PRO Series Introduction

The Midas PRO Series Live Audio Systems employs technology developed from the class-leading XL8, offering the same exemplary sample - synchronised audio performance. The PRO series can provide up to 104 simultaneous input processing channels and up to 35 discrete mixes in monitor mode, all of which feature EQ and a choice of dynamics processing options. By adding additional I/O hardware the PRO series network can be expanded to 288 inputs x 294 outputs with point-to-point routing anywhere within the network which can then be patched and routed on a scene-by-scene basis via a powerful snapshot automation system.

The PRO series effects and dynamics algorithms are more than superb quality, easy-to-use SHARC-based effects processing. They are incorporated within the automatic delay management system, so that wherever they are patched, the audio will be absolutely phase-coherent when summed into your mix. It is possible to assign up to 36 1/3 octave Klark Teknik DN370 graphic EQs, for demanding monitor applications, all of which can be controlled using the optional Klark Teknik DN9331 Rapide moving fader remote. All of this in addition to the four types of compression available on inputs, and five types on outputs. FX options, configurations, settings and patching can change completely with each scene recall. The possibilities are almost endless.

Reliability is designed into all Midas products, and all PRO Series hardware elements feature redundant power supplies as standard. The FPGA processing engine is of modular construction, with the option of a spare module which will automatically deploy in the event of an engine module failure (n+1 model). Due to its modular configuration the DSP engines of both the PRO3 and PRO6 can be loaded and upgraded to PRO9 specification.

PRO Series digital audio transport uses the international AES50 standard, featuring feed-forward error correction which provides superior protection against lost data packets and synchronization issues when compared to other Ethernet cable based systems. All links between PRO series hardware elements support redundant cables for copper and optical options are available on the PRO6 and PRO9.

The Control Centre houses dual redundant Linux master control computers (MCs), both running full versions of the relevant PRO Series Linux software. Either MC is capable of running the entire system on its own and control can be switched between the two without any loss of audio.

Overview:
- Dual "Daylight Visible" Screens with 3-way KVM switch
- XL8-Style "Fast Zones"
- XL8-Style Dual Operator "Channel Strips"
- 10 VCAs
- 6 POPulation Groups
- Configurable "Area B"
- Surround panning including 5.1, Quad and LCRS
- Dual-Redundant Linux control computers
- 3 AES50 ports on the Control Centre for I/O expansion and XL8 connectivity
- 8 AES50 ports on stage end of snake for I/O expansion
- Up to 24 configurable inputs and 30 configurable outputs on the Control Centre*
- Redundant hot swappable triple power supplies
- Three year factory warranty

Accessories:
- Klark Teknik DN9331 Rapide Graphic Controller
- Klark Teknik DN9696 96 track High Resolution Audio Recorder
- Klark Teknik DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO3 Live Audio System

The Midas PRO3 Live Audio System provides entry to the PRO Series of consoles and will ensure that even more touring riders and professional installations can take advantage of Midas' digital features.

PRO3 naturally features the legendary and much-loved Midas sound characteristics, which have their roots in the classic Midas analogue consoles. It also includes the overwhelmingly successful VCA and POPulation groups, which allow users to navigate channels intuitively, without the hindrance of layers or pages of faders. It also benefits from the same comprehensive choice of effects and dynamics processing as the PRO6 and XL8, including the much-acclaimed XL8 compressor styles.

The PRO3 brings these features and more within reach of tighter budgets, offering 48 input channels with remote controlled mic pres, 27 buses and six stereo effects. At the heart of the PRO3 is another new arrival from Midas, the DL251 fixed format, 5U I/O rack, designed as a more cost-effective solution for those not requiring the flexibility of Midas modular I/O hardware. However should investors require more connectivity over time, a simple and affordable upgrade path supersizes the system to the PRO6 or the fully-loaded, 88-channel PRO9 with additional hardware and firmware upgrades.

PRO3 Configuration:
- 288 inputs x 294 outputs (max capacity) point-to-point routing anywhere within the Network
- 48 primary inputs
- 8 return inputs
- Up to 72 simultaneous mix channels
- 16 Group/Aux & 8 Matrix - 24 Mixes in "monitor" mode
- 27 mix busses
- 10 VCAs
- 6 POPulation Groups
- 6 Effects devices
- Up to 28 KT Graphic EQ's - with optional DN9331 Rapide control
- Configurable "Area B"
- Standard surface I/O (3 configurable card slots)
  DL443 "TRS" card
  Plus 2 expansion slots for additional cards
- Stage I/O
  DL251 48 in / 16 out fixed configuration
- 100m bi-directional 192+192 channel CAT-5e snake (redundant option)
- Control Centre supplied in shipping crate

