



Fireface UCX II

The most powerful USB audio interface ever!

24 Bit / 192 kHz

TotalMix FX™



SteadyClock FS™



SyncCheck™

- USB 2.0 Digital I/O System
- 8 Channel Analog Interface
- 2 + 2 Channel AES / SPDIF Interface
- 8 Channel ADAT Interface
- 24 Bit / 192 kHz Digital Audio
- 40 x 20 Matrix Router
- MIDI Input / Output
- Full Stand-Alone Operation
- Direct USB Recording
- Class Compliant Operation

Safety Instructions and Proper use



Read the manual carefully and completely before using the device. Pay attention to the following information on how to use and operate the Fireface UCX II safely. Improper use can lead to loss of warranty claims (see warranty statement on page 82).

Proper Use

The Fireface UCX II is a digital interface for professional audio applications for use with CE approved class B computers.



To comply with the European CE standard, the Fireface UCX II must be used with CE approved Class B computers. All connecting cables must be shielded. The computer and all cables connected to the Fireface UCX II must be properly grounded. Operation with non-certified computers and cables may cause interference to other devices as well as the Fireface UCX II.



Do not open chassis

No user serviceable parts inside. Refer service to qualified service personnel.



To reduce the risk of fire or electric shock do not expose this device to rain or moisture. Prevent moisture and water from entering the device. Never leave a pot with liquid on top of the device. Do not use this product near water, i. e. swimming pool, bathtub or wet basement. Danger of condensation inside – don't turn on before the device has reached room temperature.



Installation

Surface may become hot during operation – ensure sufficient ventilation. Avoid direct sun light and do not place it near other sources of heat, like radiators or stoves. When mounting in a rack, leave some space between this device and others for ventilation.



Unauthorized servicing/repair voids warranty. Only use accessories specified by the manufacturer.



Fireface UCX II

► **Technical Reference**

39. Technical Specifications

39.1 Analog

AD, Line In 5-8, rear

- Resolution AD: 24 bit
- Signal to Noise ratio (SNR): 112 dB RMS unweighted, 115 dBA
- Frequency response @ 44.1 kHz, -0.1 dB: 5 Hz – 20.8 kHz
- Frequency response @ 96 kHz, -0.5 dB: 3 Hz – 45.8 kHz
- Frequency response @ 192 kHz, -1 dB: 2 Hz – 92 kHz
- THD: < -110 dB, < 0.00032 %
- THD+N: < -104 dB, < 0.00063 %
- Channel separation: > 110 dB
- Input: 6.3 mm TRS jack, electronically balanced
- Input impedance: 8 kOhm unbalanced, 12 kOhm balanced
- Input sensitivity switchable to +19 dBu and +13 dBu
- Variable gain: 0 to +12 dB
- Minimum level for 0 dBFS: +1 dBu, -1.2 dBV

Line In 3-4, front

- as AD, but:
- Additional digital Gain stage: 0 up to +12 dB
- Maximum input level, +19 dBu, Gain 0 dB: Line +19 dBu, Inst +13 dBu
- Maximum input level, +13 dBu, Gain 12 dB: Line +1 dBu, Inst -5 dBu
- Input impedance: Instrument 1 MOhm. Line 13 kOhm balanced, 9 kOhm unbalanced
- Input Gain Inst: +6 dB
- Input mode: Line balanced (TRS), Inst unbalanced (TS)

Microphone In 1-2, front

As AD, but:

- Input: XLR, electronically balanced
- Input impedance: 5.4 kOhm
- Gain range: 75 dB
- Maximum input level, Gain 0 dB: +18 dBu
- Maximum input level, Gain 75 dB: -57 dBu
- EIN: -128 dBu A-weighted, 60 dB gain, 150 Ohm, 20 Hz – 20 kHz

Line In 1-2

As AD, but:

- Input: TRS, electronically balanced
- Input impedance: 10 kOhm balanced, 5 kOhm unbalanced
- Maximum input level, Gain 0 dB: +24 dBu
- Maximum input level, Gain 75 dB: -51 dBu

