SOUNDTRACS

DS-00

Operation Manual

Issue B, January 2005

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DS-00 Contents

Chapter 1
Getting Started

1.1 The Console

The Soundtracs DS-00 consists of a worksurface, and an Input/Output Rack Unit. The Rack Unit (DiGiRack) is connected to the console by MADI and/or optical fibre links, which carry all the audio input and output signals.

The console worksurface consists of 1 Input Bank and a Master Section with an option to add up to 4 EX-00 expansion units providing a total of 49 faders.

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

The console's buss architecture is dynamic, and can support stereo, LCRS, 5.1 and 7.1 configurations.

Hardware

Standard Configuration - 64 Processing Channels / 40 Busses
1 DiGiRack
8 Analogue Inputs
16 Analogue Outputs
24 AES Inputs/Outputs with SRC per XLR
8 Input/Output Optical Connection
Options
EX-00 8 fader expander unit - a maximum of four units can be fitted.
FP-00 dedicated Film Panel - 19" section with paddles and 17" wide screen TFT.
HD-00 - 19" rack for hard disk editor or outboard insertion.
Redundant PSU with auto switching for console worksurface and/or audio rack.
On Board FX Kit - 4 stereo effects and two effects / output processing / graphic eq units for processing up to 7.1 signals.
Broadcast Kit - Includes Auto PFL, Backstop PFL and Mix Minus per channel (96 max).
GPO and GPI cards - Each card has 16 GPO or GPI's and a maximum of 4 cards can be fitted.
Optocore connection - Optical fibre connection between the console and DiGiRack.
Channel Expansion - additional processing channels in blocks of 32.
NetTracs - 19" rack mount server with CAT5 connection for file transfer and storage.
Additional I/O cards - Analogue, AES, TDIF and ADAT.
Additional DiGiRack with 14 blank card slots.
Modem for remote support.

1.2 This Manual

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

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

1.2 Hardware

1.2.1 Connections .....

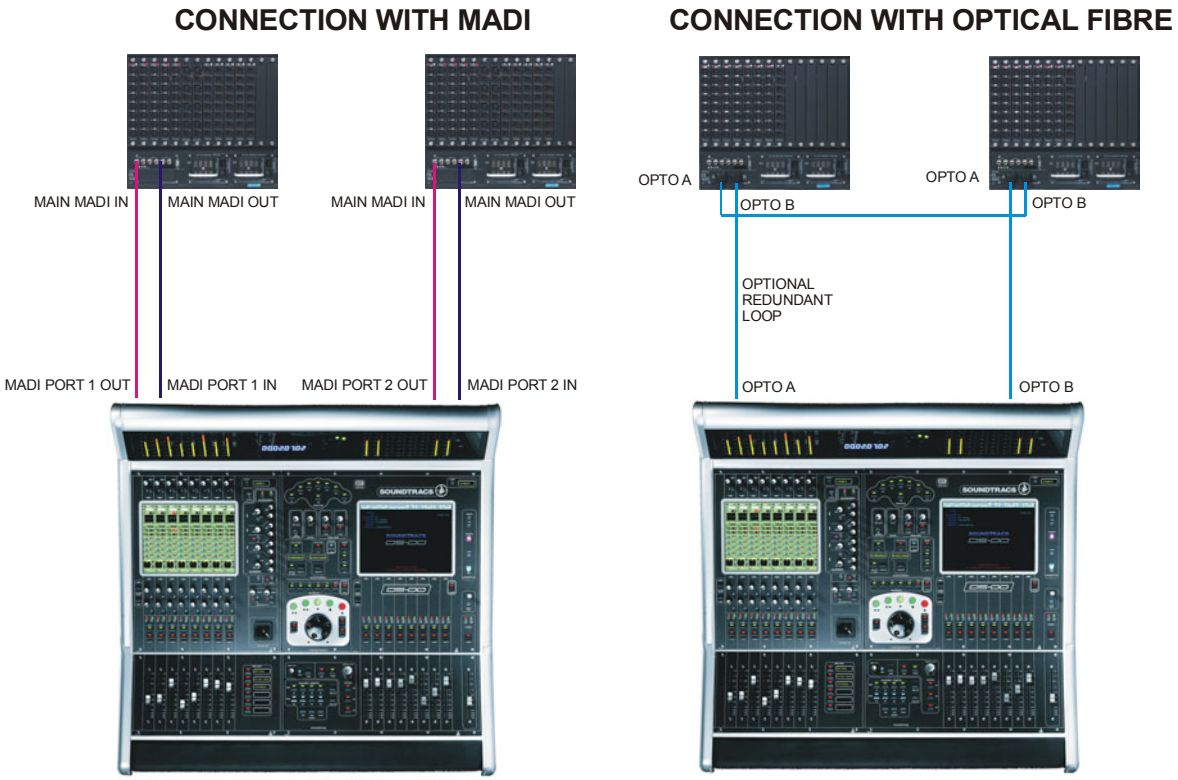
Detailed information on the various systems of connection is provided in the **Interconnection and System Setup Manual** but the following diagram provides an overview of a single console setup.

The DS00 may be connected to the DiGiRacks with MADI coaxial cables (standard) or with optical fibre (optionally).

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

If the DS00 has an optical fibre option, there will be optical fibre ports A and B on each device.

Connections are as follows:



Detailed information on multiple console setups is provided in a separate chapter of this manual.

1.2.2 The DiGiConfig Program .....

The following example shows how to run the DiGiConfig program from the DS00 software in order to configure you hardware:
This procedure will normally only be necessary when the console is first installed and if any hardware changes are made subsequently.

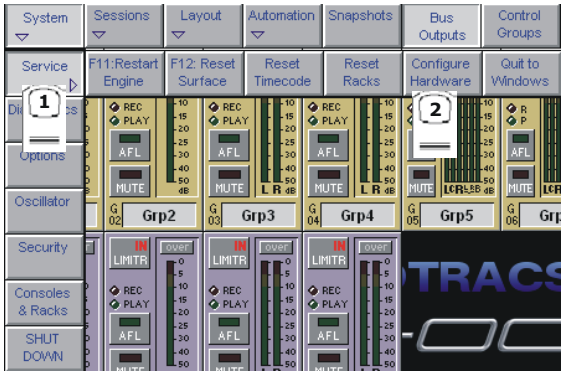
1) Open the **System / Service** menu.

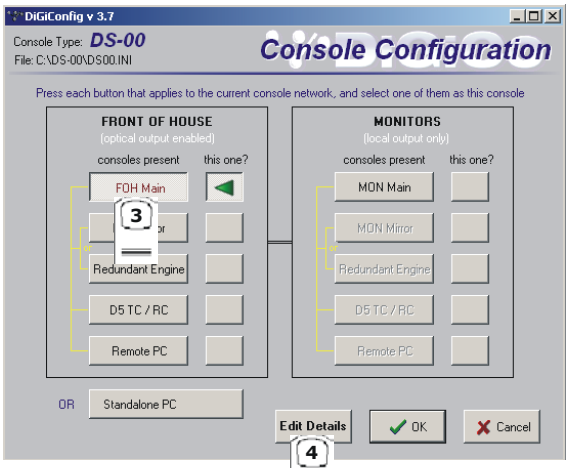
2) Press the **Configure Hardware** button, the DS00 software will close and DiGiConfig will open.

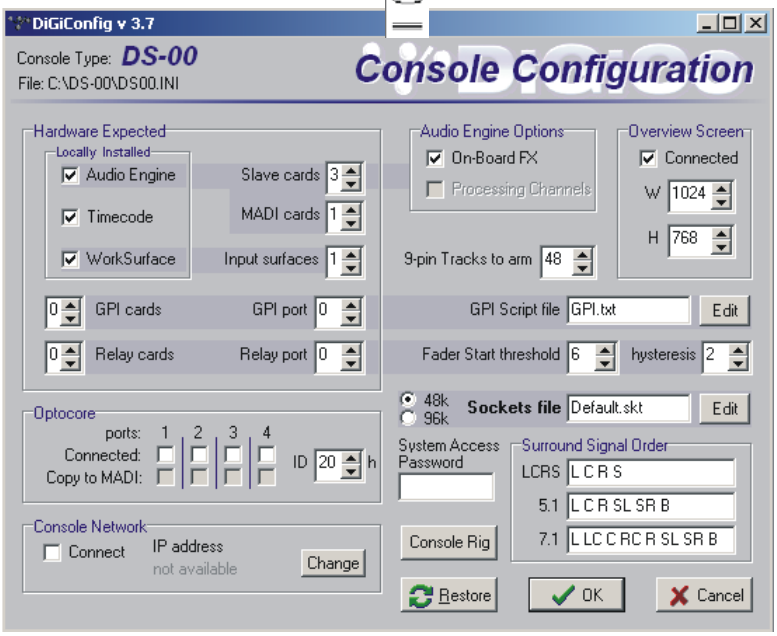
3) Press the relevant buttons for all the consoles that you wish to configure - in the example, a single **FOH Main** console is selected. Press the **This One** button to select the console that you are working on.

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

5) Press **OK** to return to DS00 software.

