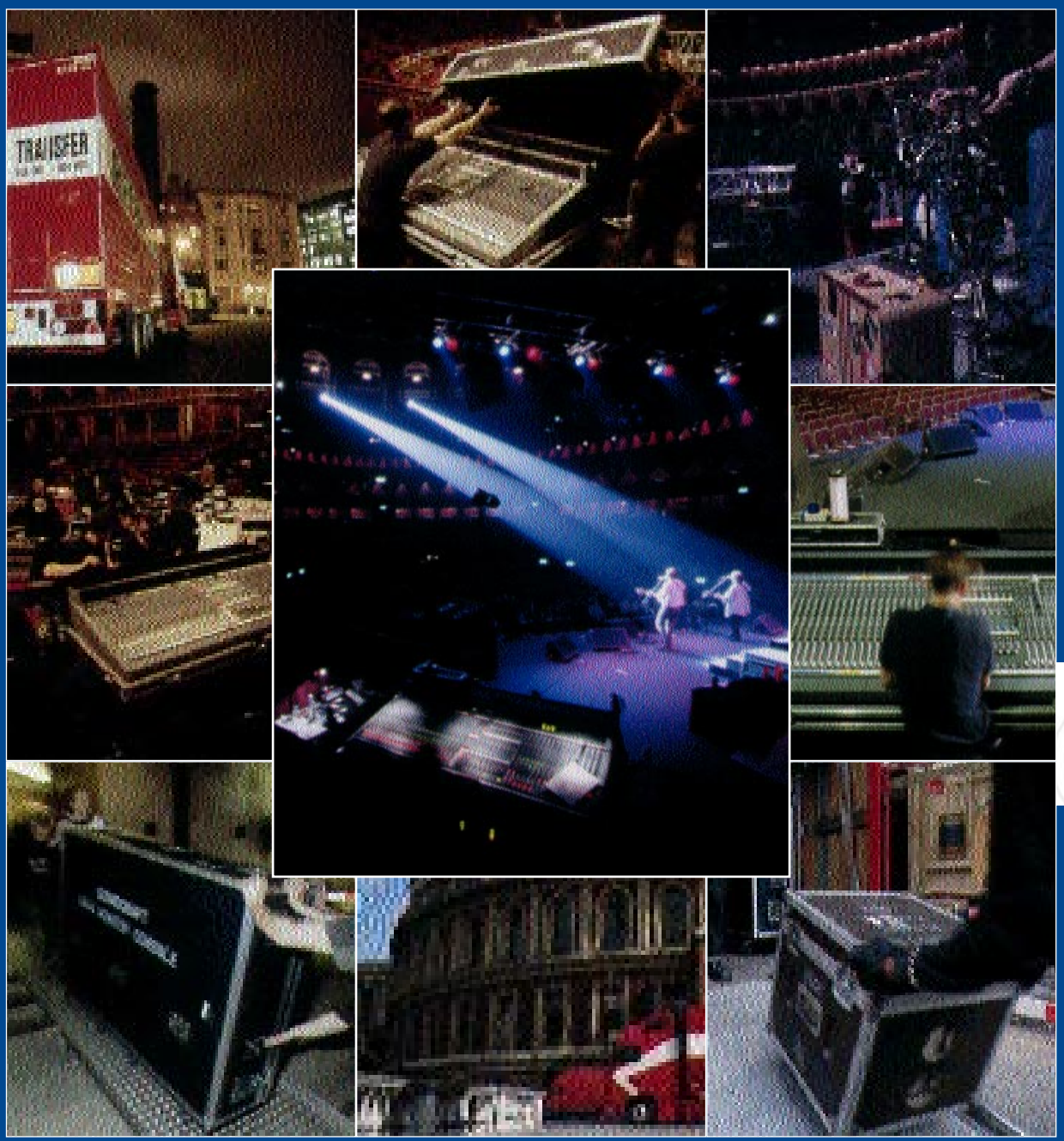


Soundcraft™

SM 24

SM24

FROM THE TOP

Soundcraft has been at the centre of the sound reinforcement industry since its early days, satisfying the needs of the world's most exacting headline acts. On stage, this type of experience matters most - where every piece of equipment must help the engineer to achieve the best possible sound under difficult conditions. Reliability, ease of use and the right facilities are of prime importance to any monitor engineer.

Access All Areas

The Soundcraft SM24 is a new generation of audio console, and represents the ideal solution to a wide range of problems. As a purpose-built twenty-six bus monitor console specified by some of the world's top monitor engineers, it will rise to any challenge; yet as a front-of-house desk it offers much more flexibility than conventional designs. A proven, compact frame reduces transportation costs and increases on-stage space, while the SM24's state-of-the-art electronic design helps to ensure a reliable performance every time.

