Fireface
X Series
Superior Audio Interfaces



Fireface UCX

Half the size - all the performance.

Works with the iPad too.

HFX-Core
USB + FireWire

High-End Converters
Low Latency Design

TotalMix FX
Complete UFX effects engine

RME

Introduction

A dream of an ultra-compact interface.



The Fireface UCX, a new member of the RME Fireface X-Series, is a highly integrated pro audio solution in an ultra-compact format for studio and live recordings. It continues RME's long tradition of designing compact high-end interfaces, packing into a half-rack size unit what usually would be spread out over two or three 19 inch panels.

In doing this the Fireface UCX marks a new packing record: 300 electronic components more than inside the already well-stocked Fireface UC! In a tremendous effort RME packed once again all the latest technologies, introduced with the award winning flagship UFX, plus a bunch of newly developed ones, into a half 19 inch housing with full mobile usability.

The result is an awesome combination of RME's most successful products:

Fireface UFX . Firefaces UC/400 . Babyface.

The Fireface UCX is not just a smaller version of the smash hit UFX. It continues the tradition of RME's tremendously successful compact interfaces and combines it with the great usability experience of the Babyface through the optional remote.

With the Fireface UCX RME reinvent an already perfect product, by improving existing features and characteristics plus adding sophisticated new ones.

Connectivity

- 18 Input / 18 Output channels
- 8 x Analog I/O
- 2 x Mic/ Line Preamps, digitally controlled
- 2 x Line / Instrument inputs, digitally controlled
- 1 x SPDIF I/O coaxial
- 1 x ADAT I/O (or 1 x SPDIF I/O optical)
- 1 x Word Clock I/O (BNC)
- 2 x MIDI I/O (via breakout cable)
- 1 x FireWire 400
- 1 x USB 2.0 (USB 3 compatible)
- TotalMix FX
- Support for optional RME Advanced Remote

- **Low Latency mastering grade converters** with outstanding specifications.
- **Two mic preamps** with the premium technology from RME's high-end recording bestsellers Micstasy and UFX, including the AutoSet overload protection.
- A newly developed **Hammerfall audio core**, supporting USB and FireWire with the maximum performance and ultra-low latency operation, combined with the legendary RME driver stability and maintenance, on both bus protocols.
- **TotalMix FX** with the complete Fireface UFX DSP engine, including all zero-latency effects up to 192 kHz.
- **Monitoring Controller:** combining the impressive flexibility of the TotalMix FX monitoring tool set and the optional RME Advanced Remote Control.
- RME's unique DIGICheck metering and analysis toolbox for Windows PC and Mac.
- Plus active jitter suppression technology, **AutoSet** for safe recording, professional reference level support, advanced stand-alone functionality, full 192 kHz operation, and last but not least two high speed MIDI I/Os.
- On top of it: The Fireface UCX is the first fully professional audio interface with a **class compliant mode** to work with Apple's iPad™, for perfect stereo recording and playback, and addition of truly professional I/Os.

All in all the Fireface UCX is the new compact-sized dream interface, created with care for every detail, and a new premium solution for any desktop and live usage, without compromises in sound, stability and ultra-low latency operation.

Inputs + Outputs

High-End converters with low latency design.



The UCX provides 36 channels of audio - 18 I/Os. All channels can be used at the same time. Up to 8 analog and 10 digital channels can be recorded onto 18 separate tracks. All outputs can be used for ASIO Direct Monitoring purposes.

Analog I/O

The UCX provides 8 analog I/O in a very flexible combination:

8 Inputs

On the rear: 4 balanced TRS.

On the front: 2 XLR inputs with Mic/Line preamps (65 dB Gain) and 2 Hi-Z capable TRS Line/ Instrument inputs.

8 Outputs

On the rear: 6 balanced TRS outputs.

On the front: One additional TRS stereo phones (playback channels 7/8).

The high power phones output offers high volumes even with low-impedance headphones.

Digital I/O

SPDIF (coaxial)

The UCX provides an SPDIF I/O (up to 192 kHz).

ADAT

One ADAT I/O adds another 8 channels, available simultaneously with the analog channels. These can be used to connect an 8-channel AD/DA converter or digital mixing console, or to insert an effects device. The ADAT I/O supports sample rates at up to 192 kHz (S/MUX4). Using an external converter like the ADI-8 QS, the UCX will provide 16 analog inputs and outputs, 12 at a sample rate of 96 kHz, and 10 at 192 kHz.

