# DiGiCo D1 LIVE

# Operation Manual

D1

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# D1 Contents

# Chapter 1
# Getting Started

## 1.1 The Console

The Digico D1 consists of a worksurface, and up to 4 Input/Output Rack Units. The Rack Units are connected to the console by MADI links (or optical fibre optionally), which carry all the audio input and output signals.

The console worksurface consists of 2 Input Banks, and a Master Section.

Each input bank has 8 assignable faders and 8 sets of assignable on-screen channel controls, the Master Section has 8 assignable faders and a master fader. The Master section controls outputs, monitoring and configuration.

The console's buss architecture is dynamic, and can support stereo, LCR(S) and 5.1 configurations.

Multiple console setups can provide:

Front of House and Monitoring with shared stage racks and gain tracking.

Redundant Mirroring of Front of House and/or Monitoring consoles.

Remote control of console via an ethernet link with a laptop computer.



This manual is divided into chapters, each dealing with one aspect of the console.

- •        Chapter 1 is a quick start guide that provides an overview of the basic console functions.
- •        Chapter 2 describes how to use the assignment and channel controls provided on an Input channel bank.
- •        Chapter 3 describes the Output channels, including Group, Direct, Aux and Matrix Outputs.
- •        Chapter 4 describes most of the Master Section functions, including console configuration, monitoring, snapshots, and timecode and transport control.
- •        Chapter 5 describes the onboard Effects and Processing Channel Modules.
- •        Chapter 6 describes the various functions of multiple console setups.
- •        Chapter 7 provides help with troubleshooting common problems.

## 1.2 Hardware

### 1.2.1 Connections ............................................................................

Detailed information on the various systems of connection is provided in the **Interconnection and System Setup Manual** but the following diagram provides an overview of a single console setup.

The D1 may be connected to the DiGiRacks with MADI coaxial cables (standard) or with optical fibre (optionally).

There are 2 sets of MADI In/Out ports on the rear panel of the console labelled MADI 1 and MADI 2. The DiGiRacks also have 2 sets of MADI In/Out ports labelled Main MADI and Auxiliary MADI.

If the D1 has an optical fibre option, there will be optical fibre ports A and B on each device.

Connections are as follows:

**CONNECTION WITH MADI**

**CONNECTION WITH OPTICAL FIBRE**

MAIN MADI IN   MAIN MADI OUT     MAIN MADI IN   MAIN MADI OUT     OPTO A     OPTO A

OPTO B     OPTO B

OPTIONAL
REDUNDANT
LOOP

MADI PORT 1 OUT   MADI PORT 1 IN     MADI PORT 2 OUT   MADI PORT 2 IN     OPTO A     OPTO B
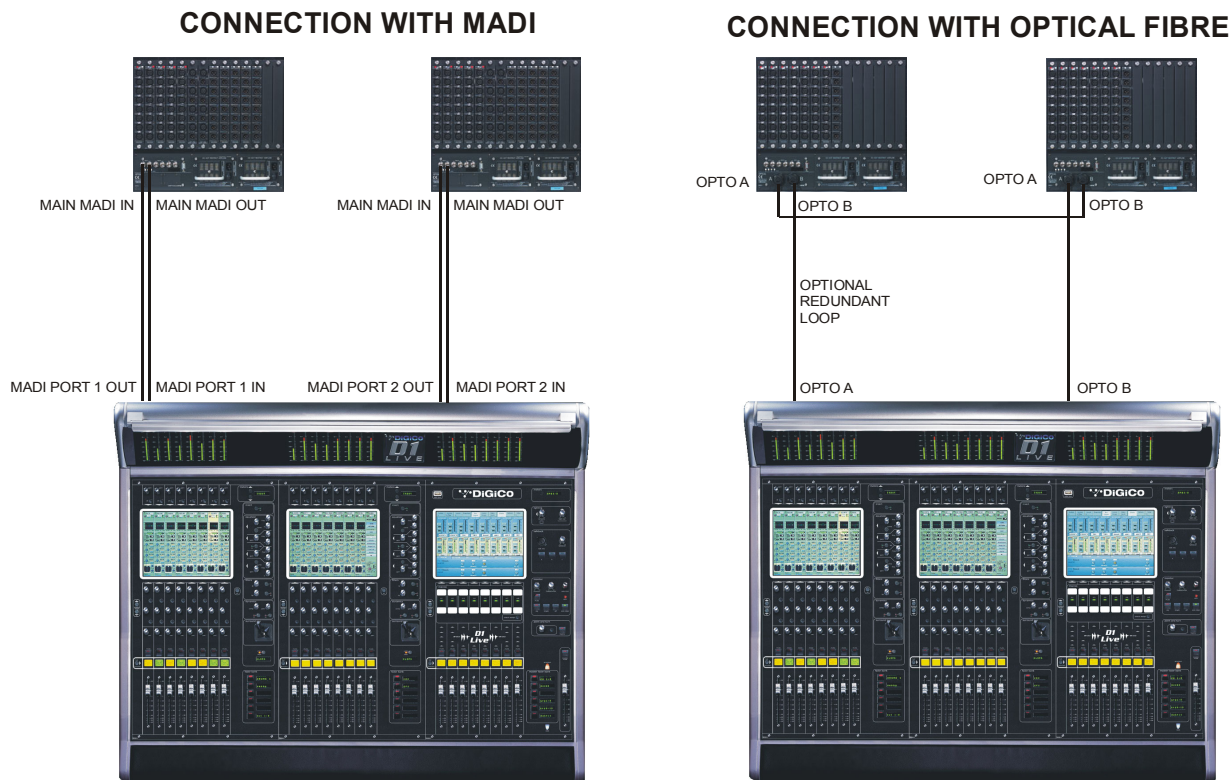
Detailed information on multiple console setups is provided in a separate chapter of this manual.

## 1.2.2 The DiGiConfig Program ....................................................

The following example shows how to run the DiGiConfig program from the D1 software in order to configure you hardware:

**1)** Open the **System / Service** menu.

**2)** Press the **Configure Hardware** button, the D1 software will close and DiGiConfig will open.

**3)** Press the relevant buttons for all the consoles that you wish to configure - in the example, a single **FOH Main** console is selected.
Press the **This One** button to select the console that you are working on.

**4)** This will apply the correct configuration but the details can be further edited by pressing the **Edit Details** button.

**5)** Press **OK** to return to D1 software.
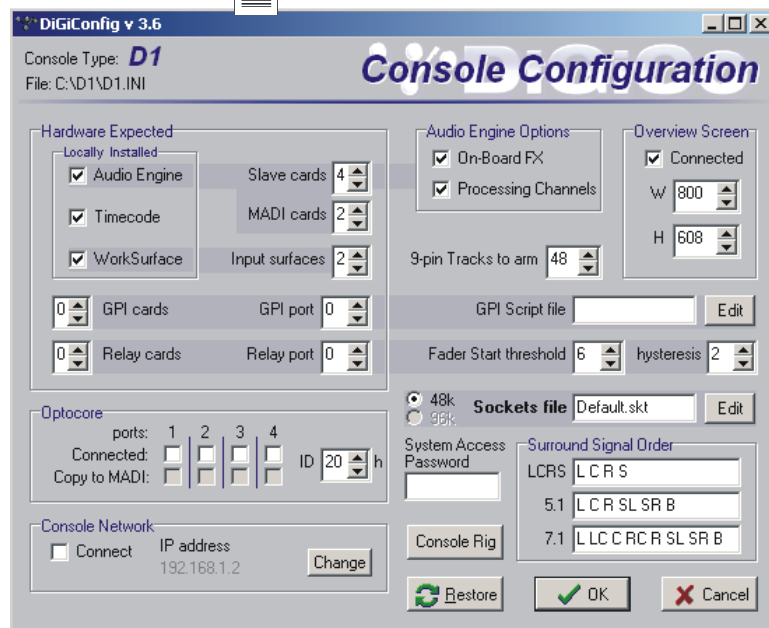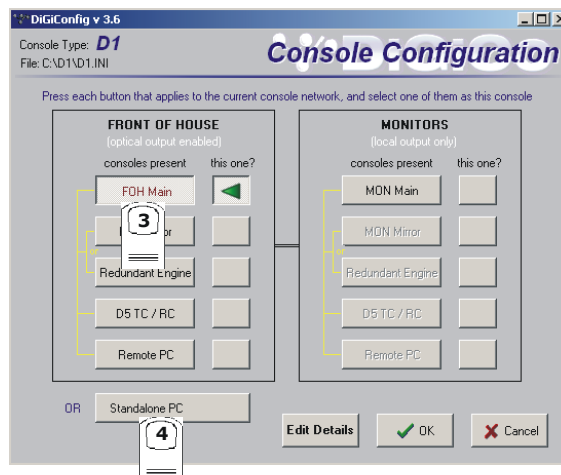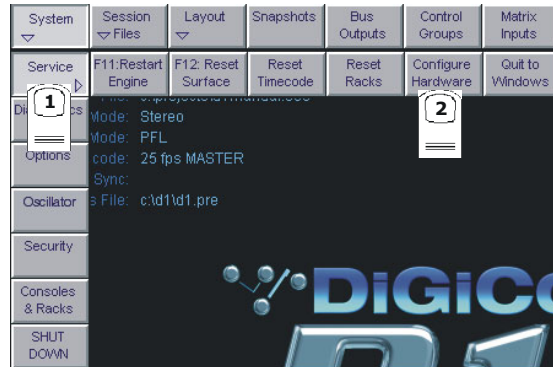
## 1.3 Getting Started

**Input Section**



Input Gain and Phase

Channel Meter Status

Channel Insert On / Off

4 Band Parametric EQ

Aux / Pan / Dynamics Controls

High and Low Pass Filters

Dynamics Thresholds and On / Off

Pan / Q Control

Joystick

Mute and Interactive LCD Function Button

Undo / Redo Button

Channels Faders

Channel Fader Banks

**Master Section**



Master Screen

Meter Status

Light Controls

Talkback

Macros

Screen Scroll

Monitoring

Matrix/Effects Controls

Mute and Interactive LCD Function Button

Master Mute

Previous Snapshot

Output / Control Group Faders

Master Fader

Master Fader Banks

Next Snapshot

**Input Channel**



Input Gain

Phase/
Gain Tracking On/Off

Input Module
Analogue Gain
Digital Trim

EQ Module

Dynamics Module

Aux Send & Compressor Controls

Aux On/Off & Compressor Controls

Screen Scroll

Aux Send & Gate Controls

Aux On/Off & Gate Controls

Pan/Q Control

Aux / Pan Module

Mute

LCD Function

Interactive LCD Button

Channel Fader

Routing Module

**Master Screen**

## 1.3.1 Consoles and Racks ..........................................................

If the console is the only one in the system, the **Consoles & Racks** panel will not open automatically and the console will be fully connected to the racks with its **Master Audio Outputs Active** by default. This panel can also be opened from the **System** menu.

If the system has been defined as consisting of more than one device, the **Consoles & Racks** panel will automatically open on boot up or load session.

If the crossed Ethernet cable or Ethernet switch has been connected, then the **Ethernet Connected** line should show a **green OK light** and not a red cross.

The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

In this state, any gain adjustments made on the console will have no effect as the racks will not be receiving any data.

The console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.

The same button on the other consoles in the system should not be highlighted at all.

The MADI Rack's connect states Receive Only and Full Connect are enabled/disabled and set according to the Audio Master active state – an inactive engine cannot output to a MADI rack.



| Main Console | Redundant Engine, Mirror Console or Remote |

To enable control of the DiGiRacks, press the Full Connect buttons for the Optocore and MADI racks. You will then be required to confirm the action, the session settings will be sent to the racks and the console will have full control over them.

If you have a system where more than one console is sharing the racks you may wish to use the **Receive Only** mode where the console will receive the rack's existing settings but will not be able to control the gain on the racks.

**Options are:**

**Isolate** where the console will not communicate with the racks and therefore any adjustment of input gain or +48V switch will have no effect on the rack settings.

**Receive Only** where the console will receive the rack's existing settings but will not be able to control the gain etc on the racks.

**Full Connect** where the console will send its settings to the racks and change them accordingly.

**For more information on the use of this panel please see the chapter on Multiple Console Setups.**

## 1.3.2 Loading the Template Session ..........................................

A basic template session (default configuration) is provided with the console. To load it:

**1)** Touch the **Session Files** button at the top of the Master Screen to view the menu.

**2)** Touch the **Load Session** button in the Sessions menu to open the Load Session panel.

**3)** Touch the **Projects** folder button at the bottom of the panel to view its contents.

**4)** Touch the **template.ses** entry in the file list to highlight it.

**5)** Touch the **Load** button in the bottom right of the panel to open the session file.



This will provide you with a configuration where 56 or 96 microphone inputs are already selected as input sources and some basic output routing is in place. However, the following instructions will help you to check or change the basic configuration and then save your custom setup as a new session file.

## 1.3.3 Selecting an Input Source ....................................................

First select the **Fader Bank** that you require by pressing one of the bank of buttons next to the channel faders.

Holding a Fader Bank button for more than half a second will switch all input banks to view the same Fader Bank row.

You can display the **Input Module** for a fader by touching the top of the fader's on-screen channel strip, where the channel label is displayed. You can then hide the module by touching the same area again.



Gain / Phase

Signal Label

Stereo Channel Mode Selector

Signal Group Selector

Signal Selector

Phantom Power (Mic i/p only)

Preset Selector

Signal Delay
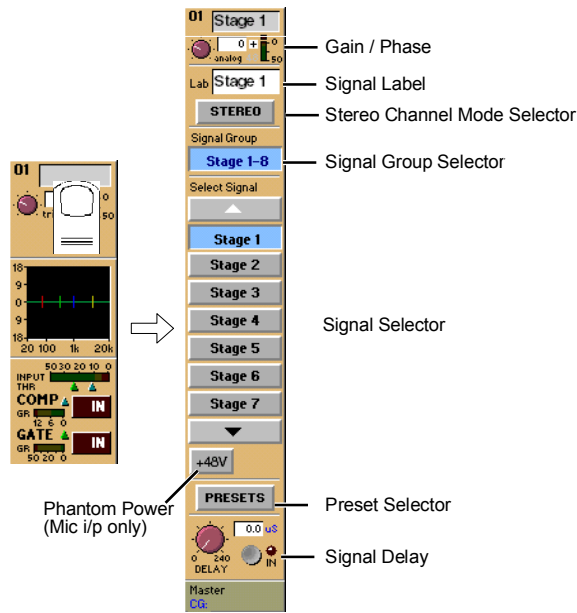
Input sources are divided into groups of signals eg. **Stage 1-8 or Line 1-16**.

**To select an input source:**

**1)** Touch the **top of the input screen** to open the input panel.

**2)** Touch the name of the **Signal Group** to view the signal names.

**3)** Touch the **name of the signal** to assign it to the channel.

**4)** Adjust the **gain** (analogue rack gain or digital trim selected by touching the required on screen control) with the **worksurface rotary control** at the top of the channel.

**5)** Touch the **top of the input screen** again to return to the standard view.

**Note:** Touch the **Lab** box and type a name for the channel if required.
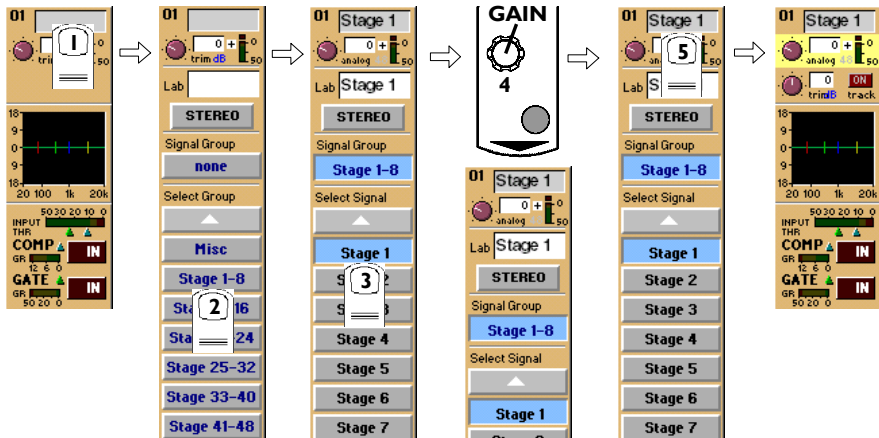


If the **Stereo** is pressed, the input channel functions will control two input signals, the one which has been selected and the next one in the rack.

eg. If **Stage 1** is selected and the stereo button is pressed **Stage 2** will also be controlled.

To **Solo** a channel use the **Channel LCD Buttons** just below the mute buttons in the channel strip.
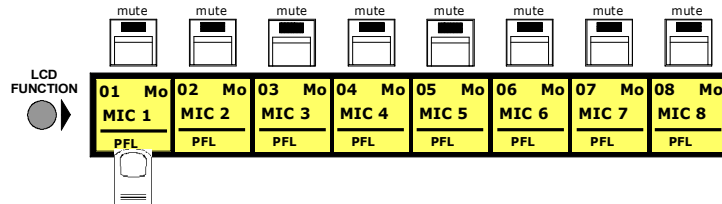
These are multi-function buttons and by pressing the **Channel LCD Function** button on the left hand side you can select which function they are currently assigned to.
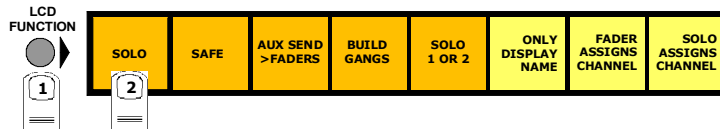


## 1.3.4 Routing the Channel Signal .................................................

The channel signal can be routed to **Groups** and **Direct Outputs**.

**To Route to a Group:**

**1)** Touch the **bottom of the input screen** to open the routing panel.

**2)** Touch the **Groups button** if it is not already highlighted.

**3)** Touch the Group button(s) that you require eg. **Master, Grp1** etc

**4)** Touch the **bottom of the input screen** again to return to the standard view.
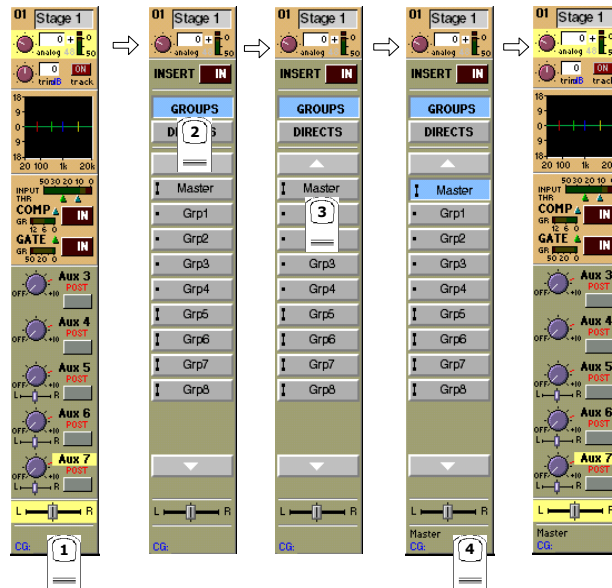


**To Route to a Direct Output:**

**1)** Touch the **bottom of the input screen** to open the routing panel.

**2)** Touch the **Directs button** if it is not already highlighted.

**3)** Touch the name of the **Socket Group** to view the output socket names.

**4)** Touch the **Output Socket button(s)** that you require eg. **Loc L1, Loc L2** etc.

**5)** Touch the **Pre/Post button** to specify the position of the Direct Out, relative to the channel fader, in the signal path.

**6)** Touch the **bottom of the input screen** again to return to the standard view.
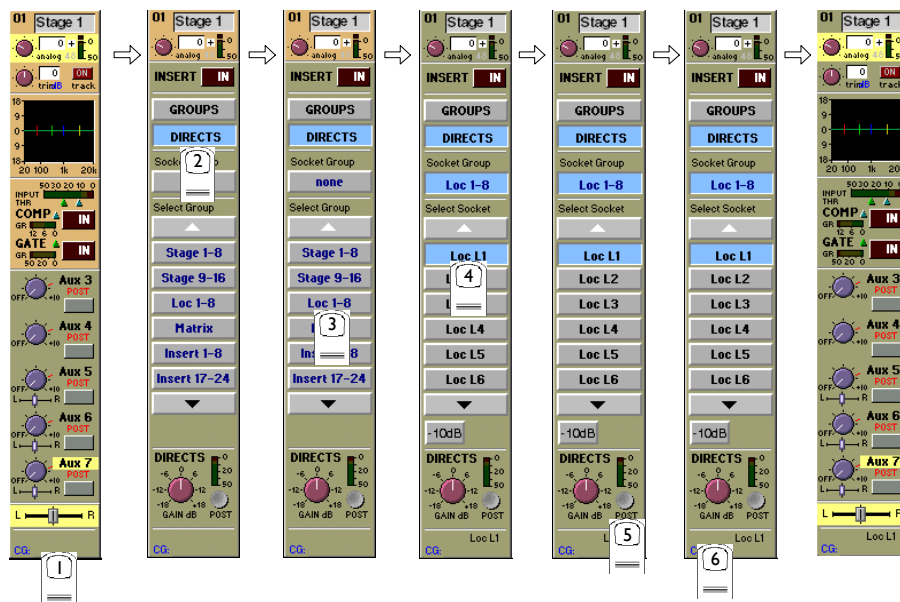
## 1.3.5 Routing Busses To Outputs .............................................

The Master, Group, Auxiliary and Matrix busses must be routed to output sockets as part of the initial configuration.

This is achieved by using the buss output routing panel in the Master Screen:

**1)** Touch the **Buss Outputs button** at the top of the master screen.

**2)** Touch the **on screen meter** of the relevant buss to expand the view.

**3)** Touch the **Route button** at the bottom of the panel.

**4)** Touch the name of the **Socket Group** that contains the output you require **eg. Loc 1-8.**

**5)** Touch the **Output Socket button(s)** that you require eg. **Loc L1, Loc L2** etc

**6)** Touch the **Route button** at the bottom of the panel to close the routing.

**7)** Touch the area around the on screen meter to return to the standard view.

**8)** Press the **Master Fader Bank** button for the relevant row of outputs to adjust the output level with the worksurface master faders.

**NOTE:** For a stereo buss, select the output for the left hand signal and the next consecutive output is used automatically for the right hand signal.
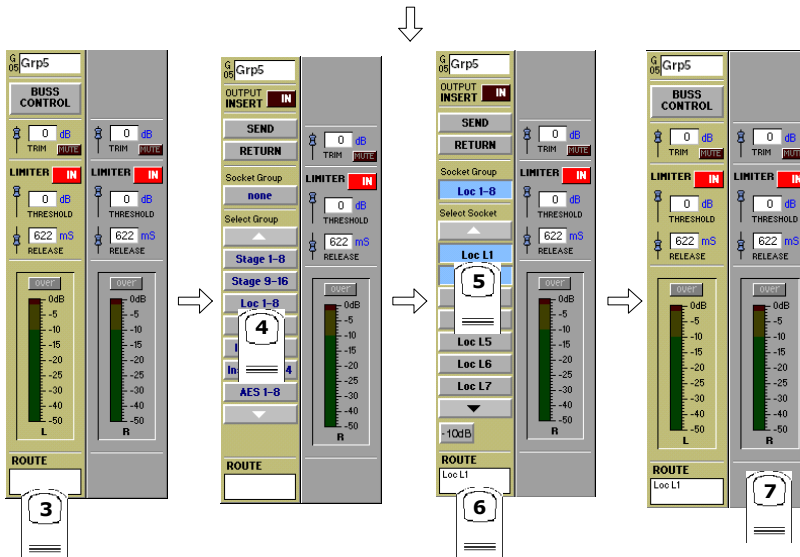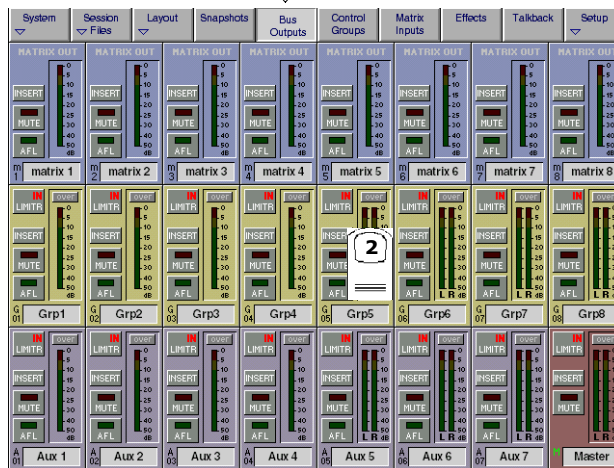
### 1.3.6 Save As New File .................................................................

When you change the configuration of the template session you should save it to the console's flash drive under a new filename.

**1)** Touch the **Session Files** button at the top of the Master Screen to view the menu.

**2)** Touch the **Save as New File** button in the Sessions menu to open the panel.

**3)** Touch the **Projects** folder button at the bottom of the panel to select the file destination.

**4)** Touch the **New Filename** box and type the chosen name **(with a maximum of 8 letters and no punctuation)**.

**5)** Touch the **Session Title** box and type a description of the session if required.

**6)** Touch the **Save** button in the bottom right of the panel to save the session file.

**Note: If you touch a session name on the existing list, this name will automatically be selected as the new file name and touching Save will overwrite the old file.**

### 1.3.7 Save Session ....................................................................

This button which is found above the **Save As New File** button will save the existing session in the same location and under the same file name as it was previously saved or loaded from. It therefore serves as a "**Quick Save**" option to update an existing session.

**Remember that this function will overwrite your last saved version.**

If you wish to save the session under a new name use the **Session Files** menu button and select **Save As New File** (See above).

# Chapter 1

## 1.3.8 EQ ...........................................................................

The EQ section comprises four user-configurable parametric filters and a pair of swept High-pass and Low-pass filters.

The EQ is accessed by touching the on screen display to **Assign** the channel (**the colour changes to orange**) and then using the controls on the right hand side of the input module.

When a control is adjusted the expanded view seen below appears in the input screen but this view can be seen at any time by touching the EQ response graph on the screen.

**NOTE:** If the expanded view does not appear when a control is adjusted open the **System / Options** panel and press the **Automatically expand EQ view when adjusted button.**



Filter Centre Frequencies

Response Graph

Reset EQ
Preset Selector

Parametric 1 (Yellow)

Curve Select for Parametric 1

Parametric 2 (Blue)

EQ In/Out

Parametric 3 (Green)

Curve Select for Parametric 4

Parametric 4 (Red)

Lopass In/Out

Hipass / Lopass Filters

Hipass In/Out
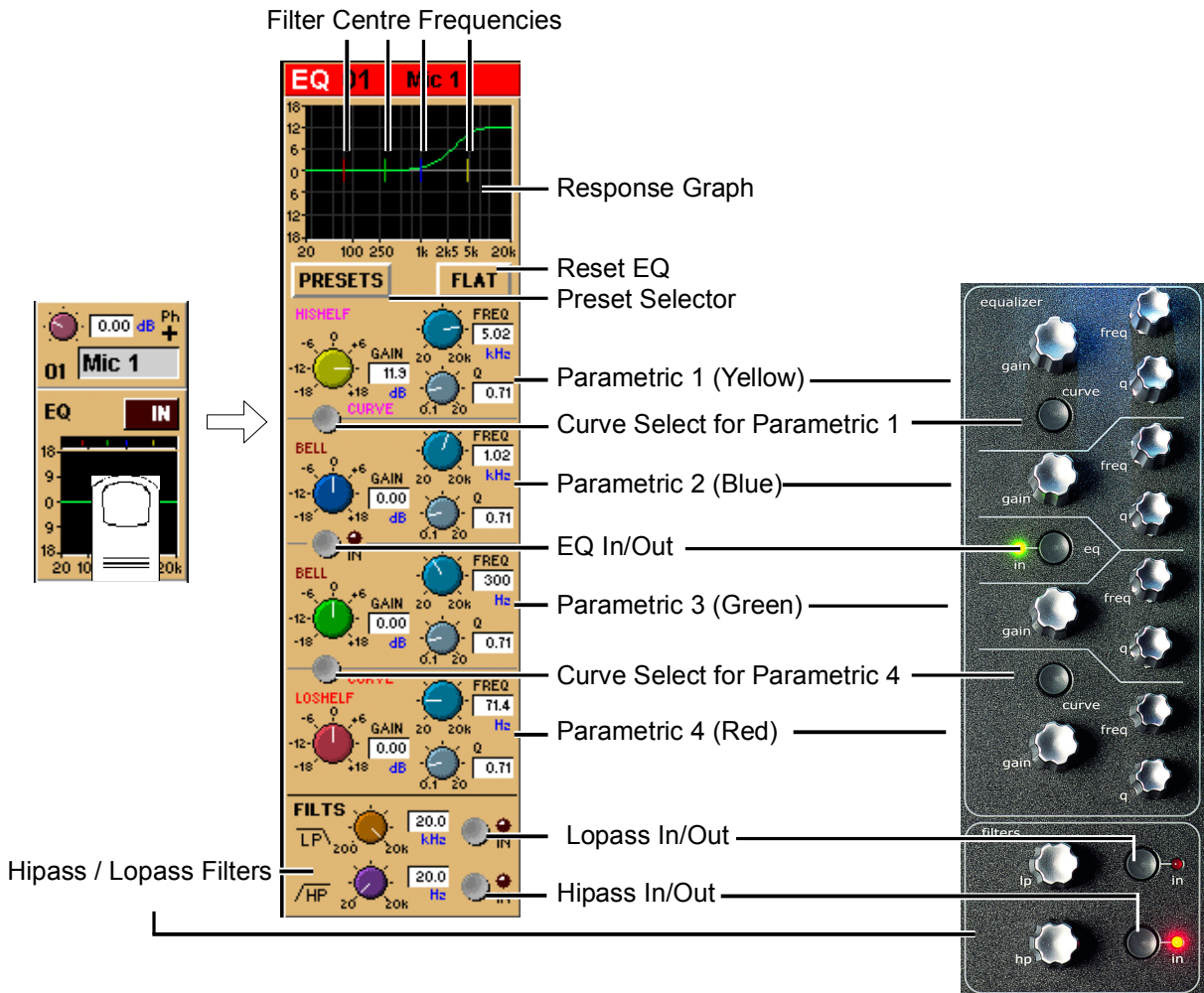
**Note:** The four band EQ and each of the filters have their own in/out switches.

The type of filter used by bands one and four can be changed by successive presses of the **Curve Select** button for that band. There are three possible settings for each band.

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### 1.3.9 Dynamics ...................................................................................

The dynamics are accessed by touching the words **Comp** or **Gate** just below the EQ graph on screen to open the dynamics panel.

The worksurface controls beneath the screen control the various parameters. Touching the panel again will close it.

Dedicated **Threshold** controls and **In/Out** switches can be found on the right hand side of the input section worksurface. These can control the Assigned channel's dynamics whether the on screen dynamics panel is open or not.



Compressor Controls

Gate Controls
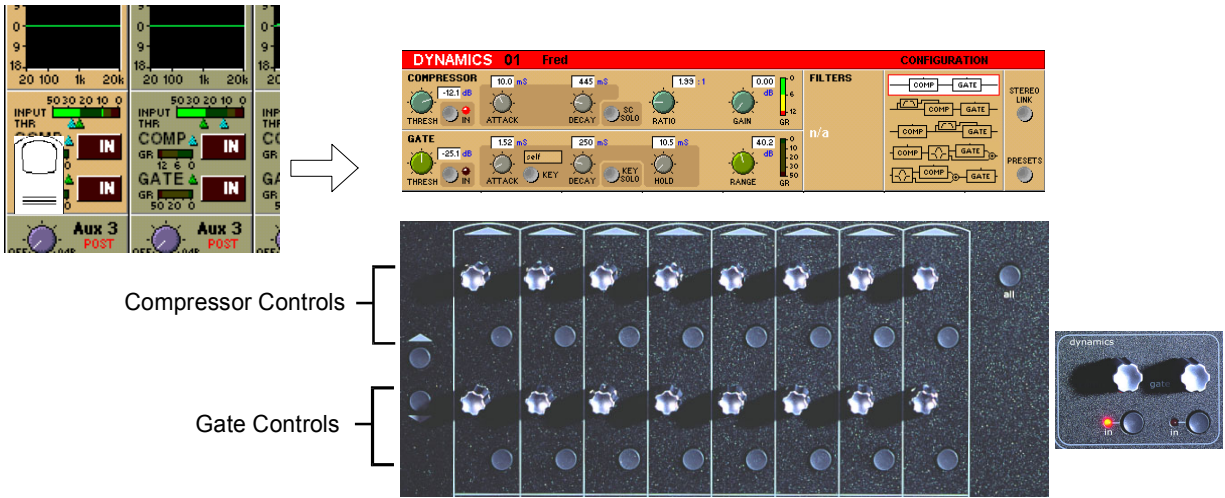
The third row of buttons in the input section can be assigned to any of the dynamics on/off switches. Hold the **Assign Switch** button on the left of the input section and touch the dynamics section on the screen. The selected control is shown by the **Status Display.**

**Note**: These switches can also be assigned to other functions - **See section 2.1.3**

### 1.3.10 Auxiliaries ...............................................................................

The auxiliaries are accessed by touching the auxiliary row on screen or using the **Screen Scroll** buttons on the left of the input section.



Screen Scroll

Aux Sends

Aux On/Off and Pre/Post

Aux Sends
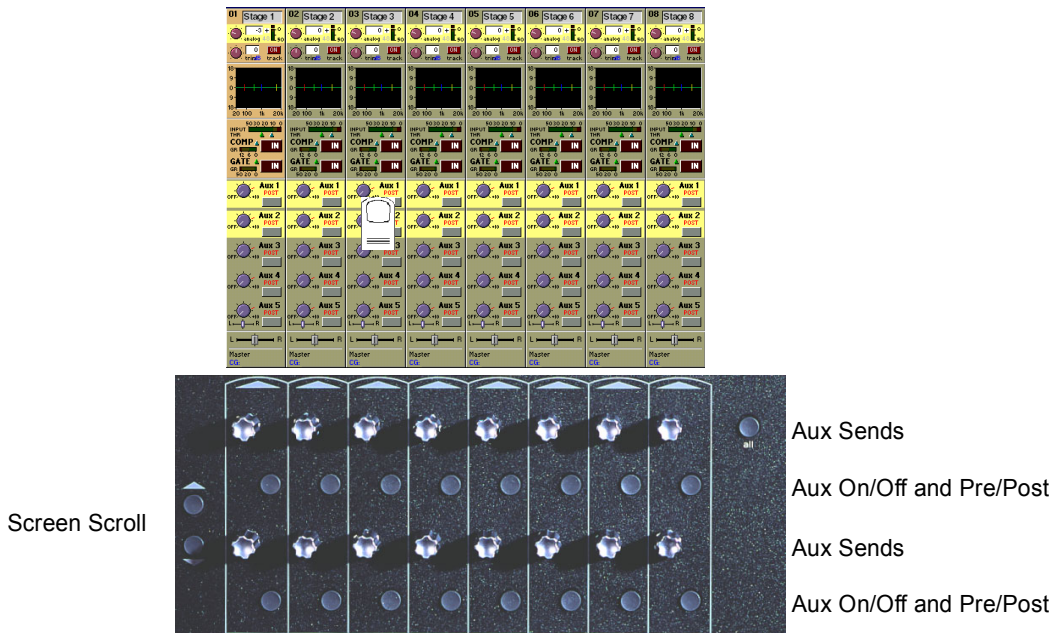
Aux On/Off and Pre/Post

Using either of these methods, the highlighted auxiliaries on the input screen will change. The rotary controls and switches beneath the screen are used as auxiliary sends, pans, on/off and pre/post switches in the following way.

## MONO AUX

FIRST MONO AUX SEND

FIRST MONO AUX ON/OFF
(PRE/POST WHEN SEND IS DOWN)

SECOND MONO AUX SEND

SECOND MONO AUX ON/OFF
(PRE/POST WHEN SEND IS DOWN)

## STEREO AUX

STEREO AUX SEND

STEREO AUX ON/OFF
(PRE/POST WHEN SEND IS DOWN)

STEREO AUX PAN

STEREO AUX PAN
TOGGLE TO CENTRE
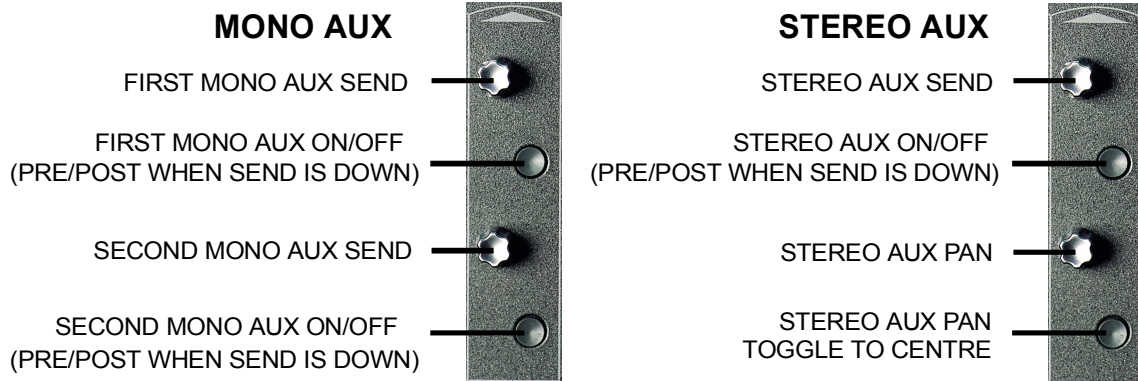
### 1.3.11 Pan / Q Control ..................................................................

The third rotary control in the section is a dedicated pan.

It also serves as a "Q" control for the 6 band parametric EQ if an insertable processing channel is selected on the screen.

### 1.3.12 The Matrix ..........................................................................

The 38x8 way matrix is accessed by touching the **Matrix Inputs** button on the master screen or the **Matrix** button on the far right of the worksurface master section.

Inputs are selected in the same way as the input channels (See Section 1.3.1).

Touch the on screen matrix send controls to select which ones you wish to adjust and they will become highlighted.

Use the worksurface **Point and Turn** control and **On/Off** switch to adjust the settings for all highlighted sends.

At the bottom of the panel there are buttons to **Clear All Assignment**, **Load and Save Presets** and **Scroll** buttons to view the other inputs.



Open Matrix

Send On/Off

Matrix Send

Clear All Selections

Scroll Inputs

Matrix Presets

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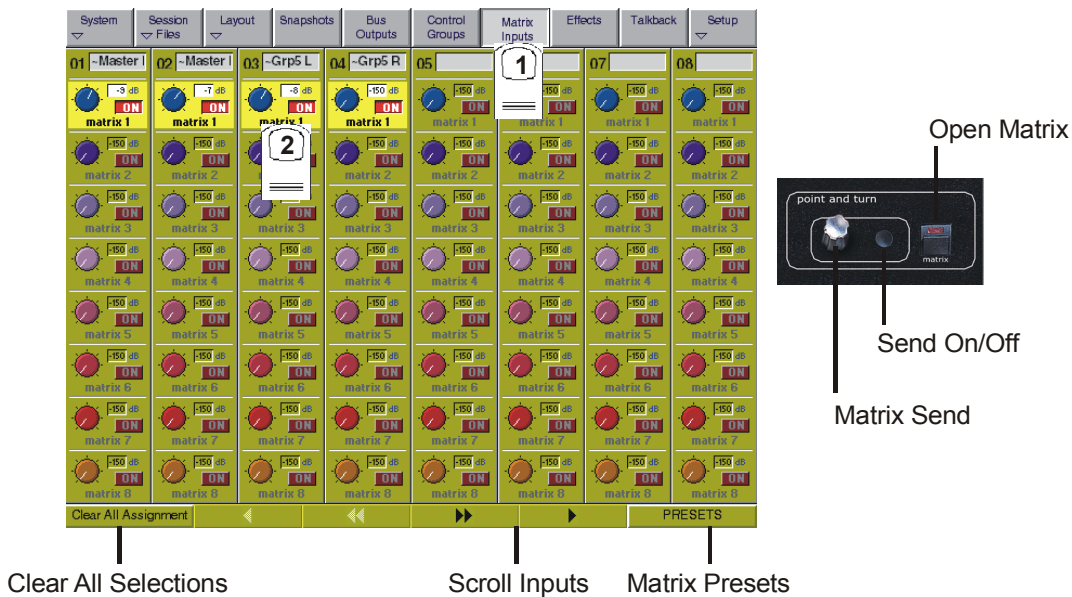
## 1.3.13 Control Groups ................................................................

Any number of input channels and output channels can be connected to one or more of the Control Groups. They can then all be operated from a single worksurface control. Changes to the Control Group fader, mute or solo or controls will affect all channels connected to the group.

To set up Control Groups:

**1)** Touch the **Control Groups** button on the Master screen.

**2)** Touch the **Touch Faders To Join/Leave** button on the required Control Group (1-16).

**3)** Touch the **faders** on the channels that you want to include. (Touching the fader again will remove it from the group).

**4)** Touch the **Touch Faders To Join/Leave** button again to turn the function off.

**5)** Press the on screen **Mode** button to select **Moving** faders, **VCA** style static faders or **Mutes** only.

**6)** Use the worksurface fader, mute and solo to adjust settings for the Control Group members.



A list of all the connected channels and their names is displayed above each Control Group display, touch the area above the **Clear** button to expand this list.

When a fader is touched it is highlighted in the list.

You can also clear all the channels from a Control Group by pressing **Clear**.

When a channel is a member of a Control Group, its own controls can still be adjusted independently of the other Group members. Adjustments to fader levels are transmitted to the Group members as dB changes, so that a level increase of 2dB on the Group fader will increase all the member levels by 2dB, irrespective of the relative levels of the individual channel faders.

## 1.3.14 Master Fader Banks ..........................................................

The faders in the console Master section control the output levels for busses, auxiliaries, control groups and the matrix. If configured using the **Master LCD Function** buttons (Section 4.5 of this manual), they may also control input channel levels.

To select a bank, press the relevant **Master Fader Bank** button**.**

**Note:** To assign the alternative set of Master Fader Banks to the worksurface, open the **Layout/Master Banks** panel and press the **Flip Banks** button



## 1.3.15 Monitoring ..........................................................................

The **Monitoring** panel can be found under the **Setup Menu** on the Master Screen and some of the controls can be accessed on the right hand side of the Master worksurface.

