1. Select Login (or Functions if password protection is disabled).
2. Enter your Login and Password or use your identification card.
3. Click Manual Admit.
4. Select the Transmitters tab.
5. Verify that the Pendant ID number (last four numbers printed on the Pendant) appears in the Select Transmitter pull-down.



Replace the Pendant Battery

RF Technologies uses only Panasonic 3.0 V Coin Cell Lithium Battery model # CR 2450 or model # CR 2032. These batteries provide 10 to 30 percent more power than other batteries of the same size.

To replace a battery in a Pendant transceiver

1. Use your fingers to remove the back cover of the Pendant and expose the circuit board.
2. If changing the battery, use a small, non-conductive piece of plastic or wood to push the 3V Lithium coin cell battery from the rear of the battery holder until it pops free.

   NOTE: Do not use a metal screwdriver or metallic instrument to remove the battery. This may damage the device.
3. Press the black button on the circuit board a few times to ensure no charge is remaining in the circuits.
4. Insert the new 3V Lithium coin cell battery into the battery holder. Be sure to align the positive (+) end of the battery as marked on the battery and battery holder.

   NOTE: When inserting the replacement battery for the Pendant, inadvertently holding the blue button down while inserting the battery may place the Pendant transceiver into Survey Mode.
5. Verify light communication.
6. When replacing the battery to a Pendant containing a model # CR 2450 battery, to maintain the Pendant's water resistance, a small coating of silicon grease on the o-ring is beneficial. Break open the tube and with a small dab on the finger, apply a thin coat of the silicone grease to the circumference of the o-ring on the top half of the enclosure. Wipe off any excess.

   NOTE: Do not use Petroleum Jelly (Vaseline) to grease the o-ring as it will destroy the o-ring material.
7. Carefully align the back cover of the Pendant to the front enclosure before snapping into place. Avoid twisting the cover; twisting may dislodge the o-ring, compromising its water resistance.
8. Snap the back cover back onto the Pendant.

Test the System Operation

After all of the components that make up the Quick Response Premiere Wireless Call System are in place, the system-wide settings are applied, and information specific to at least one transceiver is entered into the database, test the operation of the entire system.

Step 1—Check Com Port Mapping

1. Eliminate unused com ports from mapping to reduce CPU load.

Step 2—Verify Device Configuration

2. Go to Configuration Device Screen.
3. Verify correct channels are in use by looking at the Gateway settings (preferred channels: 25, 20, 15, 11).
4. Verify the name of the device complies with the recommended naming conventions. Refer to the section entitled "Naming Conventions for the Quick Response Premiere" in the applicable *Series Software Administrator Guide*.
5. Test the operation of the Supervision function
    a. Confirm that all of the supervision settings are defined. Refer to the section entitled "Configure Units" in the applicable *Series Software Administrator Guide*.
    b. Make a note of the number of minutes selected for Transmitter Supervised Time.

Step 3—Verify Dashboard

1. Verify devices powered correctly
2. Go to Dashboard screen
3. Verify all devices installed are present in Dashboard.
4. Verify all devices are named. If not named go to step 2 and name device.
5. Verify no erroneous devices. If erroneous devices are in the dashboard, go to step 2 and remove them.
6. Verify all firmware revisions are correct.
7. Verify device check-ins occurring at designated intervals.
    a. Gateway is 15 seconds
    b. Routers are 30 seconds
    c. Pull Cords and Universals are 20 minutes
    d. Pendants are 8 hours.

Step 4—Check Device Tree Report

1. Go to Device Tree Report.
    a. On the top of the screen click Comport to sort first by Comport.
    b. Then click on Short Address to sort by Short Address.
2. Check the number of devices per router (should not exceed 12).
3. Check the number of routers, devices per gateway (should not exceed 64).
4. Check the number of hops to gateway (should not exceed 4).

