DIMENSION ONE
SURROUND SOUND TELEVISION AUDIO CONSOLE

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Wheatstone is a trusted builder of audio-for-television consoles and has been for more than two decades.

So, when we decided that design considerations for Dimension One were to be wide open, we were coming from a position of proven experience to create the ultimate small-footprint audio mixer with EVERYTHING a television facility could need to serve the multiple media requirements a modern station has to address.

Moving the DSP and logic outside of the console was a natural – Wheatstone has been doing that with our Network First™ Initiative for years.

With Dimension One, you get an incredibly nimble, router-based networkable console that's flexible, expandable and incredibly easy to use and service. One that is future-proof and will keep you up and running no matter what.

AND, Dimension One is priced so that it fits perfectly in every medium sized facility or remote truck.

DIMENSION ONE
SURROUND SOUND TELEVISION AUDIO CONSOLE

Today's television productions demand more from an audio console than ever before. More power. LOTS of power. Smaller footprint. More affordable. MUCH more affordable. Completely accessible. Built to last using components that are trusted and proven. That is exactly what Wheatstone delivers in Dimension One.

Drawing on the power of Gibraltar™, Wheatstone's blindingly powerful digital signal processing (DSP) engine, and based on Wheatstone's Network First™ design philosophy, Dimension One offers a feature set never before seen in a console of its class.

The Dimension One control surface uses motorized faders. The surface is layered, so that each fader controls two sources, each of which can be mono, stereo, or full 5.1. Faders can be "paged" together or separately. Each fader also has a "spill function" - if the fader is controlling a 5.1 surround source, this allows its individual channels to spill out onto six separate faders. LCD displays always indicate a fader's current source to eliminate operator confusion.

Dimension One features Automatic Mic Mixing, which automatically optimizes the levels of several microphones during dialogue, and Audio-Follow-Video (AFV), which allows the console to automatically control input channels based on the video source currently being taken. News and sports coverage just became more effortless than ever.

The console features two 5.1 mixing busses. Upmixing and downmixing between stereo and 5.1 sources and busses is built in, along with a full complement of stereo and 5.1 surround panning controls.

Dimension One provides an impressive 16 mix-minus busses and eight AUX sends. Four DCMs (digitally controlled masters) and 16 true audio groups are available. Each input, each subgroup, and each program bus output has equalization and dynamics processing available. A comprehensive confidence feed facility is also included.

- 1,024 channels of digital signal processing

- 72 channels, all 5.1 capable

- Accepts up to 3,072 audio inputs

- Any audio source can connect to any fader

- Any audio source can connect with any kind of signal including: analog line level, analog mic level, AES digital, MADI, SDI, and GPIO

- Automatic Mic Mixing

- Audio-Follow-Video (AFV)

- Upmixing and downmixing between stereo and 5.1

- 16 mix-minus busses

- Eight AUX sends

- Two 5.1 mixing busses

- A full complement of stereo and 5.1 surround panning

- Four DCMs (digitally controlled masters)

- 16 true audio groups

- Each input, each subgroup, and each program bus output has equalization and dynamics processing available

- Each fader also has a "spill" function

- LCD displays always indicate a fader's current source to eliminate operator confusion

Five things you can do with Dimension One that you can't do with similarly-priced consoles of conventional architecture.

1. Assign any source of any type to any fader

2. Hot-swap components without powering down or disassembling

3. Add additional control surfaces which share the same I/O

4. Run automation, even without a physical control surface

5. Switch live, on the fly, between air and protect sources on the same fader

TV Audio Console Comparison

Feature	Conventional	Dimension One
Max Inputs	256	3072
DSP Channels	700	1024
Redundant DSP	NO	YES
Networked I/O	NO	YES
Any source, any fader	NO	YES
Hot-swappable components	NO	YES
Redundant A/B Sources	NO	YES
Easy access for maintenance	NO	YES
All faders 5.1 capable	NO	YES
Sources can be any type	NO	YES
Share I/O without add'l hardware	NO	YES
Audio Follow Video	YES	YES
Auto Mic Mixing	YES	YES
Upgrade control surface only	NO	YES

DIMENSION ONE: Expensive Features/Mid-Market Price

The DSP power and intelligence behind Dimension One's design have enabled us to include features that have never before been seen in a product in this price class. These features, normally seen only on high-end TV audio consoles, afford operator convenience as well as impressive automation capabilities.

