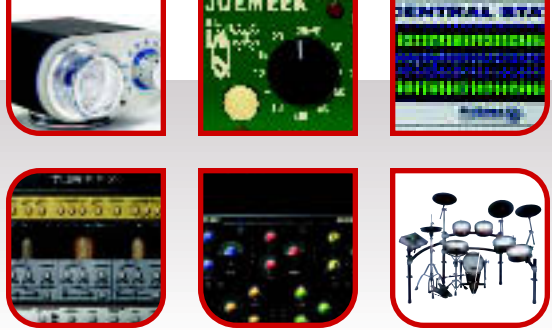




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REVIEWS



RME Fireface 800

A high-quality FireWire audio I/O with plenty of features.

By Nick Peck

FIG. 1: The RME Fireface 800 is a FireWire audio I/O and preamp offering sound quality that is on par with units that cost much more.

The Fireface 800 is the most recent audio I/O device to come from RME, a company known for its reliable, high-quality products. Striking a compromise between audio quality and economic reality, the Fireface 800 may be the company's best product yet. It offers plenty of features and flexibility, making it an excellent choice as a front end for portable recording systems and personal studios.

The 1U unit is a 24-bit, 192 kHz audio interface with 10 analog line inputs and outputs, 4 mic preamps, an instrument input, a headphone out, 16 channels of ADAT optical I/O, and stereo S/PDIF I/O (see Fig. 1). It is also a single-port MIDI interface and includes word-clock in and out on BNC connectors. Routing software and low-level drivers are included to allow you to connect the Fireface 800 between the physical gear in your studio and your DAW software of choice. The unit operates at all common sampling rates between 32 kHz and 192 kHz, with pull-up, pull-down, and adjustable clock speeds supported as well.

The Fireface 800 is compatible with Windows 2000 (Service Pack 4) and Windows XP via ASIO, WDM, MME, and GSIF, and with Mac OS X 10.3 and above through Core Audio and Core MIDI.

Gazintas, Gazoutas

The Fireface 800's front panel features instrument and microphone inputs, a small status-information display, and a headphone jack. There are four female XLR mic inputs and four ¼-inch TRS balanced line inputs on the front. The line inputs can handle balanced or unbalanced signals at +4 dBu or -10 dBV. All four mic inputs offer 48V phantom power that can be individually assigned using the Fireface's software control panel.



All front-panel inputs have gain knobs as well as signal and clip LEDs. The single-instrument DI input features overdrive and speaker-emulation effects and a more mild automatic distortion effect when the input signal exceeds -10 dBFS. The instrument input is referred to as input 1, while the mic/line inputs are inputs 7 through 10. This arrangement looks a bit peculiar but makes sense once you have mastered the Fireface's signal flow.

A $\frac{1}{4}$ -inch TRS headphone jack on the front panel has its own gain knob and can double as stereo line outputs 9 and 10. While there is adequate gain to drive most headphones to a moderate degree, there was not enough there to allow my AKG K240Ms to become excessively loud. Nonetheless, what did come out sounded clean and detailed.

The front-panel status LEDs show bare-bones system information including analog input- and output-level settings; presence of MIDI input and output signal; and synchronization with the word-clock, S/PDIF, ADAT, and timecode digital streams. That information is useful for basic debugging, but the majority of the Fireface's parameters are viewed and adjusted through the included software.

The rear panel (see Fig. 2) is a study in efficiency. Power comes in on a standard IEC cable, so no external wall-wart transformer is required. There are single MIDI In and Out ports, and two independently functioning ADAT optical connectors that allow for 16 simultaneous channels of digital I/O. Stereo S/PDIF in and out on RCA jacks is available, as well. In the analog realm there are eight $\frac{1}{4}$ -inch TRS analog line ins and outs, each of which can operate at $+4$ dBu or -10 dBV.

