

## 1100XH High Power Wireless Receiver

### Description

The 1100XH High Power Wireless Receiver provides two-way, supervised communication using 900 MHz frequency hopping-spread-spectrum technology. The receiver provides additional transmit and receive amplification for improved performance at greater distance or harsh building environments. The receiver provides up to 500 wireless zones for XR500/XR500FC Series panels and up to 100 wireless zones for XR100/XR100FC Series Panels. The system is designed so only one 1100 receiver is used per panel.

### Compatibility

- XR500 Series panels using firmware Version 113 or higher
- XR500FC Series panels
- XR100 Series panels
- XR100FC Series panels

### What is Included

The receiver includes the following items:

- One Model 1100XH High Power Wireless Receiver
- Hardware pack

### Installing the Wireless Receiver

#### Selecting a Location

Choose an optimum location to mount the receiver. A location should be selected that is centrally located between the 1100 Series transmitters used in the installation. Install the receiver away from large metal objects and at least 1 foot away from the panel enclosure. Mounting the receiver on or near metal surfaces impairs performance. Do not use shielded wire between the panel and receiver. When selecting the proper mounting location of a transmitter, refer to the LED Survey Operation section.

The 1100XH High Power Wireless Receiver contains additional transmit and receive amplifiers to enable greater distances for 1100 Series operation. The additional gain introduced by this amplification may inhibit proper communication with 1100 Series transmitters located within 4 feet of the receiver. This distance may be 8 feet when using the 1121 or 1125 PIR, 1160 Series Smoke Detectors or 9000 Series Keypad.

#### Tamper Switches

The 1100XH is equipped with a case tamper and a wall tamper. A two position header is provided to disable the wall tamper. To disable the wall tamper, place the jumper across the two pins of the header. If wall tamper is required, place the jumper over just one pin for storage.

#### Mounting the Receiver

1. Remove the cover from the plastic housing by squeezing both sides toward each other.
2. Secure the receiver to the wall ensuring that the wall tamper switch makes proper contact with the wall. Use the supplied screws in the mounting hole locations as shown in Figure 1.
3. Snap the cover back on the unit making sure the case tamper spring is installed on the tamper switch. The panel immediately recognizes the 1100XH Receiver if the panel is programmed with a house code.