Automatic Microphone Mixing

When airing a panel discussion, forum, or other program where many microphones are located close together, an audio operator has his work cut out for him. Simply leaving all the mics open all the time will result in an ugly, comb-filtering effect that will make the room sound hollow. The operator must constantly pay attention to the discussion in progress, and keep unused mics pulled down. There are many opportunities for errors which are obvious to the audience. Automatic Microphone Mixing takes this difficult task out of the hands of the operator. By engaging this feature on each of the microphones, the operator allows the console to monitor the level coming from each microphone and automatically bring up only those that are being spoken into. The rest are kept pulled down to low levels until they become active.

Audio Follow Video (AFV)

Audio Follow Video works in conjunction with the video production switcher or production automation system. When engaged, the audio console will automatically crossfade between inputs as the switcher or automation system cuts or dissolves between video sources. This feature can either supplement the work of an audio operator, allowing him to concentrate on sweetening and other tasks, or in some cases it can stand in for the audio operator during simple operations such as integrating remote broadcasts with a local anchor.

Spill

Usually, it's extremely convenient to be able to control the level of an entire 5.1 surround source package with a single fader. Sometimes, however, it is necessary to individually trim the levels within that package. For example, we might need to knock down the subwoofer level, or increase the center channel gain slightly. On the Dimension One, this is easy. Just press the "Spill" button on the fader. Instantly, the six signals of the 5.1 source will be spread across six separate faders and labeled for you, and the motorized faders will snap to the current levels. Make your adjustment, turn spill off, and everything switches back to normal.

DIMENSION ONE ARCHITECTURE: Network First™

Audio for television, it's been said, is more complicated than video. For every video scene, there are multiple channels of audio that must be routed, mixed, edited and made to sound natural and seamless. This typically involves 5.1 surround sound and many sources, so the need for audio consoles that can handle it all has created boards that have become bloated and inefficient, cramming way too much technology into too small a space (see right). Ironically, to accommodate this, consoles have become physically too big for today's increasingly-cramped production environments. Enter Wheatstone.

With our Network First technology, we've moved everything essential to audio routing, logic and processing out of the console and into a rack, accessible via the network (represented by the cloud at right). This allows a compact, efficient control surface to sit where an overgrown traditional console once sat. It provides facility-wide access to all of your audio, regardless of where it's coming from. You can route any audio source to any fader on any control surface within your network. Additionally, because we've designed our rack cages with front access and full hot-swappability, you'll never need to tear apart a console to upgrade, repair or otherwise access its components. This translates to 100% uptime and unprecedented "futurability".

With all the audio traveling on a network, the ability to physically bring in audio sources from wherever you need via a single Cat-5 cable is realized. Need a dozen inputs from Studio A? Place an I/O box there and plug it into the network. Same with any place there's a mic or audio feed - up to 3,072 of them! Sound ridiculous? See NUMBERS COUNT on the facing page.

Traditional "In Box" Design

Control Surface
Internal routing
Digital Signal Processing
Inputs/Outputs
Logic Functions
Mix Engine

DIMENSION ONE Design

Interactive Digital Network
Digital Signal Processing
Inputs/Outputs
Logic Functions
Mix Engine

Control Surface

Finally, all of this comes together for the operator in a control surface - itself a networked device that connects with a single cable. This surface has the ability to control and manipulate the network and access its audio and processing resources, just as the control surface of a more conventional console controls its inner workings. To the operator, the look and feel is completely familiar.

Since the entire system is modular, its components can live wherever you need them. Multiple control surfaces can access ANY audio from ANYWHERE on the network. No more making concessions in the form of dedicated input strips or physically rerouting inputs for different applications.

Operator Sees

Control Surface

Not Seen By Operator

1,024 Channels of Digital Signal Processing

| Up to 3,072 inputs | All 72 faders are 5.1 capable | Any Input can connect to any Fader |

| Automatic Mic Mixing | Audio-Follow-Video | Two 5.1 Mixing Busses |

| Upmixing between Stereo and 5.1 | Downmixing between 5.1 and Stereo | Stereo and 5.1 Surround Panning Controls |

| Eight Aux Sends | 16 Mix-Minus Busses | 16 True Audio Groups | Four Digitally Controlled Masters |

Equalization and Dynamics Processing Available for Each Input, Subgroup, and Program Bus

DIMENSION ONE DSP: Numbers Count - No Restrictions!