The Fireface 800 also has word-clock in and out on BNC connectors. The word-clock input offers optional 75Ω termination, and the word-clock output is a refreshed, low-jitter signal synced to the system's current master clock, giving the unit additional usefulness as a digital-clocking hub in complex, multiple-unit situations. An optional timecode card will allow it to receive positional information from linear timecode (LTC), which is great for post-production applications, as well as slaving to analog decks striped with SMPTE timecode.

The Fireface 800 offers three FireWire ports for connecting to your computer: one FireWire 400 port, and a pair of the newer, faster FireWire 800 ports. The 400-type port is sufficiently fast to handle significant high-resolution audio passing between your computer and the Fireface. You can,

FIG. 2: The rear panel contains analog and digital I/O as well as MIDI and word-clock connections.

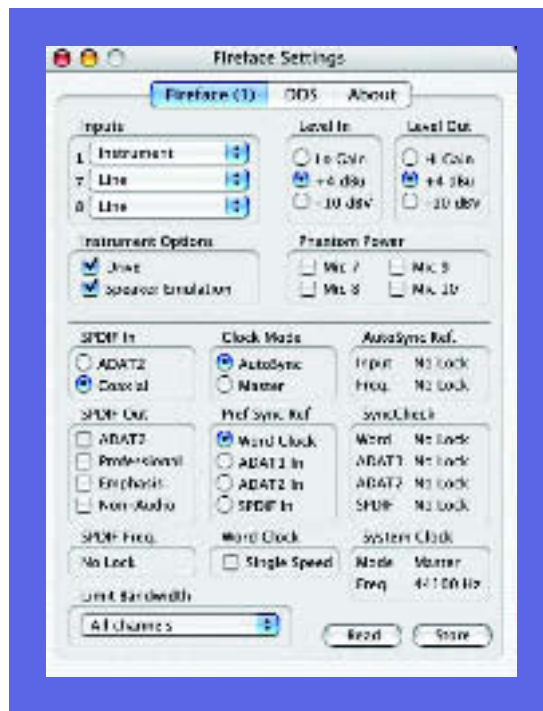


FIG. 3: The Fireface Settings software is a virtual front panel for the unit.

however, use up to three Firefaces simultaneously if you connect to your computer using the FireWire 800 port.

Totally Mixed

As soon as the Fireface 800 is connected to your computer, a pair of programs—Fireface Settings and TotalMix—automatically boot and stay resident. The former is a simple, nondescript front end for adjusting the Fireface 800's system parameters (see Fig. 3). TotalMix, on the other hand, is a virtual mixer and patch bay, designed to act as a software layer between the Fireface 800 and your DAW of choice. It allows routing of all hardware inputs to any hardware or software port desired.

You can create submixes, headphone mixes, and talkback/listenback mixes. You can view and adjust pan, level, mute, and solo information for input, playback, output, and submixes simultaneously. If that sounds like an incredible amount of information to fit on a single computer screen, it is. TotalMix is effective, but the channels are so small and crammed together that the information is hard to read and confusing (see Fig. 4). Fortunately, you don't need to stare at TotalMix that much—once you configure your routings, you'll spend your time looking at your DAW instead.

TotalMix features a 56×28 routing matrix; it shows you at a glance which inputs are connected to which outputs. For Windows users, RME also has the DIGICheck software, a

nifty program that gives you floating level-meter windows and channel-status displays, which are handy for analyzing and debugging your system.

Under the Hood

RME has added some of the best innovations from its previous products to the Fireface 800. What impresses me is how many different technological solutions to common digital-audio problems are present under the hood of this box. The company's SteadyClock low-jitter clock technology cleans up jittery incoming digital signals and creates a stable reference clock at the digital outputs. SyncCheck continuously monitors all incoming digital signals to determine if they are referencing the same master clock. If not, SyncCheck flashes a warning LED referencing the offending input. An optional AutoSync mode continuously polls all digital inputs for a valid signal. If it finds one, it automatically slaves to it; otherwise, it defaults to its own internal clock.

Finally, the Fireface 800's internal-direct-hardware routing provides for Zero Latency Monitoring (ZLM). That feature makes it possible to monitor incoming signals without passing them through the computer first.