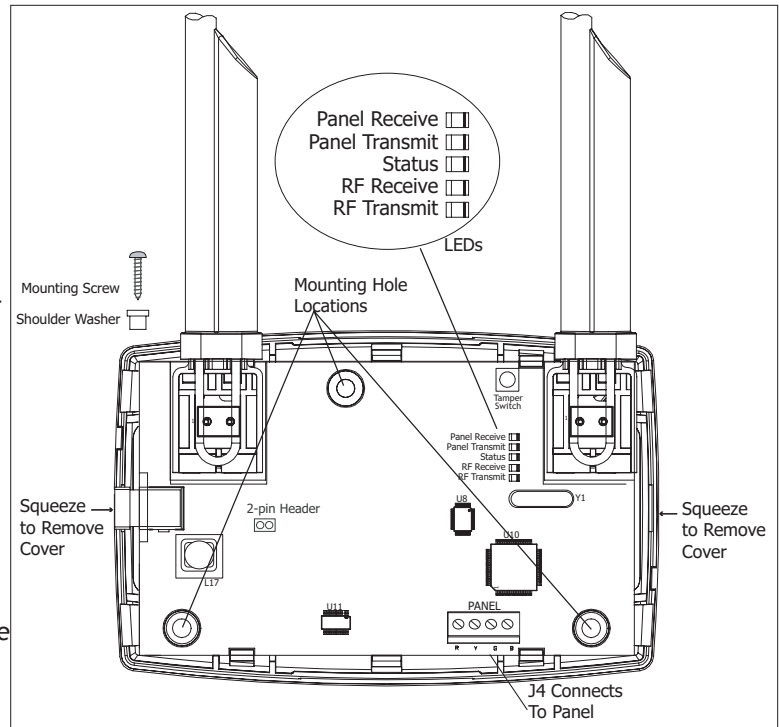


Figure 1: Receiver PCB

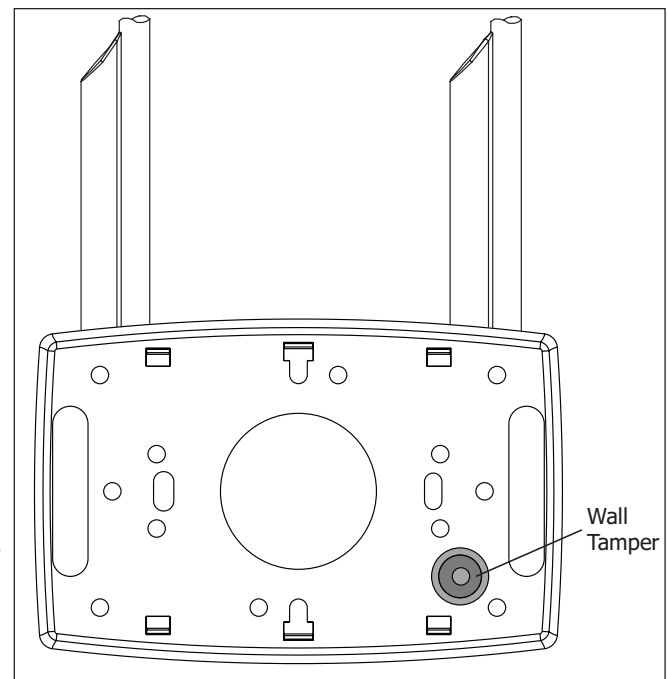


Figure 2: Wall Tamper location

## Wireless Bus Connection

The 1100XH easily interfaces with the XR500/XR500FC Series panels and XR100/XR100FC Series panels using the on-board DMP Wireless Bus connection (J22). The receiver can be hard-wire mounted up to 100 feet from the panel enclosure using 22 AWG wire or 250 feet using 18 AWG wire. This wire restriction is due to the higher current draw needed for the high power RF amplification.

If additional wire distance is required, the 1100XH can be connected to the Wireless Bus through a 710 Bus/Splitter module and powered by a 12 VDC power supply (DMP Model 505-12). Please see the 710 Installation guide (LT-0320) for maximum distance information from the panel to the 710 module.

**Note:** The 1100XH High Power Wireless Receiver cannot operate if connected to the Keypad Bus.

## Harness Connection

Refer to Figure 3, the XR500 Series Installation Guide (LT-0681), the XR500FC Series Installation Guide (LT-1088), the XR500 Series Programming Guide (LT-0679), the XR100 Series Installation Guide (LT-0899), the XR100FC Series Installation Guide (LT-1087), the XR100 Series Programming Guide (LT-0896), and use the following steps to connect the panel and receiver:

1. Install a jumper across the header pins next to the letter “X” on the XR100/XR100FC/XR500/XR500FC panel J23 header to enable on-board DMP Wireless operation.
2. Connect the J4 header on the 1100XH to the XR100/XR100FC/XR500/XR500FC panel J22 LX header.
3. After power-up, briefly reset the panel using the J16 jumper to activate wireless zone operation.
4. In System Options, program the House Code (1-50). In Zone Information, program the wireless zones.

