

PRO2
LIVE AUDIO SYSTEM



PRO2
LIVE AUDIO SYSTEM **FC**

 **MIDAS**



matrix 1 matrix 2 matrix 3

FLIP

to faders with output select

advanced channel navigation

FX

access with output select

ADVANCED

LAST 1



Introducing the PRO2 and PRO2C

Think of an audio mixing system which offers unprecedented levels of control integration in terms of speed and ease of workflow. Think of an audio mixing system which has the most intuitive, operator-driven user-interface yet imagined, yet costs no more than an ordinary console. Think of an audio mixing system which has all of this, and sounds like a Midas. Think of the Midas PRO2 - Radical thinking - It's simple!

The Midas PRO2 and PRO2C may be the smallest and least expensive Midas digital consoles so far, however, they represent a quantum leap forward in both technology and in concept for the art of audio mixing.

PRO2 can be operated in a number of different ways, depending upon the experience, ability and willingness of the operator to adopt new ideas. In "normal" mode, PRO2 behaves in a manner similar to many other digital consoles. Engineers who are new to Midas digital can relax, enjoy the PRO2's sample-synchronous audio quality, and operate the console from well within their comfort zone. As an operator becomes increasingly familiar with the console, they can activate the advanced navigation features which enable access to undreamt of levels of ease and speed of workflow on an audio console. Digital or Analogue!

PRO2 is also available in minimum-footprint compact form, PRO2C. PRO2C is essentially the same mixer, the only difference being the physical size of the user interface. The PRO2C features all of the facilities of it's larger sibling, yet this 64 channel mixer is no larger than many 24 channel analogue consoles.

MIDAS DL251 audio system I/O

DL251 audio system I/O control panel with various indicator lights and buttons.

DL251 audio system I/O	DL251 audio system I/O	DL251 audio system I/O	DL251 audio system I/O	DL251 audio system I/O	DL251 audio system I/O
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DL251 audio system I/O control panel with various indicator lights and buttons.



Mixer

In addition to the 56 primary input channels, PRO2 features 8 aux returns, all of which feature 4-band parametric EQ and insert points. These 8 aux returns can be used as returns for the PRO2's internal FX processors, or as additional mic channels, if enough mic inputs are available on the network I/O hardware.

A total of 64 input channels have routing to 27 mix buses. These buses comprise 16 user-configurable aux buses, which can be mixes, subgroups or mix minus groups, and the 8 matrix buses. The Matrix buses source from inputs, as well as groups, and so can be used as additional auxes (monitor mix and FX sends). All buses can be linked as stereo pairs (except the MONO bus). All audio paths can be routed to multiple destinations and the console format can be reconfigured live on a scene-by-scene basis.

Hardware

The Console is a typical robust Midas steel frame, which employs engineering principles similar to those employed on established products such as PRO6 and XL8. The frame is fitted with two removable power supplies, only one of which is required for full operation. The power supplies are auto-voltage sensing, auto-switchover, fitted with locking AC connectors, and are hot-swappable.

The standard DL251 remote stagebox included with each PRO2 system has 48 Midas mic/line inputs, 16 analogue XLR outputs and features dual power supplies as standard. The DL251 can be located up to 100 metres (330 feet) cable distance from the console. You can choose from a range of optional I/O including the DL431 Mic Splitter so you can tailor the I/O hardware to your chosen application.

Overview

- 56 mic/line inputs with Midas mic preamps
- 64 simultaneous input processing channels
- 32 analogue outputs (including 2 stereo local monitor outputs)
- 3 AES3 outputs
- 2 AES3 inputs
- 27 sample-synchronous, phase-coherent mix buses
- 6 multi-channel FX engines
- Up to 28 Klark Teknik DN370 31-band Graphic EQs
- Full-colour 15" daylight-viewable display screen
- 8 VCA (Variable Control Association) groups
- 6 POPulation groups
- 192 MCA (Mix Control Association) groups
- 96kHz 40-bit floating-point processing throughout
- 48 in 16 out 100m dual Cat-5E AES50 digital snake included

