



Operation Manual

Issue A, September 2004 (Software Versions 2.4+)

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Chapter 1

Getting Started

1.1 The Console

The Digico D5T consists of a worksurface, and up to 4 Input/Output Rack Units. The Rack Units are connected to the console by optical fibre and/or MADI links, which carry all the audio input and output signals.

The console worksurface consists of 3 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 16 assignable faders and a master fader. The Master section controls outputs, monitoring and configuration.

The console's buss architecture is dynamic, and can support mono, stereo, LCRS 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.

The D5-TC Theatre Masters Controller provides extended master fader controls, eight programmable macro buttons and a dedicated script space.



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

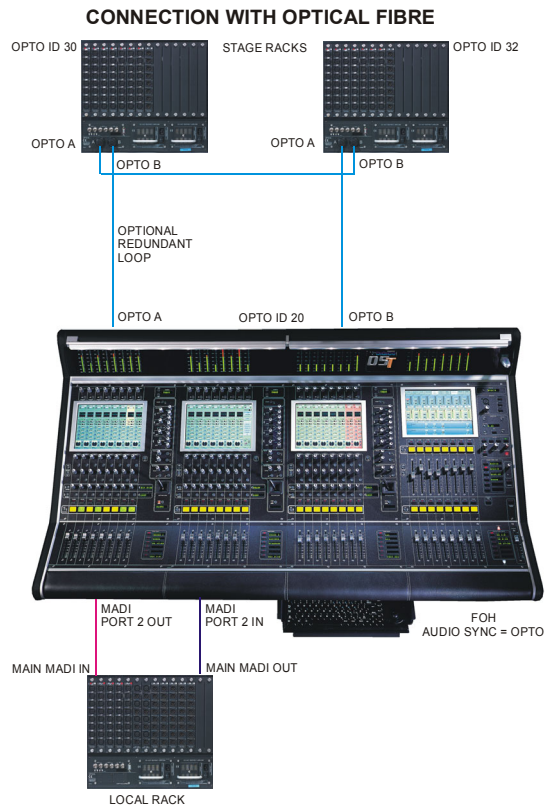
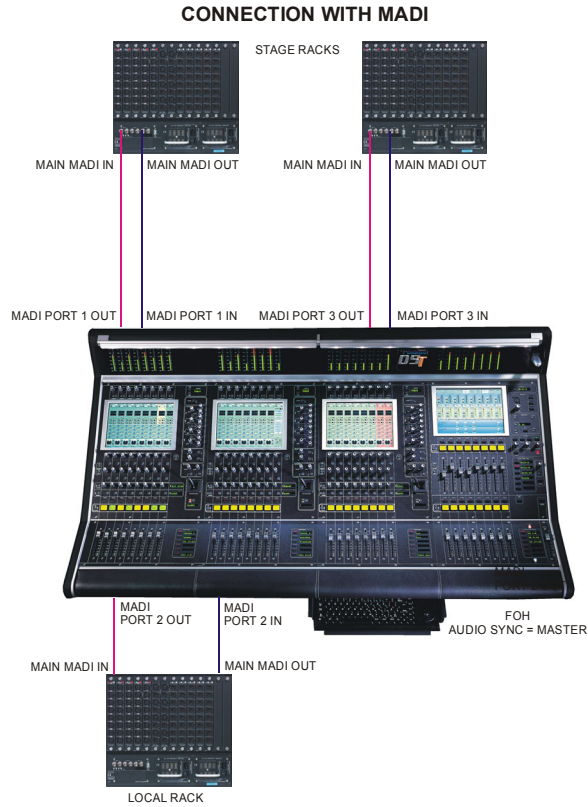
- Chapter 1 is a quick start guide that provides an overview of the basic console functions.
- Chapter 2 describes how to use the assignment and channel controls provided on an Input channel bank.
- Chapter 3 describes the Output channels, including Sub Group, Direct, Aux and Matrix Group Outputs.
- Chapter 4 describes most of the Master Section functions, including console configuration, monitoring and timecode and transport control.
- Chapter 5 describes the console's cue system.
- Chapter 6 describes the console's dynamic automation system.
- Chapter 7 describes the onboard Effects.
- Chapter 8 provides help with troubleshooting common problems.

1.2 Hardware Configuration

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.

For Multiple Console Setups see **Appendix B**



1.2.2 The DiGiConfig Program

The following example shows how to run the DiGiConfig program from the D5T software in order to configure you hardware:

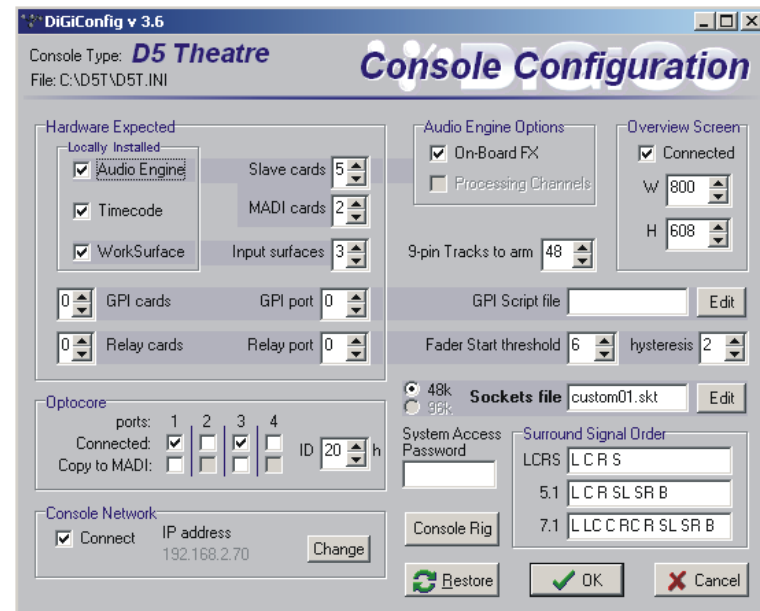
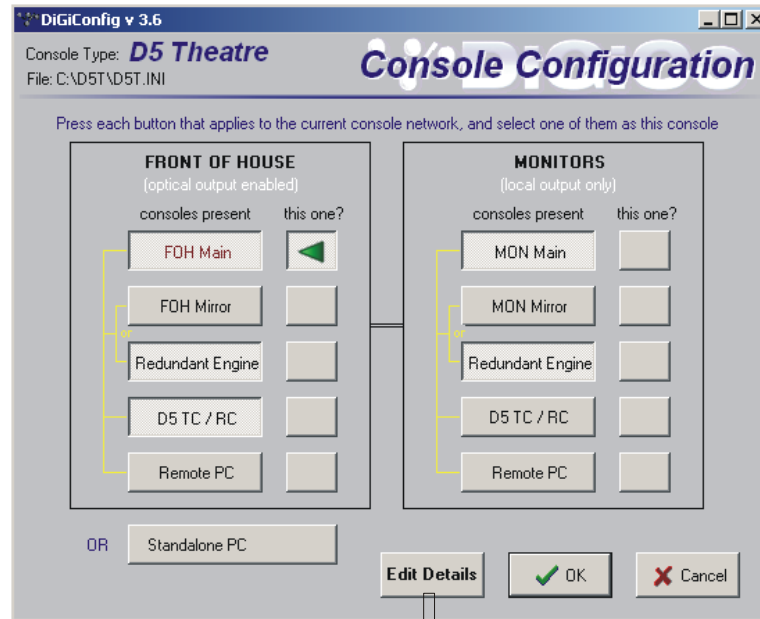
- 1) Open the **System / Service** menu.
- 2) Press the **Configure Hardware** button, the D5T software will close and DiGiConfig will open.
- 3) Press the relevant buttons for all the consoles that you wish to configure.

The example below shows the settings for a system with a Main Front of House console and its Redundant Engine, a Monitor console and its Redundant Engine and a Remote Controller or Theatre Controller for the Front of House console.

All the devices should have all of the components of the system selected but the **"THIS ONE?"** button should be selected according to which device you are setting up.

- 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 D5T software.

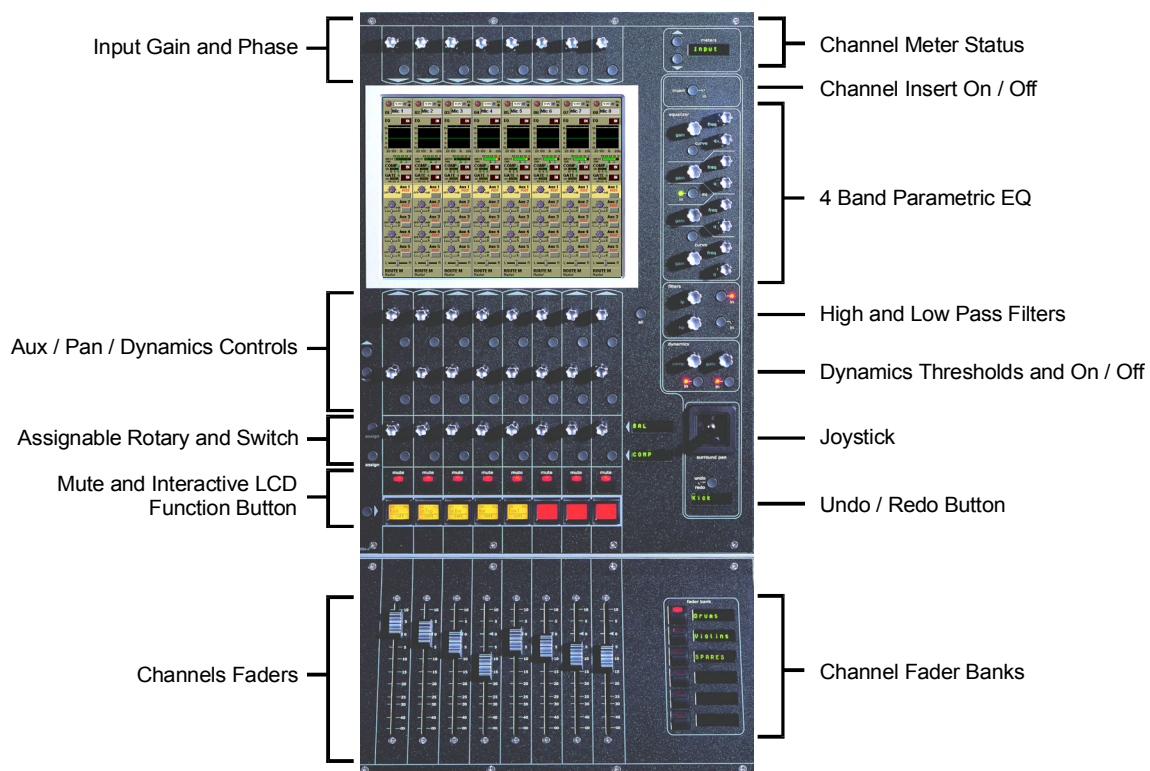
FOH Main Console



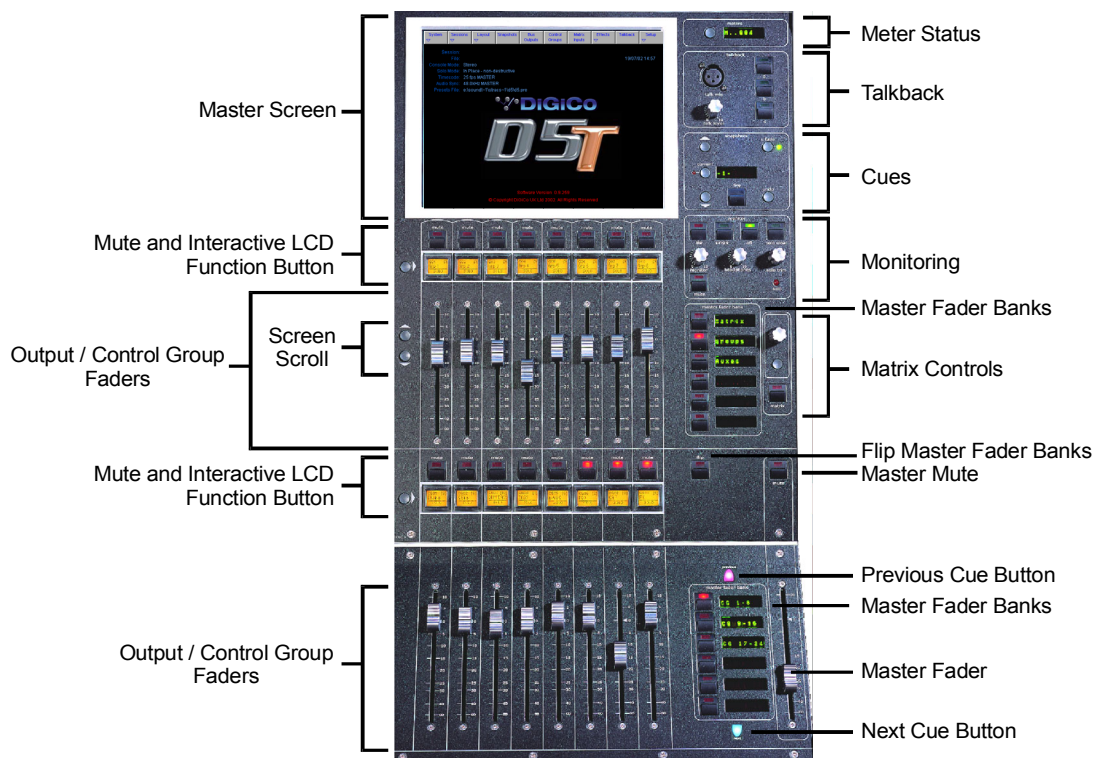
Chapter 1

1.3 Getting Started

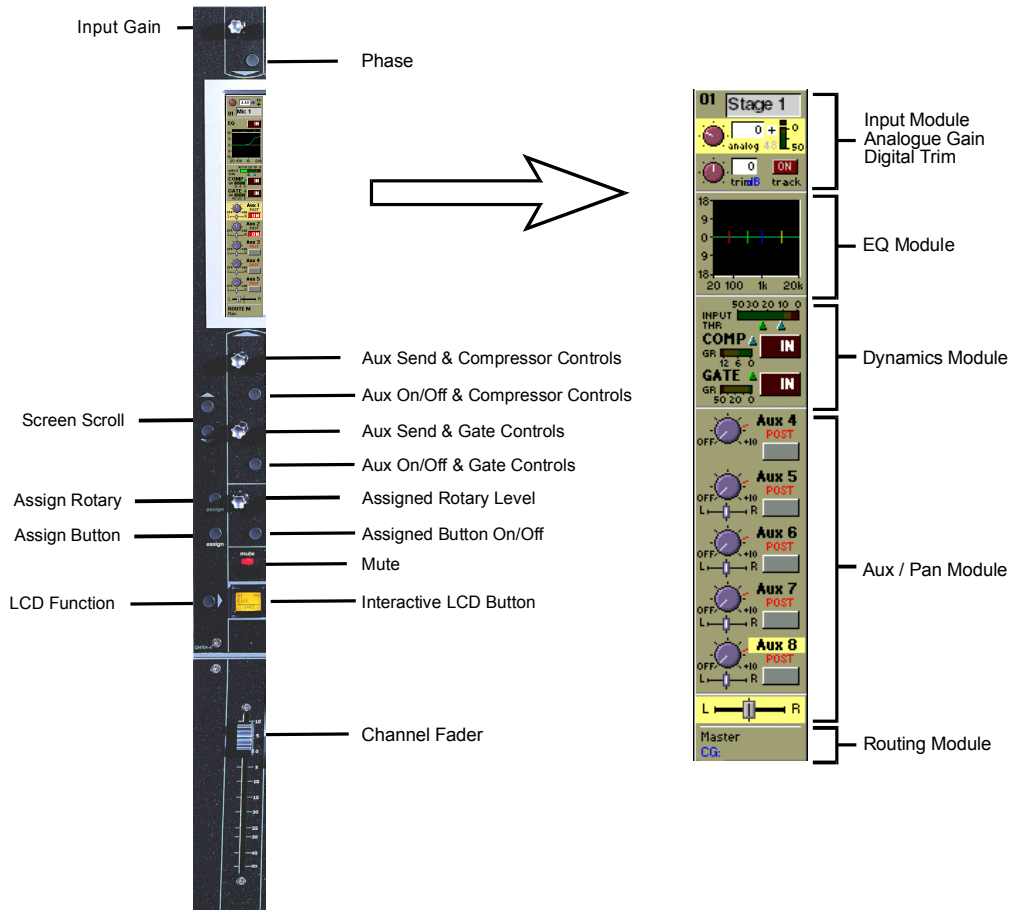
Input Section



Master Section



Input Channel



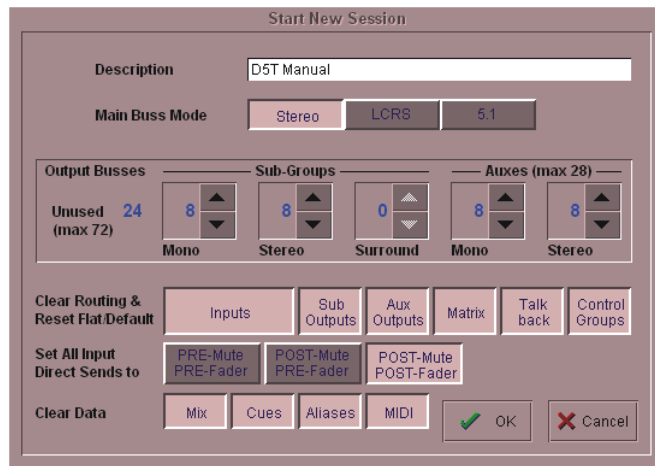
Master Screen



Chapter 1

1.3.1 The New Session Panel

To create a new session, touch the **Session Files** button on the master screen and then touch the **New Session** button. The following panel will appear:



The **Main Buss Mode** defines the format of the Main buss as Stereo, LCRS Surround or 5.1 Surround. This also affects the options for selecting the Sub 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 **Sub Groups** and **Auxes** settings allow you to define the format and number of the Aux and Sub Group busses. The total amount of busses cannot exceed 72.

Note: The total number of busses available will affect the choice of solo mode selected in the **Setup Menu / Monitoring panel**. 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.

Clearing Settings

When you start a new session all current settings will be inherited by default but the Mix Automation and Cue List 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.

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.

1.3.2 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 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.

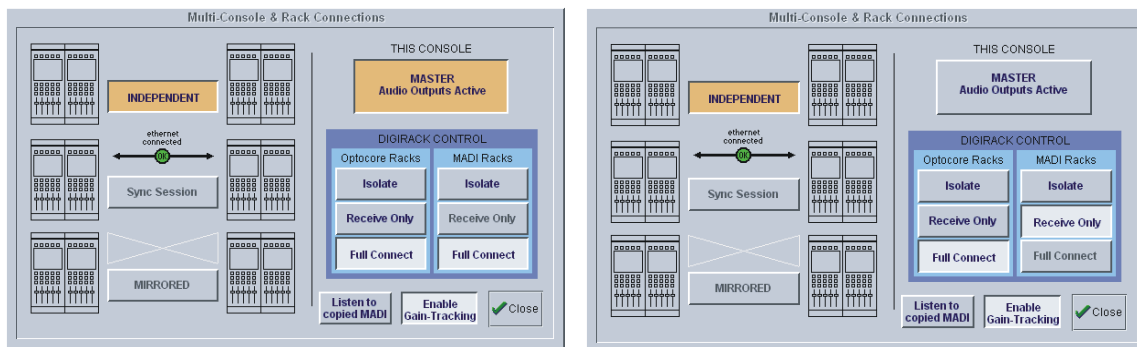
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

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

The 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 mirrored or remote devices 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.

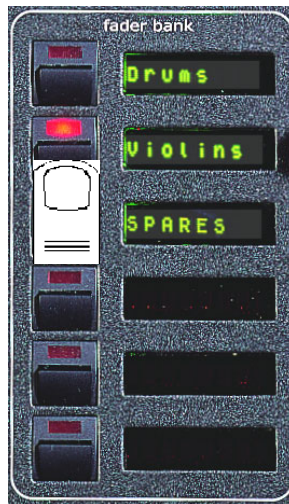
Full Connect where the console will send its settings to the racks and change them accordingly.

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

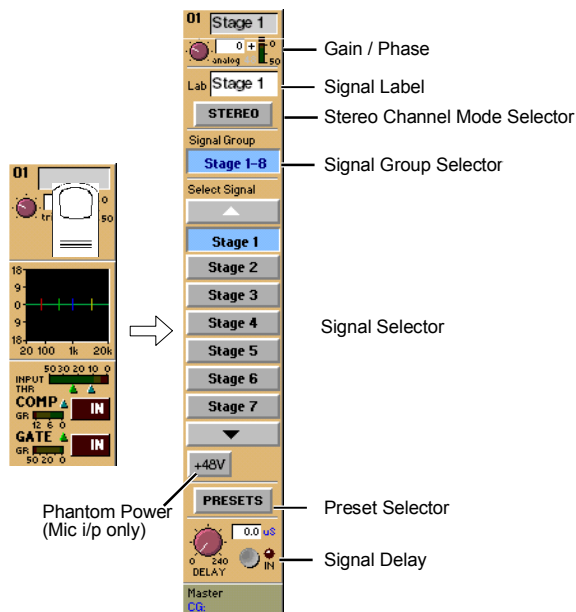
1.3.3 Selecting an Input Source

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.



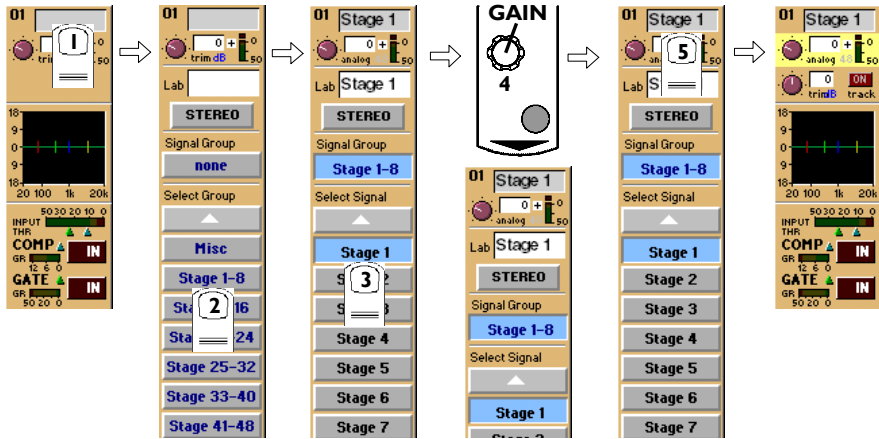
Chapter 1

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.

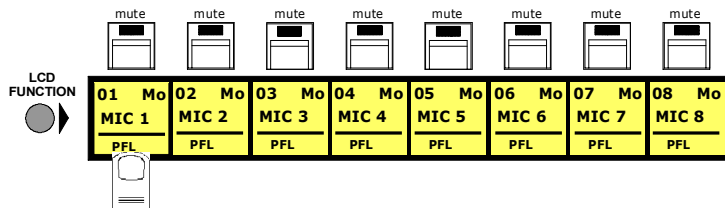
Note: Touch the **Lab** box and type a name for the channel if required.



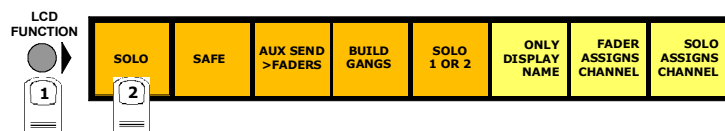
If the **Stereo** is pressed, the input channel functions will control two input signals, the one which has been selected and the next one in the rack.

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.

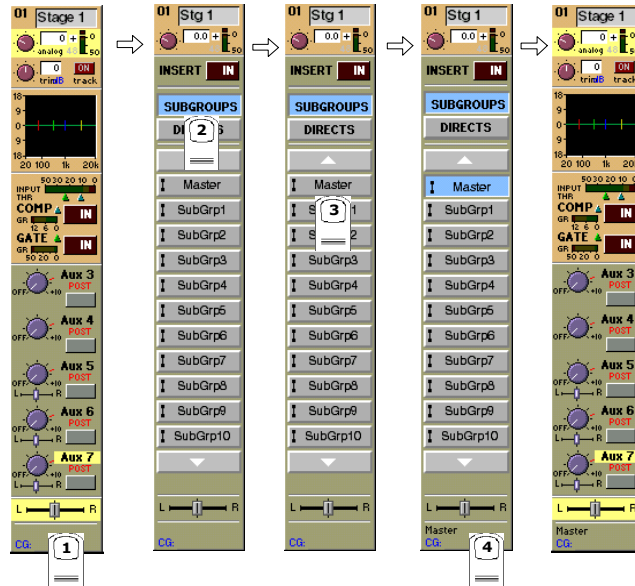


1.3.4 Routing the Channel Signal

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

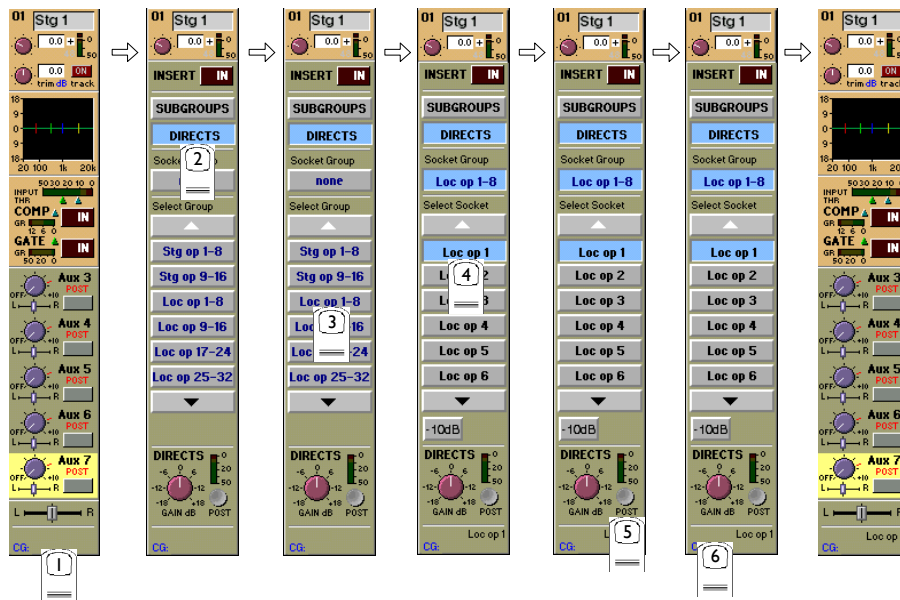
To Route to a Sub Group:

- 1) Touch the **bottom of the input screen** to open the routing panel.
- 2) Touch the **Sub Groups** button if it is not already highlighted.
- 3) Touch the Sub Group button(s) that you require eg. **Master, SubGrp1** 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 **Direc**ts 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 op 1, Loc op 2** 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.

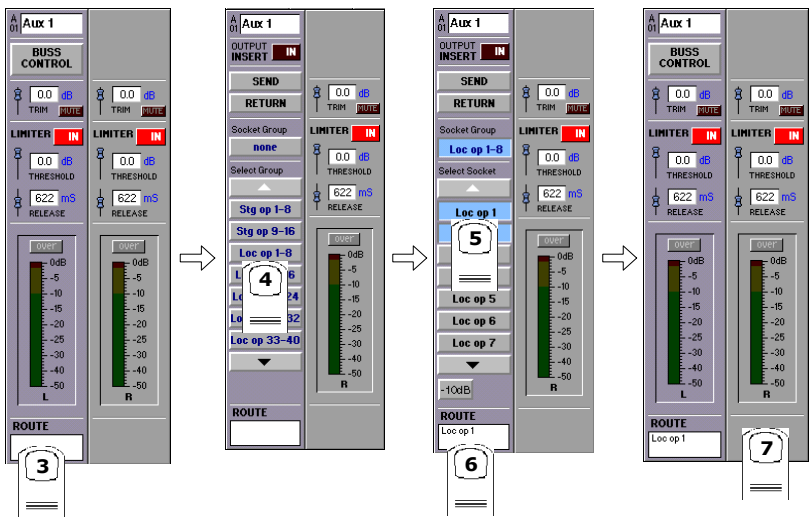


Chapter 1

1.3.5 Routing Busses To Outputs

The Master, Sub Group and Auxiliary busses may 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 op 1-8**.
 - 5) Touch the **Output Socket** button(s) that you require eg. **Loc op 1, Loc op 2** 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 Matrix Inputs

The 32x32 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).

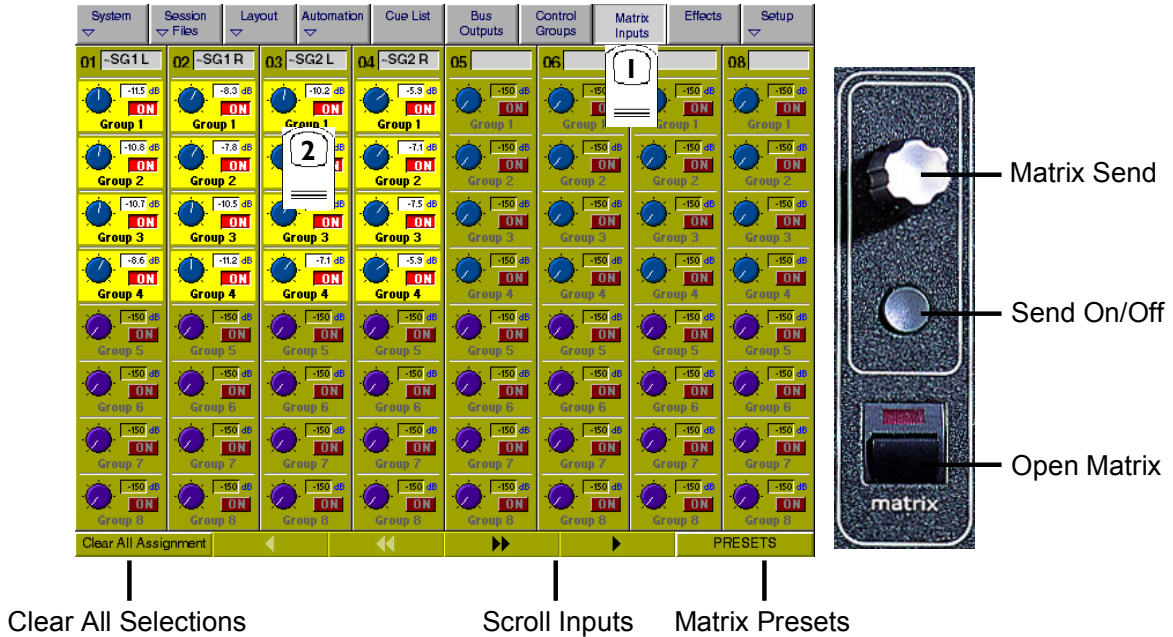
To route a Sub Group into the Matrix:

- 1) Touch the **Matrix Inputs** button on the master screen to open the panel.
- 2) Touch the **top of the input screen** to open the input panel.
- 2) Touch the **Stereo Buss or Mono Buss** button to view the names of the Sub Groups.
- 3) Touch the **name of the signal** to assign it to the channel eg. **SubGrp1L**
- 4) Touch the **top of the input screen** again to return to the standard view.

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

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

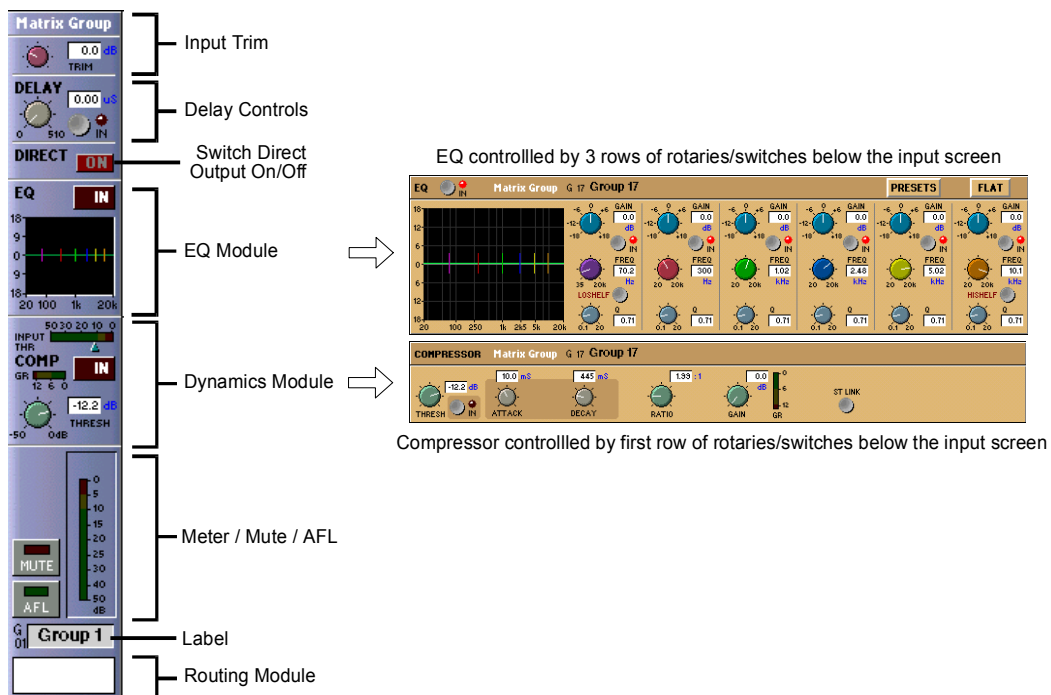
At the bottom of the panel there are buttons to **Clear All Assignment**, **Load and Save Presets** and **Scroll** buttons to view the other inputs and outputs.



1.3.7 Matrix Processing

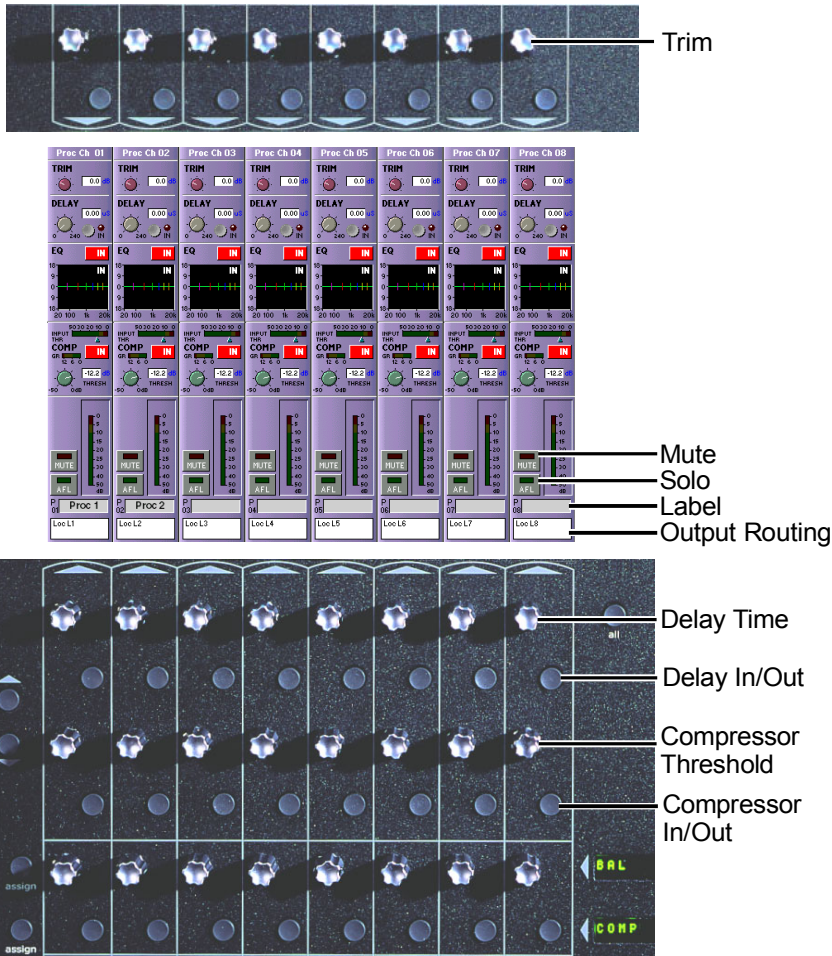
Each of the 32 Matrix groups is controlled on its own channel in the input banks labelled **matGrp1 to matGrp4**.

Press the required input bank button to show the following panel and touch the relevant on screen area to expand the views.



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Worksurface controls are as follows:



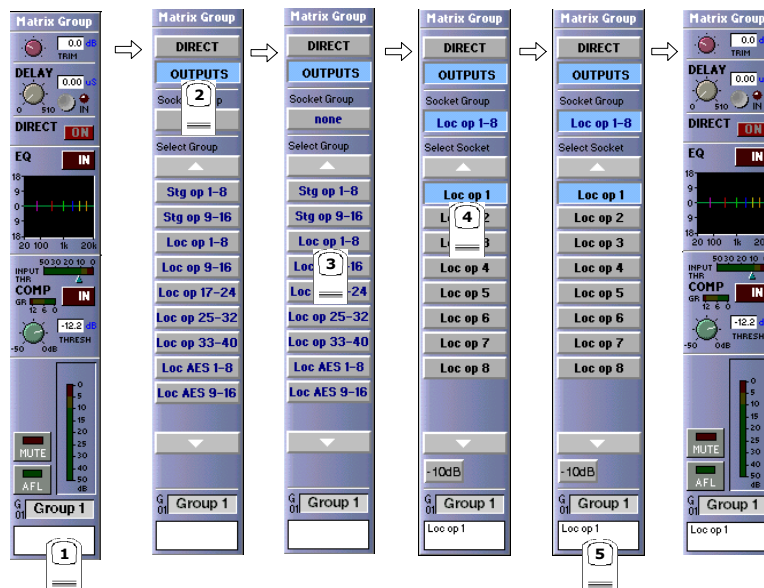
These channels provide Trim, Delay up to 510ms, Compression and 6 Band Parametric EQ.

1.3.8 Routing Matrix Groups To Outputs

Matrix Group signals may be routed to a pre EQ, pre fader direct output and/or a post fader output

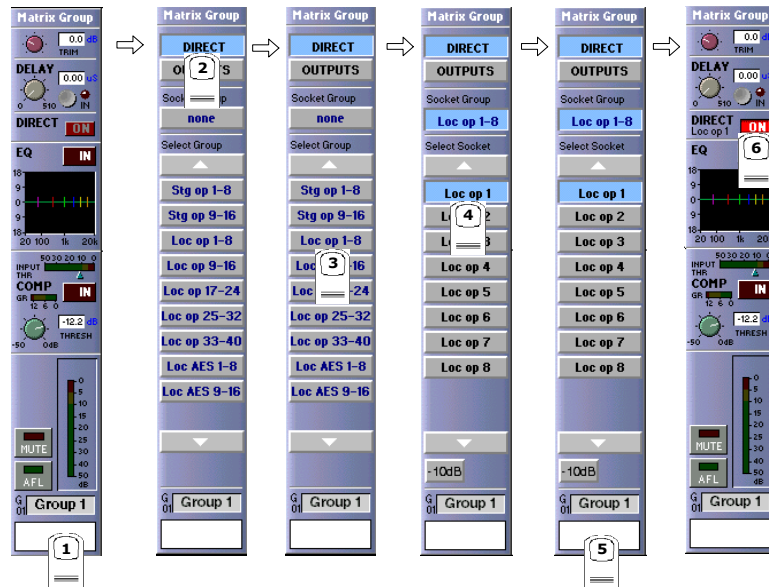
To Route a Matrix Group to a post fader Output:

- 1) Touch the **bottom** of the matrix group screen to open the routing panel.
- 2) Touch the **Outputs** 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** that you require eg. **Loc op 1, Loc op 2** etc.
- 5) Touch the **bottom** of the input screen again to return to the standard view.



To Route a Matrix Group to a pre EQ, pre fader Direct Output:

- 1) Touch the **bottom of the matrix group screen** to open the routing panel.
- 2) Touch the **Direct** 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 op 1, Loc op 2** etc.
- 5) Touch the **bottom of the input screen** again to return to the standard view.
- 6) Touch the **Direct On** button to turn the output on.



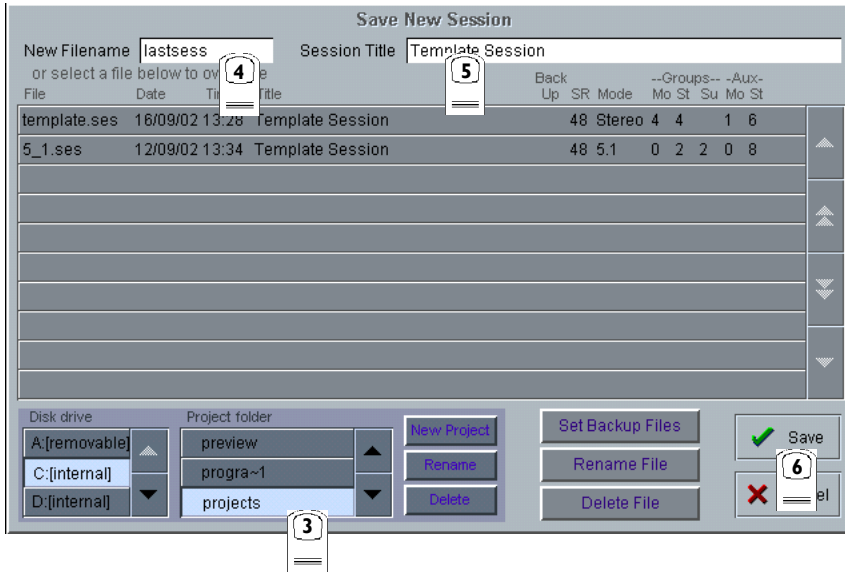
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1.3.9 Save As New File

When you change the configuration of the session you may save it to the console's flash drive under a new filename or simply overwrite the current file. To save 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 **C:\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 spaces or 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.



1.3.10 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).

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1.3.13 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.

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		STEREO AUX	
FIRST MONO AUX SEND		STEREO AUX SEND	
FIRST MONO AUX ON/OFF (PRE/POST WHEN SEND IS DOWN)		STEREO AUX ON/OFF (PRE/POST WHEN SEND IS DOWN)	
SECOND MONO AUX SEND		STEREO AUX PAN	
SECOND MONO AUX ON/OFF (PRE/POST WHEN SEND IS DOWN)		STEREO AUX PAN TOGGLE TO CENTRE	

The third rotary control and button in the section can be assigned to any of the auxiliary sends or on/off switches. Hold the **Assign Rotary** or **Assign Switch** button on the left of the input section and touch the required auxiliary row on the screen. The selected auxiliary name is shown by the **Assignable Rotary Display**.

1.3.14 Control Groups

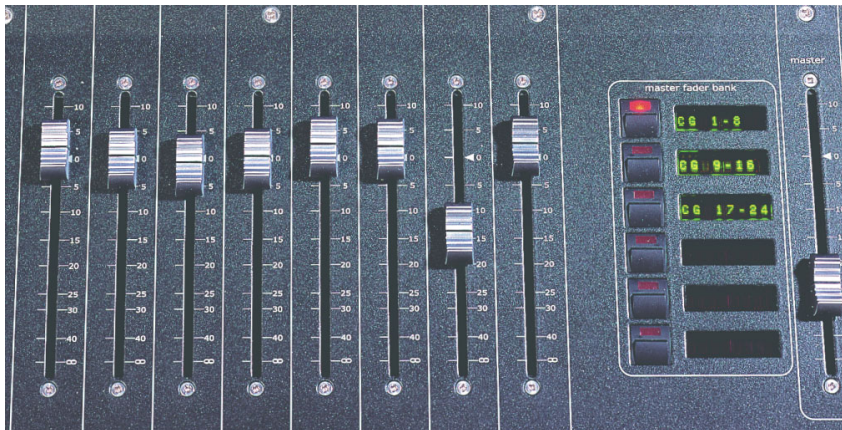
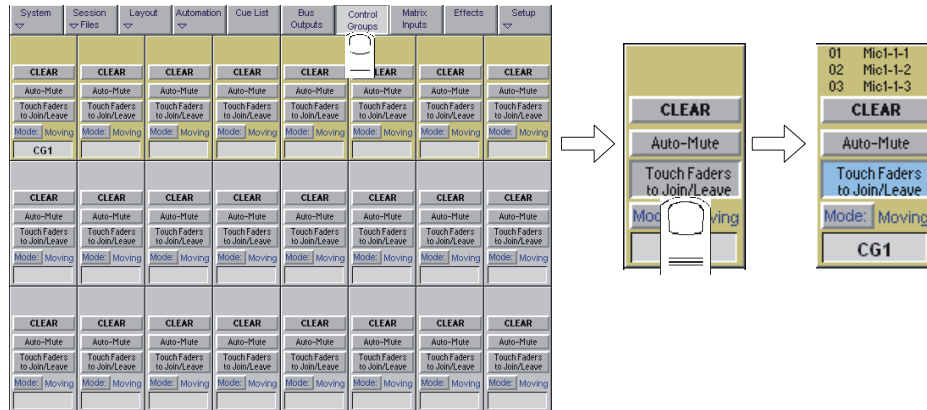
Any number of input channels and output channels can be connected to one or more of the 24 Control Groups. They can then all be operated from a single worksurface control. Changes to the Control Group fader, mute or solo or controls will affect all channels connected to the group.

