

NXP3.04
NXP3.02
NXP1.54
NXP1.52
NXP8004
NXP8002
NXP4004
NXP4002



NXP SERIES

POWER AMPLIFIERS W/ PROGRAMMABLE OUTPUTS AND PROTEA™

Ashly's new line of nX Power Amplifiers feature lightweight, energy-efficient Class-D switching amplifier technology combined with a switch mode power supply. nX amplifiers are available in three product families (nX, nXe, nXp) and are designed to meet the most demanding live sound and fixed installation sound systems in stadiums, arenas, performance venues, worship spaces and convention centers.

nXp Series features Protea™ DSP and is available in either 2 or 4-channel models. Use rear panel DIP switches to program each channel output for either High-Z (70V or 100V Constant Voltage) or Low-Z (stable down to 2 Ohms) operation. When in sleep mode, the nX amplifiers draw less than 1 Watt.

nXp is networkable with Ethernet control. It also has serial data control, aux preamp outputs, instant standby mode, preset recall, fault condition logic outputs, and optional network audio and digital audio capability all controlled using our Protea™ Software Suite. nXp amplifiers add 32-bit SHARC DSP processing (with 48kHz & 96kHz sampling) as standard equipment for comprehensive audio processing, with built-in signal generator or test tone and noise-masking. Swept load impedance monitoring is available on each amplifier channel output.

nXp Series Features:

- 2 and 4-channel high-output, lightweight amplifiers with programmable output on each channel (High-Z or Low-Z, selected via rear panel DIP switches)
- Power-saving, Energy Management System[‡] (Ashly EMS™) automatic <1W sleep-mode (defeatable)
- Front panel power switch and level controls (can be disabled for security)
- Rear panel DIP switches per channel for selection of high pass filter, limiter, input gain, and High-Z or Low-Z speaker output configuration
- Remote DC level control on each input channel
- Switch mode power supply automatically detects 120V or 240V AC operation
- Extensive protection circuitry, continuously variable cooling fans
- Multiple independent internal power supplies provide increased channel separation and reliability
- Ethernet port for use with control and monitoring of amplifier functions, with front panel COM activity LED
- Serial data port for use with Ashly remote control devices, or optional RS-232 converter for third party controllers (INA-1)
- Use Protea™ Software to remotely disable all front panel controls, including the on/off switch, for a tamper-proof installation

nXp Series	3000 & 1500 Watt Models				800 & 400 Watt Models			
	nXp 3.04	nXp 3.02	nXp 1.54	nXp 1.52	nXp 8004	nXp 8002	nXp 4004	nXp 4002
Channels	4	2	4	2	4	2	4	2
<i>*Max Output Power: Measured in Watts, Per Channel, Low-Z Output, All Channels Driven</i>								
2 Ohms	3,000	3,000	1,500	1,500	800	800	400	400
4 Ohms	2,000	2,000	1,500	1,500	800	800	400	400
8 Ohms	1,250	1,250	1,250	1,250	800	800	400	400
<i>*Low Z Output: Measured in Watts, Bridge Mode, All Channels Driven</i>								
4 Ohms	6,000	6,000	3,000	3,000	1600	1600	800	800
8 Ohms	4,000	4,000	3,000	3,000	1600	1600	800	800
<i>*70V, 100V Output: Measured in Watts, All Channels Driven</i>								
70V (per channel)	2,450	2,450	1,500	1,500	800	800	400	400
100V (per channel)	1,250	1,250	1,250	1,250	800	800	400	400
<i>Total Power Draw, Measured in Watts: Total for all Channels</i>								
Sleep Mode	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Standby Mode	70	40	70	40	40	25	40	25
Idle (no signal)	100	55	100	55	70	40	70	40
<i>Current Draw: Measured in Amps, Total for all Channels, 120VAC, Divide by 2 for 240V</i>								
Sleep Mode	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Standby Mode	1.30	0.70	1.30	0.70	0.70	0.38	0.70	0.38
Idle (no signal)	1.85	1.00	1.85	1.00	1.30	0.70	1.30	0.70
<i>Max Current Draw: Measured in Amps, Typical Input, All Channels Driven, Divide by 2 for 240V</i>								
½ Max Power @ 2 Ohms	29.5	14.7	16.0	8.0	8.8	4.6	5.0	2.6
<i>Thermal Dissipation: BTU/hr, Typical Input, Total for all Channels</i>								
Sleep mode	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Standby mode	238	136	238	136	136	85	136	85
Idle (no signal)	340	187	340	187	238	136	238	136
½ Max Power @ 2 Ohms	2,720	1,360	1,700	850	970	495	595	305

