Powerful, reliable & comprehensive **AVB & MADI** solutions developed by RME Audio

Next Generation
Network Audio Devices

RME

From recording studios to major broadcast companies

In today's music creating environment, users should never have to tolerate sub-standard reliability and performance — whether the goal is to capture a multi-piece orchestra in a commercial recording environment, tracking a world-class halftime show or a demo in a bedroom studio.

RME Audio products are used daily by working professionals in a wide range of different areas. From recording studios, to major broadcast companies, scientific research establishments, high profile live tours, west end theatre productions and national art installations.

You can even find RME products in systems monitoring whale movements near off-shore oil rigs! Whether you're in the studio, in the desert, out at sea or at home; you can count on your RME Audio equipment to deliver the quality and reliability you need.

M-32 Pro AVB Series

High-end 32-Channel 192 kHz
AD or DA Converter

Redundant power supplies, compact housing, network functionality - these and other wishes were brought to us by our customers for a revised 32-channel converter series. With the new M-32 DA Pro and M-32 AD Pro, RME meets the diverse requirements of current mobile and fixed installations.

Based on state-of-the-art, high-resolution converter components and a fully balanced analog circuit design, the new M series offers a signal-to-noise ratio of 120 dB(A) with extremely low THD values, which places the converters in the reference class.

Each of the 32 channels enables AD/DA conversion with up to 192 kHz sampling frequency.

The internal filters are based on the recently introduced ADI-2 Pro reference converter and allow a completely linear frequency response (up to 0 Hz at the output).

The open AVDECC 1722.1 control protocol as part of AVB allows users to use external controllers from different manufacturers to control almost all device functions. In addition, a web interface and a JSON API are available - both via the network connection and the integrated USB port.

For maximum compatibility with a variety of analog hardware, the individual channels of the M-32 AD Pro and M-32 DA Pro can be operated with different line levels - each with full resolution of the converters.

Besides +19 dBu and +13 dBu, the new M-Series is one of the few solutions available on the market that also allows working with the SMPTE® recommendation of +24 dBu at 0 dBFS.
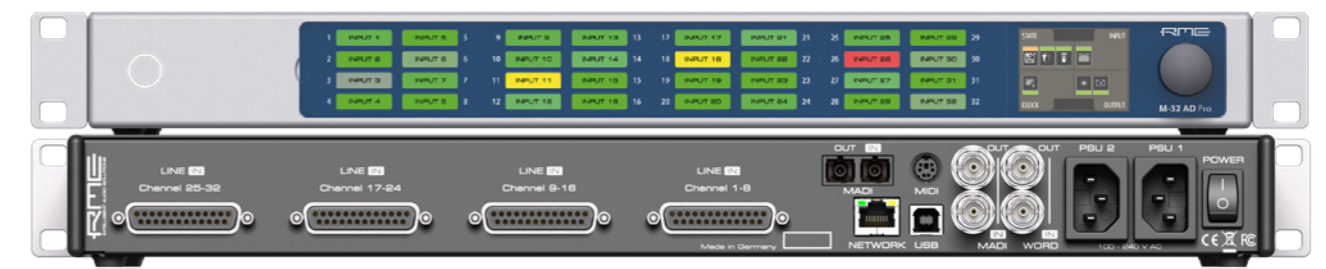
AVB - The future of network
signal transmission

In addition to the two fully equipped MADI I/Os including separate signal routing, the new M-32 DA Pro and M-32 AD Pro feature an AVB interface based on the open network standards IEEE 802.1 and 1722.1, enabling transmission of the 32 analog channels at a maximum 192 kHz sampling rate via a single Ethernet cable.

Combined with external AVB switches, the new M-Series converters can be quickly, easily and reliably integrated into more complex network structures thanks to the comprehensive time-synchronous signal processing of the AVB protocol.

Connectivity   `AVB` `MADI`

32 x Analog In/Out (25-pin D-sub, up to +24 dBu)
2 x MADI I/O (separate optical SC and coaxial BNC, up to 128 Ch.)
1 x RJ45 1 GigE AVB, four streams with 4/8/12/16 Ch. each
(optional) MIDI I/O for legacy MIDI Remote
Word Clock I/O (BNC) // USB 2.0 (for remote control)

Highlighted Features

32/32	FS			
I/O	SteadyClock FS	Redundant power supply	Intuitive user interface	MADI <-> AVB conversion

M-1610 Pro

16 channel A/D, 10 channel D/A converter with ADAT, AVB, MADI

Versatile Analog Format Conversion across all Digital Formats

Integrating 16 analog inputs with a switchable sensitivity of up to +24 dBu per channel; 8 corresponding analog outputs; and an additional headphone output, the M-1610 Pro brings plenty of analog I/O to any studio setup. With its coaxial and (optional) optical MADI, redundant AVB, four ADAT optical outputs, and redundant DC coupled outputs, the device represents one of the most versatile and highest-performing converters on the market.