DA, Line Out 1-6, rear

- Resolution: 24 bit
- Dynamic range (DR): 112 dB RMS unweighted, 115 dBA
- Frequency response @ 44.1 kHz, -0.5 dB: 5 Hz – 20.8 kHz
- Frequency response @ 96 kHz, -0.5 dB: 5 Hz – 45 kHz
- Frequency response @ 192 kHz, -1 dB: 5 Hz - 89 kHz
- THD: < -108 dB, < 0.0004 %
- THD+N: < -104 dB, < 0.00063 %
- Channel separation: > 110 dB
- Maximum output level: +19 dBu
- Output: 6.3 mm TRS jack, servo-balanced
- Output impedance: 75 Ohm
- Output level switchable +19 dBu, +13 dBu, +4 dBu

DA - Stereo Monitor Output Phones (7-8)

As DA, but:

- Output: 6.3 mm TRS stereo jack, unbalanced
- Maximum output level at 0 dBFS, High: +19 dBu
- Maximum output level at 0 dBFS, Low: +4 dBu
- Output impedance: 1 Ohm
- Max power per channel @ 32 Ohm load, 0.1% THD: 210 mW (2.6 Vrms, +10.5 dBu)

39.2 MIDI

- 1 x MIDI I/O via 5-pin DIN jacks
- Galvanically isolated by optocoupled input
- Hi-speed mode: Jitter and response time typically below 1 ms
- Separate 128 byte FIFOs for input and output

39.3 Digital

- Clocks: Internal, ADAT, AES, SPDIF, word clock
- Jitter suppression of external clocks: > 50 dB (2.4 kHz)
- Effective clock jitter influence on AD and DA conversion: near zero
- PLL ensures zero dropout, even at more than 100 ns jitter
- Digital Bitclock PLL for trouble-free varispeed ADAT operation
- Supported sample rates: 28 kHz up to 200 kHz

39.4 Digital Inputs

AES/EBU

- 1 x XLR, transformer-balanced, galvanically isolated, according to AES3-1992
- High-sensitivity input stage (< 0.3 Vpp)
- SPDIF compatible (IEC 60958)
- Accepts Consumer and Professional format
- Lock range: 27 kHz – 200 kHz
- Jitter suppression: > 50 dB (2.4 kHz)

SPDIF coaxial

- 1 x RCA, according to IEC 60958
- High-sensitivity input stage (< 0.3 Vpp)
- Accepts Consumer and Professional format, copy protection will be ignored
- Lock Range: 27 kHz – 200 kHz
- Jitter suppression: > 50 dB (2.4 kHz)

ADAT Optical

- 1 x TOSLINK, format according to Alesis specification
- Standard: 8 channels 24 bit, up to 48 kHz
- Double Speed (S/MUX): 4 channels 24 bit 96 kHz
- Quad Speed (S/MUX4): 2 channels 24 bit 192 kHz
- Bitclock PLL ensures perfect synchronisation even in varispeed operation
- Lock range: 31.5 kHz – 50 kHz
- Jitter suppression: > 50 dB (2.4 kHz)

Word Clock

- BNC
- Internal termination 75 Ohm switchable
- Automatic Double/Quad Speed detection and internal conversion to Single Speed
- SteadyClock guarantees super low jitter synchronization even in varispeed operation
- Not affected by DC-offsets within the network
- Signal Adaptation Circuit: signal refresh through auto-center and hysteresis
- Overvoltage protection
- Level range: 1.0 Vpp – 5.6 Vpp
- Lock Range: 27 kHz – 200 kHz
- Jitter suppression: > 50 dB (2.4 kHz)

39.5 Digital Outputs

AES/EBU

- XLR, transformer-balanced, galvanically isolated, according to AES3-1992
- Output level Professional 4.5 Vpp, Consumer 2.6 Vpp
- Format Professional according to AES3-1992 Amendment 4
- Format Consumer (SPDIF) according to IEC 60958
- Single Wire mode, sample rate 28 kHz up to 200 kHz

SPDIF coaxial

- 1 x RCA, according to IEC 60958
- Output level Professional 1.2 Vpp, Consumer 0.6 Vpp
- Format Professional according to AES3-1992 Amendment 4
- Format Consumer (SPDIF) according to IEC 60958
- Single Wire mode, sample rate 28 kHz up to 200 kHz

