

<u>SIGMA</u>

OPERATOR'S MANUAL SOFTWARE VERSION 1.16

Issue 4

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Whilst the Company takes the utmost care in ensuring that all details in this document are correct at the time of publication, we reserve the right to alter specifications & equipment without notice. Any changes we make will be reflected in subsequent issues of this document. The latest version will be available upon request.

This publication is for International usage.

Please also refer to the User Registration page at the end of this manual.

Please observe the following:-

After Sales Modifications.

Modifications to this equipment by any party other than Calrec Audio Limited may invalidate EMC and safety features designed into this equipment. Calrec Audio Limited can not be liable for any legal proceedings or problems that may arise relating to such modifications.

If in doubt, please contact Calrec Audio Limited for guidance prior to commencing any such work.

ESD (Static) Handling Procedures.

In its completed form, this equipment has been designed to have a high level of immunity to static discharges. However, when handling individual boards and modules, many highly static sensitive parts are exposed. In order to protect these devices from damage and to protect your warranty, please observe static handling procedures, for example, use an appropriately grounded anti-static wrist band. Calrec will supply an electrostatic cord and wrist strap with all of it's digital products.

All modules and cards should be returned to Calrec Audio Limited in anti-static wrapping. Calrec Audio Limited can supply these items upon request, should you require assistance.

This applies particularly to digital products due to the types of devices and very small geometries used in their fabrication, analogue parts can however still be affected.





IMPORTANT HEALTH AND SAFETY INFORMATION

- This equipment must be EARTHED.
- Only suitably trained personnel should service this equipment.
- Please read and take note of all warning and informative labels.
- Before starting any servicing operation, this equipment must be isolated from the AC supply (mains).
- Fuses should only be replaced with ones of the same type and rating as that indicated.
- . Operate only in a clean, dry and pollutant-free environment.
- Do not operate in an explosive atmosphere.
- Do not allow any liquid or solid objects to enter the equipment. Should this accidentally occur then immediately switch off the unit and contact your service agent.
- Do not allow ventilation slots to be blocked.
- Do not leave the equipment powered up with the dust cover fitted.
- The rack mounting parts of this equipment must be fitted into an enclosure which complies with local regulations.

Cleaning

For cleaning the front panels of the equipment we recommend anti-static screen cleaner sprayed onto a soft cloth to dampen it only.

Explanation of Warning Symbols

The triangular warning symbols below contain a black symbol on a yellow background, surrounded by a black border.



The lightning flash with arrow head symbol within an equilateral triangle is intended to alert the user to the presence of dangerous voltages and energy levels within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock or injury.



The exclamation mark within an equilateral triangle is intended to prompt the user to refer to important operating or maintenance (servicing) instructions in the documentation supplied with the product.

POWER SUPPLY BLANKING PLATES (ZN4849-3 and ZN6020)

If you are in receipt of a ZN4849-3 or ZN6020 power supply unit please do not remove the blanking plates which are fitted to the unused output connectors. The maximum potential between the terminals exceeds 60 volts, the blanking plates are fitted to avoid the risk of electric shock.





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TECHNICAL CUSTOMER SUPPORT

Should you require any technical assistance with your Calrec product then please contact your local distributor, if outside the U.K. and Ireland. For a list of Worldwide distributors please see the Calrec Web site at www.calrec.com or contact Calrec UK.

If you do not have a local distributor, then please contact Calrec UK.

For Technical assistance within the UK and Ireland, please contact a member of the Calrec Customer Support Team at :-

Customer Support Calrec Audio Ltd Nutclough Mill Hebden Bridge HX7 8EZ England UK

Tel: +44 (0) 1422 842159 Fax: +44 (0) 1422 845244 Email: support@calrec.com Website: www.calrec.com

We can deal with all technical after sales issues, such as :-

Arrange repairs
Supply of replacement or loan units while repairs are being carried out
Service / commissioning site visits
Operational training courses
Maintenance training courses
Supply of replacement components
Supply of documentation
Technical advice by telephone

If you have any other issues regarding your Calrec purchase, then please contact us and we will do our best to help. Calrec welcomes all Customer feedback.

Stephen Brant Senior Customer Support Engineer





PRODUCT WARRANTY

A full list of our conditions & warranties relating to Goods & Services is contained in the Company's standard 'Terms & Conditions'. A copy of this is available on request.

CUSTOMER SUPPORT HOURS

Factory based customer support engineers can be contacted by telephone during normal office hours, or outside hours, a message can be left on the answering machine.

All messages are dealt with promptly on the next working day. Alternatively a message can be sent to them by email at: support@calrec.com

REPAIRS

If you need to return goods to Calrec, for whatever reason, please contact the Company beforehand in order that you can receive advice on the best method of returning the goods & that a repair order reference number can be issued.

STANDARD OF SERVICE

Ensuring high standards is a priority & if you have any comments on the level of service, product quality or documentation offered to you by Calrec, then the Customer Support team would be pleased to receive your comments through any of the normal contact numbers, the email address listed earlier or on the User registration form located at the end of this manual.

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Overview

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INTRODUCTION

The Sigma 100 is Calrec's second all digital production console designed for the most critical broadcast production and on-air applications. Based on the well established Alpha 100 digital system architecture, Sigma 100 provides comprehensive features and functionality with sophisticated failure protection systems.

The introduction of digitally controlled assignable systems in 1980 has allowed for their ergonomics to be continuously refined by user input and the Sigma 100 reflects this in its user interface. Fully assignable control means that any fader can control any channel, group or main output. The flexibility offered by digital control and a computer-aided memory system has been harnessed to provide greater functionality and ease of use.

Sigma 100 has been carefully configured to provide a high level of facilities and a no-compromise technical specification at a very competitive cost. It is available in four cost-effective processing / input configurations and four frame sizes, with a variety of additional input and output interface options. These packages provide focused levels of technical provision by keeping down the costs associated with large format consoles, without sacrificing reliability, ergonomics or technical specification.

Calrec has a world-wide customer base which includes many of the world's most prestigious broadcasters. By consistently focusing upon purely broadcast products, Calrec offers consoles with the most comprehensive combination of performance and features available. The high level of reliability of all Calrec products, many of which are still in daily use after 20 years, reflects a clear awareness of the critical nature of the operating environment.

This understanding of the real issues of broadcast operations is one of the many reasons why operators and management alike prefer Calrec. The Sigma 100 is designed to ensure this level of confidence will continue in the digital era.

ISO 9001 AND RAB REGISTERED



Calrec Audio Ltd has been issued the ISO9001: 2000 standard by the Governing Board of ISOQAR.

The award, for both UKAS and RAB registration, is the most comprehensive of the ISO9000 international standards. Granted in recognition of excellence across design, development, manufacture and aftersales support, the certification follows a rigorous and thorough review of Calrec's internal and external communication and business procedures.





PRINCIPAL FEATURES

Format

Up to 64 faders, with A & B layers of control, plus 2 main output faders with 2 sub-main outputs available on a second layer of control.

120 equivalent channels: Up to 48 stereo plus 24 mono channels or 60 stereo channels.

Comprehensive surround panning and monitoring with optional motorised joystick.

Optional I/O expansion via a wide area interface such as MADI or Hydra, Calrec's sophisticated audio networking system.

Channel / Group Facilities

All channels have 4-band EQ, 2-band filters, compressor and expander/gate.

Up to 12 auxiliary outputs which can be 12 mono or 6 stereo.

All groups have compressor and expander/gate.

Inserts can be pre EQ (on channels), pre fader or post fader.

Pre configured inserts are assignable to any channel or group.

All channels and groups have direct outputs, which can be pre EQ (on channels), pre fader, or post fader.

Every direct output can be a mix minus feed.

All faders are motorised - a centrally assigned fader is also motorised.

Routing

8 stereo or mono audio groups.

Additional VCA style grouping system.

Up to 24 outputs for multi-track or general purpose feeds.

Tracks can be fed from pre EQ, pre fader, post fader or direct output.

2 main plus 2 sub-main stereo or 5.1 surround outputs with compressors.

simultaneous LCRS, stereo and mono outputs available from each 5.1 main output.

Every channel can route to every bus, at the same time, without restrictions.

Direct Input available to group, mains, aux and mix-minus busses.

System

On board Flash ROM memory system offers 99 memories.

PC backup allows an unlimited number of memories.

Sophisticated GPI facilities.

Independent DSP operation ensures audio continuity even during PC or control reset.

Console & racks boot from power on in less than 20 seconds.

Full control system reset in less than 15 seconds.

Automatic change over to hot spares for PSU's, Control cards & DSP cards.

Hot plugging of every card and module.

Hot plugged cards initialise upon insertion.





IMPORTANT CONCEPTS

Layering

Each fader can control two independent audio signal paths, named A and B. These signal paths can be either channels or groups, although for easy reference, the faders are simply known as "Channel Faders".

B signal paths are fully equipped with all the same facilities as an A path.

The faders are motorised so, when switching between A and B, the fader will move to the correct position.

This arrangement means there is less need for the operator to have to move around a large work-surface. Channels towards the ends of the control surface can be accessed more quickly than on a conventional, single layer design.

Less important signals can be placed on the B layer. Even then, only one button press is required to access them again. Using the ALL A and ALL B buttons is like moving to a different section of a single layer design.

The B layer does not need to be used if there are sufficient faders using just the A layer.

Assignable Control





Each fader has an "Assign" button (sometimes called the "Show Me" button) for each audio path. The Assign buttons are labelled A & B for channel or group paths, and M1, M2, S1 or S2 for the Main and Sub-Main output paths on the Main faders. Pressing the Assign button causes the central control modules (the "Assign Panels") to display and control the settings for that fader's Channel, Group or Main Path.

In this way a large number of controls can be accessed, for each audio path, from the central listening position. Also, accessing a control on a channel is usually faster using this method than on a conventional console.

A number of controls and displays are also provided on a per fader basis, to allow important information to be even more easily available.

In addition to the above, the type of audio path on each fader is completely assignable. The operator can choose which faders to use for the mono channels, which for the stereo channels, and which for the groups.





CONTROL SURFACE LAYOUT

4 x Twin Bigraphs MU8007	4 x Twin Bigraphs MU6007		4 x Twln B'graphs MU6007	MSD600	nal 3	4 x Twin B'grophs MU8007	4 x Twin Bigrophs MU8007	4 x Twin Bigrophs MU6007	TB Mic Rock Resel	
			Input Output PY4885s	Equaliser + Dynamics OF6002	Aux 0√P1-4	Ашх 0/P5-6			,	Y LCD Mount YW5213
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PATHS AND PORTS

On an analogue desk, the channel inputs are physical connections to the channel module or card. They are fixed. Channel 1's input is always channel 1's input (even though it may be possible to control channel 1 from a different fader). Every channel will probably have both a Mic and a Line input, even though most will only use one of them at any one time.

In a digital desk, there are two basic types of input: Mic/Line and Digital. However, it is not necessary to provide both types for every channel, as only one will be used at any one time. To provide both types for each channel would increase the cost, size and power consumption of the desk unnecessarily.

Instead, a "pool" of each type is provided, plus an internal matrix to allow any of them to be connected to any channel, giving much more flexibility than an analogue console. The matrix can be thought of as an electronic patch-bay with the added advantage that any connections made can be stored with the console's memories, and recalled at a later date. A similar matrix and "pool" is provided for the outputs. This is also stored with the memories.

Each channel can select from two inputs (1 and 2), which can be any combination of Mic/Line and Digital. Both inputs can be set up independently, using separate input controls (input gain, phase reverse, phantom power, etc). The switching between the two inputs takes place after these controls.

The basic terminology is that channels, groups and mains are referred to as "Paths" within the digital processing system, and the inputs and outputs are referred to as "Ports" through which the audio signals have to pass. Ports are connected to Paths via the Matrix.

All ports are optional, including those for the monitoring. The system can be supplied with any combination of Mic/Line and Digital ports. Calrec digital consoles are available in a number of configurations, known as Audio Packs. Each Audio Pack includes a suggested complement of ports, the nearest of which can be chosen to match the requirements of the installation. The port quantities can then be fine tuned appropriately.





PORT LABELS AND LISTS

When the Sigma 100 is installed, all the Ports on the system are labelled to match the studio wiring. Some rules are imposed on this labelling:

- The I/O should be labelled in pairs.
- The label must be no more than six characters (to fit on the console's displays).
- The same label cannot be used more than once (but an input can have the same label as an output) to avoid confusion.

I/O is labelled in pairs to make it easier to use with any type of signal; Mono, Stereo or Surround. Also, Digital I/O is wired in pairs and it makes sense to deal with all the I/O in the same way.

The system automatically adds a left (1) and right (R) suffix to the label to distinguish the two halves of the pair, or an suffix when the pair is used together.

The pairs can be used either for two mono signals, or a stereo signal, or parts of a surround signal. This includes the digital ports if the external circuit allows them to be used for two mono signals.

One exception to these rules is that I/O which is dedicated, externally, to mono signals only (telephone lines, mono reverbs, mono distribution feeds, etc), can be specified as being mono in which case the two halves of the pair have separate labels and the L&R suffixes are not applied. Note that I/O labelled in this way cannot be connected in pairs to stereo paths.

In addition to labelling, each port will have been allocated to one of a number of lists. This allows I/O which is wired for similar purposes to be grouped together for selection. Each list is automatically sorted alphabetically/numerically.

There can be up to 12 lists for input ports, and up to 8 lists for output ports. Each list can contain a mixture of normal I/O (labelled in pairs) and I/O dedicated to mono signals.

Each list will have been given a six character "list label" and the lists will have been sorted into the order in which they appear on the selection screens. The lists will appear in the same order on the I/O screens or optional I/O matrix panel (if fitted). There is the option to miss lists out from the I/O Matrix selection. This reduces the number of times the pot needs to be pushed, to go through all the available lists.





SIGNAL PATHS

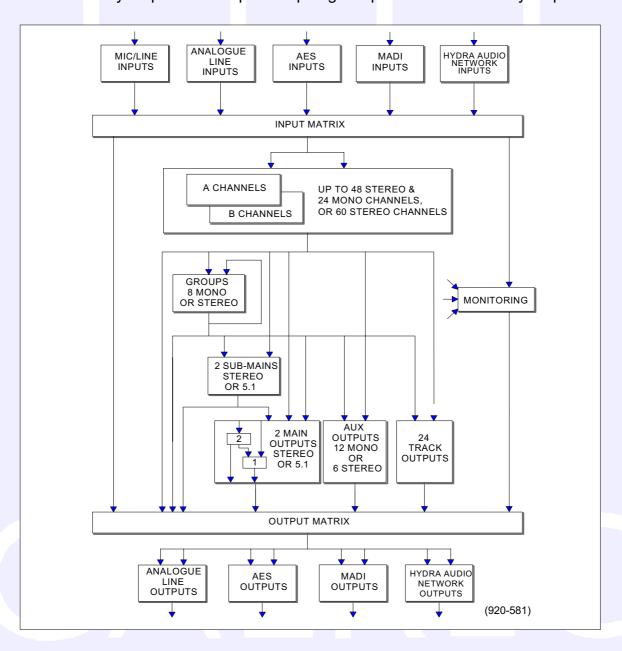
The Sigma 100 system can have 120 equivalent channels: Up to 48 stereo plus 24 mono channels, or 60 stereo channels.

The 8 groups can each be designated as stereo or mono. In addition, as many VCA style groups as required, can be created.

