M32 Digital Console - User Manual

For live and studio, with 40 input channels, 32 MIDAS microphone preamplifiers and 25 mix buses
Important Safety Instructions

This symbol wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of electric shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

Caution
To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

Caution
To reduce the risk of fire or electric shock, do not expose this appliance to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Caution
These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Use only attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.
16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
17. Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/ EU) and your national law. This product should be taken to a collection centre licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

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Limited Warranty

For the applicable warranty terms and conditions and additional information regarding MUSIC Group’s Limited Warranty, please see complete details online at music-group.com
Precautions

Before installing, setting up or operating this equipment make sure you have read and fully understand all of this section and the ‘IMPORTANT SAFETY INSTRUCTIONS’ at the front of this manual.

This equipment is supplied by a mains voltage that can cause electric shock injury!

The following must be observed in order to maintain safety and electromagnetic compatibility (EMC) performance.

Safety warnings

Signal 0V is connected internally to the chassis.

To completely isolate this equipment from the AC mains, while observing full safety precautions (see ‘Power’ on page xiii), switch off the isolator switch (above the mains power sockets on rear of control centre) and then switch off the mains at the three mains outlets. Unplug the three mains leads from the rear of the control centre. For details of how to remove Volex locking type plug, see ‘Power’ below.

To avoid electrical shock do not remove covers.

General precautions

In the event of ground loop problems, disconnect the signal screen at one end of the connecting cables. Note that this can only be done when the equipment is used within a balanced system.

Do not remove, hide or deface any warnings or cautions.

Power

The system power supplies contain LETHAL VOLTAGES great in excess of the mains voltage and its rails can produce extremely large currents that could burn out equipment and wiring if shorted.

The internal power supplies are of the switch mode type that automatically sense the incoming mains voltage and will work where the nominal voltage is in the range 100 VAC to 240 VAC.

Each mains inlet is to be sourced from its own separate wall-mounted mains outlet socket. Otherwise, their mains sources must be suitably distributed so as to meet local safety regulations.

A Volex locking type plug is fitted on each supplied mains cable, which plugs into a mains IEC connector on the unit. When fitted properly the Volex plug locks into place, preventing it from working loose, or being inadvertently knocked loose or pulled out. To fit a Volex plug, insert it into the mains IEC connector and push it in until it locks in place. Then, check to make sure it is locked in place. To remove it, release its locking device and then pull it out. When fitting or removing a Volex plug, always hold the plug itself and never use the cable, as this may damage it.

During operation, a minimum of two of its three mains inlets must be connected and supplying power.

When removing the equipment’s electric plugs from the outlets, always hold the plug itself and not the cable. Pulling out the plug by the cable can damage it.

Never insert or remove an electric plug with wet hands.

Do not connect/disconnect a mains power connector to/from the M32 Control Centre while power is being applied to it. Switch the power off first.

Before switching the M32 Control Centre on or off, make sure that all monitor loudspeaker power amplifiers are turned off or muted.

Handling the equipment

Completely isolate the equipment electrically and disconnect all cables from the equipment before moving it.

When lifting or moving the equipment, always take its size and weight into consideration. Use suitable lifting equipment or transporting gear, or sufficient additional personnel.

Do not insert your fingers or hands in any gaps or openings on the equipment, for example, vents.

Do not press or rub on the sensitive surface of the GUI screens.

If the glass of the GUI screen is broken, liquid crystals shouldn’t leak through the break due to the surface tension of the thin layer and the type of construction of the LCD panel. However, in the unlikely event that you do make contact with this substance, wash it out with soap.

Installation

Before installing the equipment:

Make sure the equipment is correctly connected to the protective earth conductor of the mains voltage supply of the system installation through the mains leads.

Power to the equipment must be via a fused spur(s).

Power plugs must be inserted in socket outlets provided with protective earth contacts. The electrical supply at the socket outlets must provide appropriate over-current protection.

Both the mains supply and the quality of earthing must be adequate for the equipment.

Before connecting up the equipment, check that the mains power supply voltage rating corresponds with the local mains power supply. The rating of the mains power supply voltage is printed on the equipment.

Location

Ideally a cool area is preferred, away from power distribution equipment or other potential sources of interference.

Do not install the equipment in places of poor ventilation.

Do not install this equipment in a location subjected to excessive heat, dust or mechanical vibration. Allow for adequate ventilation around the equipment, making sure that its fans and vents are not obstructed. Whenever possible, keep the equipment out of direct sunlight.

Do not place the equipment in an unstable condition where it might accidentally fall over.

Make sure that the mains voltage and fuse rating information of the equipment will be visible after installation.

Ensure that all underside vents are left clear during operation.

Audio connections

To ensure the correct and reliable operation of your equipment, only high quality, balanced, screened, twisted pair audio cable should be used.

XLR connector shells should be of metal construction so that they provide a screen when connected to the control centre and, where appropriate, they should have Pin 1 connected to the cable screen.

Electrostatic discharge (ESD) precautions

Electrostatic discharge (ESD) — also known as ‘anti-static’ — precautions when carrying out procedures in this manual that are accompanied by the ESD Susceptibility Symbol (shown above). This caution symbol shows you that ESD damage may be caused to items unless proper ESD precautions are taken, which include the following practices:

- Keep the work area free from plastic, vinyl or styrofoam.
- Wear an anti-static wrist strap.
- Discharge personal static before handling devices.
- Ground the work surface.
- Avoid touching ESD-sensitive devices.

Radio frequency interference — Class A device

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Electric fields

Caution:

In accordance with Part 15 of the FCC Rules & Regulations, “…changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.”

Should this product be used in an electromagnetic field that is amplitude modulated by an audio frequency signal (20 Hz to 20 kHz), the signal to noise ratio may be degraded. Degradation of up to 60 dB at a frequency corresponding to the modulation signal may be experienced under extreme conditions (3 V/m, 90% modulation).

Safety equipment

Never remove, for example, covers, housings or any other safety guards. Do not operate the equipment or any of its parts if safety guards are ineffective or their effectiveness has been reduced.

Optional equipment

Unless advised otherwise, optional equipment must only be installed by service personnel and in accordance with the appropriate assembly and usage regulations.

Special accessories

To comply with part 15 of the FCC Rules, any special accessories (that is, items that cannot be readily obtained from multiple retail outlets) supplied with this equipment must be used with this equipment; do not use any alternatives as they may not fulfil the RF requirement.
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Introduction

Welcome to the M32 Digital Console User manual! After years of intense development, we are proud to offer a mixer that combines tremendous power and flexibility with a very user-friendly layout and intuitive workflow that allows you to get up and running right away.

The M32 combines a control surface with streamlined workflow, extensive I/O and signal processing into a compact desktop form factor. Employing award-winning MIDAS PRO Series microphone preamplifiers and the custom-designed MIDAS PRO motorised faders that are rated for 1 million cycles, along with a daylight-viewable TFT screen, the control surface is designed to allow immediate access to critical functions with total and automatic recall of settings. Extensive onboard I/O includes 40 A/D and 24 D/A Cirrus Logic converters, 96 bi-directional channels over SuperMAC AES50, stereo AES/EBU out, 16 channels of Ultranet personal monitoring and 32 x 32 channels of recording over FireWire or USB.

Abundant analogue connectivity is provided by 32 MIDAS PRO Series digitally-controllable microphone preamps, six line-level auxiliary inputs and outputs, 16 XLR outputs, stereo monitoring outs on XLR/TRS and dual phones outputs. Each of the 32 microphone inputs can accept balanced or unbalanced mic- or line-level signals, and include switchable phantom power, 72 dB gain range and maximum +23 dBu level before clip. A separate external microphone input and the internal talkback mic allow communication to various destinations.

Dual AES50 Ethernet jacks that employ KLARK TEKNIK SuperMAC technology contribute 96 x 96 signals to the total count of 168 x 168 accessible sources and destinations. Motorised faders, recallable mic preamps, programmable routing and the ability to save and recall entire scenes make set or programme changes quick and simple. A top panel USB connector enables system data to be stored, or a board mix to be recorded directly to external flash or hard drives.

The Input section is home to 16 high-resolution 100 mm motorised faders, providing control over channels 1-16, 17-32, Aux inputs/USB playback/FX returns. A separate section of eight motorised faders controls DCA groups 1-8, bus masters 1-8 and 9-16, as well as matrices 1-6. The channel editing section provides tangible controls for instant access to the selected channel's gain, dynamics, EQ and other functions. A custom-assignable section allows certain control functions to be mapped directly to a set of dedicated rotary controls and buttons.

A main seven inch-wide, high-contrast colour display provides information for editing pertinent parameters of the active function or effect. Relevant parameters are quickly recalled to the display for editing via ‘VIEW’ buttons in each subsection. Each channel also features a small, customisable LCD screen for track name, number, colour and source graphic.

A virtual FX rack offers eight true-stereo (16 mono) multi-effects processors, with over 60 effects models that eliminate the need for any additional outboard gear. Four high-quality effects such as delay, chorus and reverb can run concurrently with eight channels of 31-band graphic equalisation.

Transmit up to 32 channels of audio to and from a computer using the KLARK TEKNIK DN32 USB audio interface.

The M32 integrates seamlessly with other M32 consoles, the MIDAS DL16 digital stagebox and the Behringer P-16 personal monitoring system for a complete live, studio and installed sound solution.

Control the mixer from a distance with the free iPad application, or with editing and remote control software connected via Ethernet. The M32’s ease of use, intuitive workflow, diverse feature set and integration with other equipment make it an ideal centrepiece for installed and production sound in any setting.

Continue through this User Manual to learn all about the functionality that this powerful mixer has to offer. We also recommend that you check midasconsoles.com to make sure you have the latest firmware installed, as we release frequent updates.
Channel Strip - Input Channels

REM - DAW Remote Button
Press this button to enable remote control of your Digital Audio Workstation software using the Group/Bus fader section controls. This section can emulate HUI or Mackie Control Universal communication with your DAW.

Layer Select Buttons

INPUTS 1-16 / INPUTS 17-32
Pressing one of these buttons selects either the channel 1-16 layer, or the channel 17-32 layer.

AUX IN / USB
Press to select the Aux In / USB Recorder and FX 1-4 Returns layer.

BUS MAST
Press to bring up all the 16 Bus Master channels.

Individual Channel Strip Controls
Each of the above layers operates in a similar way by use of the following controls:

SEL Button
Press to select an input or bus (depending on which layer is active) and allow it to be edited by the Channel Strip and Main Display.

Channel Meter
This displays the signal level of the input or bus, depending on which layer is active. The COMP and GATE LEDs light to indicate that compression and/or noise gate are active.

SOLO Button
Press to send the channel to the solo bus.

Scribble Strip
Information such as channel number, input source and a graphic icon are displayed here.

MUTE Button
Press to mute the channel.

Fader
Use the MIDAS PRO Motor Fader to adjust the channel output volume. In Sends on Faders mode channel faders represent the send level from channels to the currently selected output bus (see next page).
Channel Strip - Group/Bus Channels

1. Fader Flip - Sends on Fader Button
2. Group DCA 1-8 Button
3. Bus 1-8, 9-16 Buttons
4. MTX 1-6 / Main C Button
5. Main Channel
6. SEL Button
7. COMP LED Indicator
8. LCD Display
9. CLR SOLO Button
10. SOLO Button
11. Scribble Strip
12. MUTE Button

FADER FLIP - SENDS ON FADER Button
Press to activate the M32's Sends on Fader function. This function aids with the level setting of channels sent to any of the 16 Mix Buses. It is only for channels assigned to Mix Buses 1-16, and does not work for DCA groups, main or matrix buses. The Sends on Fader function works in two convenient ways to cover the most obvious situations in a live environment:

When preparing a monitor mix for a specified musician
- Select the monitor bus (BUS 1-8 or BUS 9-16) that feeds the musician's stage monitor
- Press the Sends on Fader button, which will then flash
- Select one of the three input channel layers (INPUTS 1-16, INPUTS 17-32, AUX IN / USB or BUS MAST)
- As long as Sends on Fader is active all faders in the input channels section correspond to the send levels on the selected monitor mix bus.

When checking or editing where a selected input signal is to be sent
- Select the input channel in the left-hand section
- Press the Sends on Fader button, which will then flash
- Select either bus channel layer (BUS 1-8 or BUS 9-16)
- The bus faders now represent the send levels of the selected input channel.

TIP: Sends on Fader can also be used for conveniently sending Bus or Main M/C signals to Matrices.

Layer Select Buttons

GROUP DCA 1-8
Press this button to select the Group DCA layer.

BUS 1-8 / 9-16
Press one of these buttons to select either the Bus 1-8 layer or the Bus 9-16 layer.

MTX 1-6 / MAIN C
Press to select the Aux In / USB channel layer.

Individual Channel Strip Controls

Each of the above layers operates in a similar way by use of the following controls:

SEL Button
Press to select a DCA or bus (depending on which layer is active) and allow it to be edited by the Channel Strip and Main Display.

Channel Meter
This displays the signal level of the DCA or bus, depending on which layer is active. The PRE LED lights to indicate that the bus is sourced pre-fader, while the COMP LED lights to indicate that compression is active.

SOLO Button
Press to send the channel to the solo bus.

Scribble Strip
Information such as channel number, input source and a graphic icon are displayed here.

MUTE Button
Press to mute the channel.

Fader
Use the MIDAS PRO Fader to adjust the channel volume or bus sends in Sends on Faders mode. The faders will automatically display the current status as layers and functions are changed.

Main

SEL Button
Press to select the Main bus for editing.

COMP
The COMP indicator will illuminate when compression is being applied to the stereo output mix.

CLR SOLO Button
Press to clear all sources assigned to the solo bus.

SOLO Button
Press to solo the main bus.

Scribble Strip
Customisable information relating to the main bus are displayed here.

MUTE Button
Press to mute the main bus.

Fader
Use the MIDAS PRO Fader to adjust the output of the main bus.
**Config/Preamp**

On a microphone preamplifier, input gain varies the amount of amplification applied to the microphone. Adjust the preamp gain for the selected channel with the **GAIN** rotary control.

**LED Display**

The LED display in the Config/Preamp section illustrates the signal input level for the selected channel. This is shown as a value between 0 dB and -30 dB. When there is a signal present, but below -30 dB, the **SIG** LED is lit. When the signal exceeds 0 dB the **CLIP** LED illuminates.

Please note that, when pressing the **VIEW** button, the signal input level displayed on the Main Display shows a value of between 0 dB and -60 dB.

**FREQUENCY Rotary Control**

The **FREQUENCY** rotary control selects the frequency at which the low cut filter begins to filter unwanted frequencies for the selected channel. The filter is engaged by pressing the **LOW CUT** button (see below).

Please note that the low cut filter is only available for the 32 primary input channels.

**48V**

Phantom power is a method for transmitting DC electric power through microphone cables to operate microphones that contain active electronic circuitry. It is most commonly used with condenser microphones, though many active direct boxes also use it. The technique is also used in other applications where power supply and signal communication take place over the same wires. Press the **48V** button to apply phantom power on the selected channel's physical input.

**Ø**

An audio signal's 'phase' refers to its position in a point of time along the waveform cycle, with each cycle being 360°. Press the **Ø** button to reverse the selected channel's phase by 180°. This can be useful when using the reverse phase function to cancel noise across more than one channel.

**LOW CUT**

Press the **LOW CUT** button to engage the low cut filter for the selected channel.

Please note that the low cut filter is only available for the 32 primary input channels.

**VIEW**

Press the **VIEW** button to access more detailed parameters on the Main Display. See the section **Main Display - config** for more details.
Gate

A noise gate is a device that is used to control the volume of an audio signal. Often used in conjunction with a compressor (see DYNAMICS), which attenuate signals above a certain threshold, noise gates attenuate signals that register below the threshold. By turning the THRESHOLD rotary control, the audio level at which the gate affects the signal can be controlled.

LED Display

The LED display illustrates when the Gate is functioning for the selected channel by illuminating the red GATE LED at the bottom of the display.

GATE

Pressing the GATE button engages the noise gate for the selected channel.

VIEW

Press the VIEW button to access more detailed parameters on the Main Display. See the section Main Display - gate for more details.

Dynamics

Dynamic Range Compression, or just Compression is a device that is used to control the volume of an audio signal. Often used in conjunction with a noise gate (see GATE), which attenuate signals below a certain threshold, compressors attenuate signals that register above the threshold. By turning the THRESHOLD rotary control, the audio level at which the compressor affects the signal can be controlled.

LED Display

The LED display illustrates when the Dynamics are functioning for the selected channel by illuminating the red COMP LED. The level of attenuation that is being applied to the signal is shown as a value between 0 dB and -30 dB.

Please note that, when pressing the VIEW button, the attenuation level displayed on the Main Display shows a value of between 0 dB and -60 dB.

COMP

Pressing the COMP button engages the compressor for the selected channel.

VIEW

Press the VIEW button to access more detailed parameters on the Main Display. See the section Main Display - dyn for more details.
Equaliser

MODE Select Button and Display

Pressing the MODE button cycles through each of the EQ modes for the currently selected frequency range. Each of the modes and the frequency ranges to which they apply are listed below:

**HCUT**
A high-cut function which attenuates signals above the selected frequency.

**HSHV**
A high-shelving function which boosts or attenuates signals above the selected frequency. Only available with the **HIGH 2** setting.

**VEQ**
A bell filter that provides a more 'Vintage EQ' sound. Available on all frequency settings.

**PEQ**
A bell filter that provides a classic 'Parametric EQ' sound. Available on all frequency settings.

**LCUT**
A low-cut function which attenuates signals below the selected frequency. Only available with the **LOW 2** setting.

**NOTE:** Low-Cut and High-Cut Modes do not have Gain and Width settings.

**WIDTH Rotary Control**
The WIDTH rotary control determines the span of frequencies around that specified by the FREQUENCY rotary control, which will be affected by adjusting the GAIN control.

**FREQUENCY Rotary Control**
Select the specific frequency to be adjusted with the FREQUENCY rotary control. Each frequency can be adjusted between 20 Hz and 20 kHz. The equaliser provides four discreet filter bands for input channels and even six discreet bands for buses and matrices as follows:

**HIGH**
A band intended for high frequencies, with access to **HCUT**, **HSHV**, **VEQ** and **PEQ** EQ modes.

**HI MID**
A band intended for high-mid frequencies, with access to **VEQ** and **PEQ** EQ modes.

**LO MID**
A band intended for low-mid frequencies, with access to **VEQ** and **PEQ** EQ modes.

**LOW**
A band intended for low frequencies, with access to **LCUT**, **LSHV**, **VEQ** and **PEQ** EQ modes.

**HIGH 2**
Press **HIGH** and **HI MID** concurrently to access the **HIGH 2** band of any bus equaliser.

**LOW 2**
Press **LOW** and **LO MID** concurrently to access the **LOW 2** band of any bus equaliser.

**GAIN Rotary Control**
Boost or attenuate the selected frequency by turning the GAIN rotary control. The selected equaliser band is inactive when the Gain control is in the center position (0 dB).

**EQ Button**
Engages the EQ function for the selected channel.

**VIEW**
Press the VIEW button to access more detailed parameters on the Main Display. See the section **Main Display - eq** for more details.
Bus Sends

Rotary Controls 1-4
Bus Sends are selected in banks of four with the Select Buttons (see below). The rotary controls adjust each of the four buses currently selected.

Select Buttons 1-4, 5-8, 9-12 & 13-16
Select one of the banks of Bus Sends with either of the Select buttons on the right of the panel. The bank that is currently selected will be highlighted on the Main Display.

VIEW
Press the VIEW button to access more detailed parameters on the Main Display. See the section Main Display - sends for more details.

Main Bus

LEVEL Rotary
Adjust the overall send level to the Mono Bus with the LEVEL rotary control.

PAN/BAL Rotary
When the selected channel is assigned to the Stereo Bus, the PAN/BAL rotary control adjusts the left to right positioning of the audio signal.

MONO
Press the MONO button to assign the selected channel to the Main Mono/Centre Bus.

ST
Press the ST select button to assign the selected channel to the Main Stereo Bus.

VIEW
Press the VIEW button to access more detailed parameters on the Main Display. See the section Main Display - main for more details.
RECORDER

USB Port
Connect a USB stick to install firmware updates and to record performances.

ACCESS
The ACCESS LED illuminates to indicate that a USB stick is in place and is being written to or read from.

