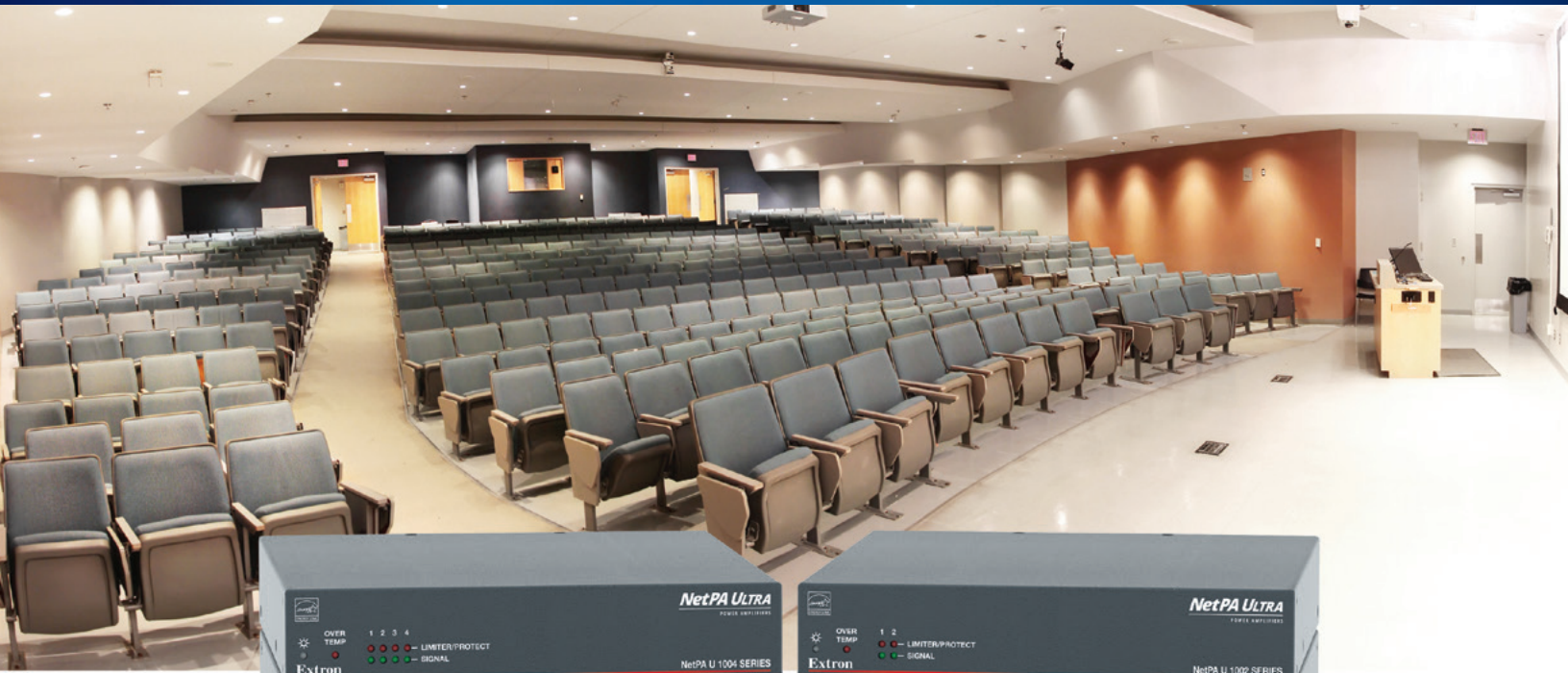


NetPA ULTRA

POWER AMPLIFIERS



Innovative Amplifiers With Dante and DSP

- ▶ Receives audio from the Dante audio network and from analog mic/line level inputs
- ▶ 100 watts per channel at 8 ohms, 4 ohms, 70 volts, and 100 volts
- ▶ ENERGY STAR qualified
- ▶ Single and dual rack mount hardware included
- ▶ Integrated DSP
- ▶ Defeatable Auto Standby with Fast Wake Up
- ▶ Convection cooled, fanless operation
- ▶ UL 2043 Plenum rated when used with optional Flexible Conduit Adapter Kit

Extron

NetPA ULTRA

POWER AMPLIFIERS

With NetPA® Ultra amplifiers, you get all the advantages of our award winning XPA Ultra amplifiers combined with the power of Dante network audio distribution. Dante connectivity makes it easy to distribute audio from a centralized location to decentralized remote amplifiers throughout a facility, building, or campus using standard network hardware. These ENERGY STAR qualified amplifiers also offer integrated DSP, allowing a single device to function as a complete audio system endpoint. NetPA Ultra power amplifiers provide system scalability, easier installation, and simplified wiring, while meeting the stringent quality requirements of professional audio installations.



Power supply failures in mission-critical AV products can cause significant disruption to signal distribution and facility operations, creating serious challenges for system integrators, end users, and manufacturers alike. Extron has answered this challenge with the Everlast™ Series of high-performance, no compromise, internal and external power supplies, setting a new standard for reliability and efficiency in the professional AV industry.



Extron NetPA Ultra amplifiers carry on our commitment to conserve energy and reduce costs with their ENERGY STAR qualified designs. All Extron amplifiers have an auto standby feature that places the amplifier into standby after 25 minutes of inactivity, consuming less than 4 watts of energy.



