Harman Pro Group | 2012

Crown Tour Sound Product Line







I-Tech HD Series



I-Tech 4x3500HD DriveCore™ Series



Macro-Tech i Series

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CTOWN



VRack Series: Complete **Amplification System VRack**



▶ FEATURES

- · Three IT12000HD amplifiers
- Fully assembled package from one source
- Worldwide power distribution with both L21-30 and 32A CEE-Form connections
- Flexible input panel with Analog, AES, and VDrive
- · Versatile output panel
- · Fail-over AES and network connection
- Rear rack lighting
- VDrive AES digital distribution over CAT5
- · Built-in network control
- · Built-in captive suspension
- Shock-mounted rack
- · Removable dolly board
- Side-storing rack doors
- Entire package is UL/CSA/ETL
- HiQnet[™] control

► CROWN'S VRACK SYSTEM

We know you've got enough to worry about in preparing your venue for each performance. That's why the new VRack, designed by Crown for optimum performance and setup simplicity, puts all your amplification needs in one customized, turnkey package, complete with full safety approvals.

With Crown-engineered components already built in, it provides you with an easy-to-configure, all-in-one amplifier solution that eliminates the time-consuming process of building amp racks, and frees your technical team to handle other important setup tasks.

The VRack delivers superb power distribution anywhere in the world and features innovative software for convenient, simplified control, giving you a versatile, worry-free rack system that's always ready to go.

▶ VRACK INCLUDES

Summary

Three I-Tech HD 12000 amps. A custom package from one source. All components professionally engineered by Crown. Simplified configuration capabilities for easier setup in any market.

VRack Industry's Exclusives

Worldwide power distribution – goes anywhere, plays anywhere. Power distro, rigging hardware and entire rack are safety certified to UL/CSA/ ETL - all safety information in order for local fire/safety inspectors.

Crown OmniDriveHD™ Digital Signal Processing, including:

- LevelMAX™ Limiters
- · Audibly superior FIR Filters
- · One amplifier per phase
- Innovative Power Factor Correction technology
- Optimal output at all AC main voltages and frequencies
- 5 pin CEE form and 5 pin Hubbell Twist Lock

Innovative software allows:

- Monitoring and adjustment on rack-byrack basis
- All changes for all 3 amps made with one interface
- · Monitors input metering (peak and RMS), output metering (peak and RMS) and overall gain reduction
- Built-in network and AES failover protects speakers in case of AC mains loss
- Standardized package configurations designed to optimize speaker nerformance
- Greater cross-renting options with "go anywhere" capability

More Versatility

Allows multiple configurations for different types of speakers. AES, Analog and Network inputs for multiple connections. Dimensions permit easy shipment: US and European truck configurations, sea containers, etc. Captive suspension provides lifting and hoisting options for venue flexibility. Run 120VAC or 208VAC (US) or 220VAC to 240VAC (international) with the flip of a switch.

Regulatory Certifications









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CTOUIN by HARMAN















With three I-Tech HD 12000 amps in each VRack, power concerns are not a concern at all. The completely original switching power amp design provides greater fidelity at high and low power levels, more efficiency because it produces less waste heat, and more reliability because it's not subjected to excessive heat or stressed to its limits. With constant access to full rail voltage, you'll always have power on demand, and it greatly extends the V-I Plane boundaries to drive speaker loads no other amplifier can. For good measure, Crown's innovative Power Factor Correction technology and optimal output at all AC main voltages and frequencies, and one amp per phase, all factor into the unrivaled power generated by the VRack. Not to mention the 5 pin CEE Form and 5 pin Hubbell® Twist-Lock® for global power distribution. Even better is something else only Crown does: the power distrio, rigging hardware and entire rack are all safety-certified to UL/CSA/ETL standards for local fire and safety inspectors.