VIEW
Press the VIEW button to open the USB Recorder pages on the Main Display.

Operation
The M32 offers functionality for playing back uncompressed stereo WAV files, and for recording any available signal in the console directly onto USB stick or compatible USB hard drive.

To record to a USB stick, perform the following steps:
1. Plug a FAT-formatted (FAT12, FAT16, FAT32) USB stick into the USB port as illustrated above.
2. Press the VIEW button in the RECORDER panel. This will then display a graphic representation of an analogue tape deck on the Main Display home tab.
3. On the config tab you can select the source of the recording, the default being the main L & R outputs.
4. Press the fifth rotary control, labelled Record.
5. To adjust the volume during playback, press the AUX IN/USB button next to the input channel faders, and adjust the volume using AUX faders 7 & 8.
Main Display (Summary)

1. Display Screen
2. Main / Solo Meters
3. Screen Selection Buttons
4. Rotary Controls
5. Up / Down / Left / Right Navigation Controls

DISPLAY SCREEN

The controls in this section are used in conjunction with the colour screen in order to navigate and control the graphical elements it contains.

By including dedicated rotary controls that correspond to the adjacent controls on the screen, as well as including cursor buttons, the user can quickly navigate and control all of the colour screen's elements.

The colour screen contains various displays that give visual feedback for the operation of the console, and also allow the user to make various adjustments not provided for by the dedicated hardware controls.

MAIN/SOLO METERS

This triple 24-segment meter displays the audio signal level output from the main bus, as well as the main centre or solo bus of the console.

SCREEN SELECTION BUTTONS

These eight illuminated buttons allow the user to immediately navigate to any of the eight master screens that address different sections of the console. The sections that can be navigated are:

HOME

The HOME screen contains an overview of the selected input or output channel, and offers various adjustments not available through the dedicated top-panel controls.

The HOME screen contains the following separate tabs:

- **home**: General signal path for the selected input or output channel.
- **config**: Allows selection of the signal source/destination for the channel, configuration of insert point, and other settings.
- **gate**: Controls and displays the channel gate effect beyond those offered by the dedicated top-panel controls.
- **dyn**: Dynamics - controls and displays the channel dynamics effect (compressor) beyond those offered by the dedicated top-panel controls.
- **eq**: Controls and displays the channel EQ effect beyond those offered by the dedicated top-panel controls.
- **sends**: Controls and displays for channel sends, such as sends metering and send muting.
- **main**: Controls and displays for the selected channel's output.

METERS

The METERS screen displays different groups of level meters for various signal paths, and is useful for quickly ascertaining if any channels need level adjustment. Since there are no parameters to adjust for the metering displays, none of the metering screens contain any 'bottom of the screen' controls that would normally be adjusted by the six rotary controls.

The METERS screen contains the following separate screen tabs, each containing level meters for the relevant signal paths: **channel**, **mix bus**, **aux/fx**, **in/out** and **rta**.

ROUTING

The ROUTING screen is where all signal patching is done, allowing the user to route internal signal paths to and from the physical input/output connectors located on the console's rear panel.

The ROUTING screen contains the following separate tabs:

- **home**: Allows patching of physical inputs to the 32 input channels and aux inputs of the console.
- **out 1-16**: Allows patching of internal signal paths to the console's 16 rear panel XLR outputs.
- **aux out**: Allows patching of internal signal paths to the console's six rear panel ¼" / RCA auxiliary outputs.
- **p16 out**: Allows patching of internal signal paths to the 16 outputs of the console's 16-channel P16 Ultranet output.
- **card out**: Allows patching of internal signal paths to the 32 outputs of the expansion card.
- **aes50-a**: Allows patching of internal signal paths to the 48 outputs of the rear panel AES50-A output.
- **aes50-b**: Allows patching of internal signal paths to the 48 outputs of the rear panel AES50-B output.
- **xlr out**: Allows the user to configure the XLR outs on the rear of the console in blocks of four, from either local inputs, the AES streams, or expansion card.

SETUP

The SETUP screen offers controls for global, high-level functions of the console, such as display adjustments, sample rates & synchronisation, user settings, and network configuration.
The **SETUP** screen contains the following separate tabs:

- **global**: This screen offers adjustments for various global preferences of how the console operates.
- **config**: This screen offers adjustments for sample rates and synchronisation, as well as configuring high-level settings for signal path busses.
- **remote**: This screen offers different controls for setting up the console as a control surface for various DAW recording software on a connected computer. It also configures the MIDI Rx/Tx preferences.
- **network**: This screen offers different controls for attaching the console to a standard Ethernet network. (IP address, Subnet Mask, Gateway.)
- **scribble strip**: This screen offers controls for various customisation of the console’s LCD scribble strips.
- **preamps**: Shows the analogue gain for local mic inputs (XLR at the rear) and phantom power, including setup and routing of preamps.
- **card**: This screen selects the input/output configuration of the installed interface card.

The **LIBRARY** screen allows loading and saving of commonly-used setups for the channel inputs, effects processors, and routing scenarios.

The **LIBRARY** screen contains the following tabs:

- **channel**: This tab allows the user to load and save commonly used combinations of the channel processing, including dynamics and EQ.
- **effects**: This tab allows the user to load and save commonly used effects processor presets.
- **routing**: This tab allows the user to load and save commonly used signal routings.

The **EFFECTS** screen controls various aspects of the eight effects processors. On this screen the user can select specific types of effects for the eight internal effects processors, configure their input and output paths, monitor their levels, and adjust the various effects parameters.

The **EFFECTS** screen contains the following separate tabs:

- **home**: The home screen provides a general overview of the virtual effects rack, displaying what effect has been inserted in each of the eight slots, as well as displaying input/output paths for each slot and the I/O signal levels.
- **fx1-8**: These eight duplicate screens display all of the relevant data for the eight separate effects processors, allowing the user to adjust all parameters for the selected effect.

The **MUTE GRP** screen allows for quick assignment and control of the console’s six mute groups, and offers two separate functions:

- **Mutes** the active screen during the process of assigning channels to mute groups. This ensures that no channels are accidentally muted during the assignment process during a live performance.
- **It offers an additional interface for muting/unmuting the groups in addition to the dedicated mute group buttons at the bottom of the console.**

The **UTILITY** screen is a supplemental screen designed to work in conjunction with the other screens that may be in view at any particular moment. The **UTILITY** screen is never seen by itself, it always exists in the context of another screen, and typically brings up copy, paste and library or customisation functions. For example:

- When you are adjusting the EQ of a channel, pressing the **UTILITY** button will offer copying, pasting or loading functionality, or saving of EQ settings
- Pressing the **UTILITY** button while editing a channel’s **CONFIG/PREAMP** screen will offer copying, saving or loading preamp configurations

**NOTE**: Pressing the **UTILITY** button while holding the channel Select button is a shortcut to editing the channel's scribble strip display icon, naming or colour.

- On the **ROUTING** screen, pressing **UTILITY** will offer the ability to load or save different presets of routing scenarios
- On the **CUES, SCENES and SNIPPETS** pages, pressing **UTILITY** also offers different levels of import/export functions:
  - Cues: Utility allows importing or exporting complete Show data, including all Cues, Scenes, Snippets and Safes to attached USB media.
  - Scenes: Utility offers selecting a number of scenes for exporting or importing on attached USB media.
  - Snippets: Utility offers selecting a number of snippets for exporting or importing on attached USB media.
  - Param Safes/Chan Safes: Utility allows setting/resetting the Safe flags for a complete column of entries at once.

**ROTOR CONTROLS**

These six rotary controls are used to adjust the various elements located directly above them. Each of the six controls can be pushed inward to activate a button-press function. This function is useful when controlling elements that have a dual on/off status that is best controlled by a button, as opposed to a variable state that is best adjusted by a rotary control.

**UP/DOWN/LEFT/right navigation controls**

The **LEFT** and **RIGHT** controls allow for left-right navigation among the different pages contained within a screen set. A graphical tab display shows which page you are currently on. On some screens there are more parameters present than can be adjusted by the six rotary controls underneath. In these cases, use the **UP** and **DOWN** buttons to navigate through any additional layers contained on the screen page. The **LEFT** and **RIGHT** buttons are sometimes used to confirm or cancel confirmation pop-ups.

Please refer to the **MAIN DISPLAY** chapter for more information on these topics.
Monitor

MONITOR LEVEL Rotary Control
Adjust the level of the monitor outputs with the MONITOR LEVEL rotary control. This will be the output device connected to the sockets in the MONITOR / CONTROL ROOM OUT section on the rear panel.

PHONES LEVEL Rotary Control
Adjust the level of the signal through the headphones or other output devices connected via the headphone jack sockets located under the front of the console.

MONO
Press the MONO button to monitor the audio signal in mono.

DIM
Press the DIM button to reduce the monitor volume by a predefined amount. The amount of attenuation can be defined via the Main Display when the VIEW button is pressed.

VIEW
Press the VIEW button to access more detailed parameters on the Main Display.

Operation
The MONITOR section shares a Main Display screen with the TALKBACK section. On this screen, only the monitor tab contains functionality which relates to the MONITOR section. This tab controls various console options relating to the solo bus, as well as the console's control room outputs. These options include various solo settings, speaker dimming, speaker delay, and a selection of sources for the control room output.

To adjust the settings on the monitor tab, perform the following steps:
1. Adjust the first rotary control to change the gain of the monitor signal. This digital stage occurs as a first preliminary level control, before the top panel's analogue-based monitor level control. A display above the rotary control shows the currently set gain value in dB.
   • A multi-segment level meter is displayed on the Main Display to allow for proper gain staging of the monitor signal.

2. Adjust the second rotary control to scroll through the various solo methods available to the console when audio is routed to the solo bus. Available options include:
   • Exclusive (last): In this mode, pressing another SOLO button disengages the previous solo
   • Solo Follows Select: When this method is selected, the audio of the currently selected channel will automatically be sent to the solo bus. Since a user will often select a channel to adjust its dedicated DSP controls, this method is useful because the audio of the channel will now already be feeding the solo bus where it can be monitored with headphones in a live sound environment
   • Select Follows Solo: When this method is selected, any channel that is soloed will automatically become the currently selected channel
   • Ch Solo AFL: The channel and select button do not have any correlation to each other. When a channel's SOLO button is pressed, its audio is sent to the solo bus in 'after-fader-listen' mode, reflecting the current level of the channel fader and any channel DSP that has been applied. The default setting for input channels is off for 'pre-fader-listen'.
   • MixBus Solo AFL: Selecting this method will set the mix bus solo to post-fader
   • DCA Solo AFL: Selecting this method will set the DCA solo to post-fader
   • Use DIM for PFL: Selecting this option will apply DIM to all PFL signals
   • Use Master Fader: This allows the main fader/MUTE button to control the solo/mon output.

3. Tap the second control to select and assign the currently chosen solo option.

4. Turn the third control to adjust the amount of digital delay that is applied to the control room signal path. The display on the screen will show the current amount of delay in feet, metres and milliseconds.

5. Tap the third control to toggle the delay function on or off.

TIP: The delay function is useful for aligning the sound of audio monitored through headphones, or speakers used at front-of-house position with audio that is coming from the stage location.

By delaying the control room audio, it can be brought into alignment with the slightly-delayed audio that has to travel from the stage to the front-of-house position.
6. Adjust the fourth control to set the amount of volume reduction that occurs when the control room bus has its **DIM** function enabled. The amount of volume reduction ranges from -40 dB to 0 dB (no change).

7. Tap the fourth control to toggle the **DIM** function on or off.

8. Turn the fifth control to adjust the volume trim for the source currently feeding the control room bus, allowing it to be level matched with the SOLO bus. The amount of trim can be adjusted from -20 dB to +20 dB.

9. Tap the fifth control to toggle the control room between mono and stereo operation. This is very useful in a studio context for checking how a mix sounds when played back on a mono speaker such as a cockpit radio.

10. Adjust the sixth control to select what specific signal source to monitor in the control room. Choices include:

    • Off (no source) in the control room, when no SOLO is active
    • LR Bus
    • LR + C/M
    • LR PFL (Pre-Fade Listen)
    • LR AFL (After-Fade Listen)
    • Auxiliary returns 5/6
    • Auxiliary returns 7/8 (USB Recorder).

11. Tap the sixth control to activate the signal source that has been chosen.

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**Talkback**

1. **External Microphone Port**
2. **Talk Level Rotary Control**
3. **Talk A Button**
4. **Talk B Button**
5. **View Button**

**EXT MIC Port**

Connect a microphone to the console via a standard XLR cable. The output carries 48 V phantom power, allowing the use of condenser or dynamic microphones.

**TALK LEVEL Rotary Control**

Adjust the level of the Talkback volume with the **TALK LEVEL** rotary control.

**TALK A / B**

Select the destination of the Talkback mic signal with either the **TALK A** or **TALK B** buttons. Press the **VIEW** button to edit the Talkback routing for A and B.

**VIEW**

Press the **VIEW** button to access more detailed parameters on the Main Display.

**Operation**

**talkback Tab**

The **TALKBACK** screen offers various adjustments for the talkback paths of the console, such as destination of the talkback signal and more.

To adjust the various settings on the **talkback** tab, perform the following steps:
1. The screen displays a multi-segment level meter showing the strength of the talkback signal as it has currently been set. It also displays a multi-segment gain reduction meter, showing the user how much compression has been automatically applied to the talkback signal.

2. Tap the first rotary control to enable the talkback circuit. The internal/external talkback microphone will now transmit audio to the talkback path’s assigned destination.

3. Adjust the third control to set the gain of the talkback signal. This is an additional gain stage that follows the initial gain stage set by the top panel TALK LEVEL control.

4. Tap the third control to toggle on/off the talkback circuits ‘auto-dim’ function. This function is useful in a studio setting, and will automatically dim the control room outputs when the talkback circuit is active. This prevents the talkback microphone from picking up too much sound from the nearby studio monitors.

5. Adjust the fourth control to scroll through the various talkback destinations, which include:
   - Mix Bus 1-16
   - LR Bus
   - Centre/Mono Bus.

6. Tap the fourth control to activate any talkback destination when it is currently selected. Multiple talkback destinations can be selected, allowing the talkback signal to reach many destinations at the same time.

7. Tap the fifth control to toggle the dedicated top-panel talkback buttons between latching and non-latching operation.

8. Turn the sixth control to adjust the brightness of the lamp that is connected to the console’s rear panel lamp connector.

9. Tap the sixth control to toggle the attached lamp on or off.

**oscillator Tab**

The oscillator tab offers controls for the console’s onboard oscillator, a very handy tool that can be used for setting up PA systems and testing various signal flow paths without the need for a live source feeding a microphone. Settings include oscillator type, frequency, volume and routing destinations.

To adjust the various settings on the oscillator tab, perform the following steps:

1. Adjust the first rotary control to set the level of the onboard oscillator.

2. Tap the first control to toggle the oscillator on or off.
   - The Main Display shows a multi-segment level meter that shows the current level of the oscillator.

3. Adjust the second control to set the frequency of the primary onboard oscillator.

4. Adjust the third control to set the frequency of the alternate onboard oscillator.

5. Tap the third control to alternate between Sine F1 and Sine F2.

6. Adjust the fourth control to select the type of oscillator to be used. Choices include:
   - Sine Wave
   - Pink Noise
   - White Noise.

7. Tap the fourth control to engage the selected oscillator type.

8. Adjust the sixth control to select a destination for the onboard oscillator. Choices include:
   - Mix Bus 1-16
   - Main L Bus
   - Main R Bus
   - Main L+R Bus
   - Main Centre / Mono
   - Matrix Outputs 1-6.

9. Tap the sixth control to assign the selected oscillator destination.
Show Control

The SHOW CONTROL section on the control surface can be used to select, activate and navigate saved scenes.

LAST - navigates to the previous scene.
NEXT - navigates to the next scene.
UNDO - undoes the previous action.
NOW - navigates to the current scene.
VIEW - This gives you access to more detailed parameters of the SCENES function via the Main Display.

The SCENES screen on the Main Display allows setup for saving and recalling different memory scenes of the M32. The comprehensive recallability of the console (including gain settings for the digitally-controlled mic preamps) is one of the most powerful aspects of the console.

The SCENES screen contains the following separate tabs:

- **home**: This screen contains a general overview of the scenes contained in the console, along with their custom names and what parameters are included in each scene.
- **scenes**: This screen allows the user to configure, edit and rename the individual scenes.
- **snippets**: This screen allows for the editing of the new ‘Snippets’ functionality. See below for more details.
- **param safe**: This screen configures which console parameters are and are not saved or switched with the console scenes.
- **chan safe**: This screen configures which console channels are and are not changed when a console scene change occurs.
- **MIDI**: This screen allows the console to associate different scenes with incoming and outgoing MIDI messages, allowing the console’s scene changes to control or be controlled by external MIDI equipment.

HOME

The SCENE screen’s **home** tab shows a general overview of the scenes that have been configured in the console, along with their custom names and what parameters are included in each scene.

For a setting where scenes are used heavily and are critical (such as a theatre performance), this would be a good screen to leave on at all times so that the console operator can be completely sure, at all times, what scene the console currently resides on, and what scene will come up next when the **GO** button is pressed.

To adjust the various settings on the **home** tab, perform the following steps:

1. Rotate the first rotary control to scroll among the available scenes in the scenes list, which is displayed on the left side of the Main Display.
2. Tap the first rotary control to go to the currently selected scene in the list, switching the console to the state it was in when that scene was stored.
3. Turn the second rotary control to select a scene in the list to be skipped when cycling through scenes using the **LAST** and **NEXT** buttons.
4. Tap the second rotary control to complete the skip command on the currently selected scene. The scene will now be skipped when scrolling through the list.
5. Turn the third rotary control to scroll back through recent changes.
6. Tap the third rotary control to undo the recent change.
7. Turn the fourth encoder to select a slot to save a new scene.
8. Tap the fourth rotary control to complete the save operation. The console’s current state will be overwritten on the scene number that was selected with the rotary control.
9. Turn the sixth rotary to select which aspects of the console’s routing are excluded from a scene change, and will be unaffected by any scene changes that occur. Routing choices that can be made safe include:
   - Routing
   - Output Patch
   - Mic Preamp Gain (HA, short for Head-Amplifier)
   - Configuration
   - Channel Processing
   - Mix Buses
   - Effects
   - Talkback.
10. Tap the sixth rotary control to select any of the above choices as the control rotation is used to select them. Multiple categories can be selected at the same time.

SCENES

Use the **Load**, **Save** and **Edit** functions by pressing the adjacent rotary control to load, save and edit the scenes. The **Scenes Safe** function works in a similar way to the **PARAMETER SAFE** function, though only applies to specific scenes.

SNIPPETS

The M32 has a new flexible structure called ‘Snippets’, which allows for setting selective parameters and channel filters for storage. Recalling a Snippet will exclusively affect the stored bits of information, leaving the remaining console status untouched. This allows to surgically introduce specific bits of automation into the current mix status.

PARAMETER SAFE

The SCENE screen’s **param safe** tab configures which of the M32’s parameters are or are not saved or switched with the console scenes. This is very useful when the operator has certain parameters of which they wish to remain in control, and would never want to have altered during a scene change, for example the mic pre gains on the input channels.
To adjust the various settings on the **param safe** tab, perform the following steps:

1. Turn any of the first four rotary controls to navigate among the checkboxes on the Main Display, which represent various console areas that can be isolated from scene changes.

2. Tap any of the first four rotary controls to select the console areas that have been selected with the rotary controls. In each of the four columns, multiple console areas can be selected and isolated from scene changes.

The following areas of the M32 can be isolated from scene changes, and are divided up into four columns on the Main Display:

**Column 1: Input Channels**
- HA (Head Amp / Microphone Preamp)
- Configuration
- Channel EQ
- Channel Gate / Compressor
- Channel Insert
- Channel Groups
- Fader, Pan, Mute, Mix Ons.

**Column 2: Input Channels**
- Mix Sends 1-16.

**Column 3: Mix Buses**
- Mix Sends 1-16
- Configuration
- EQ
- Compressor
- Insert
- Groups
- Fader, Pan, Mute, Matrix Ons.

**Column 4: Console**
- Configuration
- Solo
- Routing
- Output Patch.

**CHANNEL SAFE**

The SCENE screen's **chan safe** tab configures which console channels are and are not changed when a scene change occurs. This allows the user to protect certain channels from ever changing during a scene change, giving them as much control as possible for key audio sources.

