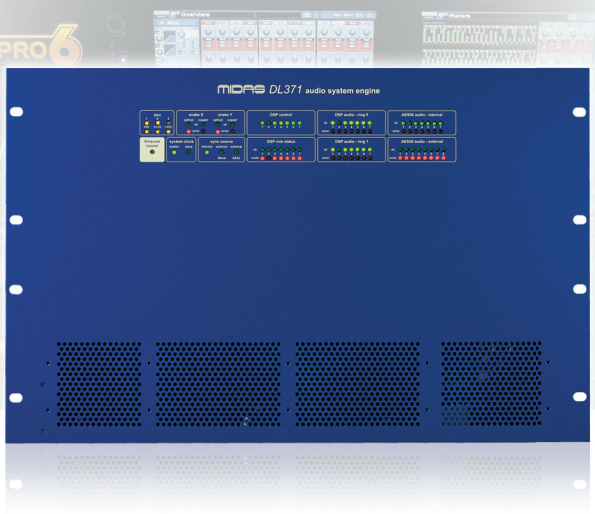
DSP/Routers

PRO SERIES
DL371PRO6

MIDAS PRO6 Audio System Engine with 26.4 Gigaflops Performance and HyperMAC Router



- MIDAS PRO6 Audio System Engine with 26.4 Gigaflops digital signal processing performance
- HyperMAC Router with 192 Bidirectional Channels over copper and optical fibre
- Provides dual redundant snake connection to PRO6 Control Surface
- Snake connections up to 500 m with optical fibre or 100 m with CAT5/5e cable
- Internal dual redundant network ring topology with contra-rotating communication system
- Fitted with 5 DL371A DSP cards as standard
- Additional DL371A DSP cards allow upgrade to PRO9 and N+1 redundant operation
- 40 bit floating point processing with 96 kHz sample rate
- Features Neutrik etherCON* AES50 and Ethernet control network ports
- Dual-fibre Neutrik opticalCON DUO* connector used for optical fibre snake connection
- Rugged 7U rackmount chassis for durability in portable applications
- Three bay auto-ranging universal switch-mode power supply with N+1 redundancy
- 3-Year Warranty Program*
- Designed and engineered in England

The MIDAS PRO Series has become established as the industry standard on live concert tours and the road-proven DL371PRO6 audio system engine has provided the superior audio processing heard at many of the most prestigious live events held worldwide.

The DL371PRO6 features managed latency and 40 bit floating point processing precision. DL371PRO6 sets the standard of performance in high-profile live sound applications and is a truly impressive audio system engine for the engineer whose very livelihood depends on both unparalleled functionality and reliability.

DL371PRO6's powerful DSPs and high-performance FPGA (Field-Programmable Gate Array) technology, coupled with a highly efficient MIMD (Multiple Instruction, Multiple Data) architecture, delivers 26.4 Gigaflops of real-time audio processing. With the capability to handle up to 64 simultaneous input channels and 35 time-aligned and phase-coherent output mix buses, DL371PRO6 is a powerhouse of digital audio mixing technology.

HyperMAC and AES50 audio networking technologies allow up to 288 inputs and 294 outputs at 96 kHz sampling frequency combined with 40 bit floating point processing precision, which can be dynamically assigned to the PRO6's input channels and bus outputs on a dynamic scene-by-scene basis. This high level of connectivity, coupled with the large channel and bus counts, make the PRO6 and DL371PRO6 equally at home in theatres and symphony halls as it is in live concert touring, outside broadcast and music festivals.

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Digital Audio Networking

SuperMAC (AES50-Compliant) and HyperMAC digital audio networking technologies from KLARK TEKNIK simultaneously provide high channel counts, ultra low and deterministic latencies, sample-synchronous and phase-aligned networked clock distribution, error detection, network redundancy, and ease of deployment and use – to meet the demanding requirements of live concert touring.

The DL371PRO6 HyperMAC router provides a dual redundant snake connection to the PRO6 Control Centre over optical fibre or copper with a bandwidth of 192 bidirectional channels of 96 kHz 24 bit digital audio, up to a distance of 500 m with optical fibre or 100 m with CAT5/5e cable.