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 (1-24).
- 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) Press the **Auto-Mute** button if required to select this mode for the Control Group.

With **Auto-Mute** on, any Control Group member which is removed from the group will be automatically muted and any member that joins a group will be automatically unmuted.

- 7) 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.

1.3.15 Master Fader Banks

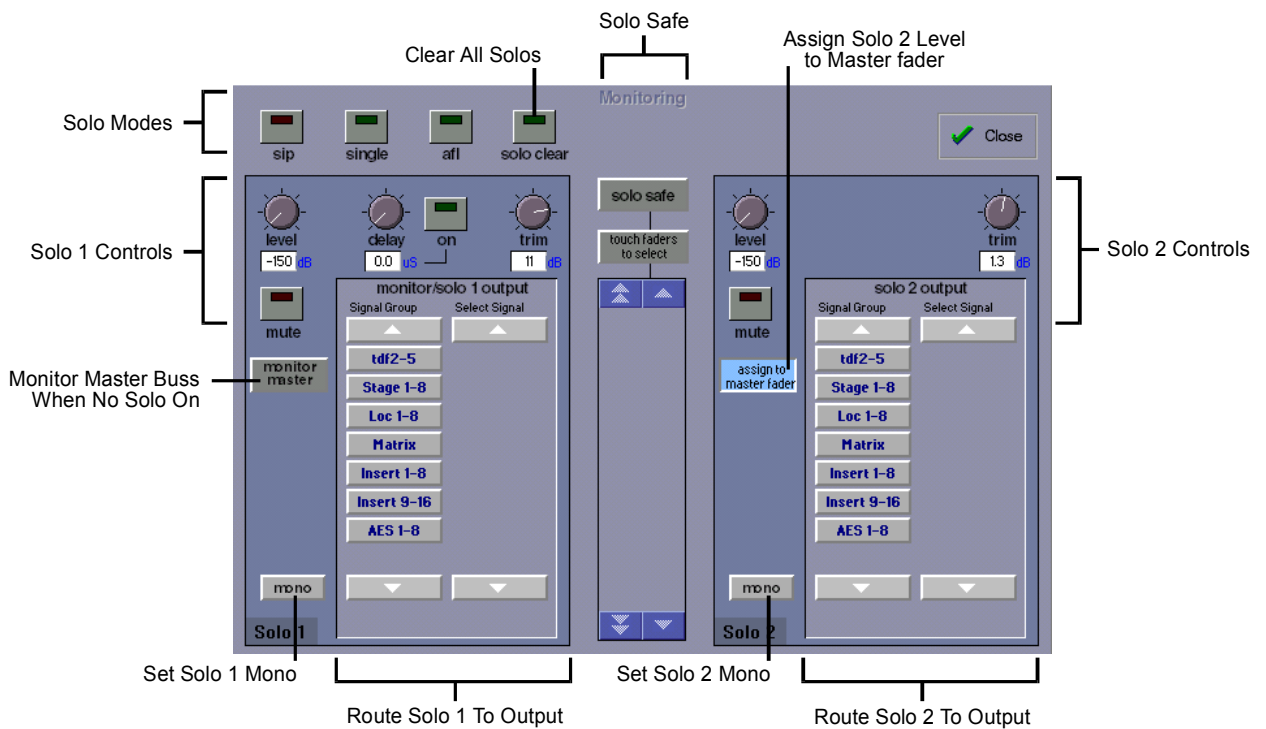
The faders in the console Master section control the output levels for busses, auxiliaries and the matrix. To select a bank, press the relevant **Master Fader Bank** button for the **Upper faders**.



1.3.16 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.



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.

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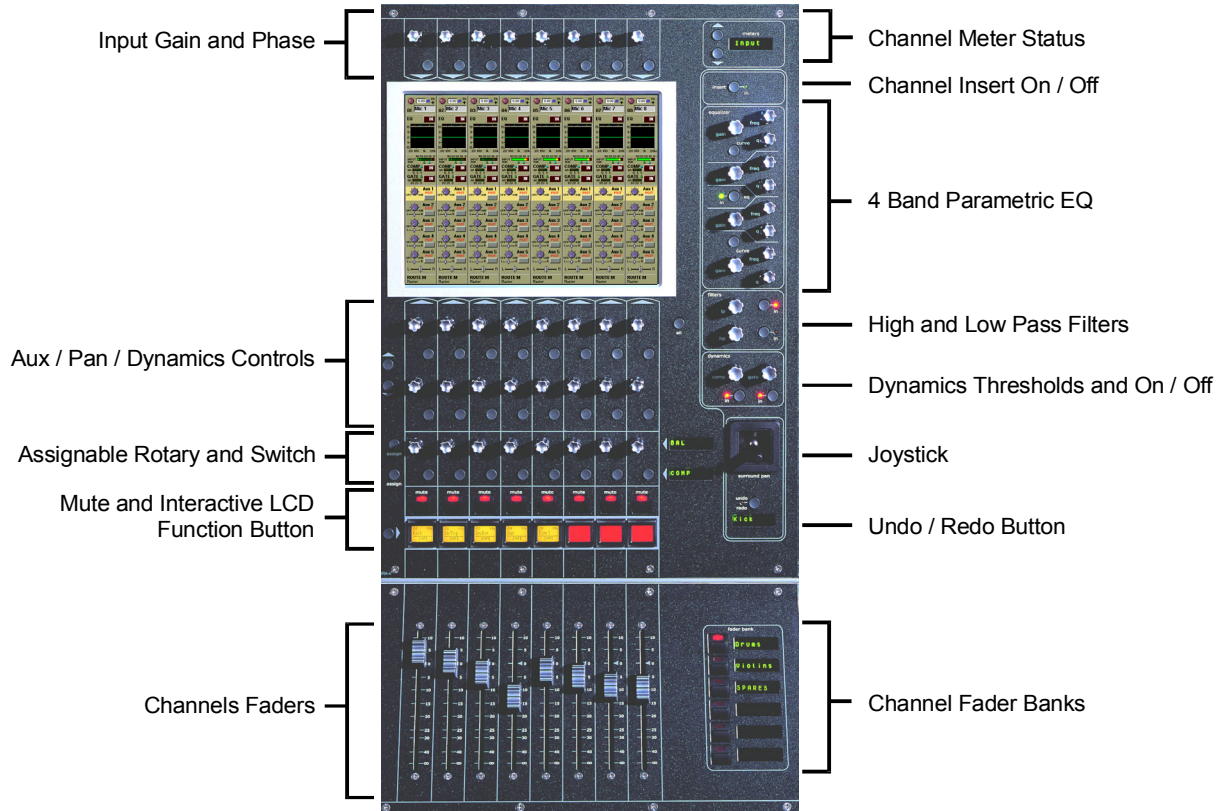
Inputs and Console Channels

2.1 The Input Channels

The console Worksurface consists of a Master section, and three "Banks" of faders for controlling input channel functions. Internally, the console has 96 or 128 (according to use of onboard effects) input channels.

2.1.1 Channel Assignment

The assignment of audio input channels to faders on the D5T worksurface is "soft", so that there is no direct link between channels and faders. The console can have up to 224 input sockets which are then assigned in blocks of eight to the console's physical 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 all 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.

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2.1.3 Input Screen - The Standard View

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

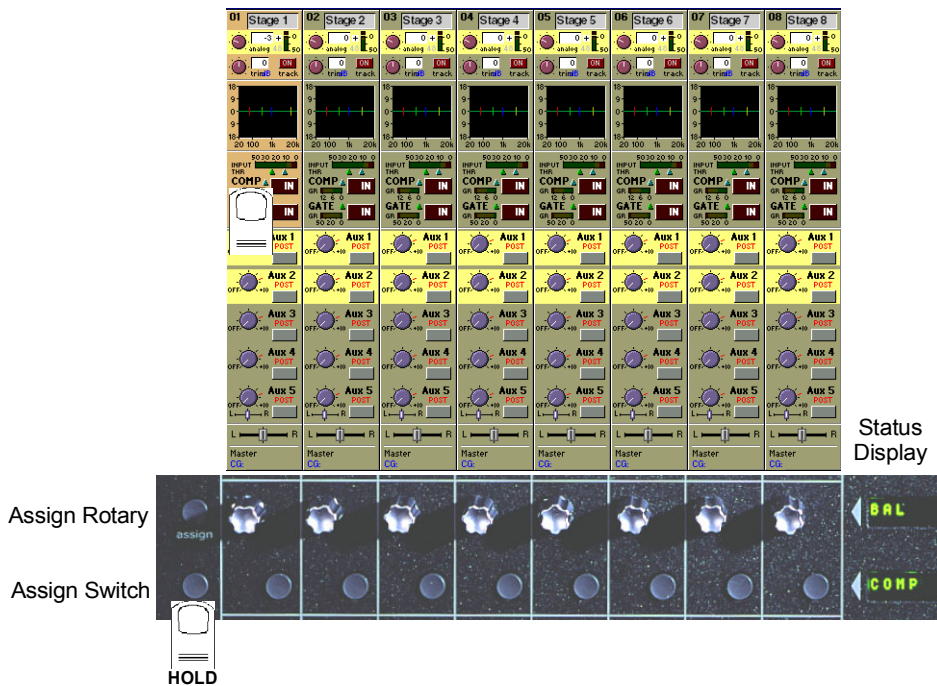
The controls around the screen operate as follows: detailed information about each particular control is given later in this chapter.

Upper row - Channel Input Gain and Phase.

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 controls can be assigned to any of the following functions by holding down the **Assign** button and touching the chosen control on the Input screen.

Assignable Switch	Assignable Rotary
Set channel delay to zero	Channel delay time
EQ In/Out	Aux level
Compressor or Gate In/Out	Stereo panning
Aux On/Off	Direct Output Gain
Set Pan position	Insert Send Gain
Insert In/Out	
Direct Output PreM/Pre/Post	



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.

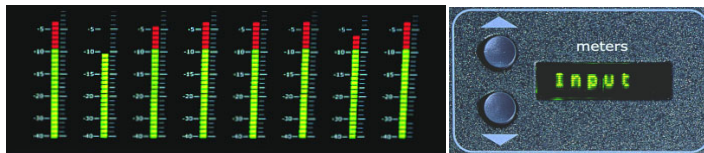
You can scroll the assignment up and down the list of Aux/Pan controls using the two **Screen Scroll** buttons on the left hand side of the section or by touching the control on the screen. Surround panning is operated using both rotaries, but is easier to adjust by selecting the channel and using the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

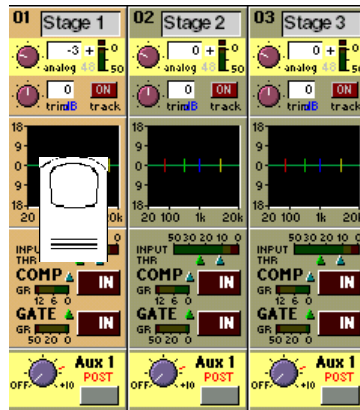


2.1.5 Assigning a Channel

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.

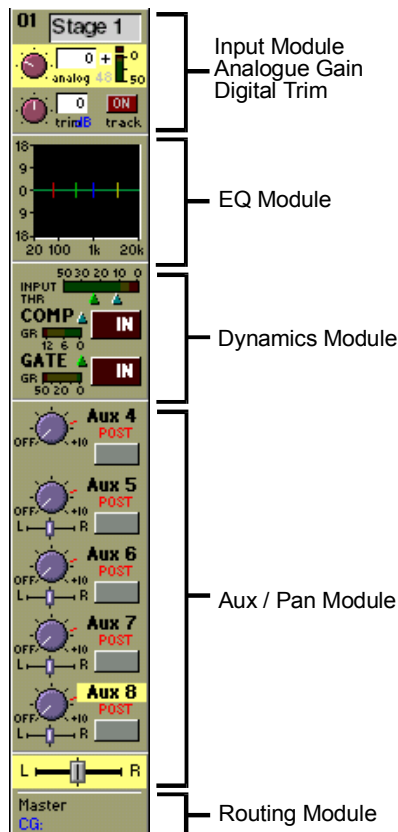
Touching the IN /OUT buttons will switch the relevant processing module ON or OFF.



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.

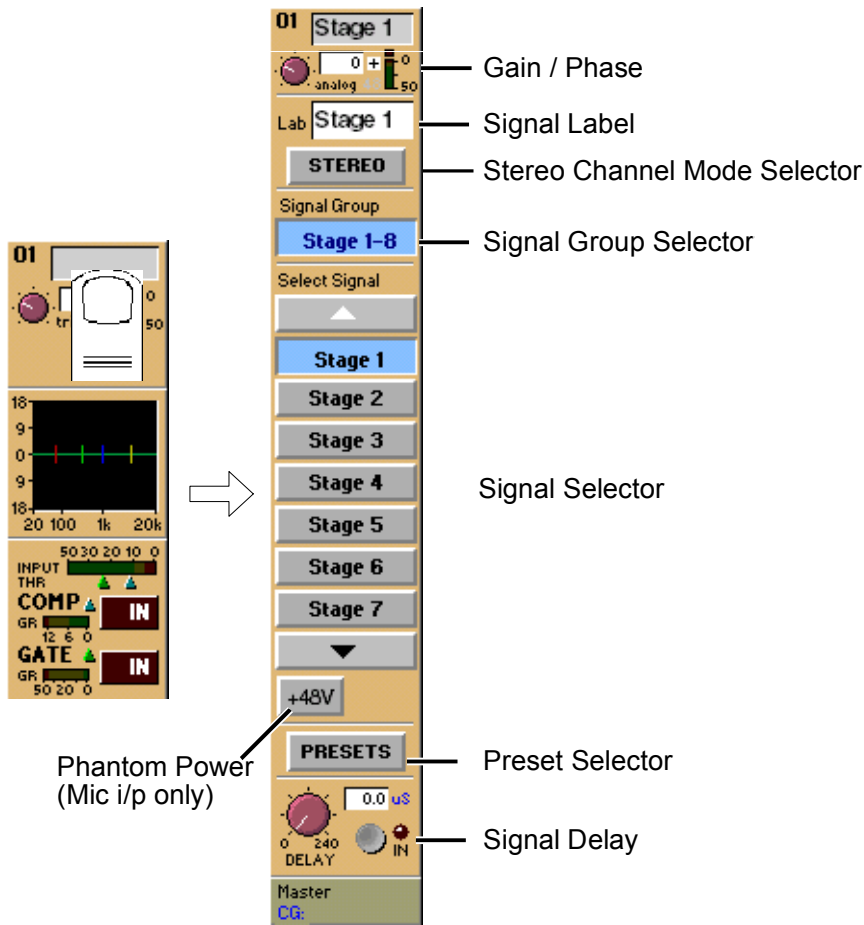
2.2 Expanding a Processing Module

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:



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 and rear Talkback microphones, and the internal Noise and Tone generators.

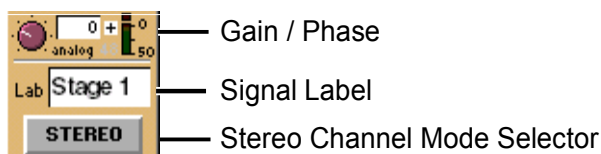
The original talkback sources (the unprocessed microphone inputs) are labelled Talk Mic L (Top) & R (Rear).

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 five 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

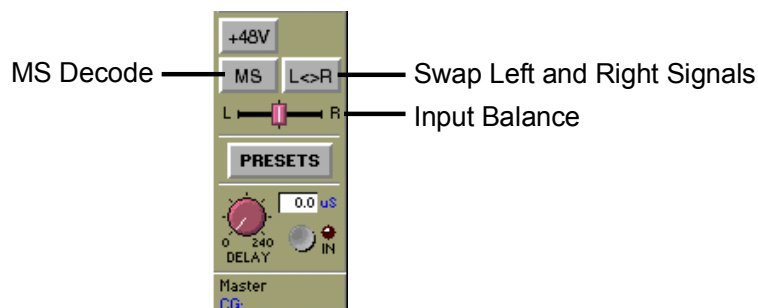


If this button is pressed, the input channel functions will control two input signals, the one which has been selected and the next one in the rack.

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 Aliases and Presets

The **Aliases** button allows you to store or recall a complete channel setup.

An **Alias** is the name of a channel and a Preset can be associated with that name. If the source of a channel is changed from cue to cue (eg Different actors use the same microphone in different cues) then the Cue List's Live Update function can be used to ensure that a change to the settings of an alias in one cue will be written to the same alias in other cues.

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 Aliases button, the screen displays a Preset Selector:

The number at the start of the name represents the channel that the Alias was created from and the name is a copy of the channel label.

There is no requirement to create Presets for each of the channel's aliases but if you intend to use the Live Update function it will probably prove simpler to organise if you do so.

Note: If you create Aliases using the Cue Editor software (See Cue List chapter of this manual) then they will automatically appear in the Aliases/Presets panel and the settings for each Alias can be stored by making the settings on the console worksurface and then using the **Store** button in the panel to update the Alias.

The following image shows three different aliases for a character called Harry that have been created in channel 1 by making the appropriate settings including the channel name and then pressing the **New** button in the panel.



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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.

Note: If a preset is renamed, it can be given a different name from the channel label itself. It is the channel label that **Live Update** uses to determine whether to update Aliases and therefore it is recommended that to avoid potential confusion, Presets that are used as Aliases are not renamed and therefore retain the name of the channel label.

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.

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.

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.

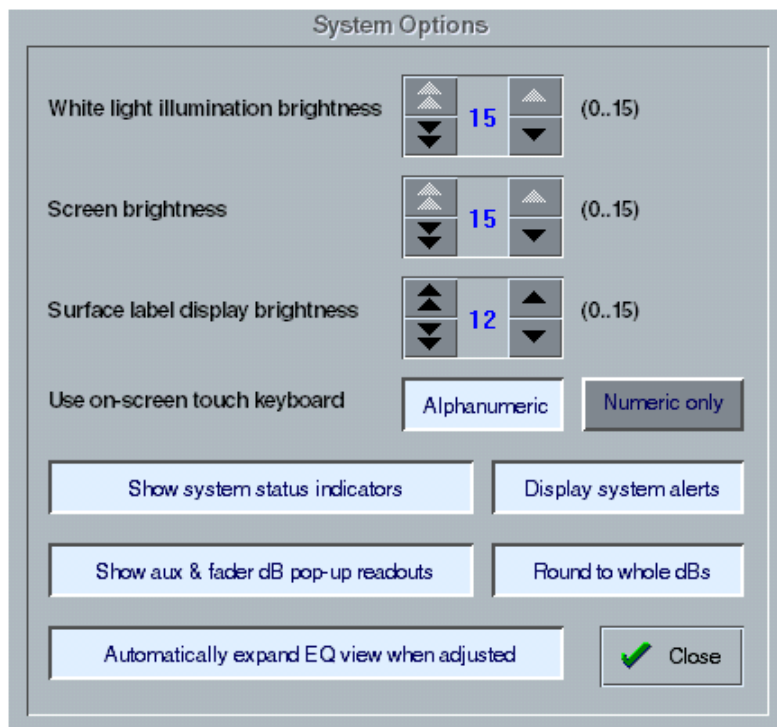
2.2.2 Equaliser Module

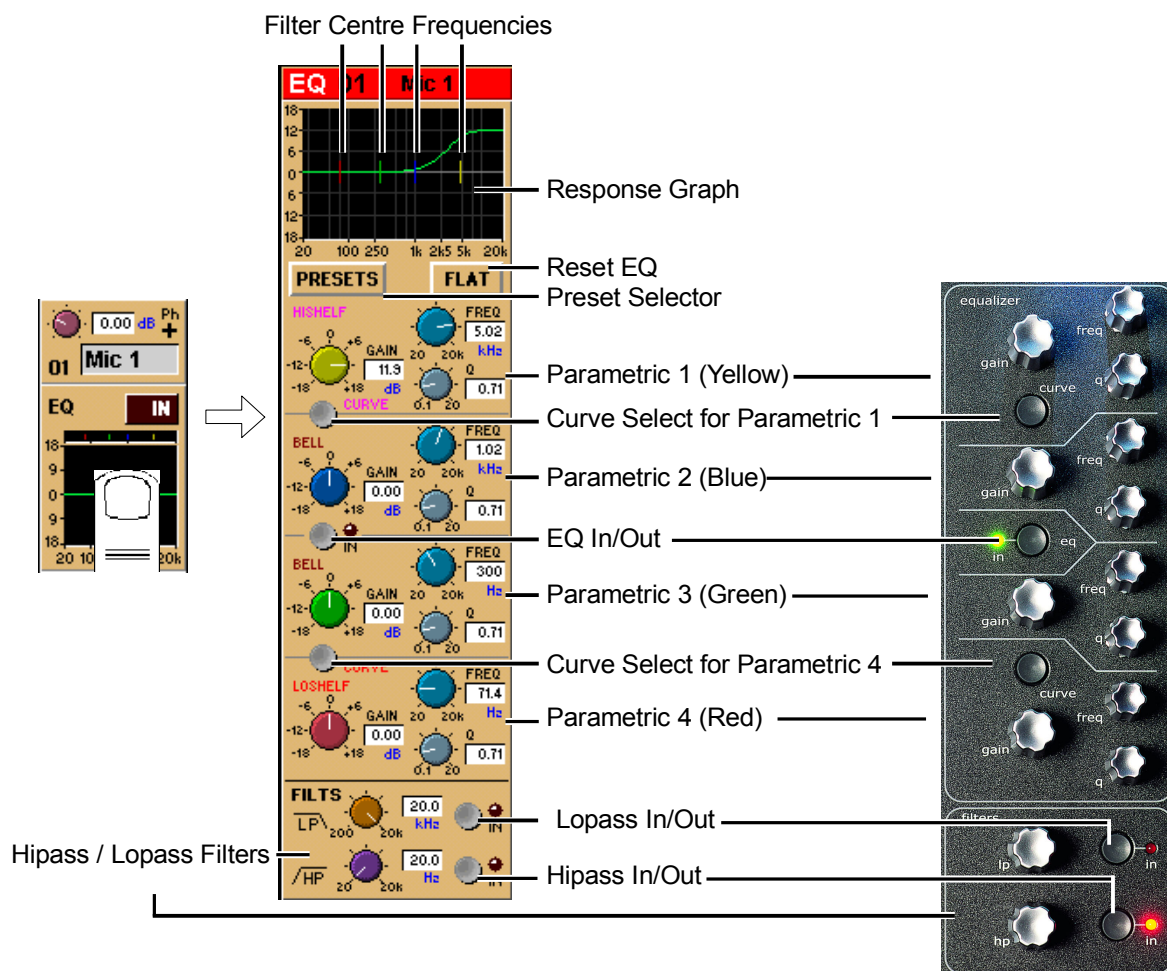
The EQ module comprises four user-configurable parametric filters.

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:





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 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:

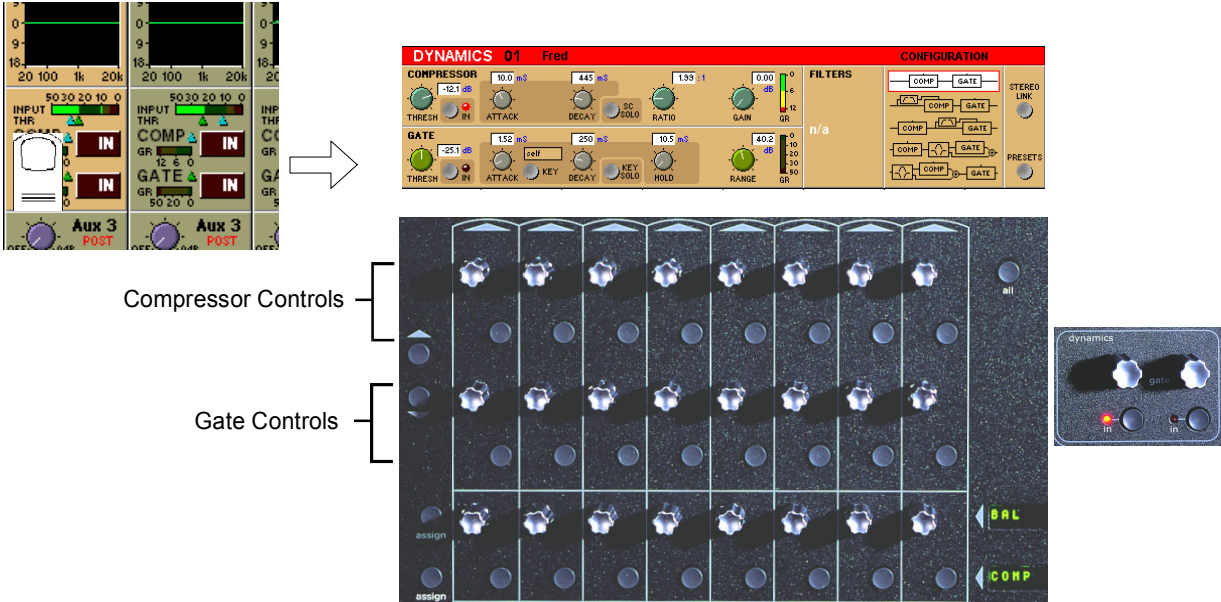
- 1) Any signal in the **Misc** signal group (Talkback Mics, Test Tone and Noise).
- 2) **SubGroup or Aux Buss results** (labelled with a ~ eg ~ Aux1 L).
- 3) **Internal FX Returns** (any signal from the Effects input signal group which is used by the optional effects module).

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.

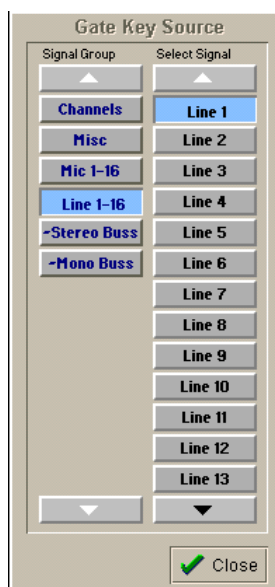
The **Gate Key** button allows you to select the signal used to trigger the Gate. The default setting is Self, where the level of the channel's own signal is used as the trigger, but you can use this switch choose a different channel or buss.

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.

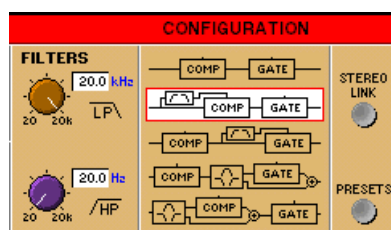
Note: When the Filters are switched into the Dynamics section the Gate Key Source is automatically switched to its "Self" setting and disabled.



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.

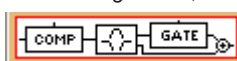
Note that the filters cannot be used on an external trigger source.



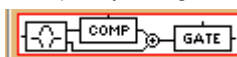
In this configuration, the filters are used in the side chain of the compressor to provide frequency conscious compression effects such as de-essing.



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.

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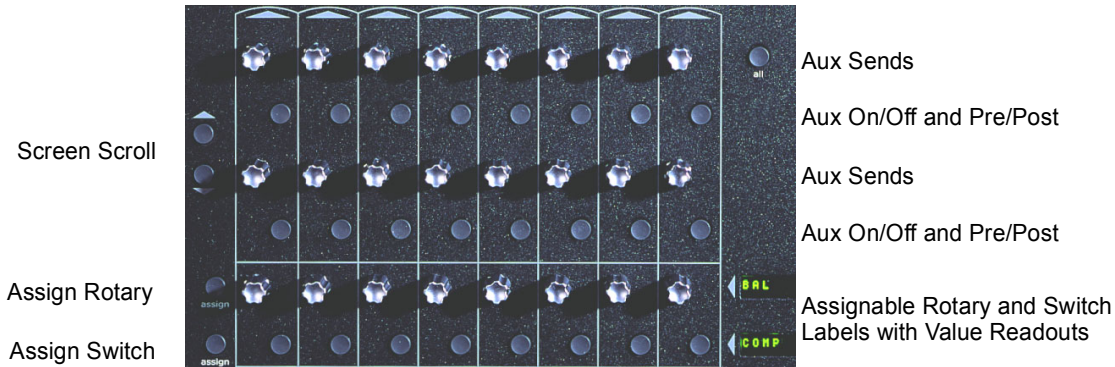
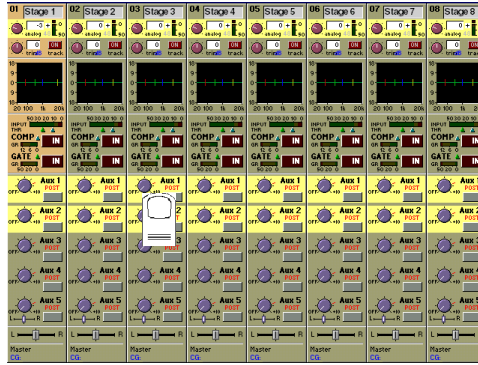
2.2.4 Pan / Aux Module

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 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

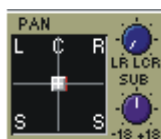
See Aux Buss Control in Chapter 3 for global mode changes.

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 two ways: by using the rotary controls in the Lower Row below the on-screen channel display, 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.



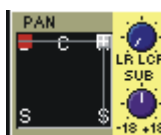
The surround panner for stereo inputs simultaneously controls the position of both left and right signals. The joystick and wheel directly control the position of the left signal, and the right signal is automatically mirrored on the left-right axis. A red indicator shows the position of the right signal. 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

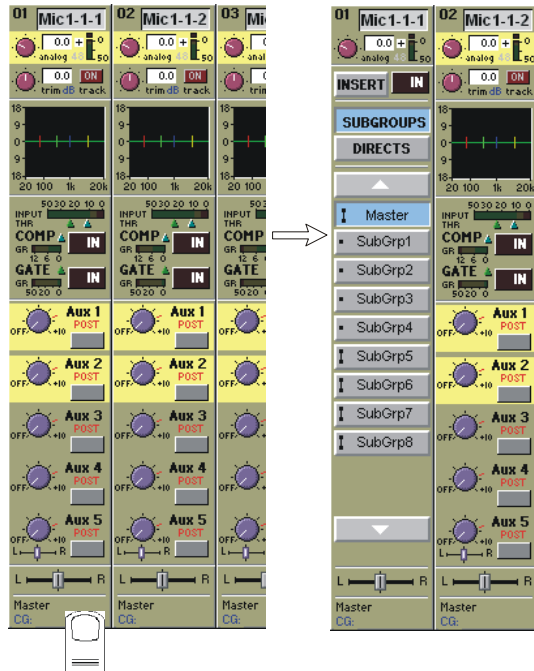


Routed to Master only and Direct routed to a socket called "Line 1"

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.

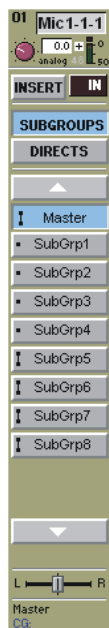
The Routing Module allows you to select the console SubGroup and/or Direct output socket routing for the channel.



SubGroup Routing

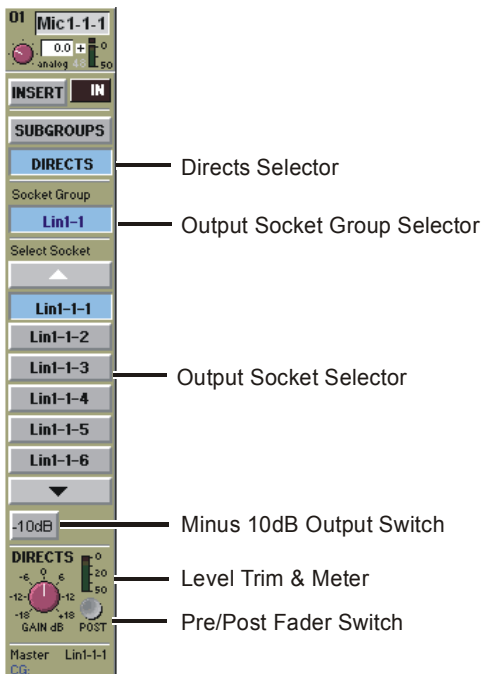
When the **SubGroups** button is selected, the on-screen SubGroup buttons allow you to connect the channel to any number of output subgroup busses - mono subgroups are displayed with a single dot (SubGroups 1-4 in the diagram below), while stereo busses appear with a double dot (groups 5-8) and surround busses with a small box. To connect or disconnect the signal, simply press the on-screen button for the relevant SubGroup.

The number and type of SubGroups 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:

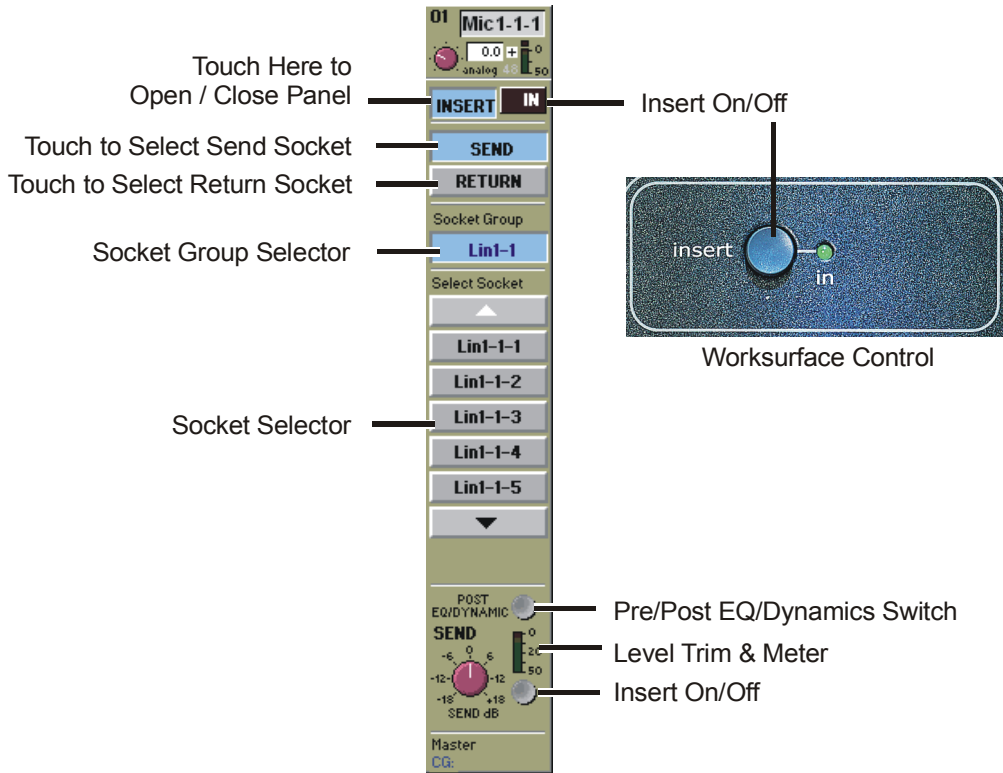
- PRE M = Pre Mute and Pre Fader
- PRE = Post Mute and Pre Fader
- POST = Post Mute and Post Fader

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 word **Insert** 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.



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

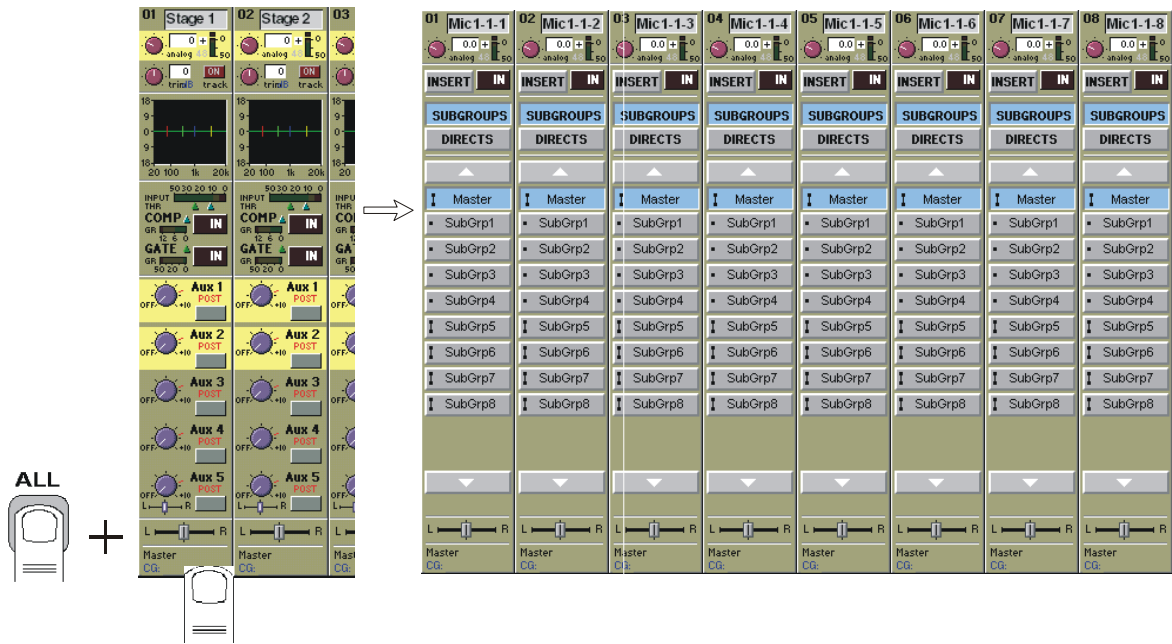
If you touch the **In** button, the channel's signal is taken from the Insert Return socket and thus switches the insert on.

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.

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.

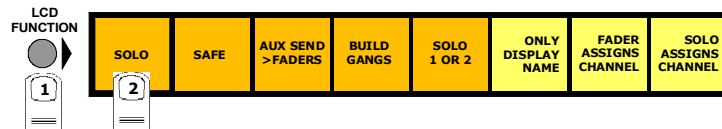
2.2.7 Undo / Redo Button

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.

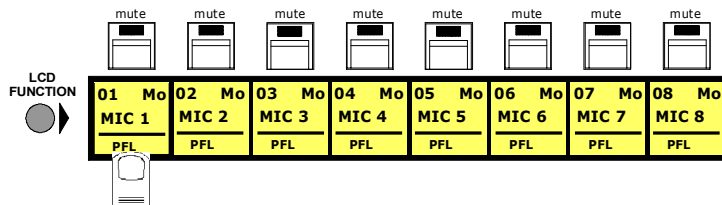
2.2.8 Channel LCD Function Buttons

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.

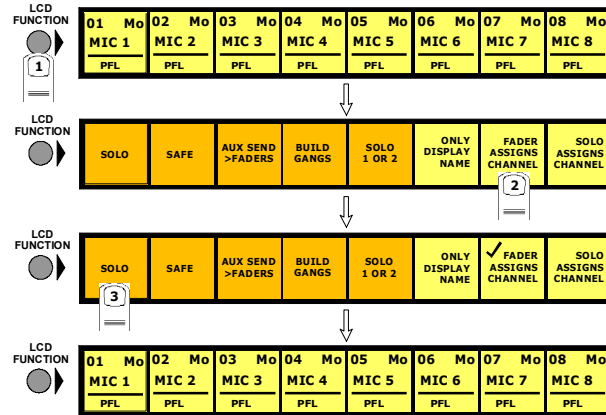
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There is also an option to assign a channel by either touching its fader or pressing its solo button.

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.

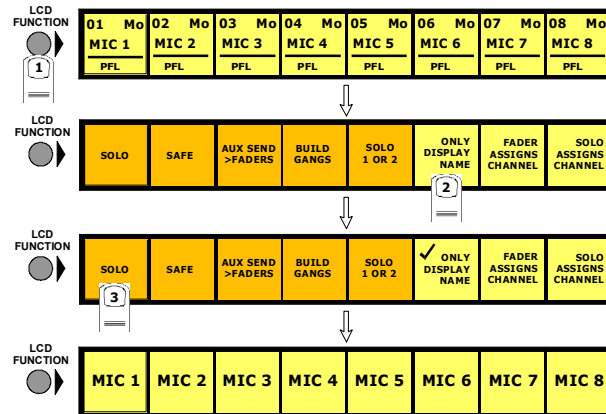


The **Only Display Name** option changes the appearance of the Channel LCD buttons when they are in Solo Mode to show the Channel Name in a large easy to read font.

To activate this function:

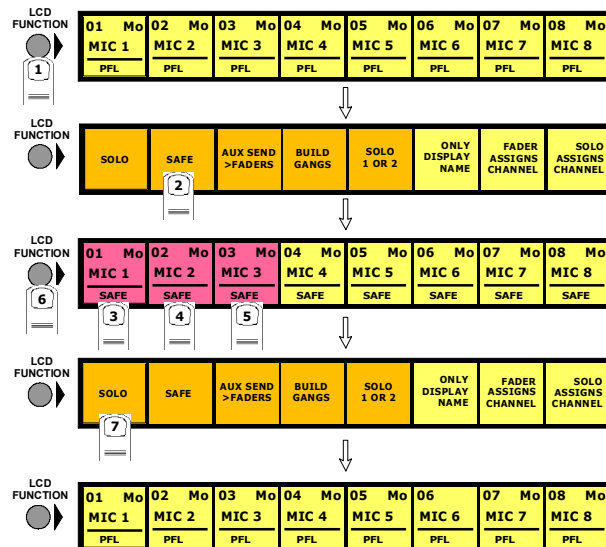
Press the **Channel LCD Function** button on the left of the input section and then press the **Only Display Name** button. When the function is activated, the button appears with a tick in its display.

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



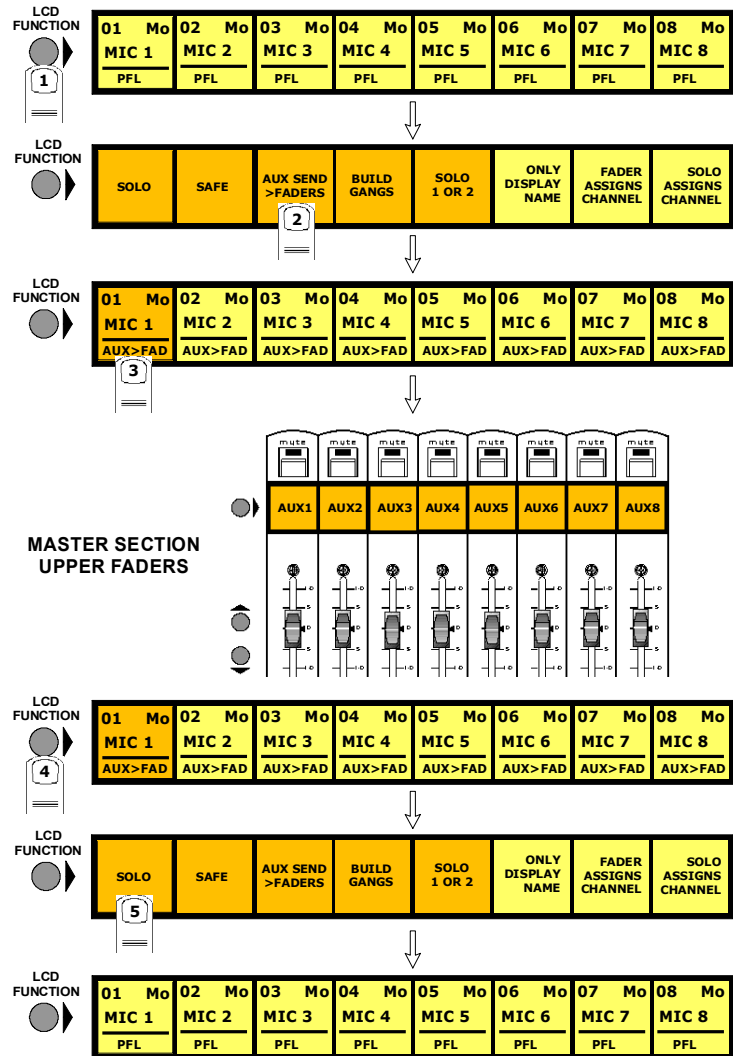
The **Safe** function makes selected channels safe from all Cues.