For example, in a theatre context, the console operator may have dialled in just the right EQ and compressor settings, and channel volume for the voice of the lead actor, and does not want to have them altered when the console changes scenes and alters various other parameters.

To adjust the various settings on the **chan safe** tab, perform the following steps:

1. Turn any of the six rotary controls to navigate among the checkboxes on the Main Display, which represent various groups of channels that can be isolated from scene changes.

2. Tap any of the six encoders to select the console areas that have been highlighted with the rotary controls. In each of the six columns, multiple console areas can be selected and isolated from scene changes.

The following areas of the M32 can be isolated from scene changes, and are divided up into six columns on the Main Display:

**Column 1: Channels**
- Input Channels 1-16

**Column 2: Channels**
- Input Channels 17-21.

**Column 3: Buses**
- Aux 1-8
- FX 1L through 4R.

**Column 4: Returns**
- Mix 1-6.

**Column 5: Main / Matrix / Groups**
- Matrix 1-6
- LR Bus
- Centre / Mono Bus
- DCA Groups 1-8.

**Column 6: Effects Slots**
- FX 1-8.

**MIDI**

The **MIDI** tab on the SCENES screen allows the console to associate different scenes with incoming and outgoing MIDI messages, allowing the console's scene changes to control or be controlled by external MIDI equipment.

For instance, the user could configure the console to issue a MIDI program change message as each new scene is recalled, with the outgoing MIDI message triggering a new scene of a MIDI-equipped lighting controller.

Conversely, the user could configure the console to change scenes in response to an incoming MIDI program change message, allowing the console to switch to a new audio scene when a new scene is recalled on a MIDI-equipped lighting controller.

To adjust the various settings on the **MIDI** tab, perform the following steps:

1. Turn the first rotary control to select a scene to edit.

2. Tap the second rotary control to make safe the console from any incoming MIDI messages, preventing the console from switching scenes in response to MIDI data.

3. Turn the third rotary control to select what type of MIDI event is transmitted by the console when a scene change is issued. The choices include:
   - Off (no MIDI event)
   - MIDI program change
   - MIDI control change
   - Note.

4. Rotary controls 4, 5 and 6 adjust the channel, number and velocity (if applicable).

The Main Display shows the MIDI data associated with the currently selected screen.
Assign

Rotary Controls 1-4
Assign the four rotary controls to various parameters for instant access to commonly used functions. Details can be found on the Main Display by pressing the VIEW button (see below).

Assign LCD Displays
These displays provide quick reference to the assignments of the active layer of custom controls.

Group Select Buttons 5-12
Assign the eight buttons to various parameters for instant access to commonly used functions. Details can be found on the Main Display by pressing the VIEW button (see below).

SET Buttons A, B, C
Press one of these buttons to activate one of the three layers of custom-assignable controls.

VIEW
This gives you more detailed access to the ASSIGN functions via the Main Display.

The ASSIGN screen allows setup for the four user-assignable rotary controls and the eight user-assignable buttons. Using this screen the console operator can assign three sets of 12 custom controls to be available for adjustment at all times.

The ASSIGN screen contains the following separate tabs:
- home: This screen provides a general overview of the 12 assigned controls for all three control sets at the same time.
- set A: This screen allows assignment of different console parameters to the 12 custom controls for Set A.
- set B: Works as described above, but for custom controls Set B
- set C: Works as described above, but for custom controls Set C

HOME
The ASSIGN screen’s home tab provides a visual overview of the 12 assigned controls for all three sets at the same time.

The home tab offers visual feedback of the controls that have been assigned to all three sets of custom controls, without having to bank between the three sets one-by-one, or relying on abbreviated syntax shown in the custom control’s dedicated LCD displays.

To adjust the various settings on the home tab, perform the following steps:
1. Turn any of the rotary controls 1-5 to move screen focus to different custom-assignable rotary controls and buttons in the A, B and C sets. The controls currently selected with each of the four rotary controls are highlighted with an orange outline.
2. Tap any of the rotary controls 1-5 to switch to the edit screen for the specific custom control that was highlighted on the home tab screen.

SET A, B & C
The set A, B & C tabs allow mapping of specific console parameters to the eight assignable buttons and four assignable rotary controls. Using these screens the user can map the exact parameters that are most useful to them to the desired controls, in the desired order.

To adjust the various settings on the set A, B & C tabs, perform the following steps:
1. Adjust the first rotary control to select the colour used for the LCD screens within that set.
2. Adjust the second rotary control to select to which of the 12 assignable controls in the appropriate set you wish to map a parameter.
3. Adjust the third rotary control to scroll through a list of parameter categories to which the selected assignable control can be mapped. Choices for the buttons include:
   - Not Assigned
   - Jump to Page
   - Mute Channel
   - Inserts
   - Effect Button
   - MIDI
   - Remote.

   Choices for the rotary controls include:
   - Not Assigned
   - Panorama
   - Sends
   - Dynamics
   - FX Parameters
   - MIDI
   - Remote.

4. Tap the third rotary control to assign the selected parameter.
5. Adjust the fourth rotary control to scroll through a list of parameters that can be mapped to the currently-selected assignable control.
6. Tap the fourth rotary control to assign the selected parameter.
7. Adjust the fifth rotary control to select from additional parameters that can be mapped to the assignable controls.
**Mute Groups**

Use these buttons to select and activate one of the user-defined Mute Groups. More detailed parameters of the MUTE GROUPS section can be accessed via the MUTE GRP screen selection button to the right of the Main Display.

The MUTE GRP screen allows for quick assignment and control of the console's six mute groups, and offers two separate functions:

1. It mutes the active screen during the process of assigning channels to mute groups. This ensures that no channels are accidentally muted during the assignment process during a live performance.
2. It offers an additional interface for muting or unmuting the mute groups in addition to the dedicated mute group buttons on the console's control surface.

When activated, the MUTE GRP screen only covers the bottom portion of the Main Display, allowing the middle portion to continue displaying the usual screen content.

To assign channels to one of the six mute groups, perform the following steps:

1. Press the MUTE GRP screen selection button to switch the main display to the Mute Groups view.
2. Press and hold the desired mute group button on the lower right-hand side of the console's control surface.
3. While holding the mute group button, press the SEL button of any input or output channel, on any layer, that you wish to assign to that mute group.
4. When you have assigned all of the desired channels to the mute group, release the dedicated Mute Group button. The individual channel MUTE buttons will resume their normal functions.

To use the MUTE GRP screen to mute or unmute the groups, perform the following steps:

1. Tap any of the six rotary controls to mute the corresponding group, and thus mute all channels that are assigned to that mute group.
2. Tap the rotary control of a currently-muted group to unmute the mute group.
3. When finished working with mute groups, tap the MUTE GRP screen selection button to exit the MUTE GRP screen. The entire screen will again display its full set of controls for the current page.
Home

The **HOME** screen contains a high-level overview of the selected input or output channel, and offers various adjustments not available through the dedicated top-panel controls.

The **HOME** screen is divided into the following tabs:

- **home**: General signal path for the selected input or output channel.
- **config**: Allows selection of signal source/destination for the channel, configuration of insert point, and other settings.
- **gate**: Controls and displays the channel gate effect beyond those offered by the dedicated top-panel controls.
- **dyn**: Controls and displays the channel dynamics effect (compressor) beyond those offered by the dedicated top-panel controls.
- **eq**: Controls and displays the channel EQ effect beyond those offered by the dedicated top-panel controls.
- **sends**: Controls and displays the channels sends, such as sends metering and sends muting.
- **main**: Controls and displays the selected channel's output.

**home**

The **home** tab of the **HOME** screen displays a general signal path for the currently selected input or output channel. It visually displays various parameters of the input, gate, insert point, EQ, dynamics, output path and buses.

The **home** tab contains the following parameters (divided into two pages) that can be adjusted using the six rotary controls.

**Page 1**

1. Turn the first rotary control to adjust the input gain (trim) of the channel.
2. Tap the first control to link the channel with its adjacent channel.
3. Adjust the second control to set the threshold of the channel noise gate.
4. Tap the second control to toggle the channel noise gate in/out of the signal path.
5. Adjust the third control to toggle the channel insert in/out of the signal path.
6. Tap the fourth control to toggle the channel dynamics between pre-fader and post-fader status.
7. Adjust the fifth control to set the threshold of the channel compressor.
8. Tap the fifth control to toggle the channel compressor in/out of the signal path.
9. Adjust the sixth control to pan the selected channel within the main stereo output.
10. Tap the sixth control to assign the selected channel to the main stereo output.

**Page 2**

1. Adjust the first rotary control to select the console channel currently controlled by the **HOME** screen.
2. Tap the first control to toggle +48V phantom power on/off for the currently selected input.
3. Tap the second control to toggle the phase flip on/off for the currently selected channel.
4. Adjust the third control to select to which of the eight DCA groups the currently selected channel will be assigned.
5. Tap the third control to assign the currently selected channel to the selected DCA group.
6. Adjust the fourth control to select to which of the six mute groups the currently selected channel will be assigned.
7. Tap the fourth control to assign the currently selected channel to the selected mute group.
8. Tap the fifth control to toggle solo on/off for the currently selected channel.
9. Turn the sixth control to adjust the fader level for the currently selected channel.
10. Tap the sixth control to toggle mute on/off for the currently selected channel.

**config**

The **config**ration tab allows selection of signal source/destination for the channel, configuration of insert point, and other settings, as well as configuration of the channel delay.

The **config** tab contains the following parameters that can be adjusted using the six rotary controls:

1. Turn the first rotary control to adjust the input gain (trim) of the channel.
2. Tap the first control to allow linking of the channel to the adjacent channel.
3. Adjust the second control to set low-cut frequency of the channel.
4. Tap the second control to toggle the low-cut filter in/out of the signal path.
5. Adjust the third control to scroll among all of the possible sources for the channel.
6. Tap the third control to select the currently highlighted source and assign it to the channel.
7. Adjust the fourth control to set the amount of digital line delay applied to the channel.
8. Tap the fourth control to toggle the delay in/out of the signal path.
9. Adjust the fifth control to toggle the channel insert between pre- and post-EQ/compressor.
10. Tap the fifth control to toggle the channel insert in/out of the signal path.
11. Adjust the sixth control to scroll among the signal path choices for the insert point.
12. Tap the sixth control to assign the selected signal path to the insert point.
gate

The *gate* tab displays all aspects of the channel noise gate, and allows for very deep control of the gate effect. Whereas the top panel's dedicated GATE section allows control of the gate's threshold and in/out status, the gate tab offers many more controls. This tab can be accessed directly by pressing the VIEW button in the top panel GATE section.

The gate tab contains the following parameters, divided among two pages, that can be adjusted using the six rotary controls:

**Page 1**

1. Adjust the first rotary control to set the input threshold of the gate.
2. Tap the first control to toggle the noise gate in/out of the signal path.
3. Adjust the second control to set the range of a 'ducker' effect applied to the channel.
4. Tap the second control to toggle the ducker effect in/out of the signal path.
5. Adjust the third control to set the attack time of the noise gate effect.
6. Adjust the fourth control to set the hold time of the noise gate effect.
7. Adjust the fifth control to set the release time of the noise gate, controlling how quickly the gate opens up and allows the signal through.

**Page 2**

1. Rotary controls 1 & 2 function the same on pages 1 & 2.
2. Adjust the fourth control to set the frequency of the key filter that can be used to trigger the noise gate.
3. Tap the fourth control to toggle the key filter on/off, allowing a specific frequency to control the gate.
4. Adjust the fifth control to set the steepness of the EQ slope used in the key filter.
5. Tap the fifth control to send the key source to the solo bus, allowing the key source to be monitored and evaluated.
6. Adjust the sixth control to select the specific key source to be used. Choices include 'Self' (the channel’s own signal), as well as any other input/output of the console.
7. Tap the sixth control to assign the selected key source to the gate.

dyn

The *dynamics* tab displays all aspects of the channel compressor, and allows for very deep control of the effect. Whereas the top panel's dedicated compressor section allows control of the threshold and in/out status, the dyn tab offers many more controls. This tab can be accessed directly by pressing the VIEW button in the top panel DYNAMICS section.

The dyn tab contains the following parameters that can be adjusted using the six rotary controls:

**Page 1**

1. Adjust the first rotary control to set the input threshold of the compressor.
2. Tap the first control to toggle the compressor in/out of the signal path.
3. Adjust the second control to set the ratio of the compressor.
4. Tap the second control to switch the channel dynamics effect between compression and expansion.
5. Adjust the third control to set the attack time of the compressor effect.
6. Tap the third control to switch the compressor between Peak and RMS (root mean squared) mode, where the average level of the signal is evaluated more than any specific peak of the channel material.
   - **PEAK**: A peak-sensing compressor responds to the instantaneous level of the peak signal. While providing tighter peak control, peak sensing might yield very quick changes in gain reduction, more evident compression, or sometimes even distortion. This mode is suitable for control/limiting of dynamic material.
   - **RMS**: In this mode, the compressor applies an average function on the input signal before its level is compared to the threshold. This allows a more relaxed compression that also more closely relates to our perception of loudness. Sharp dynamic transients will be less affected in this mode. This mode is good for controlling levels in a mix.
7. Turn the fourth control to adjust the hold time of the compressor.
   - Hold time is a parameter not often found on commercial units, but is very useful. If a compressor is set to use a very fast attack/release time, audible distortion can occur, because the compressor is trying to work on individual waveform cycles of the signal instead of the sound envelope as a whole. The Hold parameter works around this issue by providing a short delay. This delay prevents the compressor from releasing until a certain period of time has elapsed.
8. Tap the fourth control to switch between Linear and Logarithmic modes for the compressor. Following are some brief descriptions of those different modes:
   - **LOG**: This mode is used in many well-respected compressors and is the natural result of more recent analogue commercial units employing logarithmic side chains and resistor/capacitor time constants. The exponential/db law has some interesting characteristics. Firstly the time taken to complete a compression event tends to stay the same however large the dynamic signal excursion is. Also, since the peak rate of gain change increases with dynamic excursion, the resulting harmonic content due to compression tends to follow the loudness of the signal in a way that the ear expects. This helps to mask the effect of the compressor and thus provides the most forgiving solution, being tolerant of differing timing settings and signal material. This makes it the best choice for general compression use and overall dynamic control of complex musical signals.
   - **LINEAR**: In this mode, the rate if gain change is constant (as set by the timing controls). Therefore the greater the signal dynamic excursion, the longer the compressor will take to complete a gain change. Also, since the total time that the compressor spends in attack or decay is proportional to the size of the gain excursion, the harmonic content of the compression artefact will seem to reduce in frequency content, the louder the signal excursion. This type of compressor is useful for generating dynamic sound effects because the sonic character of the compressor is much more affected by time control settings and signal material than the exponential type.
9. Adjust the fifth control to set the release time of the compressor.
10. Adjust the sixth control to set the makeup gain of the compressor; useful when the compression effect has reduced the overall signal level of the channel too much.

**Page 2**
1. Rotary controls 1 & 2 function the same on pages 1 & 2.
2. Adjust the third control to set the steepness of the compressor knee angle between five separate settings. Adjust this control to switch between a harder sounding, or more transparent compressor effect.
3. Tap the third control to move the compressor effect before or after the EQ in the channel signal path.
4. Adjust the fourth control to set the frequency of the key filter that can be used to trigger the compressor.
5. Tap the fourth control to toggle the key filter on/off, allowing a specific frequency to control the compressor.
6. Adjust the fifth control to set the steepness of the EQ slope used in the compressor.
7. Tap the fifth control to send the key source to the solo bus, allowing the key source to be monitored and evaluated.
8. Adjust the sixth control to select the specific key source to be used, Choices include ‘Self’ (the channel’s own signal), as well as any other input/output of the console.
9. Tap the sixth control to assign the selected key source to the compressor.

**eq**
The eq tab displays all aspects of the channel EQ, and also displays a detailed visual graphic of the current EQ curve. This tab can also be accessed directly by pressing the VIEW button on the top panel EQUALISER section.

1. If the currently selected channel is an input, the channel EQ contains four bands, with various aspects of each band adjusted by rotary controls 2-5.
2. If the currently selected channel is a bus, the channel EQ contains six bands, with various aspects of each band adjusted by encoders 1-6.
3. On the EQ screen, the various rotary controls are always tied to the various EQ bands, and the Up/Down navigation controls are used to toggle whether the four/six rotary controls adjust:
   - Gain
   - Frequency
   - Width
   - EQ mode.

**Page 1 (Gain)**
1. Adjust the first rotary control to set the frequency of the channel low-cut filter.
2. Tap the first control to toggle the low-cut filter in/out of the signal path.
3. Adjust the second control to boost/cut the gain of the low band.

**Page 2 (Frequency)**
1. Works as above, but the rotary controls now adjust the frequency centre points for the different EQ bands.

**Page 3 (Width)**
1. Works as above, but the rotary controls now adjust the bandwidth for the different EQ bands. Use a narrow slope for working with a specific frequency, or use a broader slope for general tone-shaping.

**Page 4 (Mode)**
1. Works as above, but the rotary controls now adjust the EQ mode for each EQ band. Choices include:
   - Low cut
   - Low shelf
   - Parametric EQ
   - Vintage EQ
   - High shelf
   - High cut.

**sends**
The sends tab displays and controls all aspects of the channel sends to the 16 mix buses. Compared to the dedicated top panel send controls, this screen offers additional functions, such as send muting and simultaneous metering of the selected channel’s 16 sends. This tab can also be accessed directly by pressing the VIEW button in the top panel SENDS section.

The sends tab contains the following parameters that can be adjusted using the six rotary controls:

**Page 1**
1. Adjust the first rotary control to set the level for the first send of the currently selected four-send group.
2. Tap the first control to mute the first send of the currently selected four-send group.
3. Repeat the process with the next three controls for the remaining three sends in the currently selected four-send group.
4. Adjust the sixth control to select which four sends to control with the rotary controls, shifting focus two sends at a time.
5. Tap the sixth control to select which four sends to control with the rotary controls, shifting focus four at a time.
1. Adjust the first rotary control to select from where in the signal chain the send is tapped, for the first two sends of the currently focused four sends. Options include:
   - Pre-EQ
   - Post-EQ
   - Pre-fader
   - Post-fader
   - Sub-group.
2. Adjust the third control to perform the same operation for the second two sends of the currently focused four sends.
3. Adjust the sixth control to select which four sends to control with the rotary controls, shifting focus two sends at a time.
4. Tap the sixth control to select which four sends to control with the rotary controls, shifting focus four at a time.

**main**

The **main** tab displays and controls all aspects of the main bus assignments.

The **main** tab contains the following parameters that can be adjusted using the six rotary controls:

1. Adjust the first rotary control to pan the selected channel within the main stereo output.
2. Tap the first control to assign the selected channel to the main stereo output.
3. Turn the second control to adjust the level of the currently selected channel within the mono (centre) bus.
4. Tap the second control to assign the selected channel to the mono output signal path. Use this function when crafting an LCR mix, as opposed to a mono or stereo mix.
5. Tap the fifth control to solo/unsolo the currently selected channel.
6. Adjust the sixth control to set the fader level for the currently selected channel.
7. Tap the sixth control to mute/unmute the currently selected channel.

**Meters**

The **METERS** screen displays different groups of level meters for various signal paths on the console, and is useful for quickly ascertaining if any channels need level adjustment. Since there are no parameters to adjust for the metering displays, none of the metering screens (with the exception of the **rta** tab; see below) contain any 'bottom-of-screen' controls that would normally be adjusted by the six rotary controls.

The **METERS** screen contains the following separate screen tabs, each containing level meters for the following signal paths:

**channel**

- Level meters and fader levels for the 32 input channels.

**mix bus**

- Level meters, fader levels and gain reduction meters for the 16 bus masters
- Level meters, fader levels and gain reduction meters for the six matrix outputs
- Level meters, fader levels and gain reduction meters for the stereo main bus and the mono bus.

**aux/fx**

- Level meters for the six auxiliary sends
- Level meters and fader levels for the eight auxiliary returns
- Level meters and fader levels for the four stereo effects returns.

**in/out**

- The 32 input channels
- The eight auxiliary returns
- The six auxiliary sends
- The two rear panel digital outputs
- Monitor outputs
- The 16 rear panel analogue outputs
- The P16 Ultranet outputs.