SPDIF optical

The ADAT I/O can be used alternatively as an optical SPDIF I/O, adding even greater flexibility.

Available channel numbers with different Sample Rates:

Sample Rate	Analog	SPDIF	ADAT	Total In/Out
44.1/48 kHz	8/8	2/2	8/8	18/18
88.2/96 kHz	8/8	2/2	4/4	14/14
176.4/192 kHz	8/8	2/2	2/2	12/12



Sound Quality

Equipped with a new 2011 A/D and D/A high-performance converter design all I/Os operate at up to 192 kHz. The AD/DA conversion supersedes the outstanding technical specifications of the Fireface UC/400 with an impressive 114 dBA dynamic range on both record and playback.

The advanced multi-bit converter architecture guarantees excellent S/N and THD specs across a wide analog level range. In the best RME tradition and product philosophy, the UCX converters and preamps have no characteristic "sound" of their own. They neither add nor remove anything, but capture the original signal just as it is.

Due to its efficient jitter reduction, RME's superior SteadyClock™ finalizes the state-of-the-art AD/DA conversion, even when clocking to an external digital source.

Low Latency Converters

All analog I/Os provide a low latency converter design with impressive 14 samples for the ADC, and 7 samples for the DAC, independent of the used sample rate.

These values are about a quarter of the Fireface UC/400 (43/28), and even outperform much more expensive devices. A technical breakthrough that reduces the overall latency of timing critical applications, in live situations, and in computer-based recording studios. The converter latency is so low (0.4 ms at 48 kHz) that it can be ignored, turning analog digital monitoring into real analog-style monitoring!

Professional Level Support

A great converter needs to support the common studio levels for the perfect adaptation to other analog equipment without loosing headroom. Like all other RME devices the UCX supports the common professional studio levels: -10 dBV, +4 dBu, Lo / HiGain. The software-controlled reference levels, realized discretely in the analog domain, ensure highest dynamic range and fidelity.

Inputs 3 to 8: -10 dBV, +4 dBu and Lo Gain (adjustable in TotalMix in two groups – channels 3/4 and 5 to 8).

Outputs 1 to 6 : -10 dBV, +4 dBu and Hi Gain.

Phones/line out 7/8: -10 dBV, +4 dBu and Hi Gain.

The phones output (channels 7/8) can be set independently.

Microphone Preamps

Digitally controlled . With AutoSet



Quality over quantity. The crown jewels of the UCX are the two high-end mic and instrument preamps – built right into the front.

Like in the UFX, both preamps use core technology of RME's Micstasy - a high-end preamp for supreme sonic demands and critical applications, like professional recordings of classical and acoustic music. The outstanding preamp design boasts extremely low distortion, excellent signal to noise ratio and a perfectly flat frequency response that lets these preamps surpass those of other devices costing several times the price of the UCX. A premium solution for transmitting and amplifying any audio source truly unchanged, be it high-level stage or typical studio signals, lower level and high-impedance instruments, or dynamic, condenser and ribbon microphones.

The digitally controlled gain of up to 65 dB, adjustable in steps of 1 dB over a range of 55 dB, is individually set for each preamp with the encoder knob on the front or in TotalMix FX on the host computer. All level settings are 100% reproducible and can also be adjusted using a MIDI remote controller.

Each channel can be individually switched to 48V phantom power. LEDs for signal, clip and activated phantom power give a complete overview on the unit's status.

The two TRS inputs on the front will alternatively operate as Hi-Z inputs. Directly plug in up to two guitars or other instruments - no other hardware is required.

AutoSet. The UCX offers a unique RME feature which was previously available only in the high-end microphone preamp Mistasy and the UFX.

Usually a limiter is used during the recording to prevent clipping of the A/D converter stage. But analog processing would not only spoil the excellent technical specifications of the UCX mic preamps but also alter the original sound.

Thanks to the completely digitally controlled gain the UCX can reduce the gain automatically, thus providing perfect protection from overload with no degradation of the audio signal, which does not have to pass any additional electronic circuitry. Additionally AutoSet does not cause any of the control noises known from usual limiters. SNR and THD stay completely unchanged.