- 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.



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



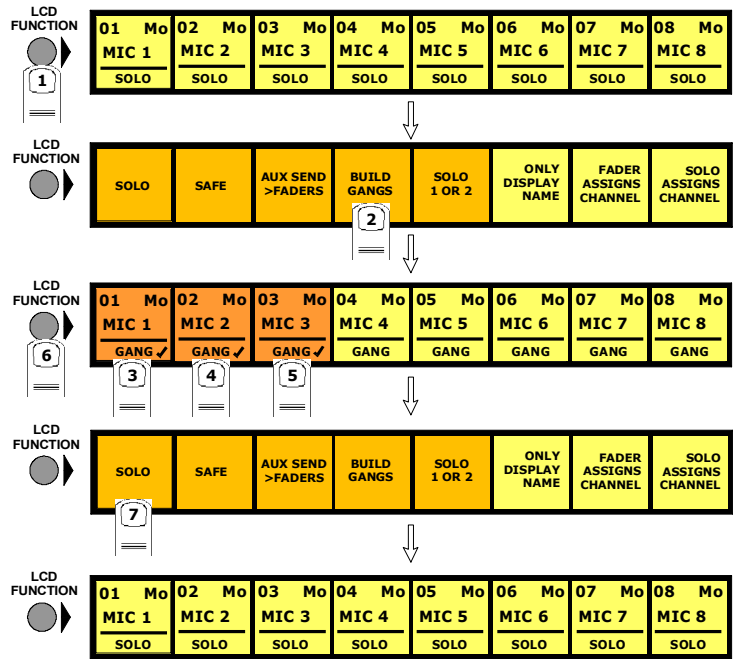
2.3 Ganging

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 Bank.

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.

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.

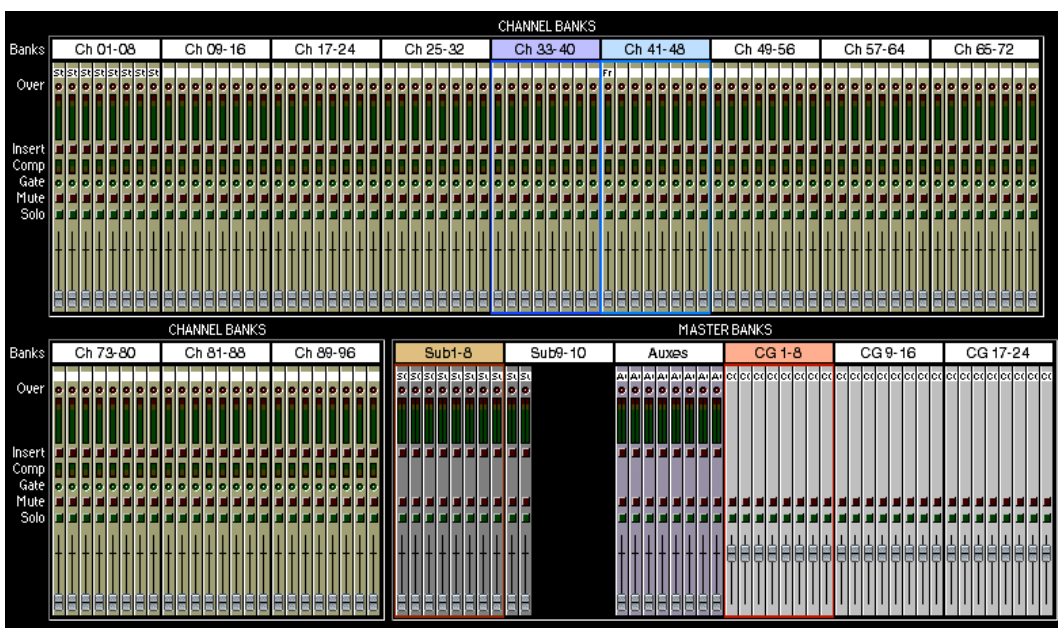
2) Socket Routing Buttons ie. Input source, Direct Out and Insert Send / Return.

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.



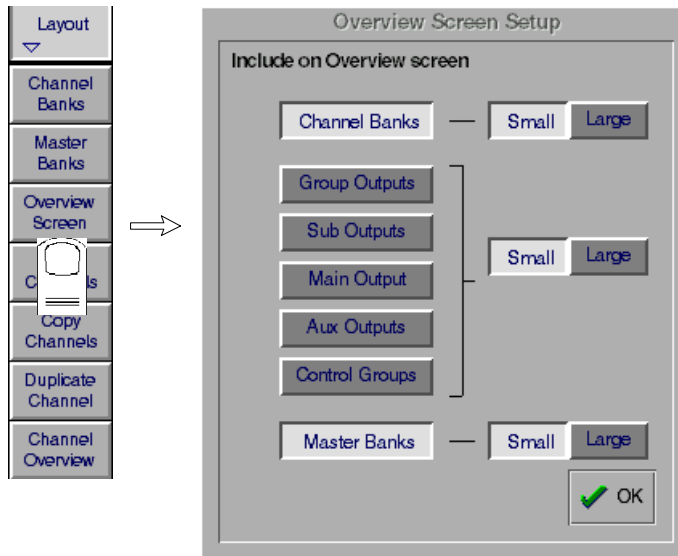
Each channel displays the essential meters, switches and fader, which may be operated with the trackball if required.

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

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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.

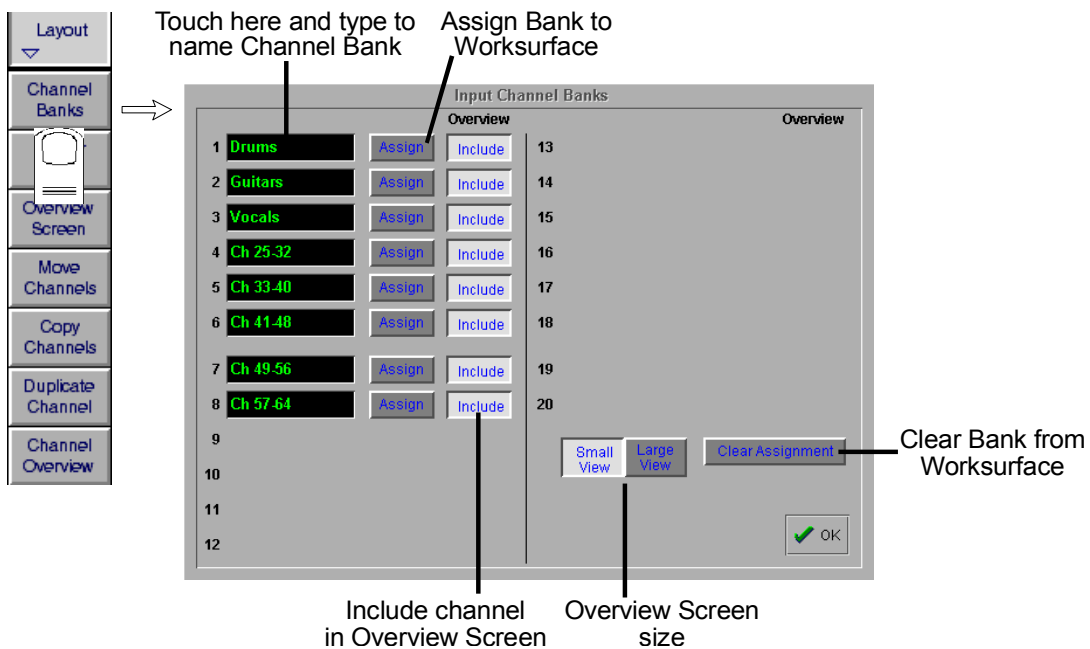
2.4.3 Channel Banks

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.

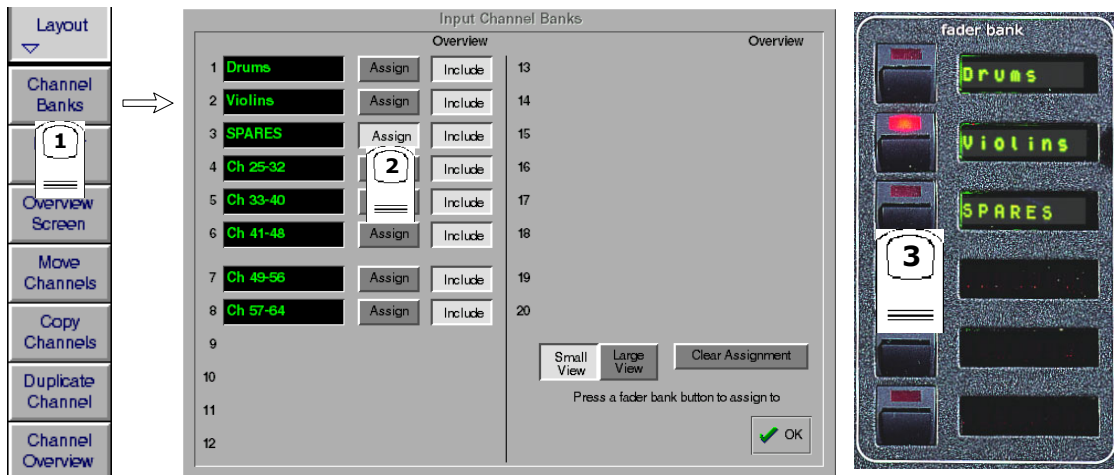


To Clear a Channel Bank from a worksurface Fader Bank:

- 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.



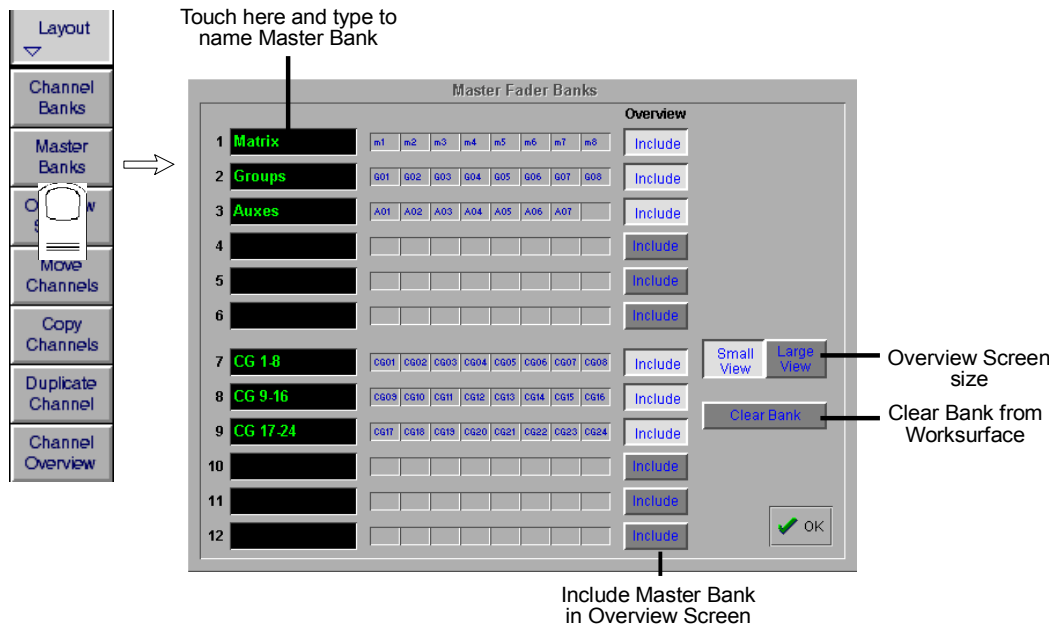
2.4.4 Master Banks

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.

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.

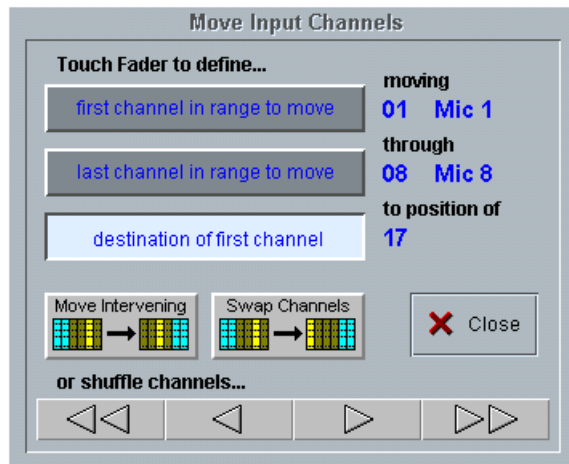
To change the appearance of the Master Fader Banks on the Overview Screen touch the **Small** or **Large View** buttons at the bottom of the panel.



Chapter 2

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.

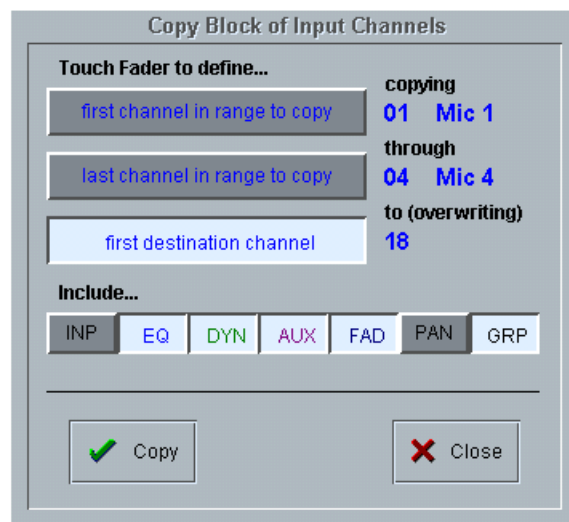
Swap Channels swaps the source and destination ranges leaving intervening channels alone. Move and Swap have the same effect if the source and destination ranges overlap.

After a Move or a Swap the selections are cleared but the panel remains visible for 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

FAD=channel fader positions

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

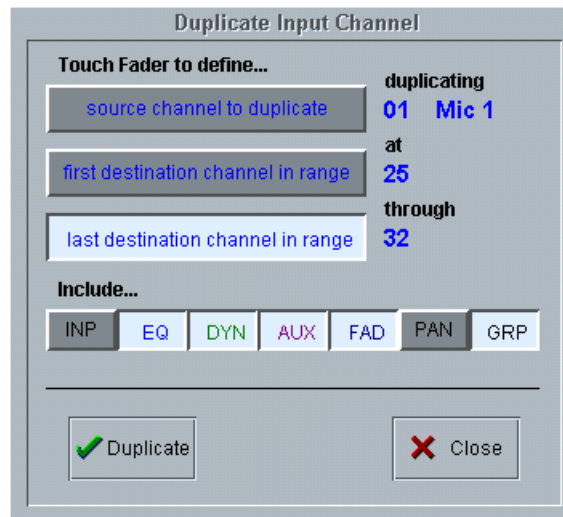
GRP = Group routing buttons only

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.

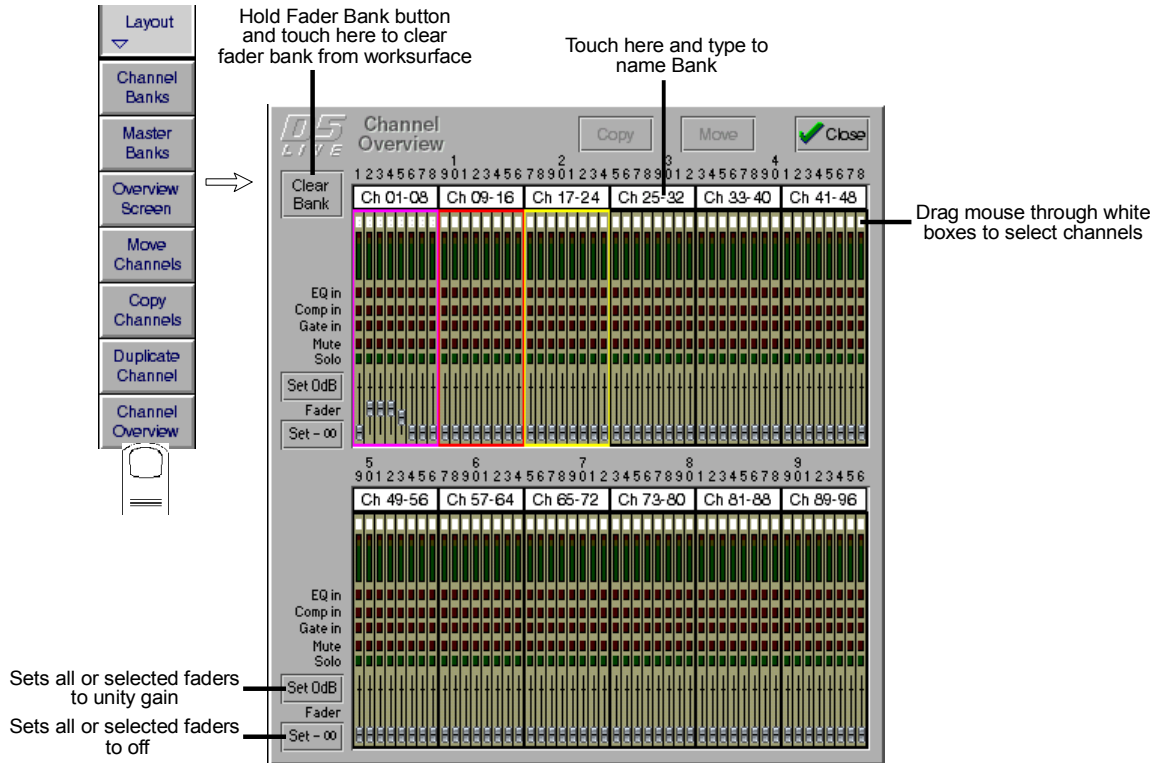
To **clear a bank** from the worksurface, hold down the relevant bank button on the worksurface and touch the on screen **Clear Bank** button.

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 -∞** 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, Sub Group and Aux 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

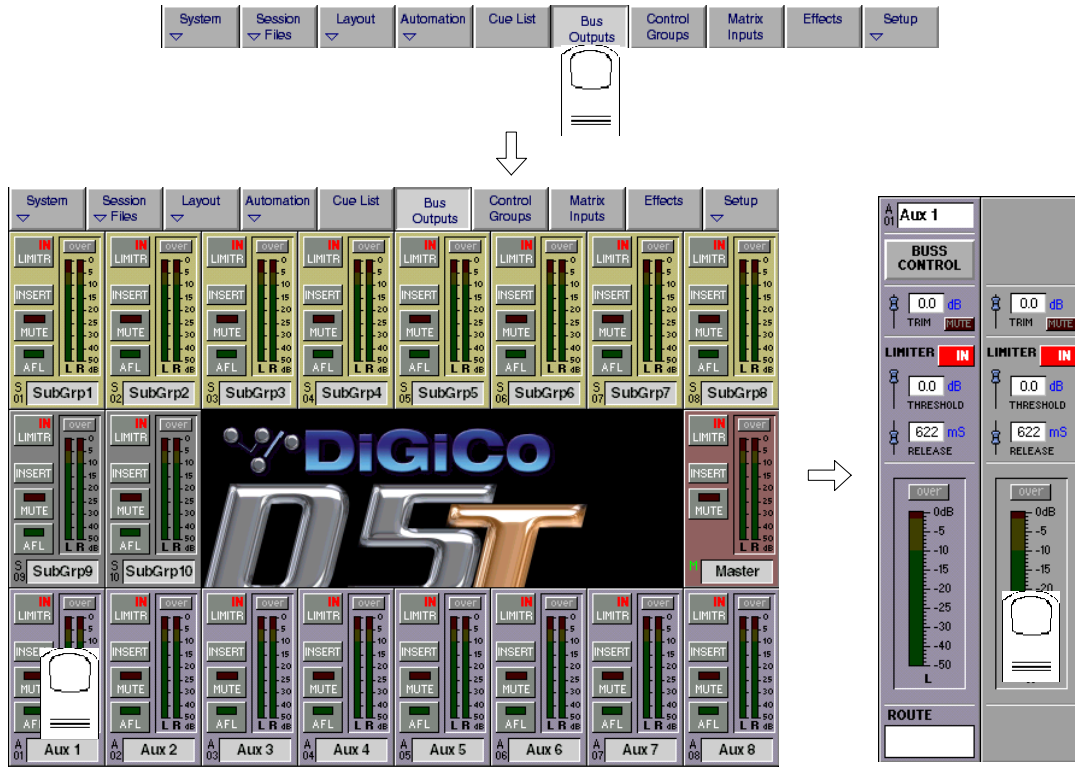
Each buss has **Mute**, **Solo**, **Insert On/Off** and **Limiter In/Out** buttons and the screen also displays an **Over** light for each buss - these are described in the next section.

Chapter 3

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.

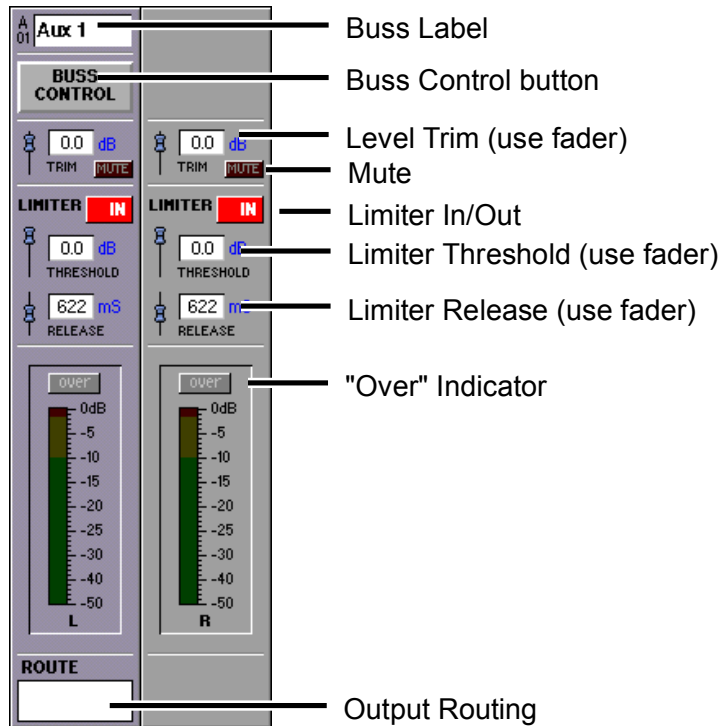
To see an expanded view of an assigned buss and access additional controls, touch the buss meter display.



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.

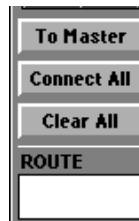
When a buss is labelled its name will appear in the input channel routing display.

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 sub group to be routed onto the Master Buss. Only sub 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 sub group are also routed to the Master Mix, a warning is displayed.

Note: The To Master button is not included in cues.

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.

Chapter 3

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.

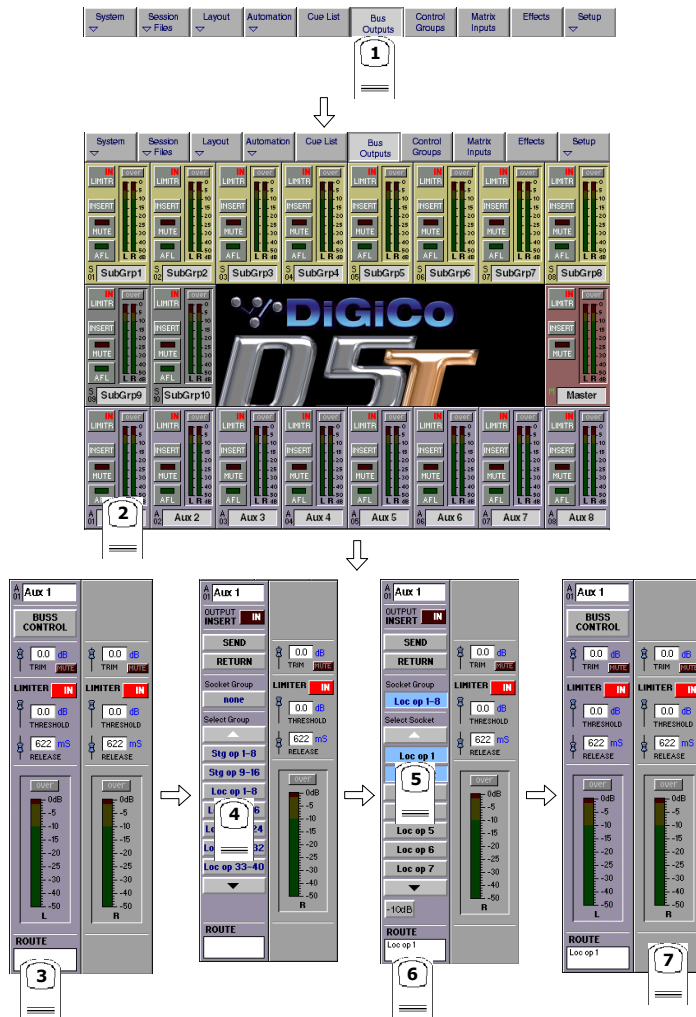
3.2.6 Meters

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 op 1** would assign the left buss signal to socket **Loc op 1**, and the right buss signal to socket **Loc op 2**.

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.

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

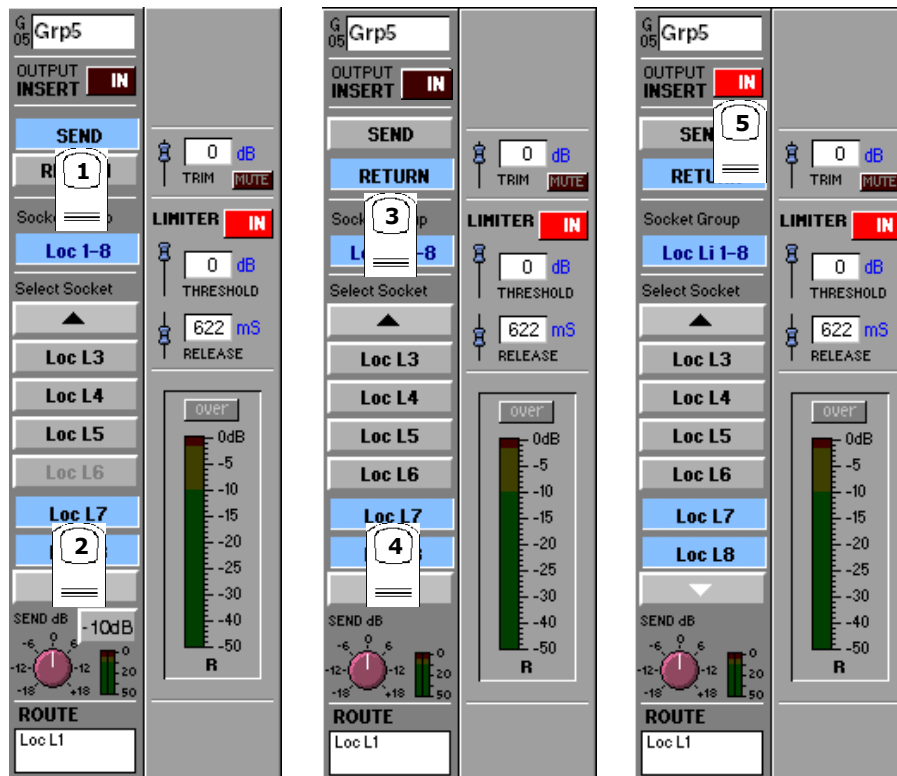
The headphones are always fed by the monitor/solo1 signals and there is a dedicated level control in the worksurface **Monitor** section on the right hand side of the worksurface.

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

3.3.1 Matrix Inputs

The 32x32 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).

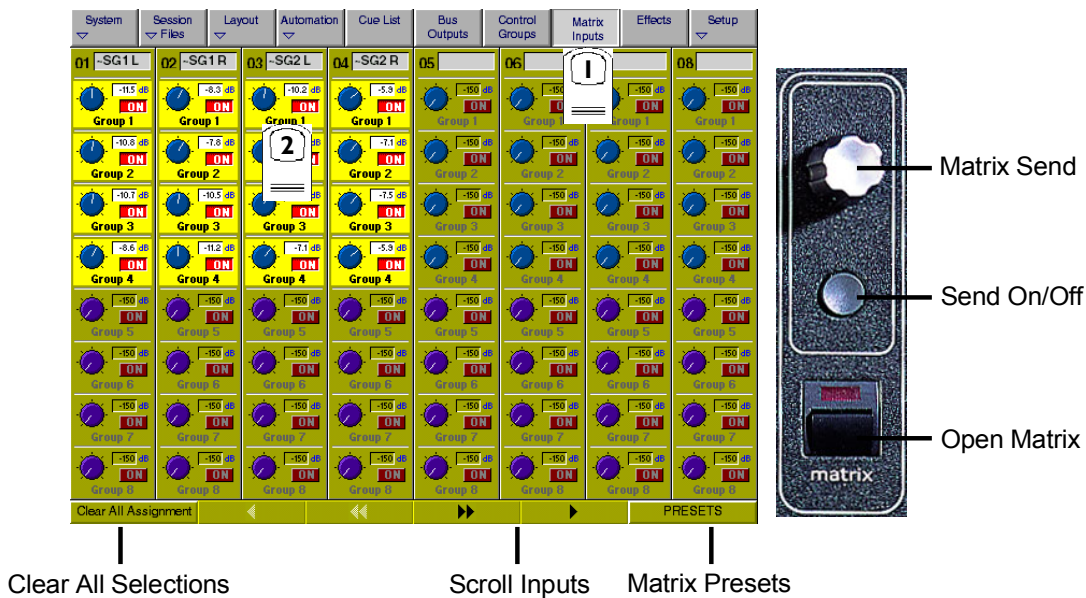
To route a Sub Group into the Matrix:

- 1) Touch the **Matrix Inputs** button on the master screen to open the panel.
- 2) Touch the **top of the input screen** to open the input panel.
- 2) Touch the **Stereo Buss or Mono Buss** button to view the names of the Sub Groups.
- 3) Touch the **name of the signal** to assign it to the channel **eg.SubGrp1L**
- 4) Touch the **top of the input screen** again to return to the standard view.

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

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

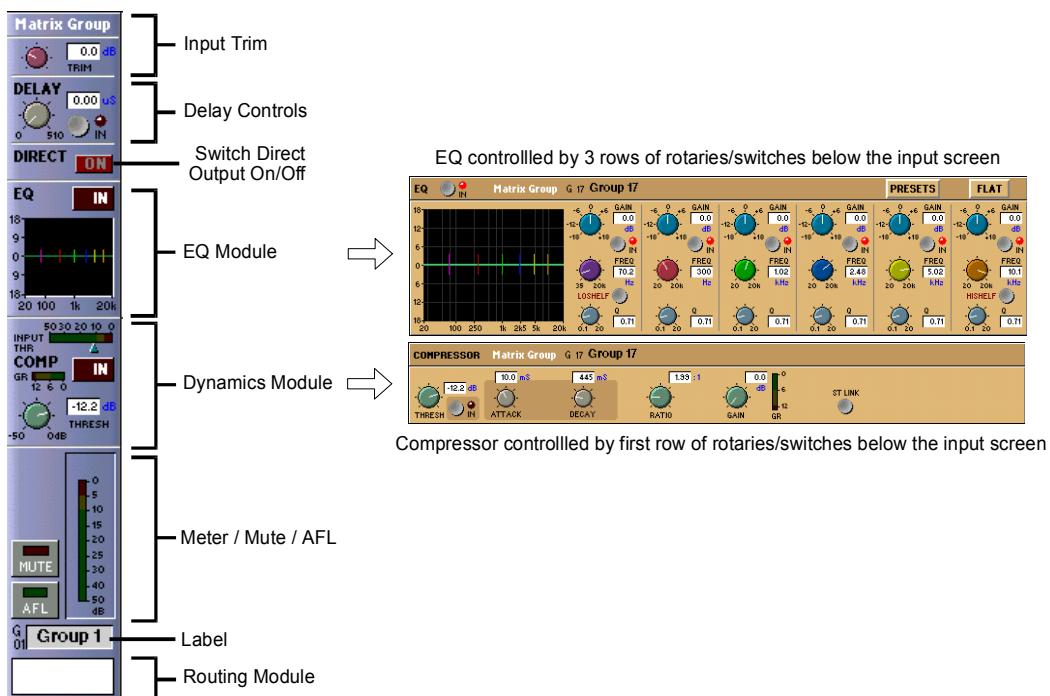
At the bottom of the panel there are buttons to **Clear All Assignment**, **Load and Save Presets** and **Scroll** buttons to view the other inputs and outputs.



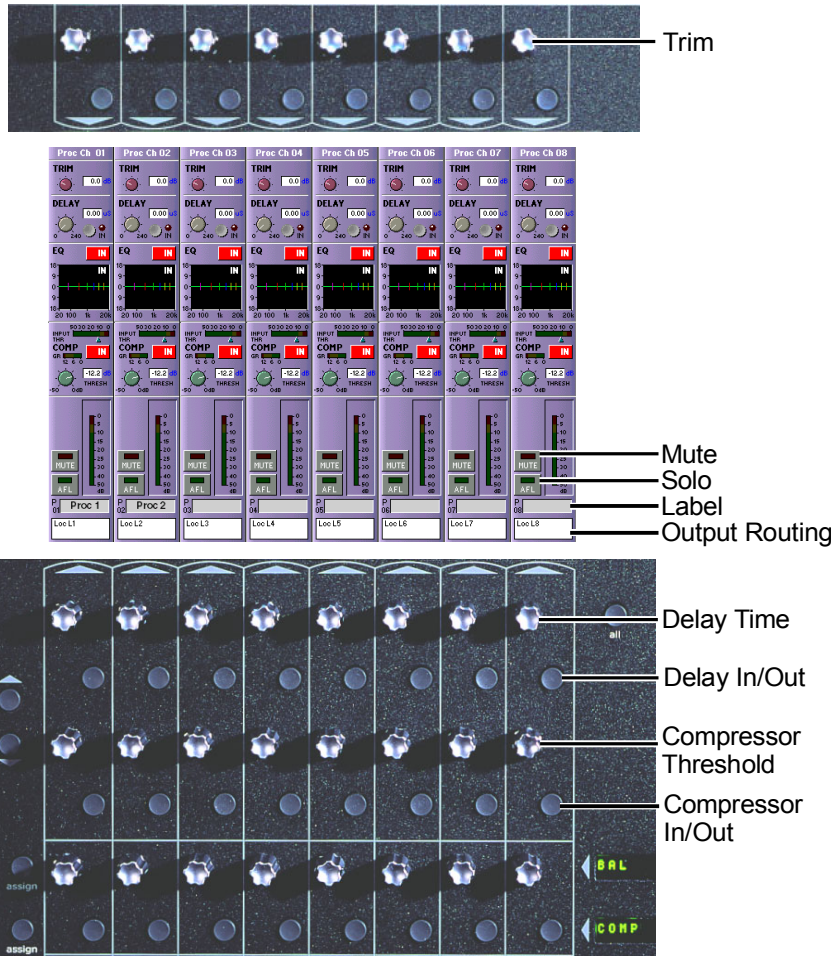
3.3.2 Matrix Processing

Each of the 32 Matrix groups is controlled on its own channel in the input banks labelled **matGrp1** to **matGrp4**.

Press the required input bank button to show the following panel and touch the relevant on screen area to expand the views.



Worksurface controls are as follows:



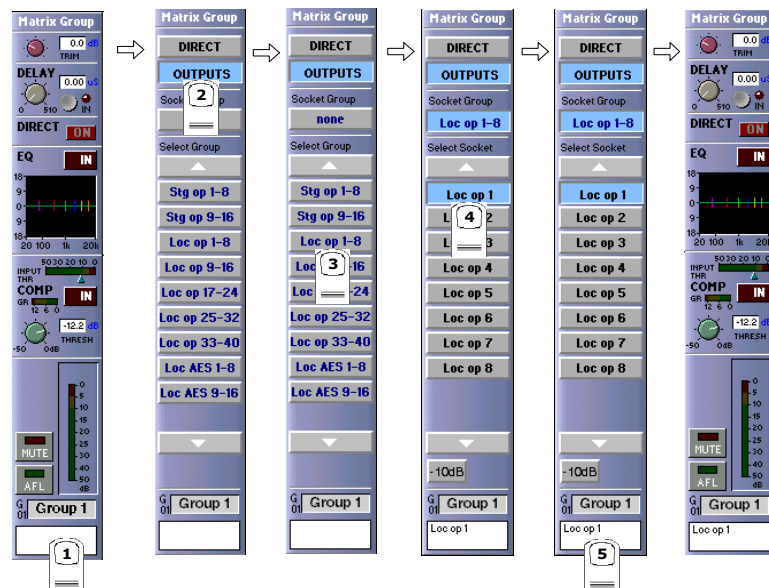
These channels provide Trim, Delay up to 510ms, Compression and 6 Band Parametric EQ.

3.3.3 Routing Matrix Groups To Outputs

Matrix Group signals may be routed to a pre EQ, pre fader direct output and/or a post fader output

To Route a Matrix Group to a post fader Output:

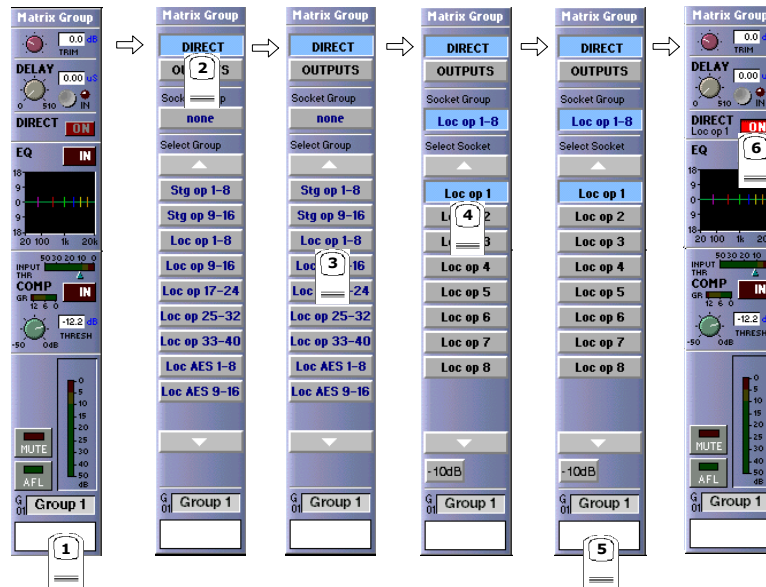
- 1) Touch the **bottom** of the matrix group screen to open the routing panel.
- 2) Touch the **Outputs** button if it is not already highlighted.
- 3) Touch the name of the **Socket Group** to view the output socket names.
- 4) Touch the **Output Socket** button(s) that you require eg. **Loc op 1, Loc op 2** etc.
- 5) Touch the **bottom** of the input screen again to return to the standard view.



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To Route a Matrix Group to a pre EQ, pre fader Direct Output:

- 1) Touch the **bottom of the matrix group screen** to open the routing panel.
- 2) Touch the **Direct** 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 op 1, Loc op 2** etc.
- 5) Touch the **bottom of the input screen** again to return to the standard view.
- 6) Touch the **Direct On** button to turn the output on.

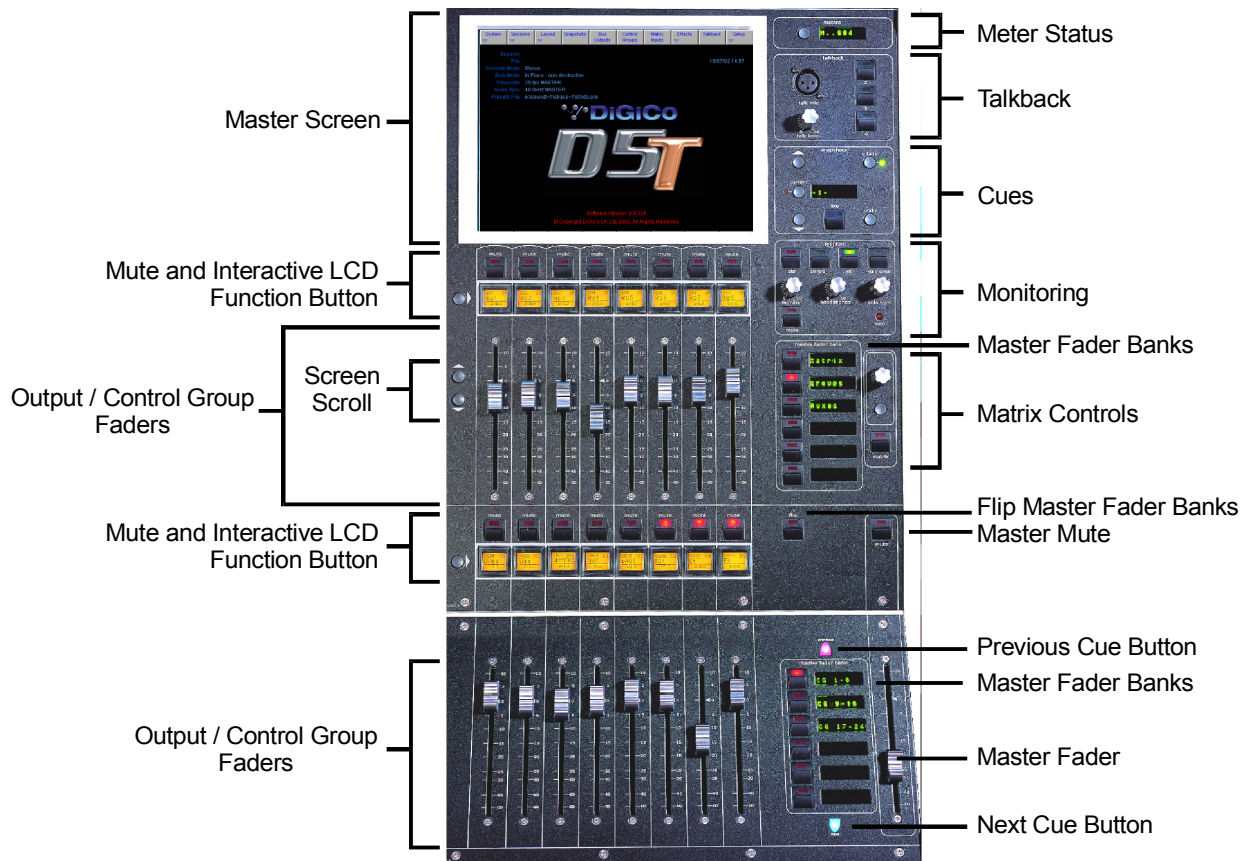


Chapter 4

Master Section

4.1 Master Section

The Master section of the D5T console includes the output controls described in the previous chapter and the meter bridge above it:



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).



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.

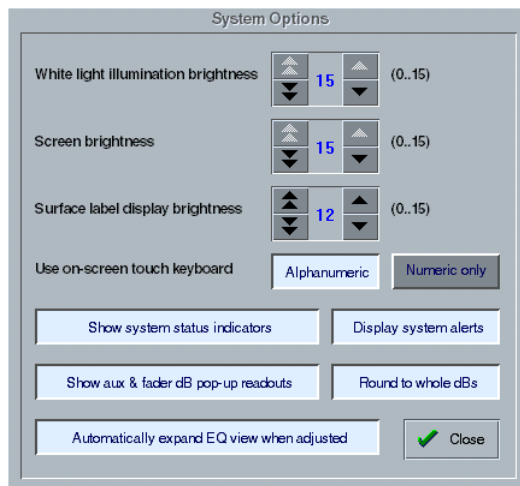


Quit To Windows Command

In the Service menu, this button will close the D5T 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 **White Light Illumination Brightness**, **Screen Brightness** or **Surface Label Display 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.

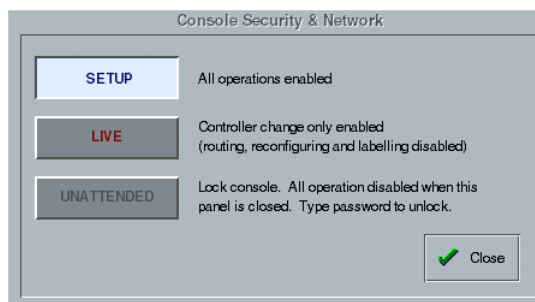
Round to whole dBs switches any dB readouts to whole dB measurements instead of decimal places.

