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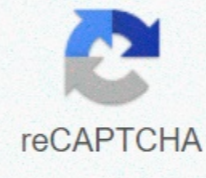
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Rme ufx plus manual

Maxim Lyadov RME Fireface UFX was released for the manufacturer's 20th anniversary and marks a new stage in the construction of the interface. Let's find out what's new. The word Fireface has been left from the moment of support for the firewire bus frontline bus at the time. So far, the manufacturer has mastered the fastest modern usb3.0 and Thunderbolt external tires, but the fireface brand has become so famous that the manufacturer decided to quit. The name UFX is a kind of suggestion: if you were satisfied with your UFX and planning an upgrade, then here is a great option already made. Compared to its predecessor, the number of channels has increased dramatically. Now there are 188, which is 128 more channels. It is clear that most of them are MADI digital channels and allow you to connect any equipment, both studio and stage, a hundred meters from the computer. By the way, RME has a large number of other products and converters for this multichannel standard. The power of the DSP hardware has also been increased. Even more interesting is the possibility of autonomous recording of 76 channels, 12 analog channels, 64 digital, in a USB flash drive connected to the front panel. That is, you cannot connect the computer at all for recording. The analog part in UFX is no less interesting than the digital part. The 12/12 input configuration, which includes 4 high quality microphone preamps. Amplifiers have the most advanced technical implementation compared to other RME products and put UFX on par with flagship solutions from leading manufacturers. This is not advertising - the manufacturer for some reason does not write about it anywhere. But it's an objective reality, Sorry. Judge for yourself: the hein rank is a record of 75 dB! For distortions and noises you can also be afraid - used very expensive and high quality circuits. As for scanning, the APC AKM signal/noise of 120 dB senior, distortions of -110 dB are used here. Even higher parameters are only available in the most expensive RME Micstasy 8-channel microphone preamp. It can be integrated with Fireface UFX ADAT or MADI, as neither USB nor Thunderbolt has A pc connectivity. Interestingly, preamps have a special hi-z mode (1MM) to connect guitars, maximum signal balancing is very high q21 dBu, it is important for passive sensors. There are other connections between the front. For example, you can send separate phonograms in two pairs of headphones: separately to the artist and separately to the sound engineer. The output on the headphones is quite good. It has a fairly high signal level and a low output resistance of 2 Om. The color display focuses on managing settings and viewing levels of all channels on the device. Interestingly, all management is fundamentally digital. And this is not only a saving of analog control handles, but a really elaborate function. Supposing you need to adjust the input level when recording - you can do it from the front on the screen, from the RME TotalMix FX app on your computer, or completely remotely – from the wired remote control or from iPad. And you can usually choose the AutoSet function, raise the level to a notoriously high and it will be lowered automatically, with peaks below -6 dB. Interestingly, any channel can be assigned to Talkback and communicated artists holding the button. At the same time, the volume of the signal on the headphones will be automatically reduced and the artist will listen to you. That is, the interface is designed for daily actual work. It's not just a lot of between and out as we see on most devices. It's a very different approach. You can create a monitor submix, and you can choose a rigid match ready preset from inputs and outputs to physical channels, so as not to get confused in numerous settings. However, reading the instructions is strictly necessary to understand exactly how to use this or that function. Fortunately, the manual is written intelligently. There are silly instructions, in the style of changing gay, changing gay. To turn on ghost feeding, turn on ghost food. RME has all the human and useful explanations. For example, it is stated that XLR outputs do not operate in servo-balance mode, so you cannot close the 3rd contact (cold) to the ground, as it will cause a sharp increase in distortions. Okay, for the sake of such information it is worth carefully reading the guide. Generally speaking, for ANY technique, especially a professional, reading guide is necessary. And here the manufacturer deserves all the praise, as it makes an excellent thick printed version of the manual in the form of a brochure, on quality paper with color offset printing. It's hard to find another device that has so many professional digital connectivity interfaces. We have experienced great pleasure when using Thunderbolt Connectivity. In fact, it's an external PCI Express bus. The speed of the exchange allows First, cascade