

# Film-Tech

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# **SLM-150**

## **Sound Level Monitor**

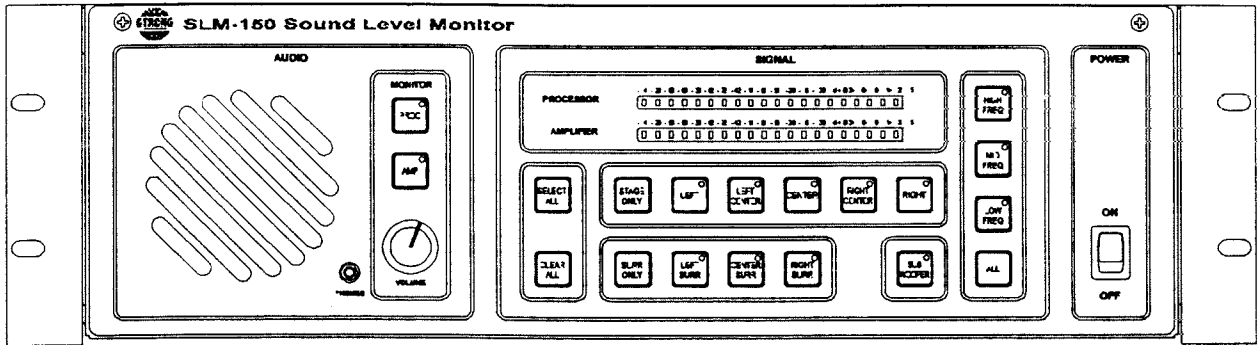
### **Operation and Installation Reference Manual**

**Preliminary**

**April 1999**

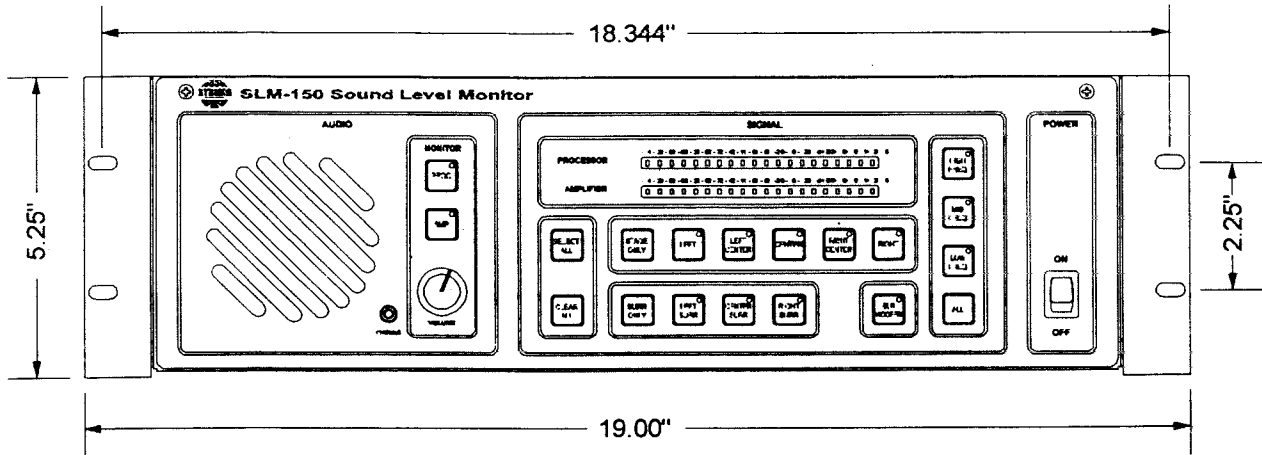
### OVERVIEW

The SLM-150 Sound Level Monitor is an audio monitor used in the projection booth to monitor the processor and amplifier outputs for all channels of a multi-channel cinema sound system. The SLM-150 has inputs for both the processor and amplifier signals. The SLM-150 can monitor: Left, Left-Center, Center, Right-Center, Right, Left-Surr, Right-Surr, Left-Rear, Right-Rear and Sub-Woofer.