Connectivity

The fixed-format, integrated audio I/O on the rear of the surface features the following connections:

- 8 x analogue mic/line inputs with Midas mic pre's (XLR)
- 8 x analogue outputs (XLR)
- 2 x AES3 inputs
- 3 x AES3 outputs (XLR)
- 6 x AES50 ports (RJ45)
- Local monitor A L&R and Local monitor B L&R (XLR)
- Left, Right and Mono master outputs (XLR)
- Talk output (XLR)
- Talk Mic input (XLR)

Additional non-audio rear panel connections are:

- MIDI in, out and through
- AES3 clock in and out (XLRM & XLRF)
- Wordclock in and out (2 x BNC)
- Video (black burst) sync in (BNC)
- DVI video output from console screen (DVI)
- Ethernet control port (Ethercon RJ45)
- USB port (USB A)

I/O Options

- DL252 16in / 48 out fixed configuration I/O
- DL351 Up to 64 in / 64 out configurable I/O (8 card slots)
- DL451 Up to 24 in / 24 out configurable I/O (3 card slots)
- DL431 24 in 5 way split: fixed configuration I/O

Klark Teknik Accessories

- Klark Teknik DN9331 Rapide remote Graphic EQ fader controller
- Klark Teknik DN9696 high resolution audio recorder
- Klark Teknik DN9650 digital audio format convertor

PRO2

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The PRO2 features 16 input faders, which can easily be increased to 24 by using the EXTEND button to deploy 8 more input channels on what are by default the VCA faders. An operator used to "layers" of faders can programme the POPulation groups to mimic this way of operation, so navigating between 3 layers of 24 input faders to access the PRO2's 64 input channels.

Remote Control App







PRO2C has the same feature set as the PRO2 but has 8 input faders that can be increased to 16 by using the EXTEND button.

Daylight Viewable Display Screen

Assignable Controls

Fader EXTEND Button

Screen Access Buttons

100mm Motorised Faders



8 Mic/Line Inputs

8 Line Outputs

8 Master and Local Outputs

2 AES3 Inputs and 3 AES3 Outputs

MIDI

Multiple Clocking Options



6 AES 50 Ports



Detail Strip

Input Gains

Dynamics Processing

Equalisation

GLOBAL TAP-TEMPO Button

Advanced Navigation

Six POP Groups

Eight VCAs

Area 'B'



Dual Redundant Power Supplies

USB

Ethernet Control

DVI Video Out

aux 9 aux 10 aux 11 aux 12 aux 13 aux 14 aux 15 aux 16

6 / level / pan level

7 / level / pan level

8 / level

matrix 1 matrix 2 matrix 3 matrix 4 matrix 5 matrix 6 matrix 7

TALK MUTE SOLO SELECT

advanced channel navigation

FLIP to faders with output select

FX access with output select

advanced mix bay navigation

GEO access with output select

MCA

population and mute groups

intro SUPP OH'S CUE

1 2 3 4 5 6

storage USB key

LAST store

scroll

mix bay VCA OUTPUT

mix



Navigating the Channels

The concept of “paging” or “layering” is eliminated. Instead the operator is invited to create groups of mixes or musically related channels, which are structured around the process of mixing the show. This is preferable to locating target channels from arbitrary “layers” or “pages” which have no logical delineation and often start and end at inconvenient points (i.e. half-way through a logical sequence of inputs).

There are three types of groupings available on PRO2. VCA (Variable Control Associations) MCA (Mix Control Associations) and POPulation groups. These groups are identified using colour coding and high-visibility labelling and further supported by the full-colour daylight-visible TFT screen. Selecting a VCA or POP group will bring all of the members of that group to the designated area of the control surface, populating from the VCA area outwards. If the group has more members than visible input channels, the group can be viewed either by scrolling the input faders, or pressing the EXTEND button. This will populate the VCA fader area with the additional input channels.

Advanced Navigation Modes

The PRO2 features three modes of channel navigation. These options make it possible for an engineer to easily and efficiently mix a large number of inputs on a very compact control surface, and makes the PRO2 Midas' most dynamic user-interface to date. The Advanced navigation modes are accessed using the four large illuminated advanced navigation hardware buttons.