The 2 Main plus 2 Sub-Main outputs can each be designated as Stereo or 5.1 Surround. If they are 5.1 Surround, then a mono rear is derived at the output to allow them to be used as LCRS mains. Stereo and Mono downmixes of the 5.1 are also produced.

If a channel is panned to both a Stereo and 5.1 bus simultaneously, the pan law to each will be correct, as though the other bus did not exist, even though the same control is used to achieve the pan.

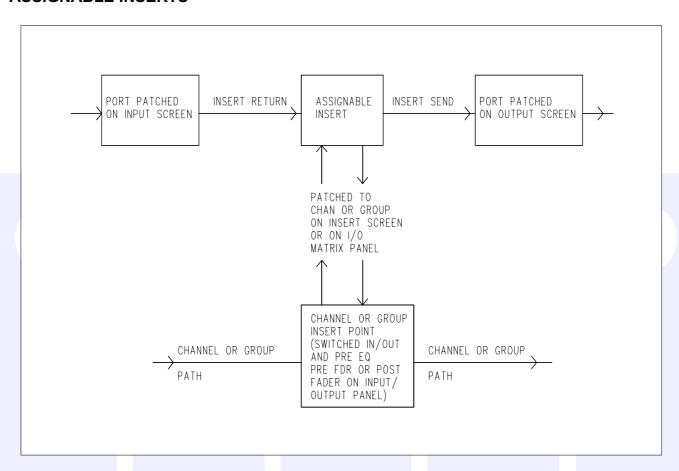
The 12 Mono auxiliary outputs can be paired up to give up to 6 Stereo auxiliary outputs.







ASSIGNABLE INSERTS



The system provides a pool of assignable inserts which can be used in the stereo and mono channels and groups. In addition, the main outputs, because they can be surround, have their own dedicated inserts.

Assignable inserts are designed to be pre-connected to send and return ports which are in turn pre-wired to insertable devices or to an insert patchbay (normally there would be some assignable inserts of each type). The Input and Output screens allow "send and "return" ports to be set up for the assignable inserts. They can then be patched into channels or groups as required, using either the INSERT screen or the optional I/O Matrix panel (if fitted).

To facilitate the assignment of these inserts, the system allows the user to label them, in a similar way to how the Ports are labelled. The same rules also apply, including the exception that inserts dedicated to mono devices can be marked as such.

The assignable inserts can also be divided into up to 4 lists in a similar way to I/O. This separates them for selection on the optional I/O matrix panel pot-switch (if fitted).

It is recommended to specify the number and type of ports for inserts corresponding to the number and type of insertable devices available plus a small number for occasional devices via a patch bay.





INPUTS & OUTPUTS

There are two types of ANALOGUE INPUT CARD:

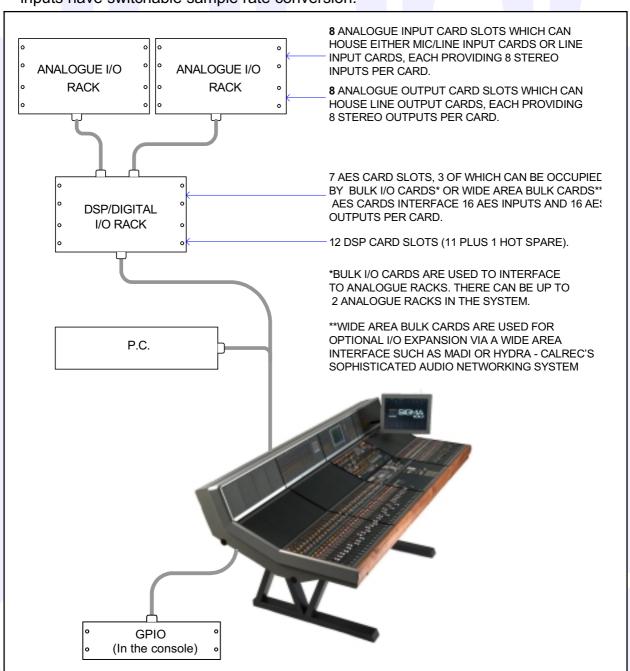
- Analogue Mic/Line input with 16 Mono (8 Stereo) inputs per card.
- Analogue Line input with 16 Mono (8 Stereo) inputs per card.

There is one type of ANALOGUE OUTPUT CARD:

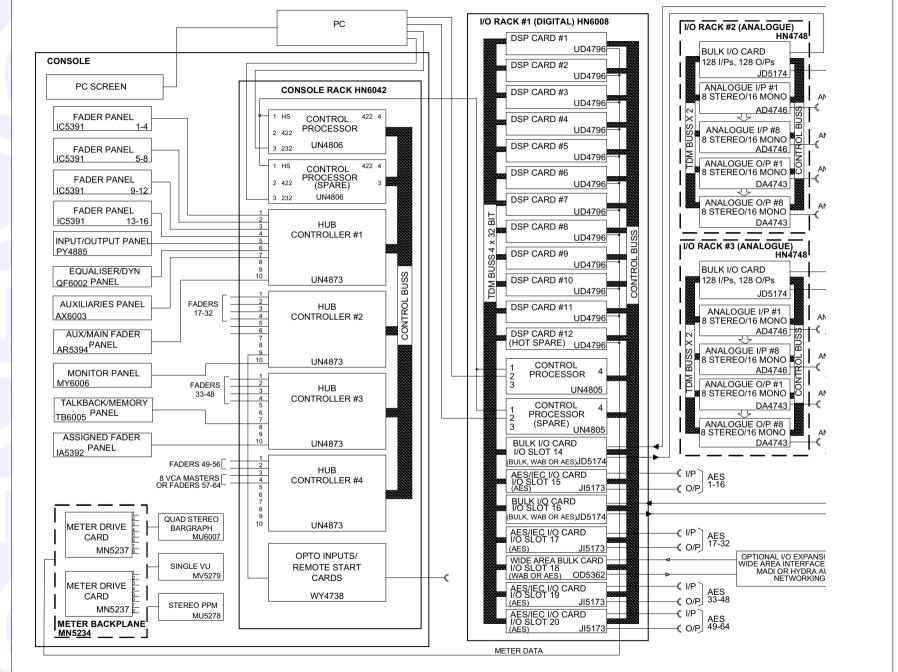
■ Analogue Output card with 16 Mono (8 Stereo) line outputs per card.

There is a DIGITAL (AES3) INPUT/OUTPUT CARD:

Digital (AES3) input/output card with 16 AES inputs and 16 AES outputs per card. All inputs have switchable sample rate conversion.



TYPICAL DIGITAL SYSTEM DIAGRAM





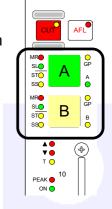


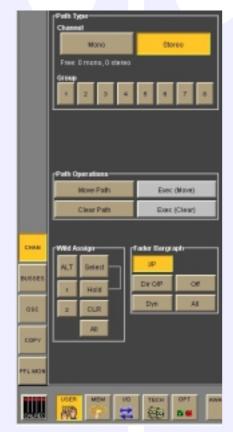


GETTING STARTED

As a safety measure, ensure that all faders are minimised, and the control room level control is no more than half way up.

Assuming that the basic system ports have been set up and the control room monitor speakers are connected to the appropriate outputs, firstly choose a channel fader by pressing the A (or B) button on the channel fader module.

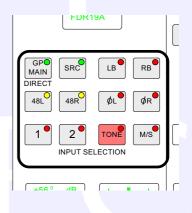






Next, go to the **USER-CHAN** Screen by selecting USER and then CHAN on the touch screen. If a Path Type is not already indicated, press either the Mono or Stereo buttons to assign a mono or stereo channel to the fader, or select one of the group buttons 1-8 to assign a group to the fader. An optional I/O Matrix panel can be fitted so that these functions can be performed on the control surface.

Next, go to the Input Output module and select Input 1.



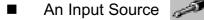




Go to the Input Ports Screen by clicking I-O and then INPUT



Connections are made by selecting:





A Channel Input

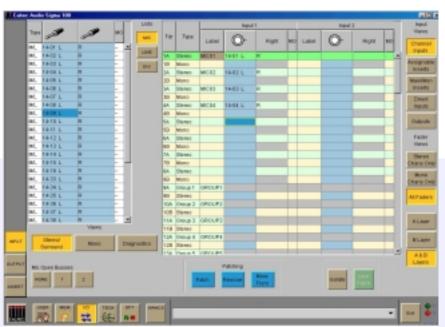


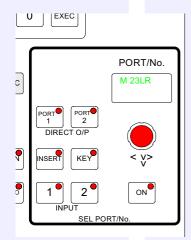
...and selecting PATCH.



The Input Source label will appear in the Channel Input NAME field and on the fader display on the console.

By clicking on one of the Name cells, the input name can be edited. The PC keyboard slides out from the front of the console.



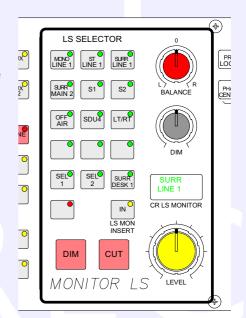


Connections can also be made using the optional I/O Matrix panel. Select Input 1 in order to assign a port to it. Do this by turning the selector control knob to scroll through the available ports. Pressing the knob down and turning it will switch to another list of input ports. Once you have arrived at the port you want, press the ON button to connect it. (This is like inserting the patch cord).

You are now ready to use the channel as you would on any other desk. Set the input gain and panning etc, on the Input-Output panel, the EQ and Dynamics on their panel, and route the signal to Main 1, using the routing controls.

Now fade up the Main 1 fader and select ST Line 1 on the LS selector (Monitor LS panel). If the channel fader and LS volume controls are set correctly you should hear the signal.

Refer to the descriptions of the individual control panels and screens for a more detailed description.











Fader Area



Channel

Control



"CHANNEL" FADERS

(4) GROUP MAIN 1 MICO 2 LINEO S1 DIGO S2 O SRC 5 O TRACK O Central (4) PEAK 🔴 DYN O 0 12 0 16 0 20 0 24 48 0 5 FLTR (M/S ● 40 (4) IC5391 4

Channel and Group Paths are controlled by the console's "Channel" faders. Each fader can control two independent audio signal paths, named A and B. Any fader can control any channel or group path. Main Output paths have their own dedicated faders on the Routing, Aux and Main Outputs panel.

The A & B buttons are used to select either of the two channel paths A & B. Selecting a path will "call" the fader to the Assign Panels. Any changes made to the Assign Panels will affect the selected path only. When switching between the two paths, the indicative displays and fader position will change to match the settings of each path.

The label in the display is the name associated with the input assigned to the path, or the group number if the path is a group. The input labels default to the Port ID unless a name is entered via the PC. If path A is active, it's label will be displayed in the top half of the display in green. If path B is active, it's label will be displayed in the bottom half of the display in amber. There are also A & B LEDs to the right of the A and B Assign buttons to indicate the active path.

The CUT button cuts the channel or group. Its effect is the same as fading out the channel or group. Optionally, ON buttons may be fitted instead of CUT buttons, which switch the channel on.

The MR & SL LED's next to the Assign buttons indicate the Masters and Slaves of the VCA style group. To create a VCA style group, hold down the Assign button of the fader you wish to be the Master, then select the Assign buttons of the fader or faders you want as slaves. Slaves can be removed by de-selecting their Assign buttons with the Master's Assign button held down.

AFL will be heard through the monitor loudspeakers (main or small). AFL will be heard in surround provided that surround panning is in use and the loudspeaker system is surround.

The ST & GP LED's next to the Assign buttons indicate Stereo Channels (ST) or Groups and Group Faders (GP).

The fader bargraph indicates the level at the channel input (post the input gain & switching and the tone switching), the channel direct output, or the gain reduction of the dynamics, indicated by the three led's. Selection is made using the USER-CHAN screen.

The \land and \lor led's are normally off. They will only illuminate when the position of the fader knob is not the same as the level of the audio. For example, if a VCA Master is moved away from the `0' position, the null leds on the slaves will light. When illuminated they indicate whether the audio is above or below the position of the knob. The T LED indicates that the console has recognised that the fader has been touched.





The PEAK led will light if the channel, main or group signal is within 3 dB of the clipping level.

The EQ, FLTR, DYN and M/S leds indicate that these functions are active.

The ON led lights when the audio level is not at the ∞ position.

PFL is provided on the fader overpress and on the button. It will be heard on the small LS (or the main LS if PFL to Mon is selected via the PC).

"CHANNEL" CONTROL

The "Channel Control" section is situated directly above the channel fader section. A set of LED's provide indication of :

- Routing to groups and mains
- The currently selected input type (Mic, Analogue Line, or Digital)
- If the Sample Rate Convertor (SRC) is switched in (for AES inputs)
- Routing to any track
- Whether the Direct output is feeding the Mix Minus buss
- Whether the Direct output is being fed with a Mix Minus feed

This section houses two WILD controls per fader. Almost any Assign Panel rotary control for the selected path can be assigned to either Wild Control on the fader, including:

- Input Gain
 Aux Send Level
- Dynamics E
- Direct Output Level Pan and Balance
- Stereo Width Track Output Level

The A & B faders may also be assigned to a Wild control, in which case it will be the opposite fader which is being controlled.

Available Options

Depending on the options purchased, the button next to DIR TB can perform different functions.



Option 1

Normally selected using the Input/Output panel, each channel path can select between two input ports using the I/P 1/2 button. With the LED off, Input 1 is selected, and with the LED on, Input 2 is selected.



Option 2

The ALT WILD button allows switching between two complete sets of alternate wild settings. This would then allow up to 4 available wild controls per fader.





ASSIGNING FUNCTIONS TO WILD CONTROLS

Functions are assigned to Wild controls from the USER-CHAN screen. All the Assign Panel rotary controls incorporate a switch which is operated by pushing the control. These switches are used to assign the control to a Wild control as follows:

- 1) Select a Fader Path by pressing its Assign Button (A or B).
- 2) Select WILD ASSIGN 1 or 2 on the USER-CHAN screen.
- 3) Push one Assign Panel rotary control. For example, Aux 1 Send.

The control is now assigned and changes will show in the display. The colour of the Wild control display will indicate the fader path the control is related to: Green for A, Amber for B.

Multiple Wild Control Assignment

The button above HOLD toggles between SELECT mode and REGIONS mode, which allow functions to be assigned to multiple fader path's Wild controls at a time.

In SELECT mode, select Wild 1 or 2 on the screen and HOLD (both will light). Any number of fader paths can then be selected individually by pressing their fader assign buttons (A or B) which will illuminate. Pushing an Assign Panel rotary control will then assign that control to Wild 1 or 2 for all selected fader paths.

In REGIONS mode, select Wild 1 or 2 on the screen and HOLD (both will light). A block or region of faders can then be defined by pressing the fader assign buttons of the first and last fader path in the required region (Assign buttons of paths in the region will light). Pushing an Assign Panel rotary control will then assign that control to Wild 1 or 2 for all fader paths in the selected region.

It is possible to assign the same control to Wilds 1 or 2 for all fader paths. Select Wild 1 or 2 on the screen, and select ALL before pushing the required Assign Panel rotary control.

The selected Wild control can be cleared from it's assignment using CLR on the USER-CHAN screen. Select the required fader path or paths by pressing its Assign Button (A or B) or selecting a region as described above, then select CLR.



