ZETA 100

OPERATOR MANUAL

ISSUE 3

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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 complete and return 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

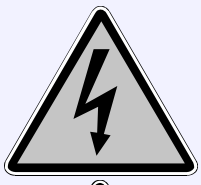
- This equipment must be EARTHED.
- Only suitably trained personnel should service this equipment.
- Please read and take note of all warning and informative labels.
- Before starting any servicing operation, this equipment must be isolated from the AC supply (mains).
- Fuses should only be replaced 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 safety, 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 on the rear of the unit. The maximum potential between the terminals exceeds 60 volts, the blanking plates are fitted to avoid the risk of electric shock.

CONTENTS

Continued...

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

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.

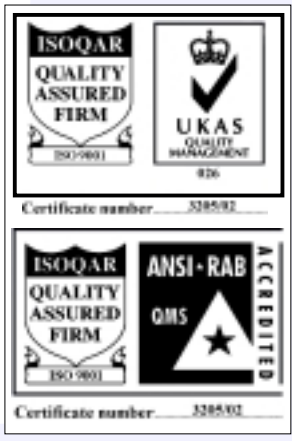
STANDARD OF SERVICE

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.

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 after-sales support, the certification follows a rigorous and thorough review of Calrec's internal and external communication and business procedures.



Overview

INTRODUCTION

The Zeta 100 is Calrec's third all digital production console designed for the most critical broadcast production and on-air applications. It is designed for use in television and radio production studios and outside broadcast vehicles where broadcast facilities cannot be compromised but space is restricted. Based on the well established Alpha 100 and Sigma 100 digital system architecture, Zeta 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 Zeta 100 reflects this in its user interface. Fully assignable control means that any fader can control any channel or group. A dual layer design allows for single or dual path operation, and 2 Wild controls per fader allow allocation of assignable channel controls. The flexibility offered by digital control and a computer-aided memory system has been harnessed to provide greater functionality and ease of use. The console benefits from good operational visual feedback and a variety of metering options.

Zeta 100 is available in a number of cost-effective processing / input configurations and three frame sizes, with a variety of additional input and output interface options. These packages provide focused levels of technical provision at a reasonable cost, 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 service, 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. Zeta 100 is designed to ensure this level of confidence will continue in the digital era.

PRINCIPAL FEATURES

Format

Up to 48 faders, with A & B layers of control, plus 2 Main Output faders.
88 equivalent Channels (up to 32 Stereo or Mono plus 24 Mono Channels), or:
96 equivalent channels (48 Stereo).
Table-top or floor stand mounting.
Comprehensive Surround Panning and Monitoring.

Channel / Group Facilities

All channels have 4-band EQ/Filters, Compressor/Limiter and Expander/Gate.
All groups have Compressor/Limiter.
8 Mono or 4 Stereo Auxiliary Outputs.
Pre configured inserts are assignable to any channel or group.
Inserts can be pre or post fader.
All channels and groups have direct outputs.
Direct Outputs can be Pre EQ, Pre Fader or Post Fader.
Every Direct Output can be a Mix Minus feed.
Two assignable Wild controls per fader.
All faders are motorised.

Routing

8 stereo or 8 mono Audio Groups, or 4 stereo and 4 mono Audio Groups.
Additional VCA style Grouping system.
16 outputs for multi-track or general purpose feeds.
Tracks can be fed from Pre EQ, Pre Fader, Post Fader or Direct Output.
Pan to Tracks.
Mono to Tracks on stereo channels and groups.
2 Main Stereo or 2 Main 5.1 Surround Outputs with Compressors/Limiters.
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.
Comprehensive GPI facility.
Desk operates independently of PC.
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.
Last settings fully restored on power-up or re-set.
Automatic change over to hot spares for PSU's, Control cards and DSP cards.
Hot plugging of every card and module.
Hot plugged cards initialise upon insertion.

IMPORTANT CONCEPTS

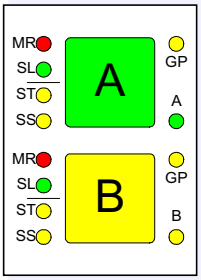
If you are at all familiar with sound mixing consoles, you should find Zeta 100 very easy to operate. To help with this, there are just a few basic concepts which need to be explained:

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, and 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.

Assignable Control



Each fader has an “Assign” button for each audio path (A & B). Pressing this causes the central control modules (the “Assign Panels”) to display and control the settings for that fader’s channel or group 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.

Paths and Ports

On an analogue desk, the channel inputs are physical connections to the channel module or card, and 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 type will be used at any one time. To provide both 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 & 2), switched on the Input Output panel. Both inputs can be set up independently, and can be any combination of Mic/Line and Digital. The two inputs have

separate controls which include input gain, phase reverse and 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, which are a suggested complement of ports. The Audio Pack which most closely matches the requirements of the installation can be chosen, and the port quantities can be fine tuned appropriately.

Port Labels and Lists

During installation, all the ports on the system should be 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 (ᴸ) and right (ᴿ) suffix to the label to distinguish the two halves of the pair, or an ᴸᴿ 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 can be given a six character “list label” and are sorted into the order in which they appear on the selection screens. The lists appear in the same order on the I/O screens and port selection controls on the control surface. It is possible to decide which lists are to be visible on the port selection controls. This reduces the number of times the pot needs to be pushed, to go through all the available lists.

SIGNAL PATHS

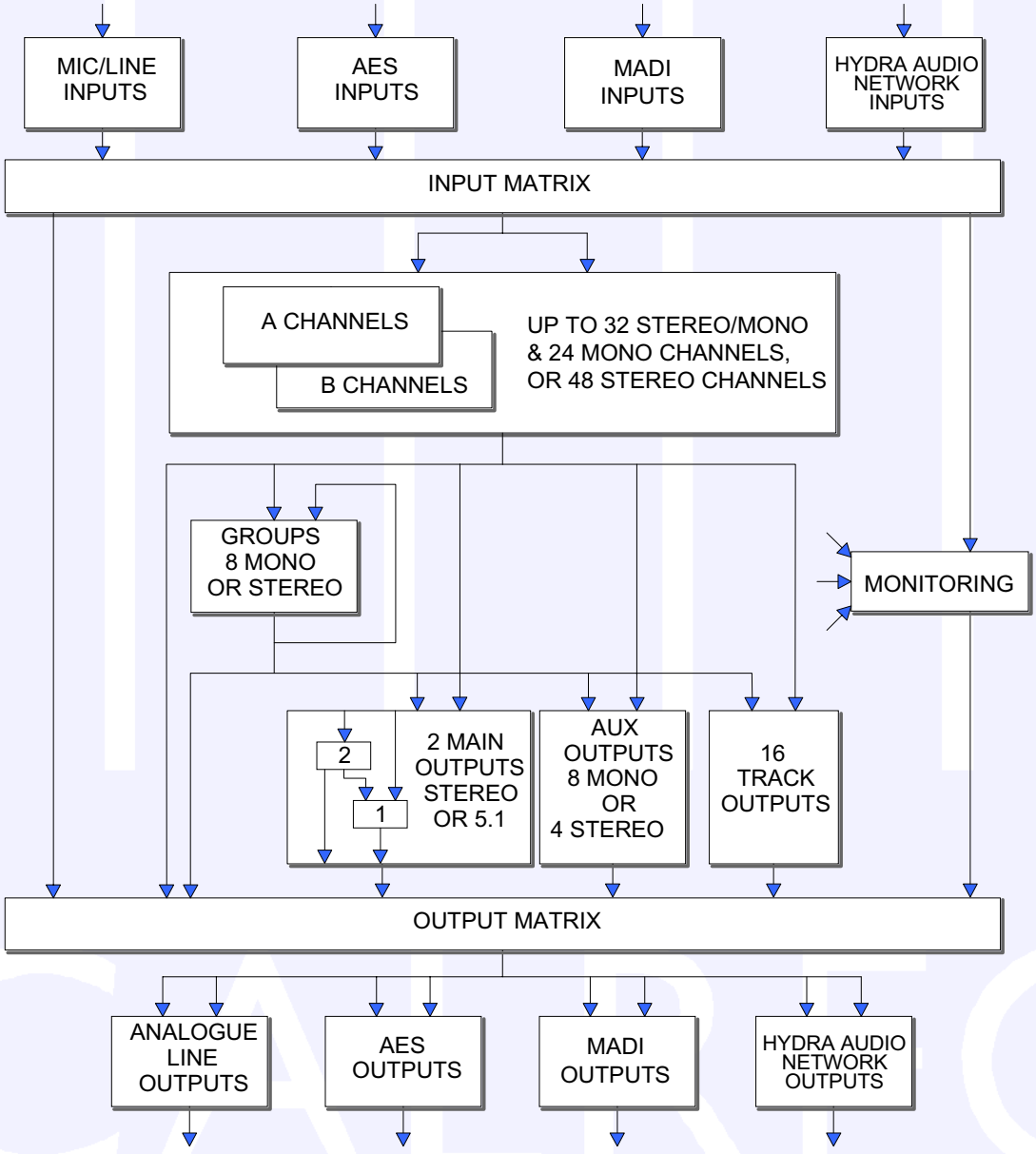
The Zeta 100 system can have up to 32 stereo or mono plus 24 mono channels, or 48 stereo channels.

The 8 groups can be designated as stereo or mono in blocks of 4. In addition, as many VCA style groups as required, can be created.

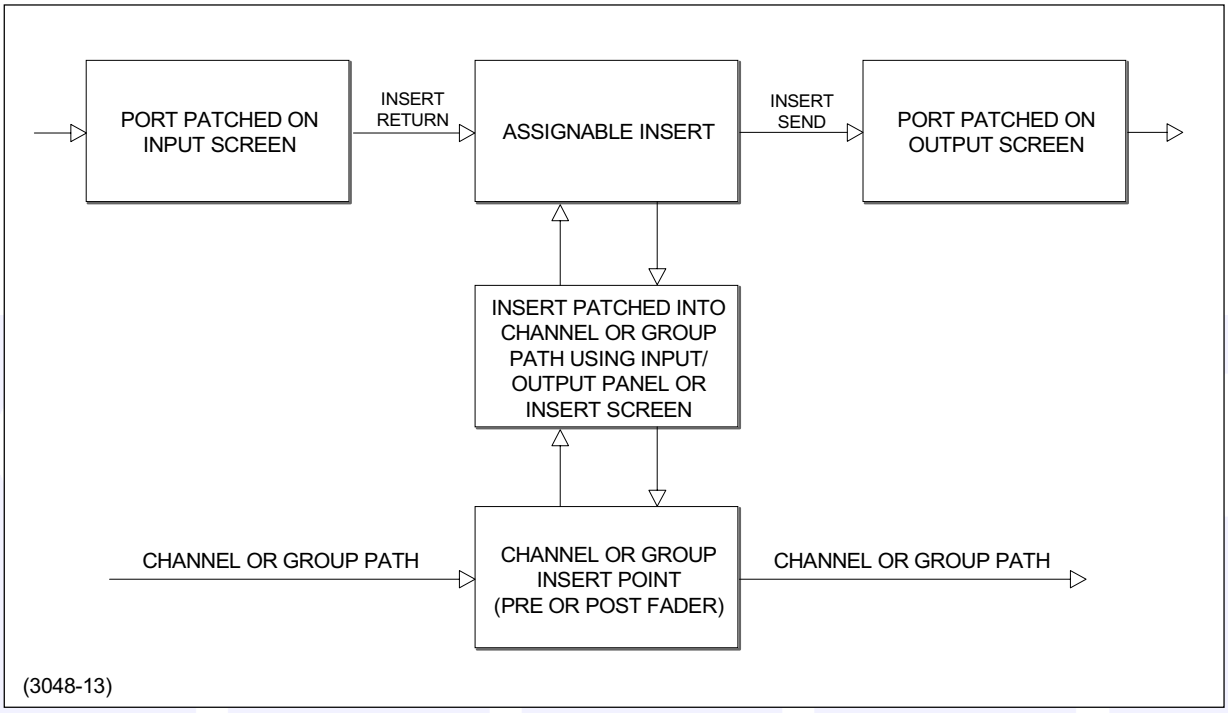
The 2 Main outputs can be designated either as both stereo or both 5.1 surround. If they are 5.1 surround, then a mono rear is derived at the output to allow them to be used as LCRS mains. stereo and mono downmixes of the 5.1 are also produced.

If a channel is panned to both a stereo group 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 8 Mono auxiliary outputs can be paired up to give up to 4 Stereo auxiliary outputs.



ASSIGNABLE INSERTS



The system provides a pool of 48 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 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 port assignment controls on the Input/Output section of the control surface.

To facilitate the assignment of these inserts, the system allows the user to label them, in a similar way to how input or output 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 be divided into up to 4 lists. This allows inserts to be accessed more efficiently for selection on the port assignment controls on the Input/Output section of the control surface.

INPUTS AND OUTPUTS

PROCESSING RACK

3 ANALOGUE INPUT CARD SLOTS
3 ANALOGUE OUTPUT CARD SLOTS
4 AES CARD SLOTS, 3 OF WHICH CAN HOUSE BULK CARDS *
2 CONTROL PROCESSOR SLOTS (1 PLUS HOT SPARE)
8 DSP CARD SLOTS (7 PLUS HOT SPARE)

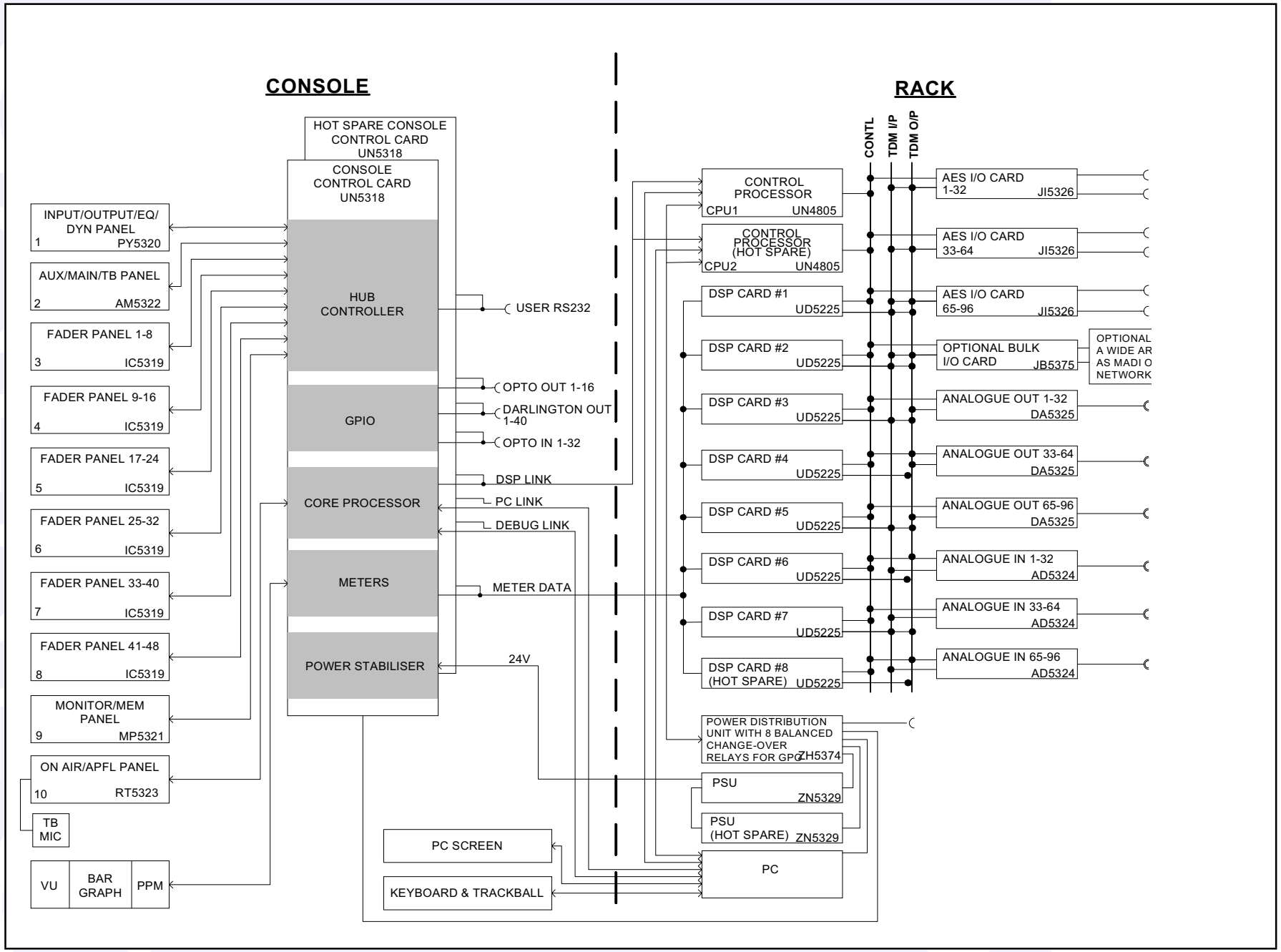
- **ANALOGUE I/P CARD**- 32 INPUTS PER CARD.
- **ANALOGUE O/P CARD** - 32 OUTPUTS PER CARD.
- **AES CARD** - 32 AES INPUTS AND 32 AES OUTPUTS PER CARD.

* BULK CARDS ALLOW FOR OPTIONAL I/O EXPANSION VIA A WIDE AREA INTERFACE SUCH AS MADI OR "HYDRA" - CALREC'S SOPHISTICATED AUDIO NETWORKING SYSTEM.

P.C.

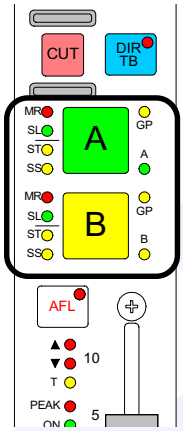
GPIO
(In the console &
Power Distribution Unit)

TYPICAL SYSTEM DIAGRAM

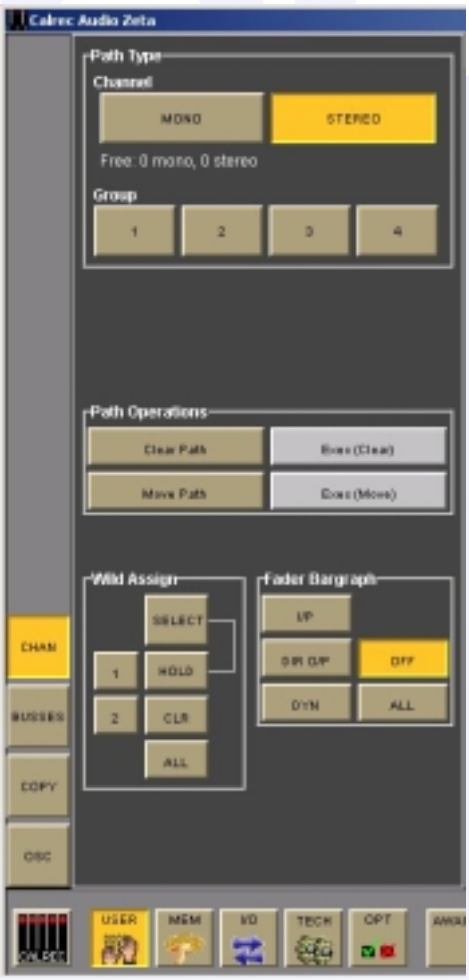


GETTING STARTED

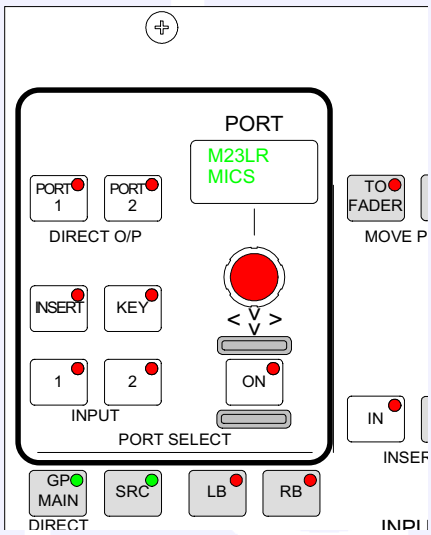
As a safety measure, ensure that all faders are minimised, and the control room level control is no more than half way up.



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. and, if a Path Type is not already indicated, select either the mono or stereo button to assign a mono or stereo channel to the fader, or select one of the group buttons to assign a group to the fader.



Connections are made using either the Input/Output controls or the I/O screens. Each fader can select between 2 inputs. Using the Input/Output controls, select Input 1 or 2 in order to assign a port to that input. Turning the selector control knob will scroll through the available ports. Pressing and turning the rotary control will scroll through other lists of available ports. Once you have arrived at the required port, press the ON button to connect it to the selected input (This is like inserting the patch cord).

Once Input 1 or 2 are selected on the Input /Output controls, the port assignment can also be carried out using the I/O screens.

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

Connections are made by selecting:

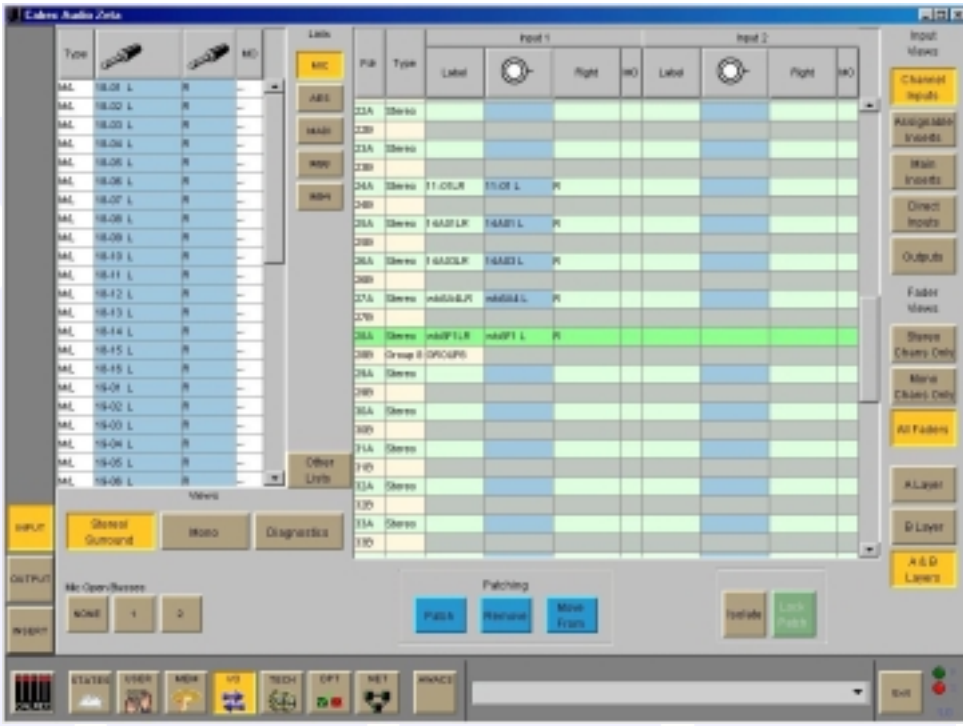
ν An Input Source  and...