Instant Stereo Configuration

The SM24 is available in 32, 40 and 48-input versions which may be intelligently linked together to provide as many channels as required. A total of twenty-six outputs are provided, including eight dedicated mono sends and a stereo sidefill mix. Sixteen of the SM24's outputs are individually configured at the touch of a button to act as independent mono mixes or true stereo feeds, which means that the SM24 fits the bill whatever the application; conventional mono systems, stereo (and in-ear) monitoring, or a combination of both.

Going Solo

Soundcraft has enhanced its advanced Logic Controlled Soloing system for the SM24; the engineer is now offered no less than four ways to use the console's comprehensive solo facilities. All the output solo points may be switched to compare processed and 'dry' signals, and the engineer may choose to monitor in mono or stereo.

The Bottom Line

The biggest benefit however, is a commercial one - for the engineer, rental company or venue owner. As a top-spec monitor console which is just as effective 'out front' as on-stage, the SM24 will never be off the road!



SM 24









THE INPUT MODULE

The standard input features Soundcraft's low-noise wide-range input amplifier, which allows any low-impedance source to be connected to the rear-mounted XLR. Sensitivity is adjustable from -70dBu to +10dBu to suit microphone and line level inputs. 48V phantom power is individually switched, and a phase reverse switch is fitted.

4-band Parametric EQ

The SM24 benefits from a precise four-band parametric EQ section with three-way switched 'Q' values. This allows the engineer to use both general tonal adjustments and 'notch' filtering on the same source. The four frequency bands overlap for maximum flexibility, with ranges of 32Hz to 660Hz, 70Hz to 1.4kHz, 470 Hz to 10kHz and 700Hz to 14kHz. Each band may be selected to operate with Q values of 0.5, 1.2 or 2.5. In addition, a variable high-pass filter (30Hz to 400Hz) is provided.

An insert point is fitted to the mono input; this may be selected internally to be pre or post EQ, and may be bypassed if not required.

Mono and Stereo Configuration

The SM24 boasts a unique configuration system which offers the engineer eight mono outputs, plus either sixteen further monos or up to eight stereo sends. In mono mode, the upper and lower dual-concentric controls are configured as two separate mono sends. In stereo mode, the controls are configured as Level (upper) and Pan (lower). A separate stereo bus is also provided for the creation of a side-fill mix. All sends are selectable as pre or post fade by the front panel switches, minimising preparation time.

Muting and VCA Assignment

Each input may be muted using the illuminated CUT switch, and may be assigned to any combination of 8 mute groups, controlled from the VCA Main module.
The eight VCA Mains are used to affect input levels; each channel may be assigned to one or more VCA groups if required.

The engineer may monitor a channel by pressing the illuminated PFL switch. Channel level is controlled by a 100m long-throw fader; pre fade input level is displayed by an LED bargraph in the console meter bridge. A peak LED is used to warn of pre fade signals within 6dB of clipping.







THE OUTPUT MODULE

Each output module contains a mono output section and configurable stereo/dual mono output. Eight output modules are fitted to the SM24, controlling outputs 1-8 (mono) and 9-16 (dual mono or stereo).

Each output allows an external input to be connected for linking consoles; these inputs are routed via the EXT IN level control and ON switch, and may be monitored separately.

True Stereo Outputs

The combined external/internal mix is routed via a (switched) insert point for processing. Outputs 1-8 are controlled by a 100mm long-throw fader and adjacent bargraph meter. In Mono mode, outputs 9A to 16A are controlled by a similar fader, whereas outputs 9B to 16B utilise a rotary control. When switched to stereo (using the STE mode switch), the 'A' group controls are used to affect the stereo output, while the 'B' group controls remain unused. An LED adjacent to the 'A' group fader indicates whether the output pair is working in stereo or dual mono mode.

Flexible Sub-grouping

As well as acting as normal monitor sends, the SM24's outputs may be used as sub-groups and fed to the stereo L and R outputs. This allows the SM24 to be used as a twenty-six bus front-of-house console, with either mono or stereo groups and auxiliary sends. Outputs may be phase reversed if required.

Monitoring and Metering

Post-fade outputs are monitored by the engineer by using the AFL switch; this may be selected as pre or post the insert point to give an instant check on the effect of outboard processing on the mix. Each output may be muted by the illuminated CUT switch. Outputs 1-8 have an LED bargraph meter adjacent to the fader; the meters for outputs 9-16 are located in the console meterbridge.













THE MAIN MODULE

The SM24 is provided with a multi-function oscillator which may be selected to give either pink noise or a single frequency between 63Hz and 10kHz. The oscillator is routed via the TB/OSC switches on each output.

