

## General Description

The DMS 22 is a dual channel studio-grade microphone stage with equalization and a stereo mixer. Perfect for studio recording in direct-to-tape or hard disk applications, the audio quality surpasses that found in most professional mixing consoles. The DMS 22 is useful in installations when comprehensive mic equalization is required.

Each microphone XLR Input features switchable 48V Phantom Power, Polarity Invert switch, and Input Gain control. A balanced, line-level 1/4" TRS Output with Output Level control is provided for each Channel. Pan controls (defeatable) send to a separate XLR stereo pair of Mix Outputs, allowing a stereo mix of the two

microphones when hard left/right is not appropriate.

A 3-band Equalizer on each Channel offers a broad palette of tonal control (activated with the EQ Engage switch). Accelerated-Slope™ (U.S. Patent 5,046,105) tone controls provide steep phase-corrected slopes that eliminate most of the traditional interaction between shelving and midband controls. Shelving frequencies are switch selectable for High (7 kHz and 12 kHz) and Low (50 Hz and 100 Hz) controls. A parametric Mid provides sweepable frequency and selectable bandwidth.

Each Output features a selectable 15/50/100 Hz Low Frequency Filter to remove mic bumps and rumble that might otherwise overload a good recording.

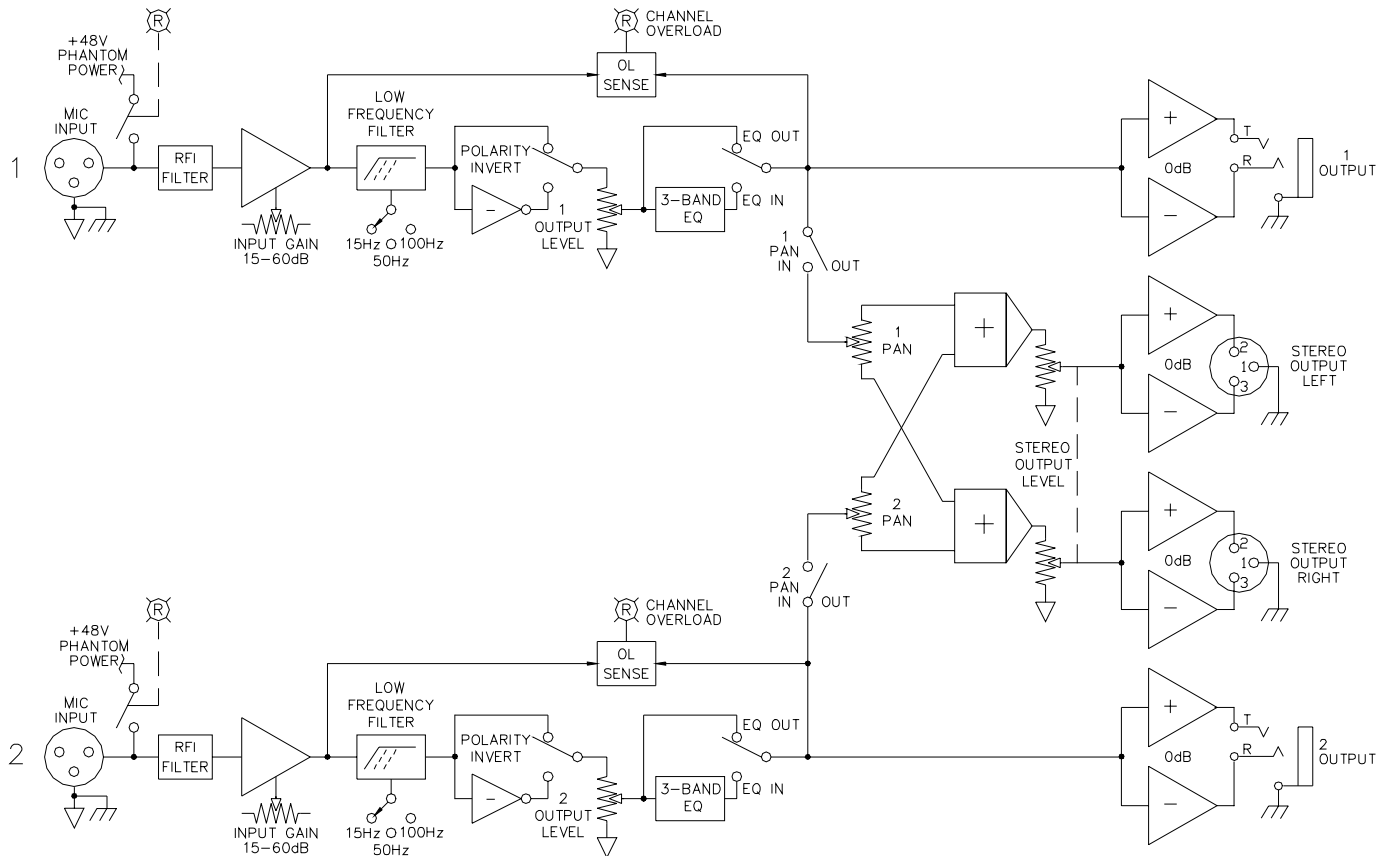
## Features

- Dual Mono/Stereo Mic Stage
- +48V Phantom Power
- Polarity Switches
- Gain and Output Controls
- Stereo Outputs with Separate Pan and Level Controls
- Accelerated-Slope™ Low & High EQ
- Parametric Midrange EQ
- Selectable 15/50/100 Hz Low Filter
- Balanced Output Line Drivers
- UL/CSA/CE and 100/120/230 VAC Remote Power Supplies

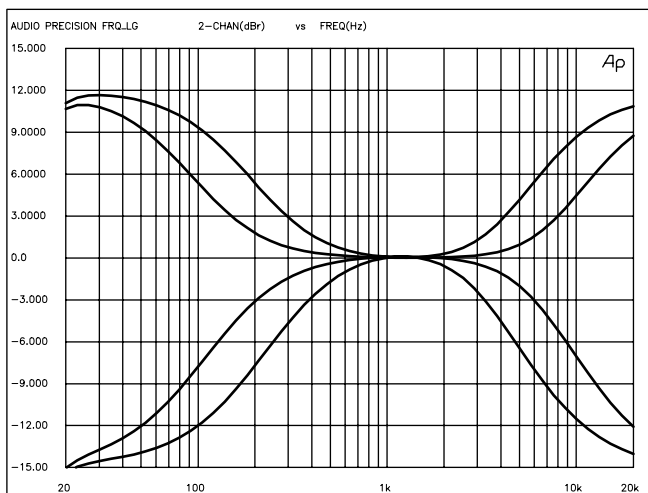
## Features and Specifications

Parameter	Specification	Limit	Units	Conditions/Comments
Mic Input: Impedance	1k	1%	ohms	Balanced 500 + 500