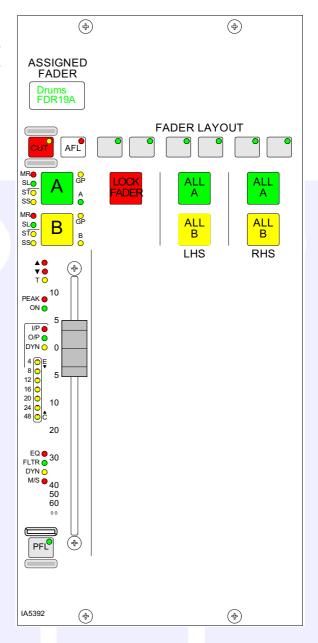




ASSIGNABLE FADER

The Assignable Fader is positioned towards the centre of the console, and allows any fader to be controlled from the optimum listening position. It works in parallel with the last "Channel" Fader selected.

Alternatively, LOCK FADER allows it to be fixed to a specific path.











Assign Panels





INPUT/OUTPUT CONTROLS

The input controls in the Input/Output section allow separate settings for the two channel inputs, and gain and ON/OFF for the group and main direct inputs.

(1) Input Settings

Each channel path can switch between two input ports using buttons 1 and 2. Optionally, each fader can have a dedicated selection button to select between inputs 1 and 2 in its channel control section.

SRC switches the sample rate converter on AES inputs.

48L & 48R switch phantom power on mic/line channel inputs. 48L is used for mono channels.

LB & RB provide Left to Both & Right to Both on stereo channels and groups.

M/S converts a sum & difference (mono/stereo) input to L & R on stereo channels.

ØL and ØR buttons reverse the phase of the channel inputs. ØL is used for mono channels.

The TONE button switches tone to the input of the channel or group, from where it can be routed as required.

(2) Gain Adjustment

Comprises 2 buttons for coarse ranging plus a knob for fine adjustment. Pressing both buttons at the same time sets the Gain to 0dB. For a group or main path, the controls set the gain of the direct input. Gain is adjust-

able from -18dB to +78dB for mic/line inputs, -18dB to +24dB for AES inputs, and ∞ to +10dB for direct inputs.

1

(3) Balance Control

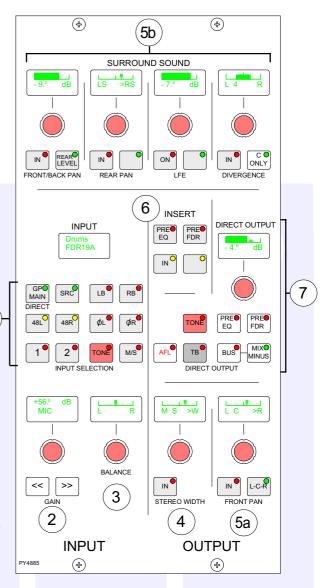
Operates on stereo channels only. When LB & RB are selected, the balance control acts as an input pan control.

(4) Width Control

Operates pre fader on stereo channels and groups. The rotary control adjusts the width from mono, through stereo, to wide. The control is switched in and out of the path using the IN button.

(5a & 5b) Stereo and Surround Panning

Stereo and surround panning is provided for channels and groups. Signals can be panned to both stereo groups and 5.1 outputs simultaneously. AFL can be heard in surround, post the pan controls, if the monitoring is surround.







The Front Pan allows the front signal to be panned from left, through center, to right. On stereo channels and groups, the L-R PAN acts as a balance control.

The Front/Back pan control pans the signal between front and back. When Rear Level is selected, the level to the rear only can be controlled. This allows signal to be fed to the rear without affecting the balance of the mix in the front speakers. Also, the front signal can be turned off and a level set to the rear which is different to that being sent to any stereo groups or mains which the path is feeding.

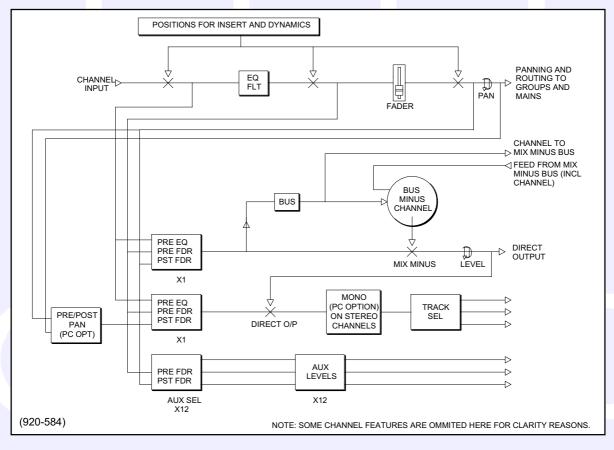
The DIVERGENCE control sets an amount of the centre signal to also feed L & R. Divergence does not operate on stereo channels and groups. The C ONLY button connects the channel output to the centre bus only. All other panning controls are disabled. The channel is fed to both L & R of stereo busses. On stereo channels and groups, C ONLY feeds a mono reduction of the stereo signal to the centre bus only.

(6) Inserts

Assignable inserts can be patched in and out of the channel path using the IN button. The buttons allow the insert to be patched pre or post fader or pre EQ. Assignable inserts must first be set up using the optional I-O Matrix panel (if fitted) or I-O screens (see page 17).

(7) Direct Output and Mix Minus

In the Direct Output section, BUS feeds the Direct Output signal to the Mix Minus Bus. The output of the Mix Minus Bus feeds back into the channel (or group) where the channel's signal is subtracted. MIX MINUS then feeds the resulting signal to the Direct Output. Therefore, every channel can produce a Mix Minus output which is a mix of all the channels routed to the bus apart from itself. MIX MINUS & BUS are independent buttons, so the Track routing selector and the Direct Output can be fed with the Mix Minus Bus, even if the channel is not feeding the Bus.







INPUT PORTS SCREEN





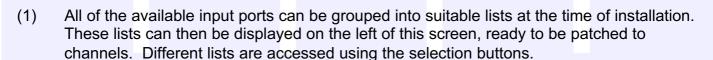
Path types and the assignment of sources to channels are set via the PC. As an option, the Sigma 100 can incorporate an Input/Output Selection panel (I-O Matrix), so that changes can be made from the control surface.



This screen is the Input Ports Screen and is used for "patching" input sources to channel inputs, Insert Returns, Direct Inputs or Outputs. The screens automatically scroll to follow the Assign button (A and B) presses on the faders.

button (A and B) presses on the faders.

Assignment is made by selecting a source, and an input or output, and selecting Patch.



- (2) The sources can be viewed as pairs (best for patching to stereo or surround paths), individual (best for patching to mono paths), or individual with the actual rack number, card slot and input shown (for diagnostic purposes).
- (3) These buttons select the different console path types which can have input ports attached (Channel Inputs, Insert Returns, Direct Inputs or Outputs). They will then be displayed in the main section of this screen. Selecting a source from the source list and a channel, insert return or output, then selecting PATCH will assign that source to the channel.
- (4) It is possible to choose which set of faders are to be available on and altered by this screen.





I/O MATRIX (OPTIONAL)

The I/O Matrix panel provides a set of path and port selection controls in addition to those already available on the screens.

Port Assignment

- Select input 1 or 2 on this panel in order to assign a port to the input (Note: This does not switch the channel from input 1 to 2, or 2 to 1 this is done using the Input/Output panel).
- Use the rotary control to scroll through the lists of available ports.
- Upon reaching the desired input port, press the ON button to assign the chosen port to input 1 or 2.

Lists

Pressing the rotary control gives access to lists of other types of input port which are set up during installation of the console. Each port can be allocated to one of a number of lists to allow I/O which is wired for similar purposes to be grouped together for selection. It is possible to determine which lists of input ports appear for selection on the I/O Matrix Panel using the Options-Misc screen. Making only the relevant lists available for selection reduces the number of times the pot needs to be pushed, to go through all the available lists.

Path Type Selection

The GROUP, STEREO and MONO buttons select the path type for the currently assigned fader. If the channel is to be a group, it's

number can be selected using the rotary control & ON button. The channel path type can also be selected using the USER CHAN screen.

Direct Outputs

Ports can be connected to channel and group direct outputs, first by selecting PORT1 or PORT2, and using the rotary control and ON button to choose and select ports. (Two ports can be connected to each Direct output).

Inserts

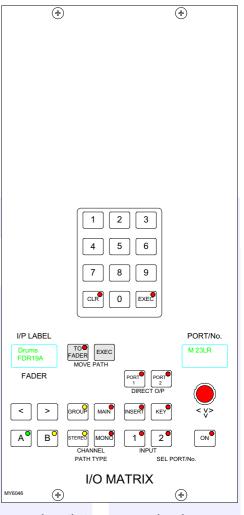
Pressing the INSERT button allows the rotary control and ON button to control selection of inserts on channels and groups. The insert is then patched in and out of the signal path using the buttons on the Input-Output panel. Send and return ports for inserts must first be set up using the I/O screens.

Fader Path Selection

In addition to the Assign buttons on the fader modules (A & B), fader paths can be selected using this panel. The nudge buttons are used to scroll through the faders, and the A and B buttons choose the path. This is for use when pressing the fader assign button is not convenient, or should a fault develop on the fader strip.

Moving Paths Between Faders

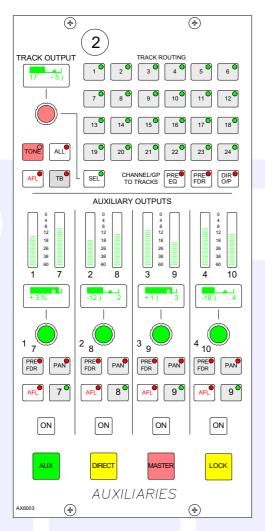
Paths can be moved or swapped from one fader to another, using the MOVE PATH buttons. Select the fader assign button of the path that you want to move, and press TO FADER. Then select the destination fader assign button, and press EXEC. Paths can also be moved using the screens.

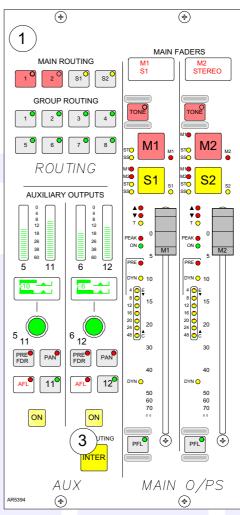






ROUTING





- (1) Routes to groups or main outputs for the selected path can be made or removed by pressing the numbered buttons. In addition to the indicative LEDs on the fader's channel control section the button LED will light to indicate that the route is made.
- (2) The TRACK OUTPUT section controls the output to the multi-track, after the track mix. The 24 track outputs can also be used as IFB or general purpose bus outputs. 24 optional bargraphs can be fitted in the upstand to monitor the output level.
 - The track output being controlled is selected by pressing SEL plus the required track routing buttons 1-24. ALL makes the control a Master, controlling all the tracks at once.
 - The CHANNEL/GP TO TRACKS section selects the signal feeding the track routing selector to be post-fader (All OFF), pre-EQ, pre-fader or a copy of the direct output (post the mix minus and direct output level controls see Channel Schematic on page 31).
- (3) INTER (latching) puts the panel into Interrogate mode. If the main, group or track routing buttons are held down, the fader assign buttons of all the paths feeding that bus will light. Paths can be added or removed from the bus under interrogation, by selecting or deselecting their fader assign buttons.





AUXILIARIES

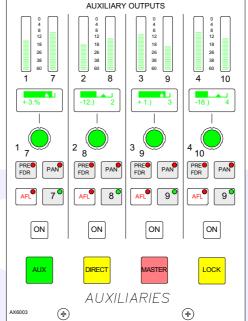
The buttons at the bottom of the Auxiliaries section influence the function of the controls.

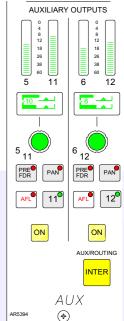
The displays above each rotary control show what is being controlled (e.g O/P or DIR) until they are adjusted, when the level is then displayed. A short time after the adjustment has been made, the display will show the label again.

AUX

When AUX is selected, this section of the module controls the feeds from the channels or groups to the auxiliary output busses. Each feed can be pre or post the channel or group fader.

The ON buttons switch the feed to the auxilliary on.





There can be 12 mono or 6 stereo auxiliaries. The Auxilliary buses are pre-set to be mono or stereo via the PC. If, for example, aux 6 is stereo, then aux 12 will not be available (and aux 12 will not work on the monitor selector).

PAN makes the control into a Pan control (balance on Stereo channels). Any pan offset will be shown as an offset between the two bars of the display.

On mono auxiliaries, buttons 7 to 12 switch the control to that numbered aux send. The Pan button will be inoperative.

MASTER When MASTER is selected this section controls the Aux Outputs. On Stereo auxiliaries a dual level display will be shown, For example, aux 5 & 6. Here, buttons 11 & 12 will be disabled. There cannot be a level offset on the output display.

LOCK

The ON buttons switch the output on and off

LOCK will lock the panel into output mode. If LOCK is not selected, the panel reverts to Aux if a fader assign button is pressed.

INTER

INTER (latching) puts the panel into Interrogate mode. If the Aux ON buttons are held down, the fader assign buttons of all the paths feeding that bus will light. Paths can be added or removed from the bus under interrogation, by selecting or de-selecting their fader assign buttons.

DIRECT

When DIRECT is selected, this section controls the Aux Direct Inputs. The Pre Fader and Pan controls will be in-operative.





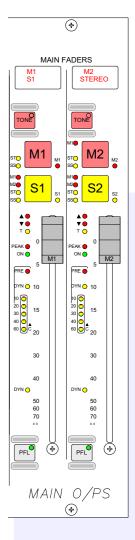
MAIN OUTPUTS AND MAIN OUTPUT METERS

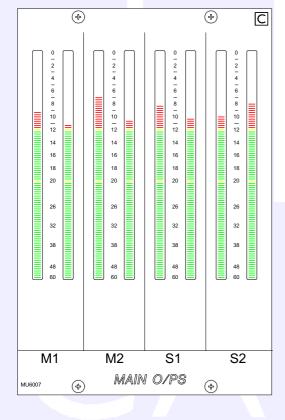
Like channel faders, the main fader design is dual path. Sub-mains 1 and 2 are incorporated under Mains 1 and 2 on a second layer of control.

The ASSIGN buttons (M1, M2, S1, S2) call that main output to the Assign Panels to allow; routing (of one Main to another - indicated on the routing leds above the faders), Insert on/off, and control of the Compressor and Direct Input.

Each Main output can be pre-set to be either Surround or Stereo. Surround Mains are 5.1 plus a Rear downmix to allow a simultaneous LCRS. There is also a Stereo downmix and a Mono downmix (potentially 10 outputs for each Surround Main). The Insert and Direct Input are also Surround.

If a Surround Main is routed to a Stereo Main, it will be the Stereo downmix which is routed.





Main Output Meters

The Main output meters display the stereo downmix if the output is surround.

If the Main Line Monitor is set to be fed back from the Studio Distribution via external inputs to the console, then the meters will display this instead.





