STAGETEC



NEXUS

NETWORKED AUDIO MATRIX //

MODULAR | COMPACT | INTEGRAL

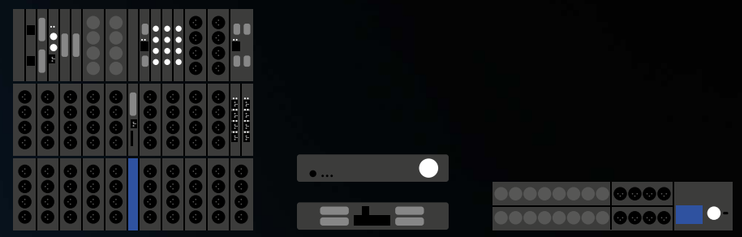
WE ARE STAGETEC //

FOUNDED AS A TECH COMPANY WHEN THE TERM DIDN'T EVEN EXIST YET.

By this, we don't mean the "garage" cliché, but rather our mindset when STAGETEC started with mixing consoles and audio distribution systems in 1993. We were and still are "digital natives" * in our industry, pioneers of digital consoles and networks. The important difference is the conception of our products. No isolated solutions, instead all our developments are part of a system that simplifies integrations to the maximum and allows extensions almost without limits.

By the way: All our products are downward compatible. So, if you are working with a NEXUS from 1993, you can combine it with our current hardware and software developments at any time.

** Another buzzword that didn't exist back then.*

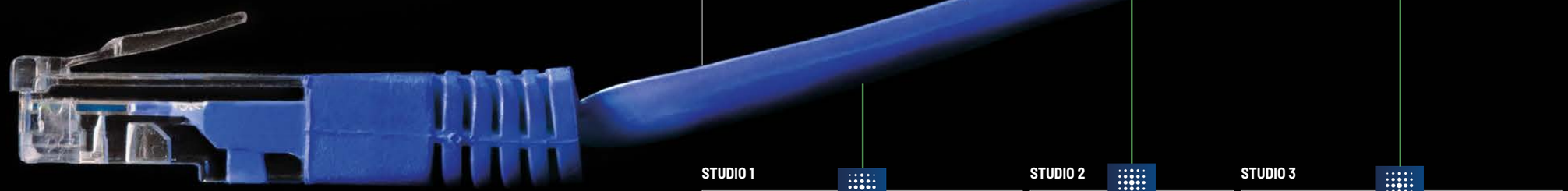


	NEXUS modular	NEXUS compact	NEXUS integral
Broadcast studios	•	•	•
Broadcast mobile	•	•	•
Theatre & live	•	•	•
Recording studio	•	•	•
Public building	•		•
	Practical and flexible. For projects that require high/ custom I/O resources.	Portable IO and DSP-toolbox with the power of TrueMatch. Small in size but big in performance.	A compact rack mounted IO and DSP-toolbox system. Available in different sizes.

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

At STAGETEC, we understand that each installation is unique, demanding a system that perfectly aligns with its specific composition. Our dedication to customized solutions ensures that every domain receives the ideal system assembly specification. Are you seeking a modular design that empowers you with adaptability and seamless growth? Or do you prefer the stability and simplicity of a fixed system? Why not consider a combination of both, harmonizing flexibility and permanence to suit your needs? The choice is yours to make. We also recognize that each project comes with its own priorities – whether it's practicality, flexibility, or managing initial costs. Rest assured, with STAGETEC, our NEXUS networked audio matrix systems will serve as the reliable heartbeat of your installation.

Experience unwavering reliability and witness your vision come to life. Join the ranks of our countless satisfied customers who have entrusted their installations to our innovative solutions. Choose STAGETEC for unparalleled system excellence and transform your project into an outstanding success. Unleash the possibilities. Discover our wide range of NEXUS networked audio matrix systems today and embark on your journey toward system perfection with STAGETEC.



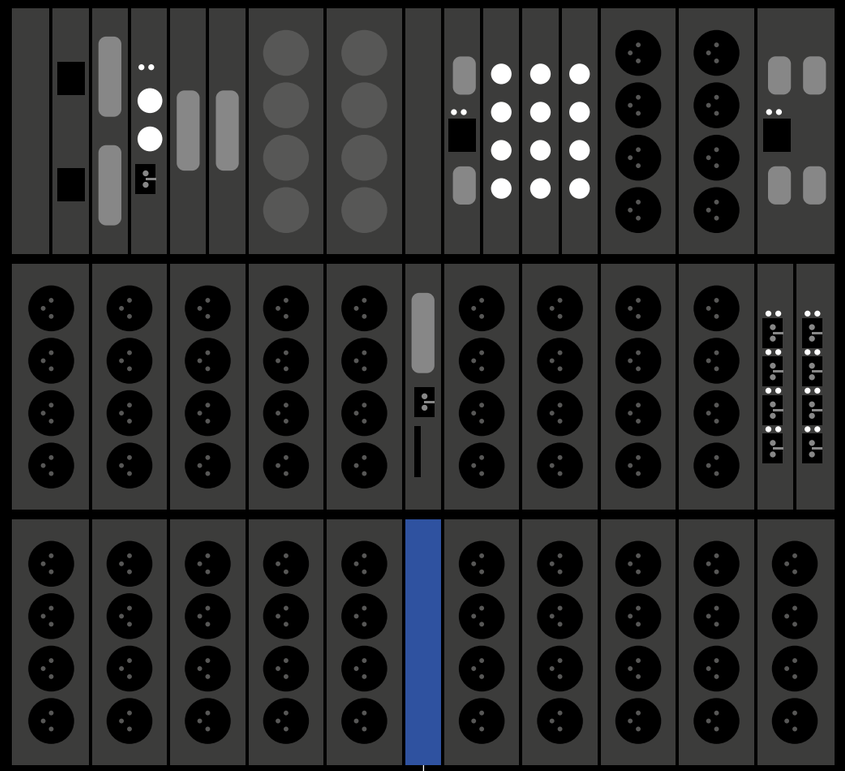
BROADCAST IP BACKBONE

BROADCAST IP BACKBONE – AV signals

STAGENET – I/O routing

STAGETEC ARISTA matrox video simplexity MERGING AUDIO FOR THE NETWORKING AGE

NEXUS
modular



LARGEST AUDIO MATRIX I/O COUNT AND CROSSPOINT CAPACITY

Up to 63 nodes

65.535 x 65.535 addressable I/O

72 million cross points

Up to 2.048 ch / fiber

Up to 256 ch / stream

...SO MUCH MORE THAN AN AUDIO ROUTER.

