

INSTALLATION INSTRUCTIONS

RT8 ADDRESSABLE INFRARED ROUTER

The RT8 Router is a ONE-IN/EIGHT-OUT IR switcher. It directs an infrared control signal to any one of 8 output ports or all 8 as a group. It is intended for selective control of up to 8 TV monitors (or any other A/V product) from control locations using Xantech IR Receivers and/or SmartPads. The "I" and "G" output ports provide the ability to drive LEDs placed at each controlled device location so that you can see which device is being addressed at any given time. The RT8 responds to the Xantech RC68+ (or RC68) commands and is Code Group changeable by the installer.

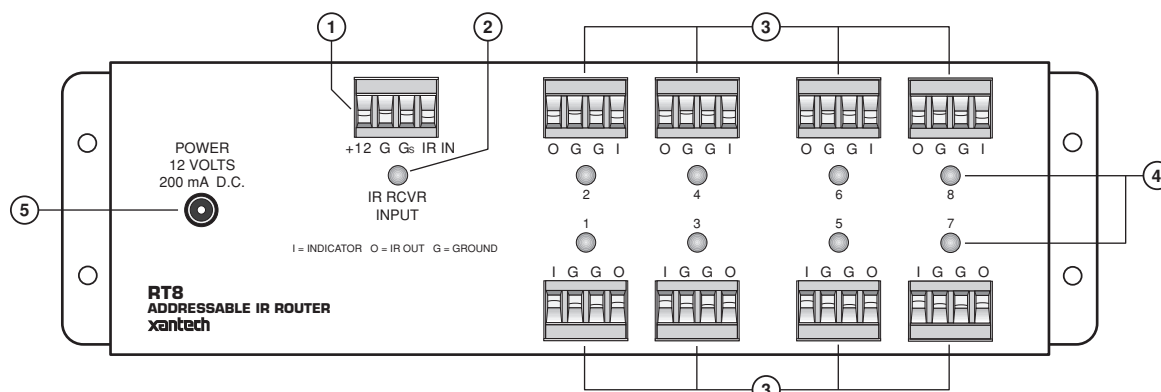


Fig. 1 Model RT8 Addressable IR Router

FEATURES AND SPECIFICATIONS

- 1. Input Terminals:** One IR RCVR INPUT on a 4-terminal plug-in connector permits connection of any Xantech IR Receiver, Keypad, Controller, etc. The **Gs** and **IR IN** terminals connect to the floated signal input of the internal opto isolator. Allows ground isolation when needed.
- 2. IR RCVR INPUT LED:** Green indicator LED blinks with the presence of any incoming IR commands.
- 3. Output Terminals:** Eight IR "O" and "G" emitter outputs and eight "I" and "G" routing indicator outputs are located on eight 4-terminal plug-in connectors.

The "I" and "G" routing indicator outputs are activated with the selected route. They are current limited to 10 mA, allowing the direct connection of an LED without the need for an outboard current limiting resistor.

4. LED Routing Indicators:

These eight red LEDs, located near each of the 4-terminal outputs, come on with the selected route. They **do not** blink with signal.

- 5. Power Jack:** 2.1mm coaxial type. 12V DC @ 200mA. Works with one 786-00 Power Supply (not included) if powered separately from IR receivers and keypads. Otherwise, use a 782-00 Power Supply.

• **IR Command System:**

- The RT8 output ports are selectively addressed using eight commands from the RC68+ (or RC68) handheld programmer. A 9th command turns all 8 ports ON as a group and a 10th turns them OFF.
- The factory preset IR Code Group is **58**. It can be changed by the installer, when needed, using the RC68+ Programmer.
- IR carrier frequency range: 30 kHz to 100 kHz.

• **Dimensions:** 9-7/8" x 2-7/8" x 1-3/8" (251mm x 73mm x 35mm)

• **Weight:** 0.75 lb. (0.34kg).

RC68+ PROGRAMMER / REMOTE CONTROL

The RC68+ Programmer (available separately) contains all the commands necessary to operate the RT8 (see Fig. 2).

• You will need it to program universal learning devices such as the Xantech URC-1 learning remote, the Xantech SmartPads, the 590 Programmable Controller, the 710 Fone Link, etc., with commands that operate the RT8.

• **NOTE:** The RC68+ codes operate several other Xantech models as well, such as the RT16-10, CC12, ZPR68, etc. Therefore, **only the button descriptions that apply to the operation of the RT8 are listed.** All others should be ignored.