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I-Tech HD Series: Excellence Without Compromise IT5000HD, IT9000HD, IT12000HD



RAISING THE BAR-AGAIN

systemarchitect







▶ FEATURES

- BSS OMNIDRIVEHD™ DSP processing with IIR and linear phase FIR filters
- Global Power Supply designed to deliver maximum power no matter where your schedule takes you. Universal AC input accepts 100-240 VAC, 50/60 Hz (±15%)
- High power density, up to 9000 watts in a 2U chassis
- Highest output voltage in the industry (200V peak) provides clean transient peaks
- 5th-generation patented Class I (BCA®) circuitry
- Front-panel USB connector transfers presets to/from a USB drive to the amp's DSP
- True Ethernet backbone-fast, reliable and scalable

POWFR OUTPUT*

		20 mS BURST		2-ohm Dual	2-ohm Dual	4-ohm Dual	8-ohm Dual	4-ohm	8-ohm
	Model	2-ohi	m Dual (per ch.)	(per channel)	(per channel, 1 kHz)	(per channel)	(per channel)	Bridge	Bridge
	IT5000H	łD	3,000W	2,000W	2,000W	2,500W	1,250W	4,000W	5,000W
	IT9000H	ID	4,700W	2,800W	3,500W	3,500W	1,500W	5,600W	7,000W
	IT12000	HD	6,000W	3,750W	4,500W	4,500W	2,100W	7,500W	9,000W

*Guaranteed minimum power in watts at 20 Hz-20 kHz with 0.1% THD

▶ SPECIFICATIONS

Summary Specifications

Frequency Response (at 1 watt, 20 Hz - 20 kHz): ±0.25dB.

Signal to Noise Ratio below rated full-bandwidth power, A-weighted: > 112 dB.

Total Harmonic Distortion (THD) at full rated **power:** < 0.1%.

Intermodulation Distortion (IMD) 60 Hz and 7 kHz at 4:1. from full rated output to -35 dB: < 0.2%.

Damping Factor (20 Hz to 100 Hz at 8 ohms):

Crosstalk (below rated power, 20 Hz to 1 kHz): > 80 dB.

Common Mode Rejection (CMR) (20 Hz to 1 kHz): > 70 dB typical.

Latency (analog, digital inputs): 1.13 mS analog, 1.81 mS digital (96 kHz).

A/D. D/A Converters: 24-bit 192 kHz Cirrus Logic.

Digital Input: AES/EBU. 24-bit. 32-96 kHz. Onboard sample-rate converter.

Network: Onboard TCP/IQ and HiQnet, compatible with standard 100 Mb Ethernet hardware.

DSP: 24-bit conversion with 32-bit, floatingpoint DSP processing. World-class IIR and linear phase FIR filters. Has 64 assignable filters with 9 different filter types. Includes all-pass filters, over 2 seconds of delay available per channel, and dual uncorrelated-noise and sinewave generators.

Load Impedance: (Note: Safe with all types of loads) Stereo: 1/2/4/8/16 ohms. Bridge Mono: 2/4/8 ohms.

Input Sensitivity (referenced to 8 ohm rated output): Adjustable in 0.1V steps from 1.4V to

Required AC Mains: Universal AC input. 100-240VAC, 50/60 Hz (±15%), Maximum AC mains voltage 277VAC

AC Line Connector: Five cordsets supplied with amplifier (USA, UK, European, Australia, India).

Front Panel Indicators. Controls and **Connectors**

Indicators: Bridge mode, Ready, Signal level, Clip, Thermal error, Fault, Network data, Power, AC mains.

LCD Control Screen and Controls: These let the user adjust the amplifier's attenuation and muting, configure the amp, set up and view error monitoring (such as temperature and load supervision), set IP and HiQnet addresses from the front panel, and recall DSP presets. The presets allow the user to quickly reconfigure the amp for various applications.

Level Controls (Encoders): Speed-sensitive rotary encoders, 0.5 dB steps, range 0 to -100 dB. These two knobs affect the Channel-1 and Channel-2 output levels. They also select Menu items and adjust parameter values that are displayed on the LCD Control Screen.

Power Switch: Push-on/push-off switch with built-in green AC mains present indicator.

USB 2.0 Connector: Accepts a USB drive to transfer presets from the drive to the amplifier DSP, and vice versa.

Back Panel Connectors. Controls. and Indicators

Connectors: Balanced XLR analog inputs, balanced analog XLR loop-thru outputs, AES/EBU digital input. AES/EBU digital loop-thru output. 4-Pole Speakon output connectors, binding post output connectors, power cord, EtherCon® Ethernet connector for networking via HiQnet or CobraNet.