**INSTALLATION**

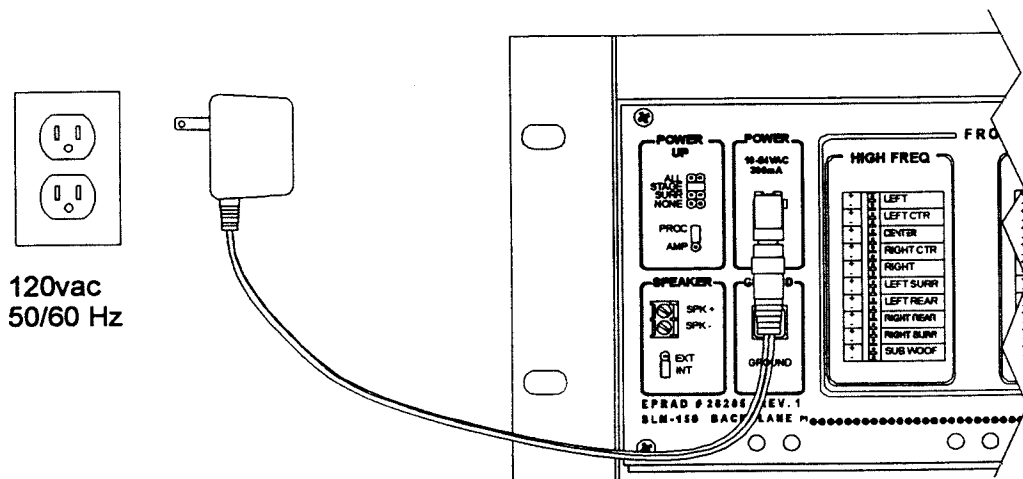
The SLM-150 mounts in a standard 19" rack using 5.25" of rack space. All wiring is made from the back of the unit and all adjustments are made from the front of the unit.



Because the SLM-150 connects to both the processor and amplifier (if monitoring amplifier outputs is desired), the SLM-150 should be mounted very close to the processor or between the processor and amplifiers.

**Power Supply**

The power supply for the SLM-150 is a 120v wall pack power supply. The wall pack power supply provides 18vac at 300mA to the SLM-150. Plug the wall pack power supply into any convenient 120v outlet and plug the other end of the cord into the power connector on the back of the SLM-150.

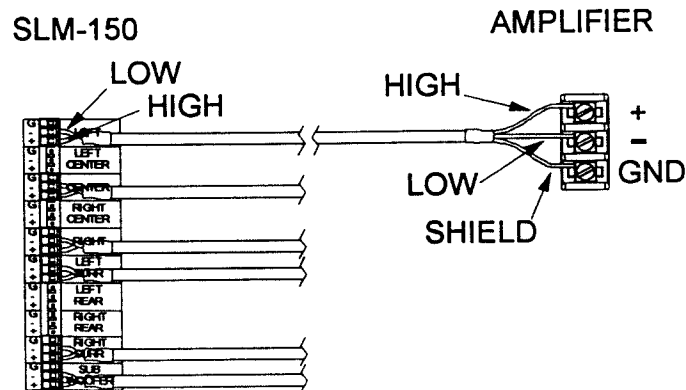
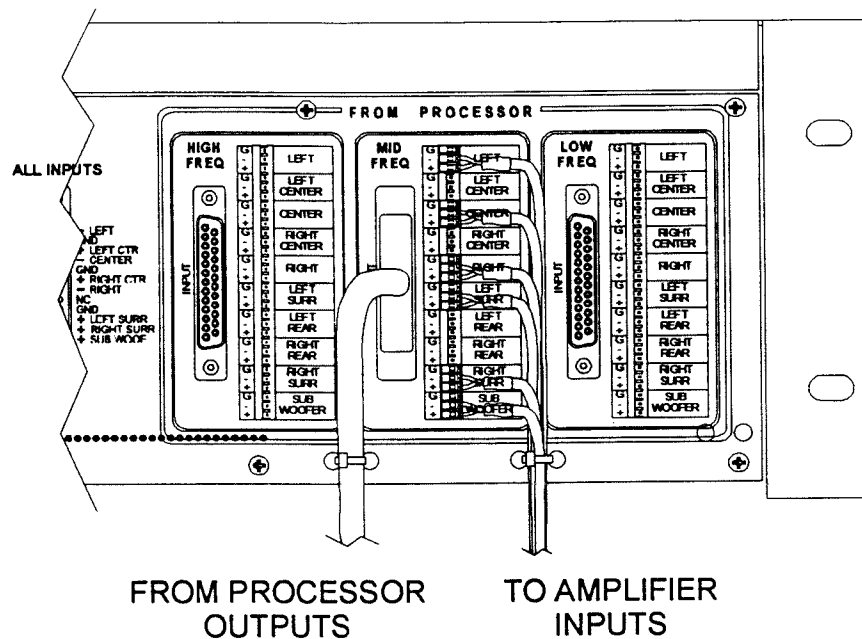




### Wiring using the DB-25

If a DB-25 cable is not included with the processor, a shielded 25 pin cable should be used. The DB-25 connectors on the back of the SLM-150 are pin compatible with the Sony SDDS and can they can be connected using a standard shielded parallel extension cable. All other processors will probably require a special cable.

