

HXDA D/A CONVERTER

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

- 16 channels
- Dynamic range: 120 dB(A) @ 15 dBu (typ.)
- THD&N: <0.001% @ 4 dBu (typ.)
- Outputs galvanically isolated in pairs
- Decreased power consumption

This output board features eight 2-channel 24-bit D/A converters producing a maximum output level of 15 dBu with a dynamic range of 120 dB(A). Exceptional balancing specifications, transformer isolation, low output impedance, and optimal dynamic range provide versatile connectivity for power amplifiers or analogue tape machines. The two channels of each output pair are balanced but share a common potential. Each output pair is floating with respect to the other pairs.

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

This board was specifically designed to meet the requirements of radio applications (15 dBu maximum output level) or static installations featuring a large number of channels (for example, feeding power amplifiers in a sound-reinforcement environment).

STAGE TEC D/A-CONVERTER TECHNOLOGY

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

› **ULTRA-LOW THD** Stage Tec D/A converters offer ultra-low THD over a wide level range, making them ideally suited to applications such as monitoring, large sound-reinforcement systems, and high-quality analogue recording.

› **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 latency, the HXDA board is ideally suited to live-sound applications.

TRANSFORMER-ISOLATED OUTPUT STAGE

Thanks to an innovative and sophisticated design, all channels feature transformer-insulated output circuits. This provides the following benefits when compared with traditional switch-based solutions:

- Insusceptibility to magnetic fields
- Low THD&N at both low and high levels and even at low frequencies
- Low output impedance
- Precision balancing
- Compact dimensions and low weight

RJ45 PORTS

The HXDA is available with an RJ-45 port. This provides for quick and economical wiring using standard S/STP lines particularly in static installations. The port wiring complies with the EN 50173 standard. The mounting width of the RJ45 version is just 4 HP on the Base Device.

The RJ 45-ADP adapter PCB is available for connecting signal sources requiring XLR ports. This allows an XLR extension to be accomplished via a multicore S/STP or UTP multicore (CAT5) cable. The RJ-45 wiring is the same as on the HXDA board.

LOW SPACE REQUIREMENTS

The HXDA requires just 4 HP in the Base Device.

APPLICATION NOTE

With regard to the common earth potential shared by the individual channel pairs, the outputs should not be connected to patchbays. Ground loops may occur when using single-channel output signals.

The HXDA is perfectly suited to stereo or multichannel applications.



VERSIONS

HXDA-R	4 × RJ45 ports
HXDA-D	2 × 25-pole D-Sub terminals



HXDA SPECIFICATIONS

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 = 15 dBu.

Outputs	16 channels per board	
	EN 50173-compliant RJ45 port for S/STP lines (CAT5)	
	25-pol. D-Sub	
	electrically balanced outputs, output pairs galvanically isolated	
Channel configuration	short-circuit-proof	
	insusceptible to inadvertent phantom-power routing	
	analogue muting for supply-voltage enabling / disabling	
Output level	0 to 15 dBu @ > 600 ohm load adjustable in 1-dB steps	
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	
	90 dB @ 50 Hz (typ.)	
	80 dB @ 20 kHz (typ.)	
Offset voltage	< 10 mV (0.1 mV typ.)	
Gain range	-63 to 15 dB (and mute), digitally adjustable in 1-dB steps; click-free adjustment	
THD&N.	0.001% @ 15 dBu (typ.)	
	< 0.01% @ -20 to +15 dBu (typ.); < 0.02% granted	
	< 0.001% @ 4 dBu (typ.)	
	< 0.18% @ -60 dBFS	
Dynamic range @0 dBFS = 15 dBu	120 dB(A)	
	117 dB RMS	
Idle-channel noise	-116 dBFS (RMS) (typ.)	
	-112 dBFS (CCIR 1K) (typ.)	
	-101 dBFS (CCIR 2K RMS) (typ.)	
Crosstalk attenuation	> 100 dB (20 to 20,000 Hz); > 130 dB (typ.)	
HF resistance	HF-demodulation resistant according to IRT standards (»IRT-Pflichtenheft 3/5«) and European standards	
EMC	EN 55022, Class B, EN 55013	
D/A conversion	Delta-Sigma converters	
	24-bit resolution, 128 times oversampling	
Propagation delay	sample rates	44.1; 48; 88.2; 96 kHz
	< 0.23 ms @ 48 kHz sample rate	
Power supply	Voltage	+ 4.9 to 5.2 V
	Current	current draw: 0.8 A 1.5 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	1 × 4 HP (20.02 × 128.5 mm)
	Required space	1
	Weight	0.23 kg