Extron has made significant investments in the construction of our own in-house product testing facilities. Our internal quality standards, along with multiple accreditations from worldwide regulatory agencies allow Extron to continually provide reliable, high-performing products, like XPA Ultra amplifiers, to customers worldwide.

NetPA ULTRA ADVANTAGES

Dante Connectivity

The NetPA Ultra models deliver Dante networked audio to local sound reinforcement systems. They enable decentralized and reliable distribution of Dante audio to multiple speaker zones throughout a facility or building, and are the ideal choice for audio amplification in Dante systems. Also supporting AES67 for Audio over IP Interoperability and Dante Domain Manager enterprise level network management, the NetPA Ultra power amplifiers can connect to a variety of other devices and network infrastructure.

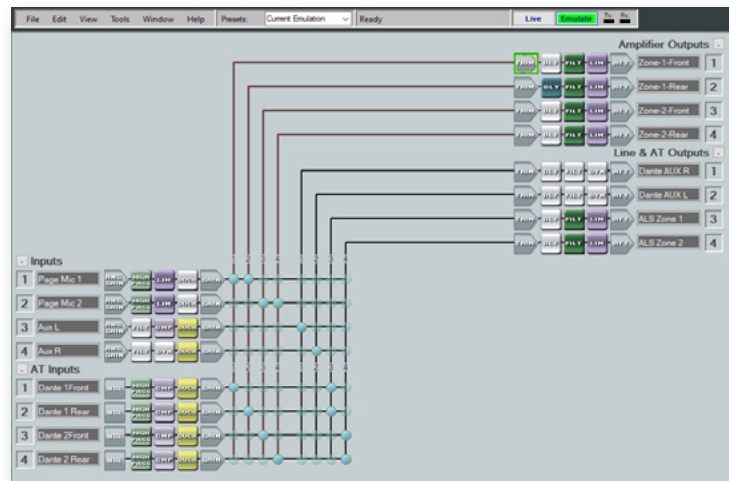


**DANTE DOMAIN
MANAGER READY**



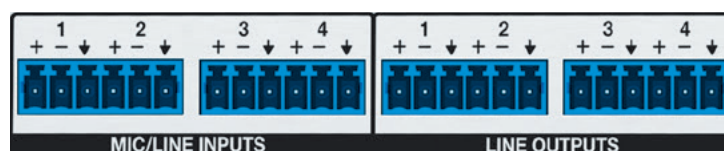
Mix Matrix With DSP

A built in matrix allows any analog or Dante input to be mixed to any amplifier output, Dante output or analog line output. Included in the mix matrix is essential processing such as gain adjustments, filters, dynamics, and delay. This functionality offers the possibility of simplified complete systems that include source ducking and routing, without a separate audio DSP.



Analog Mic/Line Inputs and Line Outputs

Both the mic/line inputs and line outputs can be used for connecting analog devices to the Dante network. The mic/line inputs provide connections for sources such as microphones and wireless microphone receivers. The analog line outputs allow for connection of other equipment, including additional amplifiers or assistive listening systems, simplifying connection to the source while maintaining consistent processing. These line outputs have processing separate from the amp outputs to account for varying delay and level settings.

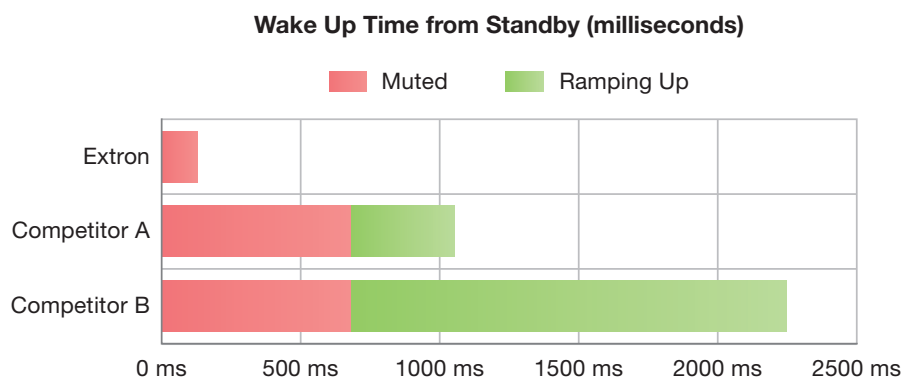


NetPA U 1004 Mic/Line Input/Output Panel

Ultra Fast Wake Up Time

NetPA Ultra amplifiers have an auto-standby feature that places the amplifier into standby after 25 minutes of inactivity, consuming less than 4 watts of energy. This auto-standby can be disabled if required, while maintaining ENERGY STAR compliance.

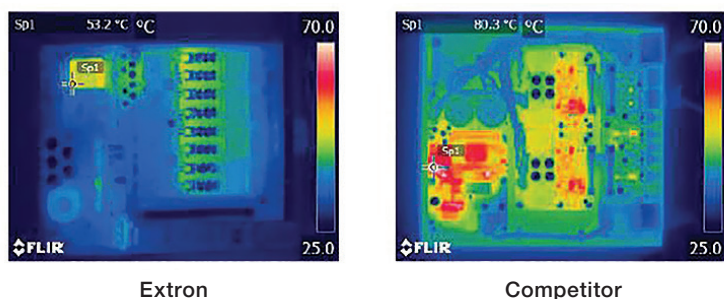
When audio is detected while in standby, an amplifier must wake up fast enough for the beginning of audio to be heard. The graphic below shows how NetPA Ultra amplifiers wake up completely in less than 100 milliseconds compared to other Class D amplifiers that can take well over two seconds to achieve nominal power.



