


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
# Operation Manual

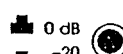
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S Y S T E M S


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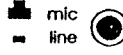
# INPUT CHANNEL CONTROLS

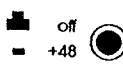
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(15)

(1) PEAK INDICATOR (+15dB). This Red LED indicates signal levels 3dB below clipping (+15dB) and should flash only on occasional peaks.

(2) SIGNAL PRESENT INDICATOR (-15dB). This Green LED indicates signals of normal level (above -15dB) are present in the channel.

(3) -20dB PAD. When depressed, this switch reduces the input signal by 20dB. Depress this switch when Mic or Line signal levels exceed normal operating range of the TRIM control.

(4) TRIM CONTROL. This control adjusts the input gain to compensate for different input signal levels. For best performance this control should be adjusted so that the PEAK INDICATOR (+15dB) flashes only on occasional peaks.

(5) MIC/LINE SWITCH. When released, this switch selects the MIC input as the signal source for the channel. When depressed, the LINE input becomes the signal source for the channel.

(6) +48 VOLT PHANTOM POWER. This switch, when depressed, applies +48 volts to the MIC input for Phantom Powering of condenser microphones or direct boxes. It is recessed to avoid accidental switching.

(7) EFFECTS SEND. This control adjusts the amount of signal being sent from the channel to the Effects mixing bus. The EFFECTS SEND signal is Post-Fader (see pg.7 for modification to Pre-EQ or Post-EQ/Pre-Fader).

(8) AUX SEND. This control adjusts the amount of signal being sent from the channel to the Aux mixing bus. The AUX SEND signal is Post-EQ/Pre-Fader (see pg.7 for modification to Pre-EQ or Post-Fader).

(9) MONITOR SEND. This control adjusts the amount of signal being sent from the channel to the Monitor mixing bus. The MONITOR SEND signal is Pre-EQ (see pg.7 for modification to Post-EQ/Pre-Fader or Post-Fader).

(10) HIGH EQ. +/-15dB @ 10kHz shelving type equalization.

(11) MID EQ. +/-15dB @ 2kHz peaking type equalization.

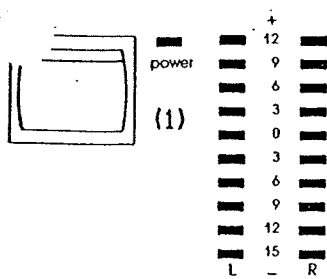
(12) LOW EQ. +/-15dB @ 80Hz shelving type equalization.

(13) PAN CONTROL. This control adjusts the balance of channel signal between the Left and Right Mains.

(14) SOLO SWITCH. This switch, when depressed, applies channel signal to the Solo bus for headphone monitoring purposes. The SOLO signal is Pre-Fader (see pg.7 for modification to Post-Fader).

(15) CHANNEL FADER. This 100mm slide control adjusts the level of the channel signal being sent to the Left and Right Mains.

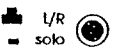
# MASTER SECTION CONTROLS



(1) **POWER SWITCH and INDICATOR.** When the Power Switch is turned on, the Green LED indicates power is applied to the mixer.



(2) **LEVEL METERS.** These 10-segment LED displays indicate signal levels at the Left and Right Main outputs. When  $\pm 12\text{dB}$  indicators flash, 6dB of headroom remains. These meters are peak reading. (0dB = .775 volts).



(3) **HEADPHONE LEVEL CONTROL.** This control adjusts the signal level at the HEADPHONE OUTPUT.



(4) **LEFT/RIGHT and SOLO SWITCH.** When released, this switch selects the Left and Right Mains as a stereo signal source for the headphones. When depressed, the channel Solo system becomes a mono signal source for the headphones.



(5) **HEADPHONE OUTPUT.** This output is for connection of 600 ohm stereo headphones. Connection of 8 ohm or mono headphones is not recommended.



(6) **EFFECTS MASTER.** This control adjusts the level of signal being sent from the Effects mixing bus to the EFFECTS SEND jack on the rear panel.



(7) **AUX MASTER.** This control adjusts the level of signal being sent from the Aux mixing bus to the AUX SEND jack on the rear panel.