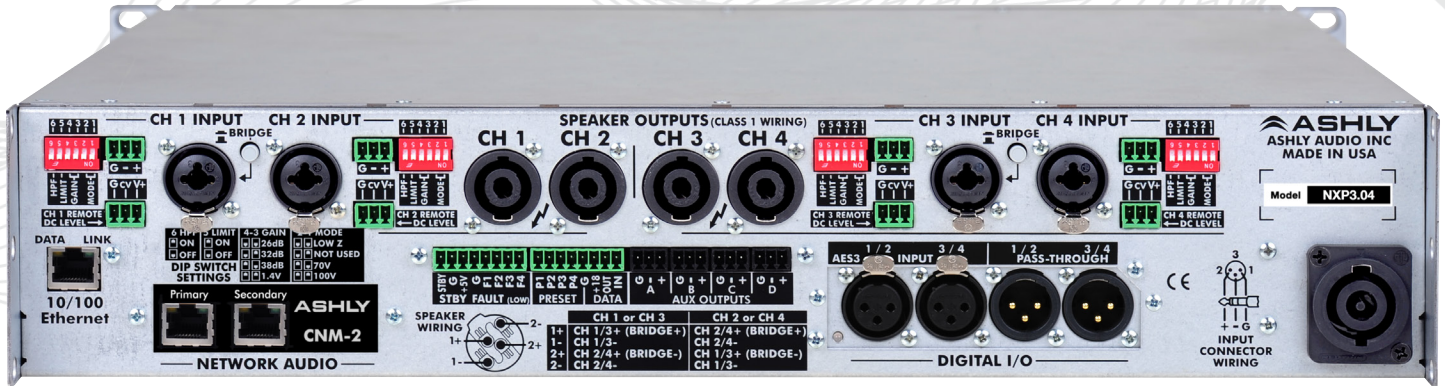
* Measurements based on CEA-2006/490A, 20ms 1kHz 1% THD+N, 480ms 1kHz -20dB.

‡ <1W sleep mode can be defeated for applications that are subject to third-party performance standards that prohibit a sleep mode, including those used for Mass Notification and Emergency Communication Systems and those subject to ANSI/UL 2572.

Note: When making a true comparison of energy efficiency, one must look at the Thermal Dissipation (BTU/hr) numbers for a product. All other efficiency, i.e. "percentage" numbers are not standards based, and therefore may be marketing hype. Ashly Audio builds highly efficient Class-D amplification with SMPS that will equal or surpass the competition on BTU/hr thermal output (unused energy given off as heat). Please check our published BTU/hr specifications for more information.



nX uses Neutrik®
Components



nXp 3.04 Rear Panel Configuration

Additional Features:

- Real-Time Clock with Event Scheduler
- Instant Standby Mode, 30% reduction in power consumption with on/off triggered by contact closure, software control, or event scheduler
- Programmable power-on delay
- Preset recall via contact closure, software control, remote control, or event scheduler
- Aux preamp outputs, and fault condition logic outputs
- Optional Cobranet® or Dante® network audio and AES3 digital audio input with pass-through
- Dynamics, gain, equalization, FIR filter ready, 2x4 or 4x4 matrix mixer, crossover, delay, metering, and signal generator functions for test and noise masking applications
- Precision swept load impedance monitoring of each amplifier channel for quick and easy diagnosis of sound system problems remotely via Ethernet
- Neutrik® Combo XLR – 1/4" TRS jack plus Euroblock input connectors
- Neutrik® speakON® twist locking loudspeaker connectors for security, safety, and reliability
- Neutrik® powerCON® detachable AC mains connector

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Specifications	Notes: 0dBu = 0.775 VRMS
Voltage Gain	Selectable at 26dB, 32dB, 38dB, or 1.4V
Damping Factor	>250 (8 Ohms load <1kHz)
Input High Pass Filter	80Hz 2nd order
Distortion (SMPTE, typical)	<0.5%
Distortion (THD-N, typical)	<0.5% (8 Ohms, 10dB below rated power, 20Hz–20kHz)
Channel Separation	-75dB (dB from full output, 1kHz)
Signal-to-Noise (20Hz–20kHz, unweighted)	>114dB (all 3.0x models) >111dB (all 1.5x models) >108dB (all 800x models) >105dB (all 400x models)
Frequency Response	20Hz–20kHz, +/-0.05dB
Balanced Input Connector	Euroblock 3.5mm, 1/4" TRS and XLR Combo jack
Input Impedance	10k Ohms
Maximum Input Level	+21dBu
Speaker Output Connector	Neutrik® speakON®
Control Network	Compatible w/ standard 100MB Ethernet
AUX Output Connector	Balanced Euroblock 3.5mm
AUX Output Maximum Level	+21dBu
Remote Standby Contact Closure	Euroblock 3.5mm, close contact to GND for standby mode
Preset Recall Contact Closure	Euroblock 3.5mm, close contact to GND for preset 1-4 recall
Data Connection	Euroblock 3.5mm - Gnd, +18V, In, Out
Fault Condition Logic Outputs	Euroblock 3.5mm - 4 available
Remote DC Level Control	Euroblock 3.5mm - Gnd, CV, V+ per input
Attenuators (per channel)	Front panel, software, offset link group, and remote. Fully off = Mute
Amplifier Protection	Inrush current limitation, temperature monitoring, output over-power protection, mains fuses
Cooling	Continuously variable temperature controlled axial fan(s)
Environmental	32–113 deg F, (0–45 deg, C) (noncondensing)