ADAT

- 1 x TOSLINK
- Standard: 8 channels 24 bit, up to 48 kHz
- Double Speed (S/MUX): 4 channels 24 bit 96 kHz
- Quad Speed (S/MUX4): 2 channels 24 bit 192 kHz

Word Clock

- BNC
- Max. output voltage: 5 Vpp
- Output voltage @ 75 Ohm termination: 4.0 Vpp
- Output impedance: 10 Ohm
- Frequency range: 27 kHz – 200 kHz

39.6 General

- Power supply: external power supply
- Typical power consumption: 13 Watts
- Current at 12 Volt operating voltage: 910 mA (11 Watts)
- Dimensions incl. rack ears, full depth (WxHxD): 258 x 44 x 155 mm (10.16" x 1.73" x 6.1")
- Dimensions without rack ears, body depth (WxHxD): 215 x 44 x 130 mm (8.5" x 1.73" x 5.1")
- Weight: 910 g (2.0 lbs)
- Temperature range: +5° up to +50° Celsius (41° F up to 122°F)
- Relative humidity: < 75%, non condensing

40. Technical Background

40.1 Lock and SyncCheck

Digital signals consist of a carrier and the data. If a digital signal is applied to an input, the receiver has to synchronize to the carrier clock in order to read the data correctly. To achieve this, the receiver uses a PLL (Phase Locked Loop). As soon as the receiver meets the exact frequency of the incoming signal, it is locked. This **Lock** state remains even with small changes of the frequency, because the PLL tracks the receiver's frequency.

If an ADAT or SPDIF signal is applied to the Fireface UCX II, the corresponding input field starts flashing. The unit indicates LOCK, i. e. a valid input signal (in case the signal is also in sync, the field is constantly lit, see below).

Unfortunately, LOCK does not necessarily mean that the received signal is correct with respect to the clock which processes the read out of the embedded data. Example: The Fireface is set to 44.1 kHz internally (clock mode Master), and a mixing desk with ADAT output is connected to input ADAT. The corresponding field will show LOCK immediately, but usually the mixing desk's sample rate is generated internally (also Master), and thus slightly higher or lower than the Fireface's internal sample rate. Result: When reading out the data, there will frequently be read errors that cause clicks and drop outs.

Also when using multiple inputs, a simple LOCK is not sufficient. The above described problem can be solved elegantly by setting the Fireface from Master to AutoSync (its internal clock will then be the clock delivered by the mixing desk). But in case another, un-synchronous device is connected, there will again be a slight difference in the sample rate, and therefore clicks and drop outs.

In order to display those problems optically at the device, the Fireface includes **SyncCheck**. It checks all clocks used for *synchronicity*. If they are not synchronous to each other (i. e. absolutely identical), the SYNC field of the asynchronous input flashes. In case they are completely synchronous, all fields are constantly lit. In the above example it would have been obvious that the field ADAT kept on flashing after connecting the mixing desk.

In practice, SyncCheck allows for a quick overview of the correct configuration of all digital devices. So one of the most difficult and error-prone topics of the digital studio world finally becomes easy to handle.

The same information is presented in the Fireface's Settings dialog. In the status display the state of all clocks is decoded and shown as simple text (No Lock, Lock, Sync).

40.2 Latency and Monitoring

The term **Zero Latency Monitoring** has been introduced by RME in 1998 for the DIGI96 series of audio cards. It stands for the ability to pass-through the computer's input signal at the interface directly to the output. Since then, the idea behind has become one of the most important features of modern hard disk recording. In the year 2000, RME published two ground-breaking Tech Infos on the topics *Low Latency Background*, which are still up-to-date: *Monitoring, ZLM and ASIO*, and *Buffer and Latency Jitter*, both found on the RME website.

How much Zero is Zero?

