

## XDA+ D/A CONVERTER

### 8-CHANNEL ANALOGUE-OUTPUT BOARD WITH 24-BIT D/A CONVERTERS

- 8 channels
- Dynamic range: 131 dB(A) @ 24 dBu (typ.)
- THD&N: 0.0006% @ 24 dBu (typ.)
- Outputs galvanically isolated using transformers
- Decreased power consumption

This 8-channel output board features 24-bit D/A converters producing a maximum output level of 24 dBu at a dynamic range of 131 dB(A). Exceptional balancing specifications, transformer isolation, low output impedance, and optimum dynamic range provide uncritical connectivity for power amplifiers or analogue tape machines. The extensive utilisable dynamic range provides appropriate headroom even for signals with unfavourable level settings or without dynamic limiting, always enabling optimum signal quality to be achieved, for example, in mobile use.

Thanks to the circuit design and the production quality, no calibration is required; therefore, manually adjustable electronic components are not incorporated.

#### STAGE TEC D/A-CONVERTER TECHNOLOGY

The exceptional dynamic range of the XDA+ board is the result of a sophisticated DSP technology based on wide experience in dynamic-range enhancement for D/A converters and pioneering research on the problems of D/A conversion.

› **NEGLIGIBLE CONVERTER INACCURACIES** Stage Tec D/A converters produce a stable and almost perfect conversion curve, showing almost no errors over the entire conversion range.

› **ULTRA-LOW THD** Stage Tec D/A converters produce ultra-low THD over a wide level range, making them perfectly suitable for applications such as monitoring, large sound-reinforcement systems, and high-quality analogue recording. The large effective range makes the application of the converters uncritical.

› **HOMOGENOUS NOISE SPECTRUM** Stage Tec D/A converters have a

homogenous noise spectrum over the entire conversion range. The intrinsic noise is practically imperceptible even at very low input levels.

› **LOW LATENCIES** Thanks to the ultra-low group delay, the XDA+ board is perfectly suitable for live-sound applications.

#### TRANSFORMER-ISOLATED OUTPUT STAGE

Thanks to the innovative circuit design, the XDA+ board features transformer-isolated balanced outputs that get around the flaws of conventional solutions. Compared to conventional circuits based on output transformers or electronically balancing, XDA+ boards provide the following benefits:

- Insusceptibility to magnetic fields
- Low THD&N at both low and high levels and even at low frequencies
- Low output impedance
- Excellent balancing
- True galvanic isolation
- Low dimensions and weight

#### RJ45 VERSION

The XDA+ board is also available in an alternative version featuring an RJ45 port. The port wiring is similar to the EN 50173 standard. This provides for quick and economical wiring using standard S/STP lines in fixed installations, in particular. The RJ45 version of the XDA+ requires only 4 DU (approx. 20 mm/0.79") in a NEXUS Base Device.

An RJ45-ADP transformer board is available for connecting signal sources that require XLR ports. This allows an XLR extension to be accomplished via a multicore S/STP or UTP multicore cable. The RJ45 wiring is the same as on the XDA+ board.

#### LOW SPACE REQUIREMENTS

Due to the XLR terminals, the board requires 1 slot and 8 DU in a NEXUS Base Device. If necessary, the front panel can be detached from the board and be installed in an adjacent module location; it is then connected to the board via a ribbon cable, and the space requirement will reduce to 4 DU. The D-Sub and RJ45 versions are only 4 units wide.



VERSIONS	
XDAplus-X	8 × XLR ports
XDAplus-R	2 × RJ45 ports
XDAplus-D	1 × 25-pole D-Sub terminal



## XDA+ SPECIFICATIONS, REV. 5

Unless otherwise indicated, all data given relate 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.

Outputs	8 channels per board	
	XLR-3 ports (male), gold-plated contacts	
	alternative: EN 50173-compliant RJ45 port for S/STP lines (CAT5)	
	25-pol. D-Sub	
Channel configuration	balanced outputs; floating transformer isolation	
	detachable ground connection at the output port (XLR version)	
	short-circuit-proof	
	insusceptible to inadvertent phantom-power routing	
Output level	analogue muting for supply-voltage enabling / disabling	
	0 to 24 dBu @ > 600 ohm load adjustable in 1-dB steps; or 0 to 15 dBu @ 300 ohm load	
Dielectric strength	common-mode voltage	< ±200 V DC, < 250 V AC (max. 1 min.)
	ESD protection	15 kV
Frequency response	20 to 20,000 Hz (+0 dB, -0.2 dB), integrated DC filter	
Output impedance	19 ohm (typ.)	
Output-impedance CMR	> 60 dB @ 20 to 20,000 Hz	
	120 dB @ 50 Hz (typ.)	
	80 dB @ 20 kHz (typ.)	
Offset voltage	< 1 mV (0.1 mV typ.)	
Gain	-63 to 15 dB (and mute), digitally adjustable in 1-dB steps; click-free adjustment	
THD+N.	0.003% @ 24 dBu (typ.)	
	< 0.006% @ -20 to +24 dBu (typ.); < 0.02% granted	
	< 0.0006% @ 4 dBu (typ.)	
	-68 dB @ -60 dBFS	
Dynamic range @ 0 dBFS = 24 dBu	131 dB(A) (typ.)	
	128 dB RMS (typ.)	
	-124 to -128 dBFS (RMS) (typ.)	
Idle-channel noise	-93 dBq (CCIR 1K) (typ.)	
	-105 dBu (CCIR 2K RMS) (typ.)	
	-124 to -128 dBFS (RMS) (typ.)	
Crosstalk attenuation	> 100 dB (20 to 20,000 Hz); > 130 dB (typ.)	
HF resistance	HF-demodulation resistant according to IRT standards	
EMC	EN 55022, Class B (with XLR cables connected), EN 55013	
D/A conversion	Stage Tec Delta-Sigma converters	
	24-bit resolution, 128 times oversampling	
	sample rates	44.1; 48; 88.2; 96 kHz
Propagation delay	< 0.23 ms @ 48 kHz sample rate	
Power supply	Voltage	+ 4.9 to 5.2 V
	Current	current draw: 1.2 V (no load)
		2 A (max. load)
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	2 × 8 HP (40.2 mm × 128.5 mm) for X2R or 1 × 4 HP (20.02 × 128.5 mm) for RJ45 or Sub-D
	Required space	1
	Weight	0.24 kg