DYNAMICS, EQ & FILTERS

The Dynamics section of the module controls the Compressor and Expander/Gate on Channels and Groups, and the Compressor on Main outputs, providing:

Compressor:

Threshold +20dB to -20dB

Recovery 75ms to 4 sec + AUTO (Max clockwise setting)

Ratio 1 to 50

Attack = 5ms, Fast Attack = 250µs

Expander:

Threshold 0dB to -40dB Recovery 75ms to 4 sec + AUTO (Max clockwise setting) Depth 0dB to 40dB

Fast attack 300µs (normal 16ms)

Ratio 2/1 or SOFT

Gate:

Threshold 0dB to -40dB Recovery 75ms to 4 sec + AUTO Depth 0dB to 40dB Fast attack 300µs (normal 16ms)

Make up gain is adjustable from 0dB to +20dB.

EQ & FILTERS

The Equaliser section of the module controls EQ & Filters on the Channels. ALT EQ FLTR allows switching between two complete sets of alternate settings. Excessive control ranges are deliberately avoided to simplify operation.

The controls provide:

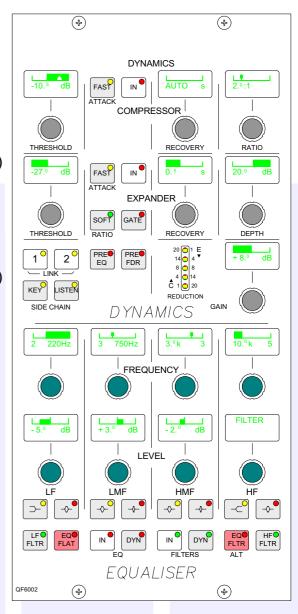
Filters:

LF 12dB/octave, 20Hz to 330Hz HF 12dB/octave, 3.3kHz to 20kHz

Equaliser:

LF 30Hz to 470Hz, shelf or bell (Q of 1.5) LMF 160Hz to 2.4kHz, Q = 1 or High Q = 3 HMF 500Hz to 7.5kHz, Q = 1 or High Q = 3 HF 1kHz to 16kHz, shelf or bell (Q of 1.5)

EQ level controls are ±15dB







MEMORY AND TALKBACK PANEL

(1) Memories

99 memories can be held in the Flash ROM for different console arrangements. In addition to this, the PC back-up can allow an unlimited number of memories, which can be restored into the Flash ROM as required.

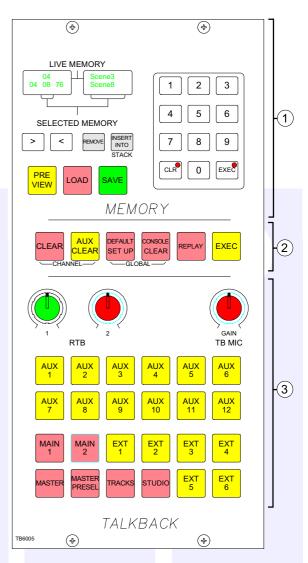
The display at the top of the panel shows the "Live Memory" on the top half, and the "Selected Memory" on the bottom half.

The Live Memory is the current memory loaded onto the console. The buttons in the memory section act on the Selected Memory.

The Selected Memory can be thought of as the "Ready" position, where the operator can place the next required memory until it is needed.

Pressing LOAD+EXEC will launch the Selected Memory into the Live Memory position, overriding the previous console settings.

The Selected Memory can be chosen in different ways. The keypad allows any memory number to be called into the Selected Memory position. Enter the two digit memory number followed by EXEC to call up any memory. The Selected Memory can also be chosen by clicking on the required memory in the Flash Rom list on the left of the Memories Screen.



The contents of the Selected Memory can be cleared by selecting Clear Memory from the screen.

The SAVE button will save console settings to the Selected Memory. Therefore, the memory to which you want to save should be in the Selected Memory position when SAVE is pressed. Alternatively, SAVE+Memory Number + EXEC will save into that memory number.

To create a new memory, choose an empty memory from the list on the left of the Memory screen, either by clicking on it, or by typing it's number on the keypad. If however, you wish to simply update changes you have made to the Live Memory, it must be showing as both the Live Memory and the Selected Memory in the display. The PC can be used to change the title of the memory being saved.

When the Preview button is pressed and held down, the Selected Memory's settings will be displayed on the control surface. The Assign panels' displays will be blanked out. Upon release of the Preview button, the control surface will display the Live Memory again.





Stacked Memories

The memories can be arranged into a Pre-set list, known as a Stack. This can be useful for setting up an easy-to-access shortlist of specific memories for use during a show.

To allow the stack to use the Selected Memory position, any memory which has been selected manually, and is not part of the stack (shown in inverse text), must first be removed from the Selected Memory position, by pressing REMOVE.

If REMOVE is pressed while a stack memory occupies the Selected Memory position, it will be removed from the stack. A second press will remove it from the Selected Memory position.

The > and < buttons scroll through the Stack. Pressing both > and < together, will reset the position so that the last number loaded is back in the central position. To add a memory to the stack, ensure it is in the Selected Memory position, and press INSERT INTO STACK.

AUTO > or < automatically moves the Stack to the next position after each LOAD.

(2) Console Functions

The channel buttons allow clearing of all settings, or just the Auxiliary settings from the currently assigned channel path. The global buttons allow the default studio set-up to be loaded onto the console, or for all console settings to be cleared completely.

The channel and global buttons flash when pressed and require the Exec button to be pressed before the operation is carried out. It is recommended that settings are saved to memory before these functions are used.

The DEFAULT SET-UP button will recall the Default Memory, which should be created upon installation of the Sigma 100 using the Tech-Info screen. could contain the fixed port set-ups which match the studio wiring, and any other settings which hardly ever change. It could have all channel settings OFF or flat, with no routes made, and would be available as a start up memory, from which more specific memories could be created.

(3) Talkback

Talkback is available on this panel to all 12 Auxes, Main 1 and 2, 6 external sources (via GPO switching), all tracks, and Studio. In addition, the MASTER button operates all the TB buttons preselected by the MASTER PRESEL button.

Talkback is also available using the buttons on the fader modules, Input/Output panel and Track routing panel, to Direct Outputs and individual tracks.

All Talkback buttons are subject to On-Air inhibits, set up via the PC.

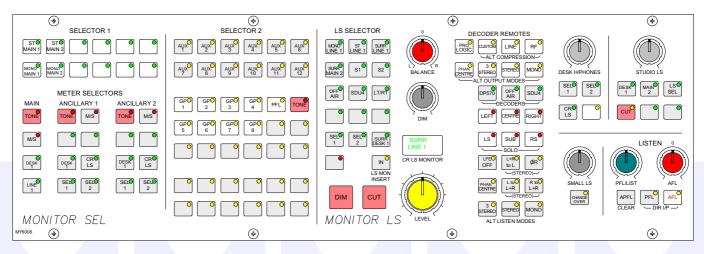
The GAIN control sets the level of the TB Mic.

2 rotary controls set the level of 2 RTB (Reverse Talkback) signals. Each RTB signal can feed a separate loudspeaker. There can also be a mix of both signals to feed a single loudspeaker. This can mix with the PFL feed.





MONITOR SELECTOR & LS PANEL



The Monitor and Meter Selectors are used to select the source to monitor, and what to display on the meters. If the LS system is Surround, Stereo and Mono sources will still be heard in Stereo and Mono, with no signals on the other speakers. Selectors 1 & 2 are sub-selectors which feed the other selectors. All Selector external inputs can be Mono, Stereo, or 5.1. Mono inputs are fed to L + R.

If a surround signal is monitored on a stereo LS or Meter, a stereo downmix will be created and monitored. If a Main Output is surround, the stereo monitor buttons for that Main Output will monitor the stereo (downmix) output of that Main Output. The surround monitor buttons for a Stereo Main Output will be disabled.

The SMALL LS level control is in series with the Main LS level control. The "change over" button diverts the monitor output to the Small LS for near field, or domestic check monitoring. Both Main and Small LS can be Stereo, 3 Stereo, or 5.1 independently.

DIM, CUT & SOLO operate on both sets of loudspeakers. DIM & CUT can be externally operated and DIM can be controlled from the TB (See Condition Switching TX/REH screen).

Alternative Listening Modes

All off indicates NORMAL (Mono, Stereo or Surround depending on the source selected and the LS arrangement).

3 STEREO with Phan Centre ON is the same as STEREO except the LFE is optional.

ØR, L+R to L, L to L+R, and R to L+R will work in any mode, but are really designed for use in STEREO mode or when monitoring stereo sources.

MONO feeds L, C, R, LS & RS to L + R.

AFL & PFL

AFL (post the surround panning controls) feeds the Control Room LS outputs, overriding the LS SEL. PFL is available on Selector 2, or alternatively, there can be a separate stereo PFL LS output. An external RTB input can mix with PFL to the PFL LS output. APFL CLEAR, clears any latched buttons. PFL from Surround Mains is a stereo downmix of the surround signal.



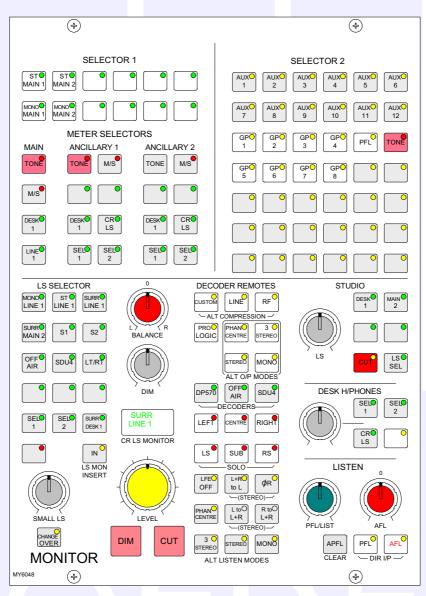


The DECODER REMOTE buttons control whichever Decoder is currently selected. (Other Decoders remain in their previously set state). The buttons are shown engraved for a Dolby DP570.

- 4 buttons for Alternate Output Modes (all off indicates Full Surround).
- 3 buttons for Alternate Compression Modes (all off = no compression and no dialogue normalisation).
- 1 button for Pro Logic mode. It is assumed that the DP570 will be set on the unit, to Dolby Digital mode either in manual or auto detect mode.
- When controlling a Dolby SDU4, LT/RT decoder, only the Stereo and Mono, Output Mode buttons will function.

For STUDIO LS, two parallel LS outputs are provided, post the level control, with separate MIC OPEN cuts. These can be independently either Stereo, 3 Stereo or 5.1.

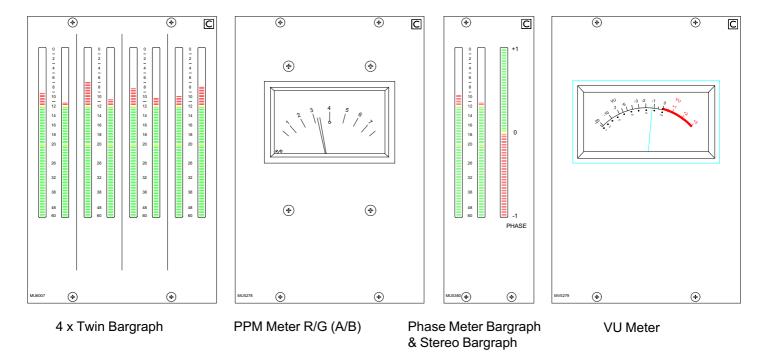
The Monitor Selector & LS panel is also available in portrait style. This allows channel faders to be placed in the centre section of the console.







METERING OPTIONS



The MAIN and ANCILLARY 1 meters can be stereo only, surround only, or surround plus stereo (displaying a downmix of the surround signal). There can be a separate M/S meter (fed from the same downmix). They can be PPM's, VU's, bargraphs, phase display incorporating bargraphs, or a mixture of these.

The Main meters are fed from the Main meter selector which is on the Monitor Selector panel. It can select either Main 1 or 2 Desk (pre Tone & TB), Main 1 or 2 Line (which can be an external input), or Tone.

In addition to the Main and Ancillary 1 meters, a comprehensive set of optional meters are available:

- Track Bargraphs displaying the track output levels, post Tone &TB.
- ANCILLARY 2 Meter: This is Stereo only. It can be PPM's, VU's or bargraphs.
- Stereo APFL or Surround AFL Bargraph. AFL is monitored post the channel/group panning and is in surround. The APFL meter will display the stereo downmix of these signals.
- MIX MINUS: Single bargraph displaying signal on the mix minus bus (Mono).
- GROUPS: 8 stereo bargraphs for the groups. For mono groups, the meter will display the eft bar only.

Calrec can supply either bargraphs, Moving Coil VU or PPM meters. (except for the Aux output meters, which are always bargraphs). All meters in the meter bridge, including moving coil types, are fed directly from the meter processor, except for any Phase Displays which will require audio outputs from the I/O Rack.





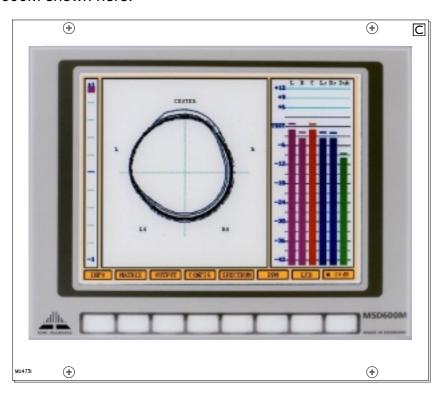
Calrec bargraphs provide a bar which can be either VU or PPM. In addition, there can be a True Peak spot (which incorporates a long release time). Together, these allow the operator to see the level of the signal using a familiar meter and at the same time to see how close the peaks of the signal are to the digital maximum.

The bargraphs can have yellow markers at specified points (to mark the "nominal" and "peak" levels). The top of the bargraph always equals full scale digital level. The scale on the bargraph is normally 0 (at the top) to -60 in dB. Other scales can be provided to special order.

The meter bridge is continental height allowing alternative European bargraph meters to be fitted. These would need additional audio outputs from the I/O Rack.

Optional Third Party Metering

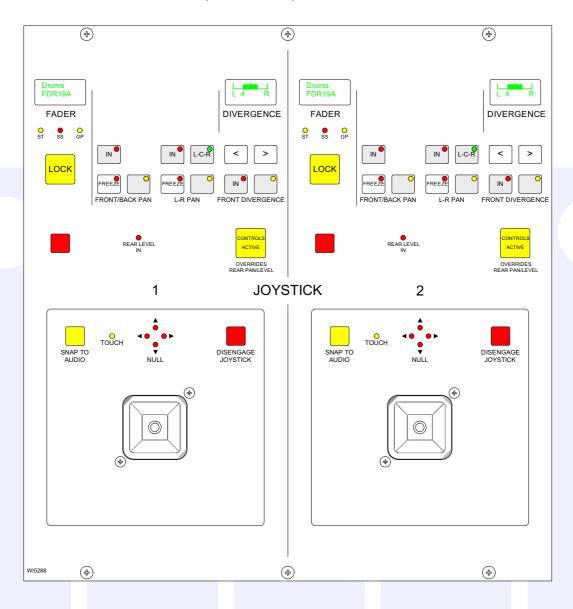
It is possible to incorporate third party metering options into the Sigma 100 design, such as the DK Audio MSD600M shown here.







MOTORISED JOYSTICK PANEL (OPTIONAL)



The joystick panel is available as an option, and can be either a single joystick, or twin joysticks as shown above.

The joysticks are touch-sensitive, and the TOUCH LED will light when the joystick is touched. In normal operation, the joystick controls the currently selected fader path (Chosen by pressing A or B on the fader panel). LOCK allows the joystick to be fixed to a specific path. Pressing LOCK again will unlock the panel. The fader display shows the path currently assigned to the joystick panel.