Weights and Dimensions	
Unit Weight	1.54/3.04: 28.7lbs (13kg) 1.52/3.02: 22.7lbs (10.3kg) 4002/8002: 22.2lbs (10.1kg) 4004/8004: 25.9lbs (11.7kg)
Shipping Weight	1.54/3.04: 35.2lbs (16kg) 1.52/3.02: 29.2lbs (13.3kg) 4002/8002: 28.7lbs (13.1kg) 4004/8004: 32.4lbs (14.8kg)
Unit Dimensions (all models)	19"W x 3.5"H x 16.84"D (483mm x 89mm x 428mm)
Shipping Dimensions	24.5"W x 22"H x 5.25"D (622mm x 559mm x 133mm)

Front Panel LED Indicators	
White LED	
POWER	Switch: On, Off, Standby (flashing)
Red LED	
CLIP/MUTE	Per Channel: Clip @ 1dB below full output / Mute
PROTECT	On (fault condition or shut down), Off
Green LED	
SIGNAL	Per Channel: -18dB below rated output
BRIDGE	Per Channel Pair: On, Off
COM	On, for Ethernet data or Device ID
CURRENT	Per Channel: Proportional to output
Yellow LED	
TEMP	Per Channel: On dim at 90% max operating temperature, full bright + protect at 100%
SLEEP	On, amplifier is asleep from audio inactivity
DISABLE	On, power switch & front panel attenuators are disabled

Power Requirements (@ 50/60Hz)		
Nominal (Automatic Sensing SMPS)	120VAC	240VAC
Operating Range	70-135VAC	140-270VAC
Minimum power-up	85VAC	170VAC
Power Cable Connector	20A powerCON® (32A powerCON® 3.04 model only)	

Remote Accessories	
WR-1	2-Channel Level Control
WR-1.5	Level and Preset Recall
WR-2	Four-Position Preset Recall Switch
WR-5	Programmable Button Controller
neWR-5	Programmable Network Button Controller
FR-8	8-Channel Network Fader Remote
FR-16	16-Channel Network Fader Remote
RD/RW-8C	Serial Data Fader Remote
Ashly Remote	Remote Control Application for Apple® iPad®

Digital Input Options (Factory installed)	
OPAES2	2-Ch AES3 Input w/ AES3 pass-thru
OPAES4	4-Ch AES3 Input w/ AES3 pass-thru
CNM-2	CobraNet® Digital Interface
OPDante	Dante® Digital Interface
OPAVB	AVB Digital Interface (in development)

Protea™

DIGITAL SIGNAL PROCESSING FOR NXP AMPLIFIERS

Protea is compatible with Microsoft® Windows 8, 7 (Vista/XP) 32 & 64 bit systems.



Audio professionals find our Protea™ DSP to be very intuitive and easy to navigate—and you will too. No need to attend a one-week training class away from home to learn our software. Common sense layout of controls and features, on-line help, or a visit to the Technical Support page on our website provides answers to all of your questions.

Protea™ DSP Specifications for nXp Amplifiers	
All DSP functions can be linked to 1 of 16 link groups	
Input Source Selection	
Input Source Select Options	Analog, Auto (Net, AES3, Analog)
Brick Wall Limiter	
Threshold	-20dBu to +20dBu
Ratio	Infinite
Attack	0.2mS/dB to 50 mS/dB
Release	5mS/dB to 1000mS/dB
Compressor	
Threshold	-20dBu to +20dBu
Ratio	1.2:1 to infinite
Attack	0.2mS to 50mS
Release	5mS/dB to 1000mS/dB
Detector	Peak/Average
Attenuation Bus	2 available
Metering	In, Out, Attenuation, Graphical
Autoleveler Controls	
Target Level	-40dBu to +20dBu
Action	Gentle, Normal, Aggressive, User-Defined
Maximum Gain	0dB to +22dB
Metering	Input, Gain, Attenuation
Ratio	1.2:1 to 10:1
Threshold Below Target	-30dB to 0dB
Gain Increase/Decrease Rate	5mS/dB to 1000mS/dB
Hold Time	0-6 Sec
Ambient Noise Compensation: Output Only	
Max Gain	-20dB to +20dB
Min/Base Gain	-40dB to +20dB
Gain Change Rate	0.2S/dB to 20S/dB
Link Group	16 Available
ANC Input Channel	1-2 or 1-4
Noise Threshold	-40dBu to +20dBu
Program/Ambient Gain Ratio	0.3:1 to 3:1
Metering	Input level, Attenuation, Average noise

