

XFIP

BASE DEVICE // DIGITAL-AUDIO

NEXUS AES67 interface

UNCOMPROMISING INTEGRATION OF NEXUS INTO AUDIO-OVER-IP NETWORKS

THE XFIP CARD CONNECTS AOIP NETWORKS TO THE NEXUS SYSTEM. AES67 AND RAVENNA ARE SUPPORTED AND MANAGED VIA A USER-FRIENDLY WEB INTERFACE. WITH 2 ACTIVE PORTS, 256 AUDIO CHANNELS CAN BE RECEIVED AND TRANSMITTED REDUNDANTLY IN UP TO 32 STREAMS.



XFIP is the most effective solution for connecting a single base device or the entire NEXUS system to an AoIP network. The open standard for audio-over IP transmissions is AES67. Common formats like Dante, Ravenna, Livewire and Q-Lan find a common denominator and become interoperable. Not only synchronization and network transport, but also clock identification and transmission setup are standardized in this norm. In order to ensure maximum compliance with future standards, subsequent extensions and various AoIP protocols such as AES67 and Ravenna, STAGETEC uses DirectOut's AES67.IO modules to communicate with the IP world.

The configuration via a web interface is particularly user-friendly. Status monitoring is performed via the NEXUS operating program. A single XFIP card can convert a total of up to 256 incoming channels or output channels. With 32 input and 32 output streams each, all 256 audio channels of a base device can be converted. These can come from any source in the entire NEXUS network and can also be processed, mixed and output in any conceivable format within the system.

Equipped with complete redundancy according to the SMPTE 2022-7 standard (Seamless Protection Switching), the XFIP is up to the special requirements of real-time audio. For this purpose, a stream can be effortlessly sent and received on two physically separated networks via the two integrated RJ45 ports.

Additional redundancy can be realized by logic programming with alternative streams. In addition, all information about the status of the active connections is available for transfer to external control software, i.e. fully automatic monitoring of the AoIP streams can be performed using the NEXUS system. As is typical for NEXUS boards, precise synchronization in both networks is of course ensured. When the NEXUS system is configured as the PTPv2 master for the connected AoIP networks, the high-precision internal clock is used. Alternatively, the clock of the PTP grandmaster can be used as the synchronous source for the NEXUS system.

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 at inputs

A digital gain (+/-20 dB) is available on all input and output channels.

Saving and loading configurations

For easy configuration changes, presets containing all or selected parameters can be saved and loaded.

Automated status monitoring

The AES67.IO module of the XFIP board provides the NEXUS system with all information about the status of each individual stream. This allows fully automatic monitoring of the AoIP stream via a logic circuit. If NEXUS is integrated into an SNMP environment, e-mails or SMS can be sent in the event of an error. In an emergency, the precise evaluation provides clear feedback, e.g. which network has failed, thus helping to contain sources of error. For redundancy beyond the ST2022-7 standard, content-equivalent alternative streams can be used, which are automatically switched between in the event of failure.

CONNECTIONS

XFIP_01	1 x 4DU		
BNC	2 x	AES67	Bidirectional
SFP	2 x	NEXUS format	Bidirectional



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
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

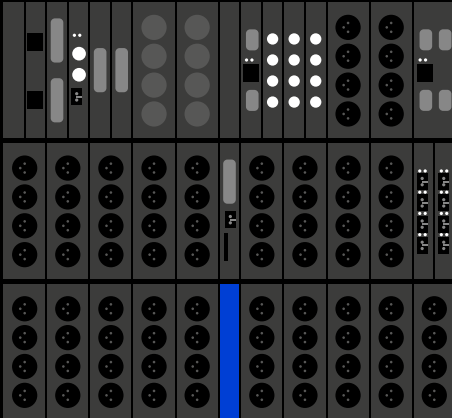
Power supply

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.

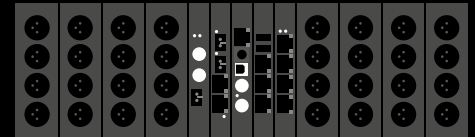
Every installation is unique, requiring a system that aligns perfectly with its specific requirements. Our commitment to customised solutions ensures that each scenario receives the ideal system configuration. Are you looking for a modular design that offers flexibility and seamless expansion? Or do 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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