LEDs show the type of path being controlled:

- SS Indicates a surround sound main (no control available).
- ST Indicates a stereo path.
- GP Indicates a group.

SIGMA



Front/Back pan, L/R Pan and Front Divergence each have a set of dedicated controls. Each has an IN button to enable the function. The IN buttons and L-C-R button work in parallel with the buttons on the Input/Output panel. The blank buttons are there so that additional features can be implemented in the future.

CONTROLS ACTIVE must be selected for the joystick controls to take effect. When Controls Active is selected, the joystick moves to the position set by the Front Pan and F-B controls (including IN/OUT status). If the joystick is being touched when Controls Active is selected, then the audio will move to the position of the joystick. Any Rear Pan and Rear Level settings are disabled, and the Rear Pan and Rear Level displays on the Input/Output panel and any Wild Controls show "JOYSTK". De-selecting Controls Active does not restore any previous Rear Level or Rear Pan controls, but leaves the Rear Level switched out, and the Rear Pan at the same setting and IN/OUT status as the Front Pan.

If a blank fader or a Main path is assigned, Controls Active is disabled. The divergence display will be blank and the buttons should be all off. If the joystick is engaged, it will default to the central position, unless it is being touched, in which case it will stay where it is. Similarly, if a path is assigned where Controls Active is off, the joystick (if engaged) will default to the central position, unless it is being touched, in which case it will stay where it is.

FREEZE : When freeze is pressed on either axis, the joystick ceases to alter

that axis. Freeze does not affect the Input/Output panel or Wild controls, they can still alter the frozen axis. The null LEDs show which direction the joystick must be moved to match the audio.

DISENGAGE: Disengages the joystick only. When the joystick is disengaged, it

does not control or move to follow the audio. This is to protect against accidental changes. The null LEDs will still indicate the direction in which the joystick must be moved to match the audio. When Disengage is de-selected, the joystick will move to the position of the audio, unless it is being touched, in which case, the

audio will move to the position of the joystick.

SNAP TO AUDIO : Pressing this button will cause the joystick to snap to the position of

the audio.





BROADCAST FACILITIES PANEL

Condition Switching

There are three modes which the system can be in: Transmit (TX or On Air), Rehearse, or neither. These are controlled from the ON AIR and REH buttons or from external inputs set up on the OPTO screen.

The OPTIONS-TX REH screen allows the condition switching for the system to be set up. Many different functions can be set to be active, or not, in any of the three states. This can significantly reduce the risk of human error, making the whole system a more robust, less stressful, user friendly environment for operators to work in.

Power Supply Monitoring

The rack mounted PSU monitor module monitors the power supplies for failures, and the hot spare will take over should a fault develop. The PSU FAIL Indicator/ Cancel button on this panel will flash if any one PSU fails (the hot spare PSU would prevent the desk from being affected). Pressing this button will change the flashing to a steady lit condition. In this mode, in the unlikely event of a second PSU failing, the light will begin to flash again, although depending on the function affected by this second failure, other effects may be apparent.

AUTOMATIC WARNING & CORRECTION SYSTEM



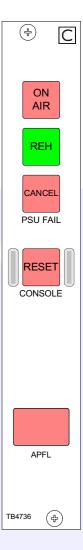
If a problem does develop, the PC will flash the icon of the Automatic Warning and Correction System (AWACS) screen where error messages are reported.

Because the system has many back-up features, such as automatic change over to hot spares for PSU's, Control cards & DSP cards, it is possible to continue operating after errors are reported. Message history is saved to the PC's hard disk for future analysis.

Console Reset

Pressing the CONSOLE RESET button resets the Control System only. Independent DSP operation ensures audio continuity during console reset. The most recent console settings will be fully restored in less than 15 seconds.

As the console operates independantly of the PC, rebooting or failure of the PC will affect neither the audio nor the operation of the console.







OPTIONAL I/O EXPANSION VIA WIDE AREA INTERFACES

MADI

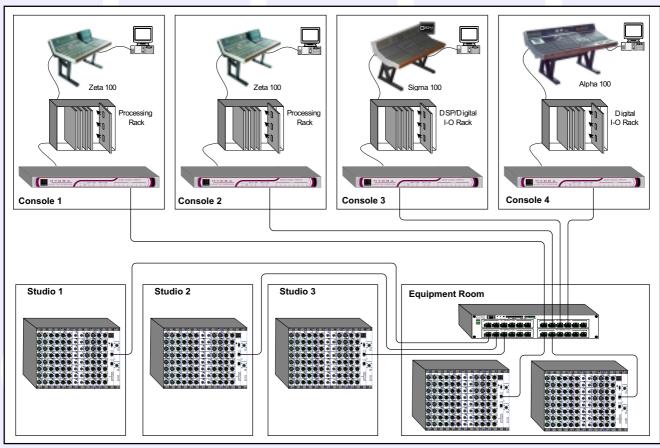


The rack mounted MADI Interface unit contains two independent, AES10 MADI compatible interfaces, and is available as an option. The two ports are interfaced to the Sigma 100 system via a Wide Area Bulk (WAB) card, which occupies one of the AES card slots in the DSP & Digital I/O Rack. Each MADI interface can operate in either 56 or 64 channel mode and can transmit over a coaxial AND optical medium and receive over a coaxial OR optical medium. A switch allows receiver selection. There is no Sample Rate Conversion available on MADI inputs or outputs therefore, all the equipment connected via MADI must be synchronised to the same source as the console.

HYDRA



The Hydra Audio Networking System provides a powerful network for sharing of I/O resources and control data between Calrec digital consoles. Remote I/O units, with up to 96 inputs/outputs, analogue or digital, may be connected onto the network, providing remotely located sources and destinations that can be used by any or all mixing consoles. The Sigma 100 system interfaces to the Hydra Gigabit Interface Unit via a Wide Area Bulk (WAB) card, which occupies one of the AES card slots in the DSP/Digital I/O Rack.



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Screen Operation





SCREEN USAGE & LAYOUT

The Sigma 100 software is designed to provide instant access to various set-up functions. Once the console has been preset, the operator will only need to return to the screens if any of the following functions need changing: Stereo/Mono, CH/GP, Wild Assign set-up, Input Meter Set-up, Clear/Move path, I/O configuration (unless optional I/O Matrix has been purchased). The use of menus has been minimised to provide easier and quicker access to the functions and information on the screen. Failure of the screen's computer has no effect on the operation of the control surface or the audio.

The Sigma 100 screens are divided into groups which are accessed using the buttons along the bottom of the display. There are groups for:

User



Operational screens which enhance the controls on the console and for setting options which are stored with the memories.

Mem



Memory control screens to supplement the panel controls.

I/O



Set up and display of all the I/O connections stored with the memories.

Tech



Trouble-shooting screens for the "house technician".

Opt



Options screens for pre-set items which are not stored with the memories.

Within each group there are a number of screens accessed by buttons up the left (or optionally, the right) side of the display. On some screens, there are drop boxes or additional buttons to access sub-sets of the screen's function.

The "EXIT" button at the bottom corner of the screen will exit the application.

Next to this button are two indicators which show the status of the Primary and Secondary Control Processors. During normal operation, the Primary processor will be in use, and it's indicator will be

EXIT P

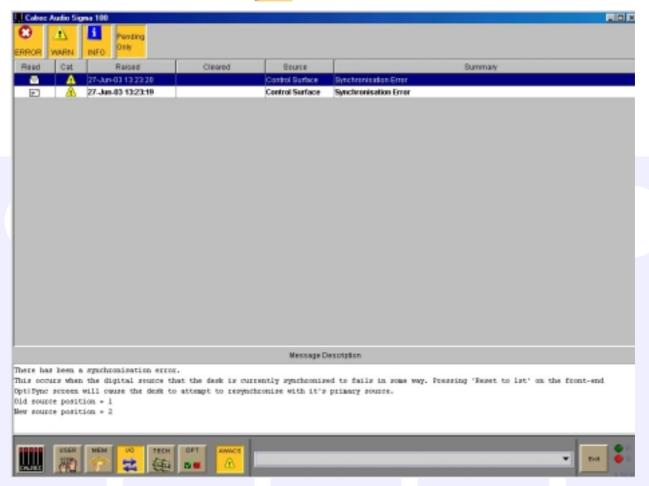
green. When busy, the processor's indicator will be amber, during which time, no changes can be made to the control screens, (Although changes to the console's control surface can be made, and will take immediate effect).





ERROR MESSAGES (AWACS)





If a problem does develop, messages will be delivered on the Automatic Warning and Correction System (AWACS) screen. The AWACS button at the bottom of the screen will flash to alert the user that a message has been reported. Selection of this button will open the AWACS page, where messages can be viewed. Selecting a message will reveal a more detailed description. Message history is saved to the PC's hard disk for future analysis.

Three types of messages are reported:

- Information messages, eg "Control Surface UN4806 processor started successfully"
- Warning messages, where the system back-up has taken over
- Fatal Error messages, where the system cannot recover by itself (perhaps because the back-up is already in use)

Because the system has many back-up features, it is possible to continue operating after errors are reported. If un-cleared errors are still present, an icon will flash in the AWACS button. Selecting this button at any time will switch back to the AWACS screen. Information messages can be cleared by selecting them and then leaving the AWACS screen. Warning and Fatal Error messages can only be cleared by clearing the error and restoring the system to its normal operational state.





INPUT PORTS SCREEN



This screen is the Input Ports Screen and is used for "patching" input sources to channel inputs, Insert Returns, Direct Inputs or Outputs. The screens automatically scroll to follow the Assign button (A and B) presses on the faders.



(1) Source Lists

All of the available input ports can be grouped into suitable lists at the time of installation. These lists can then be displayed on the left of this screen, ready to be patched to channels. Different lists are accessed using the selection buttons.

(2) Viewing Options

The sources can be viewed as pairs (best for patching to stereo or surround paths), individual (best for patching to mono paths), or individual with the actual rack number, card slot and input shown (for diagnostic purposes).

(3) Input Views

These buttons select the different console path types which can have input ports attached (Channel Inputs, Insert Returns, Direct Inputs or Outputs). They will then be displayed in the main section of this screen. Selecting a source from the source list and a channel, insert return or output, then selecting PATCH will assign that source to the channel.

(4) Fader Views

It is possible to choose which set of faders are to be available on and altered by this screen.





(5) Mic Open Busses

Each input port can be assigned to either of the two MIC OPEN busses by firstly selecting the input and then selecting BUSS 1 or BUSS 2. Then, if the input is patched to a channel input, it will operate the mic open circuit when that channel is faded up and routed to the programme output. If a pair of inputs are patched to a stereo channel, the channel will operate the buss to which the left of the pair is assigned. Each buss can be set to automatically cut the studio loudspeaker output (two separately cut outputs are provided, one for each buss) and/or fire a relay. These are set on the OPTIONS screens: TX/REH and RELAY.

(6) Patching

Assignment is made by selecting a source and an input or output, and selecting Patch. Connections can also be made using the limitatrix panel, available as ption for those who were prefer a set of controls on the control surface.

The Input Source label will appear in the Channel Input NAME field and on the fader on the console (if that input, 1 or 2, is selected on the Input/Output panel). By selecting one of the name cells, the input name can be edited using the keyboard. The new name is stored with the channel input and replaces the Source Label on the fader display.

Once patches are made, they can be removed when selected by clicking REMOVE.

Connections can be moved between channel inputs when selected using the MOVE FROM button. The Name field will be highlighted and the PATCH, REMOVE and MOVE FROM buttons will be replaced with MOVE TO, and CANCEL. Upon selection of a new patch point, pressing MOVE TO will move the connection. CANCEL will cancel the operation.



Multiple Patching - It is possible to patch regions of sources to a region of inputs.



- Select a list of input ports using the trackball by dragging down the column
- Select the fader to start patching to
- Select Patch

(7) Port Isolation

The ISOLATE button allows the selected port connection to be isolated from memory recall, so that it's current settings will not be over-written by what is in the memory. Clicking the button a second time will de-isolate the connection. A brown cell in the Label column indicates that a port has been isolated. Other console settings can be isolated using the ISOLATE screen.

(8) Locking - Currently only available on Output Ports

Certain elements of each desk configuration may need to be 'locked' once they have been set up to avoid accidental removal. For this reason, Calrec provides a system of software locks to protect critical parts of each configuration. The Sigma 100 can be in one of three modes, "User", "Technician" and "Supervisor". Operation of the locking system is only available in "Technician" or "Supervisor" mode, which are password protected to add an extra layer of security. Modes are selected using the TECH screen. If a lock is active, the port name will be highlighted in bright green text.





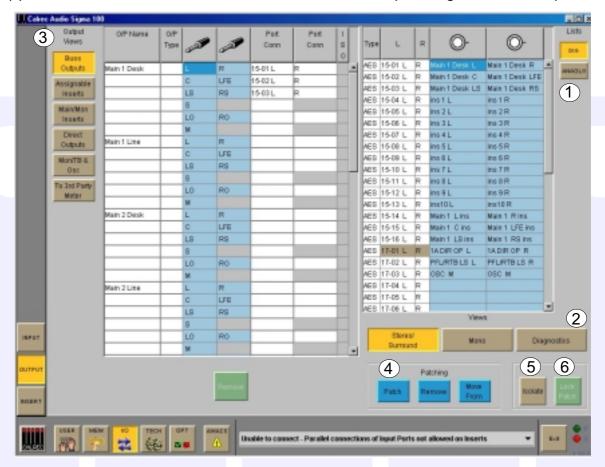
OUTPUT PORTS SCREEN







This screen is used for "patching" console output signals to Main, Auxiliary and Track output ports, Insert Sends and Direct Outputs. The screens automatically scroll to follow the Assign button (A and B) presses on the faders. The screen below shows the patching for "Buss Outputs".



(1) Output Ports Lists

All of the available output ports can be grouped into suitable lists at the time of installation. These lists can then be displayed on the right of this screen, ready to have console output signals patched to them. Different lists are accessed using the selection buttons.

(2) Viewing Options

The ports can be viewed as pairs (best for patching to stereo outputs), individual (best for patching to mono outputs), or individual with the actual rack number, card slot and output shown (for diagnostic purposes).

(3) Output Views

These buttons select the different categories of console output signals which can be patched to output ports (e.g. buss outputs, insert sends, direct outputs, monitoring outputs, Talkback outputs, oscillator outputs, external meter outputs). They will then be displayed in the main section of this screen. Selecting a source from the source list and a channel, insert return or output, then selecting PATCH will assign that source to the channel.





(4) Patching

Assignment is made by selecting an output signal, and an output port, and selecting Patch. Connections can also be made using the I/O Matrix panel, available as an option for those who would prefer a set of controls on the control surface.

Output signals can be patched to any number of output ports by repeating this procedure. (If groups are set to be Mono, only the left output will have a signal on it).

Once patches are made, they can be removed when selected using the REMOVE button.

Connections can be moved between channel outputs when selected using the MOVE FROM button. The Name field will be highlighted and the PATCH, REMOVE and MOVE FROM buttons will be replaced with MOVE TO and CANCEL. Upon selection of a new patch point, pressing MOVE TO will move the connection. CANCEL will cancel the operation.



