

RADIAL ENGINEERING WORKHORSE 500

Eight-Slot, 500 Series Module Rack With 8-Channel Mixer



The Radial Workhorse 500 offers eight 500 Series card slots.

Radial Engineering has a knack for creating practical, solidly built, problem-solving gear for stage and studio that are both innovative and fairly priced. The company's DIs, reampers, splitters, switchers and acoustic stabilizers come in a variety of configurations that offer engineers plenty of creative options. In this lineage, the Workhorse 500 takes two simple ideas and marries them in a single unit. The Workhorse is an 8-channel mixer with panning, main, monitor and headphone outs, housed in an 8-slot, 500 Series rack-mountable unit.

ZOOMING IN

What takes the Workhorse beyond your standard 500 Series rack are the little extras that expand the interactivity between the mixer and rack modules. For instance, on the back of the unit, the I/O sections for each card slot includes a Feed switch that takes the output of one unit and sends it internally to the input of the next unit over. I used this with great results with preamp/

compressor combinations using modules from three manufacturers. Each module can also feed the mixer internally (with reservations), and the Omniport uses a 1/4-inch TRS plug on the back of each module section and extends the capabilities of each module, depending on its function. For instance, when used with a Radial PowerPre, the Omniport acts as an instrument input.

Some features (like units auto-feeding the mixer and the Omniport) are only available on modules developed for the Workhorse or purchased from Radial; other features work as advertised across all manufacturers' modules. For example, the Stereo Link option allowing odd/even modules to work in tandem on odd/even slots operates in standard API master/slave configuration. In addition, the 1/4-inch TRS input and output on each module works with any unit

In addition to the standard XLR and TRS I/Os, the Workhorse also supports 8-channel, balanced D-Sub I/O for all card slot I/Os, and there is another D-Sub that lets you feed eight channels of balanced audio directly to the mixer for summing.

Finally, the Workhorse also includes external lugs on the back for setting up a star-grounding scheme in high-end installs.

THE MIXER

The Workhorse mixer is a clean machine providing low-noise operation and a solid design using Jensen transformers on the main output. Each channel offers an on/ (continued on page 81)

PRODUCT SUMMARY

COMPANY: Radial Engineering
PRODUCT: Workhorse 500
WEBSITE: radialeng.com
PRICE: \$1,600 retail

PROS: Solid construction, clean and versatile mixer. Omniport, Feed and Link switches are a bonus.

CONS: Some companies' modules have minor compatibility issues with the Workhorse.

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off switch, panner, confidence meter and rotary level control that feeds the main output bus, monitor bus (both switchable on/off) and the volume control for the dual headphone outs, which carries a mono/stereo toggle. The main and monitor output section uses balanced XLR or ¼-inch TRS connectors, with the main out featuring an unbalanced TRS insert. To move beyond 8-channel summing/mixing capability, the expansion bus allows you to strap two or three units together for 16x2 or 24x2 operation via ¼-inch TS cable.

ability to feed the mixer internally. Alas, all features are not always available when using third-party modules.

ON THE BENCH

The Workhorse's mixer was put to the test using an APx525 audio analyzer with great results. The first trial run was to run signal through a Radial PowerPre at mic level and then out at +4 dBu. The signal was automatically fed to the mixer on the same channel number, then out of the mixer at +4 dBu and back into the APx525, which read S/N at a very respectable 87 dBu. To see what happens at the

I only had two negatives come up during my time with the Workhorse. One involved the new Millennia HV-35 preamp, which would not fit into the Workhorse without removing the HV-35's outer steel housing. A call to Millennia revealed that its units do work with the API Lunchbox but hadn't been tested with the Workhorse. A look at the manual revealed that slots 1 through 4 are set up for single-wide modules while 5 through 8 are double-wide. I was able to fit the HV-35 with its outer housing on the double-wide slots without a problem. Also, the card tray can be completely removed if the need arises.



The Workhorse 500 also features an 8-channel mixer; back panel shown here.

PLAYING NICELY WITH OTHERS

I was able to test a variety of Radial's 500 Series modules with the Workhorse, as well as modules from other manufacturers. During a variety of sessions, I used a pair of Millennia's HV-35 preamps; the Magnum preamp, Brute optical compressor and Vogad VCA compressor from Inward Connections; Grace Design's m501 preamp; and the DACS MicAmp 500. (See the accompanying reviews of four 500 Series modules.) Once I loaded up the rack with a variety of components, my first wish was that all third-party companies accommodated the Workhorse's added feature set. Although essential operations such as in/out work as promised, I missed the Omniport, Link function and

extreme, the preamp gain was raised until the first red light was lit (before clipping). The mixer's channel output was also maxed, providing 49 dBu of total gain at the mixer's output, which tested well again at 0.004 THD+N.

CAN DO!

The Radial Engineering Workhorse 500 certainly lives up to its name. It is a versatile tool for live and studio use. I found it easy to get excited about using 500 Series modules with the Workhorse—I used the Feed switch often and liked how individual modules worked within the unit's framework. The mixer is superclean; I wouldn't hesitate to use it as my main summing mixer out of my DAW.

Another third-party module issue came up with the Grace Design m501 preamp. Instead of using standard 500 Series rack-screws, Grace went with longer hex screws that proved difficult when trying to thread them into the Workhorse. In both cases, I was able to work around the problems, but be aware that 500 Series modules are manufactured by a range of companies and aren't tested across all platforms.

Despite these minor issues, the Workhorse is a great unit and reasonably priced for what it offers. The feature set is deep, the system is scalable, construction is solid and it sounds great. What's not to like?

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