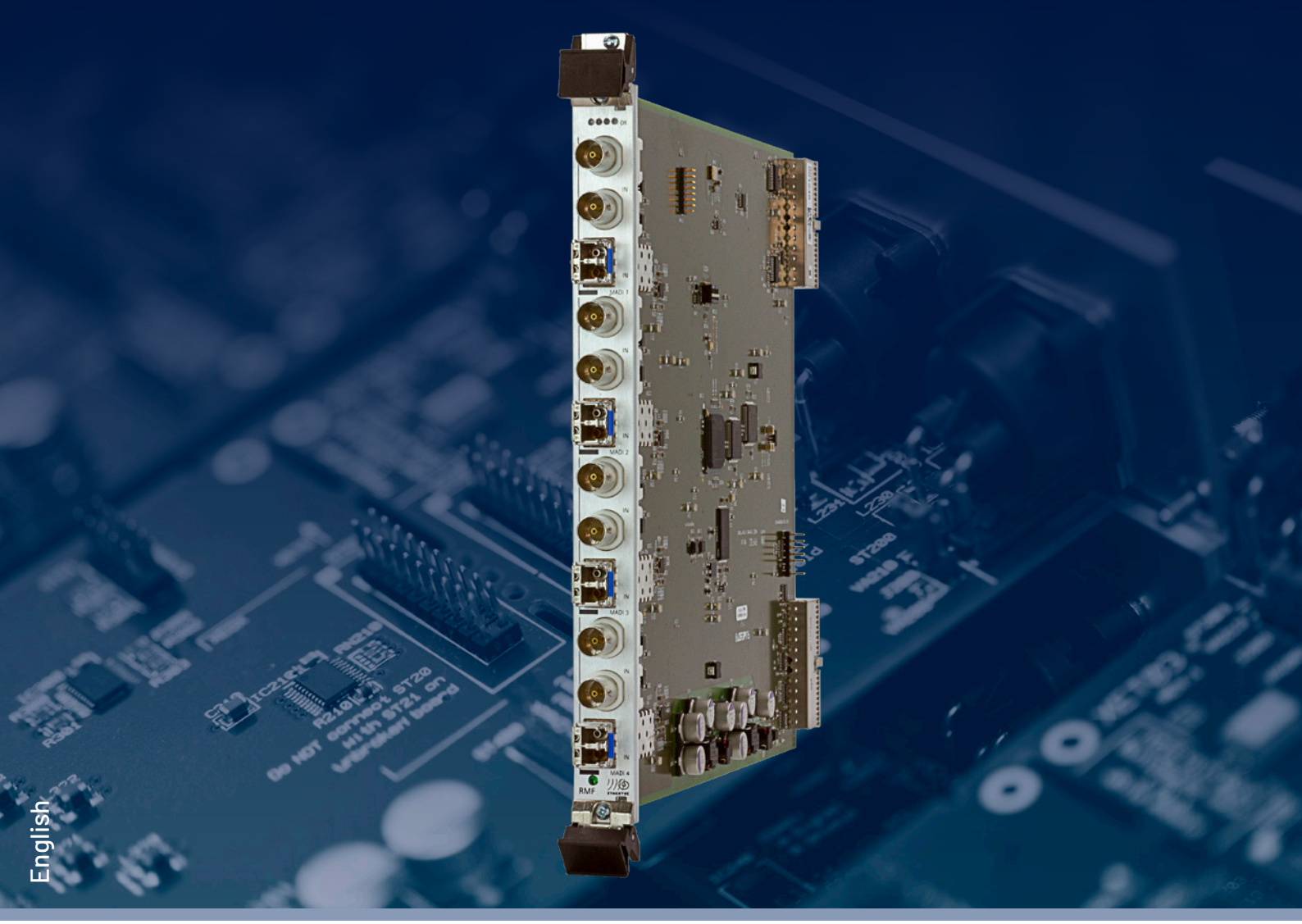


English

RMF

MADI Interface

STAGETEC

AUDIO. VIDEO. IP.
SIGNALMANAGEMENT

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MADI interface card for NEXUS Star Routers

The RMF MADI card is the consistent scaling of the XMF MADI card for Star Router. As a router card, it allows up to four MADI universes to be integrated into a NEXUS network. The four ports, both BNC and SFP ports for LC-duplex fiber optics, are connected directly to the matrix of the Star Router and can be routed from there system-wide.

The RMF router card was developed for applications in which a particularly large number of audio channels are to be transferred from external systems to a NEXUS network. It has four independent MADI interfaces, each with a BNC socket and an SFP module slot on the front panel. On the output side, both connections operate in parallel, while on the input side the priority of a connection can be defined. The SFP ports can be equipped with the standard SFP module required for each application, supporting a wide range of scenarios with both single-mode and multi-mode fiber optic cables.

56 and 64 channel MADI formats are supported and incoming audio streams are automatically detected. The RMF card also supports legacy mode, where the MADI connection works at twice the sampling rate, i.e. up to 96kHz, but half the number of channels. In transparent mode, AES additional data can be transferred and read out and are available for further use by the user. For example, they can be output to an XTI board anywhere else in the network or displayed in the NEXUS operating program. The RMF card can also receive compressed or encoded audio signals and transmit them transparently over the NEXUS network. It is certified by Dolby Laboratories for the transmission of Dolby-E.