Example: In a recording session, the recording engineer asks the vocalist or guitarist to sing or play a reference part and sets the UCX preamp gain to an unusual high level (e. g. 50 dB). AutoSet will automatically reduce the gain when the level reaches -6 dBFS. The reduction is done in a musical way, based on the intensity and duration of the input signal. Manual gain adjustment becomes obsolete most of the time, but the gain can still be set manually. AutoSet can be switched on for each of the 4 front panel mic and instrument preamp channels individually.

Hammerfall-X-Core

USB + FireWire . Made by RME



With the release of the Fireface 800 in 2004 RME stirred up the FireWire audio market, setting the benchmarks and providing a superior solution with a unique feature set. It is no surprise many customers and testers respect RME as the reference and technology leader for FireWire audio interfaces. In 2009 RME released the Fireface UC, a pioneering USB solution which again provided an exceptional performance, previously not available from USB audio interfaces. RME once again became the technology leader from the start.

The secret of success: RME is the only manufacturer not to use a third party USB or FireWire audio technology, but an own, self-developed Hammerfall Audio Core with an outstanding performance and uncompromised pro audio features.

RME integrated the latest and most sophisticated version of RME's bus technology, the Hammerfall X-Core - combining both, USB 2.0 and FireWire - within one half-rack sized interface.

USB 2.0. Like other RME USB 2.0* interfaces the Fireface UCX has been optimized for highest performance under Windows and Mac OS. It uses a special customized firmware for each operating system, and provides revolutionary ultra-low latencies even with multiple channels.

* The Fireface UCX is compatible to USB 3 chipsets.

FireWire. The completely redesigned Hammerfall FireWire technology of the HFX-Core provides the UCX with the same exceptional compatibility and performance as RME's USB solution. The UCX does not have any FireWire chip inside – the complete bus technology is programmed into the FPGA and remains under direct control of the RME masterminds. If ever necessary, it can be updated anytime by a simple firmware update.

TotalMix FX

Built-in high-end hardware mixer



The UCX provides the complete effects engine from the UFX - all effects are available at all sample rates.

The DSP-based TotalMix mixer allows fully independent routing and mixing of all 18 input and playback channels to all 18 physical outputs. Up to 9 totally independent stereo submixes plus a comprehensive Control Room section offer unrivalled monitoring capabilities and unsurpassed routing flexibility.

And there is more: The latest generation of TotalMix delivers hardware mixing/routing with lots of new features and a highly improved usability.

Every input and output channel comes with a luxury feature set, comparable to a full-scale digital console. The effects per channel include 3-band parametric EQ, adjustable Low Cut, Auto Level, Compressor, Expander, MS Processing and phase reversal. The Reverb and Echo effects unit is available for all channels by way of a stereo send and return bus. The UCX easily surpasses the competition by offering all these effects even at 192 kHz operation.

Two DSPs ensure an impressive performance even in extreme applications. As usual with RME, TotalMix is available with all channels at all sample rates, completely unlimited. The second dedicated DSP only renders effects, and therefore always has sufficient resources. For example, at 48 kHz 36 EQs, 36 Low Cuts, 26 Compressors and Echo can be activated. With activated Reverb and Echo still 36 EQs, 36 Low Cuts and 16 Compressors are available.

The FX-DSP uses automatic overload surveillance. As soon as no effect can be added anymore the TotalMix surface will clearly signal this condition. When changing to higher sample rates the UFX automatically deactivates all effects that exceed the DSP's performance - the DSP will never be overloaded. This also prevents any possible damage to loudspeakers due to distortion.

The complete effects section not only adds a lot of flexibility to the recording chain, but makes latency burdened software dispensable. TotalMix can easily replace any external mixer, e. g. to create different latency-free monitoring mixes with EQ and Reverb for the main studio monitors and the headphone of the vocalist(s) in the recording room.

Furthermore, the DSP hardware calculates RMS and Peak levels for all 54 level meters, so there is zero CPU load on the host.

The main functions of TotalMix can be remote controlled via MIDI with any Mackie Control compatible controller.

Integrated Monitoring Controller

Remote Control optional



Thanks to the multi-functional rotary encoder the UCX is not only a perfect desktop level controller for the main monitors and phones. The integrated TotalMix FX high-end mixer provides an impressive set of monitoring control features for modern Mix-In-the-Box studios or live mixing sessions. Among them Dim, source selection, monitor switching, integrated Talkback, a flexible CUE setup, Mute and Mute FX, Mono and much more.