CAUTION: While the RC68+ can be used as a handheld remote control, it is highly recommended it not be given to the final user for the following reasons:

- Since it includes adjustable code groups, the user may inadvertently alter the installer configurations.
- Since the user will require IR commands from other brands of equipment to control the total system, in addition to those of the RT8, all commands should be consolidated into one learning device, for easy use.

APPLICABLE RC68+ BUTTON DESCRIPTIONS (use "C" overlay, Fig.3)

Routing Commands (1 through 8).

The IR commands from these buttons cause the RT8 to route commands to any of the 8 corresponding IR outputs. For example, pressing button **5** (labeled 00 on the button face) on the RC68+ will cause the RT8 to route the IR signal through to the number 5 output.

NOTE: The RT8 will not respond to buttons 9 through 16.

GP-ON (group ON).

This button (labeled 60 on the button face) causes the RT8 to route IR commands to all 8 outputs at the same time.

GP-OFF (group OFF).

This button (labeled 88 on the button face) causes the RT8 to shut off all of the 8 outputs.

Code Group Numbers.

The RT8 is capable of being set to 55 different IR code groups. If the RT8 is used in a common IR bus system with other Xantech RT8's, it will be necessary to change the code group on one or more of them to avoid mutual interaction.

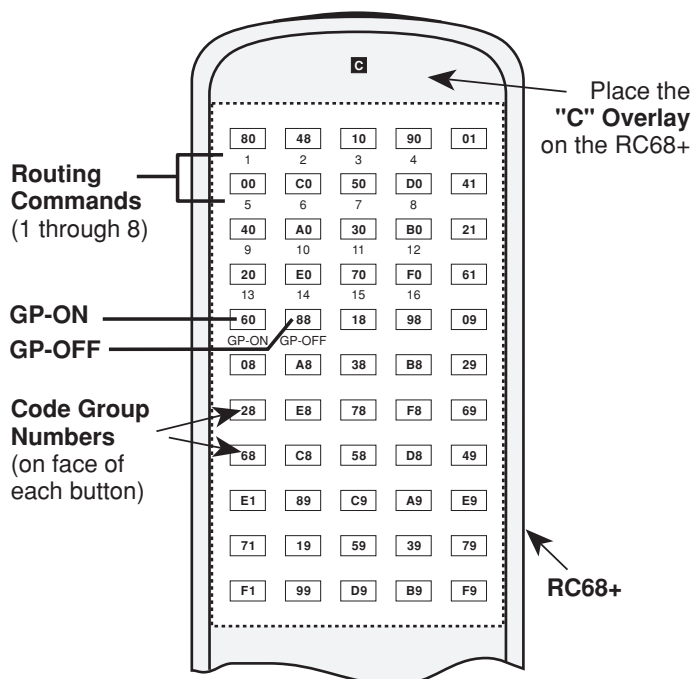


Fig. 2 RC68 Programmer

Refer to the RC68+ instructions for code group setting details and procedures!

The code groups are identified by the numbers and letters that are on the face of each button.

NOTE: When shipped from the factory, the RT8 is set to code group number 58.

Be sure to set the RC68+ to the same number!

IR ROUTING MODES

The RT8 has the ability to direct IR control signals to any one of the 8 output ports, or all 8 as a group as follows:

1. Single Routing

An IR route to a single port (**1** through **8**) occurs when a corresponding RC68+ Hand Held Programmer code is sent. It remains on until a different routing command is sent (**1** through **8**) or when the **GP-OFF** (group off) code is sent.

This allows any individually selected port to be driven with an IR control signal. The other seven will be turned OFF.

2. GP-ON (Group On - all 8 ON as a group)

In this mode all 8 routes are chosen instantly with the **GP-ON** command. This is useful if you wish to quickly address all groups at the same time.

3. GP-OFF (Group Off - all 8 OFF as a group)

After GP-ON is chosen, all 8 IR routes remain on until the **GP-OFF** command is sent **OR** until an individual route command is sent (**1** through **8**).

IR RCVR INPUT CONNECTOR (refer to Figs. 1 & 3)

This 4-terminal input has electrical connections for **+12V**, **G** (chassis ground), **Gs** (IR signal ground) and **IR IN** (IR signal). The **Gs** terminal is provided so that, if needed, the IR signal ground can be isolated from the chassis ground. This isolation may be necessary in some instances to prevent ground loop problems, etc.

A special jumper, within the RT8, gives you the option to make the grounds common or have them isolated. Refer to **Fig. 3**.