Ultra Cool

The XPA Ultra amplifier platform underlying every NetPA Ultra model, runs cooler than other Class D designs. Excessive heat not only wastes a rack space by requiring space for cooling, it also places more demand on rack cooling systems and reduces component life. Higher cooling requirements and failure rates of other Class D amplifiers lead to higher costs and downtime. The convection cooled NetPA Ultra amplifiers run quieter, cooler, and longer, thanks to the cumulative effect of Extron's meticulous thermal engineering.

Thermal Imaging



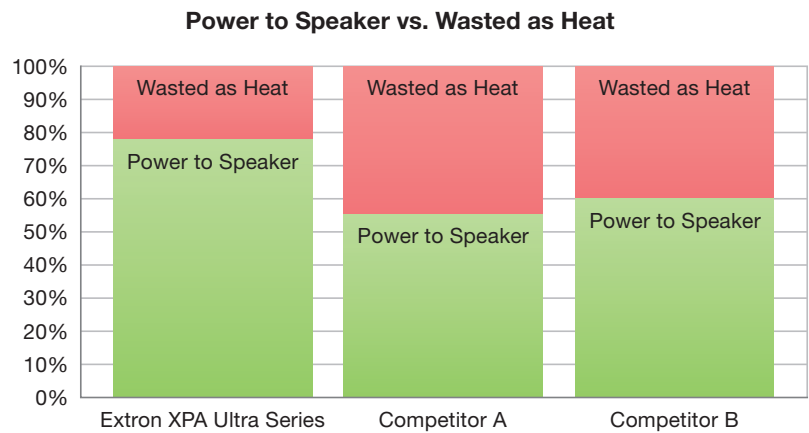
Network Status Monitoring

With an IPCP control processor, proactively monitor the status of NetPA Ultra amplifiers via the Dante network connection. Get the amp details you need, including temperature, levels, clipping, and if an amplifier unexpectedly goes offline. Whether identifying equipment in a room, verifying if a device is offline or simply powered off, direct access to information helps support teams resolve tasks faster and plan maintenance before anything becomes an urgent issue.

NetPA ULTRA ADVANTAGES

Ultra Efficient

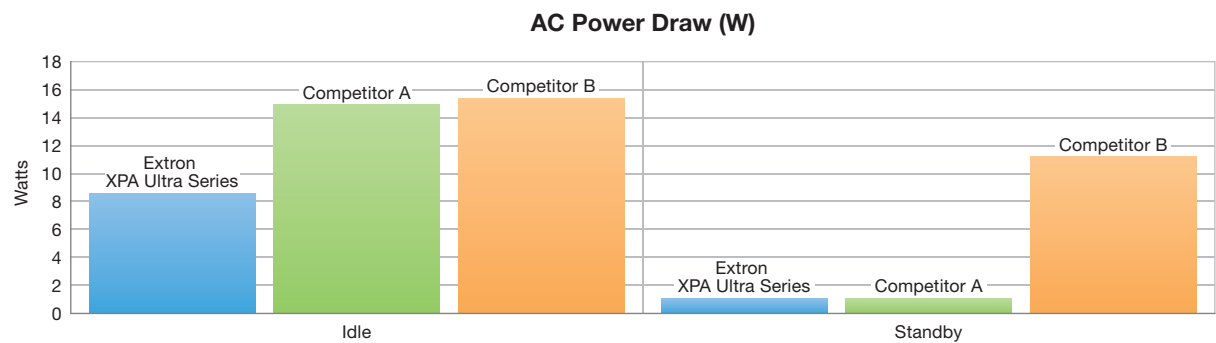
An efficient amplifier delivers the highest possible percentage of its input power to output power for speakers. Power not delivered is wasted as radiated heat, which causes further waste in higher cooling costs and energy requirements. The XPA Ultra amplifier platform operates with industry-leading efficiency up to 77%.



Ultra Low AC Power Draw

A highly efficient amplifier will require less electrical power than an inefficient amplifier to deliver the same amount of amplification to speakers. The ENERGY STAR qualified NetPA Ultra amplifiers also use less power in idle or standby.

The NetPA Ultra amplifiers, with their Everlast power supplies, reduce electrical costs in terms of kilowatt hours used, power infrastructure required, and cooling.



Ultra Reliable

Extron's team of dedicated power systems engineers made hundreds of design decisions that cumulatively ensure a NetPA Ultra amplifier will provide years of trouble-free service. For example, sensitive power capacitors are located away from heat sources, failure-prone wire harnesses are avoided, short-lived electrolytic capacitors are not in the audio path, and many innovative heat dissipation techniques are utilized throughout. The NetPA Ultra line of amplifiers set a new standard for reliability and efficiency in the professional AV industry.