It may be accessed at any time to change the monitoring setup.

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There are two solo busses and each console solo button can be independently assigned to use Solo 1 or Solo 2. Output solos may use a total of 16 inputs to each solo buss.

Therefore, if the console was being used for stage monitors, the first solo buss could feed an "in ear" monitor and the second solo buss could feed a wedge.

To use **Solo 2** there must be sufficient busses available (at least two) and if Solo 2 does not appear on the panel a new session should be created to make these busses available.

The dedicated worksurface buttons control the relevant Monitor/Solo 1 functions and the Solo 2 level and trim may be controlled by touching the on screen control and using the Matrix rotary control on the worksurface.

**For more information on Monitoring and Solo options see Section 4.2.9.**

# Chapter 2
# Inputs and Console Channels

## 2.1 The Input Channels

The console Worksurface consists of a Master section, and two "Banks" of faders for controlling input channel or auxiliary levels. Internally, the console has between 64 and 160 (according to the model) processing channels.

### 2.1.1 Channel Assignment ........................................................

The assignment of audio input channels to faders on the D1 worksurface is "soft", so that there is no direct link between channels and faders. The console has between 40 and 224 (according to the model) inputs which are then assigned in blocks of eight to the console's physical fader banks.

Input Gain and Phase — Channel Meter Status

Channel Insert On / Off

4 Band Parametric EQ

High and Low Pass Filters

Aux / Pan / Dynamics Controls — Dynamics Thresholds and On / Off

Pan / Q Control — Joystick

Mute and Interactive LCD Function Button — Undo / Redo Button

Channels Faders — Channel Fader Banks
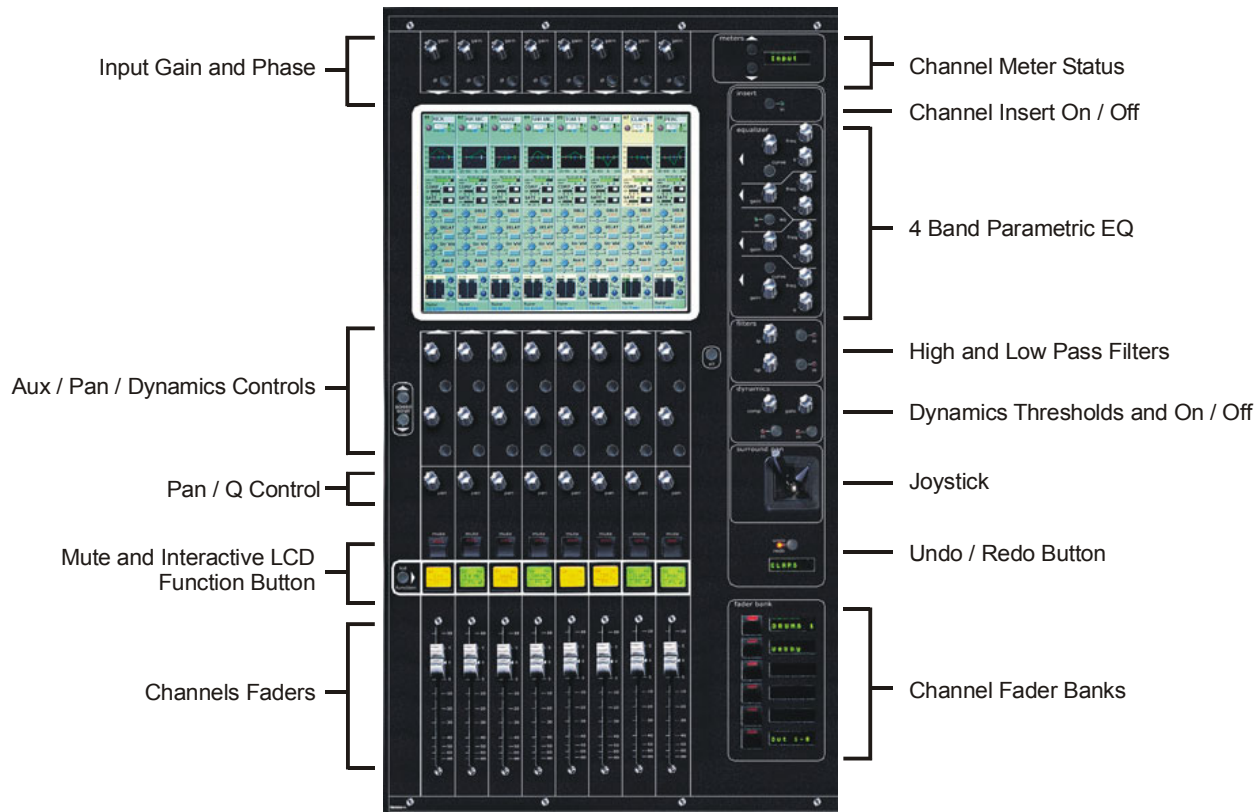
When you want to access an input channel which is not currently visible on a worksurface channel, press the relevant **Fader Bank** button on the console worksurface.

**Note:** Holding a Channel Fader Bank button for more than half a second will switch both input surfaces to their equivalent bank for the same bank button

### 2.1.2 Worksurface Channels ........................................................

Each fader bank has eight channels. Each channel has a Mute switch, an Interactive LCD button which performs a number of different functions and assignable rotary controls and switches to control auxiliaries and dynamics functions.

As well as a number, each channel has a Label which you can define. Labels can be up to 31 characters but only the start of the label will be displayed. The number of characters displayed depends on the character width.

Above the faders on each bank, the touch-screen provides access to the routing and processing for each channel.

# Chapter 2

## 2.1.3 Input Screen - The Standard View .....................................

In the screen's Standard View, each on-screen channel is shown in abbreviated form.

The controls around the screen operate as follows: detailed information about each particular control is given later in this chapter.

**Upper row** - Channel Input Gain and Phase / Gain Tracking On/Off.

**Lower row** - the first two rows of controls below the screen are used to adjust the channel's Pan position, Auxiliary sends and Dynamics parameters.

The third row of rotary controls are dedicated as pan controls in input channels and EQ "Q" controls on Insertable Processing Channels.
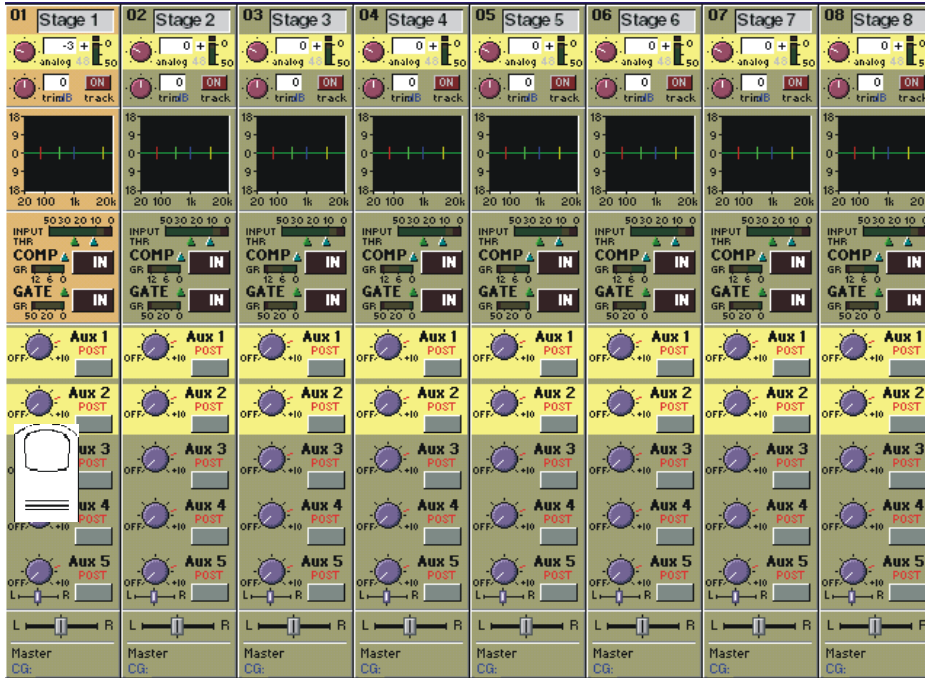


The on-screen channel strip is normally coloured grey, but one or two of the Aux/Pan controls are highlighted in a different colour, indicating that these controls are currently assigned.

You can scroll the assignment up and down the list of Aux/Pan controls using the two **Screen Scroll** buttons on the left hand side of the section or by touching the control on the screen. Surround panning is operated using both rotaries, but is easier to adjust by selecting the channel and using the joystick.

## 2.1.4 Input Meters ...........................................................................

Note that the meter above the channel display will show the input signal level for that channel but if the Meter Buttons to the right of the Input screen are pressed the meter can show any of the following:

Input / Gate GR / Compressor GR / Direct Out / Insert Send

The meter display buttons allow you to scroll through the options.
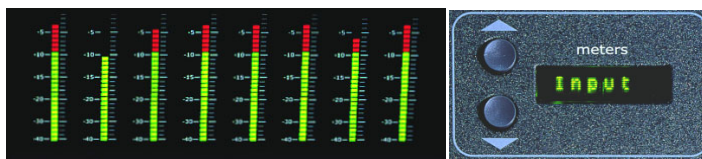
### 2.1.5 Assigning a Channel ..........................................................

To assign one of the on-screen channels so that you can adjust the EQ or Dynamics settings or use the Joystick, touch the on-screen display of the channel anywhere in the EQ or Dynamics area. (Not on the In / Out switches)

The background colour of the channel changes to show that it is selected.

Touching the IN /OUT buttons will switch the relevant processing module ON or OFF.
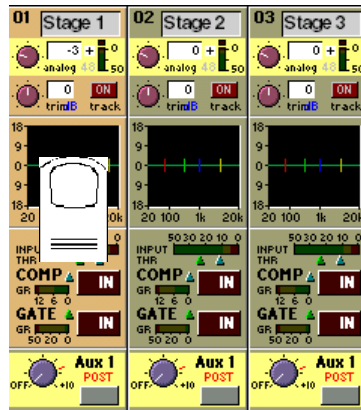


There is also an option to assign a channel by either touching its fader or pressing its solo button. **See Section 2.2.8 Channel LCD Function Buttons.**

## 2.2 Expanding a Processing Module

Once you have selected a channel, you can choose to view any of the processing Modules in more detail by touching the abbreviated display of the section. There are five areas of the channel you can touch to see the module in more detail:



Input Module
Analogue Gain
Digital Trim

EQ Module

Dynamics Module

Aux / Pan Module

Routing Module
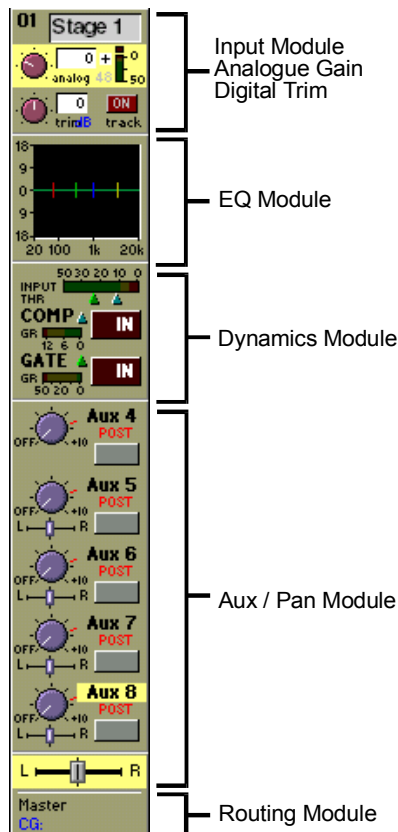
## 2.2.1 Input Module ...........................................................................

You can display the Input Module for a fader by touching the top of the fader's on-screen channel strip, where the channel label is displayed.  You can then hide the module by touching the same area again.
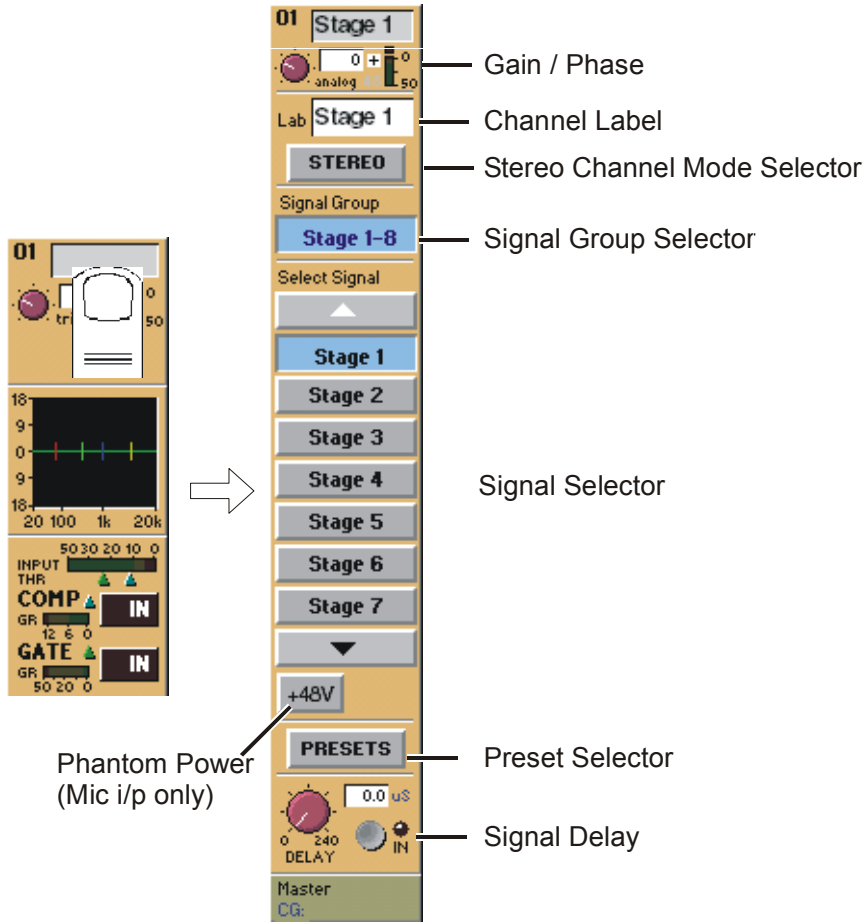


The Input Module contains the following controls:

### Channel Label

To alter the Label, touch the Label area, then type the new label on the keyboard.  Labels can be up to 31 characters long, but only the start of the label will be displayed depending on the character width.

### Signal Group

The input sockets are arranged into named "Groups".  To display the signal groups, touch the Signal Group Selector area as shown above.  You can then touch the button for the group you want.

### "Misc" Signal Group

The Misc group contains the console's internal signal sources and sockets, including signals from the worksurface Talkback microphone, and the internal Noise and Tone generators.

The original talkback source (the unprocessed microphone input) is labelled Talk Mic.

The post-processing results from the talkback input channels are labelled Talkback A & B.

### Select Signal - Signal in Group

To select a source, touch the button for the signal you want to connect to the channel.  If there are more than seven channels in the group, you may need to use the scroll buttons (top and bottom) to display the button for the signal you want.

### Stereo Channel Mode Selector
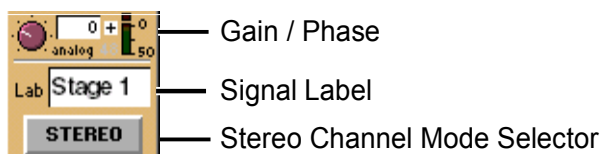


If this button is pressed, the input channel functions will control two input signals, the one which has been selected and the next one in the rack.

Input source, Direct output, Insert Send and Insert Return will all function as adjacent pairs so making a selection for the left signal will result in an automatic selection for the right signal.

Processing for the right signal is taken from the highest numbered channel available which has no input route or insert return route selected. The channel which is used will no longer be available for normal operation. This is indicated by a white channel number.

Stereo channels show all signal meters as pairs. Gain reduction meters in dynamics are also shown as pairs, but with the dynamics stereo link switched on, only the larger gain reduction of the pair is used for both sides of the stereo channel. The meter bridge shows two peaks for stereo inputs.

The stereo channel display will change in the following way:
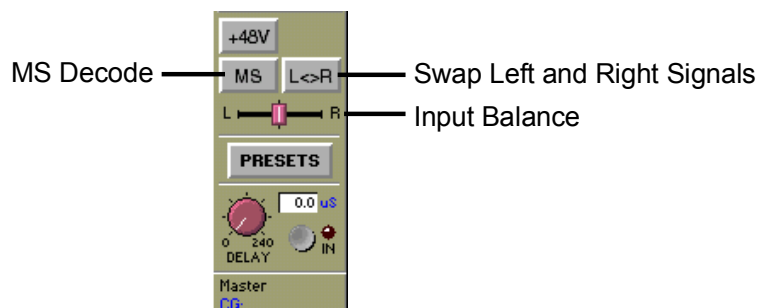


The following additional functions are made available:

### MS Decode

This button will activate MS Decoding for the stereo signal

### Swap (Reverse) Left and Right Signals

This button will reverse the left and right signals or the Middle and Side signals if MS Decoding is active.

### Input Balance

Controls the relative levels of left and right signals in the stereo pair.

**NOTE: Most of the channel settings are preserved when switching from Mono to Stereo or vice versa. Pans are reset and stereo routing may not be correct if the relevant output sockets are unavailable**

### Phantom Power only appears if the channel's source signal is a microphone.

When you connect to a Microphone input, a Phantom Power switch appears in the Input Routing Module. Phantom Power operates at +48V. The default setting of this button can be controlled in the "Sockets File".

### Channel Presets

The Channel Presets button allows you to store or recall a complete channel setup. A Channel Preset contains all the channel controls from the Input Gain to the Pan and Fader positions and group routing. Note that a channel preset does NOT include any input socket routing information - this must be set specifically for each channel.

When you press the Channel Preset button, the screen displays a Preset Selector:



To **Recall** an existing channel preset, simply touch the preset you want. If the preset is not visible, you can touch the vertical arrows to scroll the list up or down. The preset settings are implemented in the channel as soon as you touch it.

To store the current channel settings as a **New** preset, touch the **New** button, then type a name for the new preset.

To **Replace** an existing preset with the current settings, touch the **Store** button, then touch the name of the preset you want to overwrite.

To **Rename** an existing preset without changing its settings, touch the **Rename** button, then touch the preset you want to rename, and type the new name.

To **Delete** a preset, touch the **Delete** button, then touch the name of the preset you want to delete.

The **Default** button forces all controls on the channel to their default settings. This will normally mean flat EQ, inactive dynamics, central pan, Aux sends at zero, and fader at 0dB.

The **Close** button removes the Preset Selector from the screen, but has no direct effect on the channel settings.

# Chapter 2

## Gain, Phase and Delay

When the Input module is expanded, the rotaries and switches in the Lower Row of input bank controls (immediately below the channel display) control the Delay settings for mono channels or Input Balance and Delay for stereo channels.

In addition, Gain and Phase adjustment is always available using the controls above the Inputs Screen.

The **Input Gain** control provides a basic level trim. If the input source is an analogue input socket, the Gain setting controls the analogue amplifier which sets the incoming signal level before conversion to digital. The **Phase** switch allows +/- phase settings.

There is also digital trim control which can be accessed by touching and it will be highlighted in yellow. In this state, the button at the top of the channel serves as a **Gain Tracking On/Off** switch (See the chapter entitled Multiple Console Setups for more information)

On mono or stereo channels you can use the **Delay** control to delay the input signal by up to 240ms. On a mono channel, pressing the **Set 0** button sets the delay back to zero.

## 2.2.2 Equaliser Module ................................................................

The EQ module comprises four user-configurable parametric filters.

There is also a pair of swept High-pass and Low-pass filters. If the EQ module is not expanded, the EQ can be switched On or Off with the In / Out button above the EQ graph

To expand the EQ Module for a channel, first select the channel, then touch the channel's EQ graph. To hide the module again, touch the expanded EQ graph.

**Note: The EQ panel can be expanded automatically when an EQ control is adjusted by setting System Menu / System Options:**

Filter Centre Frequencies

Response Graph

Reset EQ
Preset Selector

Parametric 1 (Yellow)

Curve Select for Parametric 1

Parametric 2 (Blue)

EQ In/Out

Parametric 3 (Green)

Curve Select for Parametric 4

Parametric 4 (Red)

Lopass In/Out

Hipass / Lopass Filters

Hipass In/Out
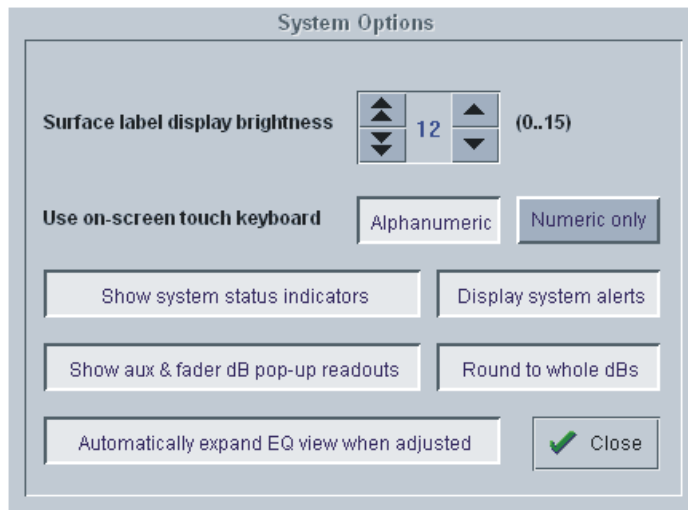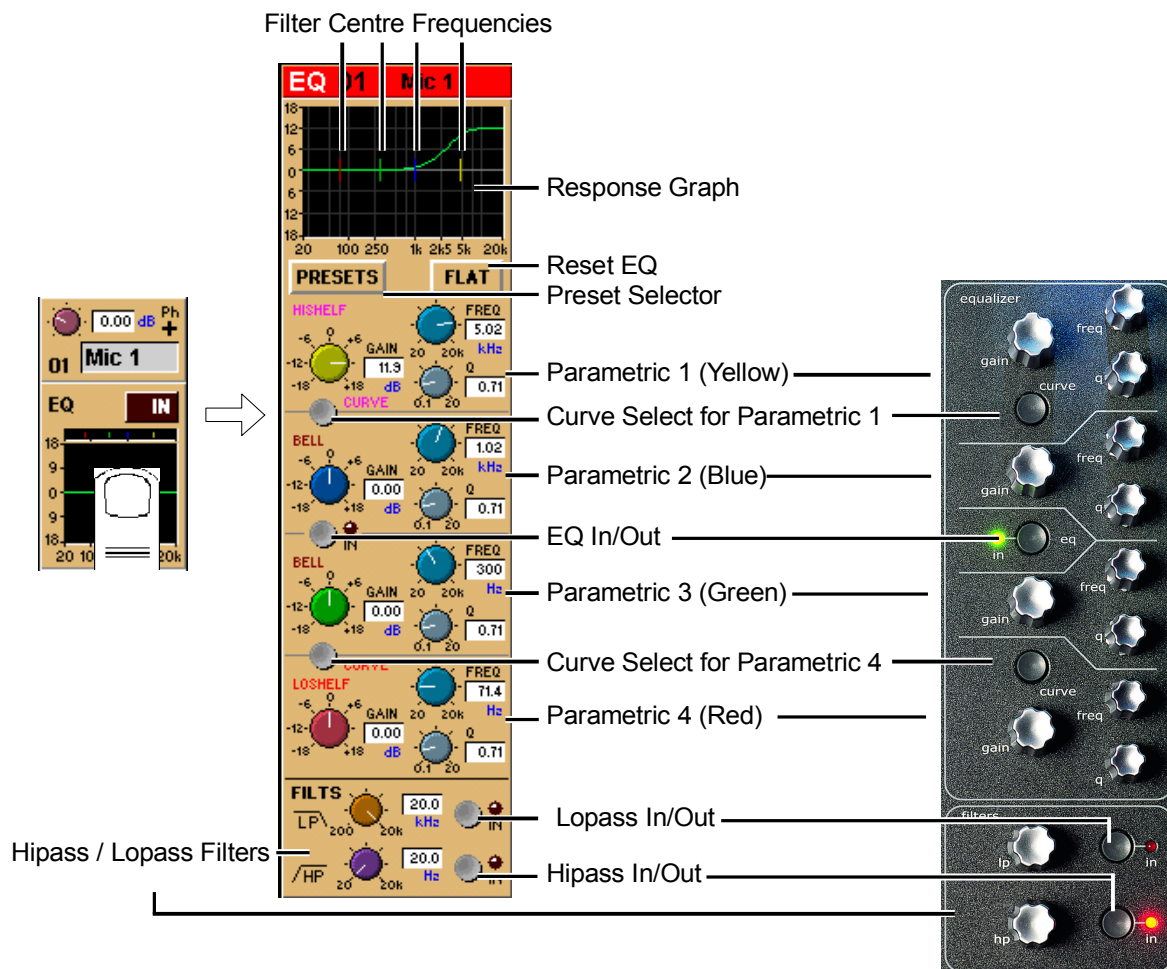
When expanded, the EQ Module shows the filter settings in detail, using a different colour for each filter.  The In/Out switch and indicator for the EQ module is located in the centre.  When the EQ module is visible, the EQ controls at the right side of the screen operate corresponding to the on-screen controls.

### Preset Selector

Presets are used not only for complete channel setups, but also for EQ and Dynamics setups.  They provide a way of storing the EQ settings for a particular channel, so that these settings can be recalled instantly at a later date, or for another channel.

Touching the EQ module's **Presets** button displays a Selector panel for the EQ presets.  The panel works in exactly the same way as the Channel Preset Selector described earlier in this section (see 2.2.1), although an EQ preset only contains settings for the EQ controls, not for the whole channel.

### Flat Button

The **Flat** button forces all gain controls on the channel's EQ section to their default settings.

### Equalisers

Filters two and three (blue and green) are swept parametric "bell-curve" equalisers, with a centre-frequency range of 20Hz-20KHz.  They provide up to 18dB Cut/Boost, with Q adjustable from 0.1 to 20.

Filters one and four (yellow and red) default to being a Hi and Low Shelf but each has an additional **Curve** switch which allows you to select HiShelf / Lowpass or Bell for filter one and LoShelf / Hipass or Bell for filter four. When the Hipass or Lowpass function is selected, the filter operates at 12dB/Octave, and the Q and Gain controls disappear.

### Hipass / Lopass Filters

The Hipass and Lopass filters at the bottom of the module (purple and orange) operate at 12dB/Octave, and can be swept from 20Hz-20KHz (HPF) and 200Hz to 20KHz (LPF).

**Note: The Hi and Lo Pass Filters are positioned preprocessing and therefore they will be unavailable to any internally generated signal such as the test noise.**

**These internally generated signals consist of:**

**1)** Any signal in the **Misc** signal group (Talkback Mics, Test Tone and Noise).

**2) Group or Aux Buss results** (labelled with a ~ eg ~ Aux1 L)**.**

**3) Internal FX Returns** (any signal from the Effects input signal group which is used by the optional effects module)**.**

## 2.2.3 Dynamics Module .................................................................

The Dynamics Module on each channel incorporates a Compressor and Gate, and also includes optional Filters for the sidechain and key signals.

You can display the Dynamics Module by touching the dynamics display on the channel strip. Touching the In / Out buttons will switch the section On or Off.

When expanded, the Dynamics Module appears across the bottom of the screen, and its settings are changed using the corresponding controls below the display.
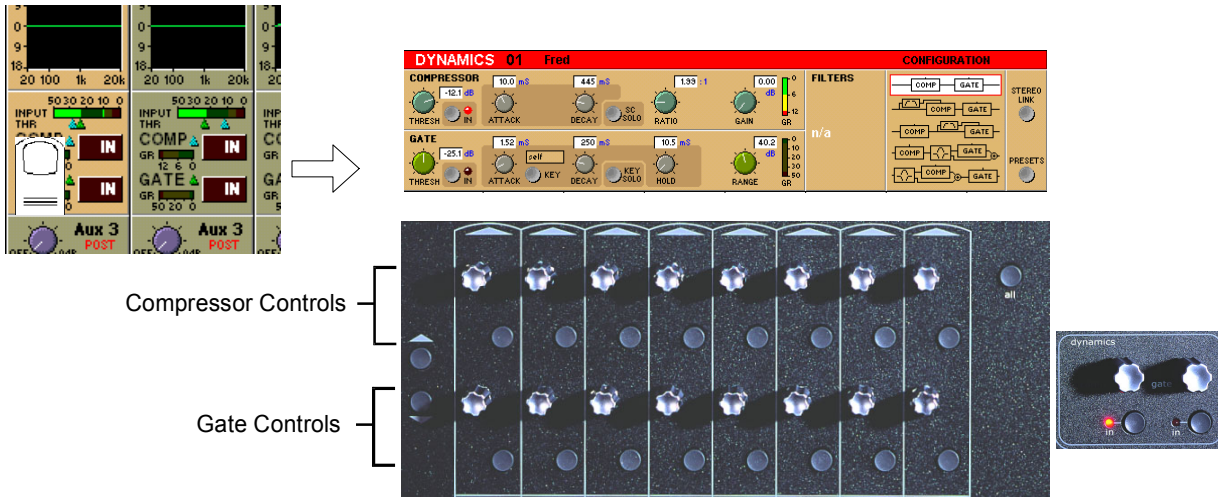


## Compressor

The **Threshold** is the level at which the compression begins to affect the signal. For example, if you set the Threshold to -12dB, this means that the compressor has no effect until the signal level exceeds -12dB.

The **Attack** time is the time taken for the attenuation to reach the desired level after an increase in the level of the input signal.

The **Decay** time is the time taken for the attenuation to reach the desired level after a decrease in the level of the input signal.

The **Ratio** control lets you set the ratio between the signal level change and the resulting attenuation change. For example, if you set the Ratio to 2:1, and the signal is above Threshold, a 6dB increase in level will result in a 3db increase in attenuation, so the net effect on the audio signal will be a level increase of 3dB.

The **Gain** control allows you to boost the overall level of the audio signal coming out of the compressor, to make up any level lost through compression.

The **Meter** provides a constant indication of the compressor gain reduction.

The **Sidechain Solo** places the Sidechain signal on the Solo buss in PFL (Mono) mode. This is achieved by holding down the corresponding button in the compressor controls below the screen.

## Gate

The **Threshold** is the signal level above which the Gate has no effect.

The **Attack** time is the time the Gate takes to open once the signal level has risen above threshold.

The **Decay** time sets the time the Gate takes to close, once the signal level has dropped below the threshold (and the Hold time has passed - see next paragraph). A long decay time means that the attenuation increases gradually, making any sub-threshold signal fade out. A short decay time means that the Gate shuts quickly, cutting off the signal abruptly.

The **Hold** time is an extra period for which the Gate remains open after the signal level has dropped below threshold.

The **Range** control sets the maximum amount of signal attenuation implemented by the Gate when it is closed (*ie* when the signal level is below threshold). A Range setting of 0dB means that the Gate has no effect, while a Range setting of 30dB means that all signal levels below threshold will be attenuated by -30dB.

The **Meter** provides a constant indication of the Gate attenuation. If the Gate is fully open, the meter shows full deflection, indicating 0dB attenuation. If the Gate is fully closed and the Decay and Hold times have passed, the meter shows the amount of attenuation set by the Range control.

The **Gate Key** button allows you to select the signal used to trigger the Gate. The default setting is Self, where the level of the channel's own signal is used as the trigger, but you can use this switch choose a different channel or buss.

Pressing the Gate Key button in the Dynamics panel displays a routing panel from which to select a key source. All input signals and buss results are listed as well as input channel post-processed signals.

**Note:** The Signal Group labelled Channels contains the post-processed signals.

Gate Key signals use the channel send resource just like direct output and insert sends. This resource is limited to 96 channels and when all 96 are used up, other channels listed will be greyed out. The state of channel send resources is displayed on the diagnostics panel.

**Note: When the Filters are switched into the Dynamics section the Gate Key Source is automatically switched to its "Self" setting and disabled.**
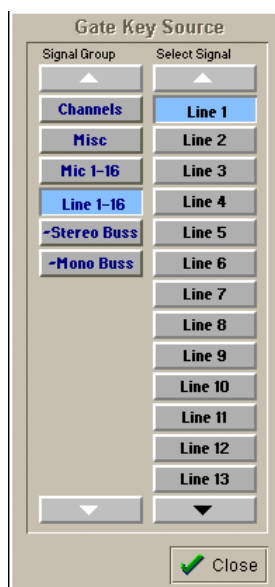
The **Key Solo** places the Key Source signal on the Solo buss in PFL (Mono) mode. This is achieved by holding down the corresponding button in the gate controls below the screen.

## Configuration and Filters

The default structure for the Dynamics Module is a simple Compressor-Gate layout, but you can also select from four other structures, or orders of effect processing, and use filters to achieve frequency-sensitive keying of the dynamics. The filters are a pair of second-order (12dB/Octave) High-Pass and Low-Pass filters, which can be swept between 20Hz and 20KHz.
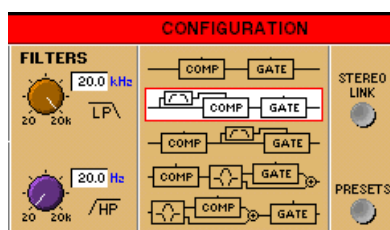


You can select any of the structures just by touching them on the screen, and all the structure options except the default top one use the Hipass and Lopass filters. The filter roll-off frequencies are controlled by the rotaries directly below the on-screen controls.

**Note that the filters cannot be used on an external trigger source.**



In this configuration, the filters are used in the side chain of the compressor to provide frequency conscious compression effects such as de-essing.



In this configuration, the filters are used in the side chain of the gate to provide frequency conscious gating.
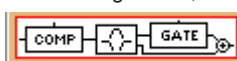


In this configuration, the filtered signal feeds the input of the gate while other frequencies bypass the gate. This allows for a specific band of frequency to be gated and then mixed back into the remaining band.
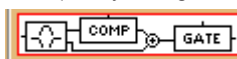


In this configuration, the filtered signal feeds the input of the compressor while other frequencies bypass the compressor. This allows for a specific band of frequency to be compressed and then mixed back into the remaining band.

## Dynamics Presets

Touching the Dynamics module's **Presets** button displays a Selector panel for the Dynamics presets. The panel works in exactly the same way as the Channel Preset Selector described earlier in this section (see Section 2.2.1), although a Dynamics preset only contains settings for the Dynamics controls, not for the whole channel.

## Dynamics Linking

The Gate and Compressor modules may be linked in adjacent channels to produce a stereo mixed control voltage, ensuring both channels respond identically.

Press the **Stereo Link** switch on the right hand side of the Dynamics panel. Both sides of the pair are switched simultaneously.

**Note: The switches are not included in snapshots or presets.**

In a stereo channel, the stereo link switch is pressed by default.

### 2.2.4 Pan / Aux Module ..................................................................

The Aux Send and Pan controls are always operated using the Lower Row of rotaries below each channel of the on-screen display. There are only two rotaries and switches for each channel, but these can be assigned to any Aux or Pan control using the **Screen Scroll** buttons at the left end or by touching the on-screen control that you wish to adjust. The current assignment of the controls is indicated by a highlight on the screen.

To expand the display to show more auxiliaries on screen touch the highlighted control.

To return to the standard view touch the highlighted control again.

**Note:** Holding the **All** button on the worksurface and touching the highlighted control will expand the view for all the channels in the relevant bank.
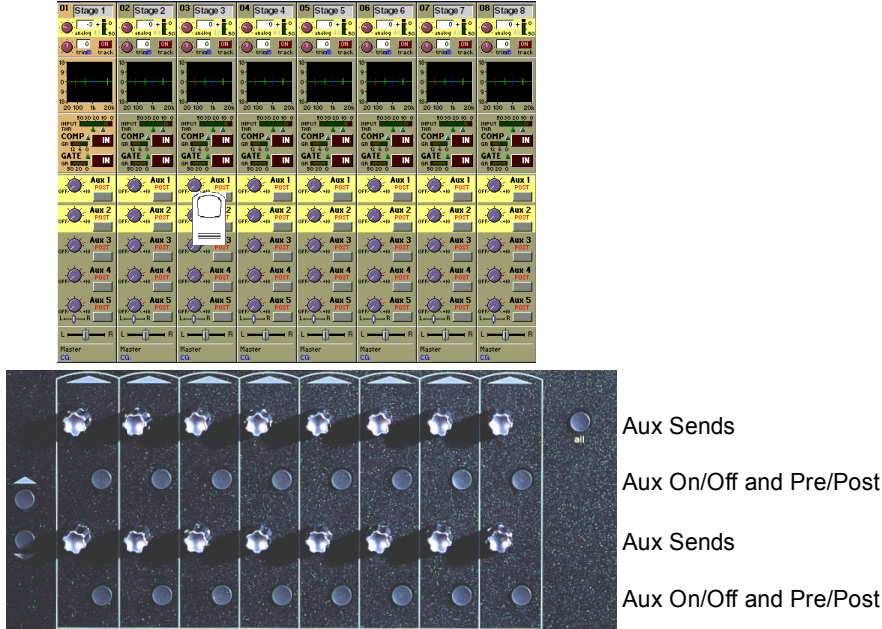


The Pan/Aux controls and scroll buttons operate in exactly the same way in both the Standard and the Expanded view.

### Auxiliaries

The console can support up to 28 Mono or 18 Stereo Auxiliaries, depending on the availability of bussing resources. Auxiliaries can be mono or stereo, and stereo Auxiliaries have a Pan control as well as the normal Send Level control.

The Aux send rotaries below the screen operate differently depending on the Aux format. For mono Aux sends, each row of rotaries controls a different send level, but for a stereo Aux send, the two controls are used for send level and pan position for that Aux. As always, the assignment of the rotary controls below the screen is clearly indicated by the highlight on the relevant screen controls, and you can always use the Screen Scroll buttons to access the control you require.

### Aux Pre / Post and On / Off Switching

Each Aux Send rotary control in the Lower Row has an associated switch, which operates both the Mode and On/Off function for that Aux.



If the level control is set to zero (as Aux 1 above), the switch controls the Mode setting for that Aux. As soon as the level control is moved above zero (Aux 2 above), the switch becomes an On/Off switch for that Aux send. So to change the Mode setting for an Aux, you must first reduce the level on that Aux Send to zero.

There are 3 possible Modes:

PRE M  =        Pre Mute and Pre Fader
PRE    =        Post Mute and Pre Fader
POST   =        Post Mute and Post Fader

**See Aux Buss Control in Chapter 3 for global mode changes.**

### Pan Control

Panning to the Master and Group busses is Stereo or Surround, depending on the console configuration. Pan position for each channel can be controlled in three ways: by using the rotary controls in the Lower Row below the on-screen channel display, by using the dedicated Pan/Q control or by Selecting the channel and using the Joystick. For surround panning, the Joystick is much more intuitive than using a pair of rotary controls.

## Surround Panning

With Surround console formats, in addition to the surround Pan control, there are two additional controls for LR/LCR and Sub in 5.1 format and one control for LR/LCR in LCRS format.
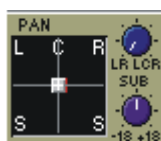


When using the **Joystick** to Pan the Selected channel, you will find that the Joystick position is shown on the Pan control as a pair of green lines. Moving the Joystick moves these lines, but does not move the Pan position of the channel itself until the green lines travel over the real Left-Right or Front-Back pan position. Once the Joystick position has passed through the real Pan position, further movement of the Joystick will then alter the Pan position in the normal way.

When using the **rotaries** for surround panning, the upper rotary controls the Left-Right position, and the lower rotary controls Front-Back.

## Preset Pan Positions

The upper button directly below the pan rotaries can be used to reset panning positions.

In a stereo console it will switch panning between left, centre and right positions with successive presses. In LCRS and 5.1 consoles the button works in a similar way for each available position.

### Panning Stereo Channels

When an input channel is stereo and therefore controlling a pair of input signals the pan control will appear in one of the following ways.

In a stereo console configuration the upper rotary serves as a width control with the full left position being mono, the centre position being normal stereo and the full right position being wide stereo. The width control is accessed by scrolling down past the pan. The lower rotary serves as a balance control between the relative levels of the stereo pair.



The surround panner for stereo inputs simultaneously controls the position of both left and right signals. The joystick and wheel directly control the position of the left signal, and the right signal is automatically mirrored on the left-right axis. A red indicator shows the position of the right signal. This provides some control of width. The signals can also be crossed to reverse the stereo image.

When panned to centre, left and right will be mono. Front-back, Sub and LR/LCR are always identical for both left and right signals.



## LR/LCR Blend and Sub

The LR/LCR and Sub controls can be adjusted using the normal Pan/Aux rotaries below the screen - use the Screen Scroll buttons to move the highlight **down** from the Pan control to highlight LR/LCR and Sub.
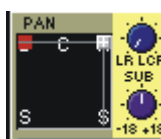


The **LR/LCR Blend** control adjusts the type of Panning that is applied when sending to Surround busses.

It blends a normal stereo panner with an LCR panner by varying amounts, allowing control of how much L & R is fed into C. The default is full LCR in a New Session, but note that when loading older surround sessions the level is taken from the old Divergence control, which defaulted to hard left (= full LR).

A Blend setting of LR (Full left) only allows LR panning with no signal going to the C buss whilst a setting of LCR (full right) allows panning between L and C up to the control's centre position and panning between C and R thereafter.

The **Sub** control is only present on 5.1 console configurations. It is a trim control with unity gain at the centre position for sending the signal to the Sub channel of a surround buss or output.

### Controlling the Sub Feed

When a Sub control is present the lower button directly below the pan rotaries switches between three different states for controlling the Sub Feed**.** Successive presses of the button will change to the following states:

**LCRSS on** - The signal can go to all busses except the sub buss according to the channel pan position. (Default mode)

**Sub on** - The signal can only go to the Sub Buss. (Indicated by a B in the display)

**All on** - The signal can go to all busses including the Sub Buss. (Indicated by LCRSS and B in the display)

The current state is indicated by letters in the background of the pan control display.

**NOTE:** This control is contained in snapshots and channel presets. It is part of the **Panning Scope** for **Snapshots**.