ν A Channel Input 

...and clicking PATCH. 

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

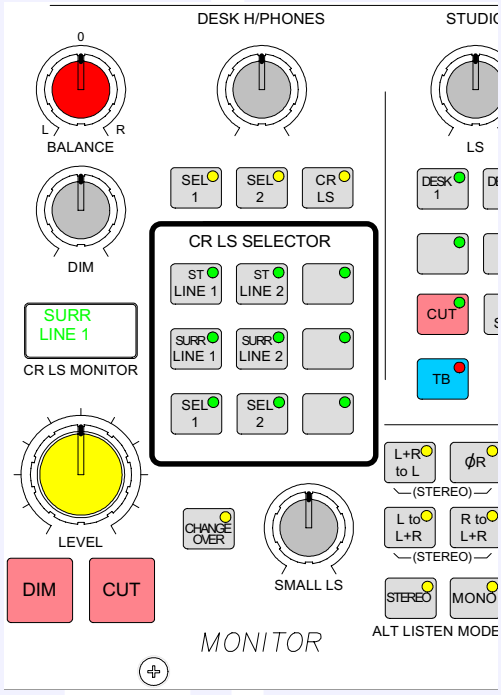
By clicking on one of the Name cells, the input name can be edited. The PC keyboard slides out from the front of the console.



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

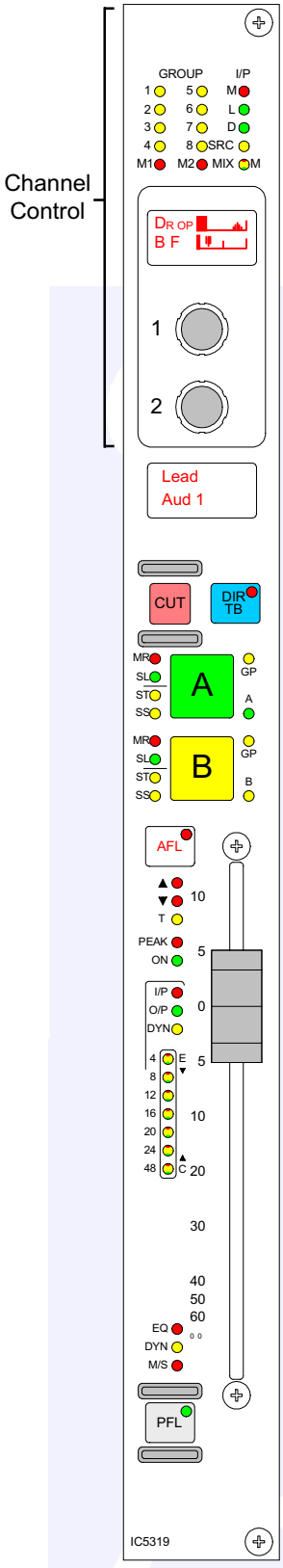
Now fade up the Main 1 fader and select **ST Line 1** on the LS selector (**Monitor LS** panel). If the channel fader and LS volume controls are set correctly you should hear the signal.

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



Control Surface

"CHANNEL" FADERS



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.

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. Path A's label is shown in the top half of the display, and path B's label is shown in the bottom half of the display. The colour of the display indicates the active path. If path A is active, the label will be green. If path B is active, the label will be 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. ON buttons can be fitted instead of CUT buttons.

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 from the VCA group by de-selecting their Assign buttons with the master's Assign button held down.

Assign Button LEDs

- MR - The fader path is a Master of a VCA style group.
- SL - The fader path is a slave within a VCA style group.
- GP - A Group is assigned to the path.
- ST - The path is a stereo channel or group.
- SS - Not Used.

AFL will be heard through the monitor loudspeakers (main or small). AFL will be heard in surround if surround panning is in use to a surround main, and the loudspeaker system is surround.

PFL is provided on the fader overpress and on the button. It will be heard on the PFL LS or the Small LS, depending on how these are set during the Set-up application. PFL will be heard on the main LS if PFL to Mon is selected via the PC.

The fader bargraph can be set to display either the input level, direct output level or the amount of gain reduction being applied by the dynamics setting. This is selected using the USER-CHAN screen.

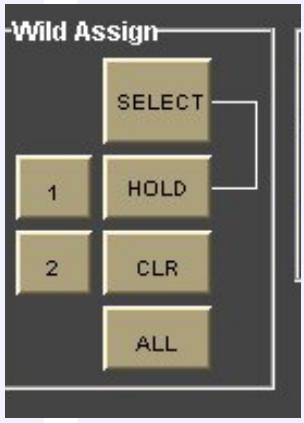
"CHANNEL" CONTROL

The "Channel Control" section is situated directly above the channel fader section. A set of LED's provide indication of the channel's source type and routing. Two WILD controls per fader are available. Almost any Assign Panel rotary control for the selected path can be assigned to either Wild Control on the fader, including:

- Input Gain
- EQ
- Dynamics
- Pan and Balance
- Aux Send Level
- Direct Output Level
- Track Output Level
- Stereo Width
- Fader Level (opposite layer A or B)

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 controls 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.

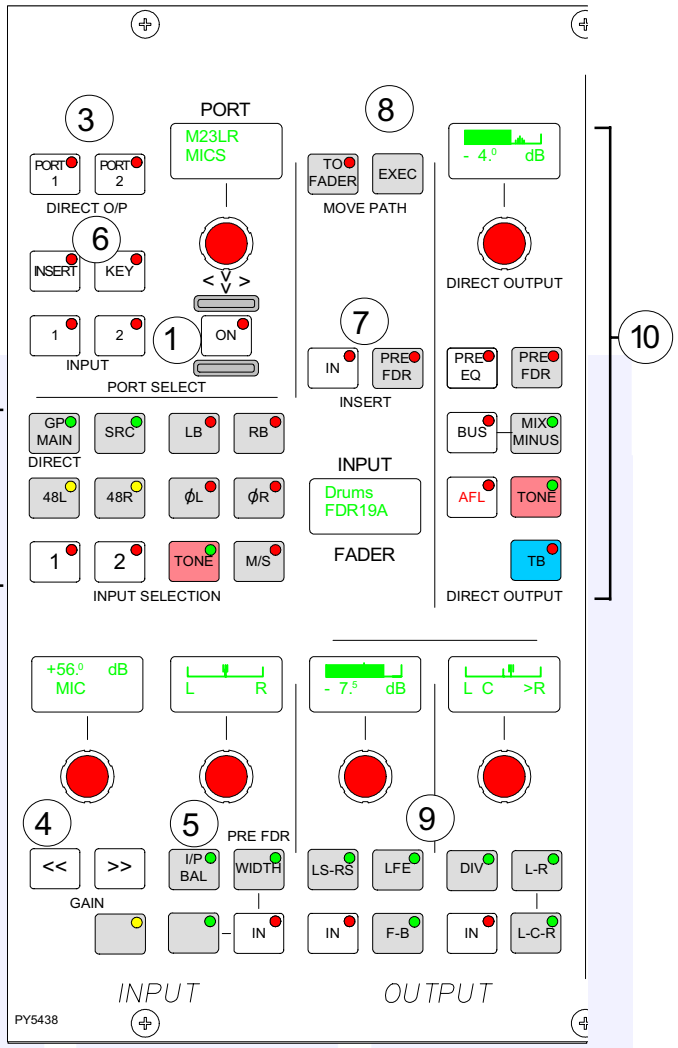
In REGIONS mode, select Wild 1 or 2 on the screen and HOLD (both will light). A block or region of faders can then be defined by clicking HOLD and then pressing the fader assign buttons of the first and last fader path in the required region. Pushing an Assign Panel rotary control will then assign that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

INPUT/OUTPUT CONTROLS

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



(1) Input Port Assignment

Each channel path has two inputs. Ports are patched to inputs 1 and 2 for the currently assigned fader as follows:

- Press Port Select 1 or 2 in order to assign a port to it (Note: This does not switch the channel from input 1 to 2, or 2 to 1).
- Use the rotary control to scroll through the available input ports. The available inputs can be grouped into suitable lists at the time of installation. Pressing and turning the rotary control gives access to different lists of input ports.
- Press “ON” to assign the chosen input port.
- De-selecting “ON” de-assigns the port, to allow a different one to be selected.

(2) Input Settings

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.

Input Selection buttons 1 and 2 select between the two available inputs for the selected path.

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

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

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

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

(3) Direct Outputs

Two ports can be connected to channel and group direct outputs. By selecting PORT1 or PORT2, the rotary control and ON button can be used to choose and select direct output ports.

(4) Gain Adjustment

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 0 dB. For a group or main path, the controls set the gain of the direct input. Gain is adjustable from -18dB to +78dB for mic/line inputs, -18dB to +24dB for AES inputs, and ∞ to +10dB for direct inputs.

(5) Input Balance and Width

The Input Balance control operates on stereo channels only. When LB & RB are selected, the Balance control acts as an input pan control. A WIDTH control operates pre-fader, on stereo channels and groups. It adjusts the width from mono, through stereo, to wide.

(6) & (7) Assignable Inserts

Pressing the INSERT button allows the rotary control and ON button to control assignment of assignable inserts to channel and group paths. Assignable inserts can then be patched in and out of the channel or group path, using the IN button. A button allows selection for the patch to be made pre-fader. The send and return ports for the assignable inserts must first be set up using the screens.

(8) Moving Paths

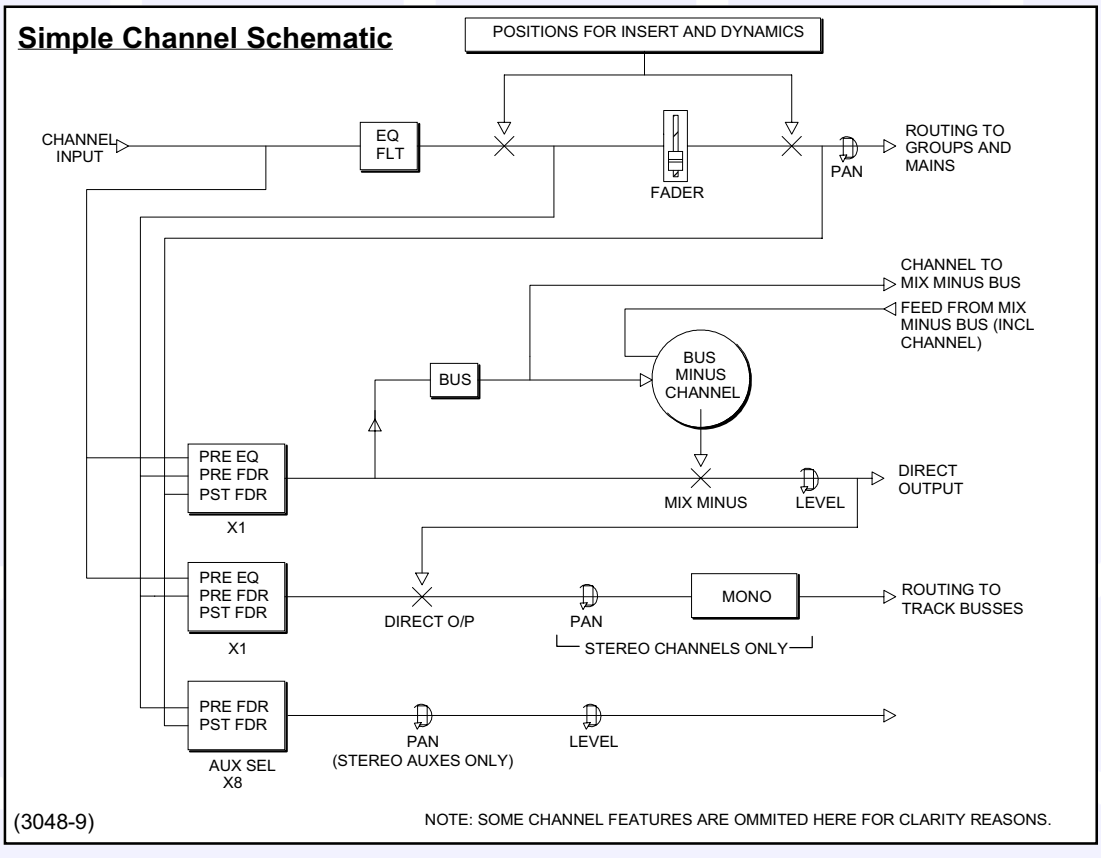
Paths can be moved or swapped from one fader to another, using the MOVE PATH buttons. Select the fader assign button of the path that you want to move, and press TO FADER. Then select the destination fader assign button, and press EXEC. Paths can also be moved using the screens.

(9) 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 main outputs and monitoring are surround.

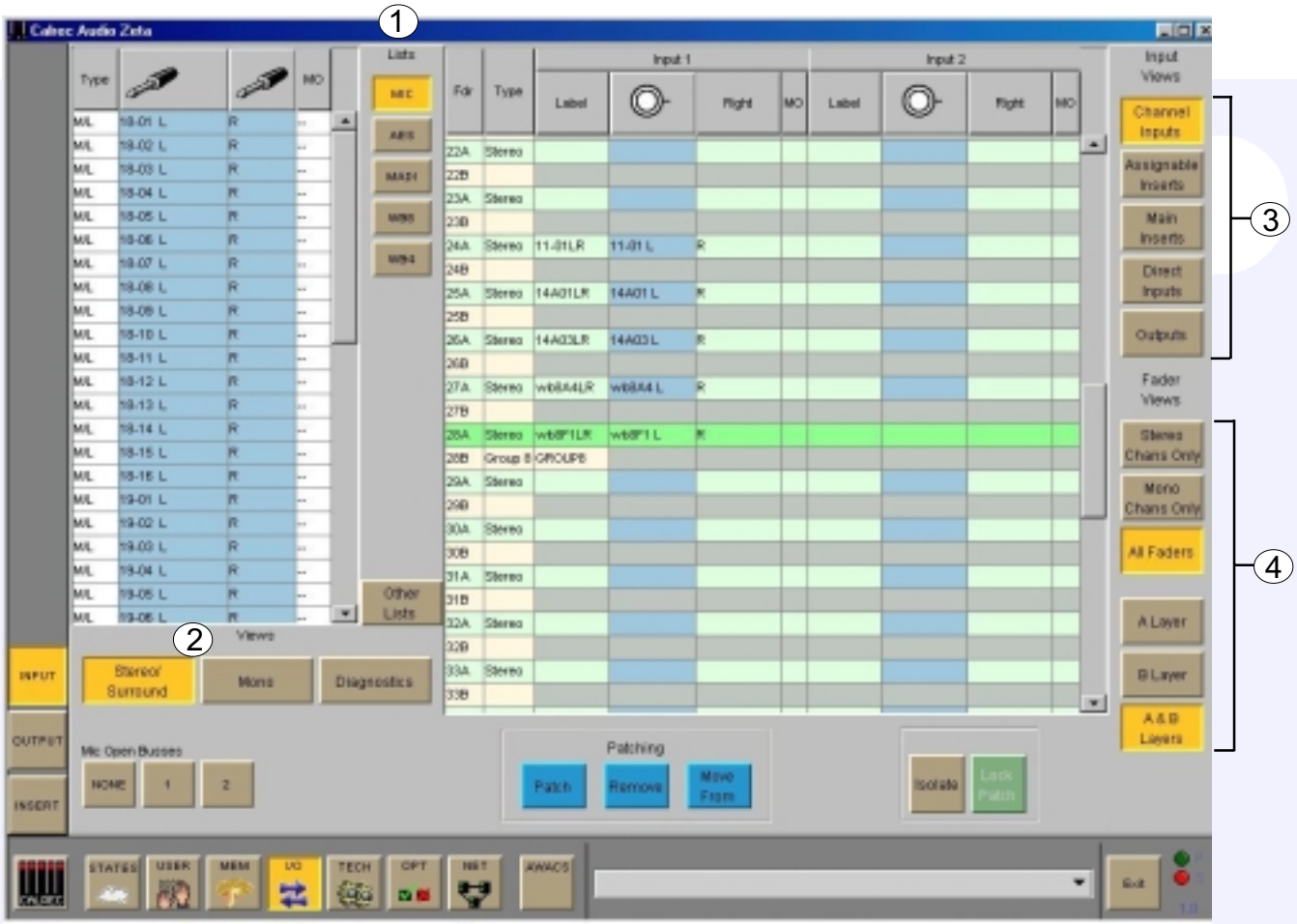
(10) Direct Output and Mix Minus

BUS feeds the Direct Output signal to the Mix Minus Bus. The output of the Mix Minus Bus feeds back into the channel 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. Groups can also produce a mix-minus output in the same way.



INPUT PORTS SCREEN

In addition to the port and insert selection controls in the Input-Output section of the control surface, port connections for all I-O and the assignment of inserts can be set using the PC. The Input Ports Screen below is used for "patching" input sources to channel inputs, insert returns, direct inputs or port outputs. The screens automatically scroll to follow the Assign button (A and B) presses on the faders.



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

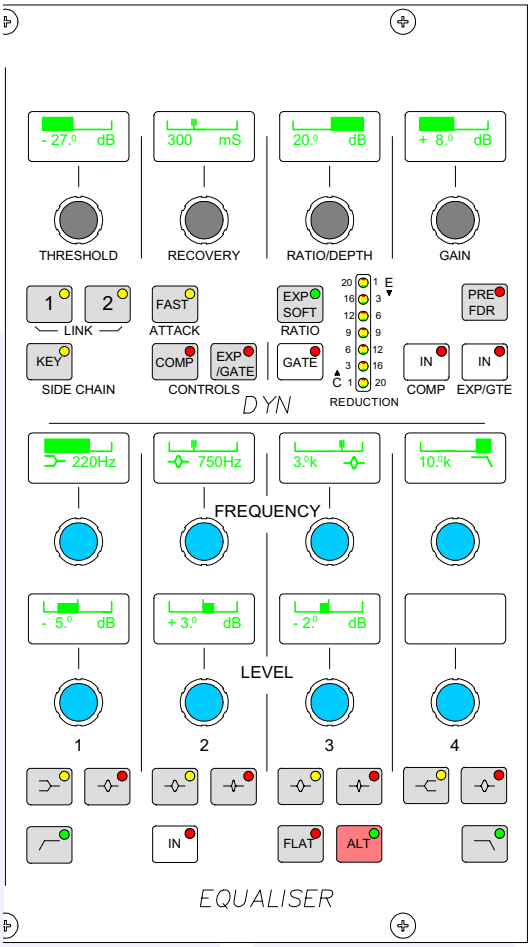
(1) All available ports can be grouped into suitable lists at the time of installation. These lists can then be displayed on the left of this screen, ready to be patched to channels. Different lists are accessed using the selection buttons.

(2) 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 port 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, direct input or output port, then selecting PATCH will assign that source.

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

DYNAMICS, EQ AND FILTERS



The Dynamics section of the module controls the side chain, providing a Compressor/Limiter and Expander/Gate on channels, and a Compressor/Limiter on groups and main outputs

The COMP and EXP/GATE buttons switch the controls between the two functions. The IN buttons switch the Compressor/Limiter and Expander/Gate into the signal's path. The controls provide:

For a Compressor/Limiter:

Threshold +20dB to -20dB
Recovery 75ms to 4 sec + AUTO (Max anti-clockwise setting)
Ratio 1 to 50 (Limiter)
Fast Attack = 250µs (normal 5ms)

Make up gain between 0dB to +20dB can be applied.

For an Expander:

Threshold 0dB to -40dB
Recovery 75ms to 4 sec + AUTO (Max anti-clockwise setting)
Depth 0dB to 40dB
Fast attack 300µs (normal 16ms)
Ratio 2/1 or SOFT

For a Gate:

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

It is possible to have the dynamics of many channels linked by assigning them to one of two available link busses. This is useful for when the same dynamics settings need to be applied to more than one channel, for example, when four channels represent a 5.1 signal. With the channel selected, press 1or 2 to assign the channel to the bus.

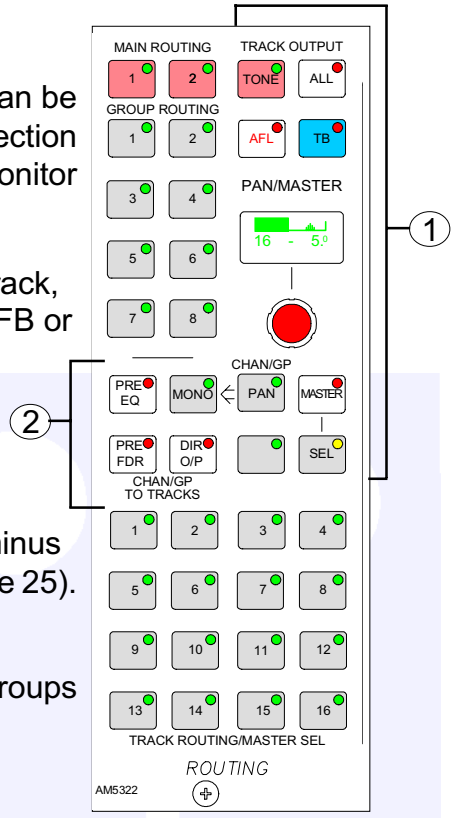
EQ & Filters:

The controls provide:

1 20Hz to 470Hz, shelf, bell (Q of 1) or High Pass Filter (12 dB/octave).
2 50Hz to 3.2kHz, Q = 1 or High Q = 3.
3 250Hz to 16kHz, Q = 1 or High Q = 3.
4 1kHz to 20kHz, shelf or bell (Q of 1) or Low Pass Filter (12 dB/octave).

Bands overlap to allow greater flexibility of settings. EQ level controls are adjustable by +/-15dB.

ROUTING



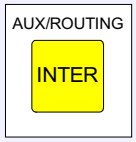
Routes to tracks, groups or main outputs for the selected channel can be made or removed by pressing the numbered buttons in the routing section of this panel. 8 optional bargraphs can be fitted in the upstand to monitor the group levels.

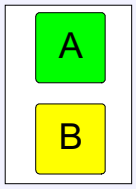
(1) The TRACK OUTPUT section controls the output to the multi-track, after the track mix. The 16 track outputs can also be used as IFB or general purpose bus outputs. 16 optional bargraphs can be fitted in the upstand to monitor the output level.