Because the MTA-100 connector is in parallel to the DB-25 connector, the MTA-100 connector can be used as breakout points for the connection to the amplifiers. Two conductor shielded cable should be used for these connections.



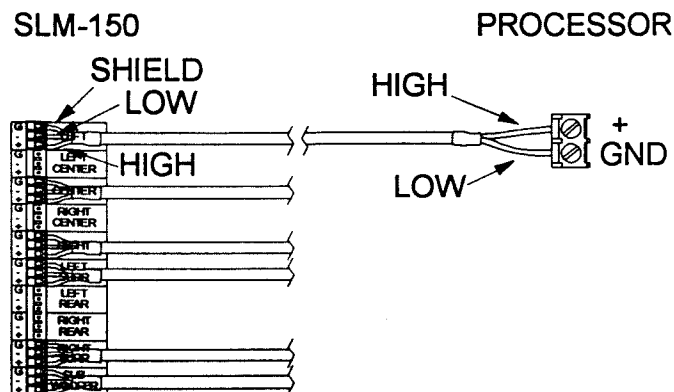
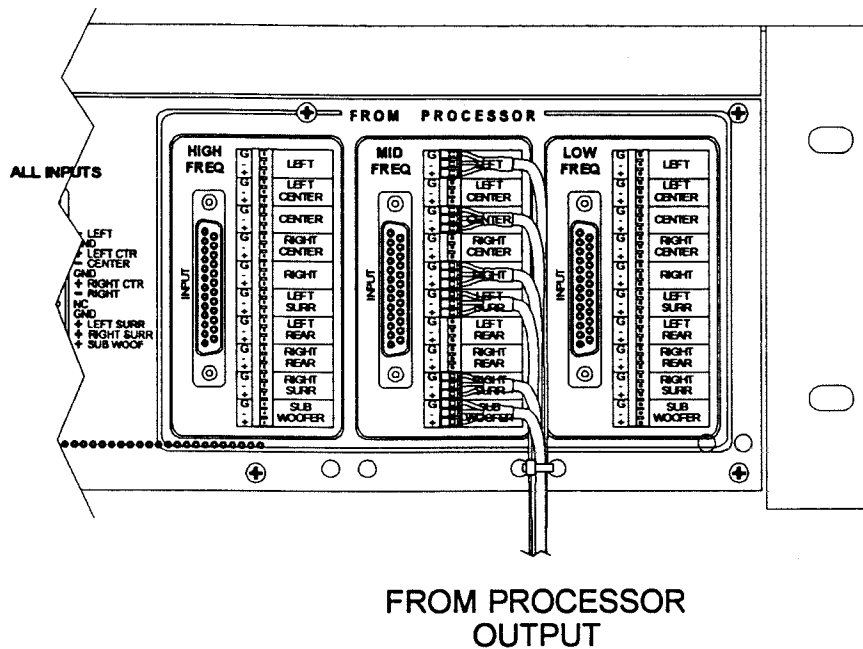
The shield for these cables should only be connected at one end. Typically, the shield is only connected at the end of the cable connected to the inputs of a device, not the

end of the cable connected to the outputs of a device. This means the shield should only be connected at the end of the cable connected to the amplifier inputs and not the end of the cable connected to the monitor (because the monitor connection is actually the processor output).