MORE THAN ENOUGH DSP TO DO THE JOB: There are 1,024 channels of processing available in Dimension One. Sound like a lot? It is! For a modern studio, consider that for every input (and there are up to 72 input channels on this control surface) you'll need a minimum of 5.1 channels of processing as well as 2 channels of stereo processing. Add to that processing for EQ, compression, stereo mixing, monitoring, program outputs, etc and you'll see that it all makes sense.

72 inputs x (5.1 [surround] + 2 [stereo]) = 576

NO BLOCKOUTS: Of course having 72 simultaneous inputs for a single production is not an every day occurrence, but since you have completely unrestricted routing capabilities, having all faders available to dial up whatever mix you need means the days of having to block out channels based on input type are a thing of the past.

You're Covered...Up to 3,072 Audio Inputs

EXTREME FLEXIBILITY: With 3,072 audio inputs simultaneously available on the network, you'll never have to repurpose your inputs again. This kind of unrestricted access means your throughput is greatly streamlined AND your flexibility options are SIGNIFICANTLY increased. This is unprecedented in a console of this size and price, making it the perfect choice for any mid-sized studio or remote truck.

The Gibraltar™ Mix Engine is the powerhouse of the Dimension One. Its modular design uses multiple Gibraltar DSP cards to provide the mixing, bussing, and processing power which the control surface presents to the operator. The amount of DSP processing available can be scaled to the size and complexity of the intended installation and to allow for future expansion.

The Gibraltar Mix Engine has an internal, modular power supply and has room for a second one for full power redundancy. A "hot standby" Gibraltar DSP card can also be installed and will seamlessly take over the functions of any failed DSP card.

DIMENSION ONE FAILSAFES: Keeping You Live

REDUNDANT SOURCES: With the A/B source selector provided on each fader, if the primary feed, "A", goes silent, an operator simply presses the "B" source selector to recover audio. Because the system supports such a vast number of inputs, there's room to provide these redundancies without the need for patching or external switching.

REDUNDANT COMPONENTS: If a DSP chip fails in a traditional console, it tends to take the entire card with it, leaving the board dead. Thus, having a backup DSP chip on the same card is not really a solution. With Dimension One, I/O cards can be doubled up, and a hot-spare DSP card can be utilized with automatic failover in the event of a problem with the primary engine. Because any source can be assigned to any fader, even catastrophic damage to a fader module on the console (as from a drink spill or falling object) only means that the damaged faders are out of action. The sources can be rerouted to other faders, and the show goes on.

REDUNDANT POWER: External, rack-mounted, modular power units can be quickly replaced while the console continues to operate. Each of the network components can also be redundantly powered.

DIMENSION ONE Control Surface

Input Module

SOURCE: Rotate the knob to select a source, press the knob to take that source.

A and B sources allow a redundant source to be preset for immediate backup use.

GAIN: Allows gain of an incoming source to be trimmed. PHANT switches phantom power (mic inputs only).

WILD: Programmable knobs and switches which can be assigned to a variety of functions.

BUS-: Allows the channel strip's signal to be subtracted from a bus, creating an automatic mix-minus output.

UPMIX/DOWNMIX: Allows 5.1 sources to be downmixed to stereo, or stereo sources to be upmixed to 5.1 surround.

EQ, GATE, COMP: Activates a parametric equalizer, a noise gate, and a compressor/limiter on the channel strip. Controls are in the master section or can be assigned to WILD controls.

MIX MINUS: Gives a visual indication of which mix-minus busses this channel strip currently feeds.

AFV: Engages Audio-Follow-Video, allowing this channel strip to be switched with video sources.

SET: Selects this channel strip to be modified by controls in the master section.

SPILL: For 5.1 sources, spills the source channels onto adjacent faders for individual control.

PAGE: Switches the channel strip from one page of sources to another individually. This can also be done globally.

DCM: Visual confirmation of DCMs to which this fader has been assigned.

SOURCE DISPLAY: Displays the name of the selected source on this channel strip.

ON: Switches the channel strip's audio path on and off.

A-MIX: Press to enable this fader to participate in automatic mic mixing. Overpress to make this fader the priority source.

PFL: Pre-Fader Listen. Allows a source's audio to be singled out for detailed listening.

FADER: Penny + Giles motorized long-throw fader.

DIMENSION ONE Control Surface

Master Module

EQ, GATE, COMP: Allow a parametric EQ, a noise gate, and a compressor/limiter to be inserted into the mix bus signal path.

SET: Selects this mix bus for modification or adjustment by controls in the master section.

ON: Switches the mix bus signal path on and off.

