



Overview

RME's Fireface 800 revolutionized the world of FireWire audio interfaces. Now the revolution continues: The Fireface 400 is not just the little brother of the Fireface 800 – it is a completely newly designed device. It is the only device in its class with active jitter suppression, stand-alone functionality, complete controllability from the front panel, highly flexible I/Os in professional quality, and an unsurpassed 648-channel matrix router – at sample rates up to 192 kHz.

As usual, RME offer a host of sophisticated features and characteristics with the fastest Firewire technology. These include:

- Two digitally controlled Mic Preamps in high-end quality
- Two balanced universal inputs for line and instrument signals
- SteadyClock for maximum jitter suppression and clock refresh
- Simple stand-alone operation with rotary encoder and front panel display
- 54 Level Meter Peak/RMS, hardware-calculated
- Full mobility by Bus Power support
- DIGICheck, RME's unique meter and analysis tool
- TotalMix: 648-channel mixer with 42-bit internal resolution

FireWire audio by RME is seen as the reference by both users and editors.

It includes lots of features and capabilities not available from other manufacturers.

The DSP-based TotalMix mixer allows fully independent routing and mixing of all 18 input and output channels to all 18 physical outputs. Up to 9 totally independent stereo sub-mixes simply mean unrivalled monitoring facilities. Copy/paste of routings, ganging and group-based operation of faders, and the extraordinary Matrix window are just some of the mixer's unique features. The mixer can be completely MIDI controlled, even in stand-alone operation. Furthermore the DSP hardware calculates RMS and Peak levels for all 54 audio channels, without causing any significant CPU load.

A word clock input and output (BNC) plus two MIDI I/Os (breakout cable, 5-pin DIN) complete the analog/digital feature list and turn the Fireface 400 into a complete audio system of the highest quality.

Connectivity

- 8 x Analog I/O
- 1 x ADAT I/O or 1 x SPDIF I/O optical
- 1 x SPDIF I/O coaxial
- 2 x MIDI I/O
- 2 x Firewire 400
- 2 x Mic Preamp with digitally controlled gain
- TotalMix

Features

- works Bus-powered
- TotalMix™
- Intelligent Clock Control
- ADAT S/MUX
- ZLM™
- SteadyClock™
- SyncCheck™
- SyncAlign™



The Fireface 400 excels as portable all-in-one solution when it comes to power supply. The included switching power supply accepts voltages from 100 to 240 V, thus can be operated all over the world. A rear panel switch enables Bus Powered operation, taking the power directly from the FireWire connector. To avoid potential problems, both the unit's internal power supply and the protective circuits at the FireWire port were specially designed and thoroughly tested.

Inputs and Outputs

Analog I/Os: Eight inputs and outputs (balanced, output 7/8 unbalanced) with software controlled switching of the reference levels (-10 dBV, +4 dBu, Lo/HiGain), of course realized discretely in the analog domain, guarantee highest dynamic range and highest fidelity.

The Fireface 400's front panel features 2 balanced microphone inputs with a digitally controlled input stage, individually switchable 48 V phantom power, and Neutrik Combo connectors for XLR and TRS. These can also be used as additional Line inputs. A gain of up to 65 dB, adjustable in steps of 1 dB over a range of 55 dB, exceptional EIN performance even at low amplification settings, and extremely low THD+N let these preamps surpass those of other devices that cost several times the price of the Fireface 400. All level settings are 100% reproducible and can also be adjusted by software comfortably.

Inputs 3 and 4 are stunningly flexible balanced universal inputs. Firstly, they operate exactly as inputs 5 to 8 on the rear and can be adjusted to accept standard studio input levels (+4 dBu, LoGain). Furthermore, the input impedance can be switched from Line (10 kOhm) to Instrument (470 kOhm). An additional analog input amplification of up to 18 dB (in steps of 0.5 dB) is also available. In short: There's no signal that these inputs can't deal with perfectly!

Inputs 5 to 8 on the rear feature RME's proven level references. -10 dBV, +4 dBu und LoGain can be selected in the settings dialog, equivalent to +2 dBV, +13 dBu und +19 dBu for digital full scale. The same applies to the balanced rear analog outputs 1 to 6.