**Wiring using the MTA-100**

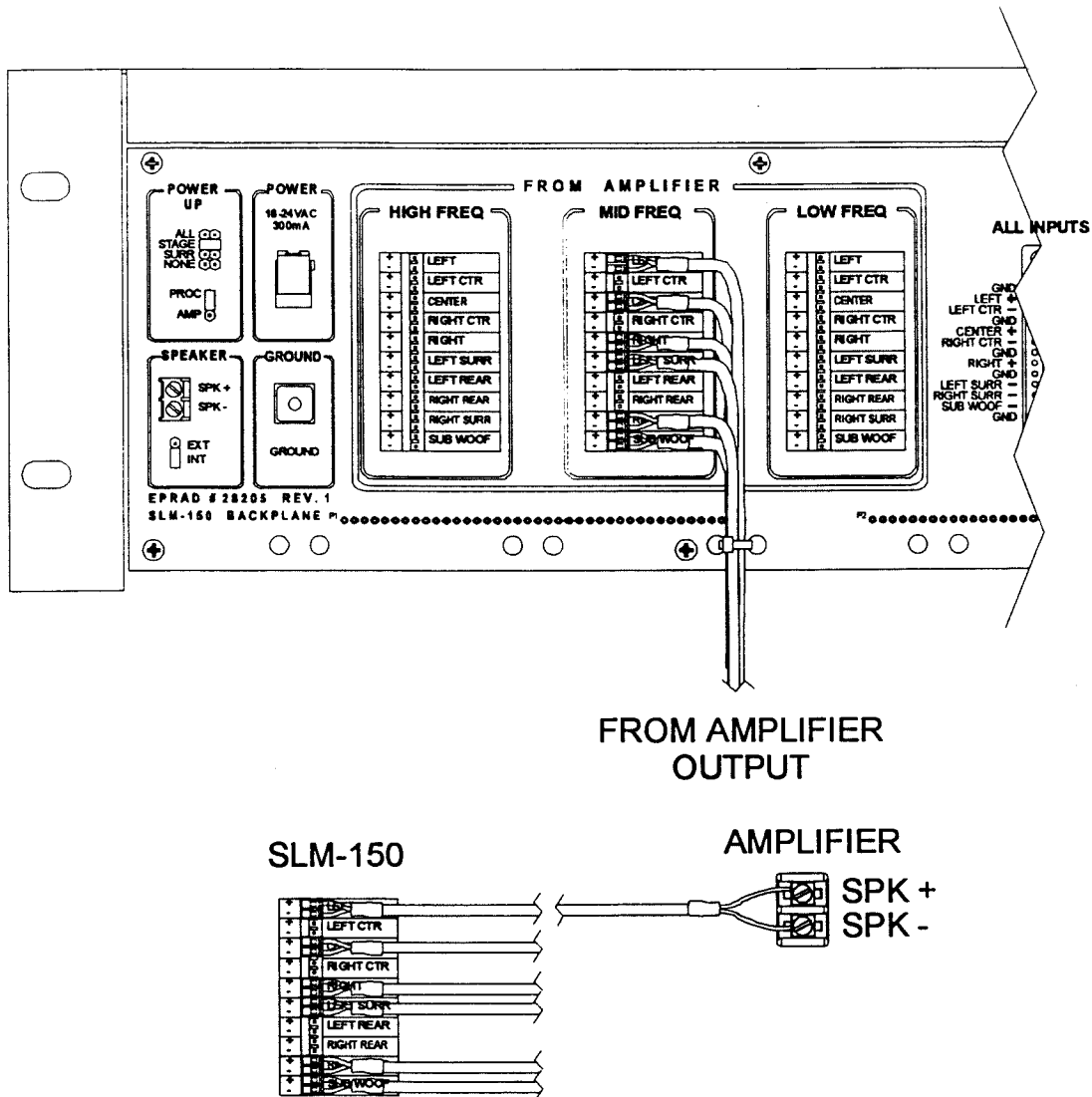
The SLM-150 can also be connected to the processor using the MTA-100 connectors. These pinout for these connectors is clearly labeled on the back PCB of the SLM-150.

Each processor output is connected to the SLM-150 MTA-100 connector using a two conductor shielded cable. The shield for this cable should be connected only at the SLM-150 end and not at the processor end. Wiring to the MTA-100 connectors is show below.



### Amplifier Wiring

The SLM-150 provides amplifier inputs for all three signals of a tri-amp system. These inputs are labeled HIGH, MID and LOW. Although the frequency inputs are labeled HIGH, MID and LOW, the inputs are full range inputs that do not filter the highs or lows from any of the inputs before summing the signals and sending them to the displays and speaker. The sole purpose of labeling the inputs as HIGH, MID and LOW is to provide a clear indication of where the tri-amp signals connect.