(2) 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 25).

Pan (Balance on stereo channels and groups) pans the signal between odd and even tracks. Mono (on stereo channels and groups only) makes the signal mono after the pan.

Interrogate Mode

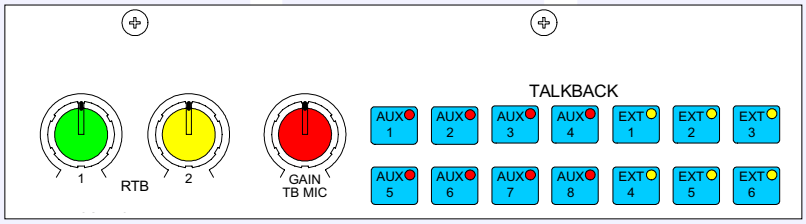




It is possible to discover which fader paths are feeding each of the routing busses by putting the panel into “Interrogate” mode. This is done by pressing the INTER button in the Auxiliaries section. If any of the routing buttons (Groups, Mains, Tracks) buttons are held down, the fader assign buttons of all the paths feeding that bus will light. Auxiliary and Mix minus busses can also be interrogated in this way.

When in Interrogate mode, it is possible to add or remove paths to and from the bus under interrogation. With the required routing button held down, simply select or de-select the path by pressing it’s fader assign button. This is known as “Reverse Routing”.

TALKBACK



Talkback is available to all 8 Auxes and 6 externals (via GPO switching) using the buttons in this section . Talkback is also available using the buttons on the fader modules, the Input/Output section and the Track output section, to Direct Outputs and individual tracks. Talkback is available to Studio LS using the button in the monitor selector section.

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.

AUXILIARIES

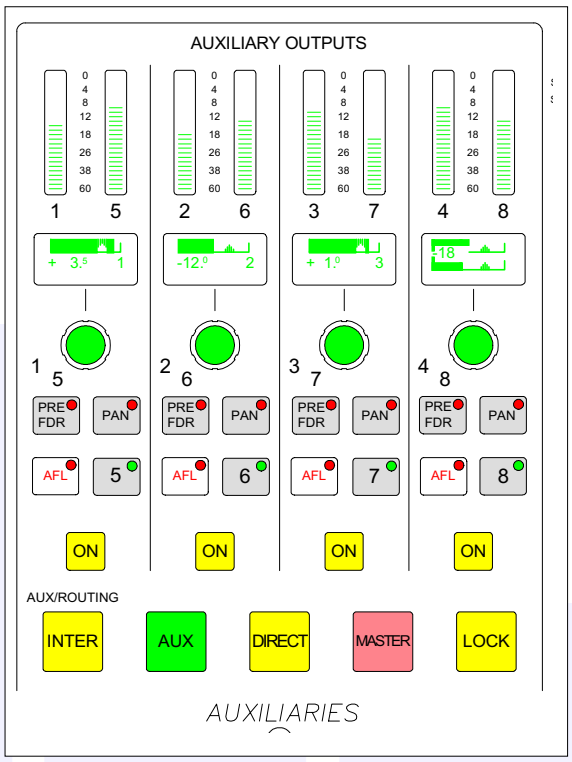
There can be 8 mono or 4 stereo Auxiliary output busses. They are pre-set to be mono or stereo using the Busses screen. If, for example, aux 4 is set to be stereo, then aux 8 will not be available (and Aux 8 will not work on the monitor selector).

On mono auxiliaries, buttons 5 to 8 switch the control to that numbered aux send.

The **ON** buttons switch the feed to the Aux on. Each feed can be pre or post the channel or group fader.

The bargraphs at the top of the panel display the Aux output levels.

PAN makes the control into a Pan control (balance on stereo channels) if the Aux is stereo. Any pan offset will be shown as an offset between the two bars of the display when controlling the level.



INTER — This latching button 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. It is also possible for interrogation of the routing busses to take place by holding down any of the routing buttons (Groups, Mains, Tracks).

AUX, DIRECT, MASTER and **LOCK** influence the function of the controls.

AUX — When AUX is selected, this section of the module controls the feeds from the channels or groups to the auxiliary output busses.

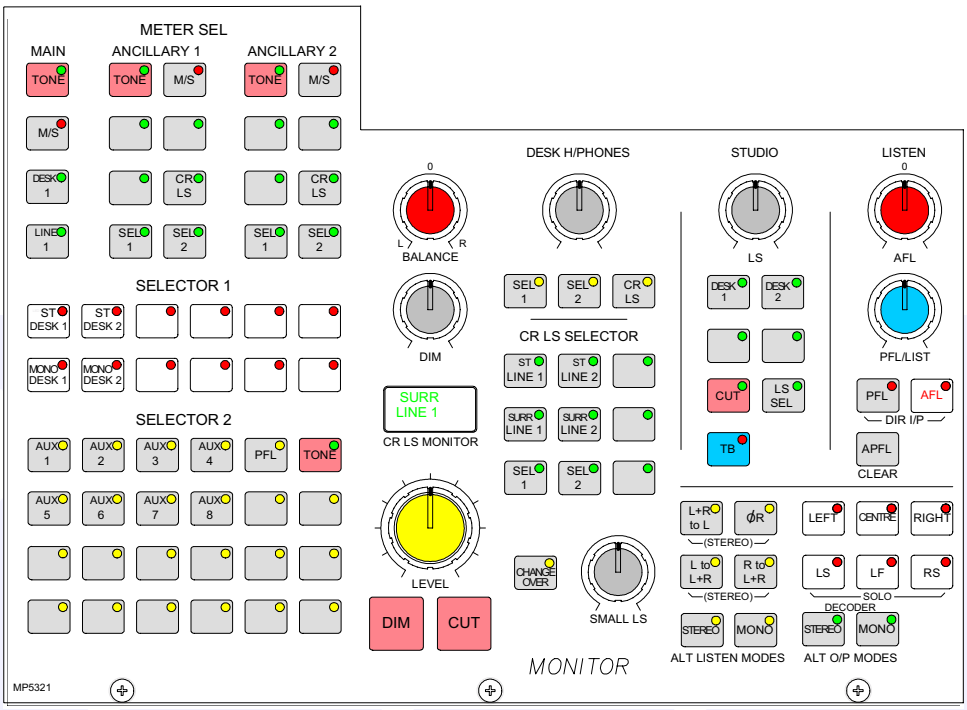
DIRECT — When DIRECT is selected, this section controls the aux direct inputs. The pre fader and pan controls will be in-operative.

MASTER — When MASTER is selected this section controls the aux outputs. On stereo auxiliaries a dual level display will be shown. There cannot be a level offset on the output display. The ON buttons switch the output on and off.

LOCK — Locks the panel into MASTER mode. If LOCK is not selected, the panel reverts to AUX mode if a fader assign button is pressed.

When DIRECT or MASTER are selected, the displays above each rotary control show a bargraph of the gain, and what is being controlled (e.g O/P or DIR) . This remains until they are adjusted, when the dB value of the gain is then displayed. A short time after the adjustment has been made, the display will show the bar and label again.

MONITOR SELECTOR AND LS



The Monitor Selector is used to select the source to monitor, and the Meter Selector is used to select what to display on the meters. If the loudspeaker system is surround, stereo and mono sources will still be heard in stereo and mono, with no signals on the other speakers. Selector 1 & Selector 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.

For surround signals to be monitored using stereo loudspeakers or metering, a stereo downmix is created in the monitoring. 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.

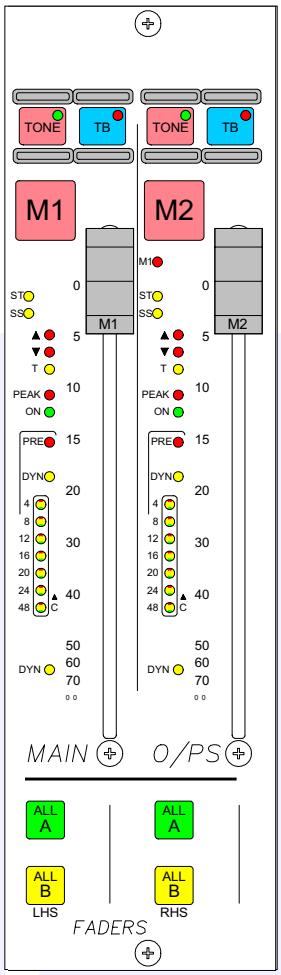
The Small LS level control is in series with the Main LS level control. The “change over” button diverts the monitor output to the Small LS for near field, or domestic check monitoring. Both Main and Small LS can be Stereo, 3 Stereo, or 5.1 independently.

DIM, CUT & SOLO operate on both sets of loudspeakers. DIM & CUT can be externally operated and controlled from the TB.

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

MAIN OUTPUTS



Unlike channel faders, the main fader design is not dual path.

The Assign buttons (M1, M2) call Main Output 1 or 2 to the Assign Panels to allow:

- ν Routing of Main 2 to Main 1.
- ν Insert ON/OFF.
- ν Control of the compressor and direct input.

The Main outputs 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.

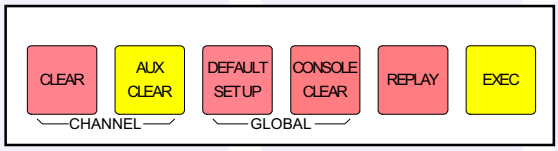
The Main output meters display the stereo downmix if the output is surround. If the main line monitor is set to be fed back from the studio distribution via external inputs to the desk, then the meters will display this instead.

The function of the fader bargraph can be set to display either the pre fader level or the amount of gain reduction applied by the dynamics setting.

Faders Section

The ALL A and ALL B buttons switch all the channel faders to display either their A path or their B path. Using the ALL A and ALL B buttons is similar to moving to a different section of a single layer design.

CONSOLE FUNCTIONS



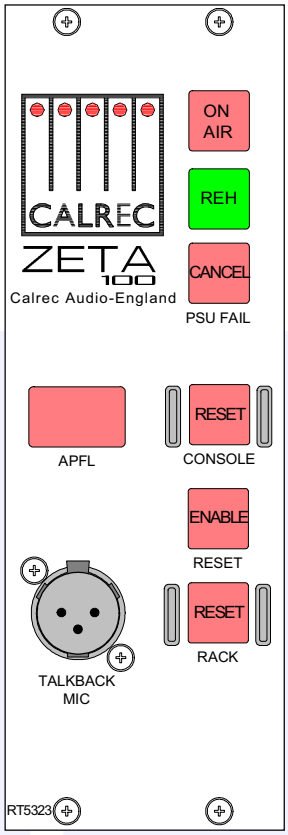
These buttons are located above the Meter Selector controls. The channel buttons allow clearing of all settings, or just the Auxiliary settings from the currently assigned channel path. The global buttons allow the default studio set-up to be loaded onto the console, or for all console settings to be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

CLEAR, AUX CLEAR, DEFAULT SET-UP and CONSOLE CLEAR flash when pressed and require EXEC to be pressed before the operation is carried out. It is recommended that settings are saved to memory before these functions are used.

Default Set-up

The Default set-up should be created upon installation of the Zeta 100. 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.

RESET PANEL AND ERROR CORRECTION



This module controls the Transmit/Rehearse state of the console, rack and console reset, and houses the connector for the talkback microphone.

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 at the top of this module. The condition switching for the system is set up using the screens, where 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 when in the various modes, 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 ensures "hot" changeover to the spare should there develop a fault (if the hot spare option has been purchased). 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.

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.

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.

Console and Rack Reset

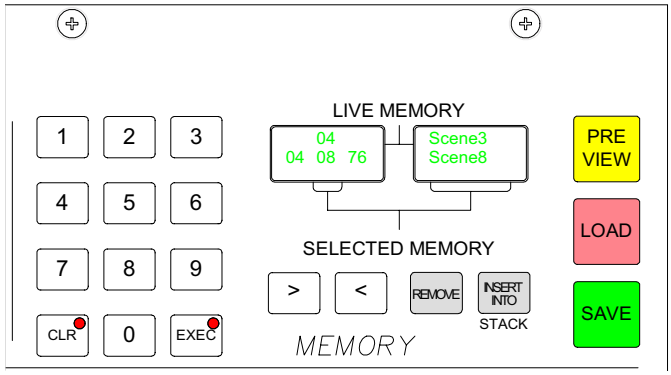
Pressing the Console Reset button resets the Control System only. Independent DSP operation ensures audio continuity during console reset. The most recent console settings will be fully restored in less than 10 seconds.

The Rack Reset button reboots the racks only, without affecting the control surface.

PC Reliability

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.

MEMORY SYSTEM CONTROLS



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 (See-Memories screen). Memories can also be stored to external media, which can be useful for when several operators use the same console.

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.

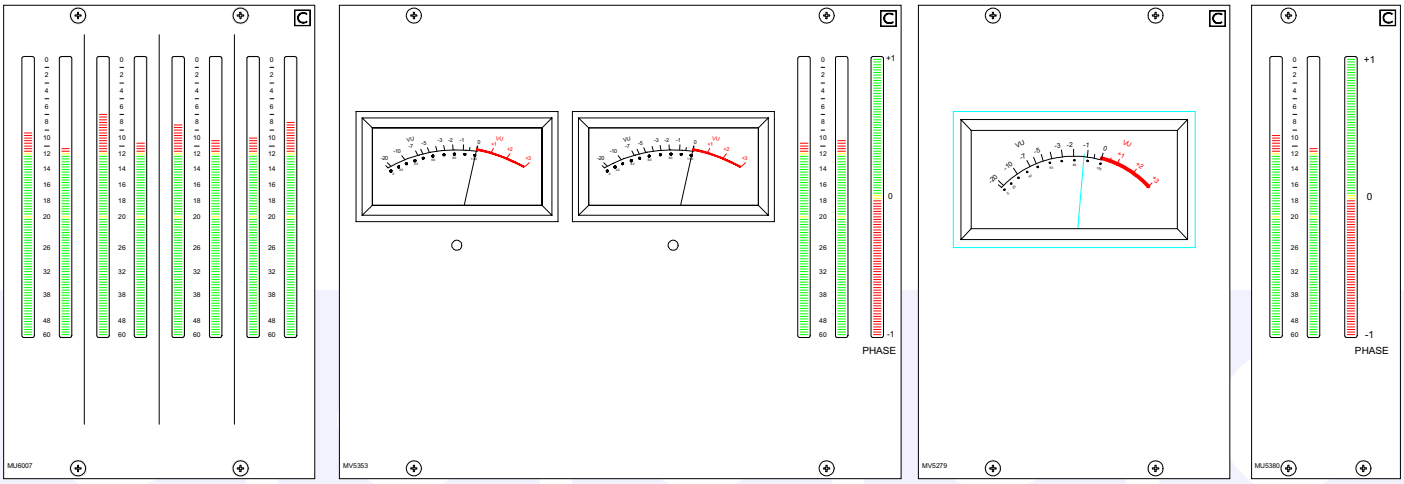
Stacked Memories

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.

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. Pressing REMOVE will remove a Stack memory from the Stack, or in the case of a non-stack memory will remove it from the Selected Memory position.

METERING OPTIONS



Main and Ancillary 1 Meters

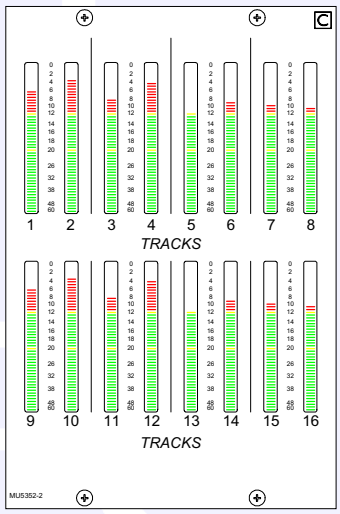
The Main and Ancillary 1 Meters can each be stereo only, surround only, or surround plus stereo (displaying a downmix of the surround signal). There can be a separate M/S meter (fed from the same downmix). They can be PPM's, VU's, Bargraphs, Phase displays incorporating bargraphs, or a mixture of these.

The MAIN METERS are fed from the Main meter selector which is on the Monitor Selector module. The two selection buttons can be pre-set to either Main 1 or 2 Desk (pre Tone & TB), or Main 1 or 2 Line (which can be an external input). An M/S button can be fitted if there is a stereo meter and no separate M/S meter.

All meters in the meter bridge, including moving coil types, are fed directly from the internal meter system, except for any Phase Displays which will require audio outputs from the I/O Rack. 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.

Other Meters

A comprehensive set of optional meters are available, for example:



- 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. The APFL meter will display the stereo downmix of these signals.
- Single bargraph displaying signal on the mix minus bus (Mono).
- 8 stereo bargraphs for the Groups. For mono groups, the meter will display the left bar only.

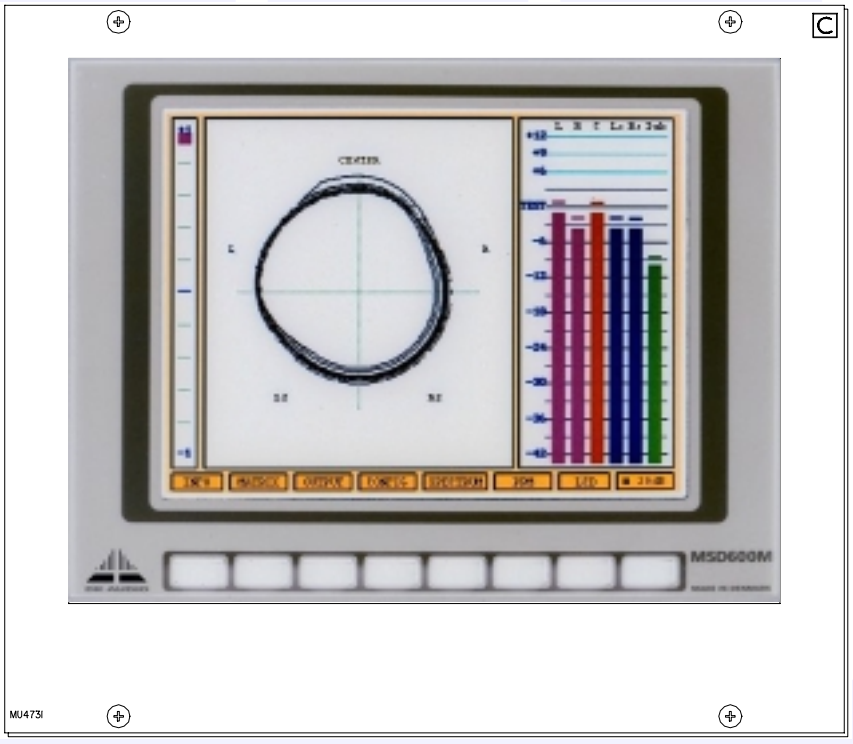
Calrec can supply either bargraphs, Moving Coil VU or PPM meters. All meters in the meter bridge, including moving coil types, are fed directly from the internal meter system.

Calrec bargraphs provide a bar which can be set to 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 two 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.

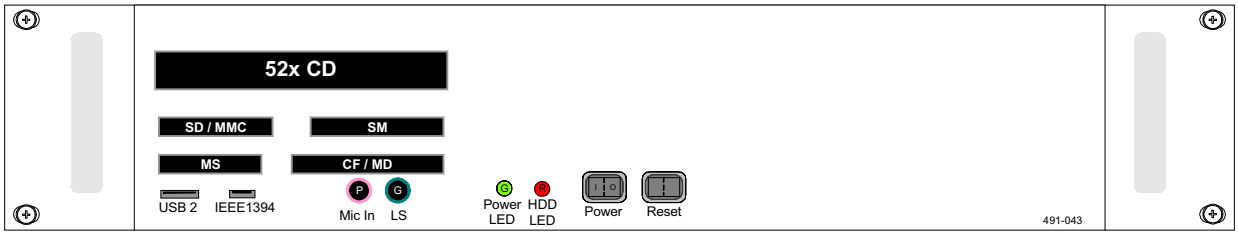
Optional Third Party Metering

It is possible to incorporate third party metering options into the Zeta 100 design, such as the DK Audio MSD600M shown here. This should be fed from the ANC 1 meter selector, and will require audio outputs from the processing rack.

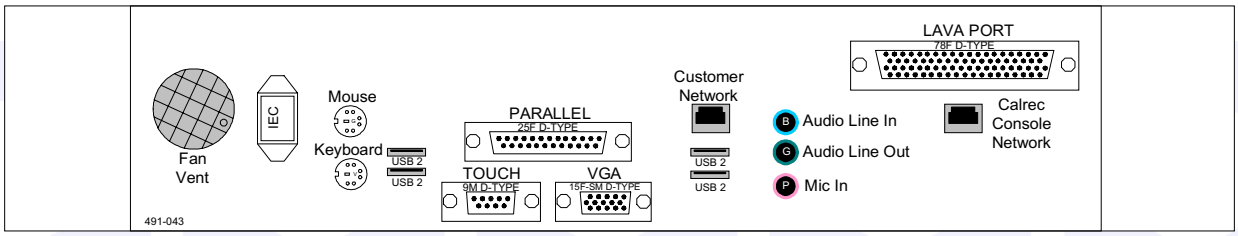


PC INFORMATION

Front



Rear



Usernames and Passwords

The PC will be set up with two sets of usernames and passwords:

Username	Password	Description
CalrecAudio	(None)	This user can install and run programs, but not change PC hardware settings, (i.e. set-up network, install drivers). This user is intended to be used during normal operation of the PC.
CalrecAudioAdmin	calrec	This user has full rights to the PC, and can install and change PC hardware settings. This user is intended for use during re-configuration of the PC and to set up Hydra Audio Networking.

File Backup

A number of flash card slots are provided on the front of the PC for file backup. In addition, backup could also be to a customer's LAN or to a USB device which can be plugged into the front or rear of the PC. It is recommended that the following files are backed up in case of PC failure:

File	Location
Config.ini	C:\Alpha 100\cust1
Setup.ini	C:\Alpha 100\cust1
a100fe1.ini	C:\Alpha 100\cust1
Options.bin	C:\Alpha 100\cust1\options
Alphaprg.ini	C:\Alpha 100\alphaprg

For Hydra Netork users, it is advisable to back up the Network folder, found on **c:alpha100/cust1.**

It is also advisable to back up any user memories (.mem) created and saved onto the PC's hard drive. These will be found on **c:alpha100/cust1/memories.**

Remote Access

USB connectors are provided on both the front & the rear of the PC for the option to add an external modem of your choice. If a modem is added, and a suitable telephone line installed, the console can be remotely accessed by Calrec Support Engineers to aid software upgrades and diagnostic work. This can greatly enhance the level of service and support we can provide. A dial-up facility must first be activated at the PC before this is possible, to ensure that connections are not made at inappropriate times or without the user's knowledge and consent.