When the FLIP button is engaged, selecting an output will flip the input faders to become the input channel send levels to the selected output.

When the GEQ NAVIGATION button is engaged, selecting an output which has a GEQ assigned, will present the GEQ on the VCA faders. Scrolling the VCA faders left and right will provide access to all 31 GEQ faders. If FADER FLIP is also engaged, the input channel faders will become the contributions to the selected mix. If HIDE UNASSIGNED CHANNELS is selected, the operator will only be presented with input channels which are sending to that mix.

When the FX NAVIGATION button is engaged, selecting an output which is patched to an internal FX processor will deploy that FX processor on the screen and map the ASSIGNABLE CONTROLS to it. If FADER FLIP is also engaged, the input channel faders will become the contributions to the FX processor. If HIDE UNASSIGNED CHANNELS is selected, the operator will only be presented with input channels which are sending to that FX processor.

If the MCA button is engaged, when an output (mix) is selected, the MCA faders for that output are deployed on the VCA fader bank.

MCA groups (Mix Control Association groups), operate similar to VCA groups, but are specific to the selected mix. When the PRO2 is in Advanced navigation mode, and MCA navigation is engaged, the MCA faders control

the contributions of their members only to the currently selected bus. This is a unique and powerful mixing tool, which puts the PRO2 in a class of it's own for innovation and usability. PRO2 has the ability to make working with the console as simple as requirements dictate, or as deep and complex as a user desires. To introduce the concept, think of multilayered 3-D VCAs, or a mixing console with 200 linked VCA groups! Both are valid starting points.

Hide/show unassigned channels when flipped. When in this mode, and the FLIP button is engaged, selecting an output flips the input faders to become the input channel send levels to the selected output. The console will only populate with the input channels which are assigned to the selected output.

Automation

One of the most critical requirements for Theatre applications is the power and flexibility of console automation. The Midas PRO2 has taken into consideration these very specific requirements, and features the same automation software as the XL8, which is itself no stranger to Broadway!

The PRO2's automation system can store and recall up to 1000 snap shot scenes. These contain the audio parameter values for every control on the console as well as the network routing, configuration of the FX rack, and the format of the mixer itself, all of which is scene-specific.

Hardware automation “safe” buttons are provided to enable the operator to quickly isolate selected processing areas from recall should this be required during a performance. In addition to these, the store and recall of scenes can be “scoped” such that only the areas that the operator wants to store or recall are affected (all other controls remaining in their current state).

Channel settings can be edited in advance of recall (across all scenes) from the SHOW EDITOR screen, and scenes can be re-ordered, inserted and deleted, simply and quickly without overwriting their designation. Scenes can be recalled instantaneously, with no discernible drop in audio, or via complex crossfade options, including programmable surround-sound panning events.



assignable controls

BV 1

BV 2

BV 3

SOLO

SOLO

SOLO

SOLO

SOLO

ALT

channel

channel

channel

10



Assignable Controls

Between the screen and the fader bank are the 8 assignable rotaries and buttons. These controls are scrolled using the vertical arrow keys, and address the function of all primary rotary and switch functions on the channels populating this area of the console. The assignable controls adopt colour cues depending upon their function. The ALT button selects the alternative function (if one is available) for each area. Assignable rotaries can be used for input gain, compressor and gate threshold, aux send levels, pan.

Area B

To further enhance an already dynamic and flexible user-interface, PRO2 features an AREA B. By default, these are the Left, Right and Mono master faders. However, as these faders are seldom used once the show is running, any of the VCA or POPulation groups can be deployed here as an alternative to the primary fader area. This allows the operator to "stick" high-priority channels onto this area of the surface for instant access.

Display Screen

The high-resolution screen remains visible even in direct sunlight. In this aspect, the PRO2's visual support is exceptional, as most conventional consoles become difficult, or impossible to operate in high ambient lighting.