Real World

I recorded with the Fireface 800 using a Pentium IV-based PC laptop running Nuendo, and a 600 MHz Apple iBook G3 running GarageBand and Traktion. It worked under all circumstances, although there was some confusion during setup due to old internal drivers in the unit itself. On the PC, once I upgraded the internal firmware to version 1.66, everything proceeded without a hitch.

On the Mac, I had repeated problems with glitches and ticks in the digital audio, and crashes when using early versions of the driver. Version 1.2, which was released shortly before Christmas of 2004, solved my digital audio glitching problems but didn't eliminate the crashing issue. Version 1.2(1) was released just as I

FIREFACE 800 SPECIFICATIONS

Analog Inputs	(8) ¼" TRS line (inputs 7–10 duplicated on front panel); (1) ¼" TRS; (4) XLR mic, all servo balanced; (1) ¼" TS unbalanced
Analog Outputs	(8) ¼" TRS line, servo balanced, DC-coupled signal path; (1) ¼" TRS headphone unbalanced
Digital Inputs	(2) ADAT optical, (1) SPDIF optical
Digital Outputs	(2) ADAT optical, (1) SPDIF optical
MIDI	In, Out
Dynamic Range A/D	109 dB RMS unweighted, 112 dBA
THD A/D	< -110 dB (< 0.00032 %)
THD+N A/D	< -104 dB (< 0.00063 %)
Crosstalk A/D	> 110 dB
Dynamic Range D/A	116 dB RMS unweighted, 119 dBA (unmuted)
THD D/A	< -103 dB (< 0.0007 %)
THD+N D/A	< -100 dB (< 0.001 %)
Crosstalk D/A	> 110 dB
Sampling Rate Internally	32-, 44.1-, 48-, 64-, 88.2-, 96-, 128-, 176.4-, and 192 kHz
Sampling Rate Externally	28–200 kHz
Frequency Response A/D/A	-0.1 dB: 5 Hz–21.5 kHz (sf 48 kHz)
Frequency Response A/D/A	-0.5 dB: < 5 Hz–43.5 kHz (sf 96 kHz)
Frequency Response A/D/A	-1 dB: < 5 Hz–70 kHz (sf 192 kHz)
Dimensions	19" (W) × 1.7" (H) × 8.1" (D)
Weight	5.5 lbs.

was completing work on this review. That version fixed the crash bug and appears to work smoothly with my Mac. In any case, be sure to download the latest drivers and firmware from RME's Web site before you use the system.

I tested the Fireface 800's analog audio quality by comparing it with a common high-end audio production solution: a Digidesign Pro Tools HD system with a 192 I/O. I recorded a Mason and Hamlin grand piano through a pair of Earthworks QTC-1 omni mics, first using a Millennia HV-3D mic preamp, and then the Fireface's mic preamps. I also recorded Tibetan bells and tambourines. All tests were recorded at 24-bit, 96 kHz. The results were pretty close.

The Fireface captured the piano with good detail, creating an even, well-balanced, and realistic recording. The Digidesign 192 did sound a bit more musical, creating a more integrated and slightly warmer recording. When comparing the Fireface's mic preamp to the Millennia, the latter (which costs \$3,000) came out on top, which wasn't a big surprise. The Fireface preamps had a sharper, edgier sound that, while detailed and clean, did not quite capture the richness of the instrument the way that the Millennias did (see **Web Clips 1** through **3**).

What really impressed me about the Fireface 800, though, was how slight the sonic differences were between it and the Digidesign and Millennia systems. Bear in mind that the Pro Tools system and the Millennia mic pre cost many times what the Fireface does. The Fireface 800 sounded far better than some other USB and FireWire audio interfaces I have evaluated. I wouldn't hesitate to use a Fireface 800 to make an album, record a concert, or score a film. For an integrated, all-in-one audio I/O in its price range, the Fireface 800's sound quality is outstanding.