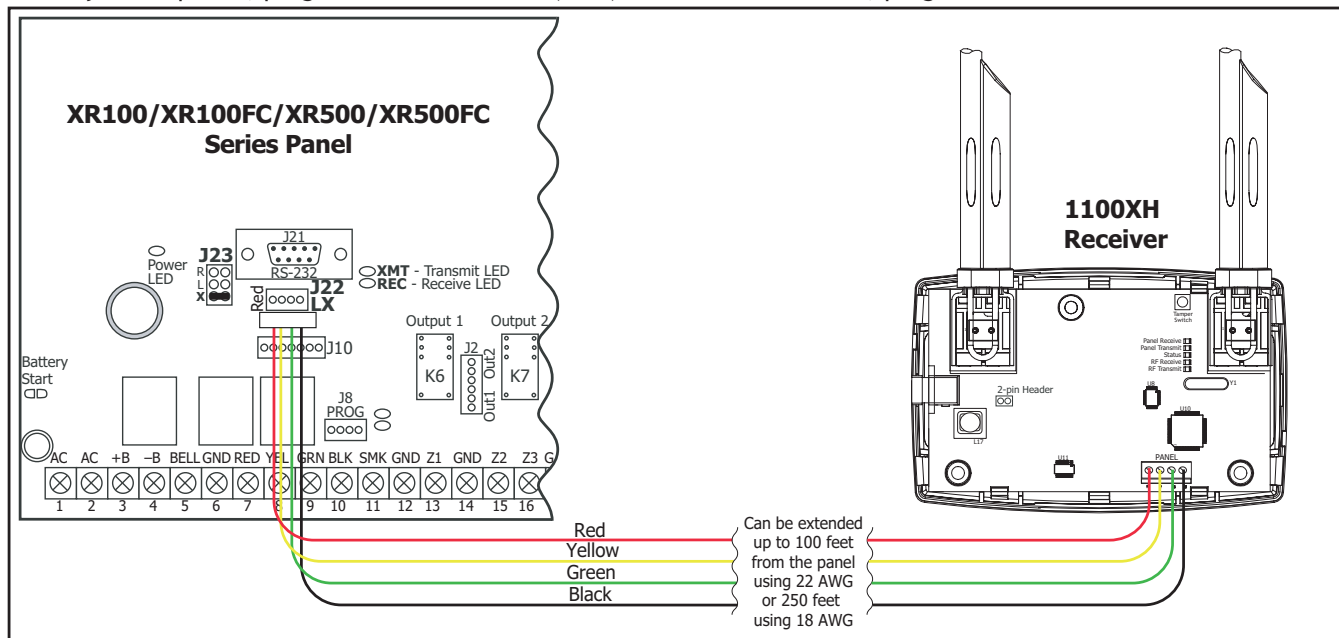


Figure 3: XR100/XR100FC or XR500/XR500FC DMP Wireless Bus Connection

## 1100XH Receiver Operation

The 1100XH receiver automatically sends the panel house code to wireless transmitters when the unique transmitter serial number is programmed into the panel. The house code identifies the panel, receiver, and transmitters to each other. The receiver only listens for transmissions using the specified house code and/or programmed transmitter serial number.

**Note:** When setting up a wireless system, it is recommended to program zones and connect the receiver before installing batteries in the transmitters.

Transmitters can be programmed for supervised operation. When programmed as supervised, the transmitter must communicate with the receiver within the programmed number of minutes. If the transmitter fails to communicate, the panel displays a missing condition.

**Note:** When a receiver is installed, powered up, or the panel is reset, the supervision time for transmitters is reset. If the receiver has been powered down for more than one hour, wireless transmitters may take up to an additional hour to send a supervision message unless tripped, tampered, or powered up. This operation extends battery life for transmitters. A missing message may display on the keypad until the transmitter sends a supervision message.

When any wireless zone programming is changed in the panel, receiver zone programming is updated. At that point, all wireless zones display as normal for approximately one minute, regardless of the actual state of the contact.

## 1100XH LED Operation

Six LEDs display receiver operation and activity. Refer to the table below as required.

Label	Operation
PNL RX	Flashes yellow to indicate data is being received from the panel.
PNL TX	Flashes green to indicate data is being sent to the panel.
STATUS	Steady red to indicate memory upload. Off when upload is complete.
RF RXD	Flashes yellow to indicate data is being received from a transmitter.
RF TXD	Flashes green to indicate data is being sent to a transmitter.

### Transmitter Survey LED Operation

DMP 1100 Series transmitters provide Two-way (transmit acknowledge) operation. This advanced data protocol allows each transmitter to confirm that each of its messages (alarm, checkin, tamper, low battery) are received and acknowledged by the 1100 Series receiver. The confirmation is indicated visually by use of an LED on each transmitter. This Survey LED should be used during installation to test each transmitter for proper operation. A full definition of the Survey LED follows.

The red LED on an 1100 Series transmitter turns on when the processor wakes up to send a message. Then after a series of communication steps are completed (successful or not), the LED turns off when the processor goes back to sleep. 99.9% of the time the processor is asleep in normal operation. The following list summarizes various indications that can be observed on the LED and a definition for each. Note this is for a single message. Example, pressing and holding the tamper switch.

#### Single 1/16 second flash

- Processor wakes up
- Transmitter receives immediate synchronization from receiver
- Transmitter transmits
- Transmitter receives immediate acknowledgement from receiver
- Processor goes to sleep

#### Single Pulse greater than 1/16 second but shorter than 8 seconds

- Processor wakes up
- Transmitter receives synchronization from receiver - possibly not immediate
- Transmitter transmits
- Transmitter receives acknowledgement from receiver - possibly not immediate
- Processor goes to sleep

#### Steady for 8 seconds

- Processor wakes up
- Transmitter never receives synchronization from receiver, or might receive synchronization
- Transmitter transmits if synchronization was received
- Transmitter never receives any further data from receiver
- Processor times out and goes to sleep

#### Multiple short flashes

- Processor wakes up
- Transmitter receives synchronization from receiver
- Transmitter transmits
- Transmitter receives data from receiver, but not a valid acknowledgement
- Processor briefly goes to sleep
- Entire sequence is repeated, each short flash indicates a cycle

## Troubleshooting Using the Transmitter Survey LED

If a transmitter is unable to reliably communicate a message to the receiver, or is reported as missing, the Survey LED can be used to help diagnose the issue. If the missing transmitter cannot be explained by obvious reasons such as a damaged transmitter, failed battery, or changes in building construction; then the Survey LED should be used.