When using only bi-amp or single-amp for each channel, only one or two of the frequency inputs will be used. The input frequencies that are used for the bi-amp or single-amp are determined by the installer. One possibility is to use the HIGH and LOW frequencies when bi-amping and using the MID frequency when using a single-



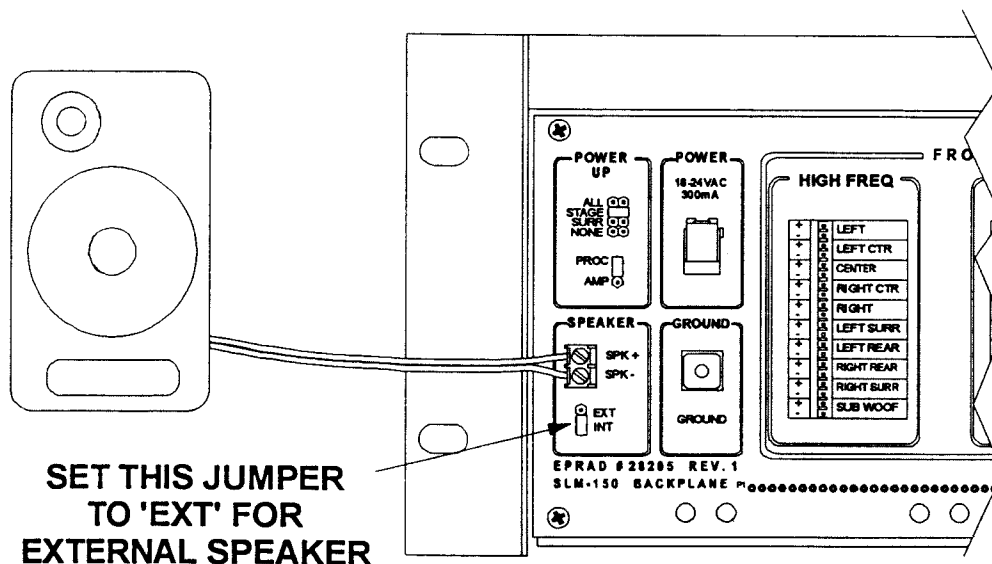
amp.

All inputs for the SLM-150 are balanced inputs. This will help reduce the possibility of ground loops and ground noise. The SLM-150 amplifier inputs can handle voltages up to 80vac rms. This is the equivalent of an 800watt power amp into an 8 ohm speaker.

### Connecting an External Speaker

If the SLM-150 internal speaker is not of sufficient quality, an external speaker can be connected to the SPEAKER terminal block on the back of the unit. The SLM-150 will provide 2 watts of power into an 8 ohm load.

The jumper below the terminal block must be moved to the EXT position for the external speaker to work. When the external speaker is selected, the internal speaker will be disconnected but the headphone jack will still work.

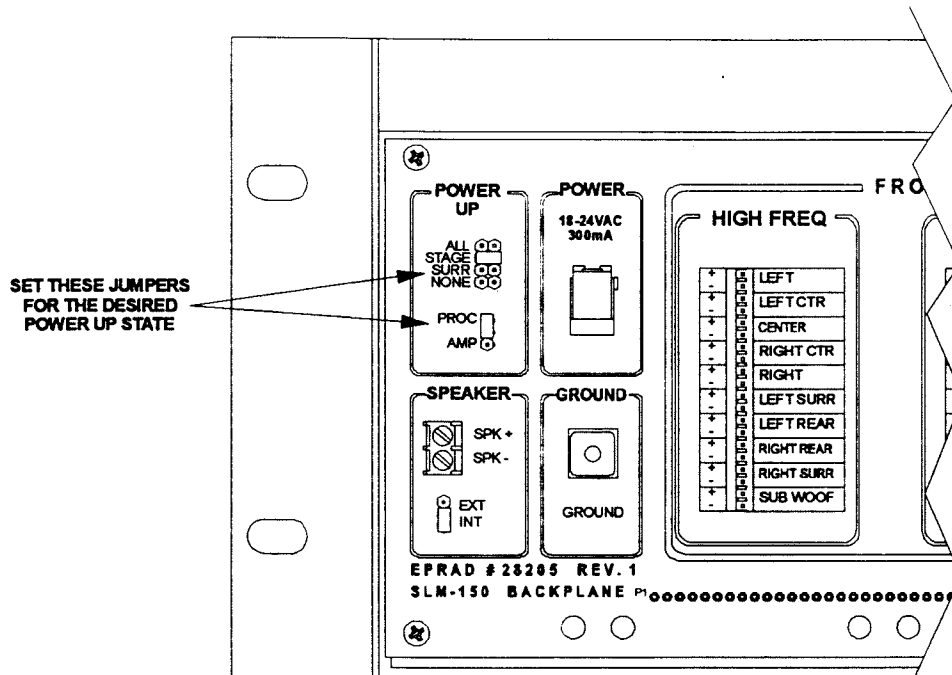


### SETUP

#### Power Up States

The SLM-150 can be set to select a certain number of channels each time the power is turned on to the unit. Available options are: All Channels, Stage Only, Surr Only, None.

