

## 1100DH High Power Wireless Receiver

### Description

The 1100DH 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 32 wireless zones for XT30/XT50 Series Version 102 or higher (28 zones using one keypad). The system is designed so only one 1100DH receiver is used per panel.

### Compatibility

- XT30 Series panel
- XT50 Series panel using firmware version 102 or higher

### What is Included

The receiver includes the following items:

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

### Installing the Wireless Receiver

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 1100DH 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 Wireless Keypads.

Remove the cover from the plastic housing by squeezing both sides toward each other. Secure the receiver to the wall in the desired location installing the supplied mounting screws and shoulder washers in the mounting hole locations as shown in Figure 1. Snap the cover back on the unit. The panel immediately recognizes the 1100DH Receiver if the panel is programmed with a house code.

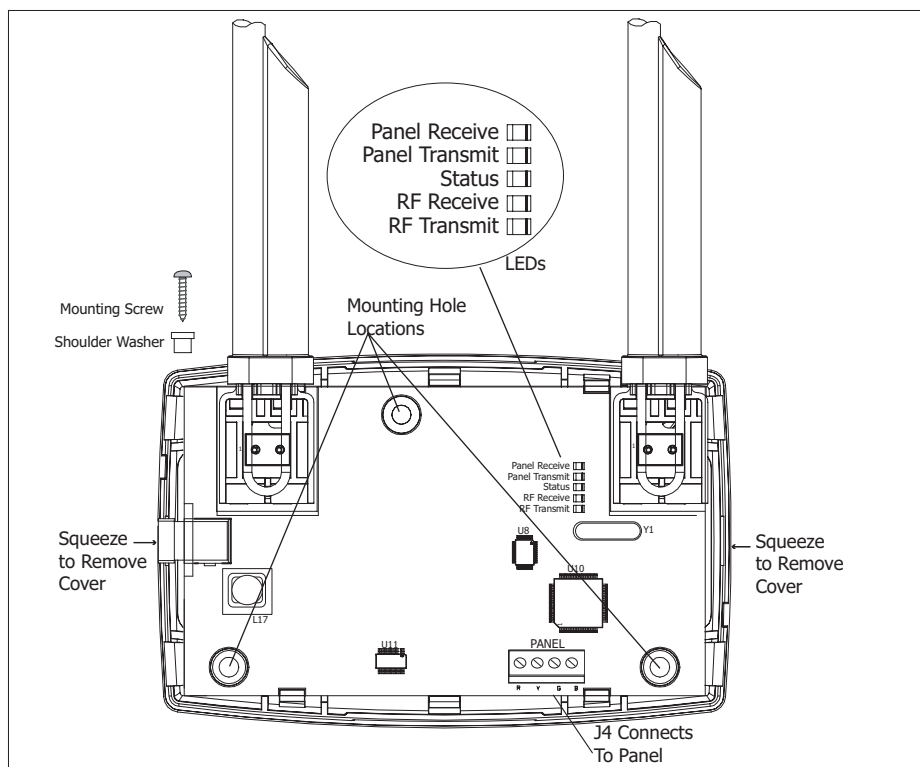


Figure 1: Receiver PCB

## Keypad Bus Wiring

The 1100DH Wireless Receiver easily interfaces with the XT30/XT50 Series panels using the keypad bus. 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 run must be a home run to the panel separate from wire runs to other devices on the Keypad Bus. This wiring restriction is due to the higher current draw needed for the high power RF amplification.

If additional wire distance is required, the 1100DH can be connected anywhere along the Keypad Bus through a 710 Bus/Splitter module and powered by a 12 VDC power supply (DMP Model 505-12) to separate the receiver power requirements from other devices on the Keypad Bus. Refer to the 710 Installation guide (LT-0310).

## Harness Connection

Refer to Figure 2, the panel programming guide and use the following steps to connect the panel and receiver:

1. Connect from the 1100DH J4 header to the panel keypad bus terminals 7, 8, 9, and 10. Observe wire colors when connecting to the terminals.
2. In System Options, program the House Code (1-50). In Zone Information, program the wireless zones.