DL371PRO6 is compatible with all MIDAS PRO Series digital I/O units, as well as with any other 96 kHz-enabled AES50-equipped devices. Multiple PRO Series consoles can be connected together to create either larger mixing systems, or multiple discrete mixing consoles can share a common resource of networked and distributed I/O interfaces.

40 Bit Floating Point Processing

DL371PRO6 can simultaneously process up to 8 internal multi-channel effects and its 40 bit floating-point audio processing hosts a wide choice of virtual effects devices, which range from dual-mono delay units, stereo modulation and numerous diverse reverberation simulations, multi-band compression, dynamic EQ and multi-channel dual-function dynamics processing. Up to 36 ⅓ octave KLARK TEKNIK DN370 Graphic Equalisers (GEQs) are provided, which can be patched into any output.

The oversampled digital signal processing algorithms, combined with the fully interpolated and touch sensitive user controls, result in the smooth continuous response and immediacy of working on an analogue console. Parameter adjustment becomes fast and easy, and the continuous phase shift of a swept frequency control is heard without the quantisation artefacts exhibited by competing digital consoles.

DL371PRO6 provides comprehensive automatic latency management of all internal routing and processing delays – and also includes compensation for external analogue inserts. All audio samples are synchronised before summing, resulting in absolute phase coherence at the outputs, without the comb filtering effects of competing products that often result in specific frequencies being cancelled out completely.

All effects processors and GEQs are custom-designed to function within this automatic latency compensation system. This ensures a phase-coherent, sample-accurate mix regardless of whether the devices are used as channel inserts or on auxiliary buses.

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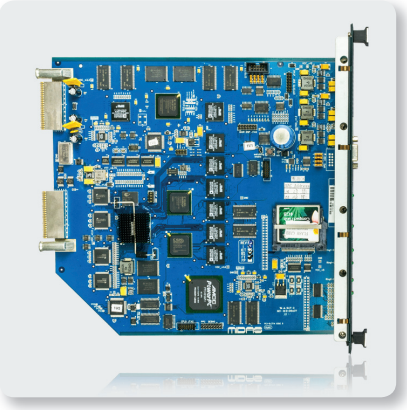

Expandable DSP Processing

DL371PRO6 is fitted with 5 DL371A DSP cards as standard. Additional DL371A DSP cards allow upgrades to PRO9 and N+1 redundant operation. In the very rare event that one of the DSP cards should experience an execution fault, the optional redundant card is loaded with that card's profile under the control of the PRO 6 Control Centre.

Built for the Road

Featuring a rugged steel 7U rackmount enclosure, DL371PRO6 is designed for the rigours of live concert touring. Premium Neutrik connectors are used to ensure reliable network connections, night after night.

Redundancy - For Peace of Mind

DL371PRO6 features three removable power supplies - only two of which are required for operation. The power supplies, which are interchangeable with those in the PRO6 Control Centre, are auto-voltage sensing for use on a worldwide basis and provide seamless switchover in the unlikely event of a loss of one of the three power supplies.

Combined with the dual-redundant HyperMAC snake and the redundant AES50 networking, plus the N+1 redundancy offered by the optional additional DSP card, no other console system goes further in providing peace of mind. This means that during a show the user can focus on what is most important - treating the audience to a flawless sonic experience..

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You Are Covered

We always strive to provide the best possible Customer Experience. Our products are made in our own MUSIC Group factory using state-of-the-art automation, enhanced production workflows and quality assurance labs with the most sophisticated test equipment available in the world. As a result, we have one of the lowest product failure rates in the industry, and we confidently back it up with a generous 3-Year Warranty program.

