D-32

SURROUND SOUND TELEVISION AUDIO CONSOLE

Wheatstone

BROADCAST AUDIO PERFECTIONISTS®

full access network

opening new networking opportunities to the TV audio world.
Any source, anywhere, any time.

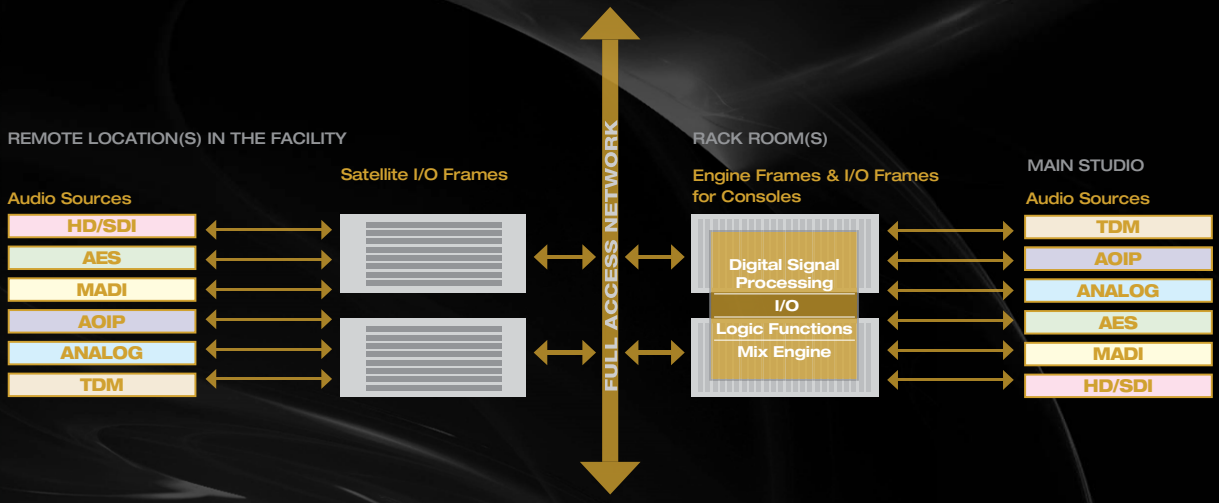
With all I/O managed through a separate rack unit, the D-32 has no limitations with fixed connection points on the console chassis itself. Any channel can connect to any audio source, using any preferred audio format at any time, whether it's HD/SDI, AES, MADI, AoIP, Analog or TDM.

The result is the first large-format audio console that is so truly universal, it can fit into almost any TV production environment, anywhere -- whether it's a Wheatstone TDM routed studio, a MADI-equipped stadium, a remote truck or even the newest space in studio networking.

With our Network First approach, everything essential to audio routing, logic and processing is situated in racks located wherever you like, accessible via the network. This 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. And, because we've designed our rack cages with front access and full hot-swappability, you'll never need to tear apart a console or rack to upgrade, repair or otherwise access its components. This all translates to 100% uptime and unprecedented expandability.

Because 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. The following shows a typical television operation in which the operator has access to some 1,024 channels of digital signal processing through one control surface.

The true advantage of a fully modular router-based network system is ultimate flexibility



Simple flow. Incredible Power.

the surface

every fader, knob and button exactly where you need it to be

With a minimum chassis width of only 58 inches, the D-32 is compact enough to fit into the smallest production suite, editing facility, or remote truck.

Don't let the small size fool you, though. Packing the power of our Gibraltar® Mix Engine, the D-32 sports big console features. Audio operators love the smooth, solid controls, the vast array of mixing tools, and the unmatched versatility of the mix-minus and bus-minus systems. Because it's based on the Wheatstone Gibraltar Network Router, engineers love the ease of integration with systems from Ross, Grass Valley, and Sony.

Wheatstone is synonymous with the finest audio-for-television consoles available today. For our D-32, we've taken things to a whole new level. Wheatstone is using the power of its new Gibraltar Mix Engine to expand the feature set of our legacy D-12 and D-16 control surfaces. Due to the increased processing capability offered by Gibraltar, the D-32 can now support up to 128 input channels on paged or non-paging faders. Thanks to the 1,024 processing paths offered by Gibraltar, the D-32's eight subgroups can now be configured as 5.1 stems with full EQ and Dynamics processing capability. Additionally, processing can now be applied to the 16 mix-minus / direct out busses and 16 aux sends available in the D-32.

The D-32 uses the battle tested Wheatstone Network First™ Gibraltar Network Router network as its audio infrastructure, providing networked I/O for AES, Analog Mic and Line Level, HD-SDI, MADI, and GPI Logic in a full crosspoint routing environment. As with all Wheatstone Gibraltar Network based systems external control from Ross Overdrive, Grass Valley Ignite, and SONY ELC is fully supported.

The D-32 continues Wheatstone's tradition of building the finest audio tools for television. With an EXTENSIVE feature set in a very compact frame, you will achieve audibly superior results, whether broadcasting live or in a production environment.

As with all Wheatstone products, D-32 is made right here in the USA in our New Bern, NC headquarters, and technical support is available on both coasts.

- Very compact footprint (36 Input faders controlling 72 simultaneous sources in a surface as small as 58” wide)
- Programmable “soft” knob above each fader lets the user assign frequently used functions
- LCD Meterbridge displays metering for all output busses as well as processing displays
- Main Busses: One 5.1 Program, Three Stereo Program
- Submasters: 8 Stereo, standard (can be optionally configured for 5.1)
- Mix-Minus: 16 Mono with automatic Confidence feed switching
- Bus-minus: Direct IFB feed from every input fader channel with direct talkback
- Auxiliary Sends: 16 Stereo
- Outputs from all busses and bus-minus are configured within the Gibraltar Network router matrix and can be analog, and/or digital, or not fitted
- Monitor Feeds:
  One 5.1 Surround, Three Stereo Studio feeds
- Processing per channel:
  - Phase Reverse
  - Pan / Balance Control
  - Stereo Mode Control
  - 4-Band Parametric Equalizer
  - High-, Low-Pass, Tunable Notch Filters
  - Compressor / Limiter / Gate
  - Continuously variable delay

five things...

you can do with D-32 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. Configure the layout of the board any way you want

D-32: Wheatstone Is Automation Ready

The power of Wheatstone's advanced mixing router includes handshaking technology with many of the broadcast industry's automation leaders.

Miranda SONY ENCO Utah Scientific
grass valley BURLI ROSS Live Production Technology™

Gibraltar Network

the processing power behind D-32 – brains, brawn and futurability

Designing from the ground up meant considering not only how things function but where they live. Given the technology we have today, and considering what's on the horizon, it only made sense to take a completely modular approach. This provides us with the ability to create incredibly powerful devices with unimaginably small footprints. Since all function is in soft/firmware, it also gives us the capability to ensure that your investment in our technology today will last well into the future. In other words: Wheatstone = incredible ROI.

Meet Gibraltar

The Gibraltar® Network is the powerhouse of Wheatstone's consoles. Its modular design uses multiple Gibraltar DSP cards to provide the mixing, bussing, I/O, 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 Network 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.

More than enough DSP to do the job

There are 1,024 channels of processing available. Sound like a lot? It is! For a modern studio, consider that for every input you'll need a minimum of 6 channels of processing for 5.1 surround as well as 2 channels for stereo processing. Add to that processing for all major output and monitor busses (stereo and surround mains, submixes, aux sends, mix-minus, tracks, control room, studios and headphone feeds) and you'll see that it adds up to a lot.

Extreme flexibility

With over 10,000 audio input sources 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.

No blockouts

Of course having a ton of simultaneous inputs for a single production is not an everyday occurrence, but since you have completely unrestricted integrated router flexibility, 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.

The SR-8 provides eight XLR inputs and four XLR outputs in a stage-box configuration. It interfaces to the Gibraltar Network via CAT-6 cables and comes with dual internal power supplies for redundancy.

failsafe redundancy

it's all about staying on the air - every second of every day - without fail

Wheatstone's experience in designing audio consoles for all broadcast realms as well as pioneering networking comes together in the D-32. More power to handle modern needs with a user interface that is pure joy to get your hands on. And with Wheatstone's built-in safeguards, you can rest assured that you'll always be on the air...with or without fail.

failsafes: keeping you live

redundant sources
With ALTERNATE and CURRENT source selectors provided on each fader, if the primary feed goes silent, an operator need simply press the second source 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 Wheatstone, 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
Gibraltar Network cage utilizes internal modular power supplies and can accommodate up to two units for redundancy.

On the Gibraltar Network cages, power supplies are internal and can be single or dual modules.

The back provides access to the cards' connections.

inside D-32

the architecture of the D-32 network

More ultra-professional installations are done in broadcast television using Wheatstone's WheatNet-Gibraltar Network TDM system than any other. And with good reason. It has pioneered absolutely rock-solid operation with minimum fuss. It's the most prolific network out there, giving you control over every aspect of your networked audio. It's the gold standard - couple it with the D-32 Surround Sound surface and its Gibraltar Mix Engine and you have a PLATINUM solution.

TDM-based Wheatstone Gibraltar Network systems provide tried-and-true audio I/O routing, mixing, and audio networking in a flexible expandable system that can easily grow to over 3,000 x 3,000 crosspoints.

