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**Mackie Onyx-i Mixers**  
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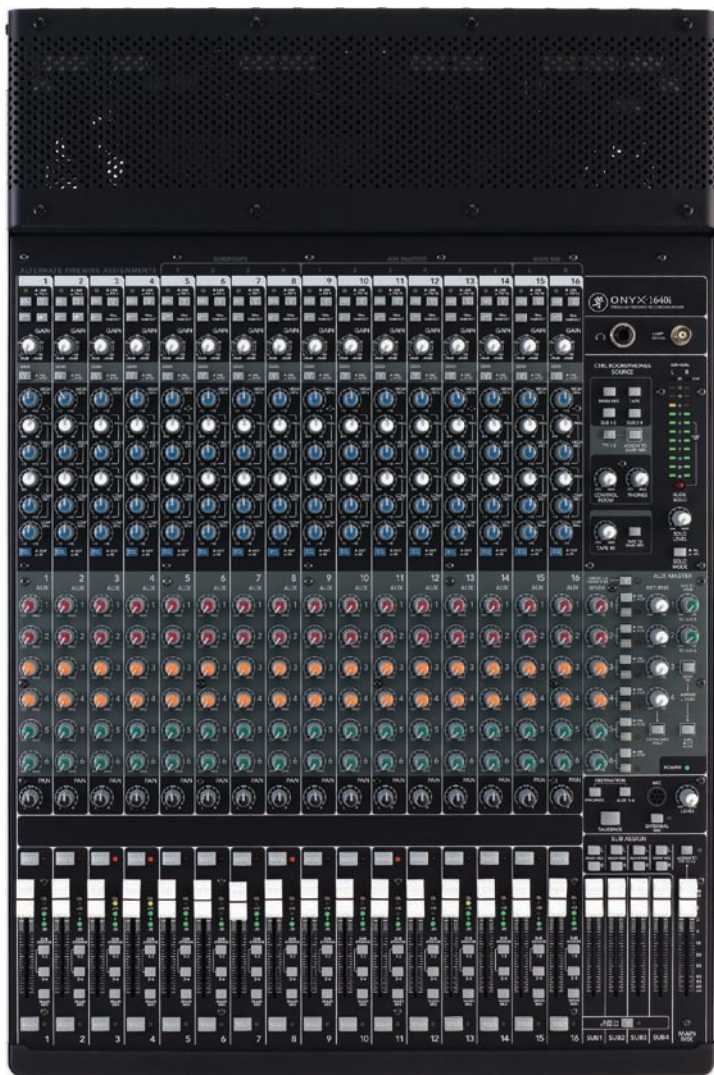


# REVIEW

BY MIKE METLAY

## Mackie Onyx-i Series Mixers

All this and seamless DAW interfacing too



I had a chance to live with two of the new Onyx-i mixers, one (the top-end 1640i) for several weeks and the other (the small 820i) for the better part of a year, and found the experience a delight.

### The lineup

I'll start with the three smaller Onyx-i mixers—the 820i, 1220i, and 1620i. Differences between them are primarily in number, rather than type, of features. The 820i has two mono mic/line input channels with inserts, two stereo line-only channels, and a “hybrid” channel that lets the user choose between a mono mic input or stereo line input. The 1220i has four mono mic/line channels and four stereo line channels, and the 1620i has eight mono and four stereo channels.

The 820i and 1220i have two mono Aux sends and two stereo Aux returns, and the 1620i has four of each. Beyond that, these three mixers are functionally identical; we'll see later that the 1640i is very different indeed.

### Getting in

All of the mono channels have Onyx preamps with individually switchable 48 V phantom power, and the first two mono channels on each mixer have a Hi-Z switch for the mono 1/4" input to enable direct guitar or bass connections. While this is a nice touch for a bass (eliminating the need for a DI box), the newcomer to the Onyx-i might wonder who'd ever want to run a naked guitar signal straight into a mix. The handiness of this connection becomes obvious when you factor in the mixers' ability to act as FireWire interfaces, offering guitar processing within a DAW. If you've always wondered if you can really hear the difference a Hi-Z input makes on a guitar's tone, the simple ability to switch the circuit in and out makes for some fascinating experiments. Even on an acoustic guitar's piezo pickup, the difference in fullness and solidity is pretty amazing—not a subtle thing at all!

