

# DIGITAL TD CONTROLLER NXAMP

NEXO is one of the world's leading sound reinforcement loudspeaker manufacturers. Founded in 1979, the company is dedicated to crafting practical solutions with solid engineering. Each new design begins with a proprietary sophisticated computer simulation process that allows every parameter to be extensively modeled and simulated, leading to breakthrough cost and performance gains. NEXO's comprehensive product line includes loudspeakers, analogue and digital control electronics and amplification; all designed to deliver consistent sound quality and long term reliability for a broad range of applications.

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POWER SPECIFICATIONS FOR NXAMP4x1		POWER SPECIFICATIONS FOR NXAMP4x4	
Number of amplifiers channels	4x channels, 2 by 2 bridgeable	4x channels, 2 by 2 bridgeable	
Max. output voltage (no load)	4 x 105Volts	4 x 200Volts	
Max. output power (8Ω)	4 x 600W	4 x 1900W	
Max. output power (4Ω)	4 x 900W	4 x 3300W	
Max. output power (2Ω)	4 x 1300W	4 x 4000W	
Power consumption (Standby)	10W	20W	
Power consumption (Idle)	100W	150W	
Power consumption (1/8 Power)	1100W	3000W	

COMMON NXAMP SPECIFICATIONS FROM ANALOG IN TO POWER OUT	
Analog Inputs channels	4x channels, analogue inputs on XLR 3 with a second XLR 3 for linking
Frequency response	±0.5dB from 10Hz to 20KHz
Input Impedance	20KΩ
Max Input Level	+28dBu
Dynamic Range	All Channels = 105dB unweighted
THD + Noise	Typical 0.1% flat setup
Latency time	500us on a flat setup
Power Supply	Dedicated version for 100 ~ 120Volts or 220 ~ 240Volts

COMMON NXAMP FEATURES	
Audio Inputs	<ul style="list-style-type: none"> <li>• 4x balanced analogue inputs on XLR3 with a second XLR3 for linking, using 24bit converters.</li> <li>• 4x digital inputs via the optional network card slot at the back.</li> </ul>
Power Outputs	4x Speakon outputs using internal power relay for automatic output assignment regarding setup.
RS232 port	Allow firmware upgrade for software improvement and new cabinet setups.
GPIO port	5x Global Purpose Inputs and 8x Global Purpose Outputs for simple remote control and monitoring.
Processing	Two DSPs, 24bit data with 48bit accumulator. 700MIPS.
Front Panel	On/Off Mains switch, Select Wheel, Menu A and Menu B buttons, 40 characters by 2 lines display. Amp protect, Stand-by and power LED's. Then for each channel: volume indicator (15x LEDs), Individual Mute buttons and red LED, output current signal green led, Speaker Protection yellow LED, Amp. Peak red LED.
Rear Panel	1 (NXAMP4x1) or 2 (NXAMP4x4) mains socket, RS232 serial communications connector; GPIO port, Expansion slot for networking audio extension card, 4 XLR inputs with link and 4 Speakon 4 outputs.
Dimensions & Weight	NXAMP4x1: 3U 19" Rack - 457 mm (18") Depth - 16.5kg (33lbs) net NXAMP4x4: 4U 19" Rack - 457 mm (18") Depth - 24.5kg (49lbs) net

NXAMP USER CONTROLS	
System Selection	Allows control across all NEXO ranges.
System Set-up	Within the selected range, if possible, allows cabinets to be set for passive or active mode, wideband or crossover mode, choose among available crossover point, cardioid or supercardioid mode.
Protection	Multiple Peak Limiters fitted for both selected cabinet and amplifier. Multiple Acceleration, Displacement and Temperature protections on every channel. Inter-channel regulation.
Delay	Up to 150m (330 ft.) of delay in 10cm (.4in) steps
Input Patching	Allows any of the 4x analogue (or digital) inputs combination to be routed on each output.
Output Gain	Global and inter-channel gain ±6dB in 0.5dB steps.
Volume control	Each channel with 16x steps from - inf dB to 0dB.
Save/Recall	Set-up Stores up to 40x user set-ups; On- the-fly recall, without mute or glitches for instant comparison.
Array EQ	LF or HF shelving filters to compensate ground or stacking effects, ±6dB, frequency factory tuned.
Security Mode	Password protected for Read-Only or Remote-Only Mode.
Remote control	Full remote control via the Ethersound protocol and ESmonitor software.
Certification	UL, SEMKO (CE), CCC, KOREA, TSS, PSE
Green status	Compliant with ROHS and WEEE directive

#### LIMITED WARRANTY

NEXO loudspeakers and electronics are covered against defects in workmanship or materials for a period of two (2) years from the original date of purchase. At the option of NEXO the defective item will be repaired/replaced with no charge for materials/labour. The item is to be adequately packaged and dispatched, pre-paid, to a NEXO authorised distributor/service centre. Unauthorised repair shall void the warranty. The NEXO warranty does not cover cosmetics or finish and does not apply to any items which in NEXO's opinion have failed due to used abuse, accidents, modifications or any type of misuse. All images and text herein are the property of NEXO SA, and deemed accurate, although specifications are subject to change without notice.

