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## Radial Workhorse 500 Series-Compatible Modular Rack/Mixer

This “truly professional-grade” 500 series-compatible chassis is innovative, fully featured and justifiably premium-priced.

Take a great idea – the API 500-6B (\$499) and 500VPR (\$949) Lunchboxes, 6- and 10-slot portable modular racks for API’s own 500 series module format, respectively – add an 8-channel mixer, extra flexibility, beefed up features and then what do you have? The Radial Workhorse: an evolved choice in 500 compatible chassis.

How does Radial’s chassis measure up to the original? Is the Workhorse (\$1,500 list) worth three times the cost of the original, smaller Lunchbox? PAR received one of the first production models of the Workhorse for this review, so let’s find out.

### Features

The Workhorse is a 3U, 8-slot, 500 series-compatible steel chassis that is, according to Radial, compatible with all 500 series modules, whether they be older API units, newer API units, third-party units, double-wide (e.g., tube and/or stereo) units, and Radial’s own burgeoning line of 500 modules. The Workhorse features a removable tray to guide modules into place, holding them securely. This tray has no guides on the last four slots, allowing easier placement of double-wide or non-standard modules there — or it can be reversed or simply removed.

The rear panel offers all the Workhorse’s impressive I/O options, other than two front-panel-mounted, quarter-inch headphone



ALL WORKHORSE IMAGES BY RICH PARKER

jacks. These rear-panel connections (per module) include XLR I/O, quarter-inch TRS I/O, and quarter-inch Omniport, a utility jack that takes on different functions based on the capabilities of any given, inserted module.

The rear panel also has three D-sub DB25 connectors (via standard Pro Tools wiring convention) that respectively provide balanced inputs for all eight modules, eight direct outs and eight line inputs routed directly to the Workhorse’s 8-channel summing mixer. Also available are XLR and quarter-inch TRS connectivity for both the main and monitor outputs (derived from the same mix, but with mutes and independent master level controls). The main L/R bus also has Jensen transformers at the output and unbalanced insert points for external

processing. The expansion bus allows the connection of multiple Workhorses together (via quarter-inch I/O) for a larger multitrack system.

Four stereo link switches allow quick pairing of modules in master/slave fashion. Seven feed switches provide the ability to connect adjacent modules and feed signal down the line without patch cables, stringing up multiple custom signal routes or even in one big channel strip-type arrangement.

Such a box as the Workhorse — one with many potential location applications — requires professional-grade power implementation, and the Workhorse delivers with a fairly large in-line switching power supply, a total of 1,200 mA of current available for all the modules (exceeding original 500



series specifications, allowing more current for power-hungry modules such as tube mic pres), grounding lugs, thick cable and a locking 5-pin XLR power connector.

The front panel offers the mixer's controls with eight continuously variable pans, rotary faders, mutes and peak indicators, mains and monitor faders, the aforementioned dual headphone jacks, and a handy mono summing button. Module outputs are automatically routed to this mixer, although older 500 series modules will require routing their XLR outputs into the mixer via D-sub connection.

Despite having a comparable boatload of features, operating the Workhorse is designed to be simple and intuitive. For example, here are some possible configurations:

- A processing rack: A studio can fill the Workhorse with anything from eight compressor/limiters, to combinations of dynamics, EQs, DIs and re-amping/splitting modules. Meanwhile, road warriors might go for a classic "four comp/limiter-four gate" rig.
- A front end: A studio or live engineer can roll with eight mic pres or maybe four tube-driven, double-wide modules ... or, half

it, with a combo of mic pres and dynamics controllers for a more versatile front end. For touring or studio, one might prefer to construct a "diva channel" — with mic pre, comp/limiter, enhancer/exciter and A/D converter.