From a technical view there is no zero. Even the analog pass-through is subject to phase errors, equalling a delay between input and output. However, delays below certain values can subjectively be claimed to be a zero-latency. This applies to analog routing and mixing, and in our opinion also to RME's Zero Latency Monitoring. The term describes the digital path of the audio data from the input of the interface to its output. The digital receiver of the Fireface UCX II can't operate un-buffered, and together with TotalMix and the output via the transmitter, it causes a typical delay of 3 samples. At 44.1 kHz this equals about 68 μ s (0.000068 s), at 192 kHz only 15 μ s. The delay is valid for ADAT and SPDIF in the same way.

Oversampling

While the delays of digital interfaces can be disregarded altogether, the analog inputs and outputs do cause a significant delay. Modern converter chips operate with 64 or 128 times oversampling plus digital filtering, in order to move the error-prone analog filters away from the audible frequency range as far as possible. This typically generates a delay of one millisecond. A playback and re-record of the same signal via DA and AD (loopback) then causes an offset of the newly recorded track of about 2 ms.

Low Latency!

The Fireface UCX II uses AD and DA converters with an innovative digital filter, causing a delay of only a few samples. With 5 samples AD and 6 samples DA the delay caused by the conversion is only a fraction of previous generations. The exact delays of the UCX II converters are:

Sample frequency kHz	44.1	48	88.2	96	176.4	192
AD (5 x 1/fs) ms	0.11	0.10				
AD (5 x 1/fs) ms			0.057	0.052		
AD (6 x 1/fs) ms					0.034	0.031
DA (5.8 x 1/fs) ms	0.13	0.12	0.066	0.06	0.033	0.03

Buffer Size (Latency)

Windows: This option found in the Settings dialog defines the size of the buffers for the audio data used in ASIO and WDM (see chapter 9).

Mac OS X: The buffer size is defined within the application. Only some do not offer any setting. For example iTunes is fixed to 512 samples.

General: A setting of 64 samples at 44.1 kHz causes a latency of 1.5 ms, for record and playback each. But when performing a digital loopback test no latency/offset can be detected. The reason is that the software naturally knows the size of the buffers, therefore is able to position the newly recorded data at a place equalling a latency-free system.

AD/DA Offset under ASIO and OS X: ASIO (Windows) and Core Audio (Mac OS X) allow for the signalling of an offset value to correct buffer independent delays, like AD- and DA-conversion or the Safety Buffer described below. An analog loopback test will then show no offset, because the application shifts the recorded data accordingly. Because in real world operation analog record and playback is unavoidable, the drivers include an offset value matching the Fireface's converter delays.

Therefore, in a **digital** loopback test a *negative* offset of about 3 ms occurs. This is no real problem, because this way of working is seldom, and usually the offset can be compensated manually within the application. Additionally, keep in mind that even when using the digital I/Os usually at some place an AD- and DA-conversion is involved (no sound without...).

Safety Buffer

An additional small safety buffer on the playback side has proven to be very efficient and useful. It is therefore implemented in all RME interfaces. Under Windows the Fireface UCX II uses a fixed additional buffer of 32 samples, under Mac 24 samples, which is added to the current buffer size. The main advantage is the ability to use lowest latency at highest CPU loads. Furthermore, the fixed buffer does not add to the latency jitter (see Tech Info), the subjective timing is extraordinary.

Core Audio's Safety Offset

Under OS X, every audio interface has to use a so called *Safety Offset* on record and playback, otherwise Core Audio won't operate click-free. The Fireface uses a Safety Offset of 24 samples. This offset is signalled to the system, and the software can calculate and display the total latency of buffer size plus AD/DA offset plus 2 x Safety Offset plus Safety Buffer for the current sample rate. The option *Short Safety Offset* in the Settings dialog reduces this to 12 samples each.

40.3 USB Audio

USB audio is in several ways different from PCI based audio interfaces. A good performance and click-free operation at a low buffer size are indeed possible on current computers. However, using older computers a simple stereo playback will begin to cause a CPU load of more than 30%.

A computer blocked for a short time – no matter if ASIO or WDM – will lose one or more data packets. Such problems can only be solved by increasing the buffer size (latency).

The Fireface features a unique data checking, detecting errors during transmission via USB and displaying them in the Settings dialog.



Additionally the Fireface provides a special mechanism to continue recording and playback in case of drop-outs, and to correct the sample position in real-time.