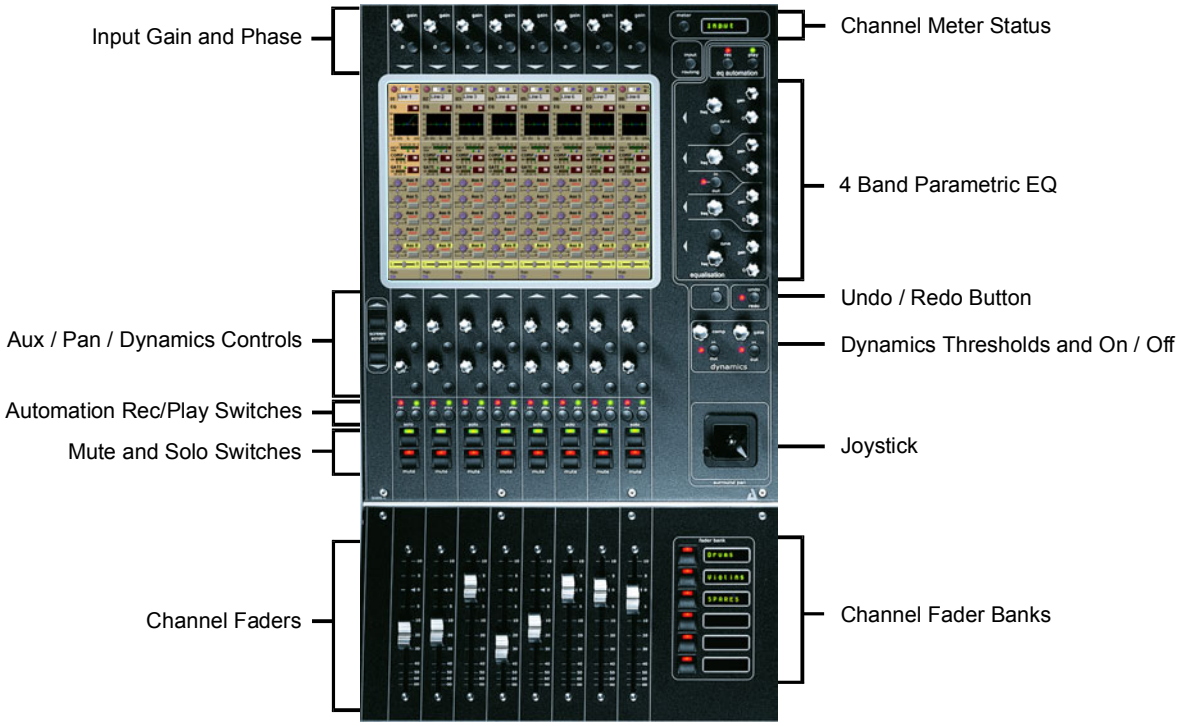




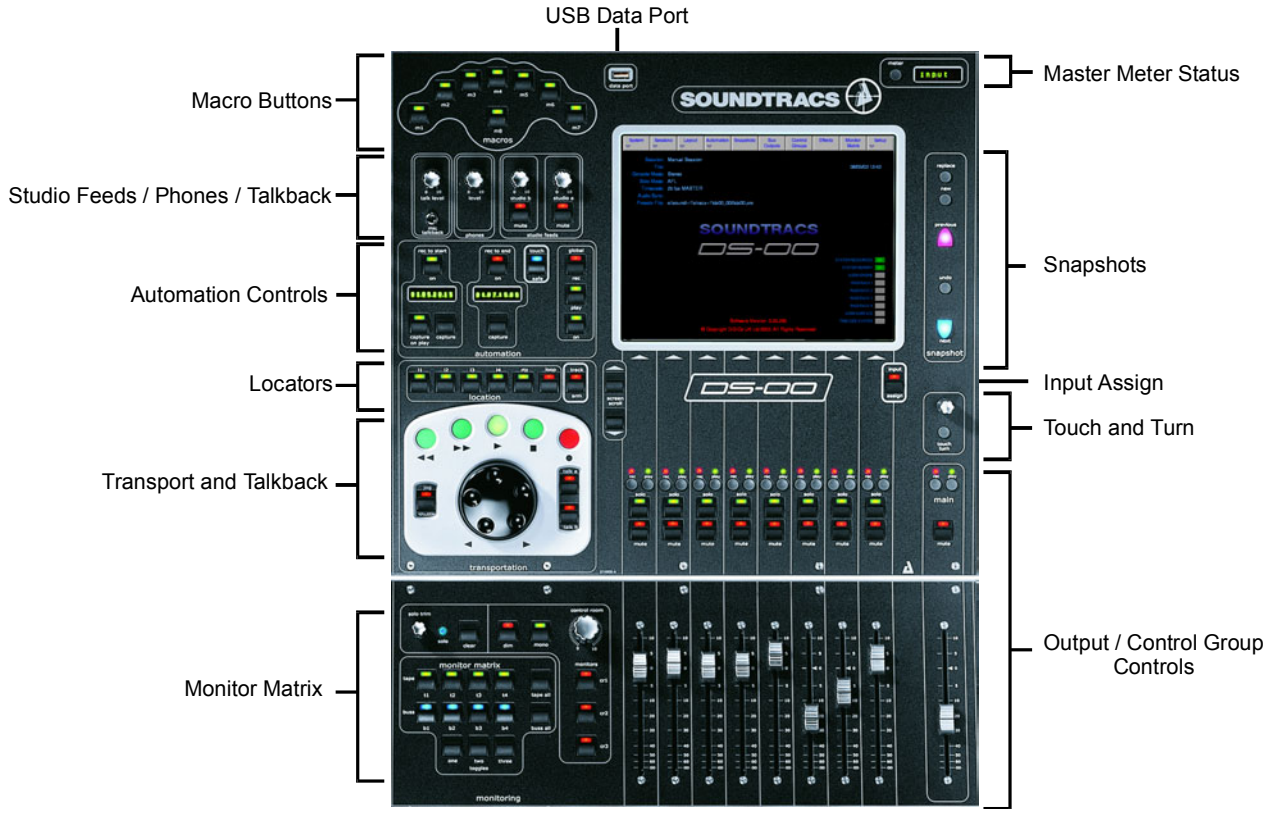


1.3 Getting Started

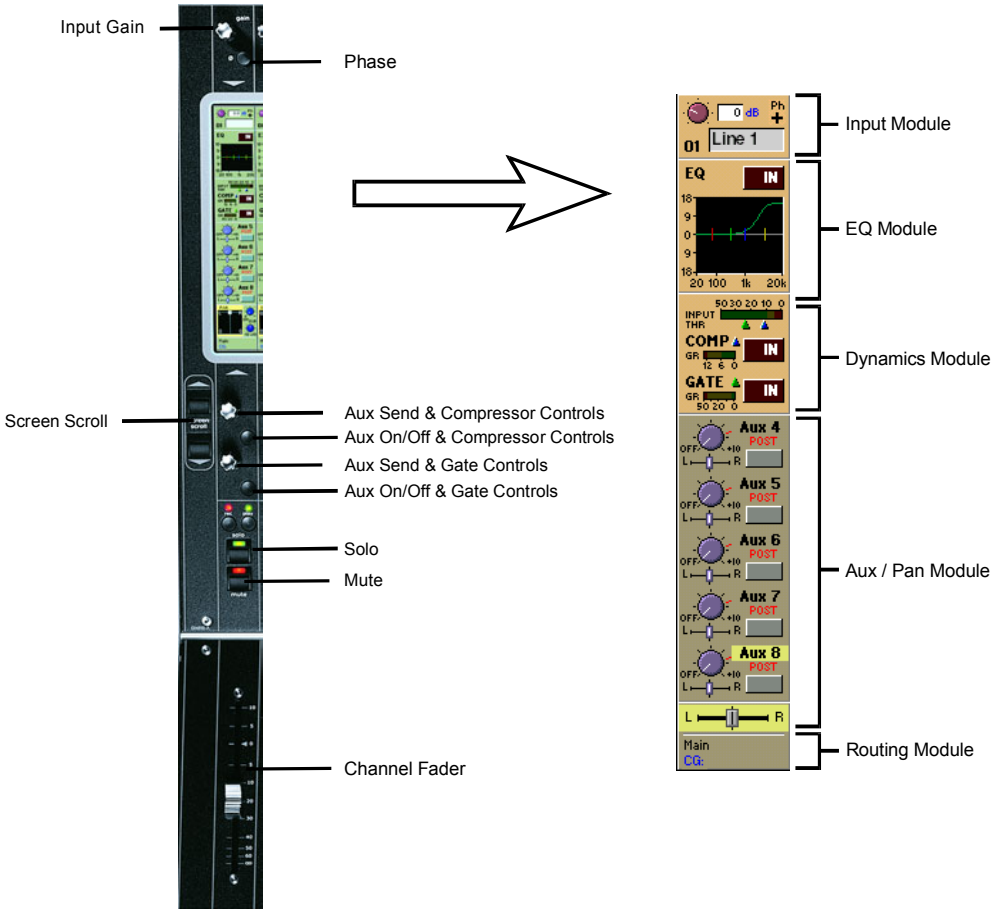
Input Section



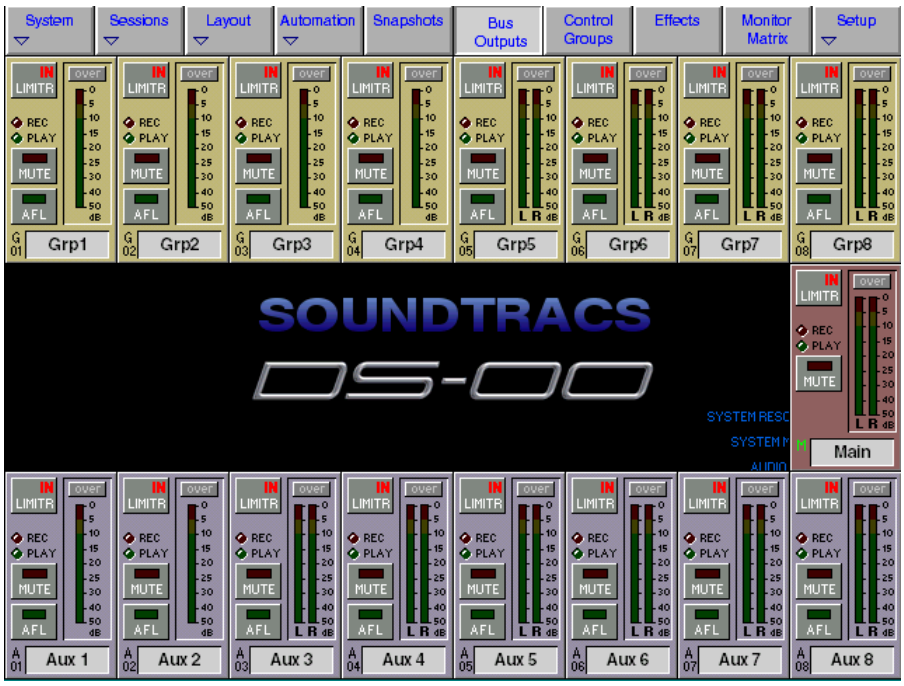
Master Section



Input Channel



Master Screen



1.3.1 Consoles and Racks .....

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

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

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

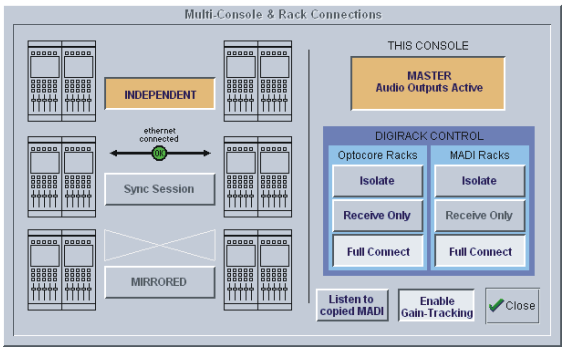
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

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

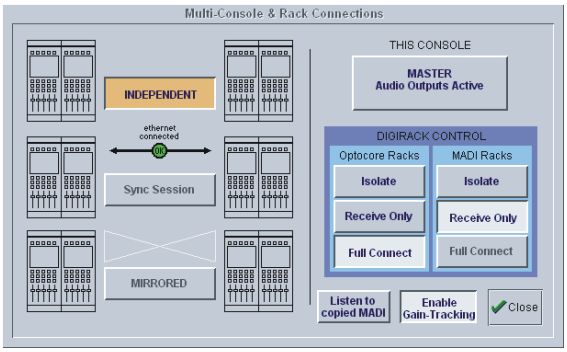
The console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.

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

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



Main Console



Redundant Engine, Mirror Console or Remote

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

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

Options are:

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

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

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

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

1.3.2 The New Session Panel .....

To create a new session:

1) Touch the **Sessions / New Session** button on the **Master Screen**.

2) Select a **Main Buss Mode**.

This defines the format of the Main buss as Stereo, LCRS, 5.1 or 7.1 Surround. This also affects the options for selecting the Group and Aux buss formats: if the Main buss is stereo, the other busses cannot use the Surround formats, and if the main buss is Surround format, the other busses cannot use a different Surround format (although they can be stereo).

3) Select the required number of busses.

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

The total amount of busses cannot exceed 39 (including the Main Buss and one AFL Buss).

4) Select options to clear the current settings.

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

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

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.

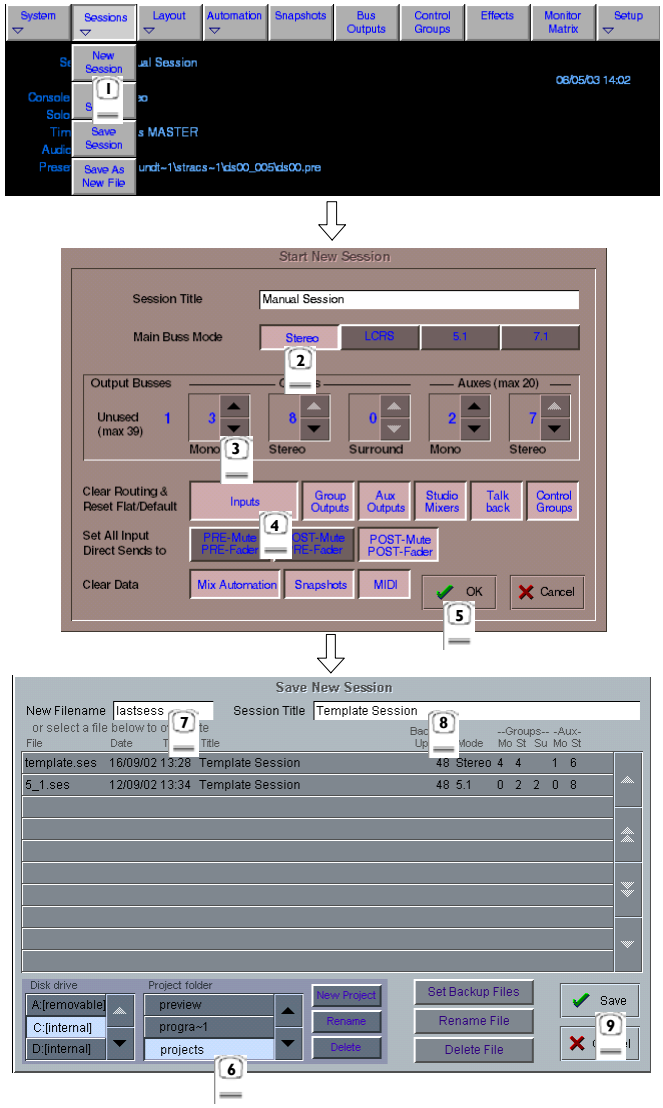
5) Press the **OK** button and the **Save As New File** panel will open.