ENGINEERING EXCELLENCE

Engineering an amplifier with the performance and reliability of the NetPA Ultra series requires a commitment to meeting rigorous standards at each step of the design process, from the choice of components to the layout of the board. Extron's commitment to engineering excellence is the foundation of developing industry leading technologies based on our mission to meet the requirements and high expectations of our customers.

The photograph below illustrates key XPA Ultra platform advantages of the Designed by Extron approach used in NetPA Ultra amplifiers.

High Quality Capacitors

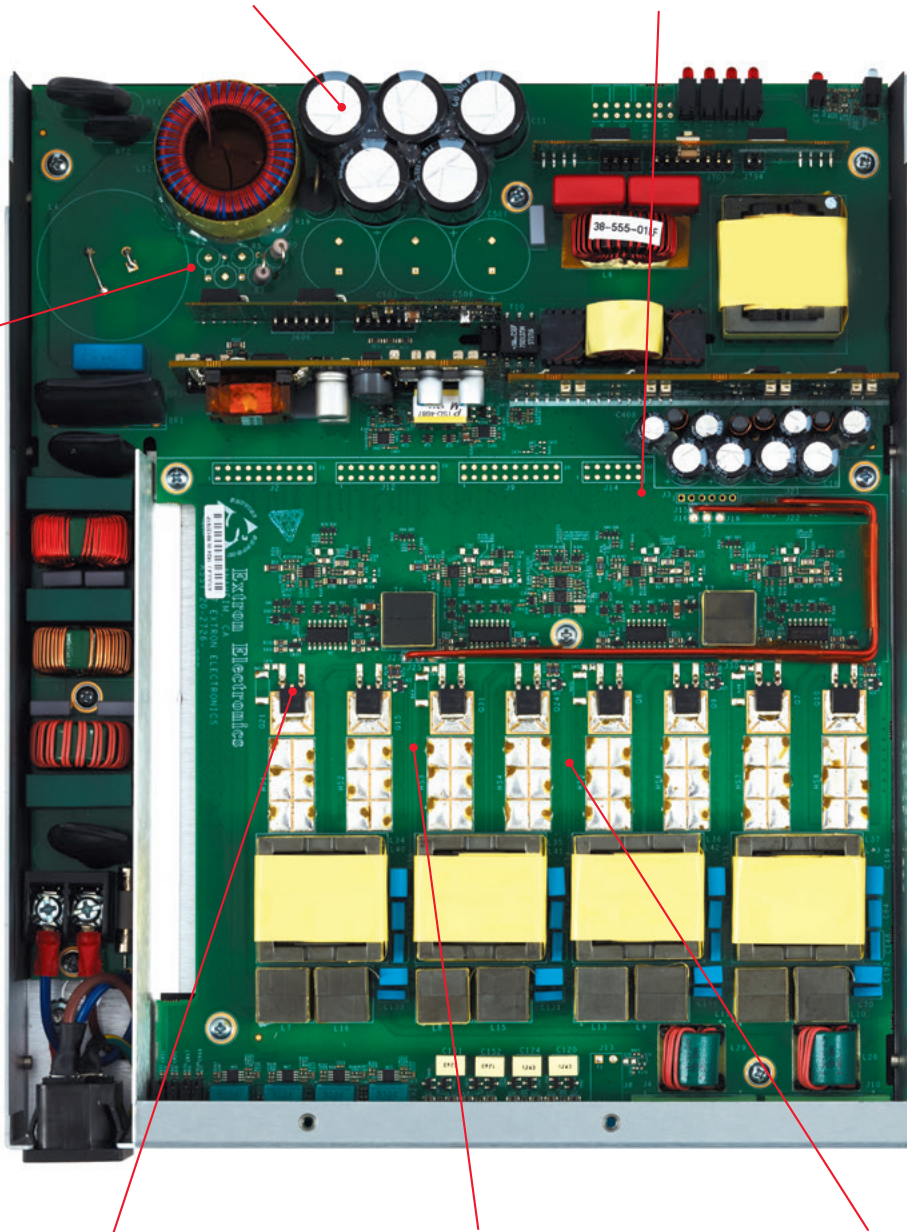
By designing in long lifespan capacitors, product life is extended by up to ten times

All point to point soldered wiring

Connections will not vibrate loose or corrode. No failure-prone connectors

Everlast Power Supply

Designed by Extron for ultra reliability and longevity



Heat Sensitive Component Placement

High temperature FETs are placed away from capacitors, further extending component life

Advanced Thermal Engineering

Convection cooled, fanless operation, uses airflow heat dissipation instead of inefficient chassis heat sinking

