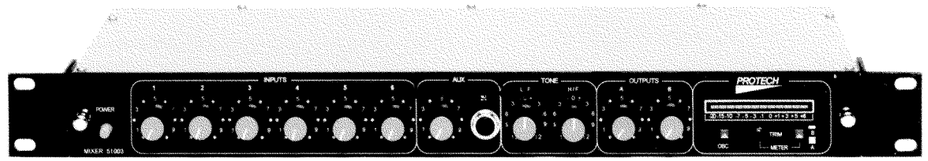
PROTECH®

1/06

INSTALLATION & OPERATION MANUAL
MODEL 51003
AUDIO MIXING SYSTEM

www.protechaudio.com



The Model 51003 Audio Mixing System is designed for smaller installations, that expect to expand in the near future. The 51003 incorporates most features that are required in a professional installation. The unit includes the following features;

Microphone and/or line level inputs, all transformer isolated.

Phantom power capability selectable for each input.

Selectable gain structures on each input (4 settings).

Low-cut filters, selectable on each input.

Priority setting for channel 1, with automatic override, or, hard wired to external switch for muting channels 2 thru AUX.

Adjustable mix level for each input, including AUX.

AUX input hardwired on rear terminal, with front panel jack to bypass rear input and allow access to mixing buss.

Mixing buss link capability, to allow additional inputs.

Effects send/receive link.

Bass & Treble Controls, with switch selectable defeat mode.

Limiter, with switch selectable defeat mode.

Two transformer isolated outputs, with switch selectable remote control of output two.

Metering of outputs A/B, with adjustable meter trim

Built-in oscillator to allow quick set-up

In addition to the many features already listed, the Model 51003 is designed to allow the entire PC assembly to unplug from the front of the chassis to facilitate quick changeovers. And the UL approved wall mount transformer helps the unit to provide superior specifications.

The architectural design of the Model 51003 is to allow the unit to serve as the heart of a small audio system, and still not become obsolete when the designer wishes to add additional equipment to the system. For instance, the defeat switches on both the tone controls, and the limiter, will allow future addition of an equalizer and/or compressor/ limiter. The defeat switches are activated, and the effects send is used to introduce these additional pieces of equipment into the system, without loosing the main mixing and distributing features of the Model 51003.

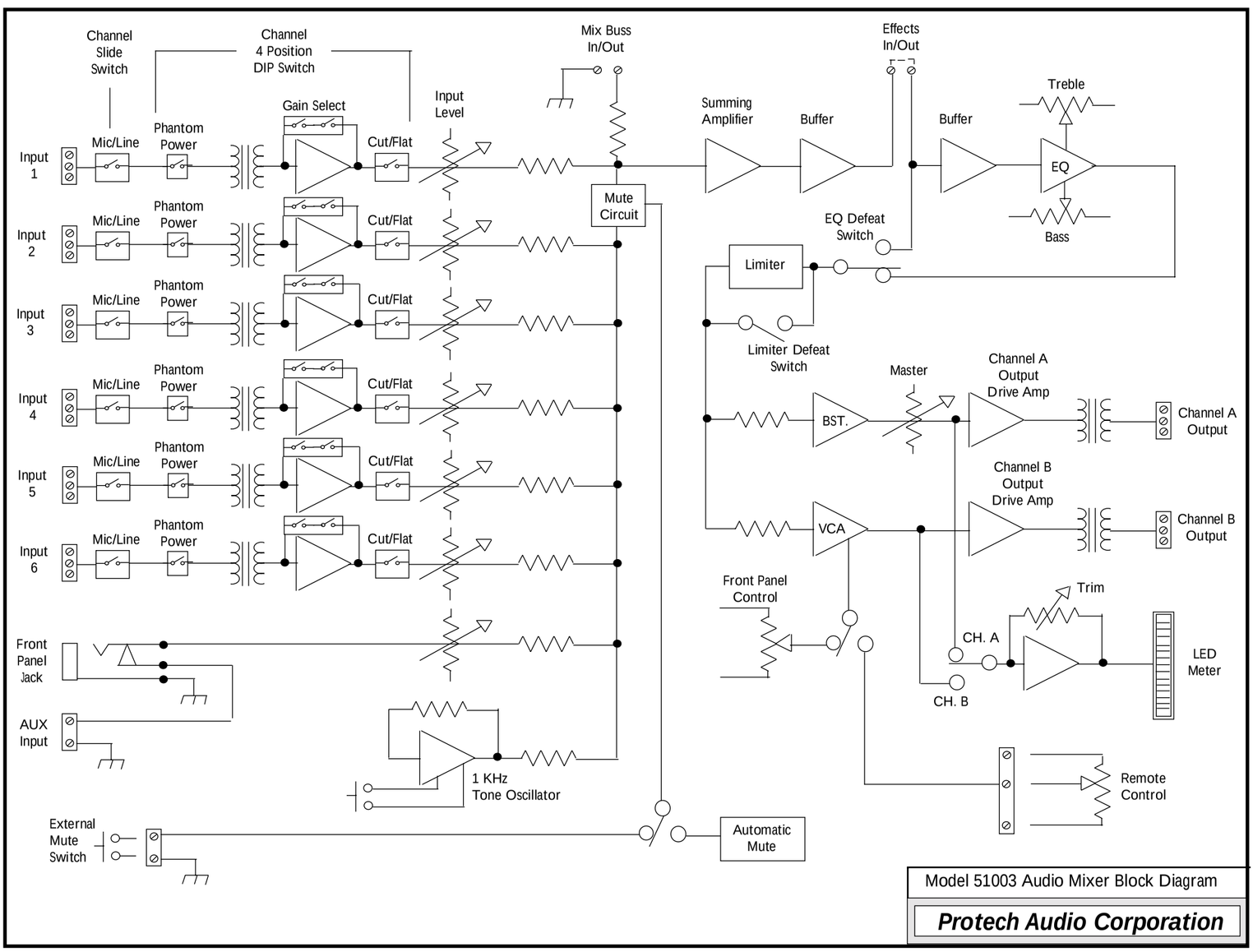
The input section has a large number of user definable features, in order to accomodate the variety of requirements that may come up in a small installation, such as a House-of-Worship. The electronics may be unplugged from the front, and re-configured in a matter of moments, to allow multiple uses of the sound system.

