

INSTALLATION INSTRUCTIONS

795-20 FOUR ZONE AMPLIFIED CONNECTING BLOCK

The Model 795-20 is a Four Zone Amplified Connecting Block that allows control of elaborate multi-zone audio/video systems. The zone input terminals permit the connection of any Xantech IR Receiver, Keypad or controller device. Each zone output can control 2 or more pieces of equipment per zone, independent of the other zones, via single or dual emitters or be direct wired to the IR input of Xantech Preamps, etc. The 10 amplified common output ports can drive 10 single or 10 dual emitters or the IR input of Xantech Controllers, etc., for control of common source equipment from any zone. Expansion beyond 4 zones can be accomplished by adding the 796-20 Six Zone Expander, for a total of 9 zones. The 795-20 utilizes active isolation devices for elimination of internal zone-to-zone crosstalk as well as high speed amplification to the common output ports for operation with a wide range of IR controlled products.

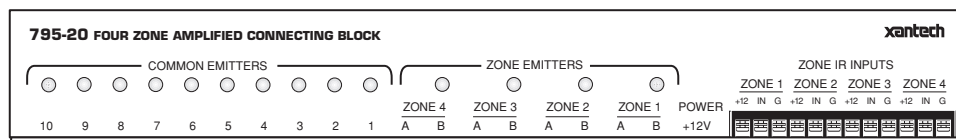


Fig. 1 Model 795-20 Four Zone Amplified Connecting Block

SPECIFICATIONS

- Zone Inputs: Four 3-screw terminal connectors to interface with all Xantech 3-lead IR receivers and/or keypads.
- Outputs: 8 Zone emitter ports and 10 common emitter ports (3.5mm mini mono phone jacks).
- Green LED test indicators are connected in series with the zone outputs and in series with each common emitter port. They will only light when the connected emitter or device is conducting current.
- Zone output ports A and B and the Common ports are parallel driven and have a 470-Ohm resistor in series with each port for lower power operation. This prevents overload of IR sensors on A/V componets and also allows the use of models 282, 283, 284 & 286 series Mini Emitters, Xantech Controllers, Preamps, etc. in any combination.
- Power requirements: 12 volts DC. Use 781RG or 782-00 Power Supplies.
- 2.1 mm coaxial power jack.
- Dimensions: 13-3/8" W x 1-7/8" D x 1" H

INSTALLATION

Fig. 2, illustrates a typical installation using the 795-20 in a 4-zone system. A variety of Xantech IR Receivers and a keypad are shown in the various zones to illustrate the flexibility of the system. When configuring a system, please keep the following items in mind:

1. More IR Receivers may be wired in parallel at each zone input, if desired, up to a total of twelve. More than twelve is not recommended, even in a zoned system, because 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 Smart Pad™ keypads, because they are not IR receivers. Keypads may be added virtually without limit, provided power supply requirements are taken into consideration. See item 3.

2. Be sure to connect the +12V, IR OUTput and Gnd of each IR receiver and keypad to the respective +12, IN and G terminals of the zone inputs as shown.

3. **Power Supply Requirements.** In elaborate installations you may combine many Xantech keypads, IR receivers, controllers and emitters in a system. Having sufficient power supply voltage and current available can be critical to achieve proper operation. To be sure you have adequate power supply capability, take the following factors into consideration:

- a) The maximum current available from a 781RG Power Supply for proper operation is 200 mA (milliamps).
- b) The maximum current from a 782-00 Power Supply is 1000 mA.
- c) Most IR receivers draw 2 mA without signal and 10 mA with signal (check specs. on actual model).
- d) Each 730 SmartPad draws 7 mA without signal and 65 mA with signal.
- e) Each SmartPad_{2 or 3} draws 85 mA with or without signal and with Status.
- f) Each emitter connected to the Zone and Common Ports of the 795-20 draws 3 mA with signal and 0 mA without.
- g) Add 10 mA for each 794 or 797 Interface module used, if they are powered from the 795-20.
- h) When using combinations of these devices, add up the currents as shown in the following example. Then choose a power supply that has a maximum available current that is higher than the total current required.

For example, the power supply needed for the system shown in **Fig. 2** is arrived at as follows:

1) Three IR receivers at 2 mA x 3 + one at 20 mA = 26 mA.

2) Assuming a SmartPad₃ keypad, the current for one is = 85 mA.

Note: Since only one IR source can operate at a time, the lower current IR receivers (and 730 keypads if used) do not need to have their "with signal" currents included.

3) The current for one 794-60 Interface module = 10 mA.

4) The current for six emitters at the Common ports is 6 x 3 = 18 mA. (The 286-00 dual emitters count as only one, since they are in series).

5) The current for the emitters at the Zone ports is 1 x 3 = 3 mA. (Since it is not likely that the zone emitters will be operating the zone equipment at the same instant in time, only one need be included).

6) Now add up all the currents from steps 1 through 5.

26 mA + 85 mA + 10 mA + 18 mA + 3 mA = 142 mA total. Since this is considerably less than 200 mA, a 781RG power supply is used.

