

**PATCH BAY >** With the unit's switchable mic and line inputs, users can leave a bank of eight mics and eight line-level sources connected at the same time and simply select whatever input source they need as they need it.



**EIGHT AWAY >** The 800R packs eight high-quality mic preamps and a selection of digital output formats into a single rackspace.

## MACKIE ONYX 800R

### ADD EIGHT PREMIUM MIC PREAMPS TO YOUR RIG

BY ERIK HAWKINS

> Most have little need for bulky analog mixers these days, what with the virtual mixer inside your digital audio sequencer, compact control surfaces and audio interfaces with myriad inputs. However, despite all of these powerful parts, a critical component is too often missing from computer-based recording setups: a bank of great-sounding microphone preamps. Sure, a lot of audio interfaces feature two mic preamps, but that's not enough inputs to track a full drum kit. Then, there's the question of quality—the onboard preamps often probably sound pretty run-of-the-mill and lack personality.

Looking to change that is Mackie's Onyx 800R, a cost-effective solution for adding eight high-end mic preamps to just about any recording setup, and it's tailor-made to connect seamlessly with your digital audio sequencer system. As you might surmise from its name, the 800R features the Onyx preamps, which were first introduced a couple of years back in Mackie's Onyx series of mixers. This unit packs a lot more than just mic preamps, including mic and line inputs, a full complement of digital outputs, two channels with variable impedance control, sample rates as high as 192 kHz and a built-in Mid/Side Decoder for stereo recording.

#### FACE THE PREAMP

The 800R is a good-looking machine with a silver faceplate and knobs that look like miniature versions of the controls found on much more expensive and esoteric units. A single-rackspace unit, it is 14.4 inches deep and weighs in at a substantial 10.6 pounds. On the unit's rear are eight XLR microphone inputs. Phantom power for these inputs is enabled for each channel by using individual 48V buttons on the unit's face. Alternately, there are eight balanced line inputs on a DB25 connection—the widely used Tascam multipin connection. Each channel has a Line button that allows you to select which input (mic or line) will be seen on that channel. This is an amazingly flexible design because it lets you normalize eight line sources, without

#### MACKIE

**ONYX 800R > \$1,279**

**Pros:** Great sound. Mic and line inputs. Comprehensive digital outputs. Two front-panel instrument jacks. Two channels with variable mic impedance. Onboard Mid/Side Decoder for stereo recording.

**Cons:** In external sync, the incoming sample rate is not indicated. Inconvenient rear-panel Mid/Side Decode button.

**Contact:** [www.mackie.com](http://www.mackie.com)

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direct boxes, for those times when you're not using the microphone inputs but still want the flavor of the preamps. If you don't have a DB25-to- $\frac{1}{4}$ -inch cable hanging about, channels 7 and 8 each feature a front-panel  $\frac{1}{4}$ -inch Hi-Z instrument input. Talk about convenient: Just plug in your guitar and shred.

**EIGHT ANY WAY YOU LIKE > The 800R is definitely geared toward the professional user. The unit includes eight XLR inputs, eight balanced line-level inputs (via a DB25 connector) as well as both ADAT Lightpipe digital and balanced analog multitrack outputs (also via a DB25).**

reducing low-frequency rumble or the "proximity effect" created by some microphones. Balanced line-level analog outputs are available on the unit's rear via a DB25 connector.

Power is accessible from the unit's face with a nicely shaped rocker-type switch. Front-panel power

800R's front panel. A handy LED indicates when the unit is locked to incoming word clock, for which there is a standard BNC connection on the unit's rear. A Termination switch adjacent to the BNC connector lets you terminate the word clock for the last unit in a chain of gear in which multiple digital clocks



Each channel has a Gain knob, and when the mic inputs are enlisted, level control goes from 0 dB at unity gain up to 60 dB. For the line inputs, there is 20 dB of attenuation and 40 dB of gain. Needless to say, ample volume control is available for either set of inputs. Each channel also includes a phase-reverse button, which is a must-have for correcting an input that is out of phase (such as a snare bottom or a mic that is poorly placed in relation to other mics). A low-cut switch on every channel lets you cut bass frequencies below 75 Hz at a rate of 18 dB/octave. This is an invaluable feature for

switches always get my vote for convenience; if you aren't using the unit and don't need it for a room heater, just turn it off. Equipped with an internal universal power supply, the 800R will accept AC voltage ranging from 100 to 240 VAC; in theory, you can plug it in anywhere in the world, and it will automatically adjust to the incoming voltage. Power is provided by a standard IEC removable cable, and two cables are provided, one with an American plug and the other with a European plug—thank you, Mackie.

