### TYPICAL SPECIFICATIONS

**Frequency Response**
- XLR Input to any Output: +1/-0.5dB, 20Hz - 20kHz

**T.H.D. and Noise**
- All measurements at +10dBu
- XLR In to Direct Out: +0.006% @ 1kHz
- XLR In to Mix Out: +0.001% @ 10kHz
- XLR In to Mix Out: +0.006% @ 1kHz

**Mic Input E.I.N.**
- 22kHz-22kHz bandwidth, unweighted: -128dBu (150kHz source)

**Residual Noise**
- Mix: Trails: no inputs routed, Mix fader @ 0dB: -95dB

**Bus Noise**
- Mix: Trails: 48 channels routed, input faders @ -84dBu
- Grp: Trails: 48 channels routed, input faders @ -84dBu
- Aux: Trails: 48 channels routed, input faders @ -84dBu

**Crosstalk**
- 1kHz, +20dBu input signals
  - Input Channel reusing: +105dB
  - Input Fader @ mix: +100dB
  - Input pan pair isolation: +90dB
  - Mic routing isolation: +85dB
  - Group routing isolation: +85dB
  - Group-gm crosstalk: +90dB
  - Group-mc crosstalk: +90dB
  - Mic-group crosstalk: +90dB
  - Aux send off: +95dB

**CMRR**
- Mono Input: -85dB @ 1kHz

**Input & Output Levels**
- Balanced Inputs: +21dBu max.
- Mic Input: +26dBu max.
- Balanced Outputs: +21dBu max.
- Nominal Operating Level: 0dBu

**Input & Output Impedances**
- All other Inputs: >10kΩ
- Mic Input: 20kΩ
- Headphone Output: 50Ω
- All other Outputs: 50Ω

**Oscillator**
- 63Hz to 10kHz/Pink Noise, variable level

**HP Filter (Mono Input)**
- 30-40Hz, 12dB/octave

**EQ (Mono Input)**
- HF: 12kHz, ±15dB, shelving
- MF: 75Hz-1.2kHz, ±15dB, Q=0.5-3.0
- LF: 35Hz-550Hz, ±15dB, shelving

**Mixing**
- Overbridge, 8 VU Meter monitoring Group/Aux/Matrix,
- 3 VU Mete monitoring Left/Mo/AFL/PFL, Right/Mo/AFL/PFL

**Power Consumption**
- 48 Ch Cons, each 17V rail takes 6.5A (nominal)

**Operating Conditions**
- Temperature Range: 10°C to +30°C
- Relative Humidity: 0% to 80%

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*Note: Three figures are typical of performance in a normal electromagnetic environment. Performance may be degraded in severe conditions. All measurements are made with balanced inputs and outputs with 0dB nominal level. All specifications may affect these specifications.*
In the modern world, live sound mixing demands a level of versatility way beyond anything previously imagined. Sound contractors and venues alike must maximise their inventory investments to accommodate a wide variety of different events. However, mixing consoles designed for use in both Front-of-house and Monitor positions have always been a compromise, with the all-important Group and Auxiliary bus structures presenting a daunting learning curve.

The Soundcraft MH4 changes all that. With external styling every bit as innovative as its internal design, the MH4 delivers an intuitive, uncomplicated and sonically superior mixing solution for engineers working on concert tours, the performing arts, theatre productions and corporate events.

In short, the Soundcraft MH4 is ready for anything.