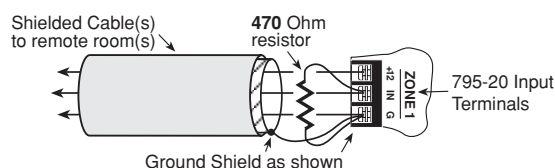
When a system requires more current than a 78RG can handle, simply step up to the 782-00.

NOTE: To avoid current "hogging", **never** connect regulated supplies, such as the 781RG and 782-00, in parallel!

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 "talk-back" LEDs in the IR receivers and on the 795-20 Zone Controller may stay on continuously!

4. **Considerations For Shielded Wire and Long Lead Lengths.** When using long lengths (> 50 feet) of inter-room shielded cable (> 75' unshielded), it may be necessary to connect a 470 Ohm resistor between **IR IN** (signal) and **GND** at the 3-screw terminals of the 795-20. Refer to **Fig. 3**.

Fig. 3
Using a 470 Ohm Capacitance Discharge Resistor.



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

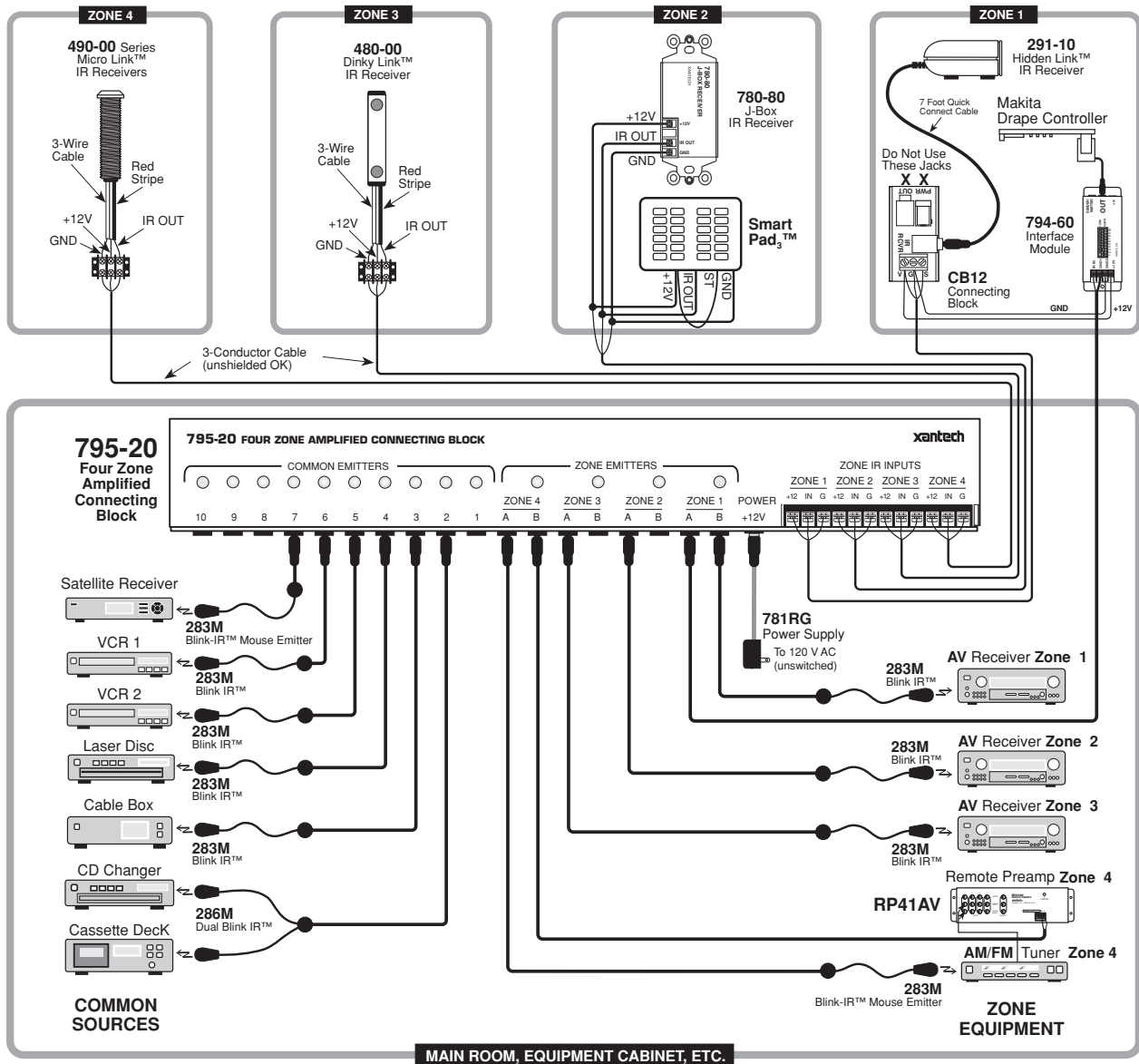


Fig. 2 A Typical 795-20 Four Zone System

5. The resistors in series with each zone and common emitter port provides current sharing to each emitter and also allows the use of dual emitters in combination with single emitters. You may, therefore, connect any combination of the 282, 283, 284 & 286 series emitters to the zone or common ports (such as that illustrated in Fig. 2 for the common ports), to control the desired number of components.
6. If only one emitter is required in any zone, it may be plugged into either the "A" or "B" jack.
7. **CAUTION:** Be sure to use **MS-1** Mouse Emitter Shields with the 282M and 284M series emitters, if you use them instead of the 283M's & 286M's. The MS-1's will stop the stray IR output of a zone emitter or a common source emitter from bleeding over into another zone or zones. This is especially important when zone receivers and source equipment are stacked close to each other.

