

LM3

LINE LEVEL MIXING MODULE

**OPERATING INSTRUCTIONS
and trouble-shooting guide**

LECTROSONICS, INC.
Rio Rancho, NM

INTRODUCTION

The LM3 Line Level Mixer Module is designed to provide system inputs for line level signals, such as tape recorders, video recorders, or tuners. Each of the three inputs accepts a wide range of line level signals. The inputs are capable of accepting any input from the -10dBm levels associated with consumer electronics to the +4dBm levels of professional audio gear.

Each input has separate gain controls to distribute the input signal to the Aux and the Main bus. These controls are non-interactive and allow precise control over the amount of each input that is introduced into the system. The inputs are unbalanced, using 1/4" phone jacks as input connectors.

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GENERAL TECHNICAL DESCRIPTION

The LM3 provides for three unbalanced, mono or stereo inputs to be mixed into either one or both the Main and Aux outputs. Each stereo signal is summed to mono and then passed through the Main Output and Aux Output level controls. Each input can provide up to 15dB gain, to boost weak signals to acceptable levels.

The amount of the mono signals that is sent to the Main and Aux buses is controlled by the setting of the Main Output or Aux Output level controls, respectively. Only audio quality operational amplifiers are used in the signal path to maintain highest signal integrity.

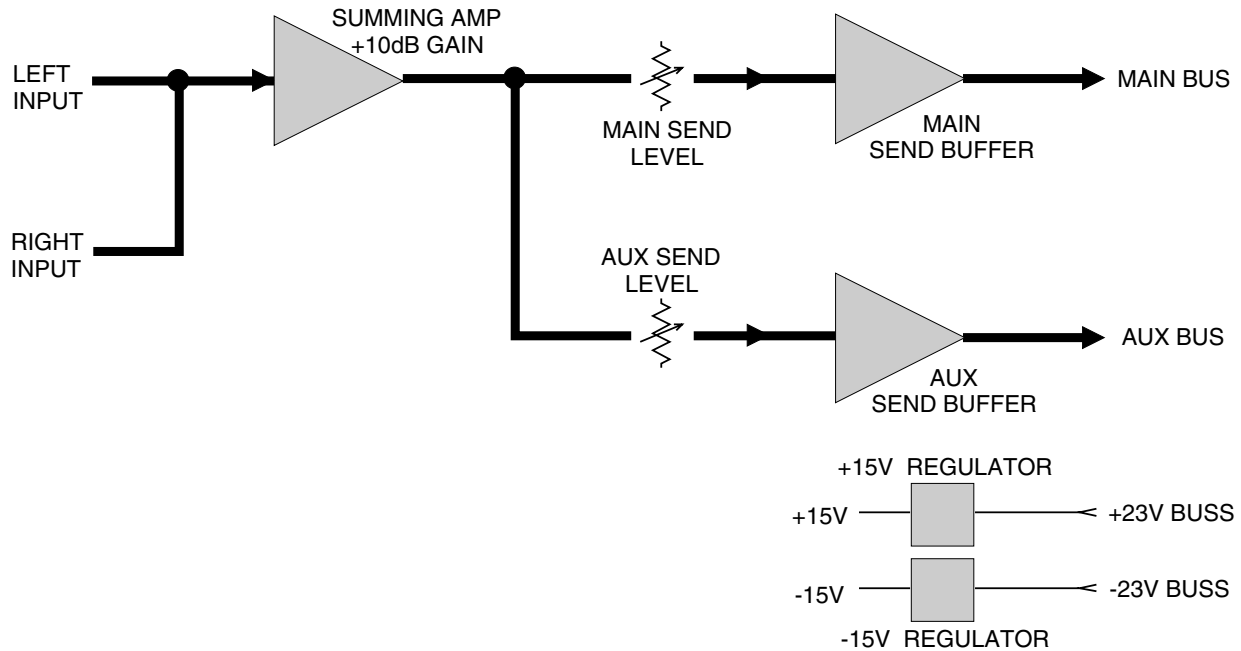


Figure 1 - LM3 Block Diagram

INSTALLATION

The LM3 module is installed from the rear of the Modular Audio Processor mainframe. The printed circuit board can fit into any of the ten slots provided for Modular Audio Processor modules. Once the module is fit into the card guides for the slot, it may be slid forward in the mainframe until the female edge connector seats firmly onto the male pins of the main bus board.

Care should be taken when inserting the edge connector onto the pins to be sure there is correct alignment.

Two #2 machine screws with captive washers are provided to secure the rear panel of the LM3 to the top and bottom rear rails of the Modular Audio Processor mainframe. Two #2 flat head screws are provided to secure the front panel of the LM3 to the front panel of the Modular Audio Processor mainframe. Once these four screws are in place, the installation of this module is complete.