Comprehensive Talkback Routing

The SM24's talkback system allows the engineer to communicate with any on-stage personnel or with the front-of-house engineer, either individually or as a pre-selected group. This unique system also permits the front-of-house engineer to talk to the stage via the SM24's routing switches.

Dedicated Stereo Mix

The SM24 Main module contains the controls for the dedicated stereo output. This may be used as a side-fill send, and extra stereo mix or as a stereo main output in front-of-house applications. The Stereo output is fitted with the same controls as the other outputs.

Advanced Soloing

The SM24 uses Soundcraft's Logic Controlled Solo system for the engineer's monitor feed. This advanced system gives the engineer a choice of four ways of working.

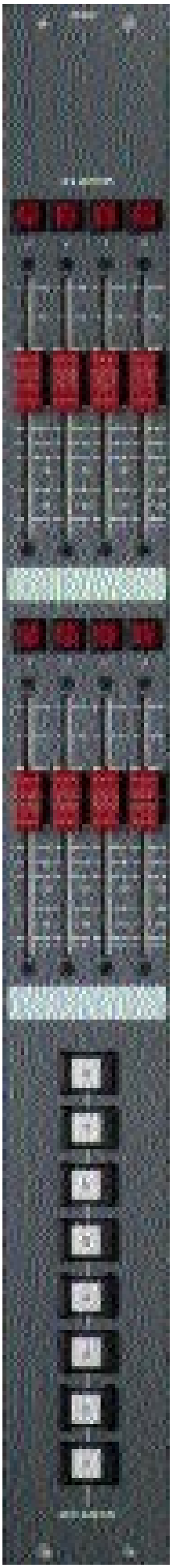
Normally, all PFL and AFL selections are additive to allow monitoring of multiple sources, using a mono or stereo monitor feed. If the SM24 is switched into 'Autocancel' mode, each new selection cancels the previous solo, speeding up an engineer's search for a particular signal. With 'Input Priority' selected, any PFL selection will override an AFL signal, for quick input/output comparisons. Finally, the 'Input Autocancel' mode allows PFL selections to autocancel without affecting AFLs (and vice-versa), while giving PFL selections priority over AFL signals. This gives the engineer a very rapid method of monitoring numerous input and output signals in quick succession.

In each mode, the clearly illuminated 'Solo Clear' button will remove any AFL or PFL selection immediately.

The engineer's output is fed in stereo via a 100mm long-throw fader and L/R selection switches. A headphone feed is also provided.

Mode	*Autocancel button*	*Input Priority button*	*Description*
'Normal'	0 (=off)	0	All output and input solos are additive.
'Autocancel'	x (=on)	0	All solos autocancel, no distinction between output and input.
'Input Priority'	0	x	If an output is left on solo, soloing an input will temporarily override the output but will return to it when input is unsoloed.
'Input/Output Intercancel with input Priority'	x	x	Combination of last two- as input priority, but also with autocancelling between groups of outputs and groups of inputs.





THE VCA MAIN MODULE

The SM24's eight VCA groups are controlled from the centre of the console by 100mm faders and illuminated Mute buttons. In this way, independent groups of inputs may be controlled by single faders, and the VCA Mutes add to the control provided by the dedicated Mute groups.

