# T - SERIES

## OPERATORS MANUAL

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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, therefore in order to protect these devices from damage and to protect your warranty, please observe static handling procedures (e.g. use an appropriately grounded anti-static wrist band).

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) by removing the incoming IEC mains connector.**

*** 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.**

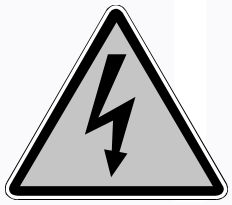
*** Do not leave the equipment powered up with the dust cover fitted (where provided).**

**Please refer to the installation section of the manual for further details.**

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

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

## 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
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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

## INTRODUCTION

This publication is for International usage.



## UPDATED INFORMATION

Whilst the Company take the utmost care in ensuring that all details in the publication are correct at the time of publication, we are constantly striving for improvement & therefore reserve the right to alter specifications & equipment without notice.
*Please also refer to the User Registration page.*

## 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

If you have a problem which cannot be solved without the reference to this user manual or the full technical handbook, then please contact either the distributor from whom you bought this console or the Customer Support team at the factory. A full list of all the Calrec distributors is available on the Company website at www.calrec.com

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 customer registration form.

# CONTENTS

## OVERVIEW

To use the control panels nearest to the channel you wish to change, press the large button with the channel number on it (assign 1).

To use the control panels furthest away from you (if you have two sets of panels) to control a channel press assign 2, next to assign one.

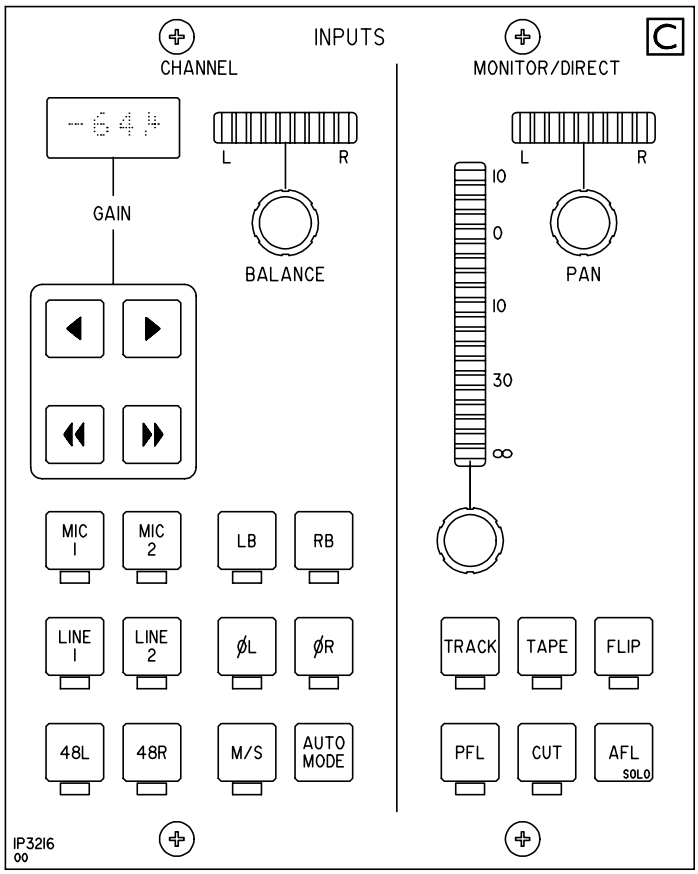
**Note:-** assign 2 also allows you to control a channel from the PC.

## CONTROL SURFACE

**Note:-** Throughout the Calrec range of consoles bi-coloured LEDs are used to show PRE or POST fader selection.

Red indicates pre fader and green indicates post fader.

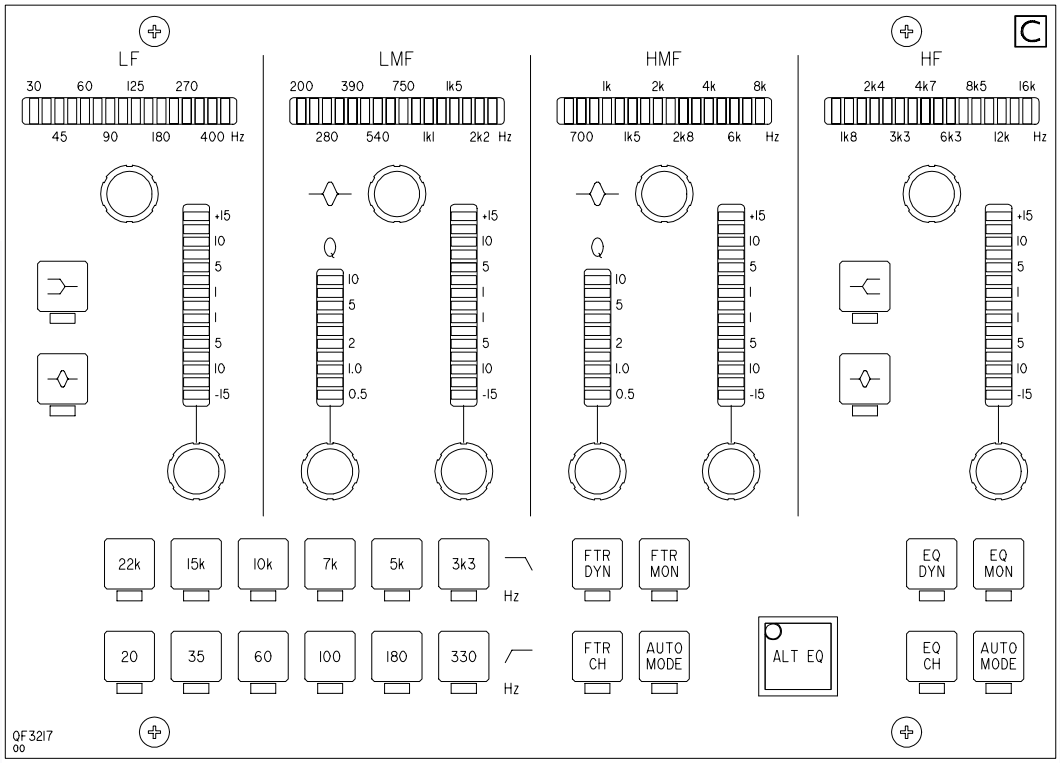
## IP3216 INPUTS PANEL




### INPUTS

Channel inputs are controlled by the IP3216. There are four inputs (Line1, Line2, Mic1 and Mic2) per channel and therefore eight on a stereo channel. Each of the four channel input acts independently so each can have its own gain setting, phantom power setting, fader label and balance (stereo only).
LB and RB are to put one input on to both legs (stereo only), ie, left to both or right to both. Note pressing both gives, a mono mix of the input to both legs and pressing either of the two gain nudge buttons together sets the gain to the default value, 0dB. Also on the inputs panel are the controls for the input to a monitor path (track or tape). This same control is used for the direct input of any bus, except auxiliaries.

# QF3217 EQUALISER PANEL

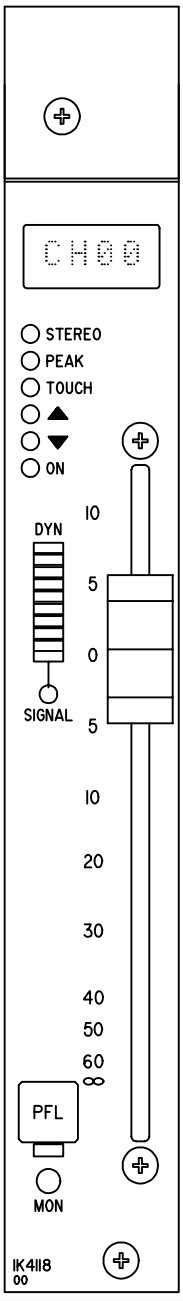



## FILTERS AND EQ

There are two fixed filters,each with a choice of six frequencies, six LF and six HF on the EQ/filter panel (QF3217). The equalisation is a four band parametric EQ with the two mid bands having a variable Q factor. The LF and HF EQ bands are switchable between “bell” and “shelf”.
Each channel has two EQ and filter memories, the second is accessed by pressing “ALT EQ”. This second memory stores your previous setting.
It is designed to return to your previous setting after making a change that you do not like.

