

# Chapter 6

## Remote Access and Control

### Remote Analog Access

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You can use a remote control device, such as, a dimmer console or a control desk to remotely access the *emulator* Controller memory as long as the voltages are within the specified limits. Twelve channels are required to control 99 pages of a selected Memory, or up to 1023 presets.

The controlling device connects to the Analog Inputs on the rear panel of the *emulator* Controller via two 8-pin locking DIN connectors. The minimum turn-on voltage for each channel is 3 volts dc, and the maximum safe voltage input is 16 volts dc.

There are two types of remote access; Page Access and Preset Access. Set Switch 3 of Personality DIP Switch B on the rear panel of the controller to select either Page Access or Preset Access (Switch 3 “Off” = Page Access; Switch 3 “On” = Preset Access.). In addition, if the controller is in the Preset Access mode, then Switch 5 of Personality DIP Switch B determines whether to access Presets through binary combinations of the input channels, or whether each input corresponds to one of 12 levels of 24 presets (Switch 5 “Off” = Preset Level Access; Switch 5 “On” = Binary Preset Access.).

In Page Access mode, the Analog Inputs on the rear panel of the controller have priority over the front panel of the controller. An active Analog Input channel prevents any subsequent change of Page numbers or Presets via the controller’s front panel until the active input channel is de-activated. However, in Preset Access mode, you can have the Analog Input channels and the controller front panel active at the same time.

You can use the Analog Inputs with the controller in or out of the Standby mode:

**In Standby Mode** – If the controller is in Standby mode, the Analog Input signal overrides the Standby mode. The Standby key begins to flash, indicating that it is receiving a higher priority signal. As long as the analog signal is active, the Standby key continues to flash. When the analog signal is de-activated, the controller returns to the Standby mode. Only the Remote Enable input can override the analog signal. You can use the Remote Enable feature with the controller in or out of the Standby mode.

**Out of Standby Mode** – If the controller is not in the Standby mode, the Analog Input signal takes control of the front panel. When the input port is de-activated, the controller resumes normal operation.

**Note:** a flashing Standby LED indicates that the controller is under control of the Analog Inputs.

Figure 6.1 and Table 6.1 identify the pin numbers and channel assignments for the Analog Inputs on the rear panel of the controller.

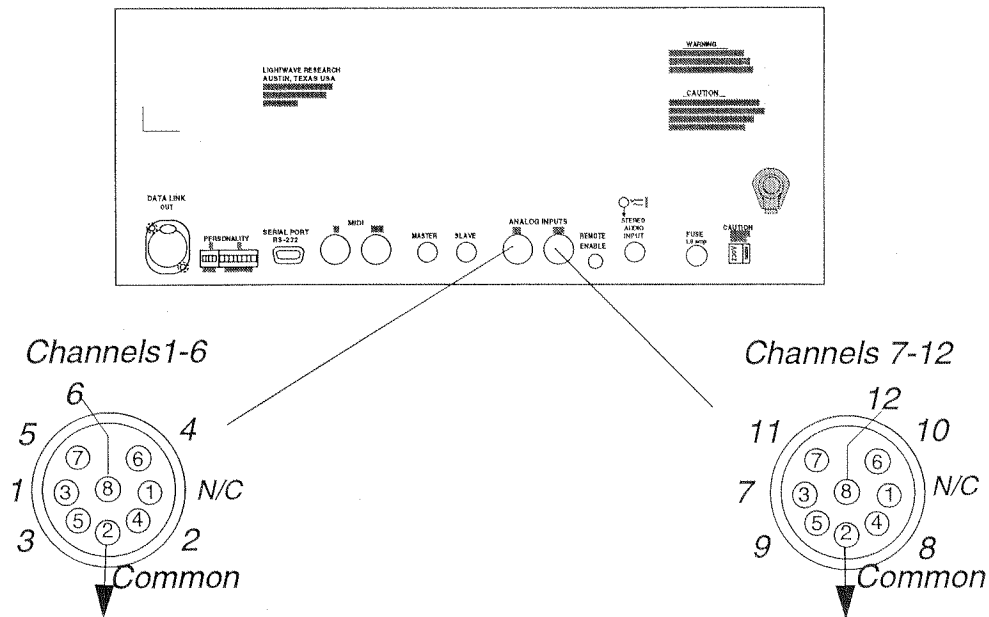


Figure 6.1. Pinouts for Analog Input Connectors

Table 6.2. Analog Input Channel Assignments

Channel Numbers		Din Connector Pin Assignments
Channels 1-6	Channels 7-12	—
1	7	3
2	8	4
3	9	5
4	10	6
5	11	7
6	12	8
Common	Common	2
Not Used	Not Used	1

## Remote Page Access

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The Remote Access feature allows you call up Pages from within the Memory that you pre-select on the controller's front panel. You cannot remotely select or change Memories.