Contrary to 3rd party external monitoring controllers, the built-in UCX solution preserves the original sound, as its hardware outputs stay directly connected to the studio monitors, avoiding another device with a possible signal alteration in the signal path.

The flexibility of RME's DSP-driven TotalMix FX monitoring tool set is impressive: any physical output can be assigned to the directly knob-controlled monitor outputs (Main out, Speaker B, Phones 1, 2 ...). Just assign the SPDIF output as Speaker B or as Phones Out - any output can be used. The functions Talkback, Listenback, Mono and Dim will work automatically for the assigned outputs in the expected way. CUE mixes can be sent to a predefined output, an external input can be assigned and monitored with a simple click. Convenience for any studio or live situation at its best.

The optional **Advanced Remote Control** (ARC) provides one big wheel dial, a button for level storage/recall, and seven freely programmable buttons - 6 with LED - for nearly all TotalMix FX functions. Just assign all frequently used TotalMix functions to these buttons. The remote control comes with a flexible, 5 m (16 ft.) long cable.

The ARC provides default settings for the 7 programmable buttons, but can be freely configured via the Key Commands dialog of TotalMix FX. All buttons can be assigned to more than 36 different commands. The behaviour of each individual button can be changed between push, toggle, enable and disable, depending on the base function.

Available commands/actions (examples):

- Main Volume
- Global Mute
- Global Solo
- Mute Group 1 to 4
- Solo Group 1 to 4
- Fader Group 1 to 4
- Link Main AB
- Speaker B Select
- DIM (Main Out)
- Mute (Main Out)
- Mute FX (Main Out)
- Mono (Main Out)
- External Input
- Reverb
- Echo
- Cue Phones 1 to 4
- Snapshot 1 to 8
- Mic Gains
- Inst. Gains
- Volume Phones

Class Compliant Mode

No driver required with Windows, Mac, Linux and the Apple iPad





The Fireface UCX is the first fully professional audio interface with the option to be used as Class Compliant interface. It then works without a driver as audio/MIDI interface on Windows, Mac, Linux and with **Apple's iPad and iPad2** (Camera Connection Kit required).

The UCX provides the iPad with the professional analog I/O connections it lacks. Superb microphone preamps with EQ, dynamics, AutoSet, in addition to professional balanced line outputs, and a hi-power headphone output. Plus level adjustments, reverb, echo and zero latency monitoring. Even high-resolution playback with 24 bit and up to 96 kHz! All of these features digitally via USB - which means no limitation in quality.

The Class Compliant mode is a standard that is natively supported by operating systems like Windows, Mac OSX and Linux distributions. No proprietary drivers are required, the device will be directly recognized when the CC mode is activated by the button on the front panel at any time.

Obviously, native features will be limited in comparison to those provided by the RME driver for the UCX. For example there will be no TotalMix and no settings for the effects. It won't be comparable to the RME drivers in terms of latency, though. Fortunately the Class Compliant mode is not relevant for Mac OS X and Windows, since there are outstanding RME drivers for both operating systems available, which provide ALL the features of the UCX at lowest latencies.

The main reason for a feature-limited Class Compliant mode has been to allow connecting the UCX to an Apple iPad or iPad2! The iPad is not only an attractive mobile music creation and recording platform, but a closed hard- and software system without common driver problems and interferences from 3rd party hardware, like graphic or network cards. It provides stability, a good realtime performance and an easy handling.

How does it work with an iPad?

Three things are needed:

- Fireface UCX in Class Compliant mode
- Apple iPad / iPad2 with iOS 5. iPhone and iPod Touch can not be used.
- Apple iPad Camera Connection Kit, or comparable third-party adapters (so-called x in 1 kits)

Switch the UCX to CC mode and connect the USB cable to the Camera Connection Kit. To achieve a stable connection between iPad and the Camera Connection Kit a dock extension cable is recommended. There are several products available from different manufacturers.

Start the iPad and plug the Camera Connection Kit into the Dock connector. The unit will enter CC Host mode, indicated by the HOST LED turning off. Audio playback in iTunes will automatically be performed by the UCX, using analog outputs 1/2 and the phones outputs 7/8 in parallel.