To gain access to this jumper, remove the six screws that secure the top cover to the metal chassis. Carefully lift the cover off. When you have made the adjustment, reassemble in reverse order.

NOTE: When shipped from the factory, the jumper is installed in the ON (common) position.

CAUTION: When powering IR receivers and key-pads directly from the RT8, you **must leave the jumper installed in the ON position** so that the **G** and **Gs** terminals are connected in common. This provides the needed ground return for the IR signal.

Change the jumper to the OFF position only when powering IR source devices separately from the RT8 and there is a need for electrical isolation.

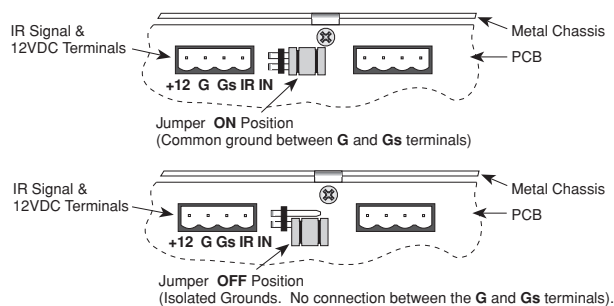


Fig. 3 Location and Adjustment of Grounding Jumper

INSTALLATION

Fig. 4 illustrates a typical application where an RT8 is used to route IR control signals to four TV monitors in a media wall.

1. In this system, the four TV receivers are the same brand - one large screen and three small. All are individually controlled from a Xantech SmartPad and a 480-30 IR Receiver through a 789-44 Connecting Block and the RT8 IR router.
2. In addition to controlling the TV receivers and the IR router, this system permits control of source components as well, through the 789-44 Connecting Block. If you need to drive more emitters, use the 791-44 Amplified Connecting Block instead of the 789-44. Note that the 789-44 is powered from the RT8.
3. MS1 Mouse Emitter Shield Covers (optionally available for use with Mouse Emitters) must be used on each TV IR sensor window as shown in **Fig. 4**. This is necessary to prevent the TVs from responding directly to the IR signals from the handheld remote. See the 282M and MS1 instructions for information on applying the Shield Covers.