Key Features
- Dual-purpose live console: FOH, Monitors, or Monitors from FOH
- Totally modular for flexible layouts
- Frame sizes 24 mono/4 stereo, 32 mono/4 stereo, 40 mono/4 stereo, 48 mono/4 stereo, 56 mono/4 stereo
- Completely flexible Auxiliary bus structure with up to four stereo sends for in-ear monitoring
- 8 group busses and 12 aux busses in FOH mode
- 16 monitor busses (configurable as 16 mono, 12 mono/2 stereo, 8 mono/4 stereo) in Monitor mode
- All Aux outputs under fader control
- Integral 20x8 matrix
- Semi-parametric EQ on stereo aux outputs
- Integral Clearcom™ compatible talkback system
- New Mic Amp design with high headroom and outstanding CMRR
- New EQ design with focused response
- LCR panning on inputs
- 8 VCA groups and 8 Mute groups with snapshot automation and MIDI control
- Passive mic splitter outputs from each channel
- Integrated control of BSS Audio Varicurve™ and dbx DriveRack™
- Optional bargraph output meterbridge
Ready to go anywhere

**CLUB:** Cubby Bear Club, USA

As part of a complete system upgrade, Ideal Productions have supplied Chicago’s Cubby Bear club with two MH4 consoles to handle front-of-house and monitor mixing. “Intuitive ease of use was the first thing that attracted us to the MH4. It’s well laid out and elegant in its simplicity. It’s also very flexible, admirably functioning as either a front-of-house console or dedicated monitor board offering eight separate wedge mixes plus four stereo in-ear mixes.”

Todd Peterson, Owner - Ideal Productions

**RENTAL:** Gighire, UK

South London-based Gighire are now into their third MH4 desk - part of a systematic upgrade programme. “As a mid-sized company we implement an ongoing programme of stock replacement,” said Jon Pickett, partner at Gighire. “The MH4’s versatility was important to us. In addition, it represents exceptional value and build quality - and it also sounds absolutely great. The EQ has the familiar feel of Soundcraft, and the meters are really accurate.”

Jon Pickett, Partner, Gighire

**FESTIVAL:** Montreux Jazz, Switzerland

An MH4 console performed front-of-house duties at the Montreux Jazz Festival in 2002, and again in 2003. “The MH4 is very intuitive and simple to operate, which is important in an environment like this where volunteers often have to run it. When you mute a channel, everything’s muted - you don’t have to worry about double-checking your cues, and the board is also nice and quiet, not to mention very forgiving.”

Michael Mendoza, Head Audio Engineer, Horizon

**INSTALLATION:** Palladium Palace, Russia

Khabarovsk City in Siberia has opened the Palladium Palace, a substantial entertainment centre which doubles as an ice-rink stadium and a concert hall. In ice-rink mode, the Palace is used for competitions, training, and social ice skating activities. With a few modifications, the venue can be turned into a 7,000-capacity concert hall.

For the main events, when the Palladium Palace is turned into a suitable concert venue, PAL Systems has provided a portable control system, consisting of a Soundcraft MH4 as front-of-house, a Soundcraft MH3 on monitors, and mobile racks of amplifier.

**CHURCH:** Canyon Hills, USA

When Pacific West Sound commenced work on a complete re-structure of the audio system at Canyon Hills Assembly of God Church in Bakersfield, they turned to Soundcraft for a comprehensive mixing solution. “The MH4 sounds great. Its mic pres are warm and the British EQ is very pleasing to the ear. Console layout is extremely straightforward and after a minimum of training, everyone in the church’s audio department was able to capably use the desk. The modular design was another big plus, its was its dual functionality as a front-of-house and monitor mix. 16 aux’s eliminate the need for a dedicated monitor board. All in all, the MH4 is a very cool console.”

Brent Milton, PWS

**FESTIVAL:** Bruck Music, Germany

A revival of Cole Porter’s Broadway hit Anything Goes at the Musical Festival at Bruck has proved extremely popular. Eventech provided sound reinforcement and invested in a 48-channel MH4 for front-of-house. "We’ve got Soundcraft desks (SM20 and SM24) in the South and North Studios," explained Music Bank’s Nunu Whiting, "and we’ve always found them to be very acceptable to the professional engineers. It was this popularity that convinced Music Bank to invest in the MH4 consoles.