6) Touch the **C:\Projects** folder button at the bottom of the panel to select the file destination.

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

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

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



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.

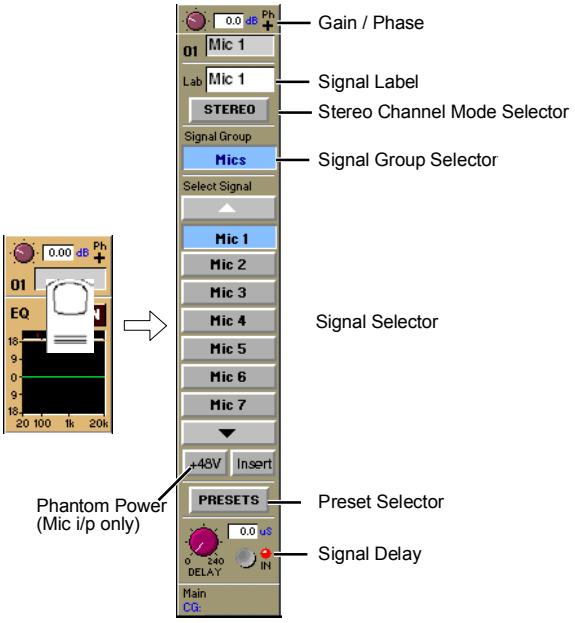
1.3.3 Selecting an Input Source .....

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

1.3.4 Input Assign Function .....

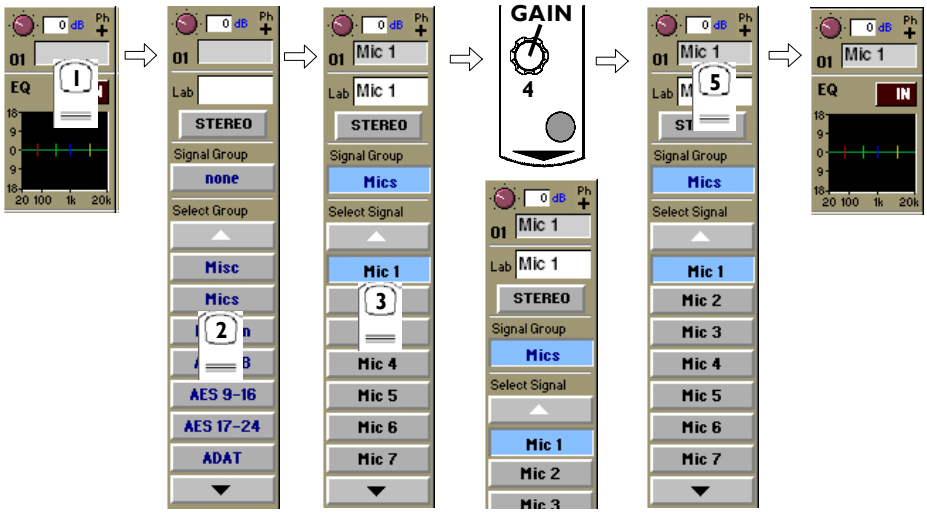
The Master Section may be used to control one bank of input channels by pressing the **Input Assign** button beneath the Master Screen. Holding this button down and pressing a **Fader Bank** button will change the bank that is being controlled. The Master Section faders, mutes, solos and automation buttons apply to the selected Fader Bank.

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.



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

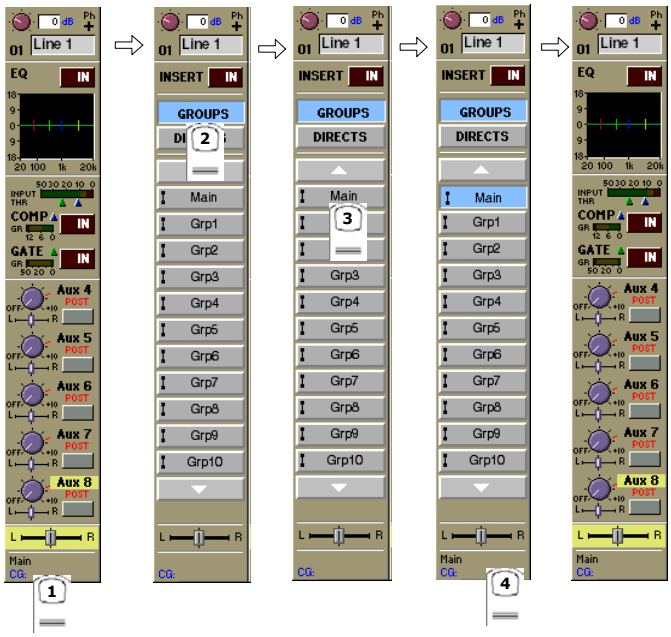
To select an input source:
1) Touch the **top of the input screen** to open the input panel.
2) Touch the name of the **Signal Group** to view the signal names.
3) Touch the **name of the signal** to assign it to the channel.
4) Adjust the **gain** with the **rotary control** at the top of the channel.
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 **Mic 1** is selected and the stereo button is pressed **Mic 2** will also be controlled.

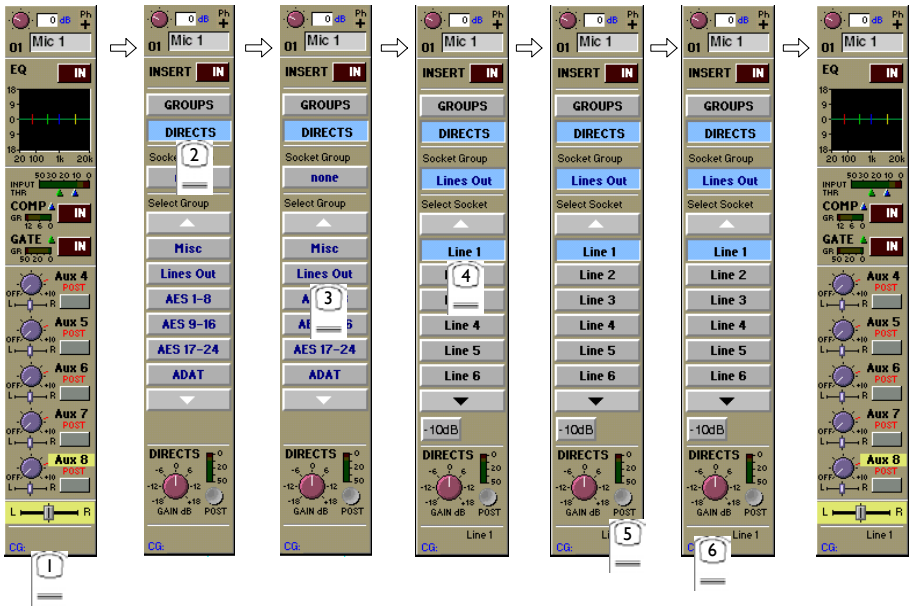
1.3.5 Routing the Channel Signal .....

The channel signal can be routed to **Groups** and **Direct Outputs**.
To Route to a Group:
1) Touch the **bottom of the input screen** to open the routing panel.
2) Touch the **Groups button** if it is not already highlighted.
3) Touch the Group button(s) that you require eg. **Main, Grp1** etc
4) Touch the **bottom of the input screen** again to return to the standard view.



To Route to a Direct Output:

1) Touch the **bottom of the input screen** to open the routing panel.
2) Touch the **Directs button** if it is not already highlighted.
3) Touch the name of the **Socket Group** to view the output socket names.
4) Touch the **Output Socket button(s)** that you require eg. **Line 1, Line 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.

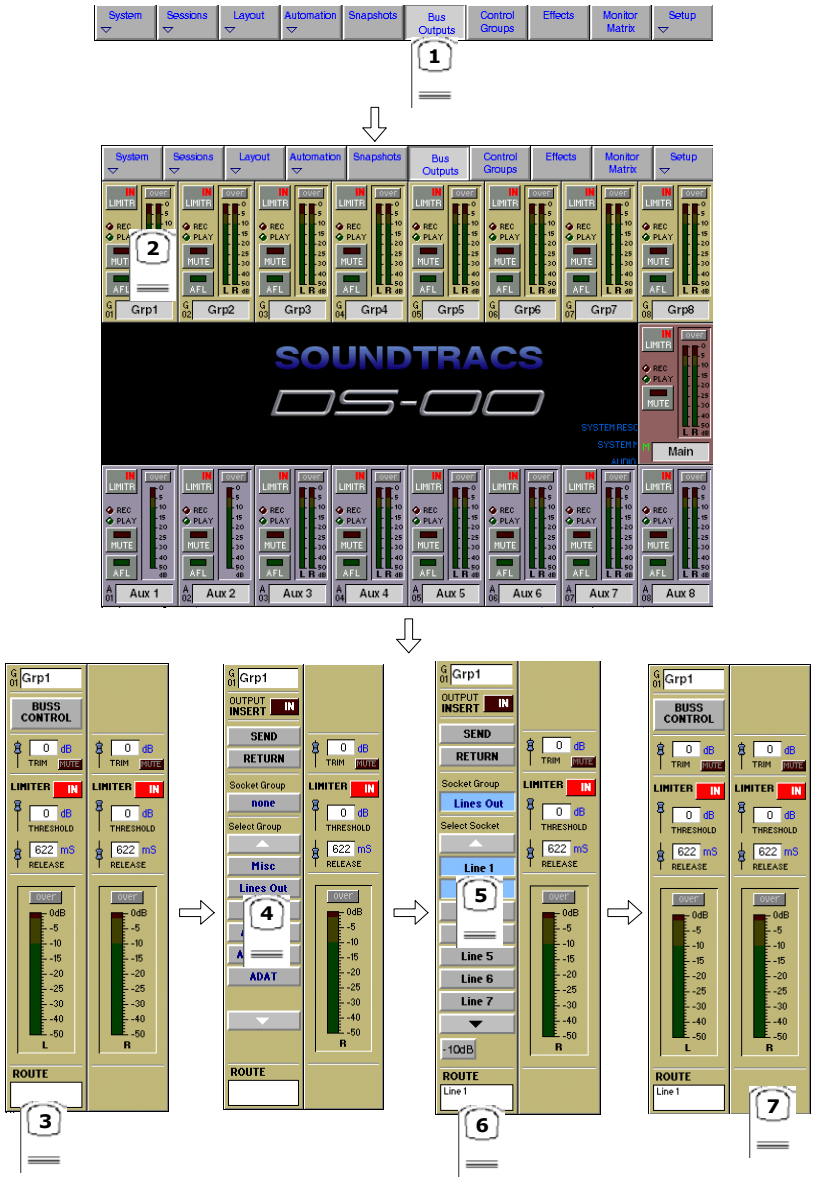


1.3.5 Routing Busses To Outputs .....

The Master, Group, Auxiliary and Matrix busses must be routed to output sockets as part of the initial configuration.
This is achieved by using the buss output routing panel in the Master Screen:

1) Touch the **Buss Outputs button** at the top of the master screen.
2) Touch the **on screen meter** of the relevant buss to expand the view.
3) Touch the **Route button** at the bottom of the panel.
4) Touch the name of the **Socket Group** that contains the output you require **eg. Line 1-16.**
5) Touch the **Output Socket button(s)** that you require eg. **Line 1, Line 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) Use the **Master Screen Scroll** button to select the relevant row of outputs and adjust the output level with the worksurface master faders.

NOTE: For a stereo buss, select the output for the left hand signal and the next consecutive output is used automatically for the right hand signal.



1.3.6 Save As New File .....

When you change the configuration of the session you may want to save it to the console's hard drive under a new filename.