4.1.3 Console Security

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.

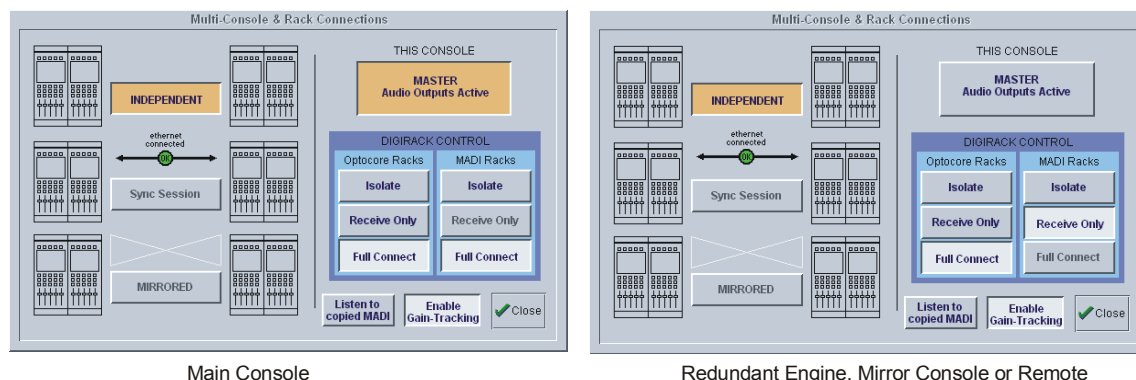
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

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

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 D5T 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 Cues.
- The Dynamic automation.

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

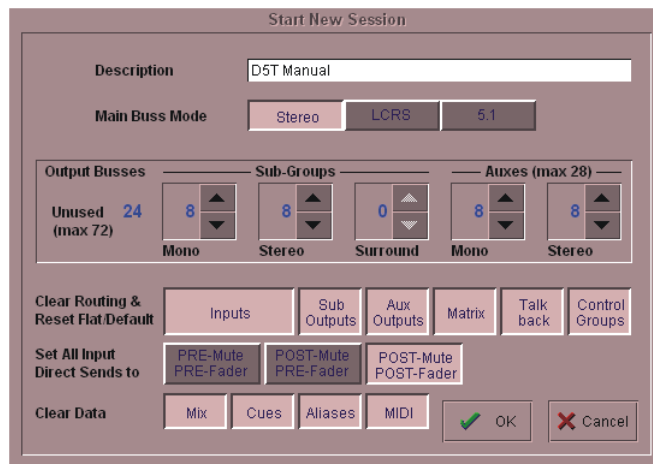
4.2.1 Session Files Menu

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

To create a new session, touch the **Session Files** button on the master screen and then touch the **New Session** button. The following panel will appear:



The **Main Buss Mode** defines the format of the Main buss as Stereo, LCRS Surround or 5.1 Surround. This also affects the options for selecting the Sub 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 **Sub Groups** and **Auxes** settings allow you to define the format and number of the Aux and Sub Group busses.

The total amount of busses cannot exceed 72.

4.2.3 Clearing Settings

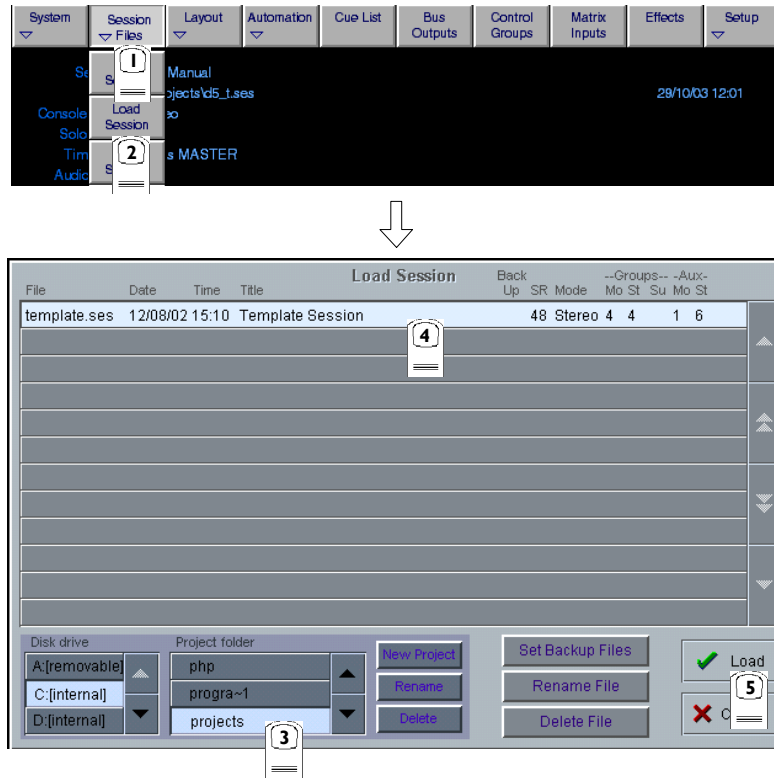
When you start a new session all current settings will be inherited by default but the Mix Automation and Cue List will be cleared.

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.

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.

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 meter bridge.

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

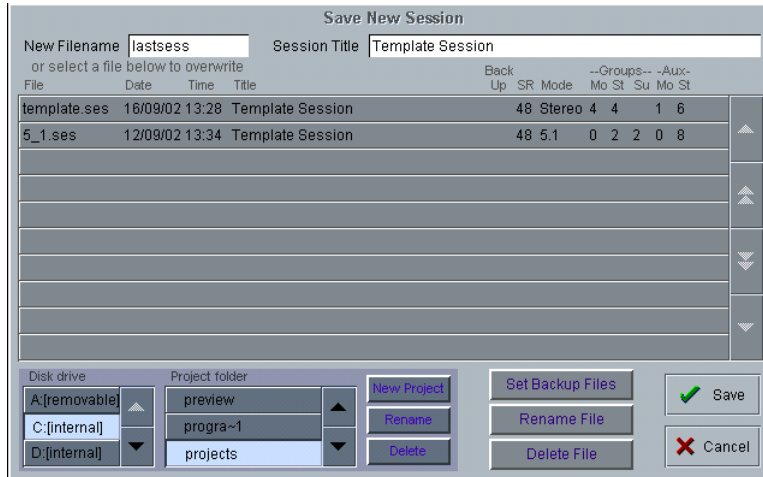
Touch this button and then touch the folder name that you wish to change. This will then be highlighted and you may type a new name.

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.

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 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.

NB: 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

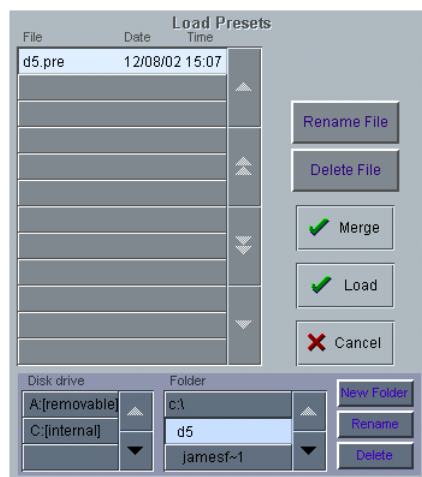
The console is equipped with a Data Port which is designed for use with a key-ring style data card. To use this facility, insert the card into the USB Data Port and it will be recognised as an external drive. It will then appear in the Load and Save panels and can be used for storage and retrieval of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

4.2.8 Managing Presets

Each session file has an associated presets file with the same name and the file extension .PRE. When a session file is saved, the presets file is automatically saved as well. You may, however, load and save presets files independently.

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.

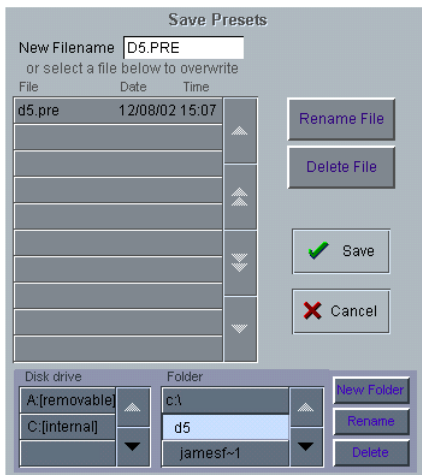
Simply select the drive you require in the bottom left corner and then open a folder from the scrolling list next to it by touching it. You can then touch a specific preset file to highlight it and touch the **Load** button.

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:



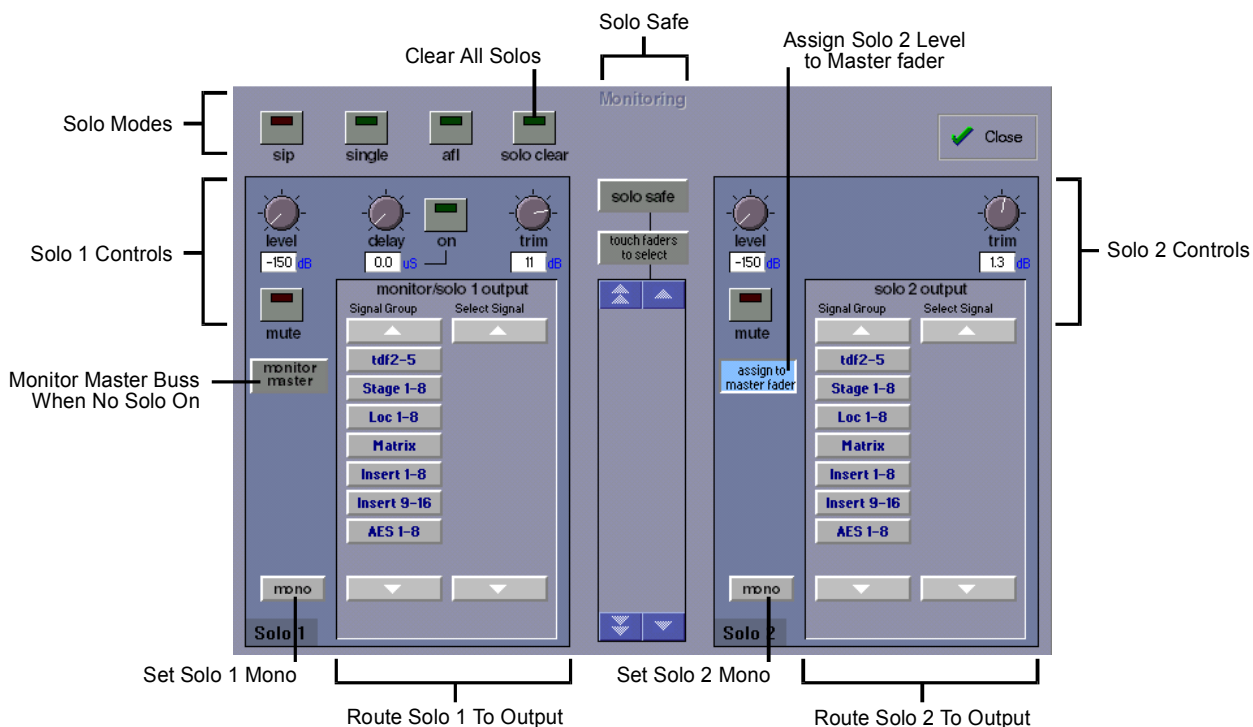
Select a drive and folder in the bottom left hand corner of the panel, type a new name in the **New Filename** box and press the **Save** button.

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 workspace.

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



Chapter 4

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.

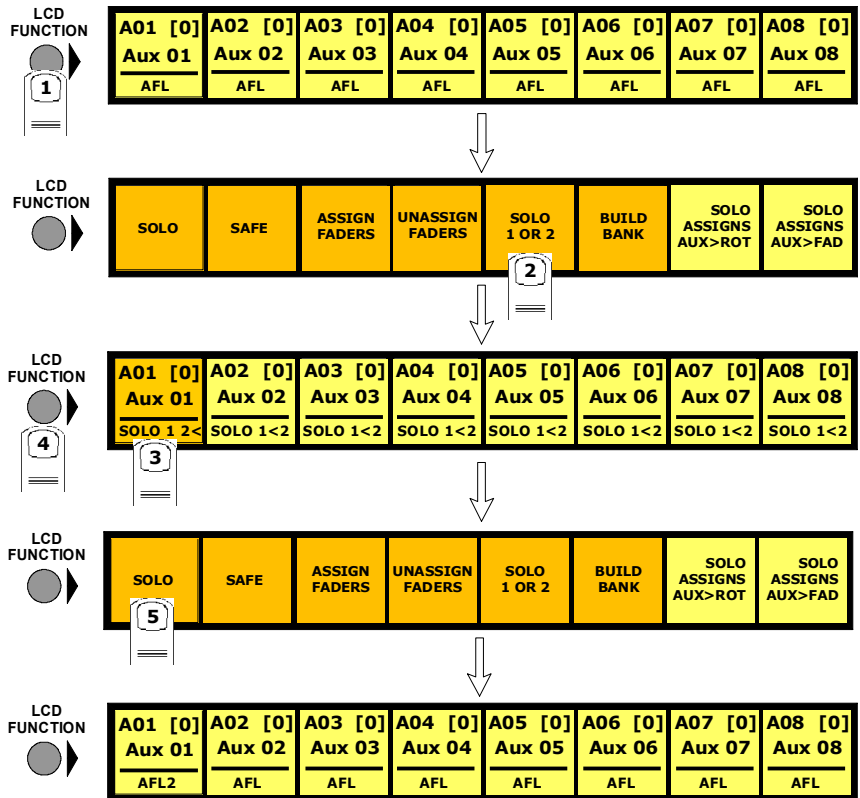
Therefore, if the console was being used for stage monitors, the first solo buss could feed an "in ear" monitor and the second solo buss could feed a wedge.

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

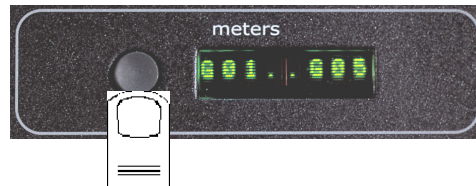
Solo safe may be used in any solo mode.

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.

Upper Bank

The meters follow the currently assigned upper 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.

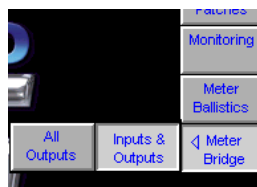
4.2.11 Meter Bridge Options

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.

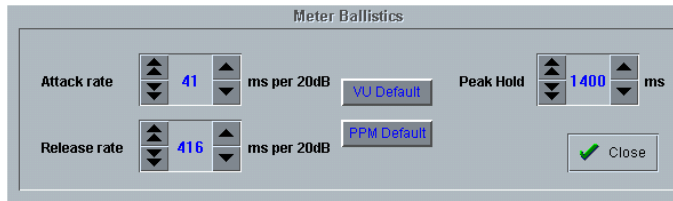
The other option is **All Outputs** where the output signals are shown consecutively across the entire Meter Bridge.

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.

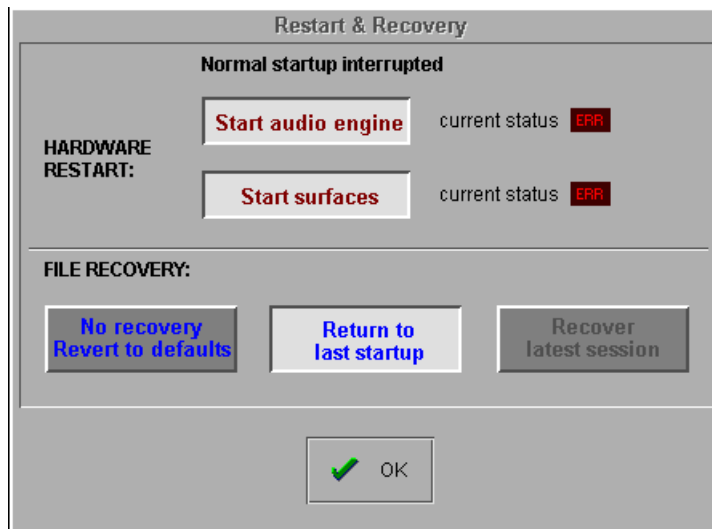
In the unlikely event of a console software crash, an abnormal shutdown, hardware or power failure, D5T will recover the latest session automatically and it can be rebooted without losing audio.

If there is any problem with this process, holding the keyboard **Shift Key** during the reloading of D5T software will open the following panel:

IMPORTANT NOTE: The easiest method of doing this is to Quit To Windows and then reload D5T software from there.

If you are holding the **SHIFT Key** when Windows is reloading, the D5T Surfaces program and D5T software itself will not load automatically.

If this situation occurs be sure to restart Surfaces.exe from the Windows Start menu before loading D5T software.

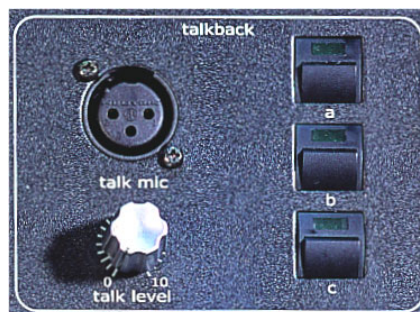


This allows the options of:

- 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, and there is an input socket provided on the rear panel for a 2nd remote talkback microphone. 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

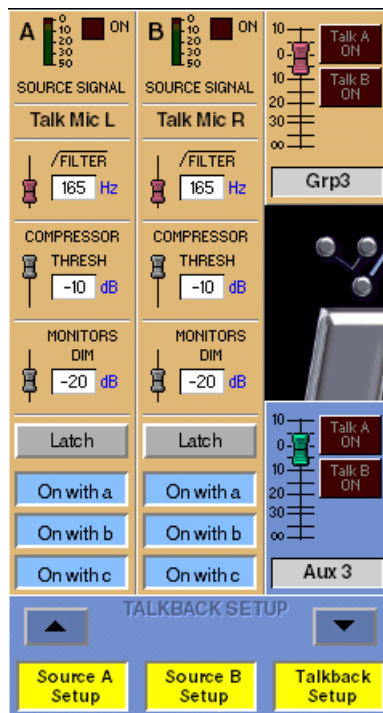
The two talkback channels can be mixed independently onto any buss using the **Talkback Setup** panel, which is displayed on the Master screen when the on-screen **Talkback** button is touched.



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 (Top) mic, the Rear 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

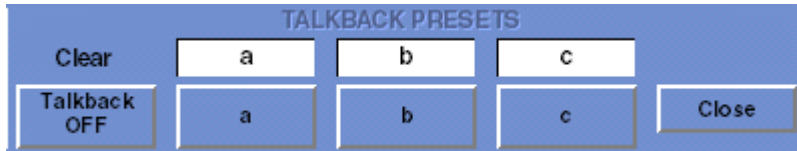
Each output buss has its own level control in the Talkback mixer, along with a switch for connecting each Talkback channel to the buss at the chosen level.

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

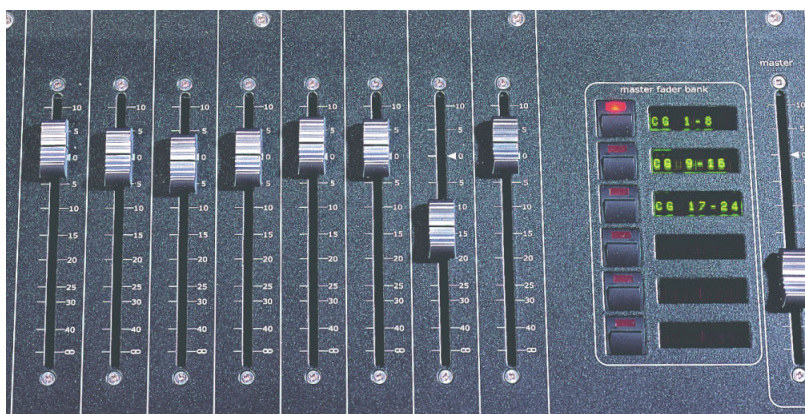
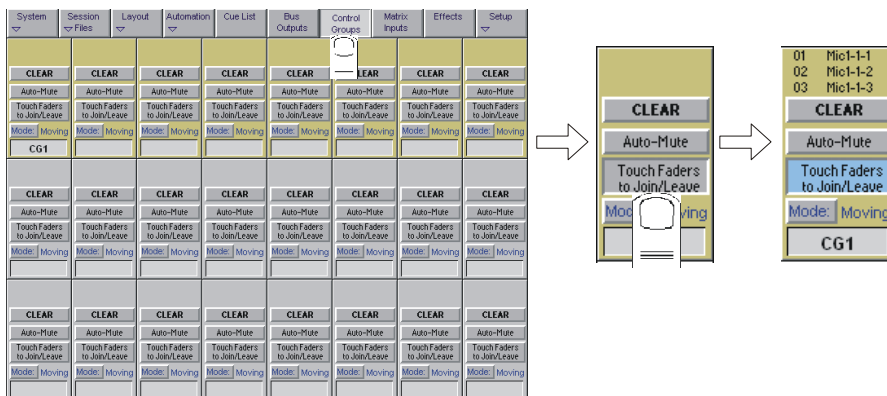
Any number of input channels and output channels can be connected to one or more of the 24 Control Groups. They can then all be operated from a single worksurface control. Changes to the Control Group fader, mute or solo or controls will affect all channels connected to the group.

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 (1-24).
- 3) Touch the **faders** on the channels that you want to include. (Touching the fader a gain 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) Press the **Auto-Mute** button if required to select this mode for the Control Group.

With **Auto-Mute** on, any Control Group member which is removed from the group will be automatically muted and any member that joins a group will be automatically unmuted.

- 7) 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.

4.4.4 Auto-Mute Option

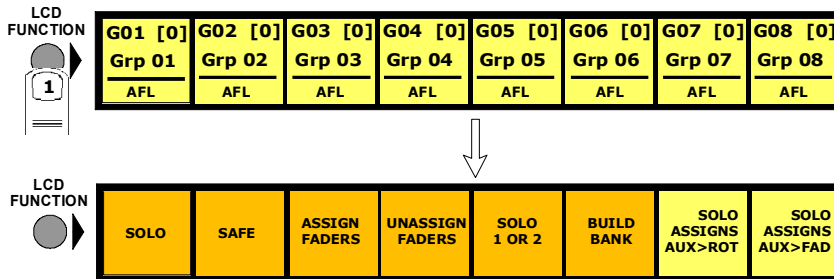
With **Auto-Mute** on, any Control Group member which is removed from the group will be automatically muted and any member that joins a group will be automatically unmuted.

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

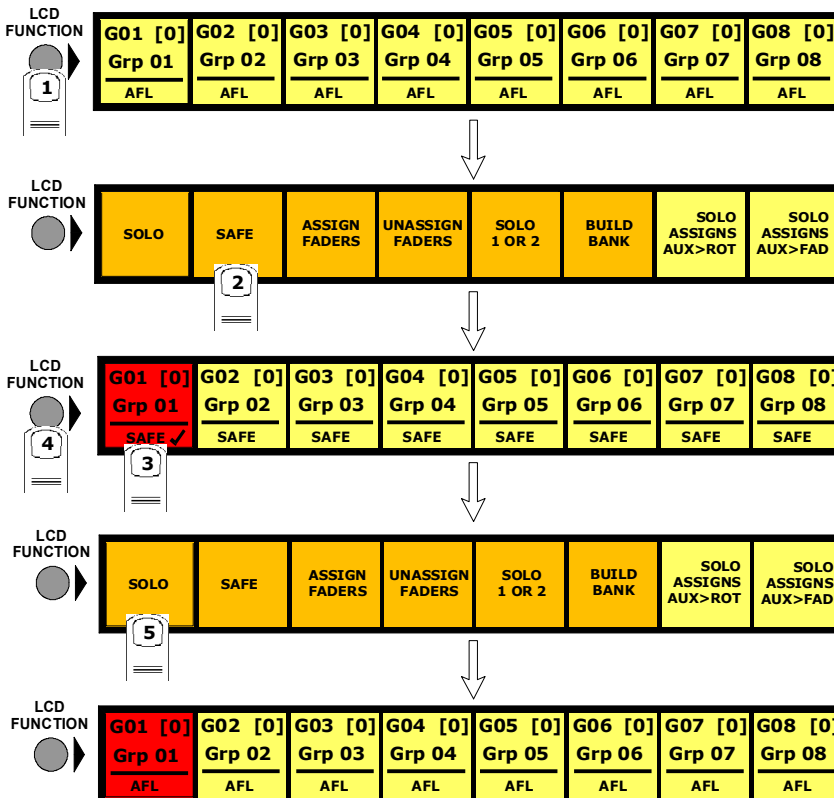
Press the **Master LCD Function** button.



To Make Masters Safe From All Cues

The **Safe** function makes selected SubGroup, Aux and Control Group Master Faders safe from all Cues.

- 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.



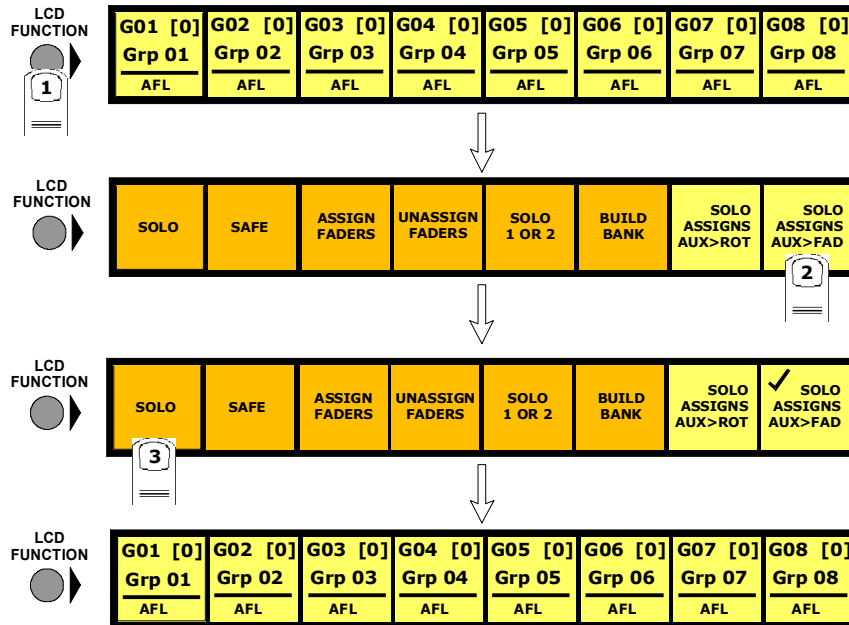
Auxiliary sends can be controlled by the console's channel faders or rotaries in several different ways.

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

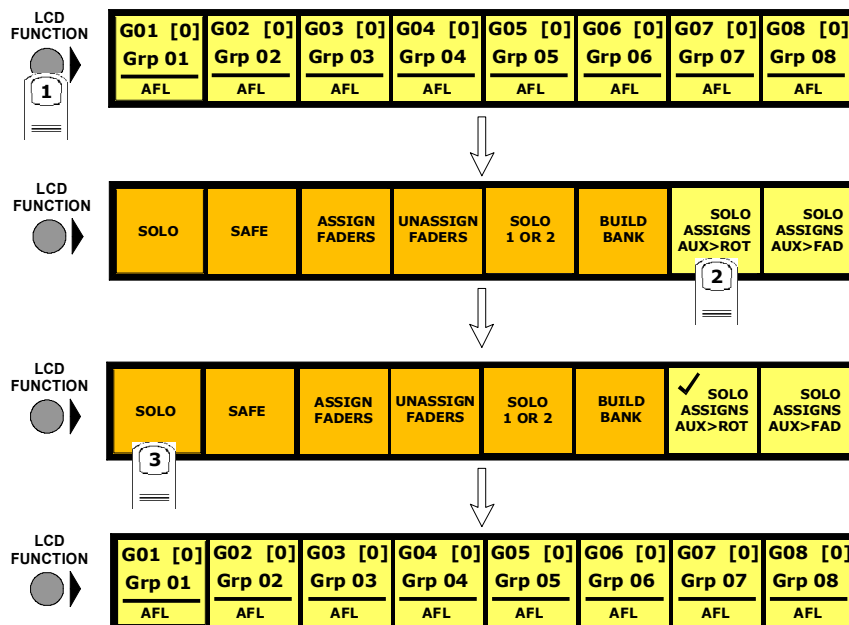
- 1) Press the **Master LCD Function** button.
- 2) Press the **Solo Assigns Aux > Fad** button (a tick will appear in the box).
- 3) Press the **Solo** function button to return to the standard view.



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.

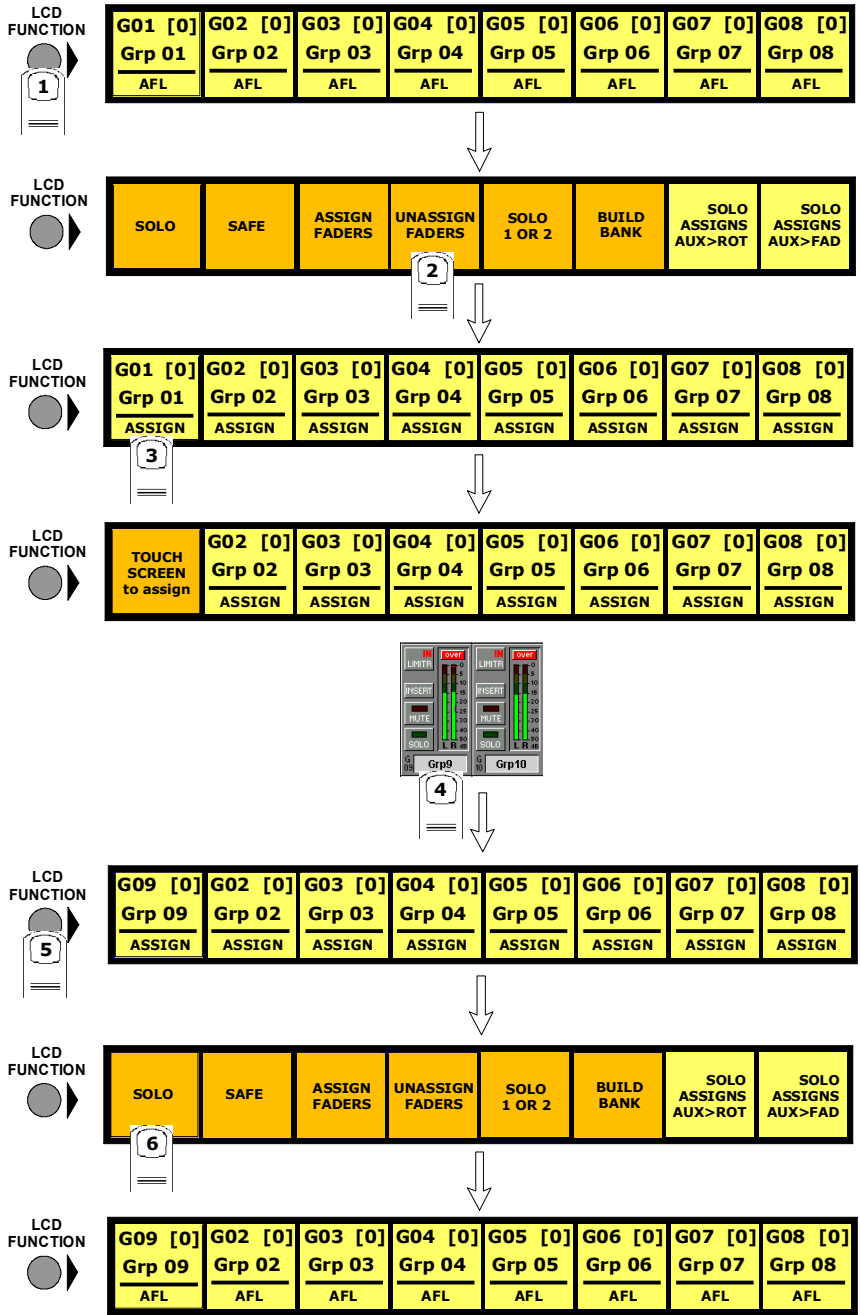


Chapter 4

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

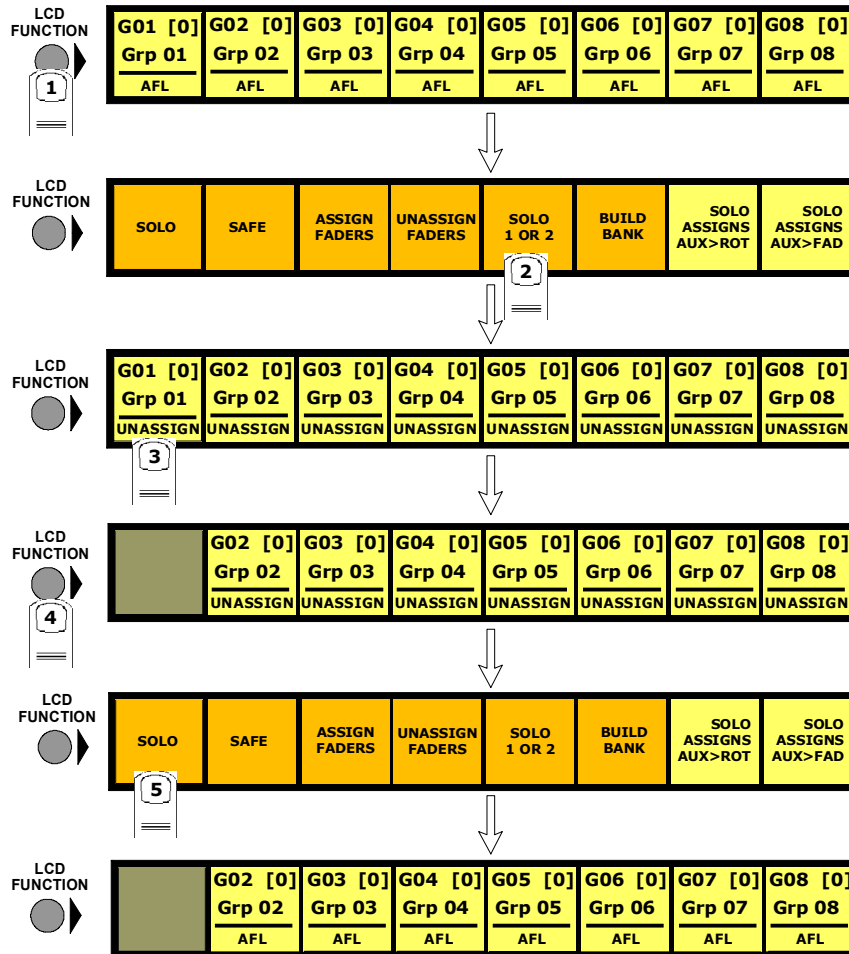
To Assign Faders To Banks

- 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.

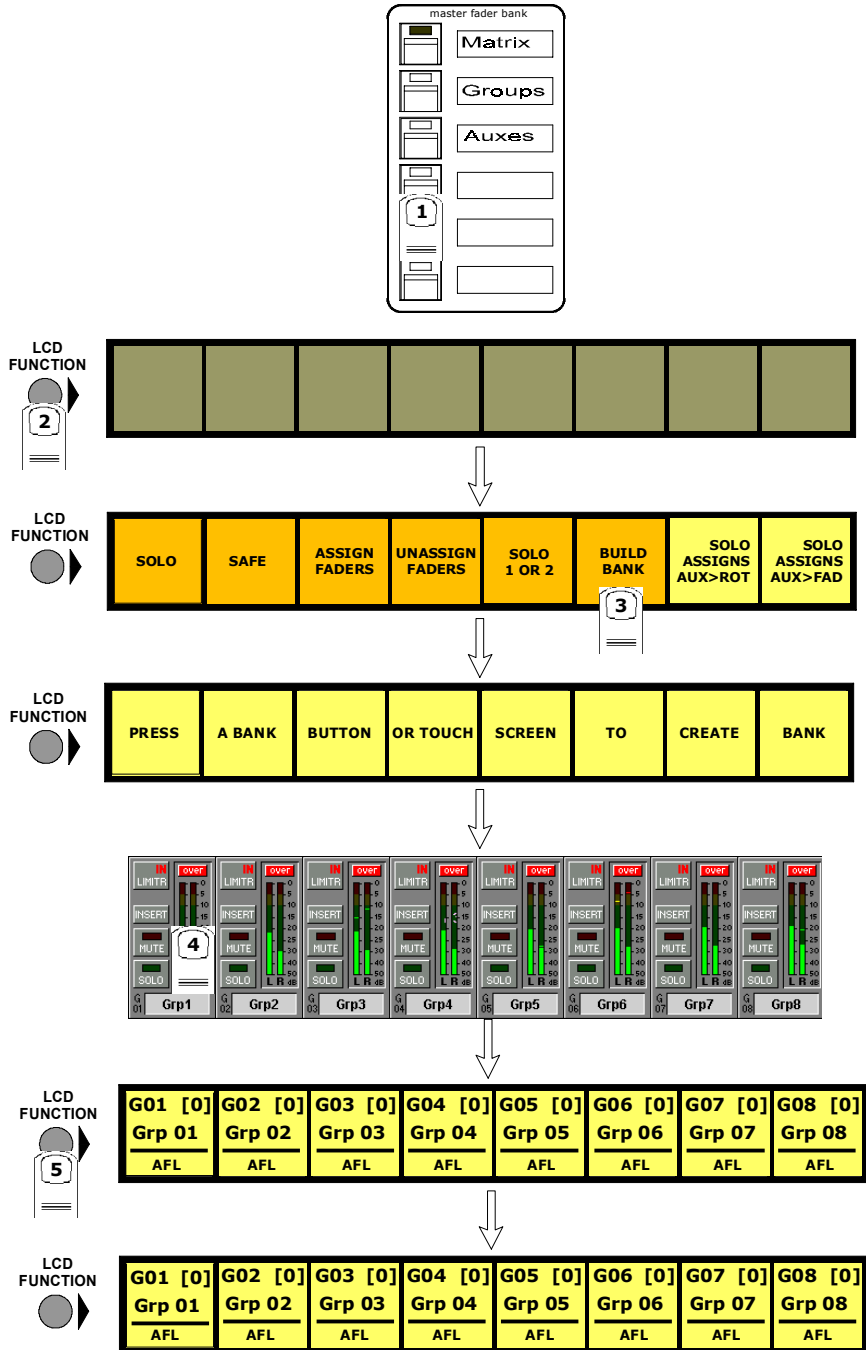


Chapter 4

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

To Build A Bank

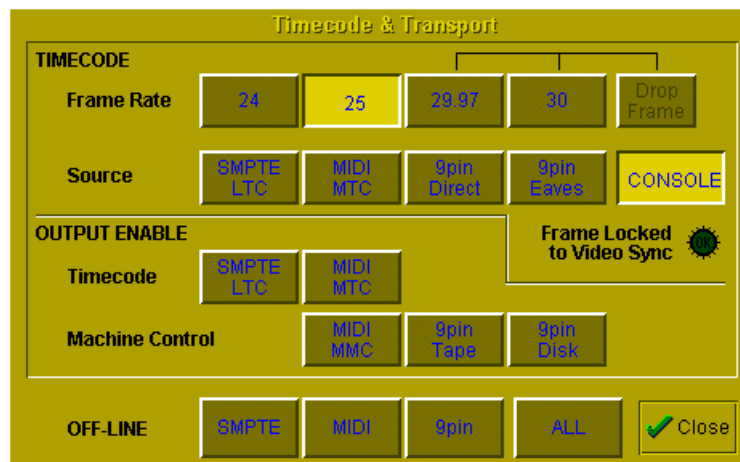
- 1) Press the **Master Fader Bank** button for the bank that you wish to build.
- 2) Press the **Master LCD Function** button for the relevant bank.
- 3) Press the **Build Bank** button.
- 4) Touch the on screen row, press a Bank button or touch an input screen for the **Bank** that you wish to Build. 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.



4.7 Transport / Timecode Configuration

When the D5T 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.

4.8 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. If you are only using MADI connections, Master must be selected as the Audio Sync source.

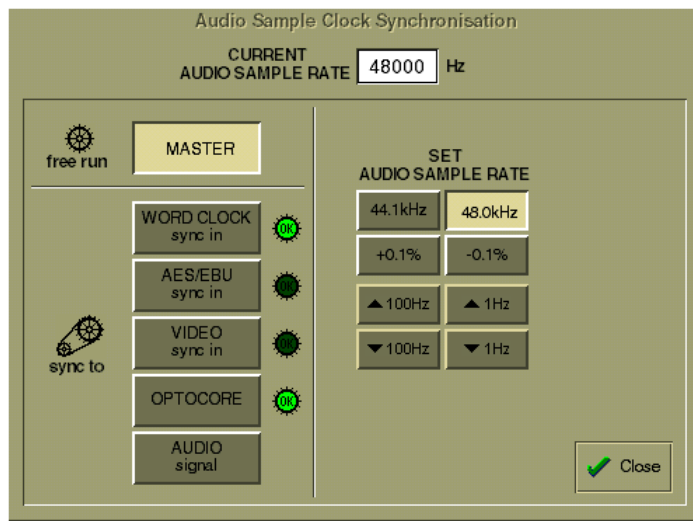
When the D5T is used with only analogue signals connected to both inputs and outputs synchronisation does not need to be considered.

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 D5T 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 D5T 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:



4.8.1 Internal Sync - Console As Master

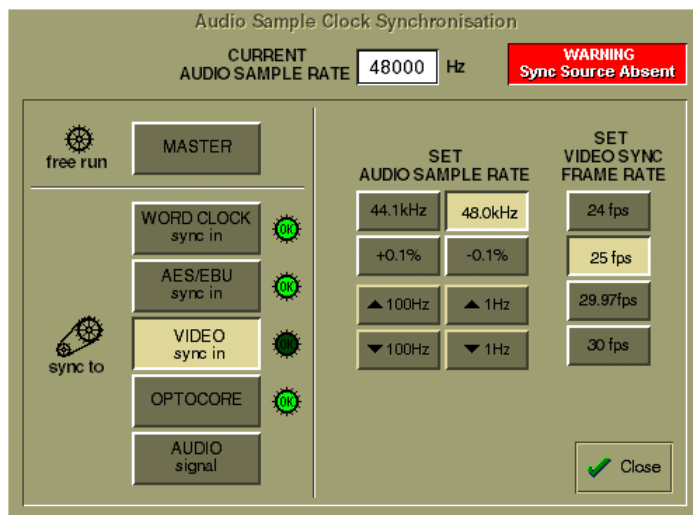
If you choose to use the console as the master sync source, you can select a standard sample rate with the 44.1KHz or 48KHz buttons and the adjust it if necessary in steps of +/- 0.1% or +/- 100Hz and 1Hz.

4.8.2 External Sync

WARNING! Operators should be aware that it is normal for a misclocked or unlocked 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.



4.8.3 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.