# DIGITAL TD CONTROLLER NXAMP



NEXAMP 4x1



NEXAMP 4x4

## NXAMP 4x4 & 4x1 POWERED TD CONTROLLERS

*A major breakthrough in high powered amplification for both fixed and mobile applications.*

#### NXAMP ADVANTAGES

*NXAMP 4x4 is among the industries most powerful amplifiers.*

*Cost effective integration of command, control, protection and amplification of all NEXO loudspeaker systems.*

*Lighter and requires less rack space than conventional amplifier-processor systems.*

*Eliminates unnecessary A/D conversion.*

*Optional EtherSound Networking.*

NXAMP technology is far more complex than a bundled power amplifier and loudspeaker controller. More than two years of research yielded significant DSP innovations which allow multiple voltage/current/temperature sense lines, from the amplifier's output, to protect both the amplifier and power supply.

#### NXAMP DSP PROTECTION INCLUDES:

- Power-on protection (smooth start-up with in-rush limitation)
- Power-off protection (clean shut-down procedure)
- Peak Voltage limiter (clip limiting)
- Peak Current limiter
- VHF protection
- Integrate current limiter
- DC offset protection
- Short circuit protection
- Fan speed control
- Power Amp overheat protection
- SMPS overheat protection
- SMPS fault protection
- Power cable monitoring

#### Robust, Rugged Power Supplies

NXAMP power supplies are full resonance types with half bridge converters. This exceptional design minimizes noise is via (Zero Crossing Switch (ZCS) technology. NXAMP4x4 employs four times the structure of a monaural amplifier to present very high power with low load drive. This requires four converters, four transformers and of course four power supplies. In addition, on both NXAMP models, two converters work synchronize the opposite phase, thus cancelling noise. The benefits include unrivalled sonic performance and low EMC.

#### Clean and Cool EEEngine

Both NXAMP amplifiers employ YAMAHA's EEEngine technology. This technology offers the sonic purity of conventional class AB, but with a heat dissipation equaling class D technology. In fact, NXAMP rails constantly follow the output signal needs, minimizing the required headroom (and wasted energy).

#### Ferocious Final Stage (with Protection)

NXAMP's final stage output transistor is customized for these devices via thin chip technology, with minimized thermal resistance, to reach 300 Volts. NXAMP4x4's final stage uses nine such transistors in parallel, to supply 135Amp output current capacity. Even though DSP protection is already used on both NXAMP models, an Area of Safety Operation (ASO) limiter circuit is also included. ASO limiting is done in analog, as the limiter attack required is too fast for digital protection and converter latency.

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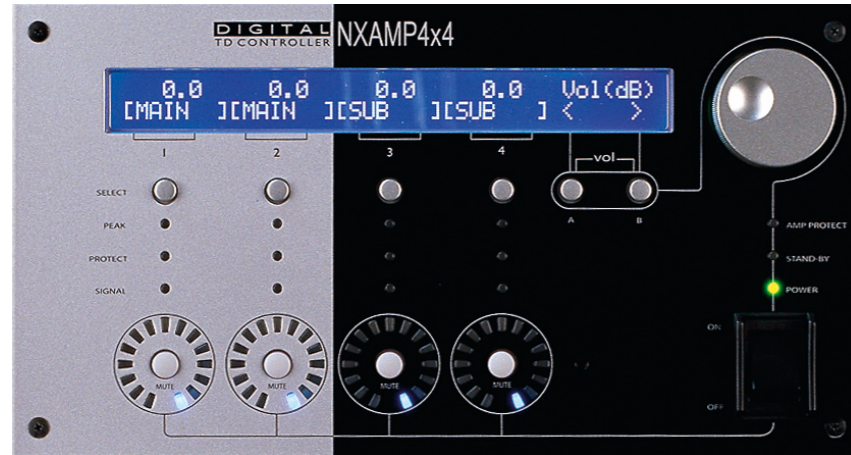
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NXAMP

PRELIMINARY DATA SHEET

# DIGITAL TD CONTROLLER NXAMP



## NXAMP 4x4 & 4x1 POWERED TDCONTROLLERS

### FRONT PANEL FEATURES

#### Amplifier Indicators

Three Amplifier status LEDs, display just above the power switch. The first two LEDs (Power and Standby) indicate amplifier power status. The third LED, 'Amp Protect' reports amplifier protection status.

#### LCD Display

NXAMP offers a large and easily display, enabling fast amplifier setup.

#### Encoder

In default mode, the encoder controls amplifier volume. The "current" LCD menu also displays other functions including delay adjustment or setup selection.