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

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

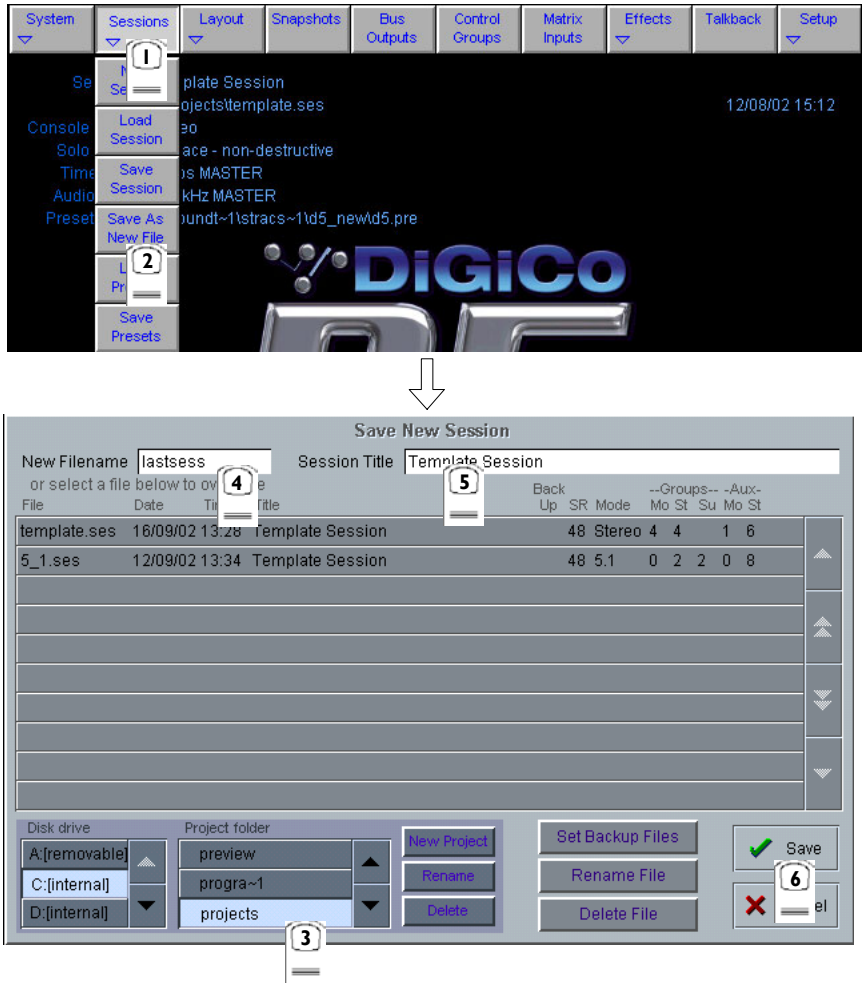
3) Touch the **Projects** folder button at the bottom of the panel to select the file destination.

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

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

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

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



1.3.7 Save Session .....

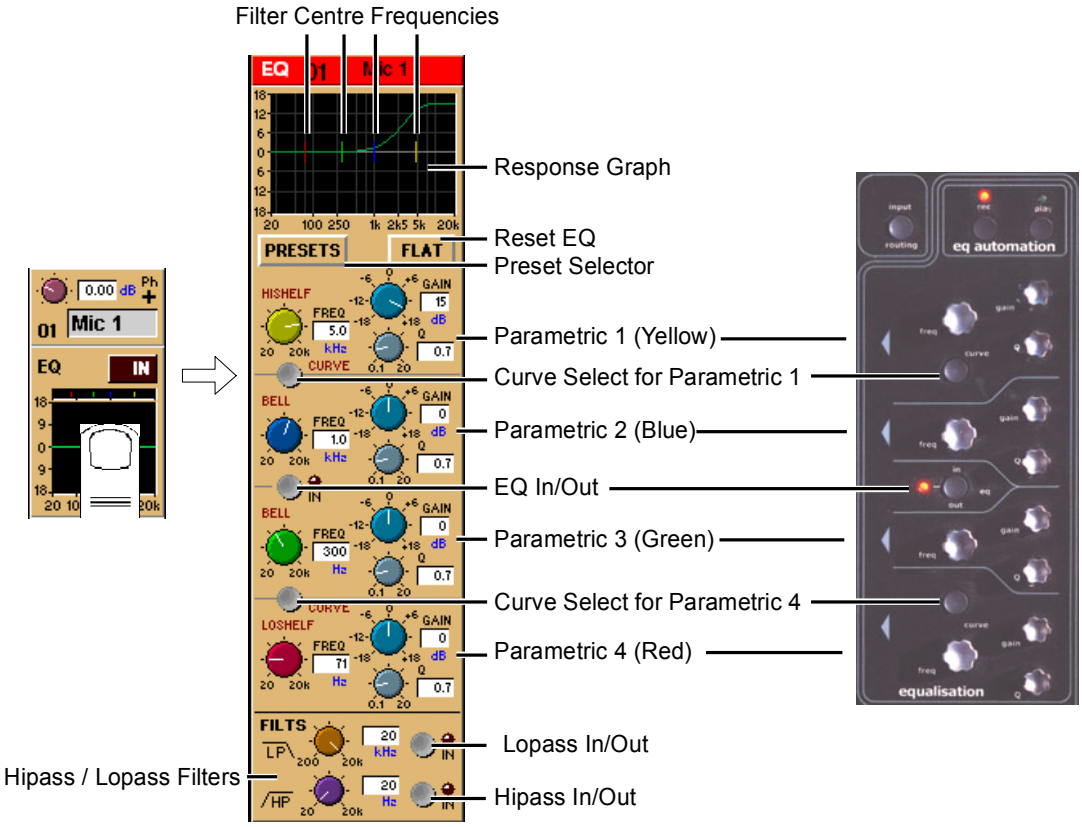
This button which is found above the **Save As New File** button will save the existing session in the same location and under the same file name as it was previously saved or loaded from. It therefore serves as a **"Quick Save"** option to update an existing session.

Remember that this function will overwrite your last saved version.

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

1.3.8 EQ

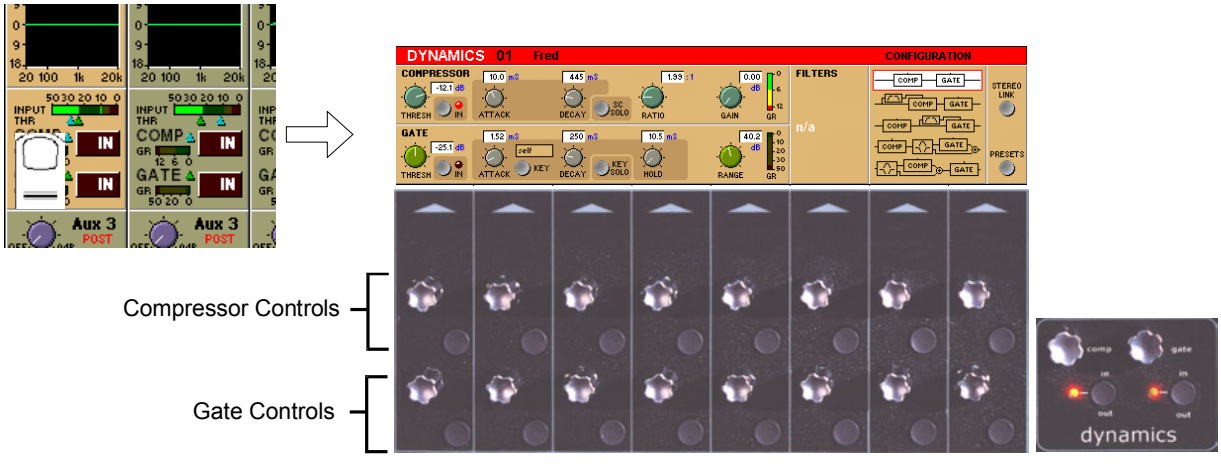
The EQ section comprises four user-configurable parametric filters and a pair of swept High-pass and Low-pass filters.
The EQ is accessed by touching the on screen display to **Assign** the channel (**the colour changes to orange**) and then using the controls on the right hand side of the input module.
When a control is adjusted the expanded view seen below appears in the input screen but this view can be seen at any time by touching the EQ response graph on the screen.
NOTE: If the expanded view does not appear when a control is adjusted open the **System / Options** panel and press the **Automatically expand EQ view when adjusted button.**



Note: The four band EQ and each of the filters have their own in/out switches.
The type of filter used by bands one and four can be changed by successive presses of the **Curve Select** button for that band. There are three possible settings for each band.

1.3.9 Dynamics

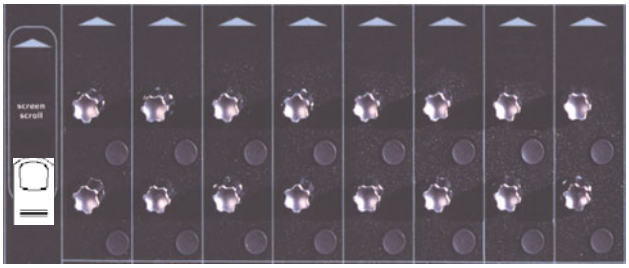
The dynamics are accessed by touching the words **Comp** or **Gate** just below the EQ graph on screen to open the dynamics panel.
The worksurface controls beneath the screen control the various parameters. touching the panel again will close it.
Dedicated **Threshold** controls and **In/Out** switches can be found on the right hand side of the input section worksurface. These can control the Assigned channel's dynamics whether the on screen dynamics panel is open or not.



1.3.10 Auxiliaries .....

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

Screen Scroll



Aux Sends
Aux On/Off and Pre/Post
Aux Sends
Aux On/Off and Pre/Post

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

MONO AUX

FIRST MONO AUX SEND

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

SECOND MONO AUX SEND

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

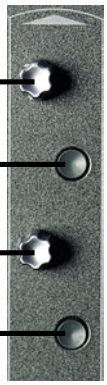
STEREO AUX

STEREO AUX SEND

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

STEREO AUX PAN

STEREO AUX PAN
TOGGLE TO CENTRE



1.3.11 Control Groups .....

Any number of input channels and output channels can be connected to one or more of the 8 Control Groups. They can then all be operated from a single worksurface control. Changes to the Control Group fader, mute or solo controls will affect all channels connected to the group.

To set up Control Groups:

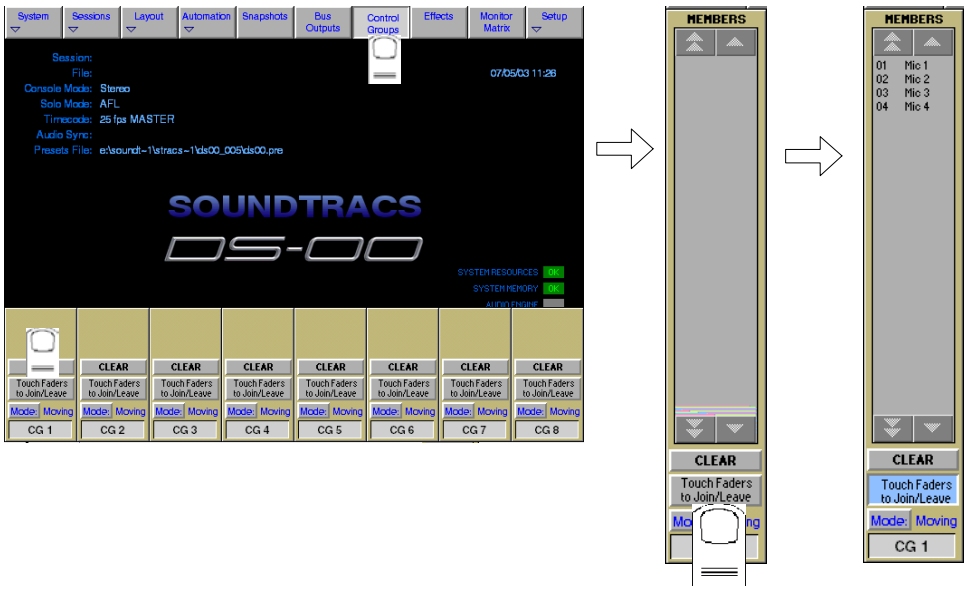
1) Touch the **Control Groups** button on the Master screen.

2) Touch the **Touch Faders To Join/Leave** button on the required Control Group (1-8).

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) 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, as shown above.