Extron Designed and Built Amplifiers

Designed and purpose built for efficiency, cool operation, and high reliability

OVERVIEW

ENERGY STAR qualified amplifier

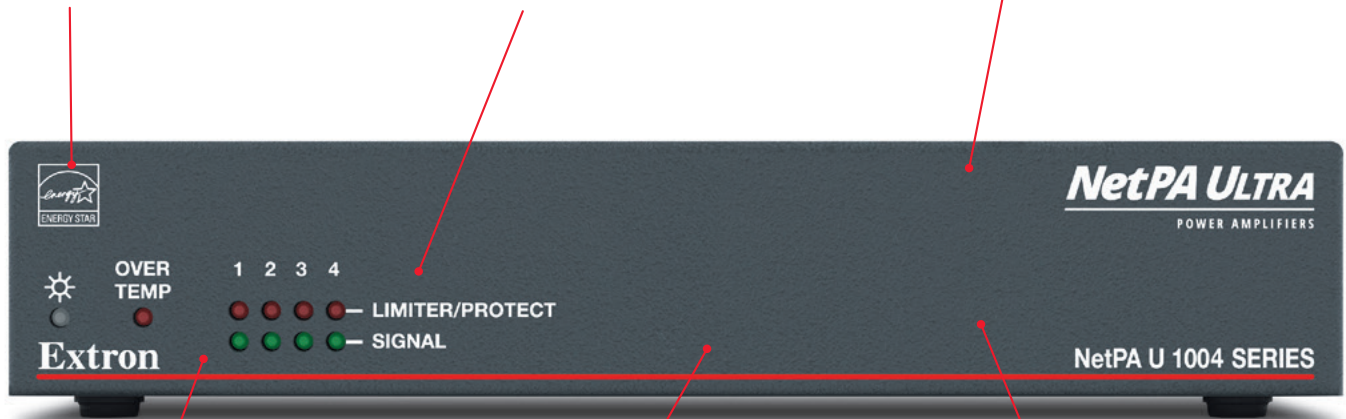
The high performance NetPA Ultra amplifiers are energy efficient products that conserve energy and reduce costs

Front and rear mounted signal and protection LEDs

Provide key indication from both sides of the amplifier during use and setup

Convection cooled, fanless operation

Can be stacked without extra rack space for ventilation



Auto Standby with Fast Wake Up

Auto standby after 25 minutes of inactivity saves energy. The amplifier then wakes up from standby in less than 100 ms upon signal detection. Auto standby can be disabled if required.

CDRS

Extron patented technology that provides a smooth, clean audio waveform, eliminating RF emissions

High performance signal-to-noise ratio and THD+N

NetPA Ultra amplifiers feature a signal to noise ratio of 100 dB and THD+N of less than 0.1%

UL 2043 plenum rated

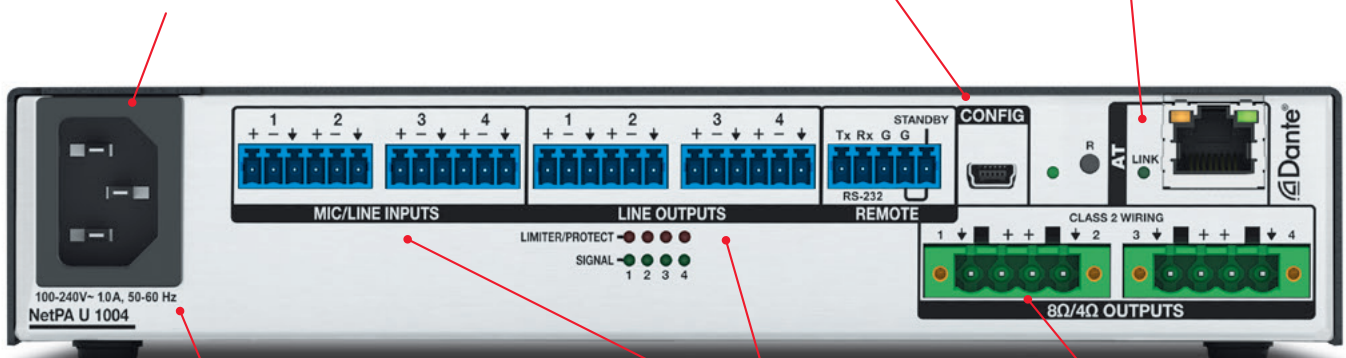
When used with the optional, easy to install Flexible Conduit Adapter Kit

Control - Monitoring - Configuration

Network and RS-232 for parameter control and status monitoring - USB for configuration

Dante Connectivity

Works as part of a complete networked audio system solution



Internal Everlast Power Supply

Provides worldwide power compatibility, with high-demonstrated reliability and low power consumption for reduced operating cost.

Mic/Line Inputs and Line Outputs

Allows for connection of legacy analog sources and additional amplifiers with unique processing

Flexible Output Power Options

100 watts per channel, with models for 8 ohm, 4 ohm, 70 volt, and 100 volt operation

Amplifier Technology Patents

The Extron portfolio of technology patents includes many audio patents. The NetPA Ultra amplifiers benefit from a number of Extron patented technologies, providing key performance and reliability advantages.



Class D Ripple Suppression - CDRS

Three patents form the basis of Extron's CDRS technology found in NetPA Ultra amplifiers. This technology reduces high frequency radiated emissions that can be picked up by other gear.

Class D Soft Switching

Extron's soft switching design works with CDRS to reduce dissipated power, which increases amplifier efficiency.

Class D Power Converter

The power converters in Extron Class D amplifiers facilitate energy transfer for more precise performance while using fewer lifetime-limiting capacitors in the power supply.

Low Noise Triangular Waveform Generator

Since a triangle generator is the heart of a Class D amplifier, and triangle generators have audio band noise content, this technology is used to greatly reduce that noise content resulting in a lower audio noise floor.