**rta**

The **rta** tab shows details of the M32’s Real Time Analyser - a real-time spectrum analyser that displays details of the audio signal on the selected signal path. The M32 features both bar graph and spectrograph with a 10-second window, that are displayed on the Main Display, and can be used in a variety of applications. The frequency resolution of both analysers is 100 bands, with constant relative bandwidth from 20 Hz to 20 kHz. Hence they are three times more detailed than typical third-of-an-octave RTAs. Both graphs can be visualised in a separate Meter screen, on top of each channel parametric EQ.
and on the FX rack graphic EQ screens.

**RTA Source**

Depending on the application the analyser input signal can be taken from the selected channel itself, any other pre-defined channel or dynamically depending on monitor source signals (i.e. Main/Solo). When EQ-ing a main PA system for example, the Graphic EQ may be inserted in Main LR, while the analyser signal may come from a dedicated measuring mic input channel. Select the source signal using the sixth rotary control.

**Solo Priority**

When switched on, the selected RTA source signals will be replaced with the monitor solo bus whenever a channel solo is active.

**Tip:** This option might be useful, if you wish to analyse a group of channels concurrently, or if you have a fixed signal on the RTA that needs to be replaced only temporarily with same other channel's signal.

**Pre / Post**

The analysers can tap their input signals from pre- or post-EQ, allowing you to see the impact of your EQ in that channel. Tap the fifth rotary control to toggle between the two.

**Gain**

When engaged, the Auto Gain function simplifies adjusting the analyser views and ensuring meaningful readings. In most cases it should be switched on. When switched off, the RTA gain can be set manually using the rotary control, which may be necessary for comparing absolute frequency band levels between different channels. Tap the fourth rotary control to engage the Auto Gain function.

**EQ Overlay**

When using the analysers on top of the channel EQ plot or over the graphic EQ screens, the meter's opacity can be adjusted to your liking. Something around 50% is typically a good starting point. Turn it down to 0% with the fifth rotary control if you don't need to see the RTA on top of the channel EQ or graphic EQ screens.

**RTA On Channel EQ View**

The channel EQ RTA function will always display the respective channel's frequency distribution, independent from the RTA Source definition. Use the EQ Overlay control for adjusting the amount of RTA on top of the EQ plot. Default preferences when opening any channel EQ view can be set to 'Pre-EQ' (off is Post-EQ) and 'Spectrograph' (off is bar graph). They can however be overruled on the respective EQ page.

**RTA On Graphic EQ View**

The Graphic EQ RTA function will always display the respective FX slot's frequency distribution, independent from the RTA Source definition, unless the 'Use RTA Source' mark is ticked. Use the EQ Overlay control for adjusting the amount of RTA on top of the GEQ sliders. Default preferences when opening any GEQ view can be set to 'Post-GEQ' (off is pre-graphic EQ) and 'Spectrograph' (off is bar graph). They can however be overruled on the respective GEQ page.

**Routing**

The ROUTING screen is where all signal patching is done, allowing you to route internal signal paths to and from the physical input/output connectors located on the M32’s rear panel.

The ROUTING screen contains the following separate tabs:

- **home**: Allows patching of physical inputs to the 32 input channels and auxiliary inputs of the console.
- **out 1-16**: Allows patching of internal signal paths to the console's 16 rear-panel XLR outputs.
- **aux out**: Allows patching of internal signal paths to the console's six rear-panel ¼"/RCA auxiliary outputs.
- **p16 out**: Allows patching of internal signal paths to the 16 outputs of the console's 16-channel P16 Ultranet output.
- **card out**: Allows patching of internal signal paths to the 32 outputs of the XUF card.
- **aes50-a**: Allows patching of internal signal paths to the 48 outputs of the rear-panel AES50-A output.
- **aes50-b**: Allows patching of internal signal paths to the 48 outputs of the rear-panel AES50-B output.
- **xlr out**: Allows patching of internal signal paths to the XLR out connections on the rear.

None of the ROUTING screen's tabs contain a secondary level of functions. When routing audio, the Up/Down navigation controls do not need to be used.

**home**

The ROUTING screen's **home** tab allows the user to patch the M32's physical rear-panel inputs to the 32 input channels and auxiliary inputs of the console.

As a default, the M32 maps its 32 rear-panel analogue inputs to the respective 32 channel inputs that are accessed on input fader layers one and two, and maps the rear-panel line-level (auxiliary) inputs to the third input fader level.

However, the **home** tab of the ROUTING screen can be used to change this default assignment and cross-patch different physical inputs to different channel inputs, in banks of eight channels at a time. This allows the user to create a custom layer of channel inputs that differs from the order that the sources are plugged into the rear panel, and is easier than physically re-patching audio cables.

**To assign various inputs to the M32’s input channels, perform the following steps:**

1. Adjust the first rotary control to select which 8-channel audio input source feeds input channels 1-8 of the console. As the control is rotated, the currently selected input will be highlighted in the vertical list of choices.
2. When the desired 8-channel source is selected, push the first rotary control to connect the currently selected 8-channel source. The selected source now feeds input channels 1-8 of the console.
3. Input choices that can be assigned include:
   - Local 1-8
   - Aux input 1-5
   - Mic input 1-16
   - XLR output 1-16
   - AES50-a
   - AES50-b
   - P16 out
   - Card out
   - Home
   - Aux out
   - XLR out

Depending on the application the analyser input signal can be taken from the selected channel itself, any other pre-defined channel or dynamically depending on monitor source signals (i.e. Main/Solo). When EQ-ing a main PA system for example, the Graphic EQ may be inserted in Main LR, while the analyser signal may come from a dedicated measuring mic input channel. Select the source signal using the sixth rotary control.

**Solo Priority**

When switched on, the selected RTA source signals will be replaced with the monitor solo bus whenever a channel solo is active.

**Tip:** This option might be useful, if you wish to analyse a group of channels concurrently, or if you have a fixed signal on the RTA that needs to be replaced only temporarily with same other channel's signal.
• Local 9-16  
• Local 17-24  
• Local 25-32  
• AES50-A 1-8  
• AES50-A 9-16  
• AES50-A 17-24  
• AES50-A 25-32  
• AES50-A 33-40  
• AES50-A 41-48  
• AES50-B 1-8  
• AES50-B 9-16  
• AES50-B 17-24  
• AES50-B 25-32  
• AES50-B 33-40  
• AES50-B 41-48  
• Card 1-8  
• Card 9-16  
• Card 17-24  
• Card 25-32.

4. To assign an 8-channel source from the other input channels of the console (9-16, 17-24, 25-32), simply repeat the process above, using the other four rotary controls on the same screen.

5. Choices for Aux 1-4 include:
   • Aux 1-4  
   • Local 1-4  
   • AES50-A 1-4  
   • AES50-B 1-4  
   • Card 1-4.

out 1-16

The ROUTING screen's out 1-16 tab allows the user to patch the M32's various internal signal paths to the 16 analogue XLR outputs that are located on the console's rear panel.

The M32 allows for many different kinds of output signal paths, and this screen is where these outputs are assigned to a physical rear panel output, so that the signal path can be patched to their eventual destination, such as front-of-house PA speakers or a powered stage monitor.

To assign the various output paths to the rear panel XLR outputs, perform the following steps:

1. Adjust the first rotary control to select to which of the 16 rear panel analogue outs you wish to assign an output signal path.

2. Adjust the third control to select an output path category. These include:
   • Off  
   • Main (LRC) Mix  
   • Mix Bus Outputs  
   • Matrix Outputs  
   • Direct Outs  
   • Monitor.

3. Adjust the fourth control to select a specific output path, including:
   • Off  
   • Main L  
   • Main R  
   • Main C/M  
   • Any of the 16 Mix Outputs  
   • Any of the six Matrix Outputs  
   • Any of the 32 Direct Outputs  
   • Any of the eight Auxiliary Outputs  
   • Any of the FX Direct Outputs  
   • Monitor L  
   • Monitor R  
   • Talkback.

4. Tap the fourth control to assign the selected output path, completing the process.

5. Adjust the fifth control to select the signal tap point for the output assignment. This determines where in the audio signal path the source is 'tapped' as it is sent to the physical rear panel output. The available signal tap points include:
   • Input  
   • Pre-EQ  
   • Pre-Fader  
   • Post-Fader.

6. Tap the fifth control to assign the selected signal tap point.

7. Turn the sixth control to adjust the amount of digital line delay applied to the output path as it is sent to the rear panel physical output. As the amount of delay is adjusted, the current delay time is displayed in three different units of measurement: feet, metres and milliseconds.

8. Tap the sixth control to toggle delay on/off. The Delay label illuminates when the delay is inserted into the signal path.

TIP: Applying a delay to an output signal is typically done when the console is used in a 'multi-zone' PA speaker set-up, where some PA speakers are located near the stage, and a second set of speakers is located further back within the audience. By applying an appropriate amount of delay only to the speakers located near the stage, the audience hears the audio from all speakers at the same time, ensuring maximum time-alignment and sound quality. The M32 assumes an operating temperature of 20°C/68°F when calculating the delay times.

aux out

The ROUTING screen's aux out tab allows the user to patch an internal signal path (such as a mix output used as an effects...
send) to the six separate ¼“/RCA auxiliary outputs.

Since these six outputs can have a wide variety of signal paths assigned to them, they can be used for a wide variety of tasks, such as:

1. Feeding an external effects processor when the internal effects are insufficient.
2. Patching a specific console signal path to an outboard recorder.
3. Feeding the analogue or digital audio inputs of a nearby video recorder.

To make an assignment as described above, perform the following steps:

1. Adjust the first rotary control to select to which auxiliary outputs to assign a source. Choices include:
   - Aux Out 1
   - Aux Out 2
   - Aux Out 3
   - Aux Out 4
   - Aux Out 5
   - Aux Out 6
   - AES/EBU (Digital) Out L
   - AES/EBU (Digital) Out R.

2. Adjust the third control to select for coarse range:
   - Insert
   - Main (LRC)
   - Mix Bus
   - Matrix
   - Direct Out
   - Monitor.

3. Adjust the fourth control to select a specific signal path to feed the selected physical output. Choices include:
   - Insert Point
     - Main L
     - Main R
     - Main C/M
     - Any of the 16 Mix Outputs
     - Any of the six Matrix Outputs
     - Any of the 32 Direct Outputs
     - Any of the eight Auxiliary Outputs
     - Any of the FX Direct Outputs
     - Monitor L
     - Monitor R
     - Talkback.

4. Tap the fourth control to assign the selected output path, completing the process.
5. Adjust the fifth control to select the signal tap point for the output assignment. Choices include:
   - Input
   - Pre-EQ
   - Pre-Fader
   - Post-Fader.

6. Tap the fifth control to complete the signal tap point assignment.

**p16 out**

The **ROUTING** screen's **p16 out** tab allows the user to route various console signal paths to the rear panel P16 Ultranet output. This output allows for 16 channels of audio to be sent, in digital form, to various accessories such as a personal monitoring distribution box.

Using the **p16 out** routing screen, the user can configure the P16 output to carry not only the main LR mix, but also various audio ‘stems’ of audio material sources from a bus send mix, such as a stereo drum mix, stereo keyboards, guitars, bass, vocals, etc. Musicians on stage would then be free to each craft their own personal mix of these musical stems, all delivered from the FOH position to stage over a single Ethernet cable.

To select which audio signals are sent to the P16 bus, perform the following steps:

1. Adjust the first rotary control to select for which of the 16 channels in the P16 bus you wish to select an audio source.
2. Adjust the third control to select a category of audio source to send to the currently selected P16 channel. These categories include:
   - Insert
   - Main (LRC)
   - Mix Bus
   - Matrix
   - Direct Out
   - Monitor.

3. Adjust the fourth control to select which specific signal path to feed to the currently selected P16 output. Choices include:
   - Off
   - Main L
   - Main R
   - Main C/M
   - Any of the 16 Mix Outputs
   - Any of the six Matrix Outputs
   - Any of the 32 Direct Outputs
   - Any of the eight Auxiliary Outputs
   - Any of the FX Direct Outputs
   - Monitor L
   - Monitor R
   - Talkback.
4. Tap the fourth control to assign the selected output path, completing the process.

5. Adjust the fifth control to select the signal tap point for the output assignment. This determines where in the audio signal path the source is 'tapped' as it is sent to the P16 output. The available signal tap points include:
   - Input
   - Pre-EQ
   - Pre-Fader
   - Post-Fader.

6. Tap the fifth control to complete the signal tap point assignment.

card out

The ROUTING screen's card out tab allows the user to patch various signal paths to the physical inputs and outputs on the XUF card. The XUF's signal path provides 32 channels of inputs and 32 channels of outputs. The 32 card inputs can be used as alternative sources for the two input fader layers, switchable in banks of eight.

To assign an output path to the option card, perform the following steps:

1. Adjust the first rotary control to select an 8-channel signal path that will be sent to the first eight channels of the card. Choices include:
   - Local 1-8
   - Local 9-16
   - Local 17-24
   - Local 25-32
   - AES50-A 1-8
   - AES50-A 9-16
   - AES50-A 17-24
   - AES50-A 25-32
   - AES50-A 33-40
   - AES50-A 41-48
   - AES50-B 1-8
   - AES50-B 9-16
   - AES50-B 17-24

2. Tap the first control to assign the selected output path, completing the process.

3. Repeat the process with controls 2-4 to select output paths for the other 24 channels or card outputs.

aes50-a / aes50-b

The ROUTING screens aes50-a and aes50-b tabs allow the user to patch various console output paths to the outputs of the dual AES50 connectors. These connectors can feed other AES50-equipped devices, such as a digital stage box or standalone multi-track recorder.

The M32 contains two separate AES50 connectors, labelled A and B. These dual connectors allow for an increased level of flexibility in networking the console to various AES50-based equipment.

Each of the two AES50 tabs contains the same following sets of parameters that can be adjusted. To assign various console signal paths to the AES50 connectors, perform the following steps:

1. Adjust the first rotary control to select an 8-channel signal path that will be sent to the first eight channels of the AES50 connector's output. Choices include:
   - Local 1-8
   - Local 9-16
   - Local 17-24
   - Local 25-32
   - AES50-A 1-8
   - AES50-A 9-16
   - AES50-A 17-24
   - AES50-A 25-32
   - AES50-A 33-40
   - AES50-A 41-48
   - AES50-B 1-8
   - AES50-B 9-16
   - AES50-B 17-24

2. Tap the first control to connect the currently selected signal path to the AES50 pathway.

3. Repeat the above process for the other five sets of 8-channel AES50 outputs.

The aes50-b tab works exactly the same as the aes50-a tab, but instead selects sources sent to the output of the console's AES50-B connector.
xlr out

The ROUTING screen’s xlr out tab, much like the out 1-16 tab, allows the user to patch the M32’s various internal signal paths to the 16 analogue XLR outputs that are located on the console’s rear panel. This tab, however, allows the XLR outputs to be patched in blocks of four, rather than individually. Also, on this screen it is only possible to route the signal to its absolute destination, rather than choosing the signal path. The available destinations will differ depending on the block selected. Destinations include:

Block 1-4 / Block 9-12
- Local 1-4
- Local 9-12
- Local 17-20
- Local 25-28
- AES50-A 1-4
- AES50-A 9-12
- AES50-A 17-20
- AES50-A 25-28
- AES50-A 33-36
- AES50-A 41-44
- AES50-B 1-4
- AES50-B 9-12
- AES50-B 17-20
- AES50-B 25-28
- AES50-B 33-36
- AES50-B 41-44
- Card 1-4
- Card 9-12
- Card 17-20
- Card 25-28
- Out 1-4
- Out 9-12
- P16 1-4
- P16 9-12
- Aux 1-4
- Auxin 1-4.

Block 5-8 / Block 13-16
- Local 5-8
- Local 13-16
- Local 21-24
- Local 29-32
- AES50-A 5-8
- AES50-A 13-16
- AES50-A 21-24
- AES50-A 29-32
- AES50-A 37-40
- AES50-A 45-48
- AES50-B 5-8
- AES50-B 13-16
- AES50-B 21-24
- AES50-B 29-32
- AES50-B 37-40
- AES50-B 45-48
- Card 5-8
- Card 13-16
- Card 21-24
- Card 29-32
- Out 5-8
- Out 13-16
- P16 4-8
- P16 13-16
- Aux 5-6/Mon
- Aux 5-6/TB.

Setup

The SETUP screen offers various controls for global, high-level functions of the M32, such as display adjustments, sample rates and synchronisation, user settings, and network configuration.

The SETUP screen contains the following separate tabs:

- **global:** This screen offers adjustments for various global preferences of how the console operates.
- **config:** This screen offers adjustments for sample rates and synchronisation, as well as configuring high-level settings for signal path buses.
- **remote:** This screen offers different controls for setting up the console as a control surface for various DAW recording software packages on a connected computer.
- **network:** This screen offers different controls for attaching the console to a standard Ethernet network.
- **scribble strips:** This screen offers controls for various aspects of the console’s DCA groups.
- **preamps:** This screen allows the gain on each of the individual input channels’ preamps to be adjusted.
- **card:** This screen selects between the USB and FireWire connectors, and also selects the input/output configuration.

None of the SETUP screen’s tabs contain a secondary level of functionality, so the UP/DOWN navigation controls do not need to be used for these screens.

**global**

The SETUP screen’s global tab allows the user to adjust various global controls of the console, such as display brightness and contrast, the panning mode used by channels, text languages, and more.

To make adjustments to the global screen, perform the following steps:

1. Adjust the first rotary control to select various console settings for pop-up messages and assorted preferences.
2. Tap the first control to turn the currently selected setting on or off.
3. Adjust the second control to select settings for linking multiple console channels.
4. Tap the second control to turn the currently selected setting on or off.
5. Adjust the third control to set the console’s panning mode, which affects how channel panning is performed in the stereo field. The five choices are:
   - LR+M: This is the default mode of the console. In this mode, channels can be panned between left and right mix outputs, as well as assigned to the separate mono mix bus. In this mode the Centre/Mono bus is not affected by the pan control
   - LCR: In this mode, the signal is panned from left to right. This behaviour is emulated by the faders on the Main tab, which is more intuitive than on other consoles. Note that in this mode, the definition of ‘mono’ changes,
since the setup is no longer mono, but rather a setup consisting of Left/Centre/Right

- CUE / SCN / SNP: Toggle between these settings to control which of the three is displayed on the external editing software.

6. Adjust the fourth control to set the brightness of the various LED lights on the M32, within a range of 1-100.

7. Adjust the fifth control to set the brightness of the Main Display, within a range of 1-100.

8. Adjust the sixth control to set the brightness of the individual LCD screens (channel display) above each input and output channel, within a range of 1-100.

config

The SETUP screen’s config tab allows adjustment of various audio-related settings, such as the console’s base sample rate and use of an internal or external digital clock. It also offers choices for high-level global settings for how signal path buses operate.

To adjust the various settings of the config tab, perform the following steps:

1. Adjust the first rotary control to select between Console, Show Data, and Libraries for initialisation.

2. Tap the first control to initialise the console back to its factory state.
   - The message, “Do you really want to initialize ALL settings?” will appear. Use the Left navigation control to cancel the operation, or the Right navigation control to confirm.

3. The console’s current firmware version is displayed in the first column of the Main Display.
   - If/when a firmware update is available for the console, the user simply needs to download the new firmware file to the root level of a USB stick, attach the stick to the console, and then reboot. The console will see the firmware file and an update will be performed automatically while booting.

4. Adjust the second control to select the digital sample rate of the console. Choices include:
   - 44.1 kHz
   - 48 kHz.

5. Tap the second control to assign the currently selected sample rate.

TIP: Note that the sample rate of the console will be the same sample rate for any audio recorded to the onboard stereo USB recorder, as well as the sample rate output by the AES/EBU connector that may get patched into an outboard recorder. Thus, it is often beneficial to select a sample rate that is appropriate for the medium on which the recorded audio will be used.

If the programme material being recorded is audio only with no video component, it usually makes sense to set a sample rate of 44.1 kHz. This will ensure that any audio that is recorded is compatible with the 44.1 kHz sample rate of commercial audio CDs.

If the programme material being recorded is audio that is meant to accompany video, it makes sense to set a sample rate of 48 kHz. This will ensure that any audio recorded is compatible with the 48 kHz sample rate of the various audio formats used on a video DVD.