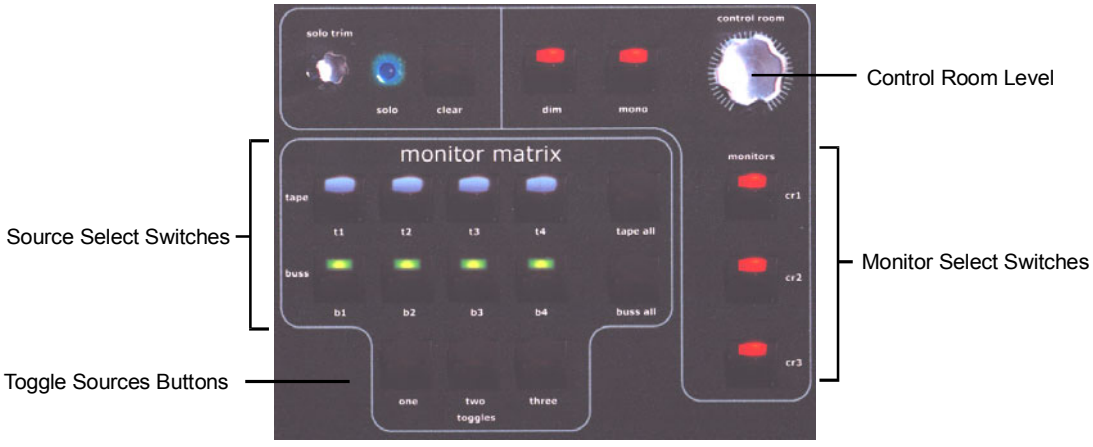
When a fader is touched it is highlighted in the list.

Note: The list of members of the Control Group can be expanded by touching the screen area just above the Clear button.

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.

1.3.12 Monitoring .....



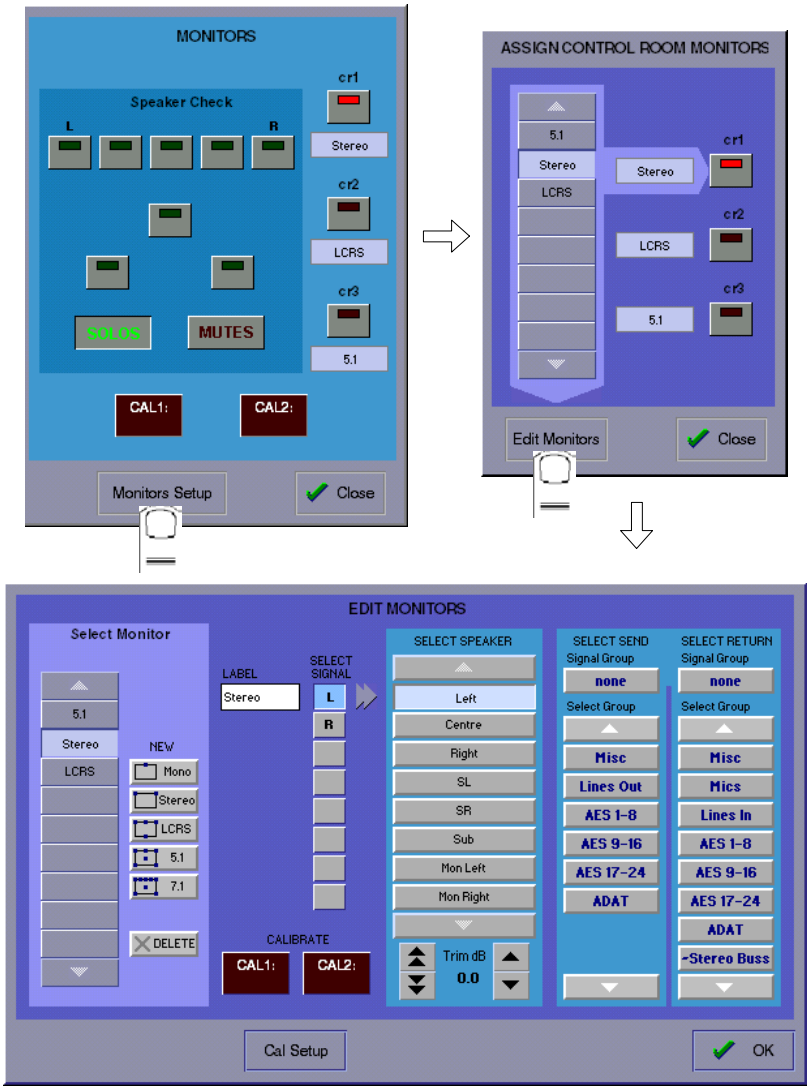
Configuring Monitors

Press the **Monitor Matrix** button at the top of the Master Screen.

The column of buttons marked Monitor CR1, CR2 and CR3 are assigned to the Output Switches in the Master Section of the console worksurface and can also be selected on this page. When pressed they will switch the control room signal to one of the three sets of monitors. They could, for example, be configured as the stereo main, nearfield and TV monitors or possibly as stereo, LCRS and 5.1 monitors.

To Assign a Monitor to a button

Press the **Monitors Setup** button and a new panel will appear which allows you to select a monitor setup from the user defined list. Touch one of the Monitor CR1, 2 or 3 buttons and then touch one of the entries on the list to assign it to the button.



To Edit or Create a Monitor

Touch the button labelled **Edit Monitors** in the Assign Control Room Monitors panel.

You may select an existing monitor in the column on the left hand side or define a new one by pressing one of the buttons in the column marked **New**.

Touching an existing monitor button a second time will unassign it.

The **Delete** button will remove the selected monitor from the list.

A new monitor can be named in the **Label** box and then each signal of the Control Room Output can be sent to a specific speaker by pressing one of the **Select Signal** buttons and choosing a speaker from the **Select Speaker** column.

The list of speakers is defined in the **Sockets File** at installation.

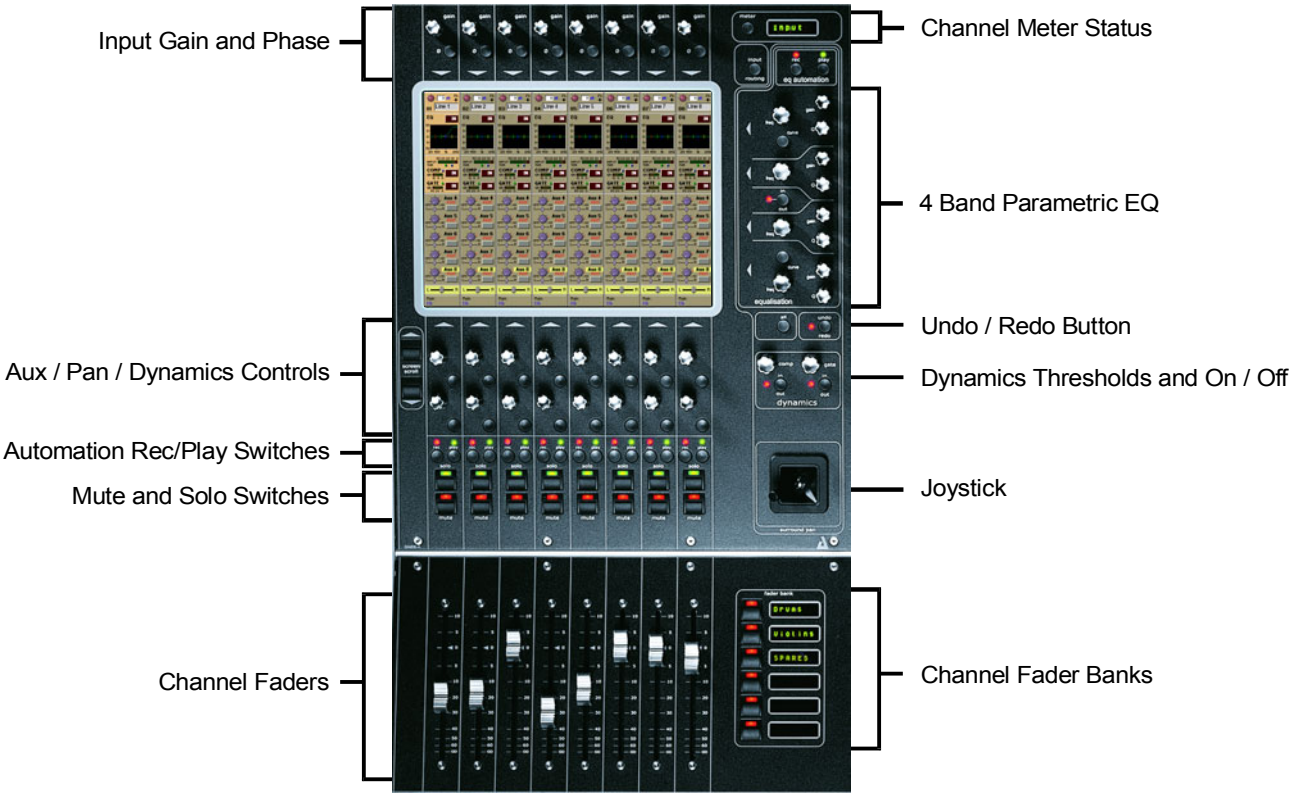
Chapter 2
Inputs and Console Channels

2.1 The Input Channels

The console Worksurface consists of a Master section, and one "Bank" of faders for controlling input channel or auxiliary levels. Internally, the console has 64 processing channels.

2.1.1 Channel Assignment .....

The assignment of audio input channels to faders on the DS-00 worksurface is "soft", so that there is no direct link between channels and faders. The standard console configuration has 8 analogue inputs, 24 AES I/O and an 8 I/O optical connection 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.

2.1.2 Worksurface Channels .....

Each fader bank has eight channels. Each channel has Mute and Solo switches and Record and Play buttons which are used for automation - see chapter 5. The remaining rotary controls and switches are used 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.

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.

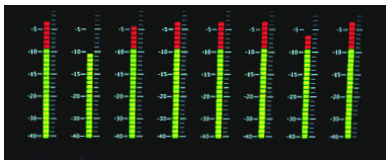
Lower row - the first two rows of controls below the screen are used to adjust the channel's Pan position, Auxiliary sends and Dynamics parameters.

The 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.

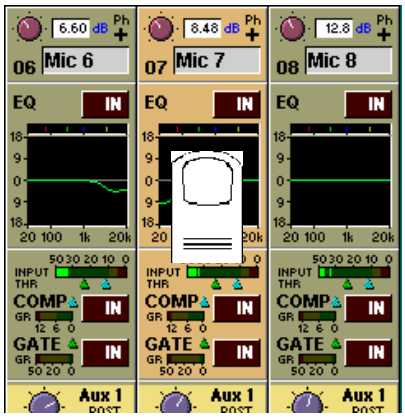
2.1.4 Input Meters .....

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 button allows you to scroll through the options.



2.1.5 Assigning a Channel .....

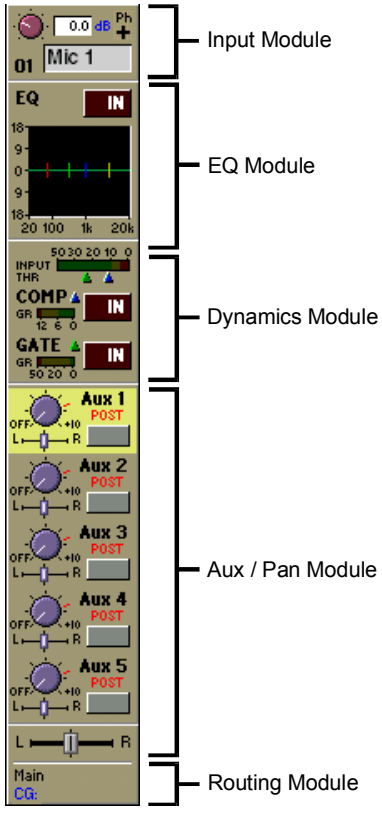
To assign one of the on-screen channels so that you can adjust the EQ or Dynamics settings or use the Joystick, touch the on-screen display of the channel anywhere in the EQ or Dynamics area. (Not on the In / Out switches)
The background colour of the channel changes to show that it is selected.
Touching 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 Setup Menu / Assignments Options.**