(8) **MONITOR MASTER.** This control adjusts the level of signal being sent from the Monitor mixing bus to the MONITOR SEND jack on the rear panel.



(9) **MONITOR RETURN.** This control adjusts the level of signal being sent to the Monitor mixing bus from the RETURN jack on the rear panel. This control is after the MAIN RETURN control in the signal path and signal level here is dependent upon MAIN RETURN level adjustment as well.



(10) **MAIN RETURN.** This control adjusts the level of signal being sent to the Left and Right Mains from the RETURN jack on the rear panel.



(11) **RETURN PAN.** This control adjusts the balance of MAIN RETURN signal between the Left and Right Mains.



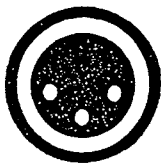
(12) **MONO.** This control adjusts the level of signal being sent to the MONO OUT jack on the rear panel. This signal is the sum of the Left and Right Mains. When operating in Mono, this becomes the Main Output, and the Left and Right Mains may be used as Submasters.



(13) **LEFT and RIGHT MAIN FADERS.** These 100mm slide controls adjust the level of Left and Right Main signal being sent to the MAIN LEFT OUT and MAIN RIGHT OUT jacks on the rear panel. The sum of these Left and Right Main signals is also sent to the MONO output.

## REAR PANEL CONNECTIONS

### CHANNEL SECTION



Mic



Line

(1) CHANNEL MIC INPUT. These 3-pin XLR jacks are for connection of Low Impedance microphones or direct boxes to each channel. They provide a balanced transformerless input wired to the DIN standard, with pin 2 being high (+), pin 3 being low (-), and pin 1 being shield.

(2) CHANNEL LINE INPUT. These 3-conductor 1/4" Phone jacks are for connection of the output from line level devices such as tape recorders, effects units, synthesizers, drum machines, wireless microphones, other mixers, etc. They are for use with either balanced or unbalanced signals, with Tip being high (+), Ring being low (-), and Sleeve being shield.

### MASTER SECTION



Return

(1) RETURN. This input jack is for connection of the output from Effects or other line level devices. The signal is applied directly to the MAIN RETURN level control.



Effects  
Send

(2) EFFECTS SEND. This output jack is for connection to the input of Effects or other line level devices. The signal is from the EFFECTS MASTER control.



Aux  
Send

(3) AUX SEND. This output jack is for connection to the input of Auxiliary line level devices. The signal is from the AUX MASTER control.



Monitor  
Send

(4) MONITOR SEND. This output jack is for connection to the input of Monitor systems or other line level devices. The signal is from the MONITOR MASTER control.



Mono  
Out

(5) MONO OUT. This output jack is for connection to the input of Main systems or other line level devices, if monaural operation is desired. The signal is from the MONO control.



Main  
Left Out

(6) MAIN LEFT OUT. This output jack is for connection to the Left input of Main systems or other line level devices, if stereo operation is desired. The signal is from the LEFT MAIN FADER control.



Main  
Right Out

(7) MAIN RIGHT OUT. This output jack is for connection to the Right input of Main systems or other line level devices, if stereo operation is desired. The signal is from the RIGHT MAIN FADER control.



Stack  
Left

(8) STACK LEFT. This input jack is for connection of the output from line level devices, such as effects units or other mixers. The signal is 'stacked' directly into the LEFT MAIN mixing bus.