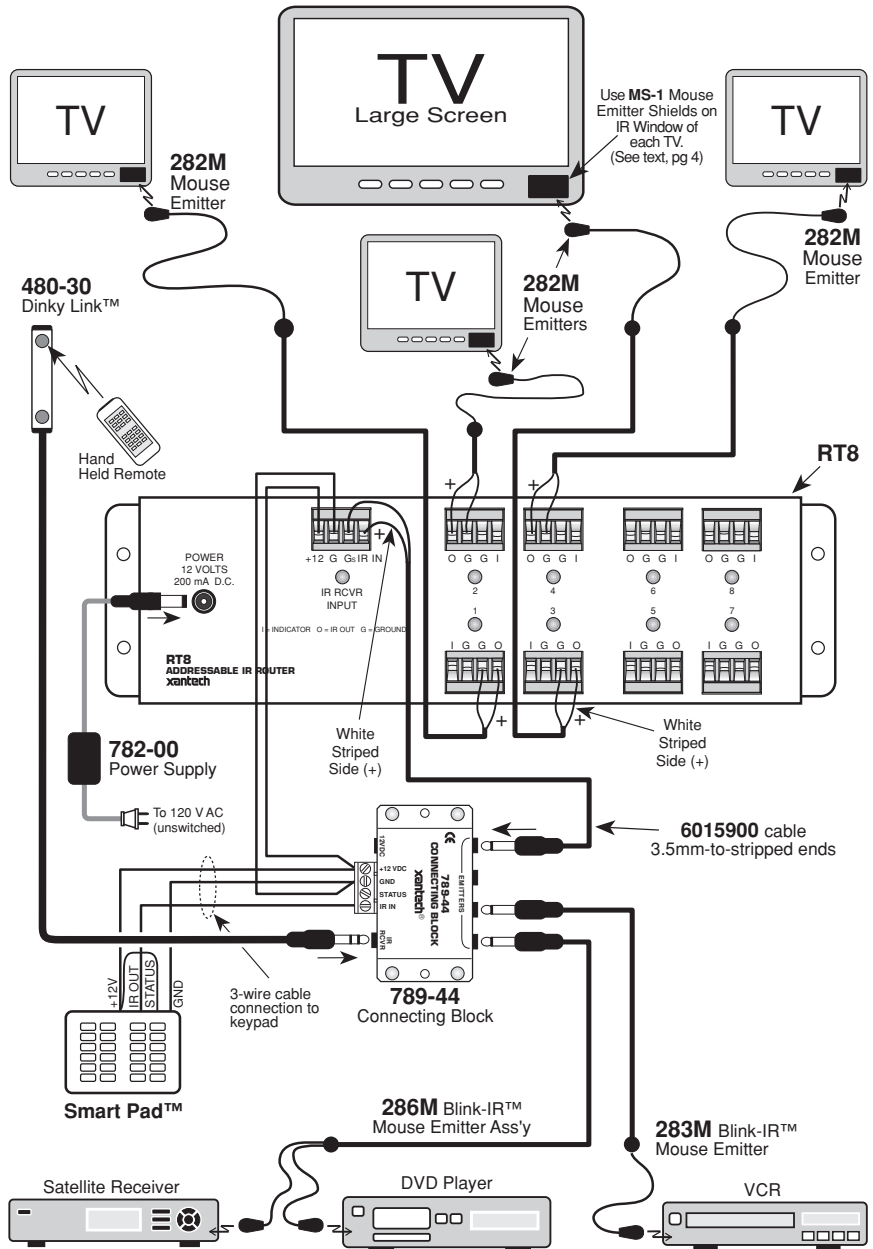


Fig. 4 Using the RT8 for IR Control of 4 TV Monitors

4. When connecting the emitters to the RT8, it is necessary to cut off the mini plugs, strip the leads back about 1/4" (6mm) and connect them to the screw terminals.
- IMPORTANT:** Be sure to connect the white striped side of the emitter leads to the "O" terminal (+) on the RT8 outputs as shown.
5. Since only one RT8 is used in this system, the factory preset Code Group **58** can be used. The RC68+ Programmer is set to the same number.
 6. The RC68+ commands **1, 2, 3, & 4** (refer to **Fig. 2**) will establish an IR route to each TV individually. The **GP-ON** (Group On) command will route to all 4 TV's simultaneously.

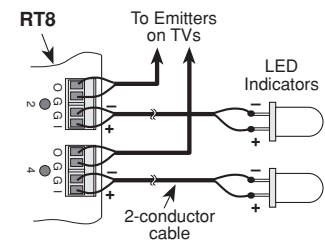


Fig. 5 Connecting LED Indicators to the "I" and "G" Terminals

Subsequent IR commands specific to the TV's, such as channel Up/Down, then operate the functions of the TV or TV's addressed.

- In this system, the RC68+ codes are "taught" to a Xantech URC type Learning Remote for use with the 480 Dinky Link™ IR Receiver and to the Xantech SmartPad. Other learning devices may be used provided they are capable of learning and outputting the RC68+ codes, with carrier, to the RT8.
- When programming, begin by assigning 6 keys to a keypad or a learning device for the RC68+ commands.

In this case, these would be commands **1, 2, 3, & 4** for individual routing and the **GP-ON** and **GP-OFF** commands. Next, assign keys for the TV function commands, such as channel Up/Down.

NOTE: Since GP-ON is cancelled when any one of the individual commands is subsequently sent, you could eliminate the GP-OFF command. This will save you one key on the learning device.

- Teach the commands into the assigned keys, following the instructions that come with the learning device. On URC type remotes and the Xantech Smart Pad, all these commands could go into one bank.
- The "I" and "G" terminals on each of the output terminal jacks are provided so that LED indicators, placed near each TV Monitor (if desired) will give a visual indication of the currently controlled Monitor. Refer to Fig. 5. Use LED's with an operating current rating of 10 to 20 mA.

Fig. 6 shows a typical system with four same-brand satellite receivers individually controlled from four remote room locations.

- Using the Xantech "Xtra Link™" patented principle, CPL10 RF/IR Couplers and INJ94 Injectors are used to inject the IR signals onto the coaxial cable at the remote TV rooms and are extracted at the other end to drive the emitters, selectively, at each satellite receiver through the RT8 Router.
- A variety of Xantech IR Receivers and a keypad are shown in the remote rooms to illustrate the flexibility of the system.
- An RF Amp, such as the Channel Plus DA500 in the RF system, overcomes the RF signal losses of the RF splitters and the long cable lengths.
- A 789-44 Connecting Block is shown expanding the control signal from the IR jack on the CPL10 Coupler to the RT8 and to emitters on other controlled devices. If you need to drive even more emitters, use the 791-44 Amplified Connecting Block instead of the 789-44.