Additional I/O Box Options:
- DL431 24 in 5 way split: fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O
- DL451 Up to 24 in / 24 out configurable I/O

I/O Cards Options:
- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card

Control Centre Weight and Dimensions:
Width 1365mm x Depth 924mm (53.7" x 36.4") Weight: 97Kg (213.4lbs)

Packaging Options:
- Control centre flight case
- 16U flight case for DL371 DSP and I/O

Accessories:
- Klark Teknik DN9331 Rapide Graphic Controller
- Klark Teknik DN9696 96 track High Resolution Audio Recorder
- Klark Teknik DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO6 Live Audio System

The Midas PRO6 is the second networked digital audio system from Midas and is at the heart of the PRO Series Live Audio Systems. The PRO6 can provide up to 64 simultaneous input processing channels and up to 35 discrete mixes in monitor mode, all of which feature Midas EQ and a choice of many dynamics processing options. By adding additional I/O hardware the PRO6's network can be expanded up to 288 inputs and 294 outputs. These connections can be patched and routed on a scene-by-scene basis, by use of the PRO6's powerful snapshot automation.

As with all the PRO Series the PRO6 benefits from the mix and match of all the Midas I/O box options, from the fixed configuration DL251 stage box to the highly acclaimed DL431 24 channel 5-way mic splitter. Flexibility can be further increased by adding the Klark Teknik DN9650 digital format converter offering MADI and Dante connectivity.

Users can navigate the channels intuitively without resorting to layers with the aid of Midas' VCA and POPulation groups. It naturally features the legendary and much-loved Midas sound characteristics with comprehensive choice of effects and dynamics processing, including the much-acclaimed XL8 compressor styles.

The PRO6 can to the fully-loaded at a later date to an 88-channel PRO9 with additional hardware and firmware upgrades.

PRO6 Configuration:
- 288 inputs x 294 outputs (max capacity) point-to-point routing anywhere within the Network
- 56 primary inputs
- 8 return inputs
- Up to 80 simultaneous mix channels
- 16 Group/Aux & 16 Matrix - 32 Mixes in "monitor" mode
- 35 mix busses
- 10 VCAs
- 6 POPulation Groups
- 8 Effects devices
- Up to 36 KT Graphic EQ's - with optional DN9331 Rapide control
- Configurable "Area B"
- Standard surface I/O (3 configurable card slots)
  DL443 "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL442 Analogue Output "O" card
- Stage I/O
  DL351 56 in / 8 out configurable I/O
- Dual-Redundant HyperMac (192x192) CAT5-e digital snake included
- Fibre Optic connections for optional maximum 500 metre snake
- Control centre supplied in flight case
- 16U flight case supplied for DL371 DSP and DL351 I/O**

Additional I/O Box Options:
- DL431 24 in 5 way split: fixed configuration I/O
- DL251 48 in / 16 out fixed configuration I/O
- DL451 Up to 24 in / 24 out configurable I/O

I/O Card Options:
- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card

- Option of 150m Fibre Optic cable

Control Centre Weight and Dimensions:
Width 1365mm x Depth 924mm (53.7" x 36.4") Weight: 97Kg (213.4lbs)*
*weights are approximate and out of flight case
** Packing may vary by territory

Accessories:
- Klark Teknik DN9331 Rapide Graphic Controller
- Klark Teknik DN9696 96 track High Resolution Audio Recorder
- Klark Teknik DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

PRO9 Live Audio System

The Midas PRO9 sits at the top of the Midas PRO Series, featuring a massive 88 channel input count and 35 buses, with the dual stage boxes offering placement flexibility up to 200m apart and 500m from the FOH position.

The PRO9 benefits from the full range of Midas I/O box options, including the DL251 fixed format stage box, the highly acclaimed DL431 24 channel 5-way mic splitter offering three mic preamps per channel and dual digital network connections, both with full redundancy. Flexibility can be further increased by adding the Klark Teknik DN9650 digital format converter offering MADI and Dante connectivity.

The Midas PRO9 comes complete with the features that have been made popular by established Midas digital systems, the XL8 and the PRO6. This includes the hugely successful VCA and POPulation groups, which allow users to navigate channels intuitively, without the confusion caused by layers or pages of faders. It features the legendary and much-loved Midas sound characteristics, which have their roots in the classic Midas analogue consoles. The PRO9 also benefits from the same comprehensive choice of effects and dynamics processing as the PRO6 and XL8, including the acclaimed XL8 compressor styles. Expandable modular connectivity means the system can be upgraded to meet any applications.

