

INSTALLATION INSTRUCTIONS

789-44D ONE ZONE IN-WALL CONNECTING BLOCK

The Model 789-44D is an in-wall version of the 789-44 Connecting Block and is trimmed with a standard decorator-style cover plate (not included). It permits connection of Xantech IR Receivers and Keypads to four single or four dual emitters, with a power supply, in infrared repeater systems. It can also provide emitter expansion for various Xantech devices, such as the 590, 710, 796-20, etc. The STATUS terminal provides a convenient tie point for voltage to drive the STATUS indicator on certain Xantech products, such as the 780-80 IR Receiver (refer to **Fig. 3**).

SPECIFICATIONS

- **Inputs:** 1 - Screw-type, 4-terminal plug-in. 1 - IR RCVR, 3.5mm stereo mini jack. (See **Caution Note**, **Fig. 4**).
- **Outputs:** 4 - Emitter ports (3.5mm mono mini jacks) parallel driven.
- Contains a 470-Ohm resistor in series with each emitter output.
- Xantech 282, 283, 284 & 286 series Emitters may be used.
- **Power:** 12 volts DC, 2.1 mm coaxial power jack. Use a 781C-00 or 782-00 Power Supply. **Note:** A power supply is not connected to the 789-44D when it is used as an emitter expander only.
- **Dimensions:** 1-3/8" W x 1-3/4" D x 4-1/8" H

INSTALLATION

Fig. 2, next page, illustrates a typical installation using the 789-44D in an IR repeater system. A variety of Xantech IR Receivers and a keypad are shown. When configuring a system, please keep the following items in mind:

1. More IR Receivers may be wired in parallel, in the same manner as shown, up to a maximum of twelve. More than twelve is not recommended since IR noise picked up by the many IR receivers may cause erratic operation and reduce remote control range.
Note: This restriction does not apply to Xantech Smart Pad keypads. These may be added virtually without limit, provided power supply requirements are taken into consideration. See item 3.
2. Be sure to connect the +12V, Output and Gnd of each IR Receiver and keypad to the respective **+12V**, **IR IN**, **GND** and **STATUS** (where applicable) of the connecting block as shown.
3. Xantech Smart Pads may be used by themselves or together with IR receivers as shown. When you do this however, the higher current requirements of the keypads must be taken into consideration as follows:
 - a) Each 730-00 keypad draws 70 mA. A Smartpad₂ or Smartpad₃ draws 85 mA.
 - b) Each IR receiver draws 10 to 20 mA (check specs. on actual model).
 - c) The max. current for proper operation from the 781C-00 Power Supply is 120 mA.
 - d) The max. current from the 782-00 Power Supply is 1000 mA.
 - e) When using combinations of keypads and receivers, do not exceed the max. current of the power supplies as noted above.

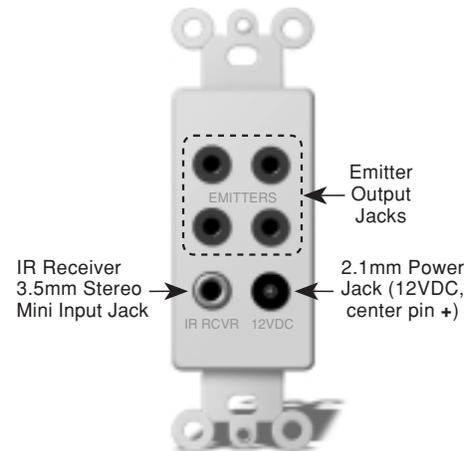


Fig. 1 789-44D Connecting Block

- For example, 1 keypad and several IR receivers could be used with one 781C-00 Power Supply. 12 keypads and 8 (or more) receivers could be used with one 782-00 Power Supply.
 - Also, two or three 781C-00 power supplies could be wired in parallel for intermediate numbers of keypads and receivers.
 - **CAUTION:** The 781C-00 power supply is unregulated and therefore can be paralleled. However, *never* parallel regulated power supplies, such as the 782-00.
 - To use additional 781C-00's in parallel, plug the first one into the 12 VDC jack on the 789-44D. Then, on the additional one(s), simply cut off the 2.1 mm coaxial plug, strip the lead ends and connect them to the +12V and GND terminals at the 4-terminal input plug. Be sure to observe correct polarity! (White striped lead is +).
 - **CAUTION:** Do not use unregulated 12V power supply adapters from other manufacturers. These may deliver excessive voltage to the IR receivers and cause them to "latch-up". When this occurs, the "talkback" LEDs and the Blink IR Emitters (if used) will stay on continuously!
4. For clarity, connections in **Fig. 2** are shown going to a 3-conductor bus in a "daisy chain" fashion. In an actual installation, however, it is recommended that 4-conductor "home-runs" be pulled from each room to the 789-44D Connecting Block in the main room. The home-runs maintain higher power supply voltage to each IR receiver and keypad, and the extra 4th wire can be used for "STATUS" if desired (refer to **Fig. 3**).
 5. The "IR RCVR" jack on the 789-44D (see **Fig. 1**) allows the 490-30 (and other Xantech IR Receivers with a cable having a 3.5 mm stereo mini plug), to be plugged directly into the 789-44D. You can do this when the 789-44D Connecting Block is within reach of the 7-foot cable, such as when installing the 490-30 in a cabinet where the controlled equipment is behind closed doors.