6. Adjust the third control to set the word clock synchronisation of the console to its internal digital clock, or slave to an external digital clock. Choices for the clock signal include:
   - Internal clock
   - External clock from the AES50-A port
   - External clock from the AES50-B port
   - XUF card.

Note that the graphics at the top of the screen will always display a green LED when the console has achieved proper ‘digital lock’, from either its own internal clock or a valid external clock.

7. Tap the fourth control to cycle through the different settings for the console’s internal date and time settings.

8. Adjust the fourth control to set the value for the currently selected date/time setting.

9. Adjust the fifth control to select the console’s ‘Bus Pre-Configuration’. This setting allows the mix bus outputs to be configured in various combinations of:
   - Pre-fader, variable output auxiliary sends
   - Post-fader, variable output auxiliary sends
   - Fixed-output subgroups.

   Choices include:
   - Eight pre-fader auxiliary sends, eight post-fader auxiliary sends, no subgroups
   - Eight pre-fader auxiliary sends, four post-fader auxiliary sends, four subgroups
   - Six pre-fader auxiliary sends, four post-fader auxiliary sends, six subgroups
   - Four pre-fader auxiliary sends, four post-fader auxiliary sends, eight subgroups
   - Ten pre-fader auxiliary sends, six post-fader auxiliary sends, no subgroups.

10. Tap the fifth control to assign the currently selected configuration.

As the configuration is selected, a display on the right-hand side of the Main Display changes to show the currently selected configuration.

remote

The SETUP screen’s remote tab allows the M32 to be set up as a control surface for various DAW recording software on a connected computer. With its large complement of motorised faders, the console can act as an excellent controller, allowing the user to make level adjustments quickly and easily without using a mouse.

To adjust the various remote settings, perform the following steps:

1. Tap the first rotary control to enable the M32’s REM - DAW REMOTE button on the control surface. This switches various console hardware, such as the bus faders, to control computer DAW software instead of the console’s internal audio path.

2. Adjust the second control to select the specific control surface protocol used, in conjunction with the target DAW.
software. Choices include:

- **Mackie Crtl**: Use this protocol to control any DAW software that is compatible with a Mackie Control hardware surface.
- **HUI**: Use this protocol to control any DAW software that is compatible with an HUI hardware control surface, such as Pro Tools.
- **Midi CC**: Use this protocol to control software via MIDI.

3. Tap the second control to assign the currently selected control surface protocol.

4. Adjust the fifth control to select whether the remote function uses the MIDI IN and MIDI OUT sockets, or the XUF card’s MIDI.

5. Tap the fifth control to confirm the selection.

6. Turn the sixth control to adjust various MIDI-based operations for the console. Choices include:
   - **MIDI In/Out**: This toggles the MIDI input and output on or off.
   - **Card MIDI**: Allows MIDI transmission through the XUF card.
   - **USB In/Out**: This toggles the console’s USB ports on or off.
   - **RTP (Real-Time Transport Protocol)**: This toggles on or off the console’s ability to interface with an Ethernet-based MIDI system.
   - **Enable MIDI scene recall**: This toggles on or off the console’s response to incoming MIDI messages for switching console scenes.

7. Tap the sixth control to toggle the currently selected MIDI option on or off. This can be useful if you want to ensure that any connected MIDI transmitters cannot interfere with the console.

**network**

The SETUP screen’s **network** tab contains settings used when connecting the M32 to a standard Ethernet network. The user can set parameters such as using a fixed IP address, or having one assigned, as well as setting up Ethernet and subnet mask settings.

To set the network address for the console, perform the following steps:

1. Adjust the first rotary control to select which specific network field to adjust. Choices include:
   - IP address
   - Subnet Mask
   - Gateway.

2. Adjust controls 2, 3, 4 and 5 to set the four numerical fields to be adjusted for the selected network field.

3. Tap the sixth control to assign the adjusted settings.

**scribble strip**

The SETUP screen’s **scribble strips** tab allows setup of the M32’s channel LCD displays, including those for the digitally-controlled amplifier grouping feature, also known as DCAs.

A DCA group is a grouping function, made possible by the console’s digital operation, where individual input channels can be grouped together and controlled with a single output fader on the right-hand side of the console. Unlike the traditional sub-grouping function found on analogue consoles, a DCA group does not combine the different input channels into a common sub-mix. Instead, the individual input channels still retain their original routing characteristics, but their level adjustments are commonly controlled.

On the **scribble strips** tab the user can make useful adjustments, such as assigning real names to the selected channel (such as ‘drums’ or ‘backing vocals’), as well as assigning colours to them that are then reflected on the console’s channel LCD screens.

To adjust the various LCD display settings, perform the following steps:

1. Adjust the first rotary control to select which of the channels you wish to edit.

2. Adjust the second control to set the colour for the currently selected channel’s scribble strip.

3. Adjust the third control to select the graphic icon for the selected channel. A large variety of clip-art is available to represent various input sources and output destinations.

4. Adjust the fourth control to select a name from a list of common preset names (snippets) for the currently selected channel.

5. Tap the fourth control to assign the currently highlighted text to the currently selected channel’s scribble strip.

6. Tap the fifth control to edit the text assigned to the currently selected channel’s scribble strip.

7. Adjust the fifth control to scroll through the available characters that can be used to name the currently selected channel’s scribble strip.

8. Tap the fifth control to select the currently highlighted character.

9. Adjust the sixth control to scroll between the available character sets.

10. Tap the sixth control to exit the text editor and save the current parameters to the currently selected channel’s scribble strip.
**preamps**

This screen allows the gain on each of the individual input channels' preamps to be adjusted. Use the appropriate rotary control to adjust the gain settings for each of the preamps.

**card**

This screen selects between the USB and FireWire connectors, and also selects the input/output configuration. Use the second rotary control to select between the following presets:

- 32in / 32out
- 16in / 16out
- 32in / 8out
- 8in / 32out
- 8in / 8out
- 2in / 2out.

**Library**

The **LIBRARY** screen allows loading and saving of commonly used setups for the channel inputs, effects processors and routing scenarios.

The **LIBRARY** screen contains the following separate tabs:

- **channel**: This tab allows the user to load and save commonly used combinations of the channel DSP effects.
- **effects**: This tab allows the user to load and save commonly used effects processor presets.
- **routing**: This tab allows the user to load and save commonly used signal routings.

**channel**

The **LIBRARY** screen's **channel** tab allows you to load and save commonly used combinations of the channel DSP effects. For example, once you have dialled in a combination of EQ and compression that works well for a particular singer, you can save the channel DSP chain as a preset for later recall.

To adjust the various settings on the **channel** tab, perform the following steps:

1. Adjust the first rotary control to select which specific elements of the input channel can be recalled when loading an input channel preset. Choices include:
   - Head Amp (Microphone Preampifier)
   - Configuration
   - Gate
   - Compressor
   - Equalizer
   - Sends.
2. Tap the first control to turn the currently selected element on or off in the recall list.
3. Adjust the second control to scroll among a list of input channel presets.
4. Tap the second control to load the currently highlighted preset and make it active on the currently selected console channel.
5. Adjust the third control to scroll among a list of channel preset slots to save the current state of the currently selected console channel.
6. Tap the third control to save the currently selected channel's state to the currently selected preset slot.
   - When the third control is tapped, a preset naming screen appears. Adjust and tap controls 4-6 to apply a custom name to the preset before saving it, then tap the sixth control to complete the save process.
7. Tap the fourth control to delete a preset from the currently highlighted preset slot.
**Effects**

The LIBRARY screen's **effects** tab allows you to load and save presets for the various onboard effects processors.

To adjust the various settings on the **effects** tab, perform the following steps:

1. Adjust the first rotary control to select which of the eight effects slots to load or save a preset.
   - As you navigate among the eight effects slots the specific effect processor loaded into each slot will display on the screen as both a name and an icon.
2. To save and load presets, as well as import/export them, follow the same procedure as detailed in the LIBRARY screen **channel** tab.

**routings**

The LIBRARY screen's **routings** tab allows you to load and save presets of the M32's signal routings. This can be useful for repeating specific routing scenarios that occur over and over on a regular basis, such as when using the console for a weekly club gig or worship service.

To adjust the various settings on the **routings** tab, perform the following steps:

1. Adjust the first rotary control to select which specific console signal paths will be recalled when loading a routing preset. Choices include:
   - Channel Inputs
   - Analog Out
   - Auxiliary Out
   - P16 (Ultranet) Out
   - Card Out
   - AES50 Out.
2. Tap the first control to turn the currently selected element on or off in the recall list.
3. To save and load presets, as well as import/export them, follow the same procedure as detailed in the LIBRARY screen **channel** tab.

**Effects**

The **EFFECTS** screen controls various aspects of the eight internal effects processors. On this screen the user can select specific types of effects for the eight internal processors, configure their input and output paths, monitor their levels, and adjust the various effect parameters.

The **EFFECTS** screen contains the following separate tabs:

- **home**: The home tab provides a general overview for all eight effects processors, displaying what effect has been inserted in each of the eight slots, as well as displaying input/output paths for each slot, and the I/O signal levels.
- **fx1-8**: These eight duplicate screens display all relevant data for the right separate effects processors, allowing the user to adjust all parameters for the selected effect.

**home**

The **EFFECTS** screen's **home** tab provides a high-level overview of the eight effects processor slots, giving the user at-a-glance feedback on the effects they have assigned to the slots, the console source and destination for each processor, and the input/output levels for each processor.

To make adjustments on the **EFFECTS** screen's **home** tab, perform the following steps:

1. Adjust the first rotary control to select the input source for the currently highlighted effects block. Signal path choices include:
   - Insert Send
   - Mix Bus 1-16.
2. Tap the first control to assign the currently selected input source.
3. Adjust the second control to select the input source for the right side of the currently highlighted effects block.
4. Tap the second control to assign the currently selected input source.
5. Tap the third and fourth controls to mute the currently selected effect.
6. Adjust the fifth control to scroll among the different audio effects available. Choices include:

   | Hall Reverb | Delay + Chamber | M/S Fair Comp |
   | Ambience    | Chorus + Chamber | Dual Fair Comp |
   | Rich Plate Reverb | Flanger + Chamber | Stereo Leisure Comp |
   | Room Reverb | Delay + Chorus | Dual Leisure Comp |
   | Chamber Reverb | Delay + Flanger | Stereo Ultimo Comp |
   | Plate Reverb | Modulation Delay | Dual Ultimo Comp |
   | Vintage Reverb | Dual Graphic EQ | Dual Enhancer |
   | Vintage Room | Stereo Graphic EQ | Stereo Enhancer |
   | Gated Reverb | Dual TruEQ | Dual Exciter |
Reverse Reverb  |  Dual DeEsser  |  Stereo Exciter
---|---|---
Stereo Delay  |  Stereo DeEsser  |  Stereo Imager
Triple Delay  |  Stereo Xtc EQ1  |  Edison EX1
Rhythm Reverb  |  Dual Xtc EQ1  |  Sound Maxer
Stereo Chorus  |  Stereo Xtc EQ5  |  Dual Guitar Amp
Stereo Flanger  |  Dual Xtc EQ5  |  Stereo Guitar Amp
Stereo Phaser  |  Wave Designer  |  Dual Tube Stage
Dimension-C  |  Precision Limiter  |  Stereo Tube Stage
Mood Filter  |  Stereo Combinator  |  Dual Pitch Shifter
Rotary Speaker  |  Dual Combinator  |  Stereo Pitch
Tremolo / Panner  |  Fair Comp  |  Stereo TruEQ
Suboctaver  |  |  |

7. Tap the fifth control to assign the selected effect to the currently highlighted effects slot.
8. Adjust the sixth control to scroll among the eight effects slots to select one for editing.
9. Tap the sixth control to go to the edit page for the currently highlighted effects slot.

fx1-8

The EFFECTS screen’s fx 1-8 tabs allow you to edit the parameters for the specific effect processor assigned to the corresponding effects slot.

In order to more closely simulate the look and feel of the outboard processors that are no longer necessary with a digital console, the individual effects processor screen provides a graphical representation of the effects processor’s real world physical counterpart. This provides greater ease of use for the user than a simple text list of parameters.

To make adjustments on the EFFECTS screen’s editing tab, perform the following steps:

1. Adjust the six rotary controls to change the various effects parameters shown at the bottom of the screen.
2. Use the Up/Down navigation controls to switch the rotary controls to a second set of parameters for effects that contain more than six adjustable parameters.
3. When the effects processor has been edited to your satisfaction, push the sixth control to go back to the EFFECTS screen’s home tab.
4. See the Main Display - Internal Effects section for more details on specific effects and parameters.

**TIP:** For the Graphics EQ effects, tap the first rotary control to implement the ‘Graphics EQ on Faders’ function. This allows you to boost or cut the different EQ bands using the eight console output faders, eight faders at a time, with the relevant EQ bands displayed on the channel LCD screens.

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**Mute Group**

The M32’s MUTE GRP screen allows for quick assignments and control of the console’s six mute groups, and offers two separate functions:

1. It mutes the active screen during the process of assigning channels to mute groups. This ensures that no channels are accidentally muted during the assignment process of a live performance.
2. It offers an additional interface for muting or unmuting the mute groups in addition to the dedicated mute group buttons on the console’s control surface.

When activated, the MUTE GRP screen only covers the bottom portion of the Main Display, allowing the middle portion to continue displaying its usual screen content.

To assign channels to one of the six mute groups, perform the following steps:

1. Press the MUTE GRP button to switch the Main Display to the mute groups view.
2. Press and hold the desired mute group button (1-6) on the lower right-hand corner of the console.
3. While holding the mute group button, press the SEL button on any input or output channel, on any layer, that you wish to assign to the mute group.
4. When you have assigned all the desired channels to the mute group, release the dedicated mute group button. The individual channel MUTE buttons will resume their normal function.

To use the MUTE GRP screen to mute or unmute the groups, perform the following steps:

1. Tap any of the six rotary controls to mute the corresponding group, and thus mute all channels that are assigned to that mute group.
2. Tap the control of a currently mute group to unmute that group.
3. When finished working with mute groups, tap the MUTE GRP button to exit the screen. The Main Display will again show its full set of controls for the current page.
Utility

The **UTILITY** screen is a supplemental screen designed to work in conjunction with the other screens that may be in view at any particular moment. The **UTILITY** screen is never seen by itself; it always exists in the context of another screen.

To reinforce this point, when the **UTILITY** screen selection button is pressed, it illuminates at the same time that another screen selection button is illuminated, showing you for which screen it is providing other utilities. For most screens, pressing the **UTILITY** button simply acts as a short cut to a page that can be navigated to by other means. In a few cases, a utility page provides extra functionality not seen anywhere else.

The **UTILITY** screen selection button works in the following manner with other screens on the console:

**HOME Screen**

Pressing the **UTILITY** button while on any of the tabs on the **HOME** page will take the user to the **channel** tab of the **LIBRARY** screen.

**METERS Screen**

There are no Utility functions on any of the **METERS** screen's tabs.

**ROUTING Screen**

Pressing the **UTILITY** button while on any of the **ROUTING** screen's tabs takes the user to the **routing** tab of the **LIBRARY** screen.

**SETUP Screen**

With the exception of the **scribble strips** tab, there are no Utility functions on any of the **SETUP** screen's tabs.

For the **scribble strips** tab, pressing the **UTILITY** button provides an interface for assigning a custom colour, name and icon to the currently selected input or output channel.

- Adjust and tap the six rotary controls to assign a colour, name and icon to the currently selected input or output channel. Tap the sixth control to save changes and exit.

**LIBRARY Screen**

There are no Utility functions on any of the **LIBRARY** screen's tabs.

**EFFECTS Screen**

Pressing the **UTILITY** button while on any of the **EFFECTS** screen's tabs takes the user directly to the **effects** tab of the **LIBRARY** screen.

**RECORDER Screen**

Pressing the **UTILITY** button while on either of the **RECORDER** screen's tabs takes the user directly to the **select USB drive folder/file** page of the **RECORDER** screen's **config** tab.

**MONITOR Screen**

There are no Utility functions on any of the **MONITOR** screen's tabs.

**TALKBACK Screen**

There are no Utility functions on any of the **TALKBACK** screen's tabs.

**SCENES Screen**

Pressing the **UTILITY** button while on any of the **SCENES** screen's tabs provides an interface for copying, pasting, loading and saving different scenes in the scene list. Adjust and tap the six rotary controls to perform these functions.

**ASSIGN Screen**

There are no Utility functions on any of the **ASSIGN** screen's tabs.
**Internal Effects**

The M32 contains over 60 internal effects that can be applied to each of the input channels, either as inserts or as sends and returns. Access the internal effects by pressing the **EFFECTS** button next to the Main Display. The functionality for each of the effects is detailed below.

### Hall Reverb

Classic Hall Reverb simulates the reverberation that occurs when sound is recorded in medium- to large-sized convert halls. Use the Hall Reverb to give your mix a lush, three-dimensional quality that will make your performance sound larger than life. *Inspired by the Lexicon Hall*.

The **PRE DELAY** slider controls the amount of time before the reverberation is heard following the source signal. **DECAY** controls the amount of time it takes for the reverb to completely dissipate. **SIZE** controls the perceived size of the space being created by the reverb effect. The **DAMP** slider adjusts the decay of high frequencies within the reverb tail. **DIFF** (fusion) controls the initial reflection density. **SHAPE** adjusts the contour of the reverberation envelope.

### Ambience

Ambience creates a customisable virtual acoustic space in which to place the elements of a mix. Use Ambience to add warmth and depth without colouring the direct sound. *Inspired by the Lexicon Ambience Algorithm*.

**PRE DELAY** sets the time before the reverb follows the source signal. **DECAY** adjusts the time it takes for the reverb to completely dissipate. **SIZE** controls the room size emulation. **DAMPING** controls the high-frequency decay within the reverb tail. **DIFFUSE** controls the initial echo density. The level sets the volume output of the affected signal. **LO CUT** affects the low frequency cut, allowing lower frequencies to remain unaffected by the reverb. **HI CUT** affects the high frequency cut, allowing higher frequencies to remain unaffected by the reverb. **MOD** adjusts the level of reverb decay modulation. **TAIL GAIN** adjusts the volume of the reverb tail.

### Rich Plate Reverb

Rich Plate Reverb was originally created by sending a signal through a transducer to create vibrations on a plate of sheet metal which were then picked up as an audio signal. Our algorithm simulates that sound with high initial diffusion and a bright-coloured sound. *Inspired by the Lexicon Plate Reverb*.

The **PRE DELAY** slider controls the amount of time before the reverberation is heard following the source signal. **DECAY** controls the amount of time it takes for the reverb to dissipate. **SIZE** controls the perceived size of the space being created by the reverb effect. The **DAMP** slider adjusts the decay of high frequencies within the reverb tail. **DIFF** (fusion) controls the initial reflection density. **SHAPE** adjusts the contour of the reverberation envelope.
Chamber Reverb simulates the reverberation found in medium sized spaces, somewhere between the intimacy of a small room, and the grandeur of a large hall. Inspired by the Lexicon Chamber Reverb. The PRE DELAY slider controls the amount of time before the reverberation is heard following the source signal. DECAY controls the amount of time it takes for the reverb to dissipate. SIZE controls the perceived size of the space being created by the reverb effect. The DAMP slider adjust the decay of high frequencies within the reverb tail. DIFF (usion) controls the initial reflection density. SHAPE adjust the contour of the reverberation envelope.

Room Reverb simulates the reverberation that occurs when sound is recorded in a small room. When you want to add a bit of warmth and just a touch of reverb, the M32’s Vintage Room breathes life into close-miked guitar and drum tracks. Inspired by the Lexicon Room Reverb.

The PRE DELAY slider controls the amount of time before the reverberation is heard following the source signal. DECAY controls the amount of time it takes for the reverb to dissipate. SIZE controls the perceived size of the space being created by the reverb effect. The DAMP slider adjust the decay of high frequencies within the reverb tail. DIFF (usion) controls the initial reflection density. SHAPE adjust the contour of the reverberation envelope.

Plate Reverb

A plate reverb was originally created by sending a signal through a transducer to create vibrations on a plate of sheet metal which were then picked up as an audio signal. Our algorithm simulates that sound with high initial diffusion and a bright-coloured sound. The M32’s Plate Reverb will give your tracks the sound heard on countless hit records since the late 1950s. Inspired by the Lexicon PCM-70.

