

# IX60:4 4-channel DSP power amplifier, 6KW



- 4-channel networked DSP amplifier with 6 kW powerTANK for Hi-Z and Lo-Z operation
- 8 x 8 Dante with OCA/AES70 remote control, 4 mic/line inputs usable as Dante break-in
- 96 kHz fully featured DSP matrix mixer and MXE-style TaskEngine for system logic, automation, scheduling and integration
- ghostPOWER via PoE to maintain DSP, Dante network and mic/line inputs
- High efficiency ecoRAIL technology for lower operating costs

The IX60:4 is a 4-channel networked DSP amplifier with 6 kW total output power. Able to drive Hi-Z or Lo-Z loads with powerTANK technology, the IX60:4 is ideal for a wide range of applications including sports venues, houses of worship, live performance spaces and hospitality.

IX60:4 features eight (8) Dante inputs, eight (8) Dante outputs and four (4) mic/line inputs, that can be used as Dante break-in points. The natively operating 96 kHz DSP features a full equipped 12 x 12 matrix mixer, EQs, dynamics, Dynacord FX and FIR-Drive capability. All 12 inputs feature pilot-tone detection, while the eight (8) Dante and four (4) amplifier outputs allow to add pilot tones up to 30 kHz. The IX60:4 uses Dynacord’s patented ecoRAIL technology for optimizing energy consumption. ghostPOWER via POE maintains the entire DSP, the Dante network and all mic/line inputs active, independent of the mains power. The integrated MXE-style TaskEngine allows for system automation, scheduling, control, and integration to third party devices.

IX series is fully integrated in Dynacord’s SONICUE Sound System Software and can be used as a SONICUE control server, for direct use with the WPN1 wall controller as well as TPC-1, iOS and Windows devices.

## Technical specifications

OUTPUT POWER				
Total rated output power <sup>1</sup>	6000 W			
Number of amplifier channels	4			
Load	2 Ω	2.7 Ω	4 Ω	8 Ω
Maximum Output Power <sup>1</sup>				
All channels equally driven	1000 W	1300 W	1500 W	1200 W
Max. per channel	1000 W	1300 W	1800 W	1200 W
Direct Drive	70 V		100 V	
Maximum Output Power <sup>1</sup>				
All channels equally driven	1500 W		1500 W	
Max. per channel	1500 W		1800 W	
Maximum Output Voltage, per channel	145 V <sub>peak</sub>			
Maximum Output Current, per channel	33 A <sub>peak</sub>			

<sup>1</sup> Test signal for max. output power according IHF-A-202 (Dynamic-Headroom, burst 1 kHz / 20 ms on / 480 ms off / low level -20 dB)

**AMPLIFIER**

Voltage Gain Low-Z mode, ref. 1 kHz	32 dB, adjustable 20.0 - 44.0 dB
Input sensitivity Direct Drive mode	+6 dBu (1.55 V), fixed
THD+N 3 dB below max, AES17, 1 kHz	< 0.1 %
Crosstalk ref. 1 kHz, 12 dB below max, 8 Ω	< -80 dB
Frequency Response ref. 1 kHz, Analog In to Speaker Out	20 Hz to 20 kHz (±1 dB)
Damping Factor 20 Hz to 200 Hz, 8 Ω	> 250
Output Stage Topology	Class D, fixed frequency

**Output Noise**

Analog input (A-weighted, eco mode)	< -66 dBu
Digital input (A-weighted, eco mode)	< -70 dBu

**DIGITAL SIGNAL PROCESSING**

Sampling rate	96 kHz internal, Dante 48/96 kHz switchable
Signal delay/latency (Analog In to Speaker Out)	0.77 ms