DCMS: LEDs provide visual confirmation of which DCMs this bus master fader has been assigned to.

PFL: Pre-Fader Listen allows the mix bus to be selected for listening on the PFL bus.

FADERS: Motorized Penny + Giles long-throw faders.

MASTERS: LEDs provide visual confirmation of which output busses this group master has been assigned to.

GRP PAGE: Switches the fader from one page to the other individually (e.g. from Group 3 to Group 11).

EQ/GATE/COMP: Allows a parametric equalizer, a noise gate, and a compressor/limiter to be inserted into the group's signal path.

SET: Selects a group for modification using controls in the master section.

DCMS: LEDs provide visual confirmation of which DCMs this group master fader has been assigned to.

G1-G16: Switches the group master signal path on or off.

PFL: Pre-Fader Listen allows the group to be selected for listening on the PFL bus.

FADERS: Penny + Giles motorized long-throw faders.

DIMENSION ONE Control Surface
Monitor Module

MASTER LEVELS (TOP LEFT): One mix-minus or aux bus can be selected using the MASTERS buttons. With a bus selected:

    TB: Engages talkback to that bus.

    GAIN: Adjusts the master level of that bus.

    PFL: Selects that bus for listening on the Pre-Fader Listen bus.

(TOP RIGHT)

PFL: Adjusts the level of the PFL bus output.

MUTE/DIM: Adjusts the level reduction that results when a monitor section DIM button is pressed.

DEFEAT buttons: The PFL and control room monitor outputs normally mute when a local microphone is selected to prevent feedback. These buttons override that automatic behavior.

TB GAIN: Adjusts the level of the talkback source.

TEST TONES:

    SELECT: Rotary control used to select frequency or level of the test tone.

    FREQ: Display or adjust the tone frequency.

    LEVEL: Display or adjust the tone level.

    ASSIGN: Sends the tone generator signal to a destination with its SET button pressed.

    PINK: Causes the tone generator to output pink noise rather than the selected tone.

    ST ID: Selects a STEREO ID tone.

    ON: Enables the tone generator.

COPY: Settings can be easily copied from one fader strip to another, or to many others, using these controls.

SWITCHED METERS:

    DISPLAY: Shows the name of the source being read by the switched meters on the meter bridge.

    SELECT: This rotary control allows selection of a new source for the switched meters.

    TAKE: Takes the selected source.

EQ controls: Four fully parametric EQ bands with frequency, bandwidth, and boost/cut controls. The upper and lower bands can be configured as shelving equalizers by switching on the green "SHELF" buttons. These controls operate on the signal which has its SET button pressed.

PHASE REVERSE: These buttons invert the left or right channel phase of the selected source.

HPF: Frequency selector and on/off button for a 24dB/octave Butterworth high-pass filter tunable from 16.1 Hz to 500 Hz.

LPF: Frequency selector and on/off button for a 24dB/octave Butterworth low-pass filter tunable from 1 KHz to 20.2 KHz.

SURROUND: Adjusts the surround panning of the selected source.

    PAN (L/R): Moves the signal from left to right in the surround image.

    SPREAD: Adjusts the width of the signal within the surround image.

    LFE: Adjusts the amount of signal sent to the LFE (subwoofer) channel of the 5.1 image.

    PAN(F/R): Moves the signal from front to rear in the surround image.

SYSTEM ROUTER: Allows sources to be assigned to input channels, and destinations for output mixes to be selected.

    SOURCE/DESTINATION: Display the name of the source or destination selected.

    LOCATION: Display the physical location of the source and destination.

    CLEAR: Allows clearing a currently routed source, or deleting a destination from the list of locations a source is feeding.

    X-Y Set: Changes the controller to function as a conventional X-Y controller for sources and destinations that are not associated with the control surface.

BUS ASSIGN: Assigns the selected channel strip to any of the console's four mix busses (two stereo, two 5.1 surround).

GROUP ASSIGN: Assigns the selected channel strip to any of 16 true audio groups.

DCM ASSIGN: Assigns the selected channel strip to any of four Digital Control Masters.

MIX-MINUS ASSIGN: Assigns the selected channel strip to any of 16 mix-minus busses.

MODE BUTTONS: Select one of the following modes for the selected channel strip or monitor bus:

    ST: Selects stereo mode.

    LT: Selects left-channel only mode.

    RT: Selects right-channel only mode.

    MONO: selects mono mode.

    BLEND: Selects BLEND mode.

    SURR: Selects 5.1 Surround mode.