The EQ and filters can be independently removed from the channel path and “borrowed” by the monitor path (if in-line monitor path option has been purchased).

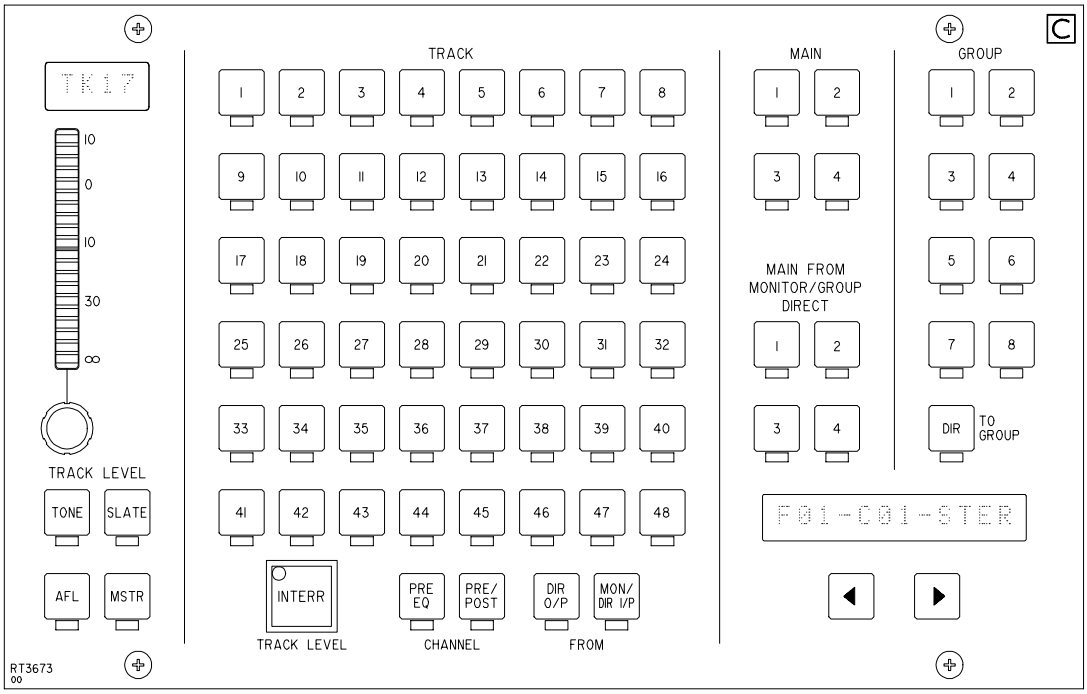
# IK4118 MOTORISED FADER




## FADERS

The faders can be operated in two ways: Absolute and Relative when the motorised faders are not fitted or switched off. Faders absolute mode means that where ever the position of the fader is, then this is the value sent to the channel VCA when a snapshot memory is recalled.
Faders relative mode means that the position of a fader is disregarded when a memory is recalled and the memory value is sent to the VCA. On the fader panel there are two LEDs shown as arrows to show the direction the fader must be moved to take over control of the channel.
The LEDs will dim as the fader gets closer to the "null" position.

# RT3673 ROUTING PANEL




## ROUTING

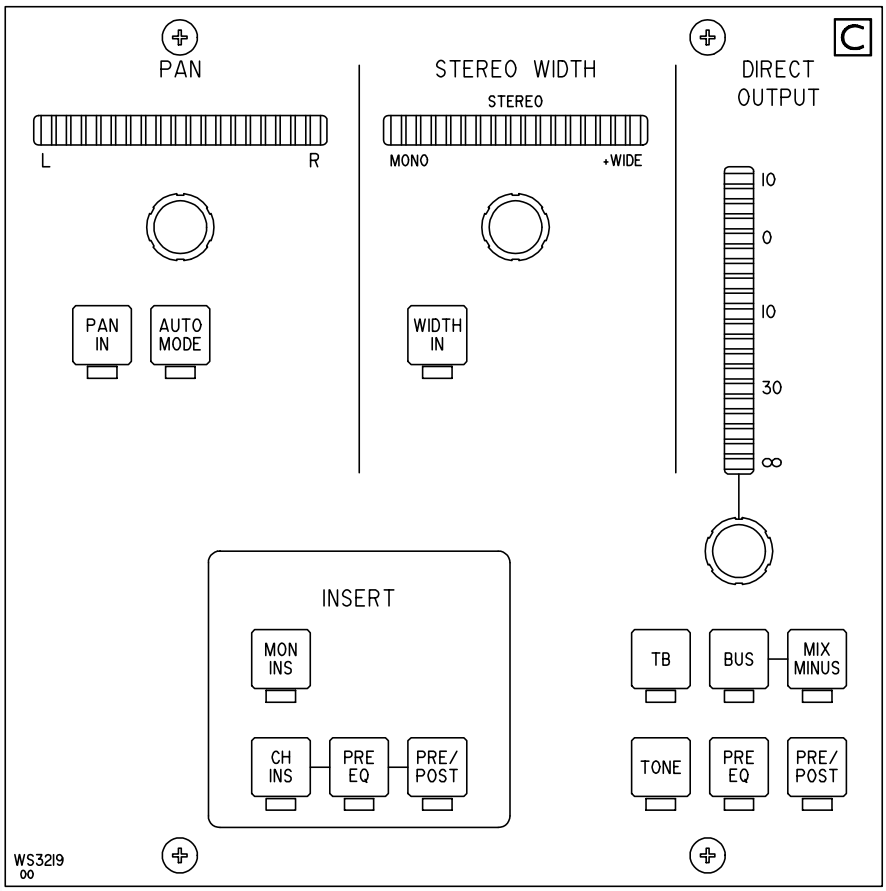
The channel routing is done using one of the following panels:- RT3673, RT3253 or RT3215.
The assignment window shows which path is currently assigned to the control surface and the fader to channel assignment. The nudge buttons below the window allow the operator to move the assigned channel along the length of the console in either direction.

The second set of main o/p routing buttons underneath the main ones are to route the group direct inputs or the monitor path to the main o/ps. The button underneath the group routing buttons labelled “DIR TO GROUP” is to route the group direct input to the group mix input.

The interrogate function deselects the routing and shows which channel is routed to which ever path the operator presses on the routing panel. This is done by lighting the right hand LED underneath the main assign button on each channel as red. This is also the case for the auxiliaries, by holding down the aux on button.

Also while in the interrogate mode the track output level control can be assigned to other tracks.

## WS3219 OUTPUTS PANEL

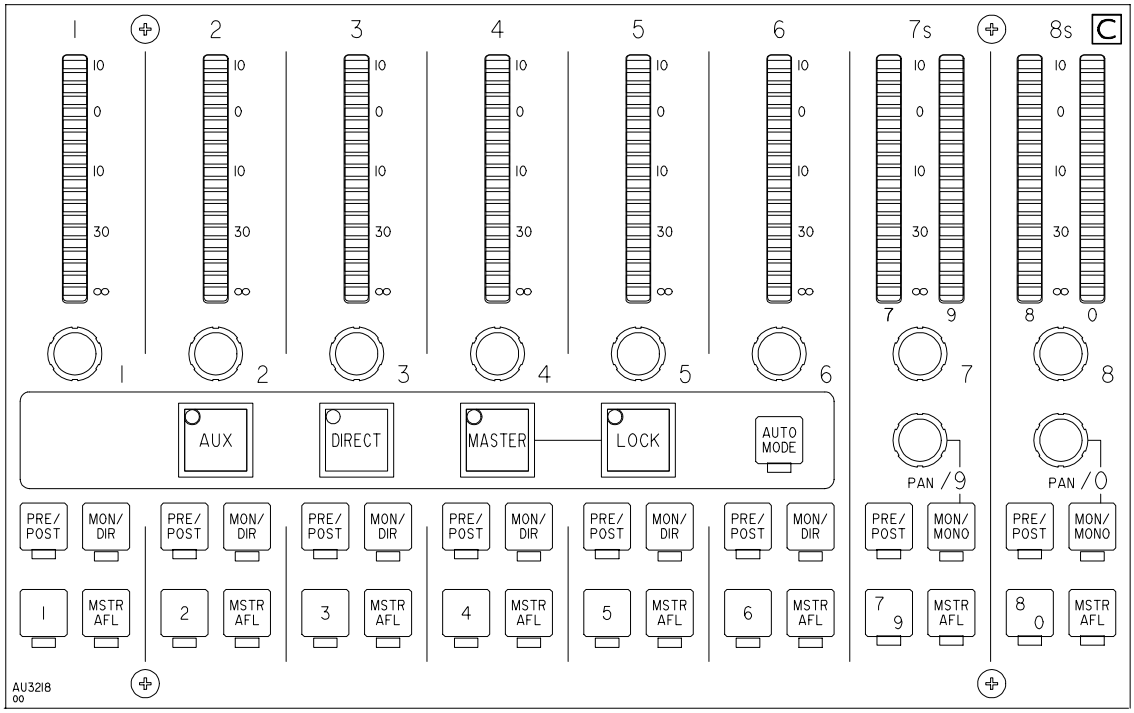



### DIR O/P, PAN AND INSERTS

The direct outputs, the pan and inserts are controlled on the outputs panel (WS3219). The insert for the monitor path can also be selected on this panel.