The built-in oscillator, and the LED bargraph metering of both outputs, helps make the realignment process, after changeover, as easy as possible. By making use of these features, the audio engineer can make precise and repeatable alignments in a matter of minutes.

This installation and operation manual is designed to help the user become acquainted with the many features of the Model 51003, and how best to make use of them. The Model 51003 Audio Mixing System is a perfect companion to other Protech Audio products, such as the Model 5117T Audio Distribution Amplifier, or the Model 65302B Ambient Sensing Level Control.

Protech Audio Corporation 192 Cedar River Road, Indian Lake, New York 12842 Voice 518-648-6410 Fax 518-648-6395

TABLE OF CONTENTS


Channel Slide Switch
Channel 4 Position DIP Switch
Mix Buss In/Out
Effects In/Out
Gain Select
Input Level
Summing Amplifier
Buffer
Buffer
Treble
EQ
Bass
Input 1
Input 2
Input 3
Input 4
Input 5
Input 6
Mic/Line
Phantom Power
Cut/Flat
Mute Circuit
EQ Defeat Switch
Limiter
Limiter Defeat Switch
Master
Channel A Output Drive Amp
BST.
Channel A Output
Channel B Output Drive Amp
VCA
Channel B Output
Front Panel Control
Trim
CH. A
CH. B
LED Meter
Front Panel Jack
AUX Input
1 KHz Tone Oscillator
Remote Control
External Mute Switch
Automatic Mute
Model 51003 Audio Mixer Block Diagram
Protech Audio Corporation

INPUT SECTION

The Model 51003 Audio Mixing System is designed to mount in a standard 19" wide EIA rack. Each unit requires 1.75" of vertical rack space. Care should be taken not to mount the unit next to power supplies, power amplifiers, or other equipment which generate strong AC fields. The steps for installing the unit are as follows;

INPUT SECTION CONFIGURATION

1- With unit firmly on workbench, loosen two thumbscrews located on each end of front panel, and slide PC assembly out of chassis.

2- Check that ground lift switch (#1) is in the on position.

3- Slide Mic/Line selector switches (#2) to the desired positions.

4- Slide DIP switch (#3) position A to on position for each input needing Phantom Power.

5- Slide DIP switch (#3) position D to off position for each input <u>not</u> needing LOW-CUT filter.

6- If required, slide DIP switch (#3) positions to off position for reduced gain on each channel (see chart on page 5).

7- If required, slide priority switch (#4) to IN position to activate automatic priority feature.