## 2.2.5 Routing Module ....................................................................

At the bottom of the input channel display is the Routing Module.  This gives an abbreviated display of the current channel routing - on the left, the Master and Group routing, and on the right (if the channel is routed to a Direct Output) the name of the Direct Output socket.  As the screen only has enough space to display one buss name, the routing of the channel to additional Groups is indicated by dots...

If the channel is a member of a Control Group, the name of that group also appears here.
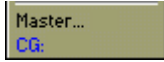


Routed to Master and other
group(s) - no direct routing

Routed to Master only and
Direct routed to a socket
called "Line 1"

### Displaying the Routing Module

Touching the bottom of the channel displays the full Routing module, which controls the buss routing for the signal.  To hide the Routing Module, touch the same area again.

The Routing Module allows you to select the console Group and/or Direct output socket routing for the channel.

DiGiCo
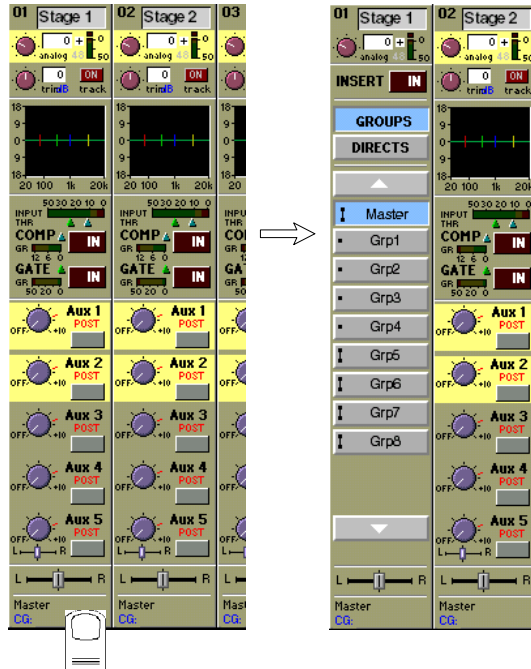
## Group Routing

When the **Groups** button is selected, the on-screen group buttons allow you to connect the channel to any number of output group busses - mono groups are displayed with a single dot (groups 1-2 in the diagram below), while stereo busses appear with a double dot (groups 3-4) and surround busses with a small box and 5 dots (groups 5-6). To connect or disconnect the signal, simply press the on-screen button for the relevant group.

The number and type of groups depends on the console configuration.



## Direct Outputs

You can also choose to route the channel signal directly to any of the console's output sockets, by touching the Directs button. This shows a display of the console's Output sockets, so that you can select any number of sockets for the Direct Out.
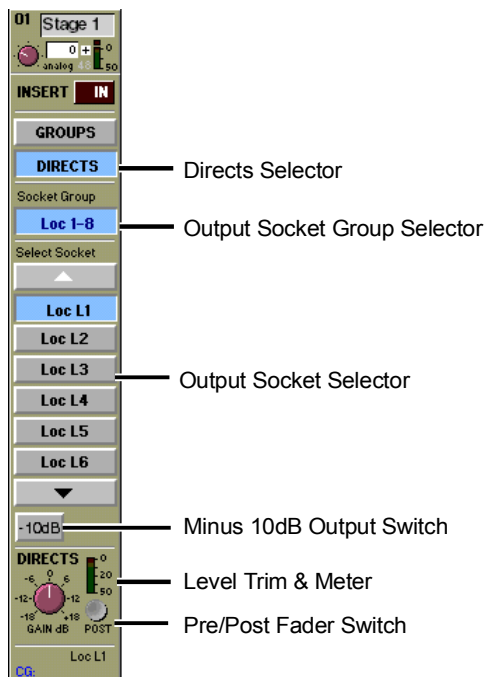


A Direct Output can operate in one of three modes:

PRE M  =        Pre Mute and Pre Fader

PRE     =        Post Mute and Pre Fader

POST   =        Post Mute and Post Fader

Its level can be trimmed by +/-18dB and a -10dB pad can be applied.

## Insert Routing and On/Off Switch

This button controls the routing for the input channel insert send and return selection.

Touching the **Insert** button displays a panel which allows you to select **Send** and **Return** sockets in the same way as you would select an Input socket or a Direct output. There is also a **Send Gain** control providing a trim of +/-18dB.



Touch Here to Open / Close Panel

Touch to Select Send Socket

Touch to Select Return Socket

Socket Group Selector

Socket Selector

Insert On/Off

Worksurface Control

Pre/Post EQ/Dynamics Switch

Level Trim & Meter
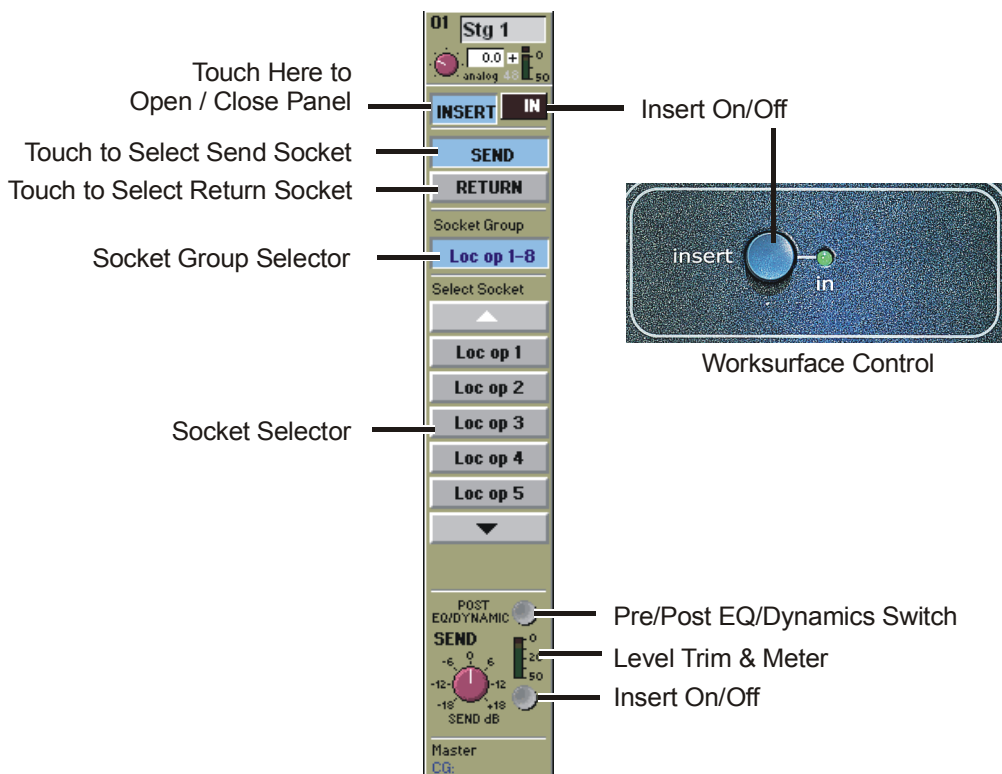
Insert On/Off

The Insert can be **PRE or POST EQ and Dynamics** switched by the button just above the Send Gain.

If you touch the **In** button, the channel's signal is taken from the Insert Return socket and thus switches the insert on.

The **In** button is also on the console worksurface on the top right hand side of the input screen.

**Note: If the insert is switched on but a socket has not been assigned for the insert return then there will be no signal audible in the channel.**

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### 2.2.6 The ALL Button ....................................................................

The **All** button provides a quick way of displaying all the Input, Aux or Routing modules for a bank of eight channels. If you hold down the All button while touching the Input, Routing or Aux modules, the expanded view of the relevant module is displayed for all the visible channels.
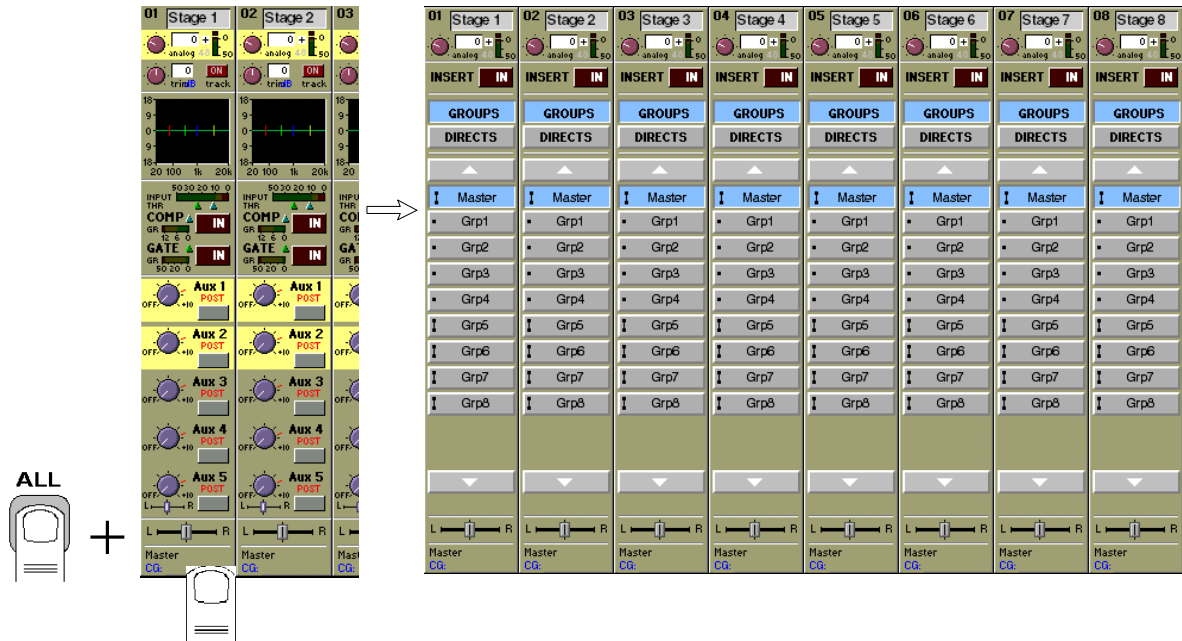


You can also scroll through lists using the All button. For example, if you wanted to select several input sources from the same group, holding All and pressing the scroll arrow on one channel would scroll the adjacent channels as well.

In the Routing window holding the All button will also allow you to perform the following tasks:

**1)** Selecting Group or Direct routing for all the channels in the bank.

**2)** Scrolling Up and Down through lists.

**3)** Routing Input sources to consecutive channels without making them part of a gang.

**4)** Routing all channels in a bank to the same group by holding all and routing the first one.

**5)** Routing all the channels in a bank to consecutive direct outputs by holding all and routing the first one.

**6)** Routing all the channels in a bank to consecutive insert sends/returns by holding all and routing the first one.

**NOTE:** In examples 3, 4, 5 and 6 the functions are limited to consecutive channels in the same view mode.

### 2.2.7 Undo / Redo Button ..............................................................

While a channel is assigned to the EQ/Dynamics/Joystick controls, the Undo/Redo LED comes on when a control is changed and pressing the button toggles between the new state and the state when assigned.

The controls affected by the undo function are input gain, phase and delay, all EQ and dynamics, all aux send levels, on/off buttons and pans, the insert and the main pan for the channel. It does not include any routing buttons.

### 2.2.8 Channel LCD Function Buttons ........................................

Pressing the **Channel LCD Function** button on the left hand side of the Input Section allows you to select the function that the individual **Channel LCD Buttons** are currently assigned to.
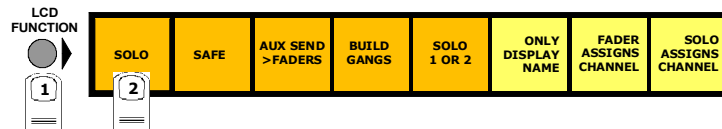


The default function is **Solo.**

To **Solo** a channel use the **Channel LCD Buttons** just below the mute buttons in the channel strip.
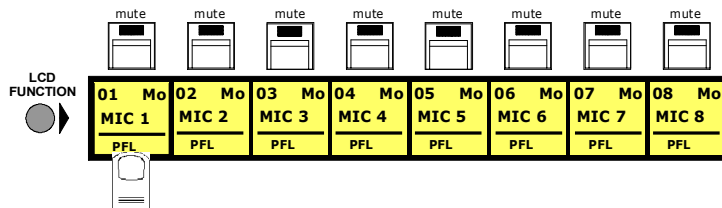


**Note:** The console has the option of two Solo busses - See Monitoring in Chapter 4 for more details.

There is also an option to assign a channel by either touching its fader or pressing its solo button.

To activate either of these functions:

Press the **Channel LCD Function** button on the left of the input section and then press the **Fader Assigns Channel** and/or **Solo Assigns Channel** buttons. When the function is activated, the button appears with a tick in its display.

Press the **Solo** button again to return to the standard view.

| LCD FUNCTION | 01 Mo MIC 1 PFL | 02 Mo MIC 2 PFL | 03 Mo MIC 3 PFL | 04 Mo MIC 4 PFL | 05 Mo MIC 5 PFL | 06 Mo MIC 6 PFL | 07 Mo MIC 7 PFL | 08 Mo MIC 8 PFL |
|---|---|---|---|---|---|---|---|---|
| ① | | | | | | | | |

| LCD FUNCTION | SOLO | SAFE | AUX SEND >FADERS | BUILD GANGS | SOLO 1 OR 2 | ONLY DISPLAY NAME | FADER ASSIGNS CHANNEL ② | SOLO ASSIGNS CHANNEL |

| LCD FUNCTION ③ | SOLO | SAFE | AUX SEND >FADERS | BUILD GANGS | SOLO 1 OR 2 | ONLY DISPLAY NAME | ✓ FADER ASSIGNS CHANNEL | SOLO ASSIGNS CHANNEL |

| LCD FUNCTION | 01 Mo MIC 1 PFL | 02 Mo MIC 2 PFL | 03 Mo MIC 3 PFL | 04 Mo MIC 4 PFL | 05 Mo MIC 5 PFL | 06 Mo MIC 6 PFL | 07 Mo MIC 7 PFL | 08 Mo MIC 8 PFL |

The **Only Display Name** option changes the appearance of the Channel LCD buttons when they are in Solo Mode to show the Channel Name in a large easy to read font.

To activate this function:

Press the **Channel LCD Function** button on the left of the input section and then press the **Only Display Name** button. When the function is activated, the button appears with a tick in its display.

Press the **Solo** button again to return to the standard view.

| LCD FUNCTION | 01 Mo MIC 1 PFL | 02 Mo MIC 2 PFL | 03 Mo MIC 3 PFL | 04 Mo MIC 4 PFL | 05 Mo MIC 5 PFL | 06 Mo MIC 6 PFL | 07 Mo MIC 7 PFL | 08 Mo MIC 8 PFL |
|---|---|---|---|---|---|---|---|---|
| ① | | | | | | | | |

| LCD FUNCTION | SOLO | SAFE | AUX SEND >FADERS | BUILD GANGS | SOLO 1 OR 2 | ONLY DISPLAY NAME ② | FADER ASSIGNS CHANNEL | SOLO ASSIGNS CHANNEL |

| LCD FUNCTION ③ | SOLO | SAFE | AUX SEND >FADERS | BUILD GANGS | SOLO 1 OR 2 | ✓ ONLY DISPLAY NAME | FADER ASSIGNS CHANNEL | SOLO ASSIGNS CHANNEL |

| LCD FUNCTION | MIC 1 | MIC 2 | MIC 3 | MIC 4 | MIC 5 | MIC 6 | MIC 7 | MIC 8 |
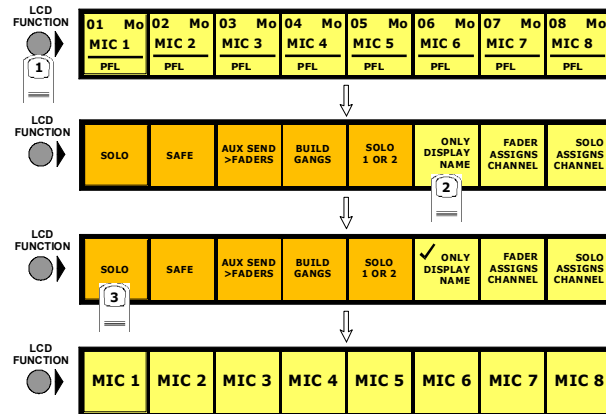
The **Safe** function makes selected channels safe from all Snapshots.

**1)** Press the **Channel LCD Function** button

**2)** Press the **Safe** button.

**3)** Press the **Channel LCD** buttons for the channels that should be Safe (The buttons and screen channel strip will turn red).

**4)** Press the **Channel LCD Function** button to exit Safe mode.

**5)** Press the **Solo** function button to return to the standard view.

| LCD FUNCTION | 01 Mo MIC 1 PFL | 02 Mo MIC 2 PFL | 03 Mo MIC 3 PFL | 04 Mo MIC 4 PFL | 05 Mo MIC 5 PFL | 06 Mo MIC 6 PFL | 07 Mo MIC 7 PFL | 08 Mo MIC 8 PFL |
|---|---|---|---|---|---|---|---|---|
| ① | | | | | | | | |

| LCD FUNCTION | SOLO | SAFE ② | AUX SEND >FADERS | BUILD GANGS | SOLO 1 OR 2 | ONLY DISPLAY NAME | FADER ASSIGNS CHANNEL | SOLO ASSIGNS CHANNEL |

| LCD FUNCTION ⑥ | 01 Mo MIC 1 SAFE ③ | 02 Mo MIC 2 SAFE ④ | 03 Mo MIC 3 SAFE ⑤ | 04 Mo MIC 4 SAFE | 05 Mo MIC 5 SAFE | 06 Mo MIC 6 SAFE | 07 Mo MIC 7 SAFE | 08 Mo MIC 8 SAFE |

| LCD FUNCTION | SOLO ⑦ | SAFE | AUX SEND >FADERS | BUILD GANGS | SOLO 1 OR 2 | ONLY DISPLAY NAME | FADER ASSIGNS CHANNEL | SOLO ASSIGNS CHANNEL |

| LCD FUNCTION | 01 Mo MIC 1 PFL | 02 Mo MIC 2 PFL | 03 Mo MIC 3 PFL | 04 Mo MIC 4 PFL | 05 Mo MIC 5 PFL | 06 Mo MIC 6 PFL | 07 Mo MIC 7 PFL | 08 Mo MIC 8 PFL |

The **Aux Send > Faders** function allows you to control the Aux Send levels for a selected channel with the **Master Faders**.

**1)** Press the **Channel LCD Function** button

**2)** Press the **Aux Send > Faders** button.

**3)** Press the **Channel LCD** buttons for the channel that you wish to control.

**4)** Press the **Channel LCD Function** button to exit Aux Send > Faders mode.

**5)** Press the **Solo** function button to return to the standard view.
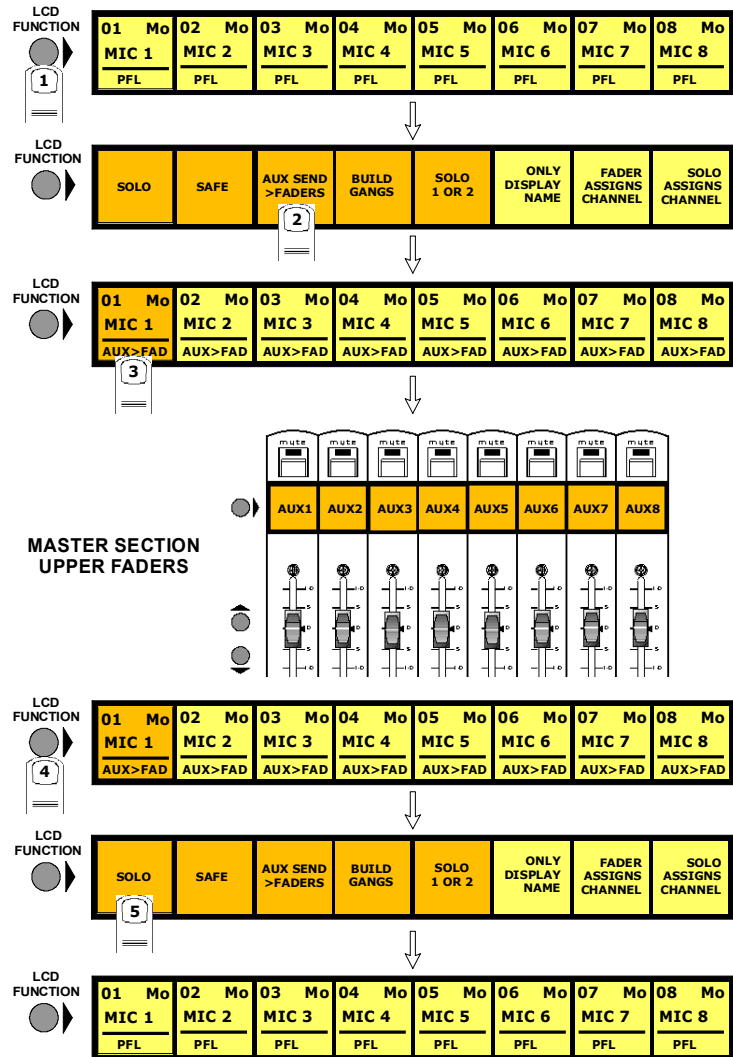
## 2.3 Ganging

Ganging is the linking of input channel controls which will allow most types of adjustment made to one channel within the gang to be automatically made to all of the other members.

For example, if 2 channels are ganged and a fader movement is made on one of them, the other will be adjusted in the same way. Ganging can apply to any number of channels within one Input section.

### 2.3.1 Creating a Gang ......................................................

**1)** Press the **Channel LCD Function** button on the left of the Input Bank.
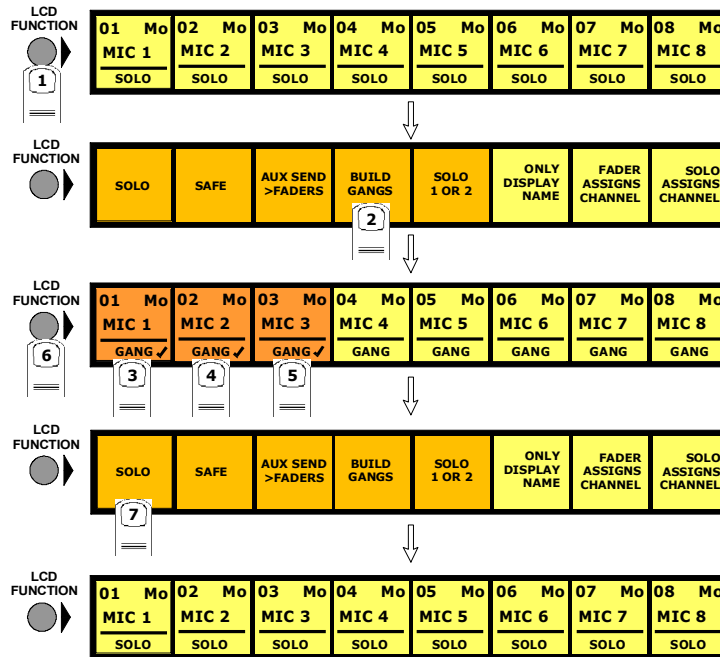
**2)** Press the **Build Gangs** button.

**3)** Press the **LCD Buttons** for the channels that you wish to gang (They will change colour).

**4)** Press the **Channel LCD Function** button again to exit ganging mode.

**5)** Press the **Solo** button to return to the standard view.



To create another new gang you should repeat the process.

When a channel is a member of a gang, a coloured line will appear at the bottom of that channel's screen display. Adjacent gangs are assigned different colours. Ganging is also indicated by triangular symbols on the LCD buttons.

**NOTE:** Members of the gang do not have to be in adjacent channels, they can be anywhere within the 8 channels in an input bank.

### 2.3.2 Clearing or Editing a Gang .................................................

A gang can be cleared or edited at any time by entering the **Build Gangs** mode as described in section 2.3.1.

To **remove a member** of the gang press the relevant highlighted LCD Buttons and they will return to their original colour and no longer be members of the gang.

To **clear** the gang remove all the members in the same way.

### 2.3.3 How a Gang Works .............................................................

When channels are added to a gang their present settings are retained until an adjustment is made to any of the members controls. When this happens all members of the gang will be adjusted in the same way as the first but relative to their own starting position.

For example, if the channel fader of one member of a gang is at minus 6dB and another is at 0dB, when the first fader is raised to 0dB, the second will be automatically raised to plus 6dB.

ie. Both faders will be raised by 6dB from their previous position.

A similar situation exists with the other channel controls such as EQ and Auxiliary sends but when any of the gang members' controls reaches its maximum or minimum level the relative offset relationship is lost.

Only the channel faders can retain their relative offsets after they have reached a maximum or minimum level.

### Adjusting settings for one member of a gang

If you wish to adjust the settings for one member of a gang without affecting the others, a member of a gang can be temporarily isolated from the rest of its gang by holding the channel's solo button down while adjustments are being made. When solo is released the channel will continue to behave as a normal gang member.

### Which controls are affected by ganging?

Screen display changes such as showing the input or group routing modules can be different between gang members but the functions themselves are always linked.

For example, if 4 channels were members of a gang and a different input source was selected for one of them, the other three input sources would automatically be assigned to the next consecutive sockets in that input group. This assumes that there are enough input sources for all the gang members in the socket group. If there are not enough sources, the gang will be allocated as many as are available at that time.

In a similar way, if one gang members group routing is changed, the other gang members will all be routed to the same group.

**NOTE: The following controls are not affected by changes to other gang members:**

Channel and Aux Pans

Sub Feed Modes

Input Phase buttons

Solos

All other controls are affected by changes to other gang members including;

1) Presets

If a preset is selected for one gang member it will load into all the other gang members as well.

2) Socket Routing Buttons ie. Input source, Direct Out and Insert Send / Return.

## 2.4 Layout

### 2.4.1 External Screens ..................................................................

Each of the console's worksurface screens have an equivalent SVGA video output on the back of the console and therefore any of the input screens can be duplicated to an external colour monitor. Input screens are 640 x 480 resolution

There is also an output for an **Overview** screen and this can be customised to show different combinations of the console's controls using the functions in the Layout menu. It is recommended to use a 1280 x 1024 resolution for greatest flexibility. The monitor should be Plug N Play compatible.
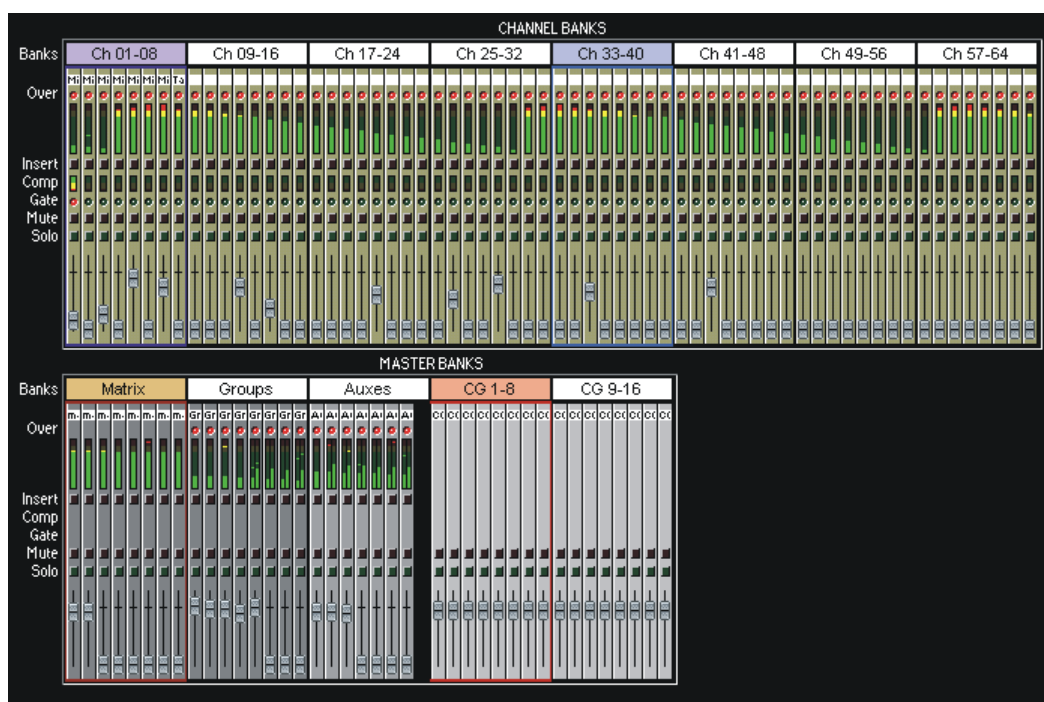


Each channel displays the essential meters, switches and fader, which may be operated with the trackball if required.

Coloured rectangles surround the channels which are currently assigned to the worksurface: magenta for the Input Banks and red for the Master Banks.

## 2.4.2 Overview Setup ........................................................................

To change the appearance of the Overview screen touch the **Layout** button on the Master Screen and touch the **Overview Setup** button.
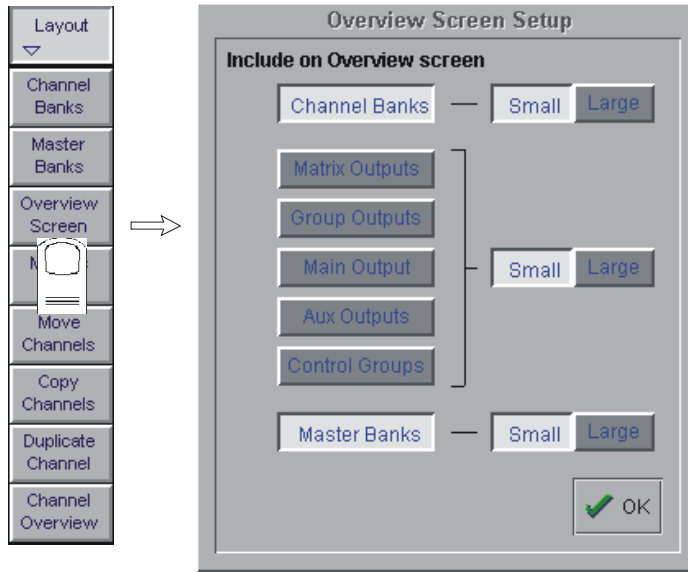


This panel allows you to select which banks appear on the screen and whether they are **Large** or **Small** format. The default view shows **Channel Banks** and **Master Banks** in small format.

To show your choice of Output Banks, touch the relevant buttons in the left hand column and then touch the related Small or Large buttons on the right.

## 2.4.3 Channel Banks ........................................................................

The naming and assignment of the worksurface Fader Banks is controlled from the Channel Banks panel in the Layout menu on the Master Screen.

To **Name** a Channel Bank, touch the existing name eg Ch 1-8 and type a new one.

To include the Channel Bank on the **Overview Screen** touch the **Include** button next to the relevant Bank name.

To change the appearance of the Channel Banks on the Overview Screen touch the **Small** or **Large View** buttons at the bottom of the panel.

To Clear a Channel Bank from a worksurface Fader Bank:

**1)** Touch the **Clear Assignment** button.

**2)** Press the **Fader Bank** button that you wish to clear.

To assign a Channel bank to one of the console worksurface Fader Banks:

**1)** Touch the **Channel Bank Assign** button

**2)** Press the relevant **Fader Bank** button.
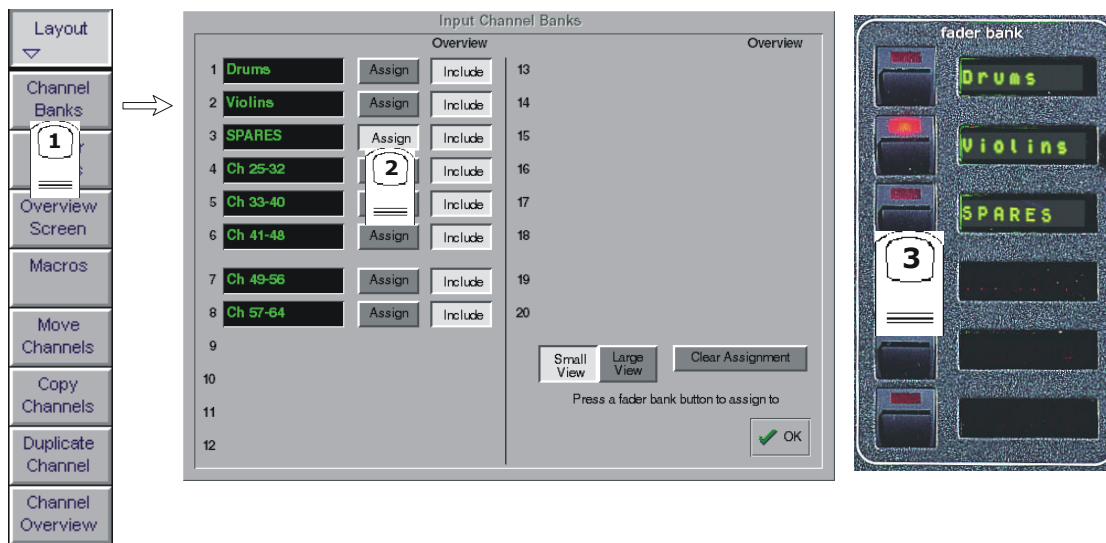


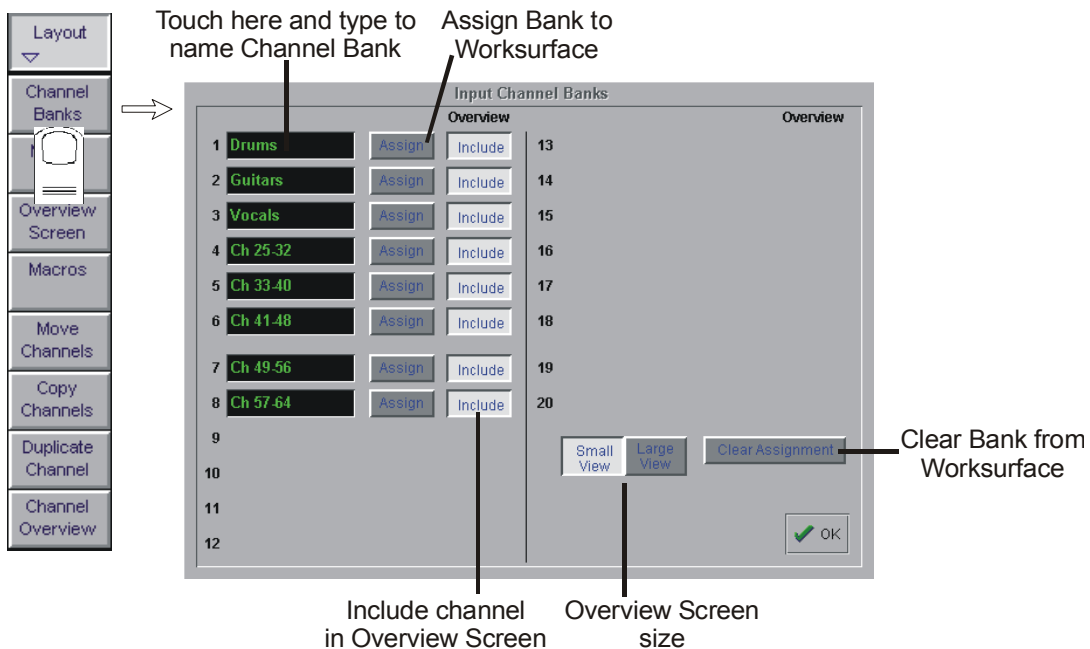### 2.4.4 Master Banks ........................................................................

The naming and assignment of the worksurface Master Fader Banks is controlled from the Master Fader Banks panel in the Layout menu on the Master Screen.

The **Flip Banks** button will assign the alternative bank of master faders to the worksurface. To assign faders to this alternative bank, press the Flip Banks Button and follow the instructions for Building Banks or Assigning faders in the **Master LCD Function** buttons section of this manual **(Section 4.5).**

To **Name** a Master Fader Bank, touch the existing name eg CG 1-8 and type a new one.

To include the Master Fader Bank on the **Overview Screen** touch the **Include** button next to the relevant Bank name.

To change the appearance of the Master Fader Banks on the Overview Screen touch the **Small** or **Large View** buttons at the bottom of the panel.
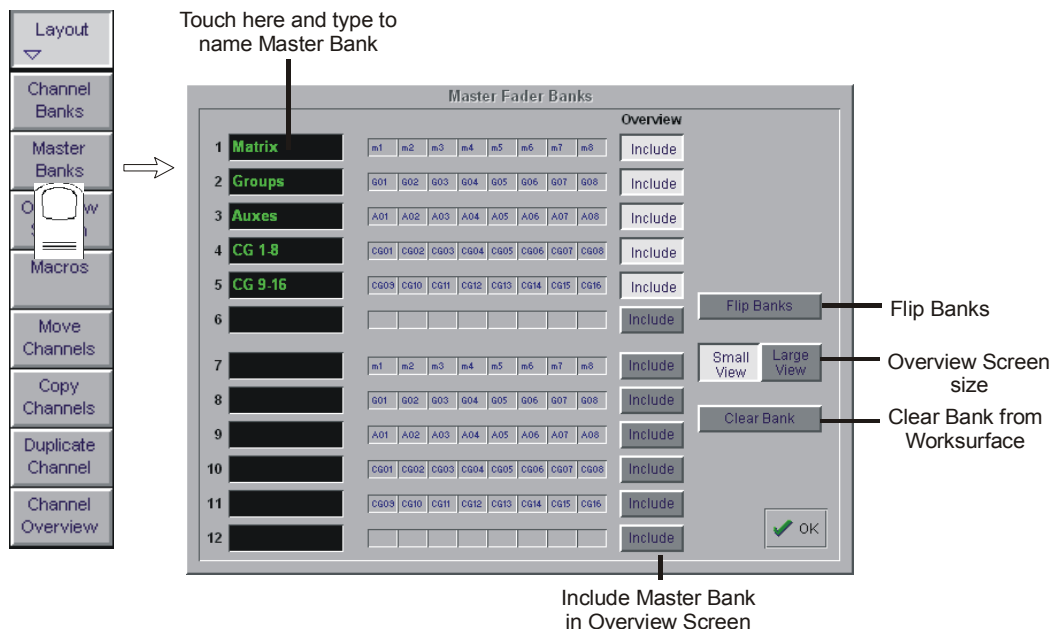
### 2.4.5 Move Channels .........................................................................

Touching the **Move Channels** button in the **Layout** menu opens the Move Input Channels panel which allows a single channel or a range of channels to be moved.
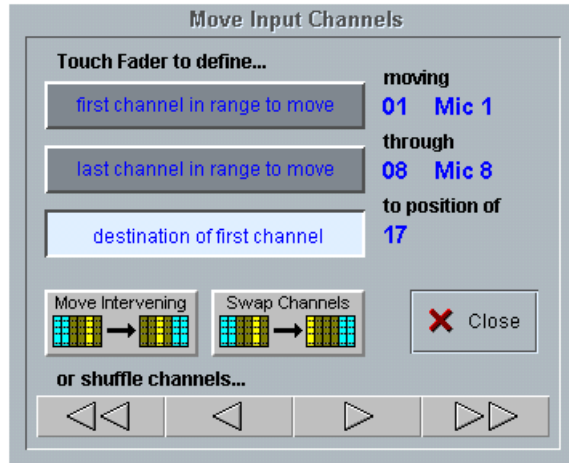


Touching a single channel allows it to be shuffled left or right with the arrows at the bottom of the panel. Both halves of a stereo linked pair are automatically selected together. Shuffling will automatically skip past stereo-linked pairs when moving the selected channels to their new positions.

Touching two channels or a gang defines a range to be moved. The shuffle arrows now operate on this range of channels, and the double arrows move by the number of channels in the range.

Touching a third channel defines the left of the destination range and enables the **Move Intervening** and **Swap Channels** buttons. A move or a swap cannot take place if a stereo pair would be split as a result; a warning message is displayed instead.

**Move Intervening** means move the source range to the destination position and shuffle all channels between the source and the destination (including all channels in the destination range) to fill the gap left by the source range.

**Swap Channels** swaps the source and destination ranges leaving intervening channels alone. Move and Swap have the same effect if the source and destination ranges overlap.

After a Move or a Swap the selections are cleared but the panel remains visible tor a new selection. The shuffle buttons do not clear any selections and remain enabled as long as at least one source channel is selected.

Single channels may be moved or swapped simply by touching the source channel twice when the top selection button is pressed. Any of the three selections can be changed by pressing the relevant button and touching a fader.

### 2.4.6 Copy Channels .........................................................................

Touching the **Copy Channels** button in the **Layout** menu opens the Copy Input Channels panel which allows different elements of channel settings to be copied.
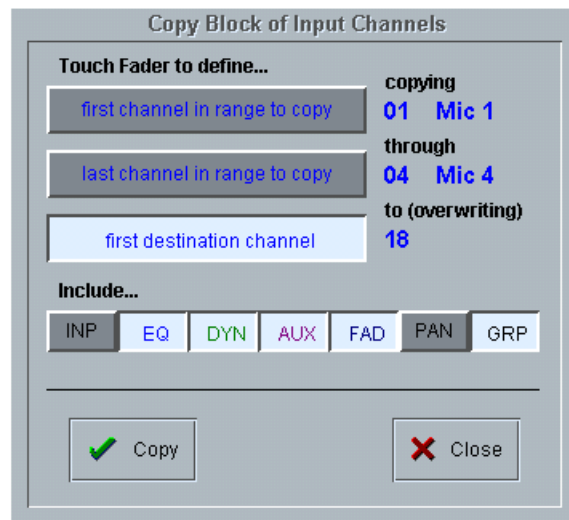


Touch faders to define the start and end of the range to be copied and then touch a third fader to define the destination for the left hand side of the group. The selected group will be highlighted in yellow in the input screen.

The destination channels will be overwritten and their previous settings will be deleted

### Scope

Which controller values are copied depends on the scope buttons beneath the word **Include.**

**INP** = all input routing controls, including gain and signal source

**EQ** = all EQ controls, plus HP and LP filters

**DYN** = all Gate and Compressor controls plus gate key route, and HP / LP filters in dynamics

**AUX** = all aux send controls

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**FAD**=channel fader positions

**PAN =** L/R and F/B pan or balance, Sub and Divergence levels and switches

**GRP =** Group routing buttons only

**Channel mutes and control group membership are always included.**

Direct Outputs and Insert Sends can only be fed from one channel at a time and therefore their routing is not copied. Stereo channels will be copied as long as sufficient audio processing (unrouted channels) is available, otherwise they will appear as mono.