PRO9 Configuration:
- 288 inputs x 294 outputs (max capacity) point-to-point routing anywhere within the Network
- 80 primary inputs
- 8 return inputs
- Up to 104 simultaneous mix channels
- 16 Group/Aux & 16 Matrix - 32 Mixes in "monitor" mode
- 35 mix busses
- 10 VCAs
- 6 POPulation Groups
- 8 FX devices
- Up to 36 KT Graphic EQ's - with optional DN9331 Rapide control
- Configurable "Area B"
- Standard surface I/O (3 configurable card slots)
  DL443 "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL442 Analogue Output "O" card
- Stage I/O
  DL351 56 in / 8 out configurable I/O
  DL451 24 in configurable I/O
- Dual-Redundant HyperMac (192x192) CAT5-e digital snake included
- Fibre Optic connections
- Control centre supplied in flight case
- 16U flight case supplied for DL371 DSP and DL351 I/O**

Additional I/O Box Options:
- DL431 24 in 5 way split: fixed configuration I/O
- DL251 48 in / 16 out fixed configuration I/O

I/O Card Options:
- DL441 Analogue Mic / Line Input "I" card
- DL442 Analogue Output "O" card
- DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
- DL452 AES/EBU Input and Output "D" card
- DL444 8 Analogue Mic In and 8 Analogue Line Out "D Sub" card

- Option of 150m Fibre Optic cable

Control Centre Weight and Dimensions:
Width 1365mm x Depth 924mm (53.7" x 36.4") Weight: 97Kg (213.4lbs)*
*weights are approximate and out of flight case
** Packing may vary by territory

Accessories:
- Klark Teknik DN9331 Rapide Graphic Controller
- Klark Teknik DN9696 96 track High Resolution Audio Recorder
- Klark Teknik DN9650 Network Bridge (MADI, Dante, Aviom, Ethersound, CobraNet)

Audio System Engine
Midas DL371

The PRO Series processing engine is a 7U 19" rack mount unit, which houses up to 7 audio processing modules and routing hardware. Employing advanced FPGA architecture, it has three removable power supplies, only two of which are required for full operation. The power supplies are auto-voltage sensing, auto-switchover, hot-swappable, are fitted with locking AC connectors and are identical to, and therefore interchangeable with the PSU's in the PRO Series Control Centre.

The engine has dual-redundant HyperMac ports (both CAT-5e and Optical on the PRO6 and PRO9) which provides the digital equivalent of a 384-way (192 in + 192 out) multi-core between the stage and FOH. There are also eight AES50 ports, which facilitate connections to the PRO Series DL351 stage box, and/or other AES50 I/O hardware. It is also possible to use any PRO Series with DL251, DL351, DL451 and DL431 plus the Klark Teknik DN9696 Hi Resolution Audio Recorder and DN9650 Network Bridge.

The processing engine is loaded with 4 modules for a PRO3, 5 for a PRO6 and 6 for a PRO9 in the standard configuration, with an extra-cost option for an n+1 redundant spare module.

Overview:
- One DL371 included in a PRO Series Live Audio System
- N+1 PSU redundancy
- Dual redundant HyperMAC ports
- Eight AES50 ports
- Ethernet tunnel connection
- Word Clock and AES3 sync connections
- Advanced FPGA architecture
- Upgrade options for upgrading a PRO3 to a PRO6 or PRO9 and PRO6 to a PRO9
- 7U
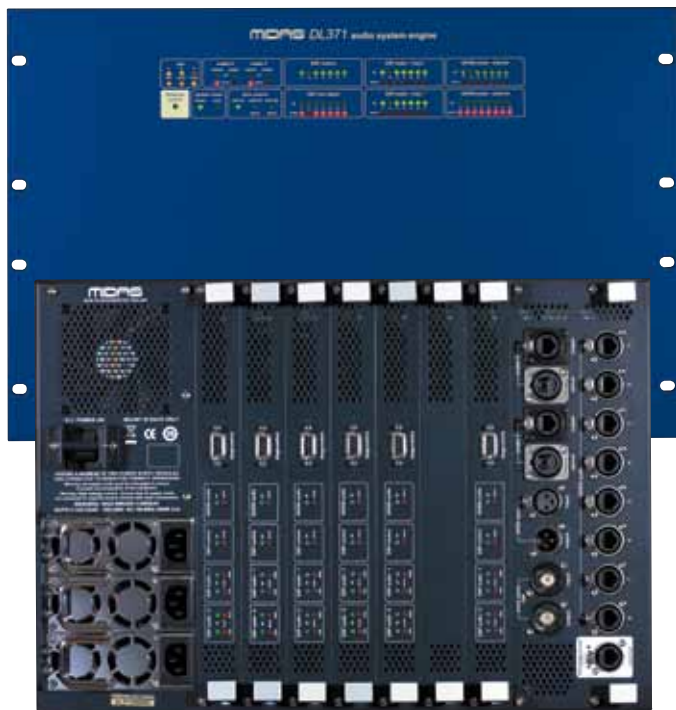
Audio System Modular I/O
Midas DL351