PFL CLEAR: Turns off any PFL buttons which might be selected anywhere on the control surface.

EVENTS SECTION: Allows storage and retrieval of snapshots of the entire control surface with all settings, sources, and selections. Up to 100 different events can be stored with descriptive names, and recalled instantly.

MONITOR MIX SOURCE SELECTION (bottom right above the "headphone" and "control' sections):

Allows selection of any source or bus to be monitored by the selected monitor output below, designated by the SET button in that section. Sources can be selected using the rotary knob and display, and engaged with the TAKE button.

PRESET: This display and button allow a second source to be made ready for quick access.

PRE-PROGRAMMED MONITOR MIXES: These four buttons select pre-configured monitor setups for each of the four main mix busses.

STUDIO1, STUDIO2, HEADPHONE: Level controls and DIM/Talkback buttons for two studio and one headphone output. The mix being monitored is displayed in the MIX window for reference.

CONTROL: Level control and DIM button for the control room monitors. This section also has LEDs to indicate the current monitoring mode, as well as a selector for two independent monitor speaker outputs.

DIMENSION ONE Control Surface
Dynamics Module

DELAY: Allows a delay of up to 20 frames or 667.5 milliseconds to be applied to the selected audio path to compensate for video processing delays (preserving lip-sync).

GATE: These five rotary controls adjust the parameters of a gate, if present in this audio path. The operator can adjust open, close, and hang times, the depth of the gate's attenuation, and the threshold of the gate. A shared display shows the numeric value of the last-adjusted parameter.

COMPRESSOR: These five rotary controls adjust the parameters of a compressor/limiter, if present in this audio path. Threshold, attack and release times, compression ratio, and makeup gain can be adjusted by the operator. A shared display shows the numeric value of the last-adjusted parameter.

AUX 1-8: A level control, ON/OFF push-button, and prefader/postfader switch is provided for each of the 8 AUX sends.

MIX-MINUS CONFIDENCE FEED:

1-16: These buttons turn the confidence feed (a selectable source, usually the station's off-air feed) on and off for the corresponding mix-minus. When the button is not lit, the mix-minus output receives the normal mix-minus bus.

CONF ALL - switches Confidence feed audio to all 16 MXM outputs.

REM TRIG - when lit, enables remote control of the CONF ALL switch from a tally relay on the Master Control switcher. Turn OFF to bypass remote control. This is generally used to send the confidence feed to the mix-minuses only when the station is in a commercial.

INFO - switches a shared LCD display on the console's meterbridge to display technical information about the surface; Surf ID, network settings, software revs etc.

DISPLAY:

AUX/MXM - switches the shared LCD meterbridge display to show metering for the 8 stereo Aux send outputs and the 16 Mix-Minus outputs.

GRP - switches the shared LCD meterbridge display to show metering for the 16 group outputs.

PGM CTLS - globally displays the input fader's two programmable Wild Card knob settings in the lower right area of the input channel's LCD screen. Switching PGM CTLS off globally displays the input channel's A-B SOURCE names in that same space.

HELP - calls up the built-in menu-driven help system

TB PRESELECTS: Allows four destinations to be preselected for talkback; the destination names appear in the displays beside the buttons, and when the TB buttons are pressed, talkback is engaged to the corresponding destination.

PROGRAMMABLE: These 12 buttons can be programmed for user functions not otherwise accommodated on the control surface.
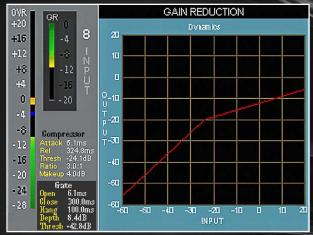
PAGE BUTTONS: PAGE A and PAGE B switch all faders to the selected page in unison. GRP PAGE toggles the page of all group faders in unison. PAGE SAFE locks the page controls so that they cannot be operated inadvertently.
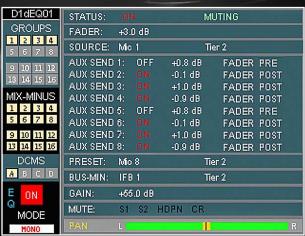
DCM FADERS and MUTE BUTTONS: Control the level and mute of all channels assigned to the corresponding DCM. These Digital Control Masters allow a group of sources to be collectively adjusted without actually combining their audio onto a group bus.

