

# INSTALLATION INSTRUCTIONS

## 780-10 J-BOX INFRARED RECEIVER

This receiver, the choice of custom installers for years, is designed to easily mount in a single gang electrical J-box. The supplied mounting screws and a dark red lens insert allow the installer to use a Decorator-style wall plate.

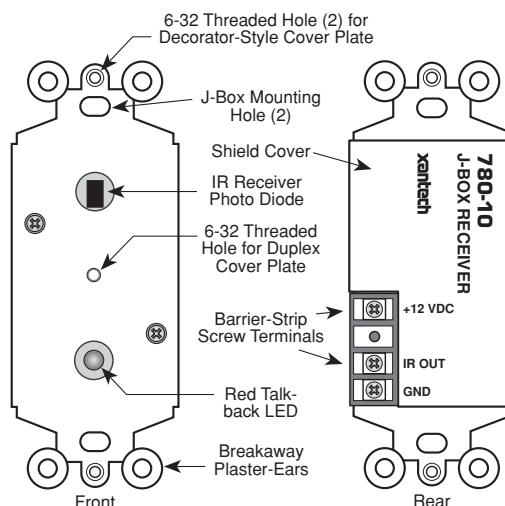


Fig. 1 780-10 J-Box IR Receiver

### FEATURES

- Works in normal 3-wire mode or 2-wire phantom power mode.
- Phantom mode requires 792-10 power module.
- System testing red talk-back LED.
- 20 units may be powered by one 781RG power supply.
- Includes dark red lens for Decorator-style wall plate. (Replacements available. Order part #3016400).
- SUN780 Sunscreen filters available separately. Order these to help with sunlight and stray IR problems. They fit easily over the IR window opening.

### SPECIFICATIONS

- Infrared carrier frequency bandwidth: 30 - 100 kHz.
- Reception range: > 25 feet on axis.
- Nominal reception angle: 45 degrees off axis at 1/2 range.
- Cable requirements: 3-conductor. Use 24 gauge up to 200', 22 gauge up to 600', 20 gauge up to 2000', 18 gauge up to 5000' -- unshielded OK).
- Maximum transmission length: One mile using 18 gauge wire.
- Maximum current output: 100 mA.
- Power requirements: 12 volts DC @ 10 mA.
- Dimensions: 1-3/4" W x 4" H x 1" D.

### INSTALLATION

The 780-10 is intended to be wired to the input terminals of Xantech Connecting Blocks or other devices. Use 3-conductor cable, as specified above, to run between the remote room and main room locations. Make

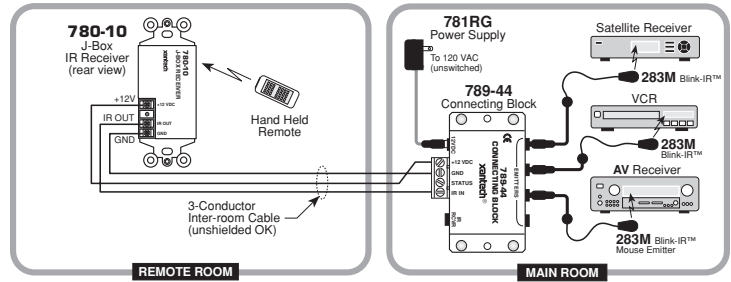
connections to a Xantech connecting block, power supply and emitters as shown in the following illustration of a typical basic system:

While it is possible to make wired connections without the connecting block, it is not recommended. The connecting block reduces installation time, helps to eliminate errors, allows easy troubleshooting and permits easy system upgrades later, if needed.

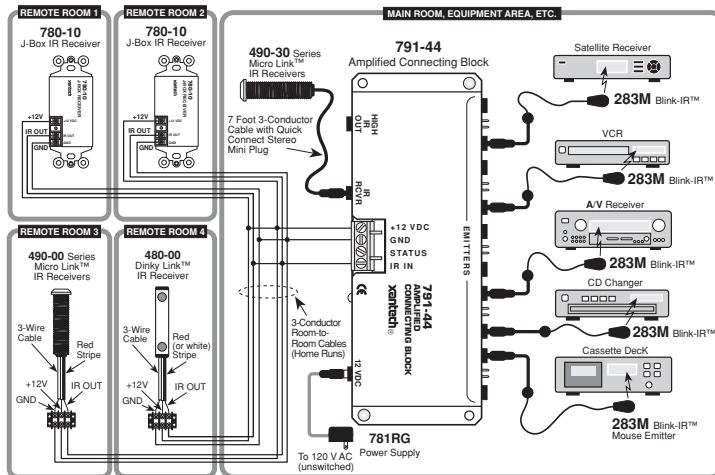
Input connections must be made as illustrated. To extend the Emitter wires to a more distant location, you may splice in 2-conductor wire, in the wire gauges mentioned before, as needed.

The 780-10 may be connected to any of the Xantech Connecting Blocks, Controllers, Interface modules, etc., that have +12 VDC, INPUT and GND terminals, such as the CB12, 789-44, 791-44, 795-20, 796-20, 794-00, etc. 780-10's may be connected in parallel to these terminals in any combination with other Xantech 3-conductor IR receivers or keypads (12 IR receivers max).

A more advanced system, using 780-10's and a variety of other Xantech IR receivers connected to a 791-44 Amplified Connecting Block, is shown in **Fig.3** below:



**Fig. 2** A 780-10 Basic IR Repeater System



**Fig. 3** 780-10 IR Receivers in a Multiroom System

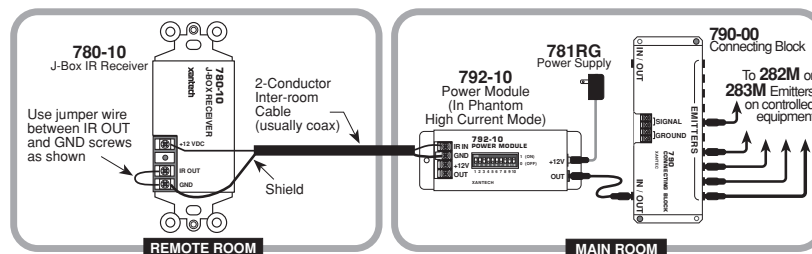
Affix the Mini-Emitters, such as the 282, 284, 283 and 286 series, to the IR sensor windows of the controlled equipment in accord with the instructions that come with them.

### Phantom Power Connections

Some existing installations may have only 2 wires (such as coax) going to a remote room. The 780-10, when used with a 792-10 Power Module, may be connected for 2-wire phantom power operation as in **Fig. 4**.

Additional 780's may be wired in parallel at the **IN** and **GND** terminals of the 792-10, up to a maximum of three. More than this may cause unreliable results.

**CAUTION:** With any of these systems, be sure the 781 power supply is plugged into an un-switched AC outlet. This maintains the IR system in "standby" operation so that power-on commands can be sent to the controlled equipment.



**Fig. 4** 780-10 IR Receiver Wired for Phantom Power Operation