PRE DELAY controls the amount of time before the reverberation is heard following the source signal. DECAY controls the amount of time it takes for the reverb to dissipate. SIZE adjusts the size of the virtual room created by the reverb effect. The DAMP rotary control adjusts the decay of high frequencies within the reverb tail. DIFF (usion) controls the initial reflection density. The LO CUT rotary control sets the frequency beneath which the source signal will not pass through the reverb. The HI CUT rotary control sets the frequency above which the source signal will not pass through the reverb. BASS MULT (plier) rotary control adjusts the decay time of the bass frequencies. XOVER controls the crossover point for bass. MOD DEPTH controls the intensity of the reverb tail modulation. SPEED controls the speed of the reverb tail modulation.

Vintage Reverb

Based on the legendary EMT250, the M32’s Vintage Reverb delivers shimmering, bright reverb that won’t drown out or overpower your live or recorded tracks. Use Vintage Reverb to sweeten vocals and snare drums without sacrificing clarity.

When Layer 1 is selected, the first slider on the left sets the reverb time from 4 milliseconds to 4.5 seconds. Slider 2 controls the low-frequency multiplier decay time. Slider 3 controls the high-frequency multiplier decay time. Slider 4 controls the amount of modulation in the reverb tail. When Layer 2 is selected, slider 1 adjusts the pre-delay. Slider 2 selects the low-cut frequency. Slider 3 selects the hi-cut frequency. Slider 4 selects adjusts the output level of the reverb.
Gated Reverb

This effect was originally achieved by combining a reverb with a noise gate. Our gated reverb creates the same impression by a special shaping of the reverb tail. Gated Reverb is especially effective for creating a 1980’s-style snare sound, or to enlarge the presence of a kick drum.

Inspired by the Lexicon 300/480L.

PRE DELAY controls the amount of time before the reverberation is heard following the source signal. DECAY controls the amount of time before the reverberation is heard following the source signal. HI/LOW MULTIPLY adjusts the decay time of the high and bass frequencies. TIME shows the duration of the reverb effect. ROOM SIZE adjusts the size of the room effect being created incrementally from small to large. HIGH CUT sets the frequency above which the source signal does not pass through the reverb. DENSITY manipulates the reflection density in the simulated room. (This slightly changes the reverb decay time.) LOW CUT sets the frequency below which the source signal does not pass through the reverb.

Reverse Reverb

Reverse Reverb takes the trail of a reverb, turns it around, and places it in front of the sound source. Use the swelling crescendo of the Reverse Reverb to add an ethereal quality to vocal and snare drum tracks.

Inspired by the Lexicon 300/480L.

Adjusting the PRE DELAY rotary control adds up to 200 milliseconds before the reverb follows the source signal. The DECAY rotary control adjusts the time it takes for the reverb to completely dissipate. RISE controls how quickly the effect builds up. DIFF(usion) controls the initial reflection density. SPREAD controls how the reflection is distributed through the reverb envelope. The LO CUT rotary control sets the frequency beneath which the source signal will not pass through the reverb. HIsvFr / HIsvGn rotary controls adjust a high-shelving filter and the input of the reverb effect. DIFF(usion) controls the initial reflection density.

Stereo Delay

Stereo Delay provides independent control of left and right delay (echo) times, and features high- and low-pass filters for enhanced tone-shaping of the delayed signals. Use the Stereo Delay to give your mono signals a wide presence in the stereo field.

The MIX control lets you blend the source signal and the delayed signal. TIME adjusts the master delay time up to three seconds. LO CUT adjusts the low frequency cut, allowing lower frequencies to remain unaffected by the delay. HI CUT adjusts the high frequency cut, allowing higher frequencies to remain unaffected by the delay. FACTOR L sets the delay time on the left channel to rhythmic fractions of the master delay time. FACTOR R sets the delay time on the right channel to rhythmic fractions of the master delay time. OFFSET LR adds a delay difference between the left and right delayed signals. The FEED LO CUT/HI CUT adjusts filters in the feedback paths. FEED L and FEED R control the amount of feedback for the left and right channels. MODE selects the feedback mode:

- ST sets normal feedback for both channels
- X crosses feedback between left and right channels
- M creates a mono mix within the feedback chain.

Vintage Room

Vintage Room simulates the reverberation that occurs when sound is recorded in a small room. When you want to add a bit of warmth and just a touch of reverb, the M32’s Vintage Room breathes life into close-miked guitar and drum tracks. Inspired by the Quantec QRS.

The VU meter displays the input and output levels. Set the early reflection times for the left and right channel with ER DELAY L and ER DELAY R. ER LEVEL sets the loudness of the early reflection level. REV DELAY controls the amount of time before the reverberation is heard following the source signal. HI/LOW MULTIPLY adjusts the decay time of the high and bass frequencies. TIME shows the duration of the reverb effect. ROOM SIZE adjusts the size of the room effect being created incrementally from small to large. HIGH CUT sets the frequency above which the source signal does not pass through the reverb. DENSITY shapes the reverb decay tail. The higher the density, the greater the number of sound reflections. LOW CUT adjusts the frequency below which the source signal does not pass through the reverb.
**Rhythm Delay**

The Rhythm Delay, or 4-Tap Delay, provides four delay stages with independent frequency, gain and pan controls. Create time-based echo effects with the triple delay to increase the sense of stereo separation.

- **TIME BASE** sets the master delay time, which is also the delay time for the first stage.
- **GAIN BASE** sets the gain level of the first stage of the delay.
- **PAN BASE** sets the position of the first delay stage in the stereo field.
- **LO CUT** sets the frequency at which the source signal can no longer pass through the delay.
- **HI CUT** sets the frequency at which the source signal can no longer pass through the delay.
- **X-FEED** indicates that stereo cross-feedback of the delayed signals is active.
- **MONO** activates a mono mix of both channels for the delay input.
- **FEED** adjusts the amount of feedback.
- **FACTOR A** controls the amount of delay time in the second stage of the delay.
- **GAIN A** controls the gain in the second stage of the delay.
- **FACTOR B** controls the amount of delay time in the third stage of the delay.
- **GAIN B** controls the gain in the third stage of the delay.
- **FACTOR C** controls the amount of delay time in the fourth stage of the delay.
- **GAIN C** controls the gain in the fourth stage of the delay.

**Triple Delay**

Sometimes called a 3-Tap Delay, the Triple Delay provides three delay stages with independent frequency, gain and pan controls. Create time-based echo effects with the triple delay to increase the sense of stereo separation.

- **TIME BASE** sets the master delay time, which is also the delay time for the first stage.
- **GAIN BASE** sets the gain level of the first stage of the delay.
- **PAN BASE** sets the position of the first delay stage in the stereo field.
- **LO CUT** sets the frequency at which the source signal can no longer pass through the delay.
- **HI CUT** sets the frequency at which the source signal can no longer pass through the delay.
- **X-FEED** indicates that stereo cross-feedback of the delayed signals is active.
- **MONO** activates a mono mix of both channels for the delay input.
- **FEED** adjusts the amount of feedback.
- **FACTOR A** controls the amount of delay time in the second stage of the delay.
- **GAIN A** controls the gain in the second stage of the delay.
- **PAN A** sets the position of the second stage of the delay in the stereo field.
- **FACTOR B** controls the amount of delay time in the third stage of the delay.
- **GAIN B** controls the gain in the third stage of the delay.
- **PAN B** sets the position of the third stage of the delay in the stereo field.
- **FACTOR C** controls the amount of delay time in the fourth stage of the delay.
- **GAIN C** controls the gain in the fourth stage of the delay.

**Stereo Chorus**

Chorus samples the input, slightly detunes it and mixes it with the original signal to produce a somewhat thicker, shimmering sound. Use it to thicken up background vocals, or to double the sound of brass and woodwind instruments.

- **DELAY L / R** set the total amount of delay for the left and right channels.
- **WIDTH** determines the amount of modulated delay.
- **SPEED** sets the modulation speed.
- **MIX** adjusts the balance of dry and wet signals. You can further sculpt the sound by trimming some of the low- and high-end of the affected signal with the **LO CUT** and **HI CUT** rotary controls. Additionally the **PHASE** rotary control can tweak the phase offset of the LFO between left and right channels, and the **SPREAD** rotary control adjusts how much of the left channel is mixed into the right, and vice versa. Finally the **WAVE** rotary control blends between the ‘Danish’ style digital triangular chorus sound and the classic analogue sine wave.

**Stereo Flanger**

The Flanger emulates the phase-shifting sound (comb-filtering) originally created by applying pressure against the flange of the reel on a tape recorder. This effect creates a unique ‘wobbly’ sound that is quite dramatic when used on vocals and instruments.

- **FEEDBACK** can be adjusted with positive and negative amounts, and also band-limited with the **FEED HC** (high-cut) and **FEED LC** (low cut) rotary controls.

The controls of this effect are nearly identical to the controls on the Chorus effect block. Additionally, the **FEEDBACK** can be adjusted with positive and negative amounts, and also band-limited with the **FEED HC** (high-cut) and **FEED LC** (low cut) rotary controls.
Stereo Phaser

A Stereo Phaser, or phase shaper, applies multiple STAGES of modulated filters to the input signal to create a ‘notch’ in the frequency response, and then applies a MIX with the original for a ‘swirling’ effect. Use the M32’s Stereo Phaser to add a ‘spaced-out’ sound to vocal or instrumental tracks.

**SPEED** sets the LFO rate and **DEPTH** sets the LFO modulation depth.

The **BASE** rotary control adjusts the frequency range of the modulation filters. The resonance is adjusted with the **RESO** rotary control. The **WAVE** rotary control shapes the symmetry of the LFO waveform, and **PHASE** dials in an LFO phase difference between the left and right channels. The modulation source can also be the signal envelope, which produces vowel-like opening and closing tones. The **ENV MOD** rotary control adjusts how much of this effect takes place (positive and negative modulation is possible), and the **ATTACK**, **HOLD** and **RELEASE** rotary controls all tailor the response of this feature.

**Dimension-C**

Chorus samples the input, slightly detunes it and mixes it with the original signal to produce a somewhat thicker, shimmering sound. Use it to thicken up background vocals, or to double the sound of brass and woodwind instruments. *Inspired by the Roland Dimension D.*

Press the first rotary control to toggle the output signal between **Mono** and **Stereo**. Pressing the second, third, fourth or fifth rotary controls engages the chorus effect with increasing intensity.

Mood Filter

The Mood Filter uses an LFO generator and an auto-envelope generator to control a VCF (voltage-control filter), as well as a side-chain function, where the channel B signal controls the envelope of channel A. When applied to electronic instruments, the Mood Filter can be used to emulate the natural sound of acoustic instruments. *Inspired by the MiniMoog.*

This filter can be modulated with the signal’s envelope using the **ENV MOD** (with positive and negative amounts), **ATTACK** and **RELEASE** rotary controls, or the LFO can modulate the filter. The **WAVE** rotary control selects between seven different waveforms - triangular, sine, saw plus, saw minus, ramp, square and random. The **PHASE** can be offset by up to 180°. The **SPEED** rotary control adjusts the rate of the LFO, and **DEPTH** adjusts the amount of LFO modulation. Adjust the resonance of the filter until self-oscillation with the **RESO** (nance) rotary control. **BASE** adjusts the range of the filter from 20 Hz to 15 kHz. The **MODE** switch selects between low-pass (LP), high-pass (HP), band-pass (BP) and Notch. Use the **MIX** rotary control to blend the affected signal with the dry sound. With the **4 POLE** switch engaged there will be a steeper slope than the OFF (2 pole) setting. The **DRIVE** rotary control adjusts the level, and can also introduce an overdrive effect (as with real analogue filters) if pushed hard. In Side-chain mode, only the left input signal is processed and fed to both outputs. The envelope of the right input signal can be used as a modulation source.

**Rotary Speaker**

Rotary Speaker emulates the sound of a Leslie rotating speaker. The M32’s Rotary Speaker provides more flexibility than its electro-mechanical counterpart, and can be used with a variety of instruments, and even vocals, to create a whirling, psychedelic effect.

The **LO SPEED** and **HI SPEED** rotary controls adjust the rotation speed of the Slow and Fast speed selection, and can be toggled with the **FAST** button. The **ACCEL**eration rotary control adjust how quickly the speed increases and decreases from the Slow mode to the Fast mode. The rotation effect can also be disengaged with the **STOP** button, which will stop the movement of the speakers.

**DISTANCE** adjust the perceived distance between the speakers and the virtual microphone.
Suboctaver

The Octave Effect combines the input signal with a digitally synthesised sound one or two octaves below the original signal. This can be used to thicken up guitar sounds, or to add extra ‘punch’ to kick drums.

The controls for the Suboctaver are split between two discreet layers. Pressing the first rotary control toggles the effect for each layer on or off. The second control increases the amount of the affected signal that is present in the output mix. The third control switches the range of the signal between LOW, MID and HIGH. The fourth and fifth controls adjust the level for each of the individual lower octaves. To navigate between the two layers, use the up and down navigational controls.

Tremolo / Panner

Stereo Tremolo creates an up and down volume change at a constant and even tempo just like the guitar amps of yesteryear. Use the M32’s Stereo Tremolo to add a unique ‘surf-music’ texture to a vocal or instrumental track.

SPEED adjusts the LFO rate, and DEPTH sets the amount of modulation. PHASE can be used to set an LFO phase difference between the left and right channels, which can be used for panning effects. The WAVE rotary control blends the LFO waveform between triangular and square shapes. The signal envelope, shaped by ATTACK, HOLD and RELEASE, can be used to modulate the LFO speed (ENV SPD) and the LFO modulation depth (ENV DPTH).

Delay + Chamber

Here we have combined Delay and Chamber reverb, so that a single device can supply a variety of delay settings, plus add just the right amount of reverb to the selected signal. This device only uses one effects slot. Inspired by the Lexicon PCM 70.

Use the BALANCE rotary control to adjust the ration between delay and reverb. Low frequencies can be excluded with the LO CUT rotary control, and MIX adjust how much of the effect is added to the output signal. The TIME rotary control adjusts the delay time for the left channel delay, and PATTERN sets the delay ratio for the right channel delay. Adjust the FEEDBACK and trim some high frequencies with the HI CUT (high-cut) rotary control. The XFEED rotary control allows you to send the delay sound to the reverb effect, so instead of running completely parallel, the reverb affects the echoes to a selected degree. The PREDELAY rotary control determines the delay before the reverb affects the signal. The DECAY rotary control adjusts how quickly the reverb fades. SIZE controls how large or small the simulated space (room, cathedral, etc.). The DAMPING rotary control determines the decay of high frequencies within the reverb tail.

Chorus + Chamber

Taking up only one FX slot, the Chorus + Chamber effect combines the shimmer and doubling characteristics of a studio-grade chorus with the sweet sound of a traditional chamber reverb. Inspired by the Lexicon PCM 70.

The BALANCE rotary control adjusts the balance between chorus and reverb. Low frequencies can be excluded with the LO CUT rotary control, and the MIX rotary control adjusts how much of the effect is added to the signal. SPEED, DELAY and DEPTH adjust the rate, delay and modulation depth of the chorus. The LFO PHASE between the left and right channels can be offset by up to 180°, and WAVE adjusts the LFO waveform from a sine wave to a triangular wave. The PREDELAY rotary control determines the delay before the reverb affects the signal. The DECAY rotary control adjusts how quickly the reverb fades. SIZE controls the size of the simulated space (room, cathedral, etc.). The DAMPING rotary control determines the decay of high frequencies within the reverb tail.
Delay + Chorus

This combination effect merges a user-definable delay (echo) with a studio-quality chorus, sure to fatten up even the skinniest track. Uses only one FX slot.

Inspired by the TC Electronic D-Two.

The BALANCE rotary control adjusts the delay ratio for the right channel and negative values activate a cross feedback between the two channels. The FEEDHC rotary control adjusts the delay high-cut frequency, while FEEDBACK adjusts the number of repeats. The X-FEED control allows you to send the delay sound to the chorus effect. The BALANCE rotary control adjusts the balance between delay and chorus. SPEED, DELAY and DEPTH adjust the rate, delay and modulation depth of the chorus. The right channel LFO PHASE can be offset by up to 180°, and FEED (positive and negative amounts) adjusts the feedback effect. Use the MIX rotary control to blend the affected signal with the dry sound.

Flanger + Chamber

Add the mind-bending, filter-sweeping effect of a state-of-the-art flanger to the elegant sweetening of a traditional chamber reverb - all in one FX slot. Inspired by the Lexicon PCM 70.

The BALANCE rotary control adjusts the balance between flanger and reverb. Low frequencies can be excluded with the LO CUT rotary control, and the MIX rotary control adjusts how much of the effect is added to the signal. SPEED, DELAY and DEPTH adjust the rate, delay and modulation depth of the flanger. FEEDBACK can be adjusted by positive and negative amounts. The LFO PHASE between the left and right channels can be offset by up to 180°. The PREDELAY rotary control determines the delay before the reverb affects the signal. The DECAY rotary control adjusts how quickly the reverb fades. SIZE controls the size of the simulated space (room, cathedral, etc.). The DAMPING rotary control determines the decay of high frequencies within the reverb tail.

Delay + Flanger

This handy dynamic duo blends the 'whoosh' of soaring jet planes with classic delay, and can be adjusted from mild to wild. This combination effect only takes up one FX slot.

Inspired by the TC Electronic D-Two.

The TIME rotary control adjusts the delay time, and the PATTERN rotary control sets the delay ratio for the right channel and negative values activate a cross feedback between the two channels. The FEEDHC rotary control adjusts the delay high-cut frequency, while FEEDBACK adjusts the number of repeats. The X-FEED control allows you to send the delay sound to the chorus effect. The BALANCE rotary control adjusts the ratio between delay and chorus. SPEED, DELAY and DEPTH adjust the rate, delay and modulation depth of the chorus. The right channel LFO PHASE can be offset by up to 180°, and FEED (positive and negative amounts) adjusts the feedback effect. Use the MIX rotary control to blend the affected signal with the dry sound.

Modulation Delay

Combining echo and chorus (and in this case, reverb too) is the domain of the Modulation Delay. By combining the two, you can get the best of both worlds in one, dreamy-sounding effect.

The controls are separated onto two layers; layer one for the delay, and layer two for the chorus. Use Balance to sweep between how much of either effect is present in the output signal. Navigate to layer two by using the navigational control buttons.

On layer one Time adjusts the time of the delay, whereas Feed controls how many echoes follow the input signal. Lo Cut and Hi Cut are, as the names suggest, low cut and high cut filters for the affected signal. On both, Mix dictates how much of the affected signal is sent to the output bus.

On layer two Depth controls the depth of the chorus effect, Rate controls the speed of the modulation, and Decay controls the length of time after the initial signal where the effect is present. Damping reduces the level of the higher frequencies in the output.

The type of reverb can be switched by pressing either of the third, fourth or fifth rotary controls.
There are four standard graphic EQs that provide 31 bands of adjustment between 20 Hz and 20 kHz. A master volume slider compensates for changes in volume caused by the EQ. A maximum boost or cut of 15 dB is available for each band.

The TruEQ incorporates a special algorithm that compensates for the gain adjustment overlapping effect that adjacent frequency bands have on one another. On a standard EQ, when neighbouring bands are boosted together, the resulting effect is magnified beyond what is visible from the positioning of the sliders.

This compensated EQ will produce an adjustment that is identical to the actual positioning of the sliders.

De-essing is an audio effect designed to reduce the amount of excessive sibilance in an audio signal, usually when dealing with the human voice. The Dual DeEsser accurately and seamlessly removes sibilance from audio tracks.

The Lo-Band and Hi-Band controls select which portion of the audio spectrum is affected by the DeEsser on each channel. By increasing the amount of reduction, the level to which the de-essing affects the input signal can be controlled. By pressing the first and third rotary controls, the effect can be targeted specifically at male or female voices.

With the Stereo DeEsser, toggle between Stereo and Mono modes by pressing the fifth rotary control.
**Stereo Xtec EQ1 / Dual Xtec EQ1**

Virtually indescribable, recording engineers claim the Pultec EQP-1a to be the “secret sauce” of sound enhancement. We analysed this classic to the core and created an exact physical model that reproduces the multi-faceted sound in painstaking detail. Even the transformers and tube output stage have been faithfully modelled. *Inspired by Pultec EQP-1a.*

LO FREQ determines the curve on which the left hand LO BOOST and LO ATT controls are effective. These controls can be used to either boost or attenuate the signal as required. HI FREQ, HI BOOST and HI ATT perform the same function, but for the higher frequencies. HI BANDWIDTH adjusts the width of the high-frequency boost curves.