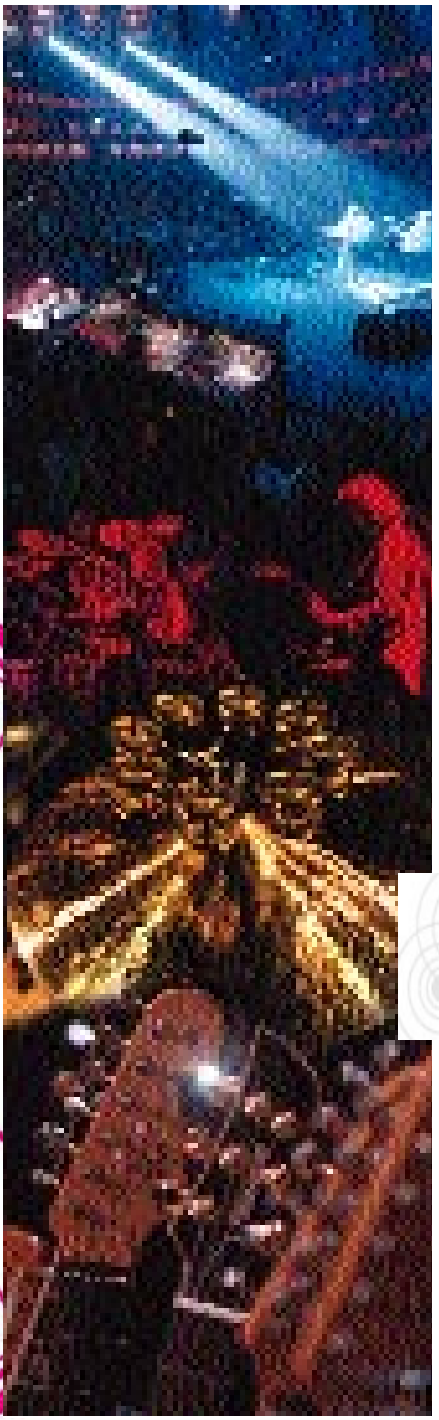
Multiple VCA Assignment

Inputs may be assigned to one or more VCA groups, using the illuminated switches on each input module. Each VCA fader affects each assigned input fader by between -90dB and +10dB. However, overall gain is limited to +10dB even if an input is assigned to more that one VCA group, to prevent excessive signal level and loss of headroom.

Dedicated Mute Groups

In addition, eight independent Mute groups are provided which are controlled by large illuminated switches in the VCA Main module. Any channels assigned to a Mute group will be muted and their CUT switches will illuminate when the relevant main switch is active to indicate their status.







CONSOLE LINKING AND POWER SUPPLIES

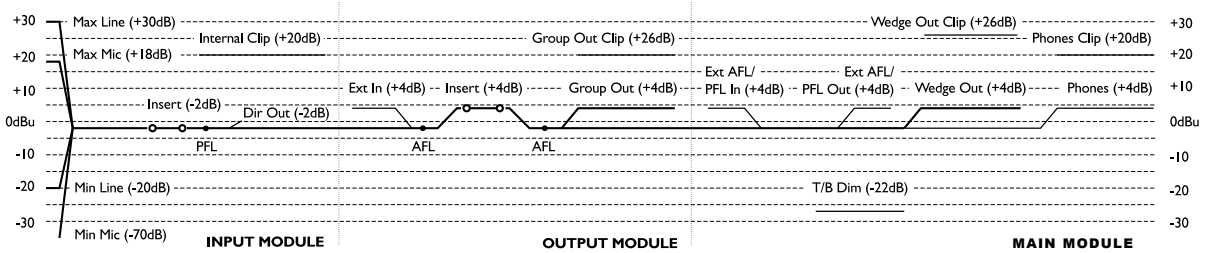
Power Supply
The SM24 is supplied with a CPS950 power supply unit as standard. As an option, a second CPS950 and Auto-changeover unit may be specified for full redundancy.

Linking Facility
For larger events or installations, multiple SM24 consoles may be linked to provide integrated control of audio and logic functions. Consoles are connected in a 'cascade' system, enabling one console to act as overall control for output level, mute groups, VCA groups and soloing.