Network Ports

A network port is provided to enable the user to connect to their own LAN. Calrec will not be responsible for the configuration of this port or for any performance issues arising from its use.
A second Ethernet port is provided to enable the PC to be connected to a Calrec Hydra Audio Network, which is an option which can either be purchased with the console or in the future.

Software Supplied

An OEM PC Operating System license is supplied with each console, and the operating system software is pre-installed. The Zeta 100 console software is also pre-installed, and supplied on a CD-ROM.

3rd Party Software

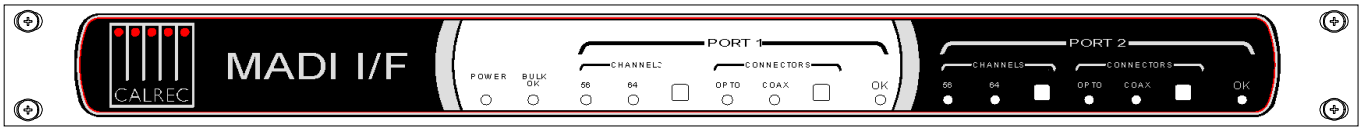
Calrec recommends that the PC is regarded as an integral control device for the console, and not as a general purpose PC. If 3rd party software is installed on the PC, care must always be taken to ensure that it does not interfere with the normal performance of the PC. The installation of inappropriate software on the PC may invalidate the console warranty.

PC Specification

Operating System	Windows 2000
CPU	Intel Celeron Processor (2GHz)
RAM	256 MB DDR RAM
HDD	40GB
CD ROM	52x
Network Ports	2 x 10/100
Card Slots	Compact Flash/Microdrive, SmartMedia, Memory Stick, Secure Digital/Multimedia Card
USB 2 Ports	4 (Rear of Unit), 1 (Front of Unit)
IEEE1394 Port	1 (Front of Unit)
Additional Hardware	Lava Octopus 8 Port Serial Card
Additional Software	PC Antywhere

OPTIONAL WIDE AREA INTERFACES

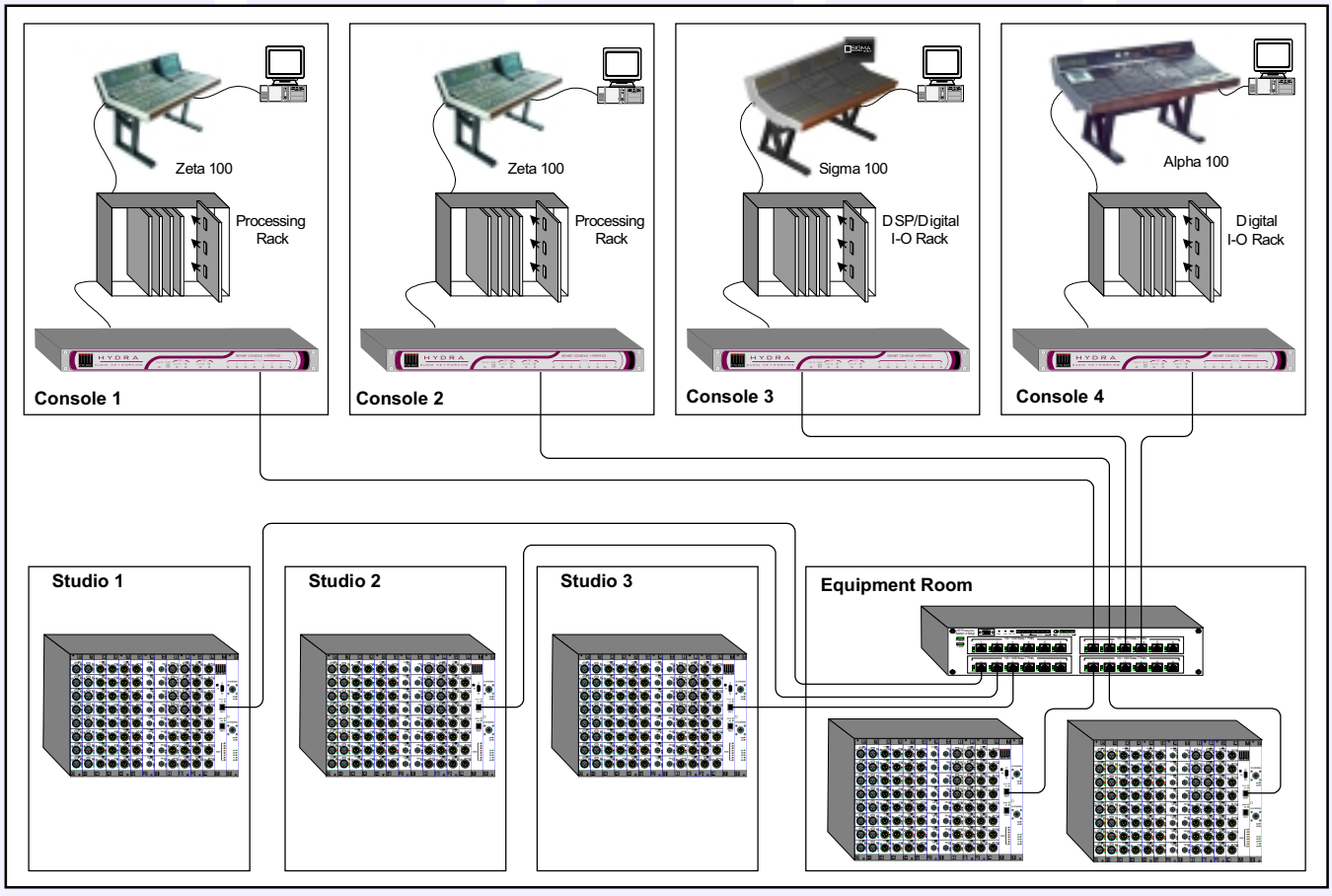
MADI



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 Zeta 100 system via a Wide Area Bulk (WAB) card, which occupies one of the bulk card slots in the Processing 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. Sample Rate Conversion is not available on MADI inputs or outputs, therefore all equipment connected via MADI must be synchronised to the same source as the console.

Hydra Audio Networking

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. Gigabit ethernet fabric is used as it is by far the highest speed network fabric commonly available.



Screen Operation

SCREEN LAYOUT

The Zeta 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 Zeta 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.

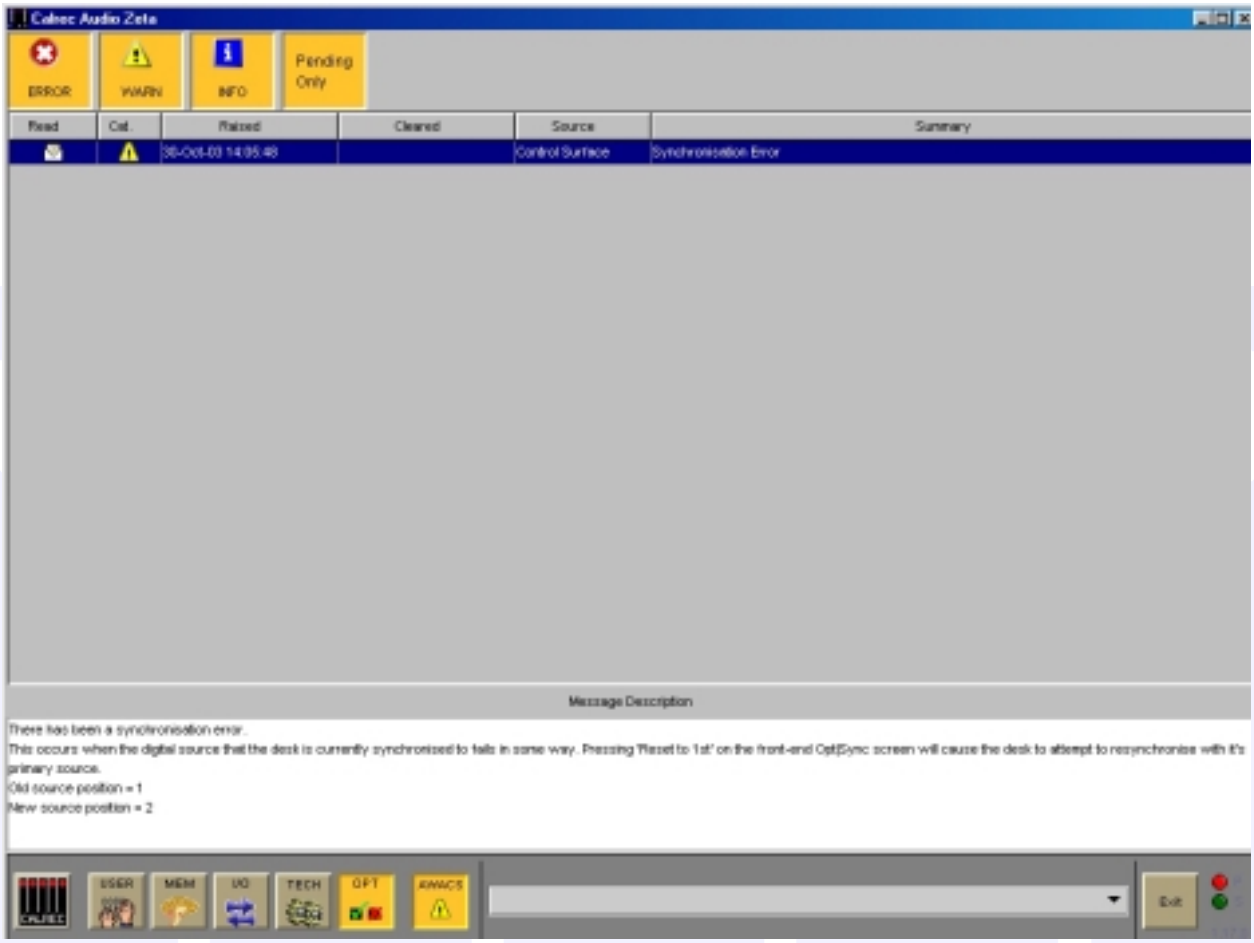
Tech — Trouble-shooting screens for the "house technician".

Opt — Options screens for pre-set items 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 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).

AUTOMATIC WARNING AND CORRECTION SYSTEM (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"

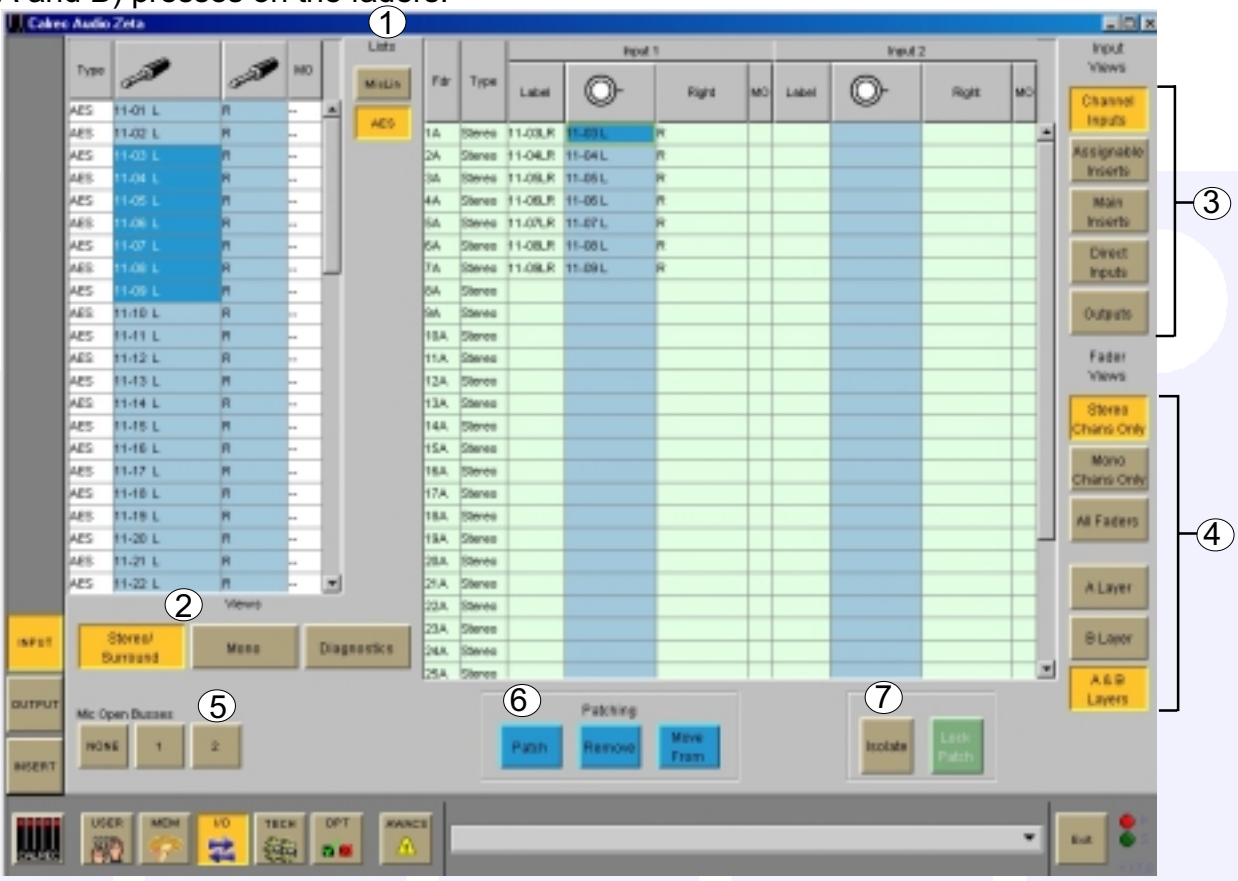
Warning messages, where the system back-up has taken over

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

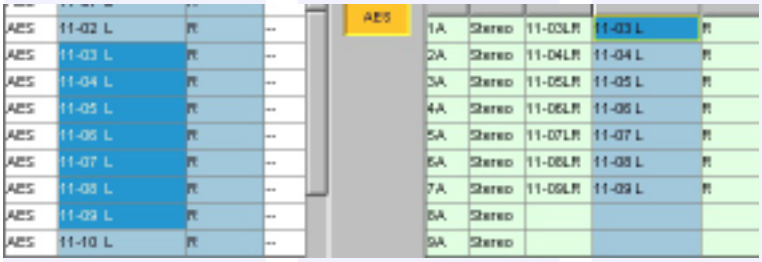
Assignment is made by selecting a source,  and an input or output,  and selecting Patch. 

Once patches are made, they can be removed when selected by clicking REMOVE. Connections can also be made using the controls in the Input/Output section of 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.

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.



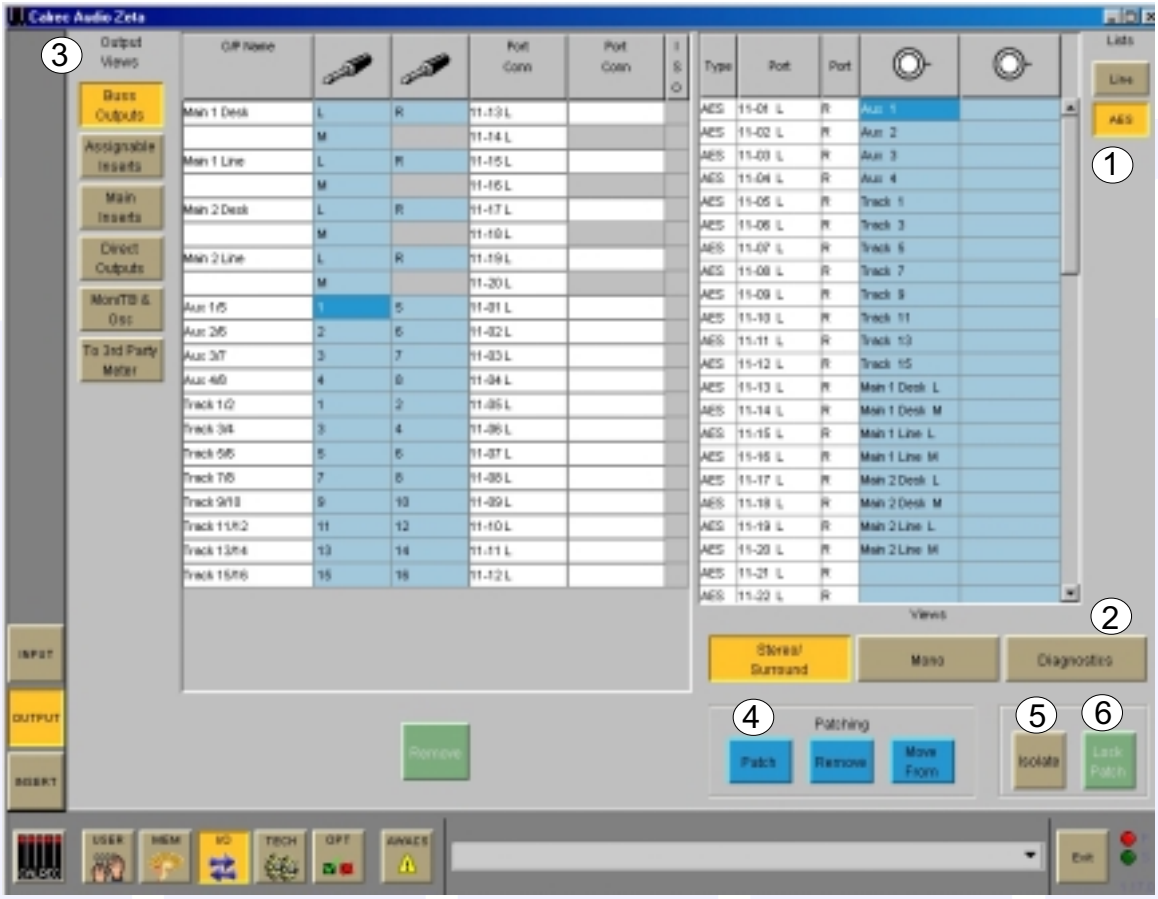
- Select a list of input ports using the trackball by dragging down the column
- Select the fader to start patching to
- Select Patch

(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.

OUTPUT PORTS SCREEN

This screen is used for "patching" console output signals to Main, Auxiliary and Track output ports, Insert Sends and Direct Outputs. It is also for setting up Monitor, Talkback ,Oscillator and external metering 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 controls in the Input/Output section of 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.

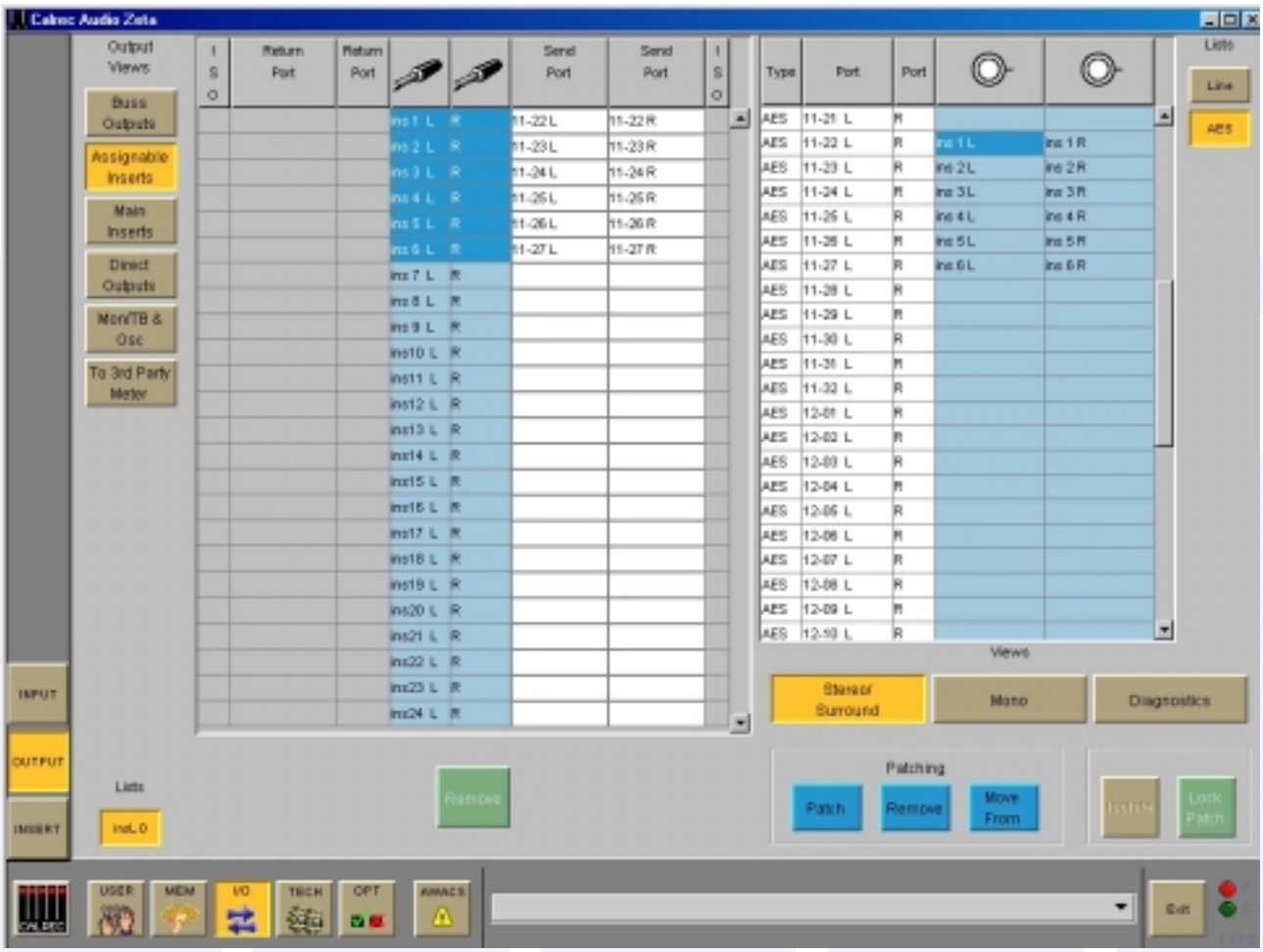
(6) Locking - Only available on output ports

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 Zeta 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.

