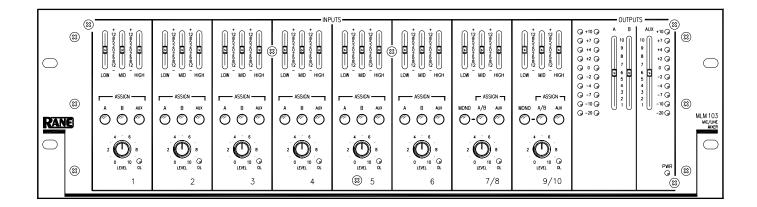


MIC/LINE MIXER



### **General Description**

The Rane MLM 103 Mic/Line mixer features six balanced, studio-grade microphone inputs and two balanced, stereo line-level inputs. The microphone preamplifiers feature direct outputs. These can monitor the signal 'pre' or 'post' the mix Level control via rear panel switches. Each microphone and *stereo* line input features three-band EQ and mix level controls. Input overload indicators are peak detecting and illuminate 4 dB before clipping. Three balanced outputs are provided. A and B outputs may be used as a stereo pair in a single zone or as two independent mono zones. The AUX output is mono. All connections are via Euroblock connectors.

Inputs 1 through 6 may be individually switched between Mic or Line level via rear panel switches. Inputs operate in Mic mode with a gain range of +15.5 dB to 60 dB. Each *pair* of inputs may operate with or without 12 volt phantom power via rear panel switches. When Inputs are operated in Line

mode, the gain range is 0 to 12 dB. When Line mode is selected, phantom power is defeated. Each input may be assigned to the A, B or AUX output.

Stereo Line Inputs 7 through 10 accommodate +24 dBu signal levels. The gain range is  $-\infty$  to +12 dB. The A/B assign switch for inputs 7/8 assigns 7 to output A *and* 8 to output B. The A/B assign switch for inputs 9/10 assigns 9 to output A *and* 10 to output B. The mono switch sends the *sum* of inputs 7 and 8 (or 9 and 10) to bus A *and* bus B. Assigning 7/8 or 9/10 to AUX sends the *sum* of input 7 and 8 (or 9 and 10) to the AUX output.

The A, B and AUX outputs feature independent level controls and 10 segment meters with peak hold. Each balanced output provides an additional 6 dB of gain and delivers a minimum signal level of +24 dBu into a 10k ohm load.

The MLM 103 features an *internal* high efficiency, universal voltage power supply.

#### **Features**

### Six Studio-grade Mic Preamplifiers

- Mic or Line-level Operation
- +12 volt Phantom Power
- Continuously Variable Gain Trim
- Direct Outputs (pre- or post- mix level)
- A/B/AUX Assign Switches
- Input Overload Indicator

## Two Balanced Stereo Line-level Inputs

- Mono Switch
- A/B/AUX Assign Switch
- Input Overload Indicator

### A/B/AUX Balanced Outputs

- Independent Level Control
- 10-Segment Meter with Peak Hold
- 85-260 VAC Universal Power Supply