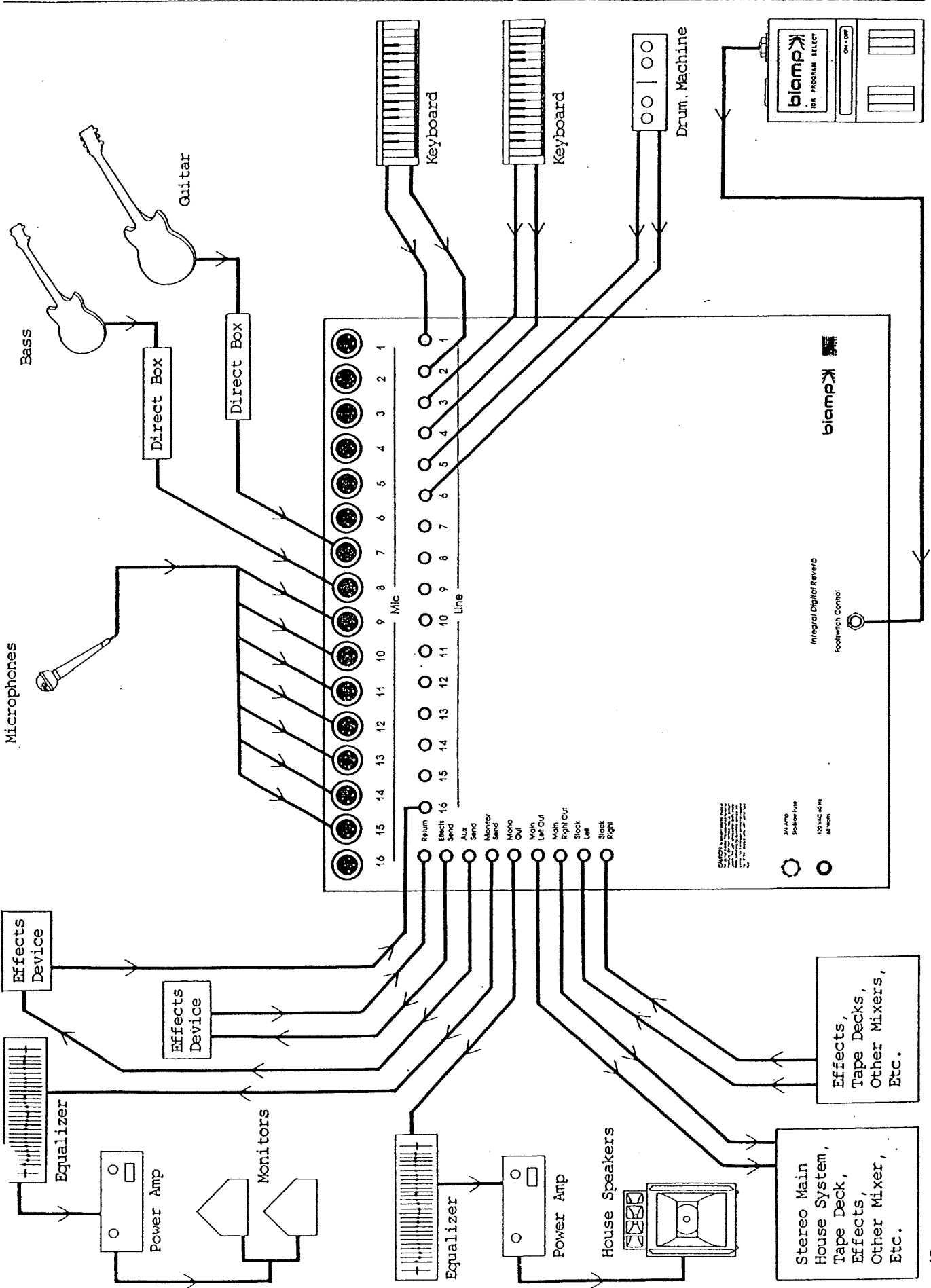


Stack  
Right

(9) STACK RIGHT. This input jack is for connection of the output from line level devices, such as effects units or other mixers. The signal is 'stacked' directly into the RIGHT MAIN mixing bus.

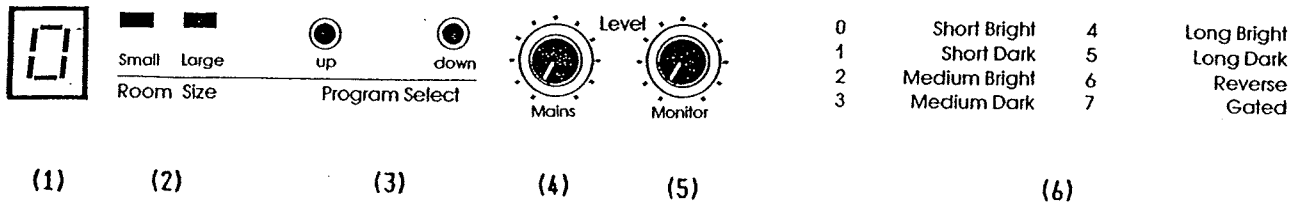
\* All MASTER section connectors are 2-conductor Tip/Sleeve 1/4" Phone jacks for use with unbalanced signals.

