

# Radio

THE RADIO TECHNOLOGY LEADER



## RDL HR-MCP2

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**R**adio engineers are sometimes regarded as control freaks. And for good reason: An engineer spends each day critically listening to and adjusting the audio chain in his or her facility. The aural characteristics of a studio are somewhat of a signature for the engineer. He or she will generally take ownership of the technology and the sound that is crafted. The continual mulling-over of audio is the sure sign of a dedicated engineer and the negative “control freak” connotation contains a slight pat on the back.

For control freaks, Radio Design Labs (RDL) has

introduced the HR-MCP2 dual-channel microphone compressor. The unit takes up half a single rack space, and the dynamic control packed inside it is an overly picky engineer’s dream come true.

### MAKING THE CONNECTIONS

The HR-MCP2 is designed to be portable or permanently installed. A standard plug-in jack and a Phoenix-style terminal block facilitates the 24Vdc power input from the wall-wart power supply. The unit draws 200mA during normal use or 230mA when phantom power is used. Both microphone inputs have XLR inputs and outputs as well as terminal block inputs and outputs. Output levels are set to either line

or mic using rear panel recessed switches on both channels. The mic-level outputs allow for the compressor to be set up in-line between the microphones and mixing console inputs. When line-level output is used, the unit can be output to a line-level console input or channel insertion point.

### AS SIMPLE AS 1-2-3

Both channel adjustments, except for line/mic output selection, are made via the front panel. Each channel has a 6dB/octave low cut filter with a 3dB cutoff at 80Hz. “Gain” facilitates 20dB to 60dB of microphone gain adjustment along with a 15dB input pad that compensates for high-output condenser

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mics. Each channel has a single red LED clip indicator and a seven-segment LED meter that displays gain reduction in 3dB increments. The phantom power on/off button provides 48V for both channels. The power button is ganged with a bright blue LED that is illuminated when the unit is powered on.

Proper operation of the HR-MCP2 requires minimal, but important level setup. By way of a brief example, I used a standard large-diaphragm condenser microphone and put the compressor in-line between the microphone and a mic input on a production mixing console. With low-cut filter and input pad on, I raised the gain until my normal speaking voice produced 9dB of gain reduction. The red LED clip indicator will flash slightly prior to any audible clipping. For best performance, the clip LED should never flash. The results of this particular setup are discussed in the next section.

## PERFORMANCE

The HR-MCP2 is economical when space is limited. Optional rubber feet make it perfect for desktop use. From a performance perspective, the unit intelligently and transparently controls transient dynamic levels. Put simply, if a voice talent staffer has the tendency to mumble and yell in the same

sentence, or if they practice poor microphone proximity technique, the HR-MCP2 goes to work.

Processing is done at the microphone level and the preamps are deathly quiet. They additionally provide tons of headroom. With those three combinations, the unit is practically invisible in the signal chain, even when abnormally high gain control is used. Additionally, when the compressor is working, no audible signal degradation is present. Many compressors tend to muddy the signal when the compression threshold is aggressively driven.

The HR-MCP2 however, handles transients and overshoots unlike most compressors I've used. As mentioned before, a comfortable speaking level registered a 6dB or 9dB gain reduction level. At this level, there was a comfortable amount of compression, making the voice a little punchier and brighter. The real test was when I practically screamed into the microphone. The VU needles on the console and waveform on the recording software never peaked! Plus, there was no audible distortion. I could talk normally, whisper and yell with no dynamic disparity. The HR-MCP2 provides 25dB of gain reduction. The only time I heard the compressor working was when I purposely turned the gain all the way up. Basically, if

the clip indicator lights up, the entire system is overdriven and the compressor will go into overdrive. However, if the preamp isn't overdriven, the attack and release is simply not audible.

The seventh yellow reduction LED shows 21dB of reduction. The red clip indicator comes on at 24dB. After 25dB, the compressor will not create distortion, it just won't compress any further.

## APPLICATION

The HR-MCP2 can be installed anywhere high-quality transparent microphone compression is needed. In a broadcast setting, the unit provides excellent dynamic control and works well as a standalone compressor for on-air and production studios. It can prevent overdriving downstream inputs, equalizers or other dynamic processing. The unit is invaluable if on-air talent is hard to control. From normal chatter to all-out belly laughter, the HR-MCP2 can keep it all in check. In addition, given the two-channel nature, the unit is perfect for a matched pair stereo microphone technique needing dynamic control. The possibilities are endless for a two-channel microphone preamp and compressor that behaves as transparently and seamlessly as the HR-MCP2. 



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