CAUTION: Plug only Xantech IR Receivers equipped with a stereo mini plug into the IR Receiver jack. Do not plug in emitters or other devices; to do so will destroy emitters and damage power supplies!

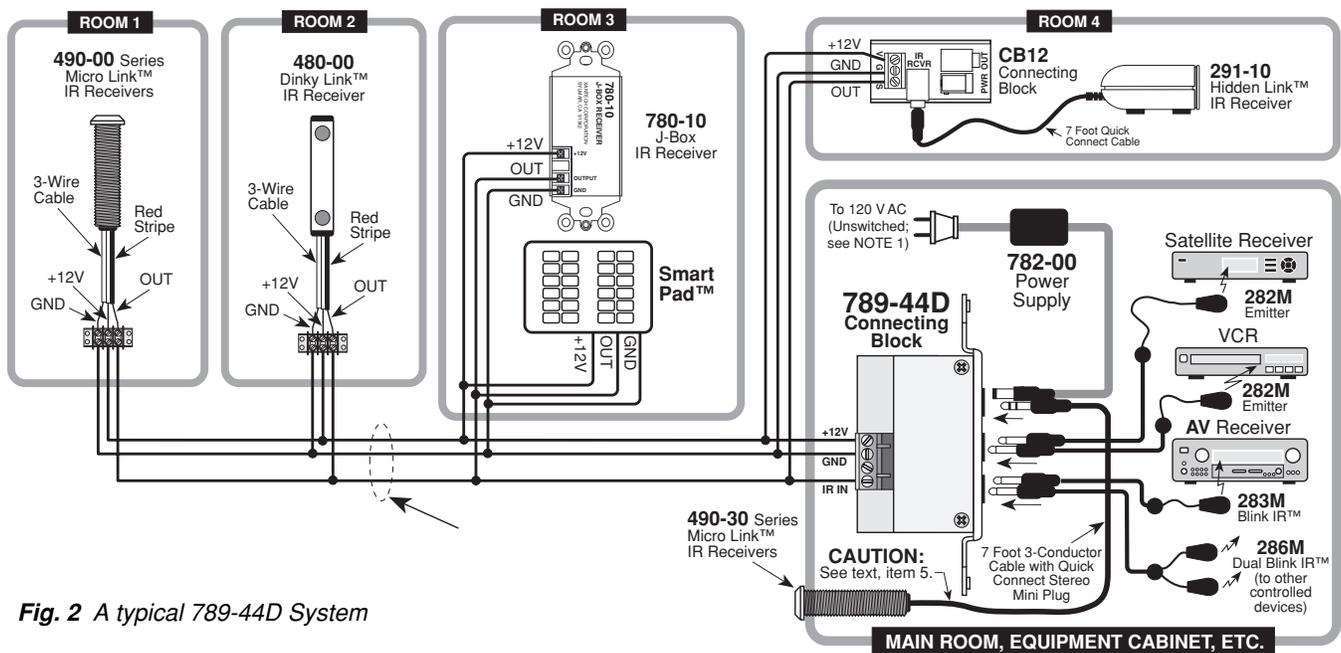


Fig. 2 A typical 789-44D System

6. The emitter ports are driven in parallel with a 470-Ohm resistor connected in series with each port. The resistors ensure proper current sharing to each emitter. When using less than 4 emitters, you may plug them into any of the 4 emitter ports without regard to order.
7. Because of this current sharing feature, you may plug in any combination of the Xantech 282, 283, 284 & 286 series emitters (up to a maximum of 8 individual emitters) to drive the desired number of devices.

NOTE 1: Be sure the Power Supply is plugged into an un-switched AC outlet. This maintains the system in "standby" operation so that power-on commands can be sent to the controlled equipment.