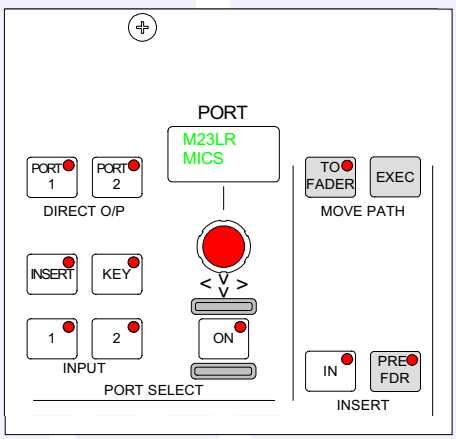
ASSIGNABLE INSERT SENDS



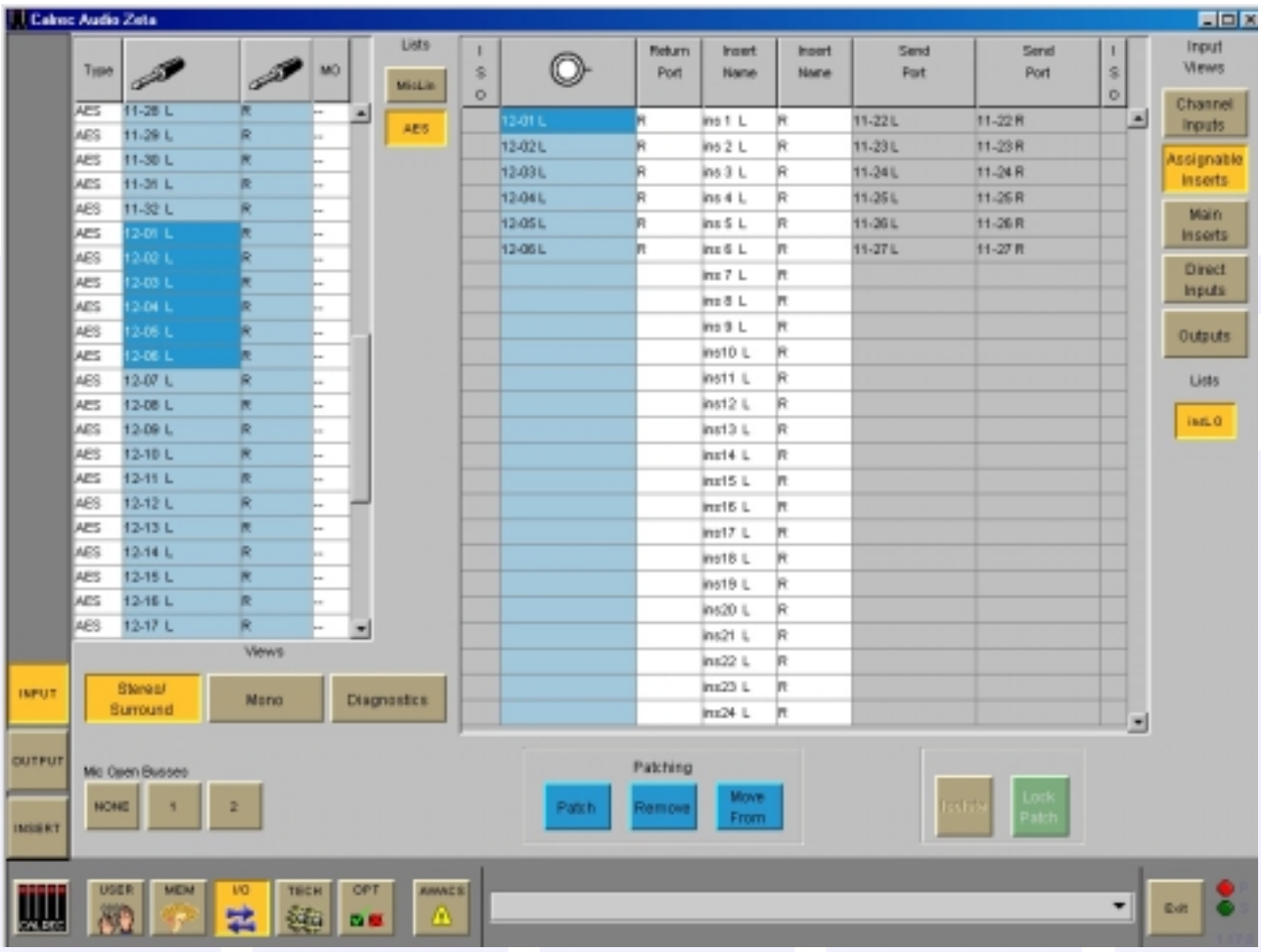
The Assignable Insert Sends are set up on the I/O - Output screen, by selecting “Assignable Inserts” from the list of Output Views. The Output Ports for Assignable Insert Sends can be patched, moved and removed here in the same way that buss outputs are patched. The Input ports connected to the Insert Return can also be seen on this screen. These are set up on the I/O - Input screen.

Once this is done the Insert can then be patched to any channel or group using either the INSERT screen or the selection controls in the Input/Output section of the control surface.

Once an insert is connected to a channel or group, it is switched into it’s path using the IN and PRE FDR buttons in the Input/Output section (shown).



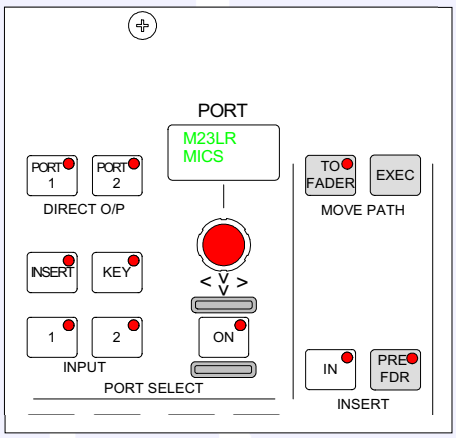
ASSIGNABLE INSERT RETURNS



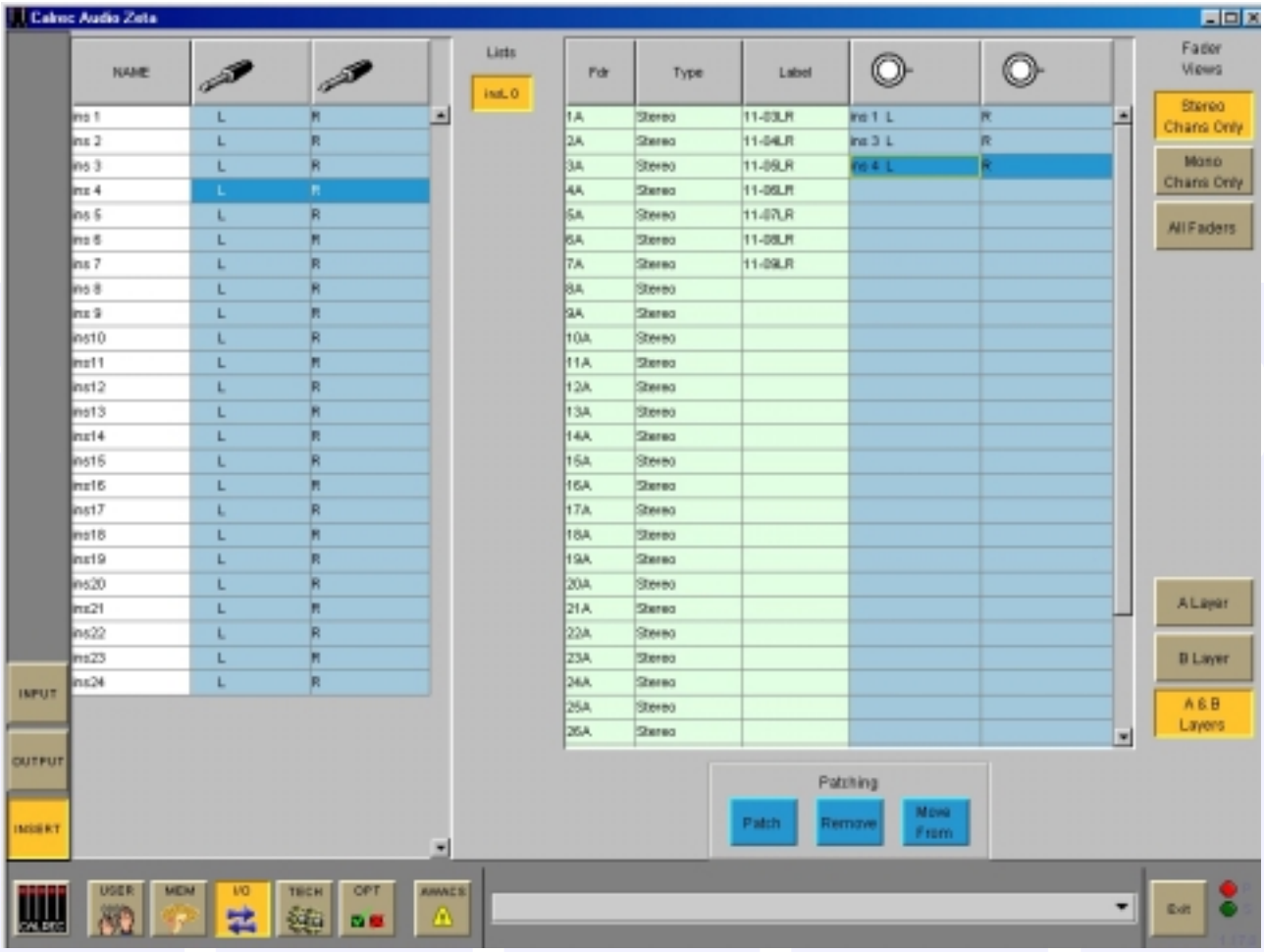
The Assignable Insert Returns are set up on the I/O - Input screen, by selecting “Assignable Inserts” from the list of Input Views. The Input Sources for Assignable Insert Returns can be patched, moved and removed here in the same way that buss outputs are patched. The Output ports connected to the Insert Send can also be seen on this screen. These are set up on the I/O - Output screen.

Once this is done the Insert can then be patched to any channel or group using either the INSERT screen or the selection controls in the Input/Output section of the control surface.

Once an insert is connected to a channel or group, it is switched into it’s path using the IN and PRE FDR buttons in the Input/Output section (shown).



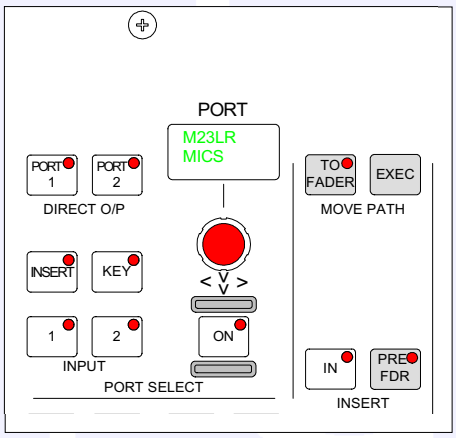
INSERT SCREEN



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 on this screen, in the same way that channel inputs are patched. The Fader View buttons select which paths are on display.

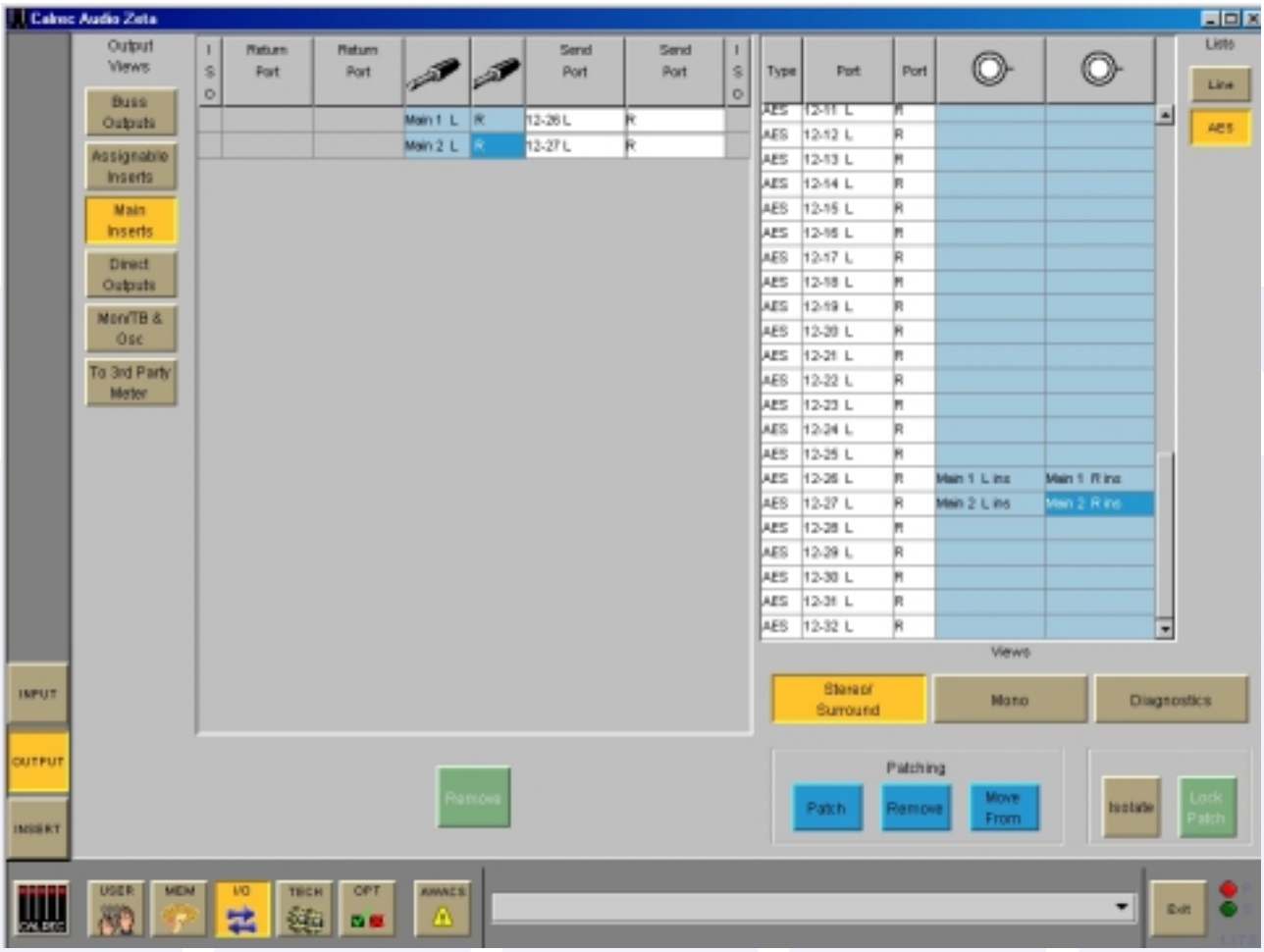
The Assignable Inserts can also be patched to channels and groups by using the selection controls in the Input/Output section of the control surface. Once an insert is connected to a channel or group, it is switched into it's path using the IN and PRE FDR buttons in the Input/Output section (shown).

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 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.

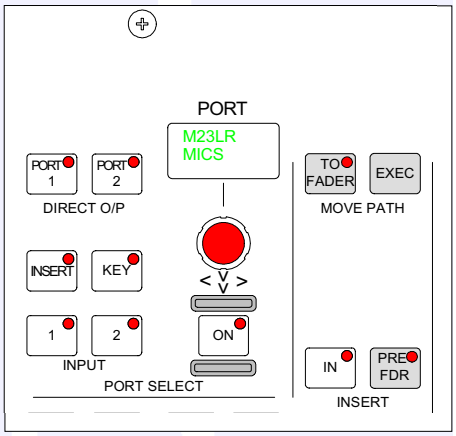
MAIN INSERT SENDS



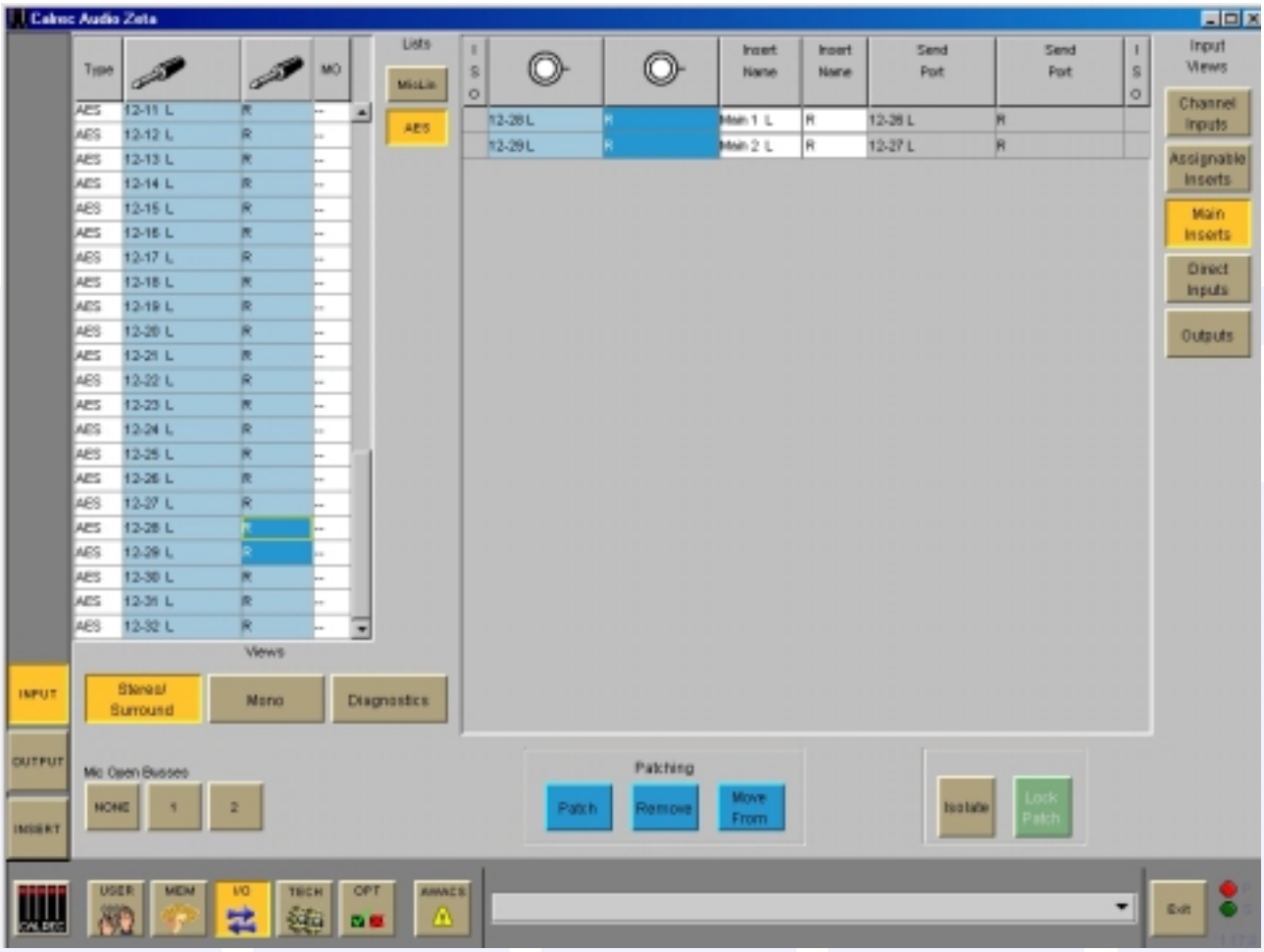
The Main Insert Sends are set up on the I/O - Output screen, by selecting “Main Inserts” from the list of Output Views. The Output Ports for Main and Monitor Insert Sends can be patched, moved and removed here in the same way as buss outputs are patched.

The Input ports connected to the Main 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 IN and PRE FDR buttons in the Input/Output section (shown).



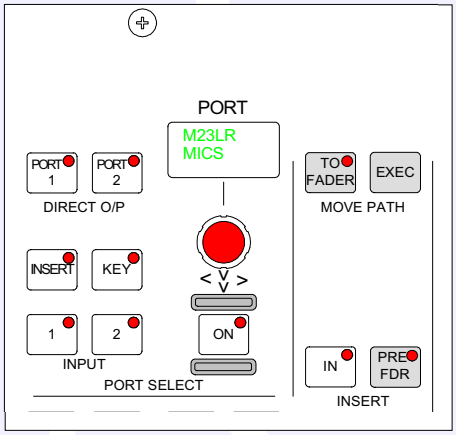
MAIN INSERT RETURNS



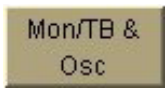
The Main Insert Returns are set up on the I/O - Input screen, by selecting “Main Inserts” from the list of Input Views. The Input Sources for Main Insert Returns can be patched here in the same way that channel inputs are patched.

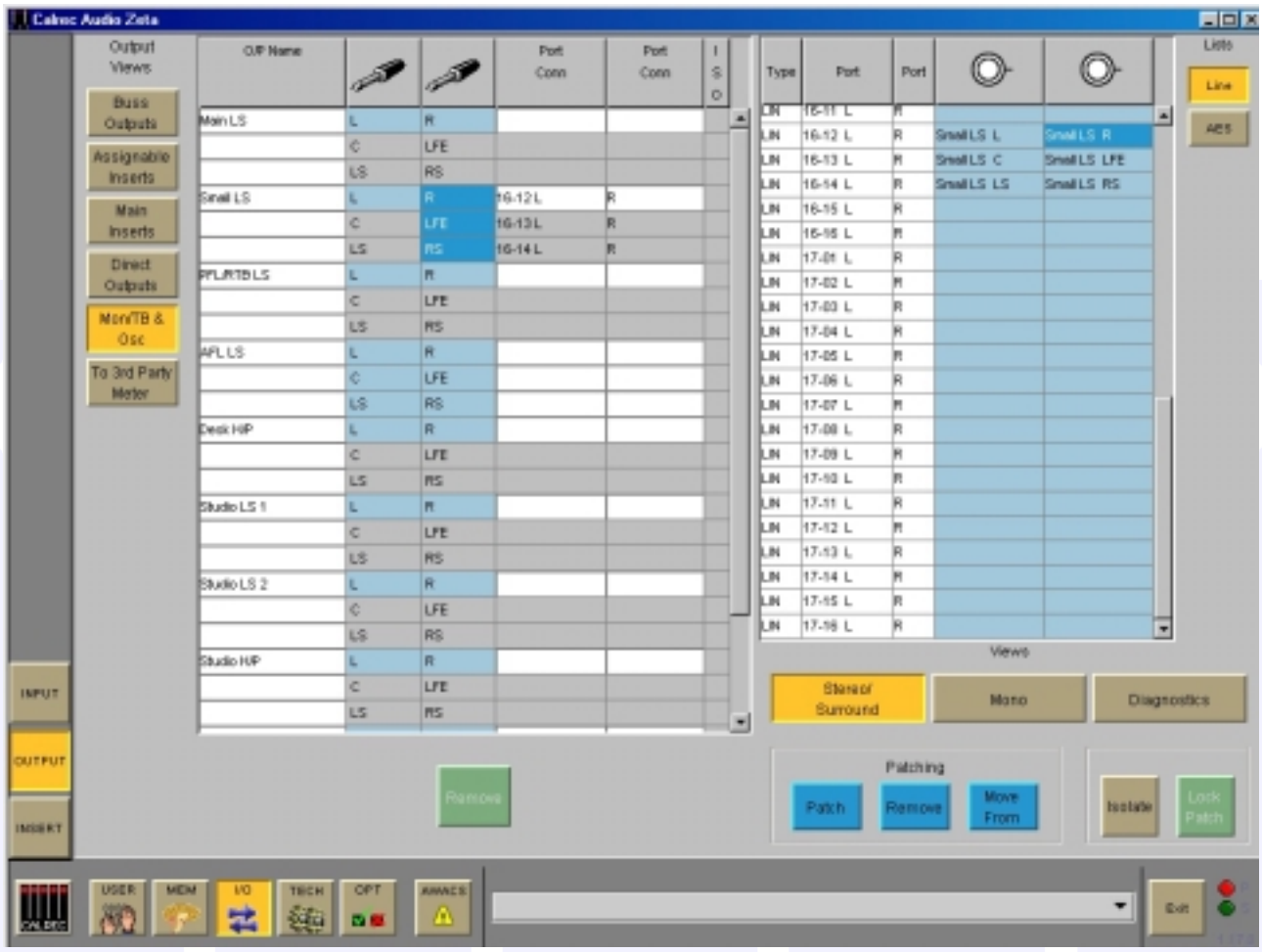
The Output ports connected to the Main Insert Send can also be seen. These are set up on the I/O - Output screen.