The WheatNet® Switch ties it all together, as a central switch for your studio and TOC racks. Multiple-level redundancy is a hallmark of the Gibraltar Network audio networking architecture: redundant system and control surface CPUs, redundant DSPs, and redundant Gibraltar Network chassis with dual Cat-5 links from each I/O frame can provide full redundancy with automatic switchover.

"Any signal anywhere." Sounds simple enough, but designing a digital audio network gets more complicated when you think about the requirements: enough non-blocking bandwidth between any two points in your entire system to transceive as many audio and logic signals as you require at any given time.

Wheatstone has been supplying large networked audio systems now for MANY years, with numerous installations comprised of a dozen or more studios. Our experience with these larger installations led us to develop WheatNet – a super high capacity audio network switch. We learned that busy engineers shouldn't have to worry about bandwidth limitations and system capacity when planning a facility. WheatNet simplifies the process. It acts as the hub in a "hub and spoke" topology, and you simply plug your studio I/O frames into it.

WheatNet Switch and Frames

Wheatstone's central core WheatNet Switch elegantly revolutionizes TDM routing technology. This single 2RU core can switch up to 3,072 audio channels to up to 3,072 destinations—all at once, virtually latency free, without blockout. Systems can even be built with a pair of these units to give 100% instantaneous glitchless system wide redundancy—a feat that cannot be guaranteed with any other known technology.

Gibraltar Network Components

Network First TDM Audio I/O Solution

The core switch can connect to 48 I/O Gibraltar Network frames, each capable of over 512 audio I/O paths. Because the frame's audio cards are front loading, service can be performed in real time. A selection of cards provides translation from analog, digital, SDI, and MADI inputs or outputs. Naturally, redundant cards can stand ready in each frame for those applications where failure is simply not an option.

The Gibraltar Network Frame houses a family of cards that allows system access for virtually any audio source format and interface path: analog, digital AES (with sample rate convertors), MADI, SDI de-embedding, and control surface mix engine cards. There's even an audio-to-ethernet portal that provides single wire integration to station audio automation playback systems. The mix engine is integral to the router; therefore any input is available to any mix, and any input or mix is available to any output system wide—forming a true router-based network system.

Wheatstone makes it easy to interface your audio gear. Pictured left is an XLR panel that simply interfaces directly to a Gibraltar Network I/O cage via our standard DB connector.

The Gibraltar Network card frame can provide virtually any type of mechanical interface most suited to your application. Interface modules simply plug in from behind to provide RJ, DB, BNC or screw terminal connections.

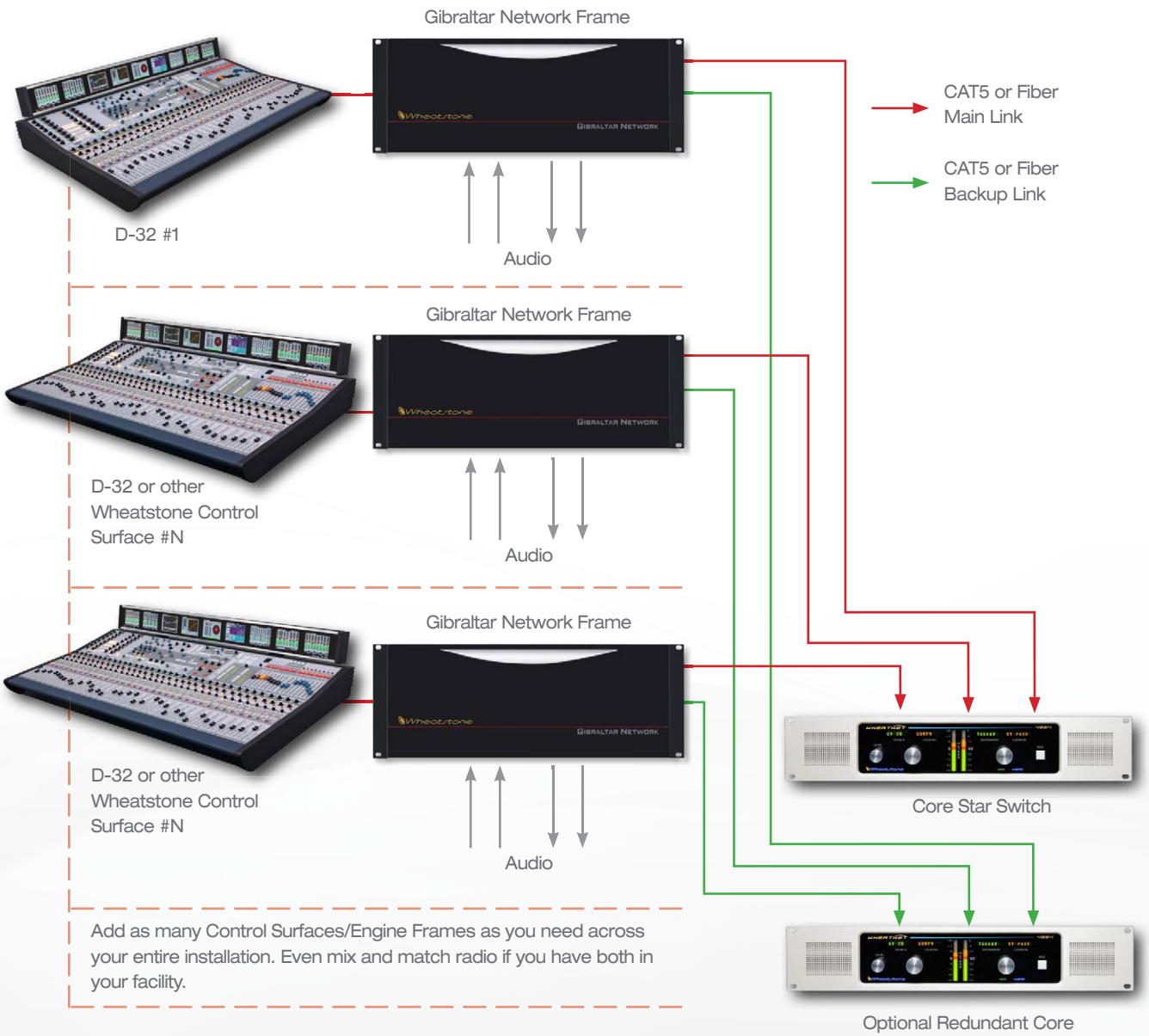
Wheatstone can even provide prewire assemblies from punchblocks (DB connector, plug-in screw terminals or simple pigtail).