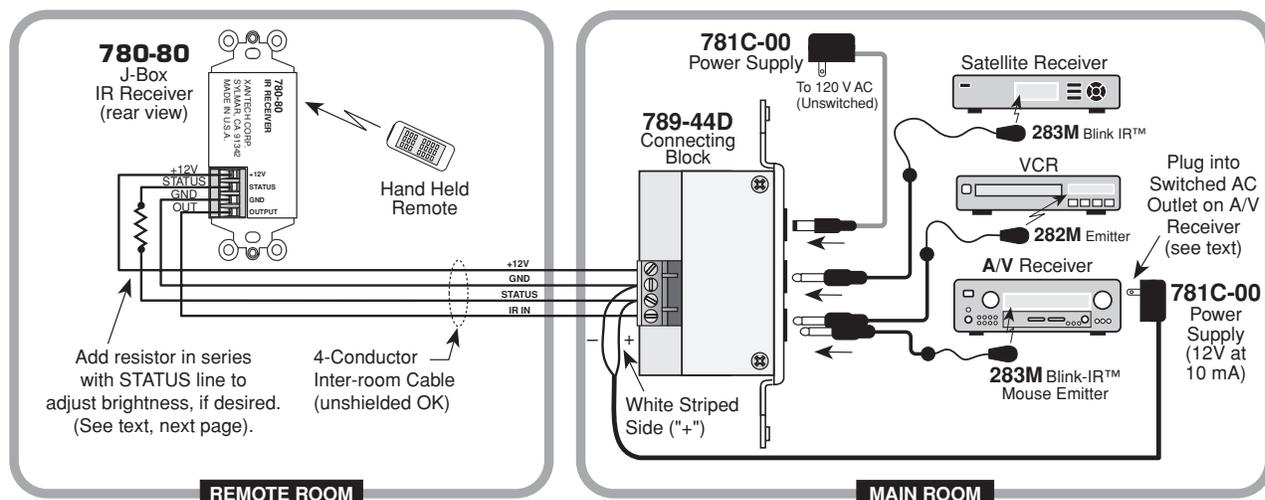


Fig. 3 Using the STATUS terminal in a typical system

Using The "STATUS" Terminal on the 789-44D

Fig. 3 illustrates a single zone system where the Status LED on a Xantech 780-80 IR Receiver, in the remote room, shows the ON/OFF status of an A/V receiver.

- The **STATUS** and **GND** terminals on the 789-44D provide convenient tie points for the voltage that drives STATUS indicators on certain Xantech products (such as the 780-80 IR Receiver).

To connect such a system, proceed as follows:

1. Be sure all power plugs for the A/V system are unplugged before proceeding with the following connections.
2. Plug a 12V adapter, such as the Xantech 781C-00 Power Supply, into the **switched** AC Outlet on the back of the A/V receiver (or integrated amplifier, preamp, etc.).
3. The 12V leads of the adapter (cut attached plug off) are then connected between the **STATUS** and **GND** terminals on the 789-44D ("+" to STATUS, "-" to GND).
4. You would then connect the 4-conductor inter-room cable between the 789-44D and the 780-80 as shown in Fig. 3.
5. If you wish to adjust the brightness of the Status LED, place a resistor in series with the STATUS lead as shown in Fig. 3. Use a value that achieves the desired brightness (usually 1k Ohm to 10k Ohm, 1/8 watt).

CAUTION NOTE

When using long lengths (> 50 feet) of inter-room shielded cable in your installation, it may be necessary to connect a 470-Ohm 1/8-Watt resistor between **IR IN** and **GND** at the 4-terminal connector of the 789-44D. Refer to **Fig. 4**.

The resistor discharges the cable capacitance more quickly, allowing IR codes of high bit rates to pass without data loss.

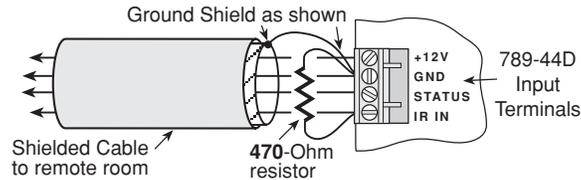


Fig. 4 470-Ohm Capacitance Discharge Resistor

REFINISHING AND MOUNTING

The printed circuit boards and jacks can be easily removed so that the metal plate can be refinished in other colors, if desired. Simply remove the four screws that secure the PCB's to the metal plate.

The 789-44D can be mounted into any single gang space in standard "J" boxes, using the two 6-32 pan-head screws supplied.