### To use Remote Page Access Mode:

1. Connect your auxiliary controller as described previously in this section. Set Switch 3 of Personality DIP Switch B on the rear panel of the *emulator* Controller to "Off".
2. Then, from the controller's front panel select the Memory containing the Pages that you want to remotely access. Use the CURSOR Up/Down keys (surrounding the Menu key).
3. From your auxiliary controller perform the applicable procedure (a, b, or c) to select the desired Page. Table 6.2 summarizes the channel functions.
  - a. Analog Input Channels 1 through 12 correspond directly to Page numbers 1 through 12. Thus, if you remotely activate Channel 1, you call up Page 1 on the *emulator* Controller, Channel 2 calls up Page 2, and so on.
  - b. If you simultaneously turn on any combination of two Channels on your auxiliary controller, you call up the Page number corresponding to the combination of the two Channel numbers. The lowest channel number is first and the highest channel number second. For example, if you simultaneously activate Channels 1 and 2, you call up Page twelve on the *emulator* Controller. If you activate Channels 3 and 7, you call up Page 37.
  - c. Channels 10, 11, and 12, correspond to the matching Page numbers and are also used as special function keys as follows:
    - Channel 10 is a ten-times multiplier. That means that when you activate Channel 10, it multiplies any other active channel by 10 and calls up the resulting Page number. For example, if you activate Channels 5 and 10, you call up Page 50.
    - Channel 11 is a number doubler. It causes the doubling of any other active Channel to use as a second digit before calling up the Page number. For example, if you activate Channels 2 and 11, you call up Page 22.
    - Channel 12 is a number inverter. For example, if you activate Channels 2, 4, and 12, you call up Page 42 rather than Page 24.

**Note:** If you try to simultaneously activate more than two of the input Channels, 1 through 9, you will only select the lowest two. The Advance, Effect, and Memory selection features remain fully active when the controller is in the Remote Access mode.

Table 6.3. Remote Page Access Channel Function

Channels 1-12	Directly Access Pages 1-12
Channels 10-12	Directly Access Pages 10-12 and also perform the special functions listed in the following 3 entries.
Channel 10	This is a ten times multiplier for Channels 2-9 to allow access to Pages 20, 30, 40, 50, 60, 70, 80, and 90
Channel 11	This is a number doubler for Channels 2-9 to allow access to Channels 22, 33, 44, 55, 66, 77, 88, and 99
Channel 12	This is number inverter for Channels 2-9 to invert the order of the two lowest Channels activated simultaneously. For example 23 becomes 32

## Remote Preset Access

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### To use the Remote Preset Access Mode:

Connect your auxiliary controller as described previously in this section. Set Switch 3 of Personality DIP Switch B on the rear panel of the *emulator* Controller to “On”. Also, set Switch 5 “Off” to select Twelve Level Preset Access or set Switch 5 “On” to select Binary Preset Access.

- In **Twelve Level Preset Access** mode, you can use each channel to activate a different level of 24 Presets, but you still call up the actual Presets from the Address/preset keypad on the controller. Twelve levels times 24 Presets equals 288 Presets.
- In the **Binary Preset Access** mode, you have 10 Analog Input Channels that you use as 10 binary digits to select 1024 combinations that correspond to 1024 Presets. This mode offers the greatest flexibility for total remote, “hands off” control.