Best USB 2 performance is achieved by connecting the UCX II to its own bus, which should be no big problem as most USB 2.0 interfaces are a double bus design. A check in the Device Manager can be done as follows:

- Connect the UCX II to a USB 2 port
- Start the Device Manager, View set to Devices by Connection
- Select ACPI x86-based PC, Microsoft ACPI-Compliant System, expand PCI Bus

This branch normally includes two entries of a *USB2 Enhanced Host Controller*. A USB Root Hub can be seen, which then connects all USB devices, including the UCX II. By reconnecting to a different port this view shows at which of the two controllers the UCX II is connected. With multiple devices it can be checked if they are connected to the same controller.

Furthermore this information can be used to operate an external USB drive without disturbing the UCX II, by simply connecting the drive to the other controller.

Especially with notebooks it can happen that all internal devices and all the sockets/ports are connected to the same controller, with the second controller not used at all. In that case all devices have to use the same bus and will interfere with each other.

40.4 DS - Double Speed

Sample rates above 48 kHz were not always taken for granted, and are still not widely used because of the CD format (44.1 kHz) dominating everything. Before 1998 there were no receiver/transmitter circuits available that could receive or transmit more than 48 kHz. Therefore a work-around was used: instead of two channels, one AES line only carries one channel, whose odd and even samples are being distributed to the former left and right channels. By this, you get the double amount of data, i. e. also double sample rate. Of course in order to transmit a stereo signal two AES/EBU ports are necessary then.

This transmission mode is called *Double Wire* in the professional studio world, and is also known as *S/MUX (Sample Multiplexing)* in connection with the multichannel ADAT format.

Because the ADAT interface does not allow for sampling frequencies above 48 kHz (a limitation of the interface hardware), the Fireface UCX II automatically uses *Sample Multiplexing* in DS mode. One channel's data is distributed to two channels. As the transmission of double rate signals is done at standard sample rate (Single Speed), the ADAT outputs still deliver a 44.1 kHz or 48 kHz carrier.

40.5 QS – Quad Speed

Due to the small number of available devices that use sample rates up to 192 kHz, but even more due to a missing real world application (CD...), Quad Speed has had no broad success. An implementation of the ADAT format as double S/MUX (S/MUX4) results in only two channels per optical output. Devices using this method are few.

In earlier times the transmission of 192 kHz had not been possible via Single Wire, so once again sample multiplexing was used: instead of two channels, one AES line transmits only one half of a channel. A transmission of one channel requires two AES/EBU lines, stereo requires even four. This transmission mode is being called *Quad Wire* in the professional studio world.

Because the ADAT interface does not allow for sampling frequencies above 48 kHz (a limitation of the interface hardware), the Fireface UCX II automatically uses *Sample Multiplexing* in QS mode. One channel's data is distributed to four channels. As the transmission of quad rate signals is done at standard sample rate (Single Speed), the ADAT outputs still deliver a 44.1 kHz or 48 kHz carrier.

40.6 Noise level in DS / QS Mode

The outstanding signal to noise ratio of the Fireface UCX II AD-converters can be verified even without expensive test equipment, by using record level meters of various software. But when activating the DS and QS mode, the displayed noise level will rise from -113 dB to -105 dB at 96 kHz, and -79 dB at 192 kHz. This is not a failure. The software measures the noise of the whole frequency range, at 96 kHz from 0 Hz to 48 kHz (RMS unweighted), at 192 kHz from 0 Hz to 96 kHz.

When limiting the measurement range from 20 Hz to 20 kHz (so called audio bandpass) the value would be -113 dB again. This can be verified with RME's *DIGICheck*. The function **Bit Statistic & Noise** measures the noise floor by *Limited Bandwidth*, ignoring DC and ultrasound.