Nunu Whiting, Music Bank

**INSTALLATION:** Music Bank, UK

Music Bank, London’s premier rehearsal facility, has undertaken a major expansion programme resulting in new East and West studios. Designed to attract medium sized live bands, both studios boast a 40-channel MH4. “We’ve got Soundcraft desks (SM20 and SM24) in the South and North Studios,” explained Music Bank’s Nunu Whiting, "and we’ve always found them to be very acceptable to the professional engineers. It was this popularity that convinced Music Bank to invest in the MH4 consoles.

Nunu Whiting, Music Bank
While traditional in its module signal flow layout, the MH4’s bus structures have been designed to make the console as user-friendly as possible, while allowing the possibilities of using the desk either at front of house or monitor positions. You can even split the functionality in one desk and achieve both FOH and monitor control from one location (such as would be used in regional theatre performance).

The GLOBAL MODE switch on each of the 4 stereo Group/Aux output modules determines how each pair of Group/Aux busses behaves when used as FOH groups or Monitor sends.

The first 8 mono aux sends are active in either FOH or Monitor mode, and are routed to the respective aux outputs and controlled by faders.

In FOH mode, the console provides 12 mono aux sends and 8 groups while in Monitor mode there are 16 monitor buses, configurable as 16 mono, 12 mono/2 stereo or 8 mono/4 stereo.

The stereo Group/Aux sends are very simple to utilise. In FOH mode, each pan control mixes the channel signal to the odd and even groups, selected by familiar push-button switches. In monitor mode, each pan control mixes the channel signal to the odd and even groups, selected by familiar push-button switches. All Auxiliary outputs are controlled by 60mm faders, colour-coded to match their corresponding input feeds.

This flexibility is enhanced by the MH4’s totally modular construction, which means that you can lay out the console inputs to your own requirements, including positioning the stereo input modules at any location in the desk where you need them to suit the type of incoming signal. This is made simple because each module has an integral connector panel.

With such a variety of stereo sources nowadays, such as effects returns, CD inputs, computer-based WAV files, you often need more stereo inputs than you think - four are included as standard in addition to the full complement of mono inputs.

**Improved signal path performance**

The MH4 signal path has been closely examined and optimised for modern live sound applications. As a result the MH4 has a very low noise floor and headroom has been increased.

**True LCR panning**

Each module has a stereo pan control, plus an LCR mode switch which provides true LCR panning across the three main outputs.

**Integral matrix to maximise efficiency**

In installed sound systems and on corporate events, signals are typically fed through distributed loudspeakers. The MH4’s comprehensive 20x8 matrix means that signals are typically fed through distributed loudspeakers. Each output module features its own matrix feeds.

**Comprehensive VCA and Mute groups**

Channels may be assigned to any number of 8 VCA groups for master control, and also to 8 mute groups. The scene changes for the channel mutes and VCA assignments may be controlled by the console’s own Scene Control automation, and triggered by external MIDI control systems.

The MUTE button may also be used to trigger an external sampler. For example – as you unmute a channel using a MIDI NOTE command.

In monitor mode, true mono/stereo switching lets you take maximum advantage of the console’s 16 busses, giving configurations of 16 mono, 12 mono/2 stereo and 8 mono/4 stereo auxes. A stereo aux becomes a true stereo monitor send, with level and pan controls for each pair.

The 1-2 group routing does not function in this mode.

If stereo auxes are being used, powerful stereo semi-parametric equaliser sections on the outputs provide major assistance when creating in-ear monitor mixes. All Auxiliary outputs are controlled by 60mm faders, colour-coded to match their corresponding input feeds.

**True LCR panning**

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The MUTE button may also be used to trigger an external sampler. For example – as you unmute a channel using a MIDI NOTE command.

**Mic Preamp & EQ**

Many modern microphones have the capability to produce high output levels, so we designed our mic pre to be able to handle this, and at the same time improved the CMRR to a noise-defeating 80dB wide band. This means that the console is much less susceptible to interference from lighting lines and stray mains fields.