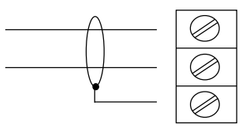
This concludes the configuration options for the input section. Refer to the output section on this page, for output configuration options.

After input and output section have been configured, proceed with installation of unit in rack.

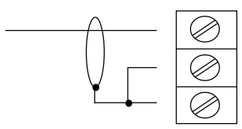
Slide PC assembly back into chassis until fully seated in mating connectors (front panel should be flush with mounting brackets).

Mount unit in rack, using four machine screws of sufficient tensile strength to support unit properly. Terminate all audio inputs and outputs, using double conductor shielded cable, as shown below and in output section.

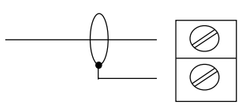
BALANCED INPUT CONNECTION



UNBALANCED INPUT CONNECTION



AUXILLARY INPUT CONNECTION



This concludes the connections for the input section. Refer to the output section on this page, for output connection information.

OUTPUT SECTION

The following configuration and installation steps should be done only after the input section has been configured. The steps are as follows;

OUTPUT SECTION CONFIGURATION

1 - With unit firmly on workbench, loosen the two thumbscrews on each end of front panel, and slide PC assembly out of chassis.

2 - If necessary, slide the LOC/RMT switch (#5) to RMT position to allow remote control of the Channel B output level.

3 - If necessary, slide the EQ switch (#6) to the OUT position to bypass the tone control section.

4 - If necessary, slide the LIM switch (#7) to the OUT position to bypass the limiter section.

5 - Turn OUTPUT control knobs (#8) fully counterclockwise.

6 - Check to confirm that the TONE switch (#9) is in the OFF position.

This concludes the configuration options for the output section. Refer to the input section for input configuration options.

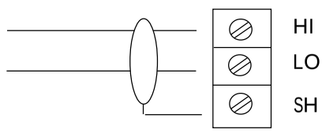
After input and output section have been configured, proceed with installation of unit in rack.

Slide PC assembly back into chassis until fully seated in mating connectors (front panel should be flush with mounting brackets).

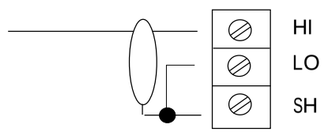
Mount unit in rack, using four machine screws of sufficient tensile strength to support unit properly.

Terminate all audio inputs and outputs, using double conductor shielded cable, as shown below, and in input section.

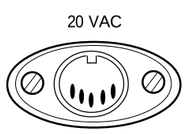
BALANCED OUTPUT CONNECTION



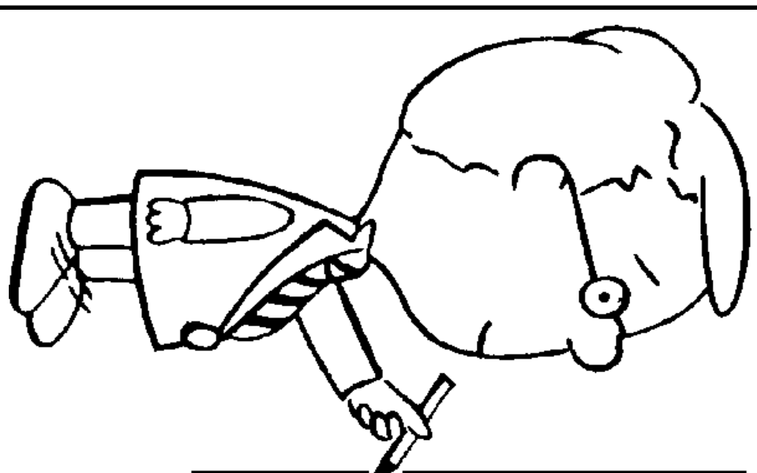
UNBALANCED OUTPUT CONNECTION



Plug wall mount transformer DIN connector into AC connector on rear of chassis. Plug wall mount transformer into AC receptacle.



This concludes the connections for the Model 51003.