Step 5—Verify Software Operation

1. Test the software
    a. At the Central Server, activate a Pendant transceiver by pressing the button. If the transceiver is functioning properly, its green light will flash a series of times, indicating that it is sending a signal.
    b. If the software is responding, an Alarm event will be listed on the Event List at the Central Server.
    c. Reset the transceiver by rapidly pressing the button six times. The green light will flash each time the button is pressed. If the transceiver is reset properly, the green light will flash a series of times, indicating that the Reset signal is being transmitted.
    d. If the software is responding, a Reset event will be listed on the Event List at the Central Server.
2. Test the system for sufficient coverage
    a. At a remote location in the facility, activate a Pendant transceiver by pressing the button. If the transceiver is functioning properly, its green light will flash a series of times, indicating that it is sending a signal.
        - If there is sufficient coverage by the Routers, an Alarm event will be listed on the Event List at the Central Server.
        - If your facility is using a paging system in conjunction with your Quick Response Premiere Wireless Call System, an Alarm message will be received by the pager.
    b. Again at a remote location, reset the transceiver by rapidly pressing the button six times. The green light will flash each time the button is pressed. If the transceiver is reset properly, the green light will flash a series of times, indicating that the Reset signal is being transmitted.
        - If there is sufficient coverage by the Routers, a Reset event will be listed on the Event List at the Central Server.
        - If your facility is using a paging system in conjunction with your Quick Response Premiere Wireless Call System, a Reset message will be received by the pager.
    c. Repeat these steps at several locations to ensure that the transceiver's signal is received from all areas.

Step-6—Monitor System for Device Faults

1. Let the system run overnight.
2. Verify there are no Device Faults within the 24 hours.

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CHAPTER 3
Maintenance

Introduction

The Quick Response Premiere network of devices is partially capable of self-maintenance in the event a device failures. The system software has four data communications to aid in the maintenance of the network.

1. Reset—force individual Routers, all Routers on a single comports, or all Routers on all comports to reset.
2. Scan—forces the Gateway and all its Routers to change channel.
3. Configure—individual device (name, supervision rate, channel mask).
4. Delete—Remove individual devices from Router tables.

Device Failure

When a single, limited function end device (i.e. Pull Cord, Universal) fails, the following procedure will remove it from the short address table and allow replacement.

To replace a failed end device

1. Unpower and physically remove the failed device.
2. Delete the device from the Configuration >>Devices window in the software. This results in a broadcast command to the Gateway to remove the MAC short address from the Router table it was joined to.
3. With the replacement device within range of the Router, remove the battery tab to activate the device. The replacement device will automatically search all channels to find a “full function” device to join.
4. Physically install the replacement device.
5. Alarm and then Reset the device. The system recognizes the device when it goes into alarm and places it into the Device List for configuration.
6. Configure the replacement device in the software using the same device name as the failed device previously deleted.
7. If necessary, configure the replacement device into a Unit.
8. If necessary, configure the replacement device into a Room.

Router Failure

When a full function device (Router) fails, its limited function device (i.e. Pull Cord, Universal) will fail to communicate and automatically search for another Router to associate with for a check-in or alarm.

To replace a failed Router

In case the router is still operating but needs to be replaced due to faulty RF communication, broken tamper switch, etc., follow the steps outlined in the Quick Response Premiere Router/Coordinator Cloning Guide (0510-0401).

