

ADI-648

64-Channel 192 kHz ADAT → MADI converter with 16 x 16 matrix router



Connectivity

1 x MADI I/O (optical and coaxial)

8 x ADAT I/O (TOSLINK), 4 ch. @ 96 kHz (S/MUX), 2 ch. @ 192 kHz (S/MUX4) each

MIDI I/O (5-pin DIN)

Word Clock I/O (BNC)

The ADI-648 offers format conversion from MADI to ADAT and vice versa. All 64 MADI I/O-channels can be converted to 8 ADAT optical TOSLINK inputs and outputs respectively. In addition, the ADI-648 features an easily configurable 8-channel based 16 x 16 Matrix Router. Any of the outputs, which are divided into 8-channel blocks, can be fed from any 8-channel input block, both on the ADAT and the MADI side.

The ADI-648 not only accepts 56-channel, 64-channel and 96k frame formats, it is also capable of generating and supplying those formats. That way the ADI-648 makes an ideal MADI front-end for ADAT devices. Interconnecting ADAT equipped computers or mixers will be more comfortable and powerful by bypassing limitations of the short cable-lengths offered by the ADAT-optical standard.

But it doesn't stop at free routing within the MADI-ADAT and ADAT-MADI conversion. Splitting and routing is also possible within the same format. An 8-channel input block can also be mirrored to any number of output blocks in parallel.

Multiple ADI-648 devices can be cascaded and synchronized with sample accuracy via Word Clock.

The ADI-648 generates Word Clock in Single or Double Speed and is capable of working with double MADI rate (96k frame). 96 kHz and 192 kHz sample rate are supported in Double Wire (S/MUX)/Quad Wire (S/MUX4) mode, both, for MADI and ADAT I/O. The Varipitch option is controlled by input signal or Word Clock.

The ADI-648 is fully MIDI remote controllable via the built-in MIDI connectors and MIDI over MADI.

The device status, controls and front panel LEDs can be scanned and controlled via MIDI. Each ADI-648 can be given its own ID, providing independent remote control of multiple devices via a single MIDI channel. RME's MIDI Remote control software for Mac and PC may use any existing MIDI port within the computer to perform remote control and status requests for all ADI-648s.

MIDI over MADI allows for 16 MIDI channels to be carried along with the MADI data packages, not interfering any of the 64 audio channels.

The ADI-648 supports SyncAlign® and SyncCheck® – known and proven technologies utilized in other RME products, allowing for perfect sync between all channels and easy detection of error states.

All settings are retained when the unit is powered off. Due to SteadyClock and its high jitter suppression, the reference clock can also be extracted from the MADI signal itself. No need for additional Word Clock or AES clock lines.

In case of errors, the Safe Mode Input function will switch the MADI input automatically, ensuring redundancy between optical and coaxial inputs.

With its 16 ADAT ports the ADI-648 performs a full integration of the most popular interface standard into the MADI world, with just a single device.

Technologies

MADI Multinorm
MADI Quad Wire
MADI Redundancy
ADAT S/MUX and S/MUX4
MIDI Remote
MIDI over MADI
Intelligent Clock Control
SteadyClock™
SyncCheck™
SyncAlign®
Cascadable

Application examples

- MADI-ADAT breakout box for all RME analog/digital front-end units
- MADI-ADAT breakout box for other devices with MADI interface
- Connecting MADI-based equipment to RME's Hammerfall series
- ADAT optical patchbay and router
- MADI coaxial / optical or vice versa converter and splitter
- MADI redistributor, patchbay, router

Specifications

- Sample rates: 44.1, 48, 88.2, 96 kHz, variable (Sync/Word Clock)
- Frame rate MADI: 48 and 96 kHz (for 88.2 and 96 kHz sample rate)
- Input Word Clock: Signal Adaptation Circuit (functional from 1.2 Vpp input signal), switchable termination
- Output Word Clock: low-impedance driver stage, 4 Vpp into 75 Ohm, short-circuit-proof
- Sync sources: MADI, ADAT optical, Word Clock, internal
- Varipitch: controlled by input or Word Clock
- Sample rate range:
MADI: 32 - 96 kHz, Word Clock: 27 - 105 kHz, ADAT: 33 - 57 kHz
- Jitter: Internal clock < 1 ns, word clock In < 2 ns, ADAT In < 2 ns
- Jitter suppression with external clock: > 30 dB (2.4 kHz)
- Jitter sensitivity: flawless PLL operation even at 100 ns Jitter
- Power Supply: Internal switching power supply, 100 V - 240 V AC, 15 Watt
- Dimensions (WxHxD): 483 x 44 x 200 mm