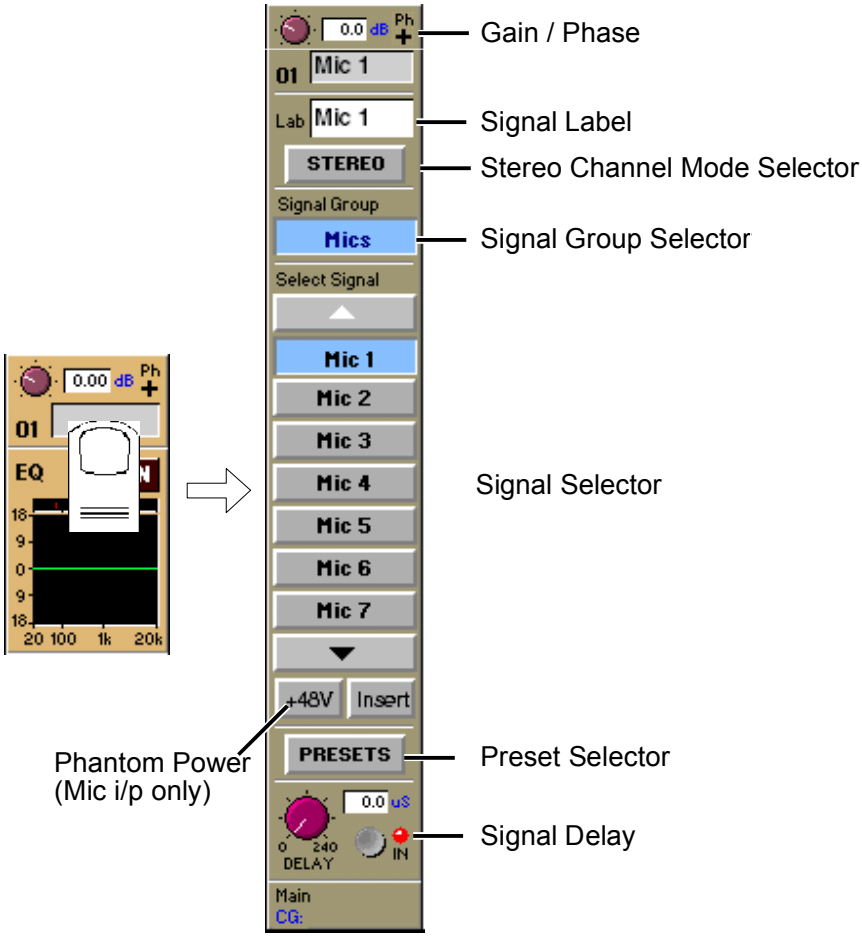
2.2 Expanding a Processing Module

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.

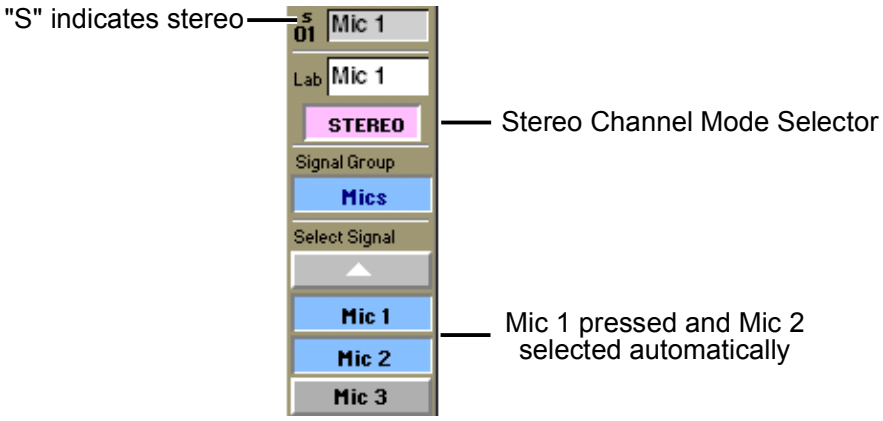
The original talkback sources (the unprocessed microphone inputs) are labelled Talk Mic L (Top) & R (Rear).

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



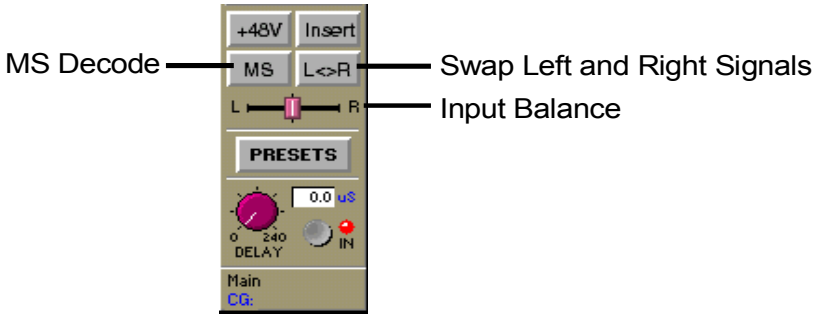
If this button is pressed, the input channel functions will control two input signals, the one which has been selected and the next one in the rack.

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 Presets

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

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

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

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

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

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

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

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

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

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. There is also a **Delay On/Off** switch..

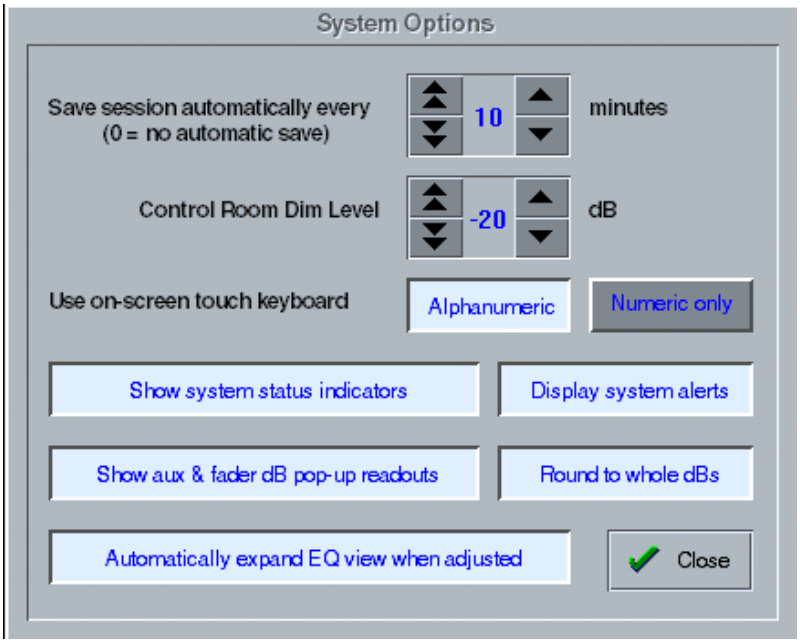
2.2.2 Equaliser Module .....

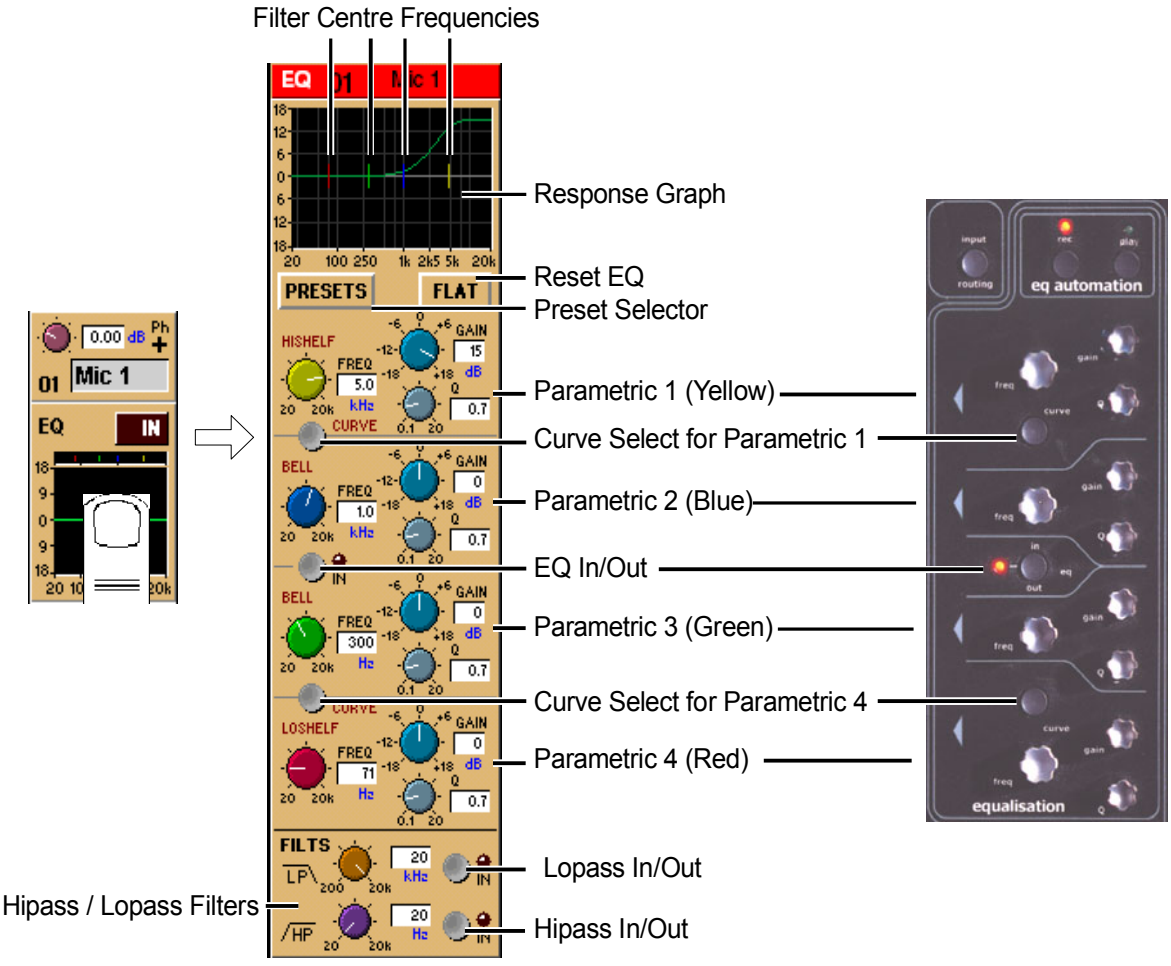
The EQ module comprises four user-configurable parametric filters.

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 pre-processing and therefore they will be unavailable to any internally generated signal such as the test noise.

These internally generated signals consist of:

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

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

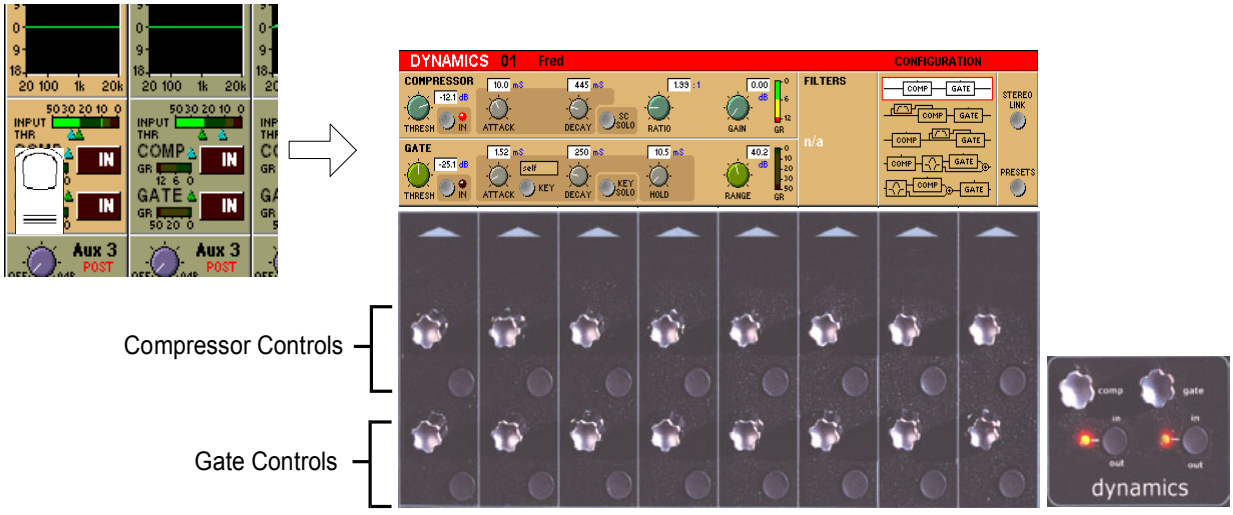
3) Internal FX Returns (any signal from the Effects input signal group which is used b

2.2.3 Dynamics Module .....

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

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

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



Compressor

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

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

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

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

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

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

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

Gate

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

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

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

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

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

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

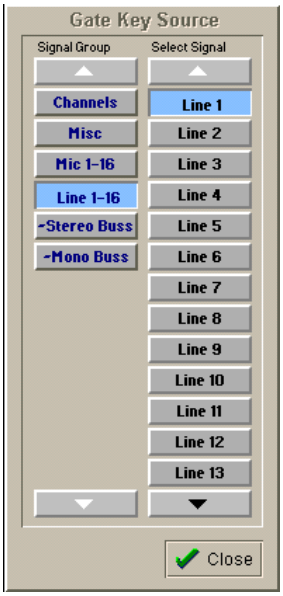
The **Gate Key** button allows you to select the signal used to trigger the Gate. The default setting is Self, where the level of the channel's own signal is used as the trigger, but you can use this switch choose a different channel or buss.