Subframe	MSB	Audio Data	LSB	AUX	CUV	RMS LB [dB+3]	RMS [dBA+3]	DC [dB]
1 - Left	x x x x	x x x x x x x x x x x x x x x x	x x x x	x x x x	0 0 0	-112.7	-115.5	-137.9
2 - Right	x x x x	x x x x x x x x x x x x x x x x	x x x x	x x x x	0 0 0	-112.6	-115.6	-137.8
Bits	4	8	12	16	20	24	20Hz ... 20kHz	A-weighting

Press F1 for help. SR 192kHz

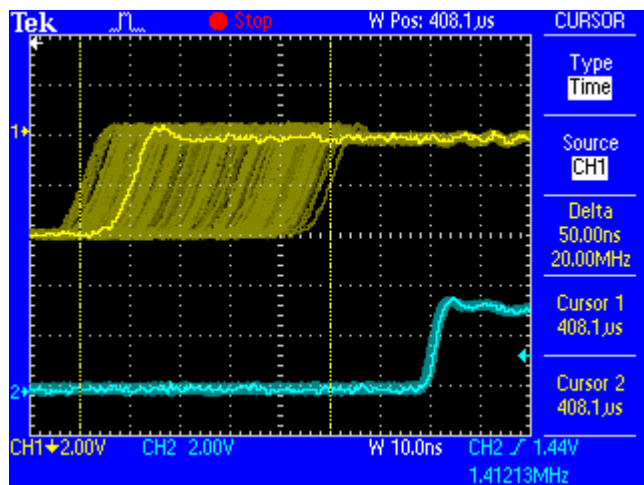
The reason for this behaviour is the noise shaping technology of the analog to digital converters. They move all noise and distortion to the in-audible higher frequency range, above 24 kHz. That's how they achieve their outstanding performance and sonic clarity. Therefore the noise is slightly increased in the ultrasound area. High-frequent noise has a high energy. Add the doubled (quadrupled) bandwidth, and a wideband measurement will show a significant drop in SNR, while the human ear will notice absolutely no change in the audible noise floor.

40.7 SteadyClock

The SteadyClock technology of the Fireface UCX II guarantees an excellent performance in all clock modes. Thanks to a highly efficient jitter suppression, the AD- and DA-conversion always operates on highest sonic level, being completely independent from the quality of the incoming clock signal.

SteadyClock has been originally developed to gain a stable and clean clock from the heavily jittery MADI data signal (the embedded MADI clock suffers from about 80 ns jitter). Using the Fireface's input signals AES and ADAT, you'll most probably never experience such high jitter values. But SteadyClock is not only ready for them, it would handle just on the fly.

Common interface jitter values in real world applications are below 2 ns, a very good value is less than 2 ns.