Multiple Patching - It is possible to patch to many outputs in one operation:



- Select a list of output signals using the trackball by dragging down the column
- Select an output port to start patching to
 - Select Patch

(5) Port Isolation

The ISOLATE button allows the selected port connection to be isolated from memory recall, so that it's current settings will not be over-written by what is in the memory. Clicking the button a second time will de-isolate the connection. A brown cell in the Label column indicates that a port has been isolated. Other console settings can be isolated using the ISOLATE screen.

(6) Locking - Currently only available on Output Ports

Certain elements of each desk configuration may need to be 'locked' once they have been set up to avoid accidental removal. For this reason, Calrec provides a system of software locks to protect critical parts of each configuration. The Sigma 100 can be in one of three modes, "User", "Technician" and "Supervisor". Operation of the locking system is only available in "Technician" or "Supervisor" mode which are password protected to add an extra layer of security. Modes are selected using the TECH screen.

To lock a port assignment, select a port which has a source assigned to it and select "LOCK PATCH".

Provided that the desk is in "Technician" mode, the lock state will be toggled. If the lock is active, the port name will be highlighted in bright green text.



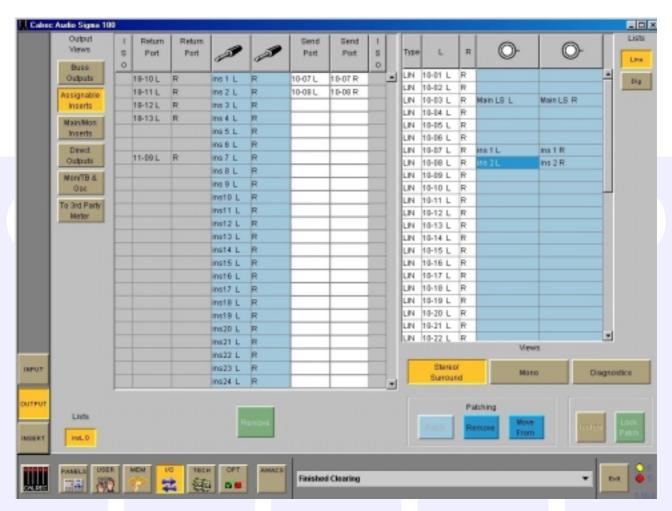


ASSIGNABLE INSERT SENDS





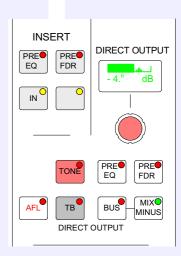




The Assignable Insert Sends are set up on the I/O - Output screen, by selecting "Assignable Inserts" from the list of Output Views. The Output Ports for Assignable Insert Sends can be patched, moved and removed here in the same way that buss outputs are patched.

The Input ports connected to the Insert Return can also be seen. These are set up on the I/O - Input screen.

Once this is done the Insert can be patched to any channel or group using the INSERT screen or by using the optional I/O MATRIX panel on the console (if fitted). Once connected, the Insert is switched into the channel path using the buttons on the INPUT/OUTPUT module (shown).





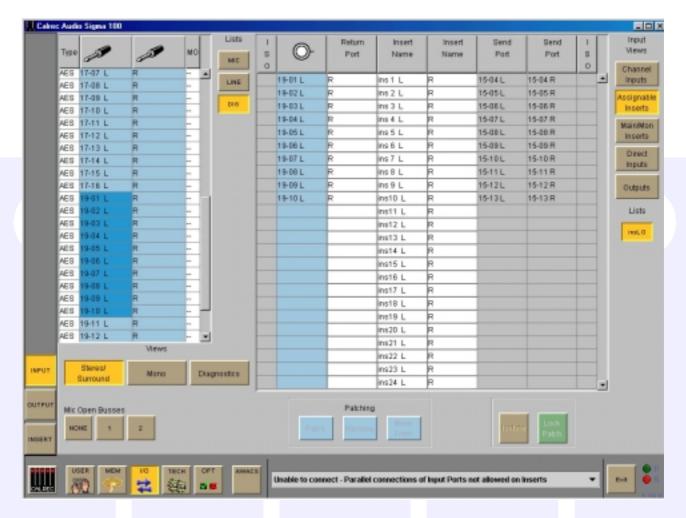


ASSIGNABLE INSERT RETURNS





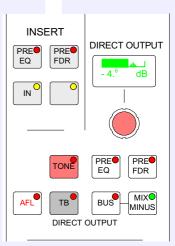




The Assignable Insert Returns are set up on the I/O - Input screen, by selecting "Assignable Inserts" from the list of Input Views. The Input Sources for Assignable Insert Returns can be patched, moved and removed here in the same way that buss outputs are patched.

The Output ports connected to the Insert Send can also be seen. These are set up on the I/O - Output screen.

Once this is done the Insert can be connected to any channel or group via the INSERT screen or by using the optional I/O MATRIX panel on the console (if fitted). Once connected, the Insert is switched into the channel path using the buttons on the INPUT/OUTPUT module (shown).



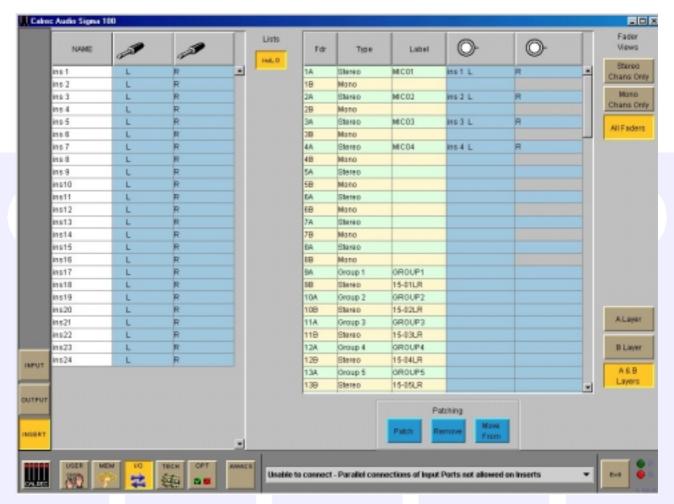




INSERT SCREEN







Once the Assignable Insert Sends and Returns have been set up on the Input and Output screens, they can be patched to channels and groups, in the same way that channel inputs are patched. The Fader View buttons select which paths are on display.

The Assignable Inserts can also be patched to channels and groups by using the optional I/O MATRIX panel on the console (if fitted). Once connected, the Insert is switched into the channel path using the buttons on the INPUT/OUTPUT module (shown).

All the Inserts can be accessed on the left hand side of the INSERTS screen. Most inserts are treated as pairs in the labelling. L and R are used to distinguish the two halves of the pair. This makes it easier for them to be used as a stereo insert but does not necessarily

INSERT DIRECT OUTPUT PRE PRE FDR - 4.⁶ dB IN PRF TONE EQ FDR MIX AFL тв BUS DIRECT OUTPUT

mean they are stereo. The two halves of the pair can be used for separate mono signals. The inserts can be viewed as pairs (best for patching to stereo paths) or individual (best for patching to mono paths).

Note: If Groups are set to be Mono, only the left insert will have a signal on it.



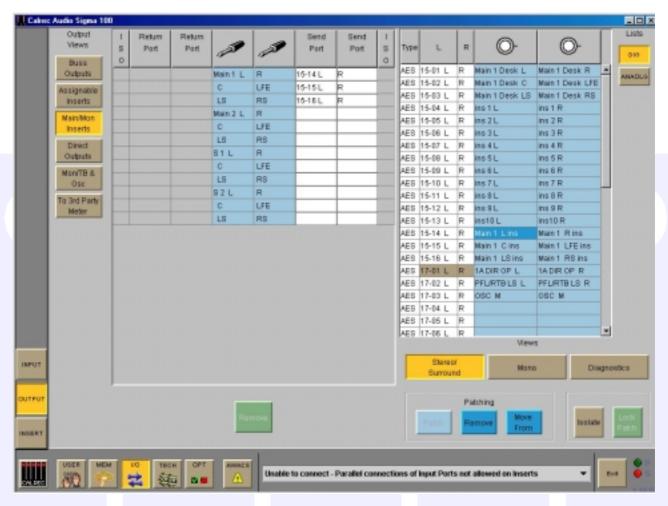


MAIN & MONITOR INSERT SENDS





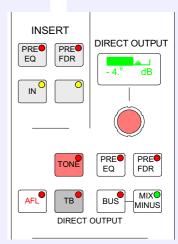




The Main and Monitor Insert Sends are set up on the I/O - Output screen, by selecting "Main/Mon Inserts" from the list of Output Views. The Output Ports for Main and Monitor Insert Sends can be patched, moved and removed here in the same way as buss outputs are patched.

The Input ports connected to the Insert Return can also be seen. These are set up on the I/O - Input screen.

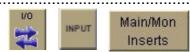
The Main Inserts are dedicated to the Main outputs. Once the ports have been set up the Insert can be switched into the main path using the buttons on the INPUT/OUTPUT module (shown).

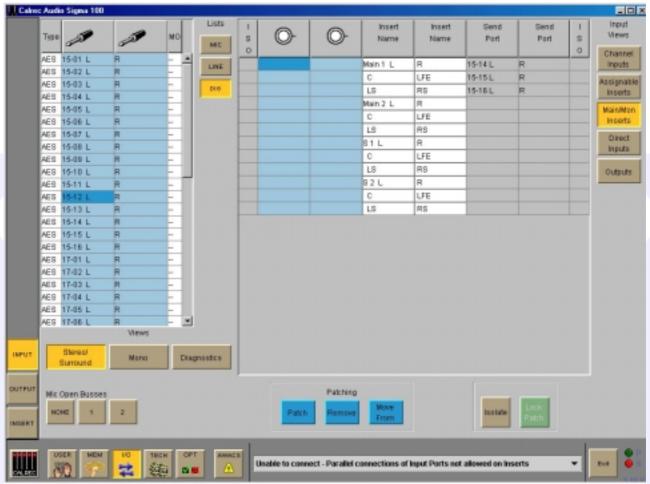






MAIN& MONITOR INSERT RETURNS

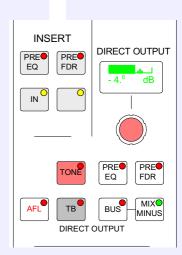




The Main and Monitor Insert Returns are set up on the I/O - Input screen, by selecting "Main/Mon Inserts" from the list of Input Views. The Input Sources for Main Insert Returns can be patched here in the same way that channel inputs are patched.

The Output ports connected to the Insert Send can also be seen. These are set up on the I/O - Output screen.

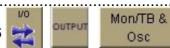
The Main Inserts are dedicated to the Main outputs. Once the ports have been set up the Insert can be switched into the main path using the buttons on the INPUT/OUTPUT module (shown).

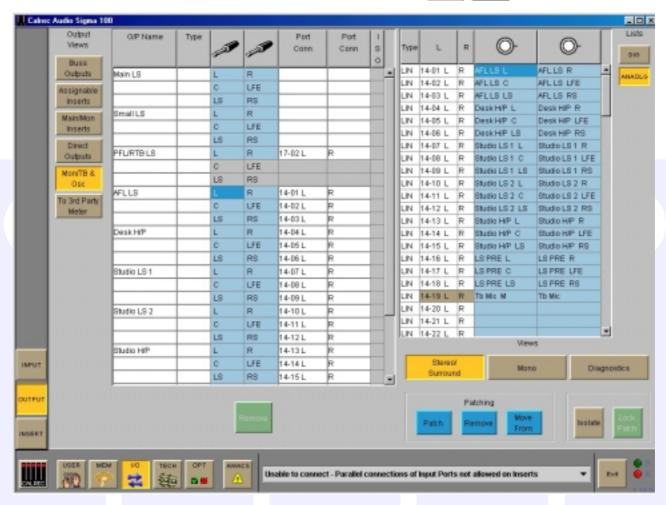






MONITORING, TALKBACK AND OSCILLATOR OUTPUTS





The output ports for the Monitoring, Talkback and Oscillator Outputs can be patched on the I/O - Output screen, by selecting "Mon/TB & Osc" from the list of Output Views.





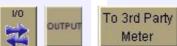
DIRECT OUTPUTS



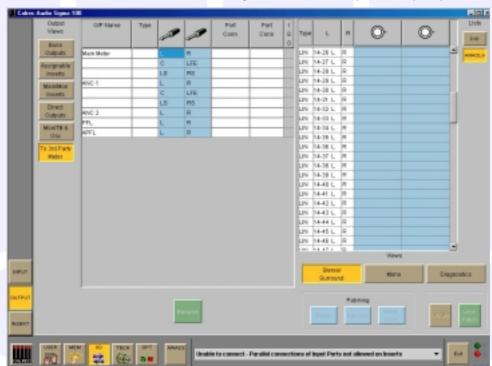
The output ports for the Direct Outputs can be patched on the I/O - Output screen, by selecting "Direct Outputs" from the list of Output Views.



3RD PARTY METER



The output ports for the External Meters, such as a DK phase scope, can be patched on the I/O - Output screen, by selecting "To 3rd Party Meter" from the list of Output Views. Most of the meters on the console are driven internally and do not require output ports.



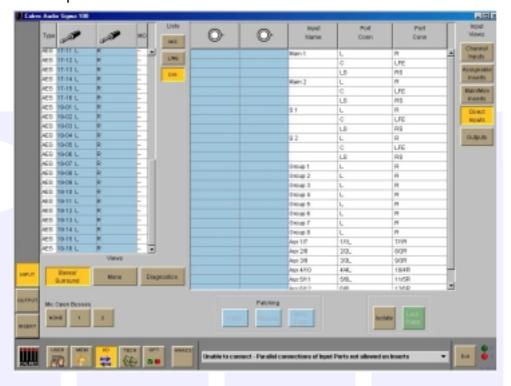




DIRECT INPUTS



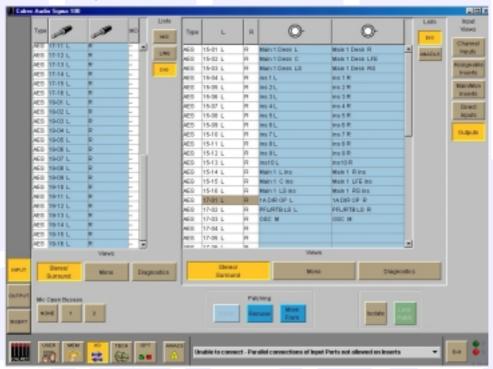
Input ports can be patched to Direct Inputs on the I/O - Input screen, by selecting "Direct Inputs" from the list of Input Views.



INPUTS TO OUTPUTS



Input ports can be patched directly to output ports on the I/O - Input screen, by selecting "Outputs" from the list of Input Views.







USER-CHAN SCREEN







This screen provides controls for path functions which are not available on the control surface.

(1) Selection

The right side of the screen shows the channels with buttons for paths A and B. Select the required channel path, either by clicking on it or pressing it's Assign Button. Then use the following controls to make changes.

(2) Path Type

The path type can be selected either as a mono or stereo channel using the Mono and Stereo buttons, or as a group, using the numbered buttons. Path type selection can also be done using the optional I/O Matrix panel (if fitted). Groups are designated as mono or stereo using the Busses screen.

(3) Path Operations

The ability to Move and Clear paths is available. Move path can also be controlled from the optional I/O Matrix panel (if fitted).