Reset Switch/Circuit Breaker: If the current draw of the amplifier exceeds safe limits, this breaker automatically disconnects the power supply from the AC mains. The switch resets the circuit breaker.

Preset Indicator: LED flashes to signal the number of the current preset if active. LED is green if the preset values have not been changed once loaded. LED is yellow if the preset values have been changed since they were loaded.

Construction

Cooling: Dual-zone, microprocessor controlled, continuously variable speed fans, front-to-back

Dimensions: 19 in. (48.3 cm) W x 3.5 in. (8.9 cm) H x 16.2 in. (41.1 cm) D.

Weight: 28 lbs (12.7 kg) net, 36 lbs (16.3 kg) shipping.

Included Accessories: Rear rack ears, rack screws, operation manual, power cords, foam air filter.

Regulatory Certifications







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Other Applications Installed. Cinema

Crown continues the tradition of excellence and innovation with the Crown® I-Tech HD Series, delivering unmatched versatility, power and performance for touring sound applications. Featuring onboard high-definition BSS OMNIDRIVEHD™ DSP with 24-bit, 192 kHz Cirrus Logic SHARC A/D and D/A converters, the I-Tech HD Series also offers a new software interface that provides easier system-level changes, and includes a configuration wizard. Providing up to 9 kW continuous power in a 2U rack space and delivering the highest output voltage in the industry, the I-Tech HD Series outperforms all the competition.

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TOURSOUND

I-Tech 4x3500 HD: Excellence Without Compromise DriveCore™ Series



More Flexibility, No Compromise. **NO COMPARISON**

systemarchitect







▶ FEATURES

- BSS OMNIDRIVEHD™ DSP processing with Industry Leading IIR filters and linear phase FIR filters
- The only Tour Sound Amplifier that provides four routable inputs to any output (analog, AES, VDRive, or CobraNet)
- LevelMAX[™] peak voltage and RMS power limiters communicate with each other, resulting in smooth and accurate response, better sound
- 6th-generation patented Class-I (BCA®) circuitry couples power efficiently to the load and provides low AC current draw
- Global Power Supply with Power Factor Correction designed to deliver maximum power no matter where your schedule takes you. Universal AC input accepts100-240VAC, 50/60 Hz (±15%)

POWER OUTPUT*

Model

2-ohm Dual 4-ohm Dual 8-ohm Dual (per channel) (per channel) 8-ohm Bridge

20 Hz - 20 kHz Bench Power (2 sec. all channels driven)

IT4x3500HD

2,000W 2,000W 1,500W 4,000W 4,000W

1 kHz 20ms Burst

3,500W 3,500W 1,900W 7,000W 8,200W

*Guaranteed minimum power in watts at 20 Hz-20 kHz with 0.35% THD

▶ SPECIFICATIONS

Summary Specifications

The power amplifier shall be a solid-state fourchannel model employing Class I (BCA®) output

The amplifier shall contain protection from shorted, open and mismatched loads, general overheating, DC, high frequency overloads, under/over voltage, and internal faults.

If an amplifier channel starts to overheat, the Thermal Level Control (TLC) circuit shall engage the channel's input compressor in an amount proportional to the amount of overheating, in order to generate less heat. If the channel becomes too hot for safe operation, the channel shall shut off, and the Thermal Indicator for that channel shall illuminate brightly to alert the user that a state of thermal stress or overload has caused the channel to shut down.

The front-panel controls shall be a power switch, Menu/Exit button, Previous button, Next button. Encoder knob with push button, and a touch screen color LCD screen. The encoder knob and button combined with the touch screen shall allow changes to be made to the amplifier via the LCD screen.

Rear-mounted controls shall include a reset switch for the circuit breaker.

The recommended load impedance in Non-Bridge/Mono mode shall be 1/2/4/8/16 ohms. The load impedance in Bridge-Mono mode shall be 2/4/8 ohms across Channels 1+2 and/or Channels 3+4. The amplifier shall be safe when driving any kind of load, including highly reactive ones.

The rear-mounted output connectors for the Speakon version shall be two high-current 50A Neutrik SpeakON NL4MLP (mates with NL4FC or NL4) and one high-current 50A Neutrik SpeakON NLT8MP (mates with NL8FC). The rearmounted output connectors for the Binding Post version shall be four pairs of high-current, 60A color-coded 5-way binding posts (for banana plugs, spade lugs, or bare wire).

