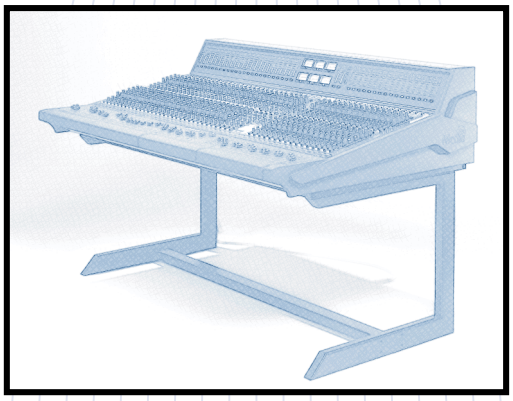

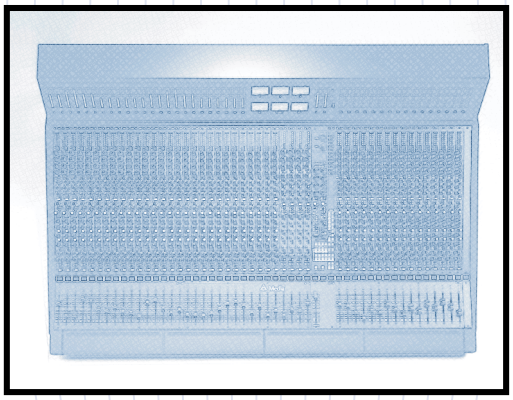



Media 51

User Guide

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Harman International Industries Ltd
Langley House
Third Avenue
Trafford Park
Manchester M17 1FG
United Kingdom
Tel: +44 (0) 161 868 2400
Fax: +44 (0) 161 873 8010
E-mail: amek@amek.com
Web: www.amek.com

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Media 51

System Overview



Why Media 51?

The demand for surround-formatted, high quality audio material has never been greater.

Film, **TV**, **Video**, **DVD**, **DVD-A**, **Digital Radio** and the **Internet** continue to require programme material which must be produced and mixed (or re-mixed) with these constantly developing media formats in mind.

Media 51 addresses these demands by providing a cost-effective, all-analogue solution for all multi-format **Music Recording**, **Post-Production** and **Broadcast** environments.

Media 51 can also be used for traditional **Multitrack** and **Stereo Recording/Mixing** tasks.

With **Media 51**, any type of **professional audio project** can be handled with ease!

System Features

Frame Sizes

Media 51 is available in three frame sizes:

- 28 input
- 44 input
- 60 input

Functionality

System

Eight Auxiliary Send Busses

Stereo AFL

In-Place Solo

Bussing and Monitoring up to eight channels wide (with 5.1 panning per input module) allowing for:

- Dolby Surround/Pro Logic (LCRS) ®
- Dolby Digital ®
- DTS (5.1) ®
- Dolby Surround EX ®
- DTS-ES (6.1) ®
- SDDS ®
- IMAX/Iwerks (7.1) ®

Input Modules

Media 51 is equipped with **Mono Input Modules** boasting a **TLA** balanced **Mic Pre** and **EQ** designed by **Mr Rupert Neve**.

All **M1RN** mono input modules have two independent signal paths which can be used concurrently into a stereo mix. The main **Mix Path** also features multi-format panning and buss assignment for surround work.

Eight mono **Auxiliary Sends,** switchable between both signal paths.

An **M10 Stereo Line** module is available, with configurable mono/stereo **Auxiliary Sends**.

FX Return / Group Modules

Four **M2** stereo **FX Return / Group** modules are fitted as standard, providing across-the-board audio subgrouping and stereo effects handling.

Monitoring

Comprehensive monitoring is provided by the **M3 Monitor** module which comprises:

- Multi-Format and Stereo Monitoring
- Mix Fader assignment
- Meter Assignment
- Auxiliary Send Masters
- Oscillator
- Talkback
- PFL/AFL and SOLO
- 10 speaker outputs including Nearfield Monitoring

Metering

The console is fitted with **30 Segment** peak-reading LED bargraphs in the meterbridge above each input module with a separate switchable pair dedicated to the **Monitors**, reading a selection of **Stereo Buss**, the **Current Monitor Selection** or **PFL/AFL**.

A set of six **Expanded-Scale VU** meters are fitted to the centre of the meterbridge to monitor **LCRS**, **LS** and **RS** signals with **Peak/VU** ballistics.

The stereo bargraphs read **Lc** and **Rc** signals in 7.1 mode.

Optional Extras

All frame sizes carry the same feature set and can be enhanced with optional extras such as:

- A motorised joystick/panner
- A floorstand
- A chassis extender which can be fitted to either end of the chassis.

Automation System

Supertrue™

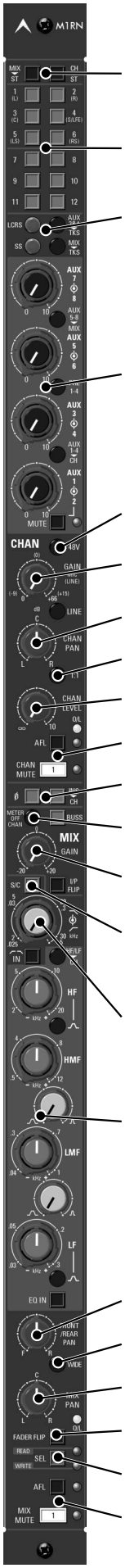
Media 51 is equipped as standard with **AMEK's** proprietary **Supertrue** mixing automation software, providing accurate control over fader levels, switch automation and internal/external events via **SMPTE** and **MIDI** timecode synchronisation.

In addition, **Supertrue** provides total recall of all channel rotary controls on the console surface with dynamic reset of selected switches.

Virtual Dynamics®

AMEK's proprietary **Virtual Dynamics®** system is fitted as standard, providing 11 software gain control devices per channel.

The **Cue List** function allows triggering of internal and external events against timecode with up to quarter-frame accuracy.



M1RN

Mono Input Module

Module Overview

The **M1RN Mono Input** is a fully featured, comprehensive module providing the necessary functionality for both professional multitrack recording and multi-format surround mixing with a **Mic Amp** and **EQ** section designed by *Mr. Rupert Neve*.

Extensive panning modes and routing options allow ease of use over a variety of recording and mixing tasks.

The module features two discrete signal paths, termed **Channel** and **Mix**.

The **Channel Path** is traditionally used to handle input signals going to tape and uses a rotary level control, whilst the **Mix Path** receives the off-tape signals and utilises the main channel fader to provide mix control out to the **Main Outputs**.

A **4-Band** swept **Equaliser** is fitted, which can be used in either signal path or split between both paths to provide limited concurrent **EQ** on each path.

Swept **High** and **Low Pass Filters** are fitted which can be used in either signal path.

The **Mix Fader** is automated via the **Supertrue** mixing software with integral recall of all major controls and dynamic reset of selected automated switches, including both **Channel Mute** and **Mix Mute**.

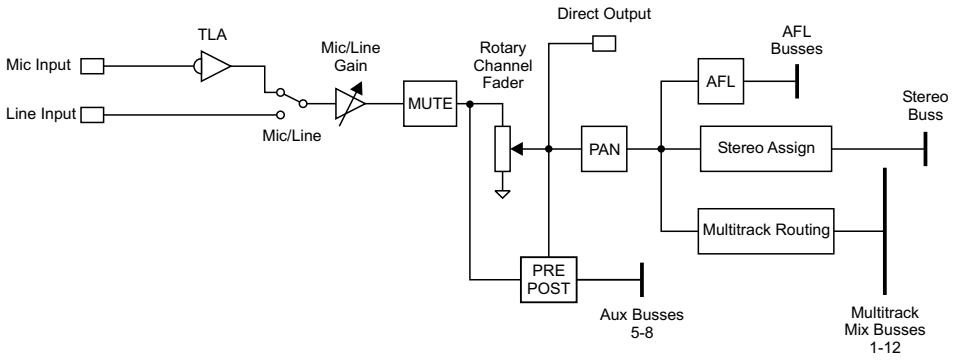
The **Main Fader** and the **Rotary Channel Level** can be swapped between signal paths.

Virtual Dynamics® is also fitted as standard to the main **Mix Fader**, and therefore follows whichever signal path the fader is assigned to.

The **Channel Bargraph Meter** is provided in the meterbridge above the module and is switchable between each signal path.

Simplified Channel Path

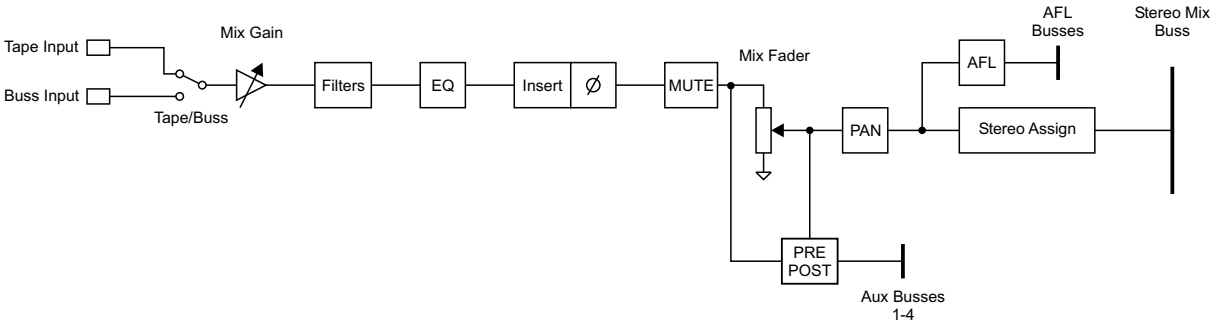
The simplified diagram below shows the default **Channel Path** arrangement, typically set up for recording to multitrack tape, with **Auxiliary Sends 5–8** available.



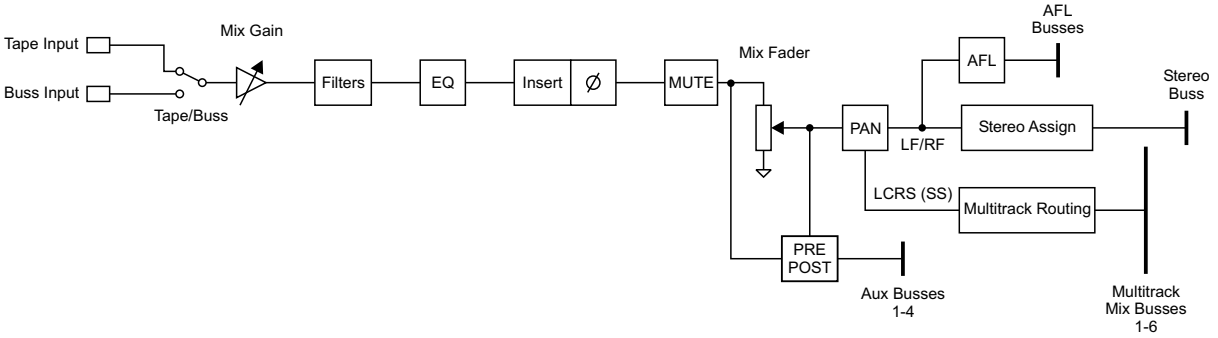
Simplified Channel Path

Simplified Mix Paths

The simplified diagram below shows the default **Mix Path** arrangements for **Stereo Mixing** and **Multi-Format Mixing**, with **Auxiliary Sends 1–4** available.



Simplified Mix Path (Stereo Mode)



Simplified Mix Path (LCRS Mode)

Module Functions

Inputs

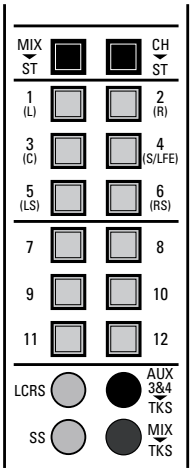
The **M1RN** module shares an **XLR** connector for both **Mic** and **Line** inputs. The **Tape** input, **Inserts** and **Direct Outputs** are provided on ¼" (6.35mm) jacksockets.

All connectors are provided on the rear terminal panel.

Note: The **Mic** input is **TLA** balanced, all other inputs are electronically balanced except for the **Insert Returns** which are unbalanced.

Signal Routing

The main routing area is found at the top of the module comprising the following features:



Mix to ST

Assigns the **Mix Path** signal the main **Stereo Buss**.

CH to ST

Assigns the **Channel Path** signal to the main **Stereo Buss**.

Multitrack Routing

The multitrack routing buttons are configured in two banks of six switches. Normally, the **Channel Path** signal feeds **Busses 1–12** in any combination, post pan pot, left signals to odd numbered busses, right signals to even numbered busses.

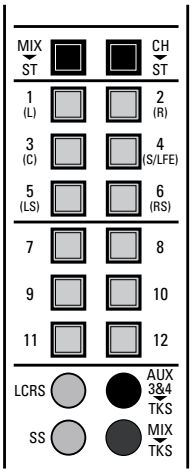
In the rear of the console, **Buss Outputs 13-24** are cross-linked to **Buss Outputs 1-12**, so signals on **Buss Output 1** are also sent to **Buss Output 13** and so on.

This allows all 24 multitrack tape inputs to be addressed directly from each input channel.

Note: In **Multi-Format Mixing** (with the **LCRS & SS** switches pressed), **Busses 1–6** are designated as a **6-Wide Mix Buss**, feeding the master outputs and centre monitoring section.

Busses 7-12 are used as **Monitor Busses**, also feeding the monitoring section and are addressed from any input channel.

In this way **6-Wide Music, Dialogue** or **FX Stems** can be brought into the input channels and used via **Busses 7-12** to create a reference monitor mix to the centre section.



Mix to Tks

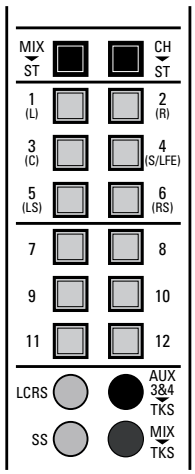
This feature assigns the **Mix Path** signal to the **Multitrack Routing** instead of the **Channel Path** signal.

Note: The **Channel** pan pot is still available to assign to the **Stereo Buss**.

Note: This function is over-ridden by both **Aux 3&4 to Tks** and **1:1** switches.

Aux 3&4 to Tks

This feature disconnects **Aux 3&4** level controls from the **Aux Busses** and feeds them directly to the **Multitrack Busses**, effectively expanding the number of auxiliary busses (if required).



Note: This function is over-ridden by the **1:1** switch.

Note: Both the **LCRS** and **SS** switches over-ride **Busses 1-6**, leaving the **Aux Sends** addressing multitrack busses **7-12** only.

LCRS

This feature is only used for **Multi-Format** work. When operated, the **LCRS** switch reconfigures **Multitrack Busses 1–4** to follow the **LCRS** panning. The busses are assigned as follows:

- **Left** = Buss 1
- **Right** = Buss 2
- **Centre** = Buss 3
- **Surround** = Buss 4

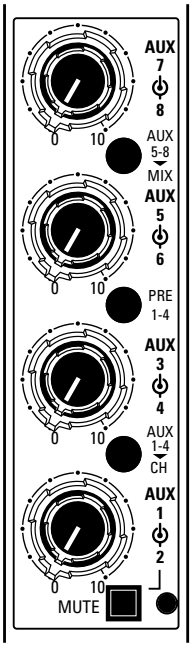
SS

This feature is only used for **Multi-Format** work. When operated, the **SS** (stereo surround) switch reconfigures **Multitrack Busses 5–6** to follow the **LCRS** panning. The busses are assigned as follows:

- **LS** = Buss 5
- **RS** = Buss 6
- **5+6** = Buss 4

Note: The **Stereo Surround** signals are derived directly from the **Surround** signal. The **Sub (LFE)** signal is derived from the **post-fade** signal.

Auxiliary Sends



There are eight **Mono Auxiliary Sends** fitted, arranged in pairs on dual concentric pots. All **Aux Sends** have unity gain when the controls are fully clockwise.

Normally, **Aux Sends 1-4** are fed from the **Mix Path**, with **Aux Sends 5-8** fed from the **Channel Path**. These can swapped between either path as required, using the **Aux 1-4 to CH** and **Aux 5-8 to Mix** switches.

Pre-Fade Aux Sends

Additionally, Aux Sends 1-4 can be selected pre-fader using the Pre 1-4 switch.

Aux Send Mutes

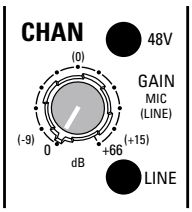
Aux Sends 1&2 are fitted with a **Mute Switch** which operates on both as a pair. This **Mute** is also automated via the **Supertrue** mixing system software.

Expanding the Number of Aux Busses

Refer to the **Aux 3-4 To Tks** section of the **Routing** area opposite.

Channel Path Inputs

48V



Applies **48 Volts DC** phantom power to the microphone input **XLR** socket for use with condenser microphones.

CAUTION: It is **NOT** recommended for use with **unbalanced** sources and should **NOT** be operated with an open channel to avoid potential loudspeaker damage due to the large switching transient!

Line Switch

Both **Mic** and **Line** signals share the same **XLR** connector. The **Line** switch disconnects phantom power from the input and changes the input gain structure accordingly.

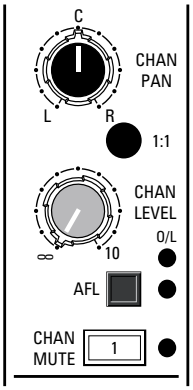
Note: Input signals can easily be swapped between both **Channel** and **Mix Paths** using the **Input Flip** switch located in the **Mix Path** Input area.

Gain Mic (Line)

The **Gain** control adjusts the sensitivity of the **XLR** input. The **Mic** range is 0dB to +66dB. The **Line** range is -9dB to +15dB.

Channel Path Outputs

Channel Mute



The **Channel Mute** switch cuts off all output from the channel and utilises a soft mute circuit for click-free switching with an associated warning LED. This switch can also be automated from the **Supertrue** mixing system software.

Channel Level

The **Channel Level** forms the main level control for the channel with +10dB gain when the control is fully clockwise.

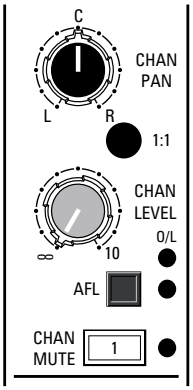
Note: Both **Channel** and **Mix Faders** can be swapped between either signal path using the **Fader Flip** switch in the **Mix Pan** area at the bottom of the module.

Channel Pan

The **Channel Pan** control feeds the signal to the **Stereo Mix** and the **Multitrack Busses**. Panning left feeds the **Odd** multitrack busses and **Stereo Left**, panning right feeds the **Even** multitrack busses and **Stereo Right**.

The **Centre** pan position is attenuated by -3dB.

1:1



Operating the **1:1** switch bypasses the **Channel Level** and **Pan** controls and sets the **Channel Path** post-mute gain to unity. The **Multitrack Routing** and **AFL** are derived directly after the **Mute** switch

Note: **AFL** becomes **PFL** and is mono.

Note: This function over-rides both **Aux 3&4 to Tks** and **Mix To Tks** switches.

Direct Output

A **Direct Output** is available, sourced post-fader / pre-pan.

Note: The **Direct Output** always follows the **Channel Path**, even if the faders are flipped.

AFL

The **AFL** switch normally provides a stereo post-fade, post pan signal to the monitor speakers, replacing the currently selected monitor source.

Note: When the **1:1** switch is active, the feed becomes **PFL** and **Mono**.

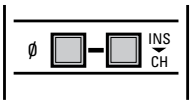
Insert Point

The insert point normally operates in the **Mix Path** and is positioned post-EQ.

Note: Both **Insert Send** and **Return** signals are **Unbalanced** and fed to a single 1/4" (6.25mm) jacksocket on the rear terminal panel. The jack **Ring** carries the **Send** signal with the **Return** signal on the **Tip**.

Insert to Channel Path

Pressing the **INS to CH** switch places the **Insert Poin**t in the **Channel Path**.