Visual feedback for the entire system is provided by the screen. Pressing the HOME key (just to the left of the assignable controls) instantly displays the console overview screen, which keeps all vital information (all metering, all fader positions, mutes and solos,) in view at all times.

Detail Panel Area

The detail panel is a vertically oriented channel strip, with an almost identical layout to the PRO3,6 and 9. The controls are configured in a logical, signal-path sequence and are easily identified by their relative positions. Both analogue users and digital adopters will find no difficulty using the large multi-colour LCD channel select buttons for navigating the console.

Input Gains

The PRO2 boasts two input gains per channel. First is the remote analogue gain for that wonderful Midas mic amp, the second is a digital gain. Set the analogue gain for the desired amount (if any) of that famous Midas "warmth", then use the digital gain to trim to your preferred gain structure.

Equalisation

Midas digital EQ features fully interpolated controls, which re-create the original phase-shift as experienced when working on the worlds' best-loved analogue consoles. Each input channel has 4-band parametric EQ, with a choice of four different filter types for both the high and low filters. These powerful EQ options enable the user to employ EQ filters which emulate the sound of historic Midas consoles, or, freed of the limitations

of analogue circuitry, choose advanced digital filter types.

Dynamics Processing

The dynamics processing on the PRO2's input channels is identical to the Midas XL8. Each input channel features a frequency-conscious gate and a choice from four different compressor algorithms. Further creative expression is available, as these compressor options feature variable knee, internal and external sidechain filtering, and colouration artefact options.

Output (bus) compression offers a choice of five different options. These compression algorithms are designed to provide the engineer with a broad pallet of options for maximum creative potential, right down to the visual display on the screen changing to support the different styles. More dynamics processing options are available in the PRO2's FX rack, including multiband compression and dynamic equalisation.

FX

The PRO2's 40 bit floating-point audio processing hosts a wide choice of virtual FX devices, which range from dual-mono delay units, stereo modulation and many diverse reverb FX, multiband compression, dynamic EQ and multichannel dual-function dynamics processing. All FX processors are custom-designed to function within the Midas automatic latency compensation system. This ensures a phase-coherent sample-accurate mix regardless of whether the FX devices are used as channel inserts or on a send-and-return basis.

Delay FX can be individually configured to synchronise to the PRO2's GLOBAL TAP-TEMPO hardware button. This makes on-the-fly changes to delay effects child's play.

Even more FX options are under development for future firmware releases.

Surround Sound

In addition to normal stereo and SIS operation, the PRO2 can operate in one of three surround sound modes:

Quad Four-channel L-R front plus L-R rear
LCRS Four-channel L-C-R plus single rear channel
5.1 Six-channel L-C-R plus Sub plus L-R rear

All three surround modes feature divergence control to tailor the depth of the surround panning. Dynamic surround panning can be implemented using the PRO2's trackball, or the USB pointing device of your choice.