**Reliability**

In designing a console for today’s hectic road life, we’ve taken advantage of the technology to again produce a lighter, cooler desk. Thanks to SMD® technology, we can reduce weight and keep internal temperatures well under control. We estimate that an MH4 is 20% less in weight than similar sized consoles.

We also use the proven Soundcraft CPS800 PSU as used on the well-known SM20 and Series FOUR consoles. Dual redundancy is of course available. The CPS2000 PSU as used on the Series FIVE is also available as an extra cost option.

Rest assured that the MH4’s modular concept adds to the console’s serviceability should anything fail.

* SMD – Surface Mount Device technology. This employs sub-miniature components and a special soldering process to give reduced size and weight and increased reliability over “conventional” circuit board technology.
Mono Input Module

New high performance input pre-amp
This totally new design features a high headroom and outstanding CMRR performance. The Mono input can handle signals up to +30dBu, with a gain range of +15dB to +40dBu and a 20dB gain change switch. A Peak LED indicates internal overload conditions.

Pre or Post fader in banks (A9-A12 & A13-A16), with pre fade signal following auxes can be configured. The mono Aux sends can be used in FOH mode. In this mode, the pre-fade signal is sent to the stereo bus and the mono panning switch is bypassed.

Stereo Input Module

Four stereo input modules are fitted as standard to all frame sizes, but more can be added by replacing mono channels. The integral backpanel and common fader panel mean that individual stereo send can be fitted anywhere within the input section of the console.

Input stage
The same high performance pre-amplifier offers the same gain range of +15dBu to +40dBu with Phantom Power switching and polarity reverse on the left channel. The peak LED indicates internal overload conditions. For stereo use, the front panel switches the fader switch to the left channel and the right channel is fed from a mono sum of the module L and R signals.

Balanced Input Interfaces
Separate jacks provide a pre or postEQ (internal switch) balanced input and output, at nominal levels of 0dBu. The NIC switch switches the return input into the signal path. The send is always active, even when INS is not on.

EQ and Hi-Pass Filter
This new design retains the traditional Soundcraft response, but sounds even better with steeper slopes on the HF stage focussing the control where you want it, and some carefully balanced overload on the "L" band, which automatically controls the critical lower mid frequencies when boosting lows. The all important high-pass filter is available from 30Hz - 400Hz with by-pass if required.

The EQ section offers a four band, with shelving high and low frequency responses, and full parametric high mid and low mid bands. The frequency ranges are 35Hz-550Hz (LF), 75Hz-1.2kHz (Low Mid), 750Hz-12kHz (High Mid), and 1.2kHz-20kHz (HF) with +/-15dB of cut or boost available at any frequency. The Q is variable on the mid bands from 0.5 to 3.

Mono Aux Sends
There are 8 dedicated mono Aux sends, these are intended as FX sends in FOH use, or mono mixes for monitoring. Each send has 5dB of gain at maximum. Each send is fed from a mono sum of the module L and R signals.

Stereo Aux sends
There are 8 dedicated stereo Aux sends, switchable pre or post fader in pairs, with internal links (both feeds follow the channel mute). These are intended as FX sends in FOH use, or mono mixes for monitoring. Each send has 5dB of gain at maximum. Each send is fed from a mono sum of the module L and R signals.

Mono and Stereo/Mono switchable Aux sends
The dual-purpose FPH/ Monitor switcher that the MH4 comes from the way in which the lower ban of mono and stereo auxes and Group routing switches can function differently depending on the setting of the Group mode switch (located on each of the four stereo Group modules).

Monitor Mode - Global GRP mode NOT SELECTED
In this mode the four dual concentric sends function as Aux sends 9-16. These mono Auxes can be switched in banks (A9-A12 & A13-A16). Up to 16 mono Auxes can be configured while stereo auxes are ideal for use in FOH or stereo wedge sends. Adjacent PRE switches allow the source for the send to be switched Pre- or Post-fader in pairs, with pre-fade feed following the post-pre EQ internal link settings (default = post EQ). In mono mode, each send is fed from a mono sum of the module L and R signals. In stereo mode, the module left side is sent to the odd-numbered busses, and the right to even. The L-R balance to the bus pairs is controlled by the main channel balance control.