Gibraltar Network

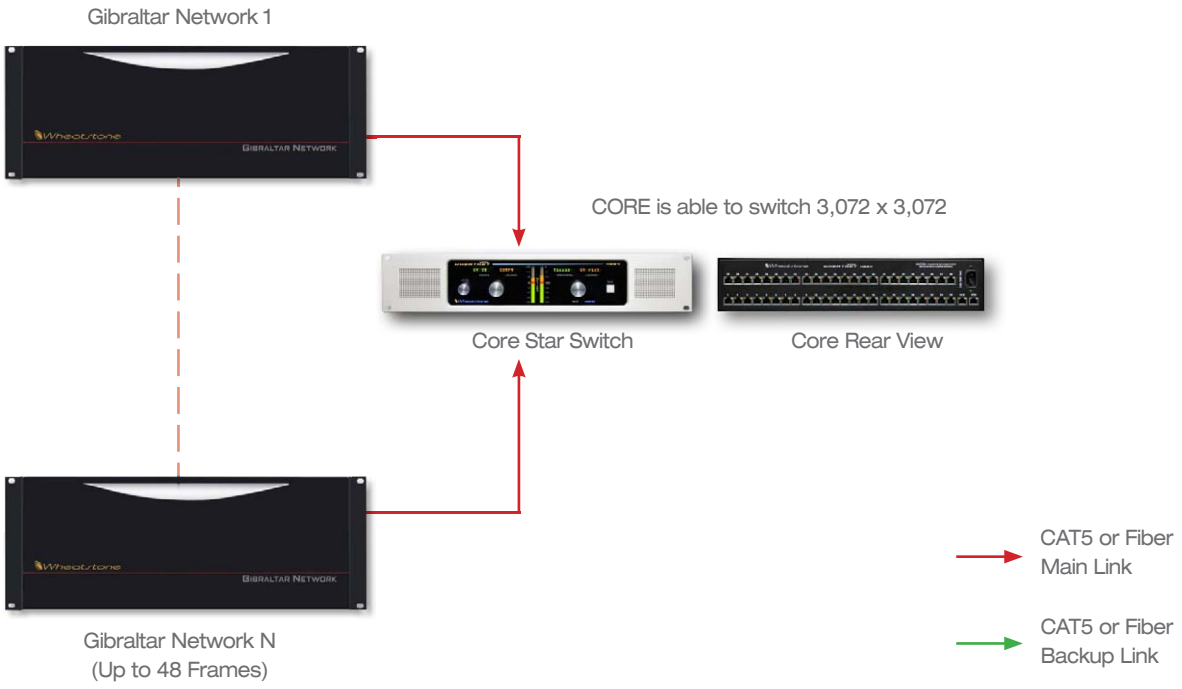
Network First TDM Audio I/O Solution

TV Studio Flow

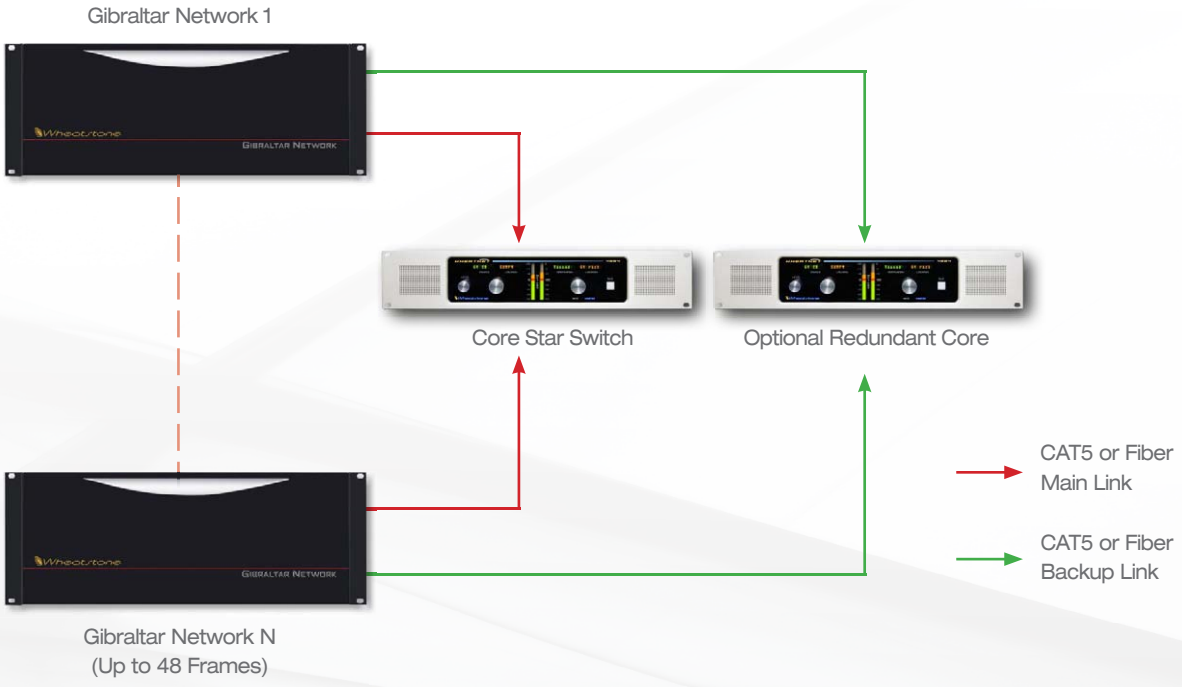
Multiple television consoles can all share the same inputs and destinations as desired. Simpler systems can be designed by easily connecting two or more Gibraltar Network frames together directly without need of the core switch. And of course, systems can be built that include both radio and television surfaces as desired.



Simple Star Technology No daisy chain or ring



100% Backup Failsafe Setup Instant mirror—no program interruption



D-32 modularity

Make it YOUR Board

The magic of the D-32 is its ability to become exactly the board you need in exactly the size and space you need. With our wide variety of frame sizes (ranging from 32 to 64 positions) and our array of modules, your mixing needs and style are completely supported. All modules except the inputs can be ordered long or short to fit exactly where you need them.

Meterbridge

The LCDs across the meterbridge display a wealth of information—from real-time monitoring to control screens for setting up and using the console.

1 Mix-minus Modules #1 and #2

The D-32 digital audio control surface is equipped with two Mix-Minus Panels. Both panels, MXM-D32 and MXM-D32#2, house AUX SENDS, MXM MASTER OUTPUTS, and MXM ASSIGN for a total of 16 AUX SENDS and 16 MXMs. In addition, the MXM-D32 panel has SUBGROUP, MASTER, and DCA ASSIGN buttons. (Note that in a 32-position frame this second panel is omitted, and there will only be 8 AUX SENDS and 8 MXMs available.)

2 EQ/Dynamics Module

The EQ/ Dynamics panel houses EQ, DYNAMICS, PHANTOM POWER, CHANNEL GAIN, DELAY, and POLARITY sections.

3 Surround Module

The SURROUND panel houses 5.1 CHANNEL TRIMS, 5.1 SURROUND PANNING, and MODE sections.

4 Events Module

The EVENTS panel contains COPY FUNCTIONS, TEST TONES, TIMER, PRESET EVENTS, and XY CONTROLLER sections.

5 Monitor Module

The MONITOR panel houses MONITORS, AFL and PFL master levels, SWITCHED METERS, and CONFIDENCE FEED sections.

6 Talkback Module

The TALKBACK panel houses the TALKBACK MIC, the TALKBACK preselects, and the PROGRAMMABLE buttons sections.

7 Subgroup Module

The SUBGROUPS panel houses eight subgroup outputs. Each subgroup has SET, ON, and AFL buttons, and MSTR and DCA assign displays.

8 Master Module

The MASTER panel houses four MASTER program outputs, four DCA masters, CHANNEL PAGING buttons, the master PFL-AFL CLEAR button, and four MONITOR display mode buttons.

9 Input Modules

Each input panel of the D-32 control surface has four identical strips controlling four input channels. Each strip has a PAGE function allowing it to access a second alternate strip, making for 8 input channels per panel.

D-32 Modules

Mix-minus Panel #1

The D-32 control surface is equipped with two Mix-Minus Panels. The first, MXM-D32, houses AUX SENDS, AUX and MXM MASTER OUTPUTS, and MXM ASSIGN controls for busses 1-8. In addition, the MXM-D32 panel also has SUBGROUP, MASTER, and DCA ASSIGN buttons.

Aux Sends
There are a total of 8 AUX SEND controls on each Mix-Minus panel. Each has programmable settings for level, pre/post ON switch, pre/post FADER, and AUX SEND on/off. Individual channel AUX SEND levels are indicated on the concentric LED array around each level control.

Masters
This middle bank of 8 level controls can be switched to control either AUX SEND or MXM bus master output levels. The AFL switch by each level control sends the chosen output bus to the AFL (Solo) bus. Individual set switches are used to apply processing to the selected mix (EQ, Dynamics and Delay for AUX SENDS, Delay-only for MXMs). The SET switch is also used to change the output routing of the selected AUX or MXM signal via the console's SOURCE/DESTINATION X-Y Controller.

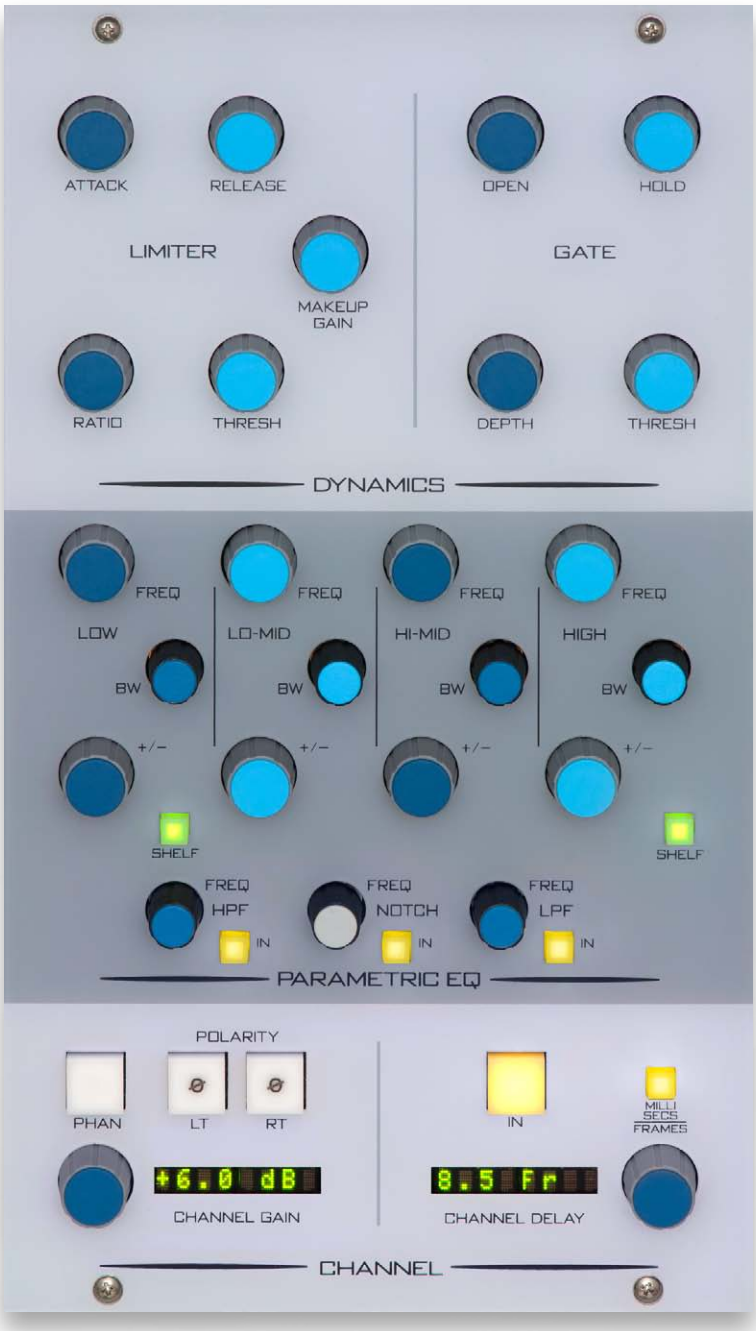
Bus Assign Section (Subgroup, Master, DCA, MXM)
The various bus assign switches are used in conjunction with SET switches on inputs, groups, and masters. When a SET switch is pushed the switches in the Assign section light to show the current assignment status of the selected input or bus. Assignment changes are made via the individual switches.