Emitter Expansion

1. Zone Output Ports. Since the 795-20 zone output ports (A and B) are parallel driven and have a 470-Ohm resistor in series with each, you may expand up to four emitters simply by using two dual emitters, such as the 284M or the 286M.

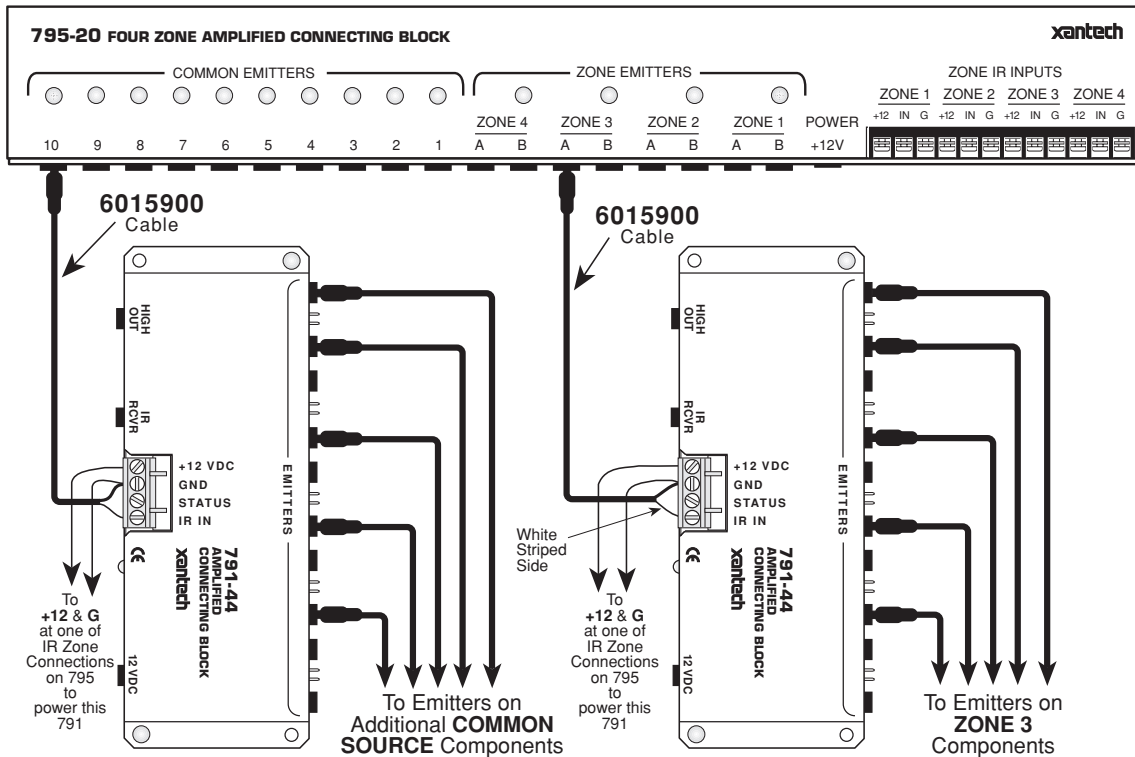


Fig. 4 Emitter Expansion - Common and Zone Ports

To expand beyond 4 emitters, connect a 791-44 Amplified Connecting Block at the "A" or "B" port. This makes a total of 11 ports available for that particular zone. See example in **Fig. 4**.

2. Common Output Ports. If more than 10 common emitter ports are needed, you may use any one of the common ports to drive the input of a 791-44 Amplified Connecting Block. This will give you a total of 19 common ports. See **Fig. 4**.
3. When using 791-44 Amplified Connecting Blocks for emitter expansion, you may power them from the +12V and G terminals on any one of the 795-20 IR ZONE terminals. See **Fig 3**. Be sure to take the current drain of the 791's into consideration (13 mA each) and the extra emitters you use, when calculating the total current for choice of power supply.

PLEASE NOTE: Be sure that the 781RG and 782-00 Power Supplies, where used, are plugged into unswitched AC outlets. This maintains the system in "standby" operation so that power ON commands can be sent to the controlled equipment.

MOUNTING

The 795-20 can be conveniently mounted to a wall or shelf by using the four sheet-metal screws and the two right-angle brackets supplied. Fasten a bracket to each end surface of the 795 using the two small black screws, driving them into the holes provided. Use the longer screws to attach the unit to a wall or shelf. The holes in the ends are located so that two different mounting positions are possible. The unit may be mounted in any orientation to accommodate the installation.