4 separate MADI interfaces
The RMF board can receive and transmit up to 256 channels via four independent MADI interfaces.

Combined version with BNC input, BNC output and LC optical connection
The board has both BNC and optical LC connectors via which the Madi signal can be fed into the base unit. The preferred input can be selected in the operating software; in automatic mode, the module automatically recognizes which connection is used.

Adjustable digital gain in the inputs
The input signals can be amplified or reduced with a digital gain adjustable in 1dB steps.

Support of MADI legacy audio at 96 kHz
MADI data streams in legacy format can also be received and sent without any problems. By halving the number of channels, the sampling rate can be doubled.

Transparent transmission of additional data in the AES3 data stream
The NEXUS network is able to transparently transmit an AES3 data stream including the additional data. If no data is available in transparent mode, Nexus internal data is output. In the case of additional data on only one channel, the data is taken over by the other channel.

Automatic detection of the number of channels in the MADI data stream
When evaluating the MADI additional data, the number of received channels is automatically recognized.

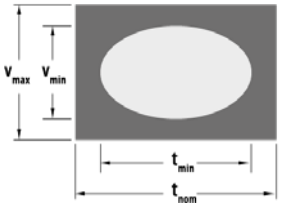
Integrated loop mode
For test purposes or to provide NEXUS outputs as NEXUS sources for advanced routing, there is a loop mode that has the same effect as a cable connecting the output and input.

Connection of two separate Nexus networks
Separate NEXUS networks are set up in larger installations, mainly for maintenance reasons. When updating a NEXUS system, the system must be switched off for a short time so that transmission operations would be interrupted. When exchanging audio signals between separate NEXUS networks, the RMF I/O card provides the interface for up to 256 channels in both directions, allowing large quantities of channels to be transmitted via MADI. In addition, the clock contained in the MADI data stream offers an excellent possibility for synchronization.



CONNECTIONS			
RMF_02		1x 4TE	
BNC	4x	MADI	output
BNC	4x	MADI	input
SFP	4x	MADI	bidirectional

TECHNICAL SPECIFICATIONS	
Data formats	
MADI	24-bit-Audio
Inputs RMF	
	4 independent ports, optical and electrical formats
	1...64 channels per port @ 48 kHz (1...32 channels @ 96 kHz)
	legacy mode supported, auto-switchover
Coaxial input	
Input impedance	75 ohm
Version	Galvanically isolated differential input ports
Input signal	The signal applied to the electrical input should be within the following tolerance range.



Receiver Eye Pattern Diagram
$t_{nom} = 8$ ns
$t_{min} = 6$ ns
$V_{max} = 0.6$ V
$V_{min} = 0.15$ V

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TECHNICAL SPECIFICATIONS	
Optical input	(e.g. HFBR-57E0LZ for multimode fiber)
Fiber	62,5/125 µm
Wavelength	1,27...1,38 µm (1300 nm)
Required input power	-31...-14 dBm
Overall attenuation	0...11 dB
RMF outputs	
	4 independent ports, optical and electrical formats
	1...64 channels per port @ 48 kHz (1...32 channels @ 96 kHz)
	legacy mode supported (enabled using the control software)
Electrical output	
Version	Galvanically isolated differential output ports
Output impedance	73...77 ohm (nom. 75 ohm)
Output voltage	0.3...0.8 VPP @ 75 ohm load, 20/80 % of the amplitude
Rise / fall time	1...3 ns
Optical output	(e.g. HFBR-57E0LZ for multimode fiber)
Fiber	62,5/125 µm
Wavelength	1,27...1,38 µm (nom. 1310 nm)
Optical power	-20...-14 dBm @ 62.5/125-µm fiber
Cabling specifications electrical	
Impedance	73...77 ohm
Attenuation	max. 0,1 dB/m bei 1...100 MHz
Cable length	50 m (max.)
Cabling specifications optical	(IEC-793 and FDDI compliant)
Core diameter	59,5...65,5 µm (nom. 62,5 µm)
Sheathing diameter	123...127 µm (nom. 125 µm)
Bandwidth	500 MHz km (max.) @ 1300 nm
Spanning distance	2 km (max.)
Attenuation	0.9 db/km (max.) @ 1300 nm (only cabling)
Features	
Data rate	125 Mbps (typ.)
Sample rates	44,1 kHz, 48 kHz, 88,2 kHz, 96 kHz
Operation conditions	
Temperature range	0 °C to +50 °C
max humidity	max. 90 %, non-condensing
Storage conditions	
Temperature range	-35 °C to +70 °C
max humidity	max. 90 %, non-condensing
Power supply	
Voltage	+4,75...5,25 V
Currrent	approx. 1 A (module without optical modules)
approx. 150...300 mA per optional module, depending on version	
Mechanical data	
Weight	0,44 Kg

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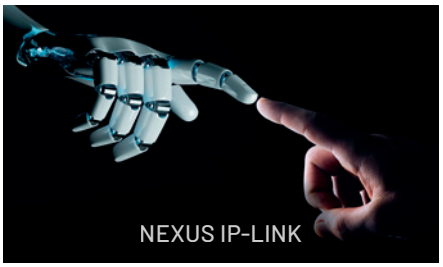
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