Ø Phase

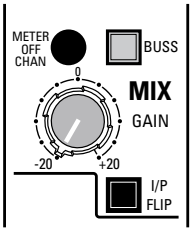
The **Ø (Phase) Switch** operates POST the **Insert Point** and reverses the phase of the **Tape** or **Buss Input**. This switch should normally be released.

Note: The **Phase** switch also moves to the **Channel Path** along with the **Insert Point** when the **INS to CH** switch is operated, where it can be used to reverse the phase of the **Mic/Line** input.

Mix Path Inputs

Buss

Pressing **Buss** switches the input source between the **Tape** and **Buss** input signals, with **Tape** being the default **Mix** input source.



Mix Gain

The **Mix Gain** control adjusts the **Buss/Tape** input level with a range of +/-20dB.

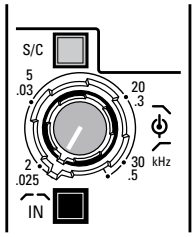
Input Flip

The **I/P Flip** function swaps the input signals between both Channel and Mix paths, allowing the **Mic/Line** signal to be fed to the **Mix Path** instead of the **Tape/Buss** signal and vice-versa.

Meter Off Channel

Normally, the LED bargraph meter (in the meterbridge above the module) reads the **Mix Path (Tape** or **Buss)** pre-gain signal. Operating the **Meter Off Chan** switch causes the meter to follow the **Channel Path (Mic** or **Line**) signal, post-gain pre-fader.

Filters



A pair of continuously variable **High Pass** and **Low Pass** filters are fitted, using dual concentric pots. The upper control is the **Low Pass** filter.

The **Filters** normally reside in the **Mix Path** (pre-EQ), but they can also be configured for use with **Channel Path** components (such as the **Mic/Line** amp) via the **Input Flip** switch.

Since both signal paths address the **Stereo Buss**, various **Filter** configurations are possible allowing them to be used in a flexible manner, including the ability to place them into the **Virtual Dynamics®** side-chain.

Filters In

Operating the **Filters In** switch places the **High** and **Low Pass Filters** in/out of circuit.

High Pass

The **High Pass** filter operates over a frequency range of 25Hz to 500Hz with a slope of 12dB per octave.

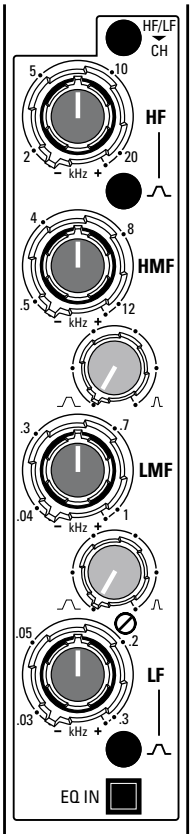
Low Pass

The **Low Pass** filter operates over a frequency range of 2kHz to 30kHz with a slope of 12dB per octave.

Side-Chain Switch

Operating the **S/C** switch places the **High** and **Low Pass** filters into the **Virtual Dynamics®** side-chain path.

Equaliser



A 4-band semi-parametric **EQ** is fitted with a separate **In/Out** switch. Each band is configured using dual concentric pots with cut/boost on the upper control and frequency sweep on the lower control. The mid bands have variable Q controls.

All four **EQ** sections normally reside in the **Mix Path**, but the **HF** and **LF** sections can be switched into the **Channel Path** using the **HF/LF to Chan** switch, providing concurrent limited **EQ** in both signal paths.

HF

The **HF** band cut/boost control has a range of +/-18dB with a variable frequency range of 2kHz to 20kHz.

HF Bell/Shelf

The **HF** band can be switched between bell/shelf responses, the default is **Shelf** mode. The **Q** factor in **Bell** mode is 1.5.

HMF

The **HMF** band cut/boost control has a range of +/-18dB with a variable frequency range of 500Hz to 12kHz.

HMF Q

The variable **Q** factor control ranges between 0.5 and 2.

LMF

The **LMF** band cut/boost control has a range of +/-18dB with a variable frequency range of 40Hz to 1kHz.

LMF Q

The variable **Q** factor control ranges between 0.5 and 2.

LF

The LF cut and boost control gives a range of +/-18dB. The LF frequency control gives a variable frequency range of 30Hz to 300Hz.

LF Bell/Shelf

The **LF** band can be switched between bell/shelf responses, the default is **Shelf** mode. The **Q** factor in **Bell** mode is 0.7.

EQ In

The **EQ In** switch inserts the **Equaliser** into the signal path.

Mix Path Output

Mix Fader

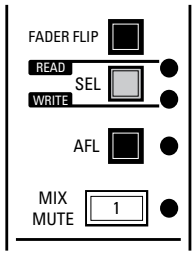
The **Mix Path** output level is controlled by a 100mm travel fader, fitted to a separate panel below the module. The **Mix Fader** controls a **VCA** *(voltage controlled amplifier)* via the mix computer under control of the **Supertrue** automation system.

Computer Fail System

In the unlikely event of a computer failure, the fader system is designed so that faders can be switched to direct control of the **VCA** element via the **Faders Isolate** switch on the **M3 Monitor Module**.

Fader Flip

Pressing **Fader Flip** swaps the **Mix Path VCA Fader** and the **Channel Path** level control.



Mute

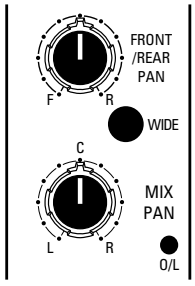
The **Mix Mute** switch cuts off all output from the **Mix Path** and utilises a soft mute circuit for click-free switching with an associated warning LED.
This switch can also be automated from the **Supertrue** mixing system software.

AFL

The **AFL** switch normally provides a stereo post-fade, post pan signal to the monitor speakers, replacing the currently selected monitor source.

Mix Panning

The **Mix Pan** controls are quite complex and change their operation depending upon the current mixing mode, traditional stereo or multi-format surround.



Stereo Mode

In traditional stereo work, the **Mix Pan** control feeds the signal to the stereo mix and multitrack busses via the **Mix to ST** and **Mix to Tks** switches at the top of the module with a -5dB centre attenuation.

Note: For stereo work the **Front/Rear** pan control **MUST** be fully panned to **Front**!

Note: **Mix To Tks** is over-ridden by both **Aux 3&4 to Tks** and **1:1** switches.

LCRS Mode

In **LCRS** mode, the **Mix Pan** becomes a multi-format pan control and feeds **Multitrack Busses 1-4** as follows:

- **Left** = Buss 1
- **Right** = Buss 2
- **Centre** = Buss 3
- **Surround** = Buss 4

Stereo Surround

In **Stereo Surround** work (with the **SS** switch operated) the **LS** and **RS** signals are derived directly from the **Surround** signal and fed to multitrack busses **5** and **6** via the routing switches.

- **LS** = Buss 5
- **RS** = Buss 6
- **Sub (LFE)** = Buss 4

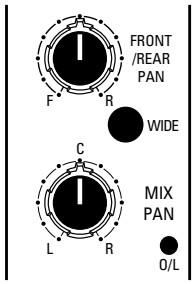
Note: The **Sub (LFE)** signal is derived from the post fade signal.

Front & Rear Pan

When the **Front/Rear** pan control is panned towards the **Front**, full signal is fed to the **Mix Pan (LCR)** pot which performs the main pan operations.

When panned towards the **Rear** full signal is fed to the **Surround** busses.

The **Front/ Rear** pan has a centre attenuation of -3dB.



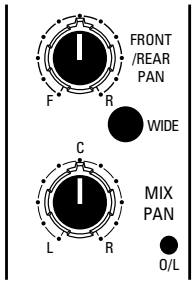
LCR Pan Responses

In normal stereo work, the **LCR Pan** control has a front **Left/Right** centre attenuation of -5dB.

Wide

When **Wide** is selected, the pan laws are modified so that no signals are present on the **L** and **R** busses when the pan is in the centre.

The overall effect is to provide a more discrete image as the pan moves from **Left** to **Right** through **Centre**.



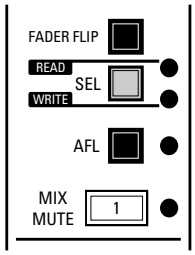
Multi-Format Panning

It should be remembered that the **Input Channel** defines the multiformat panning **NOT** the **Busses**.

Any multitrack buss **NOT** used for **Surround** can be used as normal. This allows **Stereo Surround** discrete **Sub Busses** to be sourced from **Aux Sends** or the **Channel Path**.

Note: Only necessary channels on the console need to be set for multi-format panning and even though busses may be designated as **Surround Busses**, they can include **Mono** or **Stereo** signals from other sources.

SEL Switch



The **SEL** switch is accompanied by a pair **Red** and **Green** LEDs and steps the module through the three automation system modes.

The **Green** LED indicates **Read** mode where manual control is disabled and automated functions such as VCA fader levels and certain switch positions are controlled directly via the automation computer.

The **Red** LED indicates **Write** mode where automated functions are controlled manually and changes can be stored in the automation computer.

Both LEDs indicate **Update** mode where automated functions respond to **BOTH** computer and manual changes which can then be stored as new data in the automation computer.

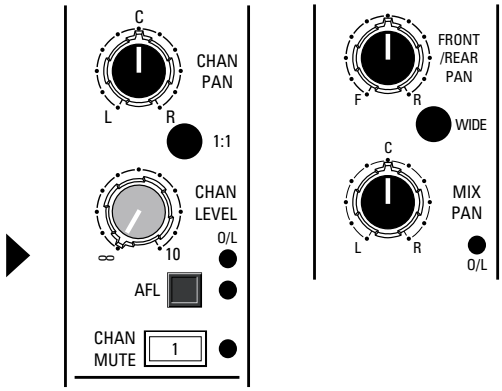
Solo in Place

Supertrue handles this operation by intercepting the **Solo-In-Place** switch and selecting the **Channel** or **Mix** solo-in-place **SEL** option, depending upon requirements.

Note: See the **Supertrue User Guide** for more details.

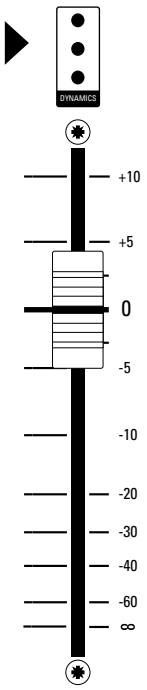
Overload Indicators

Overload LEDs are fitted pre-fader on both **Channel** and **Mix** signal paths, set to illuminate 6dB below clipping.



Virtual Dynamics®

The **Virtual Dynamics®** system is fitted as standard and provides additional control to each channel **VCA** via the automation system.



Note: The **M2 Group** modules and the four module positions **25–28** immediately to their left, **CANNOT** have **Virtual Dynamics®** fitted. This is a limitation of the system and cannot be changed.

A range of 11 software driven gain control devices is available, however, devices may only be selected and used one at a time.

Three **Virtual Dynamics®** LEDs are fitted above each fader on the fader panel **Green** (top), **Yellow** (centre) and **Red** (bottom) and the display responds according to the device selected.

Note: For any **Gate – Red** indicates gate closed, **Yellow** attack or release phase and **Green** gate open.

Note: For any **Compressor**, **Limiter** or **Expander**, **Green** is always on, **Yellow** indicates more than 3dB compression and **Red** more than 8dB compression.

Note: For the **Autopanner**, **Green** is always on, **Yellow** and **Red** indicate gain reduction.

Side-Chain Filters

The swept **High** and **Low Pass** filters can be placed into the **Virtual Dynamics® Side-Chain** using the S/**C** switch in the **Filters** area.

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M10

Stereo Input Module

Module Overview

The **M10 Stereo Input** is designed to complement the **Media 51** mono input channel by providing features required for working with stereo line level source signals.

Stereo Input modules avoid the need to use pairs of **Mono Modules** to handle stereo material, which is never a cost-effective way of working.

M10 Stereo modules can be fitted into any input module slot, however the signal routing has **NO** multi-format capability and is limited to stereo use only.

An **M/S** (Mid/Side) input matrix is also available.

A **4-Band** semi-parametric **Equaliser** is fitted, with **Swept Mids** and switched frequency **HF** and **LF** bands.

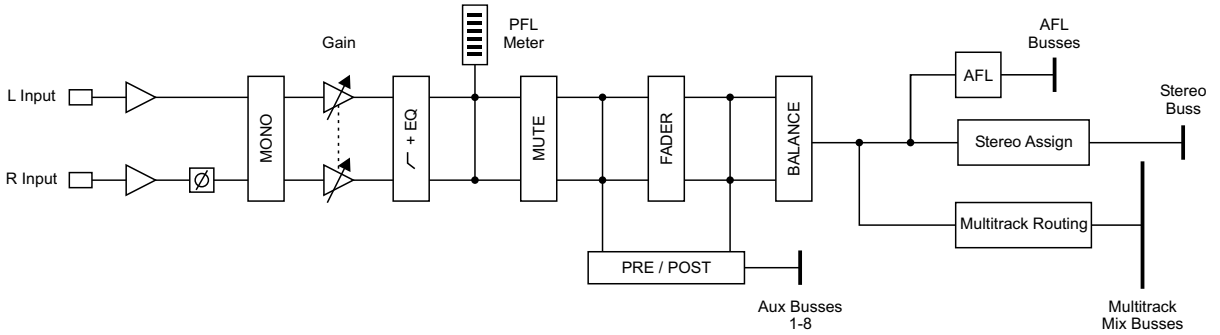
A fixed frequency **High Pass Filter** is fitted.

The **Channel Fader** is automated via the **Supertrue** mixing software with integral recall of all major controls and dynamic reset of selected automated switches, including the **Channel Mute**.

Virtual Dynamics® is also fitted as standard to the channel fader.

A channel **Bargraph Meter** is provided in the meterbridge above the module.

Simplified Stereo Channel Path



Simplified Stereo Path

Module Functions

Inputs

The **M10** module uses the **XLR** (**Mic/Line**) connector and the **Tape** input ¼" (6.35mm) jacksocket for the **Left** and **Right** line inputs.

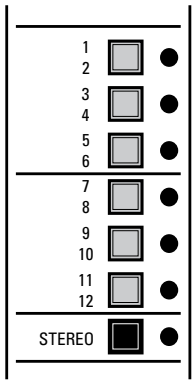
All connectors are provided on the rear terminal panel.

Note: All inputs are electronically balanced.

Signal Routing

The main routing area is found at the top of the module and stereo signals are sent post-balance control to multitrack busses 1-12 and the main stereo buss in pairs.

Each routing switch has an associated LED.



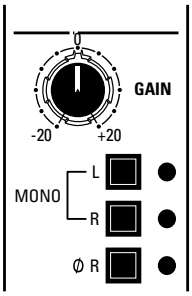
Input Controls

Gain

The **Stereo Gain** control adjusts the sensitivity of both inputs equally with a range of +/-20dB.

Mono

Separate switches are provided for **Left Mono** and **Right Mono**.



Operating only one **Mono** switch sends that input signal equally through both **Left** and **Right** signal paths.

Operating **BOTH** switches produces a **Mono Blend** of both **Left** and **Right** signals with -6dB attenuation and sends the blend equally through both **Left** and **Right** signal paths.

Right Ø (Phase)

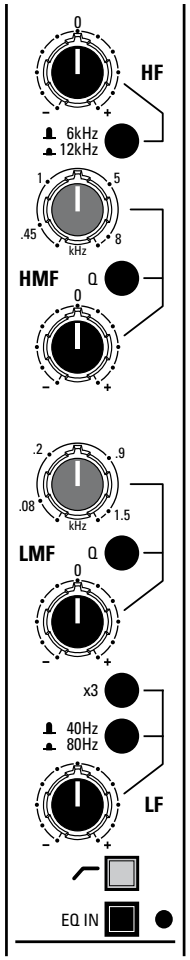
A **Phase Reversal** switch is fitted to the **Right** signal path **ONLY** to correct any phase reversal errors on the incoming signals. This switch should **NOT** normally be operated.

M/S

An **M/S** input matrix is created by operating **BOTH Mono** switches and the **Phase** switch simultaneously. The phase reversal is still only applied to the incoming right signal.

This has the effect of performing an **M/S to Left/Right** conversion with the **M** signal in the **Left** signal path and the **S** signal in the **Right** signal path.

Equaliser



The **Equaliser** operates simultaneously on both **Left** and **Right** signals.

The 4-band **EQ** is fitted with a separate **In/Out** switch. Each band is configured using single pots with variable cut/boost on each band and frequency sweep on the **Mids** only.

The **HF** and **LF** bands have switched frequencies and the **Mid** bands also have switched **Q** controls.

HF

The **HF** band cut/boost control has a range of +/-18dB with a switched frequency shelving response of either 6kHz or 12kHz.

HMF

The **HMF** band cut/boost control has a range of +/-14dB with a variable frequency range of 450Hz to 8kHz.

HMF Q

The switched **Q** factor is either 0.7 or 2.

LMF

The **LMF** band cut/boost control has a range of +/-14dB with a variable frequency range of 80Hz to 1.5kHz.

LMF Q

The switched **Q** factor is either 0.7 or 2.

LF

The **LF** cut and boost control gives a range of +/-18dB with a switched frequency shelving response of either 40Hz or 80Hz. The **x3** multiplier switch changes these to either 120Hz or 240Hz.

High Pass Filter

The **High Pass Filter** is switched at 120Hz with a slope of 12dB per octave.

EQ In

The **EQ In** switch inserts the **Equaliser** into both signal paths.

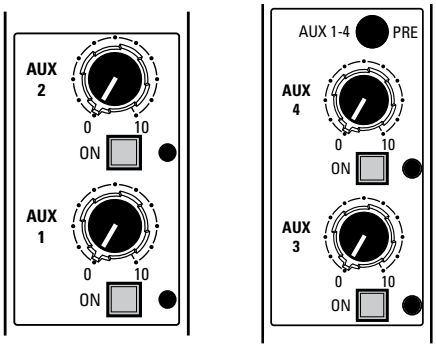
Auxiliary Sends

There are eight **Auxiliary Sends** fitted, arranged in pairs on single pots. All **Aux Sends** have unity gain when the controls are fully clockwise.

Aux 1-4

Aux Sends 1-4 have individual level controls each with an associated **ON**(Off) switch.

Aux 1&2 ON switches are also automated via the **Supertrue**mixing system software.

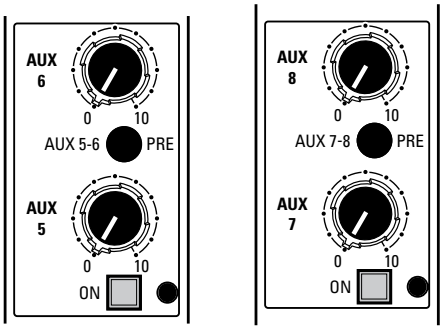


Pre-Fade Aux Sends

All four sends share a common fader source **Pre** switch and send a mono sum of **Left** and **Right** signals to the auxiliary busses when operated.

Aux 5-8

Aux Sends 5-8 have individual level controls and share an associated **ON**(Off) switch in pairs.



Pre-Fade Aux Sends

Aux Sends 5&6 and **7&8** share fader source **Pre** switches in pairs and send a mono sum of **Left** and **Right** signals to the auxiliary busses when operated.

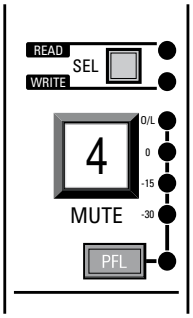
Stereo Auxiliary Sends

Three internal switches allow **Sends 1-4**, **Sends 5&6** and **Sends 7&8** to be switched into **Stereo** mode. In this mode, the **Odd** numbered sends carry the **Left** signal and **Even** numbered sends carry the **Right** signal.

Output Controls

Channel Mute

The large illuminated **Channel Mute** switch cuts off all output from the channel. This switch can also be automated from the **Supertrue** mixing system software.



Channel Fader

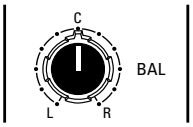
The **M10** output level is controlled by a 100mm travel fader, fitted to a separate panel below the module. The **Channel Fader** controls a **VCA** *(voltage controlled amplifier)* via the mix computer under control of the **Supertrue** automation system.