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 IN and PRE FDR buttons in the Input/Output section (shown).



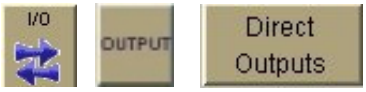
MONITORING, TALKBACK AND OSCILLATOR OUTPUTS



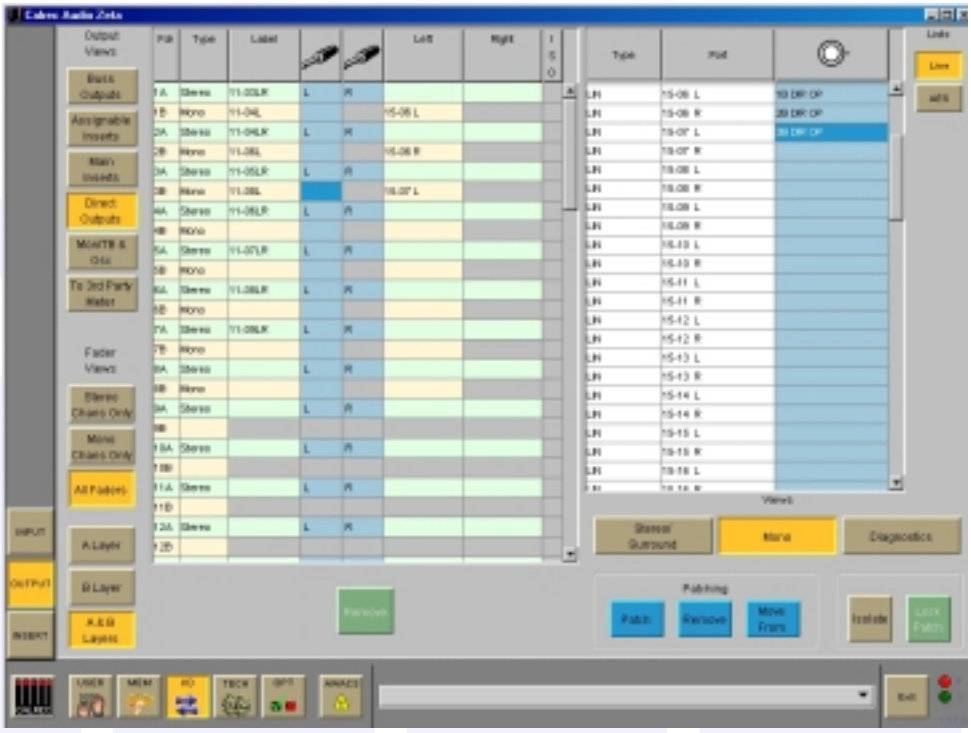


The output ports for the Monitoring, Talkback and Oscillator Outputs can be patched on the I/O - Output screen, by selecting “Mon/TB & Osc” from the list of Output Views.

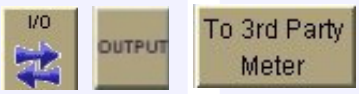
DIRECT OUTPUTS



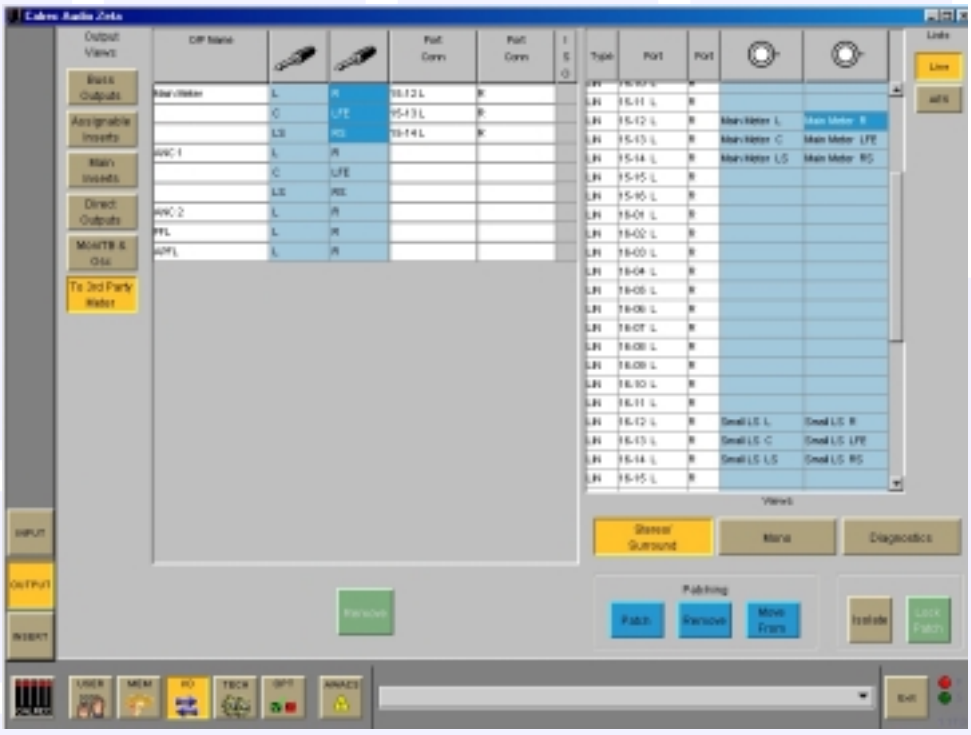
The output ports for the Direct Outputs can be patched on the I/O - Output screen, by selecting “Direct Outputs” from the list of Output Views.



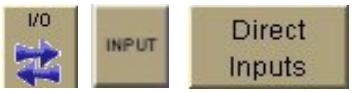
3RD PARTY METER



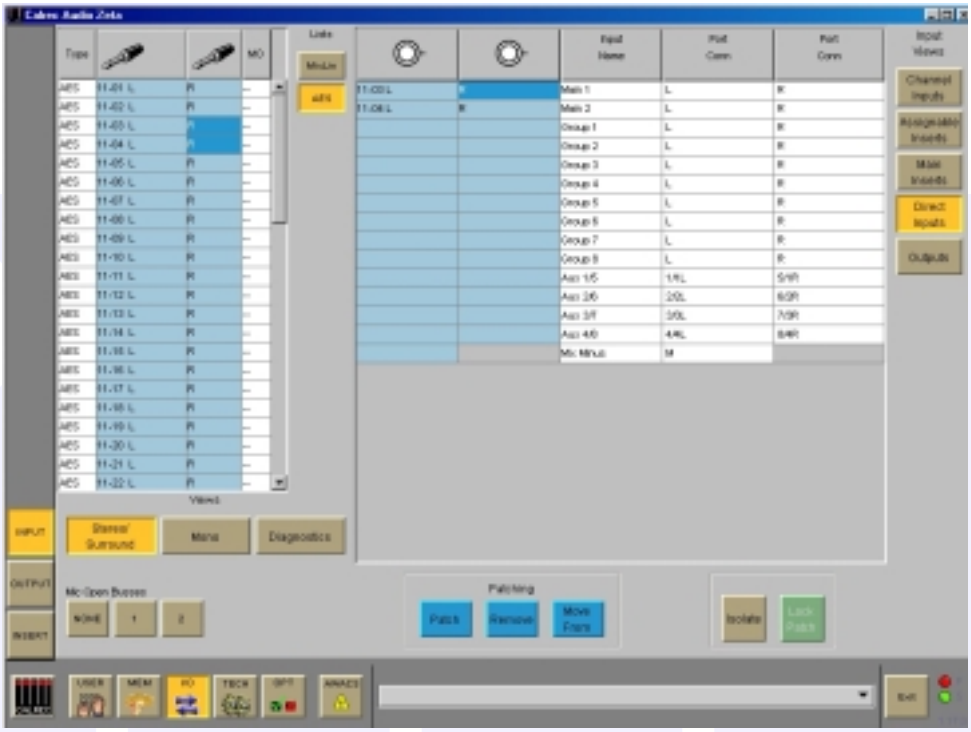
The output ports for the External Meters, such as a DK phase scope, can be patched on the I/O - Output screen, by selecting “To 3rd Party Meter” from the list of Output Views. Most of the meters on the console are driven internally and do not require output ports.



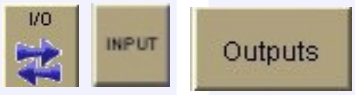
DIRECT INPUTS



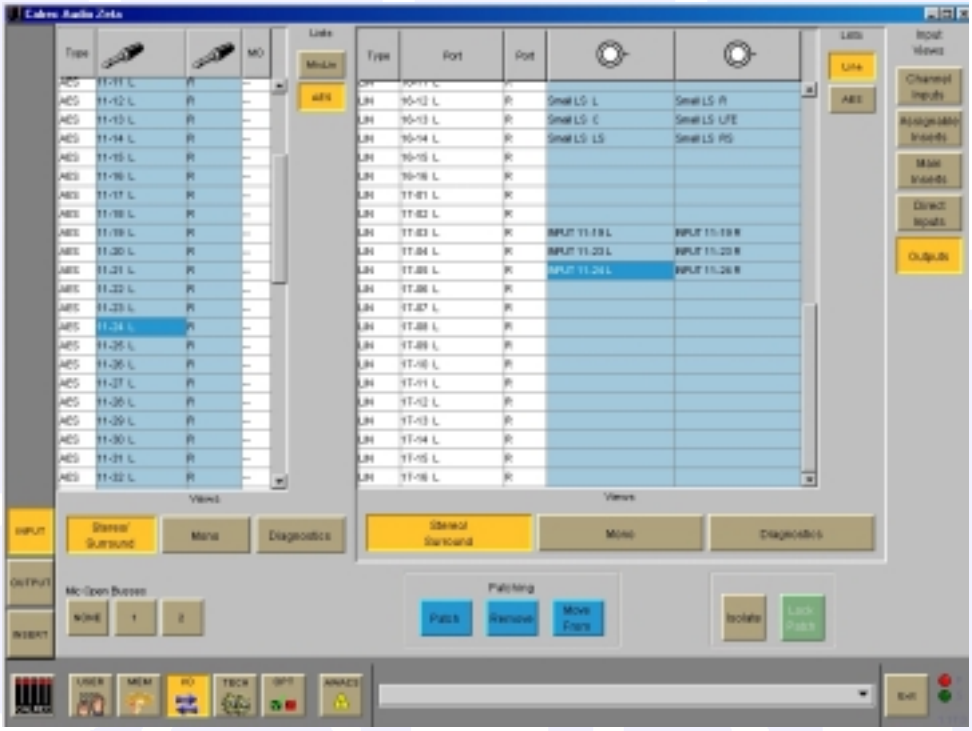
Input ports can be patched to Direct Inputs on the I/O - Input screen, by selecting “Direct Inputs” from the list of Input Views.



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, some of which are not available on the control surface.

(1) Selection

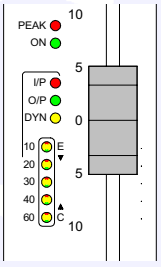
The right side of the screen shows the channels with buttons for paths A and B. Select the required channel path, either by clicking on it or pressing it's Assign Button. Then use the following controls to make changes.

(2) Path Type Selection

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. Groups are designated as mono or stereo in blocks of four using the User-Busses screen.

(3) Moving or Clearing Paths

Paths can be moved from one fader to another, or cleared from their path type using the Path Operations controls. Select the fader path that you want to move, and select Move Path. Then select the destination fader, and select EXEC(Move). To clear a path, select the fader path that you want to clear, and select Clear Path. Then select EXEC(Clear).



(4) 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.

(5) Assigning 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.

The two Wild controls “FLIP” with the fader, providing the same function for each of the two paths.

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.

Please note that Auxiliary output controls cannot be assigned to Wild controls.

Clearing Wild Controls

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.

Multiple Wild Control Assignment

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

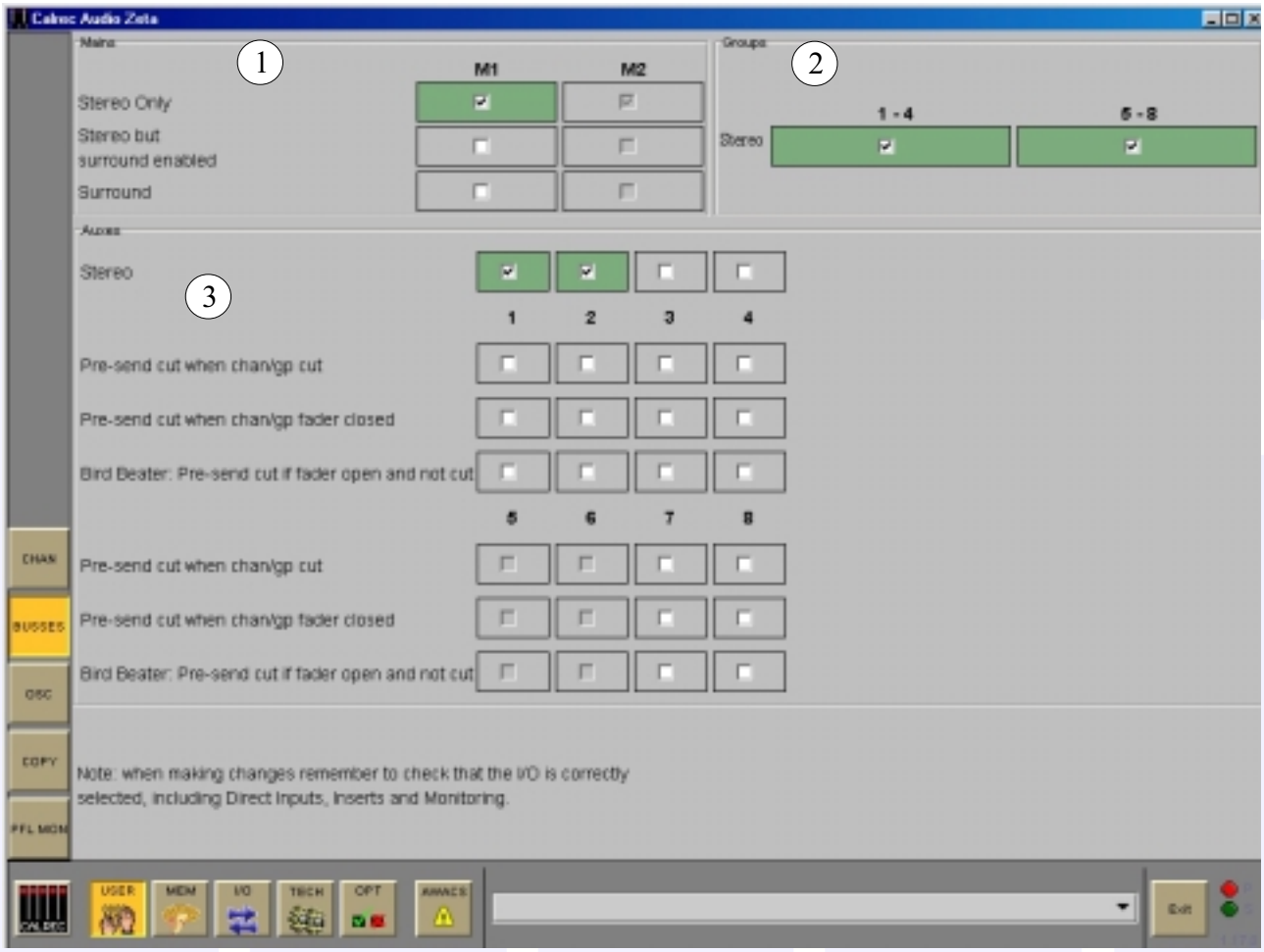
In SELECT mode, select Wild 1 or 2 on the screen and HOLD (both will light). Any number of fader paths can then be selected individually by pressing their fader assign buttons (A or B) which will illuminate. Pushing an Assign Panel rotary control will then assign that control to Wild 1 or 2 for all selected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

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.

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.

USER - BUSSES SCREEN

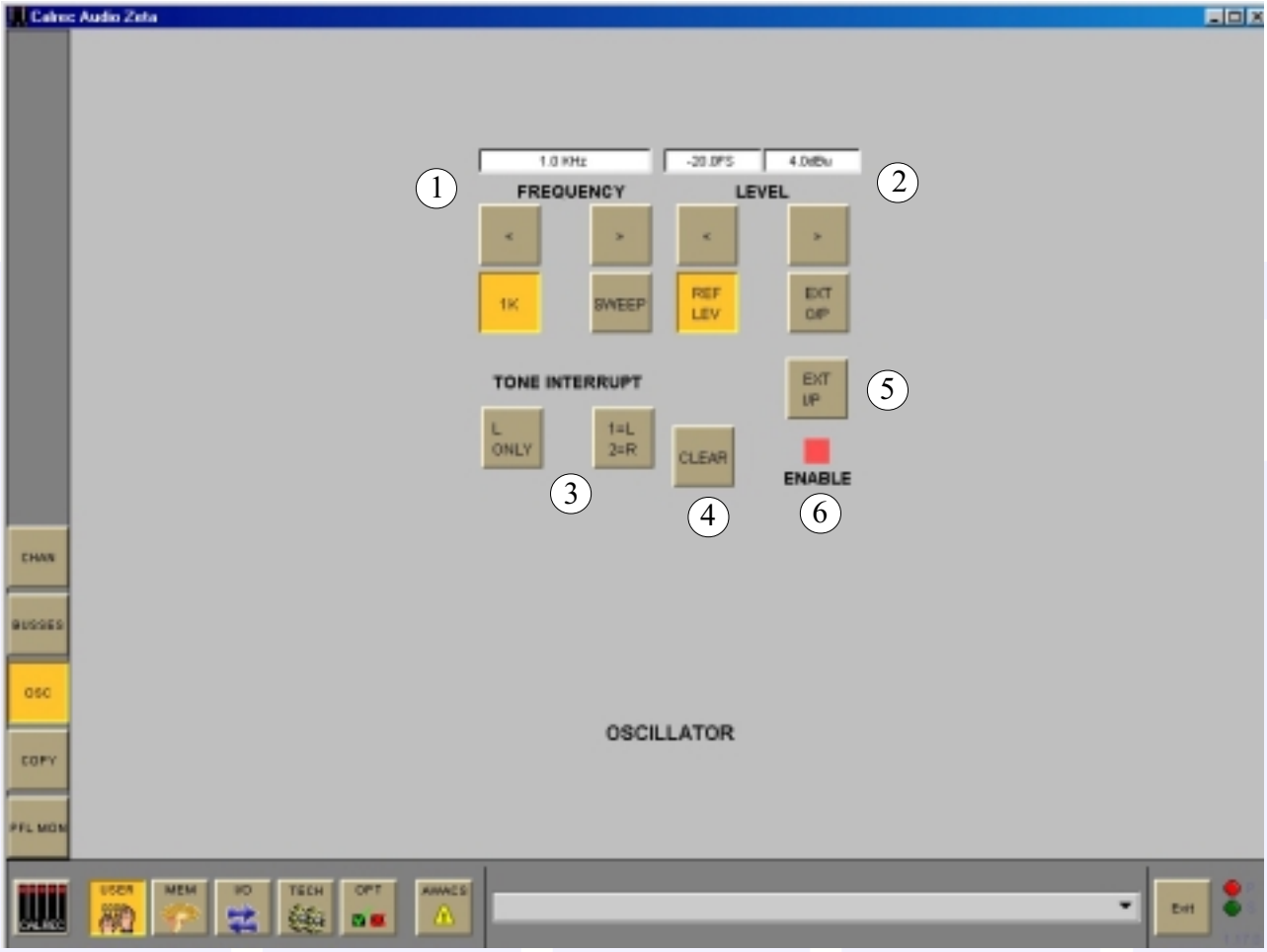


(1) MAINS - The two main outputs can be set as stereo only, stereo but surround enabled or surround. Both main outputs must be the same.

(2) GROUPS - Group busses can be selected to be mono or stereo in blocks of four. Stereo channels feed a mix of L + R to mono groups. Mono channels pan L/R to stereo groups.

(3) AUX - 8 mono Aux busses can be paired up to make 4 stereo aux busses. When a pair of aux busses are changed in this way, all settings of the pair are cleared. Options are available for pre-send cut to be enabled.

USER - OSCILLATOR SCREEN



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.