DIMENSION ONE Display Screens

INPUT CHANNEL STRIP (21-24 SHOWN)

A dedicated LCD monitor for every four input faders displays source & gain reduction metering , EQ and Automix status, Group assignments , On air status , and programmable controller values. Pressing the SET button on an Input fader opens up three detail view screens for any fader on the console.

INPUT EQUALIZATION

A comprehensive Equalizer/Filters screen displays all settings: 4 band parametric EQ and Low Pass/Hi Pass filters, in an easy to read graphical layout.
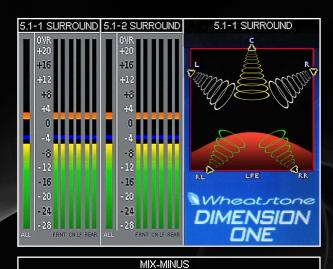
INPUT GAIN REDUCTION

A dedicated LCD screen provides detailed information on all Compressor /Limiter/Gate settings for each individual Input or output channel strip. The Gain Reduction curve graph drawn in an easy to read input vs. output level format makes it easy to see and manipulate threshold, ratio, and depth settings.

INPUT STATUS SCREEN

This screen provides a comprehensive at-a-glance view of all input fader settings. Look here for instant access to Aux Send Configuration, Bus Assignments, Channel Mode, Gain, Bus Minus Routing and more.

SURROUND METERING

The surround metering screen provides dedicated bar graph metering for each 5.1 Master output component and a switchable spatialization display. Pressing SET on any 5.1 input or output routes its surround metering information to this display. Spatialization metering lets you see how the 5.1 audio is distributed in a surround listening space.

MIX-MINUS METERING

This screen displays at-a-glance monitoring of all 16 Mix-Minus outputs.

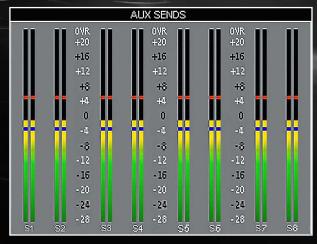## SWITCHABLE UTILITY DISPLAY

This screen displays dedicated Stereo master bargraph meters. A switchable meter let's you route any signal in the system to it for metering. This meter does triple duty and will automatically display any PFL or SOLO'd signal. Confidence Feed status lets you see at a glance what signal is being routed to each of the Mix-Minus outputs.

	CONFIDENCE FEED STATUS	
CF 1:	MXM 1	NoDest
CF 2:	NoSource	NoDest
CF 3:	NoSource	NoDest
CF 4:	NoSource	NoDest
CF 5:	MXM 5	NoDest
CF 6:	MXM 6	NoDest
CF 7:	MXM 7	NoDest
CF 8:	NoSource	NoDest
CF 9:	NoSource	NoDest
CF 10:	MXM 10	NoDest
CF 11:	MXM 11	NoDest
CF 12:	MXM 12	NoDest
CF 13:	NoSource	NoDest
CF 14:	NoSource	NoDest
CF 15:	NoSource	NoDest
CF 16:	MXM 16	NoDest

AUX SENDS

At-a-glance monitoring of all 8 Stereo Aux Send outputs.

All LCD meters simultaneously provide both peak AND average display of the source or output signal in a 48 dB range scale with OVER indicators.
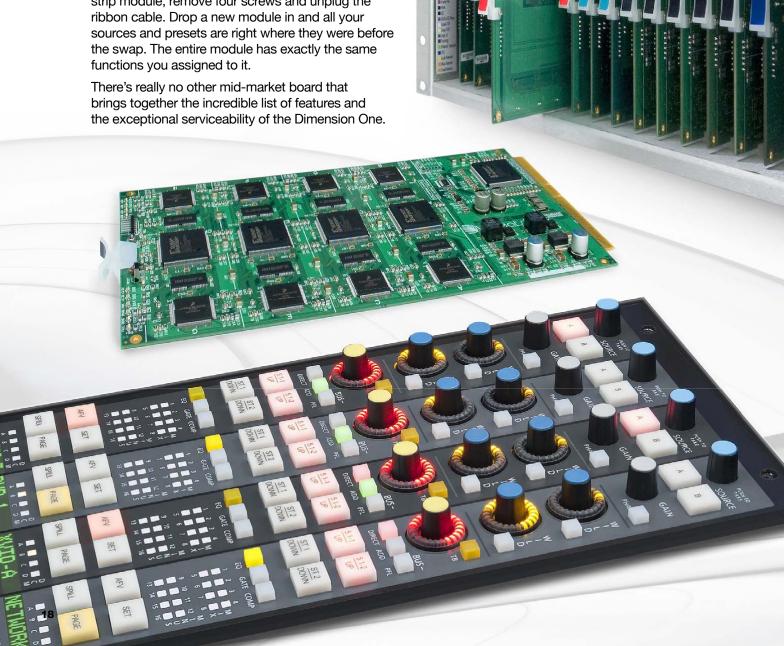
DIMENSION ONE: Exceptional Serviceability