All of the standard sample rates and bit depths (as well as external clock) can be selected from the

are being slaved to a single master clock source (for example, Digidesign's 192 I/O followed by an 888|24 followed by an 800R). The indicators and controls all work well, though, when external clock is selected. I would like to see the incoming sample rate displayed on a sample rate LED. When several units are chained together, visual confirmation that the sample rate is being passed down the line correctly is imperative.

Digital outs on the rear panel include AES/EBU or S/PDIF on a second DB25 connection, as well as an ADAT Lightpipe port. Three buttons above the

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DB25 connections let you select between AES/EBU or S/PDIF and double-fast or double-wide modes for compatibility with devices that support as high as 192kHz sample rates on AES/EBU. At higher sample rates using the ADAT Lightpipe connections, the S/MUX format for multiplexing data across multiple channels is supported. For example, channels 1 through 4 carry the left (channel 1) signal and channels 5 through 8 carry the right (channel 2) signal at sample rates of 88.2 and 96 kHz. Channels 1 and 2 carry the left signal and channels 3 and 4 carry the right signal at sample rates of 176.4 and 192 kHz. The S/MUX format is a great way to take advantage of higher sample rates via the Lightpipe connections, but only a handful of products (such as Apogee's Rosetta 800 and MOTU's 896 HD) support the format at this time.

### SMART MIC TRICKS

Vintage and ribbon mics can be very sensitive to a preamp's input impedance. The Mic Impedance control found on channels 1 and 2 lets you select the impedance that best suits your microphone. There are four different impedance settings: 300, 500, 1,300 and 2,400 ohms. A setting of 2,400 ohms is the most common nominal input impedance (channels 3 through 8 are fixed at 2,400). Selecting a different impedance can change the responsive characteristics of the microphone. For example, at 300 ohms, the mic might sound thin and quiet whereas

at 1,300 ohms, by comparison, it sounds robust and present—the effects are generally subtle.

A Mid/Side Decoder for stereo recording (M/S recording) is provided on channels 1 and 2. This feature lets you blend the signal from two microphones, each set to a different pickup pattern, into a stereo recording. Connect a mic set to a cardioid pattern to channel 1 and another mic set to a figure-8 pattern to channel 2. With the M/S Decoder enabled, the channel 1 mic represents the middle signal while the channel 2 mic is the side (left and right) signals. A button on the 800R's rear enables the M/S Decoder. The stereo image produced is wonderfully clear and vibrant, but what I like best about the M/S Decoder is that you aren't obligated to using a pair of matched stereo mics. With almost any pair of good-quality condenser mics featuring selectable pickup patterns, you can achieve a sweet-sounding stereo recording. In fact, mixing and matching mics of different sonic characteristics opens up a whole world of possibilities for creating unique-sounding stereo images.

### TEST, TEST

While testing the 800R, I recorded stereo vocals, percussion and guitar (mic and hi-Z inputs) and a full drum kit, all eight channels with a ragtag assortment of mics (AKG C 414 stereo overheads, Shure SM57s and Sennheiser MD 421s). For the M/S recording, I settled on a CAD VSM for the mid and

a CAD VX2 for the side. The recording system was Digidesign's Pro Tools|HD with a 192 I/O interface. The 800R's Lightpipe connectors were quite convenient: I could plug in straight to the 192 I/O's digital card without using up its analog inputs. In this configuration, I had another eight inputs available from within Pro Tools, and I could quickly switch between mic and line inputs with the button on the 800R's face. Everything worked seamlessly at 48 kHz. Unfortunately, the 192 I/O's Lightpipe connections do not support S/MUX, but I found that I could use the AES/EBU connections in Dual Wire mode for the 192kHz sample rate (this required a DB25-to-DB25 cable to connect the digital out of the 800R to the digital in on the 192 I/O).

The single most important thing about a mic preamp is how it sounds. The Onyx 800R sounds impressive; it's warm but not lacking in clarity and reminiscent of a high-end, vintage solid-state British console but with more punch and a much better signal-to-noise ratio. The unit's features are well-designed and implemented, from the digital outputs to the choice of mic and line inputs and the onboard M/S Decoder. I won't be surprised if the Onyx preamps, and the 800R in particular, become an industry-standard sound. If you're looking for a bank of mic preamps to replace the sterile sound of your audio interface's onboard preamps—and at a price that won't clean out your bank account—the 800R is a no-brainer. 