Every direct output can act as a clean feed output (minus one mix). To route a channel to the mix minus bus the button labelled “bus” must be pressed, for a channel direct output to become a mix minus output “bus” and “mix minus” must be selected. As many direct outputs as the operator desires can be changed to mix minus outputs.

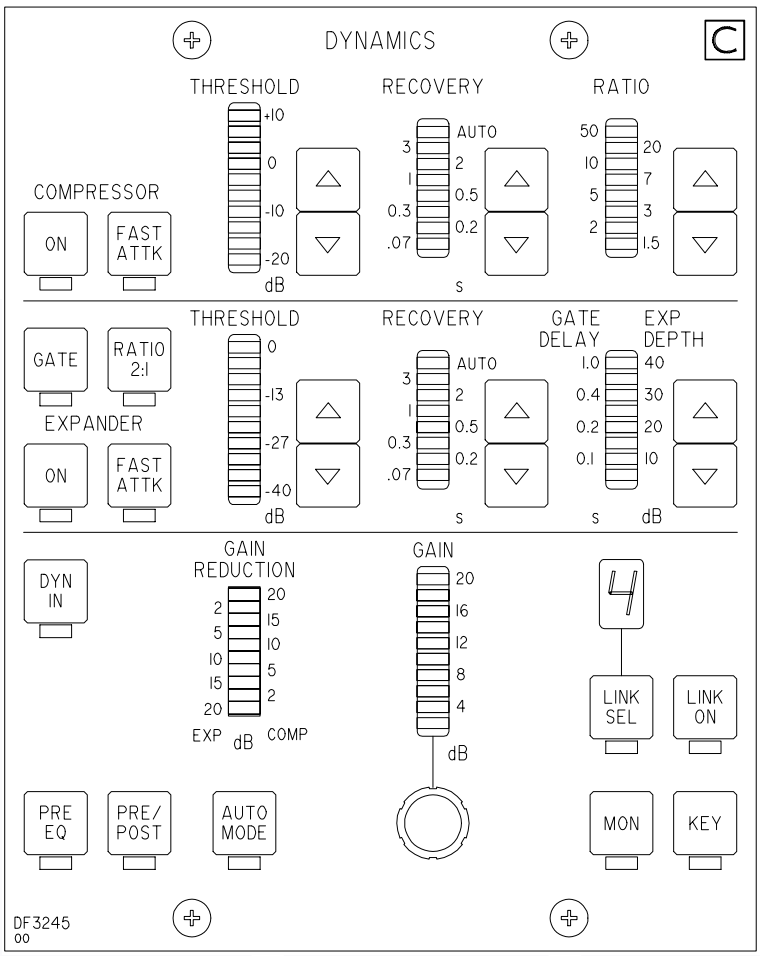
# AU3218 AUXILIARY PANEL




## AUXILIARIES

The auxiliary panel (AU3218) does the function of three panels, aux sends, direct i/ps and master outputs. The large green button “aux” is to control the channel aux send. The large orange button “direct” is to control the aux bus direct inputs. The large red button “master” is to control the auxiliary bus outputs, which must be selected to “on” as the default is off. The large yellow button “lock” is to fix the aux panel in the master mode so that it does not change when the channel assignment is change.

## DF3245 DYNAMICS PANEL



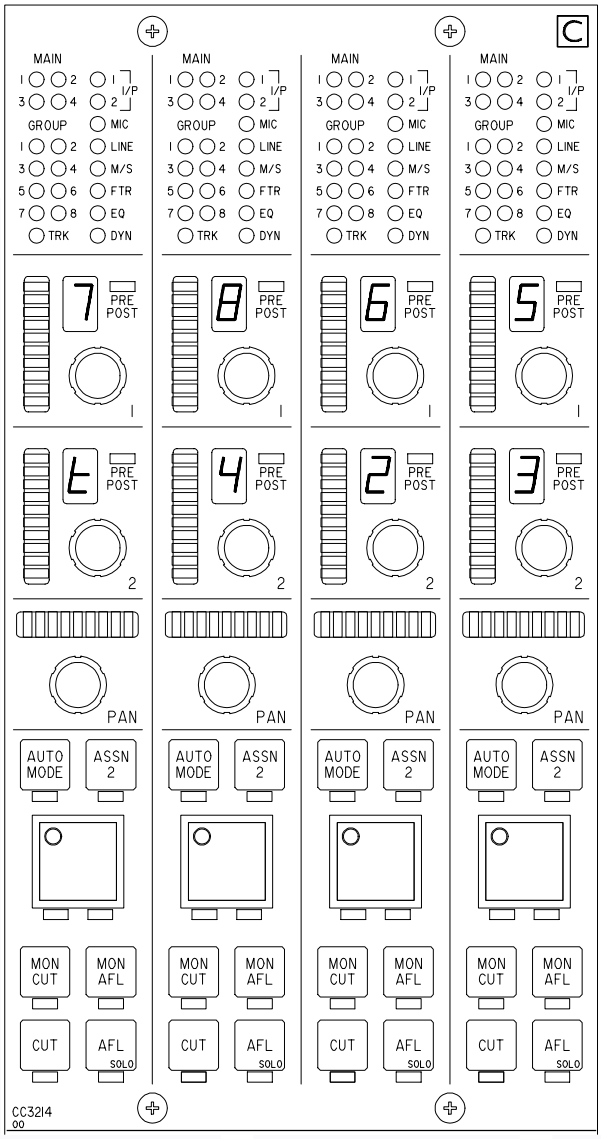

### DYNAMICS

Dynamics can be fitted as an option to any channel, group or main o/p. The dynamics option can be full dynamics, ie, compressor/limiter and expander/gate or simplified to just a compressor/limiter. Compressor/limiter is the only option available on main outputs.

The dynamic can be switched on to show gain reduction but not switched in, which is a separate button. As with the EQ and filters the dynamics can be switched into the monitor path (if fitted).

The dynamic have the ability to be linked together if so desired by the operator, there are six separate link busses. There is also a switchable key input. The side chain to the dynamics can be affected by the EQ or filters without selecting EQ or filters to the channel. This is done by pressing “EQ DYN” or “FLT DYN” on the EQ/filters panel (QF3217).

# CC3214 CHANNEL CONTROL PANEL




## VCA GROUPING

To select a channel as a VCA master the main assign button (assign 1), on the channel controller panel (CC3214), must be pressed and held down while the channels to be slaves are selected, again with the assign button. When a master has been selected the right hand LED under the assign button will illuminate green and the left hand one will be red. The slaved channel will have its right hand LED illuminated green only.

Any number of channels can be slaved to a master and as many masters as desired can be selected.

To interrogate VCA grouping press and hold any master or slave and all the other VCA groups will be extinguished. You do not need to be in interrogate mode to do this.