### 2.4.7 Duplicate Channel ...............................................................

Where Copy Channels only duplicates each of a block of channels once, the Duplicate Channel panel allows a single source channel to be copied into several destination channels, duplicating the source several times.
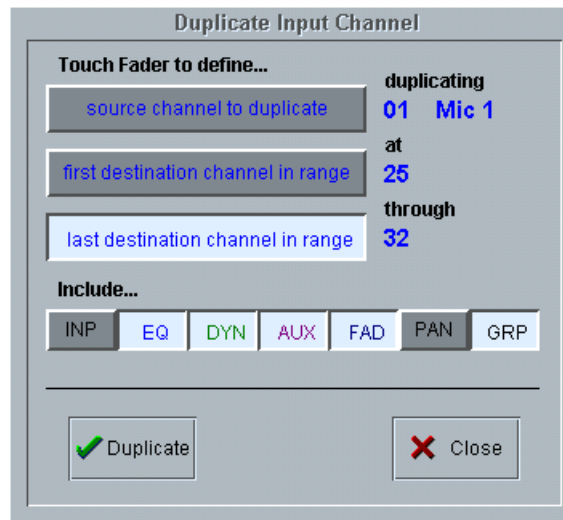


Touch a fader to define which channel will be duplicated and then touch two more channels to define the destination range. The source channel will be duplicated into each channel in the destination range.

Scope is applied in the same way as with Copy Channels (See previous section).

# Chapter 2

## 2.4.8 Channel Overview ..............................................................

The **Channel Overview** panel in the **Layout** menu provides similar functions to the **Channel Banks** panel and a graphic representation of all the consoles input channels. Many controls can be adjusted on screen using the mouse/trackball controls.

The coloured outlines represent the banks that are currently being viewed on the worksurface and this view can be changed by touching the on screen banks. The Fader Banks can be named by touching their label and typing.

To **clear a bank** from the worksurface, hold down the relevant bank button on the worksurface and touch the on screen **Clear Bank** button.

To **assign a bank** to the worksurface, hold down the relevant bank button on the worksurface and touch the on screen bank that you wish to assign.

The **Set 0dB** and **Set - oo** buttons may be used to reset all or selected fader levels for the top and/or bottom row of channel faders.

To **Select Channels**, drag the mouse through the white boxes beneath the bank labels and release - the selected channels will be highlighted in yellow.

If channels are selected, then the **Copy** and **Move** functions become available and pressing either of these buttons will open the relevant panel with the source channels already selected.
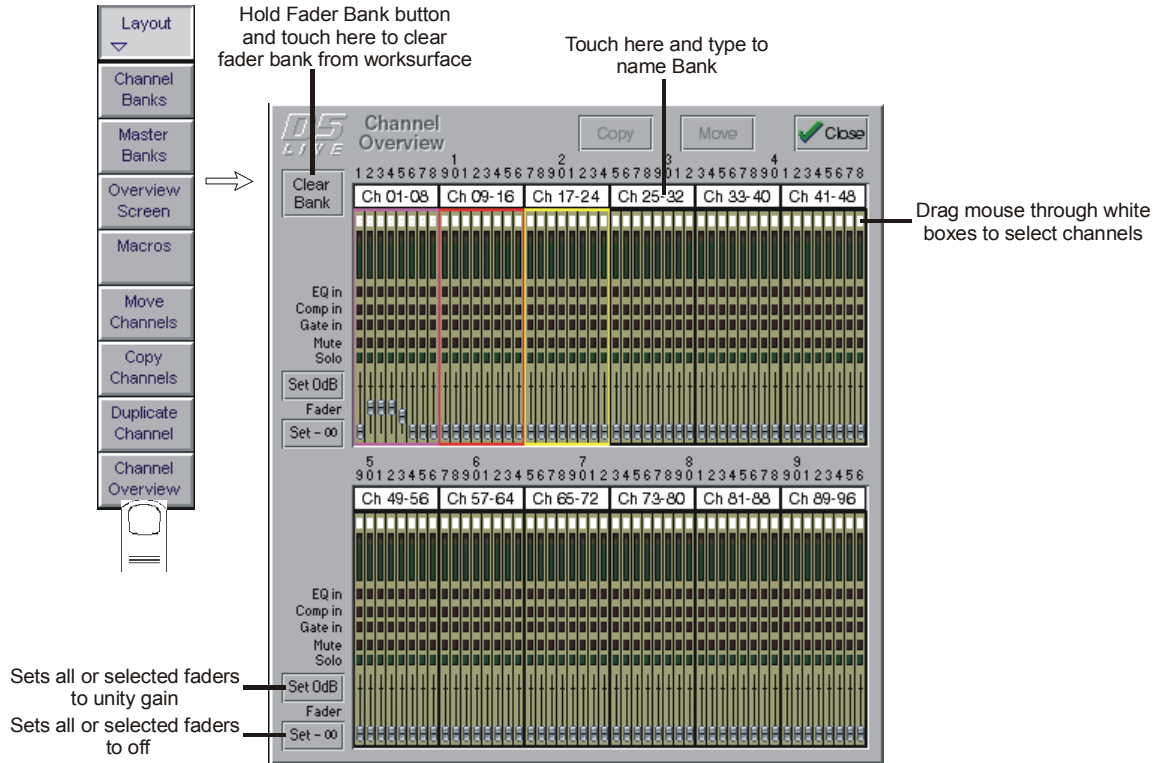
# Chapter 3
# Busses and Outputs

## 3.1 Busses and Outputs

### 3.1.1 Buss Outputs Display ...........................................................

The Master, Group, Aux and Matrix busses are displayed on the **Master Screen**, and the buss levels are controlled by the fader banks below the screen:





The exact appearance of the screen depends on the console's current buss configuration, but the layout will look something like this:
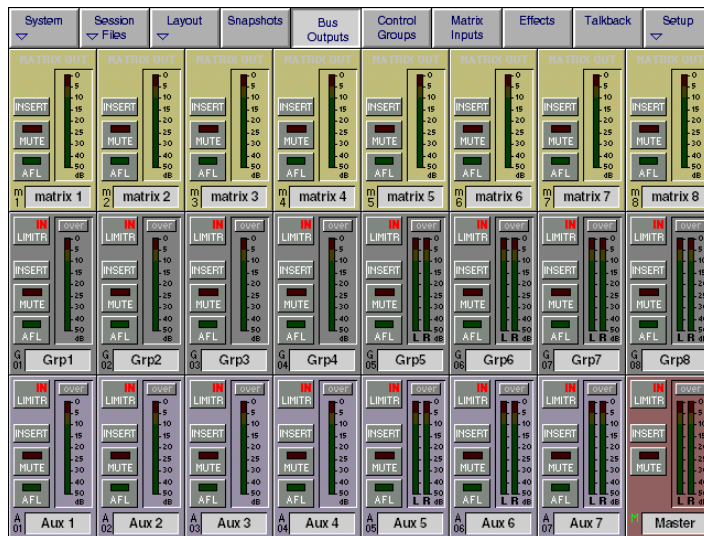


### Scrolling the Master Screen

If the console configuration is using more than the 24 outputs which the screen can display, you can "scroll" the screen down the rows of busses using the **Master Screen Scroll** on the left hand side of the section

### On Screen Buss Output Controls

Each buss has **Mute**, **Solo, Insert On/Off** and **Limiter In/Out** buttons and the screen also displays an **Over** light for each buss - these are described in the next section.

### 3.1.2 Expanding the Buss Output View ......................................

In the default state shown on the previous page, the level for each buss is controlled by a single fader, whether the buss is mono, stereo or surround.

To see an expanded view of an assigned buss and access additional controls, touch the buss meter display.
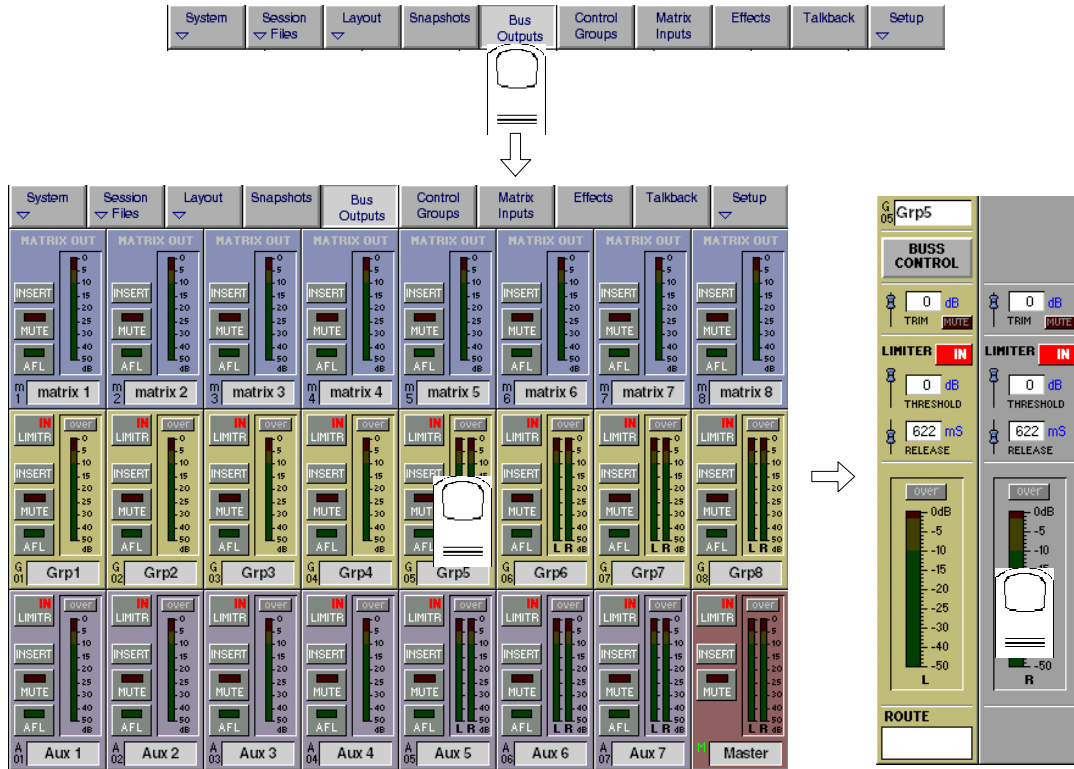


Touching the expanded view of the buss meter will restore the display back to the single-fader mode.

## 3.2 Output and Buss Controls

Once an output channel is expanded, you can access its controls.
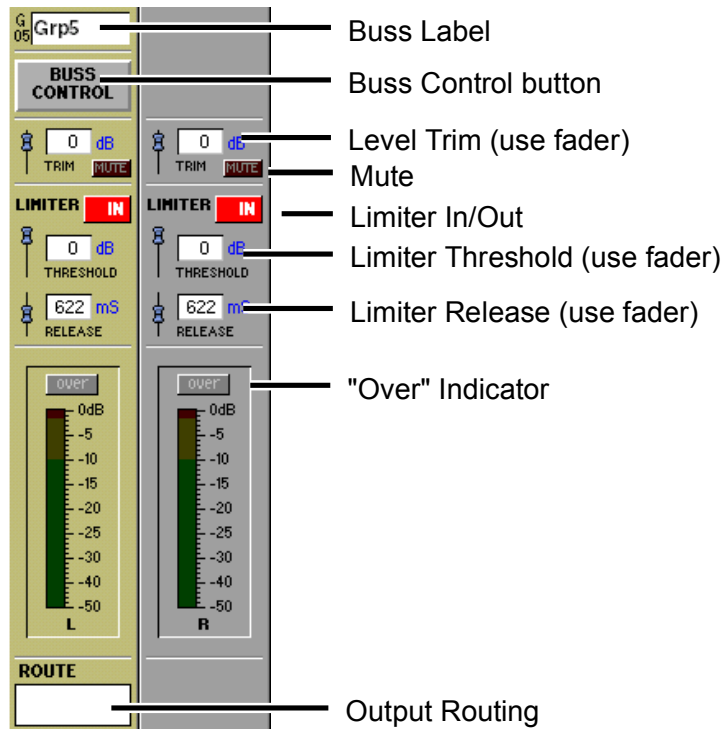


The Label, Buss Control and Routing settings apply to the whole buss, but for Stereo and Surround busses the other controls can be set independently for each signal on the buss.

### 3.2.1 Label ...........................................................................................

The **Label** operates in the same way as an Input Channel label - to change it, just touch the on-screen label, then type a new name on the computer keyboard or the On Screen Touch Keyboard.

When a buss is labelled its name will appear in the input channel routing display.

### 3.2.2 Buss Control Button ...........................................................

Touching the **Buss Control** button displays a screen showing which channels are currently routed to the buss and offers different options according to the type of buss it is.

## Group Buss Control

**Connect All** routes all input channels to the buss.

Any fader which is being touched will be omitted from the connection process to facilitate the set up of a mix-minus feed.

**Clear All** clears the routing of all input channels from the buss.

Any fader which is being touched will be omitted from the clearing process and remain connected to the buss.

**To Master** allows the group to be routed onto the Master Buss. Only groups whose width is the same as the Master Buss can be routed in this way (ie. stereo groups on a stereo console; surround stems only in surround modes).

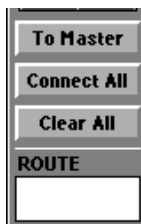When a buss is routed to the Master Mix, audio processing resources are taken from the highest numbered available input channels. If insufficient channels are available a message is displayed quoting the number required.

If any of the input channels routed to the group are also routed to the Master Mix, a warning is displayed.

**Note:** The To Master button is not included in snapshots.

## Auxiliary Buss Control

**Switch All Pre-Mute/Pre-Fader** makes the auxiliary sends for this particular buss pre-mute and pre-fader on all channels.

**Switch All Post-Mute/Pre-Fader** makes the auxiliary sends for this particular buss post-mute and pre-fader on all channels.

**Switch All Post-Mute/Post-Fader** makes the auxiliary sends for this particular buss post-mute and post-fader on all channels.

**Copy Levels from Faders** makes the auxiliary send levels for this particular buss the same as the fader levels on each different channel.

**Set Levels OFF** turns off all the auxiliary sends for this particular buss on all channels.

**Set Levels to 0dB** makes the auxiliary send levels for this particular buss 0dB on all channels.

**Assign Sends To Faders** transfers auxiliary send control to the channel faders for the relevant auxiliary.

**Assign Sends To Rotaries** scrolls the input channel view to the relevant auxiliary and allows immediate rotary control of the send.

**Note: To activate Assign Sends to Faders/Rotaries using Solo Press see Section 4.5 - Master LCD Function Buttons.**

### 3.2.3 Level Trim ...............................................................

This trims the level for each buss signal. For Stereo or Surround busses, you can trim the level of each signal independently using the fader below the display. The faders can also be assigned to the Limiter controls (see below) - touch the Level Trim display to assign the fader to the Level control.

### 3.2.4 Limiter ..................................................................

The **Limiter** is a feed-forward system which provides absolute signal limiting. You can operate the on-screen In/Out switch by touching it or by using the LCD button.

As with the Level, the **Limiter Threshold** and **Release** time are set using the fader below the display. To adjust *eg* the Threshold setting, touch the on-screen display of the Threshold - this will make the on-screen Threshold slider control turn red, indicating that this control is now assigned to the physical fader below the screen.

The **Over** indicator lights up whenever the Limiter is activated, or if the Limiter is switched out, whenever the buss signal level goes over 0dB. Once lit, the Over light stays on until it is touched.

### 3.2.5 Mute .....................................................................

Touching the **Mute** button on the screen or the worksurface cuts the output signal from the relevant buss.

### 3.2.6 Meters ...................................................................

The **Meters** display the signal level, and indicate a peak level.

### 3.2.7 Output Channel Routing .................................................

The Buss Routing section indicates which output sockets the channel is currently connected to. To alter this routing, touch the Routing section: you can then select a socket (or a number of sockets) to which the buss signal(s) are routed.

**NOTE: If an output socket button is disabled (Text in white) and is touched, a message temporarily pops up explaining why.**
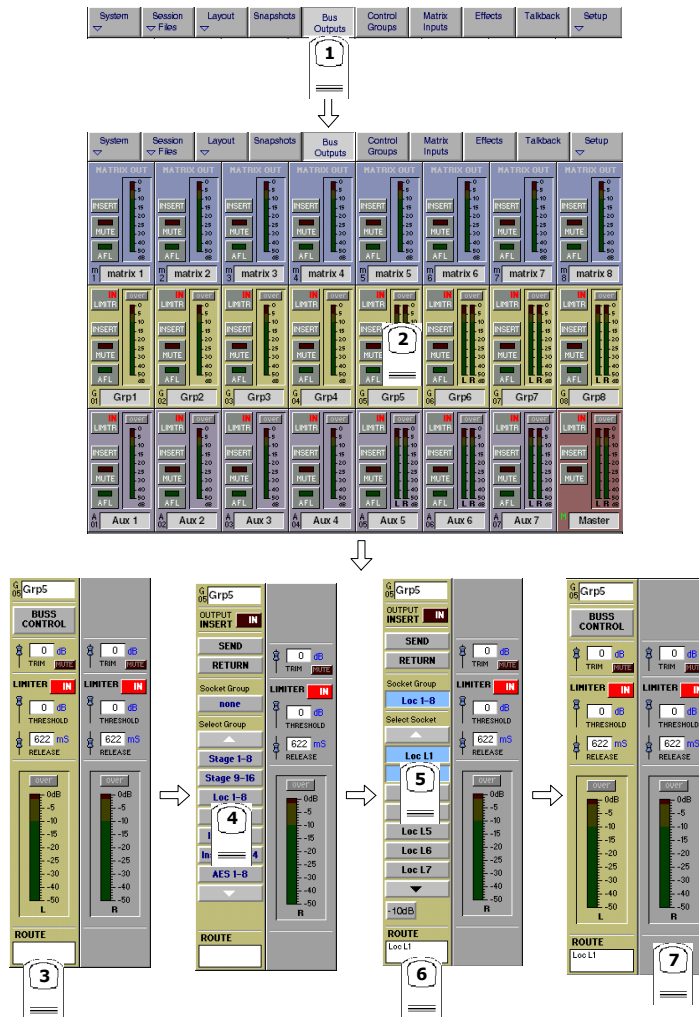


Note that with Stereo or Surround busses, you cannot route the buss signals separately - by assigning the socket for the left most buss channel, you also assign the next socket(s) in the socket Group to the remaining buss signal(s). The illustration above shows a stereo group, so choosing socket **Loc L1** would assign the left buss signal to socket **Loc L1**, and the right buss signal to socket **Loc L2**.

**NOTE:** The order of signals output from a surround stem can be adjusted by using the **System/Service/Configure Hardware** menu. This closes the current session and opens the **DiGiConfig** program - For more information, please refer to the **Interconnection and System Setup** section.

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### 3.2.8 Buss Signals as Input Sources .........................................

The output results from output channels can be returned into input channels by scrolling to the bottom of the Signal Group listing at the input stage of a channel.

You will see Signal Groups for each type of buss which is in the current console configuration (eg Mono, Stereo, LCRS etc) Touching the Signal Group buttons will show the separate legs of each buss and these signals can then be selected as inputs in the normal way.

These signals are labelled with a "~" to indicate that they are buss results and are therefore subject to delays.

### 3.2.9 Headphones.............................................................................

The headphones are always fed by the monitor/solo1 signals and there is a dedicated level control in the worksurface **Monitor** section on the right hand side of the worksurface.

### 3.2.10 Output Insert .....................................................................

In the buss master routing panel there is an Output Insert facility that can be used to route signals to effects and processing. This is particularly useful if you wish to use outboard processors on the output of a buss.

In this situation the output should be routed to its normal destination but it will be diverted through the Send and Return for processing.

Touch the **Send** button and select the input to the required processor, then touch the **Return** button and select the output from the same unit. Then touch the **Output Insert** button to switch it on.
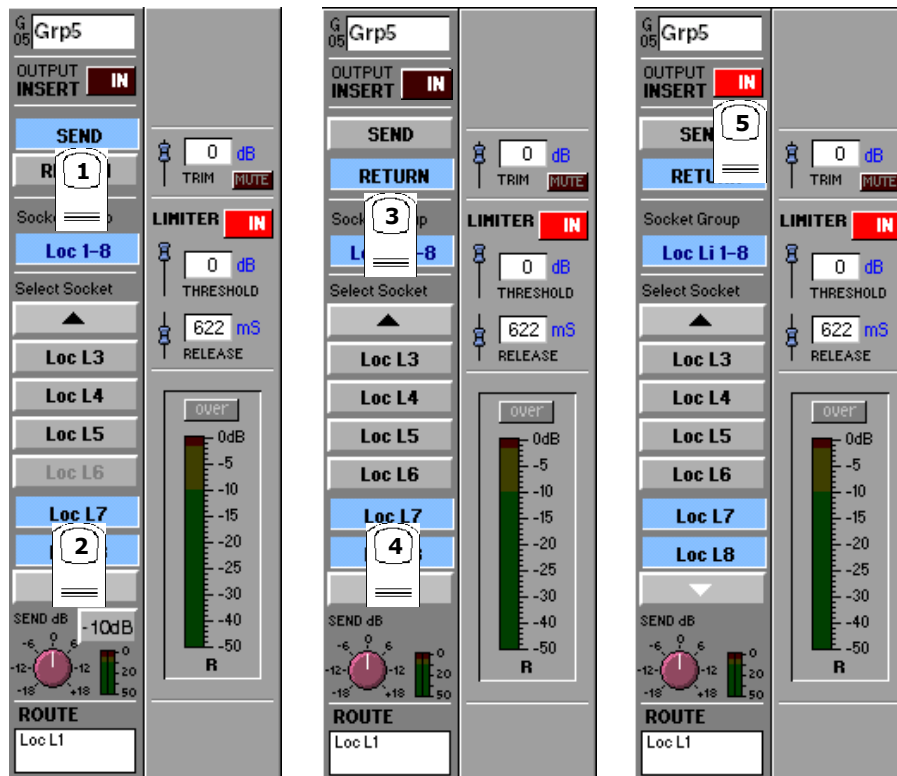


**IMPORTANT NOTE: The Insert Send signal is post fader until the Insert Return is routed from a MADI signal.**

## 3.3 The Matrix

The 38x8 way matrix is accessed by touching the **Matrix Inputs** button on the master screen or the **Matrix** button on the far right of the worksurface master section.

Inputs are selected in the same way as the input channels (See Section 1.3.1).

Touch the on screen matrix send controls to select which ones you wish to adjust and they will become highlighted.

Use the worksurface **Touch and Turn** control and **On/Off** switch to adjust the settings for all highlighted sends.
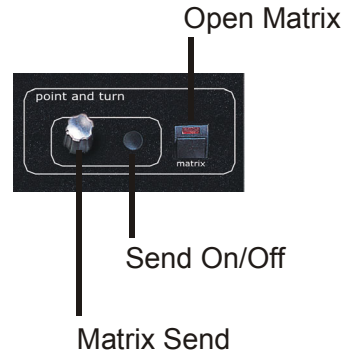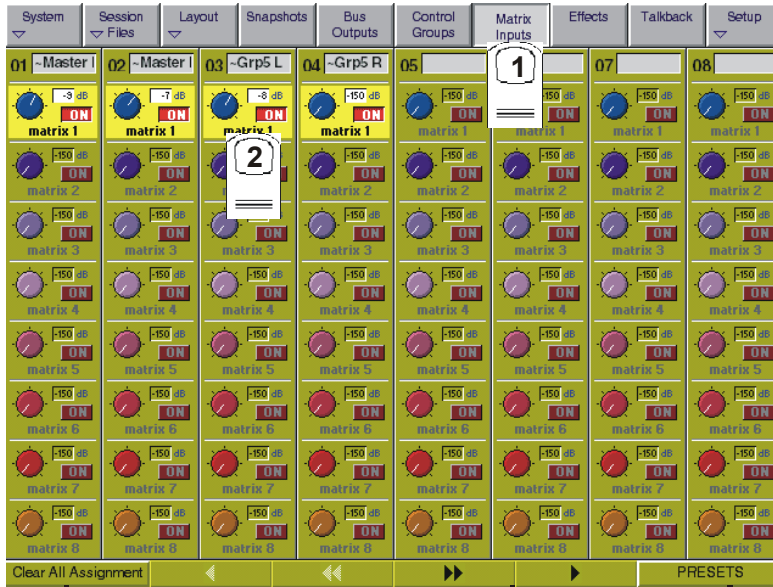
At the bottom of the panel there are buttons to **Clear All Assignment**, **Load and Save Presets** and **Scroll** buttons to view the other inputs.

# Chapter 4
# Master Section

## 4.1 Master Section

The Master section of the D1 console includes the output controls described in the previous chapter and the meter bridge above it:

Meter Status

Light Controls

Master Screen

Talkback

Macros    Screen
Scroll

Monitoring

Matrix/Effects Controls

Mute and Interactive LCD
Function Button

Master Mute

Previous Snapshot

Master Fader

Output / Control Group
Faders

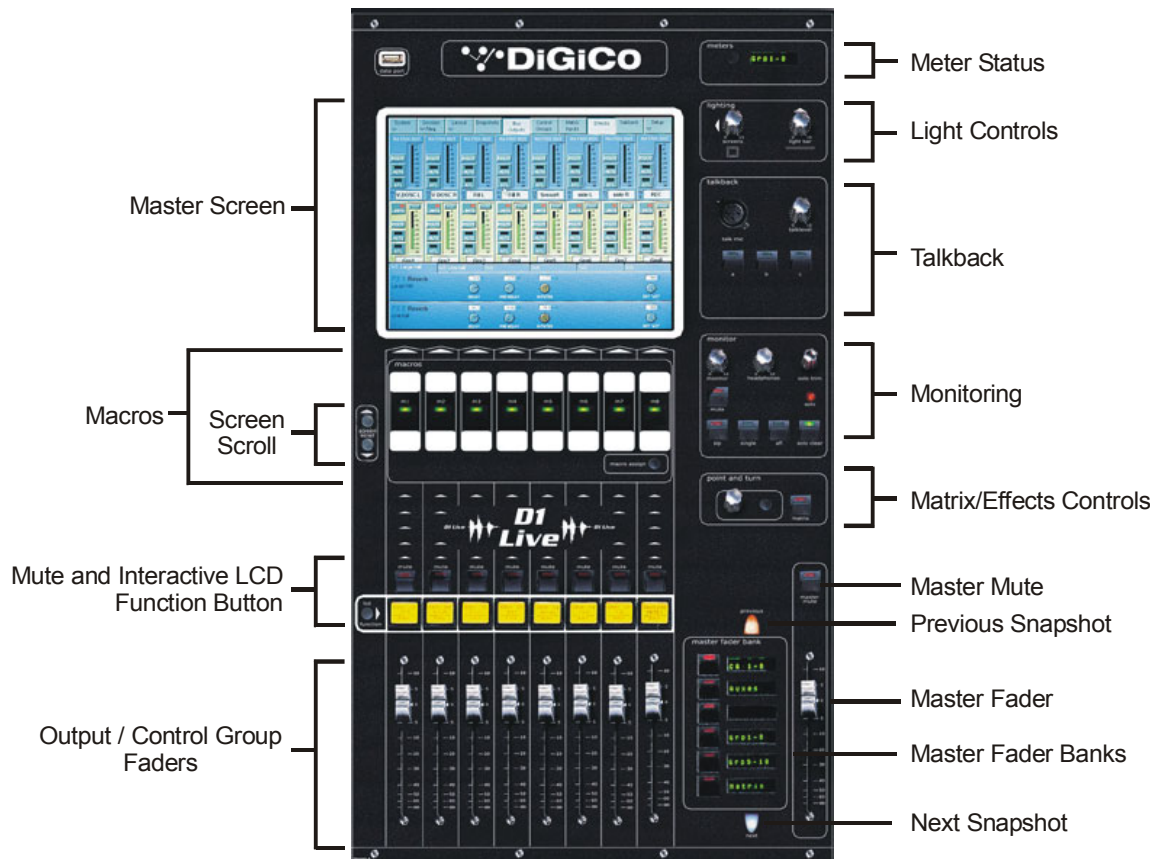Master Fader Banks

Next Snapshot

### 4.1.1 The Master Screen ............................................................

### Master Screen Status Display

The master screen displays information on the current session, mode, timecode and sync at the top left. The system date and time are displayed on the right. Further system information can be found in the Diagnostics Panel (System Menu).

| System ▽ | Session ▽ Files | Layout ▽ | Snapshots | Bus Outputs | Control Groups | Matrix Inputs | Effects | Talkback | Setup ▽ |
|---|---|---|---|---|---|---|---|---|---|

Session:  The D1 User Manual
File:  c:\projects\d1manual.ses                                        04/09/04 16:49
Console Mode:  Stereo
Solo Mode:  PFL
Timecode:  25 fps MASTER
Audio Sync:
Presets File:  c:\d1\d1.pre

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D1
LIVE

Software Version  0.01.351
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### 4.1.2 The Menu Buttons ..............................................................

## System Menu

This menu, displayed by touching the System button, contains additional buttons which display system information.

## System Shut Down Button

This command should be used to shut down the console in normal operation.



## Quit To Windows Command

In the Service menu, this button will close the D1 program but will remain in a Windows environment. It is unlikely that the user will need this option in normal operation.

## System Options

To adjust the level of lighting on the console use the up down arrows next to the value boxes for **Surface Label Display Brightness** and the worksurface rotary controls for **White Light Illumination Brightness** and **Screen Brightness.**
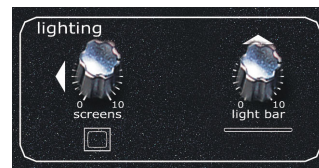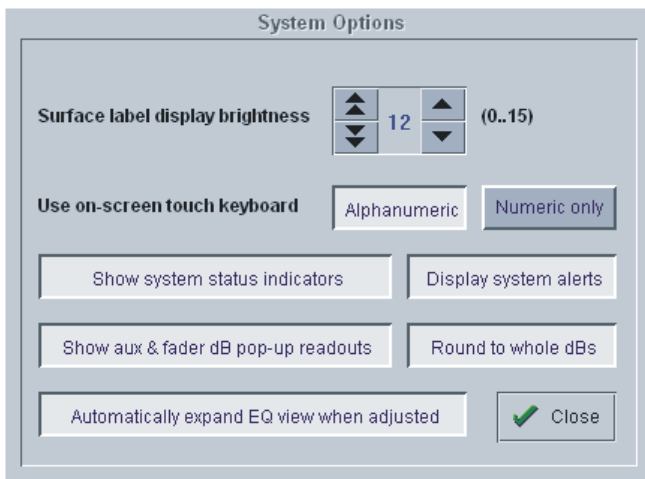


**Use On Screen Touch Keyboard** activates a touch sensitive keyboard which will automatically appear on screen when any label button (Channel, name, control group etc) is pressed.

While editing numeric-only data such as timecode, a small numeric keypad will appear.

This is intended as an alternative to using the computer keyboard itself.



**Show System Status Indicators** activates on screen information concerning the system. This will appear in the bottom right hand corner of the Master Screen.

**Show aux and fader dB Pop-up Readouts** activates yellow boxes which pop up showing the Auxiliary send and fader dB displays.

**Display System Alerts** activates on screen information to warn the user of any potential problem with the system.
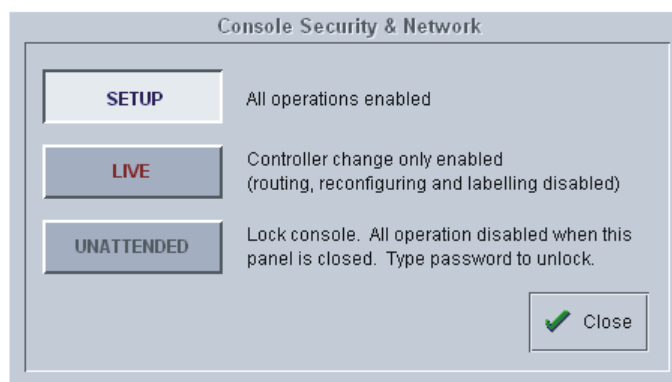
**Round to whole dBs** switches any dB readouts to whole dB measurements instead of decimal places.

### 4.1.3 Console Security Settings ................................................

The console has 3 modes of operation which dictate the types of operations that can be performed.

The **Setup** mode is essential if you wish to access all the console operations but when the basic setup is complete you may wish to switch to **Live** mode which only enables changes to controllers and not routing, reconfiguring or labelling. This may prevent accidental changes to the basic setup.

For total security the **Unattended** mode locks the console completely and all operations are disabled. This state can only be changed by typing a password - the standard password is D5.



### 4.1.4 Consoles and Racks ...........................................................

If the console is the only one in the system, the **Consoles & Racks** panel will not open automatically and the console will be fully connected to the racks with its **Master Audio Outputs Active** by default. This panel can also be opened from the **System** menu.

If the system has been defined as consisting of more than one device, the **Consoles & Racks** panel will automatically open on boot up or load session.

If the crossed Ethernet cable or Ethernet switch has been connected, then the **Ethernet Connected** line should show a **green OK light** and not a red cross.
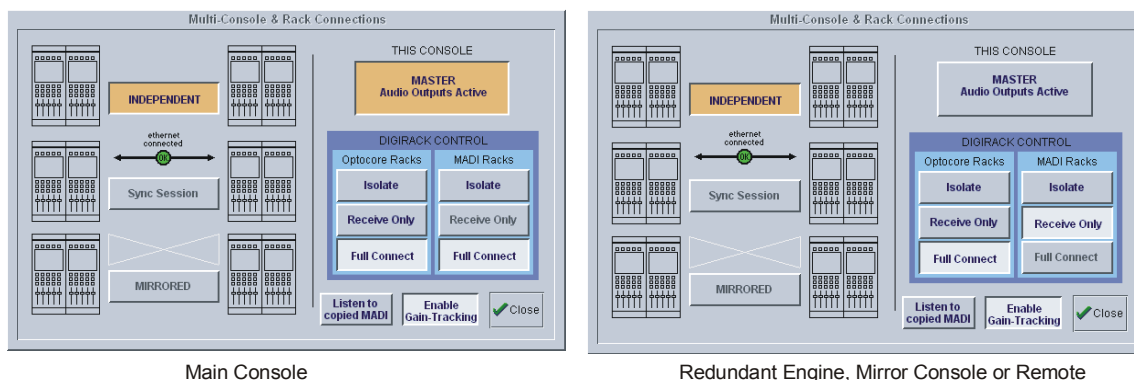
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

In this state, any gain adjustments made on the console will have no effect as the racks will not be receiving data.

The console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.

The same button on the other consoles in the system should not be highlighted at all.

The MADI Rack's connect states Receive Only and Full Connect are enabled/disabled and set according to the Audio Master active state – an inactive engine cannot output to a MADI rack.



Main Console              Redundant Engine, Mirror Console or Remote

To enable control of the DiGiRacks, press the Full Connect buttons for the Optocore and MADI racks. You will then be required to confirm the action, the session settings will be sent to the racks and the console will have full control over them.

If you have a system where more than one console is sharing the racks you may wish to use the **Receive Only** mode where the console will receive the rack's existing settings but will not be able to control the gain on the racks.

**Options are:**

**Isolate** where the console will not communicate with the racks and therefore any adjustment of input gain or +48V switch will have no effect on the rack settings.

**Receive Only** where the console will receive the rack's existing settings but will not be able to control the gain etc on the racks.

**Full Connect** where the console will send its settings to the racks and change them accordingly.

If **Copy to MADI** has been ticked in the Hardware Configuration for the optocore racks, then the **Listen to Copied MADI** button provides a quick switch from monitoring the normal signals received via optocore connections from the stage racks to signals received at the MADI inputs on the console's rear panel.

In this way a MADI equipped multitrack recorder can be connected to the MADI 1 In and Out on the rear of the console and record the stage rack microphone signals directly. The recording can then be played back into the same channels as the original microphones by pressing the **Listen to Copied MADI** button.

**For more information on the use of this panel please see the chapter on Multiple Console Setups.**

## 4.2 Configuring the Console

As a digital console, the D1 is highly configurable, allowing a wide range of different bussing formats and channel configurations. This section describes how to use the command buttons on the Master Screen to Configure, store and recall sessions.

A Session file contains the following information:

- The console configuration.

- The Snapshots.

A Session file therefore represents a complete "snapshot" of the console, and is the simplest way to store and recall a complete system setup.

### 4.2.1 Session Files Menu................................................................

All of the configuration and file management functions are handled in the Session Files Menu which is accessed by touching the button on the Master Screen.



### 4.2.2 The New Session Panel ......................................................

The **Main Buss Mode** defines the format of the Main buss as Stereo, LCR(S) or 5.1 Surround.  This also affects the options for selecting the Group and Aux buss formats: if the Main buss is stereo, the other busses cannot use the Surround formats, and if the main buss is Surround format, the other busses cannot use a different Surround format (although they can be stereo).

The **Output Groups** and **Aux Outputs** settings allow you to define the format and number of the Aux and Group busses.

The total amount of busses cannot exceed 36 in Stereo mode (extra busses are reserved for the Main and Solo/AFL functions).
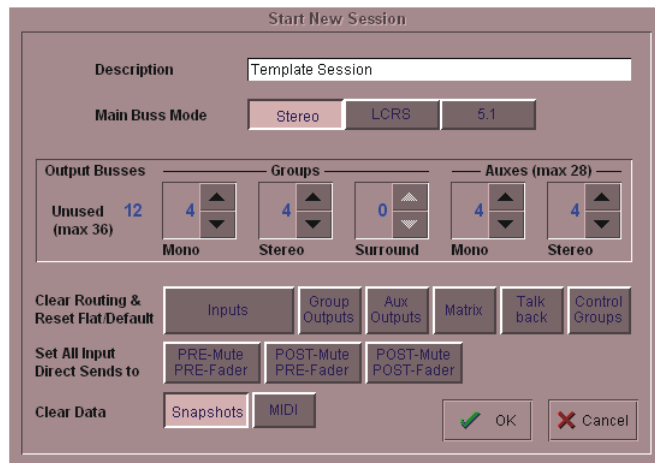


**Note: The total number of busses available will be affected by the choice of Main Buss Mode selected.**

For example, if you wish to use AFL within a 5.1 Surround console configuration, an extra 6 busses will have to be reserved for that purpose.

### 4.2.3 Clearing Settings ................................................................

When you start a new session all current settings will be inherited by default but Snapshots will be cleared.

The buttons at the bottom of the **New Session** panel allow you to clear settings according to your own requirements. When the buttons are pressed, the relevant settings will be cleared. If you are simply adjusting the buss configuration of an existing console you are unlikely to wish to clear all of your current settings.

**Note: Clearing Output Processors is linked to the Aux Outputs button.**

You may also choose to **Set all Input Direct Sends** to Pre-Mute/Pre-Fader, Post-Mute/Pre-Fader or Post-Mute/Post-Fader for the new session. Remember that when all settings are cleared, any labelling or routing which you have done will be lost.

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### 4.2.4 The Load Session Button ..................................................

Touching this button will open the following panel.



This panel shows the contents of your drives and folders, listing any saved sessions with a note of the console configurations on the right hand side of the screen. These include the removable drive that can be plugged into the USB Data Port on the worksurface.

Simply select the drive you require in the bottom left corner and then open a folder from the scrolling list next to it by touching it. You can then touch a specific session file to highlight it and touch the **Load** button to open the session.

Sessions can also be renamed or deleted in this panel using the **Rename File** or **Delete File** buttons in the same way.

The smaller **New Project**, **Rename**, and **Delete** buttons all refer to the folder listing and also appear in the **Save As New File Panel**

The **Set Backup Files** button is only relevant if your system is connected to a **NetTracs** server which is used in multiple console environments to store and backup files.

### New Project

Creates a new folder with the default name Proj001. You can then rename this as required.

### Rename

Touch this button and then touch the folder name that you wish to change. This will then be highlighted and you may type a new name.
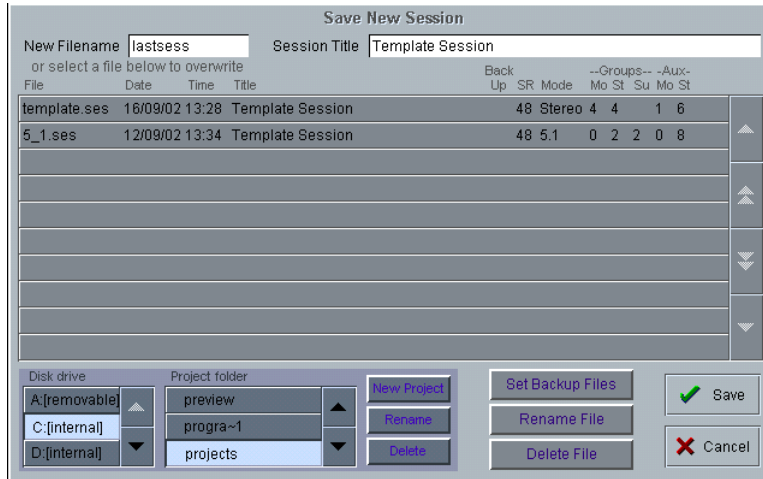
### Delete

Touch this button and then touch the folder name that you wish to delete. You will then be asked to confirm the deletion request.
**Note: File and folder names cannot exceed 8 characters with no spaces or punctuation.**

### 4.2.5 The Save As New File Button ...........................................

Touching this button will open the following panel.



This panel allows sessions to be saved as new files under new names. Select your drive and folder by touching in the boxes in the bottom left corner, then touch and type a new file name (with a maximum of 8 letters and no spaces or punctuation) in the box on the top left. You may also specify a session title which can be a different name to the file itself and may therefore be longer and more descriptive. Then touch the **Save** button to complete the process.

**Note: If you touch a session name on the existing list, this name will automatically be selected as the new file name and touching Save will overwrite the old file.**

### 4.2.6 The Save Session Button .................................................

This button which is found above the **Save As New File** button will save the existing session in the same location and under the same file name as it was previously saved or loaded from. It therefore serves as a "Quick Save" option to update an existing session.