(4) Assigning Wild Controls

The Wild controls are assigned from the USER-CHAN screen. All the Assign Panel rotary controls incorporate a switch which is operated by pushing the control. These switches are used to assign the control to a Wild control as follows:

- 1) Select a Fader Path from the right side of the USER-CHAN screen or by pressing its Assign button (A or B).
- 2) Select WILD ASSIGN 1 or 2 on the USER-CHAN screen.
- 3) Push one Assign Panel rotary control. For example, Aux 1 Send.

The control is now assigned and changes will show in the display. The colour of the Wild control display will show which fader the control is related to: Green for A, Amber for B.

It is possible to assign controls to more than one fader path at a time, either by selecting individual fader assign buttons (A or B), or by defining a "block" or "Region" of faders. Clicking on the button above HOLD will toggle between SELECT mode and REGIONS mode.

In select mode, click HOLD, then a number of fader paths can be selected individually by pressing their fader assign buttons (A or B). Pushing an Assign Panel rotary control will assign that control to all selected faders.

In Regions mode, a block or region of faders can be defined by clicking HOLD and then pressing the fader assign buttons of the first and last fader path in the required region. Pushing an Assign Panel rotary control will assign that control to all fader paths in the selected region.

It is possible to assign the same control to Wilds 1 or 2 for all fader paths. By selecting 1 or 2, then ALL before pushing the required Assign Panel rotary control.

CLR will clear the selected Wild control from it's assignment.

Notes:

Aux output controls cannot be assigned to Wild controls.

If the fader is touched instead of pushing a rotary control, then the fader for the alternate layer will be assigned to the Wild control.

If the Track output level control is assigned to a block of wild controls, each fader's wild control will have a different numbered track output level control, beginning with the track currently selected on the first fader in the block.

The two Wild controls "FLIP" with the fader, providing the same function for each of the two paths. The A & B faders may also be assigned to a Wild control, in which case it will be the opposite fader which is being controlled.

(5) Fader Bargraph Assignment

I/P, DIR O/P, DYN and OFF will set the function of the fader bargraph on the currently assigned fader. If ALL is pressed first (flashes) all fader bargraphs will be set to the selected functions.

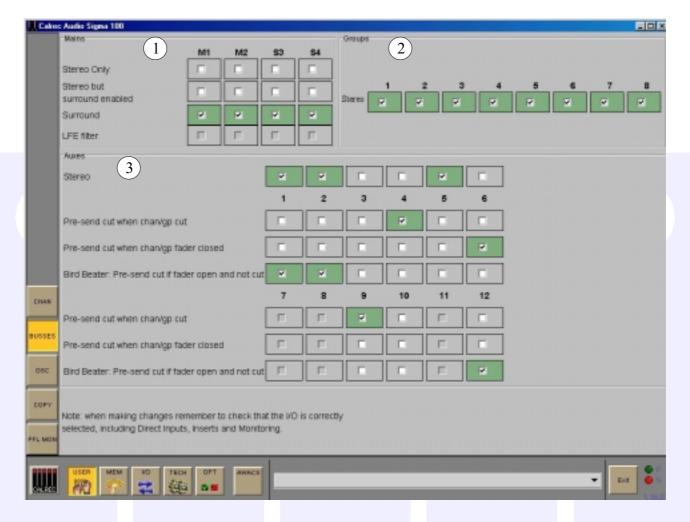




BUSSES SCREEN







- (1) MAINS The type of main output (stereo/surround) has to be set up on this screen.
- (2) GROUPS Group busses can be selected to be Mono or Stereo. Stereo channels feed a mix of L + R to mono groups. Mono channels pan L/R to stereo groups.
- (3) AUXES Mono Aux busses can be paired up to make stereo auxes. When a pair of auxes are changed in this way, all settings of the pair are cleared. Options are available for pre-send cut to be enabled.









This screen provides controls for the oscillator.

- (1) The frequency of the tone can be adjusted from 20Hz to 20KHz in in incremental steps using the nudge buttons, or set to 1KHz using the 1K button. Alternatively, the sweep button will set the oscillator to sweep through all frequencies.
- (2) The level of the test tone can be adjusted from -60dBFS to 0dBFS using the nudge buttons, or set to the reference level using the REF LEV button.
- (3) The Tone Interrupt buttons are useful for testing stereo monitoring and metering. It allows the tone to be interrupted on the left side only, or on the left and right sides in an alternating pattern.
- (4) CLEAR clears all oscillator routes made, providing an easy way of removing test tones from signal paths.
- (5) EXT I/P when pressed replaces the tone with a mono or stereo external source of your choice. This allows for external oscillators to be used if preferred.
- (6) The Enable indicator shows that the Oscillator controls are enabled.





COPY SCREEN





Nine sections of a channel or ALL together can be copied to another channel or channels using this screen. If a stereo channel's settings are copied to mono channels, only the relevant settings will be copied. If groups or mains are included in the selected destinations, they will be ignored.

TO FADER allows the destination/s to be chosen. Destinations can be chosen by selecting the required fader Assign Buttons, or by using the ALL A or ALL B buttons. Once all the destinations have been chosen, the EXEC button executes the Copy.

I/Ps copies the LB, RB, \emptyset L, \emptyset R, M/S & Balance settings (only \emptyset for a mono channel) for inputs 1 & 2, and also the Input Gains, SRC or Phantom Power when the inputs are of the same type.

EQ and FLTR copy the EQ and Filter settings including the In/Out, Alternate and Assignment (CH or Dyn) settings.

DYN copies the Dynamics settings but not whether the EQ or Filters are switched in the Dynamics.

PAN copies Pan and Width settings as appropriate.

FDR copies the Fader and Cut switch settings but not PFL or AFL selections. It does not copy VCA Group assignments.

RTG copies the routing to Mains and Groups but not the routing to Tracks.

AUX copies the routing and levels to the auxiliaries.

WILDS copies the Wild assignments but not their settings.

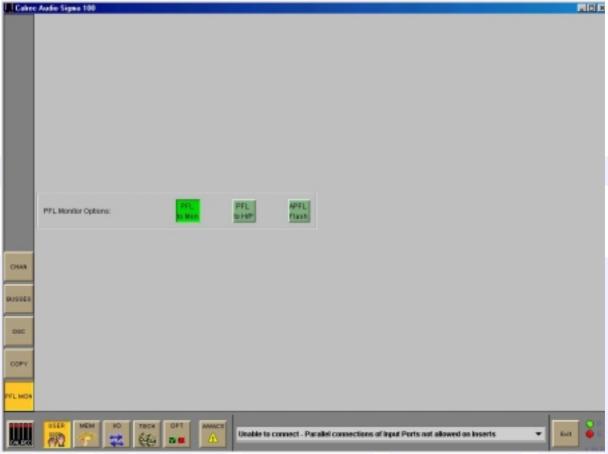
ALL copies all of the above.





PFL MONITOR OPTIONS SCREEN





PFL Monitor options are selectable on this screen.

if PFL TO MON is selected PFL feeds the Control Room Loudspeaker outputs (post the surround panning controls), overriding the LS Selector.

When PFL to MON is not selected, PFL overrides the Small LS. Alternatively, there can be a separate stereo PFL LS output. An external RTB input can mix with PFL to the PFL LS output.

PFL to H/P feeds the PFL signal to the headphones.

PFL from Surround Mains is a stereo downmix of the surround signal.

The APFL Flash will enable or disable the flashing of the APFL indicator on the Broadcast Facilities Panel.



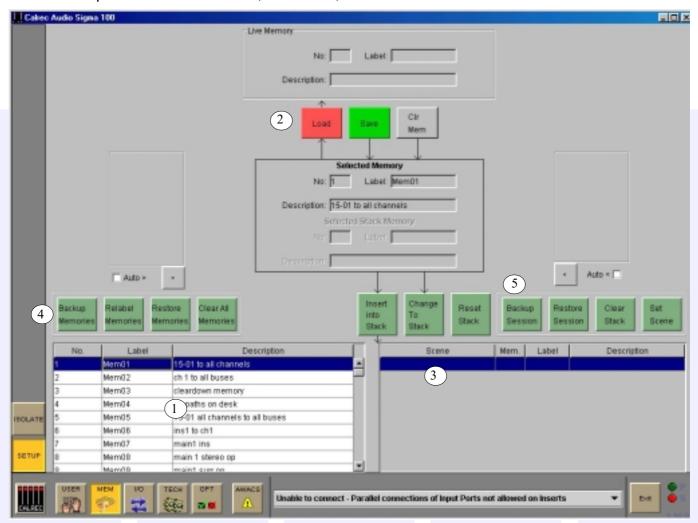


MEMORY SCREEN





This screen works in parallel with the Memory controls on the console. From here, memories can be backed up to the PC's hard disk, re-named, and cleared.



99 memories can be held in the Flash ROM for different console arrangements. In addition to this, the PC back-up can allow an unlimited number of memories, which can be called into the Flash ROM quickly and easily. Memories can also be stored to removable media such as floppy disk.

The display at the top of the panel shows the Live Memory, which is the current memory loaded onto the console. The Selected Memory is shown in the centre of the screen.

(1) Memory Selection

All the Flash ROM memories are listed here, and when selected will occupy the Selected Memory position. Memories will be shown as empty if they have not yet been used. To create a new memory, choose an empty memory from the list either by selecting it, or by typing it's number on the keypad in the memory section of the control surface. When SAVE is selected to save the new memory, the PC can be used to change it's title.





(2) Loading, Saving and Clearing Memories

When LOAD, SAVE or CLR MEM are selected on the memories screen, a confirmation box must be accepted before the action is carried out. This is to prevent memories from being accidentally overwritten, cleared or loaded onto the console at an inappropriate time.

Selecting LOAD will launch the Selected Memory into the Live Memory position, overriding the previous console settings (after a confirmation box has been accepted). When a stored memory is loaded onto the console, the system checks that the current desk configuration matches that of the stored memory. If there are discrepancies, a warning that the memory may not work correctly will be given.

Selecting SAVE will save console settings to the Selected Memory (after a confirmation box has been accepted). Therefore, the memory to which you want to save should be in the Selected Memory position when SAVE is pressed.

Selecting CLR MEM will clear the contents of the Selected Memory (after a confirmation box has been accepted).

(3) Stacked Memories

The memories can be arranged into a Pre-set list, known as a Stack. This can be useful for setting up an easy-to-access shortlist of specific memories for use during a show. To add a memory to the stack, ensure it is in the Selected Memory position, and select INSERT INTO STACK. REMOVE will remove a Stack memory from the Stack, or will remove a non-stack memory from the Selected Memory position. The Selected memory and the memories immediately before and after it in the stack will be highlighted. The two memories either side of the Selected Memory will appear in the windows either side of the Selected Memory window.

With the Auto > or Auto < check box ticked, the next memory in the stack will automatically move to the Selected Memory position after the previous Selected Memory has been loaded from the stack.

(4) Backing Up Memories

BACK UP MEMORIES, backs up all the memories both stack and non-stack, to the hard disk. RESTORE MEMORIES allows previously backed up memories to be restored from the hard disk or other media into Flash ROM. Memories can be re-named by selecting RE LABEL MEMORY. CLEAR ALL MEMORIES will remove all memories from the Flash ROM.

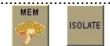
(5) Sessions

Stacks can be saved to the hard disk or removable media as sessions. BACK UP SESSION, backs up the Stack and all the memories in it. RESTORE SESSION allows previously backed up sessions to be restored. Scene labels can be applied to positions in the stack by highlighting a stacked memory and selecting SET SCENE. CLEAR STACK will remove all stacked memories from the stack.





ISOLATE SCREEN





The Isolate screen allows some console settings to be isolated from memory recall. This means their current settings will not be over-written by what is in the memory.

- (1) The majority of the screen allows whole channels/groups or parts of channels/groups to be isolated from memory recall.
- (2) This section allows console-wide isolation for a variety of settings, including Channel Inputs, EQ and Filter settings, Dynamics, Routing and Wild assignment.

If an output connection in the memory cannot be made because it needs to use an isolated port, this will be reported via AWACS.

When an input is isolated or de-isolated, it's port will also be isolated or de-isolated. There is an option on the Ports screen however, to turn the port isolation on and off independently.

If an isolated port connection is changed, any isolation setting will be cleared, unless one of the console-wide isolation options is selected and contains that port.



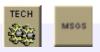


TECH SCREENS

The TECH screens are for the studio technician and Calrec Support Engineers to diagnose problems, access system information such as lists and rack card configuration, save the default studio memory and enter password protected modes in order to lock critical parts of the system.



The Tech-User Mode screen allows the studio technician to enter the password protected "Technician" or "Supervisor" Modes allowing him or her to operate the locking system, and set up passwords for other "Technicians" or "Supervisors".



The Tech-MSGS screen reports messages, which form a history which can be used by Calrec engineers to diagnose any problems which may arise.



The Tech-Info screen (shown below) displays system information and allows the Default Memory to be saved.

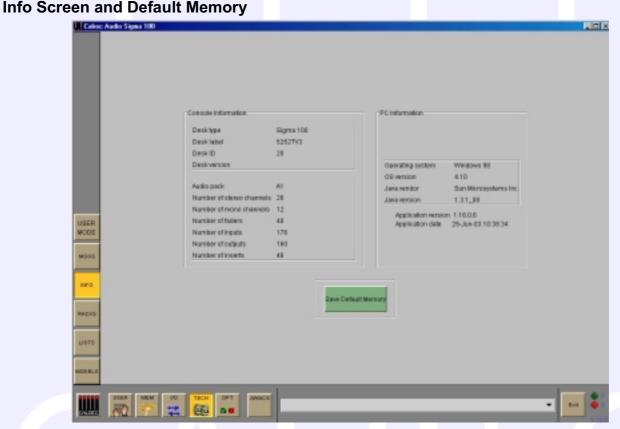


The Tech-Racks screen gives details of the systems rack configuration.



The Tech-Lists screen shows the contents of the lists of Inputs, Outputs and Inserts which are available on the I/O Matrix and I/O screens. These will have been set up during installation.





The Default Memory will usually be created upon installation of the Sigma 100 using the Save button on this screen. This is a default memory, which could contain the fixed port set-ups which match the studio wiring, and any other settings which hardly ever change. It could have all channel settings OFF or flat, with no routes made, and would be available as a start up memory, from which more specific memories could be created. It is recalled using the Default Set Up button on the Memory and Talkback Panel.





CALRE







Options Screens

The Options screens are used to pre-set the system to the studio's required settings. These settings are not stored in the individual console memories but are saved and loaded separately using the buttons on each Options screen. This allows options to be changed without invalidating any saved memories.

Changes to options take effect as soon as they are made. However, if they are not saved, the next time the desk boots up the options will revert to their previous settings.

Upon loading the options settings from the file on the hard disk, any changes made will be overwritten unless they have been saved. This allows changes to be tried out without losing the original settings and these original settings can be restored without having to re-boot the system.



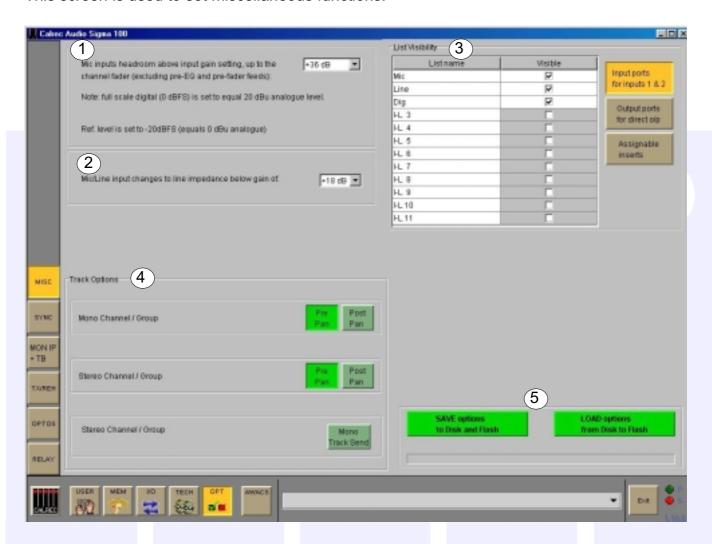


MISCELLANEOUS SCREEN





This screen is used to set miscellaneous functions.