**Signal Processing**

Input processing	HPF 24 dB, 4 filters per channel, selectable as PEQ, Lo-/Hi-Shelv, Lo-/Hi-ShelvQ, Hi-/Lo-Pass and Notch; Noise Gate, Compressor or AGC; input pilot supervision
Mix Matrix	12 x 12 matrix mixer with stereo FX
User EQ	12 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Lo-ShelvQ, Hi-ShelvQ, Hi-Pass, Lo-Pass and Notch; 2 filters of them with additional asymmetric filter type
User Delay	0 to 2000 ms per channel
Array EQ	5 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Lo-ShelvQ, Hi-ShelvQ, Hi-Pass, Lo-Pass, and All-Pass
Array Delay	0 to 500 ms per channel
Speaker EQ	10 filters per channel, selectable as PEQ, Lo-Shelv, Hi-Shelv, Hi-Pass, Lo-Pass, and All-Pass
Speaker X-Over	Hi-Pass, and Lo-Pass per channel, 6/12/18/24/30/36/42/48 dB Bessel/Butterworth, 12/24/36/48 dB Linkwitz-Riley; Alignment Delay, 0 to 20 ms per channel

**DIGITAL SIGNAL PROCESSING**

Speaker FIR	Up to 1025 taps
Speaker Limiters	Peak Anticipation Limiter and RMS/TEMP Limiter per channel
Load Supervision	Pilot tone up to 30 kHz
Other Functions	Source Selection, Level, Mute, Polarity, Sine and Noise Generator, Pilot Tone Generator and Detection, Level Meters, Impedance Measurement and Load Monitoring
DSP Presets	1 Factory + 20 User
Source Supervision and Fallback	Pilot Tone supervision at Analog and Dante inputs, switchover to FAILOVER source selection

**CONNECTIVITY****Mic/Line Input**

Type	2 x 5-pin Euroblock, male
Channels	4
Gain	0 to 60 dB
Maximum Input Level (balanced)	+18 dBu
Maximum Input Level (unbalanced)	+12 dBu
Phantom power	+48 V, switchable per input
Input Impedance, active balanced	>10 kΩ
EIN (A-weighted) @ 150 Ω	-127 dBu
Reference level equal to digital input	+22 dBu for 0 dBFS

**Speaker Output**

Type	2 x 4-pin Euroblock
Diameter	6.0 mm <sup>2</sup> / 10 AWG

**Network**

Type	2 x RJ45
General	1000base-T/100base-TX, integrated switch
Redundancy Modes	Glitchfree (PRIMARY/SECONDARY), RSTP
Backup power supply (ghostPOWER)	1 x PoE (IEEE 802.3af) on PRIMARY port
Network Audio Inputs	8 ch, 48/96 kHz, Dante
Network Audio Outputs	8 ch, 48/96 kHz, Dante

Mains Input	1 x IEC C14
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**Control Port**

GPIO Control Port	3 x GPIO, switchable Analog In/Digital In/Digital Out
Type	1 x 8-pin Euroblock, male
Analog Input Range	0 V to +13 V, 133 kΩ input resistance

**CONNECTIVITY**

Digital Input Limits	ON: < 1.5 V OFF: > 2.0 V, internal Pull Up (10 k $\Omega$ / 10 V)
Digital Outputs	ON: Output switched to GND, max. 200 mA OFF: Open Collector
Reference Voltage Output	+10 V, max. 200 mA, supervised, short circuit protected
READY/FAULT	Galvanic isolated relay, max. 30 VDC/500 mADC
Front panel indicators	6 x status LEDs (POWER, STANDBY, FAULT, OMNEO, PoE, AC), signal/ peak LED per MIC/LINE input and AMPLIFIER output
Rear panel indicators	2 x status LEDs (INFO, STATUS)
Rear panel operation	1 x INIT button (recessed)

**GENERAL****Power consumption**

Rated power consumption	1050 W
Idle/Eco mode (output power <1 W)	34 W
Standby mode	<15 W
Power Requirements	100 V to 240 V, 50 Hz to 60 Hz AC
Power Supply Topology	Switching Mode Power Supply with digitally controlled power factor correction (PFC)
Protections	Audio Limiters, High Temperature, DC, HF, Short Circuit, Back-EMF, Peak Current Limiters, Inrush Current Limiters, Mains Current Limiter, Mains Over-/Under Voltage Protection
Cooling	Front-to-rear, temperature controlled fans, supervised
Ambient Temperature Limits	+5 °C to +40 °C (+40 °F to +105 °F)
IEC Protection Class	Class I (grounded)
Electromagnetical Environment	E1, E2, E3
Color	Black
Dimensions (W x H x D)	483 mm x 44.1 mm x 447 mm (19 in x 1.74 in x 17 in)
Weight	8.6 kg (19 lb)
Shipping weight	10.5 kg (23.1 lb)

Amplifier at rated conditions, Lo-Z/4  $\Omega$  normal operation mode, all channels driven, 4  $\Omega$  loads, analog input, 32 dB Gain, 48 kHz sample rate, unless otherwise specified.