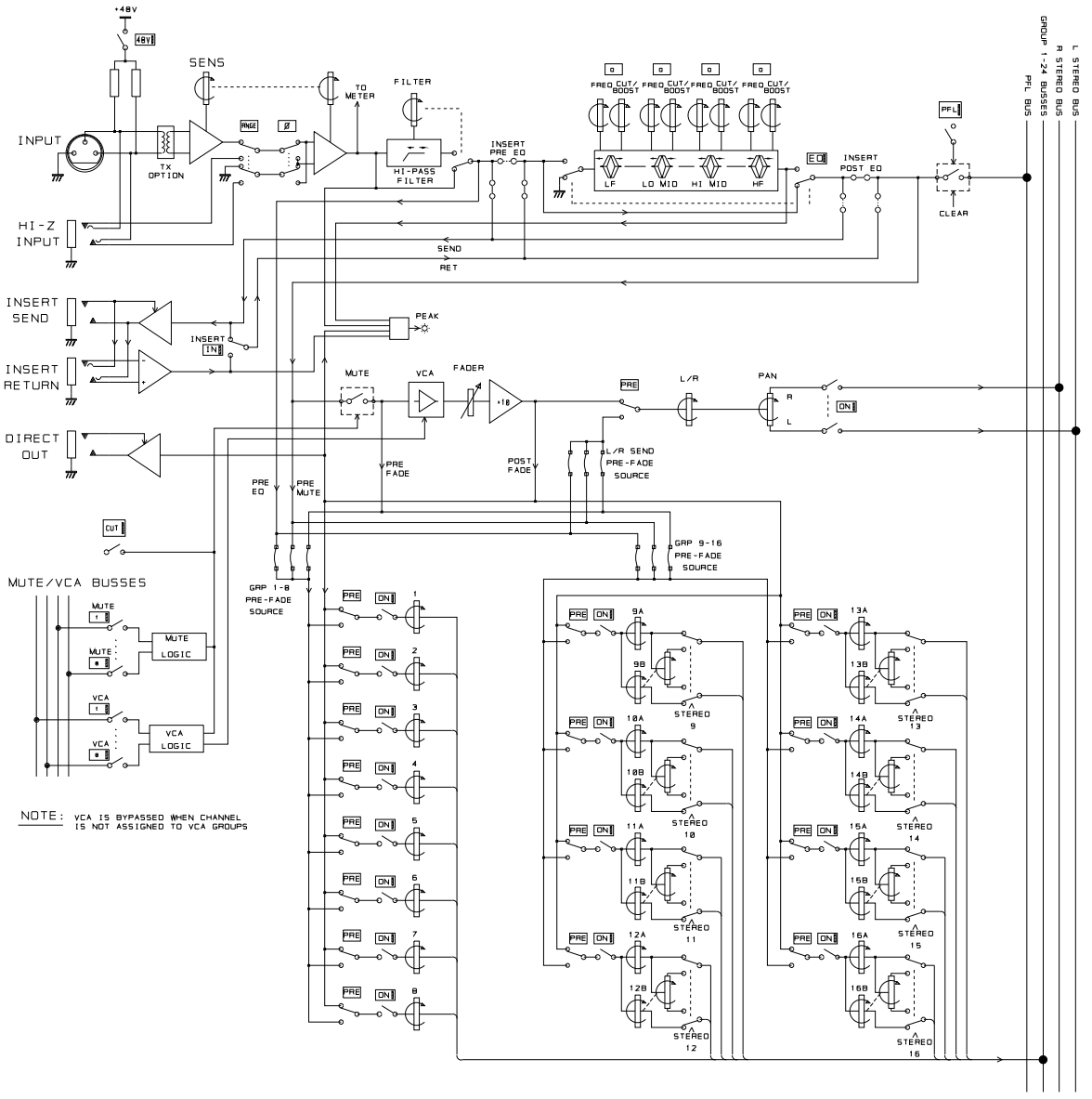
Communications
When connected to any other Soundcraft console, the SM24 provides an integrated FOH-to-Stage talkback system via a four-wire link.
The SM24 is also fitted with an innovative interface for ring-type communication system, allowing remote personnel to signal to the console by flashing the desk's working lights to indicate an incoming call.

Protection
As with all Soundcraft touring consoles, the SM24 is available with an optional flightcase, either with or without cable box, for long-lasting protection on the road. Power supplies may also be cased to provide a 'ready-to-roll' package for rental companies.