The DL351 is a 7U 19" rack unit, can provide a maximum of 64 audio inputs and 64 audio outputs. It has the same user-configurable card format as the DL451 but has the capacity to house up to 8 cards, which can be any combination of 8 analogue mic/line in, 8 analogue out (XLR), 8 analogue TRS line level in and out, 8 digital in and out (4 AES/EBU pairs) or a 25 pin D sub card with 8 analogue mic/line inputs and 8 outputs.

Midi in, out and thru, and GPIO connections are supplied as standard. Digital audio interface is via 4 AES50 ports, one of which can be configured as a spare redundant connection. Dual redundant power supplies with locking IEC connectors are fitted as standard.

The DL351 can be used with the Midas XL8 and PRO Series of digital mixing systems, or as a stand-alone AES50 audio interface in a Midas snake and audio distribution system with remote control via Ethernet.

Overview:
- 64 audio inputs*
- 64 audio outputs*
- Five card options of
  DL441 Analogue Mic / Line Input "I" card
  DL442 Analogue Output "O" card
  DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL444 "D Sub" card, 8 analogue mic/line in, 8 line out
- Midi in, out and thru
- GPIO
- Digital snake and distribution network component with redundant connections
- Ethernet control port
- 7U

* depending upon card configuration

Audio System Modular I/O
Midas DL451

The DL451 is a 3U 19" rack unit, which provides a maximum of 24 audio inputs and 24 audio outputs. It has the same user-configurable card format as the DL351 but has the capacity to house up to 3 cards, which can be any combination of 8 analogue mic/line in, 8 analogue out (XLR), 8 analogue TRS line level in and out, 8 digital in and out (4 AES/EBU pairs) or a 25 pin D sub card with 8 analogue mic/line inputs and 8 outputs.

Midi in, out and thru, and GPIO connections are supplied as standard. Digital audio interface is via 2 AES50 ports, one of which can be configured as a spare redundant connection.

The DL451 can be used with the Midas XL8 and PRO series of digital mixing systems, or as a stand-alone AES50 audio interface in a Midas snake and audio distribution systems with remote control via Ethernet.

Overview:
- 24 audio inputs*
- 24 audio outputs*
- Five card options of
  DL441 Analogue Mic / Line Input "I" card
  DL442 Analogue Output "O" card
  DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card
  DL452 AES/EBU Input and Output "D" card
  DL444 "D Sub" card, 8 analogue mic/line in, 8 line out
- Midi in, out and thru
- GPIO
- Digital snake and distribution network component with redundant connections
- Ethernet control port
- 3U

* depending upon card configuration

Audio System Modular I/O
Midas DL I/O Card Options

Audio connections on analogue consoles are comparatively inexpensive, a mixing console will have as many insert points and direct outputs as there are input channels. Not so with digital mixing consoles.

Insert points and direct outputs require A-D and D-A converters, as well as physical connections, so most manufacturers limit the number of these to a mere handful of options. One advantage of Midas' network approach to digital mixing is that the number and configuration of I/O's can be easily expanded for complex applications, but easily streamlined for less demanding, more straightforward duties.

The modular construction of the I/O system means that the right number and correct type of connections are always available, and always in the right location. Midas modular I/O cards are interchangeable between different hardware housings and all feature Midas audio performance and reliability, plus some extended usability features such as the connection locator LED found on all XLR I/O cards.

DL441 Analogue Mic / Line Input "I" card: for DL451, DL351 and PRO Series surface

- 8 analogue mic / line inputs featuring premium quality remote control Midas mic pre's
- With +48V and "check" remote indicators
- Ultra-low latency 24-bit 96kHz A-D convertors

DL442 Analogue Output "O" card: for DL451, DL351 and PRO Series surface

- 8 analogue XLR outputs with "no audio" mute and remote "check" LEDs
- High current drive capability for long cable runs
- Ultra-low latency 24bit 96kHz D-A convertors

DL443 8 Analogue Line In and 8 Analogue Line Out "TRS" card: for DL451, DL351 and PRO Series surface