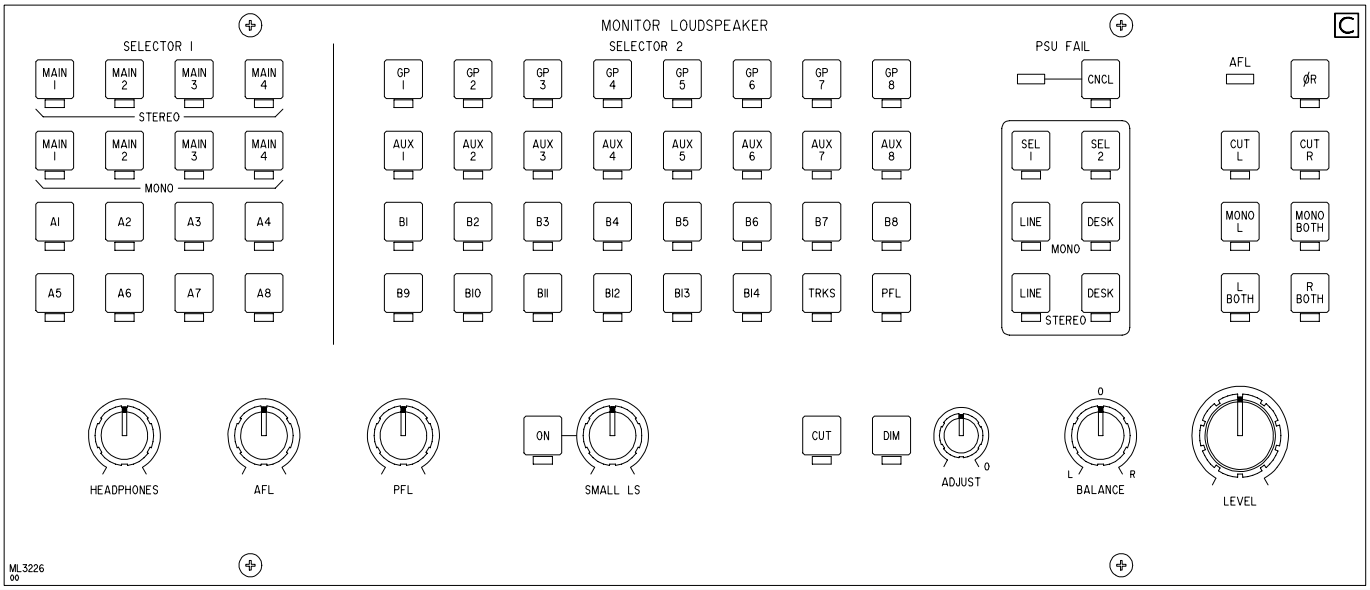
The VCA master will also control and gang together all the cuts and AFLs of the slave channels.

## CHANNEL COPY

All the setting of a channel can be very quickly copied to another channel. Simply hold down the assign two button of the channel you wish to copy from then press the assign two buttons of the channels you wish to copy to.

If required only certain aspects of the channel settings can be copied. This is done on the ISOLATE page on the PC (shift F1).

## ML3226 MONITOR PANEL




### AFL / PFL

When any channel PFL is pressed the AFL on the same channel is cancelled and vice versa. If confusion of the console monitoring occurs due to an AFL being selected and indicated by the AFL LED on the monitoring panel, then all AFLs and PFLs can be cancelled by pressing the “CANCEL” button next to the PSU fail indicator.

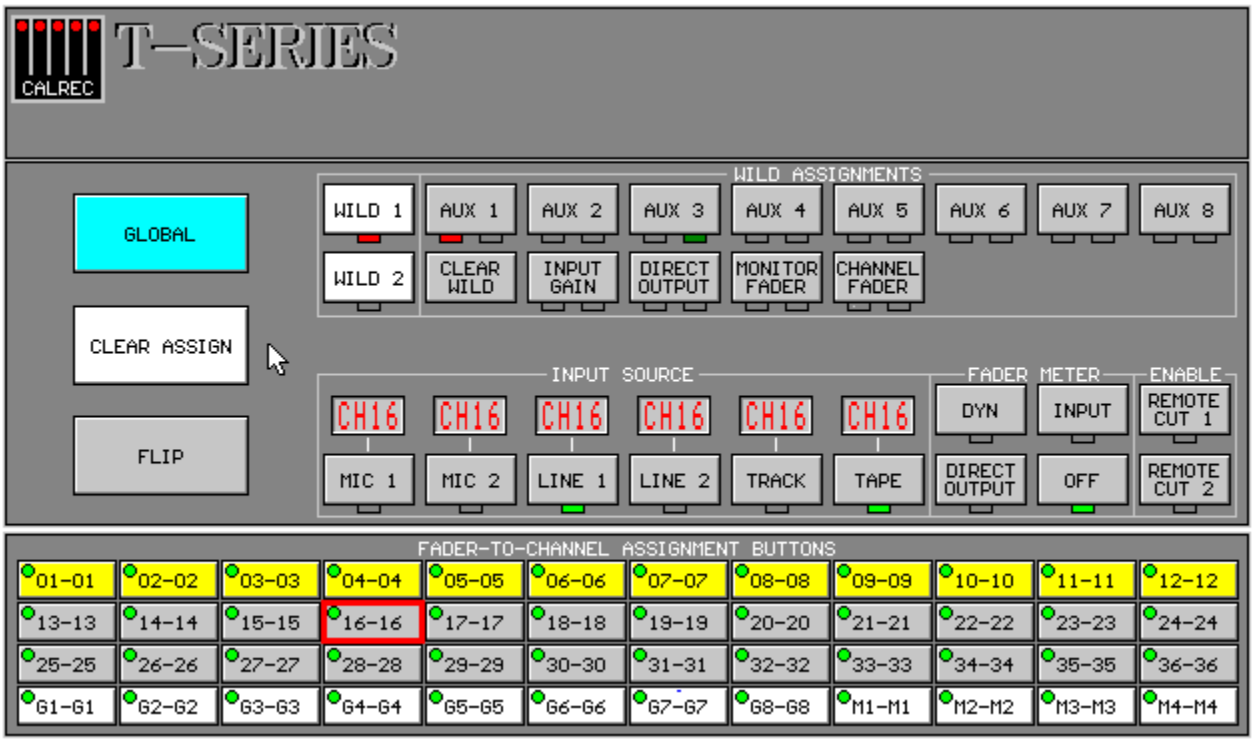
### Blind Groups

Rather than have dedicated group audio cards it is possible to have group mix amplifiers, with a balanced output. These can then be plugged in a channel line one input and be detected to display these channels as groups.

## CONSOLE P.C.

The software in the PC can be accessed by typing “DESK” at the DOS prompt “C:\>”.
The software can be installed in other PCs (486 or above) and be used to set up and edit memories away from the console. The software is on the back up floppy disk with the file DESK.EXE”. To use the off-line editor type “DESK / OFFLINE”.
If you have trouble seeing the PC screen from certain angles, then press “5” on the keyboard to change the colour palette.
All the various pages can be accessed using the function key on the keyboard or by accessing the “change page”. This is done by moving the mouse pointer to the edge of any page then pressing the right hand mouse button.

# F1 ASSIGNMENTS




## Global

One aspect of the console can be applied to all channels by first selecting the global button then selecting the desired function e.g. as “Line 2”. This will change over every channel input to line 2 from its previous setting.
If global is pressed but is then not required then simply select global once again. Note that once global is pressed that it is stated at the top of the screen to ensure the operator is aware, so no drastic changes are accidentally made to the console.
A flashing warning message is displayed at the top of the screen when global is selected.

## Flip Function

The channel fader can be swapped with the monitor path control (or the monitor fader, if fitted). This can be done on a channel by channel basis or globally.
This function is repeated on the console inputs panel (IP3216) and is indicated on the fader by the “MON” LED.

## Wild Controls

Each channel has two wild controls which can control any of the following: input gain, aux1-8, dir o/p, monitor path and channel fader. These do not have to be selected globally, so any wild control can be selected to any of the above options.
These can be very useful for setting up. For example when an operator is constantly changing input gain setting and then selecting auxiliaries during a show to control foldback which needs to be at hand when a presenter moves towards a foldback speaker. Also when using monitor paths which are “flipped” the fader can still be controlled on a wild control and vice versa.

# F1 ASSIGNMENTS

## Fader Labels

By clicking on the window above the input selectors, in the box labelled “input source”, the four character label on the fader modules can be changed (default is channel number etc).
This is also true for the monitor path input. Each input can have its own label.