**Remember that this function will overwrite your last saved version.**

If you wish to save the session under a new name use the **Sessions** menu button and select **Save As New File** (See above).

### 4.2.7 USB Data Port.......................................................................

The console ie equipped with a Data Port which is designed for use with a key-ring style data card. To use this facility, insert the card into the USB Data Port and it will be recognised as an external drive. It will then appear in the Load and Save panels and can be used for storage and retrieval of sessions and presets.

**Note: Do not remove the USB key from the port while saving or loading is in progress. Allow the process to finish completely before removing the key.**

### 4.2.8 Managing Presets ...............................................................

Presets (Channel, EQ, Dynamics and Matrix) can be loaded and saved in any file ending with **.PRE**.

Under the **Sessions** menu, touch the **Load Presets** button and the following panel will appear:
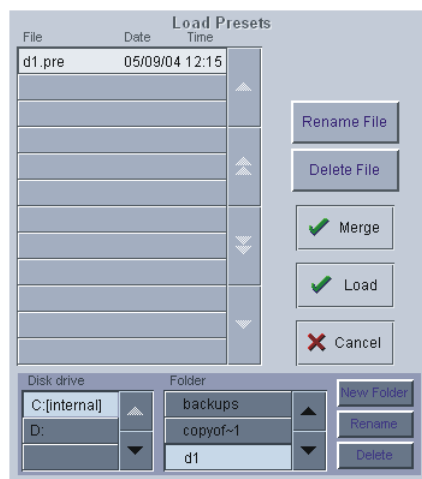


This panel shows the contents of your drives and folders, listing any saved presets.

Simply select the drive you require in the bottom left corner and then open a folder from the scrolling list next to it by touching it. You can then touch a specific preset file to highlight it and touch the **Load** button.

If you wish to keep your existing presets and add the contents of a saved presets file to them, touch the **Merge** button.

Presets can also be renamed or deleted in this panel using the **Rename File** or **Delete File** buttons in the same way.

The smaller **New Folder**, **Rename**, and **Delete** buttons all refer to the folder listing and also appear in the **Save Presets** panel.

To save a Preset file touch the **Save Presets** button and the following panel will appear:
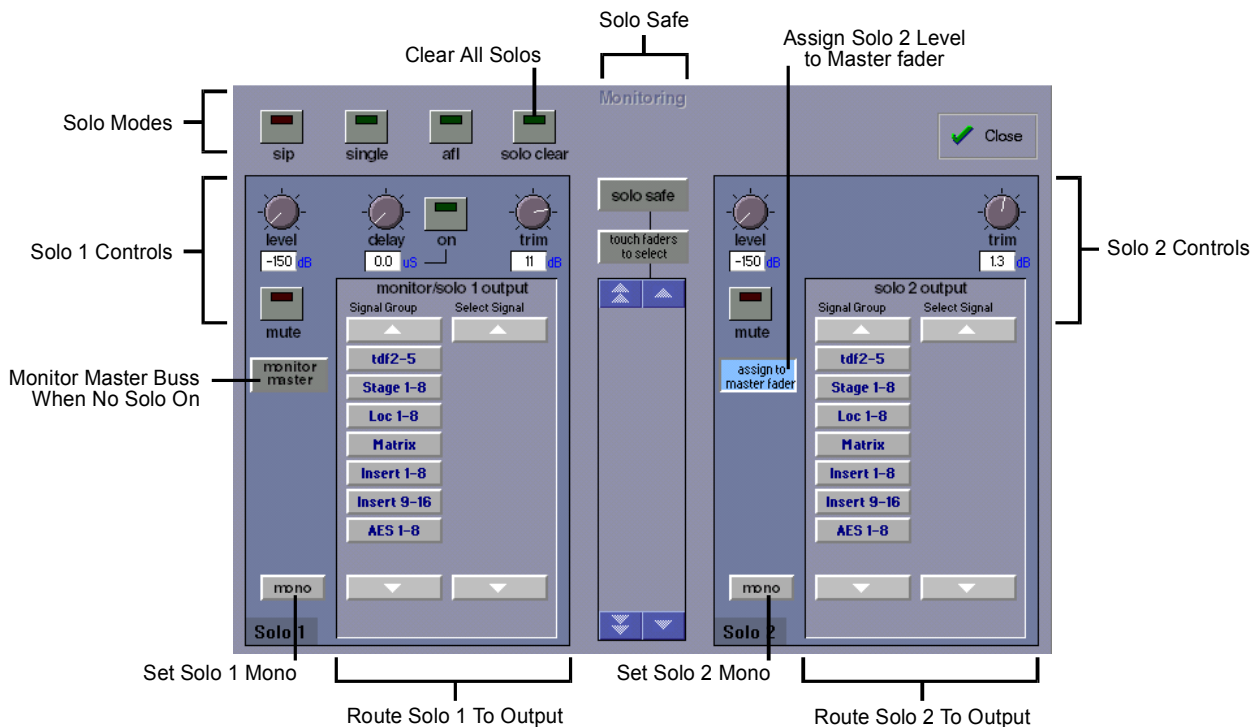
Select a drive and folder in the bottom left hand corner of the panel, type a new name in the **New Filename** box and press the **Save** button.

**NOTE:** The current presets file is always saved automatically when the console is shut down

## 4.2.9 Monitoring ...............................................................................

The **Monitoring** panel can be found under the **Setup Menu** in the Master Screen and some of the controls can be accessed on the right hand side of the Master worksurface.

It may be accessed at any time to change the monitoring setup.

There are two solo busses and each console solo button can be independently assigned to use Solo 1 or Solo 2. Output solos may use a total of 16 inputs to each solo buss.

Therefore, if the console was being used for stage monitors, the first solo buss could feed an "in ear" monitor and the second solo buss could feed a wedge.

To use **Solo 2** there must be sufficient busses available (at least two) and if Solo 2 does not appear on the panel a new session should be created to make these busses available.

The dedicated worksurface buttons control the relevant Monitor/Solo 1 functions and the Solo 2 level and trim may be controlled by touching the on screen control and using the Matrix rotary control on the worksurface.

**To Select Solo 1 or 2 for a Buss or Channel**

**1)** Press the **Master or Channel LCD Function** button for the relevant bank or channel.

**2)** Press the **Solo 1 OR 2 button** - All Solos are set to Solo 1 by default.

**3)** Press the **LCD button** for the Buss or Channel that you wish to switch to Solo 2 (It will change colour and Solo 2 will be indicated).

**4)** Press the **Master or Channel LCD Function** button to exit Solo 1 or 2 mode.

**5)** Press the **Solo** function button to return to the standard view and you will see Solo 2 indicated on the button.
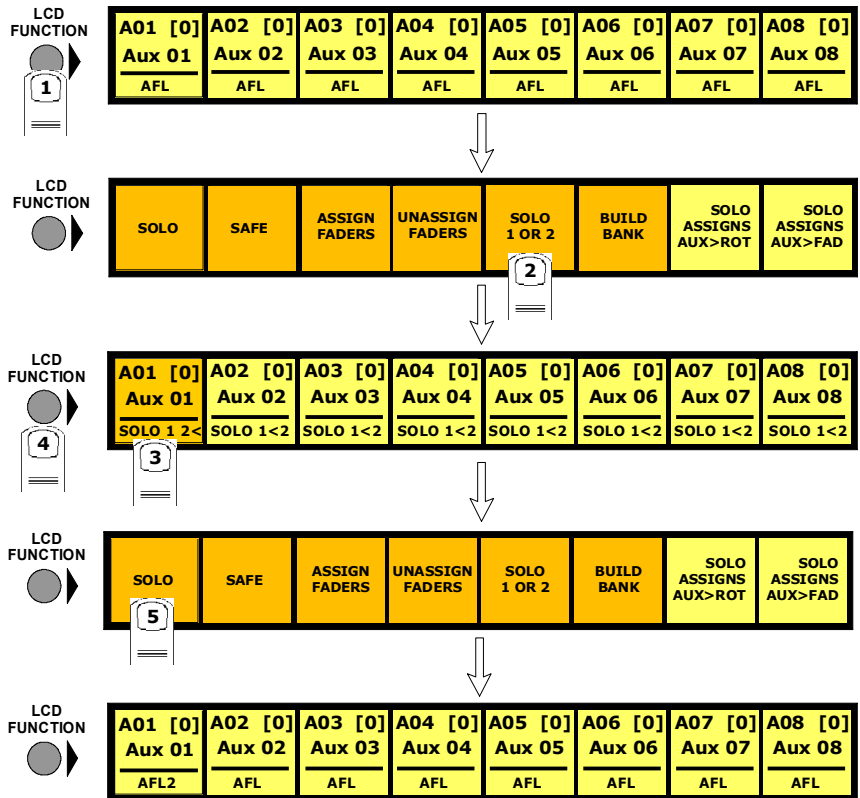


**PFL (Default mode with nothing else selected)**

Mono pre-fader listen mode which only uses one reserved buss.

**AFL**

Monitoring the signal at post-fader level with full stereo or surround panning which uses the same number of busses as the Master buss.

**SIP (Destructive Solo In Place)**

This function leaves the soloed signal routed to its current destination and mutes all non-soloed signals. To hear the soloed signal(s), the relevant buss(es) should be monitored.

**Note: This function can only be switched on by holding down the SIP button for 2 seconds.**

**Single**

Single mode means that only one channel can be soloed at a time. If single is not selected, any number of channels can be soloed simultaneously.

**Monitor/Solo 1 and Solo 2 Outputs**

This allows you to select dedicated output sockets for the Monitor/Solo 1 and/or Solo 2 signals. Touch the required Output Signal Group button and then the first output (left) that you require from that group. The second output (right) will be automatically selected. A button at the bottom of the panel will switch the solo to **Mono**.

**Monitor Delay**

The monitor signal can be delayed by up to 160ms using the on screen rotary control. This control may also be adjusted by touching it on screen and using the worksurface Matrix rotary control.

**Monitor Master**

If this button is pressed, the master buss will be monitored when no solos are on.

**Solo 2 Assign To Master Fader**

If this button is pressed, Solo 2's Level and Mute controls can be adjusted using the Master Fader and Mute.

**Monitor Mute**

Touch the Mute button to cut the monitor signal.

**Solo Clear**

Pressing the Solo Clear button will ensure that there are no solos engaged anywhere on the console.

**Solo Trim Level**

The Solo Level may be adjusted by altering the dB value in the Trim Level box. If the worksurface "Solo Trim" control is adjusted, this panel will automatically appear and the Trim Level value will change to reflect any adjustment.

**Solo Safe**

Solo safe may be used in any solo mode.

If the **Solo Safe** button is pressed, channels that appear on the list will be soloed automatically whenever any other solo is pressed.

To add channels to the list, press the **Touch Faders to Select** button and touch the required faders. When the **Solo Safe** button is switched off, the list is not affected and the Solo Safe function is disabled. The contents of the list are saved in the session files.

**Note:** If one of the channels on the list is soloed manually the other channels are not automatically soloed with it.

## 4.2.10 Master Section Meters .......................................................
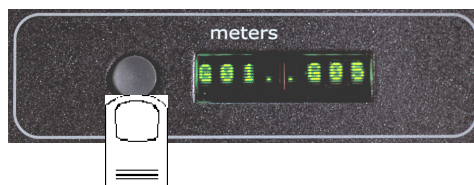


Successive presses of the **Meter Button** in the top right hand corner of the worksurface will toggle through three metering options, these are:

**Meter Master Buss (Default)**

**Meter Monitors**

The meters will show the selected type of monitor signal. (Master buss or PFL/AFL/Destructive SIP)

**Meter Selected Busses**

The meters in the console's Master section can be assigned to any console buss.

To assign Group or Aux busses to the Master meters, press and hold down the **Meter Button** in the top right hand corner of the worksurface and touch up to eight buss displays on the Master screen one after the other. Release the button when all the required busses are selected.

**Master Bank**

The meters follow the currently assigned master fader bank. Unlike the other modes, the fourth displays stereo groups on one meter with twin peaks, just like input channels. Surround groups only meter left & right signals in this mode.

**Note: If input channels have been assigned to master banks, the metered signal is pre-fader.**

## 4.2.11 Meter Bridge Options .......................................................

Touching the **Meter Bridge** button in the **Setup** menu allows you to choose between two options:

The default setting is **Inputs & Outputs** where the Input Section meters show the corresponding Input Channel signal and the Master Section Meters show the outputs.

The other option is **All Outputs** where the output signals are shown consecutively across the entire Meter Bridge.

In this mode, holding the **Meter Button** and touching a row of on-screen outputs will determine which outputs are assigned to the meters on the first Input Section.
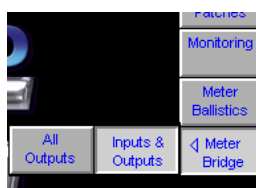


## 4.2.12 Meter Ballistics .................................................................

Touching the **Meter Ballistics** button in the **Setup** menu opens the following panel:
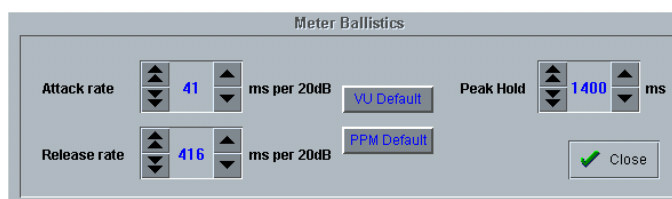


This allows ballistics to be altered for all meters on the bridge and screens using the up/down arrows on the panel.

**VU Default** sets Attack and Release to 300ms.

**PPM Default** sets Attack to 41ms and Release to 416ms which are the engine defaults.

**Peak Hold** time can be adjusted to a value between 10 and 9999ms

### 4.2.13 Restart and Recovery .......................................................

**When changes are made to a session it is important to save the session regularly as the recovery process uses the last saved session.**

In the unlikely event of a console software crash, an abnormal shutdown, hardware or power failure, D1 will recover the latest session automatically and it can be rebooted without losing audio.

If there is any problem with this process, holding the keyboard **Shift Key** during the reloading of D1 software will open the following panel:

**IMPORTANT NOTE:** The easiest method of doing this is to Quit To Windows and then reload D1 software from there.

If you are holding the **SHIFT Key** when Windows is reloading, the D1 Surfaces program and D1 software itself will not load automatically.

If this situation occurs be sure to restart Surfaces.exe from the Windows Start menu before loading D1 software.
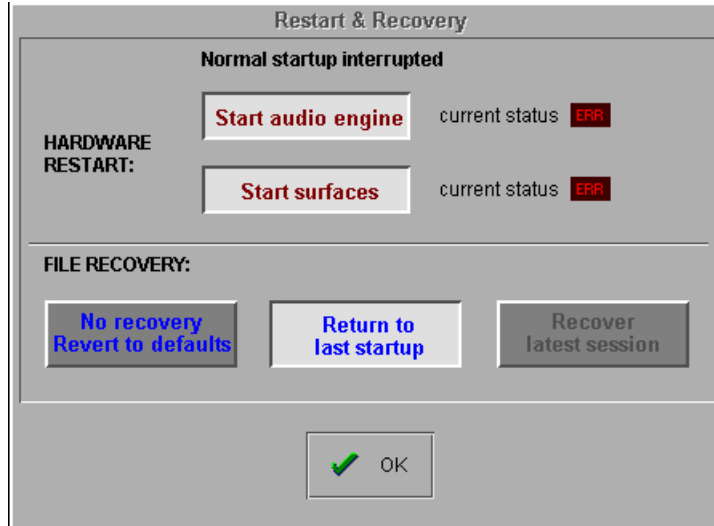


This allows the options of:

**1)** Rebooting the audio engine or worksurface.

**2)** Recovering the last session from NVRAM and last saved session file.

**2)** Loading from the last startup session file.

**3)** Not loading any file and creating a default stereo console.
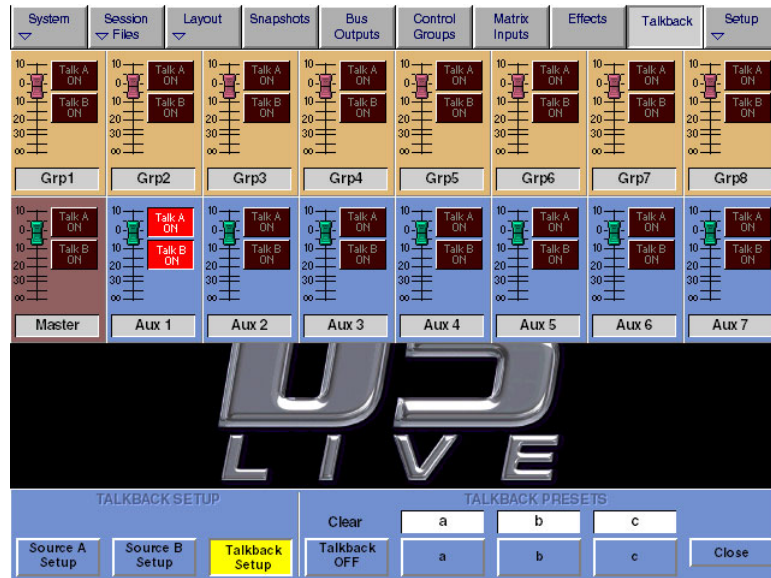
## 4.3 Talkback

The console includes a built-in talkback microphone socket situated in the top right hand corner of the worksurface. There are two Talkback channels, A and B, and both can be activated by buttons on the worksurface in conjunction with three Talkback Feed Presets, labelled a,b and c. Both channels are controlled by a level control on the worksurface.

### 4.3.1 Talkback Configuration Button .......................................

The two talkback channels can be mixed independently onto any buss using the **Talkback Setup** panel, which is displayed on the Master screen when the on-screen **Talkback** button is touched.



When you first touch the on-screen Talkback button, only the bottom section of the panel is displayed - push the Talkback Setup button to display the full mixer panel.

### 4.3.2 Talkback Mic Setup ...............................................................

Talkback channels A and B can be controlled separately, by touching the relevant button at the bottom left of the Talkback configuration panel.
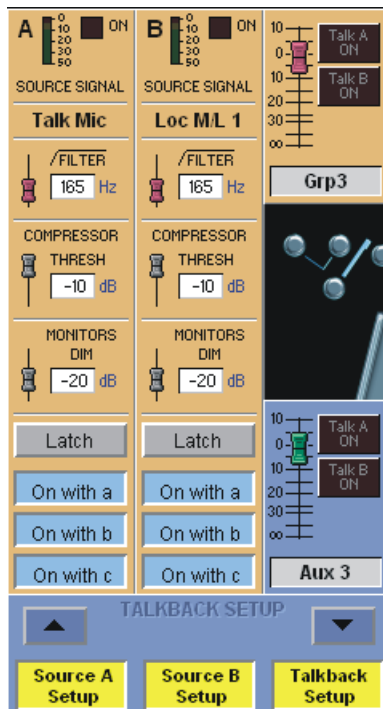


Talkback channels A and B can be sourced from any input signal, the Local mic, Tone or Noise using the buttons at the top of the Channel.

Both channels could be sourced from the same mic but each one could route to different output destinations.

Each channel has a high-pass filter, a compressor with variable threshold, and a control for the Dim level which is applied to the monitor signal when the Talk switch is pushed. These can all be adjusted by touching them on-screen, then using the fader below the display.

Below these controls are buttons which configure the talkback switch. The switches can be latching or momentary, and you can also choose to disable either channel altogether.

The worksurface Talkback buttons A, B, and C may be used to activate either Talkback Channel by pressing the required combination of the **On With** buttons.

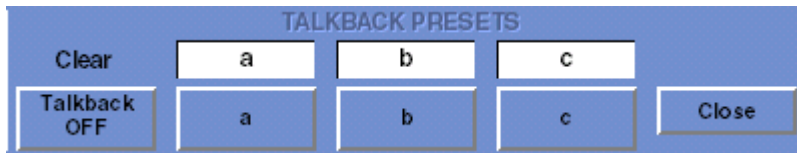### 4.3.3 The Talkback Mixer ...............................................................

Each output buss has its own level control in the Talkback mixer, along with a switch for connecting each Talkback channel to the buss at the chosen level.

The level controls can be adjusted using the faders below the screen, with each row of busses assigned to the physical faders by touching one of the rows of faders in the display.

### 4.3.4 Talkback Presets ..................................................................

You can set up three different Talkback Presets, which specify routing configurations for the talkback channels by storing the settings of the talkback feed switches for each output buss (though they do not store the mic signal levels sent to each buss).

Once you have one or more stored presets, they are recalled automatically when the corresponding worksurface Talk button is pressed (**a**, **b** or **c**) which also activates channels A and/or B if they are enabled. You can also switch between them without activating talkback by touching the buttons at the bottom of the Talkback panel. You can name each routing preset by touching the white label above its button and typing a name on the keyboard.



#### Changing Talkback Presets

Any changes you make to the talkback mic routing while a preset is selected is automatically stored as part of that preset.
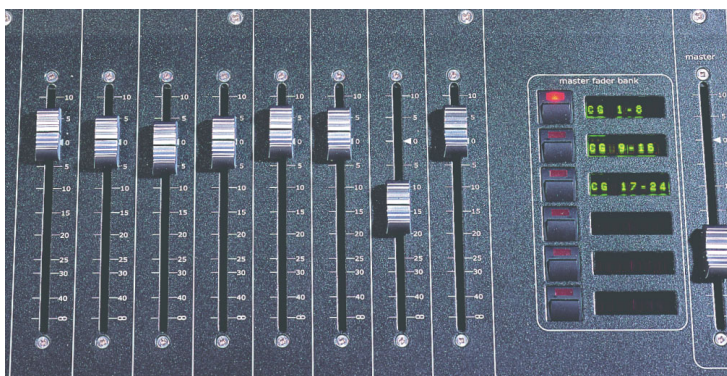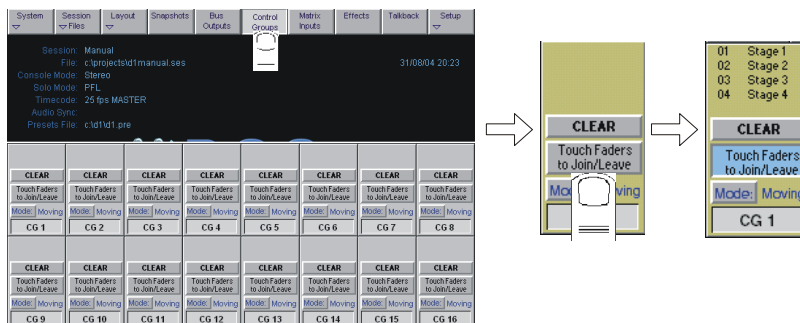
## 4.4 Control Groups

### 4.4.1 Creating Control Groups ......................................................

Any number of input channels and output channels can be connected to one or more of the 16 Control Groups. They can then all be operated from a single worksurface control. Changes to the Control Group fader, mute or solo controls will affect all channels connected to the group.

To set up Control Groups:

**1)** Touch the **Control Groups** button on the Master screen.

**2)** Touch the **Touch Faders To Join/Leave** button on the required Control Group (1-16).

**3)** Touch the **faders** on the channels that you want to include. (Touching the fader again will remove it from the group).

**4)** Touch the **Touch Faders To Join/Leave** button again to turn the function off.

**5)** Press the on screen **Mode** button to select **Moving** faders, **VCA** style static faders or **Mutes** only.

**6)** Use the worksurface fader, mute and solo to adjust settings for the Control Group members.



A list of all the connected channels and their names is displayed above each Control Group display, touch the area above the **Clear** button to expand this list.

When a fader is touched it is highlighted in the list.

You can also clear all the channels from a Control Group by pressing **Clear**.

When a channel is a member of a Control Group, its own controls can still be adjusted independently of the other Group members.

Adjustments to fader levels are transmitted to the Group members as dB changes, so that a level increase of 2dB on the Group fader will increase all the member levels by 2dB, irrespective of the relative levels of the individual channel faders.

### 4.4.2 Naming Control Groups ......................................................

Like inputs or busses, Control Groups can be named by touching the name display on the screen (default CG1, CG2 etc), and typing a new name on the console keyboard.

### 4.4.3 Mode Option ....................................................................

Successive presses of the **Mode** button above the control group's label allows the control group to function in one of three different ways:
**Moving -** The default mode where the input channel faders move to reflect any adjustment made with the Control Group fader.
**VCA** - The Control Group fader controls the level of an input channel without moving the channel's fader.
**Mutes -** Only Input Channel Mutes are affected by the Control Group, not faders.

## 4.5 Master LCD Function Buttons

Pressing the **Master LCD Function** button on the left hand side of the Master Section allows you to select the function that the individual **Master LCD Buttons** are currently assigned to.

### To Show Functions

Press the **Master LCD Function** button.
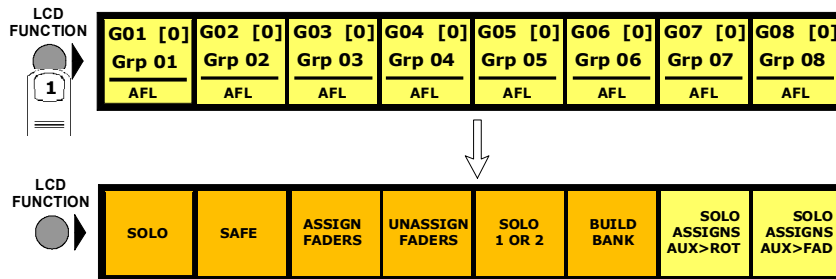


### To Make Masters Safe From All Snapshots

The **Safe** function makes selected Group, Aux, Matrix and Control Group Master Faders safe from all Snapshots.
**1)** Press the **Master LCD Function** button for the relevant bank.
**2)** Press the **Safe** button.
**3)** Press the **Master LCD** buttons for the Masters that should be Safe (they will turn red and a tick will appear).
**4)** Press the **Master LCD Function** button to exit Safe mode.
**5)** Press the **Solo** function button to return to the standard view.
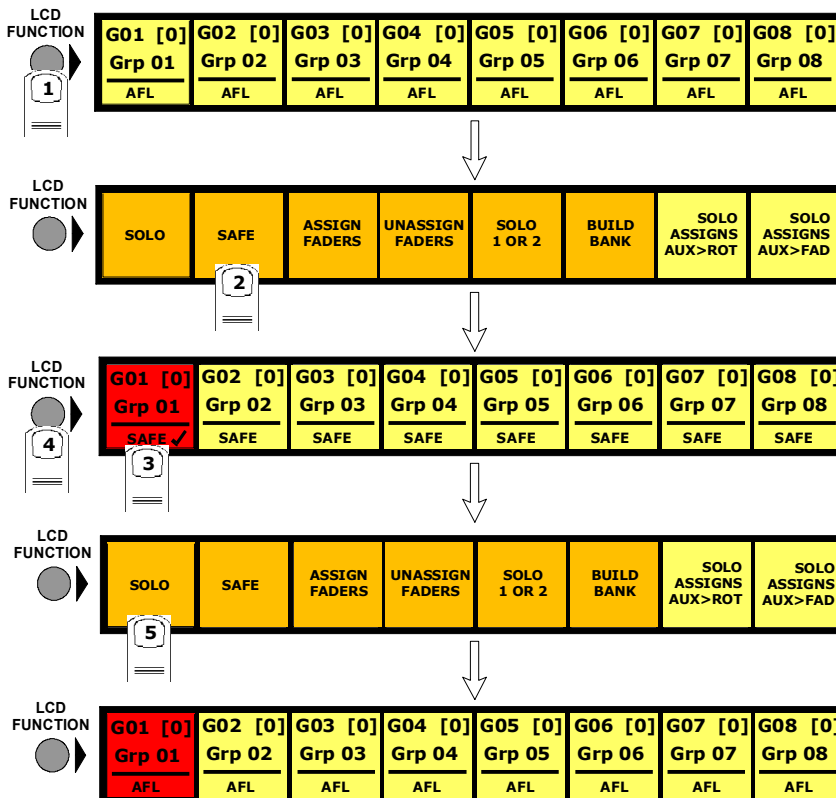
Auxiliary sends can be controlled by the console's channel faders or rotaries in several different ways.

There are **Assign Sends To Faders** and **Assign Sends To Rotaries** buttons in the **Auxiliary Buss Control** panel **(See Section 3.2.2 - Buss Control Button)** which activate these functions but for faster access there are options to activate them by a **Solo Press** on the Auxiliary Masters.

To switch these functions on or off:

**Solo Assigns Aux To Faders**

**1)** Press the **Master LCD Function** button.

**2)** Press the **Solo Assigns Aux > Fad** button (a tick will appear in the box).

**3)** Press the **Solo** function button to return to the standard view.
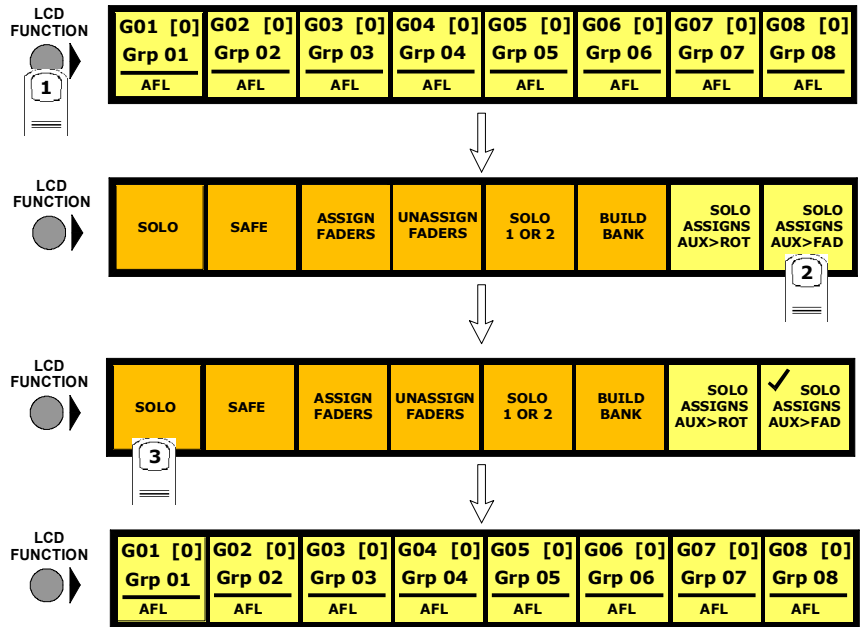


**Solo Assigns Aux To Rotaries**

When this function is activated and an Auxiliary Master Solo button is pressed, the Input Channel screen will automatically scroll to the relevant auxiliary and allow instant control of the send.
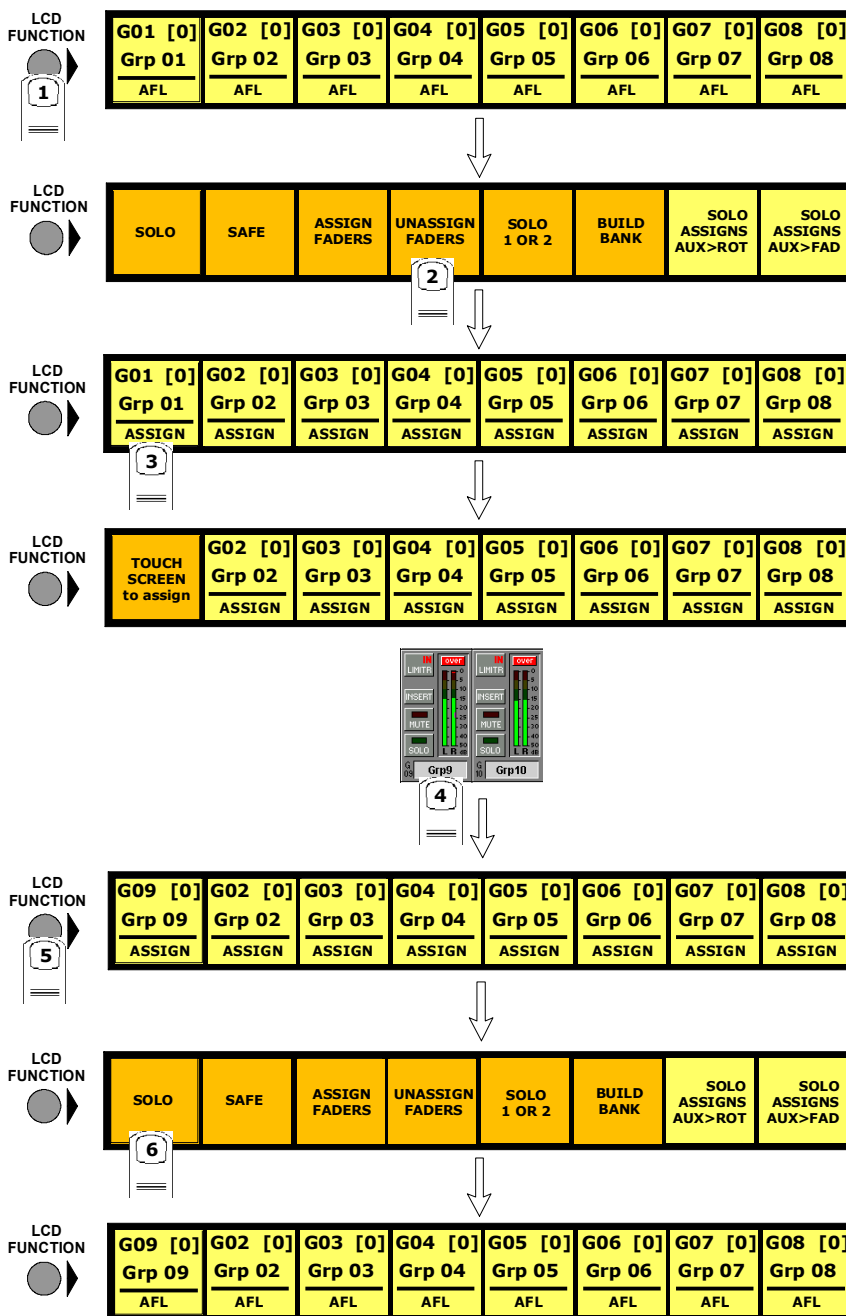
**1)** Press the **Master LCD Function** button.

**2)** Press the **Solo Assigns Aux > Rot** button (a tick will appear in the box).

**3)** Press the **Solo** function button to return to the standard view.

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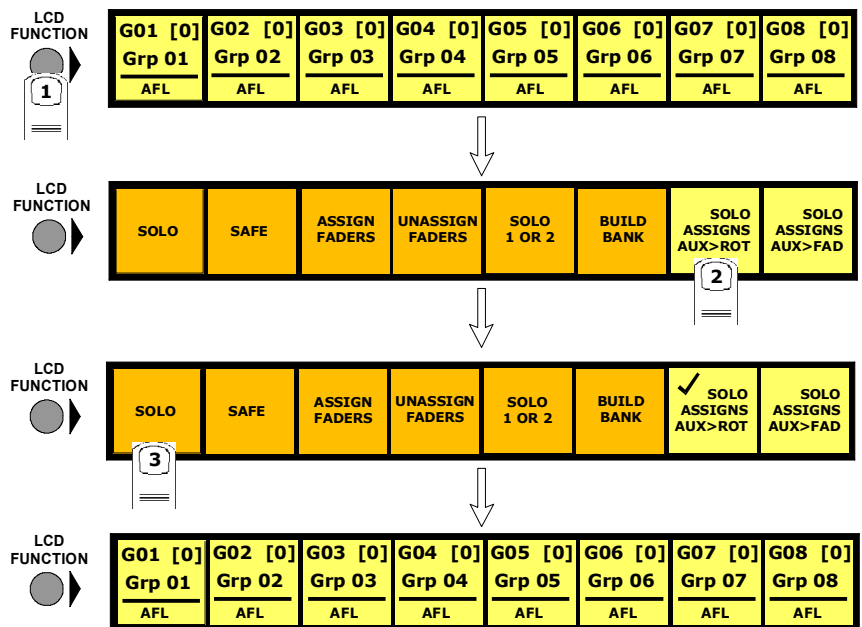
The contents of a Master Fader Bank can be customised at any time by adding or removing faders from it.
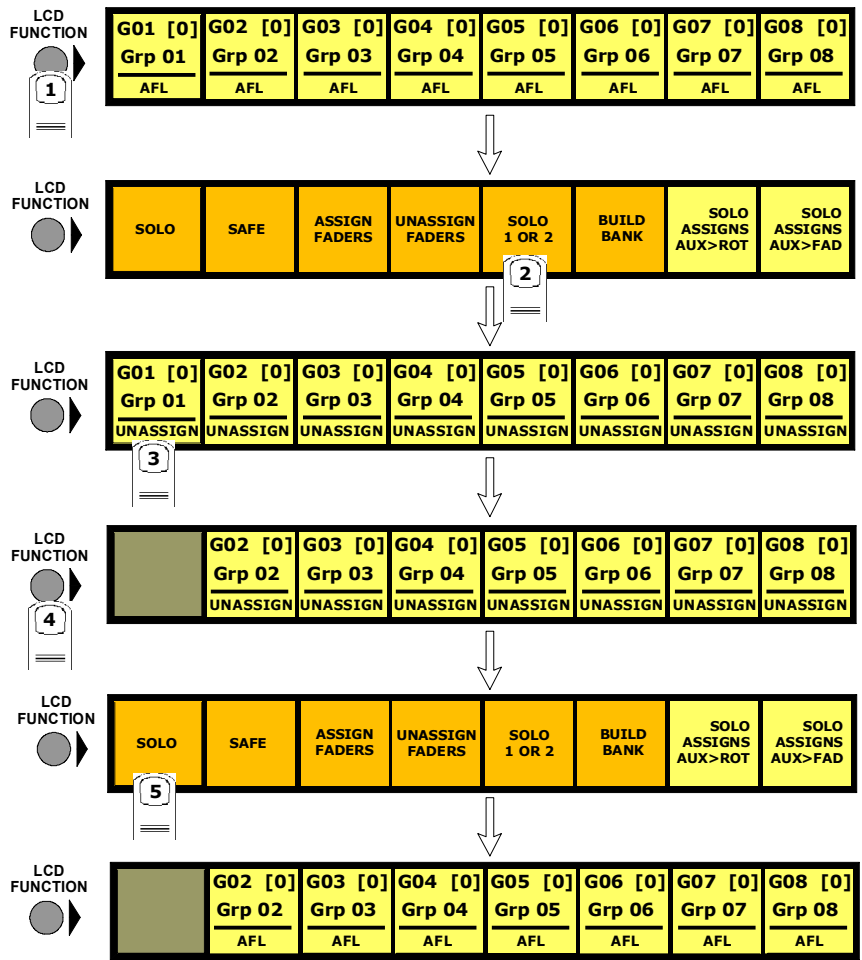
**To Assign Faders To Banks**

**1)** Press the **Master LCD Function** button for the relevant bank.

**2)** Press the **Assign Faders** button.

**3)** Press the **Master LCD** button for the Master fader that you wish to use.

**4)** Touch the on screen meter for the **Buss** that you wish to Assign or touch an **Input Channel** screen or **Control Group** display. If several LCD Assign buttons are pressed, they will be filled from left to right starting with the channel that is touched.

**5)** Press the **Master LCD Function** button to exit Assign Faders mode.

**6)** Press the **Solo** function button to return to the standard view.

## To Unassign Faders From Banks

**1)** Press the **Master LCD Function** button for the relevant bank.

**2)** Press the **Unassign Faders** button.

**3)** Press the **Master LCD** buttons for the fader(s) that you wish to Unassign.

**4)** Press the **Master LCD Function** button to exit Unassign Faders mode.

**5)** Press the **Solo** function button to return to the standard view.

| LCD FUNCTION | G01 [0] Grp 01 AFL | G02 [0] Grp 02 AFL | G03 [0] Grp 03 AFL | G04 [0] Grp 04 AFL | G05 [0] Grp 05 AFL | G06 [0] Grp 06 AFL | G07 [0] Grp 07 AFL | G08 [0] Grp 08 AFL |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

| LCD FUNCTION | SOLO | SAFE | ASSIGN FADERS | UNASSIGN FADERS | SOLO 1 OR 2 | BUILD BANK | SOLO ASSIGNS AUX>ROT | SOLO ASSIGNS AUX>FAD |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

| LCD FUNCTION | G01 [0] Grp 01 UNASSIGN | G02 [0] Grp 02 UNASSIGN | G03 [0] Grp 03 UNASSIGN | G04 [0] Grp 04 UNASSIGN | G05 [0] Grp 05 UNASSIGN | G06 [0] Grp 06 UNASSIGN | G07 [0] Grp 07 UNASSIGN | G08 [0] Grp 08 UNASSIGN |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

| LCD FUNCTION | | G02 [0] Grp 02 UNASSIGN | G03 [0] Grp 03 UNASSIGN | G04 [0] Grp 04 UNASSIGN | G05 [0] Grp 05 UNASSIGN | G06 [0] Grp 06 UNASSIGN | G07 [0] Grp 07 UNASSIGN | G08 [0] Grp 08 UNASSIGN |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

| LCD FUNCTION | SOLO | SAFE | ASSIGN FADERS | UNASSIGN FADERS | SOLO 1 OR 2 | BUILD BANK | SOLO ASSIGNS AUX>ROT | SOLO ASSIGNS AUX>FAD |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

| LCD FUNCTION | | G02 [0] Grp 02 AFL | G03 [0] Grp 03 AFL | G04 [0] Grp 04 AFL | G05 [0] Grp 05 AFL | G06 [0] Grp 06 AFL | G07 [0] Grp 07 AFL | G08 [0] Grp 08 AFL |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

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**Master Fader Banks** can also be built from scratch in the following way:

To Build A Bank

**1)** Press the **Master Fader Bank** button for the bank that you wish to build.

**2)** Press the **Master LCD Function** button for the relevant bank.

**3)** Press the **Build Bank** button.

**4)** Touch the on screen row, press a Bank button or touch an input screen for the **Bank** that you wish to Build. If a bank button is touched, the entire bank is copied to the current Master bank including the Bank Label. If a screen is touched then eight input or output channels or Control Groups will be assigned from left to right starting with the channel that you touched. On the master screen, output and Control Group rows wrap to the next row down.