If the Router has lost all ability to operate:

1. In the software application, click Report on the toolbar and open the Device Tree Report.
2. Sort the Device Tree Report by Comport and print the report.
3. Find the Router and all of its dependent Routers and make a list of these Routers (any Routers that contain the defective Router name in their path).
4. Remove power from each Router noted in step 3.
    a. a. If AC power is provided by a CPS, turn the CPS output off at this time (all Routers will report low battery in 5 minutes, but that's OK).
    b. b. If AC power is provided by individual wall transformers, unplug the wall transformer for each Router noted in step 3.
    c. c. Remove battery power (turn battery slide switch to off position) for each Router noted in
    d. step 3.
5. In the software, delete all of the Routers noted in step 3 (check delete, click save).
6. Remove battery from each end device that could possibly be within range of the Routers noted in step 3.
7. Replace the defective Router.
8. Start with just the new Router for the steps below.
9. Apply power to the Router.
    a. Apply battery power (turn battery slide switch to on position) for this Router. After the ON/Off switch is turned to the ON position, the LED's at the bottom of the device should flicker. If they do not flicker then turn the switch to the OFF position and then turn it back ON.
    b. If AC power is provided by a CPS, leave the CPS output off for now.
    c. If AC power is provided by individual wall transformers, plug in the wall transformer for this Router.

10. Perform a 15-second reset on this Router (refer to Chapter 1, Gateway/Router Reset Button).
11. Wait for a visual indication Router joined the network (dual green blinks for several seconds).
12. Secure the Router to the wall.
13. Repeat steps 9-11 for all remaining Routers noted in step 3 (important note: remaining Routers must be done in order of shortest path to longest path based on the tree report from step 2).
14. Verify each Router noted in step 3 now appears in the software.
15. If AC power is provided by a CPS, re-enable the CPS output at this time.
16. Wait up to the supervision time for a Router and verify none of the Routers are reporting low battery.
17. Restore each end device from step 6.
    a. With battery still removed, press the tamper switch a few times (ensures caps are discharged and device performs a proper power-up reset).
    b. Insert battery.
    c. Verify device light indicator blinks green 3 times. After the ON/Off switch is turned to the ON position, the LED's at the bottom of the device should flicker. If they do not flicker then turn the switch to the OFF position and then turn it back ON.
    d. Re-mount device.
18. Alarm and clear each end device and verify the PC reports each time an alarm and clear is sent.
19. Open the Device Tree Report and verify that none of the Routers, or end devices are reporting an FFFF short address. If the end devices are, remove their battery, press the tamper switch a few times and replace the battery. If the Routers are, rebuild the network from that point out using the above procedure.

Gateway Failure

When a Gateway fails, its Personal Area Network ID (PAN ID) remains in the system. Routers and end devices search for connectivity to a single Gateway's PAN ID. The PAN ID is based on the Media Access Control address (MAC address) of the Gateway.

To replace a failed Gateway

In case the gateway is still operating but needs to be replaced due to faulty RF communication, broken tamper switch, etc, follow the steps outlined in the Quick Response Premiere Router/Coordinator Cloning Guide (0510-0401).

1. In case the gateway has lost all ability to operate:
    a. Unpower and physically remove the failed Gateway.
    b. turn off the Gateway
    c. remove the serial cable
    d. remove the external antenna
    e. remove the board from the enclosure
2. Prepare the replacement Gateway.
    a. remove the antenna from the replacement Gateway
    b. remove the board from the enclosure
    c. place the new Gateway in the old enclosure
3. Execute the Gateway Service Set MAC ID Utility.
4. Connect the replacement Gateway to the service technician's laptop through the serial port or PortServer.
5. Start the Set MAC ID Utility.
6. Enter the comport of the Gateway and press Enter.
7. Enter the last eight characters of the MAC ID from the original Gateway and press Enter.
8. Enter the channel number of the original gateway and press Enter.
9. Verify that the programing was successful, then press Q and disconnect the Gateway from the service technician's laptop.
10. Perform a 5-second reset on the Gateway.
11. Reattach the external antenna.
12. Connect the power and serial cable on the replacement Gateway.
13. Note the LED sequence on the RS232 status LED. Refer to the LED Sequence Chart for a Service Replacement (page 12).
14. Physically mount the replacement Gateway.
15. Looking at the Dashboard, verify that the Gateway is checking in every 15 seconds.
16. From the software application, initiate a Reset.
    a. go to the Server Management page
    b. select the ComPort that the new Gateway is connected
    c. click **Reset**
17. Ensure that all Device Fault events are resolved.
18. Using an RMA form, return the failed Gateway's circuit board and the replacement Gateway enclosure to RFT for analysis.