multiple devices into the chain. RME announces that it works at the same time as three UFX. And at the same time, they will all be visible in the app as a single device, only with a large number of channels. By the way, the electrical S/PDIF also connects silently through the elementary adapter described in the instructions. The signal is given at 2 and 3, and the remaining contact remains disconnected. And if you choose in the SPDIF settings, then the signal amplitude to the AES connector output will drop to the home and display the correct consumer indicator within the header frame with SPDIF data. Everything is thought out down to the smallest detail - this is just one of the private examples. WordClock support is one of the main features of the device. Inside there is a fairly complex scheme that analyzes the signal and selects the parameters of the technique. You can include internal line terminology. You can send a signal of any quality and amplitude - inside the correct level will be collected and there will be a complete cleaning of interference and jitter. This updated clean signal can then be taken to the word clock and sent to hardware that is more sensitive to nerves and interference. The manufacturer reasonably warns that nervousness is usually 15 times worse than the nerve quartz generator. It is necessary to understand and design a study configuration wisely. All these typical problems are dedicated to a separate chapter of management, which is highly recommended for the study before rushing to connect devices to each other, by trial and error. On the digital side we see the main chip FPGA powerful ARTIX-7 and next to it HARDWARE DSP TI and RAM. FPGA - simply a programmable transistor array that allows you to implement any working logic, including simple arithmetic operations. Typically, FPGA is used at the design stage of any complex chips and processors, as all work logic is determined only by firmware and can be changed without iron reworking. Of course, the complexity of FPGA firmware design is much greater than simple general-purpose processor programming. But there are also advantages to this approach – you can implement parallel processing of hundreds of channels without delay, which is excluded within the traditional CPU architecture - memory for the program and data. On the FPGA chip, signal operations are performed as hardware drivers. The only thing that is bad for FPGA are complex floating-point processing algorithms. That is, effects such as equalizer, compressor, reverb. It is to solve these problems on the board is an additional POWERFUL DSP. Naturally, all processing effects are fully designed and programmed by RME engineers. Chip manufacturers only provide processing power, and then everything is done completely by the device creator. (Just like, for example, information doesn't complete your processors with an operating system or applications — it only sells powerful iron, documentation, and developer tools. Thanks to such an interesting padding, the device can work completely without a computer. The signal will be received, processed and displayed outside. Canning record dozens of channels separately to a flash drive connected to the front panel. This improves the reliability of off-field environments, compared to a lot of laptop interfaces, and opens up great opportunities for the application. Your laptop may not have time to write a large number of channels, or at an unnecessary time there may be errors in the programs. Writing to a flash drive can be more reliable. In addition to recording, you can play files from the flash drive. All this gives a powerful padding and has very elegant firmware UFX. Control from the screen, of course, less convenient than from the computer, but if you get used to it, there is no problem with it. We use several 32-bit and 4-channel AKM CAPs from the new 44 Audio 4 Pro series. Chip passport features: 120 dBA dynamic range, Kg'noise -107 dB. Two channels AKM AK5388 dynamic range of 120 dBA, Kg'noise: -110 dB is used for scanning. In addition, the actual measured number of analog inputs and outputs of RME Fireface UFX are very close to these characteristics. That is, the manufacturer did its best to unlock the potential of high quality electronic filler. RME Fireface UFX' Linear Inputs 1-8 TRS Inputs, Electronic Balance Maximum Scale: 19 dBu Signal/Noise: 116 dBA Kg: -116 dB, 0.00032 % Kg noise: -112 dB, 0.00063 % Channel division: > 110 dB Hein range: 0 to 12 dB Microphone inputs 9-12 Outputs: XLR, Electronic balance Maximum scale (Hein minimum): 18 dBu Signal/Noise: 118 dBA Kg: -116 dB, 0.00032 % Kg'noise: -112 dB, 0.00063 % Gain range: 0 to 75 dB Guitar inputs 9-12 TR input, unbalanced impedance: 1 MOM Maximum range: 21 dBu Signal/Noise: 118 dBA Kg: -116 dB, 0.00032 % -112 dB, 0.00063 % Hein range: 8 to 50 dB Analog output 3-8 Outputs: TRS, Servo-Balance Maximum scale: q19 dBu Signal/Noise: 118 dBA Kg: -116 dB, 0.00032 % Kg'noise: -112 dB, 0.00063 % Nominal level choice: -10 dBV, q4 dBu Analog output 1-2 Outputs: XLR, XLR, Maximum BalanceAl Range: q24 dBu Signal/Noise: 118 dBA Kg: -116 dB, 0.00032 % Kg'noise: -112 dB, 0.00063 % Nominal level rating: -10 dBV, q4 dBu Microphone preamplifics - very interesting and expensive. We see this implementation only in the best studio models (e.g. Lynx Aurora (n), Steinberg AXR4). This is a lot of that 1580 controller and that 5171 that allows you to implement analog amplification powered by digital commands. The supplier of these chips is a small American company specialized in this particular issue. The quality of the preamps is recognized as one of the best in the world. They also have technical registration parameters. The powerful power supply inside the box looks like a finished module, which is as far away from all chains as possible and separated by a display. In addition, digital and analog boards have their own voltage converters and power filters. Thunderbolt cable traditionally does not come in the box, it is purchased separately from the Apple store. But for USB3.0 connection is an interesting cable of the European brand ednet, length of 1.8 meters. The latency difference between Thunderbolt and USB3.0 is not very significant. Of course, Thunderbolt wins. While USB3.0 has a delay of approximately 1 ms more. It should only be noted that this is a total delay in input and output, i.e. RTL (round trip latency). Separately, the delay for entry and exit is half that. Most valuable that at such low values RME Fireface UFX is great at recording and playback. However, if you have an important recording session, it's worth putting a more reasonable buffer value, somewhere 256 samples or more. No problem with this - you can choose a buffer from 32 samples to 4096. By the way, the number of different useful settings in the RME product is traditionally large. You can choose the signal timing source or even leave the internal key, but manually adjust the difference in the speed of external and internal obstructions. We have not seen such functions in any manufacturer. RME developers traditionally write drivers for all their products themselves. As the company's founder Mathias Carstens told us - of course, the drivers were not written from scratch, and were based on the USB standard, but since the initial driver code it seems that it no longer left a single line. Everything was completely rewritten for the needs of a professional user. The TotalMix FX mixer is the same as in other RME products. It seems very sophisticated. The mixer has 4 resolutions, so it is compatible with HiDPI 4K displays and above. In all the intimidating way, you can understand. The top row of channels is responsible for physical inputs. The second row is a monitor submix for the chosen output of the third row. For example, the screenshot selects the first access to the headset. To do this, the volume of the ASIO 1/2 channels to the maximum, so that the headphones are the same as in the output of the main monitor. If you don't need submixes, you can choose a preset when each channel matches each physical output. Then the average alignment will be hidden from the user. In addition to the mixer type, you can switch to the standard display of the input and output switching matrix. Mixer channels can be signed with their own names: voice, guitar, etc. For input and output working hardware effects: dynamic processing (compressor-expander-self-level), equalizer (3-band parametric plus low cut button) and sitting on a separate FX reverb and pneumatic echo. Talkback can be activated for any input and output. ASIO Diagnostics Number of Fireface UFX digital channels is amazing. It would be impossible to transmit so much information at the same time on the USB2.0 bus. Измерения в RMAA Тестирование при уровне входа и выхода +19 dBu Тестируемое устройство [ASIO] RME Thunderbolt ASIO Режим работы 24-bit, 44 kHz Звуковой интерфейс ASIO Маршрут сигнала External loopback (line-out - line-in) Версия RMAA 6.4.5 PRO Фильтр 20 Гц - 20 кГц ДА Нормализация сигнала ДА Изменение уровня -0.2 dB / -0.2 dB Режим МОНО НЕТ Частота сигнала калибрации, Гц 1000 Полярность правильная/правильная Неравномерность АЧХ (в диапазоне 40 Гц - 15 кГц), дБ Уровень шума, дБ (A) Динамические диапазон, дБ (A) Гармонические искажения, % Гармонические искажения + шум, дБ(A) Интермодуляционные искажения + шум, % Взаимопроникновение каналов, дБ Интермодуляции на 10 кГц, % Общая оценка Подробные результаты RMAA для режима 24 бит 44 кГц Результаты измерений в точности соответствуют заявленным характеристикам. All ratings are Excellent. Let's take a look at the individual test charts: As we can see, the noise spectrum has no parasitic cables. It's all very clean. This speaks of quality nutrition and competent payment. Make record-breaking signal/noise Does the dynamic cd range barely reach 100 dB? For studio devices, low noise makes sense, as recording is done with an overload margin and the dynamic range of raw recording is not superfluous. Then, when the compressor or limiter overlaps, the level of the recorded signal will increase significantly, and with