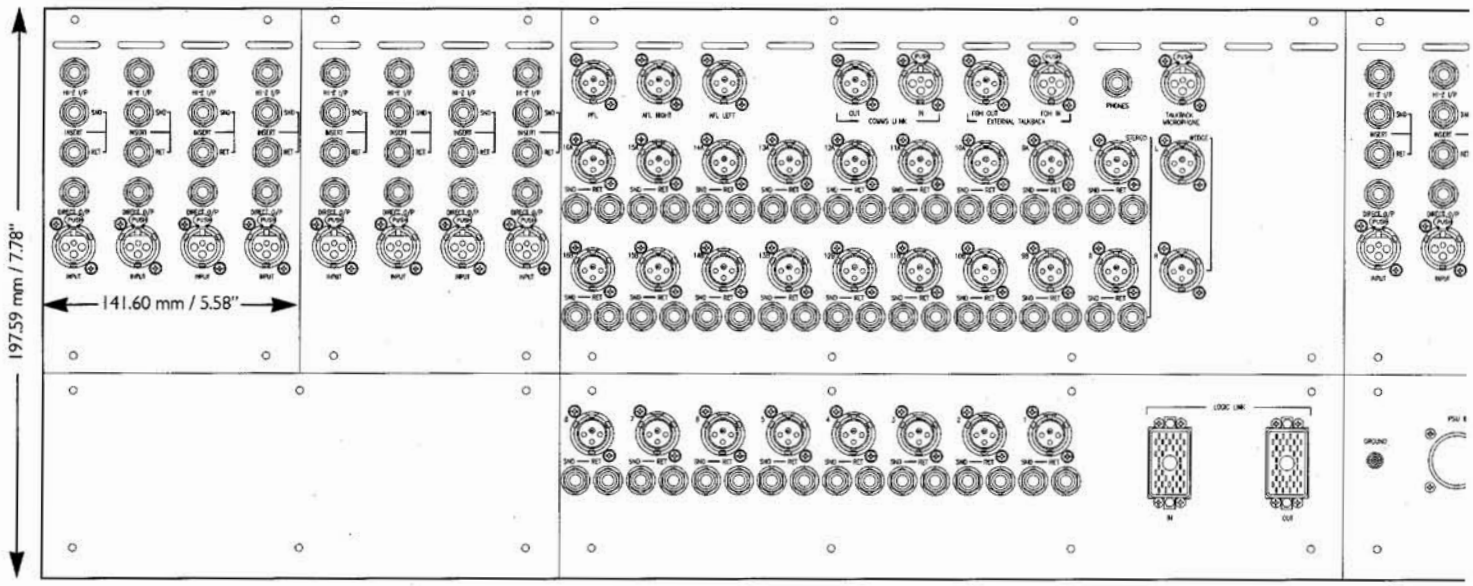
SM24 NOMINAL LEVEL DIAGRAM



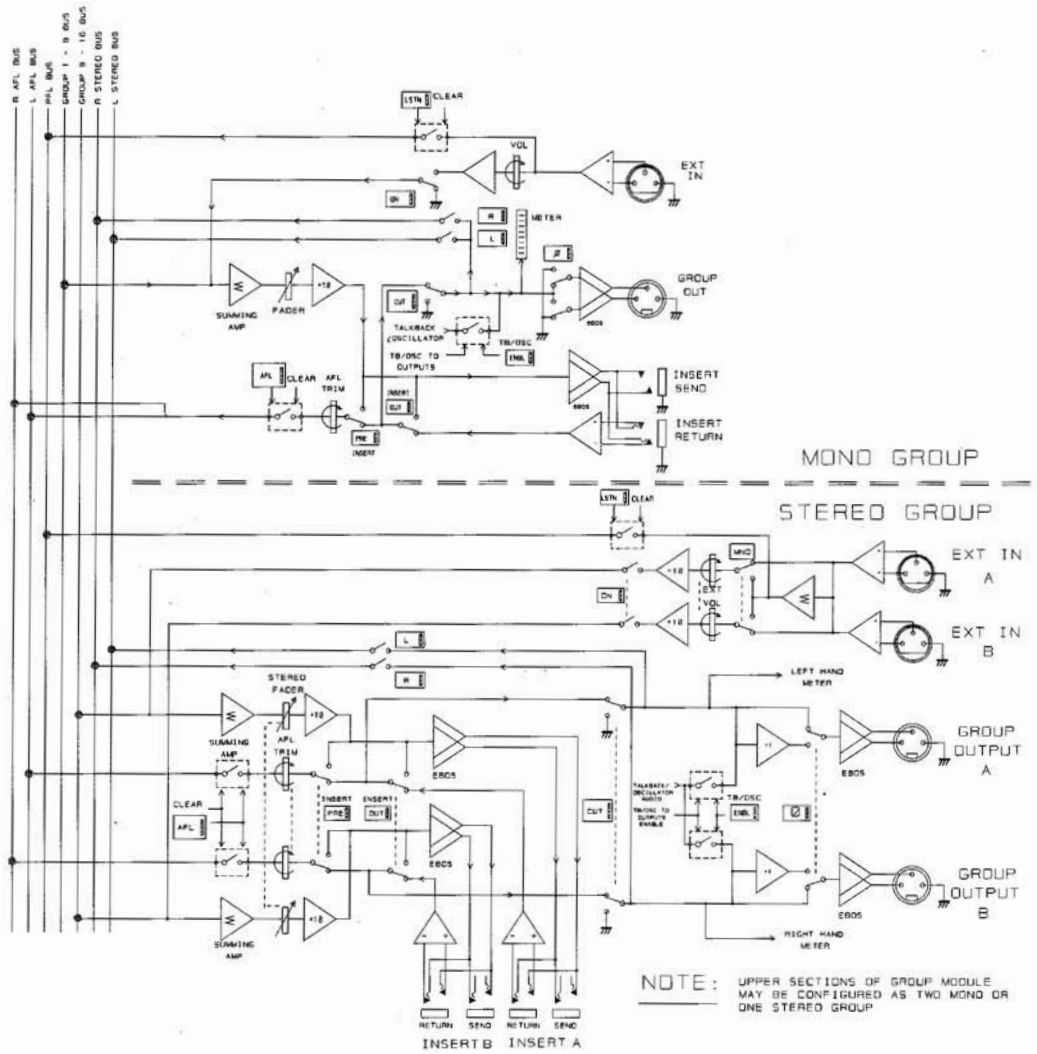