CHAPTER 4
Specifications

Specifications

This section contains information on maximum power cable run lengths for installation of daisy-chained Quick Response Premiere Wireless Routers/Gateways. It also provides specifications for the Quick Response Premiere Wireless devices, including details about the specific requirements and certifications.

Power Cable Run Lengths

Number of Routers/Gateways	CPS 16/2AWG	CPS 18/2 AWG
8	390'	245'
7	450'	280'
6	525'	325'
5	630'	390'
4	785'	490'
3	1050'	650'
2	1575'	980'
1	3150'	1960'

FIGURE 4.1: Powered by CPS

Number of Routers/Gateways	12V @ 1.5A 18/2AWG	9.0V @ 200mA 22/2 AWG
7	140'	N/A
6	160'	N/A
5	200'	N/A
4	250'	N/A
3	330'	N/A
2	500'	N/A
1	1000'	125'

FIGURE 4.2: Powered by Wall Outlet Power Supply

Mesh Network Gateway/Router

Gateway	Specifications
Power	9-15 VDC, 200mA UL Listed
Battery Backup	3.7 V, Lithium Ion Rechargeable Battery, 940 mAH Battery Backup (10 - 12 hours) *See Note below.
Frequency	2.4 GHz Direct Sequence Spread Spectrum
Frequency Range	2.405 - 2.475 GHz
Bandwidth	5 MHz/Channel
Transmit Power	+14 dBm
Operating Temperature	0° F - 100° F
Receive Sensitivity	Received Signal, Minimum -72dBm SNR, Minimum 9dB
Dimensions	4.5" H x 2.7" W x .56" D
Weight	2.9 oz (82.21g)
Color	Off White
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant

NOTE: Due to the limitations of the charge circuitry and the chemistry of the backup battery contained within the Gateway/Router, it is expected that deep discharge cycles involved in operating from the backup battery for periods longer than 12 hours will have a detrimental effect on the life of the battery and the maximum length of subsequent discharge cycles. It is advisable to contact RF Technologies Technical Services for recommendations following several deep discharge events.

High Visibility Display for Quick Look Router

High Visibility Display	Specifications
Display Dimensions with Wall Bracket	29 in. long x 4.75 in. high x 4.5 in. deep
Display Measurement	29 in. long x 4 in. high
Display	LED, green, amber and red, 1 line, 15 characters per line
Weight	6.25 pounds
Color	Dark gray plastic enclosure
Power Requirements	120VAC Adapter Available, 60Hz
Characters	15 Characters per line
Tilt Adjustment	Reclines to maximum 180 degrees; swings forward to maximum 180 degrees
Mounting	Two wall brackets with adjustable, vertical tilt for display
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant

Quick Look Display for Quick Look Router

Quick Look Display	Specifications
Display Dimensions with Wall Bracket	11 in. long x 3.5 in. high x 2 in. deep; rest 3 in. high on wall bracket, 6 in. from wall
Display Measurement	9.75 in. long x 2.25 in. high
Display	Vacuum Fluorescent (green), 2 lines, 20 Characters per line
Weight	1.7 pounds
Color	Light gray plastic enclosure
Power Requirements	15 VDC
Tilt Adjustment	Reclines maximum 30 degrees
Swivel	330 degree
Mounting	Single-piece flange
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant

32 Channel Controller

Channel Controller	Specifications
Power	12-18 VDC, 1.75A
Power Wiring	16AWG / 2-Conductor, Maximum length from CPS is 250ft. A dedicated power cable from CPS is required.
Dome Light Wiring	Contacts: 22 AWG 2-conductor cable
Composition	ABS Flame Retardant Plastic Enclosure
Operating Temperature	0° F - 100° F
Relays	(30) NO 20A 24 VDC (3) NC/NO 2A 30 VDC
Dimensions	8.75" H x 6" W x 2.5" D
Weight	1.5 lbs.
Color	Off White
Part Number	9600-1500 (surface mount)
Certification	FCC, Part 15