.....Gain Range	+15 to +60	2	dB	
.....Phantom Power	+48	4%	VDC	DIN 45596 & IEC 268-15
.....Equivalent Input Noise	-130	2	dBu	20 kHz BW, 60 dB gain, 150 ohm source
.....Max Input Level	6	1	dBu	Min gain
.....Connectors	XLR			
EQ Section: Bands	3			Accelerated Slope™ design
.....Boost/Cut Range	+12/-15	1	dB	
.....Low Frequencies	50/100 (midpoints)	5%	Hz	See graph next page
.....Hi Frequencies	7k/12k (midpoints)	5%	Hz	See graph next page
.....Mid Frequency Sweep	95 to 4k	10%	Hz	
.....Mid Bandwidth Range	0.33 / 1.0 / 2.0	5%	oct	3-position switch
Low Frequency Filters	15/50/100	5%	Hz	15 dB/octave, Butterworth
RFI Input Filters	Yes			
Frequency Response	20-20 kHz	+0/-5	dB	
Output: Design	Active balanced			
.....Impedance	100	1	ohms	Each leg to ground
.....Connectors	XLR and ¼" TRS			Pin 2, tip positive
THD+Noise	0.009	0.002	%	+4 dBu, 20-20 kHz min gain
	0.02	0.01	%	+4 dBu, 20-20 kHz max gain
IM Distortion	0.03	0.01	%	+4 dBu
Signal to Noise Ratio	97 (re +4 dBu)	1	dB	+15 dB gain, 20 kHz BW
	-130 dBu	1	dB	+60 dB gain, 20 kHz BW
Overload LED Threshold	16	1	dB	All critical nodes monitored
Unit: Agency Listing				
.....120 VAC model	Class 2 Equipment UL & CSA			National Electrical Code Exempt Class 2 equipment
.....230 VAC model	CE-EMC CE-Safety			EMC directive 89/336/EEC Exempt per Art. 1, LVD 73/23/EEC
Power Supply: Agency Listing				Class 2 Equipment
.....120 VAC model	UL CSA			File no. E88261
.....230 VAC model	CE-EMC CE-Safety			File no. LR58948 EMC directive 89/336/EEC LV directive 73/23/EEC
.....100 VAC model	Built to JIS			Japan only
Power Supply Requirement	18 VAC w/center tap	0.1	Vrms	
Maximum Current	750		mA	RMS current from remote supply
Unit				
.....Construction	All Steel			19" 1U rack mount
Unit: Size	1.75" H x 19" W x 8.5" D			(4.4 cm x 48.3 cm x 21.6 cm)
.....Weight	7 lb (w/o power supply)			(3 kg)
Shipping: Size	4.25" x 20.3" x 13.75"			(11 cm x 52 cm x 35 cm)
.....Weight	11 lb			(5 kg)
<i>Note: 0 dBu = 0.775 Vrms</i>				