The rear-mounted input connectors shall be a 3-pin female XLR analog input connector for each channel, and two 3-pin female XLR digital input connectors that accepts a digital signal in the AES3 format for Channel inputs 1+2 and 3+4.

The rear-mounted Ethernet connector accepts an RJ-45 EtherCON connector for HiQnet™, CobraNet[™] and VDrive from a standard network cable. Built into this connector shall be a vellow LINK ACTIVITY indicator that shows network activity, and a green 100Mb indicator that shows a 100Mb network connection.

The rear-mounted Data indicator shall be a yeallow LED that indicates data activity. The rear-mounted Preset indicator shall be a yellow LED that flashes to signal the number of the current preset active.

The I-Tech 4x3500HD DriveCore Series shall be fully compatible with Harman Pro System Architect, JBL HiQnet Performance Manager, and the Powered by Crown iOS app. The I-Tech 4x3500HD DriveCore Series shall also be compatible with CobraNet networks.

Front panels indicators shall include a 4.3" Color Touch Screen LCD with backlight to control the amplifier's setup and operation. A yellow Bridge-Mode Indicator illuminates when the amplifier is set to Bridge-Mono mode for Channels 1+2 and/or Channels 3+4. A Ready Indicator (one per channel) illuminates when the channel is initialized and ready to produce audio output and is off when the amplifier is in standby mode via the control software, a green Signal Indicator (one per channel) that illuminates to indicate the presence of input signals above -40dBu, a red Clip Indicator that illuminates when the THD of the channel's output signal reaches the onset of audible clipping and illuminates during Thermal Level Control (TLC) limiting, a red Thermal Indicator (one per channel) that illuminates when the channel has shut down due to thermal stress or overload. a red Fault Indicator (one per channel) that illuminates when the amplifier output channel has stopped operating, a vellow Data Indicator that flashes during network data activity, a blue Power Indicator that illuminates when the amplifier has been turned on and AC power is available (and flashes when the AC line voltage is 15% above or below the nominal rated value). and a green AC Mains Preset Indicator in the power switch that indicates AC power is preset at the power cord.

The amplifier shall include onboard BSS OMNIDRIVEHD DSP with 24-bit conversion and 32-bit floating-point processing, DSP presets in firmware and downloadable, load supervision, error reporting, and a global power supply with Power Factor Correction

The amplifier shall meet or exceed the following performance criteria.

Input sensitivity for rated output: adjustable in 0.1V steps from 1.4V to 7.75V.

Voltage gain: 37.9 dB to 23 dB.

Rated output of all four channels driven with

0.35% THD (20Hz to 20kHz): 2000 watts per channel into 2 ohms, 2000 watts per channel into 4 ohms, and 1900 watts per channel into 8 ohms.

Rated output in Bridge-Mono mode with

Channel 1+2 and Channel 3+4 both in Bridge-Mono mode and driven at 0.35% THD (20Hz to 20kHz): 4000 watts into 4 ohms and 4000 watts into 8 ohms.

Frequency Response at 1 watt, 20Hz to 20kHz: =/-0.25dB

Signal to Noise Ration below rated power, A-weighted: greater than 112dB.

Total Harmonic Distortion at full rated power: less than 0.35%.

Intermodulation Distortion (60Hz and 7kHz at 4:1, from full rated output to -35dB): less than 0.35%

Damping Factor (20Hz to 100Hz): greater than 5000

Crosstalk (below rated power, 20Hz to 1kHz): greater than 80 dB.

Common Mode Rejection (20Hz to 1kHz): greater than 70dB.

DC Output Offset: less than +/-3mV.

Input Impedance (nominal) 20 kilohms balanced, 10 kilohms unbalanced,

Maximum Input Level: +15 dBu or +21 dBu, depending on the input sensitivity.

Latency (analog, digital inputs): 1.13 mS analog, 1.81 mS digital (96kHz).

The amplifier chassis shall be constructed of aluminum with a durable powder coat finish with microprocessor controlled, continuously variable-speed forced-air ventilation from the front panel to the back panel

The dimensions of the amplifier shall allow for 19 inch (48.3 cm) EIA standard (RS-310-B) rack mounting. The amplifier shall be 3.5 inches (8.9 cm) tall, and 16.95 inches (43.1 cm) deep behind the rack mounting surface.