Mix-minus Panel #2

The second Mix-Minus panel houses AUX SENDS, AUX/MXM Masters, and MXM ASSIGN for busses 9-16.

Note that in a 32-position frame this panel will be omitted and there will be control for only 8 AUX SENDS and 8 MXMs.

D-32 Modules



EQ/Dynamics Panel

The EQ/Dynamics panel houses EQ, DYNAMICS, PHANTOM POWER, CHANNEL GAIN, DELAY, and POLARITY sections.

Dynamics Section
This section provides compression, limiting, expansion and gating functions for individual input, group, aux send, monitor, and master channels. Dynamics controls are accessible by pressing the selected signal's SET button. Dynamics may be switched in/out directly from the input fader (COMP and GATE) and master fader (DYN) switches without having to press the SET button.

Compressor/Limiter
The compressor algorithm used in the D-32 control surface is designed to allow smooth, inaudible, and unobtrusive level control on uneven sources; be able to act as a peak limiter for inadvertent overload control as well as enable deep effects if required. Its control functions include: Limiter, Threshold, Attack, Ratio, Release and Makeup Gain.

Gate
The Dynamics section also contains a noise gate, useful for reducing sounds below a certain threshold. Its control functions include: Gate Threshold, Depth, Open and Hold

EQ Section
The EQ section consists of a bank of knobs and switches that operate the equalizer—a four band, parametric design with sweepable center frequency, bandwidth, and boost/cut controls. Shelving curves may be independently selected for low and high bands. Separate High Pass, Notch, and Low Pass filters may also be inserted.

High-Pass Filter
This is a 24dB/octave variable high-pass filter with Butterworth characteristics, tunable between 16.1Hz and 500Hz, with a separate in/out switch.

Notch Filter
This 1/10th octave, variable center frequency notch filter is tunable between 16.1Hz and 20.2KHz.

Low-Pass Filter
This is a 24dB/octave variable low-pass filter with Butterworth
characteristics, tunable between 1KHz and 20.2KHz.

Equalizer
Equalization consists of four bands of parametric control used for modifying the sonic qualities of a signal. Each band has +/-14dB of BOOST/CUT capabilities.

EQ/Dynamics Panel (continued)

Polarity
A pair of switches, LEFT and RIGHT, is provided to reverse the absolute phase of the signal path.

Channel Gain
The CHANNEL GAIN level control adjusts the input fader's selected source gain. Line inputs are adjusted in a -18dB to +12dB range; mics are adjusted in a +20dB to +80dB range.

Audio Delay
Audio delay is shown in the CHANNEL DELAY display. Delay is accomplished for inputs, submixes, master mixes, aux sends, mix-minuses and monitor mixes by means of activating their corresponding SET button and dialing in the desired audio delay in frames or milliseconds.

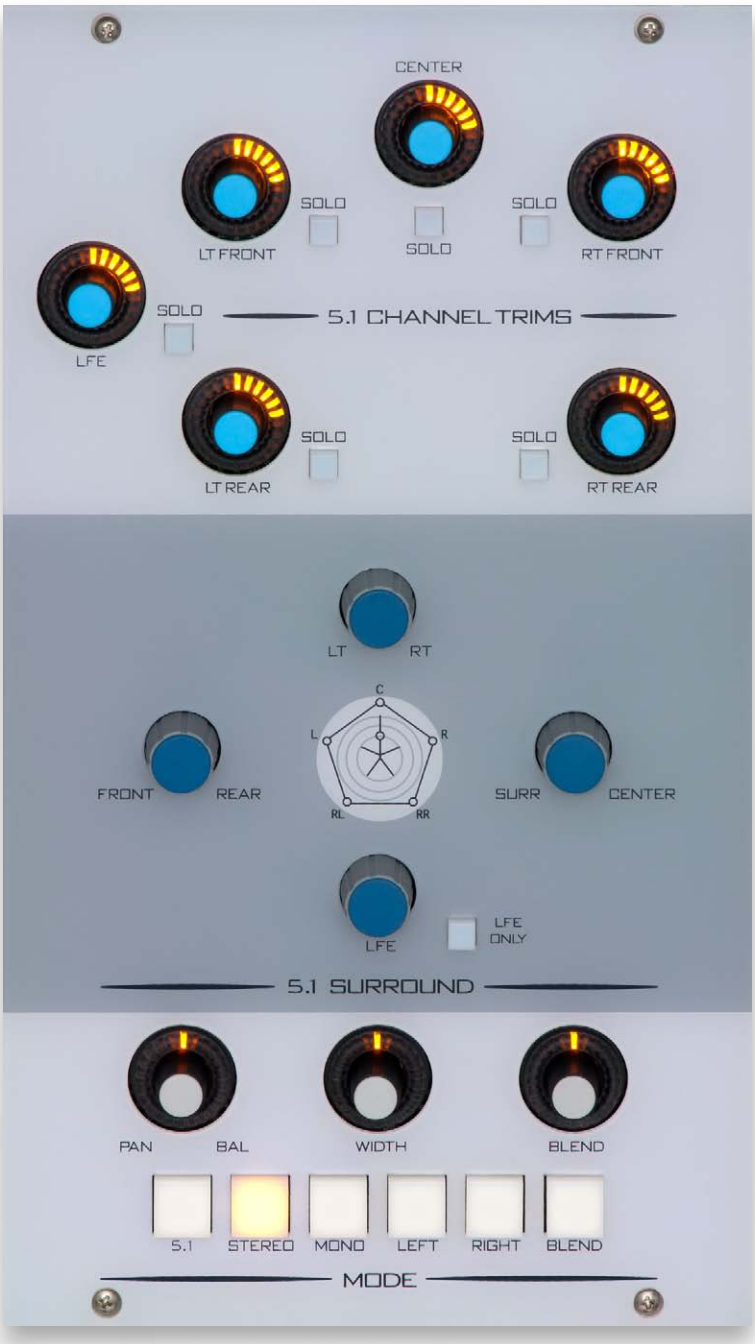
Surround Panel

The SURROUND panel houses 5.1 CHANNEL TRIMS, 5.1 SURROUND PANNING, and MODE sections.

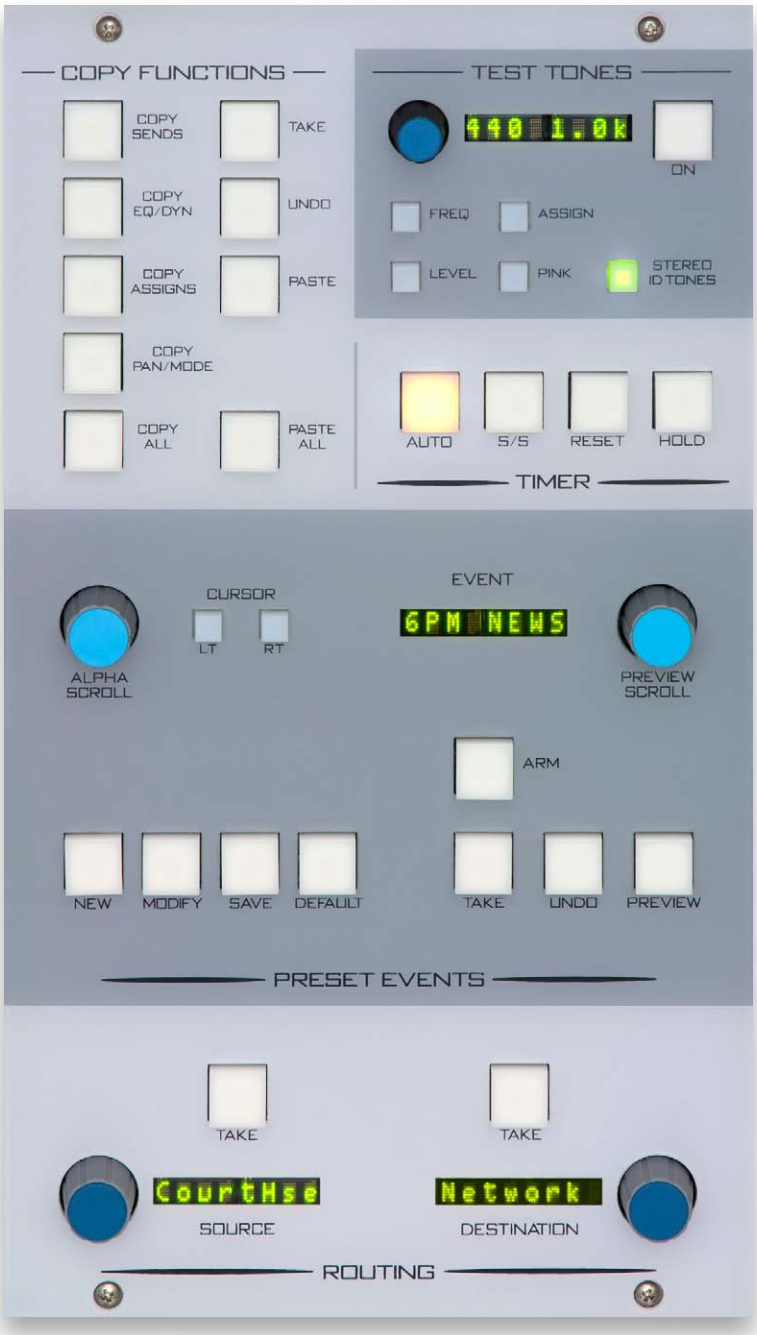
5.1 Channel Trims
This section includes independent rotary level controls and Solo switches for each component of a 5.1 signal (ie: LT FRONT, CENTER, RT FRONT, LT REAR, RT REAR, and LFE). The 5.1 trims work with surround input faders, the 5.1 master, and the CR1 and CR2 monitors. Trims are accessed by pressing the selected signal's SET button.