In countless installations around the world, a NEXUS system is the core component for networking, routing and processing audio, control and ancillary data. Countless installations, ranging from studio routers to control room routers to complete networks in broadcast centers, prove the flexibility of the system.

NEXUS modular also excels in ultra-low latency values, reliability and versatility in the centers of smaller installations, including portable transmission systems with highend stage boxes, as well as in mid-sized installations in OB vehicles or sound reinforcement systems.

IN ADDITION THE SYSTEM PROVIDES:

- A/D and D/A conversion – **TrueMatch quality**
- Audio conversion (32-bit resolution)
- Audio processing
- SDI audio embedding & de-embedding
- Custom DSP configuration
- Multichannel metering
- EBU R128-compliant loudness metering
- Flexible intercom applications
- Tunnelling of serial non-audio data
- Control of third-party systems
- User-programmable internal logic and control functions
- Integration in standard studio control systems:
  KSC, VSM, Vzrt

THE INDIVIDUALIST.

UNMATCHED PERFORMANCE FOR ANY APPLICATION: A PROPRIETARY SYSTEM WHICH IS COMPATIBLE WITH ALL POPULAR FORMATS AND STANDARDS. NEXUS MODULAR SUPPORTS ANALOG AS WELL AS DIGITAL FORMATS. IN ADDITION, IT ALSO ROUTES NON-AUDIO FORMATS AND SERIAL DATA ACROSS THE NETWORK. IT NOT ONLY EXCELS IN AUDIO QUALITY, BUT IS ALSO AMAZINGLY RELIABLE, INTEGRABLE AND SCALABLE. A HUGE AUDIO-NETWORK WHICH CAN BE COMPOSED FOR YOUR INDIVIDUAL NEEDS.

THE IDEA
A NEXUS network consists of separate base devices that are placed wherever you want to pass audio, control and other signals to and from the network. All base devices are connected to each other via digital links, which are floating fiber optic cables. Each base device acts as an autonomous local router. In this way, a NEXUS network provides distributed intelligence, including decentralised control and crosspoint information.

CUSTOMISABLE
Each base device has an individual configuration with all interfaces and modules needed on site. The base device network allows routing of any sources to any destination, regardless of I/O formats and their physical location on the network. This eliminates the need for complex and costly format conversions.

TDM AND IP
Internally, Time-Division Multiplexing (TDM) with dynamic time slot allocation ensures ultra-fast signal transmission within just a few samples. Normally, you operate the NEXUS via a graphical user interface running on a configuration computer. The computer can be connected to any base device on the network via ethernet, USB or serial connections. You can save all settings and operate the whole audio network from any place where a control interface is installed.

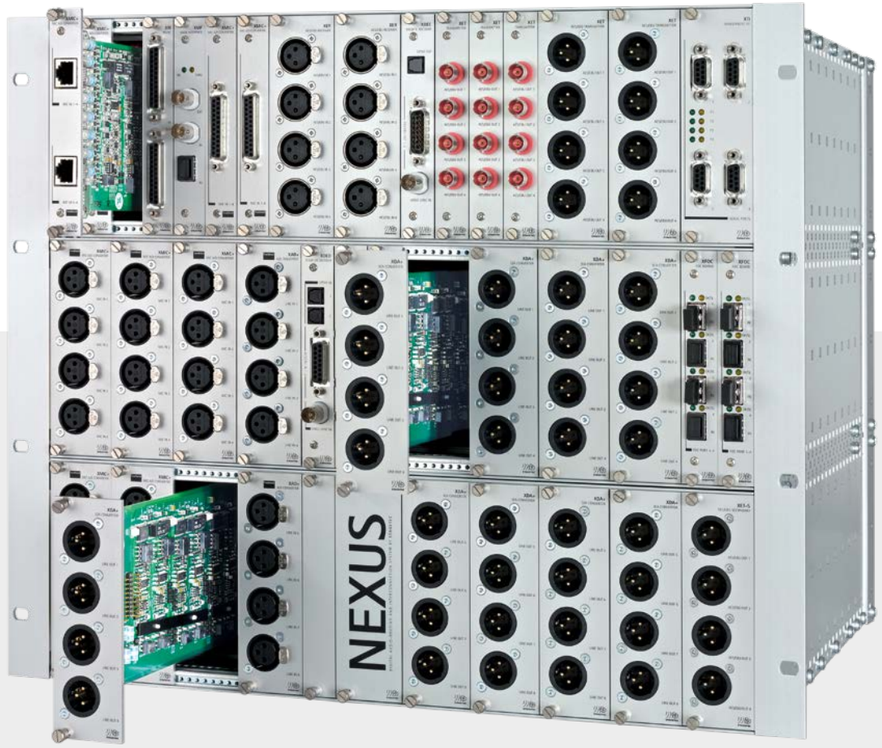
REDUNDANCY
Secure operation is a key feature of NEXUS: Each base unit has a dedicated CPU – a setup that reliably prevents the entire system from failing in the event of a failure. In addition, you can optionally use redundant power supplies and optical links to ensure secure operation. The NEXUS Star is a star router designed for large networks and therefore offers a redundant processor and routing card. In addition, the STAR can also be configured with redundant MADI ports. In the event of a power supply, optical link or MADI failure, the system silently and inaudibly switches to the required backup component. Ring, star and mixed topologies also enable rerouting of the transmitted signal.

STATUS MESSAGES
In the event of a failure, the system's internal watchdog triggers an alarm. All problems are displayed on the graphical user interface. Interface cards are hot-swappable, meaning you can replace them during system operation without affecting other components or signal flow.