it the noises will increase. Therefore, all studio devices record in 24-bit mode and have a good signal/noise margin when scanning. A wide range is also used when playing. It allows you to quickly change the signal volume digitally, without fear of noise on headphones and monitors. You can also see a very clean spectrum without distortion. The digital part works properly, without any problem. Mid-range and basic-level devices often have problems with both the digital part and the quality of the converter models themselves. RME used the senior models of AKM and AKM production at UFX and competently realized its potential. The harmonic ratio in our measurements is only 0.0002%. This is significantly better than, say, the much cheaper interface of RME Babyface Pro. That is, Fireface UFX meets the highest requirements for studio devices in the highest price category. Of course, there is no limit to perfection. If the only task is to digitize and display 2 channels with the highest quality, RME has a powerful ADI-2 PRO device, where distortions are even minor, 0.0001%. However, it's worth considering that the ADI-2 PRO doesn't have DSP hardware, it doesn't have a large number of modern USB3.0 and Thunderbolt fast tires and channels low delays. That is, each device is created for its strictly understandable tasks. Fireface UFX is best suited for studio or away for multichannel recording and output, with the ability to mix and process DSP hardware. In our work, we've connected Fireface UFX to a powerful desktop on the Core i7 4GHz with 16GB of storage so the processor doesn't get us ready with Thunderbolt and USB3.0 tires. We tested the connection to two different motherboards with Thunderbolt 2, Windows 7 x64 and Windows 10 PRO, and found no problem with professional drivers and applications. The licensed version of Cubase worked perfectly. In the exhaustion of the substitus, we published a screenshot of the program. We connected two condenser microphones on the same time, a true Neumann TLM102 condencer studio microphone and a low-cost chinese electric noim microphone with a 15mm membrane. The cheap microphone has been mingled at the doorbell due to the small membrane - significantly fewer low frequencies and mid-rise, the sound is a little loud. However, some of these issues are addressed with evaluation. Nuemann showed a nobler and more enjoyable sound, and the Fireface UFX high-quality microphone preamp showed it perfectly. The bond between the two Germans is pretty good for each other. Even to connect the devices, we use the German Cordial microphone cable ready to use with Neutrik at the ends. We use German ADAM studio monitors to listen to the recordings. Considering the Steinberg Cubase software, the result is a complete intestine alles. Get to work you can do whatever you want, completely reveal your creativity. Natürlich! We recorded vocals as well as a brass musical instrument - saxophone. For comparison, we connected the microphone to other preamps we had. The RME amplifier has demonstrated a high professional level. Although, frankly the bad amplifiers we haven't even seen in mass equipment - manufacturers pull up each other, mastering new quality heights. But the profit stock in low-cost models is approximately 50 dB, and RME is as much as 75 dB. This allows you to record to any existing microphone, including dynamics and low-sensitivity tape. The photo clearly shows 4 preamps, which are located just behind the corrosies on the front panel. What else can Fireface UFX offer the user? During recording, you can mix the processed signal for monitoring by the performer, so that the DAW recorded only a dry signal, but the already processed listened performer - with evaluation, compression and reverb. If you do this with DAW, there is inevitably a delay in processing. If you do hardware in the TotalMix FX mixer, everything happens in real time, without the participation of the computer. Also, if, for example, you want to place the UFX fireface interface away from a noisy computer or in a room without a computer at all (for example, in a good-tone room or on stage), you can use recording and playback on the flash drive, connected to the front panel. In addition, the recording will not be a total mix, but each channel individually, for more information Daw. Conclusions From the results of our knowledge of Fireface UFX, we saw a high-class product from the manufacturer, in which engineers resorted to the maximum. Here and all the most modern connectivity interfaces - Thunderbolt, USB3.0, MADI and advanced padding, and hardware DSP, and lots of interesting in every detail. However, if you are professionally involved in music, there is no need to count all technical achievements. Enough to say that this is a superior interface, launched for the 20th anniversary of the company and embodying all possible developments of the German manufacturer. RME Fireface UFX is provided for testing by the official RME representative at Russia Window Audio Audio

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