INTEGRATOR FRIENDLY FEATURES

Extron is always listening to feedback from integrators, designers, end users, and sales engineers. This feedback becomes part of the design process. Shown below are just three examples of features found in NetPA Ultra amplifiers that provide enhanced flexibility and simplify the installation process:



Plenum Rated

NetPA Ultra amplifiers meet UL 2043 requirements for smoke and heat release when used with the optional Flexible Conduit Adapter Kit, part # 70-228-02. Above-the-ceiling placement conceals the amplifier to prevent theft, and is convenient for installing equipment when space inside the room is limited.



Rack mount hardware included

Each NetPA Ultra amplifier comes with everything you need to install a single unit, or two units, into one rack space. This simplifies planning and saves cost.

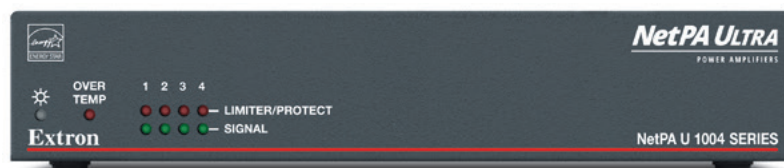
NetPa Ultra Series / XPA Ultra Series - Features & Capabilities

Model	Channels / Power @ 8 ohms	Channels / Power @ 70/100V	Channels / Power Bridged	Dante/ AES67	Onboard DSP	Analog Line Out	RS-232	VCM Support
NetPA Ultra Amplifiers with DSP and Dante								
NetPA U 1004	4 x 100 watts			√	√	√	√	
NetPA U 1004-70V		4 x 100 watts		√	√	√	√	
NetPA U 1004-100V		4 x 100 watts		√	√	√	√	
NetPA U 1002	2 x 100 watts			√	√	√	√	
NetPA U 1002-70V		2 x 100 watts		√	√	√	√	
NetPA U 1002-100V		2 x 100 watts		√	√	√	√	
XPA Ultra Amplifiers								
XPA U 758	8 x 75 watts							
XPA U 358	8 x 35 watts							
XPA U 358-70V		8 x 35 watts						
XPA U 358-100V		8 x 35 watts						
XPA U 358C-70V	4 x 35 watts	4 x 35 watts						
XPA U 358C-100V	4 x 35 watts	4 x 35 watts						
XPA U 1004	4 x 100 watts							
XPA U 1004-70V		4 x 100 watts						
XPA U 1004-100V		4 x 100 watts						
XPA U 1004C-70V	2 x 100 watts	2 x 100 watts						
XPA U 1004C-100V	2 x 100 watts	2 x 100 watts						
XPA U 1002	2 x 100 watts							
XPA U 1002-70V		2 x 100 watts						
XPA U 1002-100V		2 x 100 watts						
XPA Ultra Amplifiers with Selectable Output Modes								
XPA U 1004 SB	4 x 100 watts	2 x 200 watts	2 x 200 watts					√
XPA U 2002 SB	2 x 200 watts	1 x 400 watts	1 x 400 watts					√

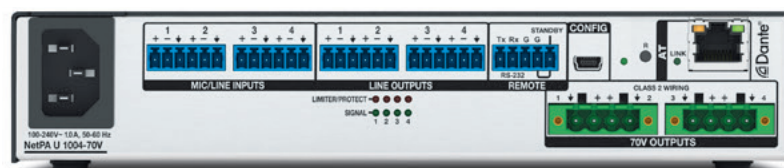
NETPA U 1004

AUDIO SYSTEM	
Frequency response	20 Hz to 20 kHz, ± 1 dB
THD + Noise	
Through amplifier	0.1% @ 1 kHz at 3 dB below clipping
S/N	
Mic/Line In to Speaker Out	90 dB, 20 Hz to 20 kHz at maximum output (unweighted)
Digital In to Speaker Out	100 dB, 20 Hz to 20 kHz at maximum output (unweighted)
AUDIO INPUT	
Number/signal type	4 mono, mic/line, balanced/unbalanced
Connectors	(2) 3.5 mm captive screw connectors, 6 pole, mono, balanced/unbalanced
Impedance	>10k ohms unbalanced/balanced
Nominal level	-60 dBV, +4 dBu, -10 dBV adjustable via input gain
Maximum level	+21 dBu at rated THD+N when input gain is set to 0 dB
AUDIO LINE OUTPUT	
Number/signal type	4 mono, line, balanced/unbalanced
Connectors	(2) 3.5 mm captive screw connector, 6 pole
Impedance	100 ohms balanced, 50 ohms unbalanced
AUDIO PROCESSING	
D/A conversion	24 bit, 48 kHz
AT PORT – AUDIO TRANSPORT	
Transmission type	Dante/AES-67, software selectable
Connectivity	1 RJ-45 connector, 1-port 100 Mbps to Dante interface
Inputs	4 channels Rx
Outputs	4 channel Tx
Audio format	24-bit uncompressed, selectable at 44.1, 48, 88.2, and 96 kHz sampling rate
AUDIO SPEAKER OUTPUT	
Number/signal type	
NetPA U 1004	4 channels, 4 or 8 ohms
NetPA U 1004-70V	4 channels, 70V
NetPA U 1004-100V	4 channels, 100 V

