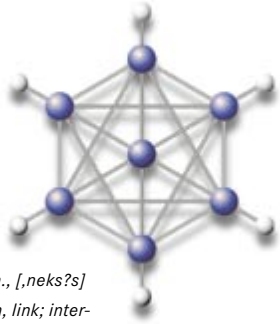
nexus

Digital Audio Routing and Interconnect System

NEXUS

...not just an audio network or routing system!



Ne|xus (Latin) n., [‚neks?s]
- (inter)connection, link; inter-weavement

NEXUS? Is it an audio network? An interconnection or routing system? Neither of these terms gives an appropriate description of what this system really is. So we need a new name: NEXUS!

NEXUS is not only an audio network, a router, and an I/O matrix at the same time; NEXUS also provides for audio-format conversion, A/D and D/A converter systems, audio processing, data transmission, routing interface, multichannel metering, power-amplifier control, talkback and intercom matrix...

The idea of NEXUS is amazing: A fiber-optic line covering the entire studio complex transfers all audio and control data in a digital format. So-called base devices providing all required I/O resources in the appropriate format are installed in the studios, control rooms, routing centers, and stages. A convenient graphical control software allows for routing any inputs to the desired outputs – no matter where the I/O resource is physically located!

NEXUS is the versatile audio network and routing system for controlling studio or mixing-desk resources, for routing-center and broadcasting-complex networking, for O.B. vans, sound reinforcement, and for any other application in professional audio.

Applications

In radio and TV broadcasting:
- control rooms, full broadcasting-center networks
- studio routing matrices
- broadcasting technology

In recording and post-production studios:
- routing matrix for mixing consoles and studios
- complete studio-building networking
- A/D, D/A and format conversion

In theaters, concert halls, convention centers, and fairgrounds:
- interconnection of recording studios, stages, sound-reinforcement facilities, and other areas
- hall and building networking

Networking

NEXUS provides virtually unlimited and inexpensive connectivity using optical fibers. Spanning distances of up to 70 km/45 miles can be achieved, with no deterioration in audio quality or clock deviations.

Components

NEXUS base devices are 19" frames available as 3/6/12/15-U units. All I/O boards are designed as 3-U plug-in boards.

Audio Conversion

All audio boards read and write the internal 24-bit audio format of the TDM bus system. Thus, audio inputs of any format can be routed to whichever NEXUS output (e.g. analog inputs to digital outputs, or Y2 inputs to AES/EBU outputs). With NEXUS, format conversion – usually a large-scale and expensive matter – stops being an issue.

Signal Processing

No signal-processor boards are required for signal distribution. However, a NEXUS DSP can be routed to wherever signal processing is desired – to any place! -, providing all relevant controls such as EQ, delay, dynamics, faders...

The signal-processor boards are controlled exclusively via the NEXUS control interface.

Non-Audio

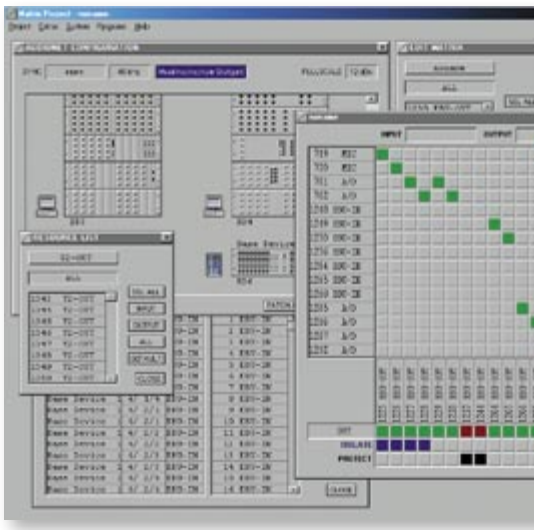
The routing and transmission capabilities manage other signal types, too. The system is capable of generating and distributing signals of various serial formats (RS 232, RS 422, RS 485, MIDI, DMX, LTC...) and control signals for third-party equipment (e.g. power-amplifier, light and machine control).

Operation

NEXUS is operated over a PC-based graphical control program and/or from CANTUS consoles. Intuitive accessibility and control of all system components is provided via the graphical control program. All settings can be stored, and presets can be recalled easily.