Computer Fail System

In the unlikely event of a computer failure, the fader system is designed so that faders can be switched to direct control of the **VCA** element via the **Faders Isolate** switch on the **M3 Monitor Module**.

Balance

The **Balance** control feeds the channel signals to the **Stereo Mix** and the **Multitrack Busses**.



Turned fully **Left**, feeds the **Odd** multitrack busses and **Stereo Left**, turned fully right feeds the **Even** multitrack busses and **Stereo Right**.

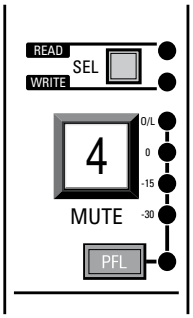
The centre **Balance** position is **NOT** attenuated and runs at 0dB whilst extreme **Left** or **Right** range from +3dB to infinity.

PFL

The **PFL** switch normally provides a stereo pre-fade signal to the monitor speakers, replacing the currently selected monitor source.

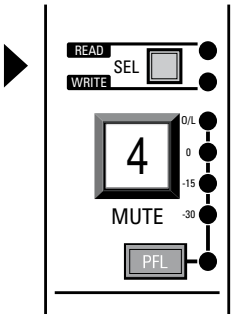
PFL Meter

A 4-LED **PFL** meter is fitted to the right of the **Mute** switch.



SEL Switch

The **SEL** switch is accompanied by a pair **Red** and **Green** LEDs and steps the module through the three automation system modes.



The **Green** LED indicates **Read** mode where manual control is disabled and automated functions such as VCA fader levels and certain switch positions are controlled directly via the automation computer.

The **Red** LED indicates **Write** mode where automated functions are controlled manually and changes can be stored in the automation computer.

Both LEDs indicate **Update** mode where automated functions respond to **BOTH** computer and manual changes which can then be stored as new data in the automation computer.

Solo in Place

Supertrue handles this operation by intercepting the **Solo-In-Place** switch and selecting the **Channel** solo-in-place **SEL** option, depending upon requirements.

Note: See the **Supertrue User Guide** for more details.

Overload Indicators

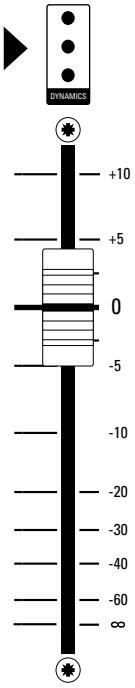
An **Overload** LED is provided as part of the **PFL Meter**, set to illuminate 6dB below clipping.

Virtual Dynamics®

The **Virtual Dynamics®** system is fitted as standard and provides additional control to each channel **VCA** via the automation system.

A range of 11 software driven gain control devices is available, however, devices may only be selected and used one at a time.

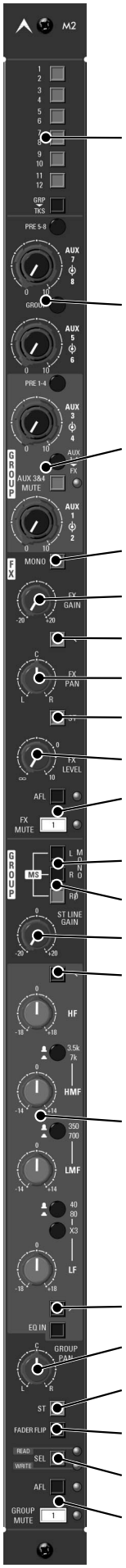
Three **Virtual Dynamics®** LEDs are fitted above each fader on the fader panel **Green** (top), **Yellow** (centre) and **Red** (bottom) and the display responds according to the device selected.



Note: For any **Gate – Red** indicates gate closed, **Yellow** attack or release phase and **Green** gate open.

Note: For any **Compressor**, **Limiter** or **Expander**, **Green** is always on, **Yellow** indicates more than 3dB compression and **Red** more than 8dB compression.

Note: For the **Autopanner**, **Green** is always on, **Yellow** and **Red** indicate gain reduction.



M2

FX / Group Module

Module Overview

The **M2 Stereo FX Return/Group** module provides several essential features necessary for professional multitrack recording and mixing.

Four modules are fitted as standard providing four **Stereo FX Returns** and eight **Audio Subgroups**.

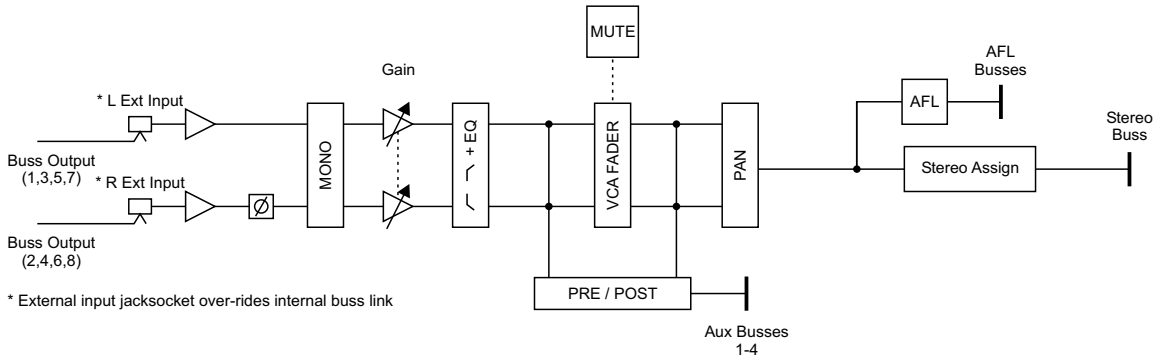
The module comprises two sections, the **Stereo FX Return** and the **Stereo Group**, which uses a 100mm travel fader located on a separate fader panel.

A **Four-Band Equaliser** is fitted, with switched frequency **Mid** and **Low** bands.

Fixed frequency **High** and **Low Pass Filters** are fitted.

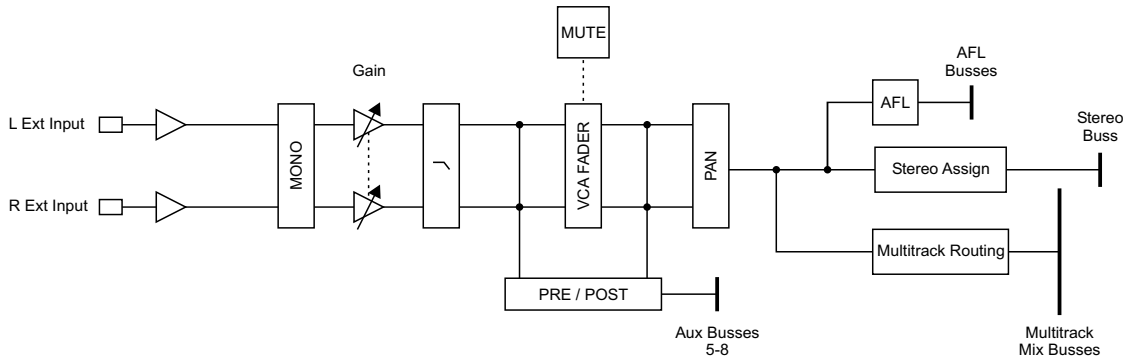
The stereo **Group Faders** are automated via the **Supertrue** mixing software with integral recall of all major controls and dynamic reset of selected automated switches, including both **FX Return Mute** and **Group Mute**.

Simplified Stereo Group Path



Simplified Stereo Group Path

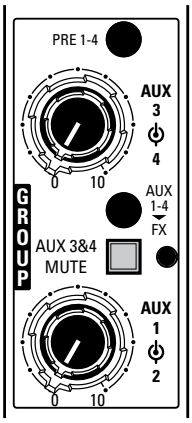
Simplified Stereo FX Return Path



Simplified Stereo FX Return Path

Module Functions

Inputs



The **M2** module uses 1/4" (6.35mm) jacksockets for inputs. All connectors are provided on the rear terminal panel.

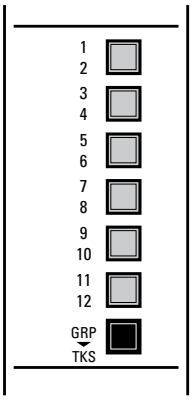
The stereo **FX Return** inputs are external, the **Group** inputs are normally derived internally from the multitrack **Buss Outputs** via a pair of half-normalled **Line Input** jacksockets.

This allows **Audio Subgroups** to be set up across the console via the channel multitrack routing switches or external signals to be brought in directly and the **Group** section used as a **Stereo Line Input**.

Note: **Groups 1&2** normally receive **Busses 1&2** etc. through to **Groups 7&8** receiving **Busses 7&8**.

Note: All inputs are electronically balanced.

Signal Routing



The main routing area is found at the top of the module and stereo signals are sent post-pan control to **Multitrack Busses 1-12**.

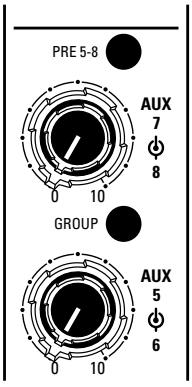
Note: Signals are normally sourced from the output of the **FX Return** section.

Groups to Tracks

Pressing the **Grp to Tks** switch changes the routing from the output of the **FX Return** section to the output of the **Group** section.

Note: This would either be the **Group** signal or any signal patched in through the **Line Input** jacks.

Auxiliary Sends



There are eight auxiliary sends fitted, arranged in two groups of four dual concentric pots. All aux sends have unity gain when the controls are fully clockwise.

Aux Sends 5-8

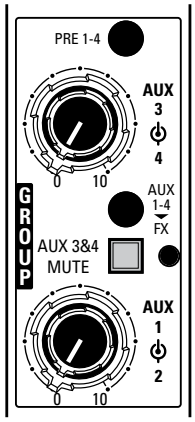
Aux Sends 5-8 are mono post fader sends, normally fed from the **FX Return** path. Operating the **Group** switch allows **Sends 5–8** to be placed into the stereo **Group** (Line Input) section.

Pre Fader

The **Pre 5-8** switch places all four sends pre-fader.

Aux Sends 1-4

Aux Sends 1-4 are mono post fader sends, normally fed from the **Group** (Line Input). Operating the **Aux 1–4 to FX** switch allows **Sends 1–4** to be placed into the stereo **FX Return** section.



Pre Fader

The **Pre 1-4** switch places all four sends pre-fader.

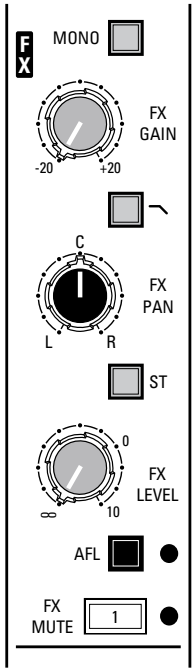
Aux 3&4 Mute

The **Aux 3&4 Mute** switch cuts off all outputs from **Aux Sends 3&4** and is also automated from **Supertrue**™.

FX Return Inputs

Mono

Pressing the **Mono** switch combines both **Left** and **Right** signals together and feeds them equally through both sides of the module.



Gain

The **Gain** control adjusts the sensitivity of the jack input for the **FX Return** section. The range is +/-20dB.

Low Pass Filter

The **Low Pass Filter** is fixed frequency and acts on both sides of the **FX Return** with the -3dB point set to 6kHz at 12dB per octave.

FX Return Outputs

Pan

The **FX Pan** control feeds the signal to the **Stereo Mix** and the **Multitrack Busses**.

Panning **Left** pans to the **Odd Multitrack** and **Stereo Left**, panning **Right** pans to the **Even Multitrack** busses and **Stereo Right**.

In the **Centre Position** there is an attenuation of -3dB.

ST

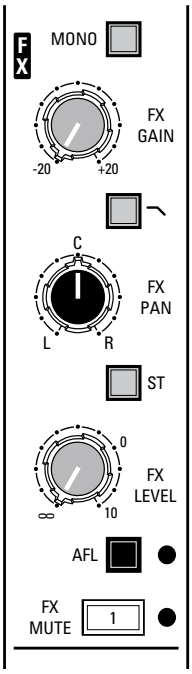
Assigns the signal in the **FX Return** path to the **Main Stereo Buss**.

FX Level

The **FX Level** is the main level control for the stereo **FX Return** and controls a pair of **VCA**s *(voltage controlled amplifiers).*

There is +10dB of gain with the control fully clockwise.

Note: The **FX Level** control can be swapped with the **Group Fader** via the **Fader Flip** switch in the **Group** section.



AFL

The **FX Return AFL** switch provides a stereo post-fade signal to the monitor speakers, replacing the selected source.

Mute

The **FX Mute** switch cuts off all output from the **FX Return** section and utilises a soft mute for click-free switching.

The **FX Mute** switch is also automated via **Supertrue**.

Solo in Place

Supertrue handles this operation by intercepting the **Solo-In-Place** switch and selecting the **Mix** solo-in-place **SEL** option, depending upon requirements.

Note: Refer to the **Supertrue User Guide** for more details.

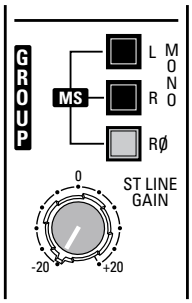
Stereo Group/Line Inputs

Normally, this section acts as a **Stereo Subgroup.** The inputs come from the multitrack routing switches on each input module via the **Buss Outputs**. Alternatively, this section can be used as a **Stereo Line Input** via jacksockets on the rear terminal panel.

Note: Any signals connected to the **Stereo Input Jacks** will override the group signals.

Mono Left

The **Mono Left** switch applies the **Left Hand Signal** to both **Left** and **Right** sides of the module.



Mono Right

The **Mono Right** switch applies the **Right Hand Signal** to the **Left** and **Right** sides of the module.

Note: If **Both** switches are pressed together, the **Left** and **Right** signals appear on **Both** sides of the module @ -6dB.

RØ (Phase)

The **RØ** switch reverses the phase of the **Right Hand Side Signal** only. This switch should normally be released.

M/S

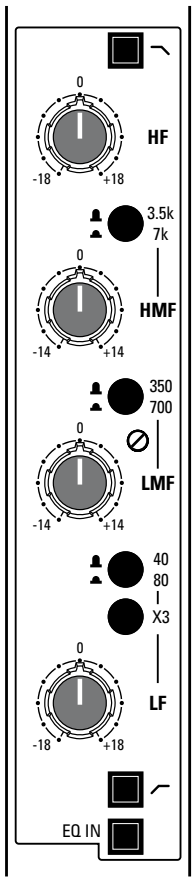
An **M/S** input matrix is created by operating **BOTH Mono** switches and the **Phase** switch simultaneously. The phase reversal is still only applied to the incoming **Right** signal.

This has the effect of performing an **M/S to Left/Right** conversion with the **M** signal in the **Left** signal path and the **S** signal in the **Right** signal path.

Gain

The **Group Gain** control adjusts the sensitivity of both the **Left** and **Right** inputs. The range is +/-20dB.

Equaliser



The stereo **EQ** section comprises four bands with fixed frequency **High** and **Low Pass Filters** and acts on both left and right signals simultaneously.

The **HF** and **LF** sections have a **Shelving Response** with the **LF** having selectable frequencies. The **Mid** sections have a **Bell Response** at selectable frequencies.

HF

The **HF** cut/boost control has a range of +/- 18dB at a fixed frequency of 12kHz.

HMF

The **HMF** cut/boost control has a range of +/-14dB at a selectable frequency of either 3.5kHz or 7kHz.

LMF

The **LMF** cut/boost control has a range of +/-14dB at a selectable frequency of either 350Hz or 700Hz.

LF

The **LF** cut/boost control has a range of +/-18dB at a selectable frequency of either 40Hz or 80Hz.

The **X3** switch multiplies the selected frequencies by a factor of three, giving either 120Hz or 240Hz.

Low Pass Filter

The **Low Pass Filter** is fixed frequency and acts on both sides of the **Group** with the -3dB point set to 6kHz at 12dB per octave.

High Pass Filter

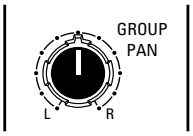
The **High Pass Filter** is fixed frequency and acts on both sides of the **Group** with the -3dB point set to 120Hz at 12dB per octave.

EQ In

The **Eq In** switch inserts the equaliser into the signal path.

Stereo Group/Line Outputs

Pan

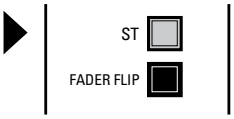


The **Group Pan** control feeds the signal to the **Stereo Mix** and the **Multitrack Busses**.

Panning **Left** pans to the **Odd Multitrack** and **Stereo Left**, panning **Right** pans to the **Even Multitrack** busses and **Stereo Right**.

In the **Centre Position** there is an attenuation of -3dB.

ST



Assigns the signal in the **Group** path to the **Main Stereo Buss**.

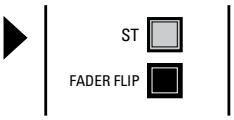
Group Level

The stereo **Group Level** control is provided by a 100mm travel fader on a separate panel below the modules and controls a pair of **VCA**s *(voltage controlled amplifiers)* via the mix computer under control of the **Supertrue** automation system.

Computer Fail System

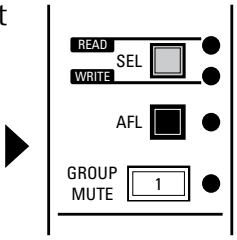
In the unlikely event of a computer failure, the fader system is designed so that faders can be switched to direct control of the **VCA** element via the **Faders Isolate** switch on the **M3 Monitor Module**.

Fader Flip



Pressing **Fader Flip** swaps the **FX Return** level control with the automated stereo **Subgroup** VCA fader.

Mute



The **Group Mute** switch cuts off all outputs from the channel and utilises a soft mute for click-free switching. The switch can also be automated from **Supertrue**.

AFL

The **Group AFL** switch provides a post-fade signal to the monitor speakers replacing the selected source.

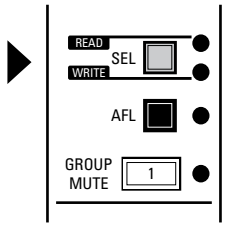
Solo in Place

Supertrue handles this operation by intercepting the **Solo-In-Place** switch and selecting the **Mix** solo-in-place **SEL** option, depending upon requirements.

Note: See the **Supertrue User Guide** for more details.

SEL Switch

The **SEL** switch is accompanied by a pair **Red** and **Green** LEDs and steps the module through the three automation system modes.



The **Green** LED indicates **Read** mode where manual control is disabled and automated functions such as VCA fader levels and certain switch positions are controlled directly via the automation computer.

The **Red** LED indicates **Write** mode where automated functions are controlled manually and changes can be stored in the automation computer.

Both LEDs indicate **Update** mode where automated functions respond to **BOTH** computer and manual changes which can then be stored as new data in the automation computer.

Virtual Dynamics®

Whilst the **Virtual Dynamics®** system is fitted as standard, these functions are not available for the **M2 FX Return/Group Module.**

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Monitoring

Features

Media-51 offers comprehensive monitoring facilities for working in traditional **Stereo** or several multi-format modes such as **LCR**, **LCRS**, **5.1** and **7.1**.

To provide this versatility whilst maintaining a compact control surface, different monitor arrangements can be set up via the console logic.

In this way, the operator is able to choose his own way of working and select the metering, solo and mute methods which best suit the task at hand.

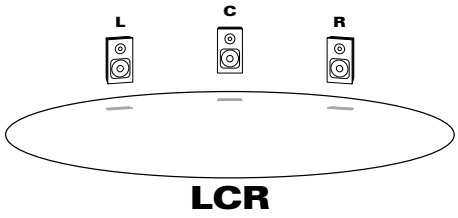
Comprehensive **Direct/Playback** switching is available (*traditionally called PEC/Direct after the Photo Electric Cells used in optical film sound tracks*), with **Speaker Solo** and **Input Cut** functions providing a flexible monitoring environment for almost any media format.

The **Media-51** monitor input source matrix is a submixing system, so wide-format monitor source signals can either be selected exclusively in the traditional way, or selected concurrently and blended together into the speaker outputs, as defined by the current operating format.