4.8.4 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

The Cue List

5.1 Cue List

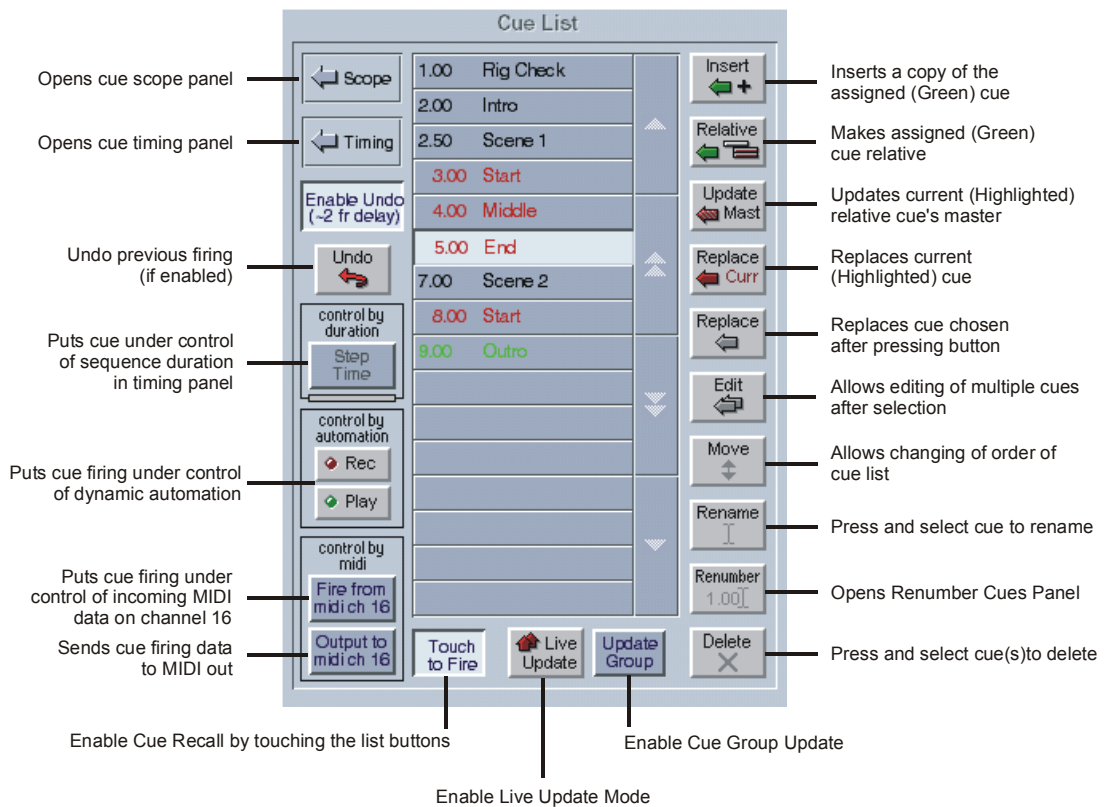
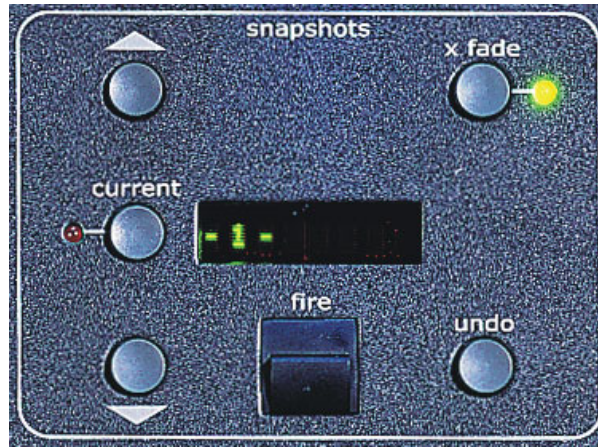
Any number of Cues containing the entire current console settings can be stored and recalled using the Cue List panel. (This is only limited by system memory)

These Cues can be absolute or relative to another cue.

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

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

Workspace controls can be found to the right of the Master Screen and Previous / Next buttons in the bottom right corner of the Master section.



Note: The current cue appears in the panel as the highlighted (pressed) button. The cue name displayed in green indicates that it is the assigned to the worksurface and its name is indicated in the display. The Fire button recalls this assigned cue and highlights it in the screen list as the current cue.

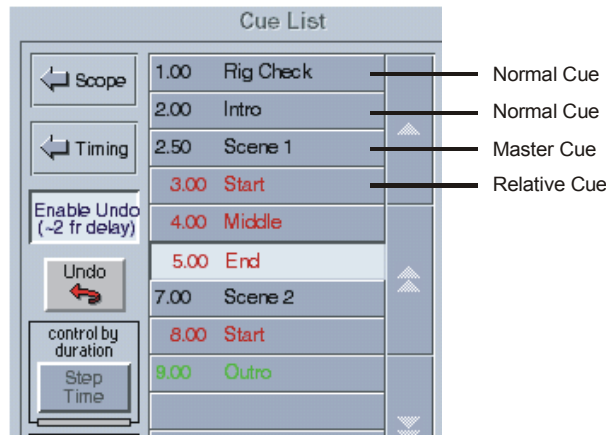
If the current cue button shows an asterisk next to the number (eg. 001*) this indicates that a controller has changed since the cue was fired.

Chapter 5

5.1.1 Normal, Master and Relative Cues

There are three types of Cue:

- 1) **NORMAL CUE** - this appears in black on the list and is always followed by another NORMAL CUE or MASTER CUE.
- 2) **MASTER CUE** - this appears in black on the list and is always followed by a RELATIVE CUE.
- 3) **RELATIVE CUE** - this appears in red on the list and its entry is indented. It is always relative to the MASTER CUE above it.



A Normal or Master cue (black entry in the list) is an absolute snapshot of the current state of all the console controls. A Relative cue (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 cue in the list. Therefore, if the level of a dB control is changed in the Master cue the same control will change by the same amount in all of its relatives. If non-dB controls such as EQ frequency, pan and Q are changed in a Master cue, only relatives that have the same settings will change with it and then to exactly the same value as the Master Cue. Commonly, a Master cue would be used as a starting point at the beginning of a performance and would contain all the basic routing and levels. The subsequent cues 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 cue will automatically update the relatives without the necessity for changing each cue individually. There may also be several groups of Master and Relative cues that relate to different parts of the performance. Eg. One group per scene or per song. A Master Cue and its associated Relatives are known as a Cue Group and the members of these groups can be updated in isolation from all other cues using the Live Update function in combination with the **Update Group** button. (See Section 5.2).

5.1.2 Storing a Cue

The first cue must always be a Normal or Master cue and a new session will always contain one default cue. This default cue will be a flat console state with all faders down and all channels muted. To store a new cue, touch the Cue List panel's **Insert** button and a new cue will be inserted below the currently assigned (green) cue and you will be prompted to name it. Initially this cue will be a copy of the cue above it but can be edited or replaced immediately (**See Replacing a Cue**). Alternatively, touch an unused button in the list and a new cue will be added to the end of the list. This cue will initially be a copy of the last cue on the list. To store a Relative cue, you must first create a second Normal cue and this can then be changed to Relative by assigning the cue 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 cue should then be shown in red and indented. Once the Relative button is pressed, all subsequent cues will also be Relative until you choose to change them. All cues with the exception of the first cue may be made Relatives or Masters at any time.

5.1.3 Recalling a Cue

To recall a cue, simply touch the cue button you require and this cue will then remain highlighted until the next cue is recalled - This function can be switched on or off using the button labelled **Touch To Fire**. Alternatively, the buttons on the Worksurface on the right of the screen provide **Scroll Up/Down** buttons to change the assigned cue named in the worksurface display and listed on screen in green. You can also use the dedicated **Fire Next** and **Fire Previous** buttons on the console worksurface which are situated above and below the Lower Master Bank buttons. The following keyboard keys can also be used to navigate through the cue list. Home, end, up, down, page up, page down. Alpha keys move the assigned cue to the one whose name starts with letter pressed. The **Fire** button then recalls the assigned cue. The **Undo** button is only enabled if the **Enable Undo** option button is pressed on the screen. The **x fade** button has a LED which indicates whether the assigned snapshot has cross-fading enabled, and may be used to switch off this feature temporarily while recalling the cue. Cue firing can also be controlled by specific events on MIDI channel 16 (See Cues and MIDI).

5.1.4 Replacing a Cue

To update or change a cue, set the console controls as required and then touch the **Replace** button followed by the cue 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** cue and this can be used to replace the last cue that was fired.

Note: The Current cue is not necessarily the one whose name appears on the worksurface, this is the Assigned cue. For a cue to be Current it must have been the last one that was fired and be highlighted in the on screen panel's list.

5.1.5 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 Cue's Master but subtract the relative values from it first.

Therefore if you are working in a Relative Cue 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 cue.

NOTE:

Only variable dB controls can be updated in this way.

If a non-dB control eg Pan is changed in a Relative Cue and Update Master is pressed only related relatives with the same setting will be changed.

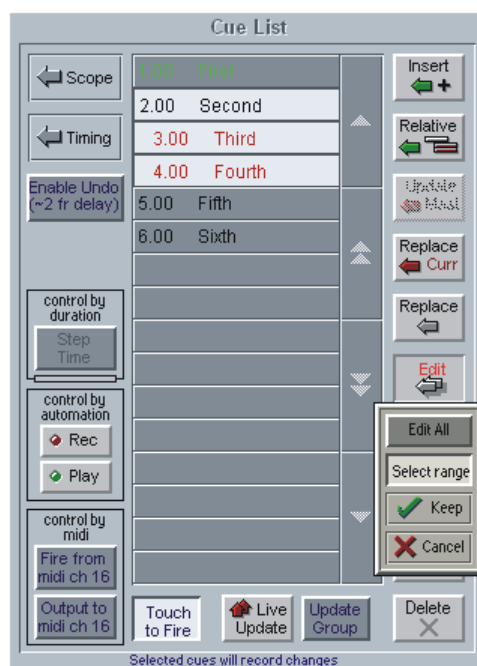
If a switch setting is changed in a Relative Cue and Update Master is pressed, the new switch setting will not be written to the Master Cue. To update switches in multiple cues, the Edit Cue function should be used.

5.1.6 Editing Multiple Cues

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

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

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



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

The selection may be changed by pressing and releasing cue 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 cues before completing the operation by pressing the **Keep** button.

The Cue List 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 cue edit mode.

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

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

For example, if cues 1 and 2 are selected and the input gain for channel 1 is changed, subsequent recall of cues 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 cues that are selected at the time.

If **Cancel** is pressed instead of **Keep**, all cues 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 cue, a warning is displayed and the **Cancel** button is disabled.

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A change in any of the following settings can be copied to all selected cues 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 Banks can only be done with the **Replace** command on one cue at a time. If you recall the cue before changing the layout, all other settings stored in the cue will remain unchanged.

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

5.1.7 Moving a Cue

If you wish the cue 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 cue that you wish to move. You then touch the point in the list where the cue should be moved to.

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

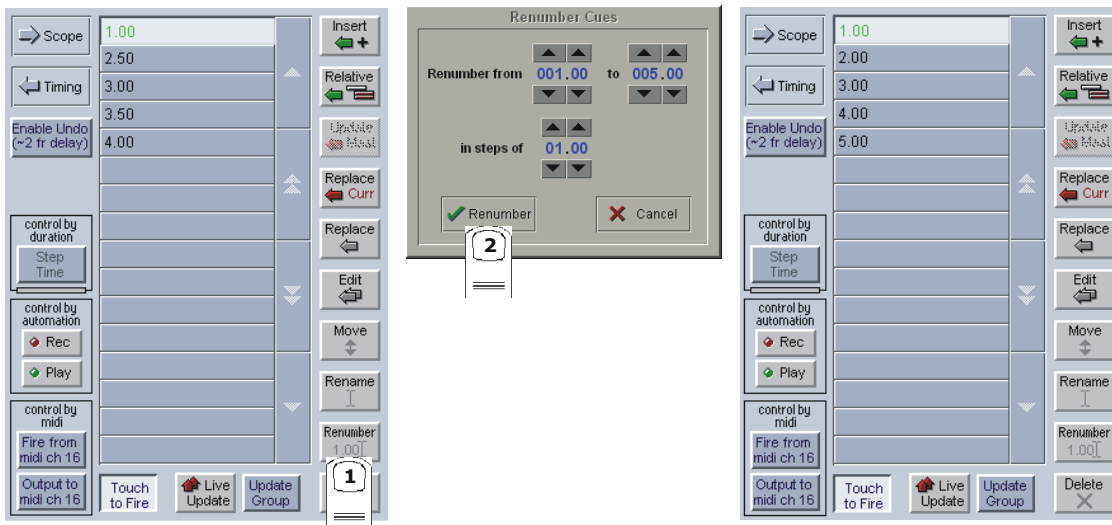
5.1.8 Renaming a Cue

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

5.1.9 Renumbering Cues

As cues can be inserted at any point in the list you may find that you wish to renumber part or all of the list.

Press the **Renumber** button at the bottom of the cues panel and a new panel will open as seen below. Enter the range that you wish to renumber using the up/down arrows or by touching the entry and typing and then enter the steps to renumber to (1.00 in the example below). Then press the **Renumber** button and the list will be adjusted accordingly.



5.1.10 Deleting a Cue

To delete a cue, touch the **Delete** button and then the cue or range of cues that you wish to delete. You will then be required to confirm the deletion.

Note: You cannot delete the first Cue in the list.

5.1.11 Cue Undo

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

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

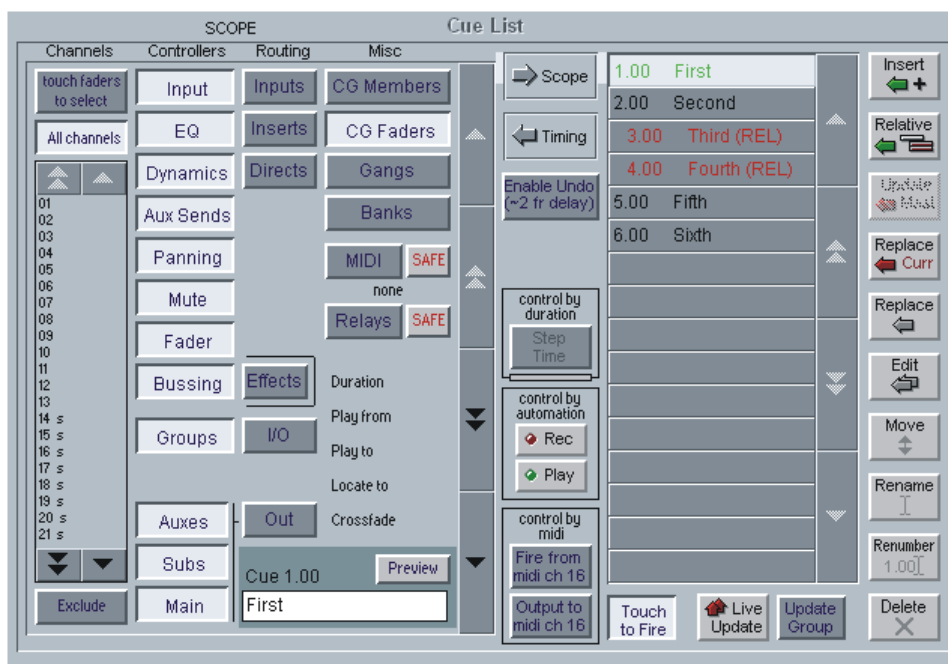
If the Undo button is pressed, the hidden cue is fired using the same scope as the previously fired cue to undo its effect.

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 cues to MIDI)

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

Note: For the fastest possible response when a cue is fired, disable the Undo function.

5.1.12 The Cue Scope Editor



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

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

5.1.13 Channel Scope

The input channels which are included in each cue 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 cue is to be global.

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

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

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

5.1.14 Controller 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).**

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

Auxes - Aux buss outputs - all controllers and label.

Subs - Sub 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.

Groups I/O - Matrix Groups 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:

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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 cues:

The input channel stereo switch.

Dynamics stereo link.

Talkback.

Channel Bank names.

Choice of Solo 1 or Solo 2.

5.1.15 Cue Timing

To automatically sequence the firing of cues:

- 1) Select the cue 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 cue or pressing the **Step Time** button.

When this cue is fired, the next cue 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 cue is fired. Pressing the **Step Time** button while the progress bar is moving will halt the process.

Each cue may also trigger **Play From**, **Play To** and **Locate To** timecode commands.

Select the required cue and enter a timecode value in the relevant box. Then activate the function by pressing the required button(s).

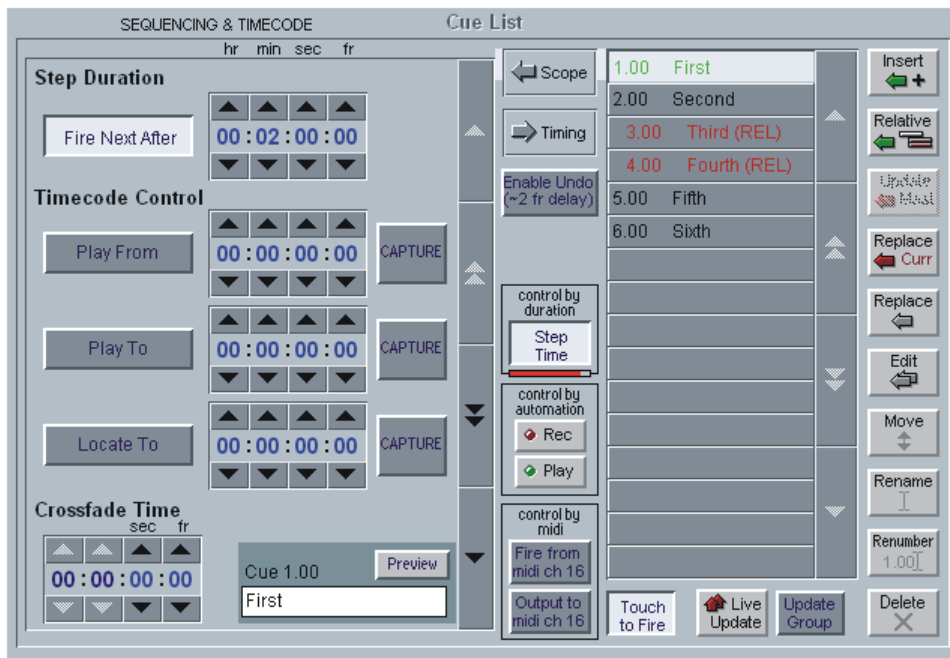
Play From does a Locate then presses Transport Play if not already playing.

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 cue by adjusting the Crossfade Time in the Timing panel. Either use the Up/Down arrows or type a value into the box. The **x fade** light on the worksurface will be illuminated when the currently assigned cue has crossfading enabled. The button next to it may be pressed to temporarily disable crossfading while recalling this cue but it does not change the crossfade time itself.

The Crossfade time is applied to faders, matrix sends and pans only (including sub level and divergence). A value of zero switches it off.

5.1.16 Cues and MIDI

There are two separate areas of MIDI control.

1) A cue 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 or in the Cue editor software. 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 cue whose scope is currently displayed.

2) The firing of cues can be controlled by incoming MIDI messages on channel 16, and can cause these same messages to be output in addition to any MIDI Patches included in (1) above.

The MIDI Input Control button allows the cue system to respond to the following incoming MIDI messages:-

General Purpose Controller A (Controller 16); Values 0 to 127 will fire cues 1 to 128

General Purpose Controller B (Controller 17); Values 0 to 127 will fire cues 129 to 256

General Purpose Controller C (Controller 18); Values 0 to 127 will fire cues 257 to 385.

General Purpose Controller D (Controller 19); Values 0 to 125 will fire cues 385 to 510.

General Purpose Controller D (Controller 19); Value 126 will fire the previous cue in list.

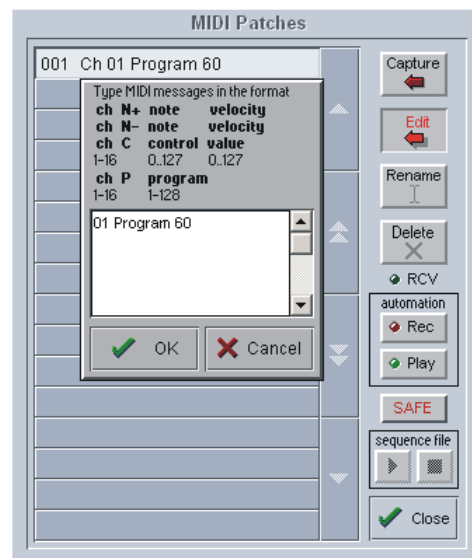
General Purpose Controller D (Controller 19); Value 127 will fire the next cue in list.

MIDI Output causes the above messages 1 to 510 to be sent whenever a cue button is pressed. Previous and Next buttons do not output MIDI messages of their own.

5.1.17 MIDI Patches

The console's main MIDI port is known as MIDI port T. If your D5T 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 works in a very similar way to the main cue system and 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 MIDI Patches can be made Safe from Cue recall globally by pressing the **SAFE** button on the panel - this button is duplicated in the Scope section of the Cue List itself.

The correct format for the messages is as follows:

(See the Cue Editor section of this manual for an alternative method of entering this information.)

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

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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.

5.2 Live Update

When the **Live Update** button is pressed, changes to console settings may be rippled through to all cues. Such changes include controllers and routing, but exclude editing the channel name since this is one method which is used to identify which cues to update. Pressing any input module's ALL button will display the word **OPTION** on all of the input screens and according to specific rules this will also affect the way that Live Update changes are implemented.

5.2.1 Live Update Rules

Exactly which Cues are updated with Live Update switched on depends on a number of different variables. These variables cannot be considered in isolation as they may all affect the functionality of Live Update. The following list is a summary of these variables:

1) Alias matching

An input channel's settings in a given Cue will only be updated if the channel's name is the same as it is in the current cue. If the channel's name is changed from one cue to another then Live Update will only make changes to channel settings in cues where the channel has the same name.
NOTE: This rule also applies if the channel's name is blank in a number of different cues. A blank name in a channel is considered to be a match for other instances of a blank name in the same channel.

Examples

If a channel has a microphone as an input source but this microphone is shared by different actors during the course of a show, it is likely that this channels settings will be different from one cue to another. Therefore, with Live Update on, an adjustment made to a channel in a cue where the channel name is "Harry" will also be made to all other cues where the same channel is also called "Harry" but not in cues where the channel is called "Fred".

In a similar way, if a channel has a microphone as an input source and the microphone is always used by the same actor, it may be that things such as costume changes will require different settings for that channel during the course of the show. So a channel could be called "Harry" in a number of cues but "Harry With Hat" in others.

The alias matching rule will ensure that, in Live Update, a change to the "Harry" channel will not update settings for cues where channel is named "Harry With Hat".

Channel Aliases and Presets

The **Aliases** button in the input channel socket routing panel (touch the top of a channel on screen) allows you to store or recall a complete channel setup.

An **Alias** is the name of a channel and a Preset can be associated with that name. If the source of a channel is changed from cue to cue (eg Different actors use the same microphone in different cues) then the Cue List's Live Update function can be used to ensure that a change to the settings of an alias in one cue will be written to the same alias in other cues.

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 Aliases button, the screen displays a Preset Selector:

The number at the start of the name represents the channel that the Alias was created from and the name is a copy of the channel label.

There is no requirement to create Presets for each of the channel's aliases but if you intend to use the Live Update function it will probably prove simpler to organise if you do so.

Note: If you create Aliases using the Cue Editor software then they will automatically appear in the Aliases/Presets panel and the settings for each Alias can be stored by making the settings on the console worksurface and then using the **Store** button in the panel to update the Alias.

The following image shows three different aliases for a character called Harry that have been created in channel 1 by making the appropriate settings including the channel name and then pressing the **New** button in the panel.



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.

Note: If a preset is renamed, it can be given a different name from the channel label itself. It is the channel label that **Live Update** uses to determine whether to update Aliases and therefore it is recommended that to avoid potential confusion, Presets that are used as Aliases are not renamed and therefore retain the name of the channel label.

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.

2) Type of Controller

There are different rules applied to faders, other dB controllers and non dB controllers/switches.

3) Value matching

For all controllers and switches with the exception of faders, cues are only updated if the control's value is the same as it is in the current cue. For EQ, this rule is only applied if all of the settings in the adjusted band are the same.

4) The Option Button

The Option Button (the ALL button pressed briefly) dictates which cues are updated based on the type of control being changed.

With **Option OFF** most controls will be changed in all relevant cues that meet the other criteria. The exceptions to this rule are Mutes, Channel Delay, Input and Output Routing and Bussing - these will only be changed in the current cue.

With **Option ON** most controls will only be changed in the current cue. The exceptions to this rule are Mutes, Channel Delay, Input and Output Routing and Bussing - these will be changed in all relevant cues that meet the other criteria.

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5) The Current Cue Type

As explained at the start of this chapter, there are 3 different cue types - Normal, Master and Relative .
The updating of cues may differ according to which type is current at the time.

This rule only applies to faders as other controllers will all be updated irrespective of the type of the current cue assuming that the control in question meets the other criteria.

6) LiveUpdateFadersOption INI file setting

The console has a default INI file setting of **LiveUpdateFadersOption=0**. If the setting is changed to **LiveUpdateFadersOption=1** then the behaviour of faders in Live Update mode is changed.

NOTE: When a Master Cue is recalled with the **LiveUpdateFadersOption=1** setting, the Master's fader positions are copied to all normal cues.

A summary of the fader functions for this and the previous Current Cue Type rule is as follows:

When the current cue is a normal cue

Faders always update other normal cues but not master or relative cues.

When the current cue is a master cue

LiveUpdateFadersOption = 0: faders only update the current cue and only if Option is pressed

Any changes that are made to the faders in the master cue are temporarily copied through to its relatives so that a consistent fader mix can be maintained as you pass through the group. As soon as the next master or normal cue is fired the faders will revert to their previously stored levels

LiveUpdateFadersOption = 1: faders always update other normal cues, and the current cue if Option is pressed

When the current cue is a relative cue

LiveUpdateFadersOption = 0: if Option is pressed, either the current cue or the current cue's master is updated, depending on the **Update Group** button.

Any changes that are made to the faders in the relative cue are temporarily copied through to the following relatives so that a consistent fader mix can be maintained as you pass through the group. As soon as the next master or normal cue is fired the faders will revert to their previously stored levels

LiveUpdateFadersOption = 1: faders always update other normal cues, and either the current cue or the current cue's master is updated, depending on the **Update Group** button.

7) Update Group

The Update Group button may determine whether a single cue or all the cues in a Master/Relative Group will be updated.

When Option is pressed and Update Group is ON, changes may be written to the entire cue group.

General Examples

The following examples all assume that Live Update is switched on and the INI file setting is **LiveUpdateFadersOption=0**:

NOTE: The exceptions to the following examples are Mutes, Channels Delays, Input and Output Routing and Bussing.

For these controls the Option button has the opposite effect. See section 5.2.4 for examples of these.

5.2.2 Fader Examples

With Option OFF

1) Current Cue is a Normal Cue and a channel fader which has the same name in all cues is adjusted.

Result: All Normal Cues cues are updated with the fader change but Masters and Relatives are not.

2) Current Cue is a Master Cue and a channel fader which has the same name in all cues is adjusted.

Result: No cues are updated but the change in fader level is maintained through the relatives until the next Master or Normal Cue is fired.

3) Current Cue is a Relative Cue and a channel fader which has the same name in all cues is adjusted.

Result: No cues are updated but the change in fader level is maintained through the relatives until the next Master or Normal Cue is fired.

With Option ON

1) Current Cue is a Normal Cue and a channel fader which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

2) Current Cue is a Master Cue and a channel fader which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated (Unless Update Group is also ON) but relatives would be indirectly affected by the update.

The change in fader level is maintained through the relatives until the next Master or Normal Cue is fired.

3) Current Cue is a Relative Cue and a channel fader which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated (Unless Update Group is also ON).

The change in fader level is maintained through the relatives until the next Master or Normal Cue is fired.

5.2.2 Other dB Controller Examples

eg Auxiliary Sends, Channel Gains and other controllers that are measured in dBs

With Option OFF

1) Current Cue is a Normal Cue and an auxiliary send in a channel which has the same name in all cues is adjusted.

Result: All cues are updated with the auxiliary change if their setting was the same as the original cue's setting.

2) Current Cue is a Master Cue and an auxiliary send in a channel which has the same name in all cues is adjusted.

Result: All cues are updated with the auxiliary change if their setting was the same as the original cue's setting.

3) Current Cue is a Relative Cue and an auxiliary send which has the same name in all cues is adjusted.

Result: All cues are updated with the auxiliary change if their setting was the same as the original cue's setting.

With Option ON

1) Current Cue is a Normal Cue and an auxiliary send in a channel which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

2) Current Cue is a Master Cue and an auxiliary send in a channel which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated but relatives would be indirectly affected by the update.

3) Current Cue is a Relative Cue and an auxiliary send which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

5.2.3 Non dB Controller Examples

Non dB Controllers (eg Pans, EQ Frequency and Q)

With Option OFF

1) Current Cue is a Normal Cue and the pan in a channel which has the same name in all cues is adjusted.

Result: All cues are updated with the pan change if their setting was the same as the original cue's setting.

2) Current Cue is a Master Cue and the pan in a channel which has the same name in all cues is adjusted.

Result: All cues are updated with the pan change if their setting was the same as the original cue's setting.

3) Current Cue is a Relative Cue and the pan which has the same name in all cues is adjusted.

Result: All cues are updated with the pan change if their setting was the same as the original cue's setting.

With Option ON

1) Current Cue is a Normal Cue and the pan in a channel which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

2) Current Cue is a Master Cue and the pan in a channel which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

3) Current Cue is a Relative Cue and the pan which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

5.2.4 Inverted Option Logic Examples

For Mutes, Channels Delays, Input and Output Routing and Bussing which are all non dB controllers but work in a different way

With Option OFF

1) Current Cue is a Normal Cue and the delay in a channel which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

2) Current Cue is a Master Cue and the delay in a channel which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

3) Current Cue is a Relative Cue and the delay which has the same name in all cues is adjusted.

Result: Only the Current Cue is updated.

With Option ON

1) Current Cue is a Normal Cue and the delay in a channel which has the same name in all cues is adjusted.

Result: All cues are updated with the delay change if their setting was the same as the original cue's setting.

2) Current Cue is a Master Cue and the delay in a channel which has the same name in all cues is adjusted.

Result: All cues are updated with the delay change if their setting was the same as the original cue's setting.

3) Current Cue is a Relative Cue and the delay which has the same name in all cues is adjusted.

Result: All cues are updated with the delay change if their setting was the same as the original cue's setting.

5.3 Cue Editor Software

The D5T Cue Editor which is bundled with the standard application software provides additional control over the Cue List. It can make many of the Cue List functions much easier to program by providing a "grid" based interface to many of the functions. It requires a Windows PC running Windows 98 (or later) software or a Mac running Windows emulation software.

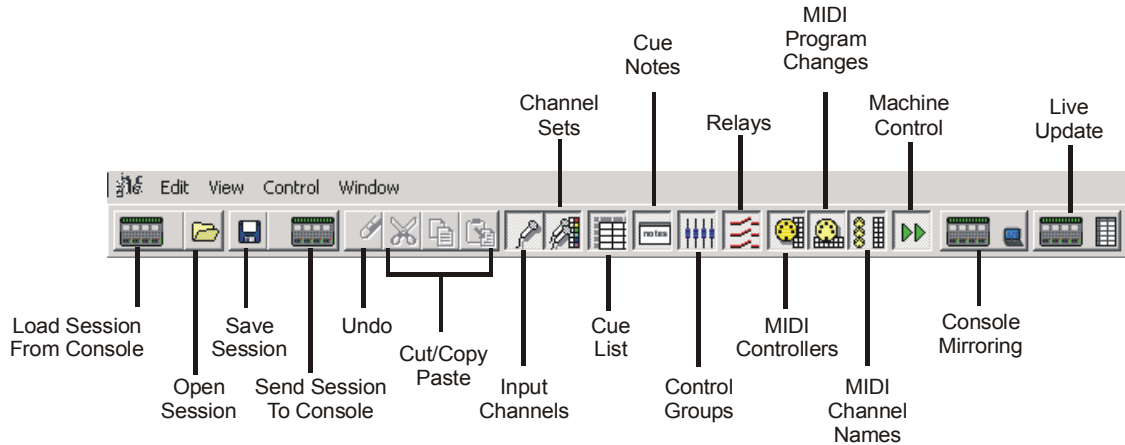
The program can be run as a standalone application or it can be mirrored to the D5T to make changes to the Cue List in real time. To run the program launch D5CueEditor.exe from the C:\d5t directory.

The Cue Editor cannot create new sessions itself but existing sessions can be transferred via the USB key or loaded from the console using a network connection and a crossed ethernet cable.

For details on how to setup a Remote PC connection see Multiple Console Setups in Appendix B.

5.3.1 The Toolbar

When the application is first loaded the screen is likely to appear blank with a series of icons along the top which represent different elements of the program. When clicked, some of these icons open additional windows and others are simply shortcuts to perform certain functions.



5.3.2 Session Management

As the Cue Editor cannot create new sessions itself, the first step is to load an existing session from the PC or USB key using the **Open Session** button or to load a session from the console using the button on the extreme left of the toolbar. (The latter will only work if there is a network connection in place and functioning).

The **Load Session From Console** button is the Cue Editor's equivalent of **Sync Session From** console in the **Console's & Racks** panel on the D5T. Pressing this button will transfer the session and presets files from the D5T and a progress bar will indicate when the process is complete.

The **Send Session To Console** button performs the same process in reverse and should be used if you have prepared elements of the Cue List offline and wish to transfer these changes to the D5T itself.

Important Note: Please remember that the Cue Editor can only control some elements of the session and if you are working offline while the console itself is being programmed there will inevitably be a problem when the information is transferred. Either the console session will overwrite the Cue Editor changes or vice versa.

Therefore it is recommended that programming only occurs on one device at a time or the two devices are mirrored to ensure that one is always updating the other in real time.

To mirror the Cue Editor to the D5T, first Sync the Sessions either by loading the session from the console or sending it to the console and then click the Console Mirroring button at the right end of the toolbar.

5.3.3 Input Channels and Sets

The small microphone icon represents the Input Channel list.

In this window, input channels can be named and assigned to sets and aliases can be created.

To name a channel, left click in the **Current Name** box for the required channel and type a name.

To create an alias, right click in the Current Name box for the required channel and select **Add Alias**. This will create a new alias column and this can be named by left clicking in the box and typing.

Input Channels				
Channel	Current Name	Alias 1	Alias 2	Sets
1	Tom	Tom 2	Tom 3	
2	Dick			
3	Harry			
4	Mary			
5	Kylie			
6	Annie			

Right clicking in the Channel Name box provides options to clear the current Set assignment or to add an Alias for the channel

Input Channels				
Channel	Current Name	Alias 1	Alias 2	Sets
1	Tom	Tom 2	Tom 3	
2	Dick			
3	Harry			

Clear Sets
 Add Alias

Input Channels					
Channel	Current Name	Alias 1	Alias 2	Alias 3	Sets
1	Tom	Tom 2	Tom 3		
2	Dick				
3	Harry				

The icon with the small microphone with the coloured boxes represents the user defined Sets of channels.

Up to 32 Sets can be defined and each one is represented by a unique colour.

Once defined, these Sets of channels can be easily selected for Control Group membership, thus making the process of creating and changing Control Groups much quicker.

To name a Set, open the Sets window, click in the **Title** box for the required Set and type a name.

Set	Title	Color
1	Tom	
2	Dick	
3	Harry	
4	Girls	
5	Boys	
6	Tourists	
7	Phantoms	
8	Witches	
9	Soldiers	
10	Elephants	
11	Set 11	
12	Set12	
13	Set13	
14	Set14	
15	Set15	
16	Set16	

To assign channels to Sets, open the Input Channels window and click in the relevant box in the Sets column. Holding the mouse over any of the boxes will show the name of the Set to make selection easier.

The following example relates to the list of Sets above and you can see that Tom, Dick and Harry are members of Sets that have their own name in red, green and dark blue but they are also members of a Set named "Boys" which is a lighter blue.

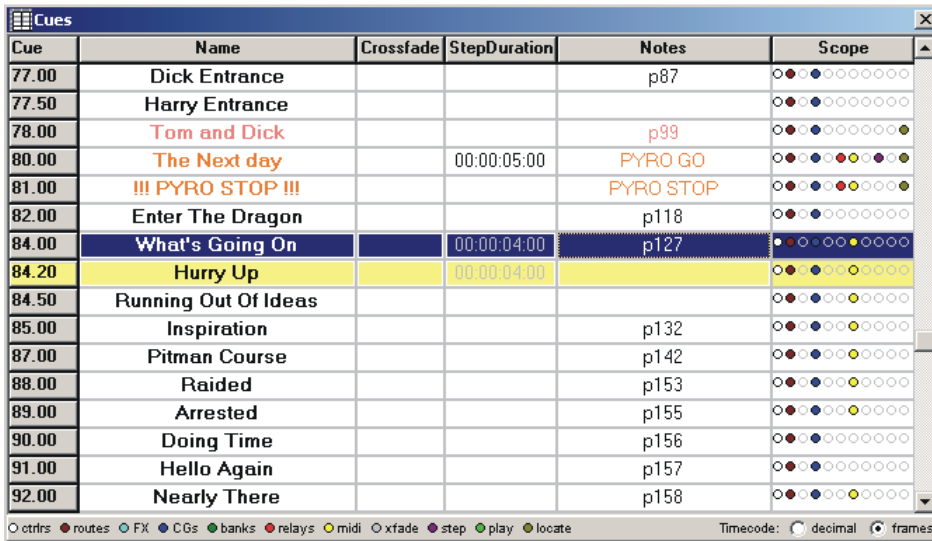
Mary, Kylie and Annie are members of a yellow Set named "Girls".

Input Channels				
Channel	Current Name	Alias 1	Alias 2	Sets
1	Tom	Tom 2	Tom 3	
2	Dick			
3	Harry			
4	Mary			
5	Kylie			
6	Annie			

Chapter 5

5.3.4 Cue List

The icon which shows a small list represents the Cue List itself.



With this window open, the current cue can be seen as the highlighted colour and the cue that is selected can be seen in dark blue. The current cue highlight colour can be selected using the **View Menu/Current Cue Colour** option and the selected cue can be changed using the Up/Down arrows on the computer keyboard.

The **Control Menu** shows other keyboard shortcuts:

Fire Selected Cue = F3

Fire Previous Cue = PgUp

Fire Next Cue = PgDn

Move a Cue = Hold the keyboard SHIFT key and drag the cue number.

Right clicking anywhere in the Cue List will show the following menu with options to:

Insert or **Delete** the selected cue (keyboard shortcuts Ins and Del).

ReNumber cues by selecting a range with the keyboard **SHIFT** key held down.

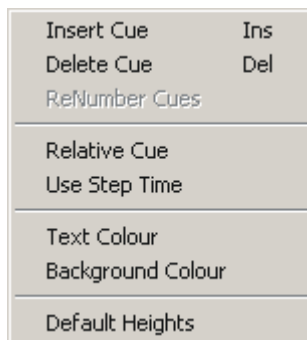
Change the type of cue to **Relative** - Relative cues have the letter "R" next to their number.

Use Step Time where a time of 00:00:00:00 will be entered into the **StepDuration** column and this can then be edited by typing.

Change the **Text Colour** of the cue and change the **Background Colour** of the cue to help with the identification of certain types of cue.

Note: The background colour appears in the Cue Notes window which can be opened by clicking the **Notes** icon on the toolbar, clicking in the Notes column in the Cue List window or opening the **Layout/Cue Notes** panel on the D5T itself.

The heights of the rows for each cue can be adjusted by dragging the dividing line above or below the cue number and the **Default Heights** menu option will return all heights to their original size.



In the Cue List window you can also edit the **Name** of the cue, its **Crossfade time** and its **Step Duration** by typing directly into the relevant column.

Although the **Cue Notes** and **Scope** are shown in this window, they cannot be edited here.

Scope can only be seen as a colour coded dots with a key at the bottom of the window and must be edited on the D5T, D5TC or a remote computer running D5T software.

5.3.5 Cue Notes

The icon labelled Notes will open the Cue Notes window and then you can type directly into the text box. Once the window is open, the selection of a cue from the list will automatically display the relevant notes. Right clicking in this window will show the standard options for Undo/Cut/Copy/Paste/Delete and Select All. Text and Background colours can be changed in the Cue List options (see above).



5.3.6 Control Groups

The icon showing a small set of blue faders represents the Control Groups.

Cue	Name	CG1	CG2	CG3	CG4	CG5	CG6	CG7	CG8
76.00	Tom Entrance	Tom						Girls 1	Girls 2
77.00	Dick Entrance	Dick	Tom					Girls 1	Girls 2
77.50	Harry Entrance	Harry	Dick	Tom	Elephants			Girls	
78.00	Tom and Dick	Tom	Dick	Harry	Elephants				
80.00	The Next day	Tom	Dick	Harry	Elephants	Phantoms	Witches	Girls	
81.00	!!! PYRO STOP !!!	Tom	Dick	Harry	Tourists	Phantoms	Witches	Girls	
82.00	Enter The Dragon	Sldr 2	Sldr 1	Harry	Tourists			Girls	Boys

In this window, Control Groups can be named and their members for each cue can be programmed or cleared. You can easily assign single channels, banks of channels or sets to a group by right clicking in the grid for the required Control Group and cue and selecting from the lists.

Right clicking in the in the CG column shows a menu allowing the Control Group for the relevant cue to be cleared or to have members assigned to it

3.00	Sound Check	music	Clear
4.00	FF Left	music	Assign
5.00 R	FF Right	music	

Click Here To Assign A Set

Select Set, Bank or Channel into CG2 for Cue 3.00 Sound Check

Kim	Engineer	Boys	Girls	Clk Vox	tourists	hustlers	vendors
Soldiers	western mer	asian men	Set12	Set13	Set14	Set15	Set16
Set17	Set18	Set19	Set20	Set21	Set22	Set23	Set24
Set25	Set26	Set27	Set28	keys	strings	ww+brass	rhythm

Bank Channels & Aliases Auto-Muting Clear

Boys 1	Glenn	Jon	NathanA	Eaton	Lynden	Chris G	NathanH	Matthew
Boys 2	Ravy	Chuck	Ariel	Miguel	Ian	Viktor	Makakilo	Meynard
Principi	Jaqui	Ellen	Thuy	John	Eng 1	Eng 2	Chris	Kim 1
Girls	Kim 2	Amira	Shie	Analín	Kanako	Crystal	York	Natalie
Clk+VOX	ClkTr1	ClkTr2	ClkTr3	ClkTr4			Edu	Jean P
MiscVox	Float 1	Float 2	Reh Pho	MD	VOG	DirShout	Extra	
Drums	Kick	Snare	Hi Hat	T1	T2	T3	T4	OH L&R
Percs	RotoToms	Glock/BT	N Gongs	B Drum	Glock	Bell Pot	R Timps	RPerclR
Strings	Violin	Vio Bug	Cello	D Bass	R Str Hi	RSt Low		
Brass	Trumpet	T Bone	Horn	R Horn 2				
Woods	Asian F	Flute	Sax Clar	Oboe/Co	R Basso	Solo Sax		
KeyGuitB	Kbd 1		RKbd 1	RKbd 2M	RKbd 2	RKbd 3M	R Guitar	ElecBass
Reverbs				S67??	M6 Cen	M6 L&R	M6 RL+R	M3 L&R
SFX	CD1	CD2	CD3	AkStage	AkTruss	AkSurr	AkSub	Ak 9/10

Click Here To Assign Individual Channels

Hold keyboard SHIFT key and click to add or remove individual channels

Click Green Labels To Assign A Channel Bank

When the assignment window is open, left clicking on any of the Control Groups in a cue will show the members of that group and these can then be edited by selecting a new set, bank or channel or by adding/ removing banks or channels from the existing selections. Adding or removing items can be done by holding the keyboard SHIFT key and clicking on the relevant bank or channel in the grid.

Chapter 5

5.3.7 Relays

The icon showing a small set of red switches represents the Relays. There can be up to 32 of these according to the hardware configuration of the console.

Cue	Name	1	2	3	4	5	6	7	8
40.50	LOC 00.00.09.20.0	off	off	off	Pulse	off	off	ON	off
40.70	LOC 00.01.51.00.0	off	off	off	off	off	off	off	off
41.00	relay start	Pulse	off	Pulse	off	off	off	off	off
42.00	relay stop	off	Pulse	off	Pulse	off	off	off	off
42.50	!!! PYRO CHECK !!!	off	off	off	off	off	off	off	ON
42.70	!!! PYRO CHECK !!!	off	off	off	off	off	off	off	off

They can be programmed to send an **ON**, an **OFF** or a **PULSE** for each cue.

Left or right clicking in the box for a specific relay number in a cue will scroll through the three options available.

It is far simpler to program relays in the Cue Editor than in the Cue List on the D5T and it is not currently possible to program a pulse using the D5T at all.

5.3.8 MIDI Channel Names

The icon showing three MIDI sockets and a small grid represents the MIDI Channel Names.

There may be up to three sets of 16 MIDI channels available, according to the console's hardware configuration. These are MIDI A, B and T. T is the original MIDI interface on the console rear panel and A and B can be provided by GPI/GPO Combi cards installed in the console.

If you are going to use MIDI to send messages to outboard equipment it is easiest to define the names and channels of the devices before starting to program the messages. Open the channel names window and type the required name next to the relevant port.

For example in the following diagram, T3 is identified as the M3000. This simply indicates that the M3000 is connected to MIDI Port T and receiving MIDI data on channel 3.

Ch	Name	PC
B14	B14	1
B15	B15	1
B16	B16	1
T1	XTA 1	1
T2	XTA 2	1
T3	M3000	1
T4	M6000 band	1
T5	M6000 vox	1
T6	T6	1
T7	T7	1
T8	T8	1
T9	Heli Stage	1
T10	Heli Truss	1
T11	Heli Surr	1
T12	Helli Subs	1
T13	Atmos Stage	1
T14	Atmos Truss	1
T15	Atmos Surr	1
T16	Akai 9 & 10	1

5.3.9 MIDI Program Changes

The icon showing a MIDI socket and a small horizontal grid represents MIDI Program Changes.