**5)** Press the **Master LCD Function** button to exit Build Bank mode.

**6)** Press the **Solo** function button to return to the standard view.
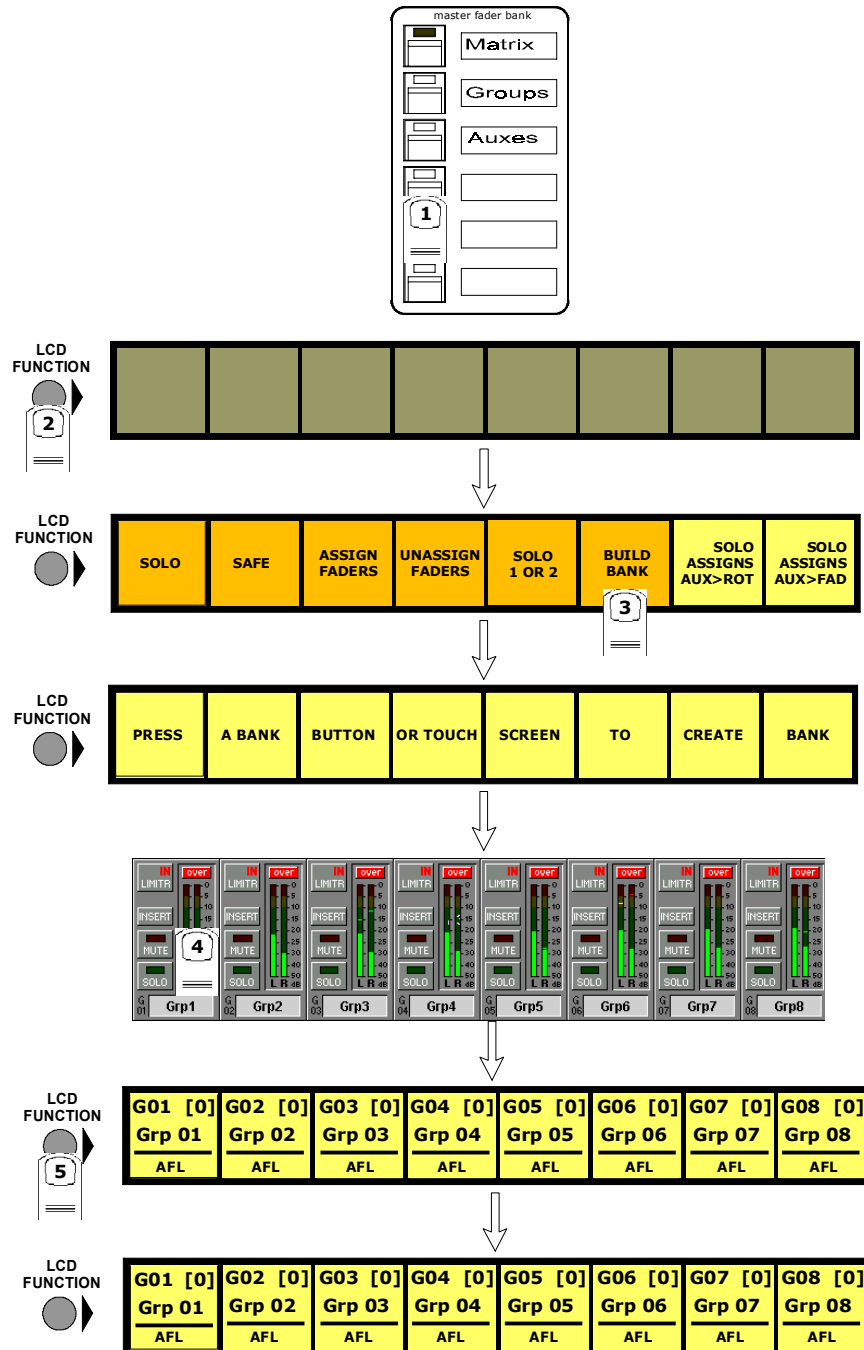
## 4.6 Snapshots

Any number of Snapshots of the entire current console settings can be stored and recalled using the Snapshots panel. (This is only limited by system memory)

These Snapshots can be absolute or relative to another snapshot.

The scope of the snapshot can be set by controller or by input channel.

To display the Snapshots panel, touch the Snapshots button at the top of the Master Screen.

Worksurface controls to fire the previous and next Snapshot can be found above and below the Master Bank buttons..



Opens snapshot scope panel

Opens snapshot timing panel

Undo previous firing (if enabled)

Puts snapshot under control of sequence duration in timing panel

Puts snapshot firing under control of incoming MIDI data on channel 16

Sends snapshot firing data to MIDI out

Inserts new snapshot after assigned (Green) snapshot

Makes assigned (Green) snapshot relative

Updates current (Highlighted) relative snapshot's master

Replaces current (Highlighted) snapshot

Replaces snapshot chosen after pressing button

Allows editing of multiple snapshots after selection

Allows changing of order of snapshot list

Press and select snapshot to rename

Press to open Renumber panel

Press and select snapshot(s) to delete

Fires previous snapshot in list

Fires previous snapshot in list

Allows snapshot firing by touching the screen

**Note**: The current snapshot appears in the panel as the highlighted (pressed) button.

If the current snapshot button shows an asterisk next to the number (eg. 001*) this indicates that a controller has changed since the snapshot was fired.

If a Snapshot name appears in **black** in the list it, is a **Master Snapshot** and if it appears in **red** and is indented in the list, it is a **Relative Snapshot**.

### 4.6.1 Master and Relative Snapshots .........................................

A Master Snapshot (black entry in the list) is an absolute snapshot of the current state of all the console controls.

A Relative Snapshot (red entry in the list) is a snapshot of the current state of all the console controls but the variable dB controls such as the fader levels, gains and auxiliary sends are stored as offsets from the previous Master Snapshot in the list. Therefore, if the level of a dB control is changed in the Master Snapshot the same control will change by the same amount in all of its relatives.

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If non-dB controls such as EQ frequency, pan and Q are changed in a Master Snapshot, only relatives that have the same settings will change with it and then to exactly the same value as the Master Snapshot.

Commonly, a Master Snapshot would be used as a starting point at the beginning of a performance and would contain all the basic routing and levels. The subsequent Snapshots would be Relative and would contain the changes that were required for each different part of the performance. If used in this way, any global changes that are made to the Master Snapshot will automatically update the relatives without changing each snapshot individually.

## 4.6.2 Storing a Snapshot ...........................................................

When a snapshot is stored all the console settings are saved but when the snapshot is recalled its effect can be limited to certain channels and controllers.

To store a snapshot of the current state of all the console controls, simply touch the Snapshot panel's **Insert** button and a new snapshot will be inserted below the currently assigned (green) snapshot. Alternatively, touch an unused button in the list and a new snapshot will be added to the end of the list, then type a name for the snapshot. The first Snapshot must always be a Master Snapshot.

To store a Relative Snapshot, you must first create a second Master Snapshot and this can then be changed to Relative by assigning the snapshot to the worksurface using the **Scroll Up/Down** buttons (it will then be in green text) and pressing the **Relative** button. The details of the snapshot should then be shown in red and indented in the list.

Once the Relative button is pressed, all subsequent snapshots will also be Relative until you choose to change them. All snapshots with the exception of the first Master Snapshot may be made Relatives or Masters at any time.

## 4.6.3 Recalling a Snapshot .........................................................

To recall a snapshot, simply touch the snapshot button you require. This will only work if the **Touch To Fire** button in the snapshots panel is pressed

The button will then remain highlighted until the next snapshot is recalled.

Alternatively, the buttons on the Worksurface above and below the Master Banks buttons may be used to fire the **Next** or **Previous** snapshots.

The **Undo** button is only enabled if the **Enable Undo** option button is pressed on the screen.

Snapshot firing can also be controlled by specific events on MIDI channel 16 (See Snapshots and MIDI).

## 4.6.4 Replacing a Snapshot ........................................................

To update or change a snapshot, set the console controls as required and then touch the **Replace** button followed by the snapshot that you wish to amend. A dialogue box will appear asking you to confirm the action.

There is also a button with an option to **Replace Current** snapshot and this can be used to replace the last snapshot that was fired.

## 4.6.5 Update Master .....................................................................

The **Update Master** button can be pressed at any time when the current (highlighted) button is Relative. This will copy the current console settings into the Relative Snapshot's Master but subtract the relative values from it first.

Therefore if you are working in a Relative Snapshot and realise that the changes you are making need to be applied to the other Relatives as well you can immediately press Update Master even though the Master is not the current snapshot.

## 4.6.6 Editing Multiple Snapshots ................................................

Individual controller changes can be written to several snapshots simultaneously using the **Edit** button. This does not replace the complete snapshot associated with the button.

When the Edit button is pressed, a panel pops up allowing **All**, a **Range**, or individual Snapshots to be selected by pressing their buttons.

If you press the **Select Range** button, touching the first and last snapshots in a range will automatically select all the snapshots in that range.
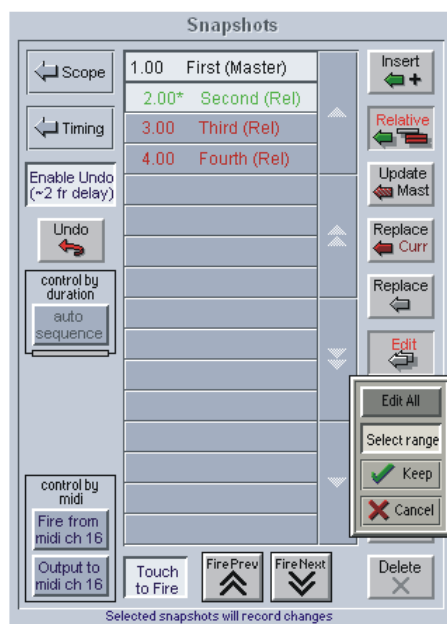


With the Edit button pressed, pressing the Snapshot buttons does not fire the snapshots, it only selects them for editing.

The selection may be changed by pressing and releasing snapshot buttons at any time during the operation of the Edit command, so a variety of controllers or routes may be changed in a variety of snapshots before completing the operation by pressing the **Keep** button. The Snapshots window may even be closed to gain access to other editable functions - In this case, a warning message will appear to advise the user that they are still in snapshot edit mode.

While any Snapshot button is selected, changes to any snapshottable controller, routing changes, and any changes to the Snapshot Scope controls can be written to every selected Snapshot, overwriting the previous settings.

Pressing the **Keep** button confirms the changes.

For example, if Snapshots 1 and 2 are selected and the input gain for channel 1 is changed, subsequent recall of Snapshots 1 or 2 will set channel 1's input gain to the new value.

Only channels which are altered while the Edit command is active will be affected and only in snapshots that are selected at the time.

If **Cancel** is pressed instead of **Keep**, all snapshots changed since the Edit button was pressed are returned to their original states, irrespective of which are currently selected. This allows any accidental changes to be undone. If there is not enough memory to store a copy of every edited snapshot, a warning is displayed and the **Cancel** button is disabled.

A change in any of the following settings can be copied to all selected snapshots in edit mode:

Snapshottable controllers

Routing

Relay outputs

Selection of MIDI Patches

Crossfade times

Control Group members

Gang members

All Channels and Exclude buttons in Channel Scope

**NOTE: Banks (Layout)** settings are excluded from the Edit operation, since it is likely that scrolling, etc. may be needed to access channels which need to be changed without wanting to change the stored layout.

**Changing Snapshot Banks** can only be done with the **Replace** command on one snapshot at a time. If you recall the Snapshot before changing the layout, all other settings stored in the Snapshot will remain unchanged.

Touching faders to add or remove channels to or from the scope is also copied to all snapshots selected for Editing, but note that the choice between add or remove depends on the currently displayed list.

**IMPORTANT NOTE**:

When editing the channel scope by touching faders, the Snapshot with the light horizontal line next to it whose Scope is currently being displayed will be updated whether it is selected for editing or not.

During the Edit command, all other scope controls do not affect the snapshot whose scope is being displayed, only those snapshots selected for editing.

## 4.6.7 Moving a Snapshot ...............................................................

If you wish the Snapshot list to appear in a specific order, you may change the order of the list by moving the entries. Touch the **Move** button and then touch the Snapshot that you wish to move. You then touch the point in the list where the snapshot should be moved to.

**Note: If a Relative Snapshot is moved above its own Master Snapshot in the list it will become Relative to the previous Master Snapshot, but only when it is fired. Therefore the list can be rearranged in any way without changing the data in the snapshots.**

## 4.6.8 Renaming a Snapshot .........................................................

To rename a snapshot, touch the **Rename** button, then the name that you wish to change and enter a new name using the keyboard.

## 4.6.9 Deleting a Snapshot ...........................................................

To delete a snapshot, touch the **Delete** button and then the Snapshot that you wish to delete. You will then be required to confirm the deletion.

**Note: You cannot delete the first Master Snapshot in the list if it has Relative Snapshots below it.**

## 4.6.10 Snapshot Undo ................................................................

If the button labelled **Enable Undo** is pressed, an undo button will appear and the worksurface undo button will be enabled.

When a snapshot is fired, a separate hidden snapshot of the complete console is stored before the fired snapshot has its effect.

If the Undo button is pressed, the hidden snapshot is fired using the same scope as the previously fired snapshot to undo its effect.

This sampling before firing can take up to two frames to store depending on console configuration and should therefore be switched off in situations where timing is important (eg when synchronising snapshots to MIDI)

**Note**: The Undo remains possible throughout any subsequent operation - changes to controllers will be undone along with the last fired snapshot if the Undo button is pressed, unless it is switched off or the console structure changes.

## 4.6.11  The Snapshot Scope Editor ...........................................
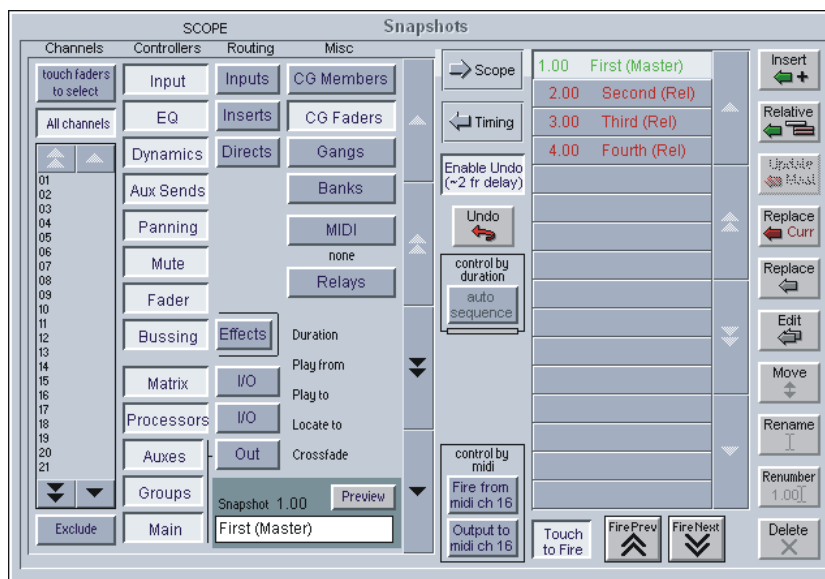


When a snapshot is stored all the console settings are saved but when the snapshot is recalled its effect can be limited to certain channels and controllers.

Pressing the **Scope** button expands the panel to display and edit the scope for one snapshot, indicated by a light band linking the snapshot list to the scope. The scroll buttons in the centre of the panel move the scope editing up and down the snapshot list.

If the **Preview** button is pressed the scope for the next snapshot in the list is displayed.

## 4.6.12 Channel Scope .......................................................................

The input channels which are included in each snapshot can be set by pressing the **Touch Faders To Select** button and touching the required faders which will be added to the list (touching a fader again will remove it from the list).

Press the **All Channels** button if the snapshot is to be global.

If the **Exclude** button at the bottom left of the panel is pressed then the snapshot will apply to all the channels which **are not** on the list.

**Note**: If both All Channels and Exclude are highlighted, the snapshot will have no effect on any input channels.

Channel scope is not applied when recalling Banks (layouts).

## 4.6.13 Controller Scope ................................................................

Each snapshot can have its own individual controller recall scope. Pressing the scope buttons includes the item in the scope.

### Controllers

The first eight Controller scope buttons relate to input channels only.

**Input** - digital trim, delay, label, input balance, MS decode, left right swap. **EXCLUDES Stereo switch.**

**EQ** - all controllers.

**Dynamics** - all controllers except stereo link.

**Aux Sends** - aux send level, on/off, pan, pre/post.

**Panning** - panner, divergence, sub level.

**Mute** - channel mute switch.

**Fader** - channel fader.

**Bussing** - buss routing buttons.

**Effects** - all FX controllers. **EXCLUDES FX configuration (Presets).**

**Processors -** IPC controllers.

**Matrix** - Matrix Groups - all controllers including EQ, Dynamics and label.

**Auxes** - Aux buss outputs - all controllers and label.

**Groups** - Group buss outputs - all controllers and label.

**Main** - Master buss outputs - all controllers and label.

### Routing

**Input** - Channel and Matrix input routing,  label, analogue gain and 48v switch.

**Inserts** - Input channel send and return routes, send gain, -10dB, pre/post switch and insert in/out.

**If Buss Controllers are included in the scope this also includes buss inserts.**

**Directs** -  Input channel send route, send gain, -10dB and pre/post switch.

**Matrix I/O** - Matrix Groups output and direct routing and -10dB switch.

**Processors I/O** - IPC output and direct routing and -10dB switch.

**Out** - If Buss Controllers are included in the scope this includes the relevant buss output routing and -10dB switch.

### Misc

**CG Members** - Control Group label and a complete list of each group's members.

**CG Faders** - Control Group faders only.

**Gangs** - Input channel gang members.

**Banks** - Each cue stores the current assignment for all controllers on the worksurface:

Fader banks currently assigned to input surfaces but not the names of these banks.

Which channel on each surface is assigned to EQ/Dynamics/Joystick controls.

Which rows of pans or auxes are assigned to rotaries.

The Master Fader Banks assignment.

**Note: Banks are not intended to reproduce the exact screen states. Channel views and other panels' visibilities are not stored or recalled.**

**MIDI** - Fires the MIDI Patch associated with the cue.

**Relays** - The sixteen red indicators below the Relay scope button represent the state of the relays which will be output when the cue is fired (**not** the current state). It is stored at the time the cue is recorded and can be edited by clicking on individual indicators with the trackball.

## Restrictions

**Important Note: The following features are not included in snapshots:**

**The input channel stereo switch.**

**Dynamics stereo link.**

**Talkback.**

**Channel Bank names.**

**Choice of Solo 1 or Solo 2.**

**Effects Preset selection**

## 4.6.14 Snapshot Timing ...............................................................

To automatically sequence the firing of snapshots:

**1)** Select the snapshots using the up/down arrows in the centre of the panel.

**2)** Press the **Fire Next After** button on the left hand side and enter a time in the boxes next to this button.

**3)** Activate the function by firing the snapshot or pressing the **Auto Sequence** button.

When this snapshot is fired, the next snapshot in the list will automatically be fired after the set time has elapsed and a red progress bar will show the time remaining until the snapshot is fired. Pressing the **Auto Sequence** button while the progress bar is moving will halt the process.

Each snapshot may also trigger **Play From, Play To** and **Locate To** timecode commands.

Select the required snapshot and enter a timecode value in the relevant box. Then activate the function by pressing the required button(s).

**Play From** does a Locate then presses Transport Play if not already playing.

**Play To** presses Transport Play if not already playing, and sets up an automatic Transport Stop when the **Play To** time is reached.

If **Play To** and **Locate To** are specified together in one cue, when the PlayTo time is reached, a Locate will be generated after the Transport Stop.

If **Locate To** is specified on its own, it simply does the Locate.

Any manual transport control cancels any pending Stops or Locates.
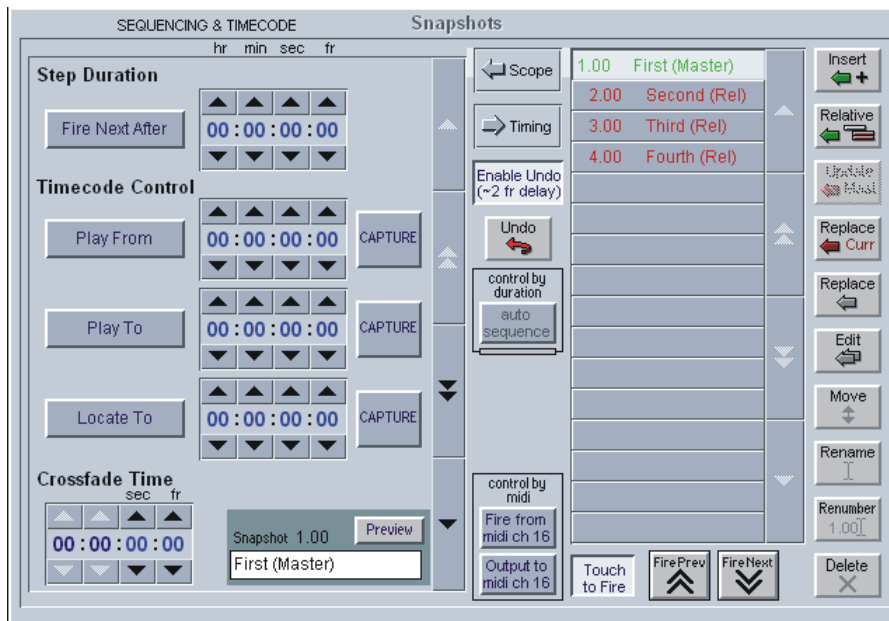


**Crossfades**

A crossfade time which is measured in frames can be applied to a Snapshot by adjusting the Crossfade Time in the Timing panel. Either use the Up/Down arrows or type a value into the box.

The Crossfade time is applied to faders, matrix sends and pans only (including sub level and LR/LCR blend). A value of zero switches it off.

### 4.6.15 Snapshots and MIDI .........................................................

There are two separate areas of MIDI control.

**1)** A snapshot can have a MIDI Patch attached to it, and will output that MIDI when fired. The MIDI Patch must be created separately in the **Setup Menu / MIDI Patches** panel. Switching the MIDI scope on pops up a panel prompting for a MIDI Patch button to be pressed, which will then be linked to the snapshot whose scope is currently displayed.

**2)** The firing of snapshots can be controlled by incoming MIDI messages on channel 16, and can cause these same messages to be output in addition to any MIDI snapshots included in (1) above.

The MIDI Input Control button allows the Snapshot system to respond to the following incoming MIDI messages:-

General Purpose Controller A (Controller 16); Values 0 to 127 will fire snapshots 1 to 128

General Purpose Controller B (Controller 17); Values 0 to 127 will fire snapshots 129 to 256

General Purpose Controller C (Controller 18); Values 0 to 127 will fire snapshots 257 to 384.

General Purpose Controller D (Controller 19); Values 0 to 125 will fire snapshots 385 to 510.

General Purpose Controller D (Controller 19); Value 126 will fire the previous snapshot in list.

General Purpose Controller D (Controller 19); Value 127 will fire the next snapshot in list.

MIDI Output causes the above messages 1 to 510 to be sent whenever a snapshot button is pressed. Previous and Next buttons do not output MIDI messages of their own.

### 4.6.16 MIDI Patches ...........................................................................

The console's main MIDI port is known as MIDI port T. If your D1 is fitted with the combination MIDI/GPI/GPO card it can also have 2 more MIDI ports A & B (Each card provides 16 extra MIDI channels - A1 to A16 on the first card and B1 to B16 on the second card.)

The port letter may be prefixed on any line of the MIDI Patches Editor before the MIDI channel number (separated by spaces). If the port letter is omitted, Port T is assumed. Touching the **MIDI Patch** button in the **Setup** menu opens the MIDI Patches panel which allows any MIDI program change, controller change, note on or off message to be recorded and played back manually or against timecode.
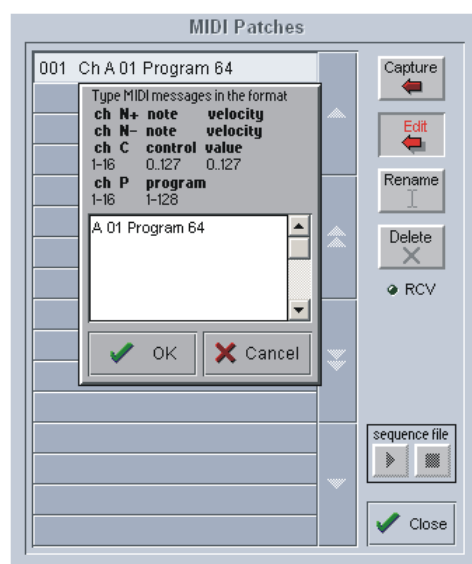


This panel is implemented just like existing ("controller") snapshots.

MIDI is received and transmitted via the timecode card. An indicator on the MIDI panel shows when any MIDI data is being received.

When the **Capture** button is pressed a text panel is displayed and any incoming MIDI controller or program change information is recorded. There is also a list of required syntax for entering the text manually.

The captured text may be edited or new text entered into an existing patch by touching the **Edit** button and typing. This text is  then compiled into the required stream of MIDI data when OK is pressed. Errors are reported at this stage.

The correct format for the messages is as follows:

**Note On**

The MIDI Port Number (Port T is assumed if there is no entry here)

A 2 digit MIDI Channel number between 01 and 16

N+ to indicate Note On

A note number between 0 and 127

A velocity value between 0 and 127

eg.    A    01    N+    60    127

**Note Off**

The MIDI Port Number (Port T is assumed if there is no entry here)

A 2 digit MIDI Channel number between 01 and 16

N- to indicate Note Off

A note number between 0 and 127

A velocity off value between 0 and 127

eg.    A    01    N-    60    127

**Program Change**

The MIDI Port Number (Port T is assumed if there is no entry here)

A 2 digit MIDI Channel number between 01 and 16

P to indicate Program Change

A program number between 0 and 127

eg.     A     01              P              127

**Control Change**

The MIDI Port Number (Port T is assumed if there is no entry here)

A 2 digit MIDI Channel number between 01 and 16

C to indicate Control Change

A controller number between 0 and 127

An equals sign (Optional)

A controller value between 0 and 127

eg.     A     01              C              11              =              64

The words Program and Controller may be used or just their initial letters (case-insensitive). The equals sign is optional.

Comments are not stored although anything on a line after a semicolon is ignored. The first message in the editor is used as the patch name on the button label but this may be edited.

When not capturing, editing, renaming or deleting, the patch buttons will output the stored MIDI data when pressed.

## MIDI Sequence Files

MIDI sequence files can be played out of ports A and B. They must be .MID files in format 0 (one track only) and are quoted in the MIDI Patches Editor as:

**<port>  file <filename>          eg.  A file test.mid**

A path can precede the filename, otherwise the current session folder is assumed. Only short filenames with a maximum of 8 characters and no punctuation are accepted.

This file is then downloaded to the card and starts playing when the MIDI Patch is fired. The Sequence File Start and Play buttons on the MIDI Patch panel then become effective. Press Stop to pause, then Play to restart from the same place or re-fire the MIDI Patch to play again from the beginning of the file. This remains possible until the file is played to the end or another Patch is fired with another sequence file for the same port. Other MIDI messages may be sent to the same port without affecting the sequence playback

MIDI Patches are stored in session files. The **New Session** panel has a Clear option for MIDI which deletes all MIDI Patches leaving an empty list.

**DiGiCo**

## 4.7 Macros

The 8 Macro buttons in the centre of the Master Section can be programmed to fire either single or multiple console functions.

Press the **Macros** button in the **Layout** menu on the Master screen or press the macro Assign button on the worksurface and the following panel will open:
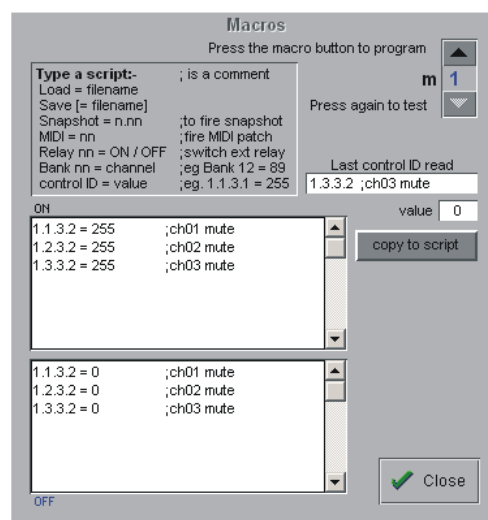


Press the worksurface Macro button that you wish to program or use the up down arrows to select a Macro button.

The panel displays two scripts for each button. The top script is what to do when the button is switched on, the bottom script when it is switched off. If either script is blank, the buttons LED comes on when pressed, off when released, and the same script will be fired the next time that button is pressed.

When a control is adjusted on the console, the resulting control ID and value is shown in the relevant boxes in the panel.

To assign the function to the Macro, position the cursor in the **ON** or **OFF** box according to which position of the Macro button you require to fire the function. This can then be copied to the Macro script by pressing the **Copy To Script** Button.

If you require multiple functions on one button, repeat the above procedure for the other controls.

If you require the Macro to include functions other than standard controllers, then the following messages can be manually typed into the message boxes.

**Note: Anything after a semicolon on each line is ignored, as are any commands which are not understood**

**Macro Commands**

**n1.n2.n3.n4 = value**

Four 1 byte numbers (0 to 255) separated by dots identifies a unique controller on the console.

See the Macro and GPI Scripts sections in D1Setup.rtf for a table of numbers.

*Value* is 0 to 255 for faders and rotaries, 0 (off) or 255 (on) for switches.

**Snapshot = *nn***

The snapshot numbered *nn* (eg. 1.00 is usually the first) in the current snapshot list is fired, if it exist.

**MIDI = *nn***

The MIDI Patch number *nn* in the current MIDI Patches list is fired if it exists.

**Load = *string***

The Load Session command is invoked to load the session file named in *string*.

**Save = *string***

The Save Session command is invoked to save the session in a file named in *string*.

**Relay *nn* = ON or OFF**

If one or more relay (GPO) cards are fitted, this switches the external relay on or off. *nn* is the relay number, 1 to 16 for the first card, 17 to 32 for the next, etc.

**Bank *nn* = *cc***

This assigns a block of eight input channels to one of the fader banks on the surface. *nn* is the bank number (1 to 6 on the first surface, 7 to 12 on the second, etc) and *cc* is any channel number within a block of eight, ie. 1 to 8 means the first eight channels, 9 to 16 means the next eight, etc. It is not possible for a bank to start on anything but an eight-channel boundary, ie. 1, 9, 17, etc.

## 4.8 Transport / Timecode Configuration

**When the D1 is used in typical live sound applications there will be no time related control systems (timecode) or motion control (tape transport) connected. Synchronisation and machine control does not need to be considered.**

This panel can be accessed by touching the **Setup** button on the Master screen and then touching the **Transport & Timecode** button.
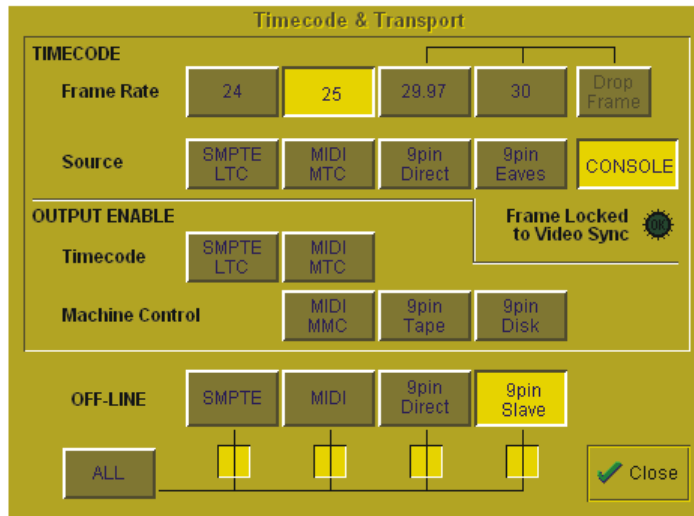


### Frame Rate

This must be set up for the frame rate used by your other equipment. You can select from four different basic frame rates, with a drop-frame option available for 29.97 and 30 fps.

### Timecode Source

You can choose the **Console** option to make the console generate the master timecode for the setup, or you can choose to make the console "chase" timecode which arrives at one of the external sockets - **SMPTE (LTC)**, **MIDI (MTC)**, or **9-pin**. These external sockets are located on the console rear panel.

The **9-pin Eavesdrop** option requires a special 9-pin cable (See technical manual for details). The option is provided for installations where the 9-pin connection runs between two other pieces of equipment (for example, a video machine and DAW), but the console is required to chase this timecode. 9-pin does not normally allow more than a single direct connection between two machines, but using the Eavesdrop cable, you can make the console "listen" to the timecode passing between two other machines, and to sync to and display this timecode on the worksurface.

**Note that if you are using 9-pin Eavesdrop mode, you cannot use any of the options for direct 9-pin connection.**

### Timecode Output Enable

Whether the console is operating as timecode master or deriving its timecode from another device, you can choose to route a timecode signal out from the MIDI (MTC) and/or SMPTE (LTC) sockets. If timecode is being received from another device it is regenerated before being routed to the output.

### Machine Control Enable

The console can only send Control signals if you have enabled a Machine Control output. This can be MIDI Machine Control (MMC) and/or 9-pin Disk or Tape. Note that you cannot output 9-pin control if you are using the Eavesdrop option to read timecode.

**MIDI Machine Control** has limited transport features, supporting only the Play, Record, FF, Rewind, Stop and Locate functions. 9-pin control supports Shuttle and Jog functions.

### Off-line Buttons

The configuration panel allows you to temporarily disable all timecode and transport control to any combination of outputs. The **ALL** button disables all timecode and machine control output - this is especially useful to prevent external machines trying to chase the console timecode.

### Video Sync Lock Indicator

By connecting a video or black/burst signal to the video frame sync input on the worksurface rear panel, you can provide an external frame sync for the timecode. If the console is acting as timecode master or regenerating timecode, the frame boundaries in the timecode are then locked to those on the incoming video signal. If the lock is operating, the green indicator on the panel lights up to indicate this.

## 4.9 Audio Synchronisation

**NOTE: If you are running an Optocore system, the console can only currently sync to Optocore at 48KHz therefore Optocore must be selected as the sync source - This situation may change in later versions of software.**

**If you are only using MADI connections, Master must be selected as the Audio Sync source.**

**When the D1 is used with only analogue signals connected to both inputs and outputs synchronisation does not need to be considered.**

The mixer will operate in a self contained manner, operated as master sync source, usually at 48KHz, see below for setting this. This will be the case even if some of the external equipment is in fact digital eg. digital delays, as long as their connections are analogue. From a system point of view this is the simplest mode of operation.

However as the D1 offers digital audio interfacing and therefore synchronisation must be considered, if this is to be used.

To ensure glitch-free audio, digital signals must be correctly synchronised using a "Word Clock" or "Digital Sync". The D1 console can act as Master, generating the word clock for other digital units in the system, or it can slave to an external digital sync input. External sync can be derived either from a dedicated sync unit, or from an incoming digital audio signal connected via an AES/EBU or MADI signal input.

The digital sync source will usually be set up when the console is installed, but it can be altered using the **Audio Sync** button in the **Setup Menu**. Pressing this button displays the Audio Sample Clock Sync control panel:
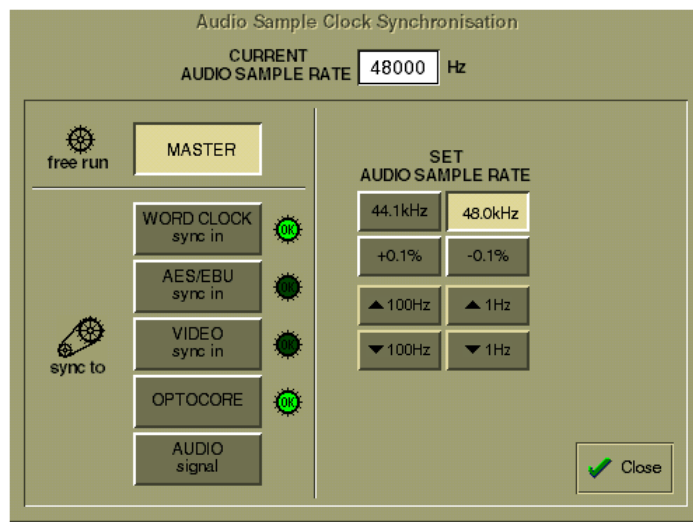


### 4.9.1 Internal Sync - Console As Master ....................................

If you choose to use the console as the master sync source, you can select a standard sample rate with the 44.1KHz or 48KHz buttons and the adjust it if necessary in steps of +/- 0.1% or +/- 100Hz and 1Hz.

### 4.9.2 External Sync ........................................................................

**WARNING!** Operators should be aware that it is normal for a misclocked or unclocked digital audio system to produce loud, random noises. This can be damaging to external systems, especially large PA systems. Take care to disable such systems until the digital sync has been properly established and proved to be stable.

When you choose to sync to an external source, the control panel will immediately try to find the sync source you specify, and display a warning if no sync can be found, as shown in the illustration below.

The presence of a valid sync source is indicated by the green OK lights, not by the button. If the selected sync source should disappear, this panel will automatically be displayed with the warning message.
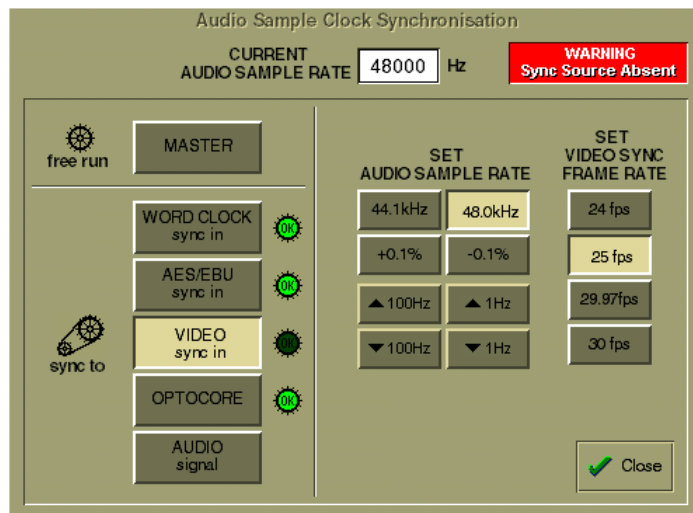
### 4.9.3 External Sync Sources ......................................................

#### Word Clock and AES/EBU

The worksurface rear panel has connectors for Word Clock and AES/EBU inputs, either of which can be used as the master sync source by pressing the appropriate on-screen button - note that the AES/EBU worksurface input is for sync only, and cannot be used for audio.

#### Video Sync

Also located on the worksurface rear panel is the Video Sync input. Although this carries only a frame boundary signal, the console can generate a full digital word-clock from it. This means that when you choose to sync to the video signal, you have to choose the sample rate you want to generate between frame boundaries, in just the same way as when the console is providing the master sync.

#### Sync to Audio Signal

Any of the console's digital audio inputs can be selected as sync source. If you choose the Audio Signal option in the Sync control panel, you can then choose any input signal group and number, in just the same way as the audio component of the signal is selected as the source for a console input channel. When you have selected a signal group, the panel displays a green "OK " light to indicate when a signal in that group carries a valid sync source.

Please note the Digico's experience shows by far the most trouble free master sync source will be an AES/EBU signal (from the AES sync input or audio input). Word clock is second best and video is the more difficult source to implement.

### 4.9.4 Sample Rate and Conversion ...........................................

The default sample rate for the console is set up at installation, and it is this sample rate which will be used when the console is operating as the master digital sync source. If the console is synchronised with an external digital audio unit, the sample rate used by the external unit becomes the master sample rate for the system.

#### Sample Rate Convertors

The AES/EBU Rack Modules are equipped with input Sample Rate Convertors (SRC). By default these are switched on at all times.

These allow the console to synchronise incoming digital signals of differing sample-rates, to avoid the glitching which occurs when signals with different sample-rates are mixed.

SRC also allows the same sample rate but different clock phase to be connected without problems (such as systems locked to external video sources).

SRC is also provided on the AES/EBU outputs. By default the outputs are locked to the console rate, however other rates can be preset to specific outputs, for example to allow a 44.1KHz output to a CDR from a console running 48KHz.

Switching of both the input and output SRC is not adjustable from the mixer screens but is configured in the socket setup file of the control computer, as this requires careful consideration of clocking issues within the system as a whole. For most users the default setup will work for the majority of applications.

# Chapter 5
# Effects and
# Insertable Processing Channels (IPCs)

## 5.1 Configure Effects

If The Effects and/or Processing Channel modules are not active, touch **Setup / Service / Configure Hardware** button to open the DiGiConfig program, select the console that you want to configure by pressing the relevant **This One** button, then tick the relevant boxes at the top of the panel and press **OK**.

The optional effects section provides up to 6 different effects modules.

FX1 is always a stereo reverb unit

FX2, 3 and 4 can be configured as reverbs or any of a selection of other effects.

FX5 and 6 can function as effects modules but can also provide Output Processing on stereo, LCRS or 5.1 output busses or Graphic EQ.

### 5.1.1 Selecting Effects .....................................................................

Touching the **Configure Effects** button in the **Setup** menu on the Master Screen opens the following panel:
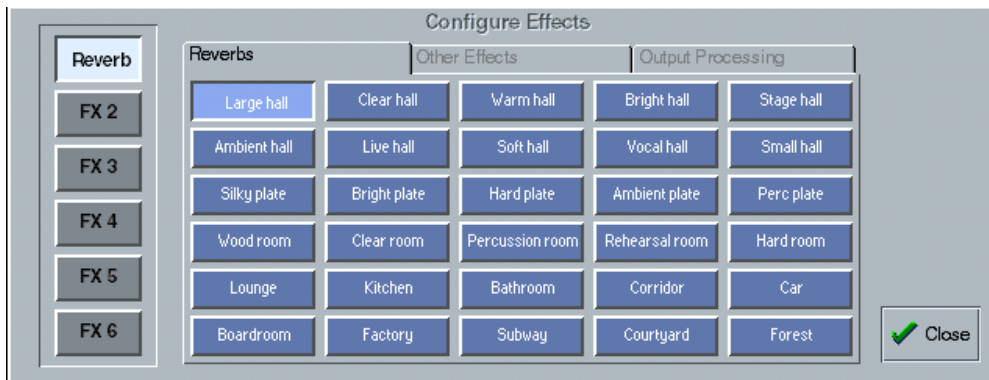


Touch one of the buttons on the left to select an effects module and assign an effect to it by selecting from the grid of buttons labelled with the effect names.