**Stereo Xtec EQ5 / Dual Xtec EQ5**

Pultec simply wrote the book on passive equalisation. By digitally “rebuilding” every aspect of the original Pultec classic, we captured the very essence in our parametric equaliser XTEC EQ5. Our digital re-incarnation is based on the original model and authentically emulates the smooth character of the its rather unique components. *Inspired by Pultec MEQ5.*

LO FREQ, MID FREQ and HI FREQ all dictate at which frequencies the LO BOOST, MID CUT and HI BOOST rotary controls work.

**Wave Designer**

Wave Designer is a powerful tool for adjusting signal transients and dynamics such as attack and sustain. Use it to make a snare drum really crack in the mix, or level out volume inconsistencies of slap bass tracks. *Inspired by the SPL Transient Designer.*

Adjusting the ATTACK rotary control can add punch or tame overly-dynamic signals. Increasing SUSTAIN acts in a similar way to a compressor, allowing the peaks to carry longer before decaying. The effect can also be used to reduce the sustain for a more staccato sound. The GAIN rotary control compensates for level changes caused by the effect.

**Precision Limiter**

This Stereo Precision Limiter allows you to set a precise volume limit, ensuring distortion-free, optimal signal integrity. Use the M32’s Stereo Precision Limiter to boost quiet signals or prevent clipping while preserving the level of ‘hot’ signals.

AUTOGAIN activates an additional long-term gain correction, allowing automatic gain scaling of varying input level ranges. STEREO LINK applies limiting to both channels equally when activated. INPUT GAIN provides up to 18 dB of gain to the input signal prior to limiting. OUTPUT GAIN set the final gain level of the processed signal. SQUEEZE adds compression to the signal to add punch and a slight distortion depending on the amount you dial in. ATTACK sets the attack time, ranging from 0.05 ms to 1 ms. RELEASE adjusts the release time from 0.05 ms to 1.04 seconds. KNEE adjusts the soft limiting threshold point from hard limiting (0 dB) to maximum soft limiting (10 dB).
Stereo Combinator / Dual Combinator

The Combinator is an amazing 5-band compressor that emulates famous broadcasting and mastering compressors. A highly complex processor, the Combinator utilises automatic parameter control that produces stunning and “inaudible” results. Makeup-gain for each frequency band will automatically be adjusted by the Spectral Balance Control (SBC) function, to maintain a balanced audio spectrum.

Fair Comp / M/S Fair Comp / Dual Fair Comp

The Fairchild 670 tube compressor not only achieves record bids in high-end vintage gear auctions, it also delivers some of the finest colourations in compressor history. Two small trim VRs preset the control side chain action, a six-step switch determines the timing, and the two large Input and Threshold knobs adjust the levels. Our FAIR COMPRESSOR model is true to the original signal path, and conveniently provides models for dual, stereo-linked or M/S operation. Inspired by Fairchild 670.
**Stereo Leisure Comp / Dual Leisure Comp**

The immaculate tube signal path in Teletronix’s LA-2A Levelling Amplifier has left its exceptional clarity, its rich and warm compression on countless albums of the past decades.

The ultra-smooth optical attenuator is closely modelled in our LA COMPRESSOR. It provides breezing, natural and effortlessly musical compression. 

**Stereo Ultimo Comp / Dual Ultimo Comp**

When Urei released the 1176LN Limiting Amplifier in the late 60s, it broke new ground. Field Effect Transistors employed were just invented and the 1176 was one of the first audio processors to benefit from this new technology.

Our digital reincarnation, ULTIMO COMPRESSOR, is based on the early Rev. E model and authentically captures the smooth character of the original class-A output stage and its FET’s legendary Fast Attack. 

**Dual Enhancer / Stereo Enhancer**

The M32’s Enhancers are so called ‘Psycho EQs’. They can enhance the signal spectrum in bass, midrange and high frequencies, but they differ from traditional EQs. When you need to generate maximum punch, clarity and detail, without turning up the overall volume, our enhancers are the solution. Inspired by the SPL Vitalizer.

Adjust the BASS, MID and HI GAIN, rotary controls to add or reduce content in those spectrums. The BASS and HI FREQ(encies) can be specifically selected, while the MID Q (bandwidth) can be adjusted instead. The OUT GAIN rotary control compensates for changes in level resulting from the effect, and SPREAD (stereo version only) emphasises the stereo content for a wider mix. Engage the SOLO MODE to isolate only the audio resulting from the effect so you can hear exactly what you’re adding to the mix.

**Dual Exciter / Stereo Exciter**

Exciters increase presence and intelligibility in live sound applications, and are indispensable for adding clarity, air and harmonic overtones in the recording studio. This effect is particularly useful for filling out the sound in difficult rooms, and for producing a more natural live or recorded sound. Inspired by the famous Aphex Aural Exciter.

Set the frequency of the side-chain filter with the TUNE rotary control, and further shape the filter slope with the PEAK and ZERO FILL controls. Turning the TIMBRE rotary control left of centre adds more odd harmonics, while turning it right of centre adds more even harmonics. Adjust the harmonic content added to the signal with the HARMONICS rotary control, and blend in the affected signal with the MIX rotary control. Engage the SOLO MODE to isolate only the audio resulting from the effect so you can hear exactly what you’re adding to the mix.
Stereo Imager

A Stereo Imager is typically used to control the placement of a signal within the stereo field during mixdown or mastering. The M32’s Stereo Imager will lend a professional quality to your live and recorded performances.

The **BALANCE** rotary control allows you to emphasise the mono and stereo components of the input signal. The mono and stereo signals can be panned independently with the **MONO PAN** and **STEREO PAN** controls. **OUT GAIN** is used to compensate for level changes resulting from the effect. The phase can also be shifted using the shelving rotary controls. Select the frequency and bandwidth (Q) using the corresponding rotary controls, then adjust the gain with **SHV GAIN**.

Edison EX1

The Edison EX1 is an unbelievably powerful psycho-acoustic processor, which allows you to completely manipulate all spatial parameters of the stereo image – such as width and depth – in a way never before possible. You can widen or narrow the stereo spread, bring instruments to the front or move them to the background, and make corrections to the stereo image – even on a finished master. Inspired by the Behringer Edison EX1.

**St Spread** increases the perceived width of the audio field over which the signal is present. **Balance** simply adjusts the levels between the left and right channels, and **Center Dist** moves the audio source back and forth in the perceived audio field.

Sound Maxer

The **SOUND MAXER** restores natural brilliance and clarity to any audio signal by adjusting the phase and amplitude integrity to reveal more of the natural texture of the sound, which is often hidden when using some effects and equalisers. *Inspired by Sonic Maximiser 482i.*

Use **LO CONTOUR** to determine the curve on which the **PROCESS** control is effective. **GAIN** determines how much of the input signal passes through the effect.

Dual Guitar Amp / Stereo Guitar Amp

Modelled after the Tech 21 SansAmp, the Stereo / Dual Guitar Amp simulates the sound of plugging into a real guitar amp. From shimmering cleans to saturated crunch, the M32’s Stereo / Dual Guitar Amp allows an electric guitar player to sound great without using an amp on stage.

The **PREAMP** rotary control adjusts the amount of input gain prior to the band-specific distortion adjustment. **BUZZ** adjusts the low-end breakup, **PUNCH** adjusts the midrange distortion, and **CRUNCH** tailors the high-frequency content and distortion for smooth or cutting notes. The **DRIVE** rotary control simulates the amount of power amp distortion from a tube amp. The **LOW** and **HIGH** rotary controls allow EQ adjustment independent of distortion content, and the overall output is controlled by the **LEVEL** rotary control. The **CABINET** simulation can be bypassed if the guitarist is already using a real cabinet, which allows the effect to function like a boost or distortion pedal. The Dual Guitar Amp allows the left and right channels to be adjusted independently.
Dual Tube Stage / Stereo Tube Stage

Tube Stage / Overdrive is a versatile effect capable of emulating a variety of modern and classic tube amps. Available in stereo and dual-mono versions, use Tube Stage / Overdrive to dial in warm and fuzzy sounds from subtle to fully-saturated.

**DRIVE** adjusts the amount of harmonics being driven by the effect. **EVEN** and **ODD** adjusts the amount of even and odd harmonics. **GAIN** adjusts the output gain of the effect. **LO CUT** sets the input frequency below which the source signal will not pass through the effect. **HI CUT** sets the input frequency above which the signal will not pass through the effect. **BASS GAIN/FREQ** adjusts a low-shelving filter at the output of the effect. **TREBLE GAIN/FREQ** adjusts a high-shelving filter at the effect's output.

Dual Pitch Shifter / Stereo Pitch

Pitch shifting is often used in two different ways; one is to set the **MIX** control lower and only use the **CENT** control to make a small offset in pitch between the wet and dry tones. This results in a 'voice doubling' effect that thickens the overall sound in a more subtle way. The extreme use of this effect is to turn the **MIX** control fully-clockwise so that the full sound is affected. This way, the signal can be shifted into other keys up to an octave above or below the original key. When used on a voice, it results in a 'chipmunk' sound or a low, 'Darth Vader' effect.

When the **SEMI** and **CENT** rotary controls are set to 12:00, the pitch is not altered. Making adjustments by semitone will have a very pronounced effect, whereas changes to the **CENT** control will be very minor. The **DELAY** control creates a time difference between the wet and dry sounds. The **LO CUT** and **HI CUT** rotary controls allows the affected signal to be band-limited. The Dual-Pitch effect allows the left and right channels to be adjusted independently, and allows gain compensation and panning of the two channels.
**MONITOR / CONTROL ROOM OUT**

**External Lamp Socket**
Connect an external lamp via a standard 12 V / 5 W socket.

**XLR Left & Right Sockets**
Connect a pair of studio monitors using standard XLR cables.

**BAL / UNBAL Left & Right Jack Sockets**
Connect a pair of studio monitors using standard ¼” cables.

1. External Lamp Port
2. XLR Right Socket
3. XLR Left Socket
4. Bal / Unbal Left & Right Jack Sockets

**AC / POWER**

**Power On / Off**
Turn the console on and off with the On / Off switch.

**IEC Power Socket**
Connect the console to a mains power supply via the standard IEC power socket.

1. Power On / Off Switch
2. IEC Power Socket

**XLR OUT 1-16**

Outputs 1-16
Send audio to external equipment using XLR cables. Outputs 15 and 16 by default carry the main stereo bus signals.

**XLR IN 1-32**

Inputs 1-32
Connect audio sources via XLR cables.
**KLARK TEKNIK DN32-USB**

**DN32 USB**
Transmit up to 32 channels of audio to and from a computer using the DN32 USB audio interface.

![DN32 USB Image]

**REMOTE CONTROL**

**USB**
Connect to a PC for remote control operation via USB.

**ETHERNET**
Connect to a PC for remote control operation via Ethernet.

![Remote Control Images]

**MIDI**

**MIDI IN / OUT**
Send and receive MIDI information via standard 5-pin DIN cables.

![MIDI Images]

**AES / EBU OUT**
Send digital audio via 3-pin AES/EBU XLR cable.

![AES/EBU OUT Image]

**ULTRANET**

Connect to a personal monitoring system (e.g. the Behringer P16) via Ethernet cable.

![ULTRANET Image]

**AES50**

Transmit up to 96 channels in and out via Ethernet cables.

![AES50 Image]

**AUX IN / OUT**

Connect to and from external equipment via ¼” or RCA cables.

![AUX IN / OUT Image]
Appendix A: Technical Specifications

### Processing

<table>
<thead>
<tr>
<th>Channel Type</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Processing Channels</td>
<td>32 Input Channels, 8 Aux Channels, 8 FX Return Channels</td>
</tr>
<tr>
<td>Output Processing Channels</td>
<td>8 / 16</td>
</tr>
<tr>
<td>16 aux buses, 6 matrices, main LRC</td>
<td>100</td>
</tr>
<tr>
<td>Internal Effects Engines (True Stereo / Mono)</td>
<td>8 / 16</td>
</tr>
<tr>
<td>Internal Show Automation (Structured Cues / Snapshots)</td>
<td>500 / 100</td>
</tr>
<tr>
<td>Internal Total Recall Scenes (incl. Preamplifiers and Faders)</td>
<td>100</td>
</tr>
<tr>
<td>Signal Processing</td>
<td>40-Bit Floating Point</td>
</tr>
<tr>
<td>A/D Conversion (8-channel, 96 kHz ready)</td>
<td>24-Bit, 114 dB Dynamic Range A-weighted*</td>
</tr>
<tr>
<td>D/A Conversion (stereo, 96 kHz ready)</td>
<td>24-Bit, 120 dB Dynamic Range A-weighted*</td>
</tr>
<tr>
<td>I/O Latency (Console Input to Output)</td>
<td>0.8 ms</td>
</tr>
<tr>
<td>Network Latency (Stage Box In &gt; Console &gt; Stage Box Out)</td>
<td>1.1 ms</td>
</tr>
</tbody>
</table>

* A-weighted figures are typically ~3 dB better

### Connectors

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Specifications</th>
</tr>
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<tr>
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</tr>
<tr>
<td>Talkback Microphone Input (XLR)</td>
<td>1</td>
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<tr>
<td>RCA Inputs / Outputs</td>
<td>2/2</td>
</tr>
<tr>
<td>XLR Outputs</td>
<td>16</td>
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<tr>
<td>Monitoring Outputs (XLR / ¼&quot; TRS Balanced)</td>
<td>2/2</td>
</tr>
<tr>
<td>Aux Inputs/Outputs (¼&quot; TRS Balanced)</td>
<td>6/6</td>
</tr>
<tr>
<td>Phones Output (¼&quot; TRS)</td>
<td>2 (Stereo)</td>
</tr>
<tr>
<td>Digital AES/EBU Output (XLR)</td>
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<tr>
<td>AES50 Ports (KLARK TEKNIK SuperMAC)</td>
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<tr>
<td>Expansion Card Interface</td>
<td>32 Channel Audio Input / Output</td>
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<td>ULTRANET P-16 Connector (No Power Supplied)</td>
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<tr>
<td>MIDI Inputs / Outputs</td>
<td>1/1</td>
</tr>
<tr>
<td>USB Type A (Audio and Data Import / Export)</td>
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<tr>
<td>USB Type B, rear panel, for remote control</td>
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<td>Ethernet, RJ45, rear panel, for remote control</td>
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### Input/Output Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Response</td>
<td>0 dB to -1 dB 20 Hz – 20kHz</td>
</tr>
<tr>
<td>Dynamic Range, Analogue In to Analogue Out</td>
<td>106 dB 22 Hz - 22 kHz unweighted</td>
</tr>
<tr>
<td>A/D Dynamic Range, Preamplifier and Converter (Typical)</td>
<td>109 dB 22 Hz - 22 kHz unweighted</td>
</tr>
<tr>
<td>D/A Dynamic Range, Converter and Output (Typical)</td>
<td>109 dB 22 Hz - 22 kHz unweighted</td>
</tr>
<tr>
<td>Crosstalk Rejection at 1 kHz, Adjacent Channels</td>
<td>100 dB</td>
</tr>
<tr>
<td>Output Impedance, XLR Connectors (Unbalanced / Balanced)</td>
<td>50 Ω / 50 Ω</td>
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<tr>
<td>Input impedance, XLR Connectors (Unbalanced / Balanced)</td>
<td>20 kΩ / 40 kΩ</td>
</tr>
<tr>
<td>Non-Clip Maximum Input Level, TRS Connectors</td>
<td>+21 dBu</td>
</tr>
<tr>
<td>Output Level, TRS (Nominal / Maximum)</td>
<td>+4 dBu / +21 dBu</td>
</tr>
<tr>
<td>Output Impedance, TRS (Unbalanced / Balanced)</td>
<td>50 Ω / 50 Ω</td>
</tr>
<tr>
<td>Phones Output Impedance / Maximum output Level</td>
<td>40 Ω / +21 dBu (Stereo)</td>
</tr>
<tr>
<td>Residual Noise Level, Out 1-16 XLR Connectors, Unity Gain</td>
<td>-85 dBu 22 Hz-22 kHz unweighted</td>
</tr>
<tr>
<td>Residual Noise Level, Out 1-16 XLR Connectors, Muted</td>
<td>-88 dBu 22 Hz-22 kHz unweighted</td>
</tr>
<tr>
<td>Residual Noise Level, TRS and Monitor out XLR Connectors</td>
<td>-83 dBu 22 Hz-22 kHz unweighted</td>
</tr>
<tr>
<td>Dynamic Range, Analogue In to Analogue Out</td>
<td>106 dB 22 Hz - 22 kHz unweighted</td>
</tr>
<tr>
<td>A/D Dynamic Range, Preamplifier and Converter (Typical)</td>
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<tr>
<td>Residual Noise Level, TRS and Monitor out XLR Connectors</td>
<td>-83 dBu 22 Hz-22 kHz unweighted</td>
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### Power

<table>
<thead>
<tr>
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<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch-Mode Power Supply</td>
<td>Auto-Ranging 100-240 VAC (50/60 Hz) ± 10%</td>
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<tr>
<td>Power Consumption</td>
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### Physical

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<tr>
<td>Standard Operating Temperature Range</td>
<td>5°C – 40°C (41°F – 104°F)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>891 x 612 x 256 mm (35.1 x 23.9 x 10.1&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>24.5 kg (53.9 lbs)</td>
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Appendix B: Dimensions

Front View

Rear View

Top View

Side View
Appendix C: Block Diagram

Appendix D: Service Information

This appendix contains routine service information for the M32 Digital Console.

Routine Maintenance
To help keep your M32 Digital Console unit in good working order and to make sure it gives you optimum performance, we recommend that you carry out the following about once every month.

- Clean the control centre, as detailed in ‘Cleaning the control centre’ (below)
- Check controls for freedom of operation. As the controls are ‘self-cleaning’, this operation will help to prevent them from sticking
- Check the functionality of all controls, that is, control knobs, faders, pushbuttons, LEDs, etc.
- Check the functionality of equipment.

Cleaning The Control Centre
Switch off the control centre and electrically isolate it from the mains before cleaning.

Clean the control centre using a dry, lint-free cloth. Do not use harsh abrasives or solvents. When cleaning the equipment, take great care not to damage faders, pushbuttons etc.

Cleaning a GUI Screen
Switch off the control centre and electrically isolate it from the mains before cleaning.

Carefully wipe the surface of the GUI screen with a soft, lint-free cloth or screen wipe specially designed for the purpose. When cleaning the GUI screen, observe the following precautions:

- Avoid putting pressure on the screen
- Don’t use harsh abrasives, for example, paper towels
- Don’t apply liquids directly to the screen
- Don’t use ammonia-based cleaners and solvents, such as acetone.

If you are in doubt or have any queries about cleaning the GUI screens, contact MIDAS Technical Support.

Equipment Disposal
When this equipment has come to the end of its useful life, its disposal may come under the DIRECTIVE 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Hazardous substances in WEEE contaminate water, soil and air and ultimately put at risk our environment and health. The directive aims to minimize the impacts of WEEE on the environment during their lifetimes and when they become waste.

The WEEE directive addresses the disposal of products when they have reached the end of their life and contributes to the reduction of wasteful consumption of natural resources. This will help to reduce pollution, and protect the environment and ourselves.

If this equipment carries a ‘crossed-out wheelie bin’ (shown left), please do not dispose of WEEE as unsorted municipal waste but collect and dispose of in accordance with local WEEE legislation. The horizontal bar underneath indicates that the product was placed on the EU market after 13th August 2005.

For WEEE disposal see our website at midasconsoles.com for information.
Appendix E: Glossary

This glossary provides an explanation of the symbols, terms and abbreviations used in this manual.

5.1 surround: A surround sound system created from six channels that form a discrete signal, which is played back over a speaker system comprising five speakers (three front and two rear) and a subwoofer (which is the ‘L’ or LFE channel). See LFE.

μ: Micro-prefix symbol that represents 10^-6 or one millionth.

A

A/D: Abbreviation for ‘anologue to digital’. The conversion of a continuous signal into a numeric discrete sample sequence.

AC: Abbreviation for ‘alternating current’.


Acoustic feedback: A sound loop existing between an audio input and audio output that is amplified on each cycle. For example, a mic input signal is amplified and passed to a loudspeaker. The output from the loudspeaker is picked up by the mic, which amplifies it again and passes it back to the loudspeaker, and so on.