# INSTALLATION DIAGRAM



# INTEGRAL DIGITAL REVERB (Optional)

## FRONT PANEL



(1) **PROGRAM READOUT.** This 7-segment LED display indicates the reverb program selected. The readout will cycle through eight programs (0 thru 7) in both SMALL Room and LARGE Room settings, for a total of sixteen programs.

(2) **ROOM SIZE INDICATORS.** These LED indicators display which ROOM SIZE the reverb program is in. The ROOM SIZE will alternate, from SMALL to LARGE, each time the reverb programs have cycled (0 thru 7). ROOM SIZE is determined by a small amount of signal 'pre-delay' before the reverb. The length of this 'pre-delay' creates the perception of ROOM SIZE: 'pre-delay' short = SMALL ROOM; 'pre-delay' long = LARGE ROOM.

(3) **PROGRAM SELECT SWITCHES.** These momentary switches select the reverb program by cycling up or down through programs 0 thru 7, and SMALL and LARGE rooms. Programs may be selected in steps by depressing either switch momentarily, or programs may be cycled by holding either switch down until desired program is selected.

(4) **MAINS LEVEL CONTROL.** This control adjusts the amount of reverb being sent to the LEFT and RIGHT MAINS. The output from the reverb is a simulated stereo Left and Right, with this control affecting both outputs. The reverb input is signal derived from the channel EFFECTS SENDS and the EFFECTS MASTER control.

(5) **MONITOR LEVEL CONTROL.** This control adjusts the amount of reverb being sent to the MONITOR mixing bus. This reverb signal is a monaural sum of the Left and Right outputs of the reverb.

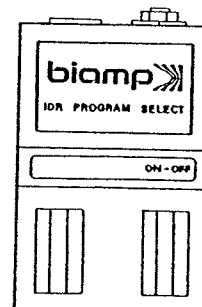
(6) **PROGRAM DESCRIPTIONS.** These are basic descriptions of the sound of reverb programs 0 thru 7. The first word of each description refers to the duration or 'decay-time' of the program. The second word refers to the high-frequency 'damping' (6dB/oct. @ 1.7kHz) that gives the reverb a 'bright' or 'dark' sound. The REVERSE and GATED programs are special effects. REVERSE has the reverb decay reversed and GATED has the reverb decay ending abruptly or 'gated'.

## REAR PANEL

### Footswitch Control



(1)



(2)