OPERATION AND MONITORING
Many third-party controllers support the NEXUS modular control protocol. This allows NEXUS networks to integrate seamlessly with global router or studio controllers in almost any configuration, and also supports SNMP management. In general, you can control NEXUS via IP, GPIO, USB or serial interfaces.

IP SUPPORT
NEXUS supports various IP-based technologies, from multi-channel audio transmission via Dante or AES67 to a variety of control methods. For internal real-time routing, the system uses a separate ultrafast high performance TDM bus. The universal XACI control interface with ethernet ports has built-in switch, which handles complex tasks that would otherwise require the use of external server hardware. IP is also used to integrate the NEXUS SNMP agent into the global SNMP scheme for system monitoring, and IP can be transparently tunneled through NEXUS.

CUSTOMISED SWITCHING
The integrated native programming environment allows you to define logical switching operations ranging from simple tally signal forwarding to full reconfiguration of studio and controller complexes (including emergency switching). The integrated documentation makes all logical operations on the system completely transparent. BASIC COMPONENTS NEXUS base devices come in various sizes. They all feature a 19" mainframe with a processor card, a backplane and optical interface cards. All base devices are separately configured with audio interfaces, DSPs, and other interface cards as per customer specifications.



FORMATS

AES
S/PDIF
ADAT
MADI
Dolby E
SDI

Analogue

AES67
Dante
RAVENNA
SMPTE:2110

CONNECTIONS

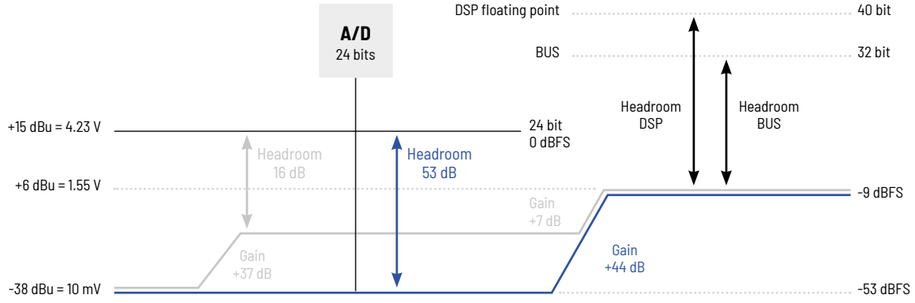
XLR
BNC
RJ45
Cinch
D-Sub
Optical
RS232/422
USB

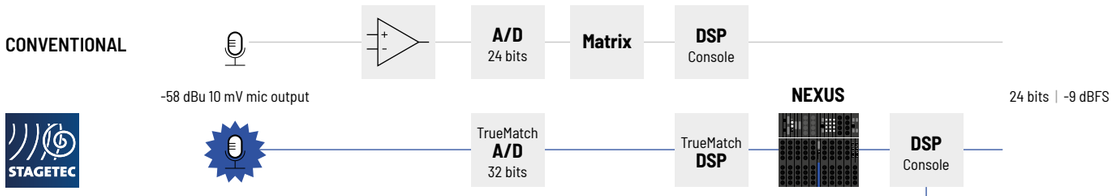
HUGE AUDIO NETWORK. NUMEROUS BENEFITS.

NEXUS MODULAR NETWORK OR CONFIGURATION CAN CONTAIN UP TO 63 NODES OR BASE DEVICES OR EDGE POINTS. SINCE EACH BASE DEVICE HAS 256 INPUTS AND 256 OUTPUTS OR 4.096 x 4.096 IN THE CASE OF NEXUS STAR. ADDITIONALLY, AN XRT IS A SPECIAL ROUTER CARD WITH A CAPACITY OF 8.448 x 8.448. THE NETWORK OR COMPLETE MATRIX CAN BE BUILT UP TO 65.535 x 65.535 ADDRESSABLE INPUTS AND THE SAME NUMBER OF OUTPUTS. THE USER INTERFACE CAN MANAGE UP TO 72 MILLION CROSS POINTS, ALL STORED WITH SYSTEM-WIDE PARAMETERS IN EACH OF THE BASE DEVICE'S CPU.

1:1 MICROPHONE CONVERSION WITHOUT ANALOGUE GAIN STAGE

Our TrueMatch microphone input is the best known exclusive STAGETEC technology. Since the late 90's, our TrueMatch mic preamp is still the reference for recording because it features a 32-bit A/D and no analog preamp stage that usually causes noise, distortion, coloration, hum and other audio artefacts. If the ubiquitous 24-bit AD converter were used without an analog preamp stage, only 8 to 10 bits would be used when a microphone is connected directly, resulting in a very high noise floor or small dynamic range. Using a TrueMatch 32-bit A/D results in an impressive dynamic range of 158 dBA (@24 dBu), leaving the competition far behind. The TrueMatch 32-bit converter ADC converts to microphone level (-58 dBu). Gain to nominal level is in the digital domain and exceeds 158 dBA dynamic range and huge headroom. The gain stage used to bring a microphone signal to unity or program level is performed in DSP in the digital domain. Since the input can handle signals up to +24 dBu without clipping, separate line inputs are not required. All microphone inputs can be digitally split 4 ways, with each split having independent control.





A/D CONVERTER WITH 158 DBA DYNAMIC RANGE

A microphone outputs in this example 10 mV. With a classic analog gain stage and a setting of 37 dB we get to -16 dBFS. When a commentator starts to scream = +20 dB you get 4 dB of clipping. Or a snare drum hits results in much harder clipping. So when using a TrueMatch there is no analog gain stage. The 10 mV ends up as -53 dBFS or 53 dB of headroom before clipping. The gain is done in the digital domain. As a result, no clipping and 1:1 microphone signal transfer without coloring and the maximum of headroom.



DECENTRALISED ROUTER

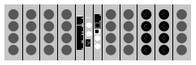
NEXUS is a non centralised matrix with dynamic routing. The network can be set up in a ring/star (mixed) configuration. Up to 4.096 (2.048 bidirectional) channels with 6 Gbit/s bandwidth can be transported per fiber. When transmitting in ST2110 format, up to 256 channels and 32 streams per port are transmitted.