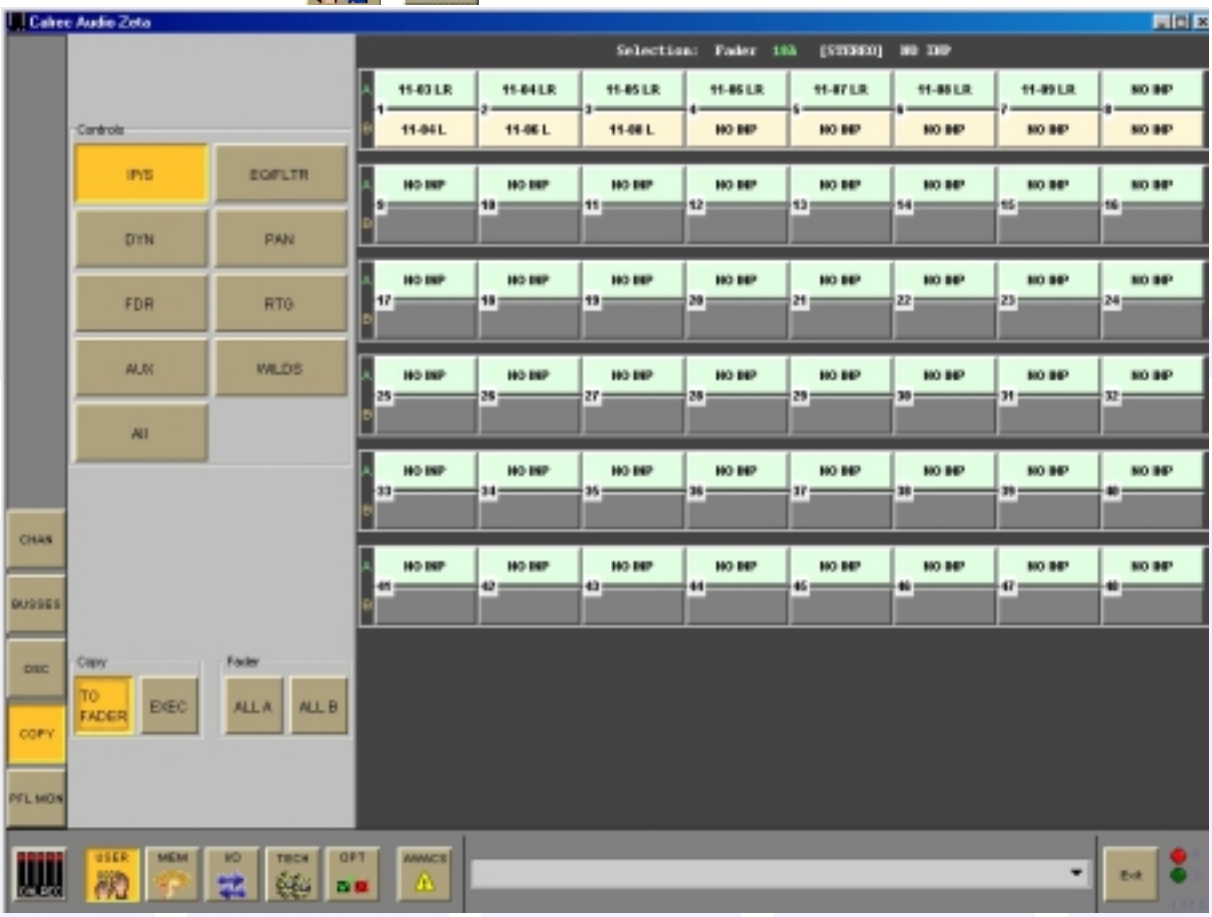
(3) The Tone Interrupt buttons are useful for testing stereo monitoring and metering. It allows the tone to be interrupted on the left side only, or on the left and right sides in an alternating pattern.

(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.

USER- COPY SCREEN



Eight 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, ∅L, ∅R, M/S & Balance settings (only ∅ 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 and Alternate settings.

DYN copies the Dynamics settings.

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.

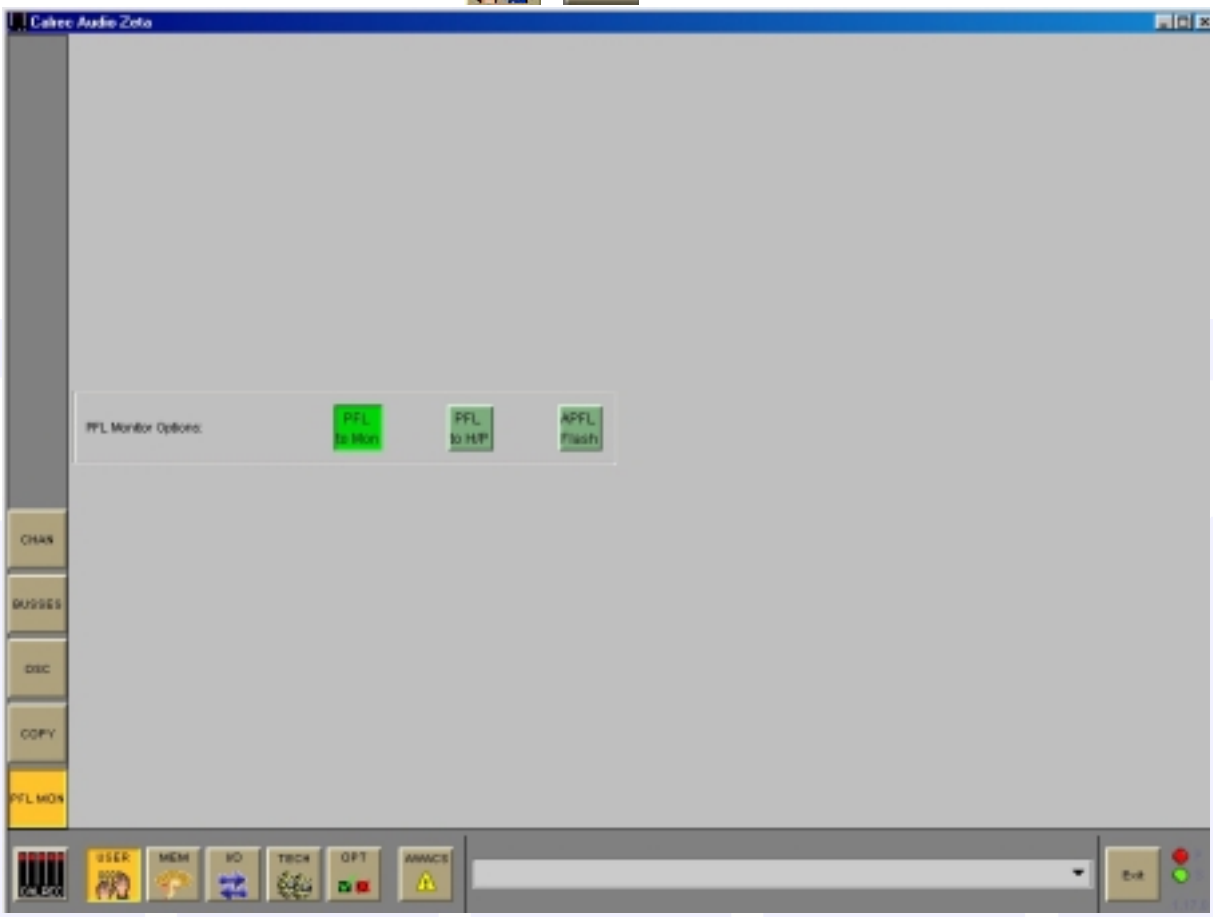
RTG copies the routing to Mains and Groups but not the routing to Tracks.

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



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.

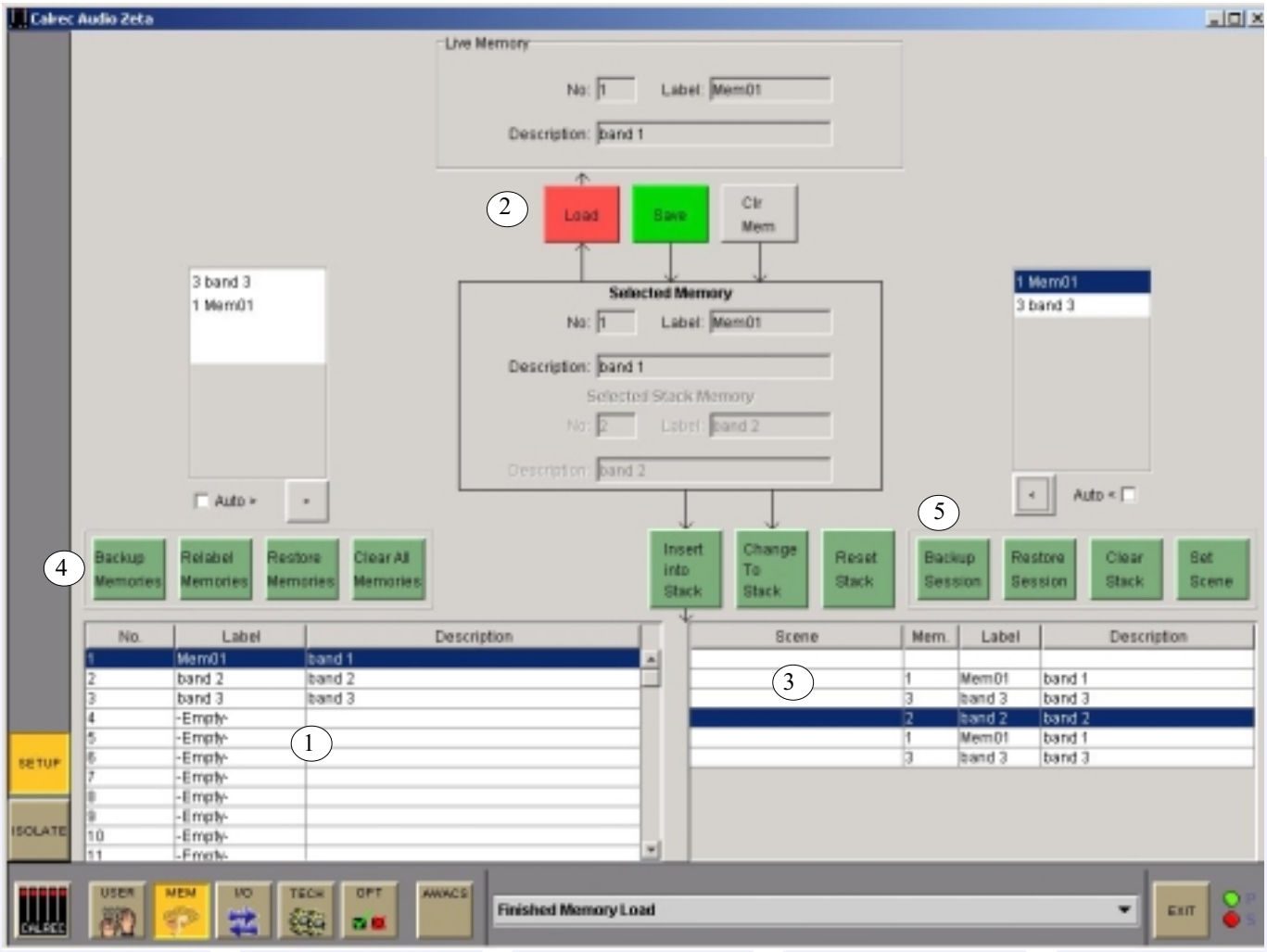
PFL to H/P feeds the PFL signal to the headphones.

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 Reset Panel.

MEMORIES 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 in the same way as any other file.

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 overwrittten, 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.

Whole channels/groups or parts of channels/groups can be isolated from memory recall.

Console-wide isolation is available 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 independantly.

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.

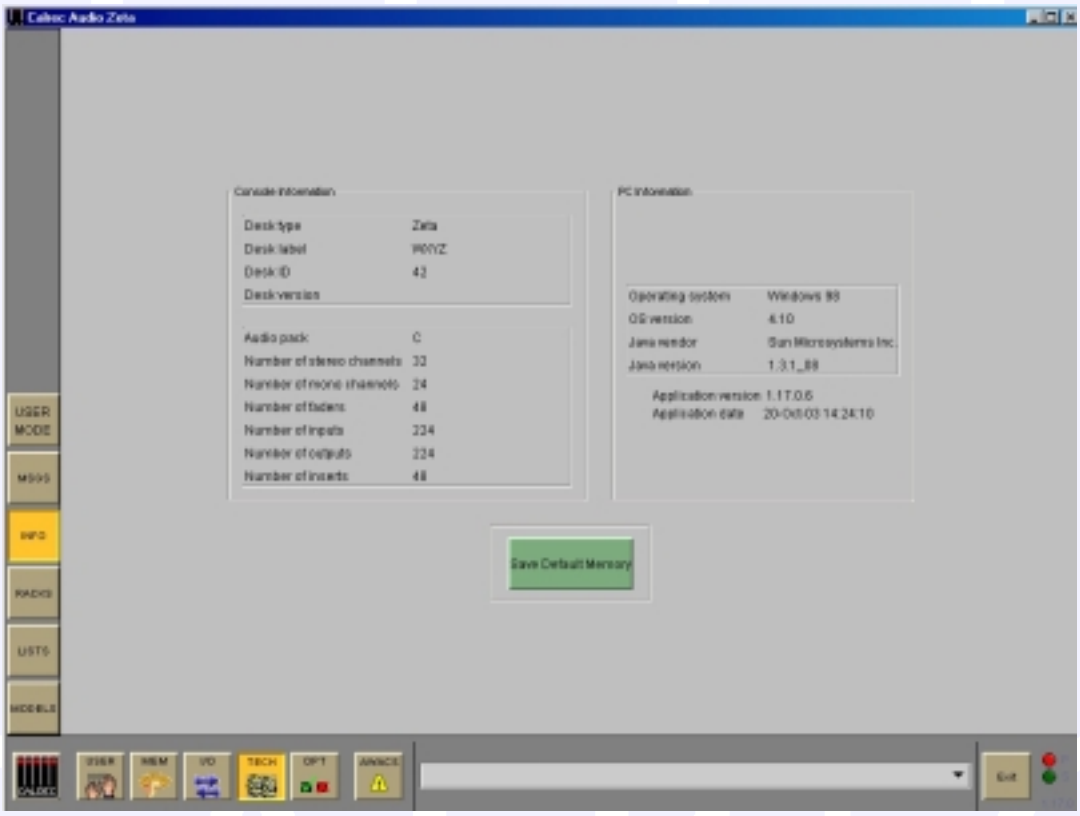
The Tech-Info screen (shown below) displays system information and allows the Default Memory to be saved.

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 Tech-Models screen shows fader and path models for the system.

Info Screen and Default Memory



The Default Memory will usually be created upon installation of the Zeta 100 using the Save button on this screen. This memory 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. The Default Set-up Memory is recalled using the buttons in the Console Functions section.

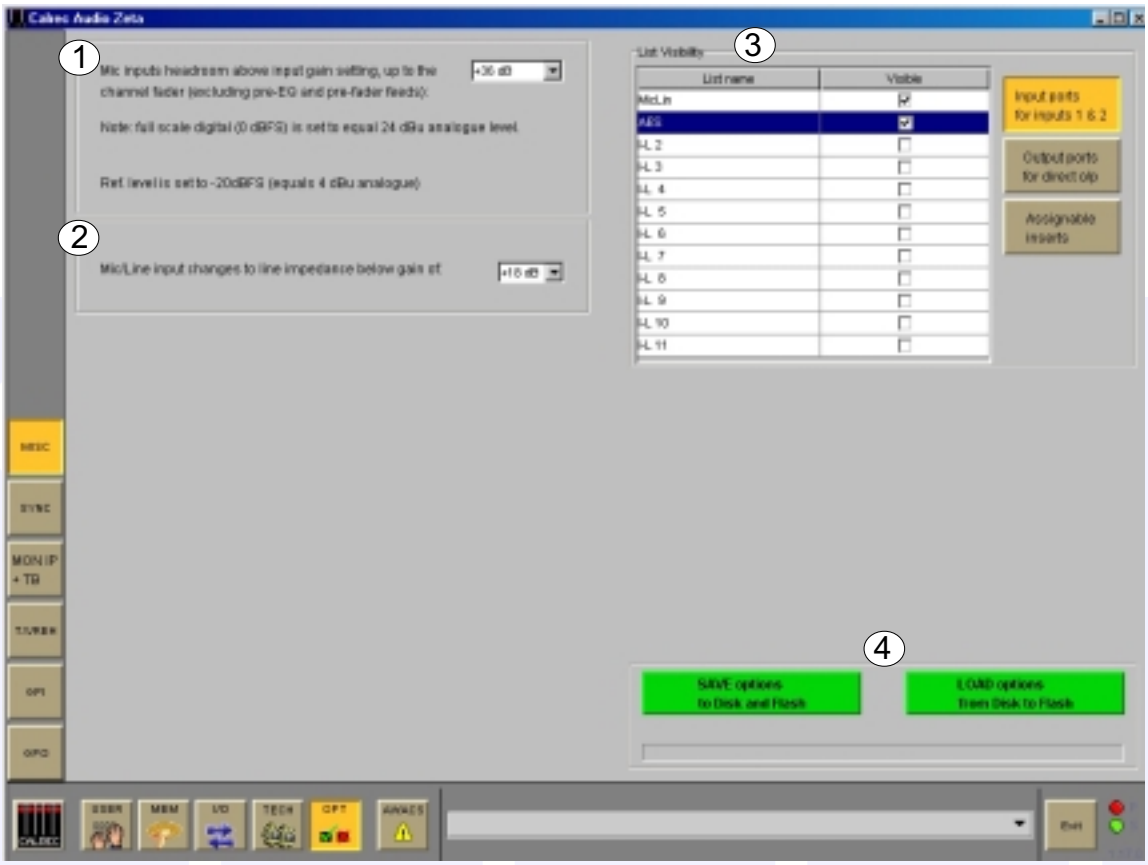
Options Screens

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 over-written 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 FUNCTIONS SCREEN

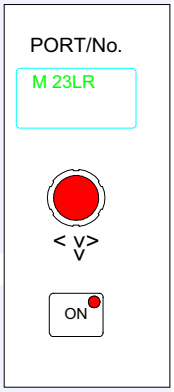


(1) Microphone Input Headroom

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

(2) Mic/Line Input Impedance

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



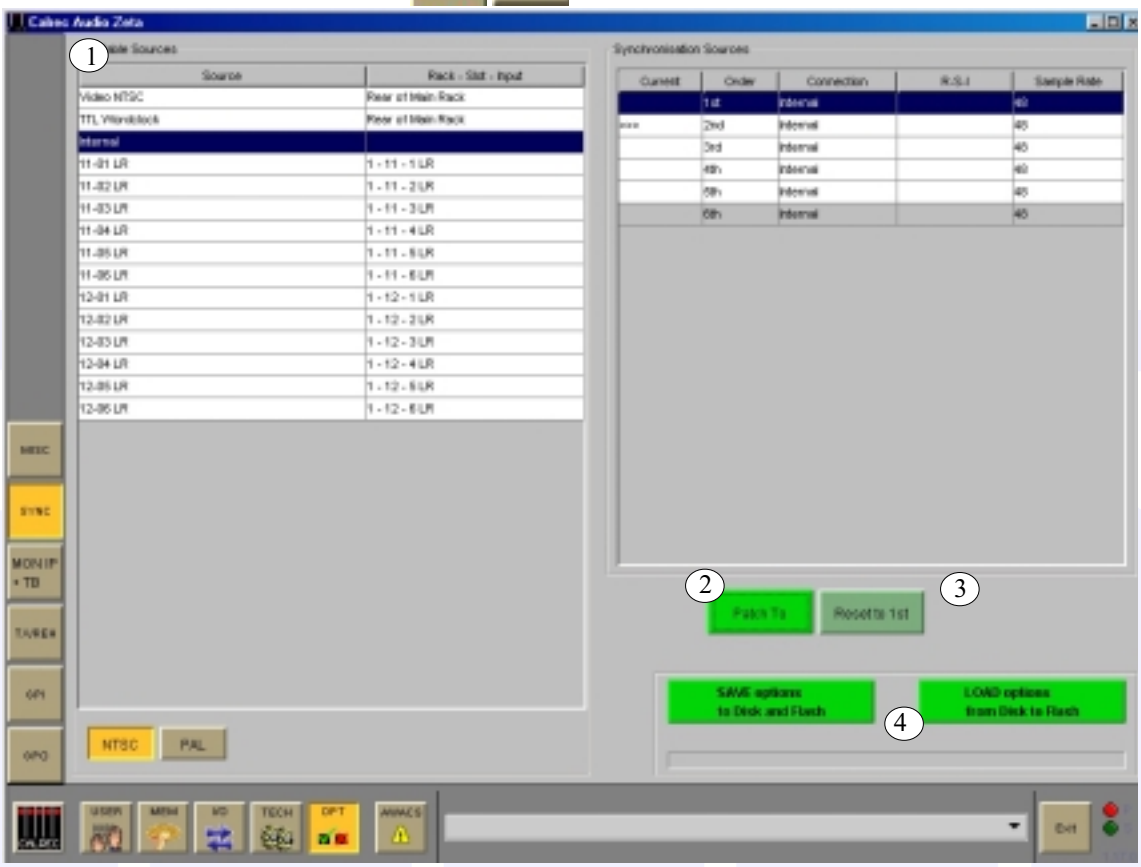
(3) Port List Visibility

This allows the studio engineer to set which port and insert lists can be accessed on the port selection display on the Input/Output section of the control surface. This can make selection easier, as it reduces the number of times the button has to be pressed to scroll through the available lists. 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 port selection controls. All lists are always available on the PC screens.

(4) Save to and Load from Disk and Flash

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 these buttons. This allows options to be changed without invalidating any saved memories.

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.