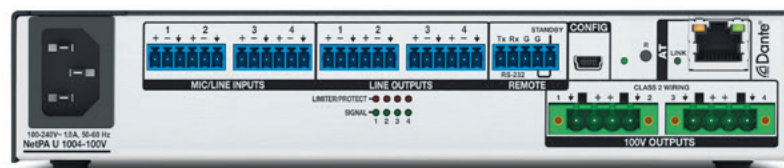
Connectors	(2) 5 mm screw lock captive screw connector, 4-pole	
Load impedance		
NetPA U 1004	4 ohms minimum	
NetPA U 1004-70V	50 ohms minimum	
NetPA U 1004-100V	100 ohms minimum	
Output power		
NetPA U 1004	100 watts per channel, 4 or 8 ohms, 1 kHz, <0.1% THD	
NetPA U 1004-70V	100 watts per channel, 70 V, 1 kHz, <0.1% THD	
NetPA U 1004-100V	100 watts per channel, 100 V, 1 kHz, <0.1% THD	
CONTROL/REMOTE		
Control port	(1) 3.5 mm captive screw connector, 5 pole	
Serial		
Serial host control port	1 bidirectional RS-232	
Standby		
Standby power control	Contact Closure	
USB control port	1 rear panel female USB mini B	
GENERAL		
Power supply	Internal. Input: 100-240 VAC, 50-60 Hz, 0.5 A	
Temperature/humidity		
Operating	+32° to +122° F (0° to +50° C) / 10% to 90%, non-condensing	
Cooling	Convection, no vents	
Protection	Clip limiter, thermal, short circuit, DC output	
Mounting		
Rack mount	Yes, with included brackets or optional 1U rack shelf	
Enclosure dimensions	1.7" H x 8.7" W x 10.5" D (1U high, half rack wide) (43 mm H x 221 mm W x 267 mm D)	
Product weight	3.8 lbs (1.7 kg)	
Product warranty	3 years parts and labor	
Everlast power supply warranty	7 years parts and labor	
Model	Version Description	Part number
NetPA U 1004	Four Channel Dante Amp, 100 watts at 8 or 4 ohms	60-1766-01
NetPA U 1004-70V	Four Channel Dante Amp, 100 watts at 70 volts	60-1766-02
NetPA U 1004-100V	Four Channel Dante Amp, 100 watts at 100 volts	60-1766-12



NetPA U 1004 – Front



NetPA U 1004-70V – Back

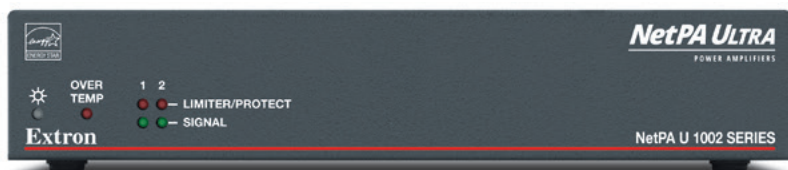


NetPA U 1004-100V – Back

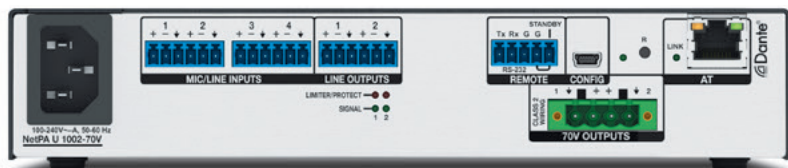
NETPA U 1002

AUDIO SYSTEM	
Frequency response	20 Hz to 20 kHz, ± 1 dB
THD + Noise	
Through amplifier	0.1% @ 1 kHz at 3 dB below clipping
S/N	
Mic/Line In to Speaker Out	90 dB, 20 Hz to 20 kHz at maximum output (unweighted)
Digital In to Speaker Out	100 dB, 20 Hz to 20 kHz at maximum output (unweighted)
AUDIO INPUT	
Number/signal type	4 mono, mic/line, balanced/unbalanced
Connectors	(2) 3.5 mm captive screw connectors, 6 pole, mono, balanced/unbalanced
Impedance	>10k ohms unbalanced/balanced
Nominal level	-60 dBV, +4 dBu, -10 dBV adjustable via input gain
Maximum level	+21 dBu at rated THD+N when input gain is set to 0 dB
AUDIO LINE OUTPUT	
Number/signal type	2 mono, line, balanced/unbalanced
Connectors	(1) 3.5 mm captive screw connector, 6-pole
Impedance	100 ohms balanced, 50 ohms unbalanced
AUDIO PROCESSING	
D/A conversion	24 bit, 48 kHz
AT PORT — AUDIO TRANSPORT	
Transmission type	Dante/AES-67, software selectable
Connectivity	1 RJ-45 connector, 1-port 100 Mbps to Dante interface
Inputs	4 channels Rx
Outputs	2 channel Tx
Audio format	24-bit uncompressed, selectable at 44.1, 48, 88.2, and 96 kHz sampling rate
AUDIO SPEAKER OUTPUT	
Number/signal type	
NetPA U 1002	2 channels, 4 or 8 ohms
NetPA U 1002-70V	2 channels, 70 V
NetPA U 1002-100V	2 channels, 100 V