Remote Control

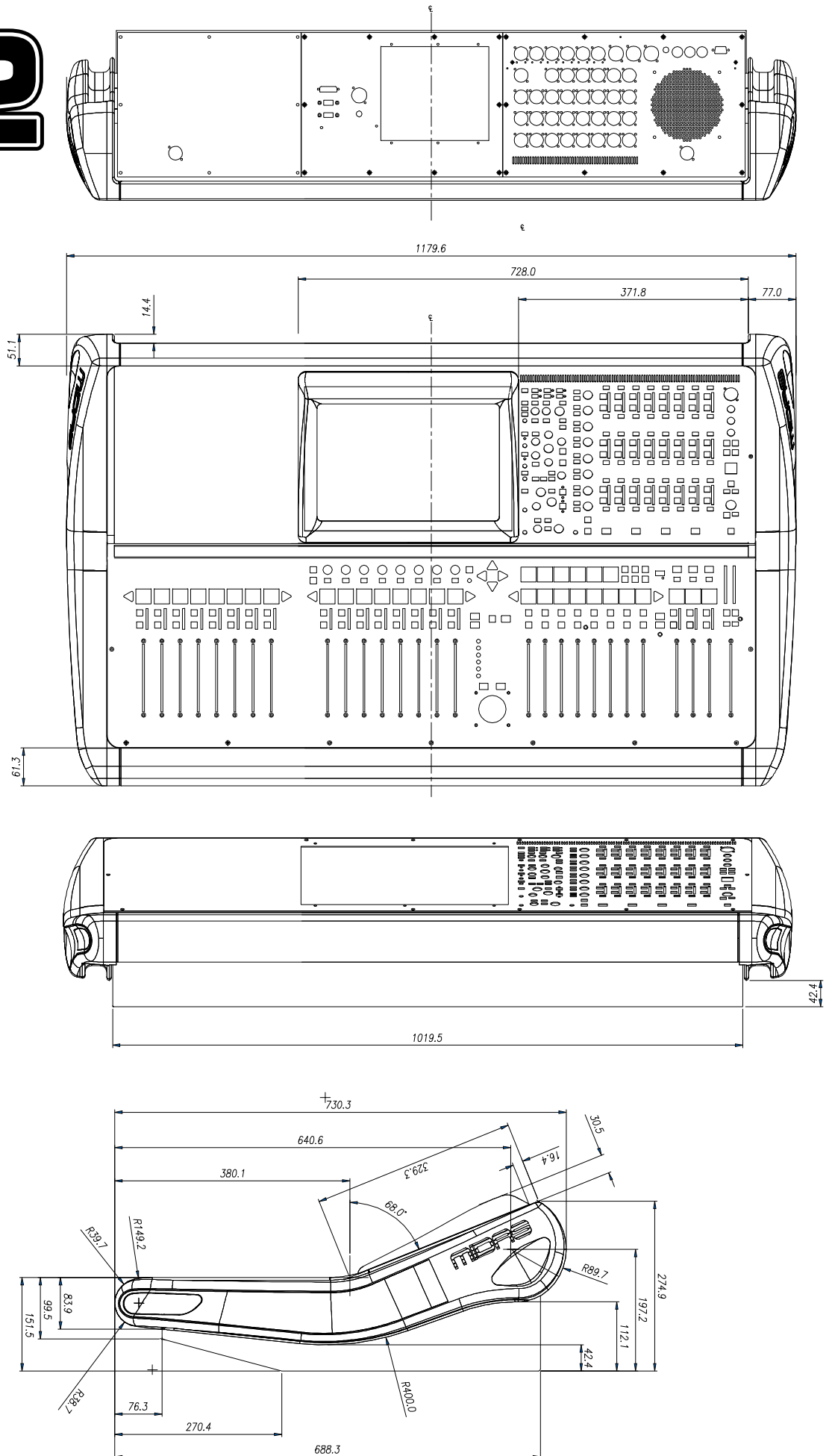
Remote control of the PRO2 can be achieved using an iPad and wireless access point. Install the PRO2 remote app on the iPad and connect the WAP to the PRO2's Ethernet control port, having configured the wireless link.

