X-CORE SERIES X5

Applications

- Live Music
- Corporate
- Night clubs/bars
- Houses of Worship
- Theatres
- Commercial Installations

Key features

- 96kHz digital signal processing
- Pure Class D amplification
- 85V to 240V Auto-sensing PSU
- Tamper proof front panel
- Manufactured in the UK

The X-Core X5, a 4 Channel DSP Amplifier

The X-Core series X5 offers a unique amplifier range with advanced technology, plenty of power, and an advanced fully-integrated 96kHz DSP providing unique and tremendously useful features. This amplifier is suitable for installations in venues such as bars, restaurants, Houses of Worships, leisure centres, theatres, or even retail premises. The versatile X5 can deploy as a portable amplifier if you preprogram it or pack a laptop in with your kit.

The X5 amplifier is compatible with any speaker, not just the Aaron B range giving you the flexibility to use manual DSP control with any other brand.

Specifications

Number of output channels	Four
Audio inputs	4x Analogue
Digital Signal Processing	High performance 96kHz DSP on all inputs and outputs
Control, monitoring and system status alarms	USB and Bvnet (optimised RS485) Contact closure ports for voice recall and system shut down
Power-save modes	Standby after user defined time with fast wake up on audio detection or from a network command

Aaron B DSP amplifiers put power and technology at your fingertips for flexible management and superb control of your sound.

AARON B

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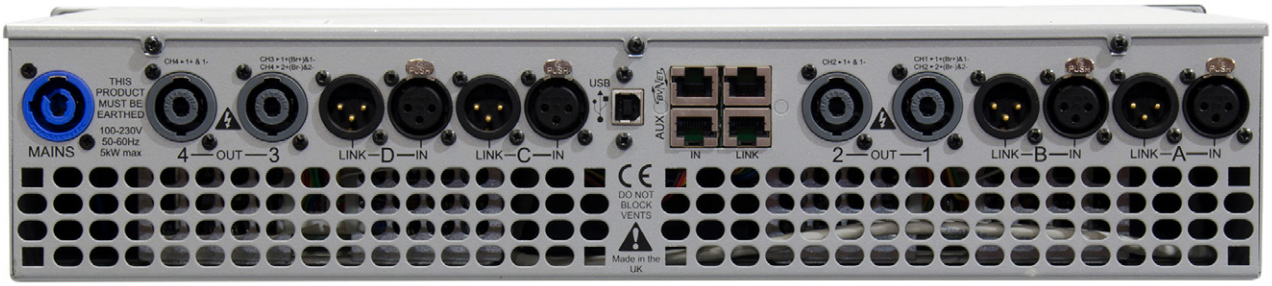

This four-channel amplifier lets you use all the power in any format. You don't need to ration the power between the channels. Each channel can deliver average continuous power of 1250 Watts in to 2 ohms, or for a bridged pair of channels, up to 2,500 Watts in to 4 ohms. Not burst or peak power, but continuous delivery by all channels at the same time.

System Engineer is a PC application that gives you remote control and plenty of useful features – flexible management of presets and overlay groupings of Mutes, Gains, Delays, and EQ across your entire system.

Also, with the X5, you get the high-end specialist feature of extensive fault and status logging, plus driver integrity monitoring as part of the package, instead of an expensive add-on.

Bynet (RS485 based system) lets you daisy chain your X5 amplifiers together with inexpensive Ethernet cables over hundreds of meters without the need for a network switch. Alternatively, you can connect via USB. The advanced 96KHz fully integrated DSP puts all the tools you need to optimise the sound (music or voice) at your fingertips.

The X5 amplifier is a powerful sound system component with superb features for portable and installed sound. It ensures phase coherence and reliable, consistent performance when paired with the Aaron B speaker range.