Ducking: High/Low Priority, Trigger, Filibuster, Ducking Program	
Trigger Threshold	-80dBu to +20dBu
Ducking Release	5mS/dB to 1000mS/dB
Ducking Depth	0dB to -30dB, -∞
Enable Ducking at Matrix Mixer	Yes
Metering	Input
Gate	
Threshold	-80dBu to +20dBu
Range	off, 100dB to 0dB
Attack	0.2mS/dB to 50mS/dB
Release	5mS/dB to 1000mS/dB
Metering	Key Signal, Gate LED, Graphical
Advanced Gate Controls	
Key Engage Enable	Yes
Key Frequency	20Hz-20kHz
Key Bandwidth	0.016 to 3.995 Octave
Gain	
Gain (with/without VCA)	-50dB to +12dB, Off, Polarity Invert
Digital VCA Groups	4 Available
Remote RD8C Gain	Enable (per channel), 0dB to -∞
WR-5 (neWR-5) Remote Gain	0 to -50dB, Mute
EQ: 31-Band	
Filter Type	Constant Q or Proportional
Bandwidth	0.499oct to 0.25oct
EQ: Parametric 2,4,6, or 10 Band	
Frequency	20-20kHz
Level	-30dB to +15dB
Q Value	0.016 to 3.995 Octave
EQ: Hi/Low Shelf 6/12 dB/Oct	
Frequency	20Hz-20kHz
Level	-15dB to +15dB
EQ: All Pass	
Frequency	20Hz-20kHz
EQ: Variable Q HP/LP	
Frequency	20Hz-20kHz
Q Value	3.047-0.267
EQ: Notch/Bandpass	
Frequency	20Hz-20kHz
Q Value	92.436 to 0.267
Feedback Suppressor: Only Available with 48kHz Sampling Rate	
Filters	12
In/Out (per filter)	Yes
Lock (per filter) and Global Lock	Yes
Filter Modes	Float, Restricted, Manual

Filter Type	Notch, Parametric
Filter Frequency Range	20Hz-20kHz
Notch Filter	-∞
Parametric Filter	+15dB to -30dB
Filter Bandwidth	0.016 to 3.995 Octave
Detector Sensitivity	5 levels
Float Time	5 minutes to 24 hours
FIR Filter	
File Types	.fir or .csv
Crossover: 2 Way, 3 Way, 4 Way Crossover & High Pass/Low Pass Filters	
Bessel & Butterworth Filters	12/18/24/48 dB/oct
Linkwitz-Riley Filter	12/24/48 dB/oct
Frequency	Off, 20Hz-20kHz
Delay: @ 48kHz Sampling Rate (Input Time, Distance & Temperature)	
Speaker Delay	0-21mS
Delay	0-682mS
Delay: @ 96kHz Sampling Rate (Input Time, Distance & Temperature)	
Speaker Delay	0-10.6mS
Delay	0-341mS
Audio Metering Tool	
Range	-60dBu to +20dBu
Increments	1dB
Peak Hold Indicator	Yes
Signal Generator Tool: Pink Noise, White noise, Sine Wave	
Signal Level	Off, -50dBu to +20dBu
Sine Wave Frequency	20Hz-12KHz
Matrix Mixer	
Gain (0.5dB increments)	Off, -50 to +12dB
Mute	Per Channel
Auto-Mixer Enabled	Per Channel
Global Auto-Mixer Response	0.01Sec to 2Sec
Enable Ducking at Mixer	Yes
Ducking LED	Per Channel (if enabled)
Metering	Level, Auto-mixer Level
Processors	
Input A/D, Output D/A	24-Bit
DSP Processors	32-Bit Floating Point
Sample Rates	48kHz, 96kHz
Propagation Delay @ 48kHz:	1.42mS
Propagation Delay @ 96kHz:	0.71mS

Protea™ DSP is designed for the nXp Amplifier, Pema, ne Series Amplifiers and Processors, the ne24.24M Matrix Processor, and Protea System Processors.