



**RDL**<sup>®</sup>  
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

## HALF-RACK SERIES Model HR-MCP2 Dual Microphone Compressor



- Two Independent Microphone Input Compression Channels
- Produces Consistent Levels from Any Microphone
- Installs Between Microphone and Mixer or Amplifier Mic Input
- Line-Level Outputs Permit Operation as Dual Mic Preamp
- Controls Overloads that Cause Distortion and Clipping
- Balanced Mic Inputs on XLR and Detachable Terminal Block
- Balanced Outputs on XLR and Detachable Terminal Block
- Each Output Allows Balanced or Unbalanced Connection
- Independent Controls for Stereo or Dual Mono Operation
- Front-Panel Gain Adjustment from 20 to 60 dB for Line Outputs
- Switch-Selectable 15 dB Input Pads
- Switch-selectable 48 Volt Phantom for Both Inputs
- 7 LED Gain Reduction Meter in 3 dB Increments per Channel
- CLIP Indicators for Peaks 1 dB Below Clipping

The HR-MCP2 is an RDL HALF-RACK product, featuring an all metal chassis and the advanced circuitry for which RDL products are known. HALF-RACKs may be operated free-standing using the included feet or may be conveniently rack mounted using available rack-mount adapters.

**APPLICATION:** The HR-MCP2 is a dual channel microphone compressor that produces a consistent audio output level over wide variations (up to 25 dB) in the microphone input level. Rear-panel switches allow setting each output to mic or line level. Each channel can therefore be used as a mic-level in-line compressor or as a microphone preamplifier with compression. The unique circuit design preserves full studio-quality low-noise performance at any gain setting. The HR-MCP2 is compatible with dynamic and condenser microphones. A front-panel switch is provided to enable 48 Vdc phantom to both microphone inputs.

The HR-MCP2 is designed to hold average output levels constant without altering the sonic integrity of dynamic sources. Gain reduction is nearly instantaneous for both expected and severe input overloads. Automatic release time adjustments result in nearly inaudible compression action over the entire dynamic gain reduction range. The HR-MCP2 improves sound quality and intelligibility by producing consistent audio levels and controlling overloads that produce distortion and clipping. It is ideally installed as the microphone preamplifier, or in-line between a microphone and its associated mixer input, in on-air broadcast studios (announce mic, guest mics, crowd mics), voice-over studios, public address systems, meeting rooms, public venues and commercial sound systems.

Each channel is equipped with a front-panel **FILTER** switch to enable or disable a 6 dB/octave low-cut filter with a -3 dB cutoff at 80 Hz. Each input includes a front-panel **INPUT PAD** switch that allows the operator to attenuate the input signal by 15 dB prior to the input stage, increasing the maximum input level from +5 dBu (attenuator out) to greater than +20 dBu. The **GAIN** control provides continuous adjustment between 20 dB and 60 dB (for the line-level output) to set the correct gain for normal microphone levels. A CLIP LED flashes if a signal peak is within 1 dB of clipping. A seven LED metering string displays the instantaneous gain reduction in 3 dB increments.

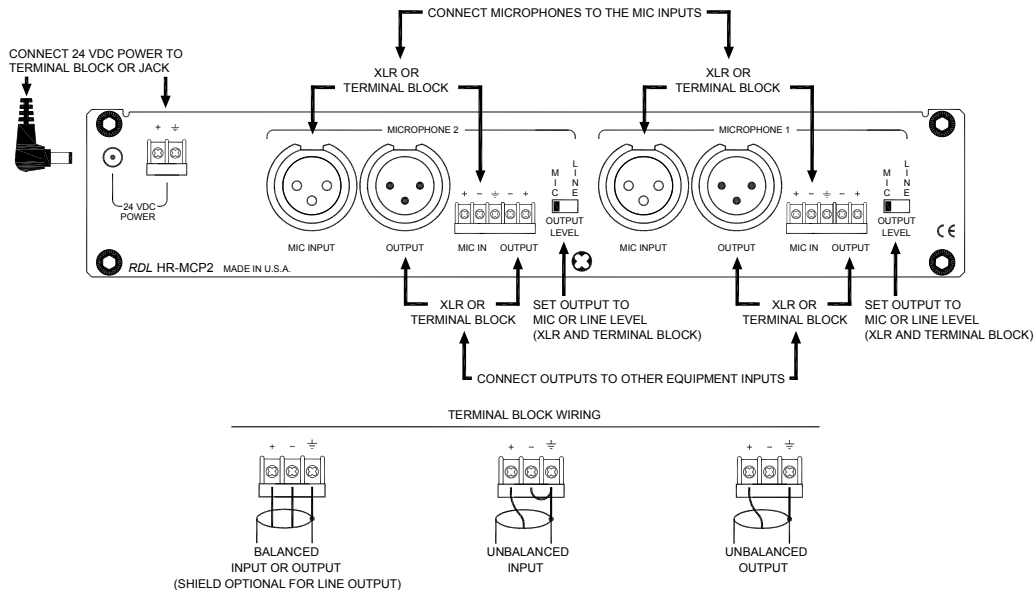
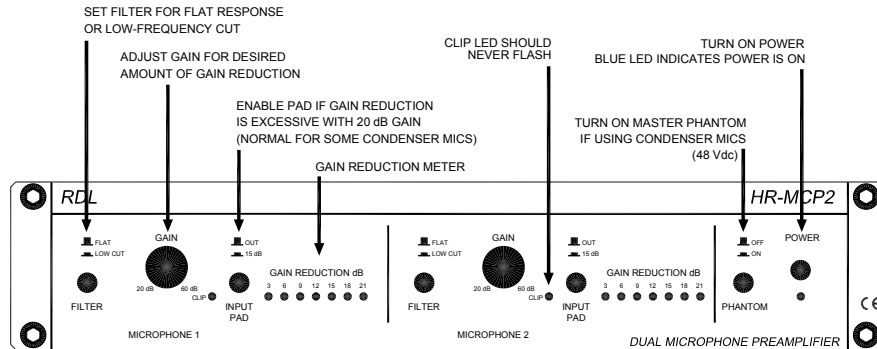
The HR-MCP2 offers exceptional input headroom, wide flat frequency response and extremely low noise with very high common-mode signal rejection. Total harmonic distortion and crosstalk are below the noise floor, allowing the HR-MCP2 to be operated as a stereo mic compressor or preamplifier, or as two separate mono compressor/preamplifiers.