## MIC/LINE MIXER



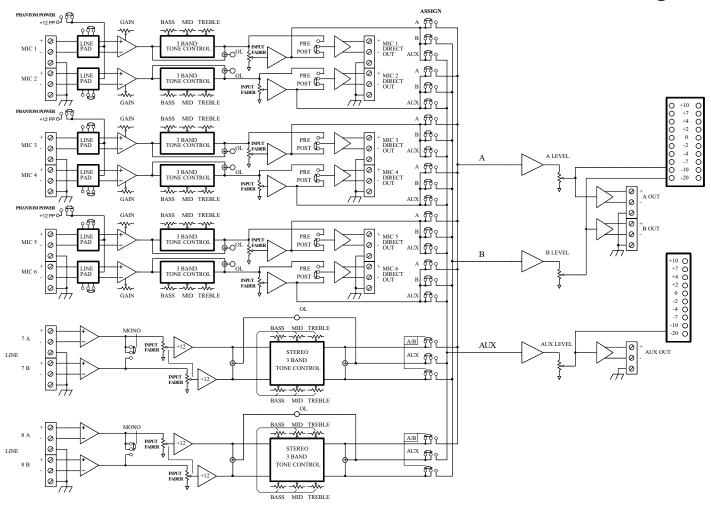
# **Features and Specifications**

Parameter	Specification	Limit	Units	Conditions/Comments
Mic Inputs: Type	Active balanced			
Connectors	Euroblock			
Input Impedance Mic Mode	1.49 k	1%	ohms	745 ohms each leg, 1 kHz
Input Impedance Line Mode	8 k	1%	ohms	4 k ohms each leg, 1 kHz
Gain Range Mic Mode	15.5 to 60	2	dB	Min/max, 1 kHz
Max Input Mic Mode	+4.5 / -40		dBu	Min/max gain, 1 kHz
Gain Range Line Mode	-0.7 / +12	1	dB	Min/max, 1 kHz
Max Input Line Mode	+20.7 / +8		dBu	Min/max gain, 1 kHz
Frequency Response	10 Hz-50 kHz	+.5,-3	dB	Mic gain=60 dB
1 , 1	30 Hz-50 kHz	+.5,-3	dB	Mic gain=15.5 dB
Equivalent Input Noise	-128	max	dBu	Mic gain 60 dB, Rs=150 ohms, 20Hz-20kHz
Common Mode Rejection	60	min	dB	1 kHz, Rs=150 ohms
THD+N	0.01	typ	%	Mic gain=40 dB, +4 dBu, 20 Hz-20 kHz
Phantom Power	12	5%	VDC	Disabled in Line mode
Stereo Line Inputs: Type	Active balanced			
Connectors	Euroblock			
Input Impedance	10 k	1%	ohms	Each leg, common mode or differential
Gain Range	-infinity to +12	typ.	dB	1 kHz
Maximum Input	+24 / +12	J.	dBu	Min/max gain, 1 kHz
Frequency Response	10 Hz-50 kHz	+.5/-3	dB	Tring man gam, 1 km2
Common Mode Rejection	40	min	dB	1 kHz, Rs=150 ohms
THD+N	0.005	typ	%	20 Hz-20 kHz, +4 dBu, Load=10 k ohms
Tone Controls: Type	Baxandall	ligh	70	2 stage, bass and treble shelving
Boost/Cut Range	±12	tvn	dB	All filters
Low	±6	typ	dB	Boost/cut at 300 Hz
Mid	±6	typ	dB	Boost/cut at 300 Hz & 3.3 kHz, center 1 kHz
High	±6	typ typ	dB	Boost/cut at 3.3 kHz
Outputs: Type	Active balanced	ligh	uD	Boosteut at 3.5 KHZ
Connector	Euroblock			
Output Impedance	200	1%	ohms	100 ohms each leg, 1 kHz
Maximum Output	+24	min	dBu	Load=10 k ohms, 1 kHz
Noise Floor	-100	typ	dB	No inputs assigned
INOISE I IOOI	-89		dB	Any line-level input assigned, output levels at
	-09	typ	uD	max, 20 Hz to 20 kHz, re +4 dBu
Crosstalk	-80	max	dB	Any input to any output @ 1 kHz
Control Feed-through	-80	max	dB	All front panel assign and level controls
Meters: Type	Average dBu	111421	Lub Lub	This from puner assign and rever controls
Range	-20 to +10		dBu	
Number of Segments	10		u.b.u	
Peak Hold	1 sec			
Power Supply Requirement				85 to 260 VAC, 50/60 Hz, .24 amp
Unit: Agency Listing				UL/CSA/CE pending
Unit: Construction	All Steel			Pending
Size	5.25"H x 19"W x 5.3"D (	31D		13.3 cm x 48.3 cm x 13.5 cm
Weight	TBD	]		TBD
Shipping: Size	11" x 23" x 16"			27.9 cm x 58.4 cm x 40.6 cm
Weight	TBD			TBD
	120			
Note: 0 dBu=0.775 Vrms				

Data Sheet-2



## **Block Diagram**

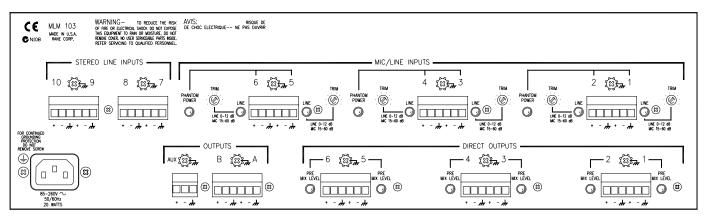


### **Applications**

Applications include, but are not limited too, hotels, churches, conference rooms, schools and rental sound systems. The direct outputs may be used with the Rane SRM 66 Splitter/Router/Mixer for applications requiring room combining and/or flexible zone distribution. The studio-grade specifications of the MLM 103 allow many other applications such as sub-mixing, recording and post-production.



### **Rear Panel**



### **Architectural Specifications**

The Mixer shall be a high performance Mic/Line Mixer featuring six balanced, studio-grade microphone inputs and two balanced, stereo line-level inputs. The microphone preamplifiers shall feature direct outputs able to monitor the signal pre- or post- the mix Level control. Each microphone and *stereo* line input shall feature three-band EQ and mix level controls. Peak detecting input overload indicators shall be provided. The Mixer shall have A, B and AUX outputs with independent level controls and 10 segment level meters with peak hold. Each balanced output shall provide an additional 6 dB of gain and deliver a minimum signal level of +24 dBu into a 10k ohm load. All connections shall be via Euroblock connectors.

Microphone inputs shall operate in Mic mode with a gain range of +15.5 dB to 60 dB. Each *pair* of microphone inputs

may operate with or without 12 volt phantom power. Each microphone input shall be capable of line-level operate with a gain range of 0 to 12 dB. If Line mode is selected, phantom power is defeated. Each microphone input may be assigned to the A, B or AUX output bus.

Stereo Line inputs shall accommodate +24 dBu signal levels with a gain range is -: to +12 dB. Each stereo line input shall feature a mono switch, A-B and AUX assign switch.

The Mixer shall feature a high efficiency, universal voltage power supply capable of operating from 85 to 260 VAC, 50-60 Hz. The unit shall feature an IEC socket and line cord. The unit shall meet UL/CSA and CE safety requirements. The unit shall be constructed of cold-rolled steel and mount into a standard 19" 3U EIA rack.

The unit shall be a Rane MLM 103 Mic/Line Mixer.

#### **Available Accessories**

- MLM 103 EQ/Assign security cover
- SC 3.5 Double Space Security Cover