### Twelve Level Preset Access

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In the Twelve Level Preset Access mode there are 12 levels of 24 Presets for a total of 288 Presets available. Levels 1 to 12 corresponds to Analog Inputs 1 to 12. Thus, you access each level of 24 Presets by activating the corresponding Analog Input channel. For example, you call up level 1 by activating Analog Input channel number 1. You call up level 2 by activating channel 2, and so on. The Analog Input

signal that you use to activate a level of Presets can be a momentary or a latching signal. If you do not use the Analog Inputs, then the controller defaults to level 1 and uses the 24 Presets stored in level 1. Remember to set Switch 3 “On” and Switch 5 to “Off” to enable this mode.

Once you activate the appropriate Analog Input channel, you can call up the desired Preset by pressing ADDRESS/PRESET keys 1 through 24 on the controller’s front panel.

**The selected Preset continues to playback until you:**

1. press another Preset key
2. change to another Preset level by changing the Analog Input
3. place the controller in Standby mode.

To program Presets in the twelve level preset access mode refer to *Programming a Preset in Binary Preset Access Mode* in Chapter 5.

### **Binary Preset Access**

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In the Binary Preset Access mode you have 1024 Presets available by using combinations of the first 10 Analog Input channels. Channels 11 and 12 are reserved for Master Blackout and Remote Enable, respectively. For example, you call up Preset 3 by activating Analog Input Channels 1 and 2 or call up Preset 386 by activating Analog Input Channels 2, 8, and 9. Combining Analog Input Channels in this manner is very similar to counting in binary, hence the term, “binary preset access.” Remember to set Switches 3 and 5 to “On” to enable this mode. *Appendix E* provides a Table that lists all the Binary Preset Access combinations. This table converts the decimal number to the binary code.

The Analog Input signal that you use to activate a Preset can be a momentary or a latching signal.

**The selected Preset continues to playback until you:**

1. press another Preset key
2. change to another Preset by changing the Analog Input
3. place the controller in Standby mode.

To program presets in the binary preset access mode refer to *Programming in Binary Preset Access Mode* in Section 5.

The controller supports mixing Binary Presets with Submasters, however, it is recommended that you assign submasters from the top down in order (for example, Channels 12, 11, 10, and so on) to simplify the Binary Preset addressing scheme which begins with the least significant bit (for example, Channels 1, 2, 3, and so on). Refer to the *Submasters* section in Chapter 5.

## Preset Playback from a Computer

There are several computer programs available that you can use to exchange serial data between a computer and a controller. One such data transfer program is Lightwave Research's Show Control. These data transfer programs are designed to allow you to organize and playback one or more controller's Presets from a computer. It is possible to link several *emulator* Controllers to one computer and playback their Presets. To do this, the computer must identify each controller separately. Each controller must be assigned a unique I.D. number. Refer to Chapter 5, *Operating the System*, for instructions on setting the controller I.D. number.

## Remote Enable

Located on the rear panel of the controller is a Remote Enable input jack that allows you to use an external source to place the controller in and out of Standby mode. The Remote Enable input overrides all other functions.

The jack (female) is a normally closed, 3.5 mm (1/8 in) mini-phone jack that accepts a 3.5 mm mini-phone plug (male). The controller functions normally with no input to the Remote Enable input. When a plug is inserted into the jack, the controller goes into the Standby mode and remains there until a voltage within the range of +5 volts to +16 volts dc is sensed. When the controller senses the voltage it restores the controller to its prior mode of operation.

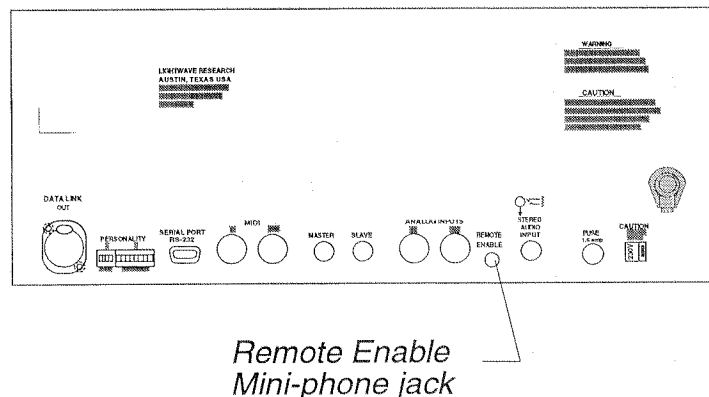


Figure 6.2. Remote Enable Mini-phone Jack