I also tested the Fireface's instrument input under OS X with GarageBand. I plugged an ancient Wurlitzer 200A electric piano into the instrument

input, first recording the signal dry, next recording it with the Fireface's speaker emulation on, and lastly, recording it with its overdrive effect on. The direct input was perfectly usable. The speaker-emulation effect was subtle but added a nice touch to the direct signal. The overdrive effect was harsh, edgy, and no replacement for a dedicated overdrive pedal (see **Web Clips 4** through **6**).

In Your Face

There's no doubt that RME's Fireface 800 is a remarkable piece of engineering. RME clearly tried to address every possible need for a product of this type and did a bang-up job. The number of features crammed into the 1U box is impressive, and the price—while not bargain basement—is within the reach of many musicians and project-studio owners.

Although there are some design quirks—you may have to wrestle with drivers and preferences a bit—and the audio quality isn't on par with the best digital audio systems I've heard, you'd need to spend at least four times the Fireface 800's retail price to move up appreciably. I don't usually say this, but this is such a fabulous box that it gets my highest recommendation.

Nick Peck is a composer/sound designer/audio engineer living in the San Francisco Bay Area. By the time you read this, he will be a new father. You can email him at nick@perceptivesound.com.

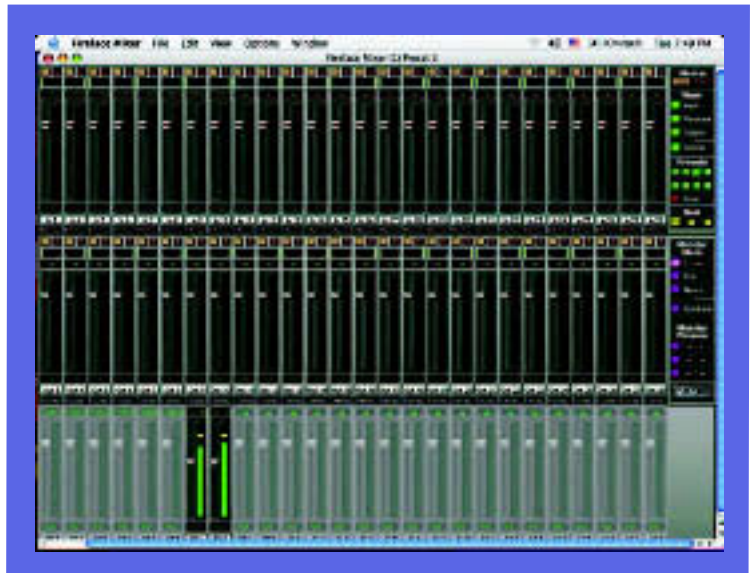


FIG. 4: The TotalMix software puts lots of information on one screen, but is confusing and hard on the eyes.

PRODUCT SUMMARY

RME Fireface 800

FireWire audio interface
\$1,799

OVERALL RATING (1 THROUGH 5): 4

PROS: Superb audio quality for its class and price range. Large numbers of inputs and outputs, both analog and digital. Handy instrument input with internal speaker emulation and drive effect. Internal power supply, no wall wart. SteadyClock feature reduces jitter on incoming digital signals. Three FireWire ports. Zero latency monitoring.

CONS: TotalMix software is confusing. Mac OS X drivers and software had problems that appeared to be fixed with driver version 1.2(1).

MANUFACTURER

RME/Synthax (U.S. distributor)
www.rme-audio.com or
www.synthax.com

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Updated Discord Plug-In Supports Audio Units

Audio Damage's pitch shifting plug-in is hitting version 1.5, available now in Audio Units format with VST for OS X and Windows to follow soon.

Pro Drum Works Vol. 1 Now in Apple Loops

Smart Loops has now released an Apple Loops version of their first Pro Drum Works collection, featuring over 9000 loops based on three different drum kits.

Mojave Debuts New Tube Condenser Mic

The company's first fully assembled product, the MA-200 was designed by David Royer, utilizing a Jensen audio transformer and military-grade JAN 5840 tube.

MAGIX Announces Audio Cleaning Lab 10

The audio restoration and burning software from MAGIX has been upgraded, offering noise reduction, audio enhancement, surround processing, and DVD-Audio capability.

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