Supported Inputs and Outputs. When connected to an iPad, the analog mic/line input 1 works with mono apps, inputs 1 and 2 with stereo apps (both dual mono and stereo), and all 8 analog inputs with 8-channel applications, like the MultiTrack DAW.

Playback will use analog outputs 1 and 2 (there is no app supporting 8-channel playback at this time). The output signal 1/2 will be copied to outputs 7/8, and can be processed independently with volume, and all effects, like EQ, dynamics and reverb/echo.

The digital I/Os are currently not operational. Not only will most apps not support more than two channels at this time, our tests have also shown digital synchronisation to be less than ideal in practice. Therefore, the use of these ports makes no sense in CC mode.

Audio Routing and Processing. The UCX is also a very powerful tool in CC mode, and can even be pre-configured via TotalMix FX under Windows/Mac. Apart from the current configuration, which will be preserved, the possibility of saving up to 6 previously saved configurations in the setup memory is very useful, allowing for a quick reconfiguration without a connected host PC/Mac.

The **input signal** will pass through all activated functions of the TotalMix FX input channel, namely settings, EQ, and Dynamics, and is then sent to the iPad. Like under Windows and Mac, the input fader controls direct monitoring to any output. The FX send control for echo/reverb is also active.

The iPad's **output signal** passes through all activated functions of the TotalMix FX hardware outputs, namely settings, EQ, and dynamics. The third row's fader sets the output level.



App examples

With an already existing number of interesting and professional apps the combination of the Fireface UCX and an iPad is not a mere toy, but as a serious alternative for mobile recording or music production.

Simple Recording:

Recorder Plus, FiRe and FiRe2, BIAS iProRecorder.

Multitracking:

n-Track Studio, Hokusai, HarmonicDogs, MultiTrack DAW.

Digital Audio Workstations:

Garage Band, Music Studio, FL Studio Mobile, Meteor.



Differences between Fireface UCX and Fireface UC and Fireface 400:

	Fireface UCX	Fireface UC/400
DSP hardware effects	yes	-
Support for RME Remotes	yes	-
AD/DA Conversion	New 2011 design	
Low latency AD/DA Conversion	yes	-
AutoSet for overload protection	yes	-
Bus-powered operation	-	Fireface 400

Comparison between Fireface UCX and Fireface UFX:

	Fireface UCX	Fireface UFX
Inputs	18	30
Outputs	18	30
Analog I/Os	8	12
Advanced Parallel Conversion	-	4 x
AES/EBU I/O	-	1 x
SPDIF I/O	1 coaxial + 1 optical (opt. = ADAT I/O)	1 optical (2nd ADAT I/O)
ADAT I/O	1 x	2 x
Mic Preamps (digitally controlled)	2 x	4 x
Word Clock I/O (BNC)	yes	yes
Phones Outputs (dedicated)	1 x	2 x
High Resolution Color Display	-	yes
MIDI I/O	2 x	2 x
Internal DSP hardware effects	yes	yes
AutoSet for Mic/Inst. Preamps	4 x	4 x
RME Remote Support	yes	yes
Direct USB Recording™	-	yes
Size	1/2 19 inch	19 inch
All TotalMix FX features at up to 192 kHz	yes	yes
SMUX (up to 192 kHz)	yes	yes
Complete Stand Alone Operation with Setup Recall	yes	yes
USB & FireWire support (HFX-Core)	yes	yes

Question & Answers

Is the Fireface UCX the successor of the Fireface UC? No. Despite the same form factor, the Fireface UCX is a completely new device with an expanded feature set for studio and live usage. The UC still remains as a state-of-the-art USB audio interface.

Can I use the Fireface UCX stand-alone? Yes. The Fireface UCX is usable without any connection to a PC or Mac. In Class Compliant mode it also works as a professional two or eight channel interface for Apple's iPad/iPad2.

Can I use the UCX on a USB and FireWire port at the same time? No. Only one connection at the same time.

What is better: USB or FireWire? Depends on your specific system. Just try it.

Can I use the UCX on a FireWire 800 port? Yes. It just needs a FireWire 800 <> 400 cable.

Can I use the UCX on an USB 3.0 port? Yes. The Fireface UCX is compatible with USB 3 chipsets.

Drivers Windows 7 / Vista / XP SP2 (32 & 64 Bit) . Apple Mac OS X 10.5+

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