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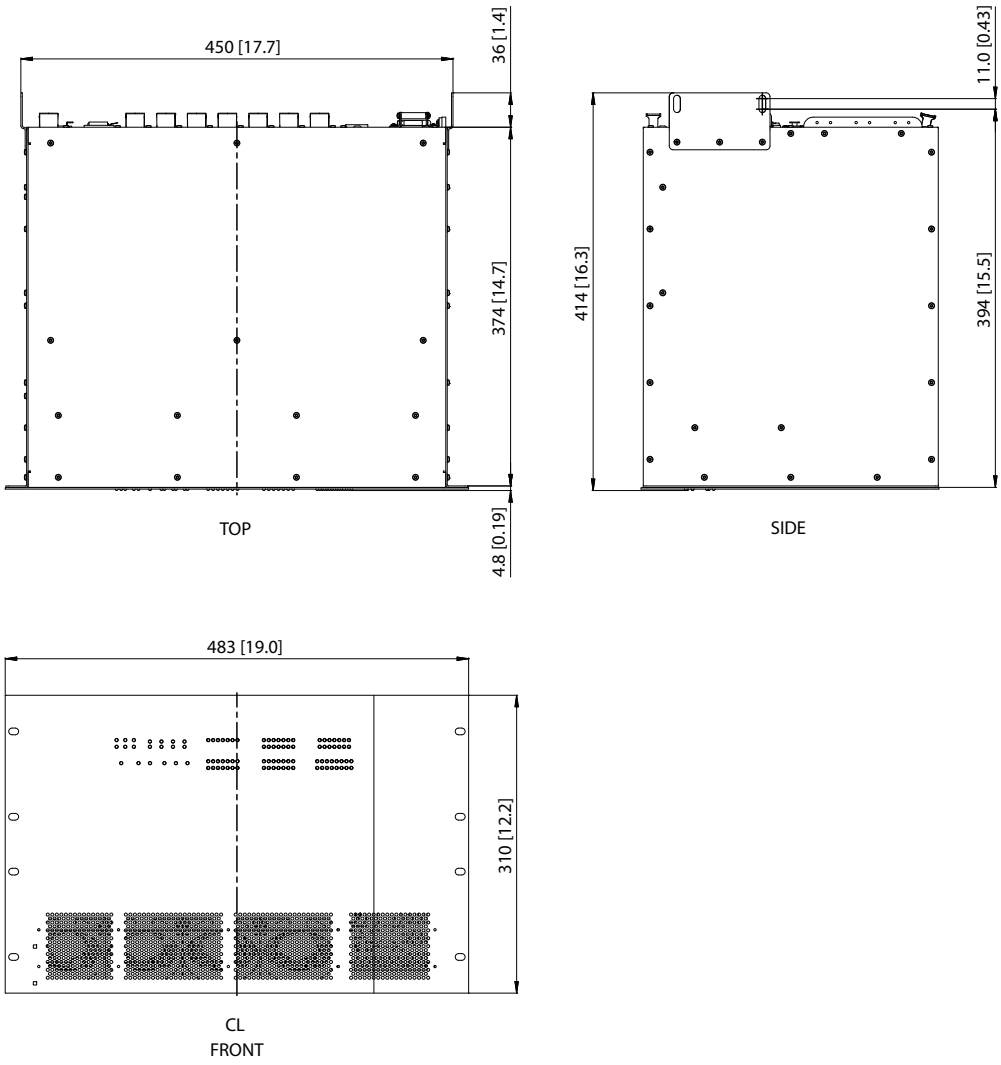
Dimensions



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Technical Specifications

System Specifications

Sample rate	96 kHz
Processing performance	26.4 Gigaflops
Processing architecture	MIMD (Multiple Instruction, Multiple Data)
Processing redundancy	N+1 DSP card redundancy (Optional)
Simultaneous input channels	64
Output mix buses	35
Maximum network I/O	288 Inputs x 294 Outputs

Digital Audio System Inputs and Outputs

AES50 Audio

Quantity	8
Format	Conforms to AES50-2011 (24 channels of bidirectional digital audio @ 96 kHz)
Connector	Neutrik etherCON with status LEDs
Redundancy	N+1 cable redundancy 0-2011

Snake (Copper)

Quantity	2
Format	KLARK TEKNIK HyperMAC (192 channels of bidirectional digital audio @ 96 kHz)
Connector	Neutrik etherCON with status LEDs
Redundancy	Dual cable redundancy (X & Y)

Snake (Fibre)

Quantity	2
Format	KLARK TEKNIK HyperMAC (192 channels of bidirectional digital audio @ 96 kHz)
Connector	Neutrik opticalCON DUO
Transmission	1.25 Gb/s 1000 base-SX physical layer on 50/125 multimode fibre
Redundancy	Dual optical fibre redundancy (X & Y)