Libraries of labels can be created and stored on floppy disk. This is done by clicking on the label window with the right hand mouse button. Then using the mouse, labels can be selected from the library. Labels can be added and removed from the library using the “ins” and “del” buttons on the keyboard. If the label ends with “#” then a number will be asked for when recalled in future, ie, VTR3.

## Fader Meters

On every fader is a bargraph which can be selected to monitor the input (pre eq), direct output, gain reduction or off. The main faders can only monitor gain reduction.

## Remote Cut Enable

There are two remote cut busses which can be fired externally to mute any two groups of channels.

## Assignments

At the bottom of the screen is shown the fader to channel assignments. The default set-up is one to one assignments, ie, fader one controls channel one etc. The white buttons represent the mono channels, yellow buttons represent stereo channels, blue buttons represent groups and red buttons represent main outputs.

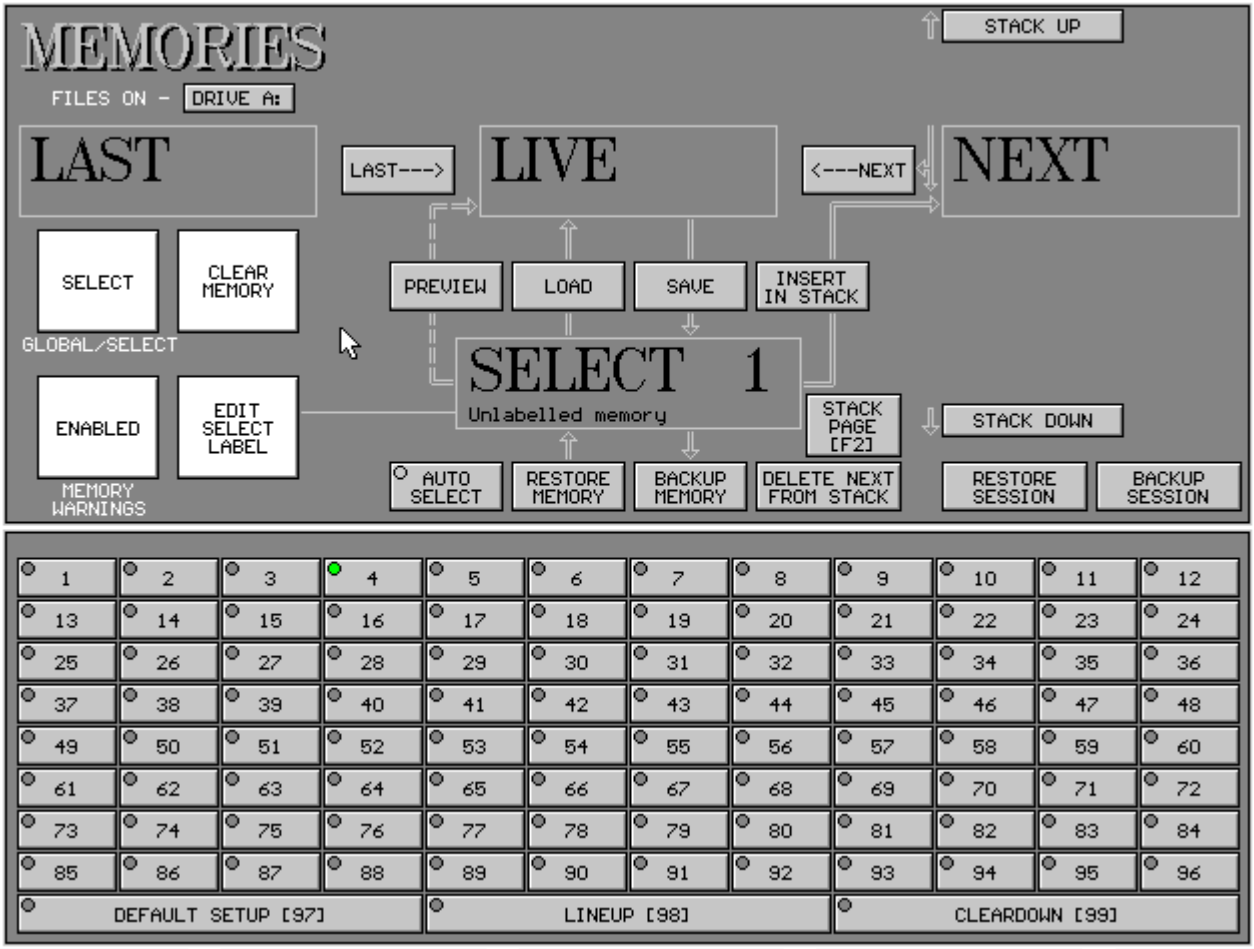
To change the assignments firstly the existing assignment must be removed. This is done by clicking on the desired path then pressing “CLEAR ASSIGN”, note the change of colour to brown for the unassigned path. When setting the assignments it is important to bear in mind the order that the assignments, as stated on the screen “FADER TO CHANNEL ASSIGNMENTS”. So first the desired fader must be selected and the then the desired channel you wish the fader to control.

If a path is displayed as a pink button, then the corresponding audio card is missing or has not programmed itself on power up.

Each button has an LED to indicate its status while making changes to the fader to channel assignments:-

| | | |
|---|---|---|
| Green | - | Channel assigned and under control of a fader. |
| Grey | - | Channel audio card is present, but not under control of a fader. |
| Pink | - | Error. No fader controlling a channel and no channel to control. |
| Red | - | Channel is being controlled but the audio card is missing. |