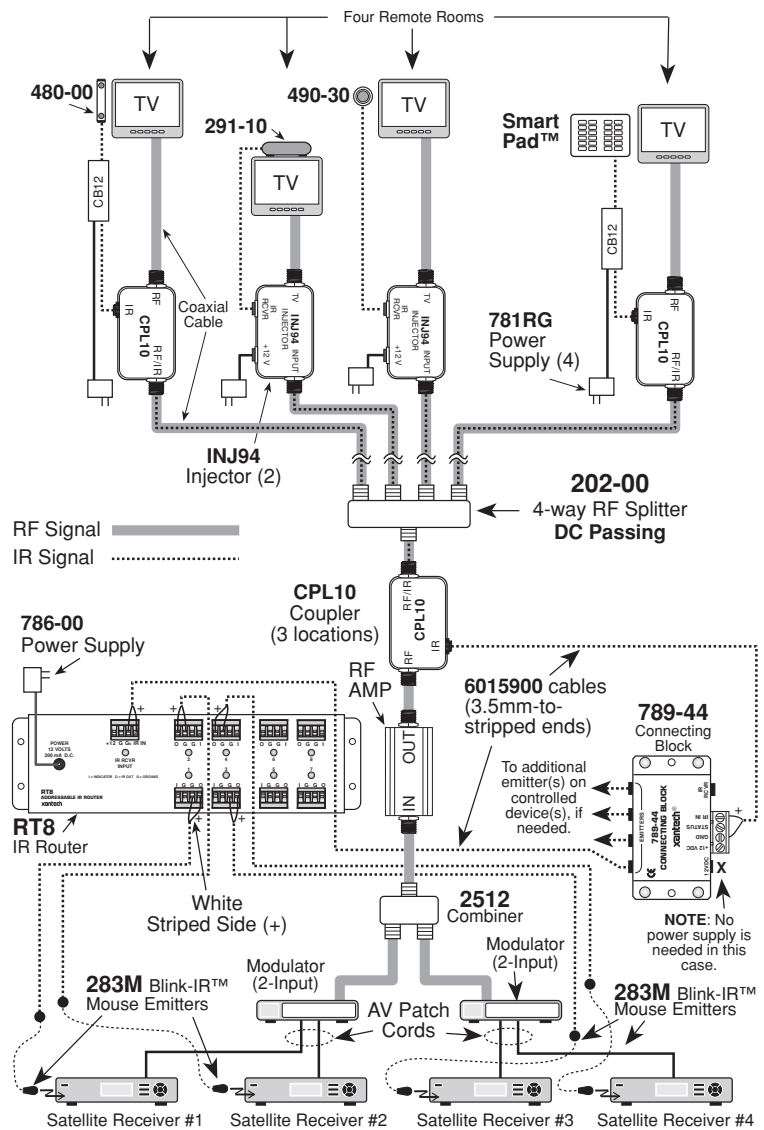


Fig. 6 Controlling Satellite Receivers through an RT8 Router

5. When connecting the emitters to the RT8, it is necessary to cut off the mini plugs, strip the leads back about 1/4" (6mm), and connect them to the screw terminals on the plug-in connectors.

CAUTION: Be sure to connect the white striped side of each emitter lead (+) to the "O" terminals on the RT8 IR outputs as shown in **Fig. 6**.

6. **Programming.** Typically a programmable remote controller, such as the Xantech URC type or a Xantech SmartPad, is "taught" the applicable RC68+ Programmer commands along with operational commands for other system components, such as satellite receivers, TV monitors, DVD players, etc. Commands that pass through the RT8 Router, such as those for the satellite receivers in **Fig. 6**, should be preceded by the appropriate RC68+ routing command in a "sequence" or "macro". This ensures that only the desired satellite receiver is being controlled when a command is executed.

7. The following are examples of such sequences:

Satellite receiver selection

- a) RT8 command #2 (routes IR to satellite receiver #2).
- b) Local TV to channel #56 (typically assigned modulator channel for satellite receiver #2).

Channel UP command for the satellite receiver.

- a) RT8 command #4 (routes IR to satellite receiver #4).
- b) Local TV to channel #62 (typically assigned modulator channel for satellite receiver #4).
- c) Channel UP command for the satellite receiver.

Simply repeat this procedure for other satellite receiver commands.

Figs. 4 and 6 show typical applications of the RT8. Many others are possible using similar techniques.