External Ethernet Tunnel

Quantity	1
Connector	Neutrik etherCON with status LEDs

Word Clock Input

Quantity	1
Format	TTL level, 96 kHz square wave
Connector	75 Ohm BNC

Word Clock Output

Quantity	1
Format	TTL level, 96 kHz square wave
Connector	75 Ohm BNC

AES3 Sync Input

Quantity	1
Format	Conforms to AES3-2009 (2 channels of digital audio @ 96kHz)
Connector	3-pin XLR

AES3 Sync Output

Quantity	1
Format	Conforms to AES3-2009 (2 channels of digital audio @ 96kHz)
Connector	3-pin XLR
Output	96 kHz Grade II reference clock

Power

Power Supplies

Quantity	3
Format	PRO Series Power Supply Module (MKT-PSU-2)
Connector	IEC mains inlet
Mains input voltage	100 to 240 VAC, 50 to 60 Hz
Redundancy	N+1 power supply redundancy

Power Consumption

115 VAC	2 PSUs	1.10 A, 126.5 W
	3 PSUs	1.15 A, 132.5 W
230 VAC	2 PSUs	0.54 A, 124.2 W
	3 PSUs	0.69 A, 158.7 W

Physical

Dimensions	483 mm wide x 414 mm deep x 310 mm high (19.0" x 16.3" x 12.2")
Net Weight	26.5 kg (58.3 lbs)
Operating Temperature Range	+5°C to +45°C
Storage Temperature Range	-20°C to +60°C

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Architecture & Engineering Specifications

The audio system engine shall be designed for digital audio mixing applications and be optimised for use in live performance. It shall feature 64 simultaneous input channels and 35 time-aligned and phase-coherent output mix buses and operate at 96 kHz sampling rate.

The audio system engine shall include Gigabit and 100 Mbit/s Ethernet frame-based digital audio networking with a total network channel count capability of 288 inputs and 294 outputs at 96 kHz sampling rate. A Gigabit Ethernet frame-based digital audio network router shall be included with 192 bidirectional channels operating over optical fibre up to 500 m and CAT5/5E cable up to 100 m, and provide a dual redundant digital snake connection to the associated control centre.

The Gigabit digital audio network shall operate on a time-division multiplex basis, and shall provide accurate phase-aligned low-jitter clock distribution using embedded timing markers in the data streams to allow transmission over either Cat5/5E copper cable up to a distance of 100 m as specified by the IEEE 802.3 Ethernet standard, or up to distances of 500 m using 50/125 µm multimode optical fibre. It shall provide two levels of cyclic redundancy check (CRC) error detection - a checksum sent with the associated Ethernet frame and an additional checksum for audio data. A dedicated 200 Mbit/s auxiliary data channel shall be provided for control data.

The Gigabit digital audio network shall have an individual link latency of 62.5 µs at 96 kHz sampling rate and support dual redundant operation.

The 100 Megabit Ethernet frame-based digital audio network shall offer N+1 cable redundancy and be compliant with the Audio Engineering Society AES50-2011 standard.

In conjunction with the associated digital console control centre, the audio system engine shall provide up to 36 assignable digital audio emulations of industry standard one-third octave proportional-Q response graphic equalisers and up to 8 simultaneous multi-channel digital audio effects. There shall be automatic latency management of all internal routing, external analogue insert and digital signal processing delays. This latency management system shall synchronise audio samples when summing to mix buses to ensure phase alignment of the summed signals.

The audio system engine shall be equipped with 5 digital signal processing cards as standard. Provision shall be made for additional cards to increase processing capability and to support N+1 redundant operation.

The audio system engine shall include three auto-ranging universal switch-mode power supplies with N+1 redundancy for use on a worldwide basis. The power supply modules shall be externally removable and interchangeable with those in the associated digital console control centre.

The audio system engine shall be 483 mm wide x 414 mm deep x 310 mm high (19.0" x 16.3" x 12.2"), with nominal weight 26.5 kg (58.3 lbs). The audio system engine shall be installed in a rack frame or road case capable of safely supporting its weight. Input, output, and power connections shall be made at the rear panel of the audio system engine. Installers shall allow adequate space at the rear for connection and disconnection of input, output, and power connections. The power requirements shall be 100 to 240 VAC, 50 to 60 Hz.