The NEXUS nodes can be interconnected via TCP/IP Layer 3 switches and correspond to the ST2110 format. When using NEXUS-IP link, the nodes can operate in an IP environment. One of the highlights: NEXUS can operate in three modes: traditionally, fully IP or hybrid! This gives customers the ability to plan the transition to IP in a gradual, budget-friendly manner. If traditional TDM fiber is a proprietary format with no latency and IP is an open format with potential latency issues, NEXUS gives you the choice depending on your application. A simple example: If for a live and/or music broadcast application, latency is a priority, while for transmission, distribution or communication an open IP format is needed, NEXUS is the right way for you.

OPERATING MODES

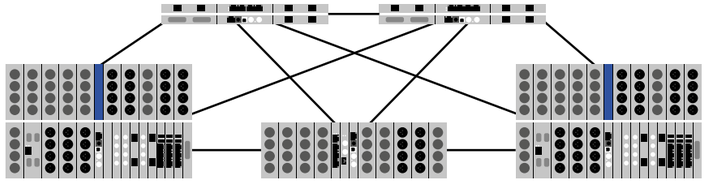
NEXUS modular in standalone use

- Reference converter
- Recording interface
- Format converter, splitter



NEXUS modular in a campus environment

- Decentralised distribution
- Individual topologies possible
- Campus networking



MODULAR. PROVEN. GROWING.

TECHNOLOGIES STILL UNMATCHED IN THE INDUSTRY.

30 YEARS AGO WE DEVELOPED A REAL "NERD-TECHNOLOGY" IN THE FIELD OF MUSIC PRODUCTION. THE ADVANTAGES OVER THE COMPETITION ARE UNMATCHED TODAY AND OUR PRODUCTS ARE STILL COMPATIBLE WITH THE FIRST GENERATION. THE LATEST FEATURES CAN ALSO BE USED ON YOUR OLD DEVICES. THIS HAS BEEN SUSTAINABILITY FROM DAY ONE.

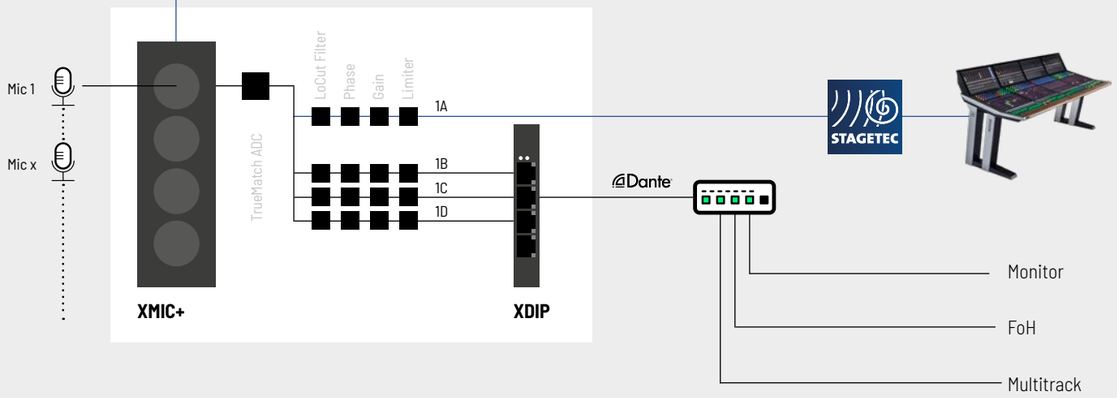
UNIQUE NEXUS 4-SPLIT MICROPHONE WITH INDEPENDENT CONTROL

Thanks to its innovative and sophisticated circuit design, the XMIC+ board features transformer-isolated balanced inputs that avoid the drawbacks of conventional circuit designs. Since they are completely floating – when phantom power is disabled – they can be used as balanced or unbalanced inputs. The XMIC+ board can be used either in the conventional way with a single output or with up to four independent outputs per microphone input, using the splitter function. The splitter function is configured so that each user sees and accesses only one of the four splitter outputs. Each splitter output is controlled completely independently: gain, phase, lo-cut, limiter and generator. The other outputs are not affected.

For phantom power, the software uses an "OR" function. Thus, microphones are only supplied with phantom power if at least one user has activated this function. Signals treated differently can be sent to each of the independent split outputs.

The microphone splitter function provides the ability to eliminate the need for external equipment. Combined with the use of AoIP, and/or MADI, this increases reliability and simplifies setup. Note that the STAGETEC TrueMatch microphone preamplifier has no analog gain stage as it uses a 32-bit AD converter.

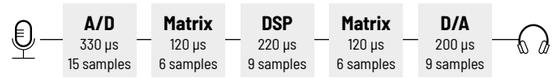


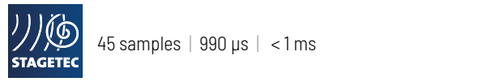


Simple set-up example of a NEXUS modular audio distribution

SHORTEST SYSTEM LATENCY

Latency is important in live transmission. An example of a typical recording session is illustrated here: a microphone (commentator, voice talent) feeds the headphone. If the delay between microphone and the voice on the headphones exceeds 6-8 ms you get complaints. This becomes more important if the signal goes back and forth in the system, so when the delays add up on each path. When IP gets involved, the situation deteriorates by adding its own latency. With STAGETEC's technology we can make sure delays stay under 1 ms. Hence providing some headroom before any latency complaints might occur.