Also, the SLM-150 can be set to power up with either the processor or amplifier audio monitoring selected.

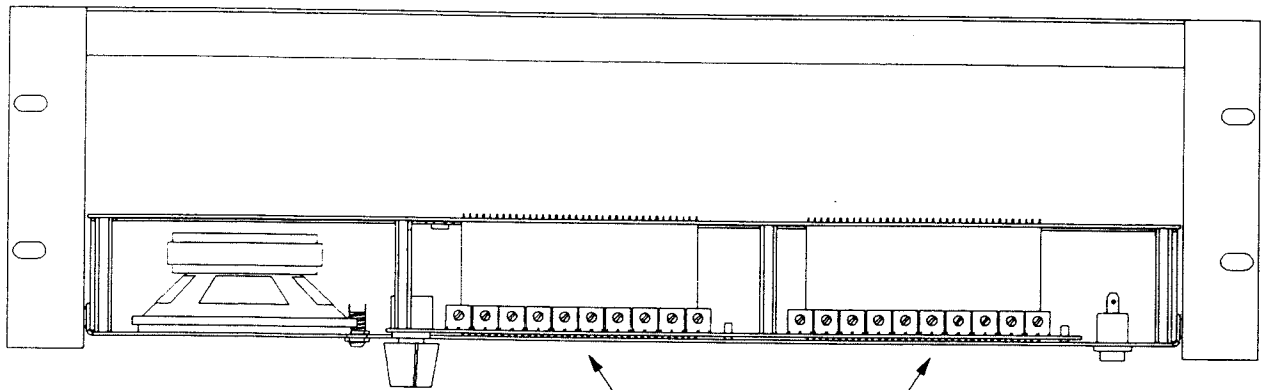


#### Adjusting the Input Levels

In order to get the most use out of the SLM-150, the input levels should be calibrated. This will allow the user to quickly determine any problems by comparing relative levels of different channels.

When connected to a bi-amp or tri-amp system, all input frequencies are combined and the total signal is adjusted using a single level adjust pot. There are nine level adjust pots for the processor inputs and nine for the amplifier inputs. There is also a level adjust pot for the processor and a level adjust pot for the amplifier that will increase or decrease the level of all inputs at the same time.

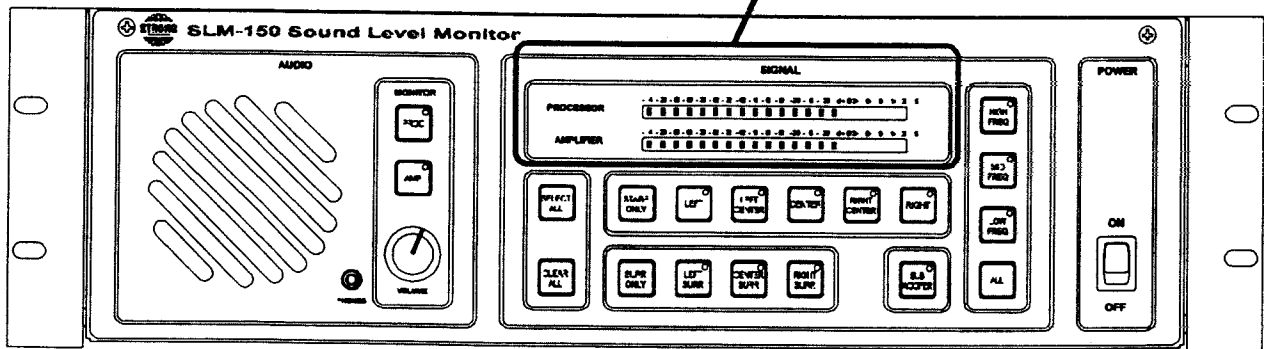
The level pots are accessed by removing the two front panel screws and hinging the front panel forward.



OPEN FRONT DOOR AND USE THESE POTS TO ADJUST THE PROCESSOR AND AMPLIFIER INPUT LEVELS

Calibration of the SLM-150 should be made when the processor and amplifier levels are being set up in the auditorium. As each processor output level is set during the processor calibration (this is when pink noise is being fed into the auditorium and the level is being adjusted for 85dB (or whatever level the installer determines to be the best)), adjust the equivalent channel on the SLM-150 processor input to read 0dB on the processor display. After the amplifier level has been adjusted for the same channel in the auditorium, adjust the amplifier input level on the SLM-150 for the channel until the amplifier meter reads 0dB.