Surround Pan System
This section provides a set of controls to pan an input fader signal anywhere in the 5.1 Mix. Input fader signals may be mono, stereo, or 5.1 signals. The surround panner is accessed by pressing an input SET button.

Mode Section
The mode selector switchbank includes 5.1, STEREO, MONO, LEFT, RIGHT, and BLEND buttons. When pressed, the switch will light up to indicate the selected mode and it will be displayed in the selected channel's LCD display in the console meterbridge.



D-32 Modules



Events Panel

The EVENTS panel contains COPY FUNCTIONS, TEST TONES, TIMER, PRESET EVENTS, and XY CONTROLLER sections.

Copy Functions Section
This system provides a convenient means of copying input channel settings (SENDS, EQ/DYN, ASSIGNS, PAN/MODE, or ALL) and duplicating them to other input channels.

Test Tones Section
The TEST TONES section provides adjustable frequency test signals, a pink noise source, and a stereo ID tones source.

Timer Section
The control surface timer is provided with an AUTO-RESTART function so programmed input modules can automatically reset the timer display to zero and start a new count, allowing the announcer to easily track his own pace.

Preset Events Section
This section provides a means for storage and retrieval of control surface settings, and naming those settings as “events.” Up to 100 events can be named and stored for instant recall.

Routing (XY Controller) Section
This section is a multi-use X-Y controller. Rotary knobs select Sources and Destinations, with TAKE buttons for each.

Monitor Panel

The console's MONITOR panel houses MONITORS, AFL and PFL master levels, SWITCHED METERS, and CONFIDENCE FEED sections.

PFL (Cue) / AFL (Solo) Section
The PFL (CUE) and AFL (SOLO) master level controls are located on the left top section of the MONITOR panel.

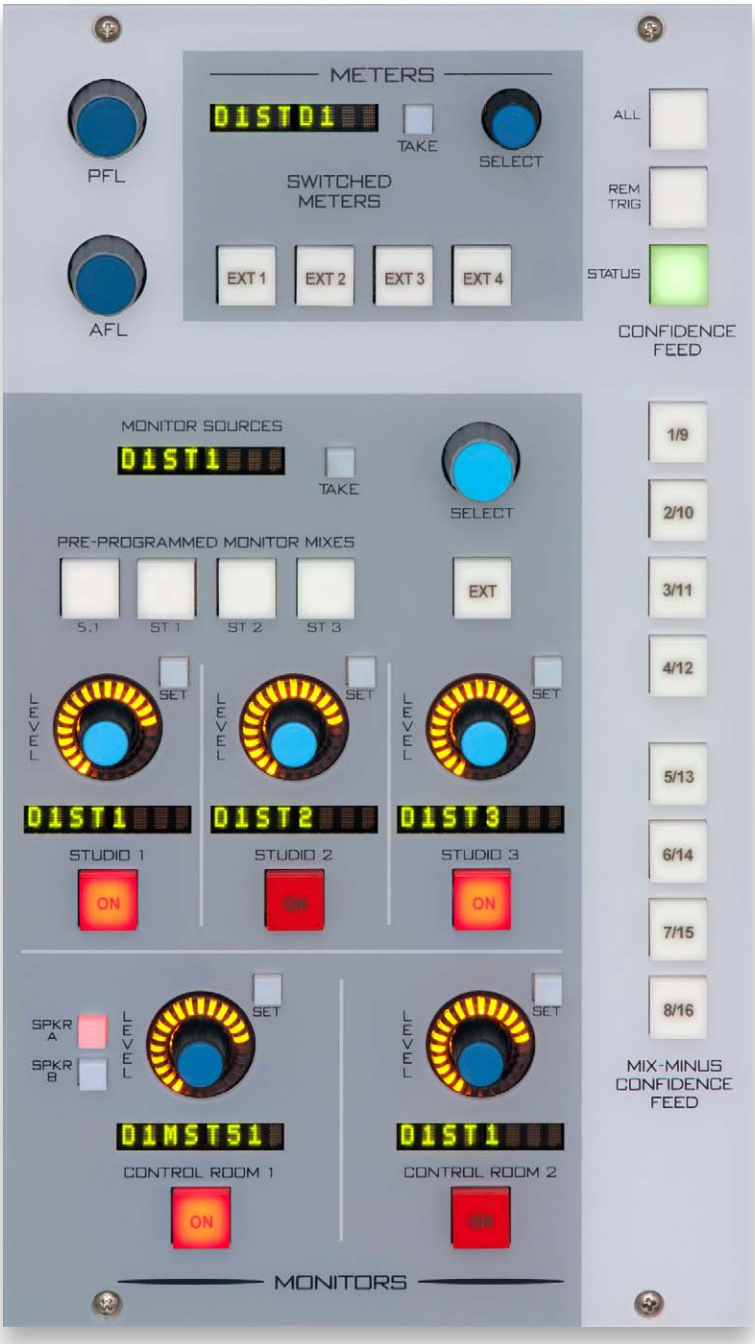
Switched Meters Section
This section has a dedicated source control knob, eight character display, and TAKE button to route any signal on the network to the switched meter. There are four "hot" buttons: EXT1, EXT2, EXT3, and EXT4.

Confidence Feed Section
This system lets the console operator send a signal (typically master control audio) to any or all of the 16 MXM outputs. This is typically used during show setup or airtime operations so talent can remain confident that their MXM feeds are active and working.

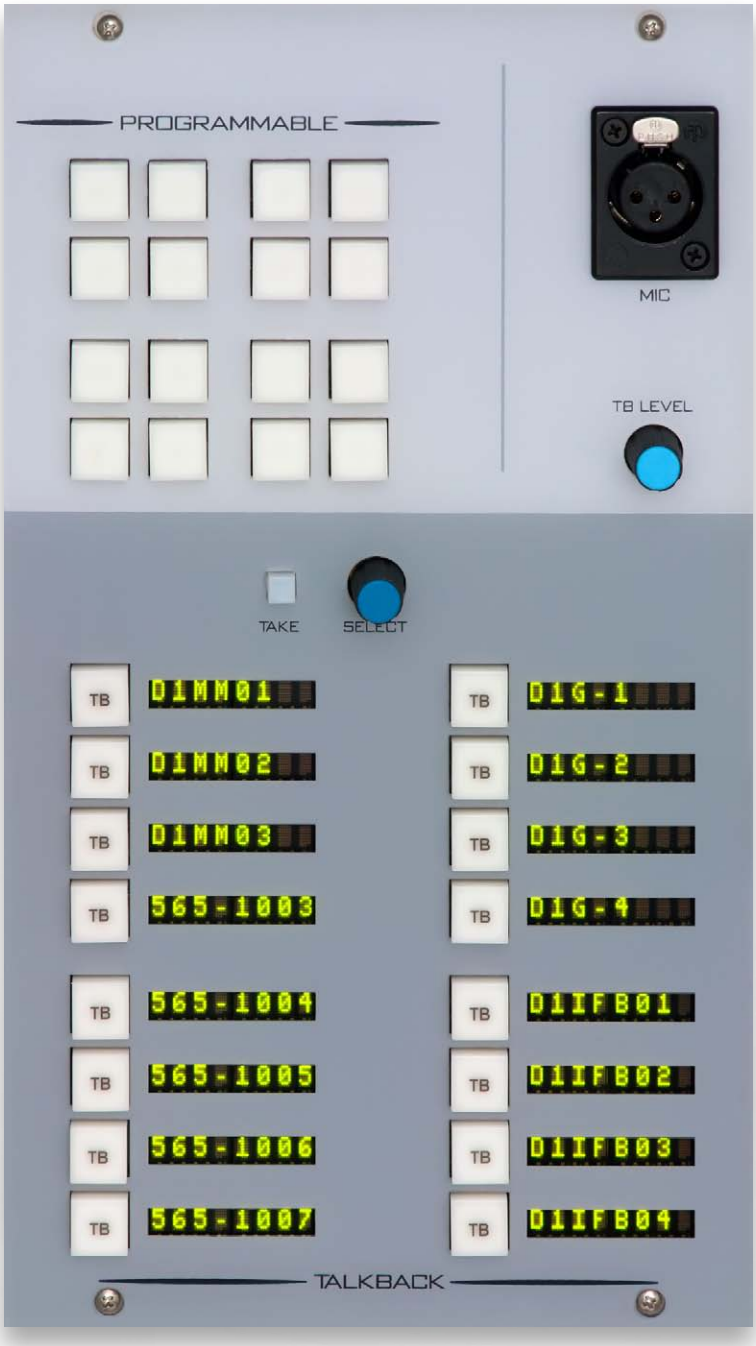
Monitors
There are five monitor outputs available: STUDIO 1 through 3, and CONTROL ROOM 1 and 2. Each monitor has a LEVEL control, a SET button, an ON switch, and a display.