Pull Cord

Pull Cord	Specifications
Power	3.0V Coin Cell Lithium Battery, CR2450
Battery Life	4-5 year
Low Battery Trouble Level	2.4V
Frequency	2.4 GHz Direct Sequence Spread Spectrum
Frequency Range	2.405 - 2.475 GHz
Transmit Power	0 dBm
Receive Sensitivity	Received Signal, Minimum -72dBm SNR, Minimum 9dB
Dimensions	4.5" H x 2.7" W x 5.6" D
Weight	2.9 oz (82.21g)
Color	Off White
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant

Universal Transceiver

Universal Transceiver	Specifications
Power	3.0V Coin Cell Lithium Battery, CR 2450
Battery Life	2 year
Low Battery Trouble Level	2.4V
Frequency	2.4 GHz Direct Sequence Spread Spectrum
Frequency Range	2.405 - 2.475 GHz
Transmit Power	0 dBm
Receive Sensitivity	Received Signal, Minimum -72dBm SNR, Minimum 9dB
Dimensions	2.2" H x 1.8" W x 8" D
Weight	.64 oz
Color	Off White
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant

Door/Window Transceiver

Door/Window Transceiver	Specifications
Power	3.0V Coin Cell Lithium Battery, CR 2450
Battery Life	2 year
Low Battery Trouble Level	2.4V
Frequency	2.4 GHz Direct Sequence Spread Spectrum
Frequency Range	2.405 - 2.475 GHz
Transmit Power	0 dBm
Receive Sensitivity	Received Signal, Minimum -72dBm SNR, Minimum 9dB
Dimensions	2.2" H x 1.8" W x 8" D
Weight	.68 oz
Color	Off White
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant

Pendant Transceiver

Pendant Transceiver	Specifications
Power	3.0V Coin Cell Lithium Battery, CR 2450 or CR 2032
Battery Life	Up to 3 years if at 24 hr supervision
Low Battery Threshold Level	2.1V
Frequency	2.4 GHz Direct Sequence Spread Spectrum
Frequency Range	2.405 - 2.475 GHz
Bandwidth	5 MHz/Channel
Transmit Power	+9 dBm
Receive Sensitivity	Received Signal, Minimum -72dBm SNR, Minimum 9dB
Pendant Dimensions: • with CR 2450 battery • with CR 2032 battery	 2.13" H x 1.34" W x .64" D (5.41 cm x 3.40 cm x 1.62 cm) 2.13" H x 1.34" W x .55" D (5.41 cm x 3.40 cm x 1.40 cm)
Pendant Weight: • with CR 2450 battery • with CR 2032 battery	 1.4 oz .96 oz
Protective Boot	Latex-Free Silicon
Color	Off White Pendant with Blue Protective Boot
Certification	FCC, Part 15 Zigbee 802.15.4 Compliant
Pendant Part Number: • with CR 2032 battery • with CR 2450 battery	 9600-0250 9600-0251

Central Server UPS (Not for rack mount Servers)

Central Server UPS	Specifications
Power Input	120 VAC, 60 Hz
Power Output	120 VAC, 60 Hz, 550 VA
Backup Time **10% Signaling** **100% Signaling**	 15 Minutes 15Minutes
Part Number	1000-7069

Central Power Supply UPS

Central Power Supply UPS	Specifications
Power Input	120 VAC, 60 Hz
Power Output	120 VAC, 60 Hz, 3K VA
Backup Time **10% Signaling** **100% Signaling**	 60 Minutes 30 Minutes
Part Number	1000-7079K

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