The amplifier shall weigh 29 pounds (13.1 kg).

The amplifier shall be designated the I-Tech 4x3500HD DriveCore Series.

Regulatory Certifications









The I-TechHD DriveCore Series offers amazing power, light weight and ease of use for touring sound applications. Unlike other amplifiers, it includes onboard high-definition DSP, a Color Touchscreen LCD control screen, and a built-in network connection. Modern power amplifiers are sophisticated pieces of engineering capable of producing extremely high power levels.

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III. performance

TOUKSOUND

Macro-Tech i Series: The Legend Continues Macro-Tech i Series



THE LEGEND CONTINUES

▶ FEATURES

 The Macro-Tech® i Series continues the Crown® Macro-Tech legacy of unparalleled sonic accuracy and detail, putting sound quality above all else

- · Patented, cutting-edge Class-I circuitry gets more power out of an amplifier with less waste
- · Rugged construction ensures that all Macro-Techs are built to withstand years of abuse on the road
- Global Power Supply designed to deliver maximum power no matter what country you work in
- . Built-in load, line voltage, input and output monitoring
- Standard Ethernet networking via Performance Manager™ lets system operators monitor and control the amplifier from any location

POWER OUTPUT'

20 mS BURST 2-ohm Dual 2-ohm Dual 8-ohm Dual Bridae 2-ohm Dual (per ch.) (per channel) (per channel, 1 kHz) (per channel) (per channel) Bridge MA-5000i 3.000W 2.000W 2.000W 2.500W 1.250W 4.000W 5.000W MA-9000i 4.700W 2.800W 3.500W 3.500W 1.500W 7.000W 5.600W 9,000W 4.500W 4.500W 7.500W MA-12000i 6.000W 3.750W 2.100W

*Guaranteed minimum power in watts at 20 Hz-20 kHz with 0.1% THD

▶ SPECIFICATIONS

Performance

Frequency Response

(at 1 watt, 20 Hz - 20 kHz into 8 ohms): +0.25 dB

Signal to Noise Ratio

(below rated full-bandwidth power, A-weighted):

Total Harmonic Distortion (THD)

(at 2 watts into 8 ohms): < 0.1%

Total Harmonic Distortion (THD)

Plus Noise (at full rated power): < 0.35%, 20 Hz to 20 kHz.

Intermodulation Distortion (IMD)

(60 Hz and 7 kHz at 4:1,

from full rated output to -30 dB): < 0.35%.

Damping Factor (20 Hz to 100 Hz at 8 ohms):

Crosstalk (below rated power, 20 Hz to 1 kHz): > 80 dB.

Common Mode Rejection (CMR)

(20 Hz to 1 kHz): 55 dB, typically >70 dB.

DC Output Offset (shorted input): < ± 3 mV.

Input Impedance (nominal):

10 kilohms balanced. 5 kilohms unbalanced.

Maximum Input Level: +20 dBu typical.

Network: Onboard HiQnet™, compatible with standard 100 Mb Ethercom hardware.

Load Impedance: (Note: Safe with all types of

loads)

Stereo: 1/2/4/8/16 ohms. Bridge Mono: 2/4/8 ohms.

Input Sensitivity (referenced to 8 ohm rated output): 1.4V, 32 dB gain, and 26 dB gain.

Voltage Gain (referenced to 8 ohm rated

output):

MA-5000i: 37.1 dB to 22.2 dB MA-9000i: 37.9 dB to 23.0 dB MA-12000i: 39.3 dB to 24.5 dB

Required AC Mains: Universal AC input, 100-240VAC, 50/60 Hz (±10%). Maximum AC mains voltage 264VAC.

AC Line Connector: Five cordsets supplied with amplifier (USA, UK, European, Australia, India).

Front Panel Controls and Indicators

Bridge Mode Indicator: Amber LED illuminates when the amplifier is set to Bridge-Mono mode.

Ready Indicator: Green LED, one per channel. On (bright): Ready.

On (dim): Onset of compression.

Off: Thermal failure.

Signal Indicators: One green LED per channel. Solid green: Input signal is above -40 dBu.

Bright green: Channel's output signal has reached the onset of audible clipping.