Control Room Section
In a typical radio or television application the control surface is located in the audio control room. Speakers in the room are fed by a stereo or 5.1 signal selected from the audio network via the selected monitor's SET button. A/B Speaker buttons allows switching between speaker sets (such as stereo nearfield and 5.1 surround).

Studio Section
The D-32 supports stereo outputs for 3 sets of external studio speakers. Source signals are selectable from the entire audio network.



D-32 Modules



TB / MIC Panel

The TALKBACK panel houses the TALKBACK MIC, the TALKBACK preselects, and the PROGRAMMABLE buttons sections.

Programmable Buttons
These 16 switches are designed for user accessible external functions (GPIs). The switches may be programmed to fire salvos, activate defined presets, or control physical Logic card output ports, to name a few possible functions. The LED indicators in the switches can also be lit by remote devices connected to a Logic card port.

Talkback Mic
The operator's talkback mic plugs into the panel mounted XLR connector located on the upper-right corner of the panel.

Talkback Preselects
These 16 programmable switches allow dedicated Gibraltar Network Router outputs to be designated as destinations for the talkback signal.

Subgroup Panel

The SUBGROUP panel houses the console's eight subgroup outputs. Each subgroup has an identical set of controls: SET, ON, and AFL buttons, and MSTR and DCA assign displays.

Centralized Controls
Press a subgroup SET switch to access centralized controls associated with the subgroup. These include PAN/BAL, MODE, EQ, Dynamics, Test Tone assign, and Routing and Delay. The subgroup may be in SURROUND Mode (if configured as a surround subgroup), STEREO, LEFT, RIGHT, or MONO modes.

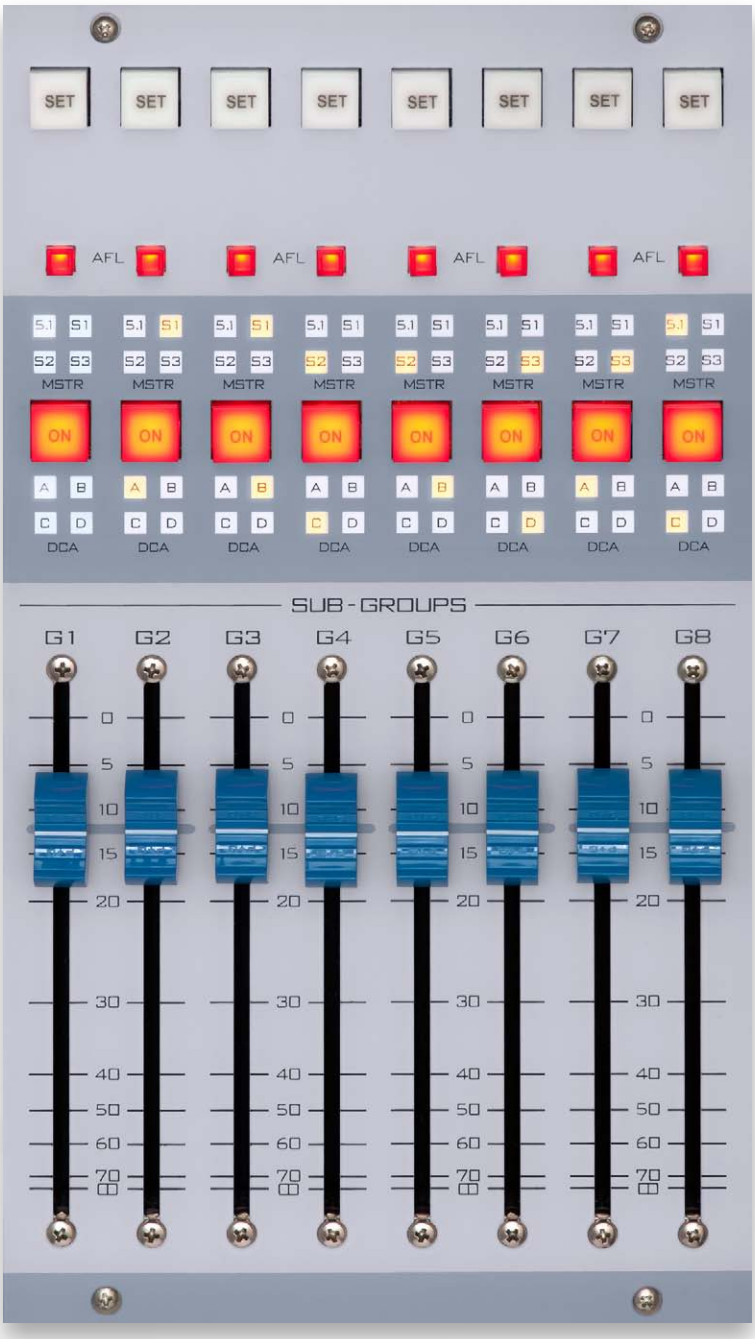
Subgroup Output Displays
Each subgroup can be assigned to any of the four main output busses using the MASTER ASSIGN buttons on the MXM-D32 panel (page 18).

DCA Subgroup Displays
Each subgroup channel can also be assigned to any combination of the four DCA masters using the DCA ASSIGN buttons on the MXM-D32 panel (page 18).

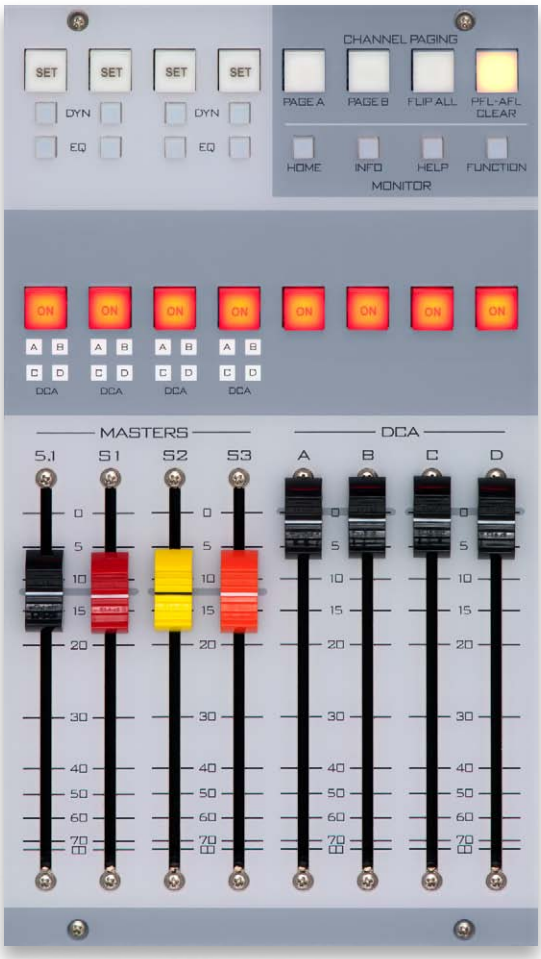
ON Switch
The ON switch turns the subgroup channel signal ON, pressing it a second time turns the group channel signal OFF.

AFL (Solo)
This switch activates After Fader Listen (SOLO) and puts the post fader subgroup audio into the AFL monitor section and meter.

Subgroup Faders
These 8 faders set the output levels of the subgroup channels. Nominal unity gain setting is at the -12dB point on the fader scale.



D-32 Modules



Master Panel

The D-32 MASTER panel houses four MASTER program outputs, four DCA Masters, CHANNEL PAGING buttons, the master PFL-AFL CLEAR button, and four MONITOR display mode buttons.

Masters Section
Each master mix (5.1 Surround and S1, S2, and S3 Stereo Masters) has SET, ON, DYN, and EQ switches, and a DCA assign display.

Master Mix Destinations
Press a master's SET switch to access centralized controls associated with the master. Central controls include MODE, EQ, Dynamics, Test Tone assign, Delay and Routing.

DYN
This switch inserts dynamic functions that have been preset by the operator in the DYNAMICS section of the EQ/Dynamics panel.

EQ
This switch inserts EQ functions that have been preset by the operator in the PARAMETRIC EQ section of the EQ/Dynamics panel.

Channel Master ON/OFF
The ON switch turns the channel signal ON; pressing it again turns the channel signal OFF.

DCA Master Displays
Each Master channel can be assigned to any combination of the four DCA masters using the DCA ASSIGN buttons in the MXM-D32 panel.

Master Faders
These linear controls set the levels of the master channels.

DCA Master Section
The DCA (Digitally Controlled Attenuator) faders allow the user to control a cluster of Input, Subgroup, and Master faders from a single DCA fader and ON switch.

DCA ON
The ON switch turns the DCA master ON; faders assigned to the master will also be turned ON.

Fader
A long-throw fader controls the relative fader level of all inputs, groups, and masters assigned to DCA.

Channel Paging Section
This section provides global page controls for the surface's two "pages." Each page includes all physical input channel strip knob, switch, and fader settings.

Clear PFL/AFL
Pressing this switch will de-activate all active PFL and AFL buttons throughout the control surface without having to locate and press the individual switches.

Display Monitor Controls
These switches change what information is displayed on certain meterbridge LCD displays.

Input Panel

Each input panel of the D-32 digital audio control surface has four identical strips representing four input channels. Each strip can be PAGED to access a second alternate strip, letting 4 physical faders control 8 completely independent input channels.

Programmable Section
Each input has a programmable encoder, 8 character display, and switch. The user may map any centrally located function (see SET below) to this rotary knob/display/switch. Typical uses might include input gain trim, pan control, or compressor/limited threshold setting.

