Fireface 800

MUSIC TECH RECOMMENDED

With up to 56 channels and true FireWire 800 operation, is the RME Fireface 800 the most powerful FireWire interface yet? **Mark Cousins** strikes the match...

Ever since MOTU released the 828 FireWire audio interface, the world of music technology has fallen in love with FireWire audio interfaces. More stable and dependable than USB, FireWire offers significantly wider bandwidth, making multi-channel recording a realistic proposal. For the modern musician – who may well be working on both laptop and desktop computers – the ability to use one interface on either machine makes the FireWire approach the most logical way of getting audio in to and out of either computer. And now, with FireWire 800 implemented as standard on the G5, the goal posts have been moved yet again – could this really be the end of the PCI audio card?

First to offer true FireWire 800 connectivity is German company RME. Having built a range of quality PCI cards and breakout boxes, the move is a logical one and sets new standards for other manufacturers to follow. As always, this RME product features both excellent sound quality and an extensive list of features.

Fireface 800 offers an impressive 28 inputs and 28 outputs – including four mic preamps, Hi-Z instrument input (with drive control and speaker emulator) and MIDI In and Out. Additional control software (available for Mac OSX and PC) enables access to the full control parameters, as well as TotalMix software to provide a powerful, real-time digital mixer.

All fired up

So, how does the Fireface 800 pack all its inputs and outputs into a single 1U case? Well, the first eight inputs are available as TRS line inputs on the rear of the unit. Gain for these inputs is switchable (using the Control Settings software) between three different levels – low gain, +4dBu and -10dBV – enabling suitable interfacing to a console's buss outputs or hardware synthesizers and samplers. To the front of the Fireface are the four mic/line inputs (labelled 7–10) and a Hi-Z instrument version of input 1. Logically, all of these inputs feature gain controls, with accompanying signal and clip lights. Phantom power is also available, although it is switchable only from the Fireface Settings Control software.

We were particularly pleased by the implementation of the instrument input on the Fireface. All too often, 'professional' interfaces leave off this kind of feature, which is a shame if you're running a portable system and want a quick way of plugging in a guitar or bass. The addition of the drive and speaker simulator circuitry certainly won't put Guitar Rig or AmpliTube out of business, but it can be a quick way of creating a more guitar-like tone without extra software or hardware. A limiter, also available on the same signal path, provides suitable dynamic control: the higher the gain, the more limiting is applied.

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Inputs 13–28 function as digital inputs, with interfacing for two ADAT Lightpipes and S/PDIF connectors. As appropriate for a high-spec A/D converter, the Fireface features both Word Clock In and Out (on BNC connectors) so that it can act as slave or master device (clocked separately from the audio path) in a digital studio. Set to run from its own internal clock, the Fireface delivers excellent A/D conversion, helped by RME's unique SteadyClock system. SteadyClock seeks to minimise jitter – the small timing variations that create small distortions and a weak stereo image. Given the strength of the SteadyClock, the Fireface could be a worthy candidate for the job of Master Word Clock in your studio. In the future, the optional Time Code card could also extend its ability to work with LTC (Longitudinal Time Code) and video.

Inevitably, with so much being squeezed into one unit, a compromise has to be made somewhere. In this case, RME has focused on the number of inputs and outputs, rather than providing fully variable gains on all inputs, front-panel controls and metering. Thankfully, the Control software largely addresses any concerns with this, but if you hanker after meters and controls that are easily accessible, you might want to explore other options, such as the MOTU 828mkII or Traveller interfaces, for example. Most importantly, no compromise seems to have been made on the audio quality of the unit, with sample rates up to 192kHz, Class A preamps and a suitably impressive dynamic range of 119dBA.

In session

We tested the Fireface using our studio's G5, connected via a spare FireWire 400 port. In theory, using the lower-speed FireWire connection should have no detrimental effect on the performance of a single Fireface, the main benefits of the increased 800 bandwidth being better handling of external hard drives (on the same buss) and the ability to chain several Firefaces together. The unit we were supplied with contained both a manual and a driver CD, although neither covered Mac operation. After a quick trip to the RME site, however, we quickly obtained some

FIREFACE 800

Manufacturer **RME**

Price **£999**

Contact **Synthax Audio 01664 410600**

www.rme-audio.com

METHOD SPOT

Multiple inputs

If you need to record a large number of signals at once, you can double-up the use of channels 1, 7 and 8. The Fireface Settings Control software provides software switching of the mic/line or instrument/line inputs on these channels. Alternatively, both can be selected, with the inputs feeding the same A/D converter. In this way, the number of potential inputs that can be recorded simultaneously increases to 31, although the number of destination tracks (28) remains fixed.

drivers for OSX 10.3. Once installed, the unit was quickly recognised by Logic Pro 7, while the control software looked and operated in much the same way as the PC version described in the manual.

Performing some direct A/B comparisons with the original MOTU 828, we found that the Fireface converters were certainly up to the demands of modern, high-resolution recording using the 192kHz sample rate. As you would expect, the converters weren't quite up to the standards of an Apogee, but they did deliver a slightly tighter sound then the 828, with a better sense of depth to the recordings – clearly the SteadyClock had a helping hand in achieving this. The mic preamps also seemed to deliver consistent results, comparable to a good mid-range console, although not in excess of a dedicated preamp, which might also include bass rolloff and phase inversion.

