Q-NEX+ SERIES

4-channel Class D power amplifiers with PFC and DSP

KEY FEATURES

- High-power, digitally controlled Class D power amplifiers
- Very efficient Universal Switch Mode Power Supply with PFC
- Up to 20,000W in 4 channels (Q-NEX+ 20.4) or 10,000W in 4 channels (Q-NEX+ 10.4)
- 8, 4 and 2 Ohm low impedance operation
- 100V and 70V high impedance modes
- Extensive protection system
- Fifth-generation SHARC+ floating point DSP processing
- 32-bit AD converters with 121dB dynamic range
- AVB-Milan networking with redundancy and failover
- AES70 standardized control and device management
- AUDIA software control and monitoring
- Large IPS display with capacitive touch panel

TECHNICAL SPECIFICATIONS

MODEL	Q-NEX10.4	Q-NEX20.4
Channels	4	4
Total output power	10000 W	20000 W
Output Power* (All ch driven/single ch)		
2 ohms	4x2500 / 1x2500 W	4x5000 / 1x5000 W
2.67 ohms	4x2500 / 1x3300 W	4x5000 / 1x6700 W
4 ohms	4x2500 / 1x2500 W	4x5000 / 1x6000 W
8 ohms	4x1250 / 1x1300 W	4x2500 / 1x3000 W
4 ohms Bridged	2x5000 W	-
8 ohms Bridged	2x5000 W	-
Hi-Z 100V	4x2500 / 1x2500 W	4x5000 / 1x5000 W
Hi-Z 70V	4x2500 / 1x2500 W	4x3500 / 1x3500 W
Max output voltage	150 Vpeak	235 Vpeak
Max output current	50 Apeak	71 Apeak
Frequency response	20 Hz - 20 kHz	
Input Sensitivity (DSP adjustable)	+10 dBu	+12 dBu
Gain	32 dB	32 dB
Input Impedance	30 Kohm (bal) / 15 Kohm (unbal)	
Input Connectors	INPUT: XLR-F LINK: XLR-M	
Output Connectors	NL4 Speakon	
Network Connectors	2 x ETHERCON® (NE8FAV)	
Audio Networking	AVB - Milan	
Signal Processing	Fifth-generation SHARC+ 32-bit floating-point DSP	
Direct access Controls	Capacitive touch panel - Dial - Terminate	
Remote Controls	AUDIA software with AES70 device control standard	
Cooling	Variable speed DC fan	
Protections	Soft-start, Turn-on Turn-off transients, Muting at turn-on, Over-heating, DC, RF, Short-circuit, Open or mismatched loads, Overloaded power supply, Clip Limiting	
S/N Ratio	111 dBA	115 dBA
THD+N	< 0.05 %	
Power Supply	90V - 265V AC, 50Hz-60Hz	
1/8 Rated Power	7.3 A	14 A
Weight Net (kg-Lb)	7 kg (15.4 lbs)	9 kg (19.8 lbs)
Dimensions (W x H x D)	483x89x355 mm (19"x3.5"x14")	

* IEC filtered pink noise signal (40Hz-5kHz, 12dB crest factor)

Q-NEX+ SERIES

4-channel Class D power amplifiers with PFC and CORE2 DSP

APPLICATIONS

Q-NEX+ amplifiers are high-performance 4-channel power amplifiers equipped with advanced DSP processing, designed for powering large touring systems and high-profile fixed installations. Optimized for use across the entire AXIOM product line, Q-NEX+ amplifiers provide the processing, networking, and power delivery necessary for passive loudspeaker systems.

When paired with MAESTRO control software, Q-NEX+ amplifiers can coexist with powered AXIOM loudspeakers on the same network, enabling unified system management and consistent control logic across both passive and active configurations.

AMPLIFIER TECHNOLOGY

Q-NEX+ power amplifiers employ high-efficiency Class D topology with Switch Mode Power Supply, delivering up to 20,000W across 4 channels (Q-NEX+ 20.4) or 10,000W across 4 channels (Q-NEX+ 10.4). The power supply features PFC (Power Factor Correction), which guarantees stable performance regardless of voltage fluctuations. An advanced Power Control Management system allows total power to be shared between channels according to demand, with the capability to deliver maximum power to a single channel when required.

Q-NEX+ technology offers cutting-edge performance including superior sound definition, high-fidelity reproduction across the entire audio range, and high dynamics at any signal level with low distortion even at very high power. At the same time, Q-NEX+ amplifiers feature compact size, light weight, efficiency above 90%, and negligible heat dissipation. The high efficiency results in significant reduction in energy consumption for large installations, noticeable reduction in operating costs, and direct environmental benefit. Featuring high power levels in a lightweight and compact chassis, Q-NEX+ amplifiers are economical to transport and environmentally friendly.

The extensive protection system includes soft-start, turn-on/turn-off transient suppression, muting at turn-on, over-heating protection, DC protection, RF protection, short-circuit protection, open or mismatched load detection, overloaded power supply protection, and clip limiting.

Q-NEX+ amplifiers feature an inverted chassis design that minimizes fan dust accumulation, combined with removable dust filters for simplified maintenance and extended operational life.