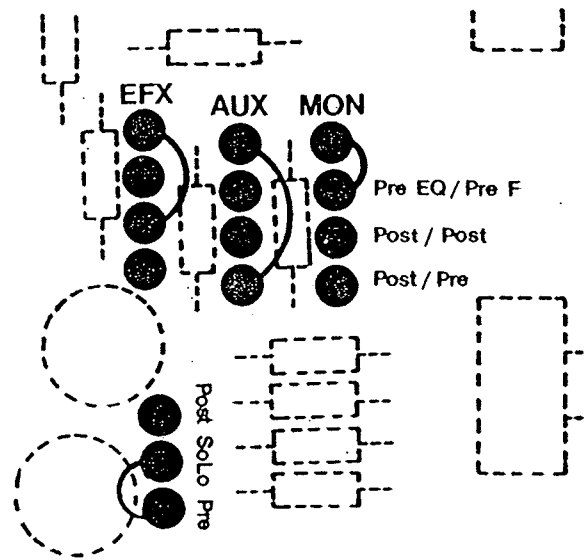
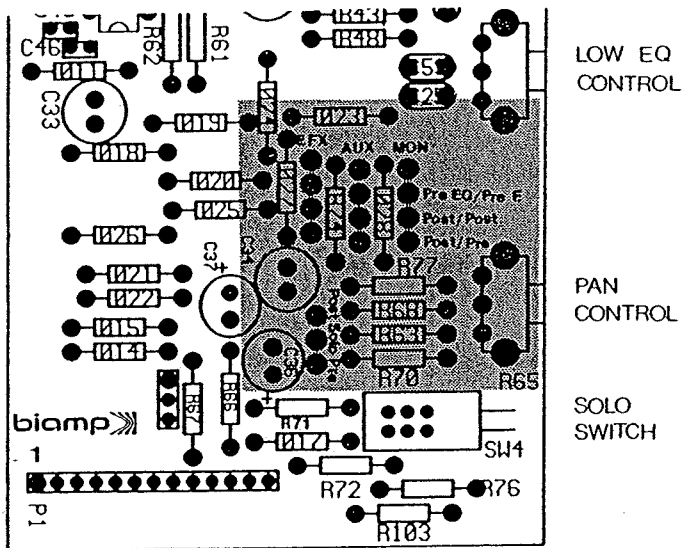
(1) **FOOTSWITCH CONTROL JACK.** This 1/4" Phone jack is for connection of the FOOTSWITCH CONTROL. This is a 3-conductor Tip/Ring/Sleeve connector with Tip being on-off, Ring being program select, and Sleeve being ground. Use only with the FOOTSWITCH CONTROL and standard 3-conductor cable supplied with the Integral Digital Reverb.

**FOOTSWITCH CONTROL.** This footswitch and 15 ft. cable are to be connected to the FOOTSWITCH CONTROL JACK for remote control of the Integral Digital Reverb. The switch on the left is a momentary program select switch and will function the same as the 'UP' PROGRAM SELECT switch on the mixer. The switch on the right is the reverb 'ON-OFF' switch.

# MODIFICATIONS

DIAGRAM (A)

DIAGRAM (B)