The mono channels have a 3-band Perkins eq with sweepable mid plus a switchable 75 Hz lowcut filter, and the stereo channels have three fixed eq bands (80 Hz Low, 2.5 kHz Mid, 12 kHz High). The 820i's “hybrid” mono mic/stereo line channel has a 4-band fixed eq, with an added Low Mid at 400 Hz. I won't take up too much space gushing about the Perkins eq on these boards; let's just say that it's nice to find an eq that actually makes you happy to have to use it, whether you're fattening a bass's bottom end, bringing up a bit of air on a cymbal, or accentuating the sweet spot in a guitar's midrange.

The 820i controls channel levels with pots, and the 1220i and 1620i have medium-throw faders. The Mute button actually doesn't mute a channel at all; it removes the channel from the Main Mix bus and routes it instead to the Alt 3-4 bus. This time-honored Mackie innovation lets you use the otherwise stereo-bus mixers as faux 4-bus consoles,

Mackie's Onyx mixers have been around for quite a few years now. They've introduced a number of features that Mackie has justifiably been proud of—perhaps most notably the Perkins channel eq controls, which offer a very musical and powerful set of tone-shaping tools with a lovely “British console” flavor, and the remarkably clean and sweet Onyx preamps, arguably the standard by which other affordable mixers' pres are measured. The Onyx line, which included large rackmount multichannel interfaces and the short-lived and underrated Onyx Satellite portable interface, made good use of the intelligent high bandwidth of FireWire, which was an optional add-on to the original Onyx mixers.

With the Onyx-i mixers, Mackie takes a strong step forward, completely integrating the many great features of the Onyx products with a comprehensive and remarkably easy-to-use FireWire implementation.

a routing trick that lets you create everything from custom submixes to specialized effects sends. Each channel has signal-present and clip LEDs.

### Getting out

Each Aux send can be routed pre or post fader, and the 1620i's Return 3 can be routed back to Aux Send 1 on the 1620i—to add vocal reverb to a tracking-room monitor mix, for example. The Master section allows the Control Room and Phones to be fed by the Main Mix, Alt 3-4 bus, Tape, or FireWire (see below); in a very nice added touch, the Control Room and Phones levels are separately settable and independent of the Main Outs. Too many

RCA. If you wire up the Onyx-i with balanced cables wherever possible, this will greatly aid common-mode noise rejection, making these mixers wicked silent.

### Getting to a DAW

The 820i, 1220i, and 1620i each offer multitrack recording to FireWire and a stereo FireWire return back to the mixer itself. This is a straightforward FireWire implementation that's seen in many interface/mixers on the market, and it works seamlessly for most tracking and mixdown operations.

Each input channel feeds an A/D converter that sends the input to a DAW for recording; individual channel switches let you determine if the FireWire send is pre

### And then there's the 1640i

The 1640i is quite a bit more than "more of the same" when compared to its smaller cousins. This mixer pretty much nails the paradigm of the full-featured analog front end for a computer recording system, giving you all the flexibility you could hope for and topping it off with amazing audio quality.

The 1640i has 16 almost-identical channels, each a mono mic/line input with an Onyx preamp and its own 48V phantom switch, lowcut filter switch, and (on the first two) Hi-Z switch. All channels have inserts, Mute, Solo (switchable PFL/AFL), and routing to pairs of subgroups as well as the Main Mix. The Perkins eq on the 1640i's inputs is



small mixers force you to make compromises between sending a hot signal from the Mains, driving speakers efficiently, and listening to headphones in comfort. About the only thing I'd have liked to see that was missing was a second Headphone jack, but that's what headphone distribution amplifiers are for, I guess.

