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E-MU 1616M

The Digital Audio System hits the road

BY MIKE METLAY

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(most laptops have at least one slot), and sports very high maximum communication speeds—up to 1040 Megabits per second, faster than FireWire 800. Pro Tools systems using CardBus-connected card cages like Magma have been allowing laptop users full access to the DSP

What you get

The 1616M differs from the 1616 in its A/D and D/A conversion: while the 1616 has “premium” converters suitable for most small studio applications, the 1616M has E-MU’s “Mastering Grade” converters, the same hardware used in Digidesign’s Pro Tools HD 192 interface. In virtually all other respects, the two products are identical, both capable of handling up to 24-bit 192 kHz audio.

The system consists of two hardware devices—the MicroDock (or MicroDock M for the 1616M) half-rack interface box and the E-MU 02 CardBus card—connected by a 3’ RF-shielded CAT-5e Ethernet cable. E-MU calls their connection protocol EDI (E-MU Digital Interface), and cautions the user that it is not Ethernet, despite the cable’s appearance: if you hook a LAN to the 1616M, you’ll risk cooking one or the other.

The E-MU 02 has a jack for the EDI cable to the MicroDock, and as an added convenience there’s a 1/8” TRS line-out jack for monitoring in situations where one doesn’t want to carry the MicroDock around. Since the E-MU 02 card is the part of the system that has the DSP chip on board, you don’t lose

E-MU’s Digital Audio System audio/MIDI interfaces for Windows computers made their debut in our June 2004 issue, and we followed up with a full review of the top-of-the-line 1820M in July 2004. These hardware/software bundles include a variety of interfaces with differing I/O according to price point, specialized software that runs on the interfaces’ native DSP chips for lots of power without much CPU load, and the option to add powerful virtual instruments like the Emulator X software sampler (reviewed August 2005).

With the new 1616 and 1616M, E-MU moves this DSP/interface package out of the studio and onto the tour bus, with a new hardware interface based on the CardBus standard. The software’s identical to previous Digital Audio Systems, so we’ll focus on the new hardware in this R&R.

Why CardBus?

CardBus, formerly known as PCMCIA after the organization that creates and maintains the standard, has been available on laptop computers for around a decade

and interface cards of Pro Tools TDM for years now, and the Echo Indigo series of miniature CardBus audio interfaces (reviewed May 2003 and October 2004) are an industry standard. There’s the beginning of a push by the PCMCIA toward ExpressCard, a newer CardBus standard with different card shapes and capabilities. But while the new Intel-based Mac laptops have moved to ExpressCard, the vast majority of Windows machines are still sticking to CardBus as we know and love it, at least for now.

Given that, it’s not surprising that E-MU elected to use CardBus for the 1616 and 1616M. The interface provides reliable and high-speed connectivity at a quite affordable price.



effects processing power when you disconnect the MicroDock.

The MicroDock's front panel has two inputs on Neutrik Combo jacks, with the inner 1/4" TRS jacks used for Hi-Z instrument inputs and the XLRs for mic signals. Each input has its own gain pot and LED level meter, and a global 48V switch turns on phantom power. Next comes coaxial S/PDIF and optical ADAT I/O, then a 1/4" TRS headphone jack with a volume pot/power switch.

The rear panel has four more inputs plus six outputs (configurable as three stereo pairs or 5.1 surround) on balanced 1/4" TRS jacks. One of the rear-panel input pairs also can be fed by a pair of RCA turntable inputs with RIAA preamp and ground lug. There are three 1/8" TRS outs for mini-speaker systems (duplicating the balanced outs), a 9-pin jack for a breakout cable with two MIDI Ins and two Outs, and a socket for the inline DC power supply. Add it up and you have, yep, 16 inputs and 16 outs, plus MIDI.

In use

There's a lot of power under the hood, and the PatchMix DSP control panel application lets you work it all in great detail—see the July 2004 issue for an in-depth explanation of all the routing and effects-insert possibilities. There's a lot to learn, and it's all well worth learning, and a proud new owner should plan to make time for some manual reading and careful setting up before tackling that first real-life project.

The rewards of this preparation are amazing: nothing else does what the Digital Audio System can do, in terms of CPU-friendly effects power, flexible routing, and sound quality. On our test system, a 3.4 GHz Pentium 4 Alienware Ozma-m laptop, we had no performance issues once we got everything configured properly, and had good results with minimal (5 ms or less) latency. Audio quality was clear and problem-free, even over the E-MU 02 card's minijack.

One small operational issue of note for laptops is found in PatchMix DSP's user interface. If it's used on a laptop like ours, with a 1680 x 1050 15" LCD, the entire PatchMix console window isn't very large and some of the "fake LED" text displays (used, for example, on the PatchMix mixer's channel inserts) are tiny and very hard to read. We'd encourage E-MU to make the next version of PatchMix DSP a bit more laptop-friendly by using the same clear text rendering used in the main data window on all relevant displays.

That nitpick aside, it's hard to fault the 1616M. There's a learning curve, but at the top you'll find a portable mixing/routing/DSP solution for Windows that's second to none. ☺

Price: 1616, \$599.99 (\$400 street); 1616M, \$699.99 (\$500 street)

More from: E-MU Systems, Inc., 1500 Green Hills Rd., Scotts Valley, CA 95067. 831/438-1921, www.emu.com.

Some text legends in PatchMix DSP can be hard to read on a laptop screen.



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