Servicing, upgrading or accessing internal components in a traditional console is a task even the most seasoned veterans don't look forward to. First, the console usually has to be taken off-line, meaning downtime for your programming. Just getting to the internal components is a job in itself. Due to rear access and very cramped quarters, it's a great deal like servicing an appliance. Everything needs to be unhooked, the console needs to be pulled out and the person servicing it needs to be a contortionist.

Thanks to its Network First architecture, servicing Dimension One is a snap. First, since all of the audio and logic components live in a rack enclosure, all you need to do is open the front panel and replace or add cards. You don't even need to shut anything down - everything is redundant and hot-swappable.

The Dimension One control surface is just as impressive. Should you need to replace a channel strip module, remove four screws and unplug the ribbon cable. Drop a new module in and all your sources and presets are right where they were before the swap. The entire module has exactly the same functions you assigned to it.

There's really no other mid-market board that brings together the incredible list of features and the exceptional serviceability of the Dimension One.

CONTROL SURFACE SPECIFICATIONS

CONTROL SURFACE FRAME CAPACITIES:
2 Bay Frame up to 12 Physical Input Faders
3 Bay Frame up to 24 Physical Fader Channels
4 Bay Frame up to 36 Physical Fader Channels

INPUT PANELS:
IS-D20 - Input Channel Panel (4 Faders per panel; each fader can be mono, stereo or 5.1 surround).
Note: all input faders can be PAGED (i.e.12 physical faders = 24 input channels)

METERBRIDGE:
TFT LCD flat panels, programmable in software.

MASTER CONTROL PANELS:
MFS-D20 - Group/Master Output Control Panel
EFS-D20 - Monitor, EQ, Aux/Mix-Minus Control, Event Store/Recall, Test Tones, Surround Pan, Router, Mode, Bus Assign.
DCM-D20 - Compressor/Limiter/Gate, Talback Assign, Channel Delay, Confidence Feed, Aux Send Masters, Global Page, DCM Masters.

CONNECTIONS:
DSP Engine Link - Fiber (SFP module) or Copper UTP (RJ-45) - dual connectors for redundant operation.
Administrative Port - 100M Ethernet - Copper UTP (RJ-45); for setup only.
Power - Dual HiPower DB-5 connectors for redundant operation.

BUS STRUCTURE:
Main Busses
Two 5.1 Program busses with auto upmix.
Two Stereo Program busses with auto downmix.
Ancillary Bussing
16 Sub-Groups configurable in software as stereo or 5.1 surround.
8 Auxiliary Sends configurable in software as Stereo or Mono.
Mix-Minus
16 dedicated mono Mix-Minus busses.
Up to 72 Bus-Minus mixes. Each Bus minus output is a discrete Mix-Minus feed or Direct Out "clean feed" from every input fader channel.
Monitoring
Four Control Room/ Studio feeds each with independent muting and tally control.
PFL and AFL Monitor outputs.
Communications
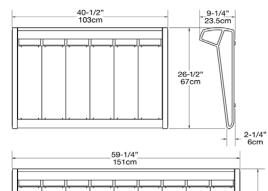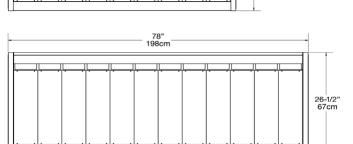Dedicated and programmable Talkback to Aux Sends, Mix-Minus, Bus-Minus and Monitor Mixes.

INPUTS:
Any mic, analog line, AES-3, HD/SD SDI, or MADI input may be routed to any input fader or monitor pot.

OUTPUTS:
Any output mix may be routed to any combination of analog, digital AES-3, or MADI outputs.

EVENT RECALL:
All surface settings may be stored/recalled for up to 100 named events.

