

AUDIO MASTER

The Echo Audio Indigo IO is a smash hit.



A couple of years back, we raved about the sound quality delivered by Echo Audio's Indigo PC Card.

Designed to bypass a laptop's onboard audio, the Indigo's onboard digital-to-analog converter enabled music (and movie) lovers to enjoy a level of quality limited only by their headphones or external speakers. The Indigo was especially impressive when rendering movie soundtracks, where its exceptional dynamic range and low distortion resulted in sound that was dramatically better than what a laptop could deliver on its own.

The Indigo IO expands on the still-available original by adding recording capability. The notion of using a laptop for direct-to-digital recording is very attractive, especially when

you want to record outside a studio. Aside from significantly reducing the hardware inventory, it provides a post-recording platform for creating a stereo mix from several recorded channels.

Of course, field recording isn't the only potential use for a digital recorder. A garage band on a budget—that is, every garage band—is more likely to have a laptop available than a dedicated digital recorder. Let's not forget the one-man-band market, either: Lay down some rhythm tracks, overdub a lead line, and then plug in the microphone for the vocals for a complete demo.

What you don't want to do when recording to a laptop's hard drive is plug directly into the mic jack. Doing so will reveal the deficiencies of the laptop's own measly analog-to-digital converter, and subject the preconverted signal to interference from the electromagnetic energy bouncing around inside the chassis. The Indigo IO eliminates that problem with a high-quality 24-bit/96-KHz converter that does its job before the signal even reaches the laptop's interior.

The Indigo IO has a standard 1/8-inch analog stereo input and output and comes with a 6-foot audio cable and adapters for both RCA and 1/4-inch connectors. The package includes a mixing-console application and provides support for the full gamut of audio drivers. This includes Wave/MME, GSIF, DirectSound/DirectSound3D, and ASIO, and covers all pro audio, general Windows audio, and gaming applications.

The product's most interesting and unusual feature is its multichannel driver, which allows applications to see eight virtual output channels presented as four stereo pairs. This means it's possible to run several audio applications at once, downmixing them into a two-channel stream using Echo's mixer console.

We tested the Indigo IO's capabilities by first recording a lead guitar track over a commercial CD track consisting of voice and rhythm. We then played back that mix, and overlaid a keyboard track. Despite the absence of a hardware buffer, the Indigo IO can support the simultaneous monitoring and recording required by that sort of

overdub process. The result was a mix that could easily have passed for a professional recording.

The playback capabilities of the Indigo IO are also far superior to those of the typical laptop. If the source material is a commercial CD or DVD, or an Ogg Vorbis file, even the most critical listeners should be satisfied by the sound, assuming they pair the Indigo with good speakers or headphones.

Just as it can't make up for bad speakers, the Indigo also can't make up for poor-quality MP3 files, especially those ripped at low bit rates. The muddling of a laptop's mediocre sound system actually camouflages the flaws in these recordings, while the Indigo IO simply enhances them. If you have any interest at all in using a laptop for serious recording and playback, however, the Echo Indigo IO is a must-have.

—David Drucker



Echo Audio Indigo IO

Rating: ★★★★★

Price: \$229

www.echoaudio.com

PROS

Amazing sound quality for music and movies

Direct-to-digital recording

Audio cables and adapters included

CONS

Magnifies flaws in low-bit-rate MP3s

Quick Specs

Frequency Response	10 Hz to 20 KHz, +/-0.5 dB
Dynamic Range	>109 dB A-weighted
THD+n at -3dbfs, 1-KHz sine wave	<0.0014% A-weighted
Nominal/Maximum input level	-10 dBV/+7.2 dBu
Nominal/Maximum output level	-10 dBV/+6.3 dBu
Supported sampling rates	32K, 44.1K, 48K, 88.2K, 96K
Laptop interface	CardBus-compliant PC Card slot