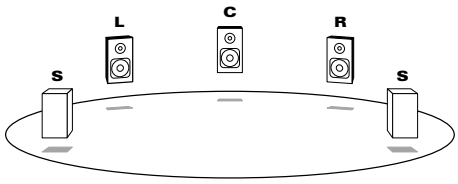
A typical use would be mixing music programme whilst monitoring dialogue or FX material which isn't actually included in your mix, but needs to be considered!

Downmixing wide format programme material into the monitors is also possible, although this is usually best performed in the external encode/decode system being used.

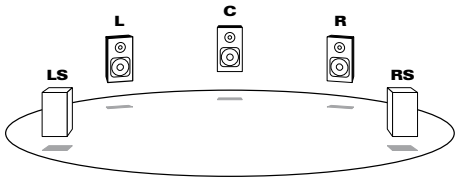
All monitoring options are switch selectable from the **M3 Monitor Module** control surface.



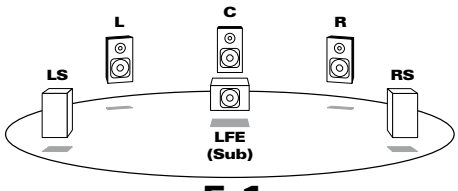
LCR



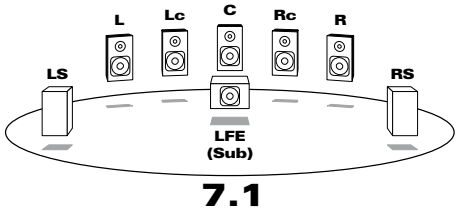
LCRS



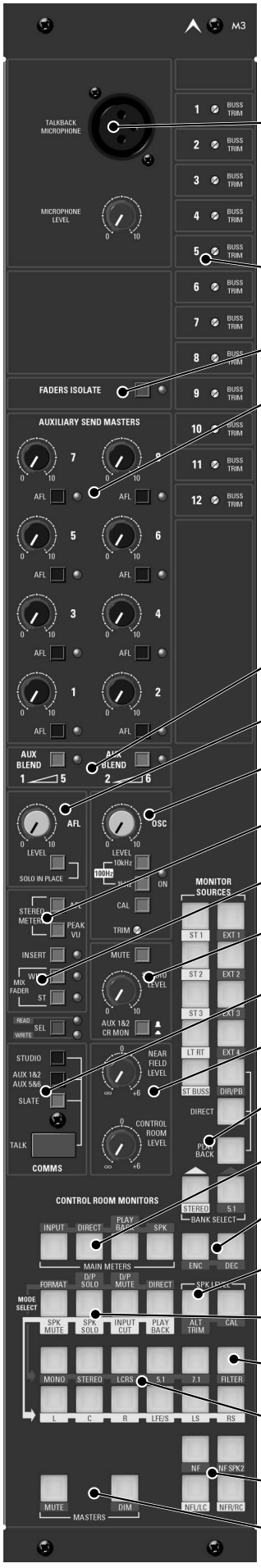
Phantom 5.1



5.1



7.1



Talkback Mic XLR Connector

Buss Trims

Faders Isolate

Auxiliary Send Masters

Auxiliary Send Blend

PFL/AFL & Solo

Oscillator

Stereo Meters

Mix Fader

Studio Monitor

Talkback

Main Monitor Levels

Monitor Source Select

Main Meters

Encoder/Decoder

Alt Speaker Trim

Monitor Mode Select

Filter

Speaker Format Select

Nearfield Speaker Select

Master Mute & Dim

M3
Monitor Module

The **M3** module features a comprehensive panel providing control for a variety of functions, including:

- Monitoring
- Mix fader assignment
- Metering
- Auxiliary Send Masters
- Oscillator
- Talkback *(not including microphone)*
- PFL/AFL and SOLO

System Diagrams

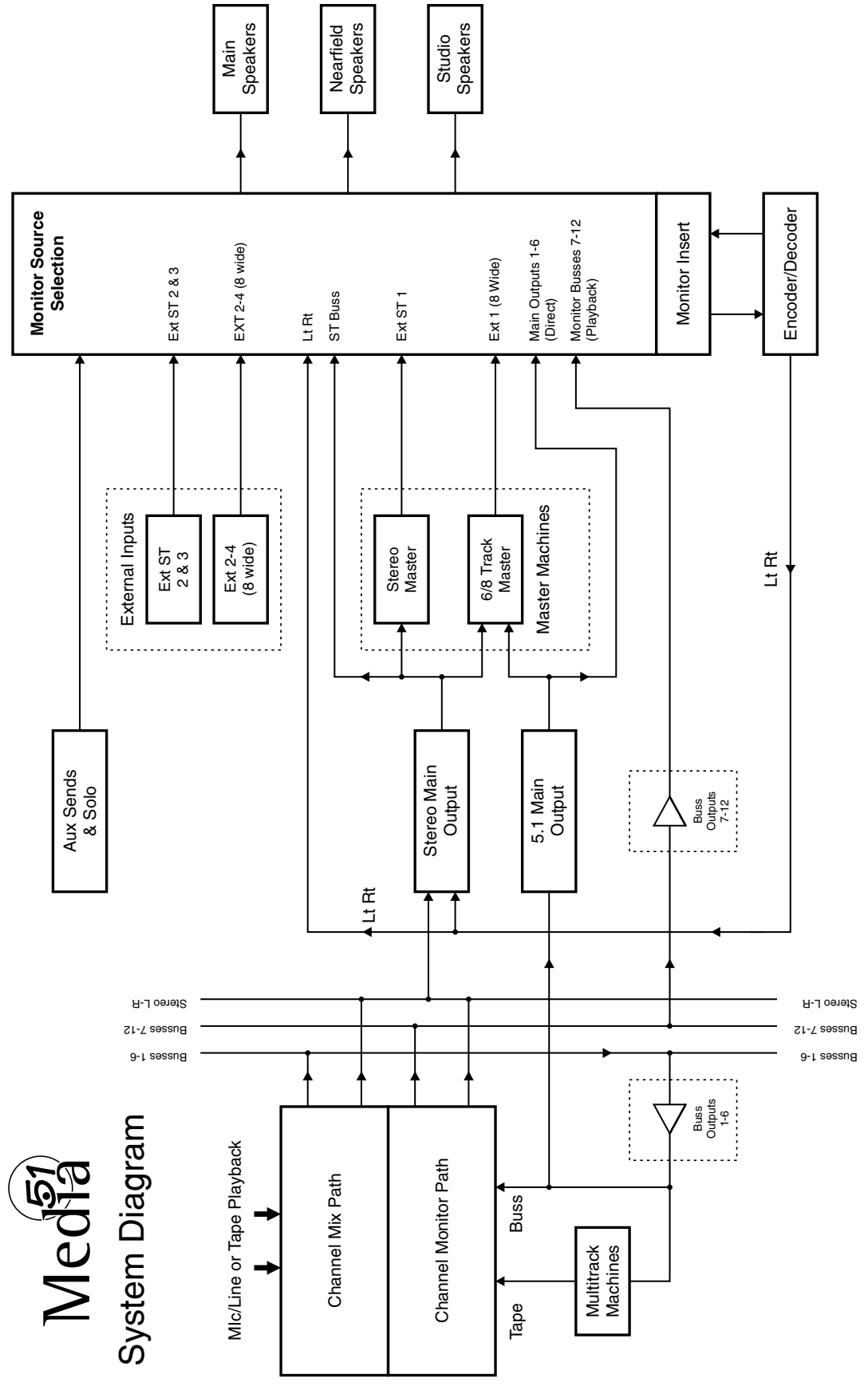
The simplified system diagrams which follow, help to identify the major signal flow paths and their inter-relationships.

It's worth noting how the multitrack busses are reconfigured in **5.1** work, with busses **1-6** used for the **Direct** signals and busses **7-12** (via the input modules) for the **Playback** monitor signals.

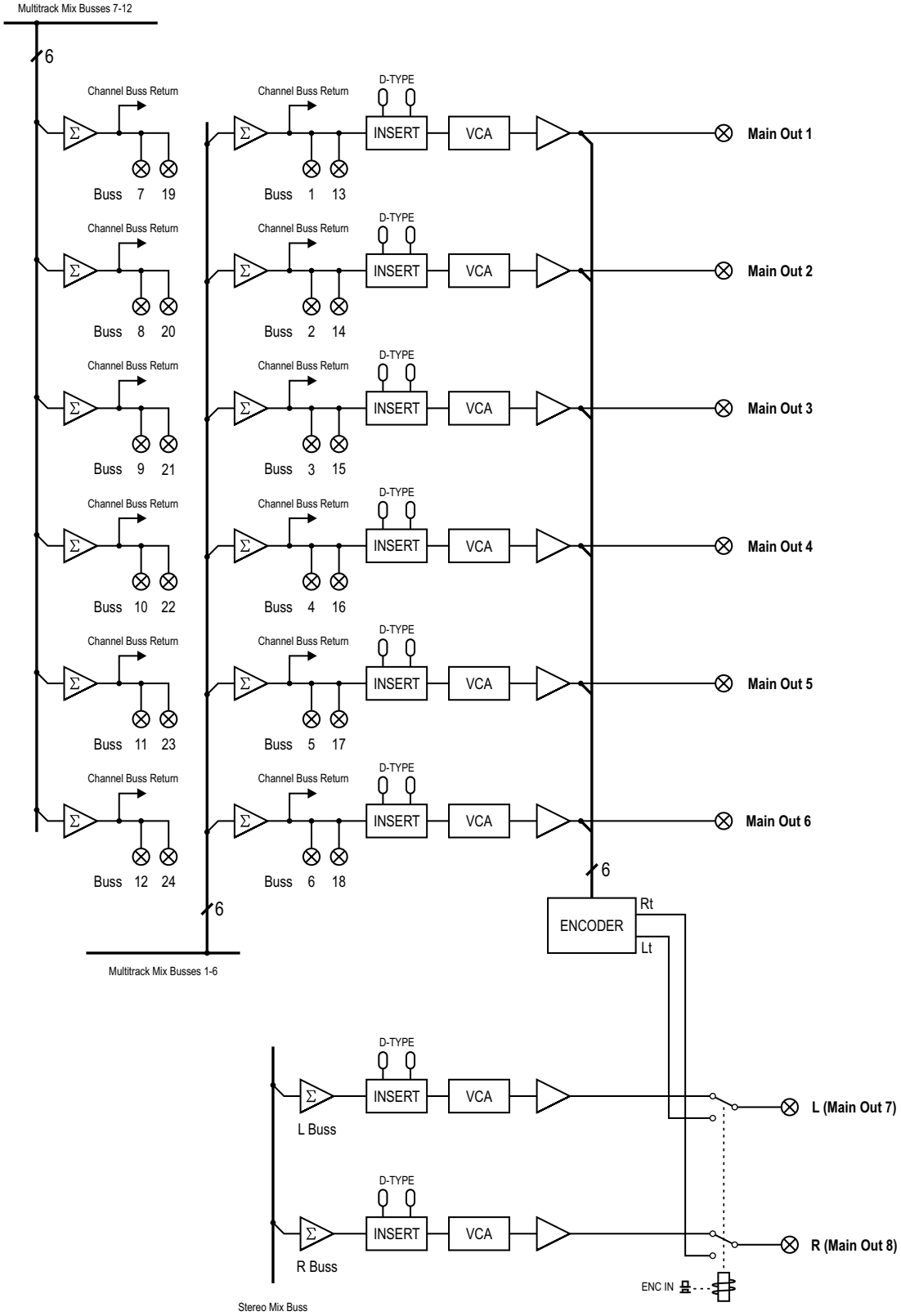
Buss Outputs 1-6 sum the buss signals in the normal manner, but they are also used to derive the signals for the **Main 5.1 Outputs**.

Of course, busses **6-12** are still available to the input channels in the normal manner, it's simply a matter of considering their usage with respect to the current tasks.

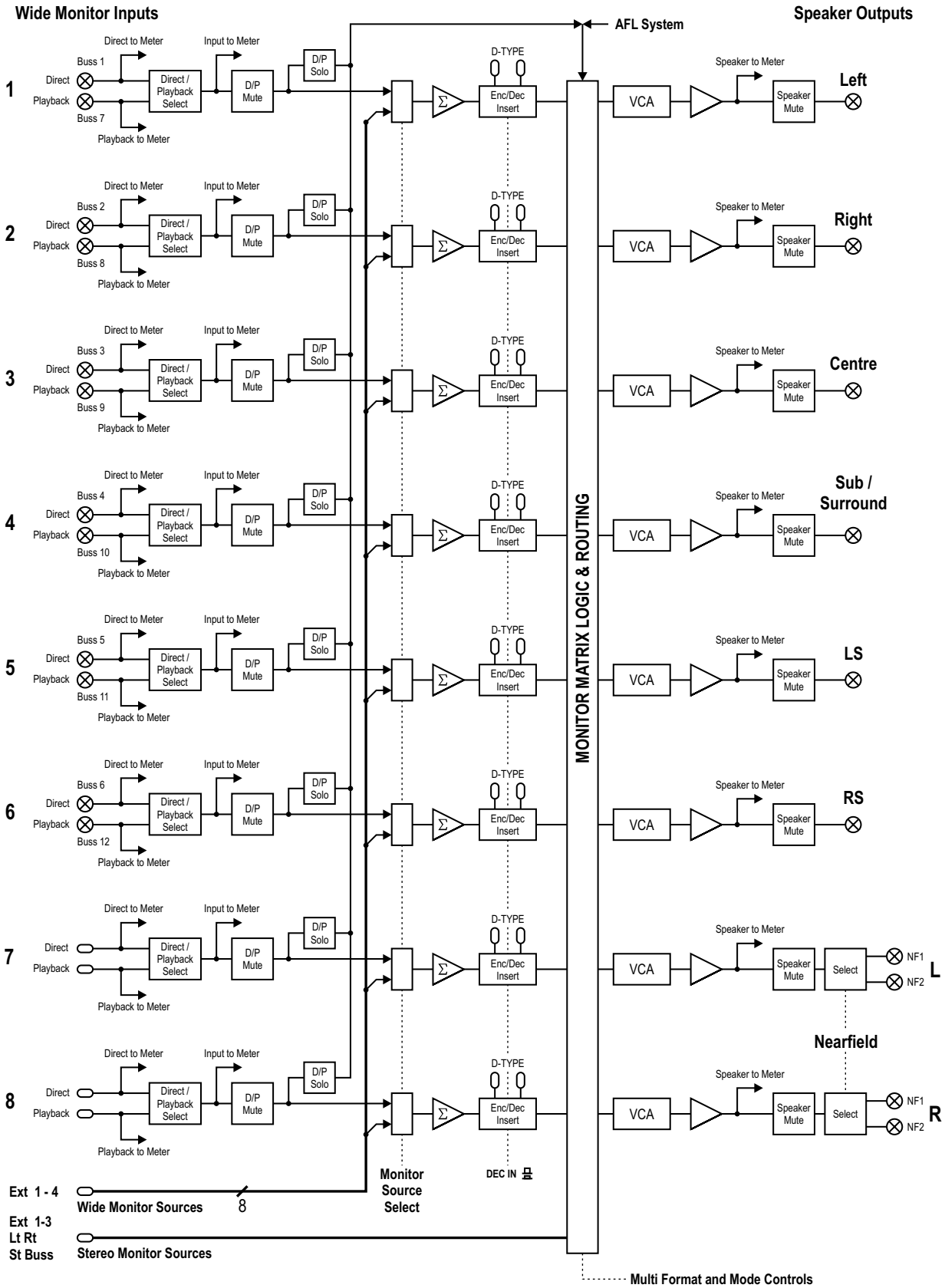
The **Monitoring System** uses a logic controlled matrix to select the various inputs and outputs, providing all the necessary functions such as **Mute** and **Solo**.


Media 51
System Diagram
Mic/Line or Tape Playback
Channel Mix Path
Channel Monitor Path
Buss
Tape
Multitrack Machines
Busses 1-6
Busses 7-12
Stereo L-R
Buss Outputs 1-6
Buss Outputs 7-12
Aux Sends & Solo
Stereo Main Output
5.1 Main Output
Lt Rt
External Inputs
Ext ST 2 & 3
Ext 2-4 (8 wide)
Stereo Master
6/8 Track Master
Master Machines
Monitor Source Selection
Ext ST 2 & 3
EXT 2-4 (8 wide)
Lt Rt
ST Buss
Ext ST 1
Ext 1 (8 Wide)
Main Outputs 1-6 (Direct)
Monitor Busses 7-12 (Playback)
Monitor Insert
Encoder/Decoder
Main Speakers
Nearfield Speakers
Studio Speakers

Media 51 Main Output Diagram



Media 51 Monitoring Diagram

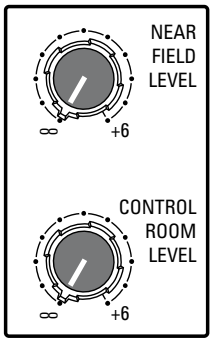


Control Room, Nearfield and Studio Monitors

The main monitor outputs, **Control Room** , **Nearfield** and **Studio** all share a common source selection but each have their own level controls and mutes.

Control Room Monitor

Main Level

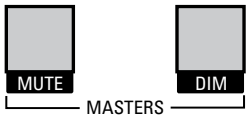


The control room monitor level knob controls a bank of **VCA**s (voltage controlled amplifiers). This provides accurate tracking of speaker levels across all outputs which is almost impossible to achieve by mechanical means and allows more flexibility when working in multi-format modes.

For example, in **7.1** mode, the **NF1** nearfield speakers are adopted for speakers **7&8** and **VCA** level control is transferred from the nearfield level to the control room level and reverted when changing to a different mode.

Normal operating range is infinity to +6dB. All other **Control Room** operations are performed on the short travel switches below the level control.

Mute & Dim



The **Master Mute** cuts all speaker outputs simultaneously. When operated, the speaker mute switch LEDs illuminate dimly and go bright when operated locally. Local mute conditions are preserved and restored when using the **Master Mute**.

Dim reduces all speaker output levels by –20dB as the factory standard.

Note: **Dim** has a variable range and can be adjusted via an internal preset.

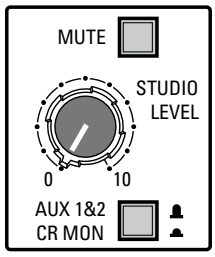
Nearfield Level

The **Nearfield Monitor Level** knob controls a pair of VCAs (voltage controlled amplifiers). This arrangement allows the nearfield speakers to be adopted (in **7.1** mode only) for speakers **7&8** and VCA level control is transferred from the nearfield level to the control room level and reverted when changing to a different mode.

Normal operating range is infinity to +6dB. All other nearfield operations are performed on the short travel switches at the bottom right corner of the **M3** monitor module.

Studio Level

The **Studio Level** control operates from unity gain to infinity with it's own local mute switch. An input selector switch allows the **Studio Monitor** to follow either the current control room selection for the **L&R** speakers or **Aux 1&2** outputs.



Monitor Sources, Modes and Speaker Format Selection

This is an important area to understand fully, since selecting a "wrong" operating mode or speaker format can cause speaker outputs and/or monitor inputs to be muted automatically, resulting in loss of signal and confusion.

Default Power-up Mode

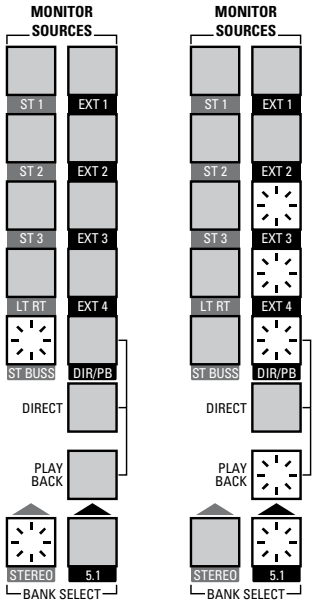
The console power-up default mode is conventional **Multitrack/Stereo** mode.

This means that the input source **Bank Select** is set to **Stereo**, the **Speaker Format** is also set to **Stereo** and all **Speakers** except **L&R** are muted. In addition, the **Main** and **Nearfield** mutes are activated to avoid unexpected noises in the monitor speakers.