EACH METER SHOULD BE CALIBRATED TO 0dB



Continue this for each channel to be calibrated on the processor. The SLM-150 0dB

reading will now match the level in the auditorium when the processor was calibrated.

**OPERATION**

The SLM-150 was designed for flexibility and ease of use so the operation is straight forward and obvious.

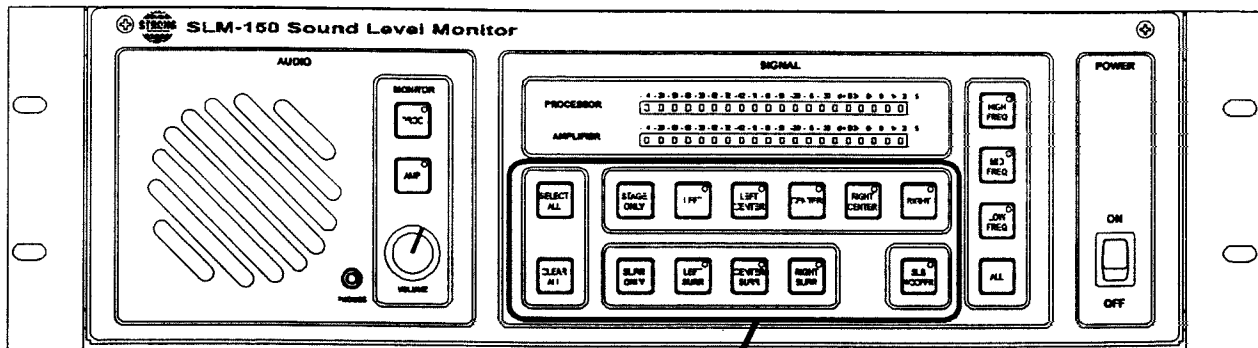
**Power**

The power switch on the front of the SLM-150 turns the SLM-150 on or off. This is a low voltage power switch. The wall plug power supply always remains on and provides a constant 18vac to the SLM-150 independent of the power switch.

When the SLM-150 is powered up, the channels that are initially activated or deactivated are determined by the power up jumpers on the back of the unit. These jumpers are set during installation or setup.

**Channel Selection**

The SLM-150 provides the ability to select and monitor any combination of nine channels. (Although there are ten inputs, there are only nine selectable channels because the left-rear and right-rear inputs are summed and are selected using the rear-surr switch.)



USE THESE BUTTONS TO ACTIVATE OR DEACTIVATE CHANNELS

All channel select switches on the SLM-150 are alternate acting switches. This means that pressing the switch once will activate the channel and pressing it again will deactivate the channel.

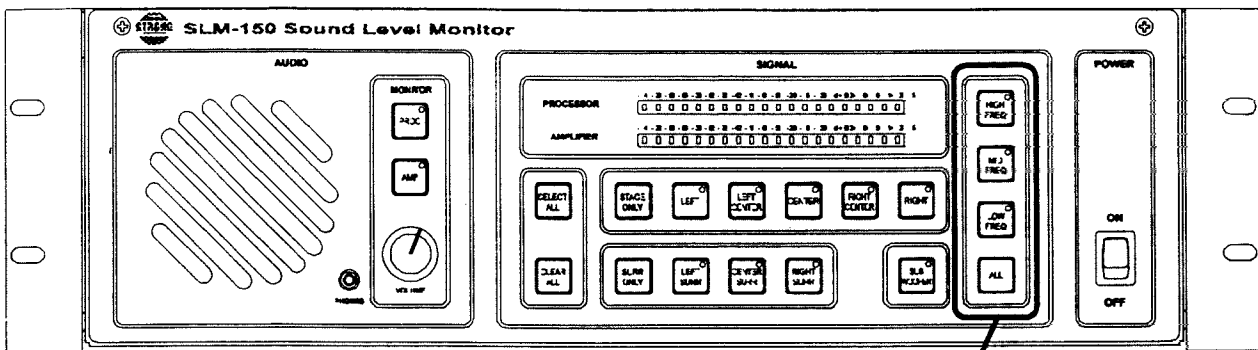
When a channel is selected, the input is activated for both the amplifier and processor inputs. All the activated amplifier inputs are summed and sent to the amplifier meter and all the activated processor inputs are summed and sent to the processor meter.