**Reverb (FX1)**

Selection of an effect for the first module labelled **Reverb** can only be made from the first page of 30 reverb effects.

**Other Effects (FX2, FX3 and FX4)**

Selection for modules 2, 3 and 4 can be made from a similar list of reverb effects but by selecting the tab labelled Other Effects there are further choices including delay, chorus flange and pitch shifters.
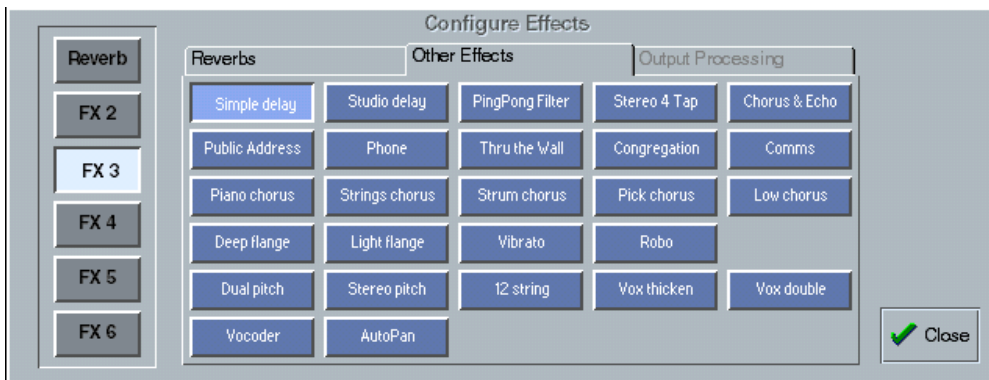


**Output Processing and Graphic EQ (FX5 and FX6)**

Selection for modules 5 or 6 can be from the Reverb or Other Effect lists but the Output Processing tab also becomes available and you may choose the type of signal that you wish to process or apply mono or stereo Graphic EQ.

The processing options are Stereo, LCRS, 5.1 or 7.1 or up to 12 mono Graphic EQs.
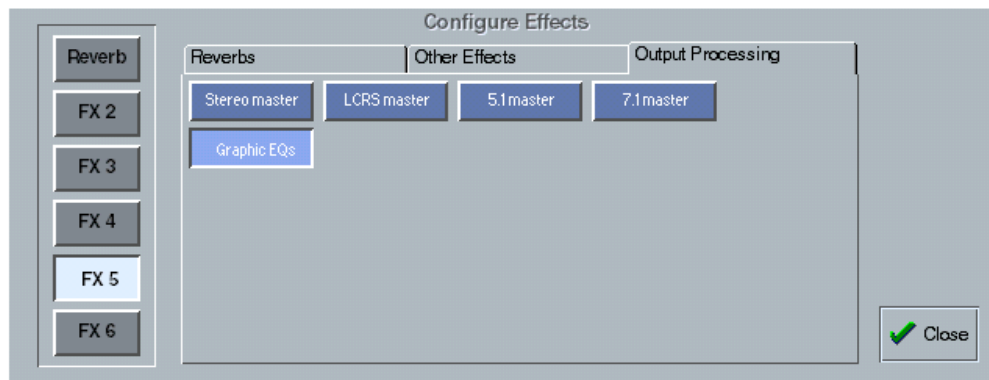


Output Processing consists of input and output gain, 3 band compression and limiting and 4 band EQ for each channel.

Graphic EQ consists of 12 independent 28 band EQ's.

## 5.1.2 Effects and Routing .............................................................

Signals can be routed to the effects modules from Direct Outputs, Insert Sends, Auxiliary Outputs and Group Outputs. An output routing Socket Group named Effects which contains the list of all the effects modules' inputs appears in the output socket routing panel.
In a similar way, the returns from the effects modules appear in a signal group named Effects in the input socket routing panel.
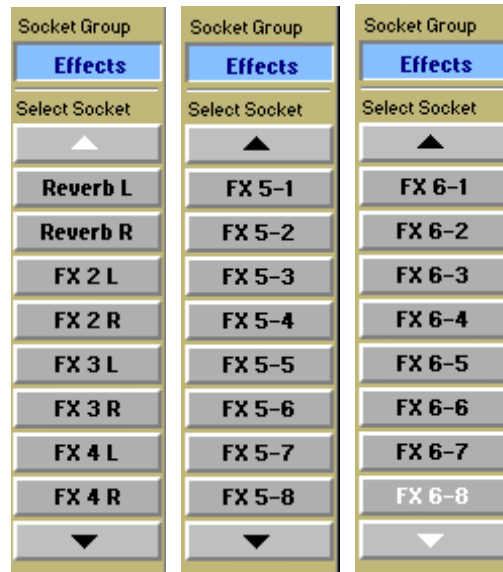


This group contains left and Right sockets for FX 1 to 4 and 8 sockets each for FX5 and FX6. Therefore FX5 and FX6 can be used for output processing on stereo or surround busses.

## 5.1.3 Effects and Auxiliaries ......................................................

Touch the relevant auxiliary bus on the Master Screen to open it and then touch the Routing box beneath the meter to show the output socket routing.
Select the effects socket group and then the output which you require eg Reverb L
**Note:** If the auxiliary is stereo, selecting Reverb L will automatically route the left and right signals to Reverb L and Reverb R.
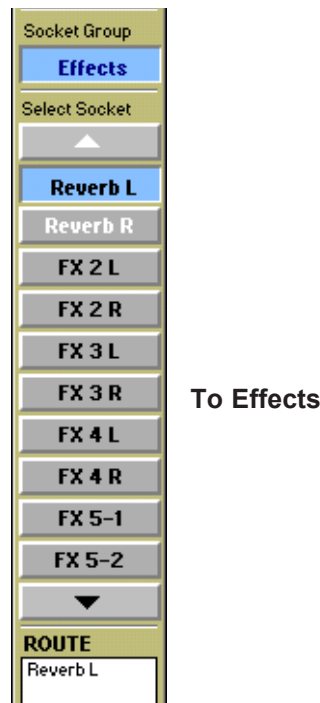


**To Effects**

The output of the Reverb module must then be monitored in a channel by opening the input routing screen, selecting the Effects signal group and then selecting Reverb L from the signal list. Touch the **Stereo** button to monitor Reverb L and Reverb R in the same channel.



**From Effects**
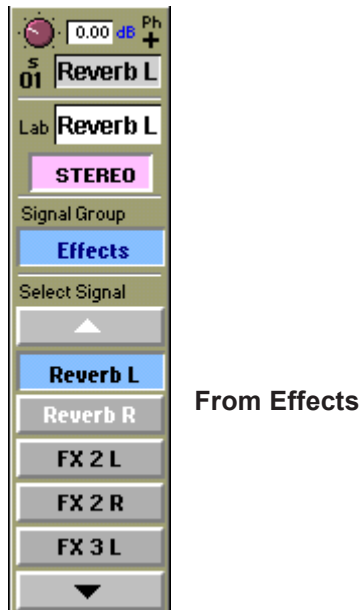
### 5.1.4 Output Insert .........................................................................

In the buss master routing panel there is an **Output Insert** facility that can also be used to route signals to effects and processing. This is particularly useful if you wish to use FX5 or FX6 to process the output of a buss.

In this situation the output should be routed to its normal destination but it will be diverted through the Effects module for processing.

Touch the **Send** button and select the input to the required effects module, then touch the **Return** button and select the output from the same module. Then touch the **Output Insert** button to switch it on.
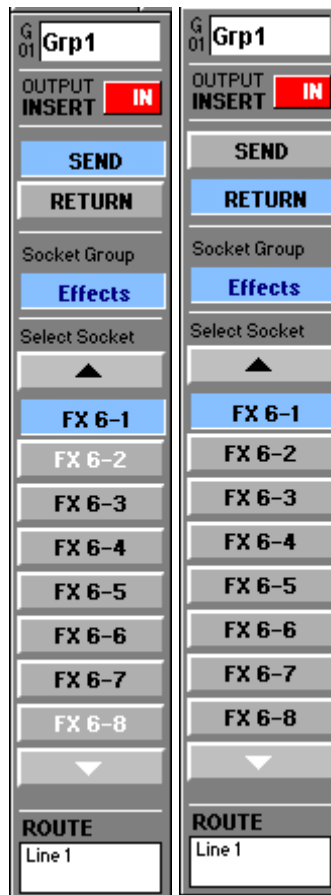
## 5.2 Effects Control

### 5.2.1 Effects Parameters ................................................................

Touching the **Effects** button in the Master Screen opens the following panel:
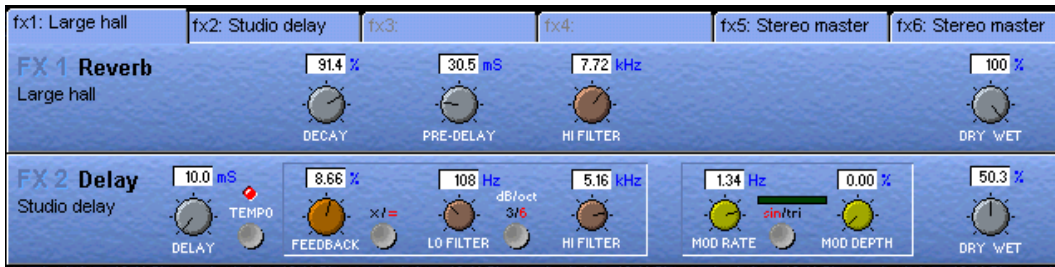


Touch the tabs at the top of the panel to select the effect that you wish to adjust. Normally, two effects modules are shown in the panel but the output processing module uses the whole panel on its own.

If the name on the tab is greyed out, an effect type has not yet been assigned **(See 5.1.1 - Selecting effects)**.

The effects parameters available will differ according to the type of effect chosen.

To adjust a parameter touch the on screen control that you wish to change and use the **Touch and Turn controls** on the right of the master worksurface.

They can also be adjusted by moving the trackball horizontally whilst holding down the left button.

### 5.2.2 Output Processing Parameters ...........................................

If you are using FX5 or FX6 as output processing modules the appearance of the Effects Control panel will depend on the size of the master that you have selected eg. Stereo, LCRS or 5.1

**Stereo Master**

Successive presses of the button in the lower left corner shows each of 3 sets of controls but the **Trim** and **In/Out** controls are global and appear on all of the panels.

**Input Normalising**

Provides Input **Gain** and **Phase** controls for the left and right signals.



**Output Normalising**

Provides Output **Gain** and **Phase** controls for the left and right signals.

**DiGiCo**

**Main Channels Dynamics**

Provides **Crossover** adjustment, **3 band compression** and **Limiting.**



Click here to change parameter view

Click here to view Threshold Attack Release Ratio

Click here to view Limiter Threshold or Release

Processing In/Out
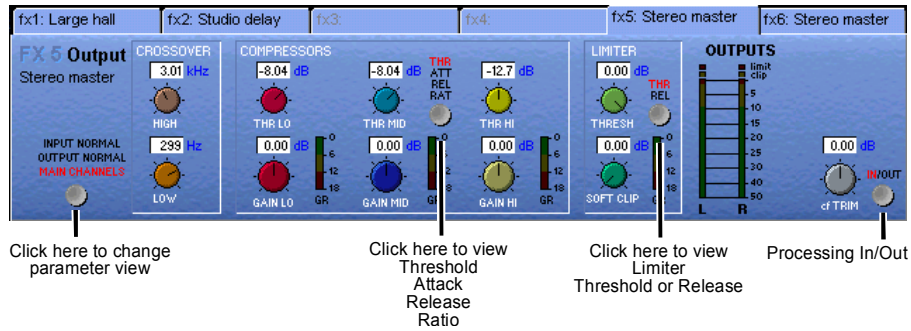
**Main EQ**

Provides **4 Band EQ** with adjustable Filter Types on Bands 1 and 4.



Click here to change Band 1 Filter Type

Set EQ Flat

Click here to change Band 4 Filter Type
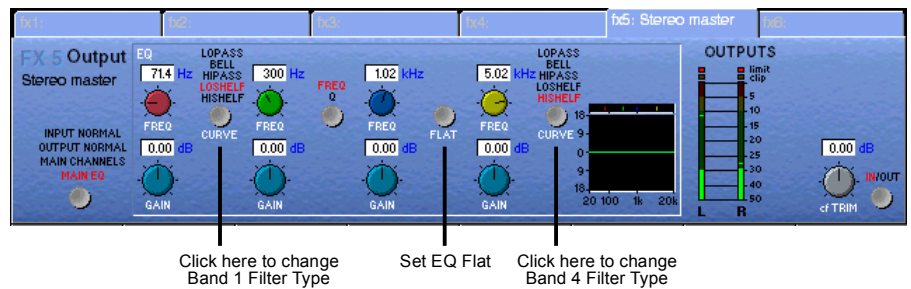
**LCRS Master**

The controls for an LCRS Master are the same as stereo (See previous section) but the Input and Output Normalising panels allow separate Gain and Phase control for each of the four signals.
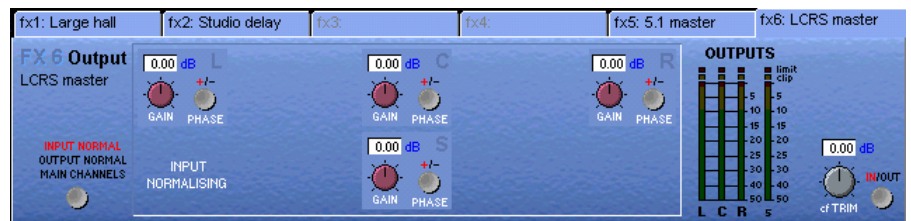


**5.1 Master**

A 5.1 Master provides separate Input and Output Normalising for each of the six signals and in addition the **Sub Channel** has its own Compressor, Limiter and 4 Band EQ.
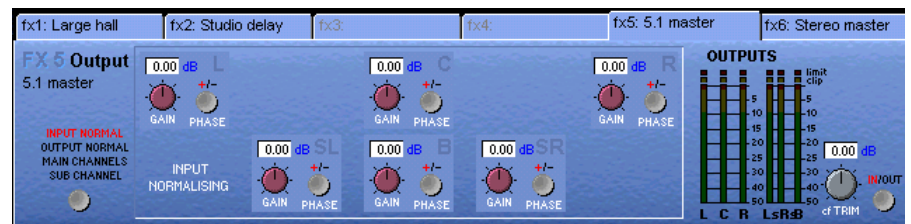


**Sub Channel Dynamics**
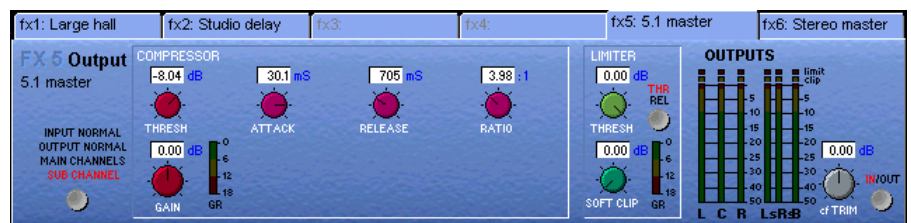


**Sub Channel EQ**
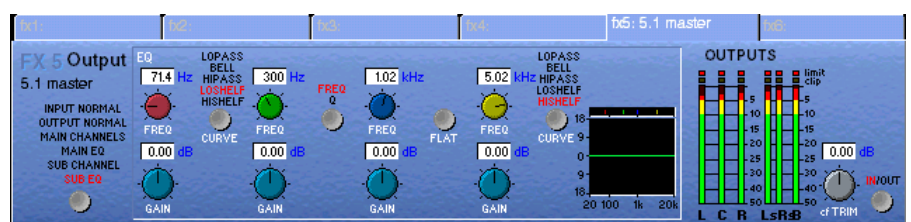
**Graphic EQ**

The controls for the 12 Graphic EQs are as follows:



Click here to link EQs in stereo pairs

Reset Flat

Click here to select which Graphic EQ to adjust (1 of 6)

Trim Control

Processing In/Out

Touch faders on screen to assign control to worksurface master faders
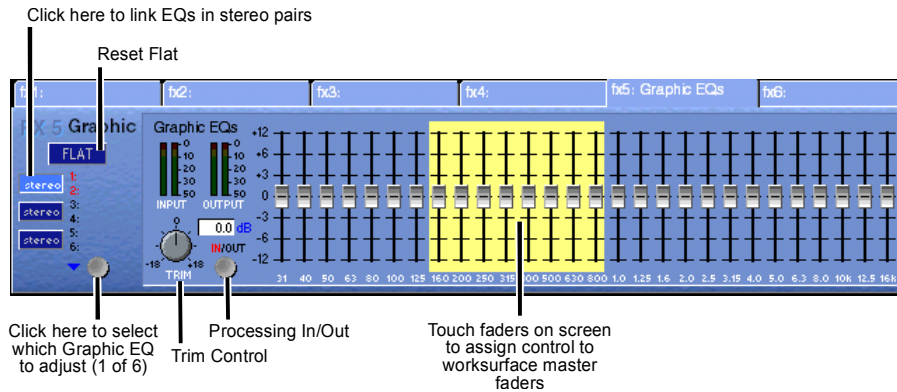
If a stereo source is being processed the EQs can be linked in pairs - 1 and 2, 3 and 4, 5 and 6.

When connecting channels or busses to the Graphic EQs each unit will appear in the Effects socket group as a different number.

If FX 5 is configured as a Graphic EQ the six units are FX 5-1, FX 5-2, FX 5-3, FX 5-4, FX 5-5 and FX 5-6.

If FX 6 is configured as a Graphic EQ the six units are FX 6-1, FX 6-2, FX 6-3, FX 6-4, FX 6-5 and FX 6-6.

# 5.3 Processing Channels

If you have activated the Processing Channels in the DiGiConfig program (Setup Menu / Service / Configure Hardware), some of the console's Channel Fader Banks will contain panels like the one pictured below. They will initially be labelled Pr in blocks of eight.



Trim

Mute
Solo
Label
Output Routing

Delay Time

Delay In/Out

Compressor Threshold

Compressor In/Out
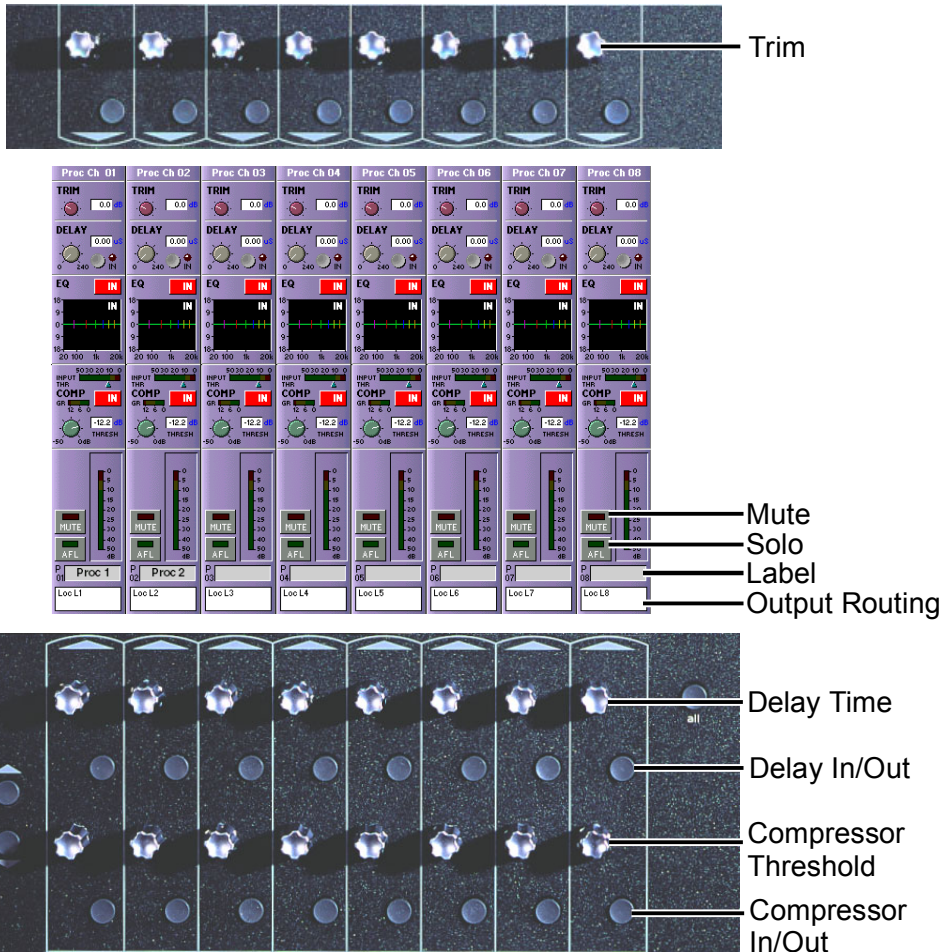
These channels provide Trim, Delay up to 510ms, Compression and 6 Band Parametric EQ and may be inserted into the signal path via Channel Direct Outs and Insert Points, Group, Auxiliary and Matrix Outputs or Insert Points

A Socket Group called **Processors** will be available in all of the routing panels which contains the inputs and outputs of these channels.

### 5.3.1 Inserting Processing Channels ........................................

To insert a Processing Channel on an output using an insert point.

Open the relevant Group, Auxiliary, Matrix or Master routing panel then:

**1)** Touch the **Insert Send** button to view the list of output socket groups.

**2)** Touch the **Processors** socket group button to view the list of sockets.

**3)** Touch the button relating to the **Processing Channel** that you want to use (Proc Ch 01/02 in the example below).

**4)** Touch the **Insert Return** button to view the list of input socket groups.

**5)** Touch the **Processors** socket group button to view the list of sockets.

**6)** Touch the button relating to the **Processing Channel** that you want to use (Proc Ch 01/02 in the example below).

**7)** Touch the **Output Insert In** button to turn it on.
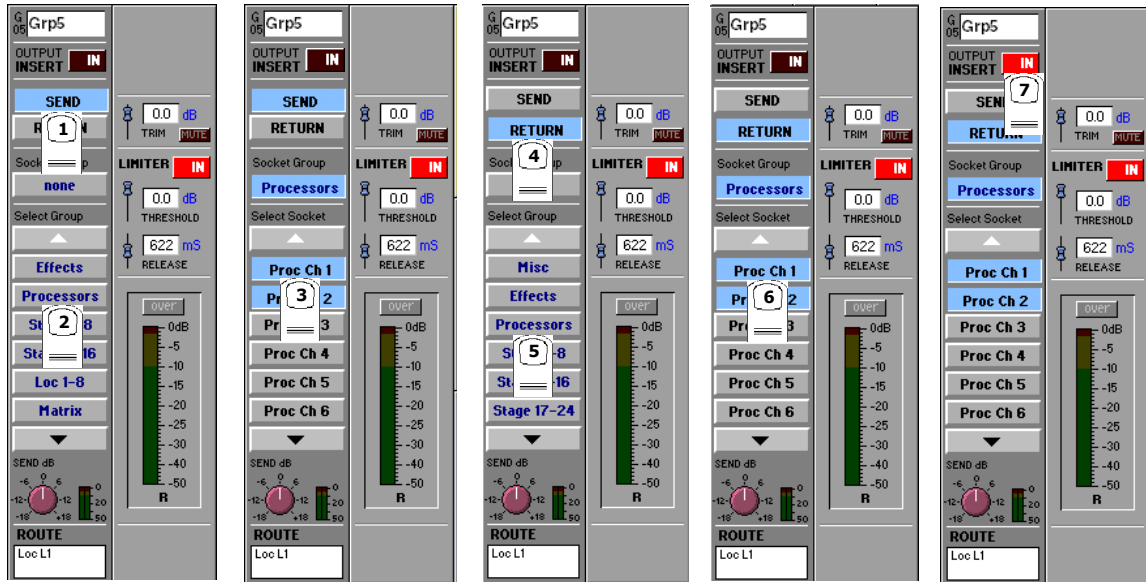


Alternatively, the signal may be sent to the Processing Channel via normal output routing and the Processing Channel can be routed to an output. In the example below, Matrix 1 output is routed to Processing Channel 1 and the processed signal is then routed to Local Line 1.

**1)** Open the output routing panel for the Buss, open the Processors Socket Group and touch the relevant Processing Channel button.

**2)** Touch the bottom of the Processing Channel's on screen strip to open the output routing window.

**3)** Touch the relevant output routing socket (Loc L1 in the example below).

**4)** Touch the bottom of the Processing Channel's on screen strip to return to the standard view.

**Note: With this method, the Group, Auxiliary or Matrix output can be routed to multiple Processing Channels and these channels can in turn be routed to multiple outputs as required.**
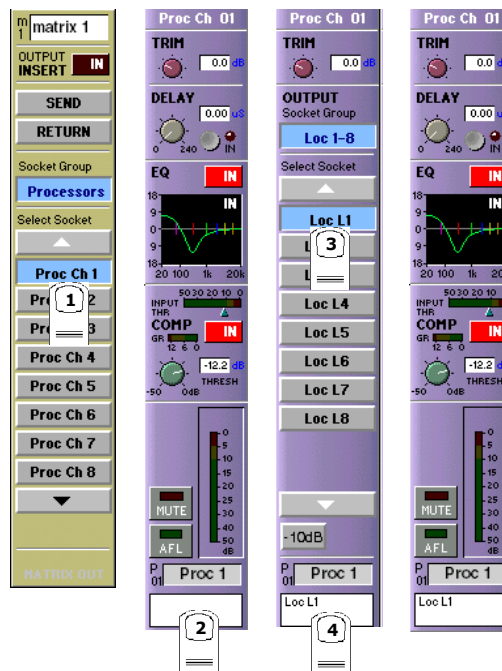
## 5.3.2 Processing Channel Controls ...........................................

Processing Channel controls can be accessed from the worksurface (See Diagram in Section 5.3) but by touching either the EQ graph or the word "Comp" on the screen, further parameters become available.

When the EQ panel is expanded, the 3 rows of rotaries and switches below the channel screen are assigned to the 3 rows of controls in the EQ panel.

When the compressor panel is expanded the first row of rotaries and switches below the channel screen is assigned to the row of controls in the compressor panel.
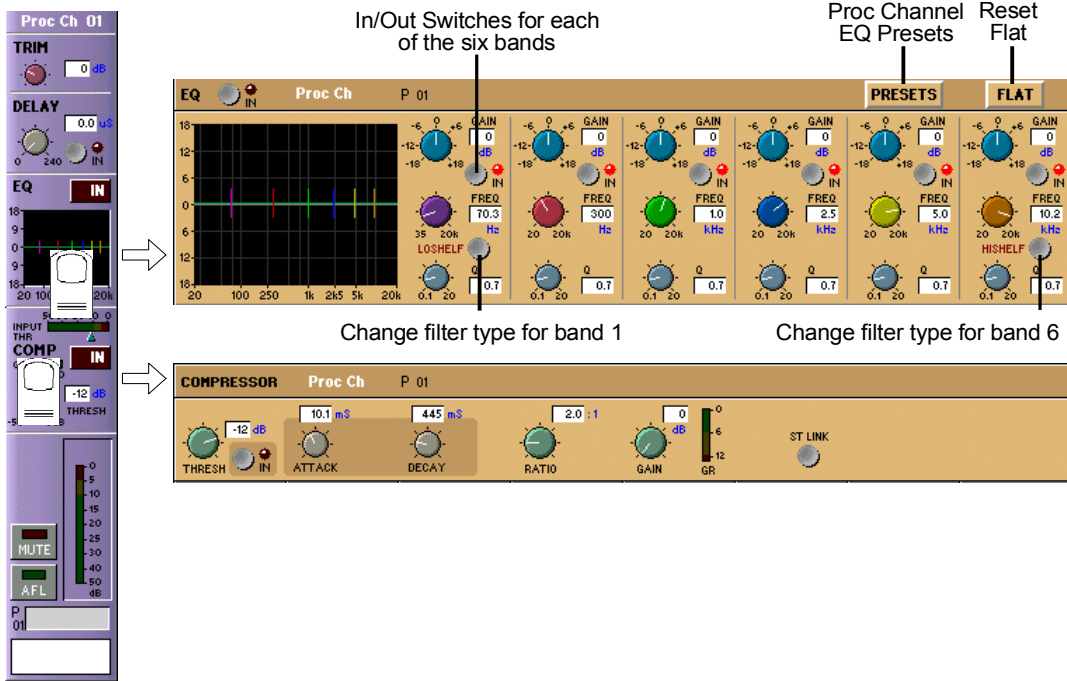


Touching the EQ panel **Presets** button opens the Processing Channel EQ library and this functions in the same way as standard Channel, EQ and Dynamics Presets.

DiGiCo
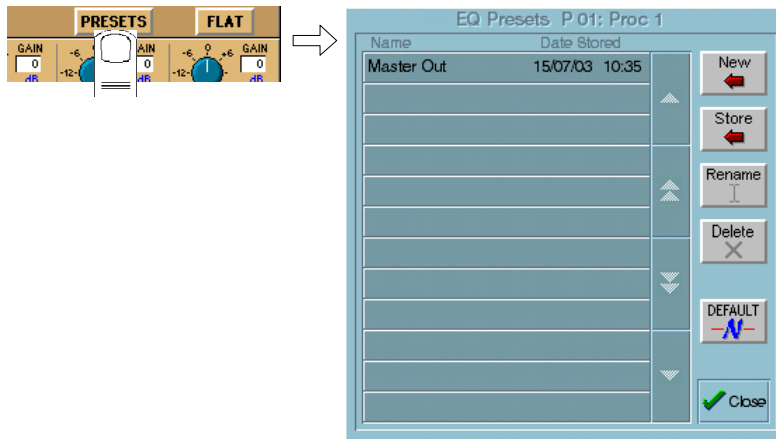
# Chapter 6
# Multiple Console Setups

## 6.1 FOH and Monitors Setup

Front of House and Monitor consoles (with 1 local rack each) may independently share input signals from up to 3 stage racks and have individual control of input gains with the use of Gain Tracking.

The local racks may be completely different but the sockets file on each console must contain identical entries for the shared racks.

The rest of the configuration must match the hardware of the actual console but the two consoles do not need to be identical.
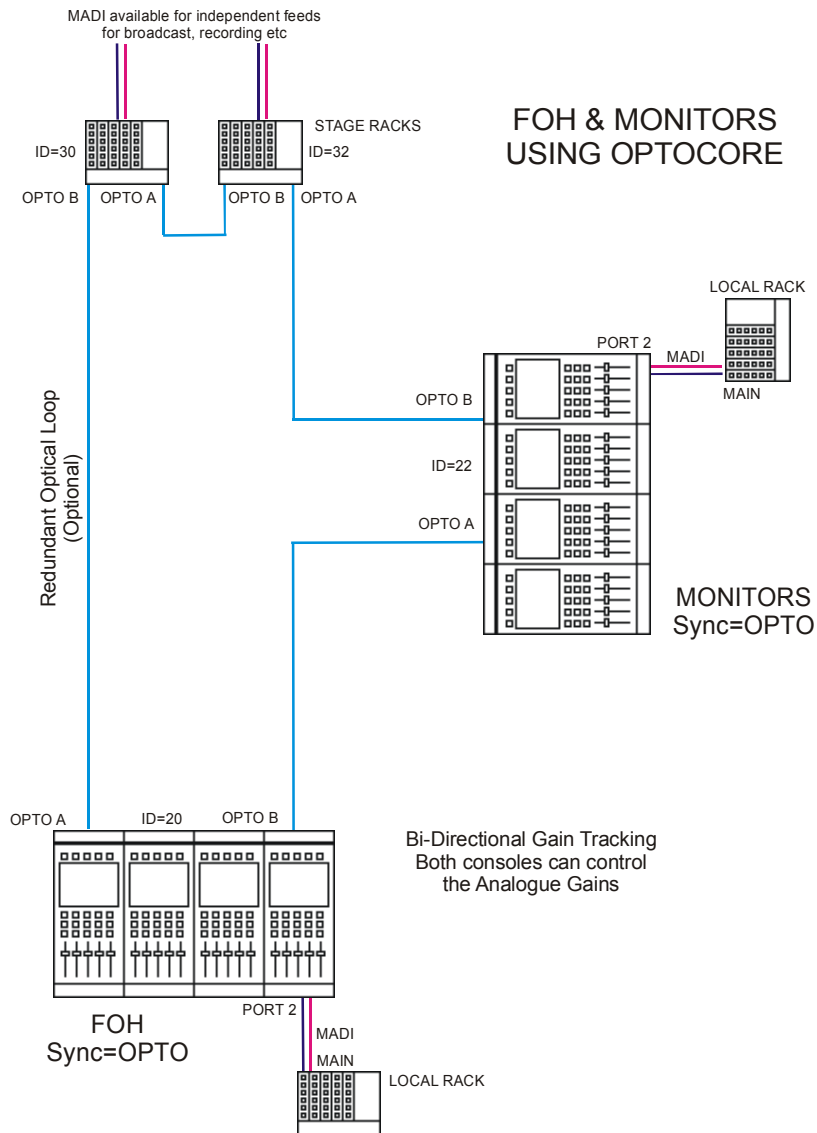


To set up the hardware configuration open the **DiGiConfig** program in the **System / Service / Configure Hardware** menu. D1 software will automatically close to enable configuration changes.

Select all the consoles in the rig (**FOH Main** and **MON Main**) and then select the console that you are configuring by pressing the **THIS ONE?** button. You can check the configuration by pressing the **EDIT Details** Button but clicking **OK** will confirm the setup and return to D1 software. Repeat this process for the other console.

**Note: Both consoles should have Optocore selected in their Setup / Audio Sync panels.**
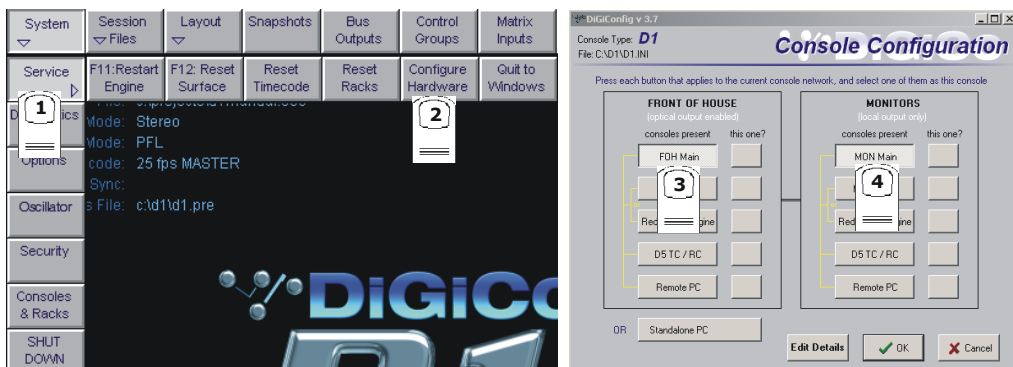
The following configuration details will have been created:

FOH Console Details                                                    Monitor Console Details
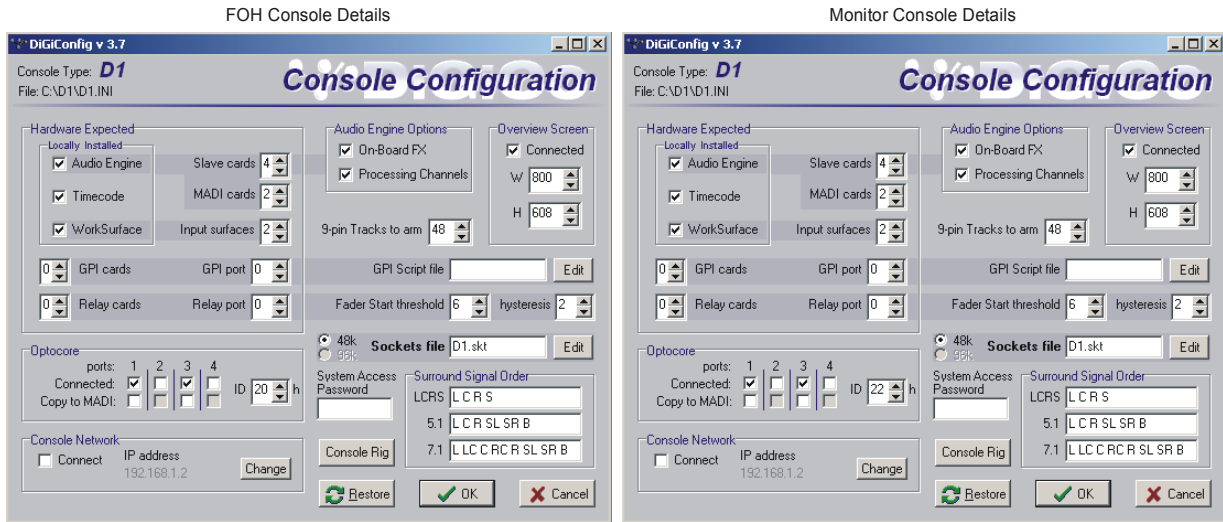


Note that the Optocore IDs are 20 (FOH) and 22 (MON). In this example, other details are the same but this is not necessarily always the case.

**MADI Connections**

If the consoles are to be connected via MADI, the setup would be as follows but Gain Tracking would only be unidirectional with the FOH acting as Master and the Monitor console tracking the changes.

**Note:** This configuration requires a Word Clock connection from the FOH to the Monitor console. The FOH console should be set to Setup / Audio Sync = Master and the Monitor console to Setup / Audio Sync = Word Clock.

The recommended connection between the Monitor console and Stage Racks is a single MADI OUT from each Stage Rack's AUX MADI connected to the console's MADI 1 IN for Stage Rack 1 and MADI 3 IN for Stage Rack 2.

If both MADI INs and OUTs were connected to the Monitor console then the console could take control of the racks' analogue gains when the **Full Connect** procedure took place. This is potentially confusing as, in this situation, the FOH console would no longer have control of the racks' analogue gains as only one console can be the "master" for the gains when connecting via MADI.
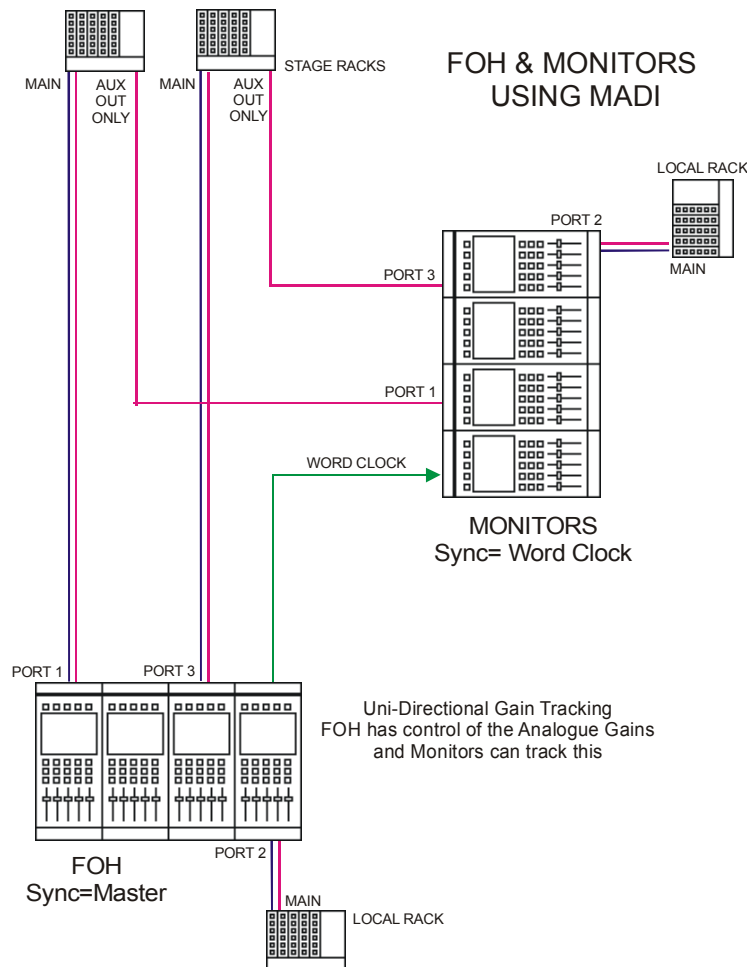
### 6.1.1 Gain Tracking Settings ......................................................

With the Optocore connection, Gain Tracking can be bidirectional. If either console adjusts the analogue gain, the other console can compensate for that change by applying an opposite digital trim. Each Input Channel has a **Track On/Off** switch next to the **Digital Trim** control. This is controlled by touching the screen in the area of the switch and using the worksurface phase button beneath the gain control. If it is switched off, the Analogue Gain and Digital Trim are completely independent but if it is switched on for both consoles, any change in the Analogue Gain by either user is compensated by an opposite Digital Trim. This means that the overall level remains the same on both consoles when the Analogue Gain is adjusted.

Gain Track Off
Analogue Gain
and Digital Trim
independent



Gain Track On
Digital Trim
compensates for
changes in
Analogue Gain
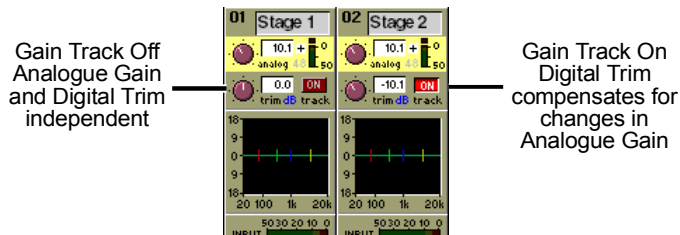
If the system has been defined as consisting of more than one console, the **Consoles & Racks** panel will automatically open on boot up or load session. The panel can also be opened from the **System** menu.