## F2 MEMORIES



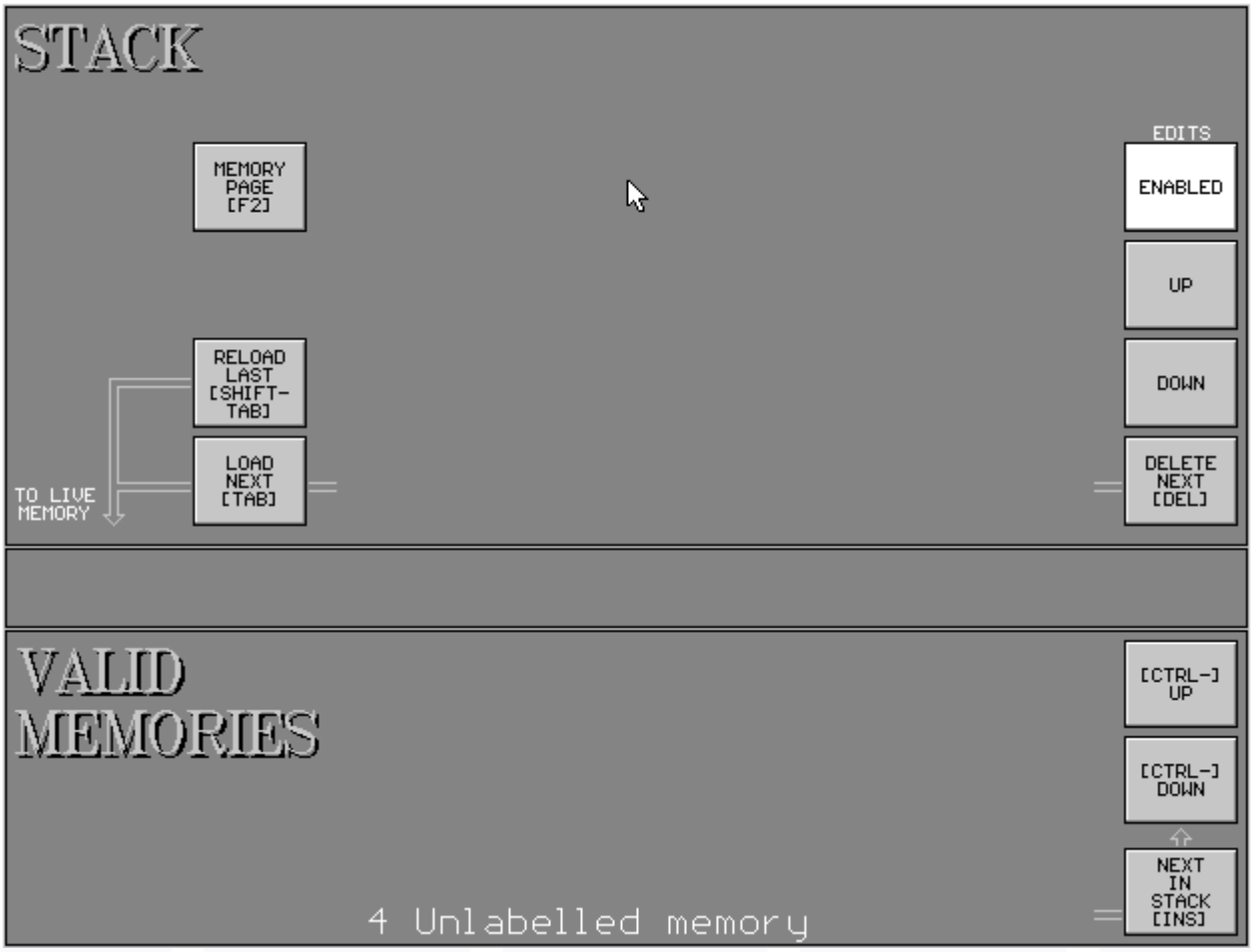

### Select/Load/Save/Labels

To save a console setting first one of the ninety nine memory locations must be chosen using the mouse, this will then be displayed in the select box. Note the green LED in the memory location boxes to show that a valid memory is already in that particular location. The save button can then be pressed and the settings are saved on the desk processor cards.

To recall a snapshot memory first the location it is stored in must be selected and then “LOAD” pressed. Note the memory is then displayed in the “LIVE” box.

Each memory can be given a name by clicking on “EDIT MEMORY LABEL”. A prompt then appears for you to type the name required for the memory.

## F2 MEMORIES




### The Stack

Memories can be compiled into a “stack”, so that all required memories for a session can inserted in the required order, which can be stepped through easily at the required cue. This is done by selecting a memory then pressing “insert in stack”. Memories can be inserted in any position in the stack by using the “stack up/down” buttons to the required position.

Once the stack has been compiled it is used by pressing “NEXT” to load the memory in the “NEXT” box and the stack is moved by one position. The memory in the next box moves to the live box and the memory in the live box moves to the last box. The memory displayed in the last box can be recalled at any time. Memories can be removed from the stack by positioning the memory to be removed in the next box using the “up/down” buttons then pressing “delete from stack”.

The stack can also be controlled on the stack page. This is accessed by pressing F2 while on the memories page or by pressing “F2 stack page”. This page is easier to use and understand as it is a dedicated stack page and therefore laid out accordingly. This page is laid out so that it could be supplied as a dedicated hardware panel.

# F2 MEMORIES

## Back up/ Restore

Individual memories can be stored on disk as a back up, to edit off-line or to be used again in the future. This is done by selecting the desired memory and the pressing “back up memory”. To restore a memory from disk, select the memory then press “restore memory”.

All memories can be stored or recalled together by first pressing “select/global” to toggle the PC into the global mode.

Stacks can be saved and recalled by using the “back up session” button and the “restore session” buttons. This stores the stack configuration data and all associated memories.

## Warnings

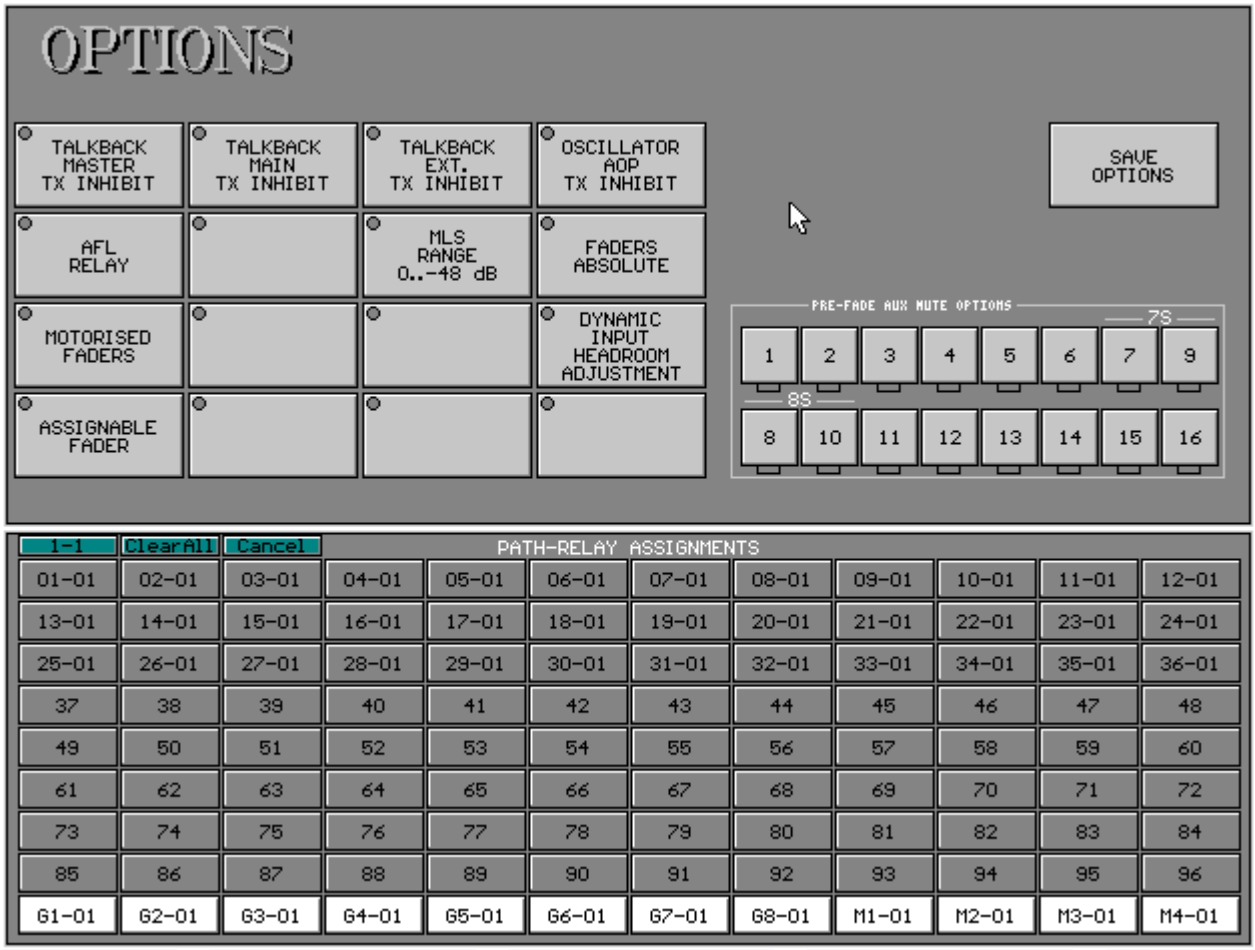
If a memory location is occupied a new memory can overwrite it, so warnings are given by the software. Also the standard memories (97,98 and 99) supplied by Calrec, can be overwritten so again warnings are given by the software.

As an operator becomes familiar with the console he/she may wish to disable the warnings to save time when hurried during a session. This is done by pressing “enable/disable warnings”.

## Preview

The preview function is not yet available, as the software explains if pressed. When it is implemented it will show the selected memory settings on the control surface without changing the values of the audio cards.

# F3 OPTIONS




## F3 OPTIONS

This page selects the options, which are not affected by store/recall of memories. The default settings can be programmed and saved by the user with “save options”. The faders absolute/ relative mode is explained under faders in the control surface section of this document.
The dynamic input headroom adjustment option is available to extend the input headroom. This is achieved by detecting peaks close to ‘natural clipping level’ and automatically lowering the input gain and putting identical gain on the fader.