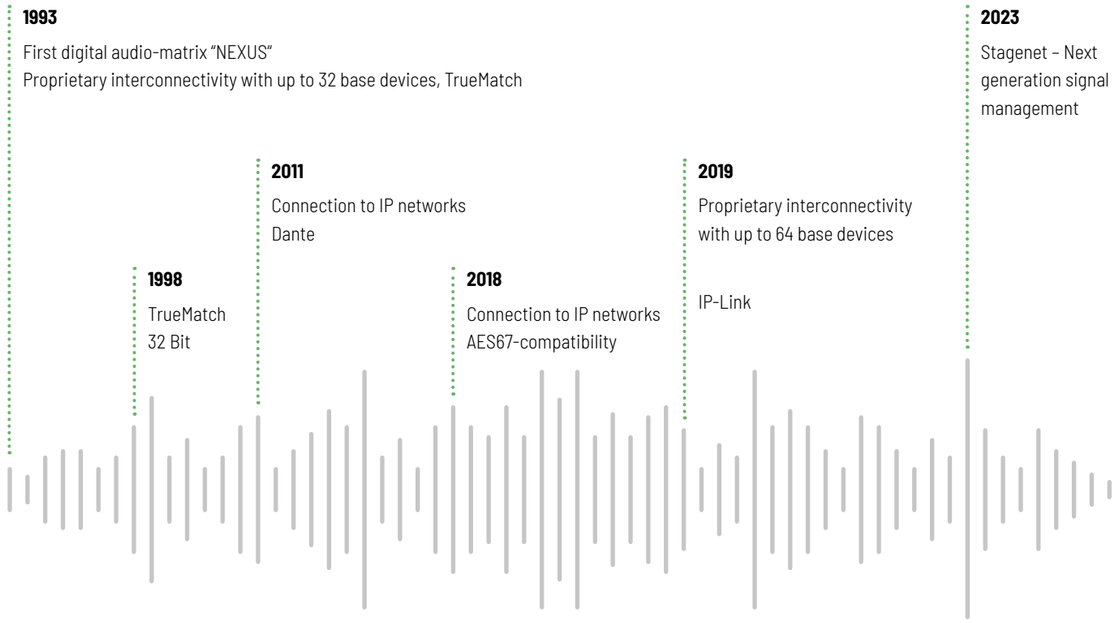


INTER-GENERATION UPGRADABILITY

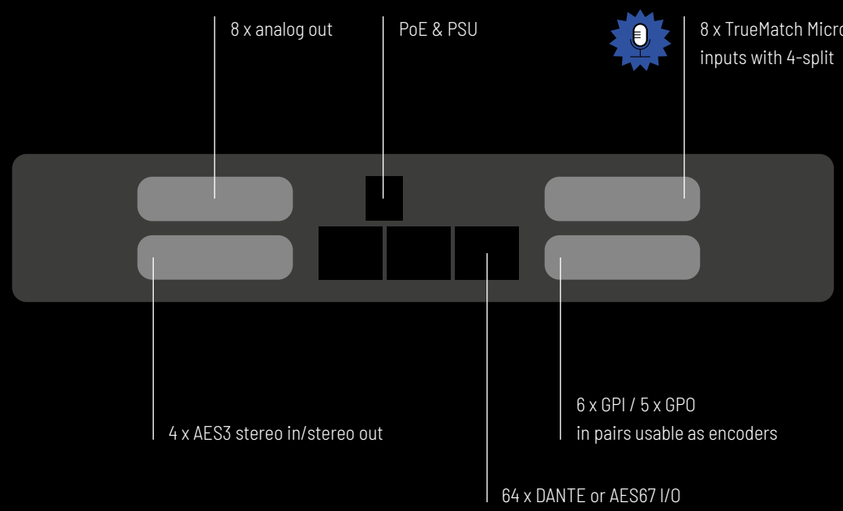
The idea behind NEXUS is the non-centralised router matrix. The hardware has evolved following technology development of new I/O-standards and new signal transport formats. Audio-over-IP was introduced as an additional I/O-standard, while today the system nodes or base devices (stage boxes) can be interconnected in a TCP IP layer 3 format or connect over standard switches instead of legacy TDM fiber. The fact is NEXUS is nowadays a hybrid system which can still interconnect over legacy TDM or on the other hand, 100% over IP, or mixed – according to the choice of the customer. Second fact is that older generation I/O-boards still can be used in actual modular NEXUS racks. A microphone board from late 90`s can still be used in new frames, and vice versa. Other competitors only maintain a much shorter product availability cycle, after which the older generation hardware is discontinued. For long-term planning, STAGETEC is your better choice.

More than 30 years continuous support





NEXUS
compact



STATE-OF-THE-ART AUDIO QUALITY.



The compact housing (1/2 size of a 1U 19" rack) converts baseband and analog signals into IP audio standards such as AES67/Dante/Ravenna/ST 2110 – 30/31. Uses open standards and protocols. A web-browser based user interface controls the on-board DSP mixer functions.

DSP FUNCTIONS FOR LOCAL SOUND PROCESSING:

120 x 16 Mix Matrix

16 x Input processing (Delay, Exp, EQ, Comp)

16 x Output processing (EQ, Comp, Lim, Delay)

THE COMPACT ONE.

NEXUS COMPACT OFFERS THE SAME STATE-OF-THE-ART AUDIO QUALITY AND OUTSTANDING RELIABILITY AS NEXUS MODULAR. APART FROM BEING A SLIM EDGE DEVICE FOR NEXUS NETWORKS AND AVATUS MIXING CONSOLES, NEXUS COMPACT CAN BE SEAMLESSLY INTEGRATED INTO BROADCAST ENVIRONMENTS VIA EMBER+ AND GPIOS.

USER INTERFACE

A web-browser can be used to control the NEXUS compact. Just putting the IP address or URL in any browser on a tablet or laptop operating in the same domain will visualise a comprehensive user interface. Giving access to all parameters of the I/O resources, as storing snapshots and configuring the GPIO's.

RELIABILITY

In addition to PoE (power-over-ethernet) and external power supply, the network redundancy is implemented with SMPTE 2022-7 seamless protection switching as required in a contemporary SMPTE 2110 workflow.