PRO2

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Dimension Overview

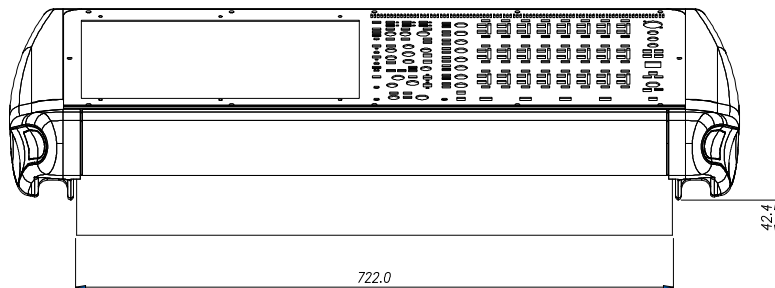
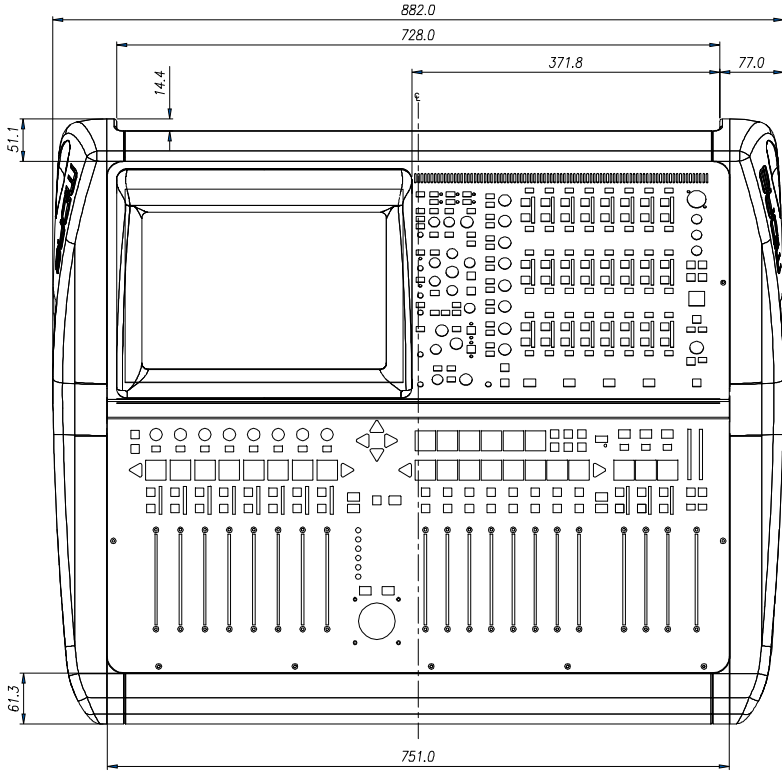
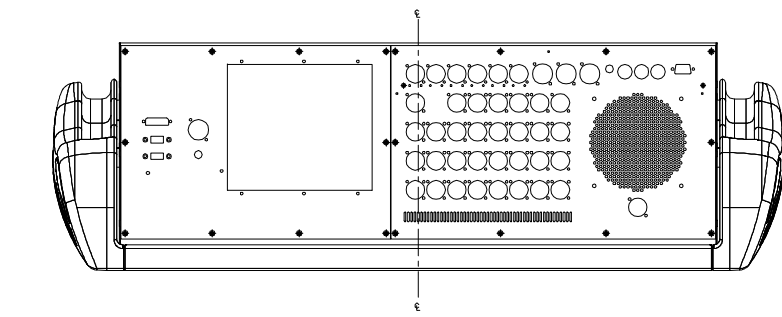
PRO2:
 Width 1179.6mm (464.4")
 Depth 730.3mm (287.5")
 Height 247.9mm (108.2")
 Weight 46kg (101.4lbs)



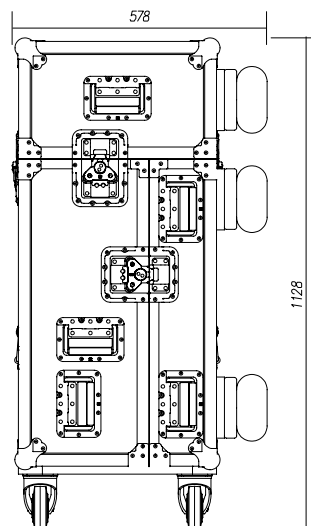
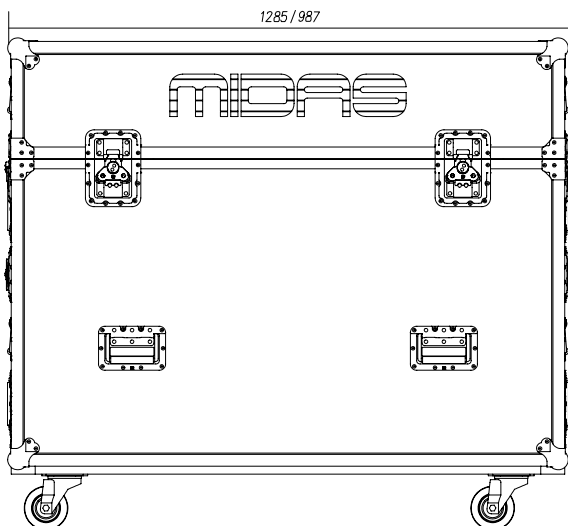
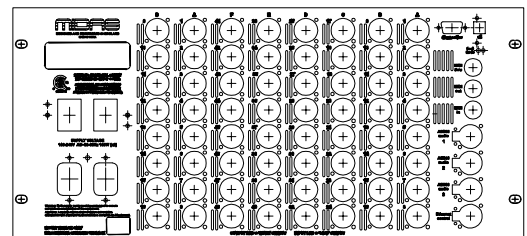
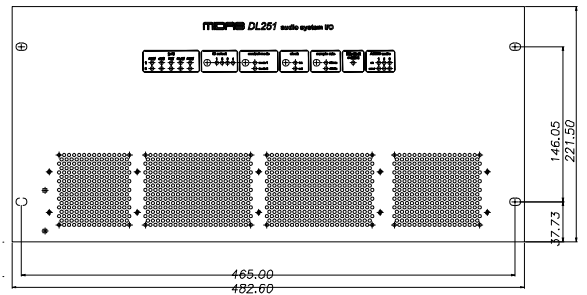