Additional select switches have been provided that allow the user to select a group of

channels with a single press. These switches allow the user to: select all channels, stage channels only, surround channels only or to deactivate all channels. When selecting surround only or stage only, all other channels are deactivated.

**Tri-amp Input Selection**

Each input channel for the SLM-150 has three inputs. These three inputs are for the high, mid and low signals of a tri-amp system. If using only a bi-amp or single amp per channel, rear panel wiring will determine which of the high, mid or low channels will be used for the high, low or full range signals.



USE THESE BUTTONS TO ACTIVATE OR DEACTIVATE TRI-AMP FREQUENCIES

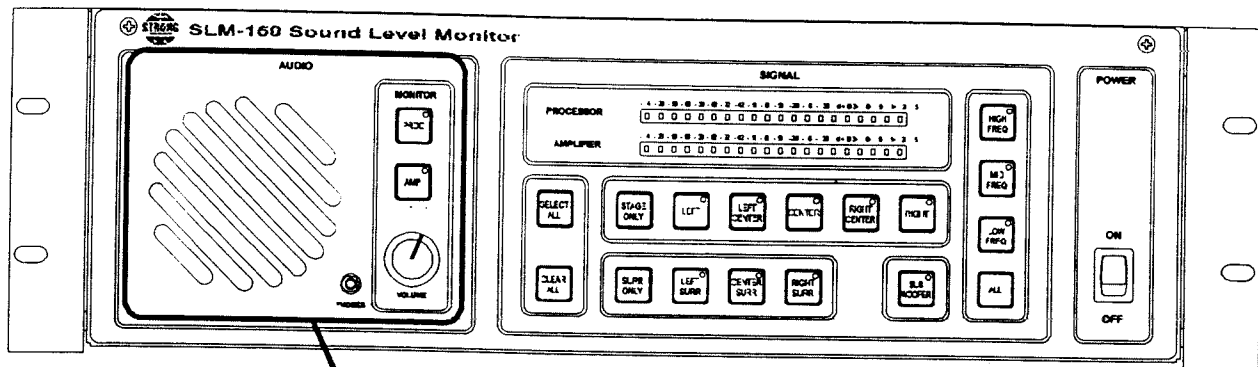
Like the channel select switches, these are alternate acting switches. Pressing the switch once will activate the selection and pressing it again will deactivate the selection.

Selecting high, mid or low frequencies enables the high, mid or low inputs for all processor and amplifier inputs. The activated high, mid or low frequencies are summed for each channel.

An 'all' switch is provided that will activate all frequencies with a single push.

## Audio

Although both the amplifier and processor inputs are displayed on meters simultaneously, the monitor speaker can only play one of the inputs. Processor and amplifier select switches are provided that allow the user to listen to the either the sum of the activated amplifier or processor channels.



USE THIS SECTION TO  
ADJUST THE AUDIO  
OUTPUT

These switches behave as toggle switches. When the processor switch is pressed, the processor switch will become selected and the amplifier switch will become non-selected. The processor audio will be monitored. Pressing the processor switch again will have no effect. Pressing the amplifier switch will make the amplifier switch selected and the amplifier audio will be monitored. The processor switch will be non-selected.

The front panel speaker is the standard audio output for the SLM-150. A 1/8" headphone jack is also provided on the front panel for stereo or mono headphones. When the headphone jack is used, the monitor speaker will continue to operate.

The audio level of the monitor is set using the volume control. The volume control affects all audio outputs including the speaker, headphone jack and external speaker if one is connected. Changing the volume level does not have any affect on the meter levels.

## SPECIFICATIONS

The SLM-150 mounts in a standard 19" rack using 5.25" (3-U rack units) of rack space and is only 2.5" deep.

Power is supplied by a 18vac 300mA wall pack power supply.

Processor Inputs:

Nominal Processor Input Level: 0.775vrms (balanced inputs)

Tri-amp Inputs: High, Mid, Low

Channels: Left, Left Ctr, Center, Right Ctr, Right, Left Surr, Right Surr, Left Rear, Right Rear, Sub Woofer. (left-rear and right rear summed to produce rear-surr)

Amplifier Inputs:

Amplifier Input Range: 100watt - 800watts (into 8 ohms) (balanced inputs)

Tri-amp Inputs: High, Mid, Low

Channels: Left, Left Ctr, Center, Right Ctr, Right, Left Surr, Right Surr, Left Rear, Right Rear, Sub Woofer. (left-rear and right rear summed to produce rear-surr)