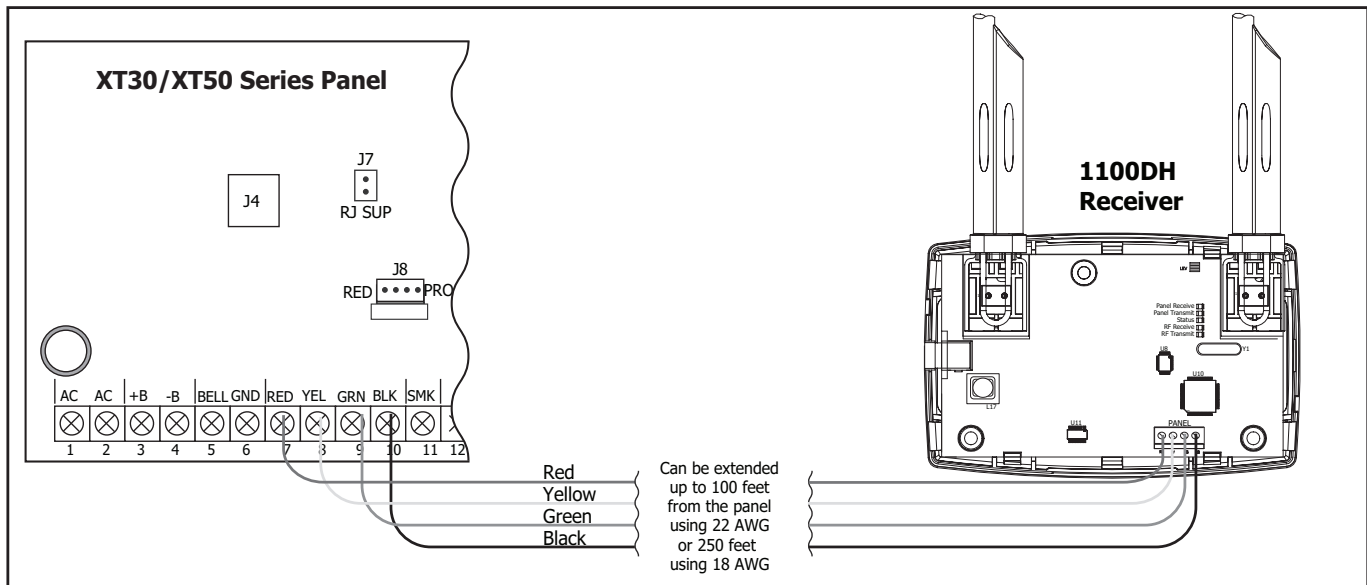


Figure 2: Panel Keypad Bus Connection

## 1100DH Receiver Operation

The 1100DH 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 or unsupervised 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.

## 1100DH 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 equipment model numbers.
- Verify the House Code (1-50) is programmed in System Options.
- Verify the 4-wire connector from the receiver J3 is connected to the panel terminals 7, 8, 9, and 10.
- Verify what zone numbers are assigned as wireless zones and check the address settings of other device(s) connected to the keypad bus to ensure no duplicate addresses have been used.
- Verify the LEDs are operating as listed in LED Operation on the previous page.
- Verify transmitters have batteries correctly inserted.

## Transmitter Supervision Time

For Listed installations, program the transmitter supervision time in panel zone programming as listed in the following table. Refer to the XT30/XT50 Series Programming Guide (LT-0981) for complete wireless programming information.

Compliance Standard		Listed Accessories	Supervision Time
UL 1023	Household Burglary Alarm System Units Accessory	1100R Repeater 1101/1102/1103/1106 Universal Transmitters 1125/1127W/1127C PIR Motion Detector 1135 Siren 1142 Two-Button Hold-Up Transmitter 9060/9063 Keypads	60
UL 634	Connections and Switches for use with Burglar Alarm Systems Accessory	1100R Repeater 1101/1102/1103/1106 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 Siren 9060/9063 Keypads	60
UL 268	Smoke-Automatic Fire Detectors	1100R Repeater 1161/1162 Residential Smoke Detectors 1164 Wireless Synchronized Smoke Detector	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 1135 Siren 9060/9063 Keypads	240

## 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.