Each channel provides two balanced input and output formats on the rear panel: Detachable terminal block and XLR. Balanced inputs and outputs may be wired unbalanced. The rear panel also provides a detachable terminal block and a power input jack to connect 24 Vdc power. The HR-MCP2 is constructed in a durable half-rack-width shielded metal enclosure for free-standing use or for mounting in an RDL rack adapter, available separately.

Wherever a dual-channel half-rack microphone compressor or preamplifier with compression is needed to provide superior audio clarity, user adjustments, reliability, compactness and unsurpassed versatility and performance, the HR-MCP2 is the ideal choice. Combine the HR-MCP2 with other RDL products as part of a complete audio/video system.

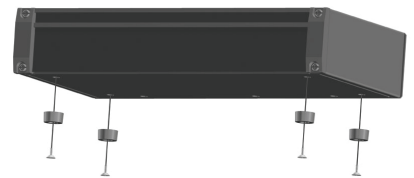
## HALF-RACK Model HR-MCP2 Dual Microphone Compressor

**Installation/Operation**  
EN55103-1 E1-E5; EN55103-2 E1-E4  
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.



### MOUNTING

For free-standing operation, use the four provided machine screws to mount the feet to the bottom of the module as shown, OR Use the four provided machine screws to secure the module to an optional RDL mount, such as an HR-RA2 Rack Adapter.



### TYPICAL PERFORMANCE

Inputs (4):  
Input level (for uncompressed output):  
Maximum Input Level:  
Input Impedance:  
Phantom power:  
Input pad (2):  
Outputs (4):  
Output level:  
Output Impedance:  
Channels:  
Gain Trim (2):  
Frequency Response:  
THD:  
CMRR:  
Residual Noise (below rated output level):  
Crosstalk:  
Indicators (17):  
Power Requirement:  
Mounting:  
Dimensions:

XLR (2, 3 pin, rear panel, 1=GND, 2+, 3-); detachable terminal block (2)  
-60 dBu to -20 dBu (without input pad); -45 dBu to -5 dBu (with input pad)  
> +5 dBu (input pad disabled), +22 dBu (input pad enabled)  
> 1.5 k $\Omega$  balanced  
Selectable 48 V phantom (IEC 61938: 2013)  
15 dB nominal (1 per input channel)  
Mic: -45 dBu (nominal, into 600 Ohms)  
Line: +4 dBu balanced (nominal, dynamic audio source), +1 dBu balanced (nominal, sine-wave producing 3 dB compression)  
150  $\Omega$  balanced  
2 (1 and 2; may be used for stereo or as two separate mono channels)  
20 dB to 60 dB (line-level output; front panel adjustable; one for each channel)  
10 Hz to 25 kHz (+/- 0.5 dB, FLAT); -3 dB @ 80 Hz (LOW-CUT FILTER enabled)  
Below noise floor (3 dB compression)  
> 70 dB (50 Hz to 5 kHz)  
< -85 dB (20 Hz to 20 kHz, 40 dB gain, without compression, 150 $\Omega$  source)  
< -70 dB (20 Hz to 20 kHz, 60 dB gain, without compression, 150 $\Omega$  source)  
Below noise floor  
**POWER LED (blue), GAIN REDUCTION (7 per channel, yellow, 3, 6, 9, 12, 15, 18, 21 dB), CLIP (2, red)**  
24 Vdc @ 200 mA (230 mA with phantom), Ground-referenced  
Rack-mount using optional rack adapters such as HR-RA2; or operate free-standing (feet included)  
Height: 1.7 in, 4.3 cm; Length: 8.6 in, 20.6 cm; Depth: 4.59 in, 11.66 cm

Radio Design Labs Technical Support Centers

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