### Block Diagram

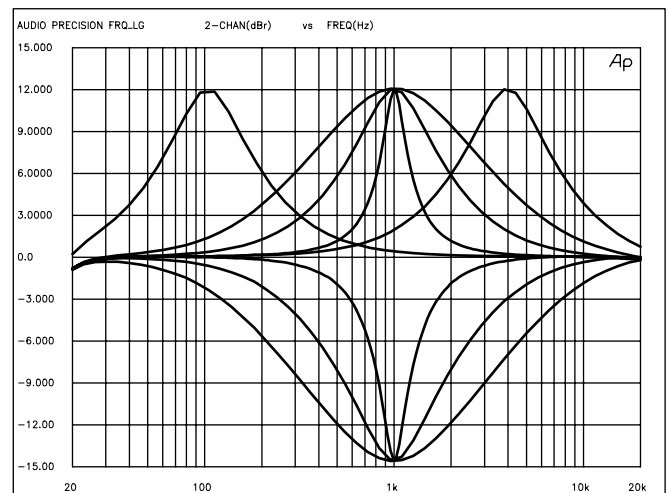


### Accelerated Slope™ High and Low Shelving Filters



Response Graph with 50 Hz and 100 Hz Low Shelving; also 7 kHz and 12 kHz High Shelving; Both full +12 dB boost to -15 dB cut.

### Parametric Midrange Bandwidth and Frequency Ranges

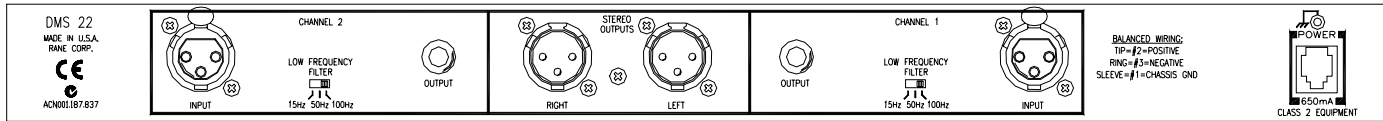


Response Graph of Parametric Midrange Control:

Frequency Range of 95 Hz to 4 kHz

+12 dB Boost to -15 dB Cut

Bandwidth Switchable 0.3, 1, or 2 Octaves

**Rear Panel****Application Information**

The DMS 22 goes beyond the concept of a dual mic preamp in two ways—the built-in Mixer section, and the comprehensive Equalizer circuitry. First, it has a built-in mixer for the two Channels, often eliminating the need for an external one when recording direct-to-tape or disk. Direct preamp Outputs and Stereo Mixer Outputs are available simultaneously, feeding the sound system, recorder, or effects with independent control.

The 3-band Equalizer section follows in Rane’s tradition of innovation. The Hi and Low shelving controls with switchable frequencies utilize Rane’s exclusive patented Accelerated Slope™ circuitry. This shelving design offers steep phase-corrected slopes, eliminating most of the traditional midrange interaction between low and high tone controls. Combined with the parametric Midrange control with selectable bandwidth, the Equalizer section satisfies the most demanding professionals. See the graphs on the previous page.

**Architectural Specifications**

The dual microphone stage unit shall be constructed entirely from cold-rolled steel, and mount into a standard EIA relay rack occupying 1 rack-space (1U). The unit shall consist of two mono channels with a separate stereo mix output. Each input shall provide switchable 48 volt phantom power. Polarity invert switches shall be provided for each channel. Three bands of equalization shall be available for each channel. The low and high bands shall be designed to produce shelving characteristics with switchable turnover points. The mid band shall be of the bandpass parametric design offering

continuous frequency sweep and switchable bandwidths. An EQ engage switch shall be provided for each equalizer section. Separate pan controls shall be available for each channel, enabled by a pan engage switch. A stereo output level control shall exist for the mixed stereo outputs.

The unit shall be exempt from agency safety requirements and powered from a UL listed, CSA certified remote power supply (120 VAC) or CE certified (230 VAC) via a rear panel input modular plug.

*The unit shall be a Rane Corporation DMS 22 Dual Mic Stage Preamplifier.*

**Available Accessories**

- SC 1.7 Security Cover

**References**

1. D. Bohn, “Accelerated Slope Tone Control Equalizers,” J.Audio Eng. Soc., vol 40, pp.1018-1024 (Dec. 1992).
2. D. Bohn, “Audio Signal Equalizer Having Accelerated Slope Phase Shift Compensated Filters,” U.S. Patent 5,046,15 (Sep. 1991).