APPLICATION AREAS

- Reference microphone converter for recording studios
- Compact design easily connected to an existing network in DANTE or AES67 format
- Connecting microphone arrays on-camera for immersive sound pick up and transport over IP. Small workstations I/O
- Reference monitoring with GPI source select
- On-site mixing for remote productions to mix local sources with IFBs without delay
- Commentary box for sports or e-games
- Swiss army knife for PA system engineers

WATCH VIDEO

STAGETEC IP

NEXUS compact has embraced IP with the introduction of Dante. Later on, AES67 and SMPTE 2110 were added to our roadmap. Since 2018 our consoles connect over IP to the core, making it possible for a full IP STAGETEC solution. Keeping the hybrid option open for backwards compatibility and your peace of mind for a budget friendly upgrade.

TRUE MATCH

The patented TrueMatch technology provides uncompromising audio quality. It features minimal transducer errors, low distortion, and improved aliasing suppression, while achieving an otherwise unattainable dynamic range of 158 dB. The special four-stage operation of TrueMatch converters eliminates the need for analog preamplification. Analog overload or component noise is thus eliminated.







EMBER+

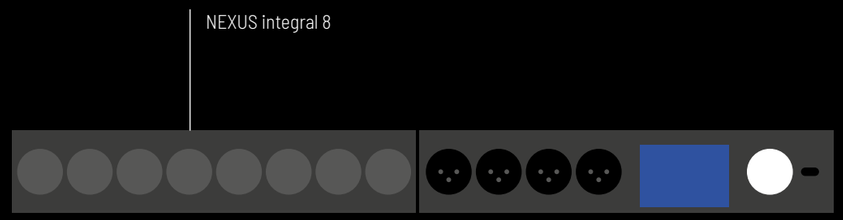
NMOS

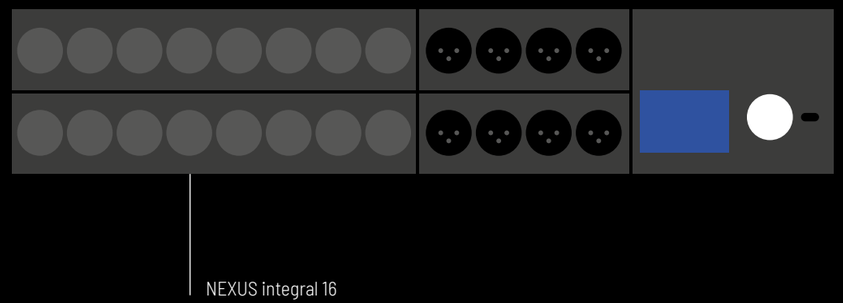
SMPTE:2022-7

SMPTE:2110

stagenet

NEXUS
integral





...IOS WHERE YOU NEED THEM.

NEXUS integral takes the outstanding STAGETEC quality to the next level of flexibility and accessibility: For the first time, STAGETEC interfaces and converters are not only available to the broadcast market, but they are also designed to serve the continuous request of recording engineers and producers to be able to seamlessly integrate the award winning converter technology into their workflow and environment.

FLEXIBLE CONNECTIVITY:

- Open Standards and Protocols
- Different I/O sizes
- DSP Tools
- USB-C Interface for DAW and recording
- OLED Display for local control and metering

THE MULTI-PURPOSE-AUDIO-INTERFACE.

STAGETEC OFFERS ITS PROVEN, HIGH-QUALITY AUDIO I/O SOLUTIONS AS COMPACT IP-BASED STAGEBOXES WITH DIFFERENT CHANNEL COUNTS AND BASIC AUDIO PROCESSING – ALSO AS AN EXTENSION TO EXISTING NEXUS NETWORKS AND AVATUS MIXING CONSOLES.

I/O AND DSP TOOLBOX

NEXUS integral is a true "multi-purpose-interface", serving every application: from large broadcast-, theater- and opera house installations to mobile and remote broadcast applications as well as high quality converters for engineers and producers. The integrated browser-controlled mix engine with the renowned STAGETEC processing technology, combined with extensive API remote control capabilities via Ember+ allows powerful system integration in conference centers, production studios and broadcast environments. From standalone applications to large scale networks, NEXUS integral is the device of choice.

SYSTEM INTEGRATION

NEXUS integral is seamlessly integrated in the AVATUS mixing console and supports parameter control and control of the internal Matrix from within NEXUS modular. This allows an easy integration into existing environments. Stagenet provides a comfortable IP-Signal-Management solution integrating and controlling NEXUS integral into Stagenet managed environments. All models are available with either Dante-Interface or AES67-Interface complying with NMOS and SMPTE-2110 standard. In addition, a USB-C port allows direct connection to a DAW, providing access to the converters, the mix engine as well as other AoIP-channels. A display provides an instant metering overview, basic configuration options and status recall functionality. Optional future interface-cards, such as MADI, Dante, AES67 or GPIO provide further functionality, even network bridge applications are possible.

NEXUS integral offers two different models with different numbers of inputs and outputs – NEXUS integral 8 and NEXUS integral 16. With this granularity, price efficiency can be provided also for systems where many low channel count edge devices are required.

APPLICATION AREAS

Broadcast
Highest signal quality with shortest possible latency: The units are rugged and resilient through redundant AoIP connections and power supplies. Universal control options and GPIO capabilities makes the system suitable for networked broadcast production tasks.

Theater, opera and philharmonic halls
Performing arts spaces need audio systems that cover a large number of different rooms. NEXUS integral offers slim edge devices with just the right amount of I/O and integrated audio processing.

