



RIF67-02

STAR ROUTER // DIGITAL-AUDIO

NEXUS AES67 interface

YOUR ACE CARD FOR AUDIO-OVER-IP NETWORKS

AoIP NETWORKS ARE CONNECTED TO THE NEXUS SYSTEM VIA THE RIF67. AES67 AND RAVENNA ARE SUPPORTED AND MANAGED VIA A USER-FRIENDLY WEB INTERFACE. WITH TWO ACTIVE PORTS, 256 AUDIO CHANNELS CAN BE RECEIVED AND TRANSMITTED REDUNDANTLY IN UP TO 32 IP STREAMS. THE RIF67 CARD IS NOW AVAILABLE IN REVISION 2 AND IS EQUIPPED WITH UP TO TWO RAV2 MODULES FROM DIRECTOUT.



Purpose and range of functions

The RIF67-02 for the NEXUS Star router is the most powerful solution for connecting AoIP networks to NEXUS. To ensure maximum compliance with AoIP standards and to allow for future extensions, the RIF67-02 uses the RAV2 modules from DirectOut as „piggyback“ modules. Up to two of these modules can be used on one card. Each module has two SFP ports on the front panel.

A total of 256 input and 256 output channels can be exchanged simultaneously with the matrix of the star router via the RIF67 card. These can be distributed to up to 32 IP streams per RAV2 module. A second module adds a further 32 stream transmitters and receivers. The card thus provides an excellent, easy-to-use integration of the DirectOut modules in NEXUS, expanding the available options and dispensing with complicated special solutions.

With a RIF67-02, it is possible to send and receive 256 audio channels in 2 x 32 streams, which can be a great advantage in large AoIP networks, e.g. in broadcasting applications. For sample-accurate synchronization, the RIF67-02 offers synchronization in both directions, as is typical for NEXUS cards. With its highly stable internal clock generator, NEXUS can be configured as a PTPv2 master for the connected AoIP networks. Conversely, it is possible to follow the PTP grandmaster of one of the connected networks.

Features

- Redundancy according to SMPTE 2022-7 (Seamless Protection Switching) The uninterruptible switching described in the SMPTE 2022-7 standard can be configured for the secure transmission of audio streams.
- Adjustable digital gain on inputs and outputs - Digital gain (+/-20dB) is available on all inputs.
- NMOS standards IS-04 and IS-05 are supported for stream and device detection and connection management. IS-04 is responsible for device discovery and registration to support automation when setting up networked systems, while IS-05 covers connection management between devices to enable the creation and removal of streams between transmitters and receivers on the network.
- Save and load configurations - Presets containing all or selected parameters can be saved and loaded for easy configuration changes.

SFP ports can alternatively be equipped with optical and/or copper transceivers. For integration into an RJ45 infrastructure (copper), the SFPM-CP-01 modules must be used (electrical SFP 100m / 328 feet, standard Ethernet, connector: RJ45)

RIF67-02 – Application examples

Integration of the star router into an IP-based network - The module connects NEXUS to IP networks and allows the secure and accurate operation of STAGETEC systems to be combined with the flexible workflow of IP technology. Using the open AES67 standard, NEXUS can be integrated into a wide variety of AoIP networks in order to establish a flexible exchange of audio channels with devices from a wide range of manufacturers. A large number of streams can be configured for this purpose, allowing the RIF67-02 card to both send and receive up to 256 channels simultaneously.


TECHNICAL DATA
Data formats

AES67, Ravenna	256 channels in and 256 channels out are available on the NEXUS side All 256 NEXUS channels can be used Streams with up to 256 channels are supported
Stream transmission	Up to 32 streams bidirectional unicast/multicast support
Connection protocols	SIP (Unicast), RTSP (Multicast), SAP (Multicast), manual multicast stream configuration. BONJOUR for device discovery and NMOS IS-04
Stream delay (offset)	8-8192 samples

Sampling frequencies

NEXUS	44,1 kHz, 48 kHz, 88,2 kHz, 96 kHz
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Amplitude resolution

AES67.IO module – RAV2	L16 (16 Bit) L24 (24 Bit) L32 (raw 32 Bit, non-standard for bit transparent transmission) AM824
NEXUS	24 Bit

Ethernet interface

Connector	2 x RJ45 1000 BASE-T, Pri+Sec using recommended SFP adapter
Transmission rate	1.000 Mbit
IP address	DHCP, Zeroconf or manual configuration
IGMP	v1 v2 v3
MTU	1500 (no Jumbo-frames)

Audio clocking

PTP	PTPv2 (IEEE1588) with IP4 and Multicast
PTP sync intervals	31,25 ms 62,5 ms 125 ms 250 ms 500 ms 1 s 2 s 4 s 8 s 16 s
PTP delay mechanism	E2E, P2P
PTP profiles	Media profile according to AES67-2015
PTP clock modes	Slave: NEXUS is synchronized to the PTP clock of the network grandmaster. With PTPv2-compatible network switches, clock quality in accordance with AES11 can be achieved. Grandmaster: The internal clock can serve as a clock source for the network.

Operational conditions

Temperature range	0° C to +50° C
Humidity	Max. 90 %, non-condensing

Storage conditions

Temperature range	-35° C to +70° C
Humidity	Max. 90 %, non-condensing

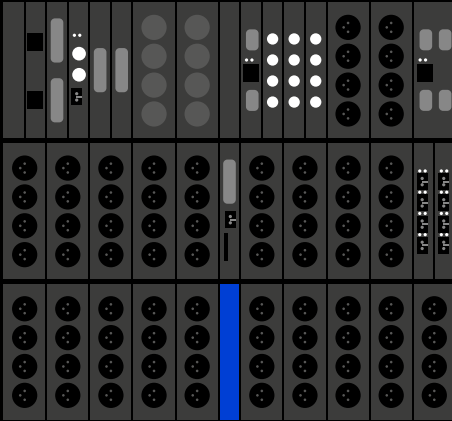
Power supply

Voltage	+4,75...5,25 V
Current	Max. 1,3 A

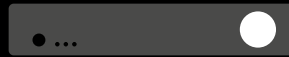
NEXUS // NETWORKED AUDIO MATRIX

NOW, IT'S TIME FOR YOU TO DEFINE YOUR SYSTEM'S FUTURE.

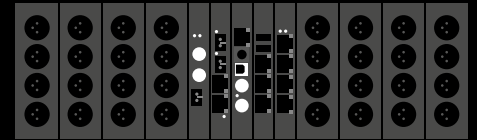
Every installation is unique, requiring a system that aligns perfectly with its specific requirements. Our commitment to customised solutions ensures that each scenario receives the ideal system configuration. Are you looking for a modular design that offers flexibility and seamless expansion? Or do you prefer the stability and simplicity of a fixed system? Perhaps a combination of both, blending flexibility with permanence, will best meet your needs. Would you like to continue using your proprietary system or network via IP? NEXUS supports both options, keeping you always up-to-date with maximum freedom and performance. With STAGETEC, our NEXUS networked audio matrix systems will serve as the reliable heartbeat of your installation.



NEXUS modular



NEXUS compact



NEXUS 4split

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