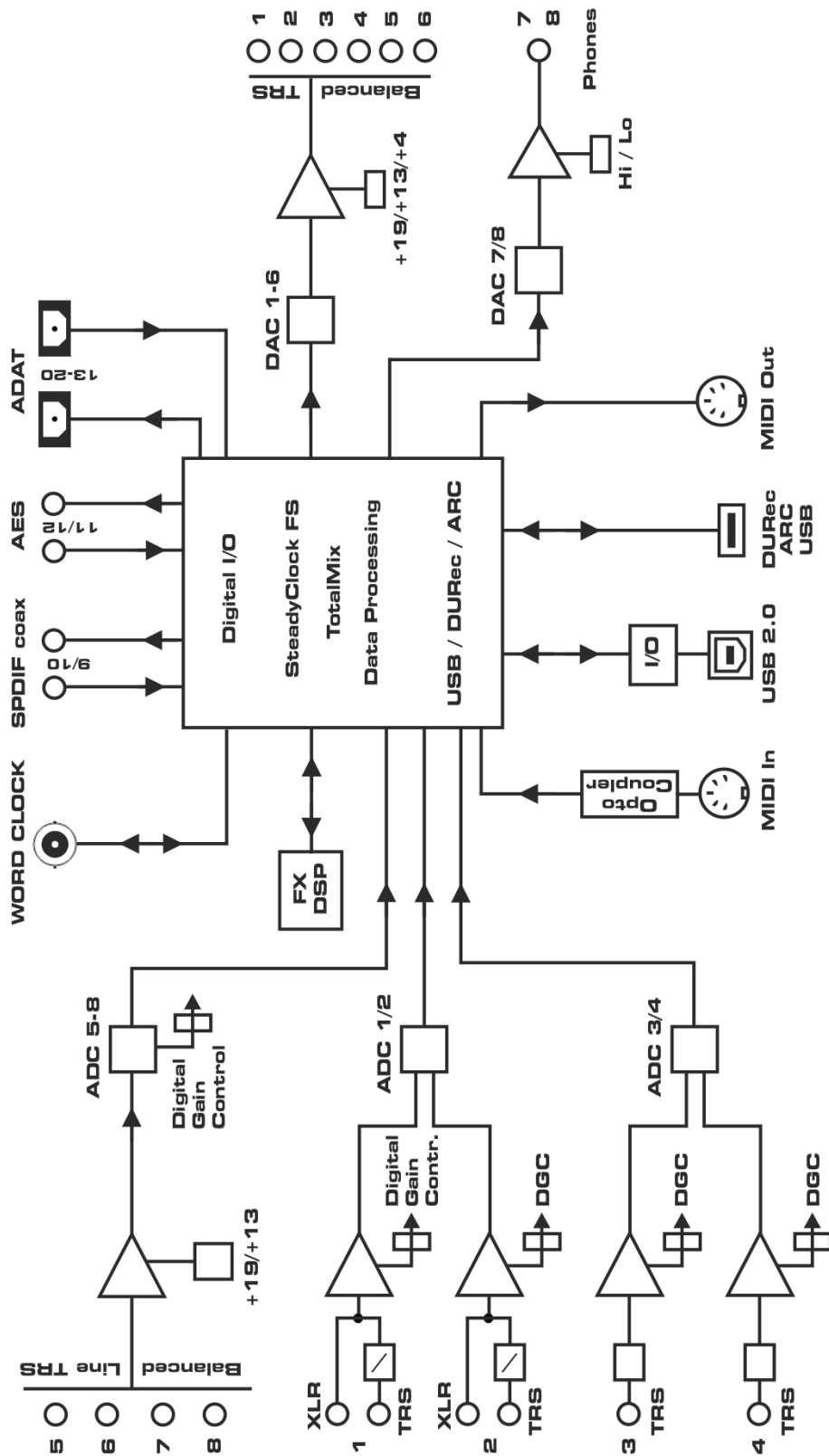


de-
jit-
bed-
er
ues.
them
in
10

The screenshot shows an extremely jittery SPDIF signal of about 50 ns jitter (top graph, yellow). SteadyClock turns this signal into a clock with less than 2 ns jitter (lower graph, blue). The signal processed by SteadyClock is of course not only used internally, but also used to clock the digital outputs. Therefore the refreshed and jitter-cleaned signal can be used as reference clock without hesitation.

41. Diagrams

41.1 Block Diagram Fireface UCX II



41.2 Connector Pinouts

TRS jacks of analog input / output

The stereo 1/4" TRS jacks of the rear analog inputs and outputs are wired according to international standards:

Tip = + (hot)
Ring = - (cold)
Sleeve = GND

The servo balanced input and output circuitry allows to use monaural TS jacks (unbalanced) with no loss in level. This is the same as when using a TRS-jack with ring connected to ground.

XLR jacks of analog inputs

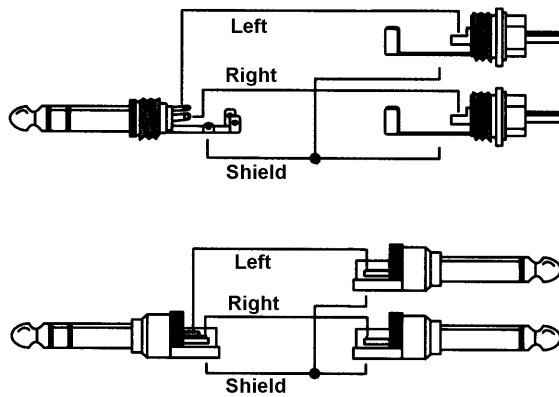
The XLR jacks are wired according to international standards:

1 = GND (shield)
2 = + (hot)
3 = - (cold)

TRS Phones jack

The analog monitor outputs on the front are accessible through stereo 1/4" TRS jacks. This allows a direct connection of headphones. In case the output should operate as Line output, an adapter TRS plug to RCA phono plugs, or TRS plug to TS plugs is required.