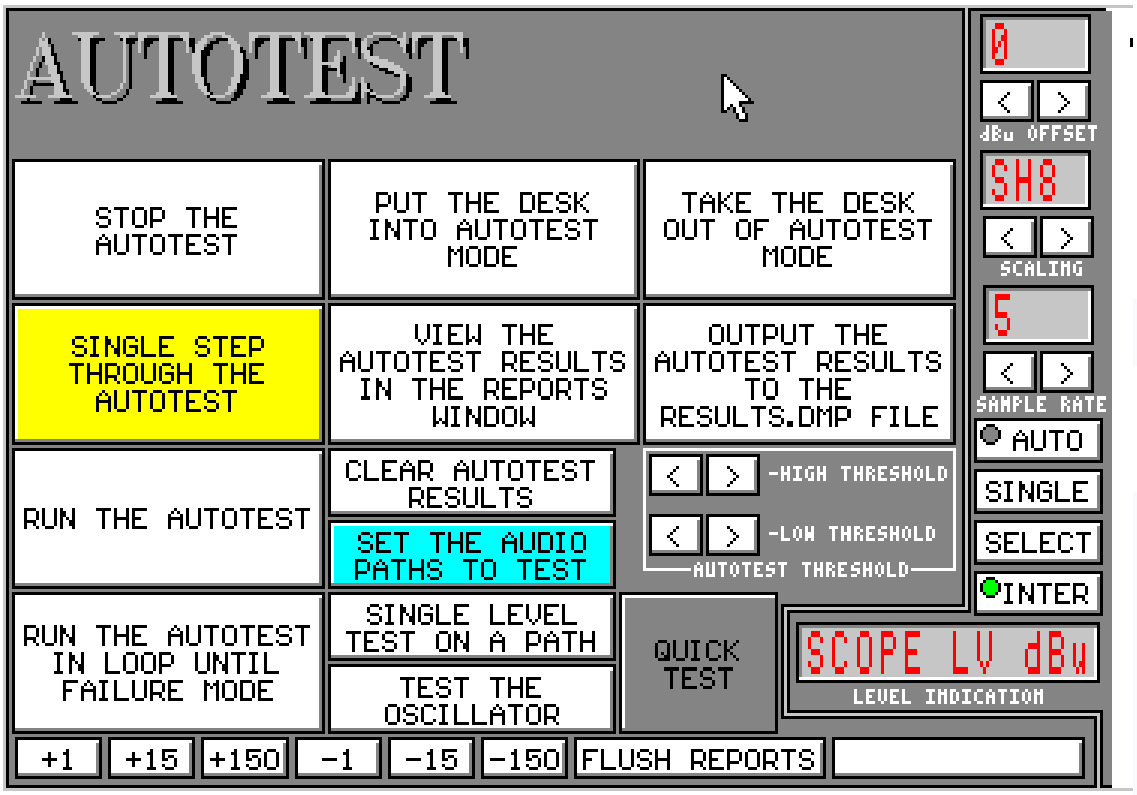
### Pre-fade aux muting

The ten buttons represent the ten auxiliary busses. When these are selected the prefade auxiliary sends will be muted when the fader is closed.

### Relay/Path Assignments

Relay modules can be supplied by Calrec as an option to be controlled by opening a fader to remotely start grams equipment. The path to relay assignment is set on this page.
The path (ie audio card) is assigned to a specific relay.

## F4 AUTOTEST




## F4 AUTOTEST

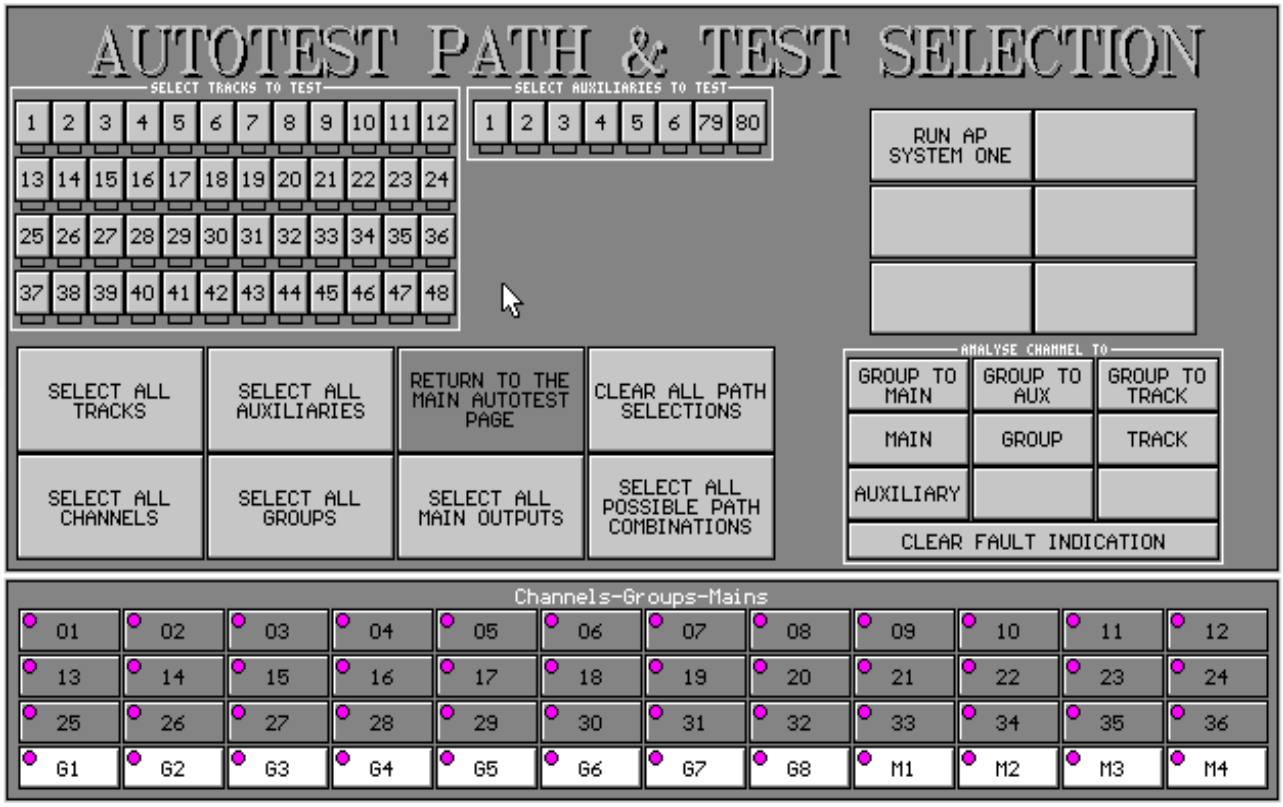
Information on the autotest functions are contained in a separate document and the operational engineering manual. Please contact Calrec for additional information if required.

## F5,F6,F7,F8 CONTROL PANELS

These pages are duplicates of the control surface panels to control the desk either on or off line. The assignments are shown underneath the panels so the path to be controlled can be selected, (this is the same as the assign two buttons on the console, when on-line).

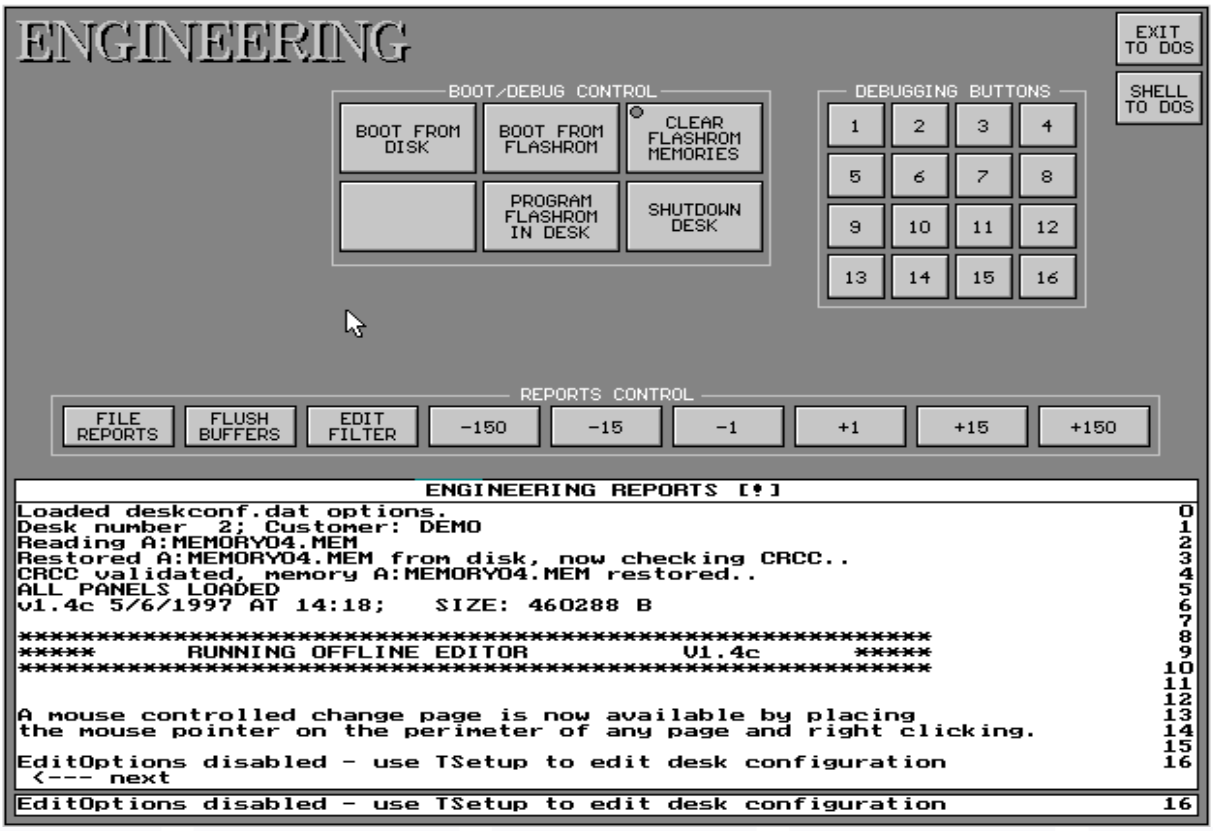
F5 - ROUTING/INPUTS
F6 - EQ/FILTERS/OUTPUTS
F7 - AUXILLIARIES/DYNAMICS
F8 - OSCILLATOR