Add Analog and AVB I/O to any existing MADI devices

At the request of recording engineers using a variety of analog effects and instruments in their sessions, RME have combined the outstanding performance of the M-32 Pro AD and DA converters into a single device, and at an unbeatable price-point.

When compared with the M-32 Pro series, which were designed primarily for fixed installations, the M-1610 Pro adds a selection of additional user-friendly features, for seamless operation in studio, live and broadcast. Input and output TRS jacks provide alternative connections for the D-Sub inputs (inputs 11-16) and D-Sub outputs (outputs 1-2), alongside redundant network ports, a headphone output for monitoring and trouble-shooting, and quick access buttons for source selection and volume.

The internal routing matrix provides visual control over all channels side by side - up to eight AVB streams (with a total of 128 channels); the coaxial and (optional) optical MADI ports (with each up to 64 channels); all analog I/O; and the ADAT outputs, for flexible routing between the 272 inputs and 298 outputs.

Lowest converter latencies and deterministic AVB networking with configurable network delay down to 0.3 ms allow the M-1610 Pro to deliver samples, even from multiple devices, at incredible speeds - time-aligned with nanosecond accuracy across an entire network.

The AD and DA filters have been carefully optimized for different sampling rates, with a focus on accuracy and RME's signature 'transparency' (nothing added, nothing removed). Together with SteadyClock FS, RME's ultra-low jitter digital clock technology, the conversion to and from analog is state-of-the-art, at any level and across all digital formats. As a notable difference to similar devices, the three analog line levels per channel each offer the full dynamic range of the converters.

Connectivity   `AVB` `MADI`

16 x Analog In (25-pin D-sub, up to +24 dBu, 6x TRS, fully symmetrical design)
8 x Analog Out (25-pin D-sub, up to +24 dBu, fully symmetrical design)
1x Stereo Phones // **4x ADAT Outputs**
2 x MADI I/O (separate optical SFP Modul and coaxial BNC, up to 128 Ch.)
2 x RJ45 1 GigE AVB, four streams with 4/8/12/16 Ch. each
Word Clock I/O (BNC) // **USB 2.0** (for remote control and firmware updates)

Highlighted Features

16/10	FS			
I/O	SteadyClock FS	Redundant power supply	Intuitive user interface	MADI <-> AVB conversion

12Mic

12-channel digitally controlled microphone preamplifier with AVB & MADI

RME's first preamp for audio networks

The RME 12Mic features twelve microphone and line level inputs with digital, no-compromise, studio-quality conversion; remote controllable gains; integrated MADI and AVB connectivity; plus a multitude of additional functionality, designed to make it the perfect companion for any professional recording setup.

MADI & ADAT for maximum flexibility

Both coaxial and optical (via an SFP module) MADI I/O is available for independent or redundant operation, and can be used for daisy chaining, merging and converting MADI signals at incredibly low latency.

Three optical ADAT outputs provide up to 24 channels of audio at single speed (for example, a combination of microphone inputs, MADI signals and AVB signals), or 12 output channels at 96 kHz sampling rate, ensuring compatibility with a wide range of audio interfaces. Additionally, the ADAT ports can also be used to send monitor mixes from the AVB or MADI inputs to existing DACs/headphone amps.

Twelve transparent mic preamps for exceptional conversion performance

The PAD-free microphone input stages have a 75 dB gain range and accept signals of up to +18 dBu. On the converter side, the 12Mic shines with an outstanding signal-to-noise ratio on all channels. All twelve front-facing XLR connections accept microphone and line level signals, whilst the first four connections also accept TRS connectors, with switchable high impedance (Hi-Z) for instruments.

Two fully redundant network ports

For the first time, RME offers an AVB device with two fully redundant network ports, based on the recommendations of MILAN. The RME AVB Core has meticulously implemented the IEEE standards for audio-streaming, discovery and control, allowing RME devices to be both discovered and fully controlled by any AVB controller, and making vendor-specific control protocols a thing of the past.

Any signal reaching the 12Mic can be routed and streamed over a network with fixed latency and guaranteed bandwidth - no switch configuration is required!

Connectivity

AVB MADI

4x XLR-TRS combo inputs (switchable P48 on XLR / Hi-Z on TRS)
8x XLR microphone inputs (switchable P48)
1x Stereo Phones // 3x ADAT Outputs
2 x MADI I/O (separate optical SFP Modul and coaxial BNC, up to 128 Ch.)
2 x RJ45 1 GigE AVB, four streams with 4/8/12/16 Ch. each
Word Clock I/O (BNC) // USB 2.0 (for remote control and firmware updates)

Highlighted Features

| I/O | SteadyClock FS | Redundant power supply | Intuitive user interface | MADI <-> AVB conversion |

AVB Tool

Router, mic preamp,
MADI « »AVB converter and more

The RME AVB Tool combines MADI and deterministic AVB networked audio with four high-precision microphone, instrument and line level inputs, plus headphone and separate line level outputs. Following RME's concept of maximum versatility and connectivity, 128 channels of MADI I/O have been also added to this half rack 19" device.