FRONT PANEL DESCRIPTION

MAIN OUTPUT LEVEL - Controls the amount of input signal from that input that is applied to the Main bus

AUX OUTPUT LEVEL - Controls the amount of signal from that input that is applied to the Aux bus.

There are three sets of these input controls on the front panel.

REAR PANEL DESCRIPTION

INPUT LEFT/RIGHT - Accepts mono or stereo inputs from any source. The tip of the 1/4" phone jack is the signal conductor, while the sleeve is ground.

OPERATING INSTRUCTIONS

Operation of the LM3 is quite straightforward. Either mono or stereo input signals can be used as a source for the LM3. If the source is stereo, both the left and right input jacks should be used. If the source is mono, either the left or the right input jack may be used. If the source is balanced, pin 2 (the "+" pin) of the balanced source should be connected to the tip of the 1/4" input jack, and pin 1 (the "gnd" pin) should be connected to the sleeve of the input jack. Note that for some balanced signals to be used unbalanced, pin 3 (the "-" pin) must be connected to pin 1. Check the operation manual of the signal source for this information.

After the signal sources have been connected to the LM3, adjust the Main and Aux Output level controls until an acceptable signal level is reached.

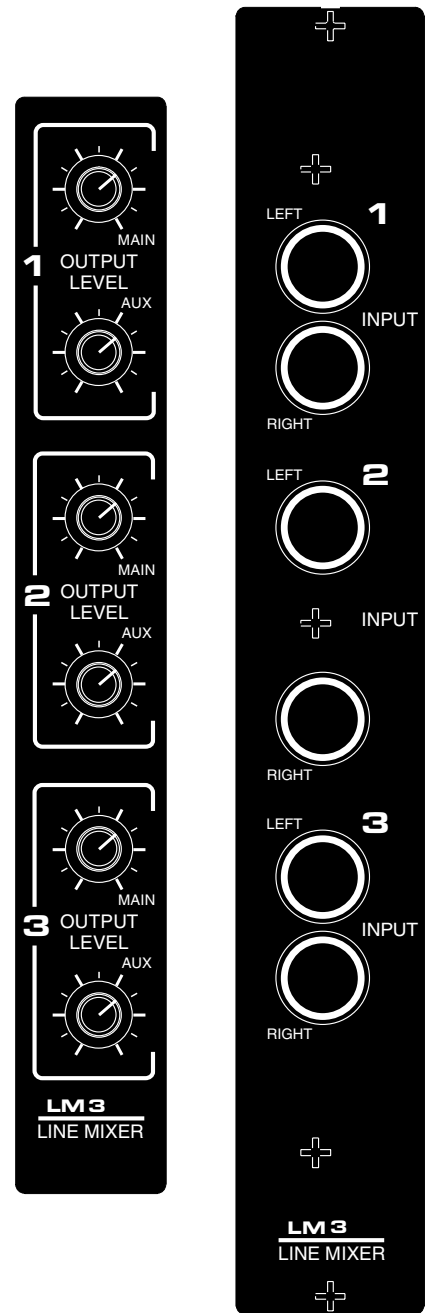


Figure 2 - LM3 front and rear panels

SERVICE AND REPAIR

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check out the inter-connecting cords and then go through the TROUBLE SHOOTING section in the manual

We strongly recommend that you **do not** try to repair the equipment yourself and **do not** have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. **There are no adjustments inside that will make a malfunctioning unit start working.**

LECTROSONICS service department is equipped and staffed to quickly repair your equipment. In-warranty repairs are made at no charge in accordance with the terms of the warranty. Out of warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out of warranty repairs.

RETURNING UNITS FOR REPAIR

You will save yourself time and trouble if you will follow the steps below:

- A. DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 am to 4 pm (Mountain Standard Time).
- B. After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the outside of the shipping container.
- C. Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.
- D. We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

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SPECIFICATIONS

Maximum Gain:	15dB
THD @ +4dBv, 20-20KHz:	Less than .05%
IMD @ +4dBv, 60/7KHz:	Less than .05%
Noise at Unity Gain:	
20-20Khz	Less than -80dBv
Maximum Input Level:	+20dBv
Input Impedance:	10K ohms
Input Type:	Unbalanced 1/4" phone jack Tip is "+", Sleeve is "gnd"

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, we will, at our option, repair or replace any defective parts without charge for either parts or labor. If we cannot correct the defect in your equipment, we will replace it at no charge with a similar new item. We will pay for the cost of returning your merchandise to you.

This warranty applies only to items returned to us, shipping costs prepaid, within one year from the date of purchase.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

LECTROSONICS, INC.

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