Note: The default can be changed to 5.1 operation via an internal switch.

Monitor Source Selection

The **Monitor Sources** comprise two banks of five switches, with each bank exclusively selectable via a pair of interlocking bank switches labelled **Stereo** and **5.1**.



Stereo

There are five stereo sources:
ST 1-3 and **Lt Rt** are derived externally via D-type connectors on the rear of the console, **Stereo Buss** is derived internally.

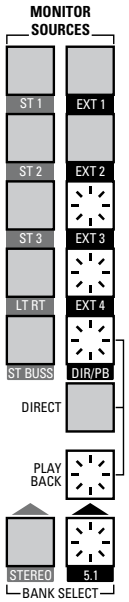
5.1 (wide)

There are five 8-wide monitor sources:
EXT 1-4 are derived externally via D-type connectors on the rear of the console, **DIR/PB** is derived internally.

Note: The **DIR/PB** signal follows whatever is selected on the **Direct/Playback** keys immediately below. The **Direct/Playback** keys interlock and force all monitor inputs to follow either the **Direct** or **Playback** signals.

When the bank switch is selected to **5.1**, the wide source switches operate **Concurrently** (default). A short press on any switch selects that input, allowing you to choose multiple sources and mix all the input signals together into the speakers.

Exclusive Operation



Concurrent selection can be changed to **Exclusive** operation temporarily by simply holding down any source button for approximately half a second. This selects a single input only and turns off all the others.

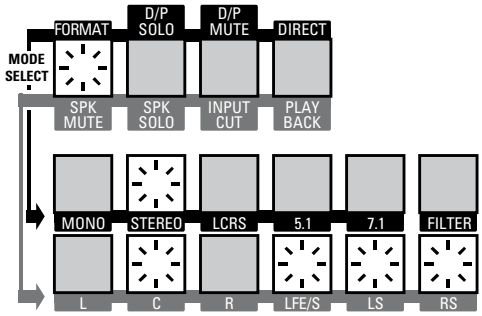
Concurrent operation is resumed immediately. This allows you to select wide monitor sources in either mode at any time.

Note: When working in any **Wide Monitor Format**, selecting the **ST** bank switch causes the LED in the **Stereo Format** switch to illuminate dimly. This is additional to the current **Wide Format** switch LED display and serves to indicate that only stereo material is currently being input to the matrix.

This indication is toggled with the **Bank** select switches.

Mode Switches

This bank of four interlocking switches forms a major part of the monitor section. The **Mode** switches control the behaviour of the **Speaker Format** switches immediately below them in conjunction with the choice of **Stereo** or **Wide Format** sources on the **Bank** selector.



Note: 7.1 mode adopts the **Nearfield** switches for inputs **7&8**. Switching in/out of **7.1** mode causes all speaker outputs to mute briefly whilst VCA level control is transferred between Main and nearfield level controls. The speaker mute LEDs will flash briefly during assignment.

Note: When moving between operating modes (except solo), selected conditions are maintained so you can leave and return to any mode at will, e.g. if you perform an input cut then move into solo mode, the input cut remains until you return and change it.

Note: The status of all **Speaker Format** switches is reflected in the switch LEDs which update as you move from mode to mode to display the current conditions for that function. An LED **ON** indicates an active function.

The four operating modes are:

- Format / Speaker Mute (normal operating mode)
- D/P Solo / Speaker Solo
- D/P Mute / Input Cut
- Direct / Playback

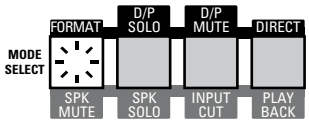
Mode Switch Table

	FUNCTION	L	C	R	LFE/S	Ls	Rs	Lc	Rc
1	FORMAT	MONO	LCRS	STEREO	5.1	7.1	LFE/HPF	NF	NF2
	SPK MUTE	L MUTE	C MUTE	R MUTE	LFE/S MUTE	Ls MUTE	Rs MUTE	NF L MUTE	NF R MUTE
2	DIR/PB SOLO	L	C	R	LFE/S	Ls	Rs	Lc	Rc
	SPK SOLO	L	C	R	LFE/S	Ls	Rs	Lc	Rc
3	DIR/PB MUTE	L	C	R	LFE/S	Ls	Rs	Lc	Rc
	INPUT CUT	-	-	-	LFE/S	Ls/Rs	Ls/Rs	Lc/Rc	Lc/Rc
4	DIRECT	L	C	R	LFE/S	Ls	Rs	Lc	Rc
	PLAYBACK	L	C	R	LFE/S	Ls	Rs	Lc	Rc

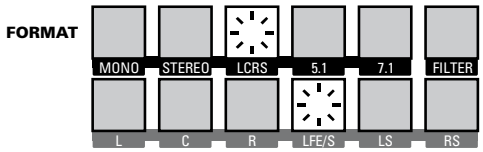
Format/Speaker Mute

Format

In this mode, the upper switches allow you to select operating **Formats** (stereo or multi-format), listen to a **Mono** blend of the current format and apply a low pass **Filter** to the **Sub** speaker output.

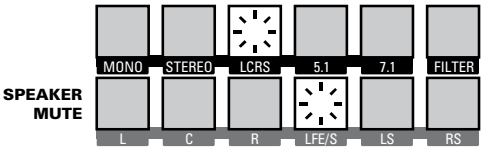


The main **Speaker Formats** are selected from four interlocking switches providing a choice between **Stereo**, **LCRS**, **5.1** or **7.1** operating modes.



Speaker Mute

In this mode, the lower switches mute the main speakers. From left to right these are **Left**, **Centre**, **Right**, **LFE/S(ub)**, **LS**, and **RS**.



Note: When different operating modes are selected, any redundant speakers are muted automatically, indicated by the switch LED.

Note: In **7.1** mode, the **Nearfield** switches **NFL/LC** and **NFR/RC** become mutes for speakers **7&8**.

Note: The **Master Mute** affects all speakers equally. When operated, the speaker mute switch LEDs illuminate dimly and go bright when operated locally. Local mute conditions are preserved and restored when using the **Master Mute**.

Speaker Mute Table

FORMAT	NF	NF2	L	C	R	S	Ls	Rs	NFL	NFR
MONO (1)	OFF	OFF	**ON**	MUTE	**ON**	MUTE	MUTE	MUTE	MUTE	MUTE
MONO (2)	OFF	OFF	MUTE	**ON**	MUTE	MUTE	MUTE	MUTE	MUTE	MUTE
STEREO	OFF	OFF	**ON**	MUTE	**ON**	MUTE	MUTE	MUTE	MUTE	MUTE
LCRS	OFF	OFF	**ON**	**ON**	**ON**	MUTE	**ON**	**ON**	MUTE	MUTE
5.1	OFF	OFF	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	MUTE	MUTE
7.1	OFF	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**

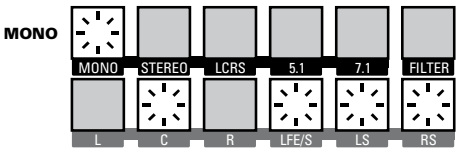
Note: **Mono** functionality changes with the **Bank Select** switch.

For **Stereo** sources, **Mono (1)** places a mono mix equally across both **L&R** speakers.

For **Wide** sources, **Mono (2)** places a mono mix onto speaker **2(C)** and mutes all others.

Mono

The behaviour of the **Mono** function depends upon the current operating mode.



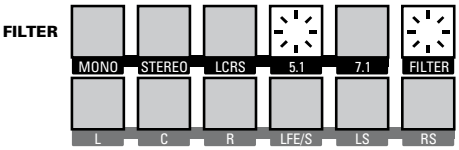
For traditional **Stereo** work, a mono image is placed across both **L&R** speakers. In **Multi-Format** work, a **Mono** blend of the incoming sources is placed onto the **Centre** speaker only.

Note: **Mono** takes place after **Input Source** selection and **Input Cut** functions. Care should be taken not to inadvertently exclude monitor signals from the **Mono** mix.

Note: **Mono** automatically mutes all speakers except either **L&R** or **Centre**, depending upon the current **Format**.

Filter

This button places an **80Hz** low pass filter (with additional gain) in and out of the **Sub** speaker output path.



Pink Noise Filter Modifier

Holding down the **Filter** button for approximately **Two** seconds, places pink noise equally across all speaker outputs and also *applies* the sub filter to the sub speaker.

Holding down the **Filter** button for approximately **Four** seconds, places pink noise equally across all speaker outputs *without* the sub filter.

D/P Solo / Speaker Solo

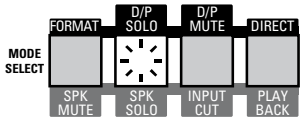
Note: In this mode, the **Lower Row Speaker Legends** apply equally to both rows.

Note: Whilst both **Solo** modes are available concurrently, in practice it's advisable to use only one type of **Solo** at a time to avoid confusion.

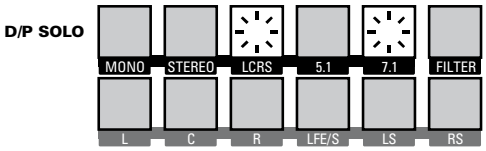
Using both, it's possible for conflicting speaker conditions to occur which will result in ALL speakers being muted and total loss of signal.

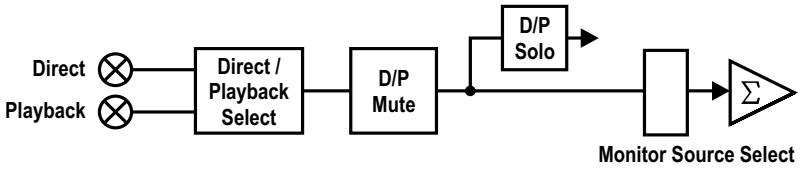
D/P Solo

In this mode, the upper switches allow you to send **Mono Solo** signals derived from the **Direct/Playback** sources into the **AFL** system. The **Solo** signal appears on the **Centre Speaker** only and the meterbridge **AFL** indicator illuminates. Multiple **Solos** can be selected as required.



Note: **D/P Solo** selections are preserved when you change to a different mode, but the actual **Solo** condition is de-activated. Returning to **D/P Solo** mode will reapply the previous **Solo** condition.

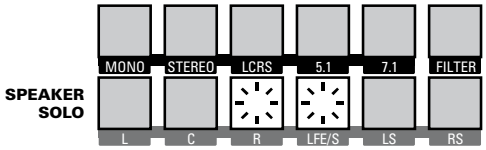




Speaker Solo

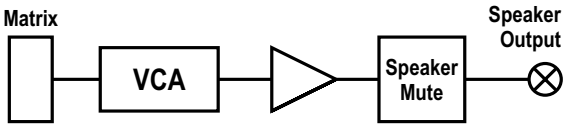
The lower switches provide **Speaker Solo** functions via an *inverted mute system*.

Pressing any switch will **Mute** all other speakers and leave the current speaker active. Multiple speakers can be **Soloed** at the same time.



Note: **Speaker Solo** selections are preserved when you change to a different mode, but the actual **Solo** condition is de-activated. Returning to **Speaker Solo** mode will reapply the previous **Solo** condition.

Note: In **7.1** mode, the **Nearfield** switches become **Solos** for speakers **7&8**.

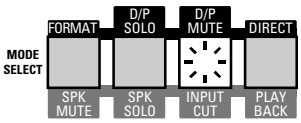


D/P Mute / Input Cut

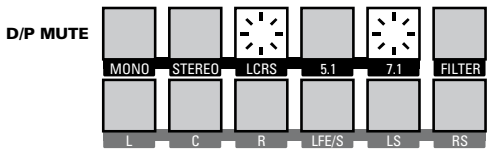
Note: In this mode, the **Lower Row Speaker Legends** apply equally to both rows.

D/P Mute

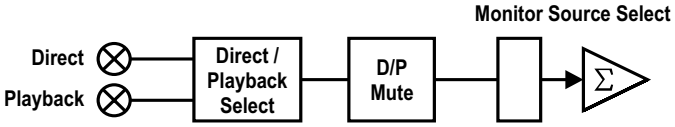
In this mode, the upper switch row is dedicated to muting the **Direct/Playback** sources and allows independent muting of incoming signals. In addition, when changing to a different mode, the **D/P Mute/Input Cut** switch LED remains **ON** but dimmed to indicate that **D/P Mutes** are still active.



Note: **D/P Mute** selections **AND** activations are preserved when you change to a different mode. You must return to this mode to change a **D/P Mute** condition.

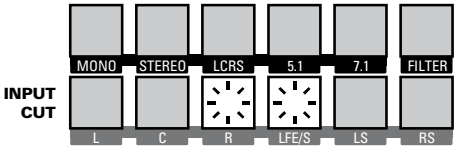


Note: In **7.1** mode, the **Nearfield** switches become **D/P Mutes** for speakers **7&8**.



Input Cut

The lower switches apply an **Input Cut** function within the logic switching matrix to all incoming monitor signals, whether derived internally or externally. These switches may be applied independently.



Note: **Input Cut** selections **AND** activations are preserved when you change to a different mode. You must return to this mode to change an **Input Cut** condition.

Note: In **7.1** mode, the **Nearfield** switches become **Input Cuts** for speakers **7&8** and operate as a pair.

Input Cut Table

	1	2	3	4	5	6	7	8
Format	**L**	**C**	**R**	**LFE/S**	**Ls**	**Rs**	**Lc**	**Rc**
ST	OPEN	T	OPEN	T	T	T	X	X
LCRS	OPEN	T	OPEN	***X***	***T***	***T***	X	X
5.1	OPEN	T	OPEN	T	T	T	X	X
7.1	OPEN	T	OPEN	T	T	T	T	T

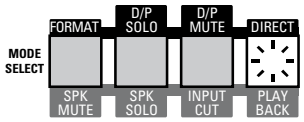
OPEN = always active; X = always cut; T = active by default, operator can toggle the setting;

X (***T***) = interactive toggle (specific to LCRS mode). By default speaker 4(LFE/S) is cut, speakers 5(Ls) & 6(Rs) are active. Opening speaker 4(LFE/S) forces 5(Ls) & 6(Rs) to cut and vice-versa.

Direct / Playback

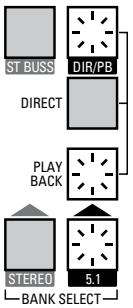
Note: In this mode, the **Lower Row Speaker Legends** apply equally to both rows.

Direct/Playback selection is controlled from several points. The **Source Select** switches determine the **Master** condition, toggling either **Direct** or **Playback** sources onto the **DIR/PB** switch which operates in conjunction with the other wide source selectors.



Selecting a master **Direct** or **Playback** places **ALL** monitor inputs into that mode and illuminates the entire row of **Speaker Format** switches.

Inputs can be overridden locally with the **Speaker Format** switches.



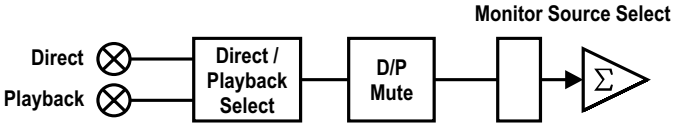
Direct

The upper switches allow individual selection of **Direct** monitor sources.

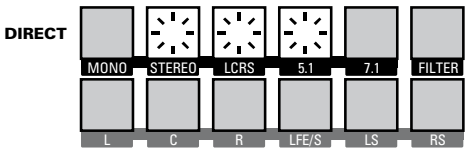
Playback

The lower switches allow individual selection of **Playback** monitor sources.

Both rows operate as toggle pairs so only one **OR** the other can be selected for each individual monitor input.

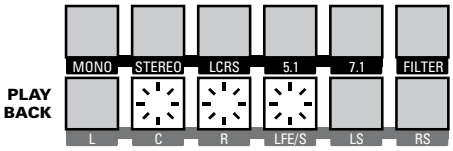


Pressing the master **Direct/Playback** switches in the wide monitor source bank forces **ALL** inputs into either **Direct** or **Playback**, overriding local changes.



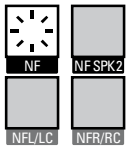
Note: **Direct/Playback** selections **AND** activations are preserved when you change to a different mode.

You must return to this mode to change a **Direct/Playback** condition.



Note: In **7.1** mode, the **Nearfield** switches become **Direct/Playback** selectors for speakers **7&8**.

Nearfield Speakers



Two sets of **Nearfield** speakers are provided for. The **NF** switch activates the **Nearfields** and presents a stereo mix of all input sources to the speakers.

The **NF SPK 2** switch toggles between **NF1** and **NF2** speakers.

This arrangement allows you to either preset which speakers you want to use, or toggle between **NF1** and **NF2** "on the fly". The default is **NF1**.

Note: When operated, all other main speakers are muted.

7.1 mode operation.

In **7.1** format only, the **NF1** speaker outputs are used for speakers **7&8** (**Lc** and **Rc**) and **Nearfield** signals are fed directly to **NF2** speaker outputs.

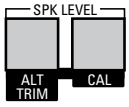
Level control for speakers **7&8** is transferred to the **Control Room Level** control, leaving **NF2** speakers on the **Nearfield Level Control**.

The **Nearfield** speaker switches are adopted for speakers **7&8** and behave in the same manner as the other speaker format switches for **Mute**, **Solo**, **DIR/PB** functions etc.

Under normal mode, operating the **NF** switch now places a **Stereo** mix of all input sources onto the **NF2** speakers and mutes all other speakers.

Note: Whilst **NF** is active, toggling the **NF SPK 2** switch will actually route the **Nearfield** stereo mix out of **NF1** (**7&8**) speaker outputs and ultimately to the **Lc** and **Rc** speakers, which can be a useful option.

Alternate Speaker Level Trims

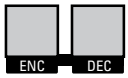


The main speaker levels can be trimmed to an alternate level setting via internal presets. The **Alt Trim** switch toggles between each state allowing an alternative "image" or "sweet spot" to be created, if required.

The **CAL** switch completely removes all **VCA**s from the main speaker outputs and provides a fixed gain structure which can be internally preset.

ENC and DEC switches

The **ENC** switch routes the **Lt Rt** signals from the external encoder to the **Stereo Buss** outputs via relays. The default is **OFF**.



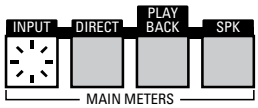
This can provide a safety feature for broadcasters where **Lt Rt** is the normal programme. An *unencoded* stereo mix of the same material can be available on the **Stereo Mix** and the **ENC** switch toggles between the two.

The **DEC** switch enables the insertion point in the **Monitor Speaker** paths, allowing the external decoder to be switched in/out. The default is **OUT**.

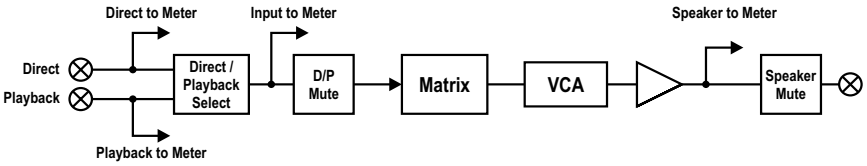
Metering

Multi Format

Six expanded scale **VU** meters are fitted for **L,C,R,S,Ls** and **Rs** signals. These are each fitted with a peak LED and follow the Peak/VU ballistics selection for the stereo bargraphs.

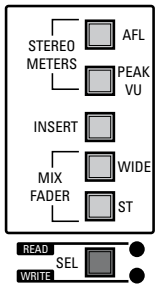


A bank of four interlocking source switches select between **Direct/Playback** inputs, the common of these inputs (**Input**) or speaker **Outputs**.



Stereo Bargraphs

A pair of bargraph LED meters read the currently selected stereo monitor source and can also be selected to follow **AFL** (**DIR/PB Solo**) signals whenever an **AFL/Solo** is operated via the **AFL** switch in the **Stereo Meters** area.



Peak VU

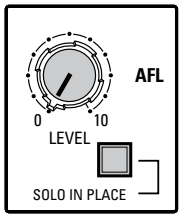
Ballistics for all bargraphs and **VU**s is controlled via the **Peak/VU** switch in the **Stereo Meters** area.