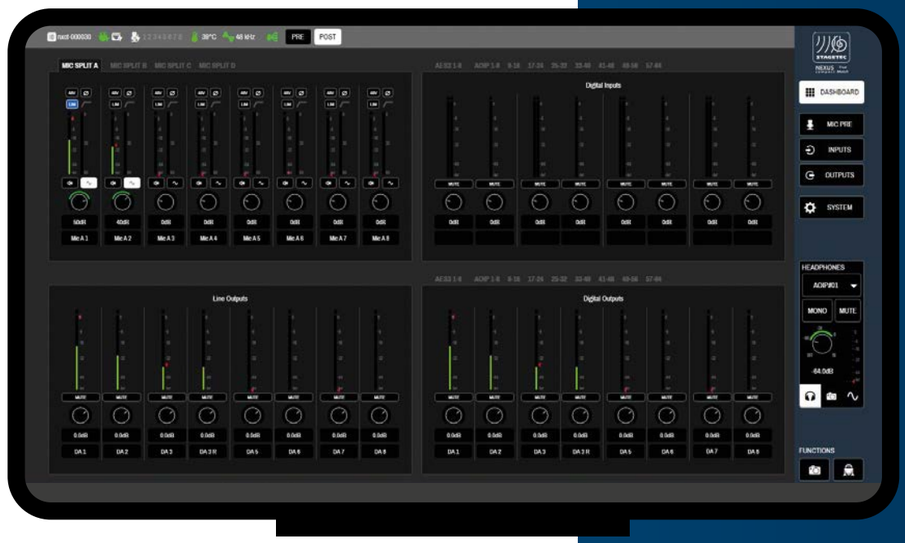
OB-vans and remote production
For outside production, the NEXUS integral units benefit from their robust design. Their mobility, combined with standardized discovery protocols makes it an ideal tool for applications.

Recording and music production
Highest signal quality mic preamps and converters, unreachable cost range. Through AoIP or even the simple to use USB-C interface, all studio devices are accessible from the DAW.

Conference centers and installation
With highest quality audio processing and integrated mixing capabilities (and optional Auto Mixer), NEXUS integral is also a perfect match for AV-systems.

PROCESSING/ INTERNAL MIX MATRIX

NEXUS integral units feature an internal mix matrix to allow standalone mixing tasks. Mix matrix inputs and outputs are equipped with audio processing such as EQ, compressor, limiter and delays to offer the required tools for decentralized applications, including remote production, local monitoring mixes, etc.



All parameters are readily accessible via the web GUI

NEXUS Star Router specifications		96 KHZ operation cuts channel count in half!	
X19-3RU	NEXUS base device, 1 active row	3U, 420mm in depth	20 free slots receiving audio, controller, sync and optical interface cards Routing technology: TDM bus.
X19-6RU-01 X19-6RU-10 X19-6RU-11	With passive top row (optional) with passive bottom row (optional) NEXUS Base Device, 2 active rows.	6U in total 6U in total 6U, 420 mm in depth	Optional: additional passive row for detached XLR panels. 40 free slots receiving audio, controller, sync, and optical interface cards.
X19-9RU-011 X19-9RU-110 X19-9RU-111	With passive top row (optional) With passive bottom row (optional) NEXUS base device, 3 active rows	9U in total 9U in total 9U, 420 mm in depth	Routing technology: TDM bus Optional: additional passive row for detached XLR panels. 60 free slots receiving audio, controller, sync, and optical interface cards.
X19-12RU-0111 X19-12RU-1110 X19-12RU-0110	With passive top row (optional) With passive bottom row (optional) With passive top and bottom rows (optional)	12U in total 12U in total 12U in total	Optional: additional passive row for detached XLR panels.
X19-15RU-01110	With passive top and bottom rows (optional)	15U in total	Routing technology: TDM bus
X19-1RU	NEXUS base device (compact)	1U, 440 mm in depth	5 free slots receiving audio, controller, sync, and optical interface cards. Routing technology: TDM bus
R19-6RU	NEXUS STAR router base device	6U, 410 mm in depth	16 (8L, 8R) free slots for audio and optical interface cards, 2 free slots for the RCX controller card (optional, redundant), 1 free slot for the RSYNC sync card. Routing technology: 4.096:4.096 matrix
System Cards for X19 Base Devices			
XCPU	Base device CPU	Base device and bus management, system-control interfaces (IP, USB, RS232), clock generation and conditioning, external wordclock-sync input, network-synced wordclock output.	
XFOC	Optical interface for the NEXUS	4 SFP ports (interface modules for various fibre types), NEXUS in-sync networking (audio, clock, and control data), up to 256 bi-directional audio channels (@48 KHz); built-in matrix (separate from the TDM bus – requires Rev. 8 or later).	
XRT	High-performance optical interface with built-in routing matrix	High-performance optical interface card with built-in 8.448:8.448 router (@48 KHz), 12 optical ports handling 512 or 2.048 audio channels each high-speed network bypassing the TDM bus.	
XSYNC	Video-sync card	Supports external internet tunnelling by SFP modules sync formats including TriLevel and Blackburst.	
System Cards for R19 Star Routers			
RCX	Base device CPU for STAR routers	Base device and bus management, system-control interfaces (IP, USB, RS232), clock generation and conditioning, external wordclock-sync input, network-synced wordclock output, 4.000:4.000 routing matrix (@48 KHz).	
RFOC	Optical interface for the NEXUS	4 SFP ports (interface modules for various fibre types), NEXUS in-sync networking (audio, clock, and control data), up to 256 bi-directional audio channels (@48 KHz).	
RSYNC	Video-sync card	Supports external sync formats including TriLevel and Blackburst.	