To use the Survey LED operation to help diagnose a field issue, complete the following steps on an 1100 Series transmitter. Repeat the following sequence 5 times and write down the LED operation for each tamper switch action.

- Press and hold the tamper switch
- Observe the LED until it turns off for at least 5 seconds
- Release the tamper switch
- Observe the LED until it turns off for at least 5 seconds

You now have observed the LED 10 times. Based on the results you have recorded use the list below to assist in troubleshooting.

### LED turns on a single time for less than 1 second 8 to 10 times.

- System is working properly

### LED turns on for more than 1 second 3 to 9 times.

- The transmitter or receiver needs to be relocated

### LED turns on for more than 1 second all 10 times.

- The receiver is not turned on, or is not operating
- The transmitter is not programmed into the receiver
- The transmitter or receiver needs to be relocated

### LED flashes multiple times with a single tamper press or release 3 to 10 times.

- The transmitter or receiver needs to be relocated

### LED never turns on.

- The transmitter battery is dead
- The tamper switch is being pressed or released too quickly
- The tamper switch or other part of the transmitter is broken

### LED stays on constantly and is dim

- The transmitter battery is almost dead
- The transmitter is broken

## General Wireless Troubleshooting

If ALL wireless devices do not operate, refer to the following checklist:

- Verify the receiver is an 1100XH and the panel is an XR500 Series with firmware Version 113 or higher or an XR100/XR100FC/XR500FC Series panel.
- Verify the XR100/XR100FC/XR500/XR500FC panel J23 jumper is in the "X" position and the J4 connector from the receiver is connected to J22 of the panel.
- Briefly reset panel using J16 jumper to activate wireless operation and wait one minute to test wireless zone(s).
- Verify the House Code (1-50) is programmed in System Options.
- Verify appropriate zone numbers are assigned as wireless zones.
- Verify that the XR100/XR100FC/XR500/XR500FC panel XMIT and REC LEDs alternately flash on and off at a rate of 1/4 second each. If the LEDs are On steady or Off, the panel and receiver are not communicating properly.
- Verify the 1100XH LEDs operate correctly as listed in 1100XH LED Operation.
- Verify transmitters have batteries correctly inserted.

## Transmitter Supervision Time

For UL Listed installations, program the transmitter supervision time in panel zone programming as listed in the following table. Refer to the XR500 Series Programming Guide (LT-0679) or XR100 Series Programming Guide (LT-0896) for complete wireless programming information.

UL Listing	Listed Accessories	Supervision Time
UL 1023 Household Burglary Alarm System Units Accessory	1100R Repeater 1101/1102/1103/1105 Universal Transmitters 1125/1127W/1127C PIR Motion Detector 1135 Wireless Sounder 1142 Two-Button Hold-Up Transmitter 9060/9063 Wireless Keypad	60
UL 636 Holdup Alarm Units and Systems Accessory	1142 Two-Button Hold-Up Transmitter	60
UL 634 Connections and Switches for use with Burglar Alarm Systems Accessory	1100R Repeater 1101/1102/1103/1105 Universal Transmitters	60
UL 639 Intrusion Detection Units Accessory	1100R Repeater 1125/1127W/1127C PIR Motion Detector	60
UL 365 Police Station Connected Burglar Accessory	1100R Repeater 1103 Universal Transmitter	60
UL 609 Local Burglar Alarm Units and System Accessory	1100R Repeater 1103 Universal Transmitter	60
UL 1076 Proprietary Burglar Alarm Units Accessory	1100R Repeater 1103 Universal Transmitter	60
UL 1610 Central Station Burglar Alarm Units Accessory	1100R Repeater 1103 Universal Transmitter 1135 Wireless Sounder 9060/9063 Wireless Keypad	60
UL 268 Smoke-Automatic Fire Detectors	1100R Repeater 1161/1162 Residential Smoke Detectors 1165/1165H/1165HS Commercial Smoke	3
UL 346 Waterflow Indicators for Fire Protective Signaling Systems	1181 PIV/1182 OS&Y	3
UL 521 Heat Detectors for Fire Protective Signaling Systems	1100R Repeater 1183-135F/1183-135R Heat Detector	3
UL 985 Household Fire Warning System Accessory	1100R Repeater 1101/1102/1105 Universal Transmitter 1135 Wireless Sounder 9060/9063 Wireless Keypad	240
UL 864 Fire Protective Signaling	1103 Universal Transmitter 1100R Repeater	3

## FCC Information

This device complies with Part 15 of the FCC Rules. 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.

