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Part 1: Hands-on With Hardware
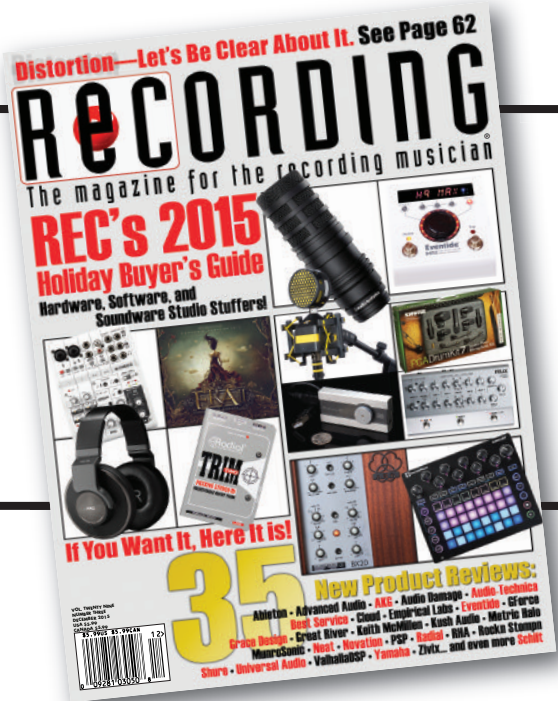
Radial Engineering Trim-Two

$149.95; www.radialeng.com

Vancouver-based Radial Engineering makes a variety of reamplification tools, 500 Series modules and enclosures, and other studio devices that can handle any I/O scenario you can think of. Radial is most famous, however, for building some of the highest-quality and most durable direct boxes on the market, with many different designs optimized for a wide range of applications. The Trim-Two is a passive stereo DI designed for laptops, DJ mixers or any other consumer-level device, built from the ground up for easy use.

The Trim-Two is built with Radial's famous bookend case design in 14-gauge steel, basically indestructible. Its inputs include stereo $1/4$" connectors, left and right RCAs, and a 3.5mm minijack, all wired in parallel (more on that later). The outputs are on stereo XLR and feature ground lift via Pin 1 disconnect on both channels.

The two transformers inside the unit are made by Eclipse, which is a sister company to Radial. The transformers provide impedance matching, give electrical isolation between the input and output, and also help to eliminate noise by blocking stray DC voltages. This DI is designed for use with buffered or active electronics, so I would not recommend pairing it with an electric guitar or passive bass.

The volume trim is a great feature of the Trim-Two. Full volume equals unity gain, so a good place to start would be setting the control around 2 o'clock. Although this would reduce the output, it is the approximate level produced by other passive direct boxes.

A mono sum button on the side of the unit mixes the stereo inputs and feeds both XLR outputs the same mono signal. This can be useful to reduce the number of channels running to

the PA if needed, or it can also be used as a distribution point between two amplifiers.

The Trim-Two has a maximum input of greater than +20 dBu, a total harmonic distortion of 0.009%, and a noise floor below –115 dBu. The frequency response is listed as 20 Hz to 20 kHz (–1/+3 dB), dynamic range is over 126 dB, and phase deviation is under 10° at all frequencies. This box has an input impedance of roughly 10kΩ with a 100kΩ load and an output impedance of 2800 ohms.

I tested the Trim-Two in the common application of turning a laptop's headphone output into dual XLR, and it sounded great and had plenty of headroom. To my ears, it sounded best with the volume trim around 1 or 2 o'clock and my laptop volume full on (for maximum resolution, since laptop volume controls are digital and reduce bit depth). The resulting signal was clean and precise, transparent without noise or distortion.

Everything on the input side of the Trim-Two is wired in parallel, which enables you to use the extra inputs as "Thru" outputs for your monitoring system. In a setup using a stereo keyboard and laptop, you can add monitors by running $1/4$" TRS out of the DI box and into a powered monitoring system. Note that the volume trim does not affect the signal being run to the monitors—levels on the "thru" outputs are only determined by the level your sound source is sending. If you are going to use a monitor setup with this DI, I would suggest getting a good level for monitors first, then adjusting the volume to the PA as needed.

The Trim-Two shines when it comes to a DJ setup. DJ systems can be tricky to dial in; often the output is too loud, which can cause distortion and potential harm to the PA system. Connecting to this DI solves that issue by allowing you to set a maximum output

level. It is quick and easy to adjust that level mid-set, should you need to. Most DJ mixers will connect using the RCA input, allowing the $1/4$" inputs to be used as "thru" outputs to the monitor system.

If you are a performing musician that uses keyboards, laptops or DJ mixers in your set, the Trim-Two may be the workhorse DI you've been looking for. This DI is packed with versatility that is easy to use, and it's easy to make adjustments on the fly.—*AH*