AFL / Solo-in-Place

Two preview listen modes are available, selectable via the **Solo-In-Place** button in the **AFL** area.

AFL

In **Stereo Format**, mono/stereo **AFL** is non-destructive and traditionally available across the console and presented to the **L&R** speakers with master level set via the **AFL** level control.



In wide formats, **AFL** appears on the **Centre Speaker** only and follows the master level control.

Solo-in-Place

Supertrue handles this operation by intercepting the **Solo-In-Place** switch and selecting the **Channel** or **Mix** solo-in-place **SEL** option, depending upon requirements.

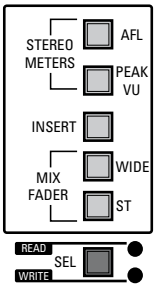
Note: In **Stereo Format**, signals appear panned between the **L&R** speakers only. In **Wide Formats** the signals appear on whichever speakers they are normally routed to.

See the **Supertrue User Guide** for more deatils.

Mix Fader and Inserts

Mix Fader

The master **Mix Fader** can be selected to control either the **Main Stereo** outputs, the **Main 5.1** outputs or both concurrently for use **7.1** mode. The stereo outputs are used for signals **7&8**.



Note: Deselecting any mix fader assignment removes the VCAs from that circuit and sets all it's outputs to unity gain.

Inserts

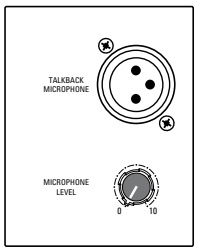
The **Insert** switch enables the balanced insert points across all main outputs and the stereo buss. All main output inserts run at unity gain.

SEL Switch

The **SEL** switch together with the **Read/Write** LEDs control the automation modes for the **Stereo** and **Main Outputs**.

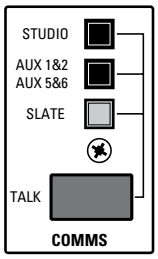
Communications

The **Communications** area consists of a large momentary **Talk** switch and several routing switches to select the talk destination.



A talkback microphone **XLR** socket and level control are provided at the top of the **M3** panel.

Talkback Routing



Studio – Provides **Talkback** to the studio monitor outputs

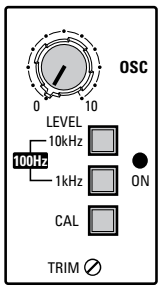
Aux 1&2/5&6 – provides **Talkback** to the master aux outputs

Slate – provides **Talkback** to all multitrack outputs, stereo buss and main 5.1 outputs.

Note: Pressing **Talk** automatically **Dims** the **Control Room Speakers**.

Oscillator

A three frequency **Oscillator** with variable level is provided for line up and test purposes. Frequencies of **1kHz** and **10kHz** each have their own **ON** switches and **100Hz** is obtained when **BOTH** are depressed.



The **ON** LED illuminates whenever the oscillator is active and tone is sent to the multitrack and main output via the buss system.

Note: The main **Control Room Speakers** are **Muted** when the **Oscillator** is active.

Routing

The oscillator is routed to the same destinations as talkback using the routing switches in the communications area.

CAL

The **CAL** switch over-rides the level control allowing a preset calibrated level to be used. The level is set using the **CAL** trimmer. Factory default is **0VU = +4dBu.**

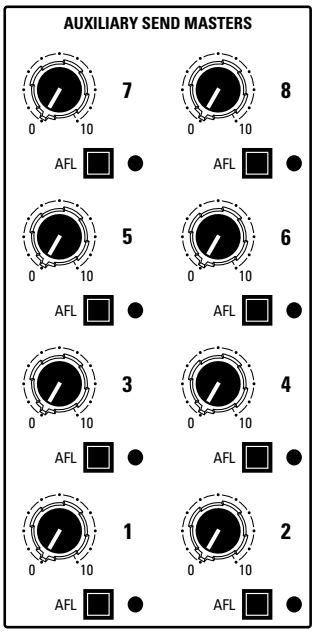
Lining up the console

This is normally performed by the installation engineer, but periodic adjustment is usually required to compensate for changes in temperature etc. which can cause calibrations to drift slightly.

- The usual procedure is to **MUTE** all speaker outputs first! High level continuous tone is unpleasant and can be damaging to both speakers and people alike.
- Press **CAL** and calibrate the **Oscillator**, measuring the level at the **Stereo Insert Send**.
- Measure each **Master Buss Output** and calibrate using the relevant buss trim.
- Finally, calibrate the **Meters** to follow the **Buss** levels.
- The calibration interval will vary from installation to installation and should only be performed by qualified personnel as and when required.

Auxiliary Send Masters

The eight **Auxiliary** busses across the console each have a master level control ranging between infinity and +3dB with an associated **AFL** switch.



AFL for **Aux outputs 1,3,5** and **7** appears on the **Left** speaker, with **2,4,6** and **8** on the **Right** speaker.

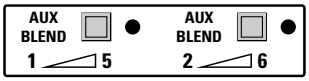
Aux Blend

During normal input channel operation, **Auxes 1-4** are sourced from the **Mix** path with **Auxes 5-8** sourced from the **Channel** path. Each group of auxes can be switched as a block between both paths.

However, there are occasions where you need to send to a common **Aux Output** from **BOTH** channel paths, e.g. to use a reverb when all console inputs are used for a mixdown, or to monitor overdubs in multitrack recording situations where one channel controls both live and off-tape signals and there are no spare channels available.

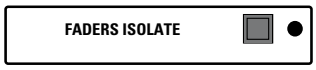
The **Aux Blend** switches independently link **Aux 1** into **Aux 5** and **Aux 2** into **Aux 6** with all signals out combined on **Aux Outputs 5&6**.

Note: When in **Blend** mode **Aux Outputs 1** or **2** are redundant.



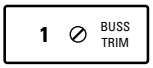
Faders Isolate

The **Faders Isolate** function is intended as a safety feature and removes the automation computer from the system, placing the fader control voltages directly onto the **VCA** elements.



Buss Trims

The 12 multitrack busses are calibrated using these trimmers. These should only be adjusted by qualified personnel.



Downmixing

Downmixing should preferably be carried out within the **Encode/Decode System** as this provides more control over **Downmix** parameters. **Downmixing** does not contain any **LFE** information, therefore if this is required, it should be distributed within the front channels.

Downmixes from **7.1** should **NOT** include any information from monitor inputs **Lc(7)** and **Rc(8)**, these are therefore cut. For special effects, **Inputs 7-8** can be unmuted if necessary.

The following formats are provided, the default format being **Stereo**. All unnecessary input sources and speakers are muted.

- **MONO** - puts a combined image of all available feeds for the format selected on the **C** speaker (or on **L+R** when normal stereo source is selected) - inputs **7-8** are cut. The default for this switch is **OFF**.
- **STEREO** - puts a derived stereo image of all available feeds on **L&R**.
- **LCRS** - provides a derived **LCRS** image.
- **5.1** - provides a **5.1** image.
- **7.1** - sources **Lf** and **Rf** from the **Stereo Buss** and enables metering on the two aux bargraphs (unless SOLO is pressed).
  7.1 automatically enables the **NF2** (nearfield) monitors as the **Lf** and **Rf** outputs.
  Pressing **NF1** provides a derived stereo on nearfield **NF1**.

6.1 can be monitored by selecting **7.1** and using a discrete signal on speaker **7** or **8** while muting the unused path. Similar methods may be employed for other formats.

Monitoring in **DTS** format, necessitates re-patching of speakers and/or machine tracks.

The following capabilities are provided - the listening format should always be selected, then the input cuts selected/deselected as appropriate.

Downmixes from 7.1 to 5.1

- To activate this mode - select **5.1** format.
- Inputs cut by this selection are **Lc(7)** and **Rc(8)**.

Downmixes from 7.1 or 5.1 to LCRS

- To activate this mode – select **LCRS** format.
- Inputs cut by this selection are **LFE/S(4)**, **Lc(7)** and **Rc(8)**.
- Speakers **4**, **7** and **8** are muted.

Downmixes from 7.1 or 5.1 to Stereo

- **Stereo** format automatically selects a derived stereo input, which can include inputs **1-6**.
- Inputs cut by this selection are **C(3)**, **S(4)**, **Ls(5)**, **Rs(6)**, **Lc(7)** and **Rc(8)**.
- Unmute inputs **5-6** to downmix stereo surround.
- Unmute **Centre** input.
- Input **LFE(4)** should remain cut.
- **Ls** and **Rs** are mixed to **L** and **R** respectively.
- **C** is mixed to **L&R**.
- Speakers **2** and **4-8** are muted.

Downmixes from 7.1 or 5.1 to Mono

- All **Mono** functions select the derived **Stereo** input of inputs **1-6** and then **Mono** it.
- Monitor inputs **LFE(4)**, **Lc(7)** and **Rc(8)** are cut.
- **Ls**, **Rs**, **L**, **R** and **C** are mixed to the **Centre** speaker.
- Speakers **1**, **2** and **4-8** are muted.

Downmixes from LCRS to Stereo

- To activate this mode – select **Stereo** format.
- Inputs cut by this selection are **C(3)**, **S(4)**, **Ls(5)**, **Rs(6)**, **Lc(7)** and **Rc(8)**.
- Un-mute inputs **3** and **4**.
- **S** and **C** are mixed to **L&R**.
- Speakers **2**, **4-8** are muted.

Downmixes from LCRS to Mono

- Monitor inputs **Ls(5)**, **Rs(6)**, **Lc(7)** and **Rc(8)** are cut.
- **L**, **R**, **C** and **S** are mixed to the **Centre** speaker.
- Speakers **1**, **2** and **4–8** are muted.

Phantom mixes from LCRS to 5.1

- **S** is fed to both **Ls(5)** and **Rs(6)** and speaker **4** is muted.
- To activate this mode - select **5.1** format and then cut monitor inputs **5–6** (**7–8** will already be cut).

Note: No phantom **7.1** is provided as this system is primarily for **5.1** operation and **Lc** and **Rc** will be audible between the **L&C** speakers and **C&R** speakers respectively.

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FAQs

Q1 How do I configure the monitor section to work in standard stereo mode?

Answer

The **M3** module monitor section is configured as follows:

Bank Select Select **STEREO** [Fig 1.1].

Monitor Source Select **ST BUSS** to monitor the console stereo buss.
Select **ST1**, **ST2**, **ST3** or **LT RT** to monitor external stereo sources [Fig 1.1].

Mode Select Select **FORMAT/SPK MUTE** then **STEREO** in the row of switches immediately beneath the **MODE SELECT** switches [Fig 1.2].

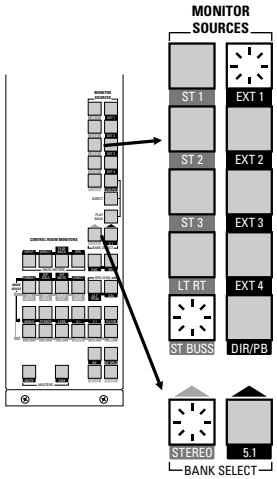

Fig 1.1

Muting

Check that the **SPK MUTE** LEDs *(lower switches with yellow colour coding)* correspond to the **Stereo** mode i.e. **L** and **R** both **OFF**, all others **ON**.

To mute either speaker individually, select the relevant **SPK MUTE** switch (LED ON).

Nearfield

To activate the Near Field monitors the **NF** switch must be selected (LED ON) whilst the **FORMAT/SPK MUTE** mode is active [Fig 1.2].

Two sets of nearfield monitors can be used. The **NF SPK2** switch presets **NF1** or **NF2**. The **NF** switch *always* performs nearfield activation.

Note: If the **NF** switch is **NOT** selected, the main speaker defaults are applied.

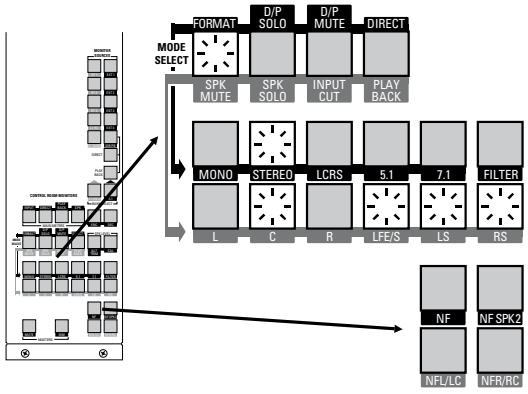

Fig 1.2

Speaker Solo

The **D/P SOLO/SPK SOLO** mode switch (immediately to the right of the **FORMAT/SPK MUTE** switch) is the only other mode switch with a function in **STEREO** mode.

When selected, it allows individual soloing of either speaker, achieved by selecting the relevant speaker (LED ON) from the lower **SPK SOLO** switch row (yellow colour code). Pressing **L** will solo the left speaker, pressing **R** will solo the right speaker.

Alternate Speakers

The **ALT TRIM** switch selects an alternative speaker gain structure which is set up using internal trimmers [Fig 1.3].

When **ALT TRIM** is **NOT** selected, the standard unity gain structure is applied. This is the factory default calibration.

Holding down the **CAL** switch for longer than 0.25 seconds causes the speaker outputs to be set to unity gain. This means that a +4dBu input signal routed via a unity gain path appears at the speaker outputs at +4dBu.

Note: The time delay before the **CAL** function activates is to prevent accidental operation during normal use.

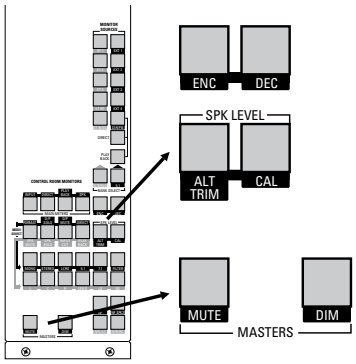

Fig 1.3

Metering

When the **MAIN METERS** are set to **SPK** (follow speakers) they will read 0VU when +4dBu is present at the speaker outputs [Fig 1.4].

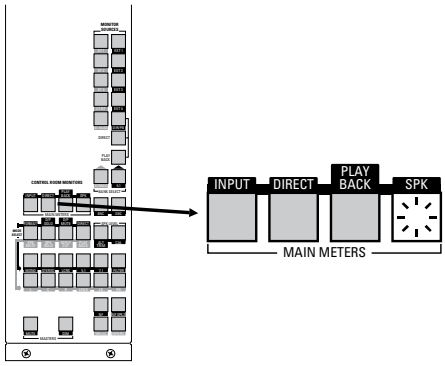

Fig 1.4

Encode and Decode

The **ENC** and **DEC** switches are only used in surround applications so should both be switched off (LED OFF) in **STEREO** mode [Fig 1.3].

Master Mute & Dim

The master **MUTE** and **DIM** switches in the lower left hand corner control both **NEARFIELD** and **MAIN** speaker outputs [Fig 1.3].

The **DIM** switch applies –20dBu to the signal gain structure.

Note: If the internal oscillator or external master mute are operated, the **Master Mute** is activated, flashing slowly. If the **Master Mute** is operated also, the speed of the flashing increases.

Note: If the speakers are in **CAL** mode, **DIM** will also activate the **Master Mute**.

Mix Fader & Inserts

Several switches are located to the left of the Studio Level control. [Fig 1.5].

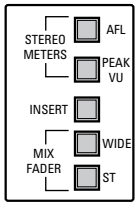

Fig 1.5

FADER > ST This enables the main stereo mix fader to control the main Stereo Buss outputs.

Note: When **NOT** selected, the Stereo VCA is bypassed with a fixed unity gain applied to the main stereo outputs.

FADER > WIDE This switch is only used in surround applications and can be ignored in **Stereo** mode.

Insert

This switch enables the Stereo Buss insert point (8 wide for surround applications).

Note: Unless the insert sends and returns are linked by an external device, it should **NOT** be selected.

FAQs

Q2 How do I configure the input module to work in standard stereo mode?

Answer

Panning

For standard panning and routing in a stereo application, the following input module switches should **NOT** be selected: **LCRS**, **SS**, **1:1**, **WIDE** [Fig 2.1].

To achieve unity gain for panning and routing purposes, the **FRONT/REAR PAN** pot should be panned fully to the **FRONT** i.e. hard left.

The module will now react in a standard **In-Line** recording format.

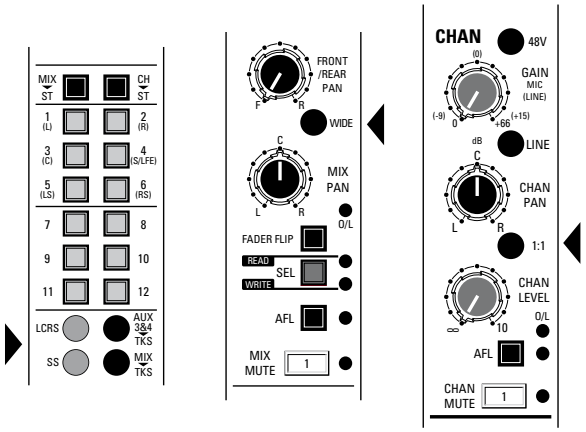

Fig 2.1

FAQs

Q3 How do I configure the monitor section for surround modes?

Answer

The **M3** module monitor section is configured as follows:

Bank Select Select **5.1** [Fig 3.1].

Monitor Source Select **DIR/PB** to monitor the console surround busses. Select **EXT1**, **EXT2**, **EXT3** or **EXT4** to monitor external surround sources [Fig 3.1].

Direct Select **DIRECT** (LED ON) if monitoring the console **OUTPUT** surround busses 1-6.

Playback Select **PLAYBACK** (LED ON) if monitoring console **RETURN** surround busses 7-12.

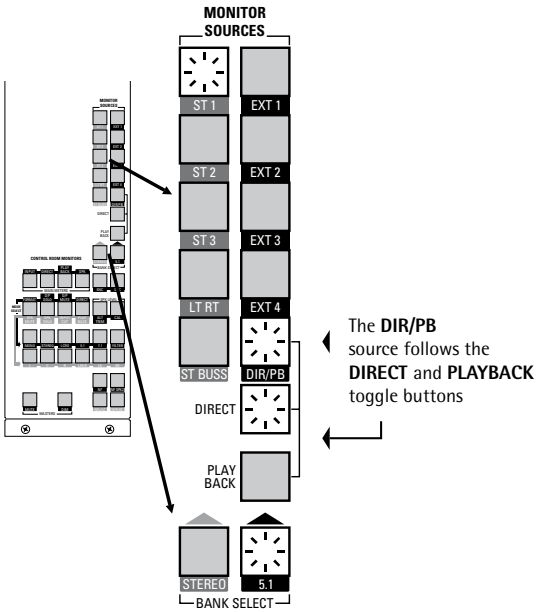

Fig 3.1

Surround Mode Buss Signal Flow

In surround modes, the Media-51 console busses are utilised as follows:

Surround Sources > Input Channels > Busses 1-6 > Recorder

Recorder Returns > Input Channels > Busses 7-12 > Monitors

In the following example, the **BANK SELECT** switch is selected to **5.1** [Fig 3.1].

Mode Selection

The four mode switches together with their various associated switches determine how the monitor section responds in surround mode.

Switch Relationships

The four mode select switches are:

- **FORMAT / SPK MUTE**
- **D/P SOLO / SPK SOLO**
- **D/P MUTE / INPUT CUT**
- **DIRECT / PLAYBACK**

These are all associated with the 12 switches directly below together with the 4 switches to the lower right [Fig 3.2].

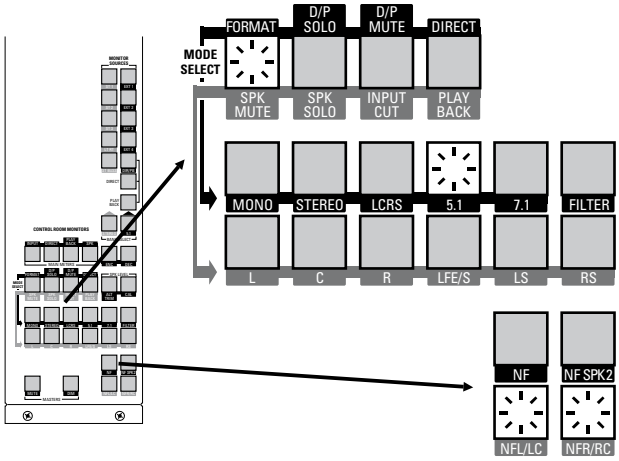

Fig 3.2

These are arranged in two banks of six with two banks of two below them. All functions are colour coded in turquoise (upper legend) and yellow (lower legend).