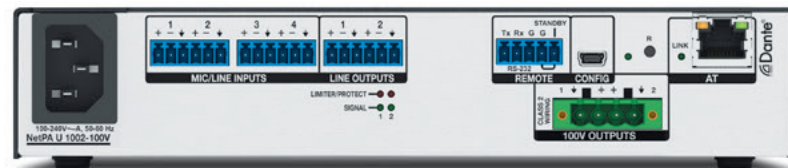
Connectors	(1) 5 mm screw lock captive screw connector, 4-pole	
Load impedance		
NetPA U 1002	4 ohms minimum	
NetPA U 1002-70V	50 ohms minimum	
NetPA U 1002-100V	100 ohms minimum	
Output power		
NetPA U 1002	100 watts per channel, 4 or 8 ohms, 1 kHz, <0.1% THD	
NetPA U 1002-70V	100 watts per channel, 70 V, 1 kHz, <0.1% THD	
NetPA U 1002-100V	100 watts per channel, 100 V, 1 kHz, <0.1% THD	
CONTROL/REMOTE		
Control port	(1) 3.5 mm captive screw connector, 5 pole	
Serial		
Serial host control port	1 bidirectional RS-232	
Standby		
Standby power control	Contact Closure	
USB control port	1 rear panel female USB mini B	
GENERAL		
Power supply	Internal. Input: 100-240 VAC, 50-60 Hz, 0.5 A	
Temperature/humidity		
Operating	+32° to +122° F (0° to +50° C) / 10% to 90%, non-condensing	
Cooling	Convection, no vents	
Protection	Clip limiter, thermal, short circuit, DC output	
Mounting		
Rack mount	Yes, with included brackets or optional 1U rack shelf	
Enclosure dimensions	1.7" H x 8.7" W x 10.5" D (1U high, half rack wide) (43 mm H x 221 mm W x 267 mm D)	
Product weight	3.8 lbs (1.7 kg)	
Product warranty	3 years parts and labor	
Everlast power supply warranty	7 years parts and labor	
Model	Version Description	Part number
NetPA U 1002	Two Channel Dante Amp, 100 watts at 8 or 4 ohms	60-1767-01
NetPA U 1002-70V	Two Channel Dante Amp, 100 watts at 70 volts	60-1767-02
NetPA U 1002-100V	Two Channel Dante Amp, 100 watts at 100 volts	60-1767-12



NetPA U 1002 – Front



NetPA U 1002-70V – Back



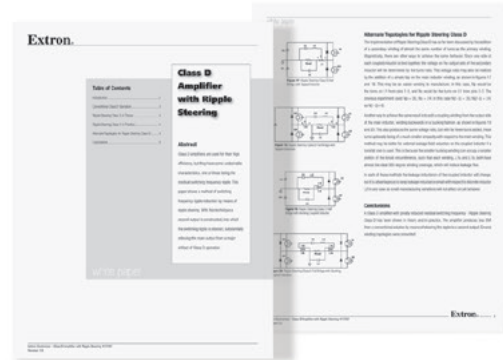
NetPA U 1002-100V – Back

Amplifier Technology White Papers

Extron offers a collection of white papers written by Extron engineers that discuss the technologies behind NetPA Ultra amplifiers. Download these and more at www.extron.com/whitepapers.

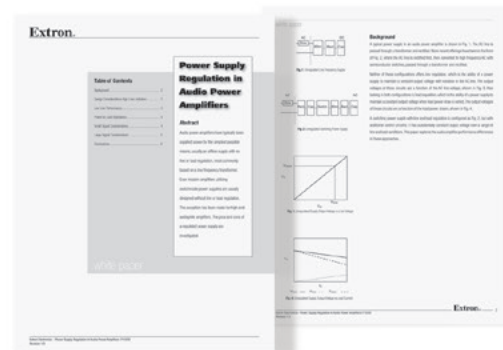
Class D Amplifier with Ripple Steering

Class D amplifiers are favored for their high efficiency, but are known for the residual high frequency switching ripple present on the audio outputs, which can affect audio performance. Extron CDRS™ - Class D Ripple Suppression is a patented technology in Extron Class D power amplifiers that eliminates the switching ripple characteristic of conventional Class D designs, resulting in a smooth, clean audio output with dramatically improved signal fidelity.



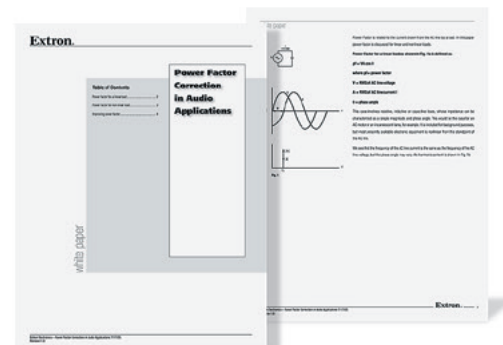
Power Supply Regulation in Audio Power Amplifiers

Audio power amplifiers have typically been supplied power without line or load regulation. High-end audiophile amplifiers have generally been the exception. Extron Class D Amplifiers utilize regulated switchmode power supplies that have been designed and engineered in-house. An advantage of a regulated power supply is that it maintains a constant output voltage despite any variance in voltage on the AC line, and optimizes the power supply's output voltage for different output load impedances.



Power Factor Correction in Audio Applications

Switched-mode power supplies are increasingly common in audio power amplifiers, and are desired for their relatively small size and weight, as well as high efficiency. This article provides an introduction to power factor correction, which substantially reduces AC harmonics and prevents noise impact on other AV products in the system.



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