The high power phones output offers high volumes even with low-impedance headphones, and represents playback channels 7/8. All outputs can be used for ASIO Direct Monitoring purposes.

Digital I/Os: An ADAT optical I/O* allows for a connection and insertion of effects devices, mixing consoles or external converters. Of course, these 8 channels are available simultaneously with the analog channels. Using an additional ADI-8 DS or OctaMidi D, you'll get 16 analog inputs and outputs, which remain still 12 at 96 kHz. The coaxial SPDIF I/O, which is fully AES/EBU compatible (as is common for RME), also works up to 192 kHz, which means that at the highest sample rate, 8 analog and two digital inputs and outputs are directly available. SPDIF optical can also be accessed through the optical I/O.

Features

Thanks to an internal flash memory, all settings including TotalMix are recalled during boot. The device can thus be configured and used as a stand-alone device, without being connected to a computer, e.g. as a submixer, A/D and D/A-converter, headphone mixer, format converter, instrument or microphone pre-amplifier, monitoring mixer and much more.

The Fireface 400 is equipped with SteadyClock(TM), RME's unique sync and clock technology. With this, the device becomes a sync reference for the whole studio. SteadyClock refreshes clock signals, removes jitter, and takes care of optimal AD/DA conversion quality, thus guarantees a sensational sound quality, completely independent from the reference clock's quality. SteadyClock allows the unit to control the sample rate freely on its own. The Settings dialog includes a direct choice of the video and audio world's most often used sample rates. Additionally, two faders can be used to set the sample rate freely and in real-time, within the range of +/- 4% and +/- 0.4%.

Of course the Fireface 400 offers a second FireWire port for hub functionality. Up to three devices can be connected to one FireWire interface and operated in parallel. The renowned Fireface 800 shares the same driver, allowing mixed setups.

Tech Specs

Input AD: 6 x 1/4"TRS (4 x Line, 2 x Line/Instrument), 2 x XLR/TRS Combo connector (2 x Mic/Line), all servo-balanced.

Output DA: 6 x 1/4"TRS, servo-balanced, DC-coupled signal path. 1 x 1/4"TRS unbalanced

Input Digital: 1 x ADAT optical or SPDIF optical, SPDIF coaxial (AES/EBU compatible)

Output Digital: 1 x ADAT optical or SPDIF optical, SPDIF coaxial (AES/EBU compatible)

MIDI: 2 x MIDI I/O via breakout cable (4 x 5-pin DIN jacks), for 32 channels low jitter hi-speed MIDI

Dynamic range AD: 110 dB RMS unweighted, 113 dBA

THD AD: < -100 dB (< 0.001 %)

THD+N AD: < -98 dB (< 0.0012 %)

Crosstalk AD: > 110 dB

Dynamic range DA: 110 dB RMS unweighted, 113 dBA (unmuted)

THD DA: -100 dB (0.001 %)

THD+N DA: -96 dB (0.0015 %)

Crosstalk DA: > 110 dB

Input/Output level for 0 dBFS @ Hi Gain: +19 dBu

Input/Output level for 0 dBFS @ +4 dBu: +13 dBu

Input/Output level for 0 dBFS @ -10 dBV: +2 dBV

Sample rate internally: 32, 44.1, 48, 64, 88.2 kHz, 96 kHz, 128, 176.4, 192 kHz

Sample rate externally: 28 kHz - 200 kHz

Frequency response AD/DA, -0.1 dB: 5 Hz - 20.4 kHz (sf 44.1 kHz)

Frequency response AD/DA, -0.5 dB: 1 Hz - 43.3 kHz (sf 96 kHz)

Frequency response AD/DA, -1 dB: 1 Hz - 80 kHz (sf 192 kHz)



Worldwide Distribution

audio ag

Am Pfanderling 60 . 85778 Haimhausen . Germany
Tel.: +49-08133-91810 Fax: +49-08133-9166

www.rme-audio.de

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