The pin assignment follows international standards. The left channel is connected to the tip, the right channel to the ring of the TRS jack/plug.



Pin assignment of the 9-pin D-Sub connector, breakout cable BO968 SPDIF / AES

Pin	Name	Pin	Name	Pin	Name
1	GND	4	AES Out +	7	SPDIF In -
2	SPDIF Out +	5	AES In +	8	AES Out -
3	SPDIF In +	6	SPDIF Out -	9	AES In -

Note: The digital breakout cable BO968 is also used on the HDSP9632, HDSPe AIO, HDSPe AIO Pro and the ADI-2 Pro versions.

44. Appendix

RME news, driver updates and further product information are available on RME's website:

<https://www.rme-audio.com>

Worldwide distribution: Audio AG, Am Pfanderling 60, D-85778 Haimhausen, Tel.: (49) 08133 / 918170

Support via e-mail: support@rme-audio.com

List of international supporters: <https://www.rme-audio.de/support.html>

RME user forum: <https://forum.rme-audio.de>

Manufacturer: IMM electronics GmbH, Leipziger Strasse 32, D-09648 Mittweida

Trademarks

All trademarks, registered or otherwise, are the property of their respective owners. RME, DIGICheck and Hammerfall are registered trademarks of RME Intelligent Audio Solutions. DIGI96, SyncAlign, ZLM, SyncCheck, TMS, TotalMix, DURec and Fireface are trademarks of RME Intelligent Audio Solutions. Alesis and ADAT are registered trademarks of Alesis Corp. ADAT optical is a trademark of Alesis Corp. Microsoft, Windows, Windows 7/8/10 are registered trademarks or trademarks of Microsoft Corp. Steinberg, Cubase and VST are registered trademarks of Steinberg Media Technologies GmbH. ASIO is a trademark of Steinberg Media Technologies GmbH. Apple, iPhone, iPad, iOS, Mac OS and macOS X are registered trademarks of Apple Inc.

Copyright Matthias Carstens, 10/2021. Version 1.2b

Current driver and Firmware versions

Driver: Windows 1.1212, Mac OS X: 2.23 / 3.221 / 3.27, TotalMix FX: 1.75

Firmware: USB 37, CC 16, DSP 24

Although the contents of this User's Guide have been thoroughly checked for errors, RME can not guarantee that it is correct throughout. RME does not accept responsibility for any misleading or incorrect information within this guide. Lending or copying any part of the guide or the RME Driver CD, or any commercial exploitation of these media without express written permission from RME Intelligent Audio Solutions is prohibited. RME reserves the right to change specifications at any time without notice.

Note on Disposal

According to the guide line RL2012/19/EU (WEEE – Directive on Waste Electrical and Electronic Equipment), valid for all european countries, this product has to be recycled at the end of its lifetime.

In case a disposal of electronic waste is not possible, the recycling can also be done by IMM electronics GmbH, the manufacturer of the Fireface UCX II.

For this the device has to be sent **free to the door** to:

IMM electronics GmbH
Leipziger Straße 32
D-09648 Mittweida
Germany



Shipments not prepaid will be rejected and returned on the original sender's costs.

45. CE / FCC Compliance

CE

This device has been tested and found to comply with the limits of the European Council Directive on the approximation of the laws of the member states relating to electromagnetic compatibility according to RL2014/30/EU, and European Low Voltage Directive RL2014/35/EU.

FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Responsible Party in USA:

Synthax United States, 6600 NW 16th Street, Suite 10, Ft Lauderdale, FL 33313
T.:754.206.4220

Trade Name: RME, Model Number: Fireface UCX II

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: To comply with the limits of the Class B digital device, pursuant to Part 15 of the FCC Rules, this device must be operated with computer equipment certified to comply with Class B limits. All cables used to connect to the computer and peripherals must be shielded and grounded. Operation with non-certified computers or unshielded cables may cause interference to radio or television reception.

RoHS Notice

This product has been soldered lead-free and fulfils the requirements of the RoHS directive.