In this mode, the adjacent routing switches 1-2, 3-4, 5-6 and 7-8 will not function.

FOH Mode - Global GRP mode SELECTED
In this mode the busses which are used in Monitor mode for Auxes 9-16, new become Subgroup busses, with fixed routing via the 1-2, 3-4, 5-6, 7-8 switches. Note that, unlike a conventional FOH console, the panning to these Groups does not follow the main channel Pan pot, but each pair has its own Pan, using the bottom of the adjacent duo concentric pot. This arrangement is designed to give maximum flexibility in routing, as even though the Group busses are routed in pairs, it is new possible to route to any individual bus without tying up the main mix bus pan pot.

Alternative, up to 4 stereo subgroups can be created, each with its own pan setting, from the inputs.

As a bonus in FOH mode, the top knobs of the duo concentric pots become an additional 4 mono Aux sends, numbered 17, 18, 19 and 20. These can be used for additional fill sends, and can be switched pre- or post-fader by the PRE switches. The masters for these sends are rotary controls located on the Stereo Group module.

Solo
The Solo button provides a PFL feed to the engineer’s headphones or monitors, or triggers a destructive solo in place, depending on mode selection at the master section. The solo button can also be activated remotely from a VCA solo when assigned to a VCA master control. Stereo-AFL, integrated or additive silencing is possible, with or without input priority, and silos can be cleared with a single button press at the master section.

Four stereo input modules are fitted as standard to all frame sizes, but more can be added by replacing mono channels. The integral backpanel and common fader panel mean that individual stereo send can be fitted anywhere within the input section of the console.

Input stage
The same high performance pre-amplifier offers the same gain range of +15dBu to +40dBu with Phantom Power switching and polarity reverse on the left channel. The peak LED indicates internal overload conditions. For stereo use, the front panel switches the fader switch to the left channel and the right channel is fed from a mono sum of the module L and R signals.

Balanced Input Interfaces
Separate jacks provide a pre or postEQ (internal switch) balanced input and return, at nominal level of 0dBu. The NIC switch switches the return input into the signal path. The send is always active, even when INS is not on.

EQ and Hi-Pass Filter
New high performance input pre-amp. The design retains the traditional Soundcraft response, but sounds even better with steeper slopes on the HF stage focussing the control where you want it, and some carefully balanced overload on the "L" band, which automatically controls the critical lower mid frequencies when boosting lows. The all important high-pass filter is available from 30Hz - 400Hz with by-pass if required.

The EQ section offers a four band, with shelving high and low frequency responses, and full parametric high mid and low mid bands. The frequency ranges are 35Hz-550Hz (LF), 75Hz-1.2kHz (Low Mid), 750Hz-12kHz (High Mid), and 1.2kHz-20kHz (HF) with +/-15dB of cut or boost available at any frequency. The Q is variable on the mid bands from 0.5 to 3.

Mono Aux Sends
There are 8 dedicated mono Aux sends, these are intended as FX sends in FOH use, or mono mixes for monitoring. Each send has 5dB of gain at maximum. Each send is fed from a mono sum of the module L and R signals.

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There are 8 dedicated stereo Aux sends, switchable pre or post fader in pairs, with internal links (both feeds follow the channel mute). These are intended as FX sends in FOH use, or mono mixes for monitoring. Each send has 5dB of gain at maximum. Each send is fed from a mono sum of the module L and R signals.

Mono and Stereo/Mono switchable Aux sends
The dual-purpose FPH/ Monitor switch that the MH4 comes from the way in which the lower ban of mono and stereo auxes and Group routing switches can function differently depending on the setting of the Group mode switch (located on each of the four stereo Group modules).