Standalone Switches
The following switches directly access certain input functions.

COMP - activates compressor/limiter settings stored for the input strip.

GATE - activates gate settings stored for the input strip.

EQ - activates equalizer settings stored for the input strip.

SET - press an input's SET switch to access centralized controls associated with the input channel strip. Central controls include PAN/BAL, MODE, EQ, Dynamics, Source Select and IFB output Routing, Delay, Phase Reverse, and Source Gain.

PAGE - Press PAGE to access the second layer of a channel strip (essentially another full input channel). Each layer is totally independent.

ON - turns the input channel ON. All Bus assignments mapped as POST ON feeds will receive audio from the input channel. Certain logic signals may be mapped.

PFL - puts the input channel's signal into the PFL (CUE) mix prefader/ pre-on, and post gain, EQ, and DYN

IFB (Interruptible Fold-back)
There is one common IFB bus. Users add any or all input channels to the bus via the IN switch on each individual channel. Each channel generates an output signal consisting of all signals assigned to the IFB bus-minus the channel's input signal (N-1). Level control and direct talkback are provided for each channel. The individual output signal may also be switched to become a direct channel output for multi-track recording applications.

Source Selection
This section allows the user to select any source visible to its X controller. A Preset memory location stores a single source signal for recall via the PRESET switch. The REVERT switch causes the previously selected input to be recalled. Sources may be taken at any time regardless of the input fader ON status.

VU and Gain Reduction Metering
Each input fader has two independent 9-segment LED vertical columns to provide input signal metering.

Motorized Fader
The fader controls the channel strip's signal level to all post fader busses. The nominal unity gain level is at the -12dB mark on the scale. Note that EVENT recall includes the fader setting.

Bus Assign LED's
Each input strip has four sets of LED indicators which display the state of the channel's bus assignments. An illuminated LED indicates:

GROUPS – shows which Groups the input is assigned to: 1 through 8.

MSTR – shows which Masters the input is assigned to: 5.1, S1, S2, and S3.

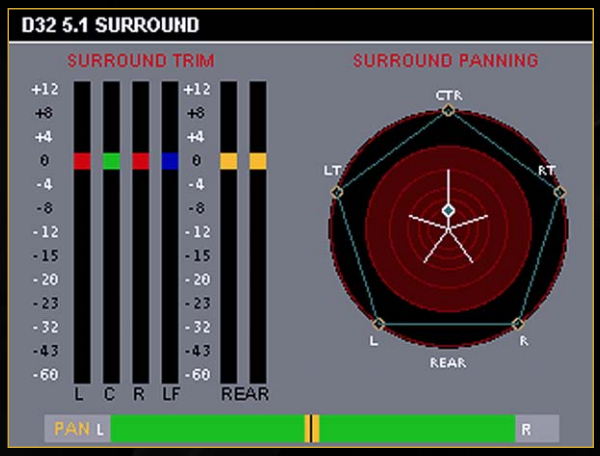
DCA – shows which DCA masters the input is assigned to: A, B, C, and D. If lit, the DCA assign LED(s) will flash if the DCA master is turned OFF or if the DCA master fader reaches a threshold setting of approximately -60.

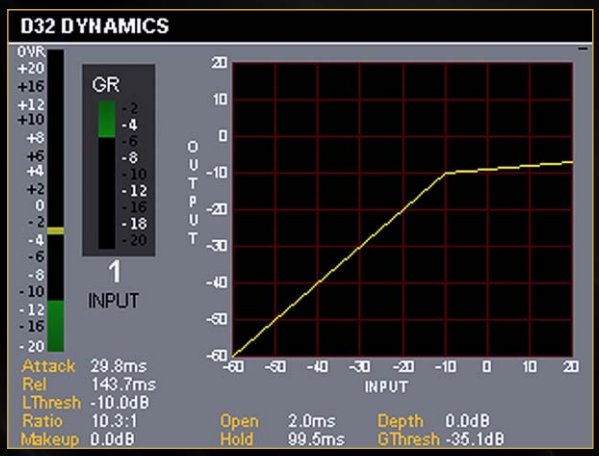
MXM – shows which MXM the input is subtracted from. MXM polarity can be flipped. If so programmed, lit MXM assign LED's mean that the channel is ADDED to the MXM mix.

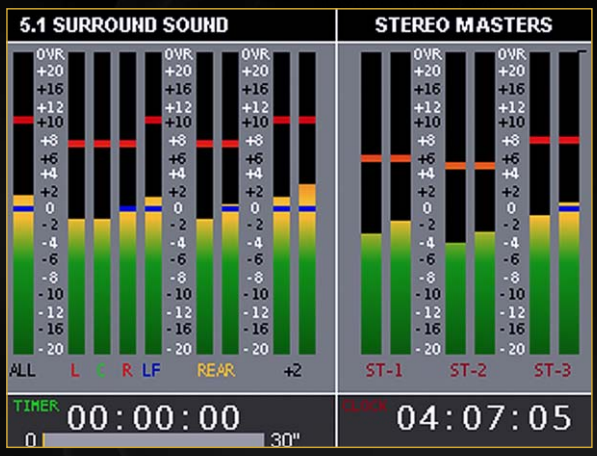
D-32 Active LCD Readouts

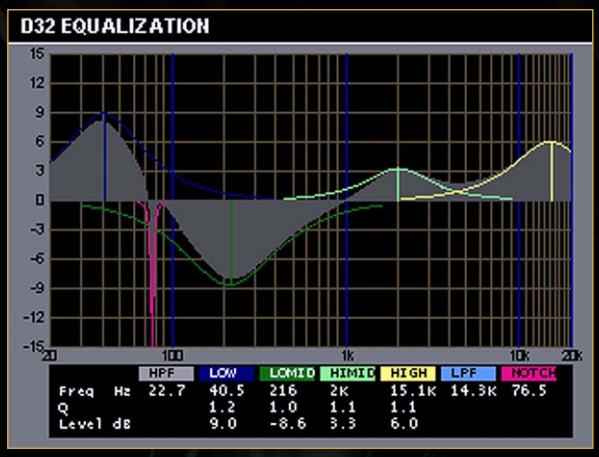
Every function on the D-32 has an associated screen on one of the LCD meterbridge displays. This allows both day-to-day operation of the board as well as deep editing of its many parameters. It also allows for very precise mixing on the fly. You'll always know where you are with the D-32...and where you're going.

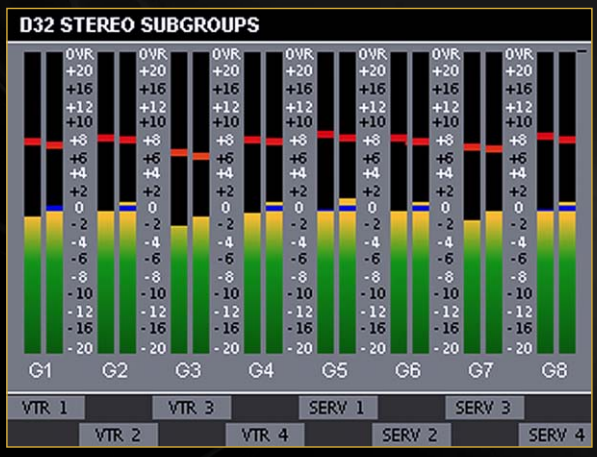
All LCD meters simultaneously provide both peak AND average display of the source or output signal in a 48 dB range scale with OVER indicators.