High-grade quality analog inputs

The AVB Tool is a pristine analog converter featuring the most commonly-found analog signals in a control room, recording studio or on stage: four XLR-TRS combo inputs, with remote controllable 75 dB gain in 1 dB steps; an input line level sensitivity of +18 dBu, with switchable high impedance on every channel; a stereo headphone output; and two analog line level outputs, with switchable +4/+19 dBu reference levels.

Power is provided by an external power supply (with locking connector), and a K-slot lock port adds an additional level of security against theft. Seamless redundancy is available for all MADI signals, whenever the secondary MADI port is mirrored with the same signal as the coaxial MADI input. If redundancy is not required, the (optional) optical single- or multimode MADI module is treated as an individual MADI I/O with full bandwidth.

8-Stream Gigabit AVB

On the AVB side, the number of streams available in the RME AVB core have been doubled to eight streams. Up to 128 audio channels can be sent and received over AVB in total across all streams.

The AVB Tool has the same input stages as the first four channels of the 12Mic – successfully combining the components found in the Fireface UFX II and UFX+ into a new AD converter, extended with switchable High Impedance, balanced line level on the TRS, and two balanced line level outputs at the rear for monitoring.

Connectivity   `AVB` `MADI`

4x XLR-TRS combo inputs (+18 dBu, 75 dB gain)
2 x TRS balanced Line Out (+4/+19 dBu, DC coupled)
1x Stereo headphone output for monitoring of all signals
2 x MADI I/O (separate optical SFP Modul and coaxial BNC, up to 128 Ch.)
1 x RJ45 1 GigE AVB, four streams with 4/8/12/16 Ch. each
Word Clock I/O (BNC) // USB 2.0 (for remote control and firmware updates)

Highlighted Features

4/4	**SteadyClock FS**	**Intuitive user interface**	**MADI <-> AVB conversion**
I/O	SteadyClock FS	Intuitive user interface	MADI <-> AVB conversion

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Digiface AVB

AVB connectivity meets RME reliability

A lightweight, portable audio interface, combining AVB network connectivity and features with everything that RME is famous for: USB 3, TotalMix FX, outstanding options in both USB and stand-alone operation and RME's well-known USB driver for Windows and macOS, with lowest latency and industry leading stability, and equipped with TotalMix FX for flexible routing or mixing operations.

Add more control to your production workflow

RME's Digiface AVB showcases how audio can be transferred from a computer into the network and back using the AVB protocol stack. Equipped with USB 3, it allows you to stream up to 128 channels of audio with sampling rates up to 192kHz into the AVB network and another 128 channels back.

Channels are organized in streams of configurable size from 2 to 32 channels, which enables connections to all available AVB audio devices on the market.

The accompanying software package comprises an AVDECC controller, which provides essential functions to discover all AVB devices in a network and manage connections of incoming and outgoing streams. An additional headphone output allows high quality monitoring.

Connectivity   `AVB`

16 Input Streams/16 Output Streams // Headphone Output
Gigabit Ethernet (802.3 compliant) // Wordclock I/0
IEEE 802.1 BA compliant AVB Stack
IEEE 1722 AVTP / 1722.1 AVDECC compliant

Highlighted Features

128/128			
I/O	TotalMix FX	RME USB 3	USB Bus-powered

Optional

Advanced Remote Control USB (connected via Computer)

SteadyClock FS - FemtoSecond Clocking

In digital audio, the clock frequency is an essential factor, as it creates the correlation between the audio bits and the time reference. Unfortunately, the clock frequency is not always as stable as desired. The AVB Series offers the latest SteadyClock FS technology for lowest jitter and highest jitter immunity. Excellent performance in all clock modes and High Quality Analog Conversion.

SteadyClock FS reduces
the self jitter to new lows.

Capture every detail

RME's mic preamps and converters are designed to capture every nuance of a performance, with no added sweeteners. Every detail is captured and no detail is lost. Neutral conversion allows you to hear the performance exactly as it is in the room — giving you the confidence you need that what you hear in the control room will translate to the final product. Digital format conversion in RME products are done without any loss or degredation, and SteadyClock FS ensures your sonic image will never experience degradation.

SteadyClock FS Technology from the countless award winning ADI-2 Series

AVB Series

12Mic // **AVB Tool** // **M-1610** Pro // **M-32** Pro Series // **Digiface** AVB

Professional multi-channel audio solutions with maximum flexibility, new AD/DA converters,
optimised analog circuitry, as well as improved SNR and THD values guarantee pristine,
crystal clear and transparent audio for any application - studio, live, broadcast and installations.