Operation and monitoring			
XCI	 -4 HP -8 HP	NEXUS control interface 2 serial ports 4 serial ports	Multifunctional control interface, configurable ports (MIDI, Yamaha AD8HR, machine control); internal miniSD card supporting the NEXUS status-load feature, IP-control interface (configured using the GUI), SNMP.
XACI		NEXUS advanced control interface	Control interface incorporating an embedded PC module and an audio-bus interface, 2 USB ports, 3 Ethernet ports; use cases: EmBER+; FLEX-console proxy hosting (more use cases planned).
XRI	Rev 05	NEXUS relay interface	24 optocoupler inputs, 24 semiconductor-relay outputs (AC/DC), internal/external supply, common pin or isolated pairs, programmable functions using NEXUS Logic Control.
Fibre specifications			Examples – other SFP module types (e.g. CWDM / DWDM) available on request
SFPM	FO-01	SFP module for XFOC/RFOC	LC duplex, 1310 nm, SM: 10 km, MM: 500 m (default)
	FO-04	SFP module for XFOC/RFOC	LC duplex, 1310 nm, SM: 20 km
	FO-08 A/B	SFP module for XFOC/RFOC	LCsimplex,1310nm/1550nmWDM,SM:upto10km
	MF-01	SFP module for XMF/RMF (MADI)	LC duplex, 1310 nm, MM: 2 km (default)
	MF-02	SFP module for XMF/RMF (MADI)	LC duplex, 1310 nm, SM: 10 km
	HD-02	SFP module for XHDI (HD-SDI)	LC duplex, 1310 nm, SM: 30 km (SD), 20 km (HD)
Optical Multiplexer for duplex links			Transparent transmission, cascadable units
OMUX	-LC -LCT (1) ... (4)	1:4 optical multiplexer, re-clocking (optional), 1–4 units inside a 19" 1U mainframe	Standalone unit, internal plus redundant power supplies, auto (priority-controlled) or GPI-controlled operation; can be reconfigured as unidirectional in-parallel router (for example, for MADI).
XMUX	-LC -LCT	1:4 optical multiplexer, re-clocking (optional), 1 plug-in card	Plug-in card for NEXUS X19 Base Devices, auto (priority-controlled) operation; can be reconfigured as unidirectional in-parallel router (for example, for MADI).
Built-in processing			
XDSP	Rev. 06	DSP card for NEXUS X19 base device 2 processors (Sharc 21469)	Custom configuration using freely routable processor modules (faders, EQs, filters, dynamics, delays, summers, IFBs, downmix, mix-minus matrix, cross-over, M/S decoder, de-esser, and many more); capacity (@48kHz): 2 × 1.000 summing points, 20 min. audio delay.
		DSP configuration per customer specifications	Custom solutions such as single-destination auto-crossfade, etc. available on request.
ISO- STEM	-L	ISOSTEM Upmix 5.1 (dongle)	Plug-in for use with one processor of an XDSP Rev06 card.
Transparent tunnelling			
XTI	 -4 HP -8 HP	Serial-data transport interface 2 serial ports 4 serial ports	Supports transparent transmission of serial data (MIDI, RS 232, RS 422, RS 485, DMX, LTC, Dolby metadata) through the NEXUS network, 2 or 4 duplex ports, separately routed transmission in each direction, allows both parallel routing and point-to-point links.
High-Quality analog range			Fullscale [0..24 dBu]
XMIC+	-X, -D, -R	8-channel microphone converter	32-bit TrueMatch A/D converter, 158 dB (A) dynamics at 24 dBu, no analogue preamplification required, ultralow latency, exceptional pulse fidelity, phantom power, auto-mute when connecting/disconnecting powered microphones, DI-box functionality, galvanically transformer-isolated channels; Software option: active 1:4 splitter per input converter, with gain, subsonic filter, and limiter for each splitter output.
XAD+	-X, -D, -R	8-channel analogue line-input converter	24-bit TrueMatch A/D converter, 133 dB (A) dynamics at 24 dBu, galvanically transformer-isolated channels
XDA+	-X, -D, -R	8-channel analogue line-output converter	24-bit TrueMatch D/A converter, 131 dB (A) dynamics at 24 dBu, galvanically transformer-isolated outputs.

AES standard range			
XETR	-X, -B	4 AES/EBU input ports and 4 AES/EBU output ports	Combo unit featuring 4 AES digital 2-channel inputs and 4 AES digital 2-channel outputs, with I/O SRCs.
Compact range			
HXAD	-D, -R	8 line inputs (2-channel)	24-bit TrueMatch A/D converter, 112 dB(A) dynamics at 15 dBu, galvanically isolated channel pairs.
HXDA	-D, -R	8 line outputs (2-channel)	24-bit TrueMatch D/A converter, 120 dB(A) dynamics at 15 dBu, galvanically isolated channel pairs.
HXETR	-D, -R	8 AES/EBU input ports and 8 AES/EBU output ports	Combo unit featuring 8 AES digital 2-channel inputs with SRCs and 8 AES digital 2-channel outputs without SRCs.
Multichannel formats			
XDIP		Dante AoIP-interface	Audio-over-IP duplex interface, 64 inputs and 64 outputs (@48kHz); SRCs; 1 Audinate DANTE Brooklyn II; AES67; stabilised clock regeneration, 4x switch supporting primary/secondary cabling.
XMF	-BLC SRC	Single MADI port for NEXUS X19 base devices	64 inputs, 64 outputs (@48kHz) per port, BNC port, SFP slot, SFP module (optional). SRC option: 2 × 32 channels (64 in or 64 out or 32 in/32 out).
RMF	BLC	4 MADI ports for NEXUS R19 Star routers	64 inputs, 64 outputs (@48kHz) per port, BNC port, SFP slot, SFP module (optional).
RIF67		MADI & AoIP-interface	Audio-over-IP interface for NEXUS Star router; supports AES67and Ravenna; equipped with up to 4 AES67 I/O modules by DirectOut; each module has 2 ethernet ports; the board provides 256 inputs and 256 outputs, up to 128 streams; one single or 4 separated IP-networks can be supplied; 8 RJ45 ports, 2 ports for each AES67 I/O module; sample-accurate synchronisation.
XFIP		Fiber & IP interface	Fiber and Audio-over-IP interface; equipped with AES67 I/O module by Direct-Out; supports AES67 and Ravenna; 256 inputs and 256 outputs in a maximum of 32 streams, supports redundant audio transmission as per SMPTE 2022-7.
Embedded audio			
XHDI	-B -B/LC -B -LC	Combo unit with 16-channel HD-SDI embedder and 16-channel HD-SDI de-embedder	Processes the embedded audio of a serial video stream compliant with SMPTE 259M (SD), SMPTE 292M (HD), or SMPTE 424M/425M (3G). The de-embedder extracts 16 channels while the embedder embeds 16 channels. Embed mode (Emb, Replace, Clr, Byp) selectable per group SMPTE 2020 compliant metadata embedder/de-embedder. Video delay, I/O SRCs (optional).

Legend

-X	with XLR ports
-R	RJ45 version
-B	BNC version
-D	D-sub port
-O	OptoXLR version
-BLC	BNC + LC version



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