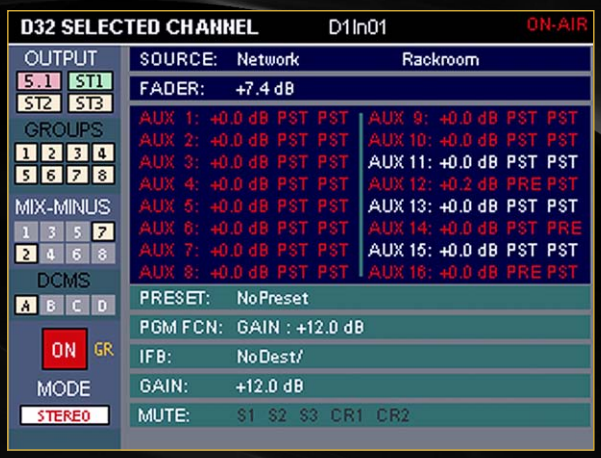




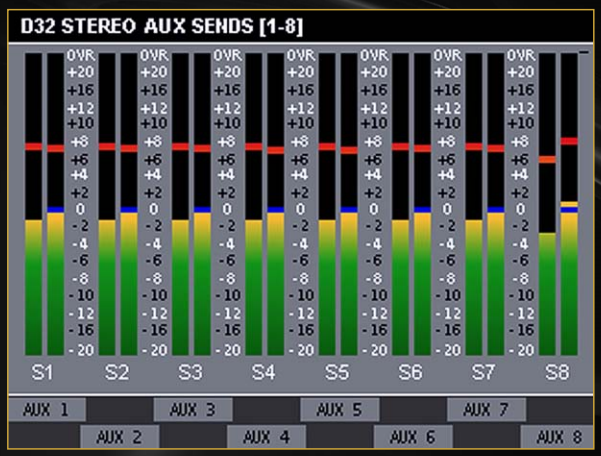


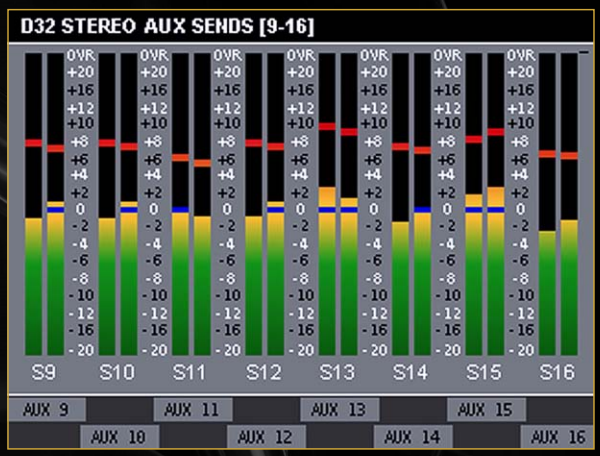


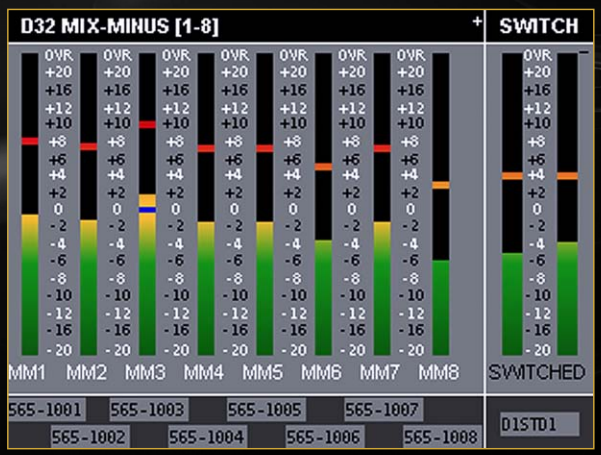


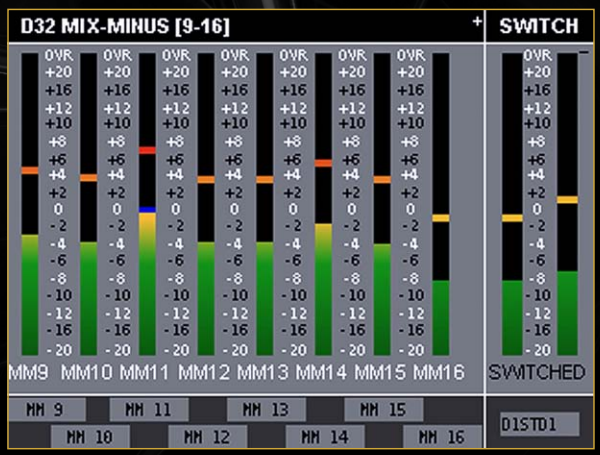

D32 SELECTED CHANNEL
D1In01
ON-AIR
OUTPUT
5.1
ST1
ST2
ST3
GROUPS
1 2 3 4
5 6 7 8
MIX-MINUS
1 3 5 7
2 4 6 8
DCMS
A B C D
ON
GR
MODE
STEREO
SOURCE: Network Rackroom
FADER: +7.4 dB
AUX 1: +0.0 dB PST PST
AUX 2: +0.0 dB PST PST
AUX 3: +0.0 dB PST PST
AUX 4: +0.0 dB PST PST
AUX 5: +0.0 dB PST PST
AUX 6: +0.0 dB PST PST
AUX 7: +0.0 dB PST PST
AUX 8: +0.0 dB PST PST
AUX 9: +0.0 dB PST PST
AUX 10: +0.0 dB PST PST
AUX 11: +0.0 dB PST PST
AUX 12: +0.2 dB PRE PST
AUX 13: +0.0 dB PST PST
AUX 14: +0.0 dB PST PRE
AUX 15: +0.0 dB PST PST
AUX 16: +0.0 dB PRE PST
PRESET: NoPreset
PGM FCN: GAIN : +12.0 dB
IFB: NoDest/
GAIN: +12.0 dB
MUTE: S1 S2 S3 CR1 CR2


D32 INFO SCREEN
Model Name : Wheatstone D32 TV Mixer
Software Rev: 1.1.0 Jan 16 2012 11:41:51
DSP Code Rev: EQ 1.0
Surface Name: D-32
Surface ID : 1
MAC Address : 000BAB3D4F0C
IP Address : 192.168.1.11
Subnet Mask : 255.255.255.0
GUI Connect : LISTENING
AUTO Connect: LISTENING
MT Link Stat: OK
Free Memory : 195084288 (78%)
Web Site : www.wheatstone.com
Wheatstone


D32 STEREO AUX SENDS [1-8]
S1 S2 S3 S4 S5 S6 S7 S8
AUX 1 AUX 3 AUX 5 AUX 7
AUX 2 AUX 4 AUX 6 AUX 8


D32 STEREO AUX SENDS [9-16]
S9 S10 S11 S12 S13 S14 S15 S16
AUX 9 AUX 11 AUX 13 AUX 15
AUX 10 AUX 12 AUX 14 AUX 16


D32 MIX-MINUS [1-8]
SWITCH
MM1 MM2 MM3 MM4 MM5 MM6 MM7 MM8
SWITCHED
565-1001 565-1003 565-1005 565-1007
565-1002 565-1004 565-1006 565-1008
D1STD1


D32 MIX-MINUS [9-16]
SWITCH
MM9 MM10 MM11 MM12 MM13 MM14 MM15 MM16
SWITCHED
MM 9 MM 11 MM 13 MM 15
MM 10 MM 12 MM 14 MM 16
D1STD1

D-32 servicability

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 D-32 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 D-32 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 D-32.

CONTROL SURFACE SPECIFICATIONS

CONTROL SURFACE FRAME CAPACITIES
32 Position Frame - 24, 28, or 32 Fader Channels *
36 Position Frame - 24, 28, 32, or 36 Fader Channels
40 Position Frame - 24, 28, 32, 36, or 40 Fader Channels
48 Position Frame - 24, 28, 32, 36, 40, 44, or 48 Fader Channels
52 Position Frame - 24, 28, 32, 36, 40, 44, 48, or 52 Fader Channels

AVAILABLE FADER CHANNEL OPTIONS
IS-D32 - Input Channel Panel (4 Channels per panel)
IS-D32NP - Input Channel Panel – No Channel Paging (4 Channels per panel)

MASTER CONTROL PANELS

EQD-D32	EQ, Dynamics Control Panel
GRP-D32	Submaster Control Panel
MON-D32	Monitor Master Control Panel
MST-D32	Master Fader Control Panel
TBM-D32	Talkback Control Panel
MXM-D32-1	Mix-Minus / Auxiliary Send Control Panel 1-8
MXM-D32-9	Mix-Minus / Auxiliary Send Control Panel 9-16
SUR-D32	Surround Pan / Stereo Mode Control Panel
XYE-D32	Preset Control / Router Control Panel

CONNECTIONS

DSP Engine Link	Fiber or CAT5 (RJ-45)
Administrative Port	Ethernet - RJ-45 (for setup only)
Power	Dual HiPower DB-5 for redundant operation

** 32-position frame limited to 8 AUX, 8 MXM*

BUS STRUCTURE

Main Busses:	One 5.1 Program, Three Stereo Program.
Mix-Minus:	16 Mono *
Auxiliary Sends:	16 Stereo; (direct rotary control from fader channel) *
Bus-minus:	Direct IFB feed from every fader channel, can be configured as direct out track feed
Outputs:	Outputs from all busses and bus-minus are configured within the Gibraltar Network router matrix and can be analog, and/or digital, or not fitted

SIGNAL PROCESSING FUNCTIONS PROVIDED WITH ALL INPUT FADER CHANNELS

Phase Reverse	
Pan / Balance Control	
Stereo Mode Control	
Compressor / Limiter / Gate	
Delay	0-667.5ms.
Variable High Pass Filter	16.1Hz-1kHz, 24dB/Octave
Variable Low Pass Filter	20.2kHz-1kHz, 24dB/Octave
Variable Notch Filter	1/10th Octave
4-Band, Parametric Equalizer:	
Low Band:	+14dB, 16.1Hz-20.2kHz, Switchable Peaking/Shelving, Bandwidth "Q" range: .2-3
Mid 1 Band:	+14dB, 16.1Hz -20.2kHz, Peaking type, Bandwidth "Q" range: .2-3
Mid 2 Band:	+14dB, 16.1Hz -20.2kHz, Peaking type, Bandwidth "Q" range: .2-3
High Band:	+14dB, 16.1Hz -20.2kHz, Switchable Peaking/Shelving, Bandwidth "Q" range: .2-3

All controls for the above functions are conveniently placed in a central facilities panel located within easy reach

WHEATSTONE GIBRALTAR NETWORK SPECIFICATIONS

GIBRALTAR NETWORK CAGE

Dimensions	4RU, 19"/48.3cm wide 7"/17.8cm high 16"/40.6cm deep 18"/45.7cm deep w/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

GIBRALTAR NETWORK POWER SUPPLY

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

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 Gibraltar Network to up to 4 remote Gibraltar Network, Cages 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.

Designed and built by
Wheatstone Corporation
600 Industrial Drive | New Bern NC 28562-5440 USA
phone 1.252.638-7000 | fax 1.252.635-4857
wheatstone.com | sales@wheatstone.com

Wheatstone
BROADCAST AUDIO PERFECTIONISTS®

073015