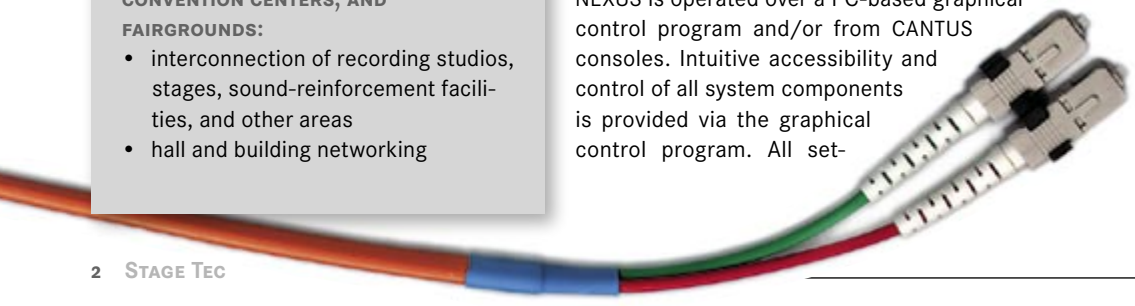
Safety

NEXUS was designed with safe operation in mind. Highly redundant systems can be configured, and every base device has its own dedicated controller board. The concept of »distributed intelligence« prevents complete failure in case of malfunctions. Specific defects can immediately be found thanks to a graphical alarm system. Module boards are hot-swap enabled, i.e. they can be replaced during operation without affecting other system components. Every board is fully functional within five seconds after installation.



NEXUS!

NEXUS is the digital routing and transmission system for audio signals. NEXUS has a distributed modular structure and guarantees brilliant sound, absolute and simple control, and optimum safety.



Base Device	
Components	Analog and digital audio boards, DSP boards, controller board, fiber-optic interface boards, power supplies (redundant ps on request)
Module boards	up to 60 per base device
Signal bus	256 signal busses, 24-bit fixed point plus ancillary information
Fiber-optic lines	250 Mbps, SC duplex
Spanning distance	multi-mode LWC: max. 1,500 m; mono-mode: up to 70 km (on request)
Dimensions	19" module frame; height: 3/6/9/12/15 U; depth: 53 cm/20.9"
Power dissipation	50...500 W, typ. 100 W (depending on the actual configuration)
General Audio Specifications	
Sample rates	32 kHz, 44,1 kHz, 48 kHz, 88,2 kHz, 96 kHz (configuration-dependent)
Full-scale level	0 dBFS = 0...22/28 dBu (global setting)
Line inputs (XAD...)	
Type	balanced, transformer-insulated
A/D converter	24-bit TrueMatch
Dynamic range	typ. 133 dB(A)
Line outputs (XDA...)	
Type	balanced, transformer-insulated
D/A converter	24-bit Delta-Sigma
Dynamic range	typ. 126 dB(A)
Microphone inputs (XMAD)	
Type	balanced, transformer-insulated
A/D converter	28-bit TrueMatch
Input level	max. 22 dBu, balanced (~10 V RMS)
Input impedance	10 kOhm
Gain	0...70 dB, click-free setting in 1-dB steps; remote-controlled
Dynamic range	> 152.5 dB(A)@200 ohm input impedance
THD&N	< 0.003 %@22 dBu
Functions	48-V phantom power, subsonic filter
Digital-audio I/Os (XAF, XET, XMF, XSF, XTF, XYF...)	
Formats	Alesis ADAT, AES/EBU and S/PDIF (XLR, RCA, TosLink/DNP), MADI, SDI, Sony SDIF-2, Tascam TDIF, Yamaha Y2 (MEL2)
Sample-rate converter	standard/optional (depending on the board)
Audio-signal processing (XDSP...)	
Type	40-bit enhanced floating-point format
Signal processors	30-band EQ, level control, delay
Options	multi-parametric EQ, limiter, compressor, mixer, pan effect, etc. on request
Non-Audio (XCI, XRI, XTI)	
Serial formats	RS 232, RS 422, RS 485, MIDI, DMX
Power-amplifier control	information on supported models on request
Relay inputs	4...30 V
Relay outputs	0...24 V (recommended), typ. 500 mA
	Other interfaces available on request

English Version

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