Dimension Overview

PRO2C:
 Width 882mm (347.2")
 Depth 730.3mm (287.5")
 Height 247.9mm (108.2")
 Weight 37kg (81.57lbs)



DL251



Please note: all measurements are in millimetres. Flight case and DL251 not to scale.

Architect's and Engineer's Specification

The PRO2 and PRO2C standard package comprises of:-

27 Bus Console (plus 4 solo),
64 main inputs (or 56 input and 8 aux return)
56 XLR mic/line inputs,
24 XLR line outputs,
2 AES/EBU inputs
2 AES/EBU outputs
1 Console in flight case (TP version only)
4 interconnecting (N=1) rack Cat5-E copper cables

The system shall comprise of robust steel, 19" rack mountable, modular units that can be interconnected via N+1 or dual redundant cables to provide a scalable audio signal network with signal processing and mixing capability. A central control surface shall be provided consisting of multiple modules housed in a robust steel chassis that can be located well away from the rest of the system and connected by dual redundant multi-channel digital fibre or copper "snake".

The entire system shall be fault tolerant such that no single interconnecting cable fault can stop the system operating to its full capacity. All external interfacing, internal processing and system controls shall be modular such that loss of power to any single module only affects that module allowing the remainder of the system to operate normally. The operational status of all the system modules and interconnections shall be continuously monitored and reported at the control surface.

The system shall be configurable to meet all of its I/O, processing and control surface requirements within an easily portable solution that is fast to set up and only requires the interconnection of two digital audio cables (three for redundancy) and power to make it operational.

The system shall be expandable and capable of sourcing inputs and driving outputs from multiple locations so that for example all inputs can source their signal from a hard disk recorder for sound checking but switch over to microphone feeds for the main live show event.

The system shall be capable of mixing 56 primary input channels and 8 auxiliary input channels simultaneously to 24 main bus output channels, with equalisation every channel and dynamic processing on all outputs and primary input channels. 6 effects processors shall be included that can be inserted into any channel path with the ability to add additional external insert points to any of the channels, as desired.

Primary Input Channel Functions:-

Input Channel Hi Pass selectable
10Hz to 400Hz swept slope
12dB/Oct or 24dB/Oct

Input Channel Lo Pass selectable
2kHz to 20kHz swept slope
6dB/Oct or 12dB/Oct

Input Channel Treble
Parametric Operation
Frequency 1kHz to 25kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Shelf Operation
Frequency 1kHz to 25kHz swept
Gain +16dB to -16dB
Soft, Classic or Bright (minimum harmonic disruption) curves

Input Channel Hi Mid
Parametric Operation
Frequency 320Hz to 8kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Input Channel Lo Mid
Parametric Operation
Frequency 80Hz to 2kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Input Channel Bass
Parametric Operation
Frequency 16Hz to 400Hz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Shelf Operation
Frequency 16Hz to 400Hz swept
Gain +16dB to -16dB
Warm, Classic or Deep (minimum harmonic disruption) curves