The audio system engine shall be the MIDAS DL371PRO6 and no other alternative shall be acceptable.

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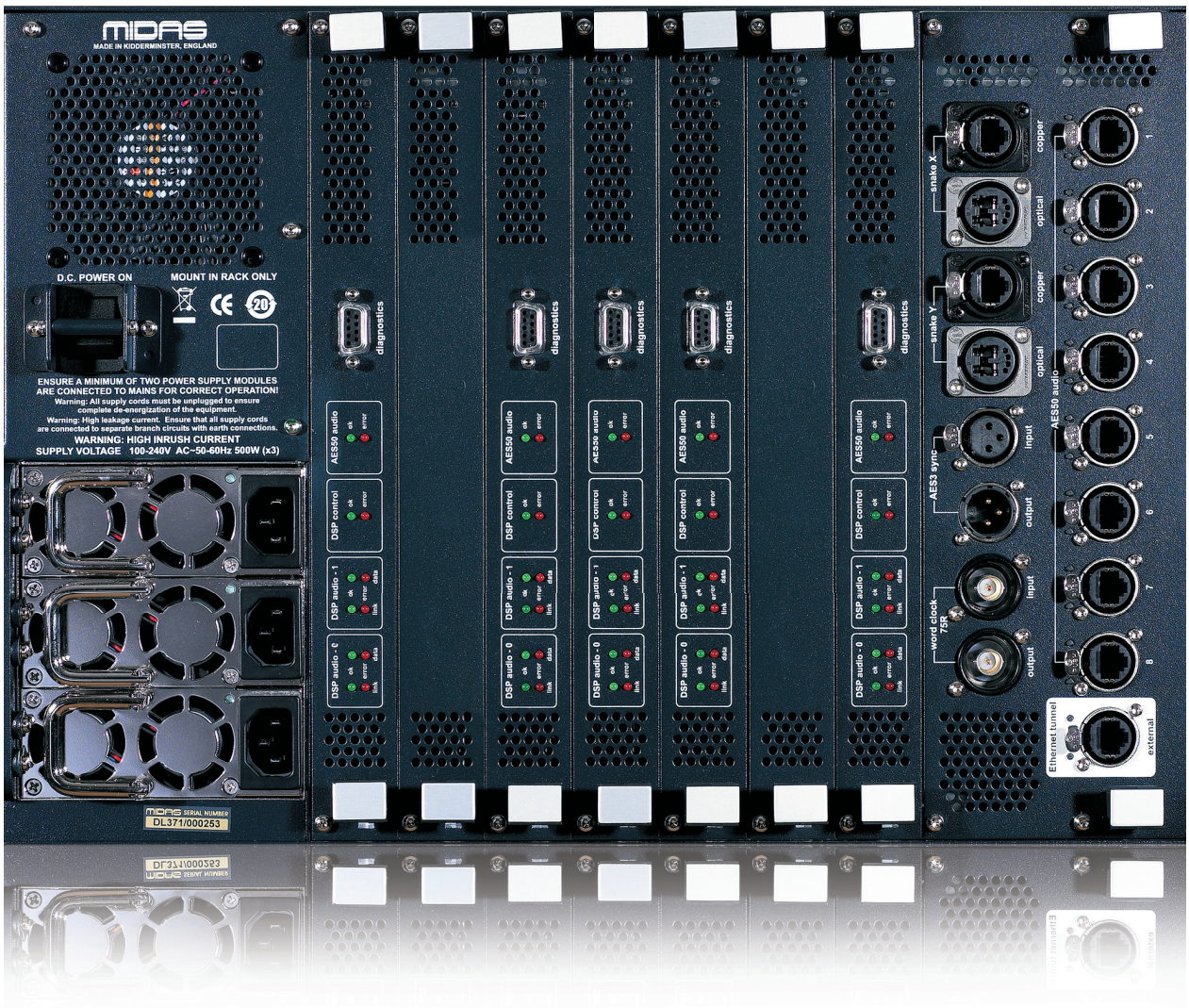

3 Year Warranty

For service, support or more information contact the TURBOSOUND location nearest you:

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