Latency and TotalMix

Of course, the big issue with any audio interface is latency, but the Fireface delivers an impressively low 'software-monitoring' latency, accessible through using a low buffer setting in Logic Pro's Audio Hardware setup. For some users, software monitoring might well be entirely adequate, but as an alternative solution, RME has included the intriguing TotalMix software. Interestingly, the Fireface can function as a basic digital mixing system (even without a suitable host computer connected), so that inputs are passed straight to the outputs. The TotalMix application enables software control over this functionality, effectively turning the Fireface into a 28-channel console, with the last setup being stored in its Flash RAM.

Aesthetically, TotalMix appears very similar to the classic Cubase mixer, but in use the software can provide another 'layer' of mixer functionality to your session. You could, for example, use the sequencer's mixer as your main control room mixer, while TotalMix balances the sequencer's outputs with the current inputs to create a headphone submix. The screen is organised so that you can distinguish between the various sections: hardware inputs at the top, playback channels (from your sequencer) in the middle row, and physical hardware outputs on the bottom row. Crucially, any routing carried out (from the input to the outputs) using the TotalMix mixing software encounters zero processing latency – the signal is simply passing from an A/D converter to a D/A converter, resolving any software latency issues.

In addition to the standard mixer interface, TotalMix also provides a matrix overview so that you can quickly see the routing between the various inputs and outputs. We found this a particularly quick way of creating a headphone mix, sending selected inputs to outputs 9 and 10. Unlike the other Fireface outputs, outputs 9 and 10 are available from the front panel of the unit, with a dedicated headphone socket and associated level control. Again, this was another feature that made the Fireface a strong contender for a portable, multi-channel recording setup.

RME has undoubtedly created one of the finest FireWire interfaces around.

Total control?

Despite some initial reservations about the amount of software control required to operate the Fireface, we soon became impressed by its range of features and assured sound quality. Yes, we would have liked to see more dedicated switches and meters on the unit, but the software is easy to use and actually meant we could operate the Fireface almost entirely remotely. The Flash RAM also helped considerably – even when the unit was switched off it would remember the last configuration you'd worked with. What's more, TotalMix, as a solution for cue mixes, could really work only in the software domain (otherwise you end up with a digital console, rather than an audio interface) but we quickly adjusted to toggling between its mixer and the Logic Pro mixer to run a session.

Having made such good PCI soundcards in the past, it's pleasing to see RME finally move into creating FireWire audio interfaces. This is, however, a highly competitive area, with a number of interfaces all seeking to offer the greatest number of features, for a little less than £1,000. The Fireface seems to understand both of its potential applications – either as a studio setup (especially given the number of input and outputs) and as a portable recording system (the headphone out and instrument input were both good in this respect).

To our minds, the Fireface's only limitation could be the low number of mic preamps – ideally, eight preamps would have covered every eventuality. That said, RME has undoubtedly created one of the finest FireWire interfaces around – and the first of a new generation to take advantage of the speed of FireWire 800. MTM

RELATED TECHNOLOGY

Against the clock

Unusually for a soundcard or audio interface, the Fireface doesn't derive its digital internal clock from a quartz crystal. Instead, the Fireface uses a unique Direct Digital Synthesizer (DDS) to generate a more stable clock, with greater precision and flexibility than the quartz crystal offers. Controls for the DDS can be found as part of the Fireface Settings Control software (under the DDS tab). In most situations you'll want to leave this set at 44.1kHz or 48kHz, but situations can arise whereby it is desirable – or even essential – to change the sample rate. Strange sample rates are often encountered in the video industry or, alternatively, you might want to retune your DAW to match different continental instrument tunings – orchestras in Prague, for example, play at A=438Hz rather than 440Hz.

SUMMARY

MINIMUM SYSTEM REQUIREMENTS
- **PC** Windows 2000 (SP4)/XP, spare FireWire port
- **Mac** OSX 10.2.8, spare FireWire port

KEY FEATURES
- FireWire 400 and 800 connections
- 24-bit/192kHz resolution
- 28 inputs, including eight TRS line, Hi-Z instrument, four mic/line, ADAT and S/PDIF
- 28 outputs (line, ADAT, S/PDIF) with dedicated headphone out
- Word Clock In/Out
- Limiter, overdrive and speaker simulator on instrument input
- TotalMix digital mixing and routing software
- MIDI I/O
- SteadyClock jitter reduction

WHY BUY
- Range (and number) of inputs and outputs
- Suitable for both studio and location work
- Low latency
- Good-quality A/D and D/A converters

WALK ON BY
- No hardware metering
- More mic preamps would be nice
- Software-driven interface

VERDICT

After two years' research, RME finally delivers the fastest and most well-equipped FireWire interface yet. The Fireface 800 offers excellent sound quality and a seemingly impossible number of inputs and outputs.

★★★★★★★★★½

V **The Fireface's rear panel is where most of the connectivity options are to be found, including eight inputs and eight outputs. Outputs 9 and 10 are located on the front of the unit.**