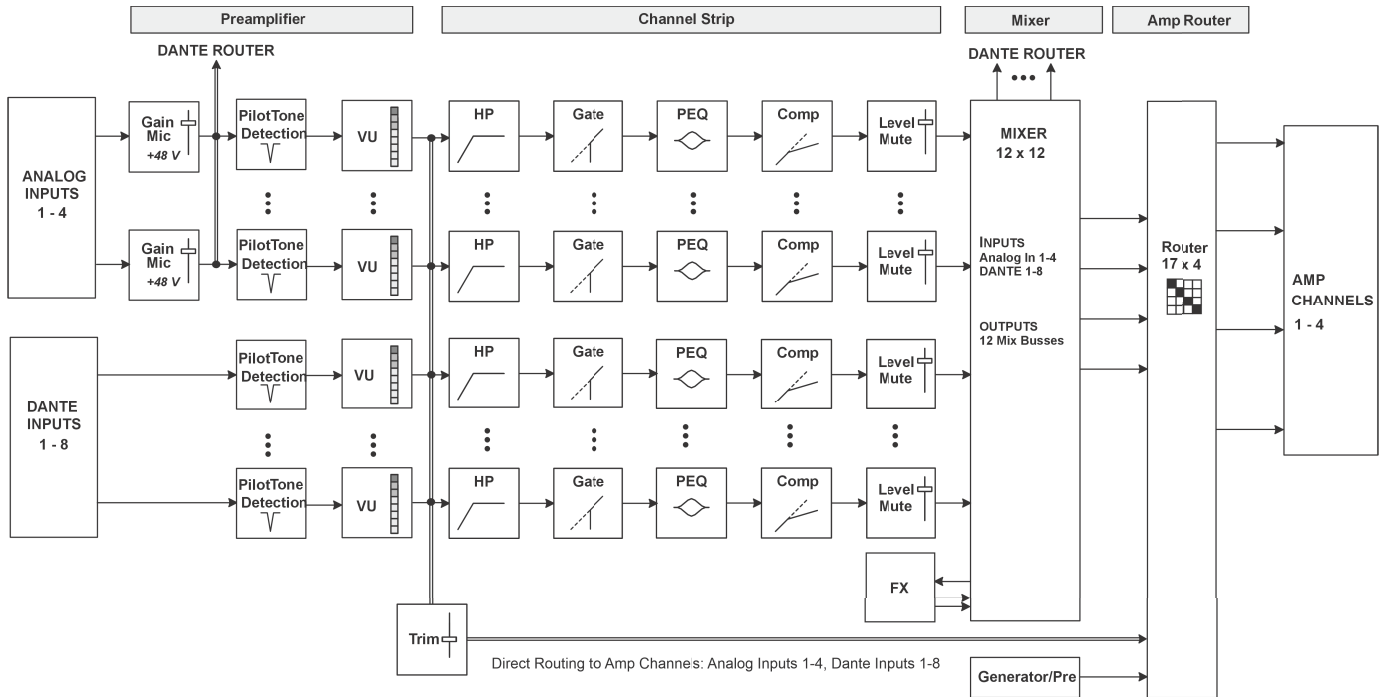


Fig. 1: Block diagram for inputs

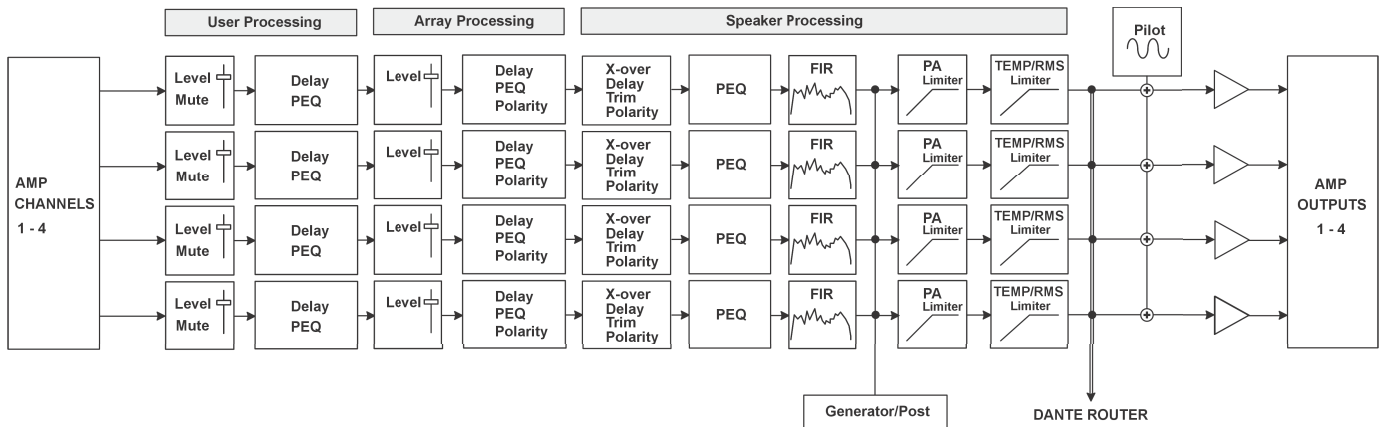