If the MIDI Channel names have been set up as described above then scrolling the window horizontally will show column names for each MIDI device in the system. To send a Program Change message from a given cue, simply click in the box relating to the required cue in the correct column for the device and type a MIDI Program Change number.

Cue	B12	B13	B14	B15	B16	XTA 1	XTA 2	M3000	M6000 band	M6000 vox	T6	T7	T8
92.00									2	2			
93.00						5	5		3	3			
94.00						4	4						
95.00									2	1			
96.00										2			
97.00									3	3			
98.00						3	3						
98.50						4	4						
98.70						5	5						
99.00						4	4		2	2			

To send other MIDI messages, see the next section on MIDI controllers.

5.3.10 MIDI Controllers

The icon showing a MIDI socket and a small vertical grid represents MIDI Controller Messages.

To send a controller message from a cue, go to the row for the required cue, click repeatedly in the **Port** column and select port A, B or T. Then select a MIDI Channel in the **Channel** column in a similar way. If you have already defined the Channel Names (as previously discussed), then the defined device(s) should automatically appear in the **MIDI Device** column.

Now select a type of MIDI command from the **Command** column and then complete the message by selecting one or two values according to the type of message.

If you wish to send more than one MIDI message from a cue then right click anywhere in the cue's row and select Insert MIDI from the drop down menu. This will insert an extra row for that cue and the above process can be repeated for a new message.

To remove a row, right click and select delete from the drop down menu.

Cue	Name	MIDI device	Port	Channel	Command	Note/Ctrl/Prog	Vel/Val
76.00	Tom Entrance						
77.00	Dick Entrance						
77.50	Harry Entrance						
78.00	Tom and Dick						
80.00	The Next day	Atmos Stage	T	13	Note on	51	80
		Atmos Truss	T	14	Note on	51	80
		Atmos Surr	T	15	Note on	51	90
81.00	!!! PYRO STOP !!!	XTA 2	T	2	Program Change	4	
		XTA 1	T	1	Program Change	4	
82.00	Enter The Dragon						
84.00	What's Going On	XTA 1	T	1	Program Change	5	
		XTA 2	T	2	Program Change	5	
84.20	Hurry Up	XTA 1	T	1	Program Change	4	
		XTA 2	T	2	Program Change	4	
84.50	Running Out Of Ideas	XTA 1	T	1	Program Change	3	
		XTA 2	T	2	Program Change	3	
85.00	Inspiration	M6000 vox	T	5	Program Change	2	

Right clicking in the relevant cue row will show a menu allowing the insertion or deletion of a MIDI Controller message

5.00	FF Right	A1	A	1	Controller Change	0	0
6.00	St Left						
7.00	St Right						

Chapter 5

5.3.11 Machine Control

The icon showing two green arrows represents Machine Control Messages.
 Each cue can send combinations of Play From, Play To and Locate To commands.

Cue	Name	Play From	Play To	Locate To
55.00	Sequence 1	00:05:00:00	00:05:52:00	
57.00	Running Around			
59.00	Standing Still			
60.00	Confused			
61.00	Exit Boys			
62.00	Elephants On			
63.00	Witches Off			
64.00	Why. Oh. Why. ?			
65.00	Locate Start			00:00:00:00
68.00	Tour Of Duty			
68.50	Scandal!!			
69.00	Sequence 2	00:11:00:00	00:11:14:00	
69.50	Recovery			
70.00	Overkill			
71.00	Sequence 3	00:06:30:00	00:06:50:00	

00:00:00:00 Timecode: decimal frames

The simplest method of inserting these commands into a cue is to right click on the cue's row and select the required command from the drop down menu. This will insert a value of 00:00:00:00 into the relevant column and this can then be edited by clicking in the box and typing.
 The other commands in this menu are the same as those in the Cue List window.

11.00	Up Circ Right			
12.00	Gallery Left			
13.00	Gallery Right			
14.00	Stalls Delay			
15.00	Circle Delay			
16.00	Cluster Vocal C			
17.00	Jukebox			
18.00	Vespa			
19.00	Stage FX Le			

00:00:00:00

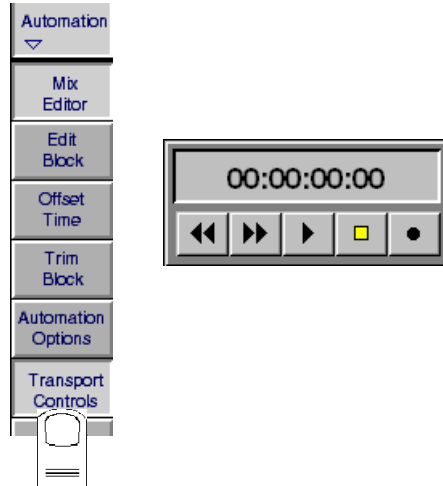
- Insert Cue Ins
- Delete Cue Del
- Renumber Cues
- Use Play From
- Use Play To
- Use Locate To
- Text Colour
- Background Colour
- Default Heights

Chapter 6

Automation

6.1 Real Time Automation

D5T's automation system can record and play back the movements of most of the console's channel or buss controls. Real Time Automation operates while timecode is running, and allows you to record the adjustments you make while listening to the audio. Note that this depends on the presence of timecode, so if you are not using the console as your timecode source, you must ensure that it is properly synchronised with your recording and/or sequencing units, before you can use automation. If you are using the console as a timecode source, press the **Automation Menu / Transport Control** button to show the on screen transport controls.



You can also use the special on-screen editor, which displays the adjustments (or "events") which you made in Real Time, and lets you edit the effect and the timing of each event. When automating a mixdown, you would normally begin by making a "first pass" in Real Time. You can then edit the result of this first pass by replaying the recording and making further adjustments to the channel controls or use the tools in the Automation Editor to alter the recorded events. For more information about the Automation Editor, see section 6.2.

Real Time Automation Modes

You can choose how the automation system operates for each channel using the Automation Editor. Each control, channel and section in the Event editor has a set of Record, Play and Safe buttons which light to show their status.



You can press these buttons with the pointer. They allow you to individually affect the status of a single control. They also allow you to set the status for a group of channels in a section. The S button makes a control safe from overwriting. This means that you cannot accidentally place the control into Record and also that you cannot edit their events in the timeline event editor.

The state of the Record and Play buttons indicate which Automation mode is active. The different modes are as follows:

Record	Play	
OFF	OFF	= Isolate
OFF	ON	= Play
ON	OFF	= Record
FLASHING	ON	= Update or Trim Ready
ON	ON	= Update / Trim
ON	FLASHING	= Nulling

6.1.2 Isolate Mode

When you start using a New Session, all channels are switched to Isolate mode by default. Isolate mode simply means that the Record and Play LEDs are both switched off. Each channel's controls can be altered on the screen or the worksurface, and these changes will affect the channel's audio signal, but the changes are not stored by the dynamic automation system.

If a control is in Isolate Mode, it can be affected by recalling a Cue.

Selecting Isolate Mode

To select Isolate mode, press the currently lit Rec or Play button.

NB: Pressing again on the currently selected mode button will normally switch the indicator off, and when neither of the Rec/Play buttons are lit, the channel is in Isolate mode.

6.1.3 Record Mode

When a channel's Record button is lit and its Play button is not lit, the channel is in Record mode. In Record mode, while timecode is running, channel control movements are recorded as "automation events". The types of controls that are automatable is determined by the **Automation Options (See Section 6.1.5)** Most events are displayed in the Automation Editor and can later be adjusted using the editing tools.

Selecting Record Mode

To select Record mode on a channel, press the Record button. If the channel is already in Play or Update mode (see below), you may have to press the Record button several times to enter Record mode.

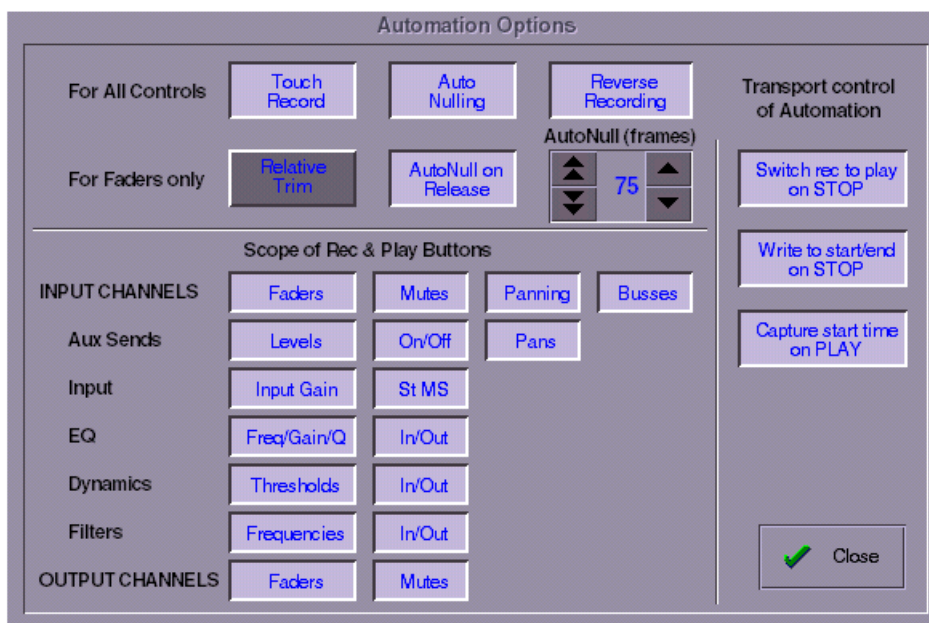
6.1.4 Play (Update) Mode

When a channel's Play Button is lit and its Record Button is not lit, the channel is in Play mode - if **Touch Record** is switched on in the Automation Options this is also the mode used for updating the automated controls changes. You can put a channel into Play mode by pressing the Play button.

In Play mode, the channel settings are controlled by the automation system, which replays the settings you have previously recorded. Once you have done a "first pass", all relevant channels are switched automatically into Play mode, but you can select Play mode at any time by pressing a channel's Play button.

6.1.5 Automation Options

In Play mode, the exact behaviour of the console controls depends on the settings you have selected in the Automation Options panel, on the Master screen. To see this panel, touch the **Automation - Automation Options** button:



The top row of buttons affect all the console controls, and the second row affect only the faders.

Switch Rec to Play On Stop

By default, this button is pressed (highlighted) and therefore when the transport Stop button is pressed, all controllers are switched back to Automation Play mode.

If the function is disabled (not highlighted), it is necessary to switch all controllers out of Record mode manually whenever transport Stop is pressed.

However, this would also mean that Write to Start or End Markers will remain enabled after the transport is stopped. (See section 6.2.10 - Write to Start and End)

Write to Start/End On Stop

If this button is pressed, automation will always be written between the Write to Start and End markers for controls that are in record/update mode when the transport is stopped. Therefore, any automation which was previously written between these markers will be erased. This button is set to Off by default. (See section 6.2.10 - Write to Start and End)

Capture Start Time On Play

This button is also accessible on the console worksurface and, if pressed, will always save the last automation play position as the **Write To Start** marker. This enables the user to quickly write automation back to the last start position. (See section 6.2.10 - Write to Start and End)

Touch-Record and Auto-Nulling

If you have selected the option for **Touch Record**, you can adjust a channel control directly from play mode. Unless a channel is made "Safe" (see section 6.1.6), you can update the automation information for the channel simply by adjusting one of its controls. As soon as you alter a control or touch the channel fader, the channel's Record light comes on (in addition to the Play light), and the new level for the control is stored by the automation system. This mode, where both lights are lit, is called **Update Mode**.

If you have selected **Auto Nulling**, when you have made the adjustment you want, pressing the Play button for the channel will force the control(s) you have adjusted to "auto-null" smoothly back to their value in the original mix, taking a user definable nulling time to do so. While auto-nulling is in progress, the Play light flashes, and when the auto-nulling is complete, the Record light goes off, and the channel is returned to Play mode. You can change the auto-nulling speed in the Automation Options panel.

For faders, the **Auto Null on Release** option determines what happens when you release the fader. If the option is selected, the fader will Auto Null to play when you let go. If the option is not selected, the fader will stay in record until you manually press the PLAY button, at which point it will Auto Null to play.

Auto Null Time is the length of time in frames that the system will take returning to play from Record or Update. Thus you can have very smooth updates where you simply grab a fader, hold it at a new level for the length of time required and then have it seamlessly reintegrate with the mix.

The default setting for the Auto-Nulling time is 75 frames.

Manual Nulling

You can decide to control the rate at which a particular channel nulls back to the old automation even when auto-null is operating. To do this, touch-record a fader to start recording. When you are ready to return to play release the fader. The Play LED will start to flash to indicate that it is nulling - grab it again. Now the fader will wait to be manually nulled (the flashing continues indefinitely). It will continue to write the current position to the automation until either (i) you move it to the point where it matches the previous automation, or (ii) the previous automation changes to match its level.

Relative Trim

If you select the **Automation Option** for **Relative Trim**, the update system behaves differently for faders.

Relative Trim mode allows you make updates to the channel controls beginning with what was recorded before. For example, if a fader carefully follows the level changes of a vocal and you then decide you need a section of that vocal to track in the same way but 6dB higher, you can "trim" it up by 6dB without affecting the existing adjustments.

To enter Relative Trim, with the option set appropriately, first put a channel in Play mode (with the Play LED lit), then press the Record button. The Play button stays lit, but the Record button begins to flash, indicating that the channel is ready to drop into Trim. The fader jumps to the -10dB position; all subsequent movement of the fader will drop it into **Record-Trim** and existing levels will be rewritten with an offset relative to the -10dB position.

Note that because Trim mode is Relative, the new fader levels do not override the old ones - instead, the faders start the Trim pass at the centre of their range, and any changes you make are added to the currently stored control levels without overwriting them. This means that you can, for example, use a channel fader to boost or cut a signal while retaining adjustments which you made to that channel level during previous passes.

Touch Record and Relative Trim

If Touch Record and Relative Trim are both selected, a fader can be dropped into Record-Trim directly from Play mode. If the Play button is lit, touch the fader and the Record button will flash. Existing events will then be rewritten with an offset from the drop-in level as opposed to the -10dB position in the previous example.

"Crashing" Out of Trim/Update

Instead of using the Auto-Nulling feature, you can choose to "crash" out of Update / Trim into Play mode. This means that the transition from the newly-recorded level at the drop-out point to the old level at the next frame is abrupt. To crash into Play mode, instead of pressing the button Play once (as you would do to null out), press it twice.

You can also crash out into Record mode, by pressing the Record button while in Trim mode. Crashing into Record mode means that from that point onwards, changes to the fader, mute and pan settings will over-write any automation data from earlier passes, instead of being added to it.

Scope of Record and Play Buttons

The other section of the Automation configuration window refers to which sets of controls will be included in the Automation.

Different controls can be isolated from the action of the record and play buttons by making selections in the Scope section.

If you have chosen to isolate certain types of controls and later reinstate them, the previously isolated control will be switched to match the automation mode of its parent module. (ie the mode set by the channel or master automation record and play buttons.)

If you have changed the mode of the previously isolated control in the Automation Editor and then reinstated it into the automation scope, it will retain its current mode and the parent module's mode will be updated to match it.

6.1.6 Safe Mode (Dynamic Automation)

Safe mode is provided so that the automation information stored in previous mix passes can be kept Safe, and cannot inadvertently be altered by adjustments to the channel controls. Safe mode cannot be set using the Record and Play buttons, but must be selected using the trackball or touch screen on the Automation editor screen - for more information about how to use this screen, please see section 6.2.5.

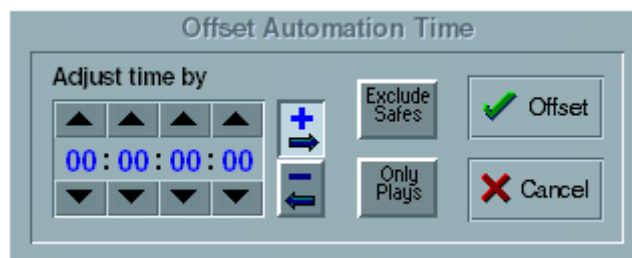
There are two different variants of Safe mode, depending on the mode the channel was in when Safe mode was selected:

If a channel is in **Play mode**, selecting Safe mode will prevent the worksurface controls from having any effect on the audio signal - all the channel control changes are replayed as stored by the automation system in previous passes, and changes to the channel's worksurface controls have no effect.

If a channel is in **Isolate mode**, selecting Safe mode will allow you to control the audio signal using only the worksurface controls. The settings stored by the automation system on previous passes are neither deleted nor played. None of the adjustments you make are stored by the automation system, and control changes stored in previous passes are retained but not played.

If you press safe on a channel which is isolated, it will effectively become safe from the global Rec and Play buttons. Because it is permanently isolated from the dynamic automation, it will be affected by the cues. This status is saved with the session. See **Cue Automation** for more information about combining cue and dynamic automation.

6.1.7 Offset Time



Touching the **Offset Time** button in the **Automation** menu opens the Offset Time panel which allows the whole mix to be moved forwards or backwards in time.

Enter a time for the offset in the **Adjust time by** box by touching the up and down arrows or touching the numbers and typing.

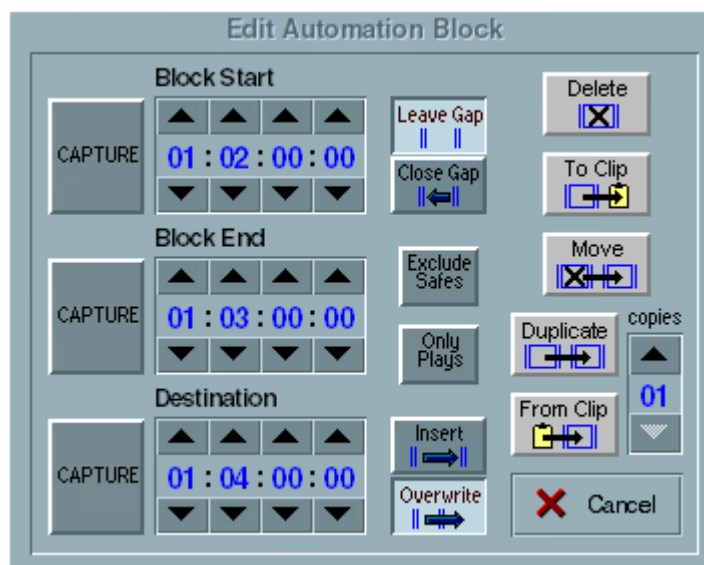
Touch the **"+"** button to move the mix forwards and the **"-"** button to move it backwards.

If the **Only Plays** button is pressed the offset will only be applied to controls which are in play mode.

If the **Exclude Safes** button is pressed the offset will not apply to controls which have been made safe in the Automation Editor.

Note: If events are moved backwards past time zero they are deleted.

6.1.8 Edit Block



Touching the **Edit Block** button in the **Automation** menu opens the Edit Automation Block panel which allows blocks of events to be deleted, moved or copied by defining start, end and destination times.

Edits will include all the mix information in the block unless the **Exclude Safes** or **Only Plays** options are selected. These functions are the same as in the **Offset** panel on the previous page.

Touching the **Cancel** button will close the panel.

Entering Times

To enter times you can either:

- 1) Touch the number boxes and type.
- 2) Use the up and down arrows to increase and decrease values.
- 3) Capture a timecode position by running the code and touching the **Capture** button at the required point or locating the point and then touching the **Capture** button.

To Delete a section of the mix:

Enter a **Start** and **End** time for the block which is to be deleted.

Select **Leave Gap** to leave a space in the mix when the block is deleted or **Close Gap** if all subsequent events are to be slipped back in time by the size of the deleted block

Touch the **Delete** button.

To Move a section of the mix:

Enter a **Start** and **End** time for the block which is to be moved and a **Destination** point to move it to.

Select **Insert** or **Overwrite** as appropriate. This will determine whether the block is inserted by slipping all subsequent events forward in time by the size of the block or by overwriting existing information.

Select **Leave Gap** or **Close Gap** as appropriate.

Touch the **Move** button.

To Duplicate a section of the mix

Enter a **Start** and **End** time for the block which is to be duplicated and a **Destination** point to duplicate it to.

Select **Insert** or **Overwrite** as appropriate.

Select a number of **Copies** which will be repeated end to end at the destination point.

Touch the **Duplicate** button.

To Copy a section of the mix to the clipboard

If this method is used the copied block can be pasted into a different session if required.

Enter a **Start** and **End** time for the block which is to be copied.

Select **Leave Gap** or **Close Gap** as appropriate.

Touch the **To Clip** button

To Paste a copied block into the same or another session

Enter a **Destination** time for the pasted block to start at.

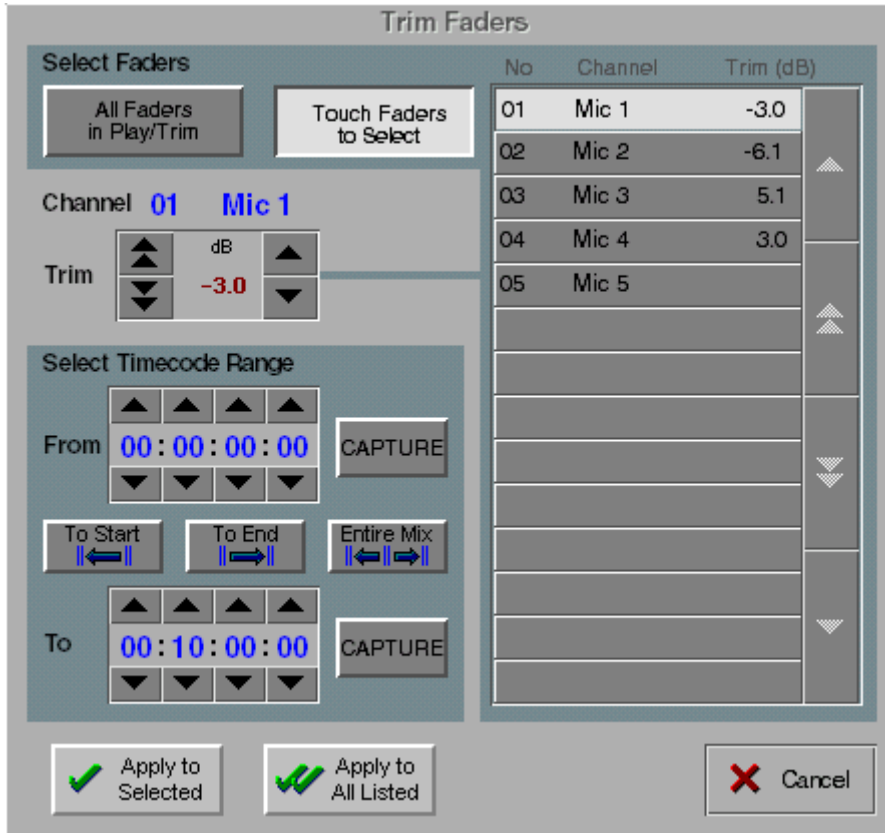
Select **Insert** or **Overwrite** as appropriate.

Select a number of **Copies** which will be repeated end to end at the destination point.

Touch the **From Clip** button.

6.1.9 Trim Block

Pressing the **Trim Block** button in the **Automation** menu opens the following panel. This allows a trim offset to be applied to any or all automated faders without changing the automation data. The trim can be auditioned and refined as long as the panel remains open, and then applied to the automation data for a single channel or all selected channels by timecode range to make it permanent.



While the Trim panel is open:

The faders behave in **Relative Trim** mode irrespective of Automation Options.

Autonulling and Nulling on Release are both switched off. Trim information can be previewed but is not recorded unless the **Apply** buttons are pressed.

Touch Record is not altered, therefore if it is not switched on in Automation Options then each channel's mode must be switched manually either before or during the use of the Trim panel.

Faders which are to be trimmed can be selected by pressing the **Touch Faders to Select** button and touching to add them to the list.

Once a fader is on the list, an amount of trim can be entered by moving the fader itself or selecting the list entry and entering a value in the **Trim** box. The value will also appear in the **Trim(dB)** column on the fader list.

These changes can then be auditioned by playing the mix with the Trim Panel still open and further adjustments made.

If you wish to make the changes permanent, select **From** and **To** timecode positions by entering values into the relevant boxes or pressing the appropriate **Capture** button.

Positions may also be set with the **Entire Mix** button or by entering a value in the **From** box and then pressing either the **To Start** or **To End** buttons.

Then the trim can be recorded to either the selected fader on the list with the **Apply to Selected** button or to all the faders on the list with the **Apply To All Listed** button.

Pressing the **All Faders** button selects all faders whose automation mode is Play, Trim, or Trim Ready. Then all the selected faders can be trimmed by adjusting any one of them. However, no trim can be applied unless the fader is in Trim or Ready mode.

If the fader is in Play mode, it will only switch automatically to Trim or Ready mode if Touch Record is enabled.

In other words, all faders must be in Trim or Ready mode for the All Faders option to be effective.

6.1.10 Cue Automation

The cues can be integrated into the automation system to allow control of non-dynamically automated parameters, or simply to allow instant changes for the entire console which are all tied to a single editable event.

For more information on how to store and recall cues see section 5.1.

You can use Cues in conjunction with the Automation system in two ways -

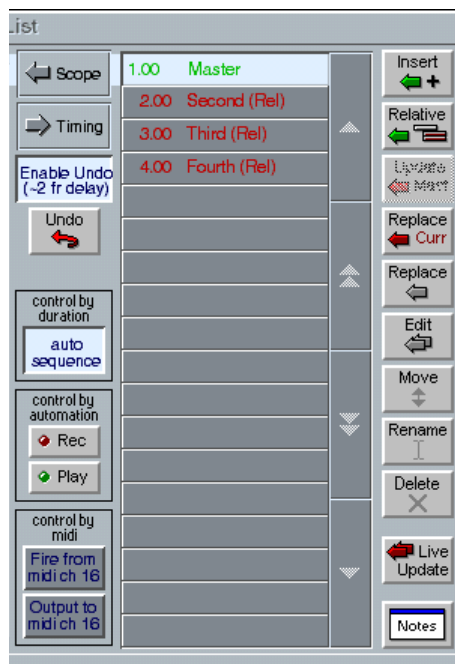
1) By firing the Cue with the channels in record mode. This is an easy way of entering control changes for a large number of channels simultaneously. To use this method, put the channels into Record/Update, and the Cues into Isolate.

2) By recording the firing of the Cue. This automates the replaying of the Cue, rather than recording the data in the Cue into each channel's automation. To use this mode, put the channels into Isolate, and the Cues into Record.

The first method does not automate the cue itself, and its use is identical to normal dynamic automation as described earlier. The rest of this section is devoted to the second method.

Automating the Firing of Cues

To allow the second of these options, the Cue control panel on the Master screen has its own Rec and Play buttons and LEDs:



To record the firing of a cue at a certain time, touch the Record button in the Cues panel, run the timecode and press the cue buttons. The cues will be replayed at the same timecode, and the labels for the cues will be inserted in the Cue line at the top of the Automation Editor. (See section 6.2 for more information about the Automation Editor.)

Cue Update Mode

Note that Cues are not affected by the Touch Record / Relative Update, or Auto-Null settings. If the Cue Play light is on, Cues will only replay. If the Cue Record light is on, Cue firings will be recorded, and old ones overwritten - in other words, if the timecode rolls over an existing cue firing, this firing will be deleted even if nothing new is recorded.

If cues are in Play and you press Rec, both lights will stay on, indicating that Cues are now operating in Update mode. Any existing cues will be replayed and any new cue firings will be added. Nothing will be erased.

To edit the timing of cues, use the timeline (see 6.2 Automation Editor).

Combining Cues and Dynamic Automation

You will have noticed that the Cue Mode buttons and the channel mode buttons are completely independent - changing either does not affect the other.

Note also that, by default, the channel automation mode buttons control the automation mode for all the channel controls. You can, however, set the automation mode for each control individually using the Automation Editor screen.

This gives a wide range of possibilities for combining Cue and dynamic automation - here are a few examples:

Cue only - all channels in Isolate and cues in Play or Update.

In this mode all parameters will be affected by the cues which are replayed. You can move channel controls manually, and they will remain as set until the next cue fires.

All Channel Controls and Cues in Play:

Any control which is dynamically automated is automatically locked out from the cues. This means that when a cue fires, a fader in play will not move to the position which was stored for it in the cue but will remain at the level the dynamic automation dictates. Controls which are not dynamic (compressor attack, release etc.) will change however.

Channel Faders in Play, EQ controls in Trim, Cues Isolated:

Faders will move dynamically as normal but ignore cues. Manually pressing cues will make and store changes to the EQ controls.

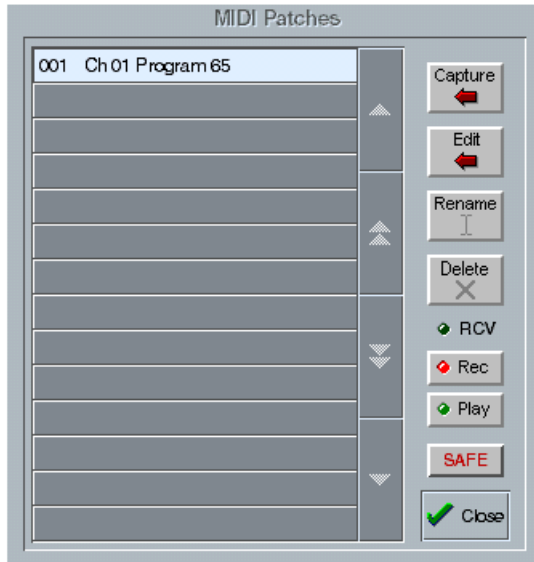
Channel Controls in Record, Cues Isolated: Firing a cue will reset all controls including dynamically automated controls. The result is that the "contents" of the cue will be instantly inserted in the dynamic automation database. You will see these events on the timeline and can then edit them on a channel by channel basis.

Chapter 6

Remember that automation modes can be set on a channel and on an individual parameter basis, as described in the third example above. For example, it is possible to set all a channel's controls except faders to Update, and then control the channel fader by firing a cue. Even a single band of a particular EQ section could be taken out of dynamic automation and put under cue control. The only restriction is that controls are not automatically switched from dynamic to cue automation, so its best to decide at the beginning of the mix which controls will be automated by which technique. Then if you need to add a cue to an EQ which is basically dynamically automated this is still possible using the **Channel Controls in Record, Cues isolated** combination described above.

6.1.11 MIDI Patches

Touching the **MIDI Patches** button in the **Setup** menu opens the MIDI Patches panel which allows any MIDI program change, controller change, note on or note off message to be recorded and played back manually or against timecode.



To record a MIDI Patch into dynamic automation press the **Record** button and touch the relevant Patch on the list. Touching the **Play** button (if not already lit) will enable the playback of the Patches.

In the **Automation Editor** the strip beneath Cues will display recorded MIDI Patch events.

The MIDI text editor may also be accessed by right-clicking on an automated MIDI Patch in this strip.

MIDI Patches and their automation events are stored in session files. The **New Session** panel has a Clear option for MIDI: if selected the MIDI Automation strip will disappear until the MIDI panel is next opened in the new session.

6.2 The Automation Mix Editor

Once you have recorded some automation "events" using the on-line automation modes, you can view and edit these events using the Automation Mix Editor. This is displayed on the Master screen when you press the **Automation / Mix Editor** button.

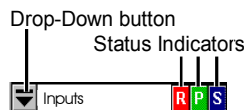


The Automation Editor initially shows a line for each section of the console's automation.

Around the edge of the automation screen are a number of buttons for controlling the display, and for editing the recorded events.

6.2.1 Channel Display

The channels themselves are listed according to their type at the left side of the screen - initially there are entries for the Cues, Inputs, Auxiliary, SubGroup and Master outputs. To see an individual channel from any of these sections, click the drop-down button to the left of the section name.





Channel Status Indicators

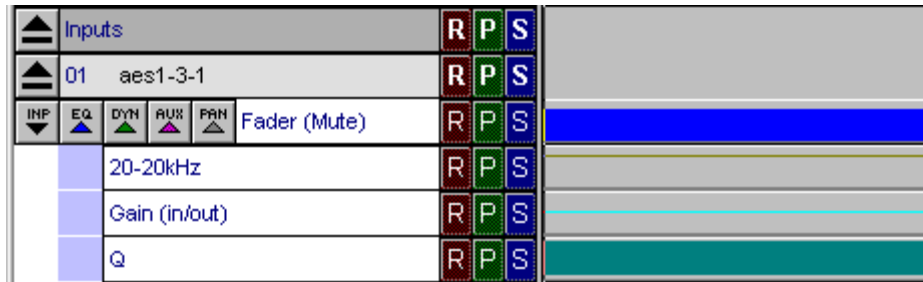
To the right of any channel or section name are three status indicators, indicating the automation mode in which that channel is currently operating. These are also buttons, and you can press them to set the relevant mode.

The third button is used to select Safe Mode - see **Safe Mode**, section 6.1.6.

Channel Control Drop-Down Buttons

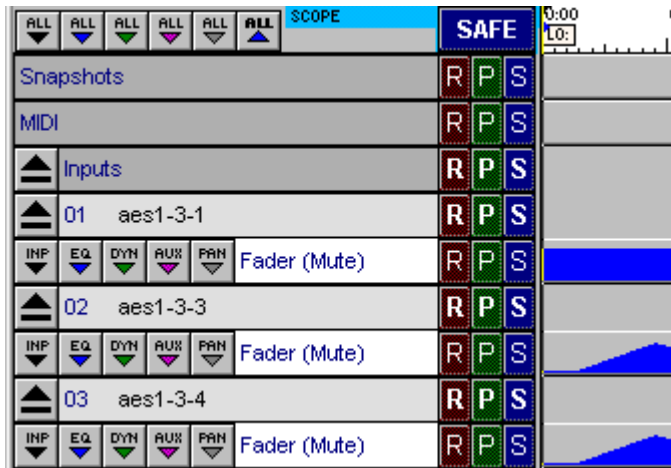
The display beside the channel label shows the channel's fader movement, but you can also automate and edit the other channel controls. The drop-down buttons beside the channel label allow you to see any combination of the parameters for any channel - each channel has buttons for displaying Pan, Aux, EQ and Dynamics controls.

For example, to see the EQ automation for the channel labelled 01, click the  01 and then the  drop-down buttons:



View All Buttons

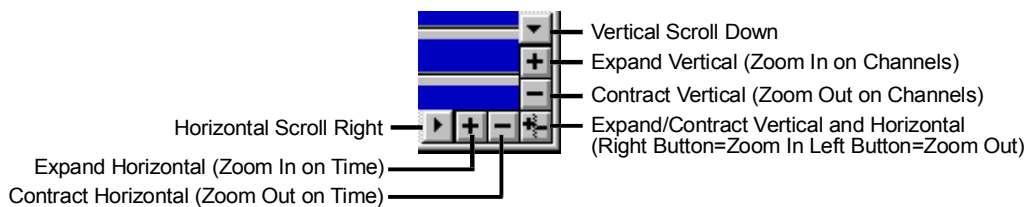
In the top left corner of the editor panel there is a row of six **View All** buttons. When pressed, the sixth button will expand all visible channel views into fader and mute views as shown below.



The other buttons perform the same function on the other sections but their effect will not be visible unless the channel's fader and mute view is already open. The effect of the button will, however, be visible if the channel view is expanded subsequently.

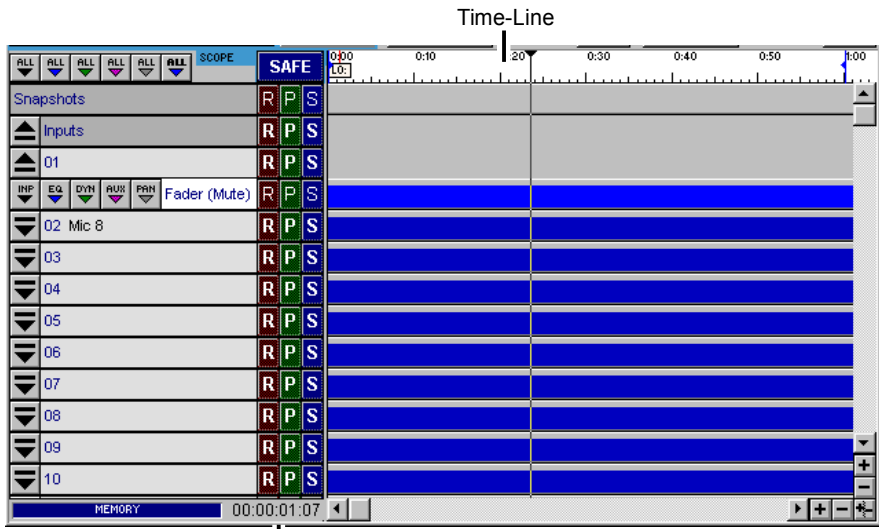
6.2.2 Scaling the Automation Editor Display

The Event Display of the Automation section can be shown at a wide range of scales, so that you can choose to see an overall picture of the automation data, or a very small amount of the data in great detail. You can scale the horizontal (time) display, and the vertical (channel) display independently, by clicking the buttons at the bottom right of the section:



6.2.3 The Time-Line

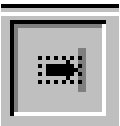
The Time-Line indicates the current time, as displayed on the timecode display. The timecode position of the trackball pointer is shown at the bottom left of the Automation Editor screen.



Trackball Position

When timecode is running, you can choose to make the time-line move with it, so that the line travels from left to right: see **Following the Timecode** overleaf.

When timecode is not running, you can select a particular timecode point in the mix by positioning the time-line using the trackball. To position the time-line, click on the timecode display area (white background) at the top of the section. The **Trackball Position Indicator** provides a continuous read-out of the position of the trackball pointer, so you can use it to position the trackball precisely to the nearest frame before clicking to move the time-line. This will issue a locate instruction to connected machines if they are following the console's timecode.



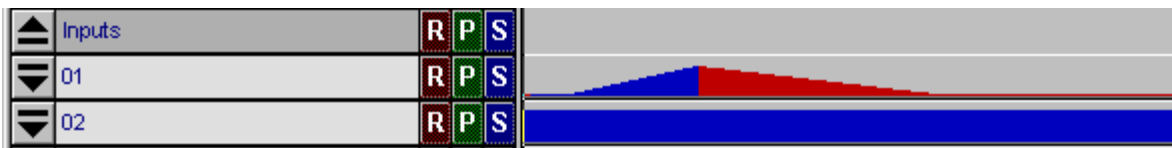
Following the Timecode: the Follow Button

This button, at the top right of the Automation section, allows you to prevent the timeline from moving as timecode runs. Stopping the timeline also prevents the automation data from "scrolling" out of the visible area: this is useful if you want to look closely at a particular section of the automation data without stopping the timecode.

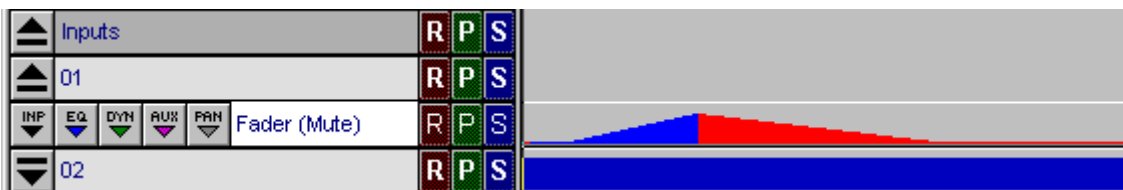
6.2.4 Event Display

The Automation Editor primarily shows the Fader and Mute status for each channel, along a timeline running from left to right. As we have seen the display can be changed to show the subset of information you need. If you record changes (using the on-line Record mode - see 6.1), these changes are displayed in the Automation Editor as "Events", and you can change or move these Events using the off-line editor tools.

NOTE: If the channel display is in its "collapsed" state (None of the lines of individual types of event are showing as seen below) editing will affect all the events on the selected channel.



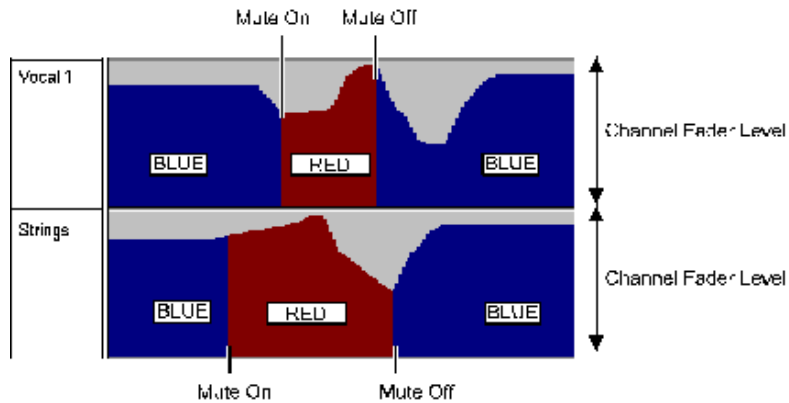
To edit individual types of event the view must be expanded to show the relevant events by touching the down arrow next to the channel number.



In the above example the fader and mute events are shown and can therefore be edited in isolation. When the view is expanded the blue and red colours appear in a brighter shade.

Fader Changes and Mute On/Off Events

For each channel, the Automation Editor shows the fader position and Mute status as follows:



Areas which are coloured red are Muted, and areas which are coloured blue are un-Muted. Each change in the height of the blue/red area represents a fader movement.

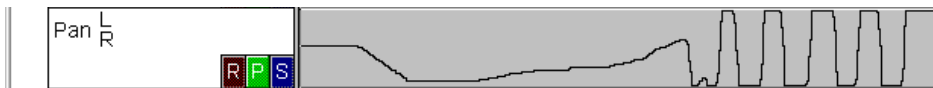
Input Gain Events

Input gain events are shown in the **INP** drop down menu in the following way:



Stereo Panning Events

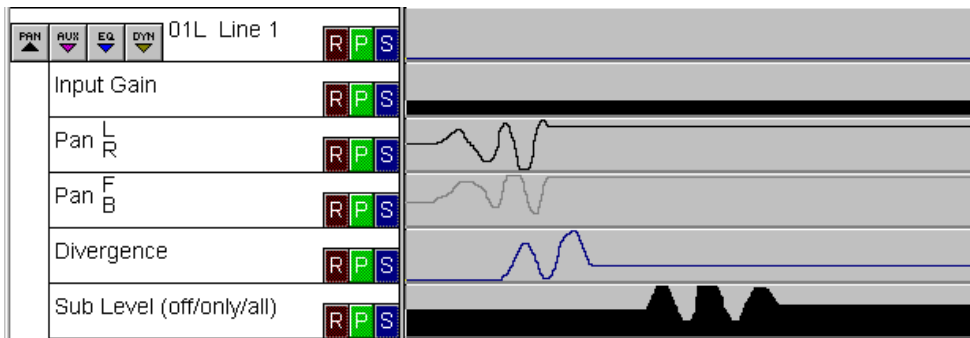
Pan is shown as follows:



The line represents the movement of the pan with time. As it goes towards the top the pan is moving to the left.

Surround Pan Events

In Surround consoles, there are two dimensions of motion for the pan position:



The first line is identical to stereo panning, except that obviously when the line is in the centre of the display the signal is only going to the C bus. The second line shows the Front-Back positioning. To duplicate the panning of one channel on another you should copy both lines together.

Sub and Divergence Events

These events are included in the **Pan** drop down menu (see diagram above).