Gain Tracking must be activated by pressing the **Enable Gain Tracking** button at the bottom of the **Consoles and Racks** panel.
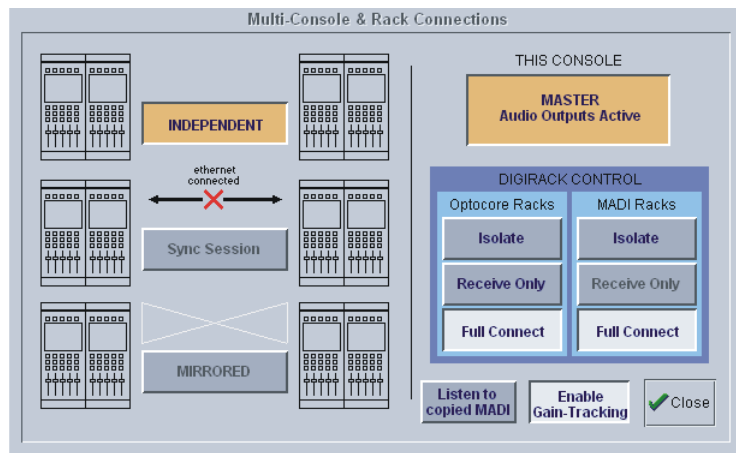


The initial state will have no connection between the devices and the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

In this state, any gain adjustments made on the console will have no effect as the racks will not be receiving any data.

If you go to **Receive Only** then **Full Connect** you can join the rack sharing without making any gain changes. If you are responsible for the analogue gains, it is likely that you will want to go straight to **Full Connect** after load session or boot up.

**Options are:**

**Isolate** where the console will not communicate with the racks and therefore any adjustment of input gain or +48V switch will have no effect on the rack settings.

**Receive Only** where the console will receive the rack's existing settings but will not be able to control the gain etc on the racks.

Receive Only
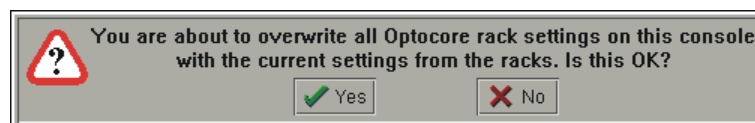


**Full Connect** where the console will send its settings to the racks and change them accordingly.

Full Connect
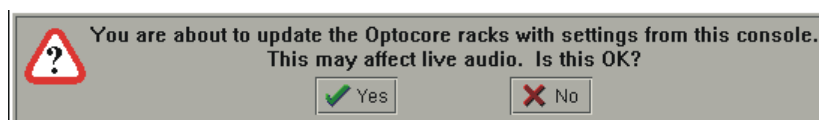


### 6.1.2 Gain Tracking Procedures ...............................................

The suggested setup for two consoles which are sharing the same racks is as follows:

**a) One operator will be responsible for adjusting the analogue gains on the racks (Recommended):**

**1)** One console should fully connect to the racks using the **System / Consoles and Racks** panel's **Full Connect** button for the Optocore racks.

**2)** The operators should agree on and set a level of analogue gain that provides enough headroom for the required application.

**3)** The second console should connect to the racks in **Receive Only** mode to ensure that it doesn't send its own current gain levels to the racks.

4) Gain Tracking should be switched on for the console that is in **Receive Only** mode consoles for all the channels that are being shared.

**5)** Both operators should use their own console's digital trims to adjust their overall operating level from this point onwards.

If the analogue gains need to be changed, only the console that is in Full Connect will be able to do this but the second console will be not be affected by these changes as it has its Gain Tracking switched on.

**b) Both operators want to be able to control the analogue gain on the racks:**

**1)** One console should fully connect to the racks using the **System / Consoles and Racks** panel's **Full Connect** button for the Optocore racks.

**2)** The operators should agree on and set a level of analogue gain that provides enough headroom for the required application.

**3)** The second console should connect to the racks in **Receive Only** mode to ensure that it doesn't send its own current gain levels to the racks. This console may then do a **Full Connect** to the racks.

**4)** With both consoles in **Full Connect**, Gain Tracking should be switched on for both consoles for all the channels that are being shared.

**5)** If either operator changes the analogue gain there will be no overall level change on either console as the digital trims will always compensate for the change in analogue gain.

**Note: If either operator wishes to change the analogue gain and not have their own console's digital trim compensating, they should temporarily switch off Gain Tracking on the required channel, make the gain change and then switch gain tracking back on again.**

## 6.1.3 Gain Tracking and Snapshots ............................................

In a FOH and Monitors system, a great deal of care must be taken if analogue gains are to be changed with snapshots. There are a number of methods of doing this but as the following points illustrate, there are several things to consider.

**Note: Analogue gains are included in the snapshot Input Routing Scope and digital trims are included in the Input Controller Scope.**

It is intended that one console will not have analogue gains in any of its snapshots' scopes. This prevents it from sending any rack commands at all and therefore it cannot change analogue gains with snapshots.

A similar situation could be created by making the console **Receive Only** for rack control but this will also prevent manual analogue gain changes.

In either case, the other console is then in complete control of snapshot gain changes.

When a session is loaded it starts in **Isolate**, so if you go to **Receive Only** then **Full Connect** you can join the rack sharing without making any gain changes. If you are responsible for the analogue gains, it is likely that you will want to go straight to **Full Connect** after load session.

Subsequently, both consoles can be in **Full Connect** at all times; this way if either operator spots an over (or under) they can manually adjust the analogue gain on either console and if **Gain Tracking** is on for both consoles the balance will not be disturbed.

**Note**: Problems may occur if both consoles are using snapshots and they have digital trim changes in their snapshots.

In this situation, snapshots must be stored at the same time on both consoles so that the analogue gain changes on the controlling console will be reflected in a stored digital trim level on the other console which is recalled with the firing of the snapshot.

The console that is not controlling analogue gains should normally have Gain Tracking switched on to enable its digital trims to compensate for the other console's analogue gain changes. This system will work correctly but if the digital trims are subsequently changed with an independent snapshot then the automatic adjustment may be overridden and unanticipated overall levels may result.

**Suggested methods:**

**1) Do not change analogue gains with snapshots from either console.**

This is the simplest method and involves removing **Input Routing Scope** from all console snapshots.

Both consoles can be in **Full Connect** so that either operator can adjust analogue gains manually.

Gain Tracking can be switched on for both consoles to ensure that neither is affected by manual gain changes that are made by the other.

Digital trim changes can be made manually or in snapshots on both consoles as these changes are completely independent of the other console and cannot affect it in any way.

**Note: The drawback of this method is that by removing Input Routing Scope from all console snapshots, the input socket selection cannot be changed with snapshots.**

**2) Only change analogue gains with snapshots from one console.**

If there is a requirement to change input socket routing and/or analogue gains with snapshots then only one console should control the gains.

The second console should have either:

a) **Input Routing Scope** removed from all of its snapshots - this assumes that there is no requirement to change input socket routing with snapshots.

**OR**

b) It should be in **Receive Only** for rack commands so that it cannot send its own analogue gain changes but can still have **Input Routing Scope** on and therefore change input socket routing with snapshots.

Gain tracking should be switched on for the second console so that unforeseen gain changes on the first will not affect its overall balance.

Gain tracking may also be switched on for the first console but this is not really necessary as the second console will not be controlling the analogue gains at all.

When the first console stores a snapshot that will change analogue gains, the second console should then store its own snapshot that reflects the required digital trim settings to compensate for that change. These snapshots should then be fired at the same time (approximately) during the show.

**Note: The most important aspect of this procedure is the coordination of snapshots between the two consoles. It is not advisable for the two operators to store snapshots independently of each other - they must both store snapshots at the same time.**

## 6.2 Redundancy and Mirroring

### 6.2.1 Redundant Optical Loop ....................................................

If an additional Optocore cable is connected to complete the loop between all connected devices, the redundant cable will ensure that a single break in the Optocore connection will not result in a loss of function.

This applies in single or multiple console operation.

### 6.2.2 Redundant Mirror Console or Engine ...............................

The following information refers to a Redundant Mirror Console but the setup for a Redundant Engine is identical.

The significant difference between the two situations is that a Redundant Engine only provides console control using a conventional computer monitor and a keyboard with trackball. With a Redundant Console, full worksurface control is possible.

The Mirror console is normally connected to the console and stage racks with optical fibre cables and two 5 metre BNC MADI cables are connected to the auxiliary MADI port on the local Rack.

An Ethernet Crossover cable (**not a standard CAT5 cable**) is also connected between the Main console and Mirror consoles or both devices are connected to an Ethernet switch if some form of Remote control is also used with the system eg. a Remote PC running the console software.

In the unlikely event that the Main console's audio engine fails, audio is automatically switched to the Mirror console without any interruption in the program material.

The Mirror console can be set to mirror the Main console's settings and therefore, in the case of loss of worksurface control on the Main console, the Mirror console's worksurface can be used to perform any function.

If the console's audio engine function is recovered then the operator can transfer audio processing back to the main console at any time with the press of a single screen button.

**NOTE: The most important aspect of the connection system is that the optical fibre cables are always in a strict Port A to Port B configuration. Connecting any device's A port to another device's A port may result in a malfunction of the system. The same applies to B to B connections. If your system has more devices simply continue with the A to B rule.**

**When using optical connections, the Main and Mirror consoles should both be set to OPTOCORE sync in the Setup/Audio Sync panel on the Master Screen.**

Stage Racks should always be next to each other in the chain so if you were connecting a third rack into the system below, it should be positioned between Stage Rack 2 and the Mirror console.

In this example there are 2 consoles with 1 local rack sharing signals from 2 stage racks:

When the consoles have been connected and started their **Sessions** must be **Synced** using the **SYNC CONSOLE** function on the **Consoles & Racks** panel. There are also options to **Sync Sockets Files** and **Presets.**
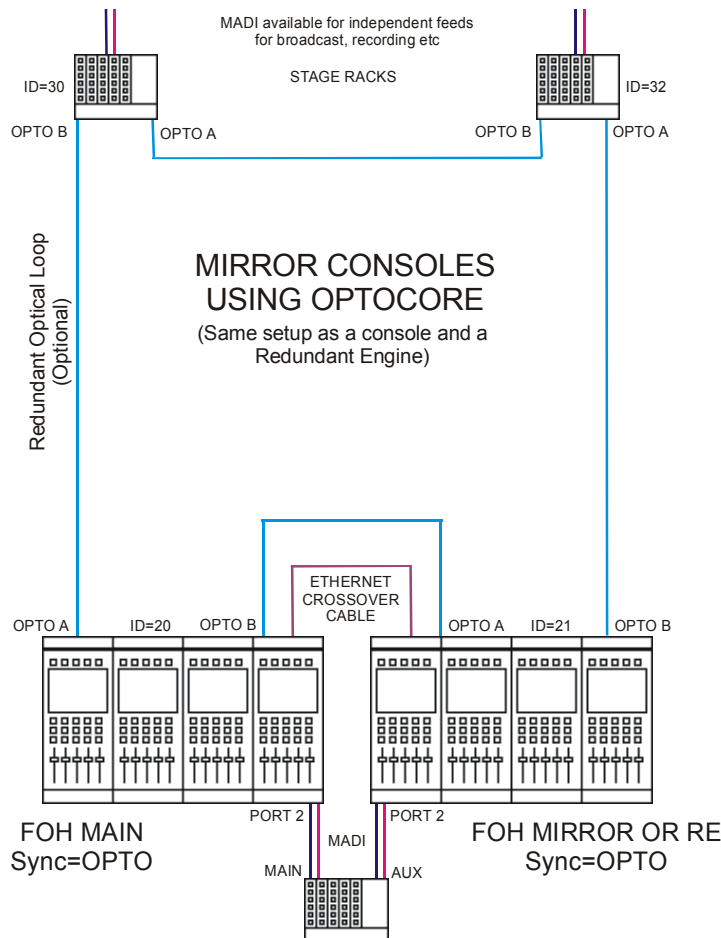
Having ensured that the consoles are identical in both hardware and software, run the **DiGiConfig** program in the **System / Service / Configure Hardware** menu. D1 software will automatically close to enable configuration changes.

Select all the consoles in the rig (**eg. FOH Main** and **FOH Mirror**) and then select the console that you are configuring by pressing the **THIS ONE** button. You can check the configuration by pressing the **EDIT Details** Button but clicking **OK** will confirm the setup and return to D1 software. Repeat this process for the other console.
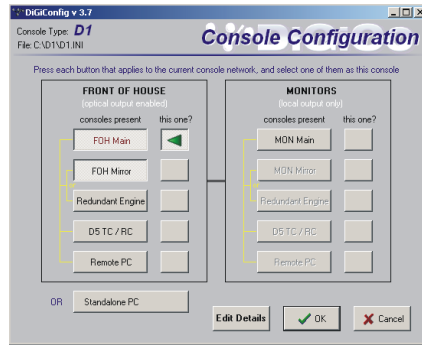


| FOH Console Details | Mirror FOH Console Details |
|---|---|
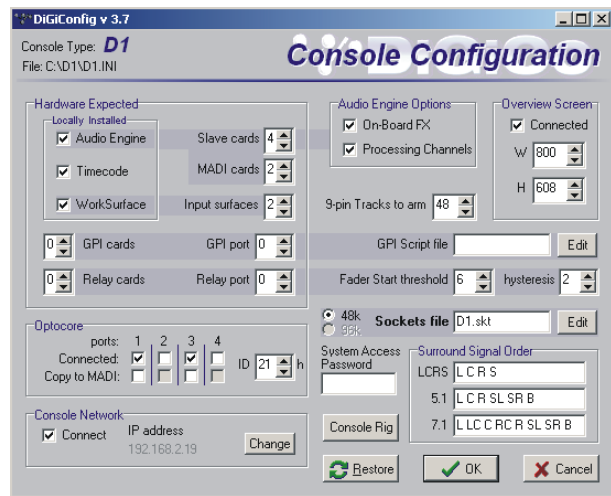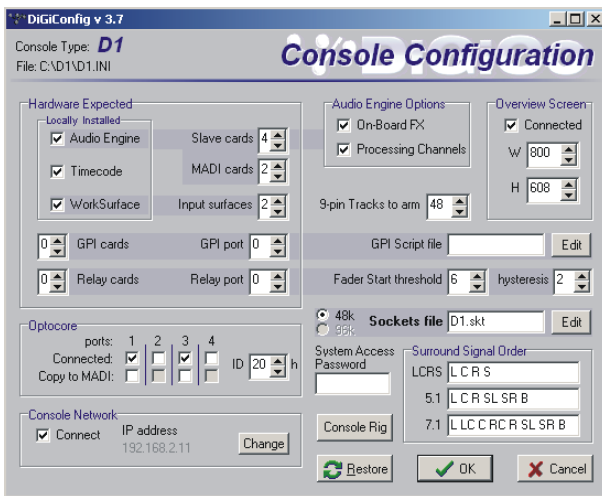


Note that the Optocore IDs are 20 (FOH) and 21 (MIRROR). In this example the network details show that the FOH Main console has an IP address of 192.168.2.11 and the FOH Mirror console has an IP address of 192.168.2.19. All other aspects of the two consoles are identical.

The console IP Address which should be unique to each device but only differ in the last of the four numbers (The number after the last dot):

These IP Addresses are assigned to the consoles and engines at the factory and should not be changed unless two devices in the same system have the same address.

The console Optocore ID which should be unique to each device in the system that is connected to the optical loop (Settings on Remote Control devices such as a remote PC or RC are not significant).

Console Optocore ID's should be as follows:

FOH Main Console = 20
FOH Main Console's Mirror = 21
Monitor Console = 22
Monitor Console's Mirror = 23

### 6.2.3 Sync Session ........................................................................

The Main console and Mirror must have the same Sockets File, Presets File and Session File and this can be achieved by using the Sync Session Functions. Assuming that a session has already been created on the Main console and its Sockets file is as required then proceed as follows:

Working on the Mirror Console (used to mirror the Main console), press the **Sync Session** button and this panel will open:
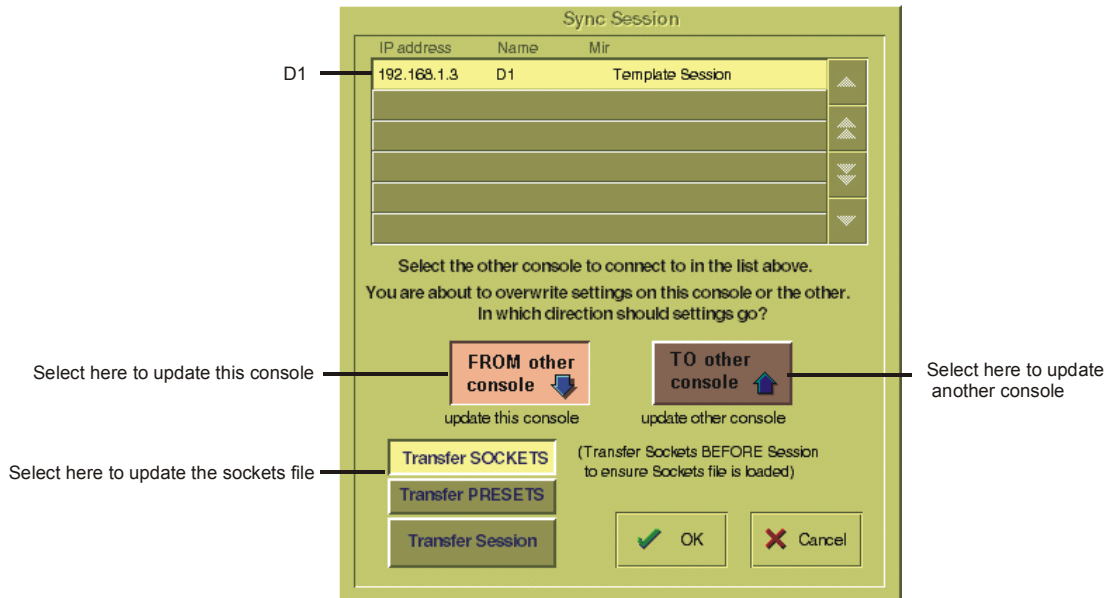


This shows a list of the devices that are connected on the network and in this example there is a D1.

**1)** Select the device from the list that you wish to transfer from (the D1 in this example).

**2)** Press the **Transfer Sockets** button and the **FROM other console** button.

**3)** Press **OK** - This will transfer the Sockets File to the Mirror console and the **Consoles and Racks** panel will reopen.

**4)** Press the **Sync Session** button again.

**5)** Select **Transfer Presets**

**6)** Press **OK** - This will transfer the Presets File to the Mirror console and the **Consoles and Racks** panel will reopen.

**7)** Select **Transfer Session**

**8)** Press **OK** - This will transfer the Session File to the Mirror console, the **Consoles and Racks** panel will reopen and the Sync Session button will be highlighted in orange.

A session can be synced in either direction; the default setting is from the current audio master.

**NOTE: If you have already transferred the Sockets and Presets files, you can sync the sessions by pressing the MIRRORED button, selecting Full Sync Session and pressing OK. This will automatically activate Mirroring after syncing the sessions.**

### 6.2.4 Mirroring ..................................................................................

When the Sessions have been synced, Mirroring can be activated by pressing the **Mirrored** button on the Mirror console and the following panel will open:
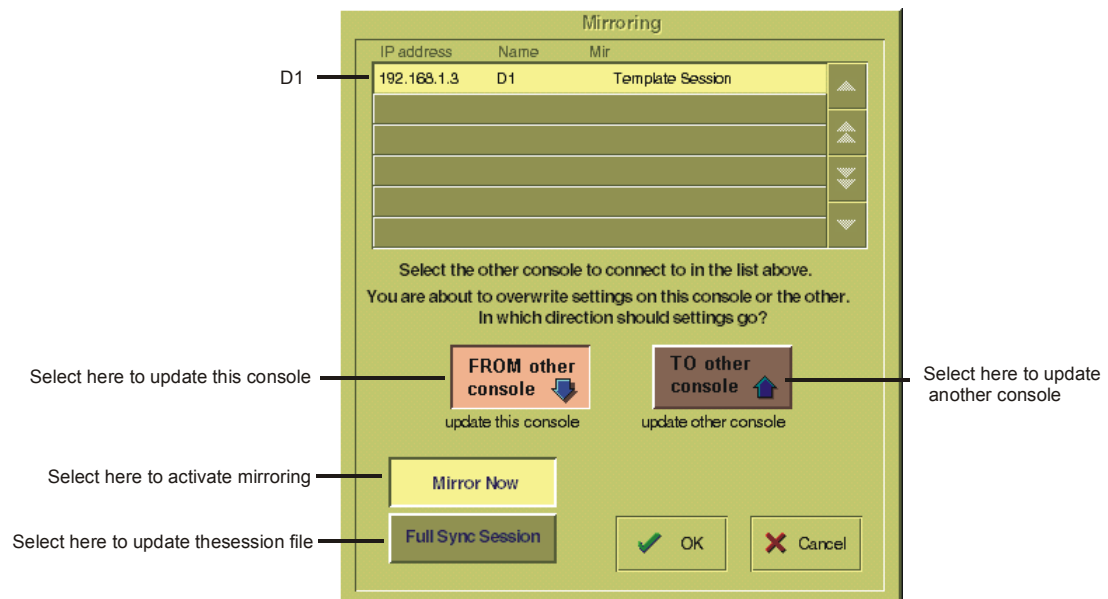
**1)** Select the device from the list that you wish to Mirror from (the D1 in this example).

**2)** Select **FROM other console** and **Mirror Now** and then press **OK**.

When the process is complete, the **MIRRORED** Button will be highlighted in orange as seen below. There will also be a pop up message to confirm that mirroring has taken place.

If you have other devices in your system such as a Remote Controller then this process should be repeated on each device, always transferring sockets, syncing sessions and mirroring **From** the Main console.
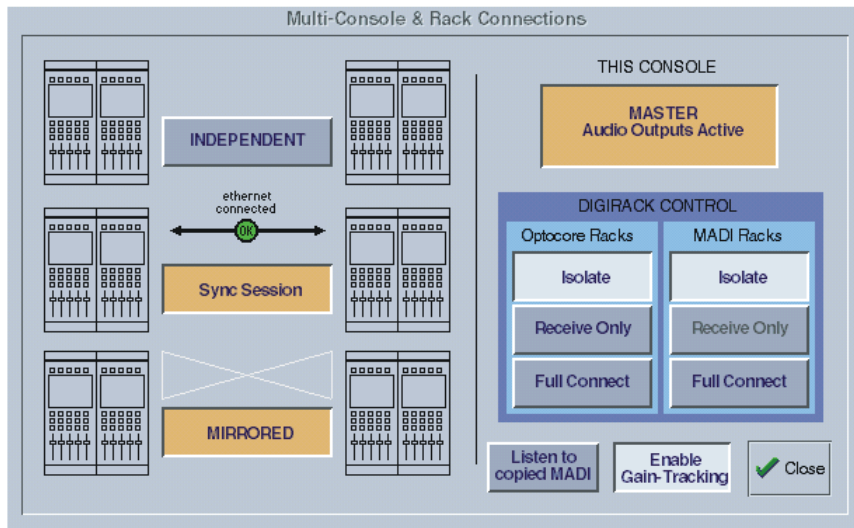


## 6.2.5 DiGiRack Control ..............................................................
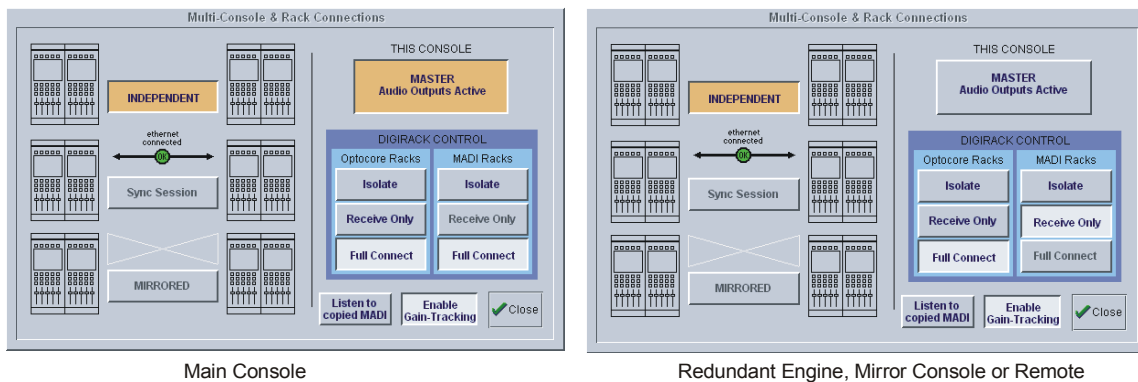


| Main Console | Redundant Engine, Mirror Console or Remote |

If the system has been defined as consisting of more than one device, the **Consoles & Racks** panel will automatically open on boot up or load session.

This panel can also be opened from the **System** menu.

If the Ethernet crossover cable or Ethernet switch has been connected, then the **Ethernet Connected** line should show a **green OK light** and not a red cross.

The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

In this state, any gain adjustments made on the console will have no effect as the racks will not be receiving any data.

The Main console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.

The same button on the Mirror should not be highlighted at all.

The MADI Rack's connect states Receive Only and Full Connect are enabled/disabled and set according to the Audio Master active state – an inactive engine cannot output to a MADI rack.

When the Main console and the Redundant Engine have been mirrored, the communication with the DiGiRacks should be activated.

In a system where there is only a single console and a mirror, on the Main console, press the Full Connect buttons for the Optocore and MADI racks. You will then be required to confirm the action, the session settings will be sent to the racks and the console will have full control over them.

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If you have a system where more than one console is sharing the racks you may wish to use the **Receive Only** mode where the console will receive the rack's existing settings but will not be able to control the gain on the racks.

**Options are:**

**Isolate** where the console will not communicate with the racks and therefore any adjustment of input gain or +48V switch will have no effect on the rack settings.

**Receive Only** where the console will receive the rack's existing settings but will not be able to control the gain etc on the racks.

**Full Connect** where the console will send its settings to the racks and change them accordingly.

Full Connect



Receive Only
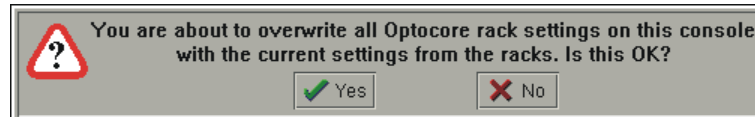


The following diagram shows the connections required to set up a mirror console with MADI connections:
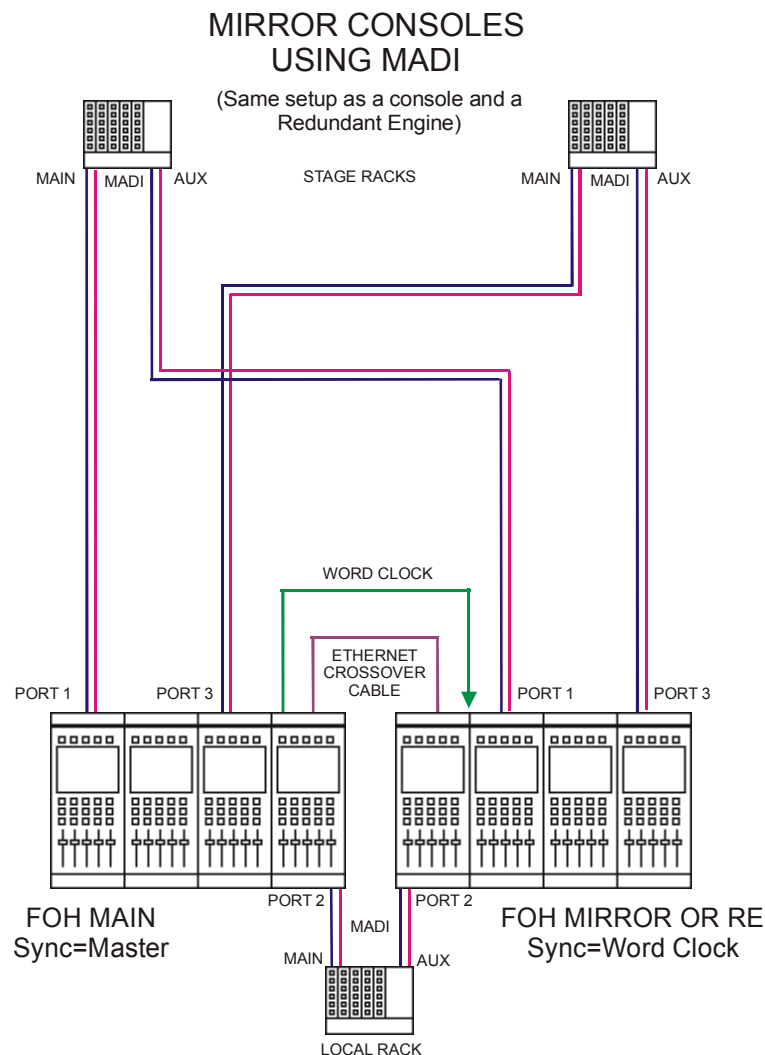
# Chapter 6

The following diagram shows the connections required to set up a full rig with redundant mirror Front of House and Monitor consoles, a redundant optical loop and multi-operator Gain Tracking.

MADI available for independent feeds
for broadcast, recording etc
STAGE RACKS

ID=30    ID=32    ID=33

OPTO B    OPTO A    OPTO B    OPTO A    OPTO B    OPTO A

**FULL REDUNDANT RIG**

FOH and Monitor consoles both with Mirror
consoles (or redundant Engines)

Redundant Optical Loop
(Optional)

OPTO B

MONITOR MIRROR
OR RE
Sync=OPTO

ID=23

OPTO A

ETHERNET
CROSSOVER
CABLE

PORT 2    AUX

MADI    LOCAL RACK

PORT 2    MAIN

OPTO B

ID=22

MONITOR MAIN
Sync=OPTO

OPTO A

ETHERNET
CROSSOVER
CABLE

OPTO A    ID=20    OPTO B    OPTO A    ID=21    OPTO B

**FOH MAIN**
**Sync=OPTO**

PORT 2    PORT 2

MADI

MAIN    AUX

**FOH MIRROR OR RE**
**Sync=OPTO**

LOCAL RACK

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## 6.3 PC Remote Control

If D1 software is run on a standalone PC or laptop, sessions may be prepared off line or the PC can be used to remote control a console.

Input channel windows are run in separate moveable windows for easier access on smaller screens. The Overview Screen and a Bank Switches window are also displayed. Channel and Master LCD buttons appear at the bottom of each screen.

A PC can also be used as a Remote Control device for the console and this is set up in a similar way to a Mirror console.

### 6.3.1 Remote PC Setup ...................................................................

DiGiCo recommend that the Remote PC is running under Windows ME or XP and that the operator has sufficient knowledge of the operating system to change IP addresses and set up a standard network connection.

**Note: With Windows XP the built in Firewall should be disabled as this may cause operational problems.**

**1)** An Ethernet Crossover cable (**not a standard CAT5 cable**) should be connected between the Main console and the Remote PC or both devices should be connected to an Ethernet switch if there is a third device in the system eg. a Mirror console or Redundant Engine.

**2)** Set the Remote PC's IP address to 192.168.2.xxx (where xxx is a number between 0 and 255 that is unique within the system).

The IP address can be checked by opening the **System/Service/Configure Hardware** panel, pressing all the buttons for the devices that are present in the system (eg FOH Main and Remote PC) and then selecting the **This One** button for the device that you are working on. Then press **Edit Details** and the IP address can be seen in the bottom left of the panel.
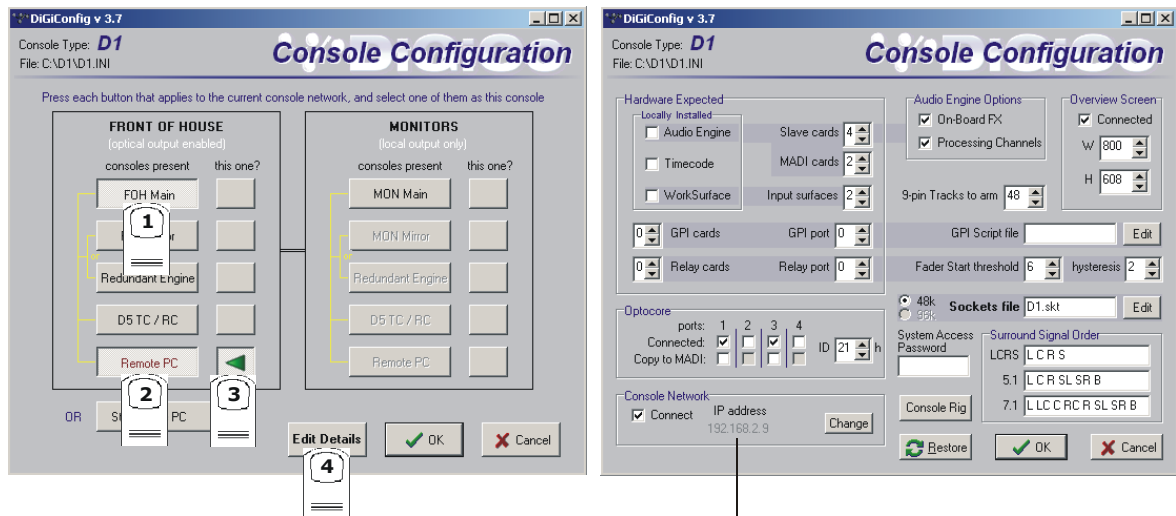


IP Address for "This One"

**3)** Repeat his process for the other device(s) and start the D1 application on all of them.

As the system has been defined as consisting of more than one device, the **Consoles & Racks** panels should open automatically and the **Ethernet Connected** line should show a **green OK light** and not a red cross.

**4)** Proceed with **Syncing** the **Sockets, Presets** and **Session** files and then **Mirroring** as described in the previous sections on Mirror consoles (6.2.3 and 6.2.4).

### 6.3.2 Remote PC Operation ...........................................................

To use the software with a mouse and keyboard the following functions are necessary:

Left mouse click on a non active window makes it active.

Right mouse click on a window functions as a screen touch.

Double click in the grey area around the LCD buttons to change their function.

Left mouse click on a switch to turn it on or off.

Hold down left mouse button and drag to adjust rotaries and faders.

Ctrl 1 to 6 = bank buttons 1 to 6 on the upper master.

Shift 1 to 6 = bank buttons 1 to 6 on input surface 1.

Up/Down (arrows) = scroll rotary assignment on all input screens.

Page Up/Down acts as the screen scroll button in the Master section.

The Shift key acts as the All button for all surfaces.

Running on a laptop or desktop PC, a single knob and button device can be connected to the RS232 COM port and used to alter controllers on the PC screen under the mouse cursor. A new entry in the D1.ini file is required for this:

COMport = n, where n = 1 or 2 for COM1 or COM2, or the default of 0 for off (don't open COM port in case something else is connected).

# Chapter 6

**Standalone or Remote PC Screen Appearance**

**DiGiCo**
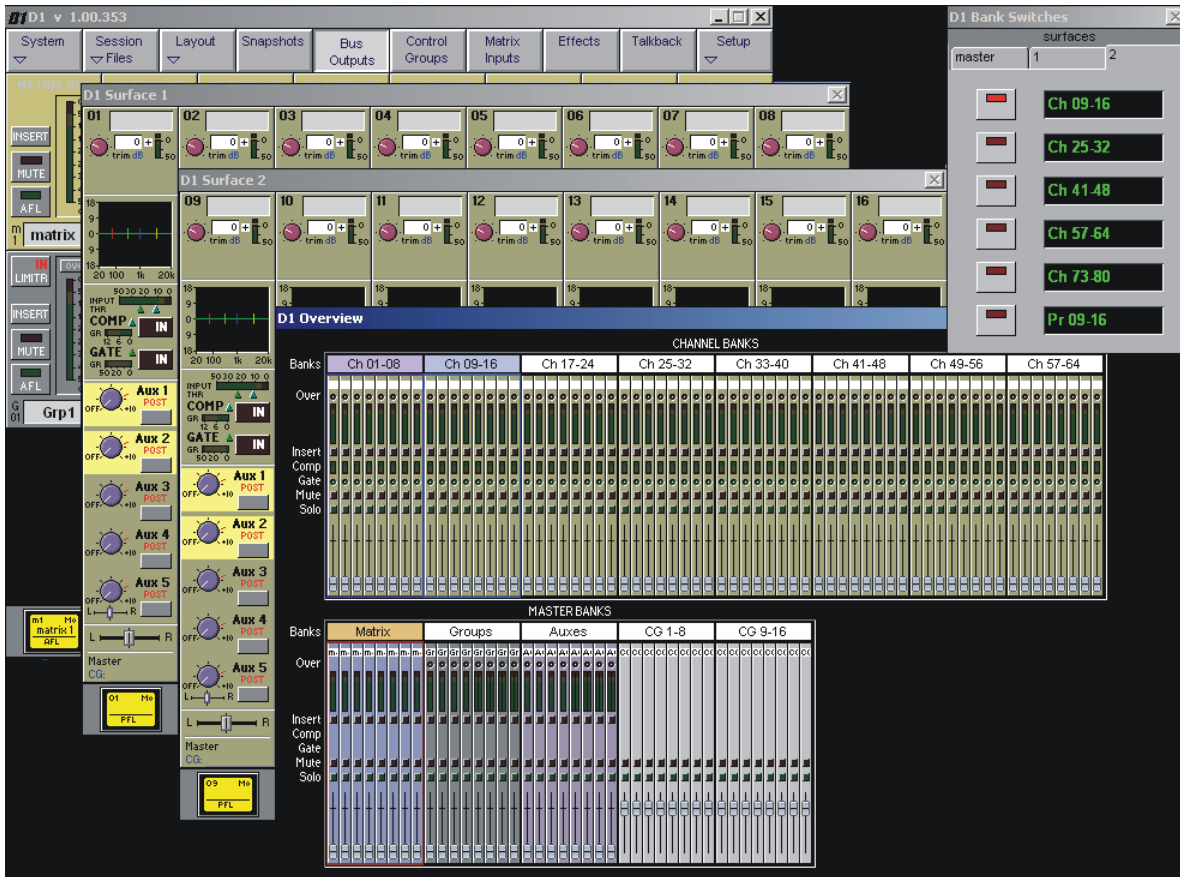
# Chapter 7
# Troubleshooting

## 7.1 Troubleshooting

**If you are experiencing any difficulty with D1 operation, please check the following commonly asked questions and answers.**

**If any users would like to contribute to this section of the manual please send the details of your questions to support@digiconsoles.com.**

I don't seem to have any control over the analogue gain.

*Open the **System/Consoles & Racks** panel and check the settings under DiGiRack control.*

*To control the analogue gain on the racks you should have the **Full Connect** buttons pressed for MADI and Optocore racks.*

I am trying to select input sources for my higher numbered channels but the channel numbers are "greyed out".

*The "greyed out" number indicates that the channel is unavailable. This is a normal console function which occurs when you have one or more channels set to stereo mode or some of your group busses are routed directly to the Master buss.*

*The number of console processing channels is fixed so by setting one to stereo you are actually using a second one as well.*

*Routing a group buss directly to the Master buss uses the same number of channels as there are buss signals eg. 2 for a stereo buss or 6 for a 5.1 buss.*

*The highest numbered unused channels are taken first.*

I am trying to route to specific output socket but it appears to be "greyed out" in the socket list.

*This indicates that the output is already being used. Touching the "greyed out" name will show a message to indicate what it is being used for.*

*If the message says that **"the socket is not in use but cannot be used for the first (left) signal of this channel"** you may be trying to route a stereo or surround buss but there are not enough consecutive output sockets available. For example:*
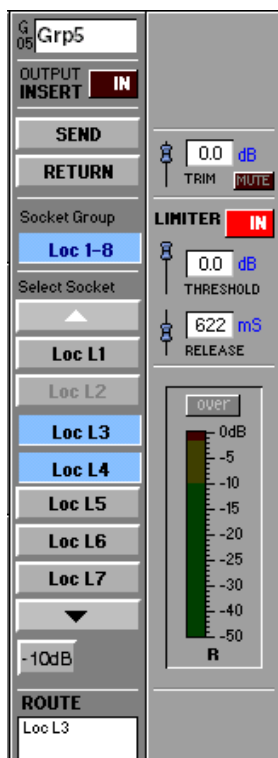
Stereo Group 5 is routed to Loc L3 and 4
but Loc L2 appears "greyed out" as well.
A stereo buss cannot be routed to
Loc L2 and 3 as Loc L3 is already in use.
It can however be routed to Loc L1 and 2

If you were routing a mono buss,
Loc L2 would be available.

The console has crashed but when it tries to recover the session there is still a problem.
*The session file may have become corrupted. Reload the D1 software whilst holding the keyboard "Shift" key. A Recover and Restart panel will appear which provides different reboot options.*
**Note: If you hold the Shift key while Windows is rebooting the Surfaces.exe program will not start and the console will not function correctly. Therefore, load the D1 software then Quit To Windows using the System / Service Menu and then load the D1 software again whilst holding the Shift key.**

I have an input source selected for a channel but there is no audible signal.
*Check that the channel insert is not switched on. If it is switched on but no insert return signal is selected then there will be no audible signal in that channel.*
The channel high and low pass filters are not having any effect on my audio signal.
*These filters have no effect on internal signals as they are preprocessing.*
*Internal signals consist of:*
*1) Talkback mics, tone and noise generators (Misc Input Group).*
*2) Buss results used as input sources (any input source name preceded by the symbol ~).*
*3) Returns from the optional internal effects module (Effects Input Group).*

I do not seem to have as many Channel Sends available as I should.
*The number of Channel Sends available can be seen in the Diagnostics panel under the System menu.*
*They are used by Direct Outputs, Channel Insert Sends, the internal Effects module and IPC's.*
*If you are using the internal Effects module:*
*2 Channel Sends will be used for each stereo effect.*
*If FX5 and FX6 are set to Output Processing, anything between 4 (2 x stereo masters) and 16 (2 x 7.1 masters) Channel Sends will be used.*

How do I tell if a channel is stereo or mono when the input screen is in its standard view?
*Stereo channels have two on-screen meters and there is also an "s" below the channel number at the top of the screen.*

How can I change the Pre/Post setting for a single auxiliary send?
*To change this setting, use the button beneath the auxiliary send control but make sure that the send is set to minimum. Using the same button with the send turned up will switch the auxiliary on and off.*

I cannot see the Width control for a stereo channel on the screen.
*Use the Screen Scroll buttons to move the highlighted line down. The Width control is in the last position after the Pan control.*

I want to trigger a noise gate with an external source but when I press the Key button, the key source panel doesn't appear.
*Check that you haven't selected a dynamics configuration which includes filters. The external trigger is only available for the first dynamics configuration where the filters are not used.*

The audio is sometimes interrupted when I use the channel EQ.
*Switching the Channel LPF or HPF Filters in will briefly interrupt the audio in that channel.*

**DiGiCo**

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