English

XRT

Fiber Optic Card & Router

STAGETEC

AUDIO EXCELLENCE

The matrix in the matrix: Standalone 12-port router card with 8,448 x 8,448 inputs on outputs

The XRT board is a super routing matrix for base devices that can switch and distribute signals independently. Six of the twelve SFP ports support high-speed connections, each of which can transmit 2,048 audio channels.

The XRT card is suitable for large NEXUS systems that require complex network topologies and very high channel counts. As is common in NEXUS networks, base devices are connected via duplex fiber optic cables; the XRT plug-in card has twelve standard SFP ports that can be equipped with modules for multimode or singlemode fibers as required.

All twelve available SFP ports transmit the familiar NEXUS protocol with 256 audio channels. Six of the ports can also be operated in high-speed mode and can then handle up to 2048 channels, which means that even the largest capacity requirements can be reliably met. If one of the lines is interrupted, the card automatically uses the second connection. As a special feature, the XRT card supports the use of SFP modules with RJ45 connectors, which enable Ethernet tunneling via the NEXUS network: A simple, helpful option to use the NEXUS infrastructure for otherwise separate Ethernet networks.

Tunneling of Ethernet

Two of the fiber ports can tunnel Ethernet between two XRT boards when equipped with appropriate SFP modules. More ports can be configured on request. The data rate can be up to 1,000 megabit/s.

Independent routing matrix of 8,448 x 8,448 inputs and outputs

The routing capacity has been designed in such a way that all channels of the fiber optic connections and those of the base unit can be included.

Automatic propagation delay compensation for very long fiber optic connections

In a NEXUS network, large differences in the distances of the fiber optic connections can occur, among other things, so that the latency that occurs is detected and compensated for by analyzing the word clock phase position.

6 high-speed ports for the transmission of 2,048 audio channels

Half of the available fiber ports are designed as high-speed versions and can transmit up to 2048 channels. Together with the routing function, this makes it possible to chain the base devices according to the daisy-chain principle.

Sample-accurate switching in case of failure of redundant connections

In both port-based redundancy and card redundancy, signal switching is not audible and can only be detected by a message in the operating software.

Exchangeable standard SFP modules

The ports of the XRT card can be equipped with interchangeable SFP fiber optic modules to meet different applications. The modules can be included in the delivery or fitted by the user. Multimodemodemodules are used as standard, which allow a transmission with a range of 500m. Alternatively, single-modem modules with a range of up to 100Km can also be used.

Redundant configuration of ports possible

If two basic devices are connected redundantly, the signals are sent over both lines, so that in the event of an accident the signals can be switched over with sample accuracy and without crackling.

Optionally activatable re-routing in case of failure of non-redundant connections

When optical rerouting is enabled and a fiber optic connection fails or is disconnected, the board automatically searches for another route to the destination. This happens with an interruption of the data stream.

Support of any network topologies

The network topologies are freely selectable and, for example, a circular or star-shaped connection structure can be set up.

Largest audio networks with multiple star networking

Star networking is a combination of NEXUS base devices with one or two redundant fiber optic lines to form a central base device that is equipped with an XRT module. Thanks to the integrated matrix with 8448 inputs and outputs, up to 12 other basic devices with all 256 audio channels can be connected. But the six high-speed ports with a transmission capacity of 2048 channels allow the exchange of all possible audio data from eight basic devices and thus the creation of complex network topologies with several star networks that are interconnected.

Connections

XRT_04	1 x 8TE		
SFP	12x	Nexus-fiber optic protocol	bidirektional

Technical specifications

Audio data	
Audio channels	512 channels at 48 kHz using 1G connection 2048 channels at 48 kHz using 6G connection
Routing	
Capacity	8448 sources to 8448 sinks; no routing-performance limitation when using redundant optical lines
Sample rates	NEXUS system clock, 32...96 kHz
SFP high-speed ports	
Ports	6 (ports 1...6)
Data rate	6.25 Gbps
Audio channels	2048 (max., bidirectional)
Data format	new NEXUS high-speed optical protocol
Compatibility	NEXUS low-speed optical protocol (up to 512 channels); NEXUS XFOC07 optical protocol (up to 256 channels)
SFP standard ports	
Ports	6 (port 7...12)
Data rate	1.25 Gbps
Audio channels	512 (max., bidirectional)
Data format	new NEXUS low-speed optical protocol
Compatibility	NEXUS XFOC07 optical protocol (up to 256 channels)
Ethernet interface	
Ports	2 (ports 11 and 12 can also be used for Ethernet tunneling)
Available data rate	depends on the audio-data utilization of the optical links: 100 Mbps, 1G-NEXUS optical link, max. audio utilization; 1 Gbps, 1G-NEXUS optical link, no audio utilization; 1 Gbps, 6G-NEXUS optical link, max. audio utilization
Port modules	optical modules or 10/100/1000 Base-T (copper) SFP modules on request
Operation conditions	
Temperature range	0 °C bis +50 °C
max humidity	max. 90 %, non-condensing
Storage conditions	
Temperature range	–35 °C bis +70 °C
max humidity	max. 90 %, non-condensing
Power supply	
Voltage	+4,75…5,25 V
Currrent	2.6 (with 12 SFPs 10km SM, 1G)
Mechanical data	
Weight	1,01 kg

Stage Tec NEXUS: A global reference!*

*The map shows selected reference locations. To date more than 1,000 Stage Tec NEXUS systems have been delivered and installed worldwide.

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