The Master section has a large LED level meter, which is especially useful when optimizing signal levels on soloed channels. On the 820i and 1220i, soloed channels are routed pre-fader at unity gain (Pre-Fade Listen or PFL); the 1620i has the option of After-Fade Listen (AFL), which keeps all channel settings in place on the soloed channel(s). There's also a Talkback section with built-in mic that can be routed to the headphones and/or Aux 1 and 2.

All of the mixers offer XLR and 1/4" TRS Main Outs, and 1/4" TRS balanced outputs for all other inputs and outputs except the inserts, which are 1/4" TRS send/returns, and the Tape In/Out connections on unbalanced

or post eq. The last stereo channel also has a switch that lets you choose its input source. You can listen to the stereo line inputs as per usual, or route the stereo FireWire return from the DAW through this input channel instead. You could use this to add a stereo mix of virtual instruments from a computer into a live mix-down, or bring back a DAW's output for additional eq and effects processing. Finally, as mentioned above, FireWire 1-2 is a selectable option for the Control Room/Phones bus routing, so you can listen to your DAW's output in combination with the Tape signal, Main Mix, and/or Alt 3-4 submix.

Aside from one or two elegant tweaks like the FireWire return to the last mixer channel (and, on the 1620i, the ability to route the first two Aux sends and the Mains back to the FireWire interface), there's nothing unusual about this interface implementation. Step up to the 1640i, though, and the game changes dramatically.

a 4-band with two sweepable mids and fixed high and low, plus an eq defeat switch.

The 1640i is a full 4-bus mixer with the four subgroups routable to the left or right sides of the main mix in any combination, and has six mono Aux Sends (all selectable pre/post fader) and four stereo Aux returns. Aux routing is very flexible, with pots to send Returns 1 and 2 to Aux Sends 5 and 6 for more elaborate effects processing in a monitor mix, Return 3 switchable from the Main Mix to the Subgroups, and Return 4 available only on the Control Room/Phones bus. As someone who routinely confidence-monitors his own signals coming back from a separate interface on a second computer that's being fed by the Main Mix (for my Internet radio show), I love this little switch, because it lets me check my work without causing a howl of feedback.

Other little extras abound. The 1640i is rackmountable, with a rotating rear-panel I/O section and removable rack ears. You can solo any or all of the Aux sends with



## Mackie Onyx-i Series Mixers

PFL/AFL status determined per send. A pair of rear-panel DB-25 connectors let you easily route all 16 inputs (pre fader, pre or post eq) to an external hard disk recorder. You can hook up an external mic to the Talkback system; you can control the Tape In level and route it to the Main Mix separately from the Control Room/Phones mix; the input channels all have very usable 4-step level meters, and more, but where things really get cool is when you add on the FireWire.

### Now we're cooking

The 1640i is a full 16-in/16-out FireWire interface. Each input channel can be routed to a DAW with the A/D converter either pre or post eq, but more significantly, up to 16 channels can be brought back into the 1640i through the mixer channels for a mixdown to stereo in the analog domain.

Much has been made of the "analog summing bus" as a way to mix DAW audio without building up digital garbage like rounding and quantization errors; many high-end studios favor this way of



working to get the best possible quality in their DAW-based mixes. This routing now lets you do precisely that with the 1640i, bringing signals back and routing them through the Perkins eq and any external effects you may have on the console's Aux busses. You can't automate your mixes this way; the 1640i doesn't have motorized faders or any other means of reproducing mix settings. But a clever user can automate levels within the DAW itself, and sum the resulting signals at unity gain using the 1640i as a summing bus.

Once you've summed your signals, then what? Where do you send your mixes? Why, back to the computer, of course! Unlike the 820i and 1220i, the 1640i gives you individual choice of which analog signals you feed your computer. Rather than simply taking all channel inputs to the DAW at once, the 1640i lets you turn each individual channel's FireWire feed on or off, and use the freed-up channels for other things. You can route the four subgroups, all six Aux sends, and the Main Mix to FireWire inputs 5-8, 9-14, and 15-16 respectively.