Sub and Divergence levels are shown in the normal way but the **Sub Mode** is indicated as a switch in the Sub Level line where different colours represent each mode:

- Black = Sub Off (LCRSS on)
- Dim magenta = Sub Only (LCRSS off)
- Bright magenta = All on (LCRSSB on)

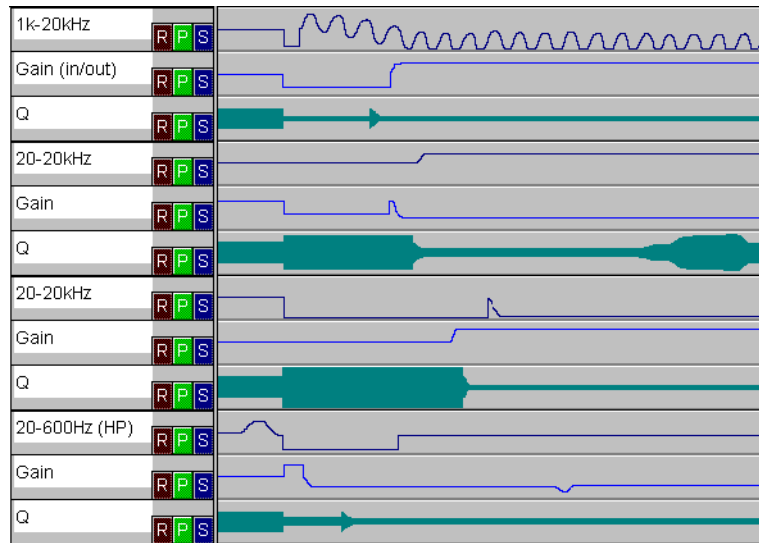
Aux Send Events

Aux sends and their mutes are automatable in the same way as channel faders and mutes:



EQ Events

The three parameters for all 4 bands of the EQ are shown under this drop-down display, with the HF at the top:

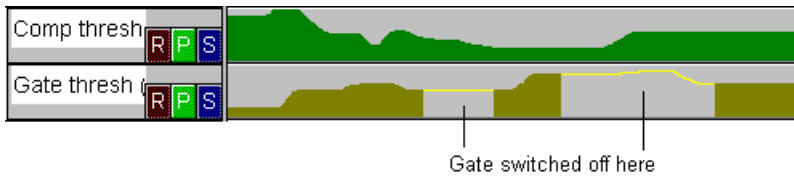


The frequency range of each band is indicated. The Gain of the HF is followed by the words **in/out**. This line indicates the automation of the entire EQ circuit being switched in and out. Note that for some filter curve types, the gain and Q data lines will have no effect. They are stored nevertheless, in case the band is switched back to parametric operation. The switching of the curve types cannot be dynamically automated.

Note: The frequency and IN/OUT status of the High and Low Pass Filters appear in the Dynamics display.

Dynamic Threshold Events

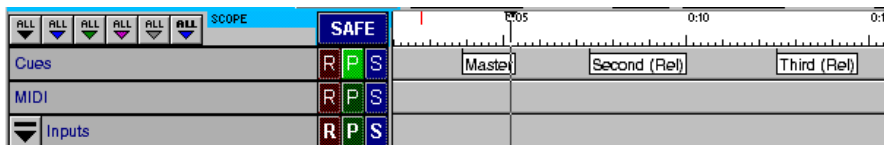
Only the threshold and on/off events for the compressor and gates are automatable.



In this case, the on/off switching for each effect is shown by the area under the line not being filled in.

Cue Events

Cues have their own line in the editor. This allows you to see them in the order they play back and perform the same edits on them as with other events. Here is a sample Cue timeline:



These events must be selected for editing at the left hand edge of the label. This also indicates the exact time at which they will trigger.

6.2.5 Automation Mode Buttons

Each control, channel and section in the Event editor has a set of Record, Play and Safe buttons which light to show their status.



You can press these buttons with the pointer. They allow you to individually affect the status of a single control which is not possible with the channel buttons. They also allow you to set the status for a group of channels in a section. The S button makes a control safe from overwriting. This means that you cannot accidentally place the control into Record and also that you cannot edit their events in the timeline event editor.

Safe Mode

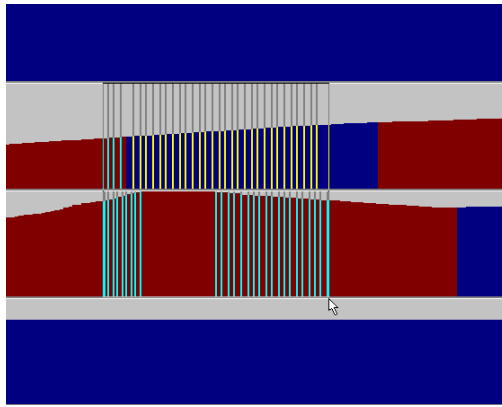
Any channel or control can be made Safe. Clicking on the Safe button in the Event Editor is the only way to set Safe mode. Safe controls and channels are shown by being greyed-out in the display.

You can use this facility when editing. If you need to affect a group of channels except one or two, place them in Safe mode and use the drag-select tools to select everything around them.

Safe mode is also useful when you are combining dynamic automation of some controls with cue automation. For more information about using Safe mode with dynamic automation and with cues, see section 6.1.5.

Safe Scope

Below the toolbar in the top left hand corner of the screen are eight scope buttons determining which controllers the global safe functions will affect. Safe buttons on expanded strips for individual controllers are not affected by the scope.



Events are highlighted to show that they are selected, and an outline box appears around the outside of a selected group. To de-select individual events within a selected group, hold down the <Ctrl> key while clicking on the event.

Switch events are:

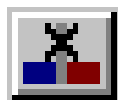
- Channel Mute
- Output Channel Mute
- MS Decode On/Off
- Aux On/Off
- Filter In/out
- EQ in/out
- Gate In/out
- Compressor In/Out
- Sub Mode

Level Events are:

- Input Gain
- Fader Level
- LR Pan
- FB Pan
- Aux level
- Aux Pan
- EQ frequency
- EQ Gain
- EQ Q factor
- Filter Frequency
- Divergence
- Sub-bass send
- Compressor Threshold
- Gate Threshold
- Output Channel Level

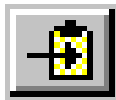
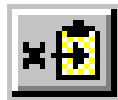
6.2.8 The Editing Tools

These tools operate only on the Selected events. They are greyed out until you have used the Selector tools to select one or more events.



Delete

This button simply deletes all the selected events from the mix. They cannot be recovered, except by using the UNDO button - see below.



Cut, Copy and Paste

These buttons use the *Clipboard* for temporary storage of events. The **Cut** button deletes the selected events from the mix, but stores a copy on the Clipboard. The **Copy** button leaves the selected events in place, but stores a copy of them on the Clipboard. The **Paste** button inserts a copy of the Clipboard contents (*i.e.* a selected group of events) into the mix. Once a group of events is Pasted in, you can use the normal editing tools to move the group forward or backward in time, or to a different channel.



Duplicate

This button simply creates a duplicate of the selected group of events, in the same position as the original group, and selects the duplicate set. You can then drag this group of events to any position you wish.

The Duplicate tool is particularly handy for copying a set of events across several channels. To assist with this process, when placing the duplicate events, you can hold down the <Shift> key to lock out any left-right trackball movement - this ensures that when you place the duplicate copy on another channel, the new events are locked to the same timecode as the original ones.



Nudge Back / Forward

These buttons move the selected events back or forward in time by a quarter-frame. If you hold down the <Shift> key while clicking these buttons, the selected events are nudged by a whole frame, and if you hold down the <Ctrl> key, the events are nudged by one second.



Snap to Timeline

This button is a toggle, and it allows you to use the Timeline for precise positioning of selected events. If you are positioning a selected group of events, switching on the Snap button allows you to align the left or right edge of the selected group precisely with the Timeline, just by moving the selection close to the Timeline position.



Undo

This button allows you to cancel the last edit you did (Delete, Nudge etc.), and restores the mix to the same state it was in before the edit. There is only one level of undo.

6.2.9 The Event Tools

You can use these tools to insert new events into the mix:



Insert Switches

To Insert a new switch On or Off event, click this button, then click on the channel and the timecode at which you want to insert. The tool will toggle the status of the event at the point you choose. See the Switch and Level Selectors section above for a listing of which events can be inserted using this tool.

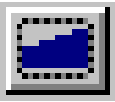


Fade-Out

To fade a channel out gradually, click this button. Then, place the pointer at the position where you want the Fade-Out to begin, then press and hold down the mouse left button, and *drag* the pointer to the position where you want the Fade-Out to end.

If you drag the pointer down or up across several channels, all the channels within the dragged area will be affected.

Chapter 6



Join Levels

"Joining" two levels together means fading from one to the other smoothly over a period of time. The Join tool works like the Fade-Out tool - you choose which levels to Join by "dragging" the tool from one screen position to another. The Join affects all the lines over which you drag the tool.

Join is *very* powerful. You can use it across any level events - to crossfade EQs for example - and to quickly tidy up other changes which you would otherwise have to null.



Zoom

Zoom allows you to control how many lines and what period of time you are viewing in the event editor window. To change the view click and drag to draw a box around the events you want to see. The scaling will redraw as closely as possible to your selection. You can use the Zoom controls in the bottom right hand corner to fine-tune the settings (see 6.2.2 **Scaling the Automation Editor Display**).



Clear Track

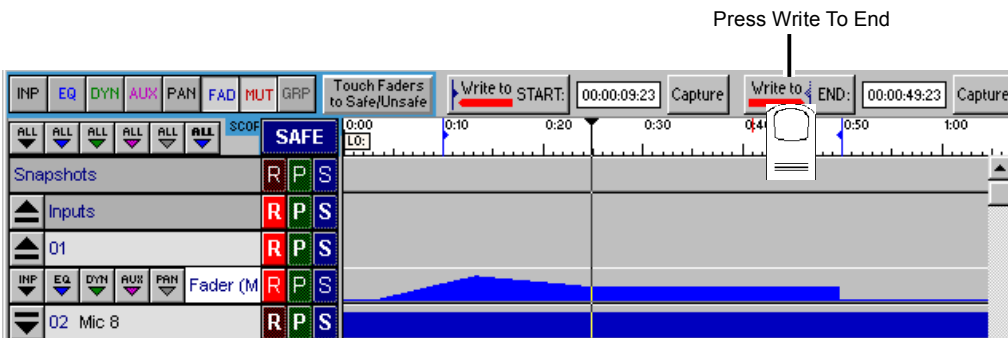
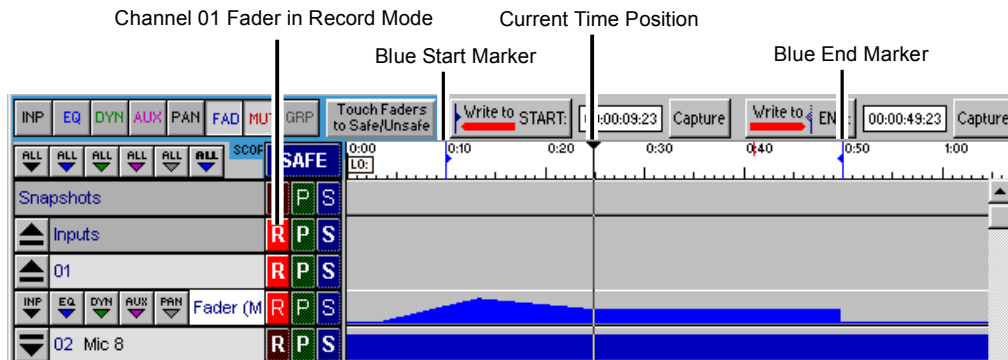
This tool allows you to delete the data for a single line or track. Select the tool, click on the track and after confirming the line cleared.

6.2.10 Write to Start and Write to End

In the timeline there are two blue lines which represent **Write to Start** and **Write to End** markers. Automation can be written from the current time to either of these markers. The markers may be set by pressing **Capture** when the current time is at the desired point. The Write to Start and Write to End buttons are **only** enabled when the current time is between them and when at least one controller is in Record mode.

If pressed at any time during recording, the current level for any controller which is in Record mode will be written from that point back to the Start marker or forward to the End marker.

This will erase all other events previously recorded.



Chapter 7

Effects

7.1 Configure Effects

If The Effects module is 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** 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.

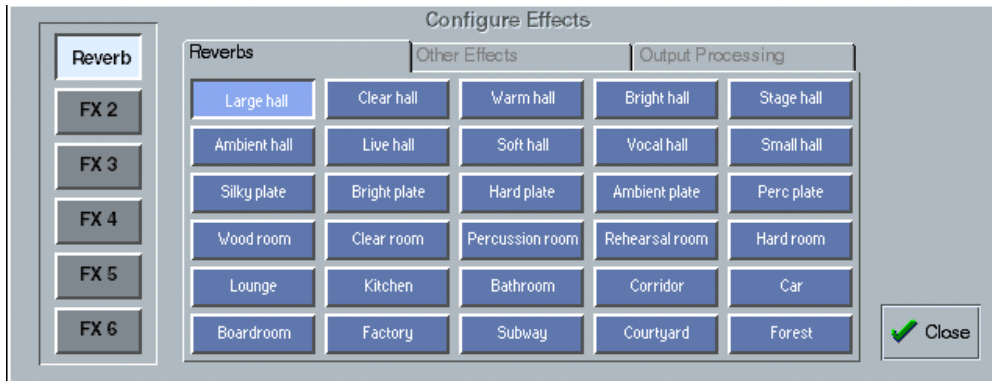
FX1 is always a stereo reverb unit

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.

7.1.1 Selecting Effects

Touching the **Configure Effects** button in the **Setup** menu on the Master Screen opens the following panel:



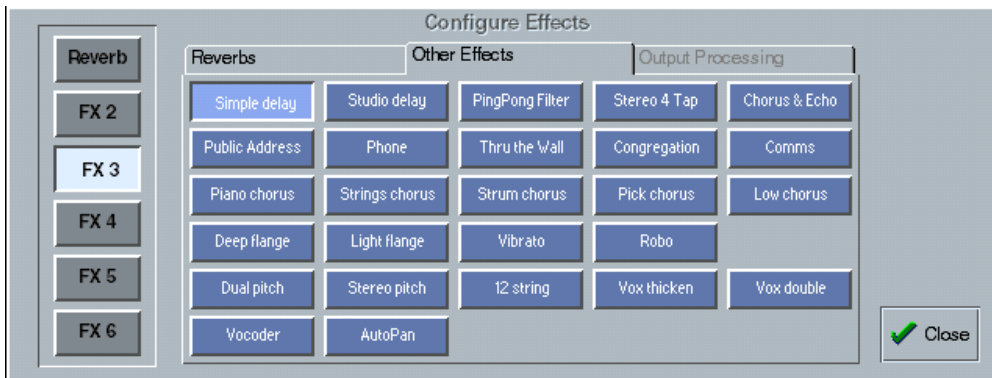
Touch one of the buttons on the left to select an effects module and assign an effect to it by selecting from the grid of buttons labelled with the effect names.

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)

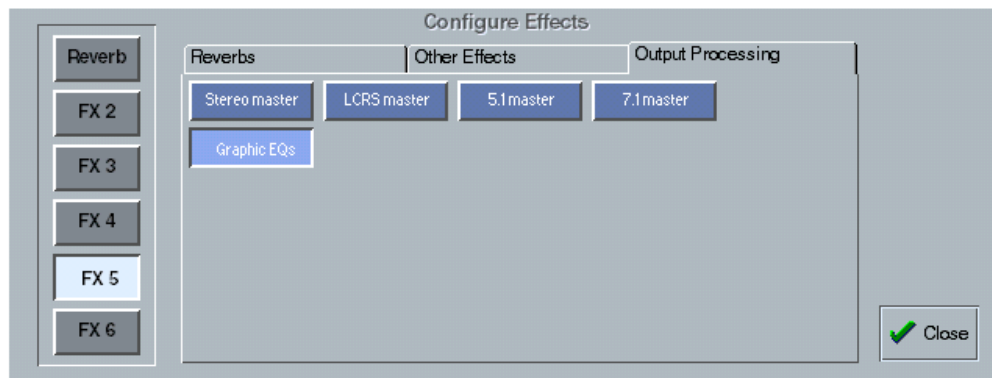
Selection for modules 2, 3 and 4 can be made from a similar list of reverb effects but by selecting the tab labelled Other Effects there are further choices including delay, chorus flange and pitch shifters.



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.

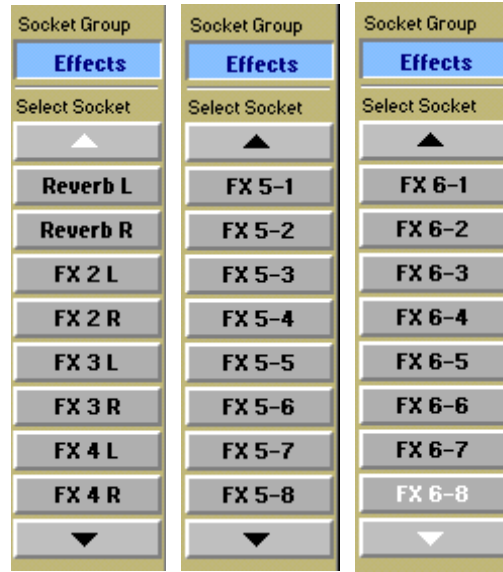
The processing options are Stereo, LCRS, 5.1 or 7.1 or up to 12 mono Graphic EQs.



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.

7.1.2 Effects and Routing

Signals can be routed to the effects modules from Direct Outputs, Insert Sends, Auxiliary Outputs and SubGroup 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.



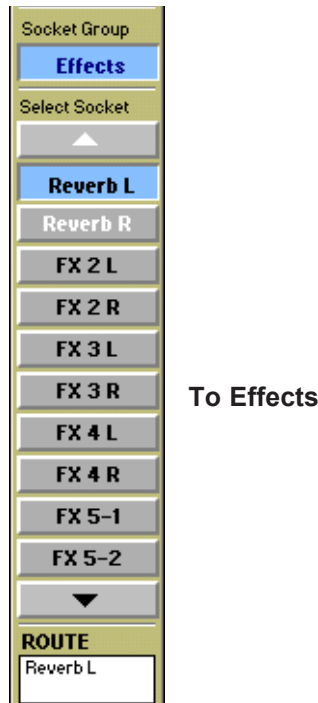
This group contains left and Right sockets for FX 1 to 4 and 8 sockets each for FX5 and FX6. Therefore FX5 and FX6 can be used for output processing on stereo or surround busses.

7.1.3 Effects and Auxiliaries

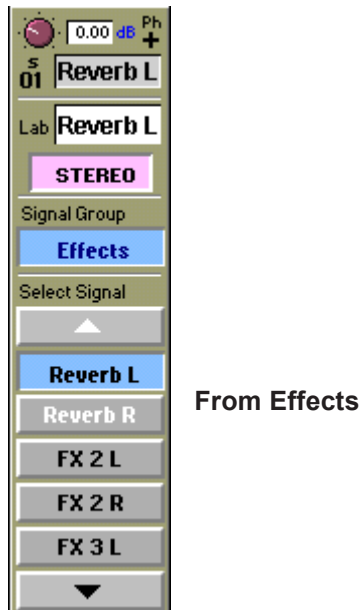
Touch the relevant auxiliary bus on the Master Screen to open it and then touch the Routing box beneath the meter to show the output socket routing.

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.



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.

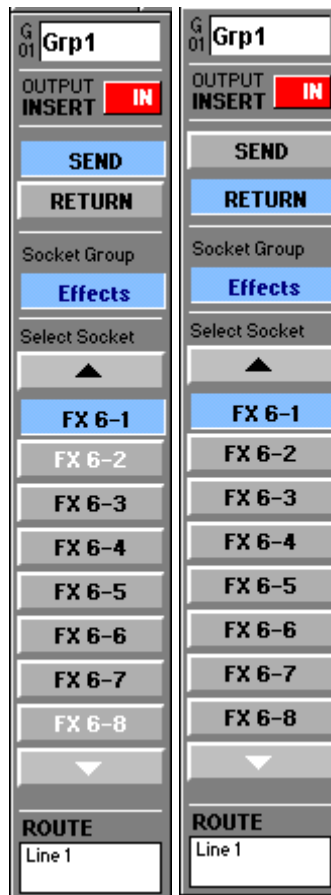


7.1.4 Output Insert

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.

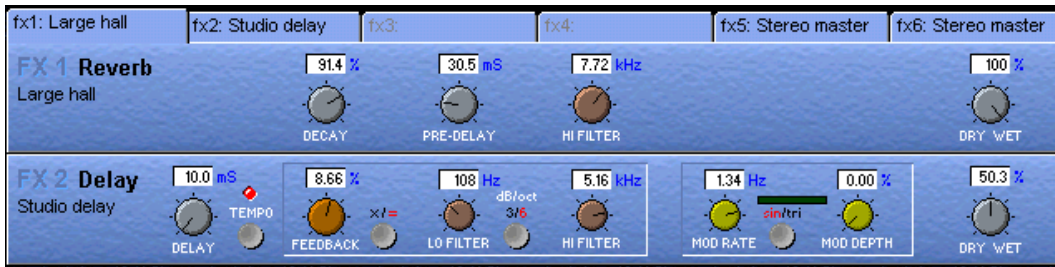
Touch the **Send** button and select the input to the required effects module, then touch the **Return** button and select the output from the same module. Then touch the **Output Insert** button to switch it on.



7.2 Effects Control

7.2.1 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 **Matrix rotary and switch** on the right of the master worksurface.

They can also be adjusted by moving the trackball horizontally whilst holding down the left button.

7.2.2 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.



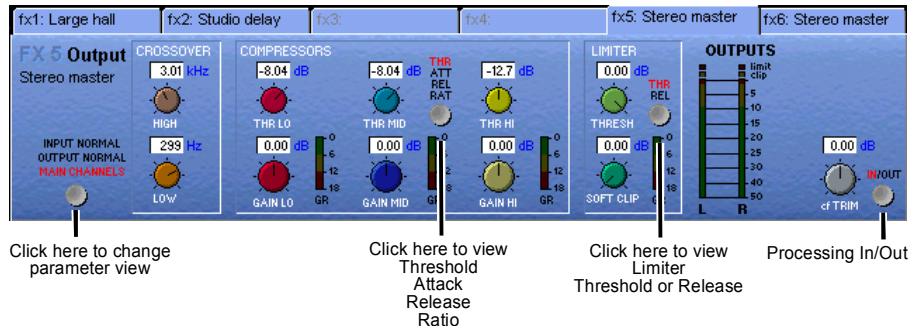
Output Normalising

Provides Output **Gain** and **Phase** controls for the left and right signals.



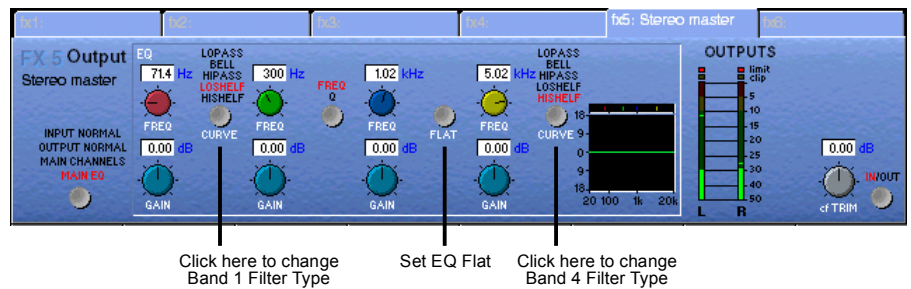
Main Channels Dynamics

Provides **Crossover** adjustment, **3 band compression** and **Limiting**.



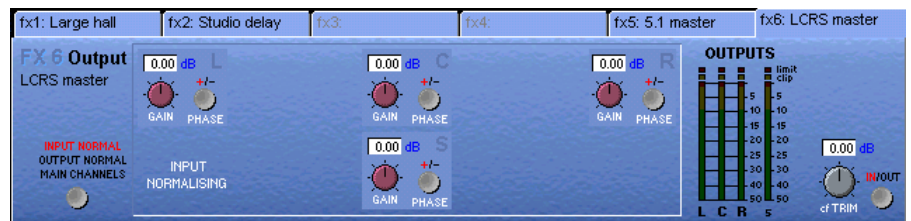
Main EQ

Provides **4 Band EQ** with adjustable Filter Types on Bands 1 and 4.



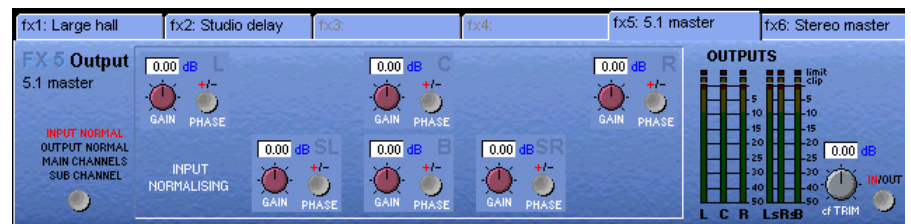
LCRS Master

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.

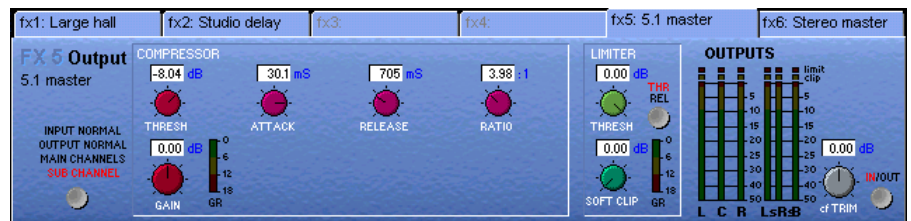


5.1 Master

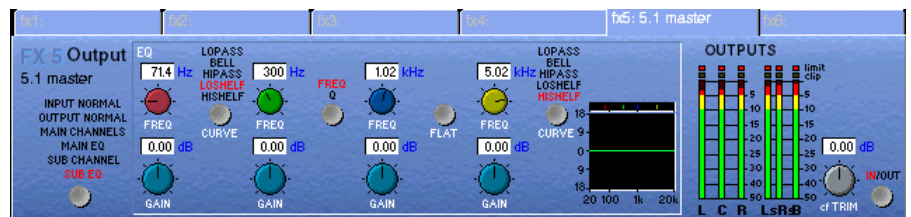
A 5.1 Master provides separate Input and Output Normalising for each of the six signals and in addition the **Sub Channel** has its own Compressor, Limiter and 4 Band EQ.



Sub Channel Dynamics



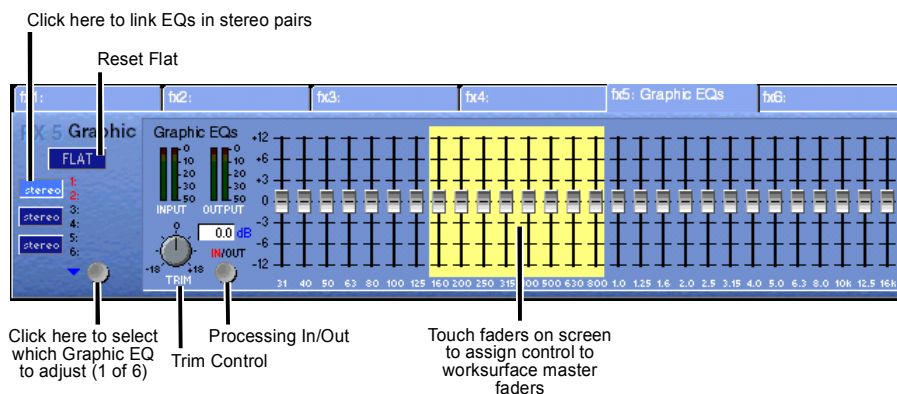
Sub Channel EQ



Chapter 7

Graphic EQ

The controls for the 12 Graphic EQs are as follows:



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.

Chapter 8

Troubleshooting

8.1 Troubleshooting

If you are experiencing any difficulty with D5T 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.

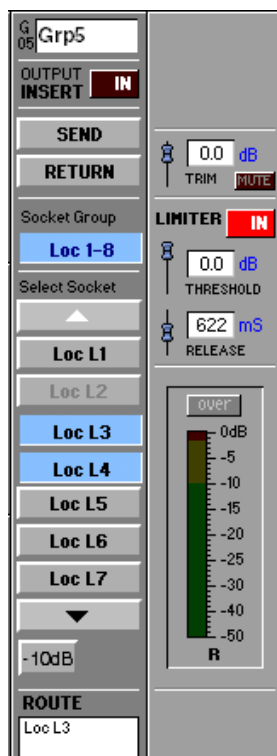
Routing a group buss directly to the Master buss uses the same number of channels as there are buss signals eg. 2 for a stereo buss or 6 for a 5.1 buss.

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.

Chapter 8

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 D5T 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 D5T software then Quit To Windows using the System / Service Menu and then load the D5T 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.

Appendix A
D5TC
(Theatre Masters Controller)

Appendix A - The Theatre Masters Controller

This appendix should be read in conjunction with the D5T User manual as many of its functions simply provide a remote control interface to the D5T itself. The TC screen is almost exactly the same as the D5T Master Screen with the exception of the Macro functions.

Note: To ensure correct operation the D5-TC, the software version number must exactly match that of the D5-T with which it is used.

A.1 Overview

The D5-TC (Theatre Masters Controller) provides alternative control over the 24 control group masters, outputs and cues, as well as all the normal display modes from the D5T master section on a TFT touchscreen.

A row of 16 widely-spaced master faders with scroll function buttons display either the first 16 or the last eight control groups and include a bright, eight-character alphanumeric display above each fader showing master channel names independently of the LCD buttons.

Eight programmable, interactive LCD macro buttons (and access button) allow access to pre-defined user macros and there are four Mute-all buttons (inputs, auxes, subs and groups) and five Safe-all buttons (inputs, subs, groups, MIDI and events).

Previous/Next Cue buttons are situated beside the faders.

Footswitch sockets on the rear panel allow remote firing of "Next".

Other features include a built-in script tray to ensure that the controls are not obscured, while the tray conceals a lit internal QWERTY keyboard.

Master fader motors are disabled by default to suit theatre operation.

Customisability includes spare modules on the left and right hand sides with a tunnel to the back panel, allowing individually-specified buttons and wiring loom to be installed. Tapped holes on the rear panel allow mounting of a bar to secure peripherals such as small LCD monitors, cuelights and the like.

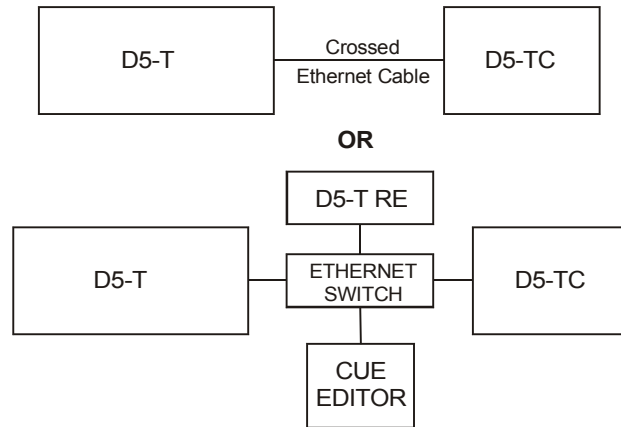
Facilities are completed by two Littlites in the keyboard compartment and a USB socket for your storage device and possible future additions.



Appendix A

A.2 Connection and Setup

The D5TC is connected to the D5T using a CAT5 Ethernet cable. If these are the only two devices in the system an Ethernet crossed cable can be directly connected to both but if there is another remote controller, a remote PC running the D5T Cue Editor or a D5T Redundant Engine in the system then all of these devices should be connected via an Ethernet switch using standard CAT5 cables.



When the TC has been connected and switched on:

- 1) Press the **System/Service/Configure Hardware** button to open the DiGiConfig program.
- 2) Select all the devices in your system by pressing the relevant buttons and then press the **This One** button for the TC.
- 3) This will automatically configure the TC but you can press the **Edit Details** button to view more information.
- 4) Then press **OK** to return to the TC software application.



A.3 Consoles and Racks Panel

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 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.

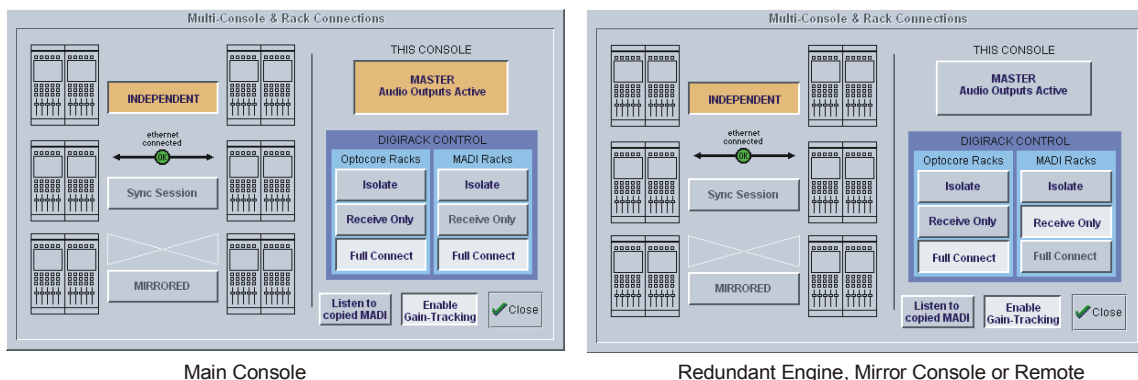
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

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 TC should not be highlighted at all.

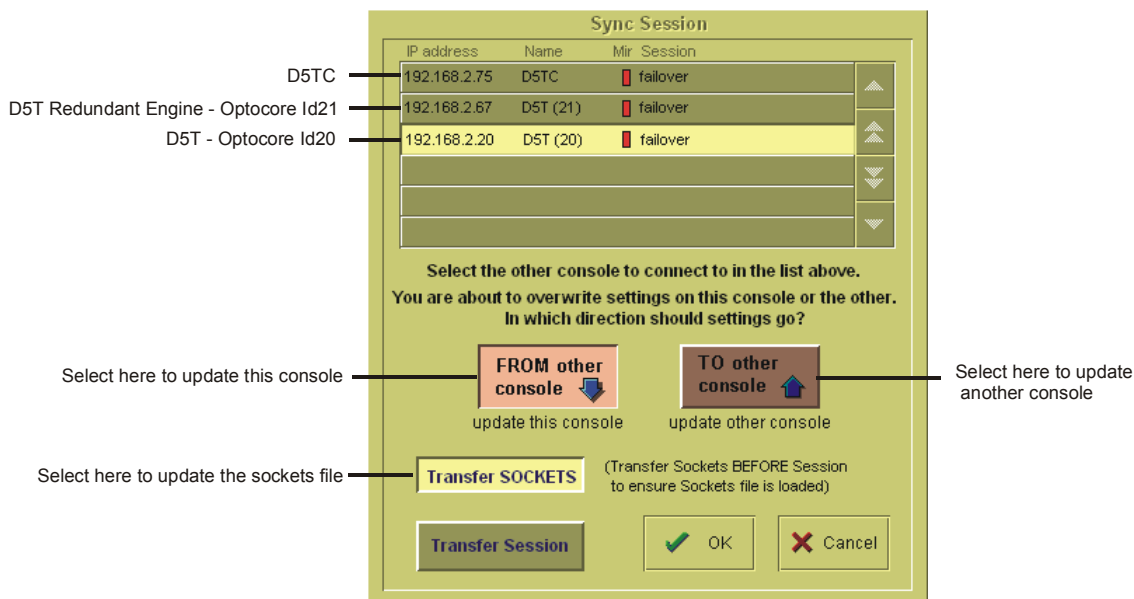
The MADI Rack's connect states Receive Only and Full Connect are enabled/disabled and set according to the Audio Master active state – an inactive engine cannot output to a MADI rack.



A.4 Sync Session

The Main console and TC 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 TC (used to remote control and 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 D5T, its Redundant Engine and the Theatre Masters Controller (D5TC).

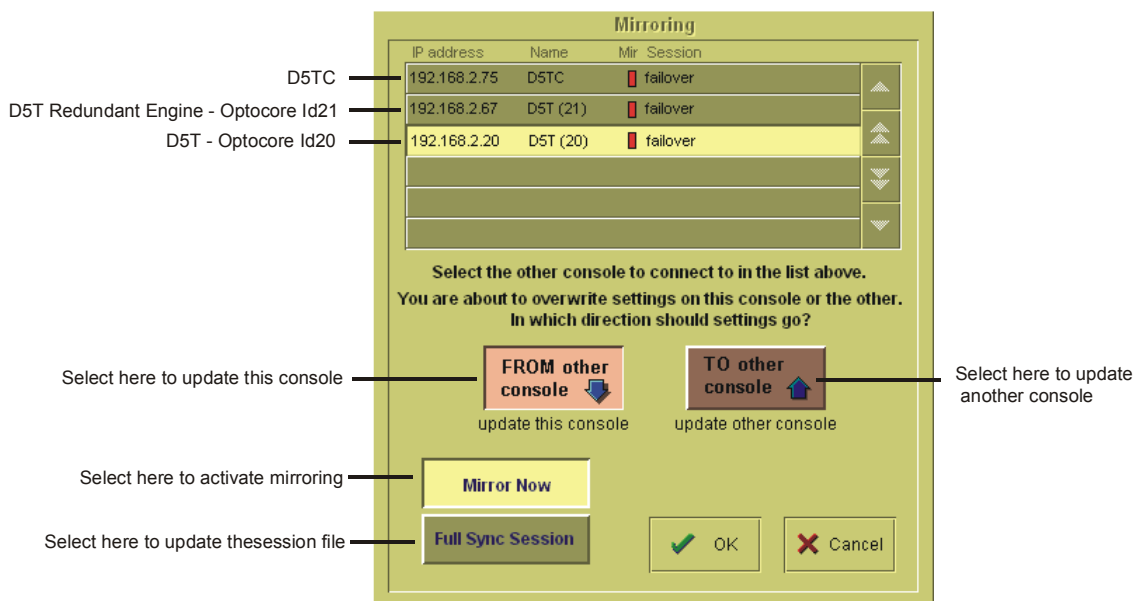
- 1) Select the device from the list that you wish to transfer from (the D5T in this example).
- 2) Press the **Transfer Sockets** button and the **FROM other console** button.
- 3) Press **OK** - This will transfer the Sockets File to the TC and the **Consoles and Racks** panel will reopen.
- 4) Press the **Sync Session** button again.
- 5) Select **Transfer Session**
- 6) Press **OK** - This will transfer the Session File to the TC, 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 file you can sync the sessions by pressing the MIRROR button, selecting Full Sync Session and pressing OK. This will automatically activate Mirroring after syncing the sessions.

A.5 Mirroring

When the Sessions have been synced, Mirroring can be activated by pressing the **Mirrored** button on the TC and the following panel will open:

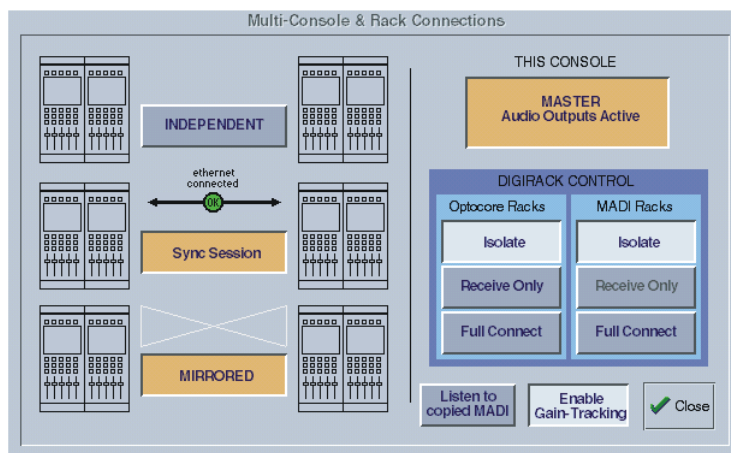


Appendix A

- 1) Select the device from the list that you wish to Mirror from (the D5T 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 Redundant Engine then this process should be repeated on each device, always transferring sockets, syncing sessions and mirroring **From** the main console.



As previously mentioned, the D5TC has all the functionality of the D5T's Master Screen panels and information on this can be found in the master Section chapter of this manual.

In addition it has some useful controls of its own which are as follows:

A.6 Masters

The D5TC has 16 faders which can be assigned to any of the D5T's Control Groups, Sub Group or Auxiliary Masters.

The LCD Buttons provide a Solo function and there is a Mute button above each of these.

Use the left and right scroll buttons to move through all of these Master faders.

The **Home** Button can be pressed at any time to reassign the faders to the first 16 Control Groups.



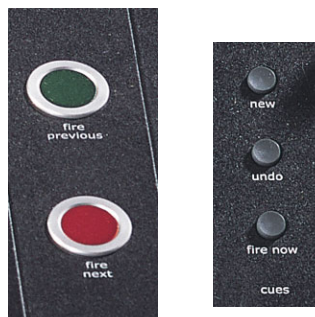
A.7 Cue Control

The worksurface **Fire Previous** and **Fire Next** buttons duplicate the D5T main worksurface Previous and Next buttons.

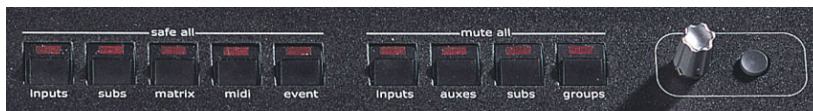
The **New** button duplicates the **Insert** button in the Cue List screen panel and inserts a new cue into the existing list below the currently assigned (Green) cue.

The **Undo** button will undo the action of the last cue fired but only if the **Enable Undo** button is active in the on screen cue list.

The **Fire Now** button duplicates the **Fire** button on the D5T main worksurface - You can select a cue to fire by scrolling through the list of cues using the **Up/Down Scroll** buttons on the TC worksurface pictured above.



A.8 Global Safe and Mute Buttons



The **Safe All** buttons allow groups of controls to be made globally Safe from all cues with a single button press. Options are:

- All Input channels.
- All Sub Groups.
- All Matrix outs.
- All MIDI events.
- All Relay events.

The **Mute All** buttons allow groups of controls to muted/unmuted with a single button press. Options are:

- All Input channels.

Important Note:

When the Mute All Inputs button is pressed, all the input channels will be muted but when it is pressed a second time to unmute the input channels the result will be that the current cue's mute status for each channel is recalled.

This may mean that not all the channels are unmuted and if there is only one default cue in the list which has not yet been edited, it will appear as if the unmute function is not doing anything at all.

All Auxiliaries.

All Sub Groups.

All Matrix outs.

The switch and rotary controls situated next to the Mute All buttons duplicate the D5T main worksurface **Touch and Turn** controls and can be used to control Matrix sends and Effects parameters.

A.9 Macros



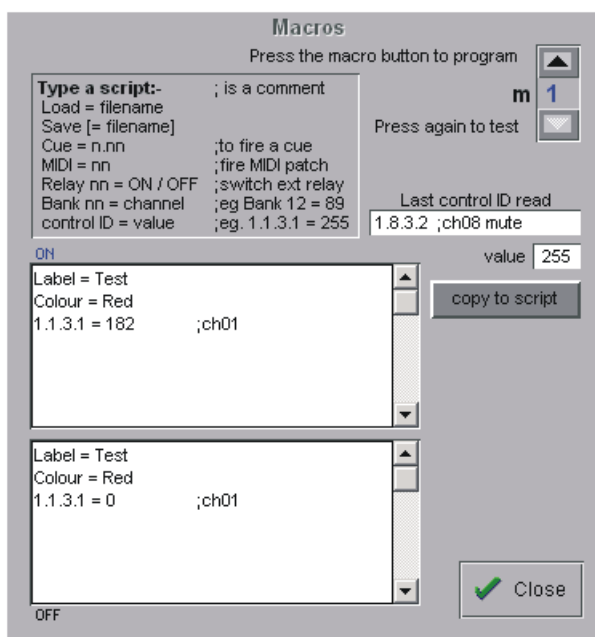
The eight programmable **Macro** buttons on the TC will initially appear unlit. The colour and labelling of the buttons is part of the script used to program the button.

Press the black worksurface switch next to the buttons or press the on screen **Layout/Macros** button to open the following panel.

In the example below you will see that for Macro Button 1 (selected top right) there are two scripts, one for its ON state and one for its OFF state in the two text boxes.

The syntax Label = "Test" and Colour = "Red" is used in both text boxes to keep the state of the button the same in both its ON and OFF positions. Obviously different text can be entered for the ON and OFF states and the colours can be chosen from the following list.

Green, Red, Orange or Yellow or any of these colours preceded by the word Dim eg Dim Green, Dim Orange etc.



Appendix A

The action of the button can be a single function or a combination of several functions and these can be entered in two ways.

1) Perform a function on the worksurface such as muting a channel and the control message will appear in the **Last control ID read** box on the panel. You can then position the cursor in either the **ON** or **OFF** text box and press the **Copy To Script** button to transfer the message. The process can then be repeated for other controls

Note: This procedure does not work for all console functions, if the controller is not read the script must be entered manually.

2) Type the messages with the correct syntax directly into the ON and/or OFF text boxes.