INPUT MODULE BLOCK DIAGRAM



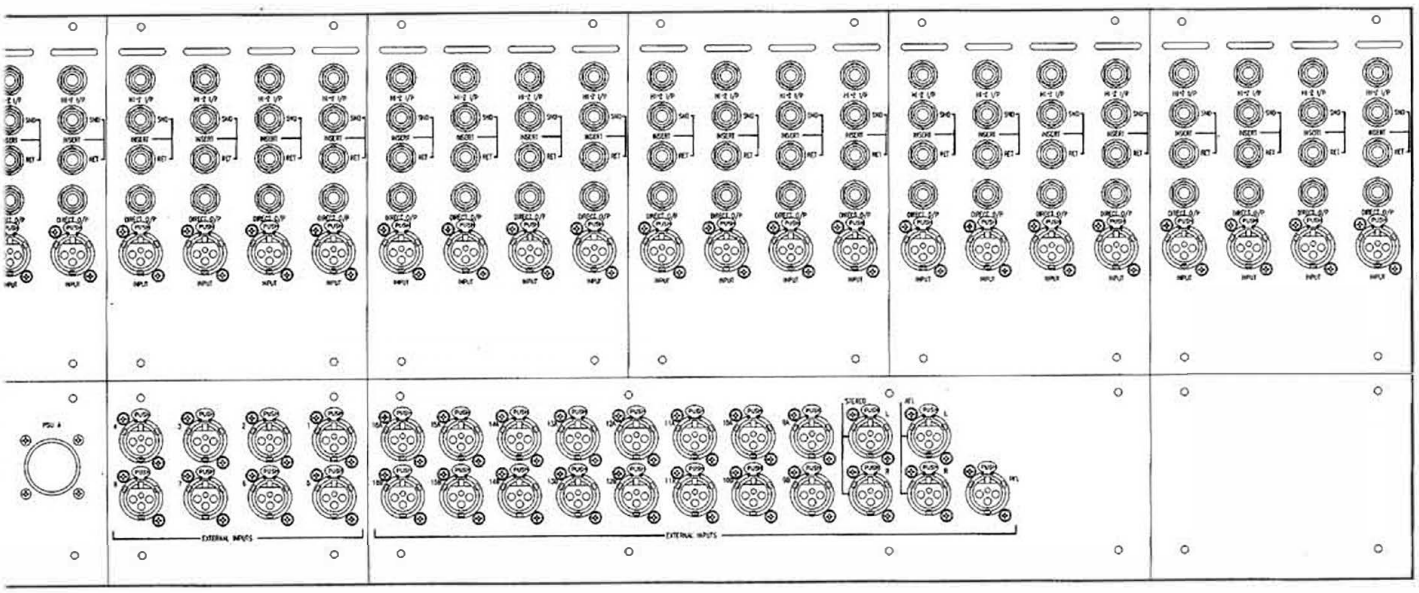
REAR PANEL LAYOUT (32 CH. SHOWN)