This routing flexibility is huge. It lets you completely integrate the 1640i and anything connected to it in the analog domain with your DAW, at the cost of some latency compensation in the final recorded tracks. You can route signals from Auxes to DAW

plug-ins and bring them back on mixer channels, letting you use your DAW's high-end plug-ins as analog-domain effects. Conversely, you can bring certain channels' signals back from the DAW through the mixer, process them with your best analog effects, and then route the results back to the DAW. You can submix DAW signals and add them to analog instruments, record multiple submixes to individual DAW channels, and much more. I suppose you could come up with some convoluted routing application that the 1640i couldn't do easily, but in my weeks of tests I never found one.

### Speaking of tests

I pulled my usual FireWire mixer/interface out of my studio and put the 1640i in its place, as a final phase to tests that had gone on for months beforehand with the 820i as the center of my small field performance/recording rig. Working with many different apps on two Macs and a Windows PC running XP SP2, my hassle level with installation and operation of the FireWire functions on the Onyx-i mixers ranged from practically none at all (Windows) to literally none at all (Mac). Installing Windows drivers is simple and fast, and if you're running Mac OS X 10.4.11 or later there's nothing to install, the Onyx-i mixers are supported natively already. The mixers appeared as interfaces with the appropriate numbers of ins and outs (16 x 16 and 8 x 2 respectively), and all I had to do was set a sample rate (44.1, 48, 88.2, or 96 kHz) and enjoy the flawless 24-bit audio I got.

[Note: An optional add-on driver is available from the Mackie website that allows the Onyx-i mixers to be recognized by Avid's Pro Tools M-Powered software. This is a pretty big deal, as M-Audio's NRV10 is the only FireWire mixer/interface out there that does anything like what the 1640i can do, and it has barely half the 1640i's channel count. As a non-PT user, I didn't test these drivers with the 1640i as part of this review, although my tests with the 820i on another computer were all successful.—MM]

My home recording setup is a bit of a kludge in places—my FireWire mixer is a 16-in/2-out design, great for tracking but not very flexible on mixdown and effects routing. The Onyx 1640i, once I sussed out how to wire it to my gear, made a lot of that awkwardness just vanish. With a push of a button, I could route anything anywhere, and it all just worked. Over and above anything having to do with the computer was the 1640i's fantastic audio quality; near nonexistent noise, stupid amounts of gain and headroom wherever I needed them, and trivially simple operation that gave me all the flexibility I needed time and time again. I got incredibly spoiled incredibly quickly, and there was much wailing and gnashing of teeth when the 1640i came out and my old mixer went back in.

The 820i has much more competition in the realm of small interface/mixers, but acquitted itself admirably in all my tests on the road, including two high-visibility gigs in the Denver area and some live music broadcasts. The quality of the individual components and the overall sound of the mixes I got were impressive all around.

### Hook up!

There's not a lot more to say at this point. The Onyx-i mixers raise the ante in both the analog and digital worlds, with their combination of high-quality preamps, excellent eq, marvelously flexible and sensible routing and I/O choices, and standard-setting FireWire interfacing.

While the smaller mixers offer similar DAW compatibility to the competition but with arguably much better analog signal path, the 1640i really is unique in what it does and how it does it. If you're interested in the possibilities of an analog summing bus in your DAW-based studio, frustrated at what many interfaces won't let you do, or just plain curious about how much difference a high-quality mixer might make to your audio as you're getting started recording your own music, then you owe it to yourself to check out the Onyx-i mixers. Mackie's done it again. ➔

**Prices:** Onyx 820i, \$649.99; Onyx 1220i, \$899.99; Onyx 1620i, \$1299.99; Onyx 1640i, \$2199.99

**More from:** Mackie, [www.mackie.com](http://www.mackie.com).