ANALOGUE-AUDIO COMPONENTS

HXAD A/D CONVERTER

16-CHANNEL ANALOGUE-INPUT BOARD FEATURING 24-BIT A/D CONVERTERS

- 16 channels
- Dynamic range: 112 dB(A) @ 15 dBu (typ.)
- THD&N: 0.001% @ 15 dBu (typ.)
- + Frequency response: $\pm 0.05~\text{dB}$ @ 20 to 20,000 Hz
- Negligible converter inaccuracies
- Optimized aliasing rejection
- Input pairs galvanically isolated

With an increased number of channels and a lower maximum input level, the HXAD A/D converter for the NEXUS was designed specifically for radio applications and static installations featuring a large number of channels.

Providing eight 2-channel analogue inputs, the XHAD offers twice as many inputs as its predecessor XAD+ and is capable of handling a maximum input level of 15 dBu.

16 A/D CONVERTERS IN JUST 4 DU

The converter unit is available with D-Sub or RJ-45 ports. This provides for quick and economical wiring especially in static installations using standard S/STP lines. The port wiring complies with the EN 50173 standard. Thanks to the excellent CMR properties, even unshielded cables (UTP) can be used with no loss in quality.

The space requirements in a NEXUS Base Device are reduced to just 4 HP (about 20 mm/0.8"). In theory, this would allow for a total of 304 analog inputs to be provided on a single 3U Base Device!

TRANSFORMER-ISOLATED INPUT STAGE

Thanks to an innovative and sophisticated design, all channels feature transformer-insulated balanced input circuits.

This provides the following benefits when compared with traditional switch-based solutions: The inputs are not susceptible to magnetic fields and offer low THD&N at both low and high levels and even at low frequencies. In addition, the input capacitance is reduced, and optimum balancing is achieved.

The two channels of each input pair are balanced but share a common potential. Each input pair is floating with respect to the other pairs.

Application Note

With regard to the common earth potential shared by the separate channel pairs, the inputs should not be wired to patchbays. Ground loops may occur when applying single channel input signals.

The HXAD is perfectly suited to stereo and multichannel applications.

VARIANT TYPES

The following Stage Tec A/D converter is available for NEXUS systems and also the TrueMatch RMC:

- XAD+ (8-channel A/D converter board with XLR ports, 24-bit converters)
- XMIC+ (8-channel microphone-input board with XLR/1/4" ports, 32bit converters)



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NEXUS Digital Audio Routing and Interconnect System

RJ 45/XLR Adaptor

An RJ45-ADP adaptor board for physical RJ45-XLR conversion is optionally available for sources that need to be connected via XLR cables. This provides an XLR extension via an S/STP or UTP multicore cable. The RJ45 pinout matches the HXAD-board connector.





HXAD SPECIFICATIONS

Unless otherwise indicated, all data given relates to the following conditions: All measurements comply with the IRT standards (»IRT Pflichtenheft 3/2«, issued in July 1982 and »IRT Pflichtenheft 3/5«, issued in October 1990) and AES standards (AES-17, issued in 1998).

Reference frequency: 1 kHz. Sample rate: 48 kHz. Full-scale level: 0 dBFS = 15 dBu.		
Inputs	16 channels per board	
	electrically balanced inputs; input pairs galvanically isolated	
	4 × EN 50173-compliant RJ45 ports for S/STP lines (CAT5)	
	alternative: 2 × 25-pole D-Sub ports (for channels 1 to 8)	
Channel configuration	test tone routing	
	phase inversion	
Input level	max. 15 dBu (adjustable in 1-dB steps via software)	
Dielectric strength	audio-line core - case: < ±200 VDC (common-mode signal)	
	audio-line core - audio-line core: < 20 VAC RMS (dielectric strength)	
	shield - case: < 48 VDC	
Frequency response	20 to 20,000 Hz +0.0 dB, -0.1 dB	
Input impedance	> 10 kohm	
Input-impedance CMR	120 dB < 100 Hz (typ.)	
	100 dB @ 1 kHz (typ.)	
	70 dB @ 15 kHz (typ.)	
Gain	-20 to +20 dB, digitally adjustable	
THD&N.	0.001% @ 15 dBu (typ.); < 0.002% granted @1 kHz	
	0.01% @ -15 to +15 dBu (typ.); < 0.02% granted	
	< 0.3% @ -60 dBFS, 20 to 20,000 Hz	
Dynamic range	112 dB (A) @ 0 dBFS = 15 dBu (typ.)	
Idle-channel noise	-109 dBFS (CCIR-RMS) (typ.)	
Modulation noise	-110 dBFS CCIR RMS (typ.) (noise@signal presence)	
Crosstalk attenuation	> 110 dB (20 to 20,000 Hz)	
HF resistance	HF-demodulation resistant according to IRT standards (»IRT-Pflichtenheft 3/5«) and European standards	
A/D conversion	Delta-Sigma converters	
	24-bit resolution, 128 times oversampling	
	sample rates	depend on NEXUS system clock (44.1; 48; 88.2; 96 kHz)
Propagation delay	typ. 0.33 ms (@ 48 kHz sample rate)	
Power supply	Voltage	4.9 to 5.2 V
	Current	500 mA
Operating conditions	Temperature range	0 to +50 °C / 32 to 122 °F
	Humidity	90% (max.), non-condensing
Storage conditions	Temperature range	-35 to +70 °C / -31 to 158 °F
	Humidity	90% (max.), non-condensing
Physical specifications	General	board for 19" module frame; 3 U, 340 mm/13.39"
	Front panel	4 HP (20.02 × 128.5 mm / 0.8 × 5.06")
	Required space	1
	Weight	0.25 kg

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