- 8 line level inputs and 8 outputs in a single card form factor
- All balanced TRS sockets
- Outputs feature "no audio" mute LEDs

DL452 AES/EBU Input and Output "D" card: for DL451, DL351 and PRO Series surface

- 8 inputs and 8 outputs in a single card form factor on 4 AES / EBU in / out pairs
- Inputs feature sample rate converters and sync to external clock
- Outputs feature sample rate converters, selectable word length and choice of clock (internal 96kHz or 48kHz or external)

DL444 "D Sub" card: for DL451, DL351 and PRO Series surface

- 8 inputs and 8 outputs in a single card form factor
- 25-pin "D" sub connectors for inputs, outputs, and remote +48V and "check" LEDs
- Mic / line inputs feature premium quality remote control Midas mic pres with +48V and "check" remote indicators
- Outputs are balanced with high current drive capability for long cable runs
- Ultra-low latency 24-bit 96kHz A-D and D-A convertors

Audio System Fixed Format I/O
Midas DL251

The DL251 is a 5U fixed configuration I/O unit with 48 mic/line inputs and 16 mic/line outputs. The DL251 is limited to analogue connections and provides a more cost-effective solution for those not requiring the flexibility of Midas modular I/O hardware.

MIDI in, out and thru and one Ethernet control port are fitted as standard. Three AES50 ports handle the (n+1) redundant digital audio interface. The DL251 is capable of being switched between 96kHz and 48kHz via a front panel switch. On the rear panel there is a MUTE all outputs button for on stage re-patching. The unit is also equipped with dual redundant PSUs.

Overview:
- 48 remote control mic/line audio inputs / 16 audio line outputs fixed configuration
- Switchable between 96kHz and 48kHz sample rates
- Midi out and thru
- Three AES50 ports
- Ethernet control port (using Midas protocols)
- Dual redundant PSUs
- Digital snake and distribution network component
- DL252 is a 48 audio outputs / 16 audio inputs configuration for snake applications
- 5U

Audio System Input Splitter
Midas DL431

The DL431 is a 6U 19" rack fixed configuration unit which features 24 mic / line inputs. Each input feeds three separate preamps, two with separate gain controls, the third being fixed gain.

The two variable-gain preamps feed separate ADCs which then pass 96kHz digital audio to the AES50 ports. Four discrete AES50 outputs supply dual redundant digital audio to AES50 networks, and allow for easy connection to any AES50 device (e.g. HD recorder, Network Bridge or mixing console).

Two balanced analogue splits (sourced post each mic amp) are provided on the rear panel. The third, fixed gain, preamp feeds a transformer isolated split on the front panel for recording or broadcast applications. The two variable gain pre-amps are remote controllable from two separate locations e.g. FoH and Monitor positions. Front-panel controls and local monitoring with integral headphone amplifier also makes the DL431 usable as a stand-alone device. Integral dual-redundant power supplies ensure peace of mind at all times.

Overview:
- Front-panel control and local monitoring (can be used as a stand alone unit)
- Integral headphone amplifier
- Dual redundant PSUs
- Integrated three way analogue mic splits
- Four AES50 ports
- Digital snake and distribution network component
- 6U

Digital Audio Format Converters
DN9650 and DN9652

The DN9650 network bridge allows the AES50 interfaces on Midas XL8 and PRO Series digital audio systems, Klark Teknik's DN9696 high resolution audio recorder and all Midas I/O units to connect to third party multichannel digital audio networks. Supported formats include MADI, Audinate* Dante, Aviom* A-Net, Cirrus Logic* Cobra Net and Digigram* EtherSound utilising network modules designed and manufactured by Lab X Technologies*, Audinate* and Cirrus Logic*.

The DN9652 dual network bridge replaces the AES50 connections with a slot for a second network module. This creates a unique product enabling conversion between many multi-channel digital audio formats, for example MADI to Dante or CobraNet to Ethersound. The DN9652 will find a myriad of uses solving all kinds of 'hard to fix' networking problems in a simple manner requiring little networking skill to deploy.

Both models include an astonishing 144 channels of high performance sample rate conversion and independent synchronisation for the two interfaces, including black burst, word clock and AES3. The minimal configuration requirements are simply set up using a standard web browser and an auto-configured Ethernet interface to the unit.

Overview:
- Units support
  AES50
  MADI
  Audinate Dante
  Aviom A-Net
  Cirrus Logic CobraNet
  Digigram EtherSound
- 144 Channels of high performance sample rate conversion
- Independent Synchronisation: including black burst, word clock and AES3
- Exemplary Klark Teknik audio performance
- 1U

* All trademarks acknowledged.