(1) Microphone Input Headroom

The channel mic input headroom can be selected here. This is the headroom available above the input gain setting, up to the channel fader. For example, if the input gain is set to 40 dB and the mic input headroom is 36 dB, then the channel will handle up to -4 dB up to the fader which can be backed off to avoid clipping of the programme output. Obviously, any pre-fader insert or pre-fader feeds to auxes, tracks, or direct outputs will not handle this level and so these should not be used where this headroom is needed.

Note: Selecting a high headroom value will compromise the noise spec slightly, but in practise should not be noticeable.

(2) Mic/Line Input Impedance

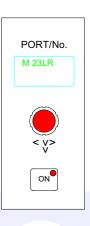
The point at which the Mic/Line Input Impedance changes can be set here.





(3) I/O Matrix Panel List Visibility

This section is only visible if your console has the optional I/O Matrix Panel fitted. This allows the studio engineer to set which port and insert lists can be accessed on the I/O Matrix panel. All lists are always available on the PC screens. For example, output ports which are only used for Buss outputs or Monitoring outputs, etc could be assigned to their own lists (in the Setup application) and those lists made invisible to the Direct output ports selection on the I/O Matrix panel.



(4) Track Options

The Track Options control global settings for how channels and groups feed the track routing selector. Channels and groups can feed the track routing selector pre or post the channel or group pan, and stereo channels and groups can be sent to tracks as a Mono signal.

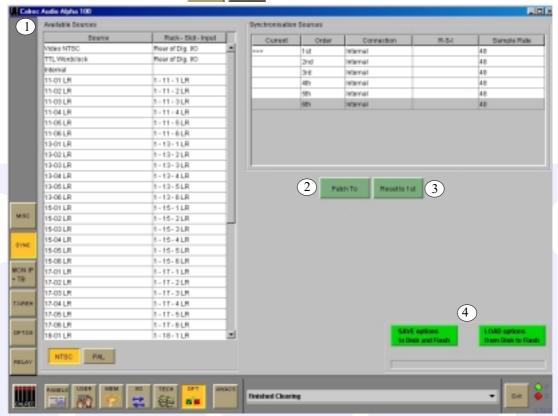
(5) Save to and Load from Disk and Flash





SYNCHRONISATION SCREEN





(1) Available Sources

The system can be pre-set with up to five external sync sources, plus internal, such that if the 1st source fails, it will automatically switch to the 2nd, and so on. One of the external sources can be Video, (PAL or NTSC). TTL wordclock is another possible external source. Digital Inputs on the console can also be used as an external source. Please note that the facility for locking to external AES sources is restricted to the first six inputs of each AES card in the console. When using a digital input or wordclock as a source, the system will tolerate a variation of up to +/- 100 Hz in the frequency of the source.

(2) Assigning Synchronisation Sources

Synchronisation sources are assigned by selecting an available source from the list on the left side of the screen, then selecting one of the five places in the priority list on the right side of the screen, and selecting Patch To.

(3) Reset to 1st

If the system is running on any of the selections 2 to 6, because the lower numbered ones have failed, and the 1st source is repaired, the system can be RESET TO 1ST during any convenient off-air period.

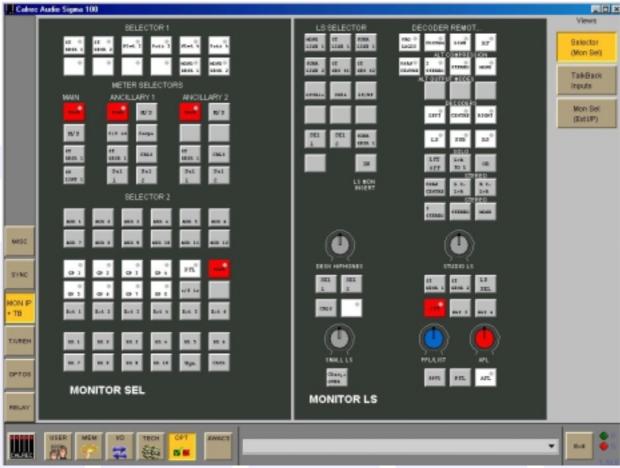
(4) Save to and Load from Disk and Flash





MONITOR I/P & TB SCREEN - MONITOR SELECTOR VIEW





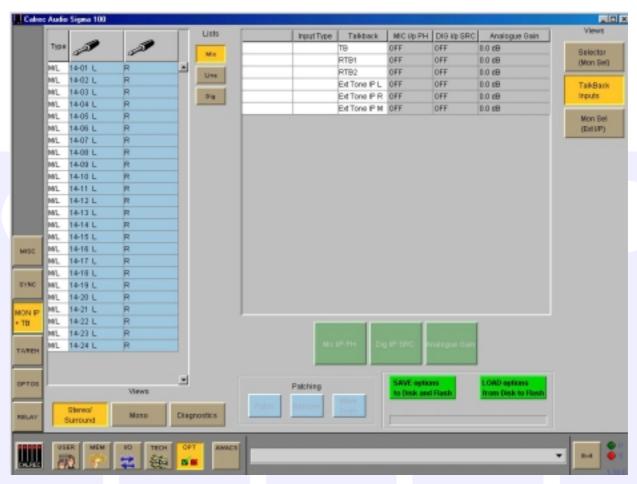
This screen gives a confirmation of how the Monitor Selector panel buttons have been set up.





MONITOR I/P & TB SCREEN - TALKBACK INPUT PORTS VIEW





The Input Sources for Talkback and Reverse Talkback can be patched here in the same way that channel inputs are patched. Talkback input ports can be any kind of port.

The parameter buttons provide controls for analogue gain control (coarse), Phantom Power (if mic/line) and SRC switching for the input (if digital). When selecting Analogue Gain, a box will appear where the gain can be selected. Selecting Mic i/p PH will turn phantom power on for the selected input. Selecting Dig i/p SRC will switch SRC on for the selected input.

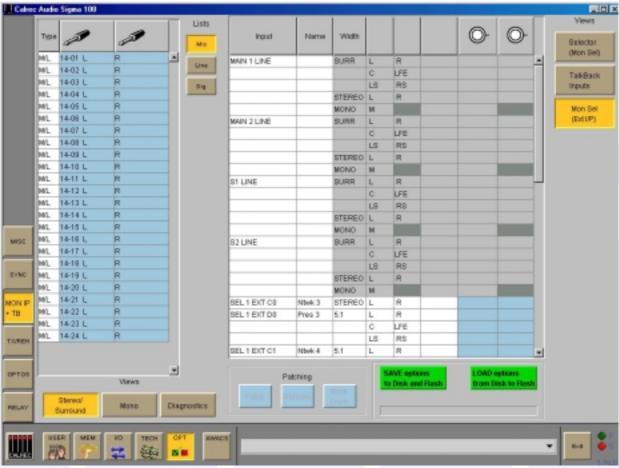






MONITOR I/P SCREEN - EXTERNAL INPUT PORTS VIEW





The Input Sources for External Monitor Inputs can be patched here in the same way that channel inputs are patched. The NAME of the external input will correspond to the text on the button as shown on the Monitor Selector View.

The Main Line monitor inputs are applicable when the Main Line output monitor is set to be returned into the desk via an external distribution. Otherwise, the Main Line monitor points are taken from the Main outputs within the desk, before they have passed though the output ports.

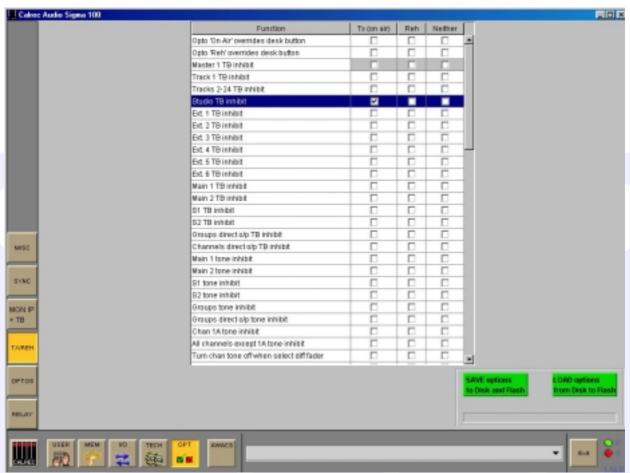




CONDITION SWITCHING (TX/REH) SCREEN







This screen allows the condition switching for the system to be set up.

There are three modes which the system can be in: Transmit (TX or On Air), Rehearse, or Neither. These are controlled from the ON AIR and REH buttons on the console or from external inputs set up on the OPTO screen.

Each function can be set to be active, or not, in any of the three states (except for the "On Air" and "Reh" optos which can only override the desk buttons or not).

The functions provided are to cater for different customer's requirements. Therefore some combinations of settings will seem invalid.

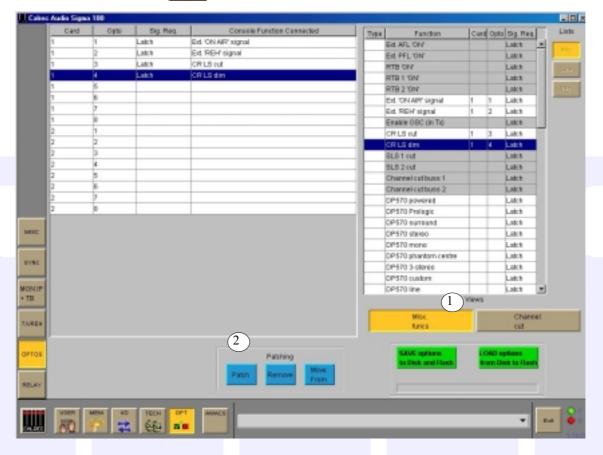






OPTO SCREEN





Up to 8 Opto isolated inputs are available on each GPI card in the system.

- (1) The Opto-isolated Inputs can be assigned to various console functions (with 'Misc Functions' selected), or they can be set to cut channels (with 'Channel Cut' selected).
- (2) To make an assignment, select an opto-isolated input (left side of screen), and a function or channel (right side of screen), and select Patch. Assignment can also be moved and removed, in a similar way to patched connections.

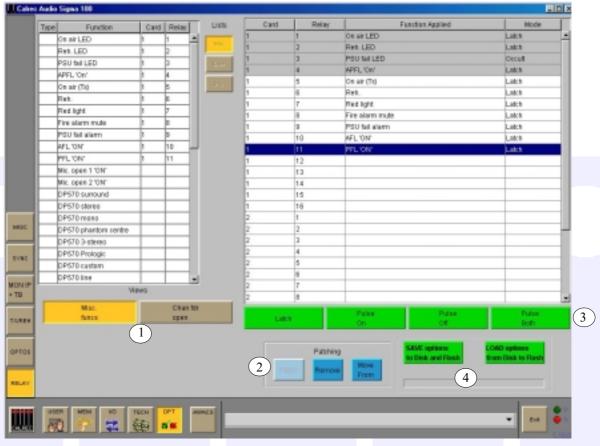
If optos are patched to Input Ports, when fired externally, they will cut any channel to which that input port is connected.





RELAY SCREEN





The Relay-isolated output connections for various console functions can be assigned here in the same way that Opto-isolated Inputs are assigned. Up to 8 Relay isolated outputs are available on each GPI card in the system. Please note that on Relay/Opto card 1, relays 1 - 4 are not available, as they are used for TX, REH, PSU Fail and APFL facilities.

- The Relay-isolated Outputs can have various console functions assigned (with 'Misc (1) Functions' selected), or they can be set to operate when particular faders are opened (with Channel Fader Open' selected). Console Functions can be assigned to more than one relay.
- (2) To make an assignment, select a function (left side of screen), and a Relay-isolated output (right side of screen), and select Patch. Assignment can also be moved and removed, in a similar way to patched connections.
- (3) The relay can be set to latch or pulse for 100 ms, when the Console Function is activated. When setting the relay to pulse, there are three different options.

Pulse On -The relay is set to pulse when the function is activated.

Pulse Off -The relay is set to pulse when the function is de-activated.

Pulse Both -The relay is set to pulse once when the function is activated,

and again when the function is de-activated.





IMPORTANT OPERATIONAL CHANGES FROM EARLIER PRODUCT RELEASES





IMPORTANT OPERATIONAL CHANGES FROM EARLIER VERSIONS OF THIS PRODUCT

V1.16 includes:

New PC front end Application, with new colour scheme, faster start up time, fadter memory load time, multiple patching on I/O screens, Replacement of drop-down boxes with buttons which are easier to use on a touch screen, New JRE for improved performance.

Bird Beater now available on all Auxes (previously available only on Aux 1)

Input 1/2 switching option on the channel/group fader module.

Preview Memory - Memories can be previewed on thee channel strips and non-assignable panels. When the preview button is pressed, the Selected Memory's settings will be displayed on the control surface.

When a stored memory is loaded onto the console from disk, the system checks that the current desk configuration matches that of the stored memory. If there are discrepancies, a warning that the memory may not work correctly will be given.

Support for the MADI interface option.

A warning will now appear to prevent the front end application being launched twice.

The Oscillator's External Inputs (Stereo and Mono) are now available.

Stereo tone feeds all stereo outputs (instead of mono tone)

Motorised Joystick (Optional)

Screen based Oscillator controls made available.

Copy screen added.

TTL Wordclock can now be used as an external synchronisation source.

The desk can be put into "User", "Technician" and "Supervisor" password protected Modes.

Locking of output port assignments in "Technician" Mode.

PFL is prevented from feeding more than one set of loudspeakers at once. i.e. PFL to small LS or to PFL LS to be off if PFL to Mon. Also, off if PFL to Sel 2 & Sel 2 to Mon.

Sel 1 & 2 is now available on the SLS selector, via the Setup application.

Revised metering selection system to allow more choice of signals, different types of meter on the same signal, metering of any external input, and up to three stereo phase meters (requires new hardware).

"PFL to Mon" option buttons have been moved to the User screens (previously on the Options - Misc screen).









NOTES











USER REGISTRATION

Please complete this end user registration form as soon as you receive this manual. This will allow us to not only provide you with any manual update sheets &/or modification information, but also with information on new product developments which may be of interest to you. Completion of this registration form will ensure that we send all technical correspondence directly to you at the address you have indicated.

The form, once completed should be returned to Calrec at the following address.

User Registrations

Calrec Audio Ltd Nutclough Mill Hebden Bridge West Yorkshire HX7 8EZ England UK

or alternatively it can be faxed back to us on +44 (0) 1422 845244

Console Type: Sigma 100

Serial Number	(lo	cated of	on the base panel):		
Date Received:					
Name:					
Department:					
Company:					
Address:					
Post/Zipcode:					
Tel No:					
Fax No:					
Email:					
21116111					
Customer comments:					
	• • • •				







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