Monitor Mode - Global GRP mode NOT SELECTED
In this mode the four dual concentric sends function as Aux sends 9-16. These mono Auxes can be switched in banks (A9-A12 & A13-A16). Up to 16 mono Auxes can be configured while stereo auxes are ideal for use in FOH or stereo wedge sends. Adjacent PRE switches allow the source for the send to be switched Pre- or Post-fader in pairs, with pre-fade feed following the post-pre EQ internal link settings (default = post EQ). In mono mode, each send is fed from a mono sum of the module L and R signals. In stereo mode, the module left side is sent to the odd-numbered busses, and the right to even. The L-R balance to the bus pairs is controlled by the main channel balance control.

In this mode, the adjacent routing switches 1-2, 3-4, 5-6 and 7-8 will not function.

FOH Mode - Global GRP mode SELECTED
In this mode the busses which are used in Monitor mode for Auxes 9-16, new become Subgroup busses, with fixed routing via the 1-2, 3-4, 5-6, 7-8 switches. The module left signal is fed to the odd-numbered busses, and the right to even. The L-R balance to the bus pairs is controlled by the main channel balance control.

As a bonus in FOH mode, the send upper level busses become additional 4 mono Aux sends, numbered 17, 18, 19 and 20. These are fed led a mono sum of the module signal, and can be switched pre- or post-fader by the associated PRE switches. The masters for these sends are rotary controls located on the Stereo Group module.

Routing and Balance
The signal is sent to the stereo mix bus and the mono bus using the MK C and C switches.

The BAL control allows the left signal to be faded down to zero level when turned fully clockwise, and vice versa for the right signal. In the centre position, both channels are fed at unity gain to the Mix bus. The balance control also affects the signal balance to the stereo Aux sends or group buses, as described above.

The C (mono) bus is always fed directly with a mono sum of the stereo post-fader signal.

Fader
A high quality long throw 100mm fader controls the level to all busses, and has 10dB of gain when fully up as well as an expanded scale around the critical unity gain area for maximum resolution.

MUTE
The MUTE switch mutes the signal to all busses, including pre-fader Aux sends. The mute circuit can also be activated by the group mute system, an SIP mute signal, a VCA mute signal or internal snapshot control from the scene computer. A Preview mode allows monitoring of a mute effect with an SMPTE time code display checking of mute groups and snapshots without distorting the audio passing through the deck, and Mutes can be set 'Safe'.

LED Input Metering
Every channel is fitted with a 12-segment LED bargraph meter, positioned next to each fader for maximum visibility. The meter point can be changed anywhere within the input section of the console.

VCA Assignment
Each channel can be assigned to any combination of 8 VCA subgroups, using the SOLO button on each channel, in conjunction with the VCA Master SOLO switches in VCA Assign mode. Once assigned to a VCA group, the channel’s fader level, mute and solo button will control the VCA master controls, but can still be operated locally.

SOLO
The Solo button provides a PFL feed to the engineer’s headphones or monitors, or triggers a destructive solo in place, depending on mode selection at the master section. The solo button can also be activated remotely from a VCA solo when assigned to a VCA group, giving Stereo-AFL, integrated or additive silencing is possible, with or without input priority, and silos can be cleared with a single button press at the master section.
The Output Section is made up of eight 2-way output modules, giving control of the 16 output buses plus the additional 4 Aux busses (which are only available in GRP mode). The fader panel below these output modules contains the 8 VCA master faders.

The layout of the output section is clear and offers excellent flexibility as well as numerous facilities. The first four 2-way modules control the 8 dual-function Grp/Aux outputs, plus the 8 Matrix master controls. The second four 2-way modules control the 8 dual-function Grp/Aux outputs and have stereo 4-band EQ, for in-ear Monitor applications, instead of the Matrix outputs. All output fader knobs are colour coded to match their corresponding input sends, for maximum clarity.