## F10 AUTOTEST PATH SELECTION




This page selects the paths and all possible path combinations and crosspoints. For more information see the autotest manual.

# F12 ENGINEERING




## PSU Fails

The console can detect any failures in the power supply system. If a failure occurs, for whatever reason, the desk will not fail. This is because Calrec consoles are supplied with more power supplies than are actually required (hot spares).

If a failure occurs then a red LED is illuminated on the monitor panel and a LED on the engineering page representing the failed PSU (power supply unit) will change from green to red. If an operator presses the “cancel” button, next to the fail LED on the monitor panel, then the fail LED extinguishes and the LED under the cancel button illuminates. This is to show that there is a failure, that it has been acknowledged by the operator and if another failure occurs that can also be seen. The acknowledgement can also be done on the engineering page by clicking on the failed PSU, shown by the red LED. The LED will then change to yellow to show the acknowledgement.

## Debug buttons

The debug buttons are not intended for use by customers but for Calrec engineers for fault finding and development. Also the location of their functions is not consistent. However their function is displayed in the reports window. After using any of the debug buttons number one must be pressed to return the console to normal operation.

# F12 ENGINEERING

## Exit / Shell

The PC is the same as any other PC and is therefore not a part of the console and the console will run without the PC.

To exit the program press the button “exit to DOS”, you will be asked whether you wish to file the engineering reports (this is only required for examination by Calrec for fault finding).
Rather than exit the program it is possible to “shell” to DOS, meaning that the program is still running. This is useful to execute DOS commands, to check memory files on disk for example. If in any doubt please contact an IT engineer.

## Booting up the Console

In the unlikely event of the console crashing the desk will attempt to reboot itself without the audio being affected. For more serious problems it can be rebooted by pressing the “boot from flashrom” button or the “reset” button, on the keyboard panel.

If the desk is crashing due to a corrupted memory then these can be cleared by pressing “clear flashrom memories” and then booting the console.

In extreme cases it may be necessary to reinstall the console software. This is achieved by pressing the “program flashrom in desk” button with the back up disk in the floppy drive.
The file name is “DESK.BIN”.

It is possible to run software on the console in a temporary mode by pressing “boot from disk” with the back up file “DESK.BTL” in the floppy drive. This is useful to test new issues of software.

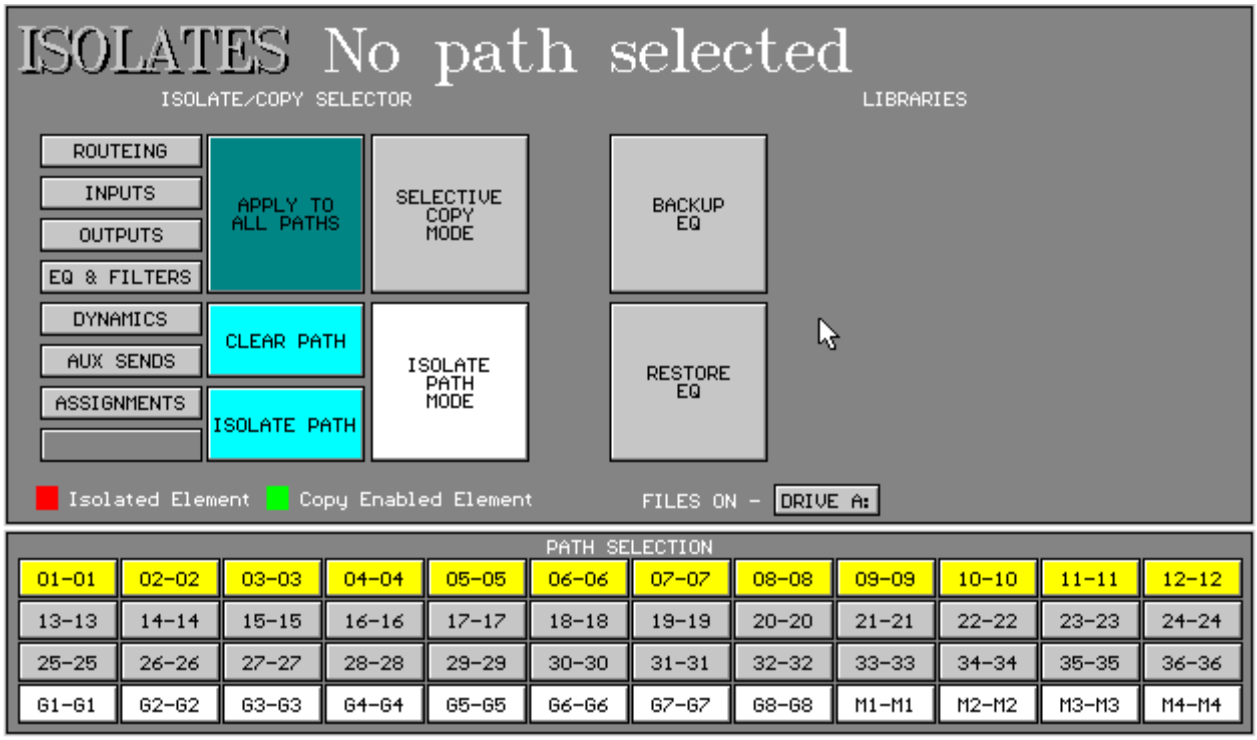
All the above functions can be executed from DOS if the software will not run, using the following commands:-

| | |
|---|---|
| DESK | boot from flashrom |
| DESK /CLEARFROM | clear flashrom memories |
| DESK /BOOTFROMDISK | boot from disk |

## Shutdown

It is very important that before the console is switched off that the “shutdown” button is pressed on the engineering page, just like you would exit any software before switching the power off. This will ensure a “clean exit”.

## (SHIFT) F1 ISOLATES




### Selective Copy mode

The channel copy mode using the assign two buttons can be changed so that only certain aspects of the channel are copied. Firstly press on the “selective copy mode” button then select the items to be isolated on the left of the screen. Note the colour change and the key.

### Isolate Path

Individual paths can be isolated so that they are not affected when a memory is recalled, for a presenter during a link as the next memory in the stack is loaded for example. This is done by pressing the “isolate path mode” button then selecting the path to be isolated, the channel settings to be changed (if any) and then “isolate path” button.

### EQ Libraries

Libraries of EQ settings can be created and saved to disk, in a similar manner to the fader label libraries. This can be very useful for certain presenters or microphones. This is achieved by selecting a channel, then pressing the “back up” button, a prompt will then ask for a filename. This will then be entered in the Library. Press the “restore” button to retrieve an EQ setting to the selected channel. You will then be asked which file you wish to insert.

Notes

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