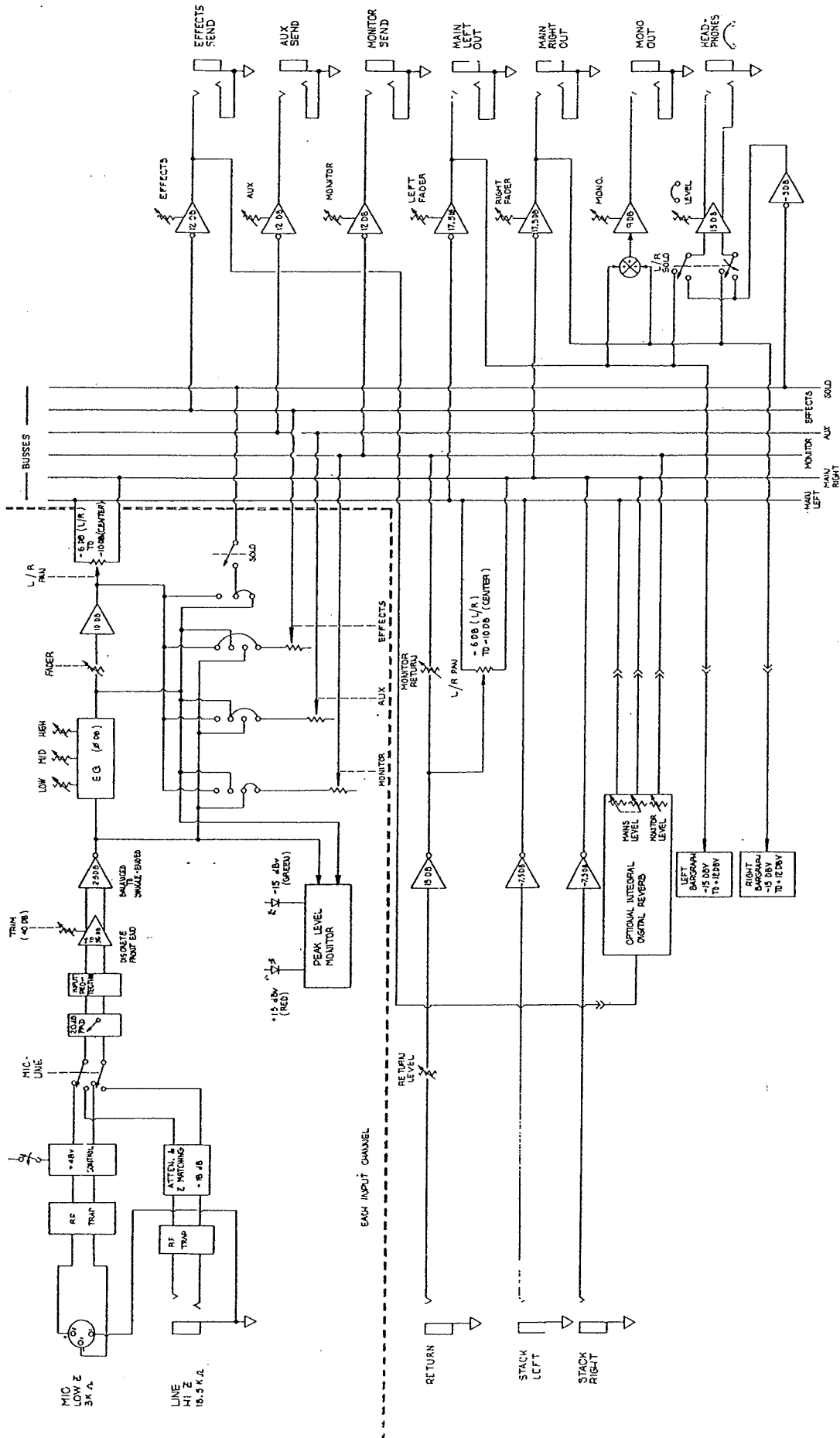


Modifications are to be performed by qualified service technicians only. Care must be taken not to damage circuitry inside the mixer, since such damage will not be covered under the warranty. Biamp Systems assumes no responsibility for injury or damage to persons or property resulting from such modifications or the installation thereof.

Diagram (A) is a component layout showing the lower portion of an Input Channel circuit board. The shaded area indicates the location of jumper wires used to perform modifications. Diagram (B) is an enlargement of this shaded area showing the actual jumper placement as it is wired from the factory. This diagram also indicates the possible jumper placements for the modifications listed on page 2. The possible modifications are as follows:

- (1) **EFFECTS SEND.** The EFFECTS SEND on each channel is factory wired post-fader, with the jumper connecting the 'EFX' and 'Post/Post' positions, as labelled on the circuit board. The EFFECTS SEND on each channel may be wired for either pre-EQ (jumper between 'EFX' and 'Pre EQ/Pre F.') or post-EQ/pre-fader (jumper between 'EFX' and 'Post/Pre'). Refer to Diagram (B).
- (2) **AUX SEND.** The AUX SEND on each channel is factory wired post-EQ/pre-fader, with the jumper connecting the 'AUX' and 'Post/Pre' positions, as labelled on the circuit board. The AUX SEND on each channel may be wired for either pre-EQ (jumper between 'AUX' and 'Pre EQ/Pre F.') or post-fader (jumper between 'AUX' and 'Post/Post'). Refer to Diagram (B).
- (3) **MONITOR SEND.** The MONITOR SEND on each channel is factory wired pre-EQ, with the jumper connecting the 'MON' and 'Pre EQ/Pre F.' positions, as labelled on the circuit board. The MONITOR SEND on each channel may be wired for either post-EQ/pre-fader (jumper between 'MON' and 'Post/Pre') or post-fader (jumper between 'MON' and 'Post/Post'). Refer to Diagram (B).
- (4) **SOLO.** The SOLO on each channel is factory wired pre-fader, with the jumper connecting the 'Solo' and 'Pre' positions, as labelled on the circuit board. The SOLO on each channel may be wired for post-fader (jumper between 'Solo' and 'Post'). Refer to Diagram (B).