The upper section of both types of module contains sends to the 8 outputs of the powerful 20kHz matrix, which accepts feeds from the 8 mono auxes, the 8 dual-function Grp/Aux busses, the MIX L, R, and C busses, and an external input if desired.

### Dual Aux Output Module

#### External Inputs

A 1/4" jack on the rear panel allows a balanced line level signal to be directly connected to the aux buses for connection of a slave console or other source. These inputs can be switched on or off, and level controlled, on the module.

#### Matrix sends

Each output has level control to derive 8 individual mixes to the 8 matrix busses, with matrix master level control, AFL and mute for each output on these matrix busses. The external input can also be routed to the associated section of the rear panel.

#### Matrix outputs

Three external inputs allow a slave console or other source to be summed onto the MIX L, R, and C busses.

### Stereo Grp/Aux Output Module

This has identical matrix sends, insert and external input facilities as the Dual Aux module, but additionally has 4 band semi-parametric stereo EQ on the Grp/Aux outputs. The global Grp/Aux switching determines the mode of the 8 Grp/Aux buses in FSR or Monitor mode as described in the input module section.

The global EQ is indispensable when feeding in-ear monitors, the four-banded stereo EQ features the same circuit and features as found on the stereo input module with frequency bands of 35Hz-550Hz (LF), 750Hz-1.2kHz (Mid), 1.2kHz-20kHz (HF), with ±15dB of cut or boost available at any frequency. The Q is fixed on the two mid bands at 1.3, with a shelving response on the LF and HF bands. The EQ can be switched into the external input path if required to allow additional equalisation of slave console master faders, or FX Returns.

### Aux Outputs A17-A20

This module also incorporates the master level and AFL controls for the 4 mono aux outputs derived from the stereo aux input sends controls when the console is in FSR mode.

#### External Inputs

A 1/4" jack on the rear panel allows a balanced line level signal to be directly connected to the Grp/Aux busses for connection of a slave console or other source. These inputs can be switched on or off and level controlled on the module. On this module the external inputs are treated as a stereo pair, and can be routed to the MIX L, R and C busses instead of the Grp/Aux busses if desired, for use as FX Returns.

Each stereo Group module features a balanced insert point on the rear panel.

#### Insert Points

Pre-fade MIX L, R and C (mono) insert points use balanced sends and returns on separate 1/4" jacks on the rear panel.

### Alternate stereo mix output

The ALT output is an additional stereo output, switchable pre or post the MIX master faders and controlled by the ALT L and R faders. The outputs appear on balanced XLRs on the rear panel. All L and R outputs can be fed by a mono sum of the MIX L and R signals using the WNO switch, effectively giving two fader controlled mono sum mix outputs.

### Talkback and Oscillator Section

The talkback and oscillator sections share a common set of routing buttons, allowing them to access any of the console buses. In addition, routing to any matrix output is possible by pressing the TB button on the Matrix Master. The talkback section has a front panel XLR for mic input. The mic signal can be routed either to selected internal busses, by pressing the INT button, or to the external talkback/oscillator section by pressing the TB button on the rear panel.

### PSU Status Indicators

Three PSU Status Indicators LEDs (red) indicate normal PSU volt operation.

### Monitor and Headphones Outputs

Separate level controls are provided for engineer’s monitor speakers and headphones. The signal source for these outputs can be selected from the post-fade MIX signal, the Centre (mono) MIX signal (to both L and R outputs), or the 2TK replay inputs, and may be summed by simultaneous selection if required. These sources are automatically overridden by an input or output solo signal. The L and R switches allow either the left or right side of the monitor signal to be fed to both L and R monitors and headphones. The MUTE affects the monitor outputs but not the headphones. The headphones output socket is a stereo 1/8" jack, discreetly mounted in a recessed socket in the fascia.

### 2 Track Relay Input/Record Output

The main stereo MIX signal is fed to a pair of 1/4" jack outputs for 2-track recording, and the Centre output signal may be added to this to allow the recording to pick up the centre feed. An auxiliary input can be routed to the MIX bus with the MIX switch, or monitored on the monitor/headphone outputs as described above.