When a mode is selected, the turquoise (upper) functions are mapped across the upper bank (also turquoise legends) and the yellow (lower) functions are mapped across the lower bank (also yellow legends).

Format / Speaker Mute

This is the primary operating mode. In this mode, the 8 upper switches (turquoise legends) control the five **Operating Formats**, the **Filter** and the **Nearfield** monitors:The 8 lower switches (yellow legends) control the speaker mutes:

FUNCTION	L	C	R	LFE/S	Ls	Rs	Lc	Rc
FORMAT	MONO	LCRS	STEREO	5.1	7.1	LFE/HPF	NF	NF2
SPK MUTE	L MUTE	C MUTE	R MUTE	LFE/S MUTE	Ls MUTE	Rs MUTE	NF L MUTE	NF R MUTE

All Other Modes

In the other three modes, the functions affect either **ALL** monitor inputs or **ALL** speaker outputs so the upper (turquoise) legends can be ignored and the **lower (yellow) legends apply to both banks.**

Format / Speaker Mute

Format (Upper Bank)

Press the **FORMAT/SPK MUTE** switch (LED ON), then select one of the **LCRS**, **5.1** or **7.1** switches from the row immediately below depending on which format you require.
In this example we are using **5.1** [Fig 3.2].

Spk Mute (Lower Bank)

Check that the **SPK MUTE** LEDs correspond to the selected mode. In this case the only active mutes (LED ON) should be **NFL/LC** and **NFR/RC**.

Note: To mute any speaker individually, select the relevant **SPK MUTE** switch (LED ON).

Note: Check the **Master Mute** is off.

Nearfield

To activate the Near Field monitors the **NF** switch must be selected (LED ON) whilst the **FORMAT/SPK MUTE** mode is active [Fig 3.2].

Two sets of nearfield monitors can be used. The **NF SPK2** switch presets **NF1** or **NF2**. The **NF** switch *always* performs nearfield activation.

Note: If the **NF** switch is **NOT** selected, the main speaker defaults are applied.

Note: In all modes *except* **7.1**, all **Nearfield** speaker outputs are a "derived" stereo mix consisting of the various elements in the monitor mix.

In **7.1** mode:

- **Nearfield Speaker 1** outputs are a "derived" stereo mix of the various elements in the monitor mix *except* **LC** and **RC**.
- Nearfield **Speaker 2** outputs are used for the **LC** and **RC** signals.

D/P Solo / Spk Solo

D/P Solo (Upper Bank)

This function follows the current monitor source **DIR/PB** selection (Direct or Playback) [Fig 3.3].

With the **D/P SOLO** switch selected (LED ON), pressing any of the upper switches places the related **Direct** or **Playback** signal onto the console **SOLO** buss which is fed to the centre speaker. They can be used in combination or individually.

Spk Solo (Lower Bank)

In this mode, these switches operate as **SPEAKER SOLO** switches. Pressing any of the lower switches **SOLOS** that speaker and mutes all other speakers [Fig 3.3]. They can be used in combination or individually.

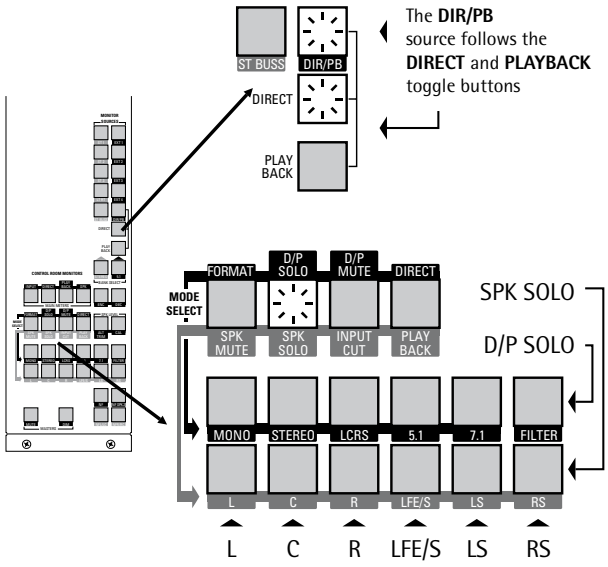

Fig 3.3

Note: The last used **SOLO** condition is stored when leaving this mode and is re-applied upon re-selection.

D/P Mute / Input Cut

D/P mute (Upper Bank)

This function follows the current monitor source **DIR/PB** selection (Direct or Playback) [Fig 3.4].

With the **D/P MUTE** switch selected (LED ON), pressing any of the upper switches mutes the related **Direct** or **Playback** signal.

These switches can be used in combination or individually.

Input Cut (Lower Bank)

In this mode, the **INPUT CUT** function is used to **downmix** from a wide format to a smaller format e.g. from **5.1** to **LCRS** or from **LCRS** to **STEREO** etc.

To achieve this, the target format for the **downmix** must be pre-selected in the **FORMAT/SPK MUTE** mode as described previously.

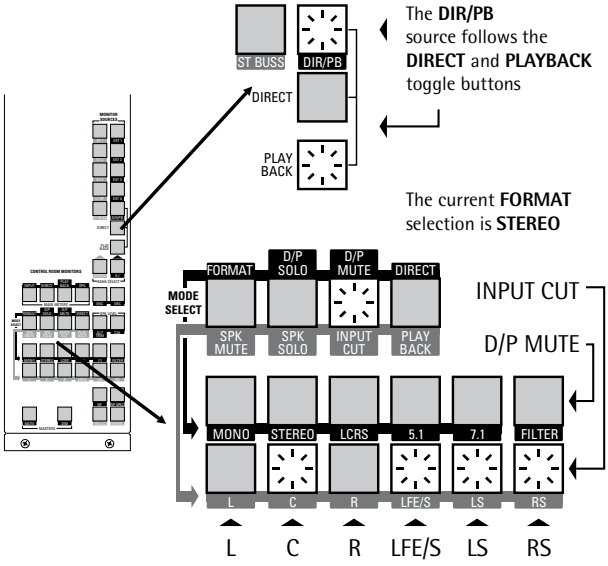

Fig 3.4

With the **D/P MUTE / INPUT CUT** switch selected (LED ON), the lower switches indicate which speaker combinations are currently employed to achieve the selected output format.

All currently unused **INPUTS** are **CUT** (LED ON) and although the incoming wide format signals are still present, they are **NOT** included in the current mix.

To **downmix** into the currently selected format, release the **INPUT CUT** switch (LED OFF) for the required inputs. This allows the selected wide format signals to be included into the **downmix** and distributed across the current output format determined by the **internal downmix** settings.

Downmix Example

For example, to **downmix** a **5.1** mix to **STEREO**, the stereo format must be selected first in **FORMAT / SPK MUTE** mode.

The **D/P MUTE / INPUT CUT** switch should be pressed next and all the lower switches will illuminate *except* for **L** and **R** [Fig 3.4].

This shows that only the **L** and **R** speakers are currently being used to output the monitor mix and that presently, only the **L** and **R** elements of the **5.1** mix are being sent to the speakers.

If the lower switches **C**, **LFE/S**, **LS** and **LR** are pressed (LED OFF), then these additional four signals will be mixed into the **L** and **R** speakers.

Note: The last used **D/P MUTE / INPUT CUT** condition remains active when leaving this mode. Any further format changes will apply the relevant defaults.

Direct / Playback

Direct (Upper Bank)

Playback (Lower Bank)

This function allows the monitor mix to consist of a combination of **DIRECT** and **PLAYBACK** signals.

The main **PLAYBACK** and **DIRECT** switches in the **MONITOR SOURCE** section allow global **A/B** comparisons to be made. Combined monitoring is possible using the individual **DIRECT / PLAYBACK** switches in the upper and lower banks.

This forms a **Master/Local** switching arrangement [Fig 3.5].

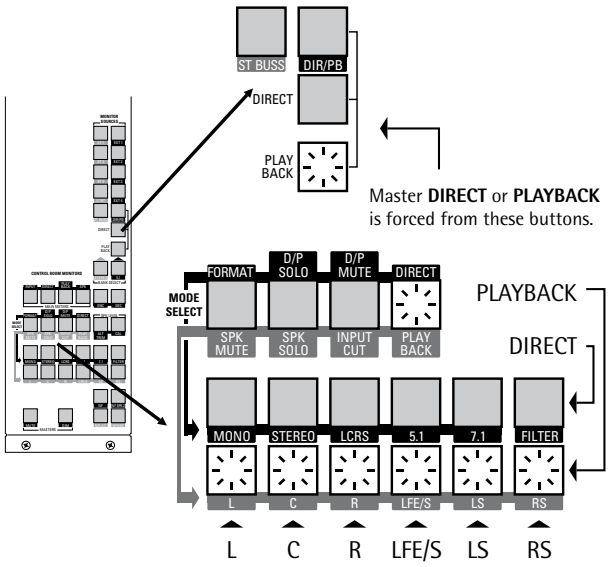

Fig 3.5

Switch Illumination

When this mode is initially selected, the current master **DIRECT** or **PLAYBACK** status is forced across all the related local switches in both banks.

For example, if master **DIRECT** is current, then the LEDs will illuminate in **ALL** the local **DIRECT** switches and **ALL** local **PLAYBACK** LEDs will be OFF.

Combined monitoring is achieved by toggling the local **Direct/Playback** switchbanks as required.

Note: When any local switch is toggled, the master switch LED dims to indicate local override.

Note: The last used **DIRECT/PLAYBACK** condition is stored when leaving this mode and is re-applied upon re-selection.

Encode and Decode

These switches facilitate the switching in/out of external **Encode** and **Decode** units for monitoring purposes [Fig 3.6].

ENC Switch

This switch routes the **Lt** and **Rt** inputs to the main **L** and **R** outputs to allow the main program to be swapped easily with an **Encoded** program.

DEC Switch

This switch enables the **Decoder Returns** to be monitored via the speakers.

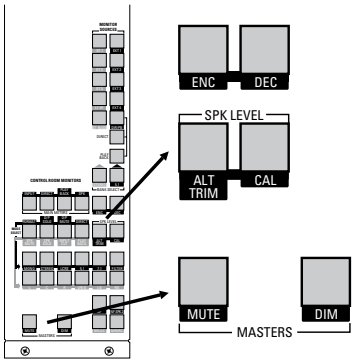

Fig 3.6

In practice, the **Encoder Sends** would be sent to the **Encoding** machine whose output would be fed into a **Decoding** machine.

The **Decoder** machine's outputs are fed to the **Decoder Returns** so that the overall **Encode/Decode** process can be monitored and compared with the original surround mix.

Alternate Speakers

The **ALT TRIM** switch selects an alternative speaker gain structure which is set up using internal trimmers [Fig 3.6].

When **ALT TRIM** is **NOT** selected, the standard unity gain structure is applied. This is the factory default calibration.

Holding down the **CAL** switch for longer than 0.25 seconds causes the speaker outputs to be set to unity gain. This means that a +4dBu input signal routed via a unity gain path appears at the speaker outputs at +4dBu.

Note: The time delay before the **CAL** function activates is to prevent accidental operation during normal use.

Metering

When the **MAIN METERS** are set to **SPK** (follow speakers) they will read 0VU when +4dBu is present at the speaker outputs [Fig 3.7].

- **INPUT** meters the result of the **DIRECT/PLAYBACK** switching.
- **DIRECT** meters the direct busses.
- **PLAYBACK** meters the playback busses.

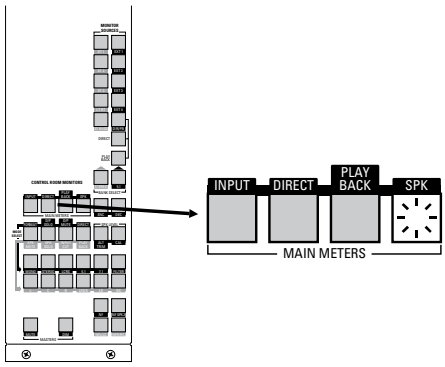

Fig 3.7

Master Mute & Dim

The master **MUTE** and **DIM** switches in the lower left hand corner control both **NEARFIELD** and **MAIN** speaker outputs [Fig 3.8].

The **DIM** switch applies –20dBu to the signal gain structure.

Note: If the internal oscillator or external master mute are operated, the **Master Mute** is activated, flashing slowly. If the **Master Mute** is operated also, the speed of the flashing increases.

Note: If the speakers are in **CAL** mode, **DIM** will also activate the **Master Mute**.

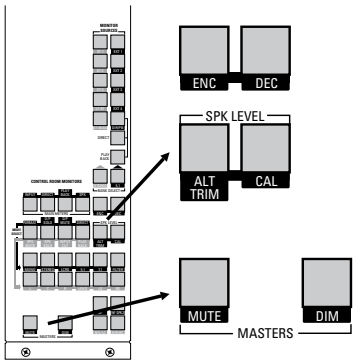

Fig 3.8

Mix Fader & Inserts

Several switches are located to the left of the Studio Level control. [Fig 3.9].

FADER > ST This enables the main stereo mix fader to control the main Stereo Buss outputs.

Note: In wide format these are buss outputs 7 and 8.

Note: When **NOT** selected, the Stereo VCA is bypassed with a fixed unity gain applied to the main stereo outputs.

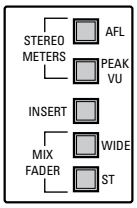

Fig 3.9

FADER > WIDE This enables the main stereo mix fader to control the multiformat main outputs.

Note: In wide format these are buss outputs 1 - 6.

Note: When **NOT** selected, the output VCAs are bypassed with a fixed unity gain applied to the main outputs.

Note: For 8-wide output formats, **BOTH** switches must be pressed.

Insert

This switch enables the main output buss insert points and is 8-wide in surround applications.

Note: Unless the insert sends and returns are linked by an external device, it should **NOT** be selected.

FAQs

Q4 How do I configure the input channel for surround modes?

Answer

Surround Mode Buss Signal Flow

The main point to note when configuring an input channel for surround modes is that multitrack routing busses 1-6 are used to output the Direct surround signals and busses 7-12 are used for the Playback surround signals.

A typical signal flow through the system is as follows:

Surround Sources > Input Channels > Busses 1-6 > Recorder

Recorder Returns > Input Channels > Busses 7-12 > Monitors

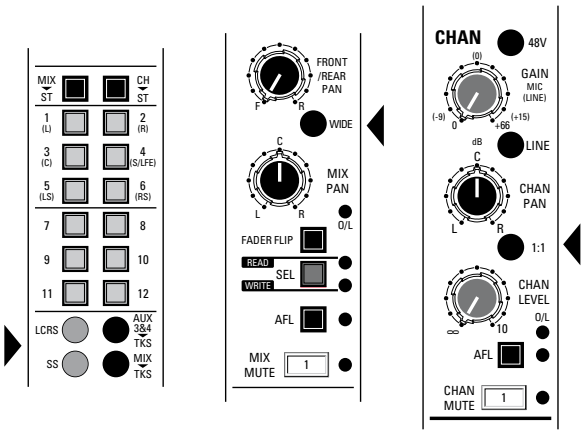

Fig 4.1

Routing

The **LCRS** and **SS** switches in the routing section are used to assign the **LCRS** and **Stereo Surround** pan modes to the routing, enabling surround panning across the busses 1-12 [Fig 4.1].

If the **MIX TO TRACKS** switch is **NOT** pressed at the same time, then busses 7-12 will be sourced from the **Channel** path, with busses 1-6 sourced from the **Mix** (surround) path.

When **LCRS** and **SS** are pressed together, tracks 4 and 10 **(LFE/S)** are sourced directly post-fader.

Wide

The **WIDE** switch changes the way the **Mix (LCR)** pan functions [Fig 4.1].

When panned Left, only Left is present, when panned Centre only Centre is present (L and R completely attenuated) and when panned Right only Right is present.

1:1

The **1:1** switch in the **Channel** section bypasses the channel level and pan pots and causes the Solo signal to become PFL (as opposed to AFL) [Fig 4.1].

This switch also routes the channel signal to busses 7-12, over-riding the **MIX TO TRACKS** and **AUX 3&4 TO TRACKS** switches.

The channel signal is also routed to busses 1-6 unless **LCRS** (busses 1-4) and **SS** (busses 5-6) are selected. All signals are still post-mute.

Pan Pots

The **FRONT/REAR** pot, pans between **LCR** and **Surround** busses.

When panned to the front, the **LCR** outputs are unity with no **LS** and **RS** outputs.

When panned to the centre, the **LCR** outputs are reduced by -3dBu, with the **LS** and **RS** signals also reduced to -3dBu less than their unity gain, which is achieved with the **FRONT/REAR** pan pot fully rear.

The **MIX PAN** is used to pan all **L**, **R**, **C**, **LS** and **RS** signals with the **L** and **R** signals attenuating by -5dBu when panned centre, the centre signal being unity. When panned fully left or right, the centre signal disappears.

When the **FRONT/REAR** pan pot is fully rear, **LS** and **LR** signals are unity when the **MIX** pan is fully panned left or right.

When the **MIX** pan is panned to the centre, the **LS** and **RS** signals attenuate by -4dBu.

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Supertrue
Automation Overview

Note: This overview only provides a brief introduction to the power of **Supertrue**.

For full details, refer to the **Supertrue User Guide**.

A Brief History

Computer control of mixing operations first became possible in the 1970's with the introduction of the **Allison 65K** computer which controlled **VCAs** in the input signal path.

An alternative approach was taken by Mr Rupert Neve's original company with the use of servo-assisted (moving) faders which did not require **VCAs**. Both of these approaches still form the basis of analogue console automation systems today.

Computing, however, has evolved rapidly and now provides huge advances in all aspects of data processing and storage. Graphics capability has also improved beyond recognition and allows sophisticated screen displays to be used as a matter of course.

AMEK introduced it's own automation system called **Supertrue** in 1989 and there are now thousands of installations worldwide.

Supertrue is powerful, easy to use and is under continuous development to provide new features and sub-programs which progressively enhance the applications of the computer controlled mixing.

Supertrue V4 is the latest version of the world's most widely used automation system. Released with the flagship **9098i** console designed by Mr. Rupert Neve, it introduces many new features, such as an improved interface with 256 colour graphics, the flexible *Circular Mix Mode*, an improved *Faders Up Screen* with *Multiple Zoom* levels, enhanced *Mix Editing* functions and an improved *Recall System*.

DOS

Supertrue V4 continues to use the **DOS** operating system, for its speed and proven stability. A knowledge of **DOS** is not essential to using **Supertrue** but can sometimes be helpful when interpreting some aspects of the system.

See the **Supertrue User Guide** for a list of commonly used **DOS** commands.

Basic Principles

Supertrue V4 allows you to record and play back the console's fader movements and automated switches, referenced against timecode. Any changes replayed will happen at exactly the same time and in the case of fader movements, at the same rate.

In the same way a multitrack recorder can be used to build up a song piece by piece, section by section, **Supertrue V4** can be used to create a mix that would be impossible to reproduce in one live pass. *Off-Line Editing, Virtual Dynamics®*, improved *Recall* and *Master Status* (signal flow preferences) allow the user to fully control all aspects of the recording and mixing process.

This means that you can sit back and concentrate on how a mix actually sounds without having to worry about muting channels and riding levels. Multiple variations of mixes can be stored allowing you to easily compare different versions, try out ideas or even return to a project several weeks later to add some minor adjustment.