Fig. 2: Block diagram for amplifier channels

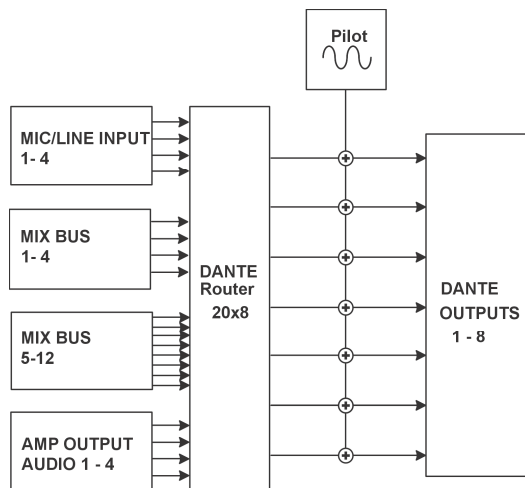
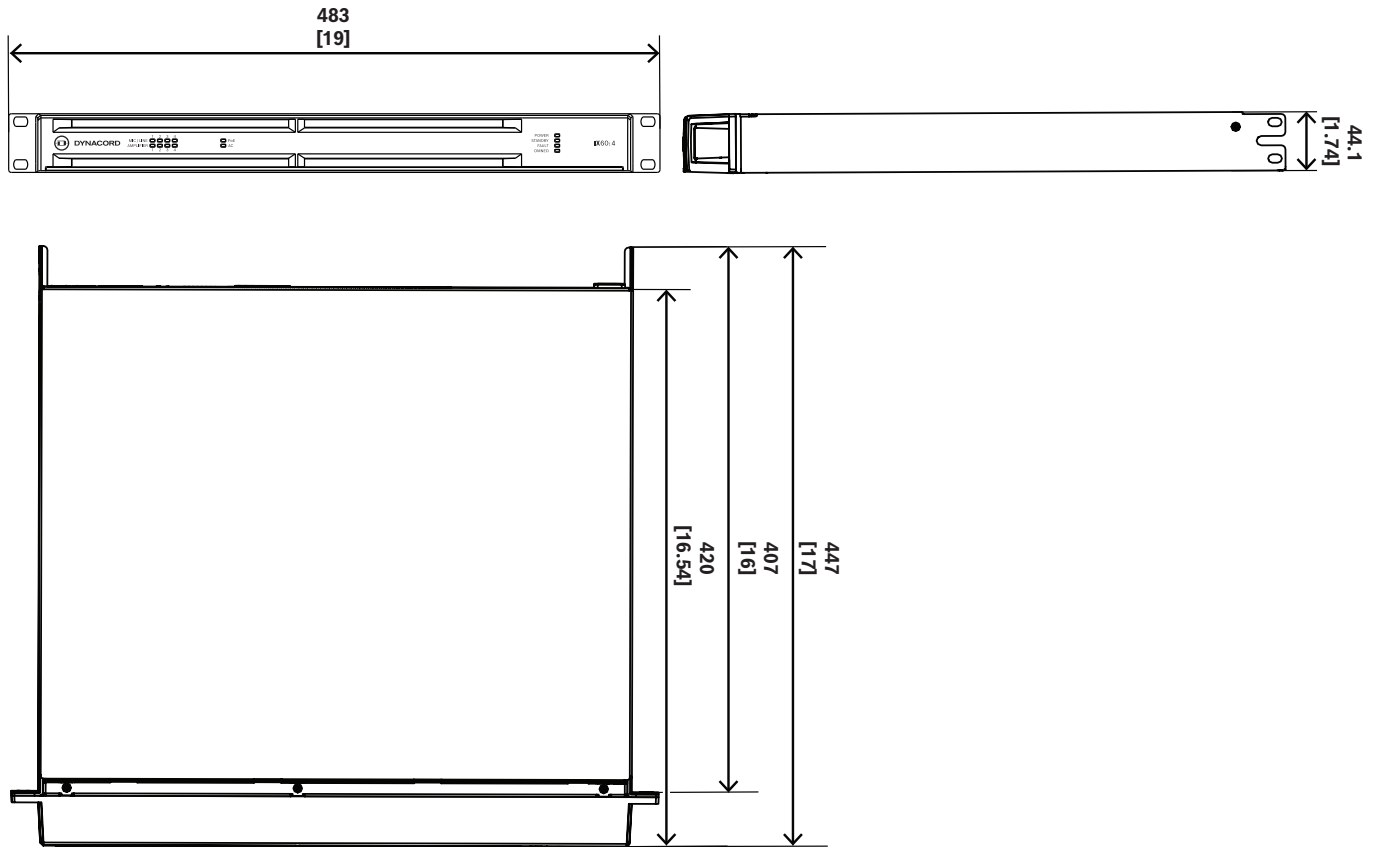