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

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

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

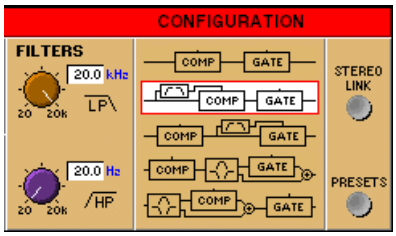
Note: When the Filters are switched into the Dynamics section the Gate Key Source is automatically switched to its "Self" setting and disabled.



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

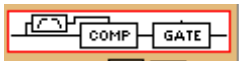
Configuration and Filters

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

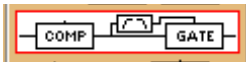


You can select any of the structures just by touching them on the screen, and all the structure options except the default top one use the Hipass and Lopass filters. The filter roll-off frequencies are controlled by the rotaries directly below the on-screen controls.

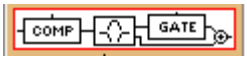
Note that the filters cannot be used on an external trigger source.



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



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



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

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

Dynamics Presets

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

Dynamics Linking

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

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

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

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

2.2.4 Pan / Aux Module .....

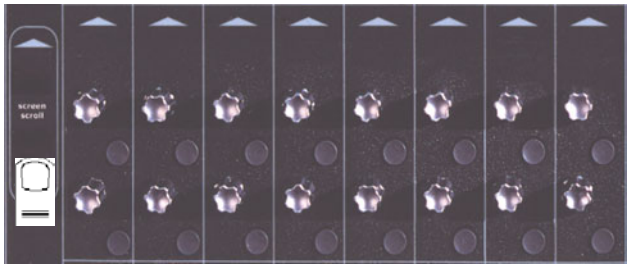
The Aux Send and Pan controls are always operated using the Lower Row of rotaries below each channel of the on-screen display. There are only two rotaries and switches for each channel, but these can be assigned to any Aux or Pan control using the **Screen Scroll** buttons at the left end or by touching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

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

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

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

Screen Scroll



Aux Sends
Aux On/Off and Pre/Post
Aux Sends
Aux On/Off and Pre/Post

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

Auxiliaries

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

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

Aux Pre / Post and On / Off Switching

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

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

There are 3 possible Modes:

PRE M = Pre Mute and Pre Fader

PRE = Post Mute and Pre Fader

POST = Post Mute and Post Fader

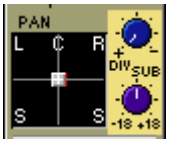
See Aux Buss Control in Chapter 3 for global mode changes.

Pan Control

Panning to the Master and Group busses is Stereo or Surround, depending on the console configuration. Pan position for each channel can be controlled in 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 Divergence and Sub in 5.1 format and one control for Divergence 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

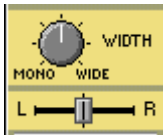
The upper button directly below the pan rotaries can be used to reset panning positions.

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

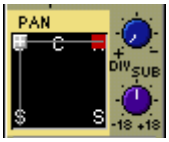
When an input channel is stereo and therefore controlling a pair of input signals the pan control will appear in one of the following ways.

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.



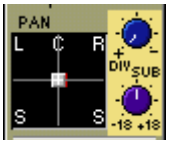
The surround panner for stereo inputs simultaneously controls the position of both left and right signals. The joystick and wheel directly control the position of the left signal, and the right signal is automatically mirrored on the left-right axis. A red indicator shows the position of the right signal.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



Divergence and Sub

The Div 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 Div and Sub.



The **Divergence** control limits the width effect of the Pan control when sending to Surround busses.

A Divergence setting of zero (Full left) allows full LCR panning between left and right busses (Zero Divergence).

Setting the rotary full right will remove the signal from the centre buss and only allow the signal to feed the left and right busses (Negative Divergence).

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 Main 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 Group 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.

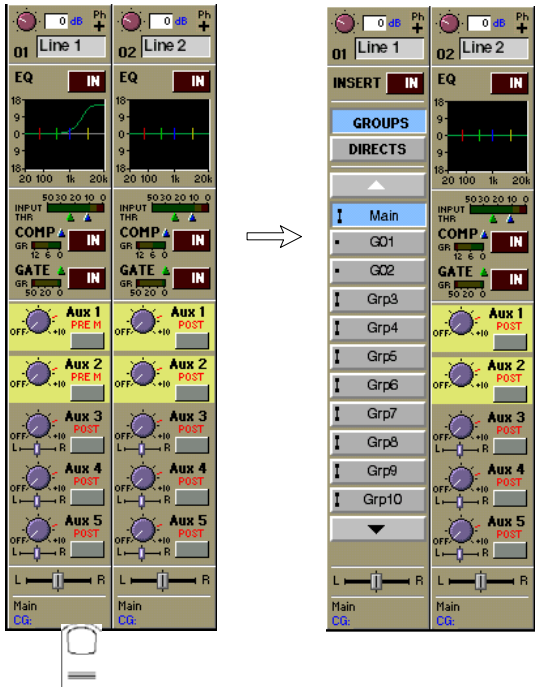
Routed to Main and other group(s) - no direct routing

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

Displaying the Routing Module

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

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



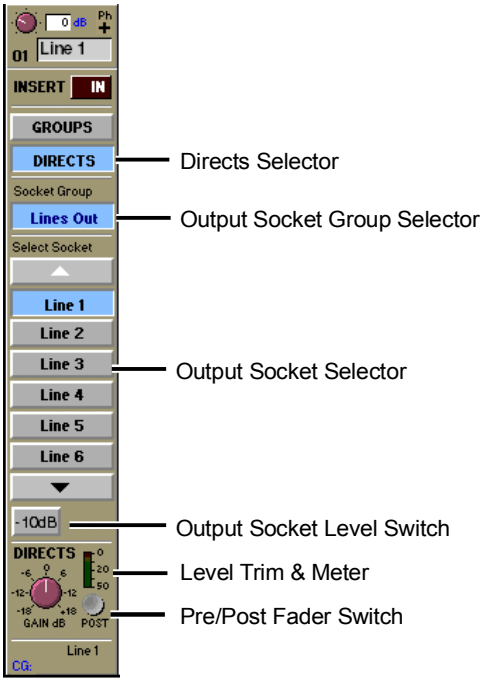
Group Routing

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

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

Direct Outputs

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



A Direct Output can operate in one of three modes:

PRE M = Pre Mute and Pre Fader

PRE = Post Mute and Pre Fader

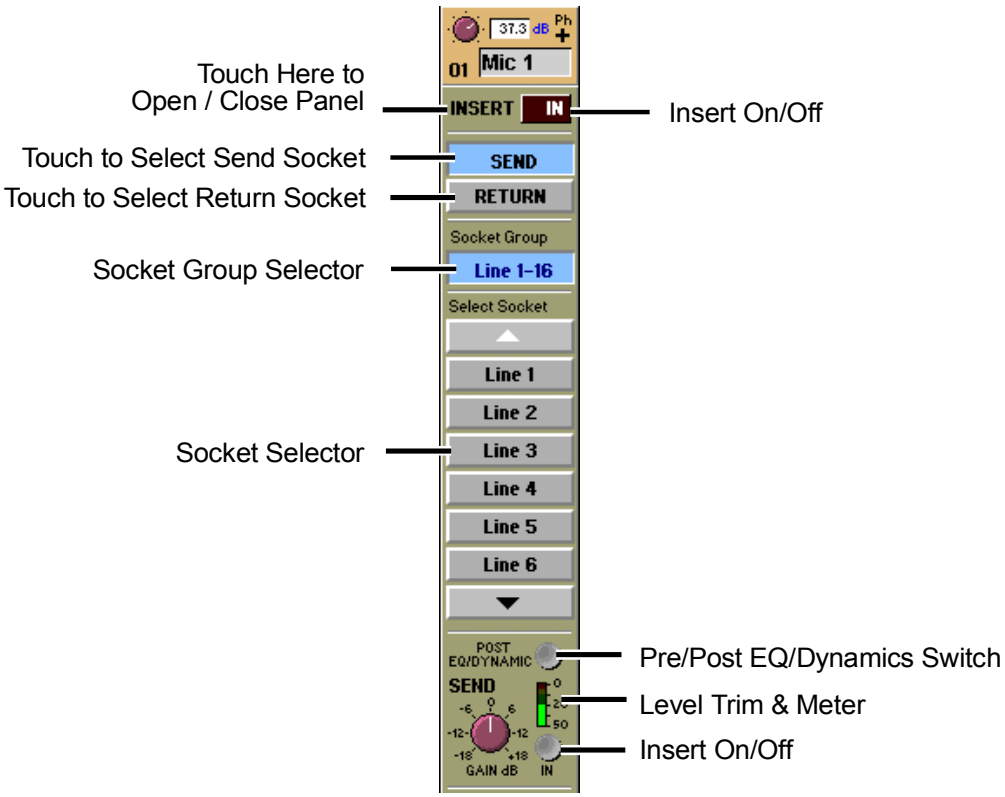
POST = Post Mute and Post Fader

Its level can be trimmed by +/-18dB.

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.



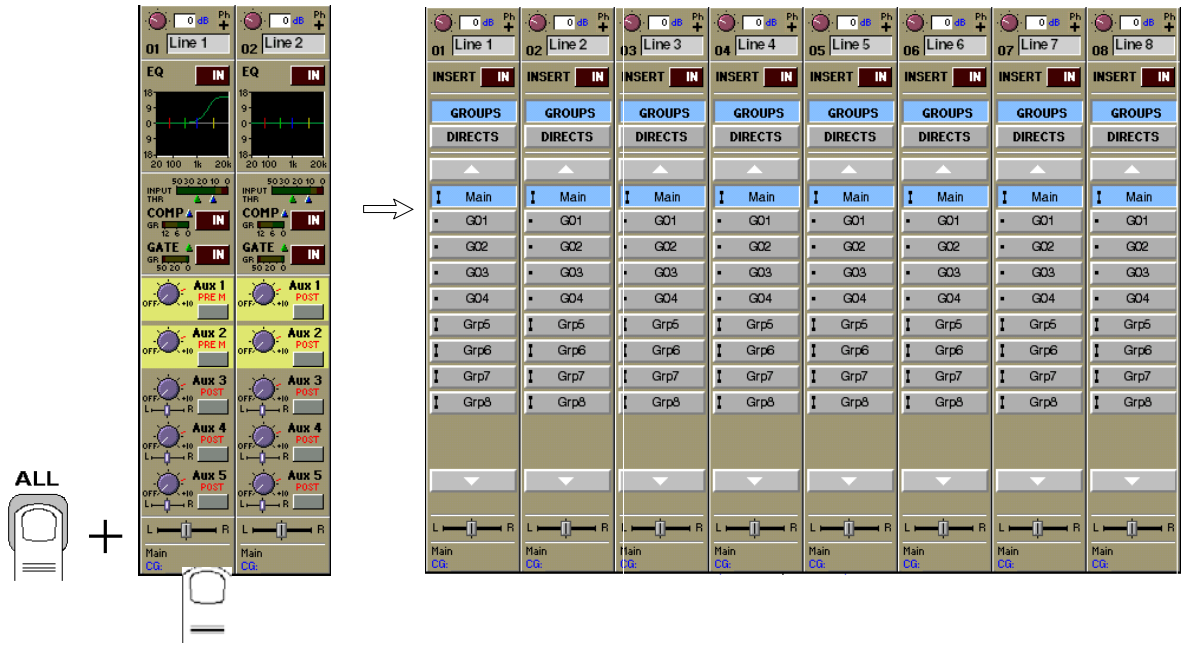
The Insert can be **PRE or POST EQ and Dynamics** switched by the button just above the Send Gain.