Power specification per channel	X5
Crest Factor of 4 (12dB), 2-Ohm nominal load	1,250W
Crest Factor of 2.8 (9dB), 4-Ohm nominal load	800W
Crest Factor of 2 (6dB), 8-Ohm nominal load	450W
Bridged, per channel pair, 4 Ohm load	2,500W
25V line (CV) operation, Crest Factor 4 (12dB)	625W
70V line (CV) operation, Crest Factor 4 (12dB)	1,250W
100V line (CV) operation, Crest Factor 4 (12dB)	1,250W

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Audio Performance

Amplifier topology	High performance Class D
Amplifier modulation scheme	Low feedback, multiple loop, with feed-forward error correction
Output noise, ref. maximum amplifier output	Better than 106dBA typical, unmuted
Gain (with all the DSP level controls set to 0dB)	27dB
Frequency response, 4 Ohm load	20Hz to 20kHz, +/-0.5dB
Total harmonic distortion, THD	<0.05% typical, 1kHz signal, AES17 filter, 4 Ohm load
Inter-channel crosstalk, worst case combination	better than -80dBr at 1kHz
Slew rate	>25V per microsecond typical
Damping factor (Ref 8 Ohms)	>100 at amplifier output (see Linea's "Damping factor debunked" white paper)
Maximum analogue input level	+20dBu
Analogue input sensitivity range for full output	0dBu to +20dBu, continuously adjustable
Analogue input (four channels)	Input 10k Ohm, electronically balanced, link directly connected to input
Analogue ground scheme	AES48 standard compliant

Digital Signal Processing

Resolution	40 bit, Linea Research proprietary algorithms
Sample rate	96kHz throughout
Input processing, per channel	Input signal routing, Delay, Gain, Phase, Mute EQ: 4thorder HPF, 4thorder LPF, 8x Parametric, Low and High shelving filters
Output processing, per channel	Source, Delay, Gain, Phase, Mute, up to 8thorder crossover filters, intelligent limiter EQ: 6x Parametric, Low and High shelving filters
Crossover filter types	Bessel Butterworth Linkwitz-Riley Hardman (Like Linkwitz-Riley but with better out of band rejection)

Power Supply

Topology (main power supply)	High efficiency Series Resonant
Nominal mains input voltage range	85V to 240V, Power supply automatically detects voltage and configures accordingly
Mains input frequency range	47Hz to 63Hz
Mains inrush current (max for <10ms)	23A at 115V, 46A at 230V

Protection system

Under all circumstances, the control and protection systems will endeavour to deliver the maximum power possible for a given set of conditions, applying limiters only in extreme circumstances. Muting will only occur when a dangerous situation is detected, normal operation automatically resuming when the condition clears.

Number of output channels
Excessive power supply current (per channel pair)
Excessive internal temperature (per channel pair)
Mains voltage within acceptable limits
Output current within limits (each channel)
Driver impedance within limits (each channel)
Power throughput within limits (each channel)
Switch on mains surge

Speaker protection
Sonically clean audio limiter
DC offset protection
Internally stored information
Log of temperature over time
Log of protection gain reduction over time
Log of output current over time (each channel)
Power cycle count

An inbuilt notification system is provided to indicate problems to remote devices via the network.

Physical

Cooling	Vari-speed fans, back to front airflow
Analogue IN and LINK	4x female and 4x male Neutrik™ XLR
Amplifiers output	4x Neutrik Speakon™ NL4 connectors
Mains input	Neutrik 20A Powercon™
USB	Standard USB 'B'
Network (BvNet)	RJ45 in with RJ45 daisy chain link
Contact closure and shutdown inputs	RJ45 in with RJ45 daisy chain link
LED indicators	Bright, easily differentiated
Operating temperature range and humidity	0 to +40degC, (+32 to +105degF) 0 to 80% RH (non-condensing)
Enclosure	Standard 19" 2U (88mm), 360mm (14") deep (from rear panel to front rack support)
Optional accessories	Rear rack support kit
Net Weight	9.5kg (20 pounds)

System Engineer Application

System Engineer is an advanced amplifier control and monitoring software.
It works with all of our Core & X-Core amplifier & processors.

System Engineer and connected device(s) are intimately intertwined, faithfully duplicating any control adjustments in System Engineer or on the front panel of the device. Adjust gain control on the device and watch the gain value in System Engineer smoothly slide in sympathy. They cannot get out of 'sync.'

There's some real plusses with this package – you don't need to go through the process of setting up an ID name directly on each amplifier, you get powerful grouping with overlays for EQ, Gain and Delay. When you've got your EQ curve sorted you can copy and paste between channels and devices. You can mute the whole system and you can monitor temperature, protective features and log the status.

You can update the firmware on devices via System Engineer network.
All the control, adjustments and monitoring you need in one place.