#### Navigation Buttons (A & B)

Two menu navigation buttons access specific functions. For example, pressing both buttons simultaneously displays the "Volume" menu, allowing encoder adjustment of channel volume.

#### Volume Indicators

These surround LEDs display each channel's volume control position similar to position indicators associated with analog potentiometers on conventional amplifiers. NXAMP output mutes during boot-up, although volume control will blink to indicate individual channel's levels (settings) after boot-up.

#### Mute Buttons

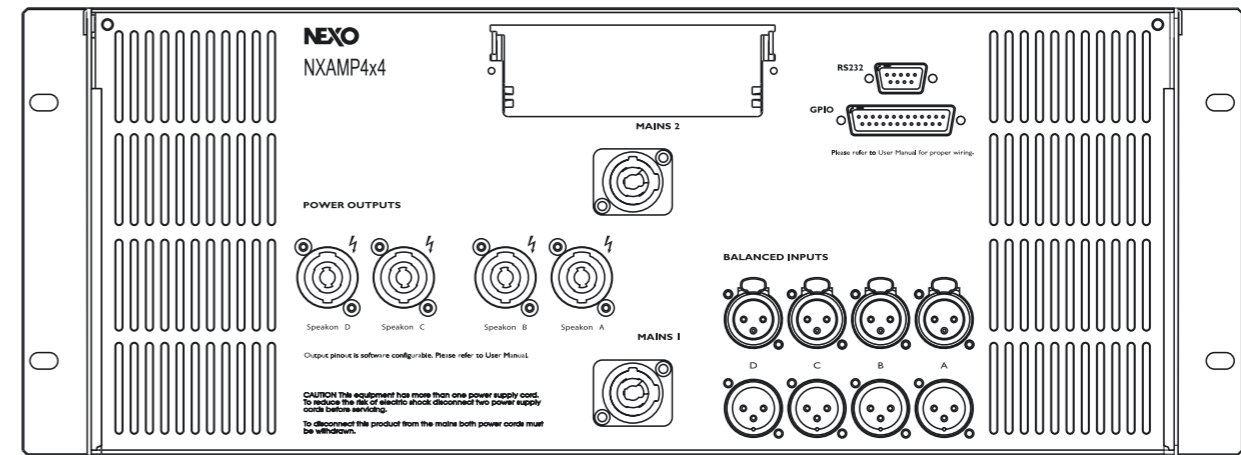
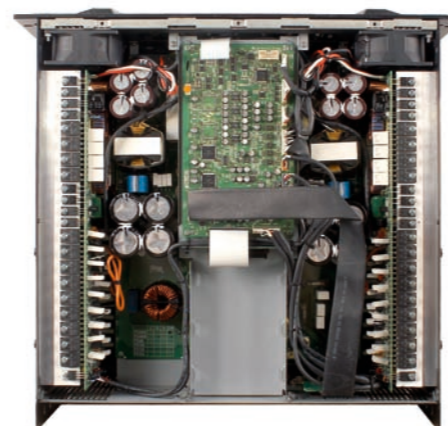
Regardless of current Menu, pressing the Mute button will set or release the mute of the chosen channel. The buttons show red as channels are muted.

#### Select Buttons

Select buttons allow encoder-adjustment of channel parameters. In most menus, the LCD's bottom line will display the cabinet name for each channel. If this name appears between brackets, the channel has been selected and can be encoder-controlled.

#### Channel Indicators

Three LEDs display per channel. The green 'Sense' LED indicates that a current threshold level is detected at output and signal presence of a connected cabinet. The yellow 'Protect' LED displays when TDcontroller applies channel-specific VCEQ protection. The red 'Peak' LED identifies limiting and cabinet/amplifier protection.



NXAMP 4x4 Rear Panel Topology

### PROCESSING AND CONTROL

NXAMP signal processing is identical on both models, and derived from the NX242 TDcontroller. Processing power has been increased on both CPU and DSP side. NXAMP uses twin Freescale (formerly Motorola) DSPs, with a total processing power which is 3.5 times the processing power of an NX242 fitted with an ES-4 NXtension board.

Amplifier output is now sensed in both voltage and current and 24bit converters execute these measurements. The latest generation audio converters provide enhanced dynamic range with low latency (500us) analog input to output, in FLAT mode.

### OPTIONAL ETHERSOUND™ REMOTE CONTROL

The rear panel expansion slot allows easy addition of an ES100 EtherSound board. This new generation of EtherSound firmware offers device-to-device communication and powerful new functions including:

- Ring topology: Simply plugging the unused "OUT" port of the last device in a daisy chain into the unused "IN" port of the primary master creates a redundant ring topology. If the ring is open somewhere, the network automatically reconfigures itself without interrupting audio.

- A Third remote control port: When both EtherSound ports are used in an EtherSound network, a third RJ-45 plug allows a computer to connected anywhere across the EtherSound network, to monitor all the devices.