- A stereo channel strip: Connect two mics, two mic pres, two EQs, two compressors and one phase alignment device (i.e., Radial's own Phazer), then use the main outputs to record (allowing a phase align/check via mono sum button), gaining Jensen transformers at the mixer output.
- A small studio mixer: Using that "diva channel," route it to your DAW, then monitor eight outputs from your DAW, feeding monitors and headphones.
- A location recorder: Load the Workhorse with eight mic pres, record the direct outs, confidence-monitor the recorder's outputs via the summing mixer's input, create a stereo rough mix and a mix for video with compression inserted on that bus.

[At the time of publication, Radial announced the soon-to-be-available WR8 (\$800 list), a rack-only version of the Workhorse. "Yes, you will be able to upgrade

it, adding the mixer section" at a later date, offers Radial. — Ed.]

## In Use

I started out by loading a combination of four modules from Radial and four from Lipinski Sound: the latter, two L-609 mic pres and two L-629 compressors; this review provided a great opportunity to bring these pre-production Lipinski devices into the review setup. The guide tray helped make things line up nicely, but a firm push is required to snap the edge card connectors into place. With a satisfying click, they all seated well and a small Phillips screw locked them in place.

I employed an AKG C 451 and the Fishman transducer output from my acoustic Taylor solid-top guitar, the Lipinski mic pres (the mic in one — the DI in one) and used the Feed switches to hit the Lipinski compressors. I ran the compressors' XLR outputs to my DAW and received some very nice sounds. This front end showed ample headroom, no noise floor issues and was easy to set up, though the compressors were a bit tricky to operate.

During this tracking, I found the

Workhorse's headphone amp to be all that was promised. It gets loud — loud enough to drive very high impedance headphones to the threshold of pain (which could be quite a useful thing live, on location, etc.).

I tried tracking in stereo with the Radial Power Pre — a nice mic amp, with nearly over-the-top Breath and Punch voicings — and a Lipinski pre through the Workhorse mixer. So, I then recorded the Power Pre both direct and through the mixer with the Jensen transformer with great results. The mixer is very clean, seemingly noise free; the color is subtly wonderful with that extra bit of heft and tempered transients that you get with Jensen transformers.

I then paired up two Lipinski pres with two Lipinski comps and recorded them via routing their quarter-inch TRS outputs through a DB25 and into the summing mixer inputs. Voilà — no problems or noise here. In fact, I routed all four modules into the mixer, created stereo panning, potted all four signals up to equal level and created some sweet parallel compression. Yes, the Lipinski modules behaved somewhat errati-

cally — unequal levels, noisy switching and surges too long after applying phantom — but man, they sounded nice; again, these Lipinskis being pre-production models, we trust that these behaviors are due to some "work in progress" issues.

Next, I wanted to insert some Lipinski compression into my Soundcraft Ghost's stereo mix bus, so I switched positions between one mic pre and compressor, thereby enabling me to use the comps adjacently and employ the stereo Link switch. Such a switch is easy and quick: after powering down, it only took a minute and a small screwdriver.

### Summary

I ultimately tried every connection and function the Workhorse offered and found it all worked as promised, at least with the Radial modules. The few performance issues that involved the Lipinski modules may simply represent the initial tweaks that third-party manufacturers must make during module production and their subsequent beta testing.

The big question is whether this Radial mixer is worth its premium price. I believe it is. It is truly professional grade and worth the cost for its applications in location recording, DAW output summing, tracking with parallel compression and other flexibilities as a studio front end, or even as an FX returns sidecar. In retrospect, I wish I tried the Workhorse with high-current-draw tube modules, simply to witness how its power pooling works under tough conditions. However, considering the quality, thoroughness and practicality the Workhorse exhibits in every other aspect, I could only expect this much-touted feature to exceed spec and expectations.

Radial's Peter Janis told me that he and his designers were slow in getting the Workhorse to market because they were insistent on all the little details being right. I believe they did it right, thus the extra wait time was well worth it.

**Price:** \$1,500 list

**Contact:** Radial Engineering, Ltd. | [radialeng.com](http://radialeng.com)

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