AES3: Also known as ‘AES/EBU’; this is a serial interface for transferring digital audio between devices.

AES50: AES digital audio engineering standard. AES50 is a high resolution, multi-channel audio interconnection (HRMAI). Rather than a network, it is a high-performance, point-to-point audio interconnection, although the auxiliary data may operate as a true network, independently of the audio. HRMAI provides a professional multi-channel audio interconnection that uses Cat 5e data cable and is compatible with Ethernet networks.

AFL: Abbreviation for ‘after fader listen’. A function that allows the signal to be monitored post-fader, that is, after it has been acted upon by the fader.

Algorithm: In computing, a set of instructions for accomplishing a specific task.


Anti-aliasing: When referring to digital images, a technique that avoids poor pixelation.

Area A: Primary input control area.

Area B: A secondary input control area.

Assignable controls: User-assignable controls that can be set up to operate other functions.

Auto-safe: Prevents channel from accepting scene recall.

Auto-mute: A function that automatically mutes the channel’s signal under certain conditions.

Auto-mute group: A function that automatically mutes a number of selected channels under certain conditions.

Automation: 1. Memorization and playback of changes made to mixer settings. 2. An area on the master bay that controls these.

Aux: Abbreviation for ‘auxiliary send’ or ‘aux send’. A designation for extra buses, typically used for sending signal to effects, headphone amps and other destinations. See Bus.

Aux send: See Aux.

B

Balanced audio: A type of audio connection that uses the three leads in a cable, connector and jack as part of a phase-cancelling arrangement to boost the signal and reduce noise.

Band: In EQ, a range of frequencies.

Bandwidth: In EQ, the width of a band, that is, the number of frequencies that will be boosted/cut above and below a centre frequency.

Bank: A fixed number of channels displayed on a GUI screen.

Bass: Lower frequencies in a signal.

Bay: One of the main control surface sections.

Bus: A pathway down which one or more signals can travel.

Cat 5e: A specification for a type of cable used typically for Ethernet computer networks.

Channel: Single path taken by an audio signal (input or output) through the control centre.

Channel strip: Row of controls in traditional analogue layout used for the shaping of a signal.

Checkpoint: A patching data store point, created by clicking CHECKPOINT. See Patching.

Click: A method of GUI operation, mainly for button operation and selection purposes.

Compressor: A dynamics processor that reduces the level of any signal exceeding a specified threshold volume.

Condenser microphone: A high quality mic that uses a capacitor to detect changes in the ambient air pressure, which it then converts into an electrical signal. This type of mic requires power from a battery or external source.

Control centre: The M32’s console, comprising control surface and GUI.

Control surface: Area on the control centre that houses the main control surface and GUI.

D

DARS: Abbreviation for ‘digital audio reference signal’. A digital signal processor is a piece of equipment specifically designed for carrying out signal processing.

D/A: Abbreviation for ‘digital to analogue’. The conversion of digital data to analogue audio.

DWAR: Abbreviation for ‘Digital Audio Workstation’. A digital audio workstation is an electronic system designed solely or primarily for recording, editing and playing back digital audio.

dB: Symbol for ‘decibel’. A unit of measurement of the loudness of sound. See dBu.

dBu: A unit of measurement of sound used in professional audio. Derived from the decibel, where the ’d’ stands for unloaded, this unit is an RMS measurement of voltage based on 0.775 VRMS, which is the voltage at which you get 1 mW of power in a 600 ohm resistor. This used to be the standard impedance in most professional audio circuits.

DC: Abbreviation for ‘direct current’.

Delay: An effect by which a reproduction of a signal is played back later than its original.

Destination: The patching data store point, created by clicking CHECKPOINT. See Patching.

Device: A diagram(s) in the I/O tabs representing a physical rack unit, such as a line I/O, mic splitter, DN9696, AES30 etc. See Patching.

Di: Abbreviation for ‘direct inject’ or ‘direct injection’. Signal is plugged directly into the audio chain without using a microphone.

Di box: Device for matching signal level impedance of a source to mixer input.

Drag: A method of GUI operation, mainly for control adjustment. Also used for selecting blocks of patch connectors during patching.

DSP: Abbreviation for ‘digital signal processing’ or ‘digital signal processor’. Any signal processing done after an analogue audio signal has been converted into digital audio. Can be used to create, for example, compression, equalisation etc. of a digital signal. A digital signal processor is a piece of equipment specifically designed for carrying out signal processing.

E

E zone: Section in the input channel strip for controlling EQ parameters.
Effect: One of a number of audio processes that can be applied to a signal to modify it, such as reverb, flanging, phasing, delay etc.

Effects rack: A virtual rack of internal processors. See Virtual rack.

Envelope: 1. How a sound or audio signal varies in intensity over time. 2. The visual representation of such, usually shown on a graph in a GUI channel strip.

EQ: Abbreviation for ‘equaliser’ or ‘equalisation’.

Equalisation: Adjusting the frequency response so that the levels of all frequencies are equal or the same. Bass and treble controls are equalisation controls.

EtherCon*: A cable connector for data transfer interconnections, which is more robust than the basic RJ45.

F

Fader: Slider-type device for precise adjustment of signal level or volume of a channel.

Fast strip: One of the strips in the input, mix and output fast zones. See Input fast strip, Mix fast strip, Output fast strip and Fast strip.

Fast zone: An area on a bay that contains quick controls. See Input fast zone, Mix fast zone, Output fast zone and Fast strip.

FB: Abbreviation for ‘front-back’. A term used in surround panning.

Feedback: See Acoustic feedback.

Filter: A device for removing frequencies above or below certain levels.

FOH: Abbreviation for ‘front of house’. The area in a theatre used by the public. Used to describe a control centre being used to control the sound that the audience will hear (and not the performers’ monitor system).

Frequency: The number of times that a sound wave’s cycle repeats within one second.

Fricative: A consonant, such as ‘f’ or ‘s’, produced by the forcing of breath through a constricted passage.

From section: The leftmost area of the patching screen that contains the source patch connectors. See Patching.

G

Gain: Another term for signal level.

Gain reduction (compressor): Decrease in gain when input signal is above threshold. See Gain.

GEQ: Abbreviation for ‘graphic equaliser’. See Graphic EQ.

GEQ rack: A virtual rack of GEQs. See Virtual rack.

Granularity: A measure of the size of components or a description of the components comprising a system.

Graphic EQ: A form of EQ that has a number of faders for controlling the gain of the audio signal. The faders are set at frequency bands that are evenly-spaced according to octaves.

GUI: Abbreviation for ‘graphical user interface’.

GUI channel strip: Right section of a GUI screen that represents the processing area of the input or output channel strip selected to the control surface.

GUI menu: A menu selectable at either GUI screen by clicking the home button (upper-left corner).

GUI screen: One of the M32’s two screens, which comprise the GUI.

H

HPF: Abbreviation for ‘high pass filter’. A filter that removes lower frequencies from a signal, leaving the higher frequencies unaffected.

Hum: Undesirable low frequency tone present in a signal due to grounding problems or proximity to a power source.

Hz: Symbol for ‘Hertz’. A unit of frequency equal to one cycle of a sound wave per second.

I

I zone: Area on the master bay that contains the operator-assignable effects controls.

I/O: Abbreviation for ‘input/output’.

ID: Abbreviation for ‘identification’.

Ident: Scale marking, or gradation, around a control knob to help indicate the current setting and to assist in accurate adjustment.

Impedance (Z): Opposition to the flow of alternating current in a circuit, measured in ohms.

K

Kernel: For computers, the kernel is the central component of most operating systems.

L

LCD select button: LCD button in the input fast strips and VCA groups, used for channel/group navigation and selection, and operator feedback.

LFE: Abbreviation for ‘low frequency effects’. Typically, the ’.1’ in ‘5.1 surround’ is an LFE channel.

LFO: 1. Abbreviation for Low-Frequency Oscillation, an electronic signal which is usually below 20 Hz and creates a rhythmic pulse or sweep. This pulse or sweep is often used to modulate synthesizers, delay lines and other audio equipment in order to create effects used in the production of electronic music. 2. Abbreviation for Low-Frequency Oscillator, the device itself which produces low-frequency oscillation.

Linux: Also known as ‘Linux kernel’. Operating system kernel used by a family of Unix-like operating systems. See kernel.

LS: Abbreviation for ‘left surround’. The left rear speaker in a 5.1 surround system.

M

MADI: Abbreviation for ‘multi-channel audio digital interface’.

Master bay: Control area for masters, automation, comms, monitoring etc. Also contains the primary navigation zone.

Masters: The three master channels (mono and stereo left and right) in the master bay.

MB: Abbreviation for ‘megabyte’.

MC: Abbreviation for ‘master controller’.

Meter: Visual device to indicate the level of a signal.

Meters screen: One of the GUI screens. This is the default screen of the master bay.

Mic: Abbreviation for ‘microphone’.

Microphone: Device for converting sound waves into audio signals.

MIDI: Acronym for ‘musical instrument digital interface’. A digital signal system standard that facilitates integration of musical instruments, such as synthesizers and guitars, with computers.

Mix: 1. A signal that contains a combination of signals, such as a pair of stereo signals with numerous effects. 2. The act of creating such a combination. 3. A type of bus. See Bus.

Mix bay: Control area for outputs and groups.

Mixer: 1. A console or other device that blends input signals into composite signals for output. 2. An engineer/technician who carries this out, especially during a live performance.

mm: Symbol for ‘millimetre’ (one thousandth of a metre).

MON: Abbreviation for ‘monitor’, used to describe a control centre being used to mix the signals sent to the stage monitor speakers.

Monitor: 1. Speaker(s) used for listening to a mix or live audio. 2. The act of listening to a mix or live audio.

Monitor A: Primary monitor bus system.

Monitor B: Secondary monitor bus system.

Monitors: Control area on the master bay for monitoring the A and B signal paths.

Mono: A single signal.

Mute: Function that allows a channel’s signal to be silenced.

Mute safe: Function that means a mute cannot be controlled by scene recall or auto-mutes.

N

N/A: Abbreviation for ‘not applicable’.

nm: Symbol for nanometre (one billionth of a metre).

Normalise: To boost the amplitude of a digital sound so that it is as high as it can be without clipping (0 dB).

Normalisation: An automatic process whereby the gain of all program material is adjusted so that the peak level will just arrive at 0 dB.

Normalised connection: Also known as ‘normalled connection’. A connection that allows a signal to pass through it when no plug is inserted in it, but breaks the
connection when a plug is inserted.

Normalising: The process of making audio files the same volume.

NVRAM: Abbreviation for ‘Non-volatile random access memory’. This is the general name used to describe any type of RAM that retains its information when power is switched off. For example, flash memory.

O

O/B: Abbreviation for ‘outside broadcast’.

Oct: Abbreviation for ‘octave’.

Octave: A difference in pitch where one tone has a frequency that is double or half of the frequency of another tone.

ohm (Ω): Unit of electrical resistance.

OpticalCon®: A cable connector for fibre optic cables.

OS: Abbreviation for ‘operating system’.

OSC: Abbreviation for ‘oscillator’ or ‘oscillation’.

Out of phase: 1. A signal, being similar to another in amplitude, frequency and wave shape, but offset in time by part of a cycle. 2. 180° out of phase or having opposite polarity. See Phase.

Outboard: External, as in an ‘external device’.

Outboard equipment: External equipment used with the M32 Control Centre, but that is not part of it.

Output: 1. The signal put out by a device. 2. The physical location of where a device sends out a signal.

Output fast strip: One of 16 channel strips in the output fast zone. Provides detailed control of the currently selected outputs. See Output fast zone.

Output fast zone: Control area for fast access to primary main output functions.

Overload: A condition where the signal level is too high.

Overview: The main view in the GUI channel strip, which contains the control sections of the selected channel. This represents the associated channel strip on the control surface.

Overview screen: One of the GUI screens. This is the default screen of the mix bay.

P

PAN: Abbreviation for ‘panoramic’.

Panning: The left/right positioning of a signal across a stereo image.

Parameter: A setting whose value can be altered by the user.

Parametric EQ: A type of EQ that allows all of the parameters of equalisation to be changed, including centre frequency, boost/cut in gain and bandwidth.

Patch: A temporary connection (physical or virtual) made between two audio devices or inside one.

Patch connector: Any tab patching point, for example, an XLR connector, bus, sidechain compressor etc. See Patching.

Pitching: Also known as ‘soft patching’. The process of routing a channel/signal from a source to a destination(s).

PCB: Abbreviation for ‘printed circuit board’.

PEQ: Abbreviation for ‘parametric equaliser’. See Parametric EQ.

PFL: Abbreviation for ‘pre-fade listener’. A function that allows the signal to be monitored pre-fader, that is, before it reaches the fader.

Phantom power: The power required for the operation of a condenser microphone when it is not supplied by internal batteries or a separate power supply. This is supplied by the M32 Control Centre itself.

Phase: A measurement (in degrees) of the time difference between two waveforms.

Pitch: A continuous frequency over time. Musical interpretation of an audio frequency.

Pitch shift: Alteration of pitch or frequency, but without adjusting tempo.

Point scene: Subdivision of a scene. See Scene.

Pointer: 1. On the GUI, the pointer is the arrow-shaped object on the screen that moves when the user moves the trackball or external mouse. 2. On a control knob, it is the marking that, when used in conjunction with the indent around edge of control knob, helps to indicate the setting.

POP: Abbreviation for ‘population’.

POP group: A number of channels assigned to a group that has unfold and area B controls. Provides an easy and quick method of manipulating and controlling the numerous channels available on the M32 Control Centre.

Post: The point for accessing audio just after it leaves a specific channel component, for example, post-fader, where the audio is tapped from just after it leaves the channel’s main level control.

Pre: The point for accessing audio just before it reaches a specific module, for example, pre-EQ, where the audio is tapped from just before it gets to a channel strip’s EQ.

Primary navigation zone: Area in the master bay for mix and master bay GUI screen navigation and control. Also has a screen access section for fast access to GUI menu options.

Processing area: A display in a GUI channel strip showing a specific control section. Accessed from the channel’s overview display. See Overview.

PSU: Abbreviation for ‘power supply unit’.

Psychoacoustics: The study of the perception of sound, that is, how we listen, our psychological responses and the physiological effects on the human nervous system.

Psychoacoustic noise: Noise that affects the physiology of the listener.

Q

Quick access button: Button for navigation/selection of a channel/bus/processing area.

R

RAM: Abbreviation for ‘Random access memory’.

Return: Auxiliary return or aux return. An extra input used for receiving a signal from the output of an internal or external effect processor. See Bus.

Reverb: An effect where the ambience of a physical space is simulated. This is done by copying a signal and replaying at regular intervals at ever decreasing levels. The intervals are so close that each copy is not heard individually.

RMS: Abbreviation for ‘root-mean-square’. The square root of the mean of the sum of the squares. Commonly used as the effective value of measuring a sine wave’s electrical power. A standard in amplifier measurements. The effective average value of an AC waveform.

RS: Abbreviation for ‘right surround’. The right-hand rear speaker in a 5.1 surround system.

S

s: Symbol for ‘second’. A unit of time.

Scene: In automation, a set of mix settings for a particular part of a performance, for example, a play or song.

Sibilance: Energy from a voice, centred around 7 kHz, and caused by pronouncing ‘s’, ‘sh’ or ‘ch’ sounds.

Side chain: A special circuit that diverts a proportion of the main signal so that it can be processed, as required. Compressors use the side chain to derive their control signals.

Signal flow: The path of a signal from one place to another.

SIP™: Abbreviation for ‘solo in place’.

SIS: Abbreviation for ‘spatial imaging system’. Combines a central loudspeaker cluster with a left-right system to form three discrete sound channels.

Snapshot: A captured group of mixer settings that reflect the state of the mixer at a particular moment within a performance. This snapshot can then be recalled at the required moment in the performance/playback.

Solo: During monitoring, the isolation of one signal by silencing all other signals.

Source: The patch connector from which a signal is patched. See Patching.

SPL: Abbreviation for ‘sound pressure level’. Given in decibels (dB), SPL is an expression of loudness or volume.

Splash screens: The GUI display during power up.

SRC: Abbreviation for ‘sample rate converter’.

SSD: Abbreviation for ‘solid-state disk’. Data storage device that uses non-volatile memory to store data. Quicker than the conventional hard disk and less susceptible to the failures associated with hard disk drives.

Status indicator: A device specifically designed to show the condition of something. For example, an LED that shows whether a pushbutton is on or off, or a meter showing the level of a signal.

Stereo: Two separate channels, left and right, used to give
the listener the perception of where the noise is coming from. Usually used with music to give a fuller, more natural sound.

**Stereo image:** The perception of the different sound sources coming from far left, far right or anywhere in between.

**Surround:** Audio that has more that two speaker locations and, therefore, more than two channels. Also commonly termed ‘surround sound’.

**Synchronisation (sync):** Coordination of timing between devices.

**T**

**Tab:** A ‘sheet’ in the From and To sections that contains a specific group of patch connectors. See Patching.

**TFT:** Abbreviation for ‘thin film transistor’.

**Threshold:** Level at which dynamics processing will begin to operate.

**Tie line:** A dedicated connection between two systems, typically between FOH and MON positions.

**To section:** The rightmost area of the Patching screen that contains the destination patch connectors. See Patching.

**Tooltip:** The information box that appears next to the pointer when it passes over or pauses on items on certain GUI screens, such as the channels on the Overview and Patching screens.

**Touchpad:** Also known as ‘trackpad’. An input device on a laptop PC for controlling the on-screen pointer.

**Track:** Single stream of recorded audio data.

**Trackball:** Device, located in the primary navigation zone, for GUI screen navigation and control of the mix and master bays.

**Treble:** Higher frequencies in a signal.

**TW:** Abbreviation for ‘twin-wire’.

**U**

**Unbalanced audio:** A type of audio connection that utilises only two of the leads of a cable, connector and jack.

**Unfold:** Navigates the input channels of a group to the input bays.

**USB:** Abbreviation for ‘universal serial bus’. A ‘plug and play’ interface that provides a fast connection between a computer and peripherals, such as keyboards, printers, scanners, digital cameras etc.

**V**

**VCA:** Abbreviation for ‘variable control association’ (also ‘voltage controlled amplifier’).

**VCA fader:** The fader control of a VCA group.

**VCA group:** A group of channels that are controlled globally, such as via their group’s fader and other controls. Provides an easy and quick method of manipulating and controlling the numerous channels available on the M32 Control Centre.

**VGA:** Abbreviation for ‘video graphics array’. A graphics display system for PCs developed by IBM.

**Virtual rack:** A traditional 19” rack, represented on the GUI. A virtual rack will, typically, contain internal devices, such as effects and GEQs.

**Volt (V):** A unit of electrical potential differential or electromotive force.

**Volume:** General term for a signal’s loudness.

**Window:** A small self-contained panel that appears on the GUI, usually after selection of a specific control. Typically, contains a number of user-selectable options or information in the form of a message or prompt.

**X**

**X-over:** Abbreviation for ‘crossover’.

**XLR connector:** High-quality three-pin audio connector, which is also used for AES/EBU digital audio connections.
1. **Register online.** Please register your new MIDAS equipment right after you purchase it by visiting midasconsoles.com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.

2. **Malfunction.** Should your MUSIC Group Authorized Reseller not be located in your vicinity, you may contact the MUSIC Group Authorized Fulfiller for your country at midasconsoles.com. If your country is not listed please contact the ‘United Kingdom (MIDAS/ KT main office)’ located under ‘Service Service/Repairs’ on the midasconsoles.com website. Alternatively, please submit the online warranty return form found under ‘Service Warranty Registration’ on midasconsoles.com BEFORE returning the product. All enquires must be accompanied by the description of the problem and the serial number of the product. The warranty eligibility will be verified from the original sales receipt.

3. **Power Connections.** Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.

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**FEDERAL COMMUNICATIONS COMMISSION COMPLIANCE INFORMATION**

Responsible Party Name: MUSIC Group Services NV Inc.
Address: 5270 Procyn Street
Las Vegas
NV 89118
USA
Phone: +1 702 800 8290

M32 complies with the FCC rules as mentioned in the following paragraph:

“This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.”

Important information:
Changes or modifications to the equipment not expressly approved by MUSIC Group can void the user’s authority to use the equipment.