WHEATSTONE BRIDGE ROUTER SPECIFICATIONS

BRIDGE
Dimensions	4RU, 19"/48.3cm wide
	7"/17.8cm high
	16"/40.6cm deep
	18"/45.7cm deep with connectors
Power supply	External
Slots	20 universal slots, including CPU (2 for redundancy) and DSP (3)
Slots available for I/O	15
Sample rate	44.1 or 48kHz, user selectable on CPU card
External sync input	On CPU card
Shipping weight	30lbs/13.6kg

BRIDGE POWER SUPPLY
Dimensions	2RU, 19"/48.3cm wide
	3.5"/8.9cm high
	15.75"/40.0cm deep
	18.5"/47.0cm deep with connectors
Shipping weight	10lbs/4.5kg
Power consumption	400W

SATELLITE CAGE
Function	Expansion when additional I/O capacity is needed
Dimensions	4RU, 19"/48.3cm wide
	7"/17.8cm high
	16"/40.6cm deep
	18"/45.7cm deep with connectors
Power supply	Internal plug-in module; use two for redundancy
Slots	11 universal slots
Shipping weight	22lbs/10.0kg
Power consumption	150W

HOST CPU — CPU-2001
Function	System control
Redundancy	Optional second CPU for automatic failover
Rear connector panel	DB9 "A" (RS485 or RS232)
	DB9 "B" (RS485)
	DB9 "C" (AES sync)
	Ethernet (configuration PC)
	two 10pin (power)

DIGITAL SIGNAL PROCESSOR CARD — DSP-2001
Function	Mixing, routing, EQ, dynamics

DIGITAL INPUT CARD — AES-2024
Inputs	8 transformer coupled (AES-2024/8)
	16 transformer coupled (AES-2024/16)
Impedance	110Ω balanced AES-3, S/PDIF compatible or 75Ω unbalanced AES-3id, depending upon rear connector panel
Reference level	-20dBFS
Channel configuration	Mono, stereo, 5.1
Rear connector panel	DB25, RJ45 or BNC

SDI EMBEDDED INPUT CARD — SDI-2001
Inputs	2 inputs, auto-detect of SMPTE 259M (SD-SDI) or SMPTE 292M (HD-SDI)
Channel configuration	Each input can de-embed two groups (4 channels)
Rear connector panel	4 BNCs (input and loop-thru for two SDI inputs)

MADI DIGITAL INPUT CARD — MADI-2001
I/O	Two AES10-2003 (MADI), auto-detect of 56 or 64 channels
Rear connector panel	Fiber (SC duplex) and 2 BNCs

ANALOG INPUT CARD — ADI-2001
Inputs	16 electronic differential
Impedance	20KΩ (bridging)
Reference level	+4dBu = -20dBFS
Sample rate converters	32-96kHz, 16-24bit
Channel configuration	Mono, stereo, 5.1
Rear connector panel	DB25 or RJ45

MICROPHONE CARD — MIC-2001
Inputs	8 electronic differential
Reference level	-50dBu = -20dBFS
Gain range	+20 to +80dB
Phantom power	Switchable
Maximum input level	-10dBu
Sample rate converters	32-96kHz, 16-24bit
Channel configuration	Mono, stereo
Outputs	8 direct analog outputs
Rear connector panel	DB25 or RJ45

DIGITAL OUTPUT CARD — DO-2024
Outputs	8 transformer coupled (DO-2024-8)
	16 transformer coupled (DO-2024-16)
Impedance	110Ω balanced AES-3, S/PDIF compatible or 75Ω unbalanced AES-3id, depending upon rear connector panel
Reference level	-20dBFS
Channel configuration	Mono, stereo, 5.1
Rear connector panel	DB25, RJ45 or BNC

ANALOG OUTPUT CARD — AO-2001
Outputs	16 electronic balanced
Impedance	50Ω, to drive loads of 600Ω or greater
Reference level	+4dBu = -20dBFS
Maximum output level	+24dBu
Channel configuration	Mono, stereo, 5.1
Rear connector panel	DB25 or RJ45

LOGIC INPUT/OUTPUT CARD — LIO-2024
Function	Programmable GPI
Ports	24, each configurable as input/GPI or output/GPO
Input GPI	Floating opto-isolated photodiode, +5 to +15VDC, maximum current 50mA
Output GPO	Solid state relay, maximum load 120mA, ±100V; not to be used to switch AC mains
Rear connector panel	DB25

QUAD AUDIO NETWORK CARD — QAT-2001
Function	Connects master Bridge to up to 4 remote Bridge, Bridge Satellite, E-SAT frames, or control surfaces
Channels	256 per card
Rear connector panel	RJ45, fiber (SC duplex), or SPF modular

Specifications and features subject to change without notice.

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