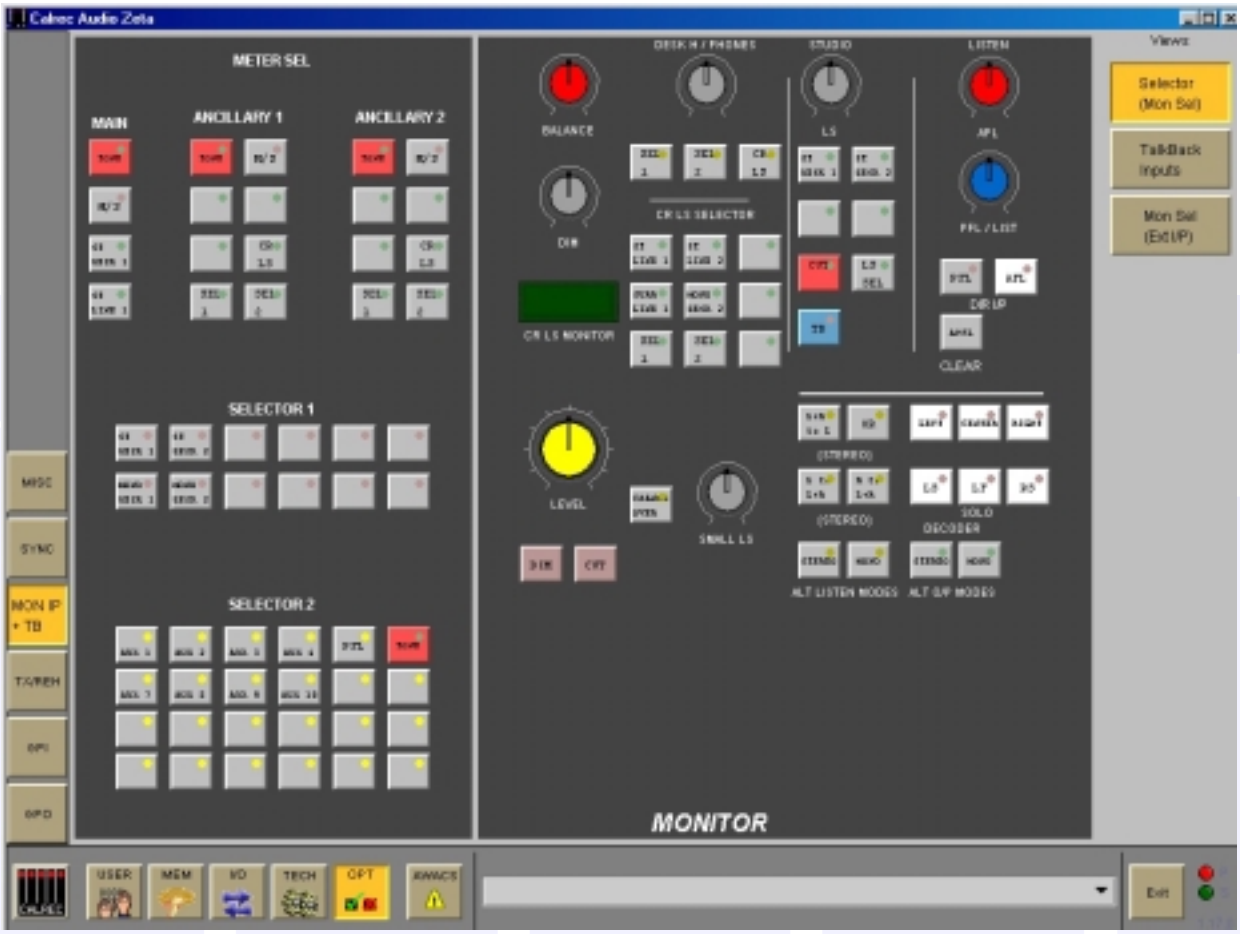
(3)Reset to 1st

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

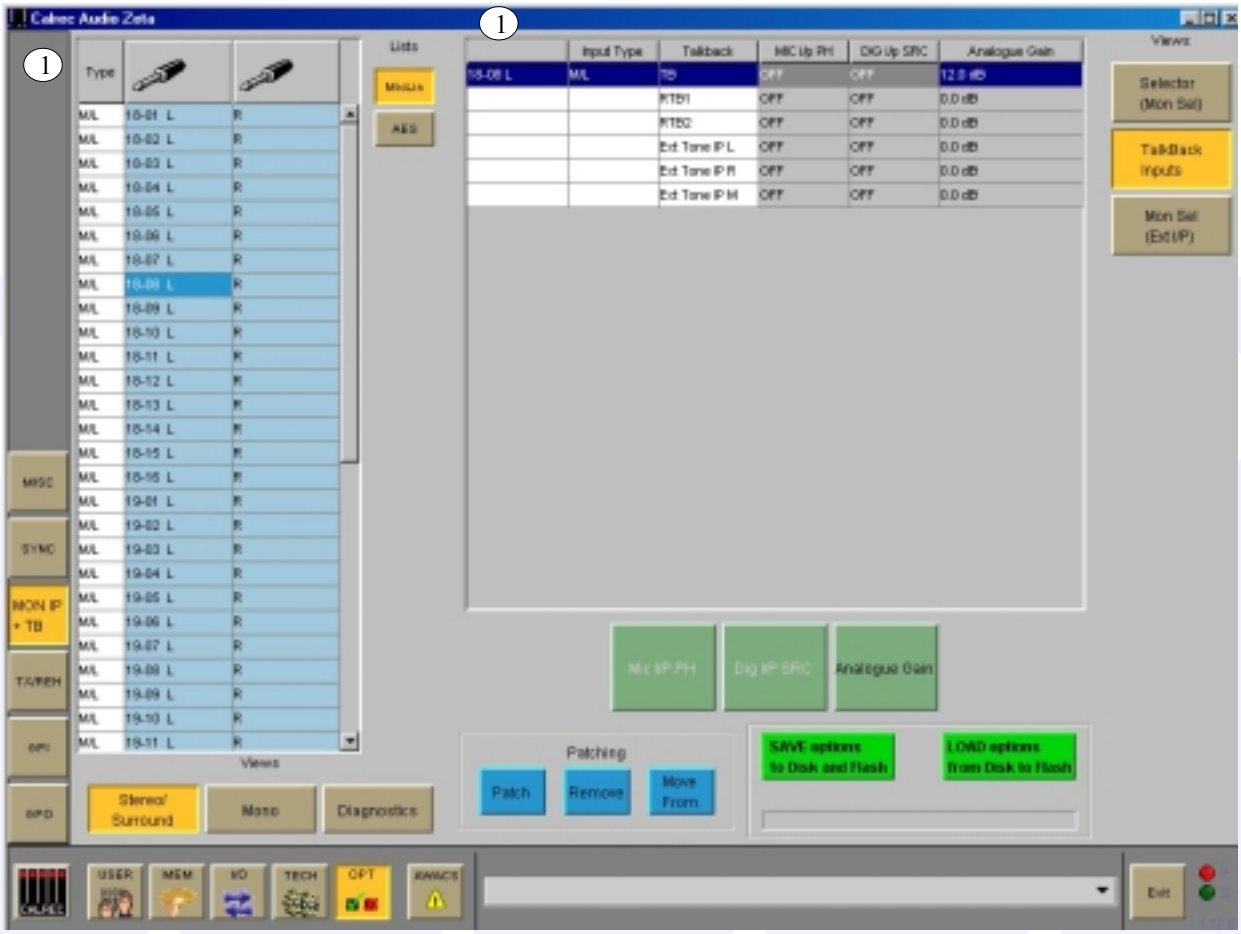
The Options screens are used to pre-set the system to the studio's required settings. These settings are not stored in the individual console memories but are saved separately using these buttons. This allows options to be changed without invalidating any saved memories.

MONITOR I/P & TB SCREEN - MONITOR SELECTOR VIEW



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

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

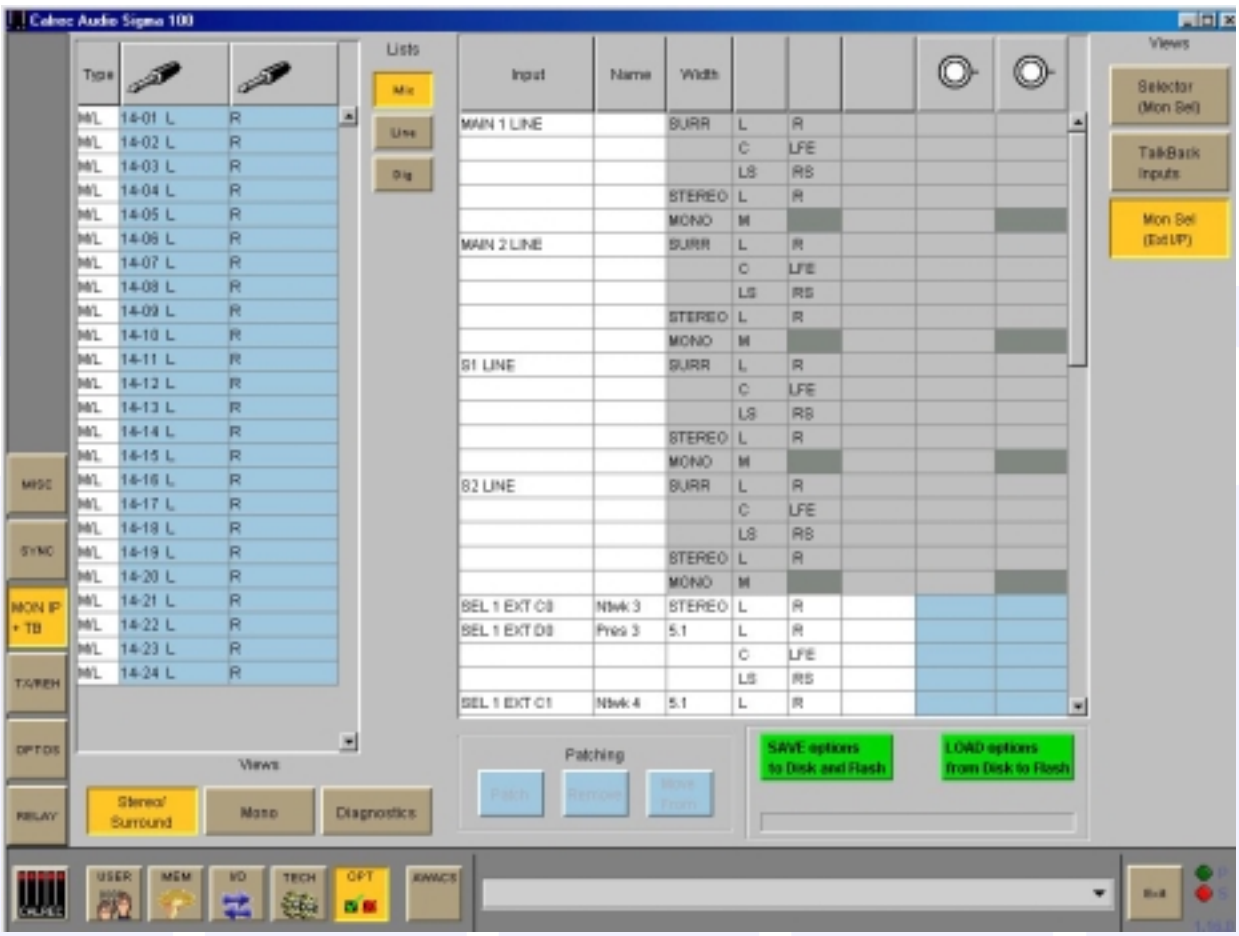


The Input Sources for Talkback and Reverse Talkback can be patched here by selecting a source fromo the list of available sources on the left of the screen, then selecting a Talkback function from the right side of the screen, and selecting Patch. Talkback input ports can be any kind of port.

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.

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 separately to disk and Flash ROM using the green Save and Load buttons. This allows options to be changed without invalidating any saved memories.

MONITOR I/P SCREEN - EXTERNAL INPUT PORTS VIEW

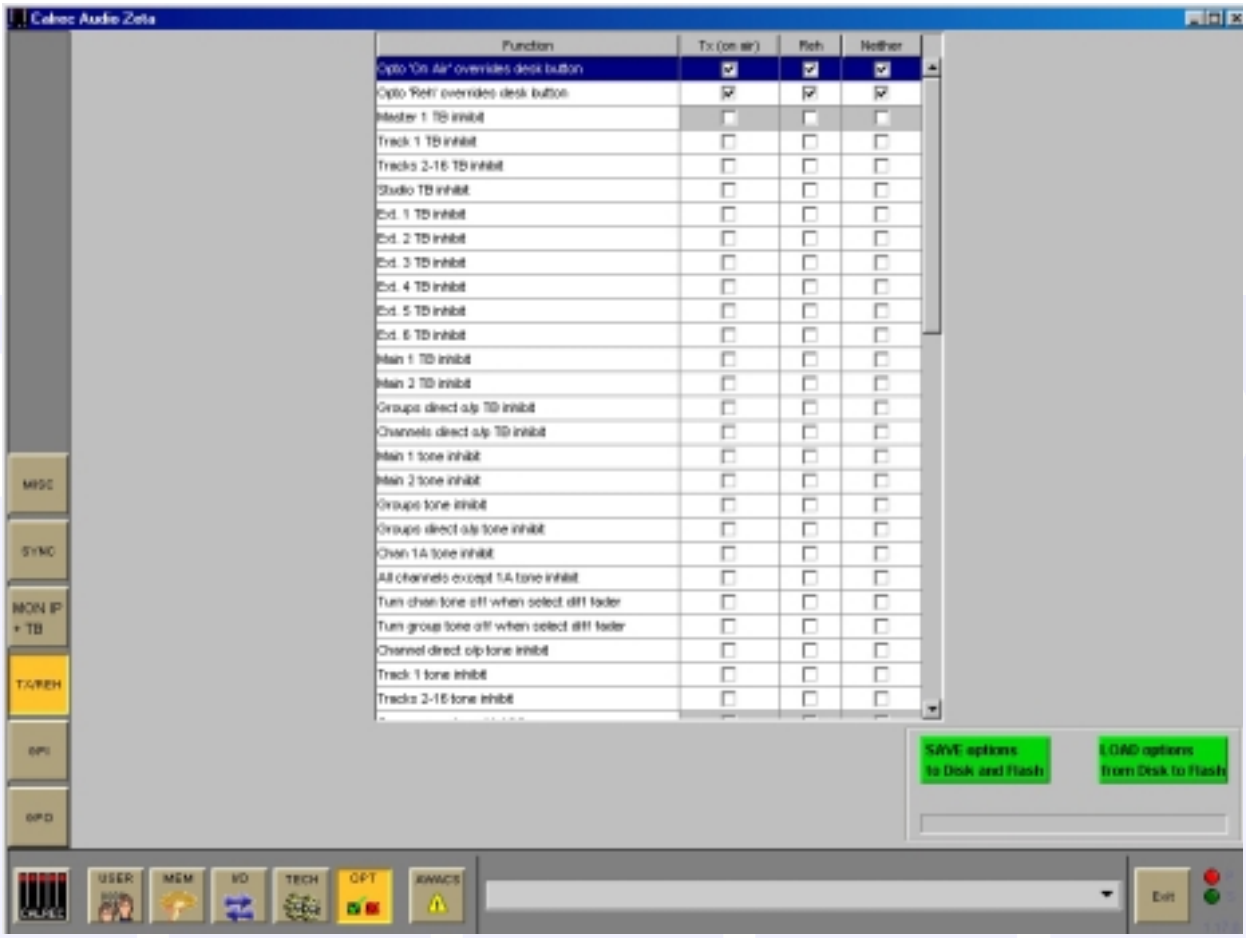


The Input Sources for External Monitor Inputs can be patched here in the same way that channel inputs are patched. The NAME of the external input will correspond to the text on the button as shown on the Monitor Selector View.

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.

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 separately to disk and Flash ROM using the green Save and Load buttons. This allows options to be changed without invalidating any saved memories.

CONDITION SWITCHING (TX/REH) SCREEN



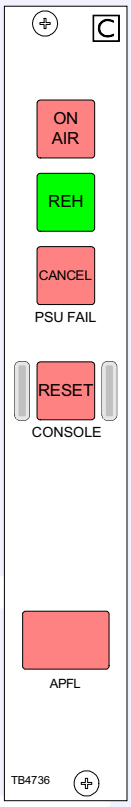
This screen allows the condition switching for the system to be set up.

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 GPI screen.

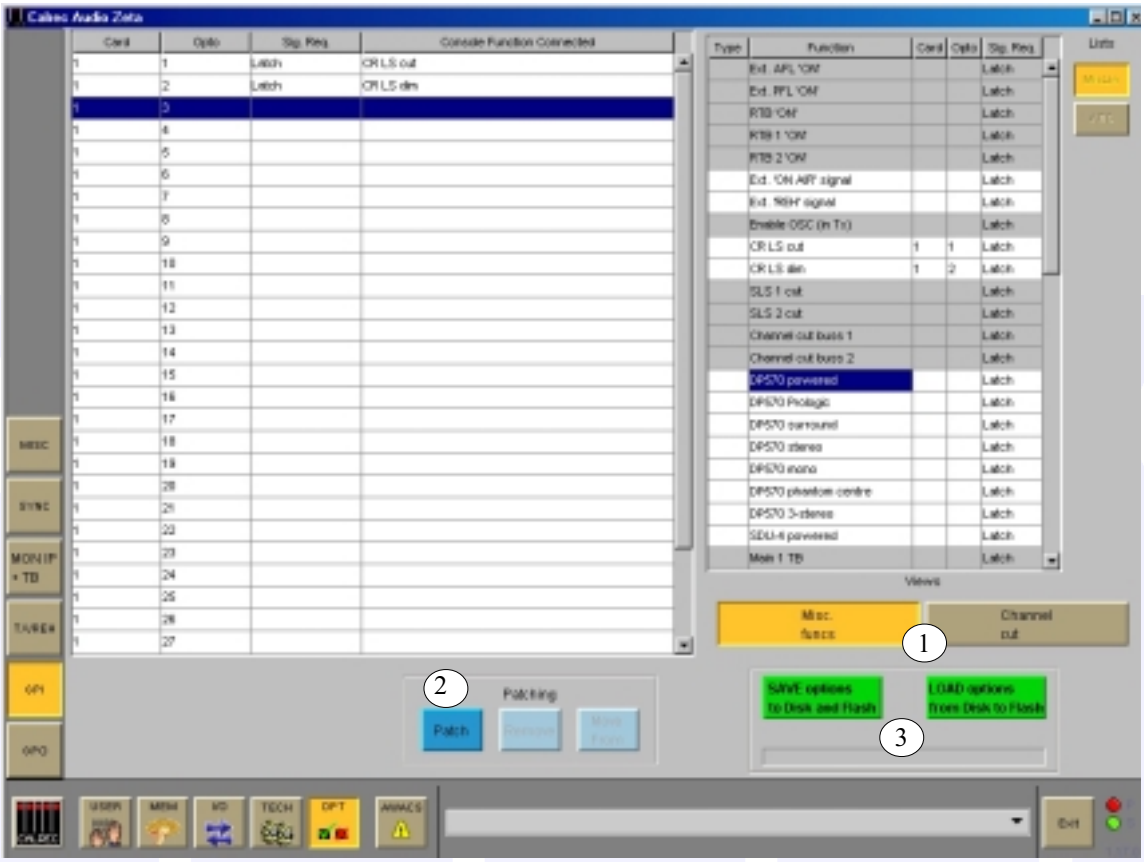
The functions listed can be set to be active, or not, in any of the three states (except for the “On Air” and “Reh” GPI’s which can only override the desk buttons or not).

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

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 separately to disk and Flash ROM using the green Save and Load buttons. This allows options to be changed without invalidating any saved memories.



GPI SCREEN



Up to 32 general purpose inputs are available.

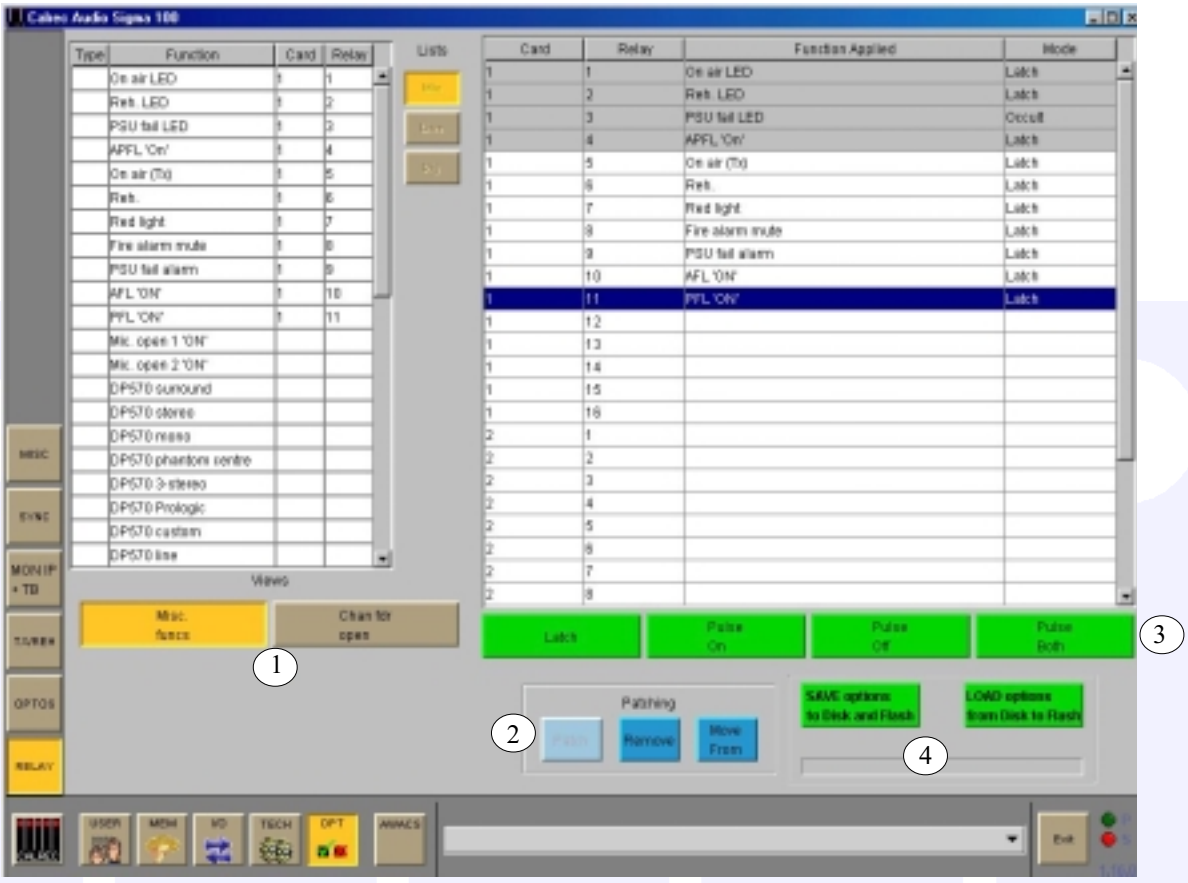
(1) The Opto-isolated Inputs can be assigned to various console functions (with 'Misc Functions' selected), or they can be set to cut channels (with 'Channel Cut' selected).

(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.

(3) 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 separately to disk and Flash ROM using the green Save and Load buttons. This allows options to be changed without invalidating any saved memories.

GPO SCREEN



The general purpose output connections for various console functions can be assigned here in the same way that general purpose inputs are assigned. Up to 16 opto outputs and 40 Darlington outputs are available.

(1) The general purpose outputs can have various console functions assigned (with 'Misc 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 general purpose output (right side of screen), and select Patch. Assignment can also be moved and removed, in a similar way to other 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.

(4) 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 separately to disk and Flash ROM using the green Save and Load buttons. This allows options to be changed without invalidating any saved memories.

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: Zeta 100

Serial Number (located on the base panel):.....
Date Received: .....
Name: .....
Department: .....
Company: .....
Address: .....
.....
.....
.....
Post/Zipcode: .....
Tel No: .....
Fax No: .....
Email: .....

Customer comments:.....
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