51003 MIXER

HOW YOUR MIXER WAS CONFIGURED AND SHIPPED

SWITCH	POSITION
GROUND LIFT	ON
MIC. / LINE SWITCH	MIC
PRIORITY (INPUT #1)	OFF (MANUAL REMOTE)
EQ SWITCH	IN
COMPRESSOR	OUT
OUTPUT (B) RMT /LOC	LOCAL

4 POS. DIP SWITCH

A = PHANTOM POWER	OFF
B = GAIN 1	ON
C = GAIN 2	ON
D = BYPASS, L/F ROLL OFF	ON

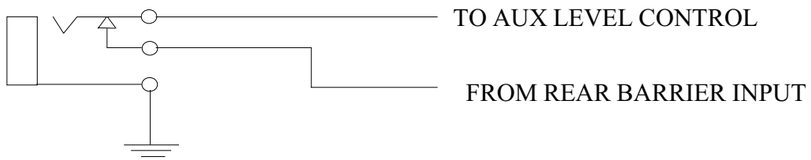
LED DISPLAY ..... 0 VU = 0dBv OUTPUT

SPECIAL FEATURE SECTION

FEATURE SETUP

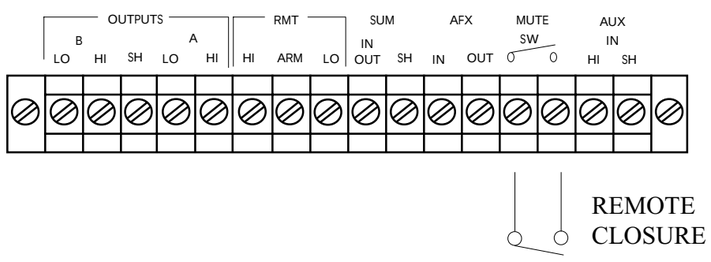
AUXILLARY INPUT

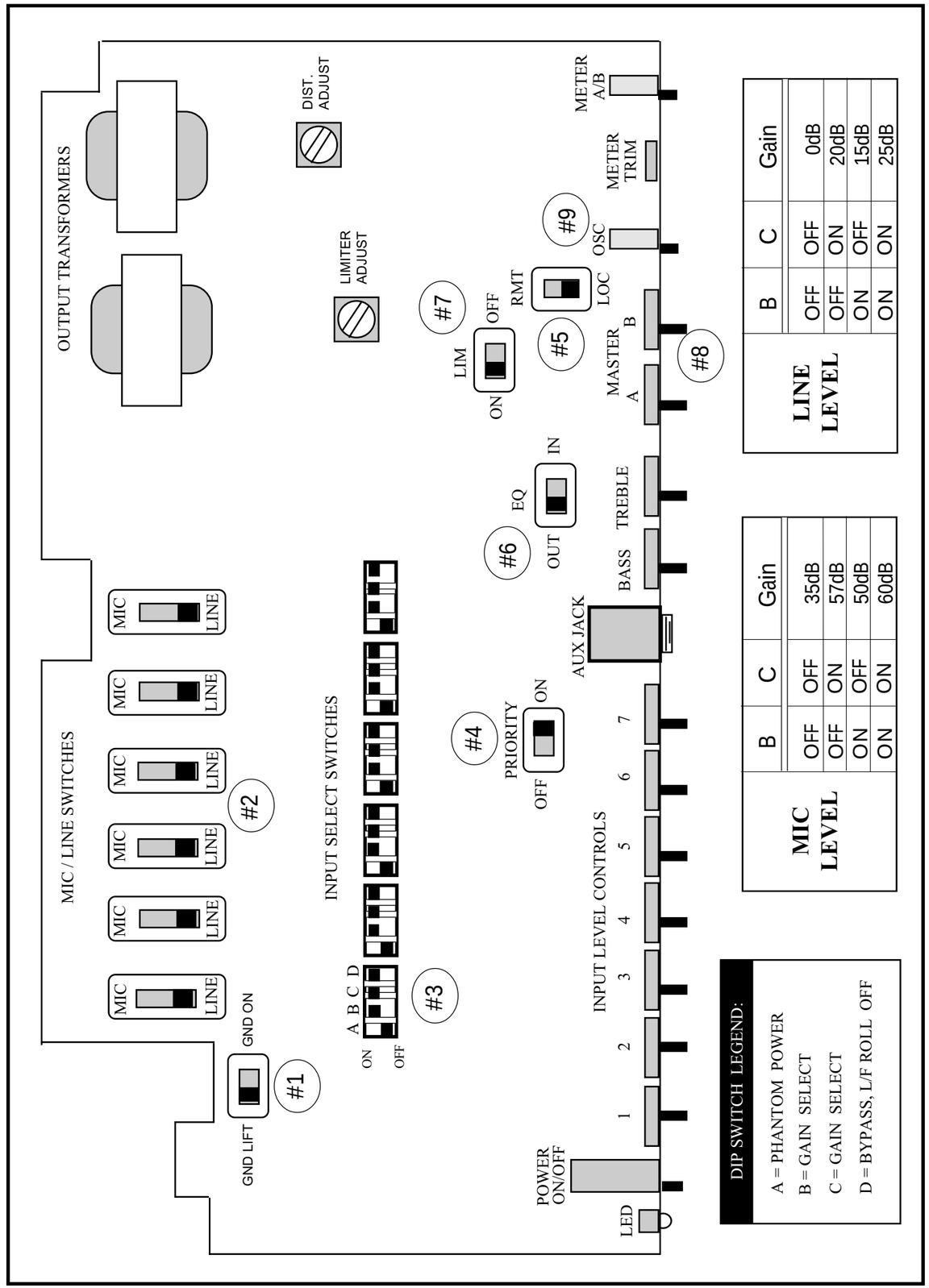
The auxillary input is wired thru the rear barrier terminal, and is normalled thru the front panel phone jack. Plugging a phone plug into the front panel jack disconnects the rear terminal auxillary input. It also allows audio on the phone plug to enter the mix buss thru the front panel AUX pot.
Wiring for the front panel jack is as follows;