### Master Modules & Fader Panel

The master modules contain the main L, R and C (mono) output faders, alternate stereo mix output, a noise test or sine wave oscillator, and internal/external talkback functions. There are also matrix sends from the MIX L, R and C busses to each of the 8 matrix outputs. The associated section of the fader panel below the master modules contains the monitor and headphone outputs. 2 Track return and monitor source controls. Insert points in the MIX L and R patchs use balanced sends/returns on separate 1/4" jacks on the rear panel.

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Solo Controls
The MH4 incorporates an advanced logic-controlled solo system, giving a number of useful features.

The Solo Clear button allows any solo(s) on the console to be cancelled at the touch of a button. The Autoreset mode allows any solo button selected to cancel the previous solo, otherwise solos can be selected additively.

Inputs normally solo as PFL, with stereo inputs giving a stereo PFL and Outputs as stereo AFL, but inputs can alternatively be soloed as stereo AFL (if assigned to a VCA group, the VCA master solo buttons). The PFL/AFL trim control gives ±15dB of gain adjustment to the PFL or AFL signals fed to the Monitor/phones outputs.

The Input Priority button, when selected, allows an input solo to temporarily override any output solo which may be present. When the input solo is released, the original output solo will reappear on the monitors.

The Solo In Place Enable button (which needs to be held for at least 2 seconds to activate it, for safety) selects destructive in-place solo rather than mono PFL or stereo AFL. Group, Aux and Matrix output solos remain in PFL mode, regardless of this switch setting.

A VCA solo will perform a solo operation on all channels assigned to that VCA group, and give a stereo AFL solo if SIP mode is engaged, the VCA solo will trigger a solo-in-place solo as if all member channels’ SIP switches had been pressed.

VCA System & Automation
The MH4 incorporates an automation system which can memorise and recall 128 snapshot settings of input and output mute status and input VCA assignments, with the ability to serially shift program change messages upon recall of a scene, or to recall a scene in response to an incoming program change message. These scene group and VCA group assignments can be recalled manually from the control panel as well as via MIDI, with an LED display indicating the scene number recalled. There is also the facility to insert new scenes between two existing ones. Scene memory can be backed-up using standard Sys-Ex dumps to an appropriate archiving device.

Channell may be assigned to any of 8 VCA Groups using the Master Assign Mode switch and the channel SOLO switches. Any VCA master then controls all the associated channel levels and their MUTES and SOLOS (although they can still be operated locally). Similarly, channel MUTES may be assigned to any of 8 mute groups (which can be freely owned) by setting the channel mute button. Scene memory can be backed-up using standard Sys-Ex dumps to an appropriate archiving device.

Dimensions, Rear Panel & Configs

<table>
<thead>
<tr>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Ch</td>
<td>144mm (5.6”)</td>
<td>76 kg (167 lbs)</td>
</tr>
<tr>
<td>32 Ch</td>
<td>171mm (6.7”)</td>
<td>89 kg (196 lbs)</td>
</tr>
<tr>
<td>40 Ch</td>
<td>190mm (7.5”)</td>
<td>102 kg (225 lbs)</td>
</tr>
<tr>
<td>48 Ch</td>
<td>222mm (8.7”)</td>
<td>115 kg (253 lbs)</td>
</tr>
<tr>
<td>56 Ch</td>
<td>247mm (9.7”)</td>
<td>150 kg (330 lbs)</td>
</tr>
</tbody>
</table>

Frame Size Dimensions (When supplied by Soundcraft)

- 24 Ch: 1525 x 515 x 1260 (h)
- 32 Ch: 1795 x 515 x 1260 (h)
- 40 Ch: 2050 x 515 x 1260 (h)
- 48 Ch: 2305 x 515 x 1260 (h)
- 56 Ch: 2560 x 515 x 1260 (h)
System Block Diagram