## ANALOGUE-AUDIO COMPONENTS

### XAD+ A/D CONVERTER

#### 8-CHANNEL LINE-INPUT BOARD WITH 24-BIT TRUEMATCH A/D CONVERTERS

- 8 channels
- Dynamic range: 133 dB(A) @ 24 dBu (typ.)
- THD&N: 0.001% @ 24 dBu (typ.)
- Frequency response:  $\pm 0.05~\text{dB}$  @ 20 to 20,000 Hz
- Negligible converter inaccuracies
- Optimized aliasing rejection
- Inputs transformers isolated

The latest generation of NEXUS A/D-converter boards now offer eight high-quality analogue inputs on a single board. The outstanding performance of Stage Tec's 24-bit converter has been further improved and now provides an incredible 133 dB of dynamic range and THD&N is reduced to 0.001%. The converter is also incorporated in Stage Tec's TrueMatch RMC stand-alone multichannel A/D converter.

#### **EIGHT TRUEMATCHERS ON 4 DU**

The converter board is not only available with combined XLR/¼" standard sockets but also with computer networking style RJ45 connectors. This provides for quick and economical wiring especially in fixed installations using standard CAT5/6 S/STP lines. The port wiring complies with the EN 50173 standard and due to excellent CMR performance, even unshielded cables (UTP) can be used with no loss of quality.

The XAD+ provides remarkable input density as the RJ45 version of the XAD+ requires only 4 DU (approx. 20mm/0.79") on a NEXUS Base Device, so a total of 160 analogue inputs can be provided by a single 3-U Base Device.

#### THE TRUEMATCH TECHNOLOGY

Like all A/D converters made by Stage Tec, the XAD+ board incorporates the patented TrueMatch technology. First-class analogue circuit design and state-of-the-art DSP technology are at the heart of these new reference converters, distinguished by superb linearity, ultra-low THD&N, homogenous noise spectrums, and considerably improved aliasing rejection. This guarantees crystal-clear and transparent recordings even at the critical 44.1 kHz sample rate.

#### TRANSFORMER-ISOLATED INPUT STAGE

The innovative and sophisticated circuit design of the XAD+ converter boards provides transformer-isolated balanced inputs that exhibit none of the artefacts of conventional solutions.

Compared with conventional circuits based on input transformers or electronic balancing, this approach has a number of benefits: The inputs are immune to magnetic fields and provide low THD&N at both low and high levels and even at low frequencies. In addition, input capacitance is reduced and an optimum balancing as well as true electrical isolation are achieved.

#### VARIANT TYPES

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

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



10/2015 

Stage Tec Entwicklungsgesellschaft für professionelle Audiotechnik mbh www.stagetec.com

# **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 XAD+-board connector.



#### XAD+ 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 = 24 dBu.

Inputs	8 channels per board	
	balanced inputs; floating transformer isolation	
	XLR-3 (female) ports with gold-plated contacts	
	alternative: 2 $\times$ EN 50173-compliant RJ45 ports for channels 1 to 4 and	
	5 to 8 respectively, for S/STP lines (CAT5)	
	alternative: 25-pole D-Sub port (for channels 1 to 8 )	
Channel configuration	detachable ground connection at the input port (XLR version)	
	test tone routing	
	phase inversion	
Input level	0 to 24 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 (open ground connection)	
Frequency response	20 to 20,000 Hz +0.0 dB, -0.1 dB	
Input impedance	> 10 kohm	
Input-impedance CMR	115 dB < 100 Hz (typ.)	
	100 dB @ 1 kHz (typ.)	
	75 dB @ 15 kHz (typ.)	
Gain	-20 to +20 dB, digitally adjustable	
THD&N.	0.001% @ 24 dBu (typ.); < 0.002% granted @1 kHz	
	0.01% @ -25 to +24 dBu (typ.); < 0.02% granted	
	< 0.03% @ -60 dBFS, 20 to 20,000 Hz	
Dynamic range	133 dB(A) @ 0 dBFS = 24 dBu (typ.)	
Idle-channel noise	-129 dBFS (CCIR-RMS) (typ.)	
Modulation noise	-130 dBFS CCIR RMS (typ.) (noise@signal presence)	
Crosstalk attenuation	> 130 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	Stage Tec TrueMatch 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	800 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") or 8 HP (40.2 mm × 128.5 mm / 1.58 × 5.06")
	Required space	1
	Weight	0.25 kg

10/2015 

STAGE TEC ENTWICKLUNGSGESELLSCHAFT FÜR PROFESSIONELLE AUDIOTECHNIK MBH WWW

XAD+

WWW.STAGETEC.COM

### **NEXUS** Digital Audio Routing and Interconnect System