PRIORITY INPUT ON CHANNEL 1

The priority feature on channel 1 disconnects all other inputs from the summing buss, with the exception of the summing buss link on the rear barrier. The priority feature may be used in one of two modes;
Automatic = any audio applied to the #1 input will automatically activate the priority feature,
Manual = a closure applied to the rear barrier terminal will activate the feature.
To use the automatic function, loosen the two thumbscrews and remove the electronic section from the chassis.
Slide thepriority switch (see pc layout drawing) to the ON position.
Slide electronic section back into chassis, making sure pc board is seated properly in mating connectors, and tighten thumbscrews.
To use the manual mode, apply a closure to the rear barrier terminal as shown below.





FEATURE SETUP

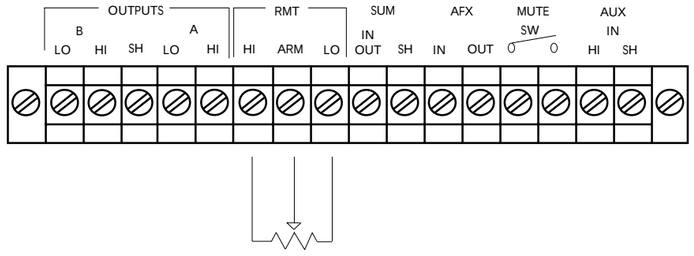
USING THE INTERNAL OSCILLATOR FOR SETUP.

Turn all input pots completely counterclockwise.
Turn both output pots completely counterclockwise.
Set meter select switch to output A.
Depress oscillator switch to turn on oscillator.
Slowly turn output A pot clockwise until a OdB reading is attained on the meter.
Set meter select switch to output B.
Slowly turn output B pot clockwise until a 0dB reading is attained on the meter.
Depress oscillator switch to turn off oscillator.

The output gain sections are now set for unity gain, and the input pots may be used to set individual input channel gain settings.

REMOTE CONTROL OF CHANNEL B OUTPUT LEVEL

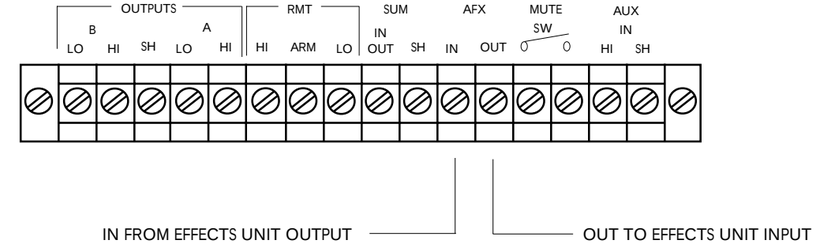
Loosen two thumbscrews on either side of front panel, and remove electronic assembly from front of chassis.
Slide LOC/RMT switch to RMT position (See PC Output Layout Drawing).
Slide electronic section back into chassis, making sure pc assembly is properly seated in mating connectors.
Tighten two thumbscrews.
Wire external pot (10K Ohms minimum) to rear barrier terminals as shown below.



FEATURE SETUP

EFFECTS IN/OUT

Remove jumper from barrier terminal.
Wire effects unit to barrier terminal as shown.



MIX BUSS IN/OUT

The summing buss link allows access to the summing buss thru a 10K resistor. This allows the link to function as either an input, or an output, when used with unbalanced line level signals.