Q-NEX+ SERIES

4-channel Class D power amplifiers with PFC and CORE2 DSP

SIGNAL PROCESSING

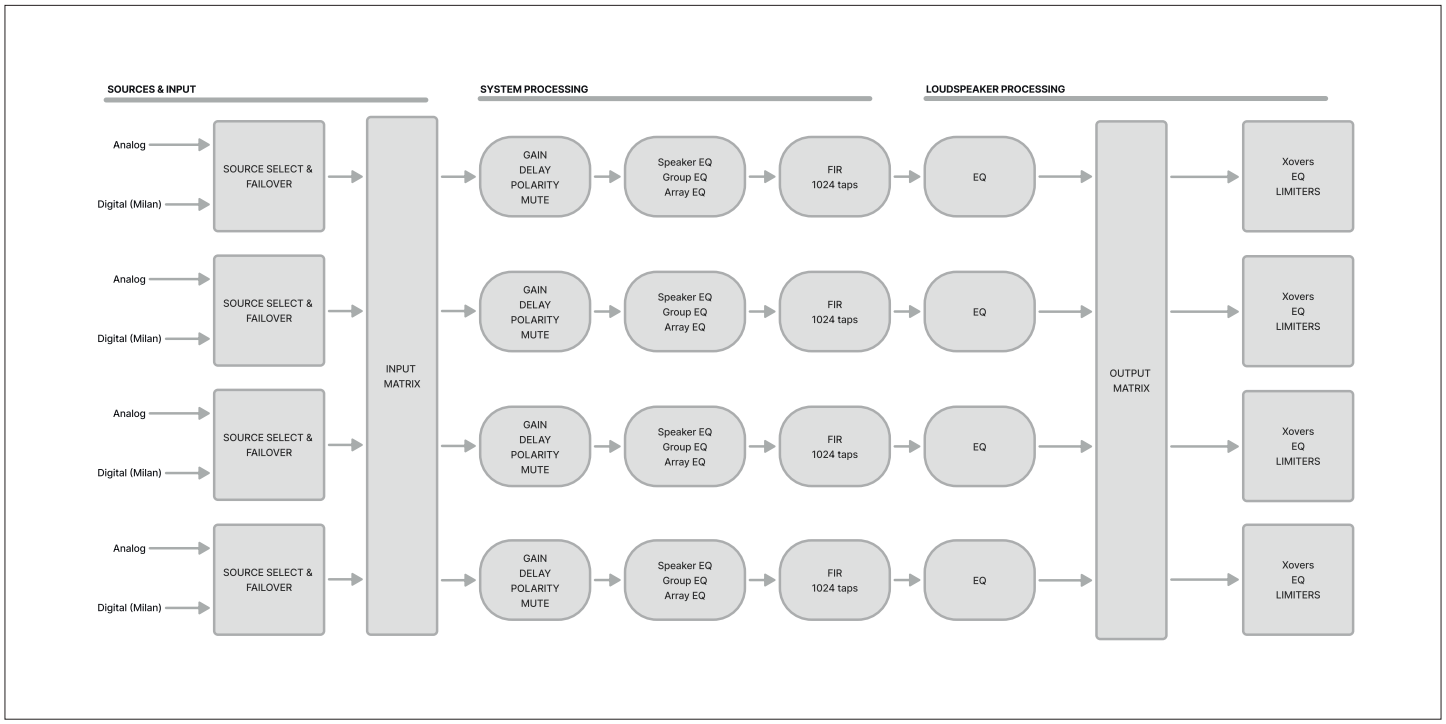
The Q-NEX+ system processing is based on a fifth-generation SHARC+ floating point DSP platform featuring 32-bit AD converters with 121dB dynamic range and high-quality DA converters for pristine signal integrity and superior sonic performance. The platform supports comprehensive speaker processing including linear phase FIR filters, parametric equalization, and dynamic control, with integrated remote control and networking capabilities.

The Q-NEX+ amplifier DSP architecture provides four independent processing channels with individual speaker tuning, plus group-level processing for coordinated system control. Processing functions include parametric filters, mute, delay, gain, and polarity control.

The signal flow follows this architecture:

- Input Stage: 4 inputs, each with selectable analog or digital (Milan) source with automatic failover
- Input Matrix: Flexible routing from inputs to processing channels
- DSP System Processing: Gain, delay, polarity, mute, speaker EQ, group EQ, and array EQ per channel
- Loudspeaker Processing: Dedicated EQ per channel
- Output Matrix: Flexible routing to power outputs
- Output Processing: Crossovers, EQ, and limiters per output channel
- Power Outputs: 4 amplified outputs

This flexible routing and processing architecture allows the Q-NEX+ platform to adapt to complex system requirements while maintaining consistent performance and control across all channels.



NETWORKING

Network connectivity is provided through dual gigabit Ethernet ports supporting AVB-Milan audio transport at 96/48kHz, with source selection and automatic failover between analog and digital inputs for each channel. Milan's deterministic, low-latency performance ensures reliable audio delivery across distributed systems, while AES70 provides standardized control and device management over the same Ethernet infrastructure.

The AXIOM AUDIA control software provides unified remote control, configuration, and monitoring of Q-NEX+ amplifiers alongside other AXIOM systems. Active loudspeakers and passive systems driven by Q-NEX+ amplifiers can coexist within the same network and be managed inside the same AUDIA workspace, ensuring consistent control logic and user experience across the entire AXIOM ecosystem.

ENGINEERING DRAWING