Power Indicator: Blue LED indicates amplifier has been turned on and AC power is available. The LED will flash when the AC line voltage is 10% above or below the nominal rated value.

Data Indicator: Yellow LED on front panel indicates network data activity. Data indicator flashes only when the amplifier is polled for data, or is polled to see whether it is online

Power Switch: Push-on/push-off switch with built-in green AC mains present indicator.

Volume Control: Precision detented attenuator with 31 steps, press-and-hold mute function.

Volume Control LED Ring: A ring of green LEDs around each volume control show the position of the control. Entire ring flashes when channel is muted. Can be converted to be a level meter.

Back Panel Controls, Indicators and Connectors

Power Cord Connector: Detachable 20 amp IEC inlet. Cord locks with suppliled cord retention clip. Voltage range is indicated above IEC inlet.

Reset Switch/Circuit Breaker: If the current draw of the amplifier exceeds safe limits, this breaker automatically disconnects the power supply from the AC mains. The switch resets the circuit breaker.

Output Connectors: Two high-current, 50A Neutrik® Speakon® NL4MLP (mates with NL4FC or NL4), one per channel. Ch 1 Speakon® is wired with Ch 1 and Ch 2 outputs for use with single 4-conductor cable. Two pairs of high-current, 60A color-coded 5-way binding posts (for banana plugs, spade lugs or bare

Analog Input Connectors: A 3-pin female XLR connector for each channel.

Analog Loop Thru Connectors: Two male XLR passive analog loop through.

Mode Switch/Indicator: Sets amplifier to Stereo, Bridge, or Input Y mode. OFF=Stereo, YEL=Bridge, GRN=Y.

Network Connectors: Two Neutrik® Ethercon connector accepts RJ-45 type connectors for HiQnet[™] networking. Next to each connector is a vellow LINK ACT indicator that shows network activity, and a green 100Mb indicator that shows a 100Mb network connection.

Data Indicator: Yellow LED on back panel indicates network data activity. Data indicator flashes only when the amplifier is polled for data, or is polled to see whether it is online.

Preset Indicator: Green/vellow LED flashes to signal the number of the current preset. LED is green if current preset is active, or is yellow if current preset is modified.

Input Sensitivity Switch: Three-position switch providing 1.4V, 32 dB, and 26 dB settings for both channels.

Firmware/Software

Firmware can be updated at www.crownaudio. com > Support > Downloads.

Software features: Same as PIP-Lite module (except no Listen Bus): User Presets, Clip Event Monitor, Input Signal Level Monitor, Output Signal Level Monitor, Thermal Headroom Level Monitor, Power/Standby Control, Signal Mute, Polarity Inverter, Input Signal Fader, Dynamic Gain Monitors (Ghost Faders), Amplifier Information, User and Channel Labels, Amplifier Mode, Amplifier Output Mode, Line Voltage Monitor, Error Reporting, Auto Standby, Input Signal Compressor/Limiter, Peak Voltage Limiter, Average Power Limiter, Clip Eliminator, Thermal Limiter, Limiter Tie, Load Supervision.

Construction

Cooling: Dual-zone, microprocessor controlled, continuously variable speed fans, front-to-back

Front Panel: Cast aluminum with integrated

Dimensions: 19 in. (48.3 cm) W x 3.5 in. (8.9 cm) H x 16.2 in. (41.1 cm) D.

Weight: 28 lbs (12.7 kg) net, 36 lbs (16.3 kg)

Protection: Amplifier is protected against reactive loads, faults and shorts. If one channel experiences a catastrophic failure, the entire amplifier will shut down.

Included Accessories: Rear rack ears, rack screws, operation manual, power cords, foam air filter.

Regulatory Certifications







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Other Applications Installed. Portable PA

The Crown Macro-Tech i Series amplifiers continue the Macro-Tech legacy of unparalleled sonic accuracy and detail, putting sound quality above all else. Their patented, cutting-edge Class-I circuitry gets more power out of an amplifier with less waste. Each model features a Global Power Supply designed to deliver maximum power in any country. The i Series offers studio-quality analog signal processing with built-in load, line voltage, input and output monitoring. Standard Ethernet networking via System Architect provides integrated monitoring and control to give system operators access to the system from any location.

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