# BLOCK DIAGRAM





## SPECIFICATIONS

FREQUENCY RESPONSE (20Hz-20kHz)  $\pm 0$ dB,  $-1.0$ dB  
(Mic Input / Main Out @  $+4$ dBm)

TOTAL HARMONIC DISTORTION (20Hz-20kHz)  $< .05\%$   
(Mic Input / Main Out @  $+4$ dBm)

INTERMODULATION DISTORTION (SMPTE)  $< .05\%$   
(Mic Input / Main Out @  $+4$ dBm)

SLEW RATE  $> 8$  volts/microsecond  
(Mic Input / Main Out)

COMMON MODE REJECTION RATIO (60Hz)  $> 60$ dB  
(Mic Input / Main Out)

EQUIVALENT INPUT NOISE (20Hz-20kHz)  $< -128$ dBm  
(150 ohm termination @ Mic Input)

CHANNEL EQUALIZATION  
High Frequency  $\pm 15$ dB @ 10kHz  
Mid Frequency  $\pm 15$ dB @ 2kHz  
Low Frequency  $\pm 15$ dB @ 80Hz

INPUT IMPEDANCE  
Mic Input 3k ohms  
Line Input 18.5k ohms  
Return  $> 8.5$ k ohms  
Left/Right Stacking 10k ohms

MAXIMUM INPUT LEVEL  
Mic Input  $+20$ dBv  
Line Input  $+25$ dBv

OUTPUT IMPEDANCE  
Left/Right/Mono Mains 50 ohms  
Effects/Aux/Monitor Sends 50 ohms

MAXIMUM OUTPUT LEVEL  
Left/Right/Mono Mains  $+18$ dBm (600 ohms)  
Monitor Send  $+18$ dBm (600 ohms)  
Effects/Aux Sends  $+18$ dBv (2k ohms)

MAXIMUM GAIN  
Mic Input to Left/Right Mains 80dB  
Mic Input to Mono Main 90dB  
Mic Input to Sends 65dB  
Line Input to Left/Right Mains 62dB  
Line Input to Mono Main 72dB  
Line Input to Sends 47dB

CROSSTALK (20Hz-20kHz)  
Channels  $< -75$ dB  
Left/Right Mains  $< -60$ dB  
Pan Isolation  $< -50$ dB

CONNECTORS  
Input XLR and 1/4" Phone  
Output 1/4" Phone

METERING  
Left/Right Mains 10-segment LED ladders

INDICATORS  
Power Green LED  
Signal Present Green LED (per channel)  
Peak Red LED (per channel)

WEIGHT 30 lbs.

DIMENSIONS  
Height (10 rack spaces) 17.5"  
Width 19.0"  
Depth 3.0"

POWER CONSUMPTION 60 Watts

POWER REQUIREMENTS 120/240 VAC @ 50/60Hz

PHANTOM POWER  $+48$  volts (switchable per channel)

## BIAMP ONE YEAR LIMITED WARRANTY

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BIAMP SYSTEMS IS PLEASED TO EXTEND THE FOLLOWING 1-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS OPERATORS GUIDE.

BIAMP Systems expressly warrants this product to be free from defects in materials and workmanship for a period of 1 YEAR from the date of purchase as a new product from an authorized BIAMP dealer under the following conditions.

1. The Purchaser is responsible for completing and mailing to BIAMP, within 10 days of purchase, the attached warranty application.
2. In the event the warranted BIAMP product requires service during the warranty period, BIAMP will repair or replace, at its option, defective materials, provided you have identified yourself as the original purchaser of the product to any authorized BIAMP Service Center. Transportation and insurance charges to and from an authorized Service Center or the BIAMP factory for warranted products or components thereof to obtain repairs shall be the responsibility of the Purchaser.
3. This warranty will be VOIDED if the serial number has been removed or defaced; or if the product has been subjected to accidental damage, abuse, rental usage, alterations, or attempted repair by any person not authorized by BIAMP to make repairs; or if the product has been installed contrary to BIAMP's instructions.
4. The normal wear and tear of appearance items such as paint, knobs, handles, and covers is not covered under this warranty.
5. BIAMP SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSON ARISING OUT OF USE OR PERFORMANCE OF THE PRODUCT, INCLUDING LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY IN TORT.
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7. No action or breach of this warranty may be commenced more than one year after the expiration of this warranty.

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