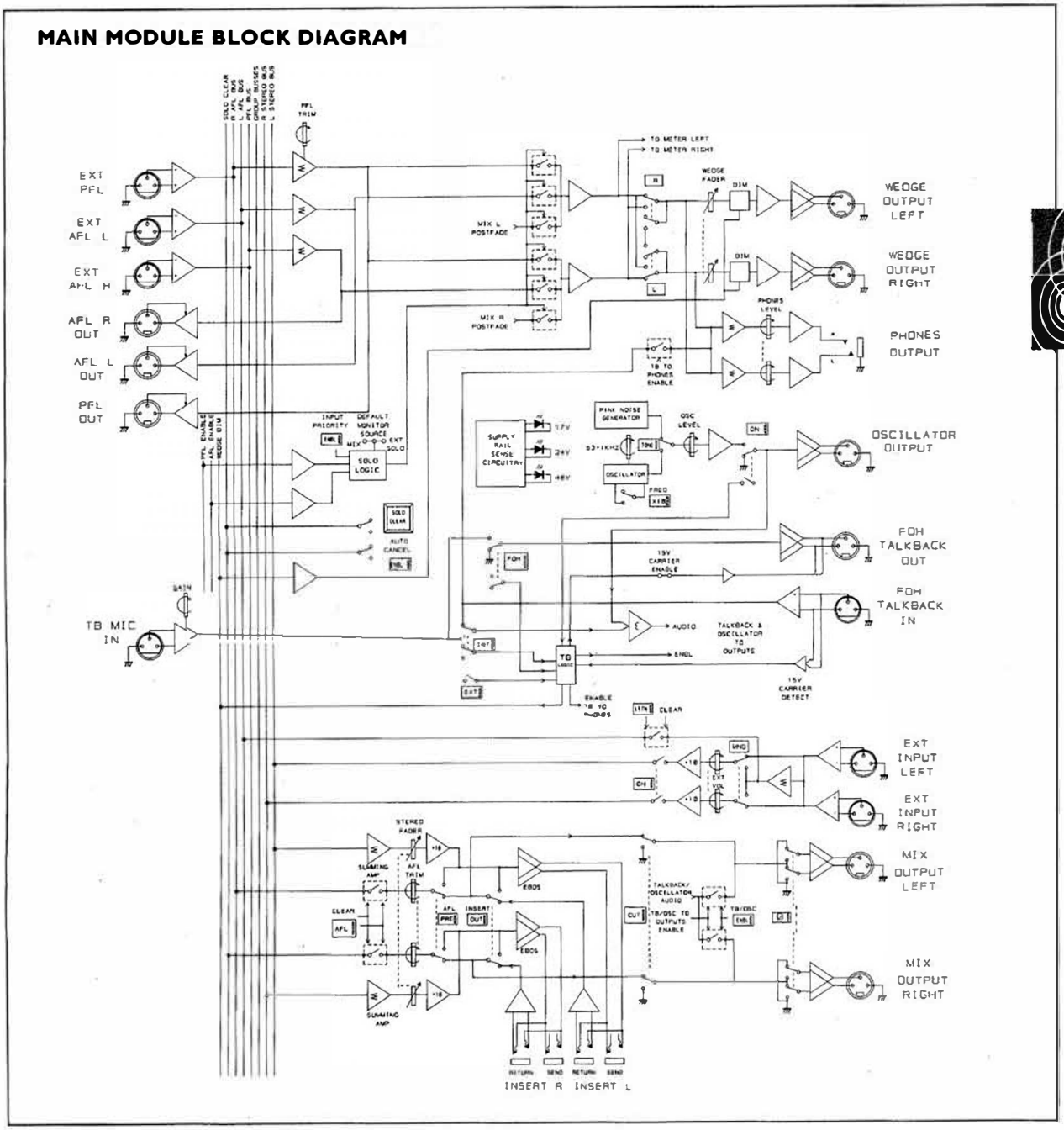
OUTPUT MODULE BLOCK DIAGRAM



NOTE: UPPER SECTIONS OF GROUP MODULE MAY BE CONFIGURED AS TWO MONO OR ONE STEREO GROUP

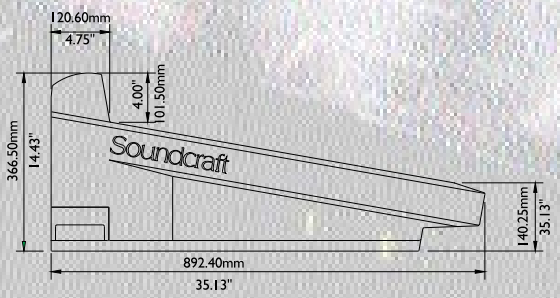


MAIN MODULE BLOCK DIAGRAM



SM24 SPECIFICATIONS

Frequency Response	Any input to any output	20Hz - 20kHz, +0/-1.0dB
Total Harmonic Distortion	(All measurements at 20dBu, VCAs bypassed)) Line In to Group or Mix out	Less than 0.007% @ 1kHz Less than 0.025% @ 10kHz
Noise	(22Hz-22kHz bandwidth, unweighted) Mic Input Equivalent Input Noise (200ohm source) Group Output Noise Mix Output Noise	 Less than -127.5dBu Less than -79dBu (40 ch routed) Less than -79dBu (40 ch routed)
Crosstalk	(All measurements at 1kHz) Input Channel Muting Input Channel Send Pot isolation Input Channel Send ON isolation Group Fader isolation Group CUT isolation Group to Group crosstalk Group to Mix crosstalk Mix to Group crosstalk	 Greater than 90dB Greater than 90dB Greater than 90dB Greater than 90dB Greater than 100dB Less than -80dB Less than -90dB Less than -90dB
Input and Output Impedances	Mic Input Hi-Z and Line Input Input Insert Send Input Insert Return Output Insert Send Output Insert Return Outputs	2kΩ balanced Greater than 10kΩ balanced 75Ω gnd comp Greater than 10kΩ balanced Less than 75Ω balanced Greater than 10kΩ balanced Less than 75Ω balanced
Input/Output Capability	Mic Maximum Input Level Line Maximum Input Level Input Insert Sends Input Insert Returns Output Insert Sends Output Insert Returns All Balanced Outputs Headphone Output	+18dBu +30dBu +20dBu into 2kΩ +20dBu +26dBu into 1kΩ +26dBu +26dBu into 1kΩ +20dBu into 1kΩ 150mW into 8Ω
Input and Output Levels	Mic Input Sensitivity (XLR) Line Input Sensitivity (0.25" jack) Input Insert Send/Return Output Insert Send/Return Outputs	-2dBu to -70dBu, +10dBu to -20dBu +10dBu to -20dBu -2dBu nominal +4dBu nominal +4dBu for 0VU



CONSOLE	LENGTH	WEIGHT
32 ch	1646.70mm 64.83"	110kg / 243lbs
40ch	1929.90mm 75.98"	140kg / 309lbs
48ch	2213.10mm 87.13"	170kg / 375lbs

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