Input Channel Compressor
Peak, Linear, RMS,
Vintage modes
Thresh -50dBu to +20dBu
Attack 200µs to 20ms
Release 50ms to 3 Sec
Ratio 25:1 to 1:1
Knee 4dB, 12dB or 40dB
Gain 0dB to +24dB

Side chain source
selectable + filter
Frequency 50Hz to 15kHz swept
Bandwidth 1/3, 1 or 2 Oct

Input Channel Gate
Peak mode
Thresh -50dBu to +20dBu
Attack 10µs to 20ms
Hold 5ms to 2 Sec
Release 2ms to 2 Sec
Range 100dB to 0dB
Side chain source
selectable + filter
Frequency 50Hz to 15kHz swept
Bandwidth 1/3, 1 or 2 Oct

Auxiliary Return Channel Functions:-

Aux Return Treble
Parametric Operation
Frequency 1kHz to 25kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Shelf Operation
Frequency 1kHz to 25kHz swept
Gain +16dB to -16dB
Soft, Classic or Bright (minimum harmonic disruption) curves

Aux Return Hi Mid
Parametric Operation
Frequency 320Hz to 8kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Aux Return Lo Mid
Parametric Operation
Frequency 80Hz to 2kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Aux Return Bass
Parametric Operation
Frequency 16Hz to 400Hz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Shelf Operation
Frequency 16Hz to 400Hz swept
Gain +16dB to -16dB
Warm, Classic or Deep (minimum harmonic disruption) curves

Output Channel Functions:-

Output Channel Band 6
Parametric Operation
Frequency 16Hz to 25kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Lo Pass Operation
Frequency 16Hz to 25kHz swept
Slope 6dB/Oct or 12dB/Oct

Shelf Operation
Frequency 16Hz to 25kHz swept
Gain +16dB to -16dB
Mode soft curve

Output Channel bands 3,4,5
Parametric Operation
Frequency 16Hz to 25kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Output Channel Band 2
Parametric Operation
Frequency 16Hz to 25kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Hi Pass Operation
Frequency 16Hz to 25kHz swept
Slope 24dB/Oct

Output Channel Band 1
Parametric Operation
Frequency 16Hz to 25kHz swept
Gain +16dB to -16dB
BW 0.1 Oct to 3 Oct

Hi Pass Operation.

Frequency 16Hz to 25kHz swept
Slope 6dB/Oct or 12dB/Oct.

Shelf Operation

Frequency 16Hz to 25kHz swept
Gain +16dB to -16dB
Mode soft curve

Output Channel GEQ

8 available in place of PEQ (above)
31 Bands.
1/3 Oct. Proportional Q
Lo Pass Frequency 2kHz to 20kHz swept
Slope 6dB/Oct or 12dB/Oct
Hi Pass Frequency 20Hz to 500Hz swept
Slope 6dB/Oct or 12dB/Oct

Output Channel Dynamic

Pk, Linear, RMS, Vintage and Shimmer modes
Thresh -50dBu to +20dBu
Attack 200µs to 20ms
Release 50ms to 3 Sec
Ratio 25:1 to 1:1
Knee 4dB, 12dB or 40dB
Gain 0dB to +24dB

Side chain source
selectable + filter
Frequency 50Hz to 15kHz swept
Bandwidth 1/3, 1 or 2 Oct

Effects Channel Functions:-

Multi Channel Effects 6 available configurable as
Modulated delay effects
Complex delay, reverbs
Advanced dynamics

Primary Input / Output Unit:-

The primary input/output unit shall be a 5U rack box with dual-redundant universal mains power supplies and connections and that interfaces 48 bi-directional system signals to external analogue equipment using the balanced 3-pin XLR format: N+1 bi-directional digital AES50 protocol system connections shall be provided on XLR Ethernet connectors.

MIDI inputs and output shall be provided.

Control of gain and all preamplifier functions on the balanced XLR mic / line inputs shall be available remotely from the system control surface.



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