Fig. 3: Dante router



mm [in]

Fig. 4: Dimensions

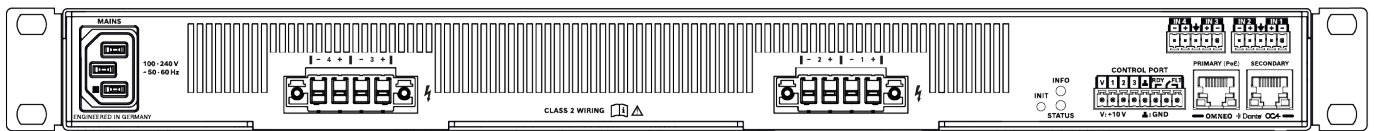


Fig. 5: Rear panel

## Ordering information

### IX60:4 4-channel DSP power amplifier, 6kW

4-channel DSP networked amplifier, 6kW powerTANK, 8x8 Dante, OCA, 4 mic/line inputs  
Order number **IX60:4 | F.01U.411.027**

### IX60:4-US 4-channel DSP power amplifier, 6kW, US

4-channel DSP networked amplifier, 6kW powerTANK, 8x8 Dante, OCA, 4 mic/line inputs, US power cord  
Order number **IX60:4-US | F.01U.425.388**

### Accessories

#### DC-RMK15 Rear rackmount kit for amplifiers

Rack Mount Kit for amplifiers, Length 15,5"; 1L/1R  
Order number **DC-RMK15 | F.01U.135.402**

### TPC-1 Touch panel controller 5.7"

Full HD TFT touch panel, POE, for control panels created in SONICUE sound system software  
Order number **TPC-1 | F.01U.384.715**

### WPN1-EU Wall panel controller networked, EU

Wall panel controller with 1.77-inch display and encoder for use with SONICUE Control Server devices, PoE, ships with white and black front covers and wall plates  
Order number **WPN1-EU | F.01U.388.087**

### WPN1-US Wall panel controller networked, US

Wall panel controller with 1.77-inch display and encoder for use with SONICUE Control Server devices, PoE, ships with white and black front covers  
Order number **WPN1-US | F.01U.394.578**



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