Changes or modifications made by the user and not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

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

**Note:** The 1100 Series wireless system is a two-way supervised wireless design. It is compliant with FCC rules as they pertain to 900 MHz Spread Spectrum devices. In rare instances it has been observed that certain 900 MHz cordless telephones may occasionally experience a clicking sound on the telephone while in use. If this occurs, it may be resolved by selecting a different channel on the cordless telephone, or replacing the cordless phone with a different brand or model of 900 MHz telephone or other cordless telephone.

To comply with RF exposure requirements, a minimum distance of 20cm must be maintained between the antenna and all persons.

## Attention! Older Cordless Telephones

Your wireless alarm system is comprised of a state-of-the-art two-way secure network created by sophisticated transmitters and receivers. It is compliant with all FCC rules as they pertain to 900 MHz Spread Spectrum devices which require devices to share the same frequencies. This creates a possibility of interference with other devices in your home.

It has been reported that certain older 900 MHz cordless telephones may on rare occasions experience interference (an audible clicking sound) while in use. (This may also occur with some 2.4 GHz and 5.8 GHz telephones as many still use 900 MHz frequencies). If this occurs on your cordless telephone, it may be resolved by selecting a different channel on your telephone. If your telephone does not have this selection, it can also be resolved by replacing your old cordless telephone with a DECT 6.0 cordless telephone.

### What is DECT 6.0?

DECT 6.0 (Digital Enhanced Cordless Telecommunications) is the current standard for cordless telephones, and it provides several benefits over 900 MHz, 2.4 GHz and 5.8 GHz systems.

- No More Interference - unlike older cordless technology, DECT 6.0 telephones are virtually immune to household interference, and vice versa. If you have a wireless computer network in your home, DECT 6.0 won't disrupt internet use.
- Encrypted Privacy - DECT 6.0 has a layer of security that older cordless telephones just don't have. As information and identity theft is on the rise, DECT encryption helps keep your personal communications safe.
- Call Quality - Extra security isn't just for safety; it gives you clearer calls without crossover traffic.
- Battery Life - A DECT 6.0 phone will last as much as 30% longer than a 5.8 GHz phone.

More information can be found on DECT technology at [www.DECT.org](http://www.DECT.org).

DECT 6.0 Cordless phones can be found at any major retailer including: Wal-Mart™, Target™, Best Buy™ & Radio Shack™.

## Listed Compliance Specifications

### Commercial Fire


Transmitters must be programmed as supervised. Refer to the Transmitter Supervision Time table for the supervision time.

The maximum line impedance of the 4-wire bus is 16.2 Ohms for 1000 feet.

The recommended wire gauge for panel to receiver connection is 22 AWG.

After all transmitters are in position, the WLS option of the panel's Walk Test must be operated and all transmitters programmed for Fire (FI) or Supervisory (SV) must show that their checkin message was received. Refer to the panel programming guide for Trip Counter for DMP Wireless check-in Test (WLS) which describes that both numbers of the counter must match. If not and a failed wireless zone is displayed at END, decrease that transmitters range with the receiver and perform the WLS Walk Test again.

The wall tamper must be enabled for commercial fire applications.

<p><b>Specifications</b></p> <p>Operating Voltage      8.0 to 14 VDC          Current Draw            240mA          RF Power Rating        720mW          Frequency Range        903-927 MHz</p> <p>Dimensions</p> <p>Receiver Housing      4.65" L x 3.1" W x 1.4" H          Antennas                8.6" H          Color                      White          Housing Material        Flame retardant ABS</p> <p><b>Patents</b></p> <p>U. S. Patent No. 7,239,236</p>	<p><b>Listings and Approvals</b></p> <p>California State Fire Marshal (CSFM)          FCC Part 15 Registration ID CCKPC0114          IC Registration ID 5251A-PC0114          Underwriters Laboratories (UL) Listed</p> <p>ANSI/UL 365      Police Station Connected Burglar          ANSI/UL 609      Local Burglar Alarm Units and Systems          ANSI/UL 634      Connections and Switches for use with                                   Burglar Alarm Systems Accessory</p> <p>ANSI/UL 636      Holdup Alarm Units and System          ANSI/UL 639      Intrusion Detection Units Accessory          ANSI/UL 1023     Household Burglar Alarm System Units          ANSI/UL 1076     Proprietary Burglar Alarm Units          ANSI/UL 1610     Central Station Burglar Alarm Units          ANSI/UL 985      Household Fire Warning System          ANSI/UL 864      Fire Protective Signaling Systems</p>
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