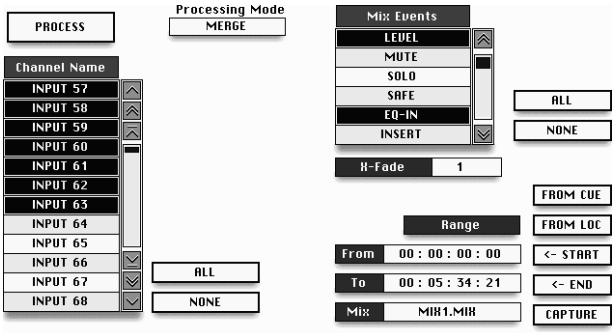
This level of control can be brought to other equipment in your recording facility, incorporating external tape machine control and *Visual Effects (VFX)* to graphically manipulate and store the parameters of your external effects processors.

Supertrue can become the central control point for your facility, enabling you to control your console, perform automated punch in/out on your multitrack and tweak parameters on your outboard equipment without moving from your chair or alternating between various software packages.

Mix Processor

Supertrue has an extensive **On-Line** and **Off-Line** editing system, the **Mix Processor**, which allows the manipulation of **Mix Data**.

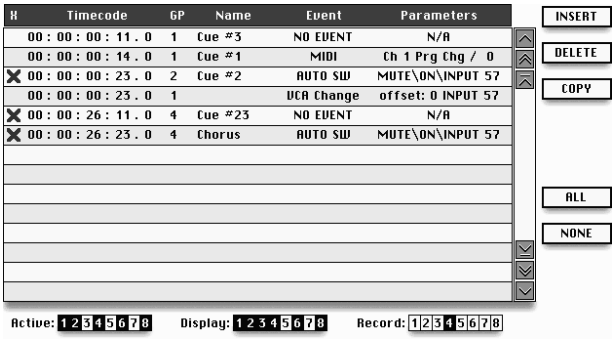
One **Mix** can be merged into another, **Repeated** in part of the **Mix** at another timecode position, **Time** shifted to follow edits and other time saving functions such as **Erase**, **Trim**, **Copy** and **Swap**, all of which speed up production work.



Synchronisation

For sound to picture applications, **Supertrue** can synchronise to incoming **SMPTE** timecode and, as an option, provide machine control.

Cue List

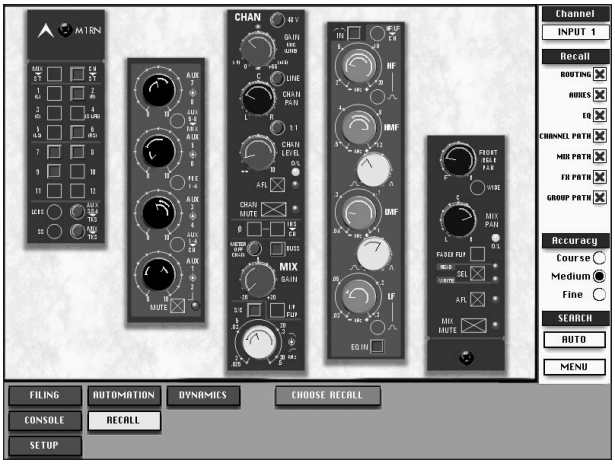


The **Cue List** is especially useful in **Post Production** and enables you to specify events that occur at given points in a **Mix**, such as sound effects and music cues or internal events such as mutes and fades - to 1/4 frame accuracy!

Events can be **MIDI** messages, automated switch changes or **VCA** level offsets.

Cues can also be defined as having no event and used simply as reference points.

Recall



Media 51 offers full **Recall** of all non-automated parameters. The **Recall** system allows the positions of all knobs and switches to be stored, except the **AFL/SOLO** switches and, of course, the **Supertrue** automated functions.

Settings can be saved into the computer before running a **Mix**.

The **Recall** system's **Autoscan** procedure speeds console setup.

When a **Recall** is activated, the computer scans the console and only pauses when it finds an incorrectly set control. It then brings up a **Graphic Display** of the **Channel's** controls.

The control is then adjusted until it matches it's target position.

Virtual Dynamics®

Fitted as standard, this unique software manipulation of the console's hardware processors, allows each **VCA** fader to have it's own **Dynamics** control device, where appropriate.

Virtual Dynamics® is based on digital control of all parameters and therefore gives you the ability not only to specify gain contours with great accuracy, but also to produce gain control effects which are difficult to emulate with standard analogue hardware.

Supertrue also allows you to store your favourite settings, either within the **Dynamics Library** or with the **Mix**.

Virtual Dynamics® devices are resident within the software and can be called to the screen at any time, offering a choice of any one of 11 available devices.

Virtual Dynamics® Devices

Easy Gate

A simplified gate device, fast and easy to set up. Includes settings for Threshold, Range and Release Time with a switchable "Fast Attack" mode.



Gate

The standard general purpose gate, similar to the **Easy Gate** with added variable attack and hold times.



Super Gate

A fully-featured gate with all of the standard gate's functionality plus manual/auto hysteresis, peak, decay, mask time, variable gain and a switchable release curve (log).



Easy Compressor

A quick and simple compressor including variable settings for threshold and compression with switchable attack and release modes.



Compressor

The standard compression device with variable settings for threshold, attack, release, compression ratio and makeup gain. It also includes a "soft knee" setting to provide a gradual transition after the threshold is reached.



Dual Compressor

A complex compression device with an expander section and compressor with dual thresholds and compression ratios.



Gate Compressor

A combined device offering the same features found on both the **Gate** and the **Compressor**.



Limiter

A limiting device with variable ratio, enabling true limiting at 10:1 or lesser values for alternative forms of compression.



Autopanner

The autopanner provides image shifting across two channels. This is achieved by the device controlling the levels of the faders once panning has been set.



Autopanner events are triggerable and variable points with variable divergence can be set. A variety of other options makes this a very flexible tool.

Expander

A straightforward expansion device with variable threshold, ratio, attack, hold and release times and expansion range.



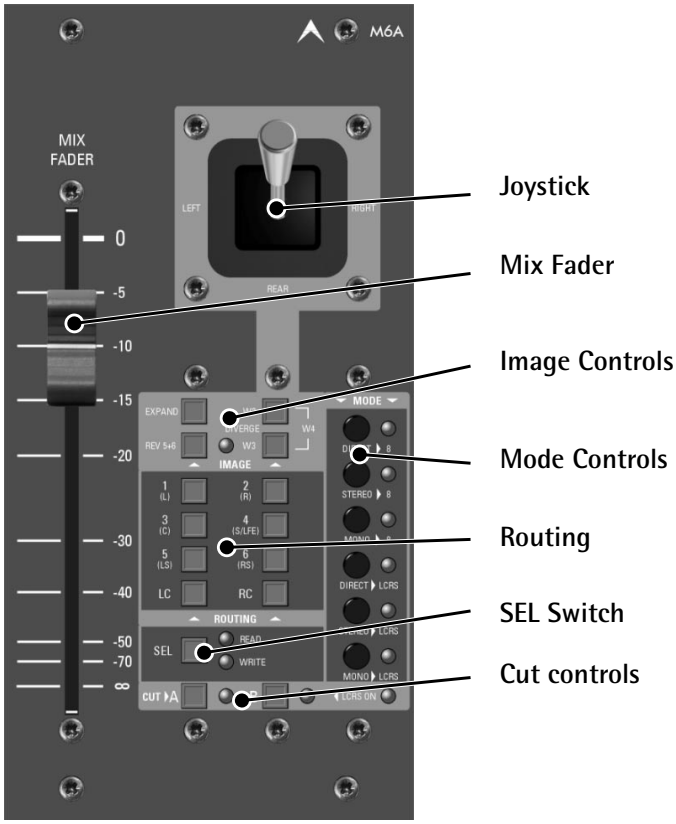
Expander/Compressor

This device allows you to combine expansion and compression on a single channel.



Joystick

Automated Panner



Joystick

Mix Fader

Image Controls

Mode Controls

Routing

SEL Switch

Cut controls

Overview

An optional **Mix Output Fader** panel **(M6A)** is available which contains a single **Automated Motorised Joystick** panner.

The joystick panner features an 8-wide internal **VCA** card which can easily be configured to respond as either a single **8-Wide Panner** or as a tracking pair of **4-Wide Panners** with a choice of input configurations.

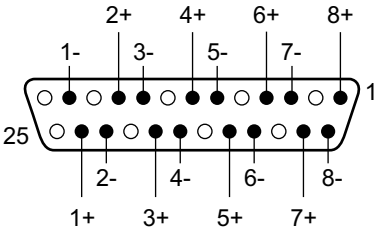
Joystick Outputs

Joystick Outputs are via local routing switches to multi-track busses **1-6** for **L, C, R, S, LS, RS (5.1)** panning and busses **7 & 8** for **Lc, Rc (7.1)** panning.

Joystick Inputs

All eight Inputs to **Joysticks** are electronically balanced and provided via a single **D-Type Connector** on the rear terminal panel.

The **D-Type** pinout adheres to the **Tascam** standard and, ideally, inputs should be hard-wired from channel direct outputs or, for maximum flexibility, via a patchbay to allow any external signals to be used.

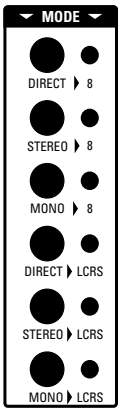


JOYSTICK INPUT D-TYPE (Tascam standard)

Facilities

Each joystick has the following facilities, all of which may be **Recalled**:

Mode switches



The **Joystick** can operate as an **8-Way Panner** or can provide two tracking **4-Way Panners,** designated **A** and **B**.

Note: Pressing any of the **Mode** switches for several seconds causes the **VCA**s to be set to unity, indicated by the illumination of all six LEDs. A second short press of any mode switch reverts to the selected mode.

Note: In any **LCRS** mode, the second pan path is also connected to the **LCRS** busses, **NOT** busses **5-8**.



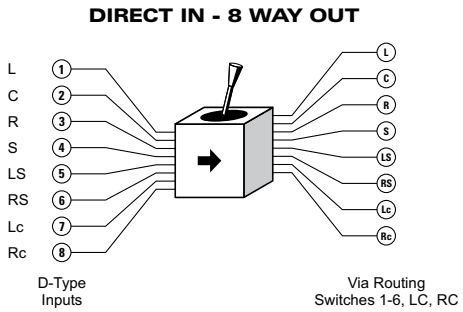
Note: Operating any of the **LCRS mode** switches causes the **LCRS** warning LED immediately below the switchbank to illuminate and **Cut A** to mute all outputs. **Cut B** is disabled.

The following basic modes are available and selected by a bank of six **Exclusive Interlocking** switches.

Direct Input to 8-Way Output.

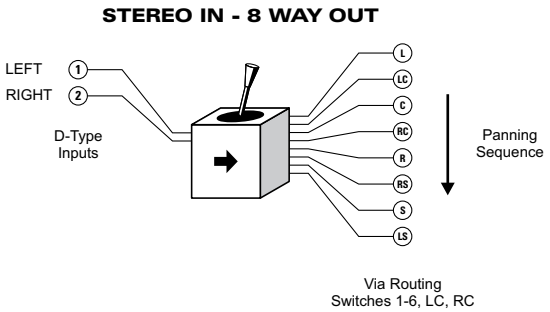
This mode provides a single **8-Wide Panner**.

The **Joystick** alters the balance between all the signals.



Stereo Input to 8-Way Output.

This mode provides a **Single Stereo Panner** from **D-Type** connector inputs **1(L)** and **2(R)**, which pan around in the following sequence:
L, **LC**, **C**, **RC**, **R**, **RS**, **S**, and **LS**.



Note: No **LFE** position is provided at the front, unless for instance, the **Sub (LFE)** buss is used, taking care of other console assignments.

Note: In this mode:

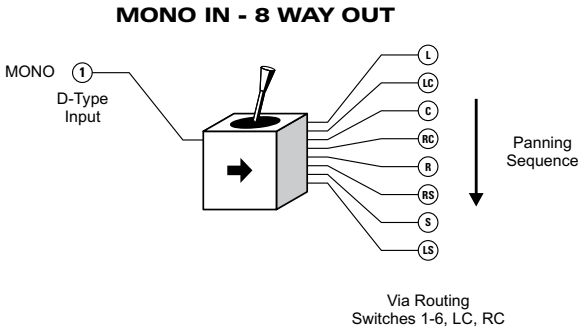
C and **S** are both derived from **L + R -3dB**.

LC is derived from **L + C -3dB**.

RC is derived from **R + C -3dB**.

Mono Input to 8-Way Output.

This mode provides a **Single Mono Panner** from **D-Type** connector input **1** which pans around in the following sequence:
L, **LC**, **C**, **RC**, **R**, **RS**, **S**, and **LS**.



MONO IN - 8 WAY OUT

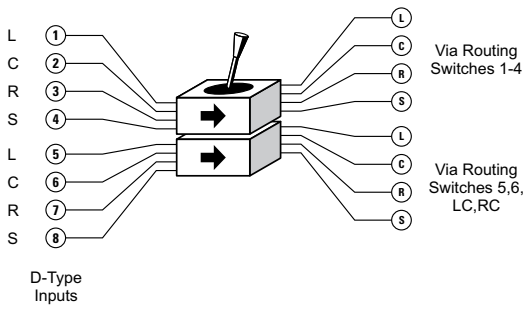
Note: No **LFE** position is provided at the front, unless for instance, the **Sub (LFE)** buss is used, taking care of other console assignments.

Note: **Input 5** on the **D-Type** connector can still be used to mix an additional signal into the **LS**, **RS**, **LC** and **RC** paths.

Direct Input to LCRS Output.

This mode provides two tracking **LCRS panners** from two **LCRS inputs**.

The **Joystick** alters the balance between all the signals.



DIRECT IN - LCRS OUT

Note: In any **LCRS** mode, both panners can be assigned to the **LCRS** busses individually.

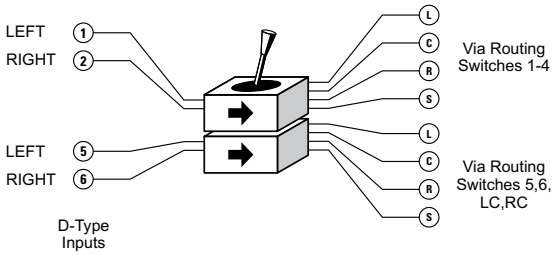
Panner A uses routing switches **1–4**, whilst **Panner B** uses routing switches **5–8**, each set directly addresses **LCRS** busses **1–4**.

Stereo Input to LCRS Output.

This mode provides **TWO** tracking **LCRS Panners**.

Stereo Input A is taken from **D-Type** connector inputs **1(L)** and **2(R)**.

Stereo Input B is taken from **D-Type** connector inputs **5(L)** and **6(R)**.



STEREO IN - LCRS OUT

Note: In any **LCRS** mode, both panners can be assigned to the **LCRS** busses individually.

Panner A uses routing switches **1–4**, whilst **Panner B** uses routing switches **5–8**, each set directly addresses **LCRS** busses **1–4**.

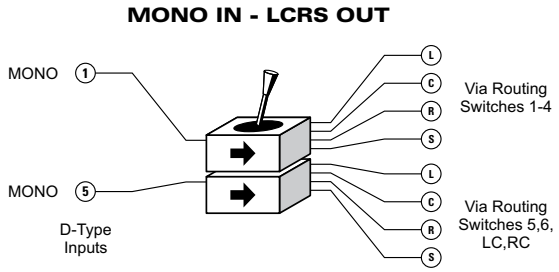
Note: In this mode, **C** and **S** are both derived from **L + R –3dB**, therefore you can achieve a **Mono** to **Stereo** image in moving from **Rear** to **Front**.

Mono Input to LCRS Output.

This mode provides **TWO**, tracking, **LCRS Panners**.

Mono Input A is taken from **D-Type** connector input **1**.

Mono Input B is taken from **D-Type** connector input **5**.



Note: In any **LCRS** mode, both panners can be assigned to the **LCRS** busses individually.

Panner A uses routing switches **1-4**, whilst **Panner B** uses routing switches **5-8**, each set directly addresses **LCRS** busses **1-4**.

Note: An application of this system might be to feed the signal to **Input A** and to fit a **Delay** between inputs **A** and **B** to provide a panned reverb field.

Routing Assignment Switches

Individual routing assignment switches are provided for each buss.

Note: In any **LCRS** mode of operation, buttons **5-8** provide assignment for the second panner **(B)** to **LCRS** busses **1-4**.

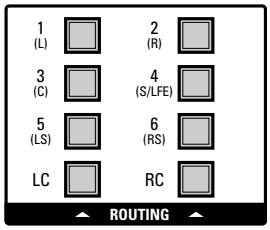
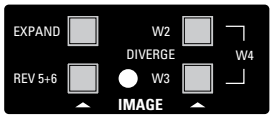


Image Switches

Expand

The **Expand** switch introduces a fixed **All-Pass Filter** on the **L Path Output ONLY** to provide image enhancement at high frequencies, particularly during **Stereo** operation.



It only operates on the **Left Front** speaker to avoid signal cancellations on paths that are derived from the **Left Input Source**. The process provides up to 360 degrees lag for high frequency signals.

Note: The effect will only be apparent on signals that include an additional unfiltered output.

Rev 5&6

The **Rev 5&6** switch reverses the **LS** and **RS** (**5 and 6**) operation. This allows the crossing of signals in **LCRS** mode and can be used in **8-Wide Modes** to provide accurate diagonal moves by using the edge of the joystick bezel for support.

Divergence

Two **Divergence** switches are fitted, providing a matrix of four fixed **Divergence** settings, **W1** (default) to **W4**. Also, the **Mode Switches** affect **Divergence**. When any **8-Way Mode** is selected, the **Divergence** is increased (i.e. more discrete).

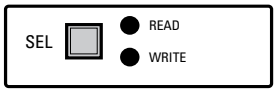
Cut Switches



Automated soft mute switches are provided for both **A** and **B** paths.

Note: In any **8-Wide Mode,** the switch for **Path A** has control and **Mute Switch B** is disabled.

SEL Switch



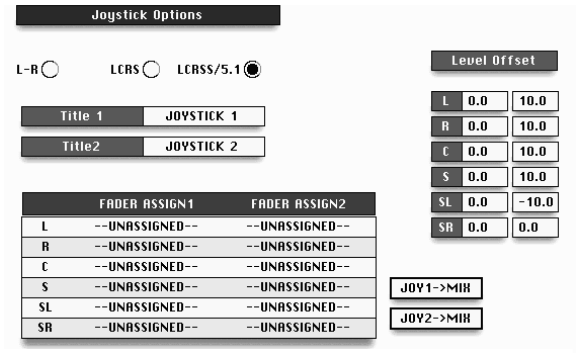
An automation **SEL** switch is provided with local **Read/Write/Update** LEDs which operate exactly as all other **SEL** switches across the console. This activates automation functions on both the **X** and **Y** joystick axes.

Solo in Place

When the **SEL** switch activates **Solo-In-Place**, the soloed signal includes both paths **A** and **B**, either path can be individually muted by the corresponding mute switch.

Supertrue

In addition to the hardware controls, **Supertrue** uses a **Joystick** setup page with additional features.



Level Offset

These **Data Fields** allow you to set individual offsets for each panner output, if required.

Fader Assign

In certain **Mix** situations, it's extremely useful to be able to manipulate several **Fader** levels using a **Joystick**, instead of programming all the moves manually. The channels in question need their audio routing and pan placements setting up accordingly.

Note: Typically, the **Joysticks** will be assigned to spare channels, so there is no existing native fader data to consider. It is also worth noting that the channel faders and their automation controls are still active and operate in tandem.

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International Headquarters
Langley House
Third Avenue
Trafford Park
Manchester
M17 1FG

Tel: +44 (0) 161 868 2400
Fax: +44 (0) 161 873 8010
Web: www.amek.com
Email: amek@amek.com



US Headquarters
1449, Donelson Pike
Airpark Business Centre 12
Nashville
TN37217

Tel: +1 888 286 9358
Fax: +1 615 360 0273



Los Angeles
2740, W Magnolia Blvd
#102
Burbank
CA91505

Tel: +1 800 585 6875
Fax: +1 818 973 1622



Tokyo
3-23-9 Toyo, Koto ku
Tokyo
135-0016

Tel: +81 (3) 5606 3101
Fax: +81 (3) 5606 3102

Part No: MANMEDIA51USER

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