The most common examples are shown at the top of the panel.

A full list of these messages can be found in the file called D5Setup.rtf in the console's D5T or D5TC directory.

Appendix B
Multiple Console Setups
(Inc. Redundant Engines)

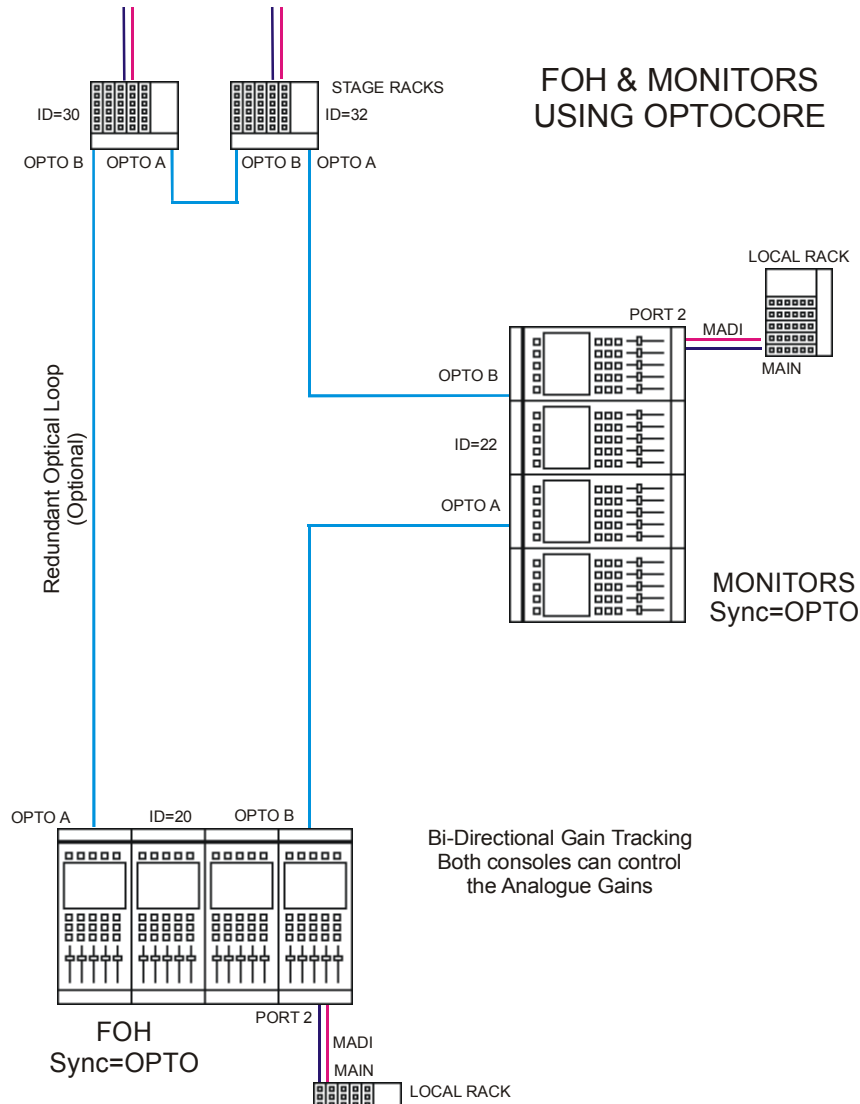
Appendix B - Multiple Console Setups

B.1.1 Front Of House 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. D5T software will automatically close to enable configuration changes.

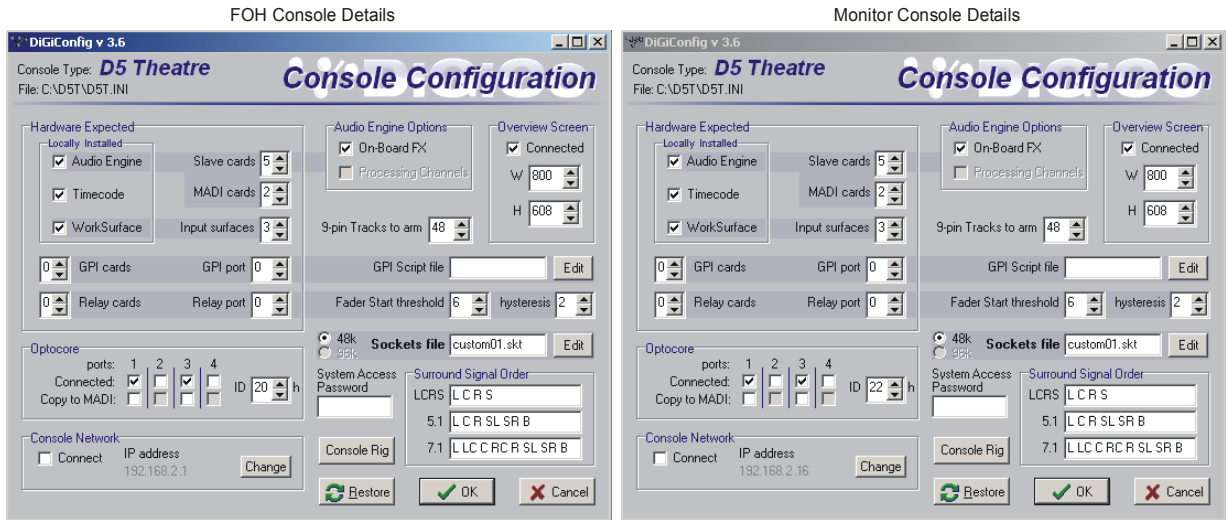
Select all the consoles in the rig (**FOH Main** and **MON Main**) and then select the console that you are configuring by pressing the **THIS ONE?** button. You can check the configuration by pressing the **EDIT Details** Button but clicking **OK** will confirm the setup and return to D5T software. Repeat this process for the other console.

Note: Both consoles should have Optocore selected in their Setup / Audio Sync panels.



Appendix B

The following configuration details will have been created:



Note that the Optocore IDs are 20 (FOH) and 22 (MON) and the IP addresses must be unique. In this example, other details are the same but this is not necessarily always the case.

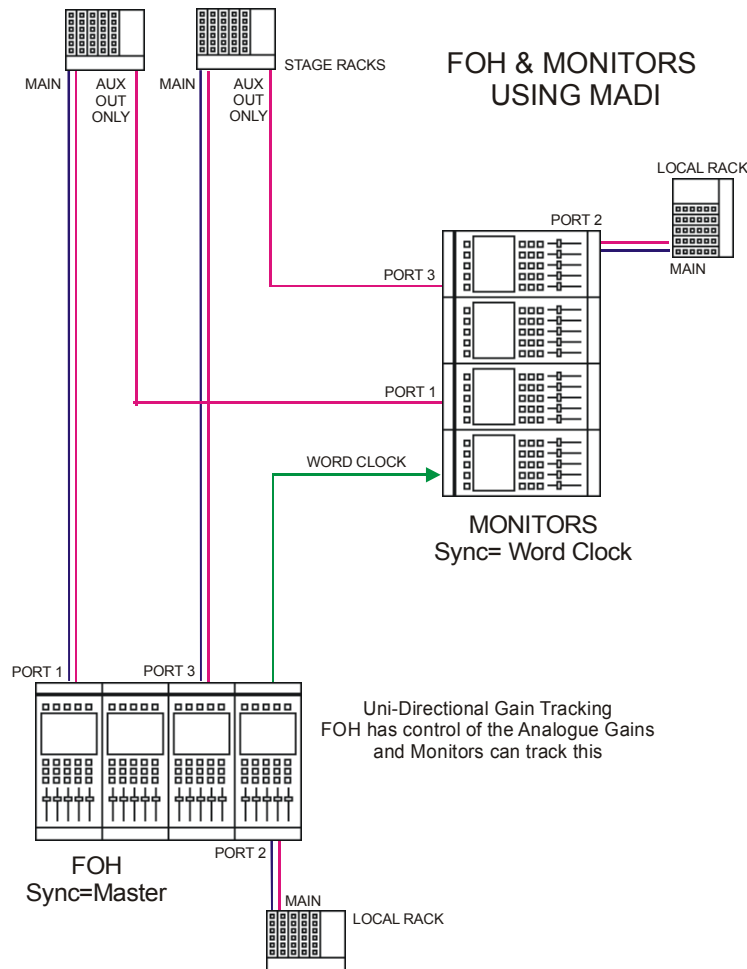
MADI Connections

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.

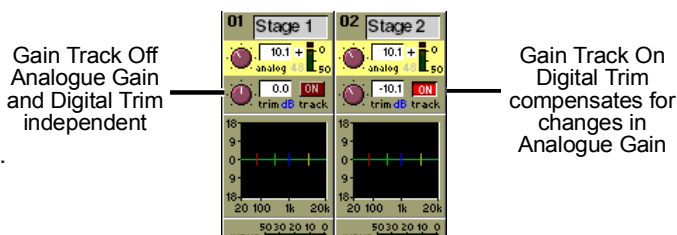
The recommended connection between the Monitor console and Stage Racks is a single MADI OUT from each Stage Rack's AUX MADI connected to the console's MADI 1 IN for Stage Rack 1 and MADI 3 IN for Stage Rack 2.

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.



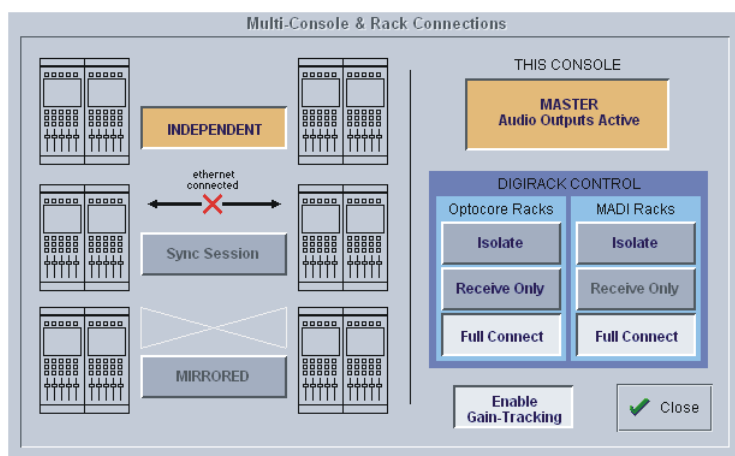
B.1.2 Gain Tracking Settings

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



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.

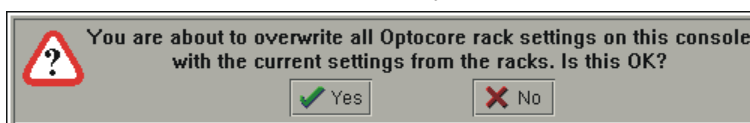
If you go to **Receive Only** then **Full Connect** you can join the rack sharing without making any gain changes. If you are responsible for the analogue gains, it is likely that you will want to go straight to **Full Connect** after load session or boot up.

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.

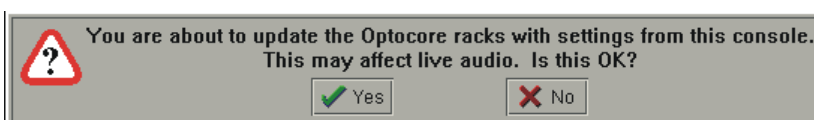
Receive Only where the console will receive the rack's existing settings but will not be able to control the gain etc on the racks.

Receive Only



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

Full Connect



Appendix B

B.1.3 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.

B.1.4 Gain Tracking and Cues

In a FOH and Monitors system, a great deal of care must be taken if analogue gains are to be changed with Cues. 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 Cue 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 Cues' scopes. This prevents it from sending any rack commands at all and therefore it cannot change analogue gains with Cues.

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 Cue 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 Cues and they have digital trim changes in their Cues.

In this situation, Cues 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 Cue.

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 in dependent Cue then the automatic adjustment may be overridden and unanticipated overall levels may result.

Suggested methods:

1) Do not change analogue gains with Cues from either console.

This is the simplest method and involves removing **Input Routing Scope** from all console Cues.

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 Cues 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 Cues, the input socket selection cannot be changed with Cues.

2) Only change analogue gains with Cues from one console.

If there is a requirement to change input socket routing and/or analogue gains with Cues then only one console should control the gains.

The second console should have either:

a) Input Routing Scope removed from all of its Cues - this assumes that there is no requirement to change input socket routing with Cues.

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 Cues.

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 Cue that will change analogue gains, the second console should then store its own Cue that reflects the required digital trim settings to compensate for that change. These Cues should then be fired at the same time (approximately) during the show.

Note: The most important aspect of this procedure is the coordination of Cues between the two consoles. It is not advisable for the two operators to store Cues independently of each other - they must both store Cues at the same time.

B.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.

B.2.2 Redundant Engine or Mirror Console

The following information refers to a Redundant Engine but the setup for a Redundant Mirror Console is identical.

It 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 console and the Redundant Engine or both devices are connected to an Ethernet switch if some form of Remote control is used with the system. This could be a Remote PC running the console software, the D5TC Cue Editor, a D5TC (Theatre Masters Controller) or a standard D5(T) RC (Remote Controller).

In the unlikely event that the console's audio engine fails, audio is automatically switched to the Redundant Engine without any interruption in the program material.

The Redundant Engine can be set to mirror the console's settings and therefore, in the case of loss of worksurface control on the console, the keyboard, trackball and monitor on the Redundant Engine can be used to perform essential functions such as the firing of snapshots.

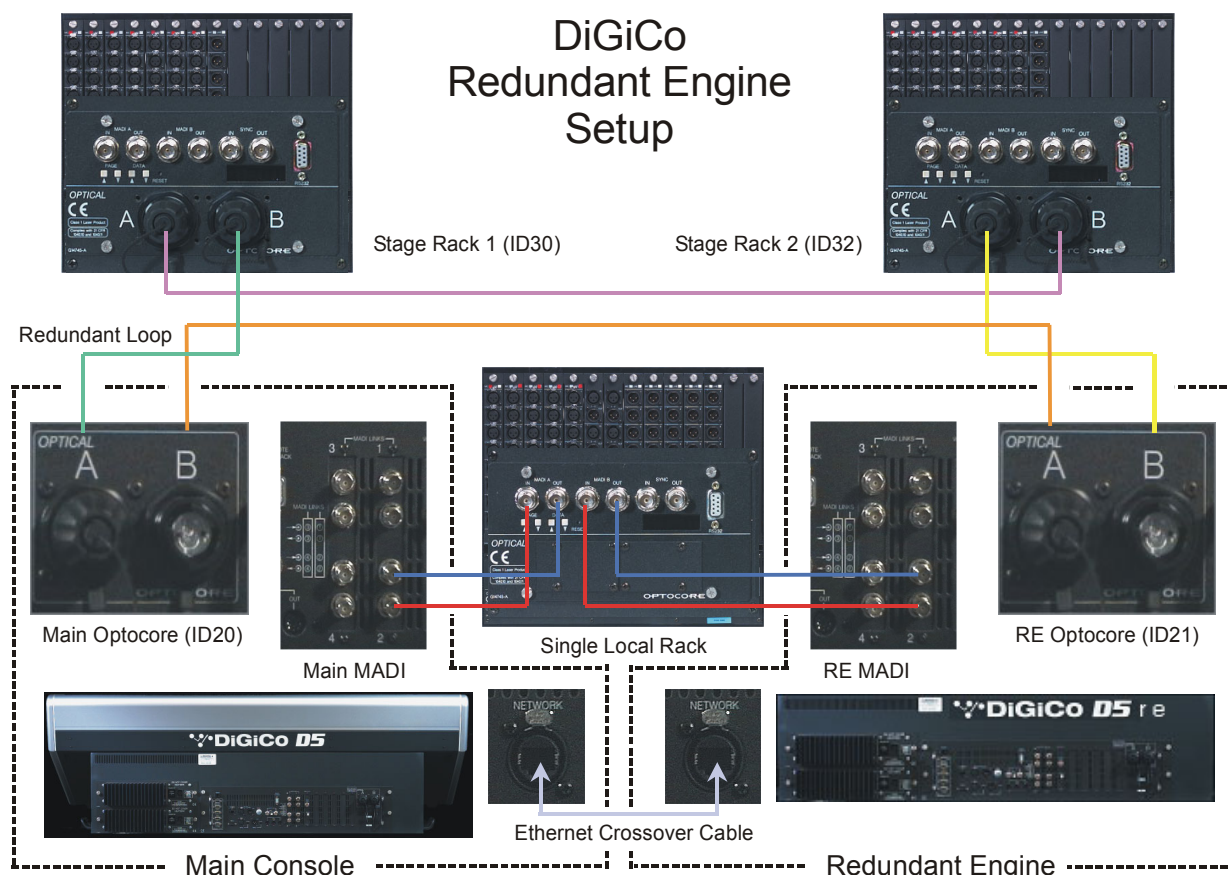
If the console's audio engine function is recovered then the operator can transfer audio processing back to the main console at any time with the press of a single screen button.

This diagram shows the required connections for a system consisting of a single Front Of House console, a Redundant Engine, two Stage racks connected via optical fibre and a single local rack.

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 console and the RE 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 Redundant Engine.



Appendix B

Optical connections should be:

- Stage Rack 1 Opto A to Stage Rack 2 Opto B.
- Stage Rack 2 Opto A to Redundant Engine Opto B.
- Redundant Engine Opto A to Main Console Opto B.
- Main Console Opto A back to Stage Rack Opto B if a Redundant Optical Loop is required.

MADI connections with the Local Racks should be:

- Main Console MADI 2 OUT to Local Rack MADI A IN.
- Main Console MADI 2 IN to Local Rack MADI A OUT.
- Redundant Engine MADI 2 OUT to Local Rack MADI B IN.
- Redundant Engine MADI 2 IN to Local Rack MADI B OUT.

The Redundant Engine has ports on its rear panel for the supplied **trackball and keyboard** and a **monitor** should be connected to the expanded VGA output on the rear panel to view the required screen. In normal operation the **Master** screen would be required to fire Snapshots (Cues) but the Overview screen could also be connected to make fader adjustments etc. The ideal solution would be to fit a multiple port video switcher that would enable easy access to any of the Input, Master or Overview screens.

B.2.3 DiGiConfig – Hardware Configuration

NOTE: The Main console and the Redundant Engine must both be running the same version of software.

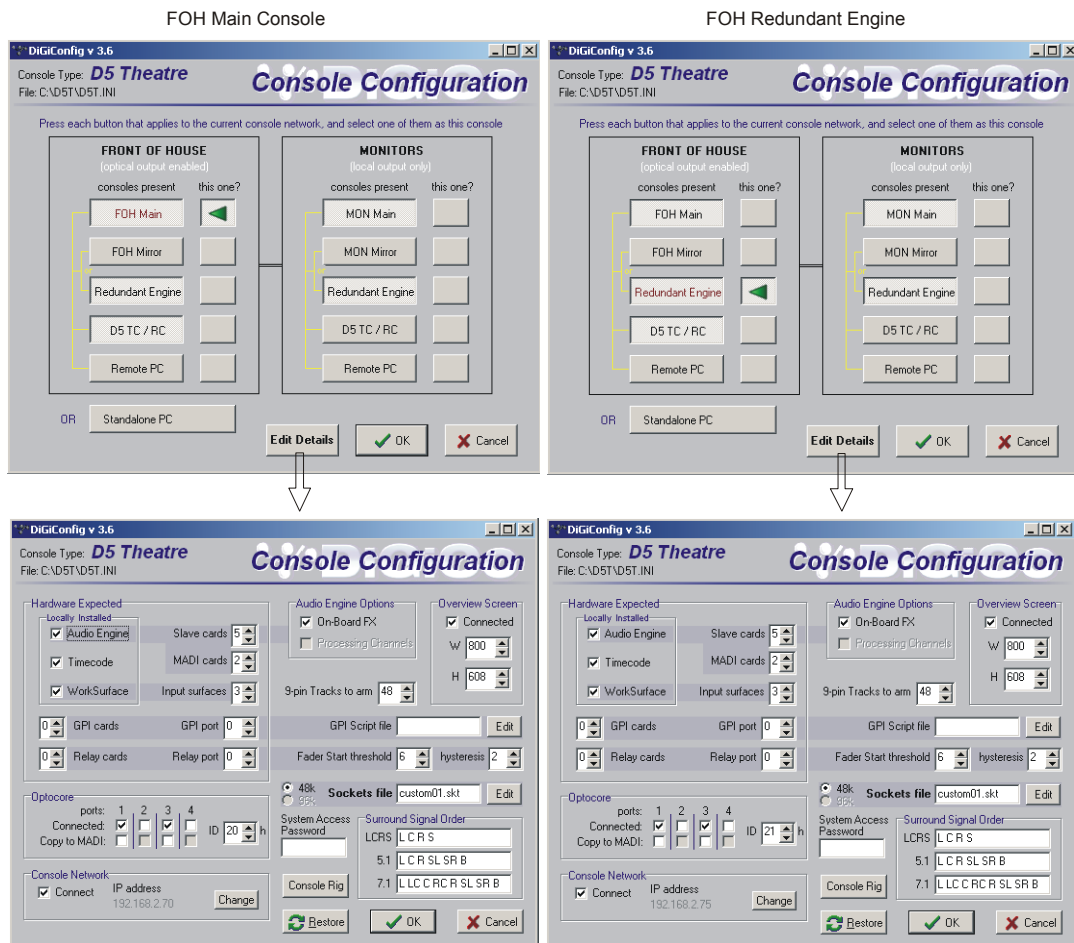
When the system is connected and switched on the DiGiConfig Program should be run on all of the devices in the system by pressing the **Configure Hardware** button in the **System/Service** menu.

The example below shows the settings for a system with a Main Front of House console and its Redundant Engine, a Monitor console and its Redundant Engine and a Remote Controller or Theatre Controller for the Front of House console.

All the devices should have all of the components of the system selected but the **“THIS ONE?”** button should be selected according to which device you are setting up.

If you wish to view or customise the settings, press the **Edit Details** button and a panel will open showing all the relevant details.

Unless you are troubleshooting the system, this should not be necessary and you should simply press the **OK** button to return to the console application itself.



There are several significant things to note in the above Console Configuration panels.

1) As these panels represent the Main console and its Redundant Engine, the configurations should be identical in most respects.

NOTE: The hardware configurations will not differ as although the Redundant Engine doesn't actually have a worksurface, it behaves as if it has and therefore on earlier models of RE the **Worksurface** warning light on the Master Screen will appear to show a red error light. This is not an indication of a real problem and the software is currently being amended to address this issue.

2) Elements that should not be identical are:

a) 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):

In the example above the Main console = 192.168.2.70 and the Redundant Engine = 192.168.2.75

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.

b) The console Optocore ID which should be unique to each device in the system that is connected to the optical loop (Settings on the TC and RC are not significant).

Console Optocore ID's should be as follows:

FOH Main Console = 20

FOH Main Console's Redundant Engine = 21

Monitor Console = 22

Monitor Console's Redundant Engine = 23

B.2.4 Consoles and Racks Panel

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 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.

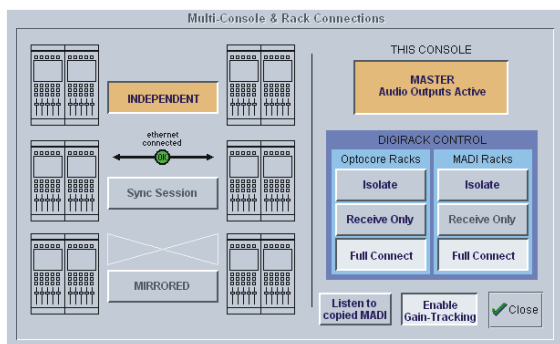
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

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

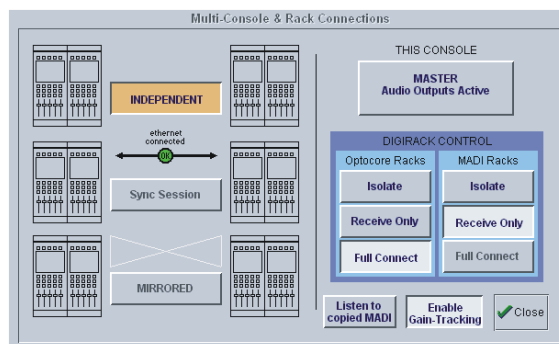
The console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.

The same button on the Redundant Engine 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



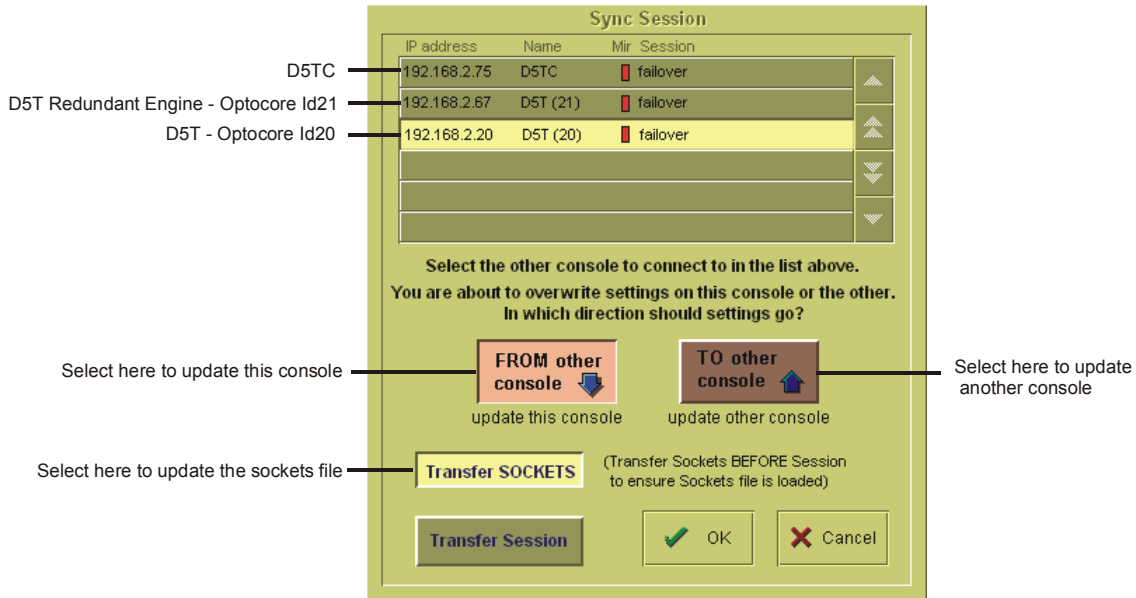
Redundant Engine, Mirror Console or Remote

Appendix B

B.2.5 Sync Session

The Main console and Redundant Engine 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 Redundant Engine (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 D5T, its Redundant Engine and the Theatre Masters Controller (D5TC).

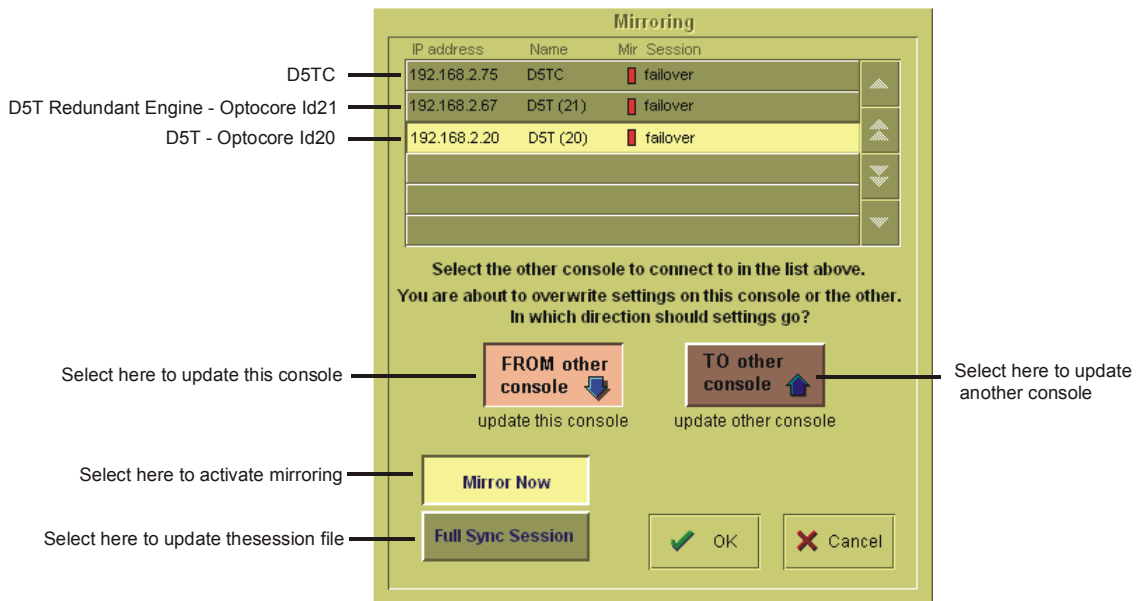
- 1) Select the device from the list that you wish to transfer from (the D5T in this example).
- 2) Press the **Transfer Sockets** button and the **FROM other console** button.
- 3) Press **OK** - This will transfer the Sockets File to the Redundant Engine and the **Consoles and Racks** panel will reopen.
- 4) Press the **Sync Session** button again.
- 5) Select **Transfer Session**
- 6) Press **OK** - This will transfer the Session File to the Redundant Engine, 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 file 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.**

B.2.6 Mirroring

When the Sessions have been synced, Mirroring can be activated by pressing the **Mirrored** button on the Redundant Engine and the following panel will open:

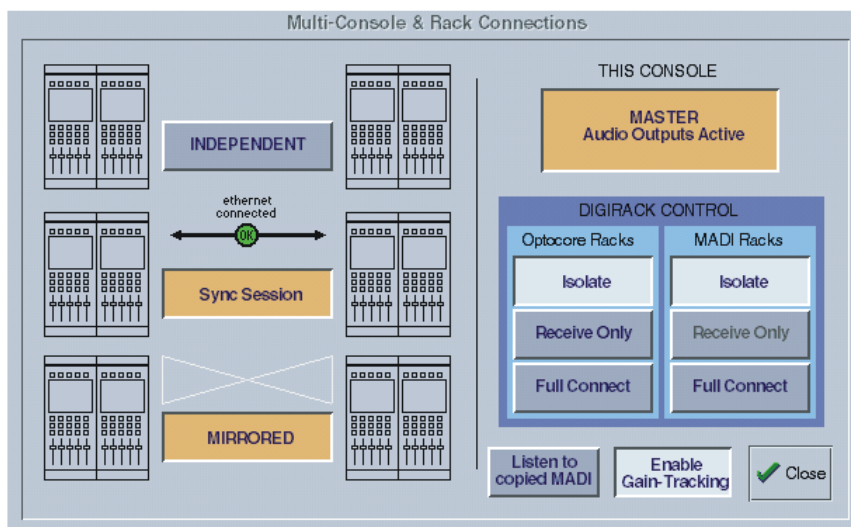


1) Select the device from the list that you wish to Mirror from (the D5T in this example).

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 or Theatre Masters Controller (D5TC) then this process should be repeated on each device, always transferring sockets, syncing sessions and mirroring **From** the main console.



B.2.7 DiGiRack Control

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 Redundant Engine, 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.

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.

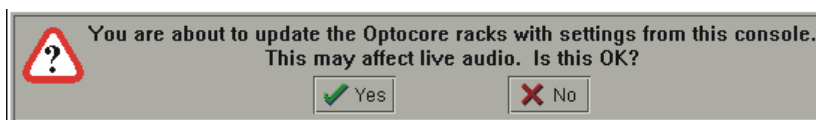
Options are:

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.

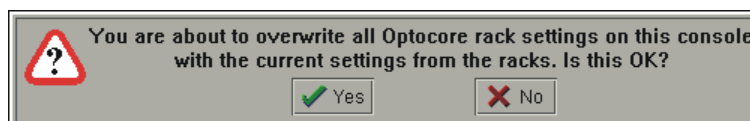
Receive Only where the console will receive the rack's existing settings but will not be able to control the gain etc on the racks.

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

Full Connect



Receive Only



B.2.8 Normal Operation

When the system has been completely configured, a failure in the console's audio engine will result in an automatic switch to the Redundant Engine. The **Master Audio Outputs Active** button on the Redundant engine will be highlighted in orange and will continue to process the audio until the operator chooses to switch back to the Main console engine. To do this, simply press the **Master Audio Outputs Active** button on the Main console and the engine switch will take place.

Assuming that the Main console's worksurface is functioning then the operator can continue to work normally even if the Redundant Engine has taken over the audio processing – the two devices are mirrored.

If the Main console's worksurface is not functioning normally then many console functions can be accessed using the Redundant Engine's keyboard, trackball and monitor or any other remote control device in the system.

Example Problem 1:

If power is lost on the main console or its audio engine fails.

Procedure:

The RE will automatically take control of the audio processing and its **Master Audio Outputs Active** button will be highlighted in orange - the button will not necessarily change colour immediately but will update its status shortly after the switch over of audio processing.

All devices in the system will show a warning message to indicate that the main console has disconnected from the Mirror Group.

Audio can be controlled from a remote control device such as the D5TC or from the RE itself using the keyboard and trackball.

When the main console has been reinstated, the normal boot procedure will take place on power up but the console will boot into a state where it is independent of the other devices and isolated from the racks. The Consoles and Racks panel will open automatically.

1) Press the **Mirrored** button in the **Consoles and Racks** panel.

2) Select the device from the list that you wish to Mirror from (the RE in this example).

3) Select **FROM other console** and **Mirror Now** and then press **OK** - the console should now be in the same state as the RE.

4) When you are ready to switch audio processing back to the main console, press the **Master Audio Outputs Active** button on the main console and it will be highlighted in orange.

Example Problem 2:

If there is a problem on the main console which requires a computer reset.

Procedure:

If the **Reset** button on the rear panel of the main console is pressed, the RE will automatically take control of the audio processing and its **Master Audio Outputs Active** button will be highlighted in orange - the button will not necessarily change colour immediately but will update its status shortly after the switch over of audio processing.

Alternatively, you may manually switch the audio processing to the RE before pressing the main console **Reset** button. This can be done using the main console or RE **Master Audio Outputs Active** button

All devices in the system will show a warning message to indicate that the main console has disconnected from the Mirror Group.

Audio can be controlled from a remote control device such as the D5TC or from the RE itself using the keyboard and trackball.

When the main console has been reinstated, the normal boot procedure will take place on power up but the console will boot into a state where it is independent of the other devices and isolated from the racks. The Consoles and Racks panel will open automatically.

1) Press the **Mirrored** button in the **Consoles and Racks** panel.

2) Select the device from the list that you wish to Mirror from (the RE in this example).

3) Select **FROM other console** and **Mirror Now** and then press **OK** - the console should now be in the same state as the RE.

4) When you are ready to switch audio processing back to the main console, press the **Master Audio Outputs Active** button and it will be highlighted in orange.

Example Problem 3:

If there is a problem on the optical fibre loop.

Procedure:

This will depend on the nature of the problem.

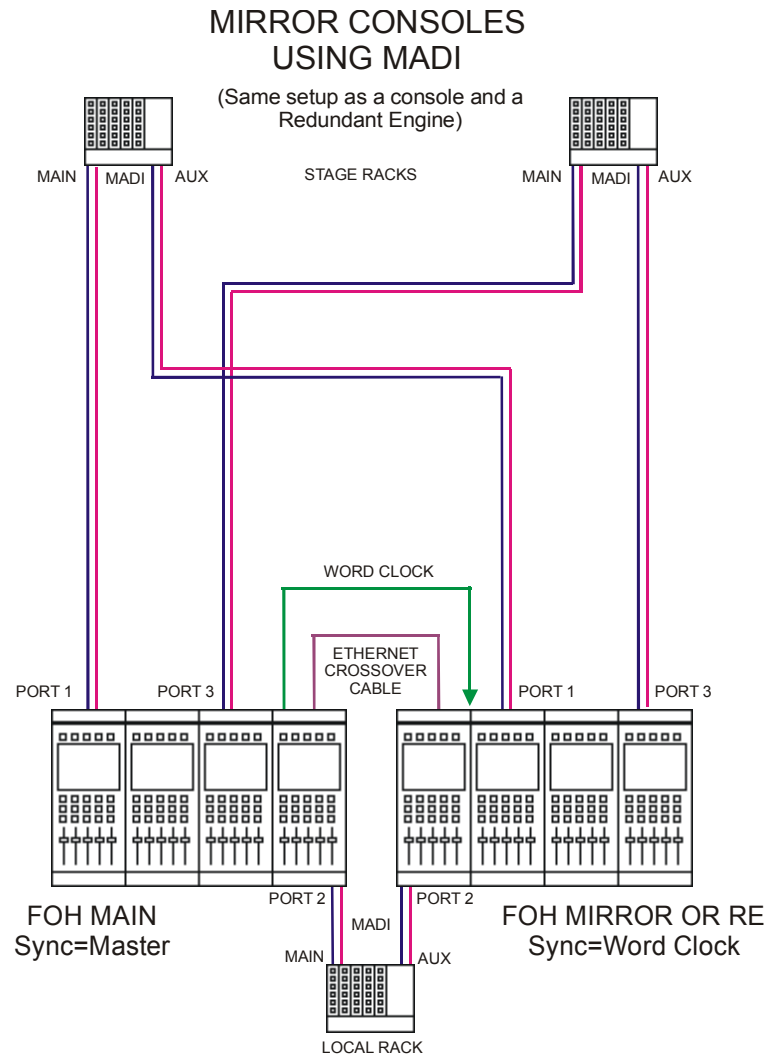
A single break in the loop will not affect the system at all as the loop's own redundancy will ensure a continuation of normal operation.

However, a red warning light will show in the bottom right corner of the Master Screen and the Optocore Loop light in the System/Diagnostics panel will go off. A pop up message will also provide a warning.

A serious disturbance in the optical system may result in a switch over to the RE for audio processing but the main console will remain mirrored and therefore normal operation can continue.

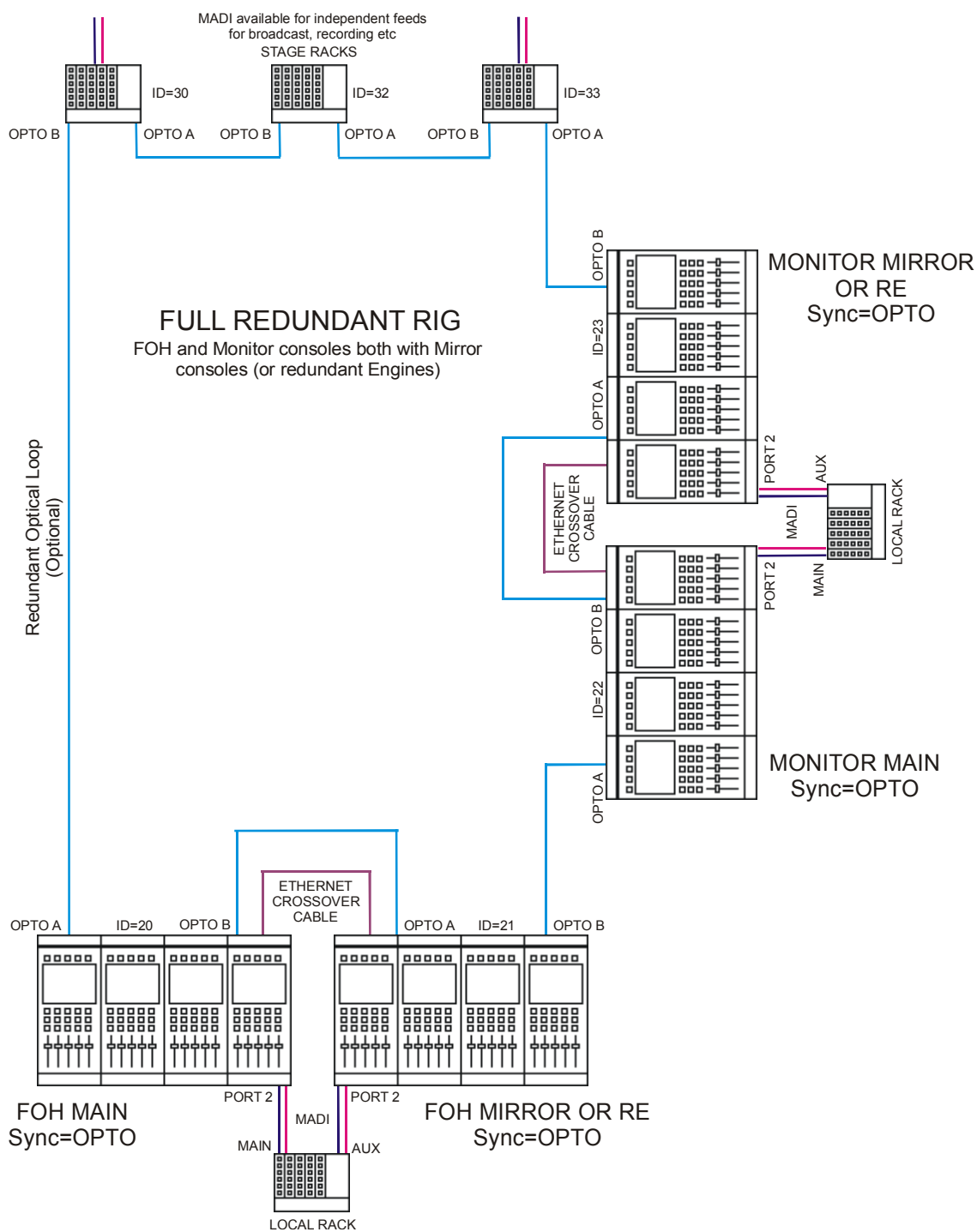
If you wish to switch audio processing back to the main console, press the **Master Audio Outputs Active** button and it will be highlighted in orange.

The following diagram shows the connections required to set up a mirror console with MADI connections:



Appendix B

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.



B.3.1 PC Remote Control

If D5T 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. In this situation the PC can be running D5T software or the Cue Editor software.

B.3.2 Remote PC Setup

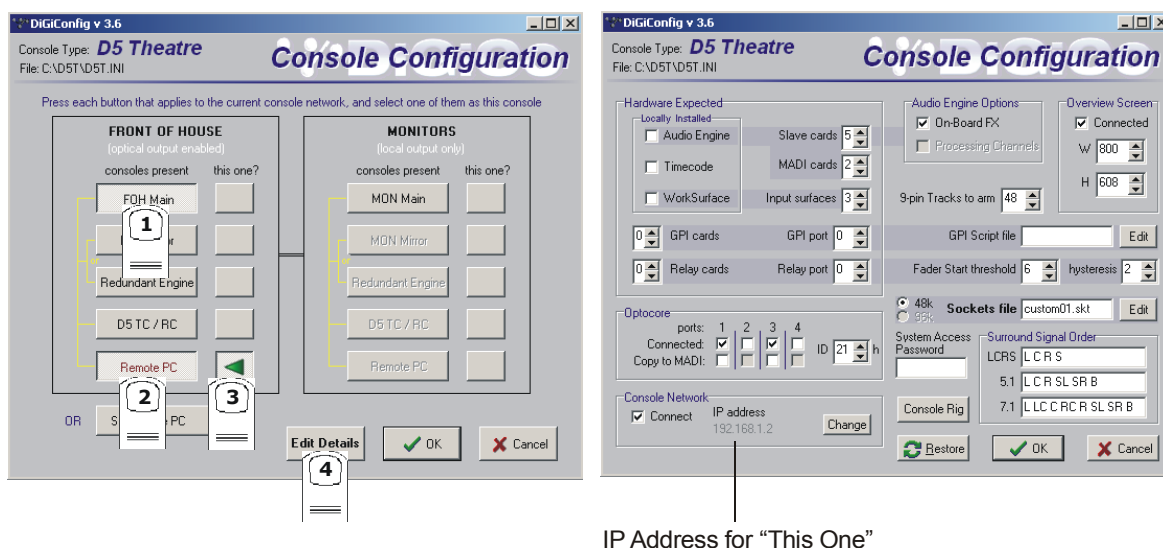
DiGiCo recommend that the Remote PC is running under Windows ME or XP and that the operator has sufficient knowledge of the operating system to change IP addresses and set up a standard network connection.

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 this process for the other device(s) and start the D5T 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 and Session** files and then **Mirroring** as described in the previous sections on Mirror consoles (B.2.5 and B.2.6).

B.3.3 Remote PC Operation

Note: There is a separate Appendix concerning the operation of the Cue Editor software.

To use the D5T 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/Page 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).

Appendix B

Standalone PC Screen Appearance



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