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

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.

NOTE: In examples 3, 4 and 5 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.

2.3 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 .....

Channels are added to a gang by holding down the "ALL" button for a particular set of channels and then touching the fader of each channel that you wish to add.

If you touch any of these faders a second time whilst still holding the "ALL" button, the whole gang will be cleared. Therefore, if you wish to remove a member from a gang, you must clear the whole gang and start adding members from scratch.

If you wish to create another new gang you should release the "ALL" button and then start the process again.

When a channel is a member of a gang a coloured line will appear at the bottom of the channels 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 a Gang .....

A gang is cleared by holding the "ALL" button for a particular set of channels and then touching the channel fader of any member of the gang that you wish to clear.

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

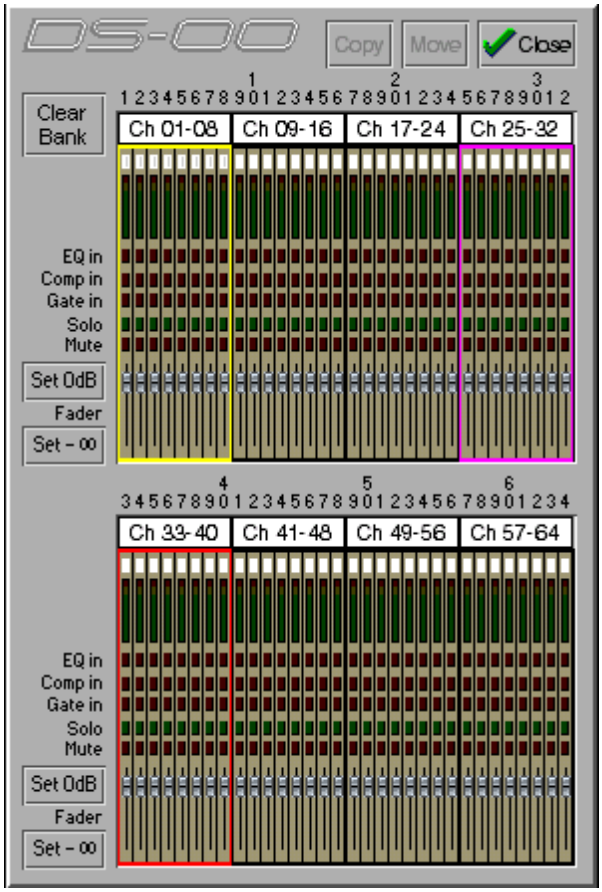
If a preset is selected for one gang member it will load into all the other gang members as well.

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

2.4 Layout

2.4.1 Channel Overview .....

Touching this button displays a panel containing all input channels for the whole console. It indicates worksurface assignment and provides global touch buttons for setting all, or selected, left or right bank faders off or to 0dB (if they are not safe, recording or playing).



Each channel displays the essential switches and channel fader, which may be operated with the trackball if required. The white area at the top is a Touch/Select indicator like the channel label on input screens:

Cyan = touched

Yellow = selected when moving or copying channels.

Selecting channels may be done with the trackball by left-clicking on the start of the range, dragging to the end then releasing. This will enable the Copy and Move buttons at the top which display the relevant panel when pressed.

Touching one of these buttons will open the Move or Copy Channels panel which will already contain the range of channels which you previously selected. The next left click on a channel defines the start of the destination range.

Note: The Copy button will automatically display the Duplicate Channel panel if only one channel is selected (to be used as the source). Otherwise the Copy Channels panel is displayed.

Selection may be cancelled by right-clicking on a selected channel.

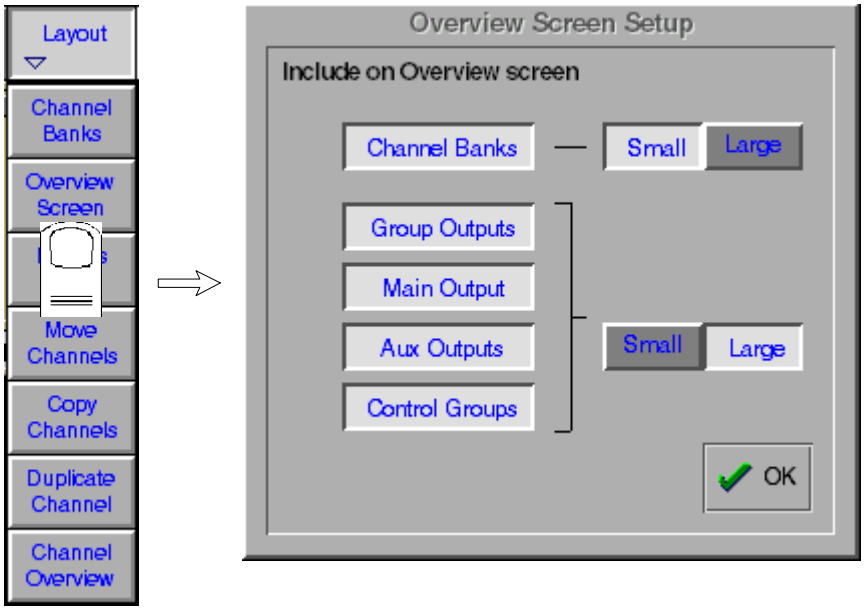
Right-clicking on a non-selected channel temporarily pops up the number and label for the channel.

Coloured rectangles surround the channels which are currently assigned to the worksurfaces.

The panel may be touched to move the assignment (scroll the inputs).

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** in small format and Group outputs, Main outputs, Aux outputs and Control Groups in large format.

To change the settings, touch the relevant buttons in the left hand column and then touch the related Small or Large buttons on the right.

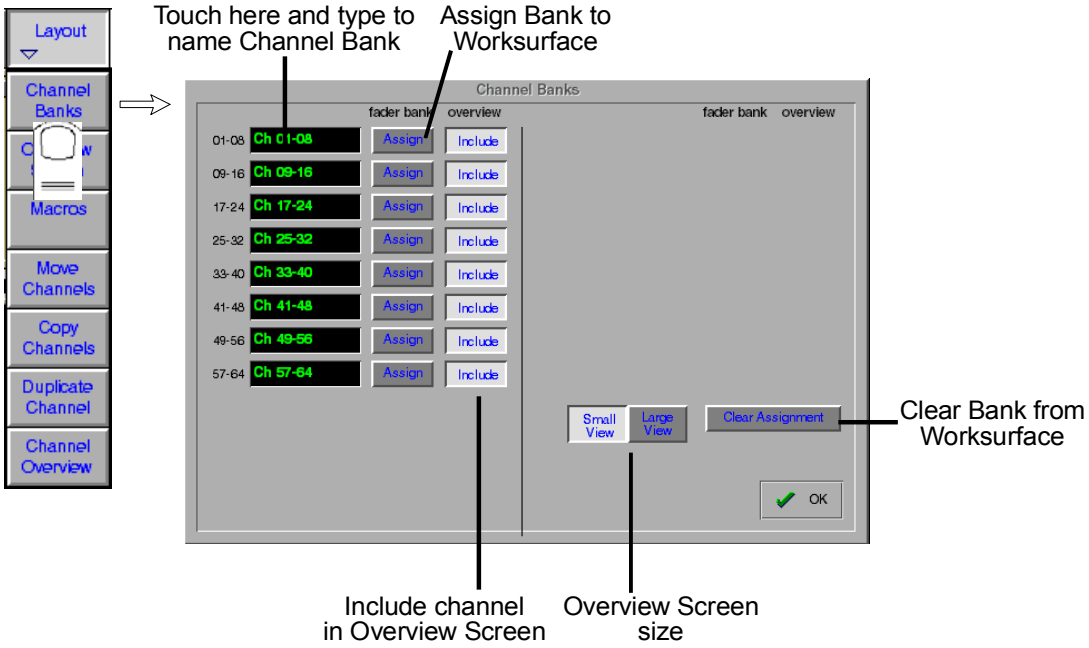
2.4.3 Channel Banks .....

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

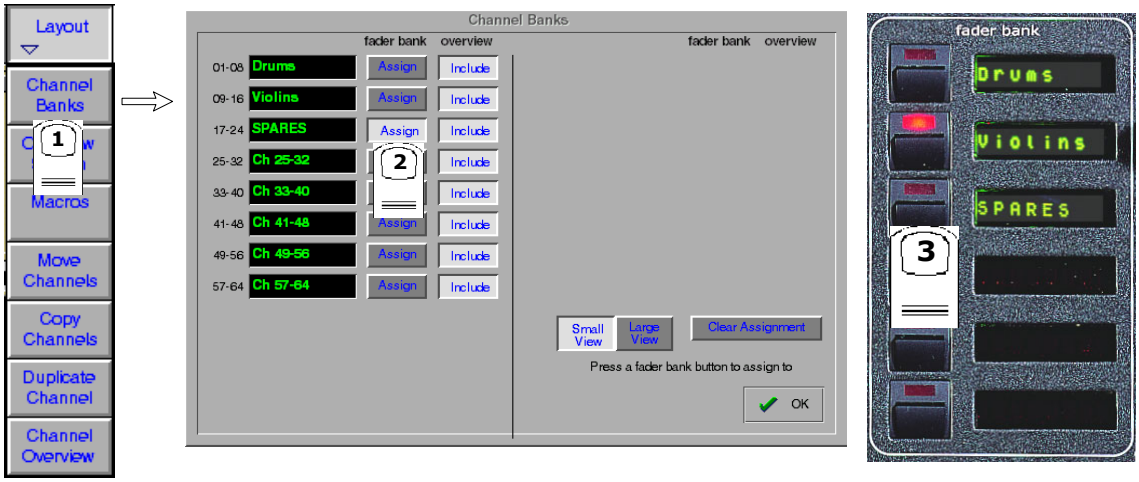
To **Name** a Channel Bank, touch the existing name eg Ch 1-8 and type a new one.

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.

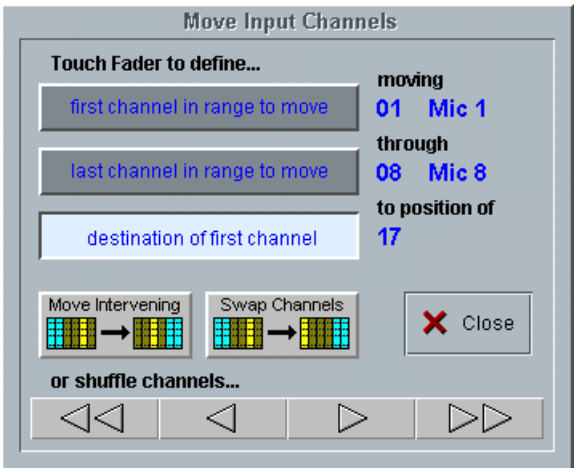


To Clear a Channel Bank from a worksurface Fader Bank:
1) Touch the **Clear Assignment** button.
2) Press the **Fader Bank** button that you wish to clear.
To assign a Channel bank to one of the console worksurface Fader Banks:
1) Touch the **Channel Bank Assign** button
2) Press the relevant **Fader Bank** button.



2.4.4 Move Channels .....

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



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

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

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

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

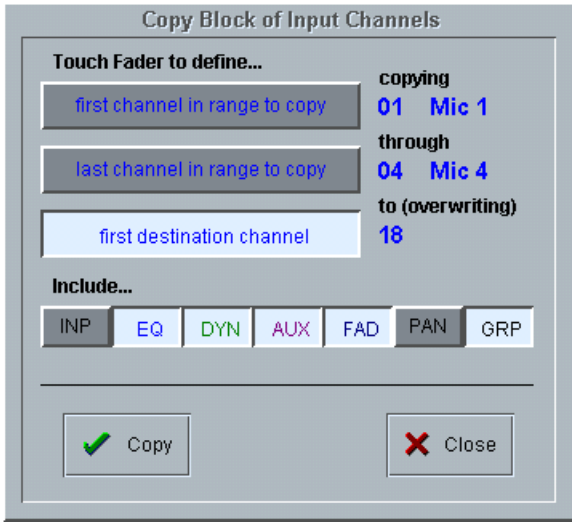
Swap Channels swaps the source and destination ranges leaving intervening channels alone. Move and Swap have the same effect if the source and destination ranges overlap.

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

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

2.4.5 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.



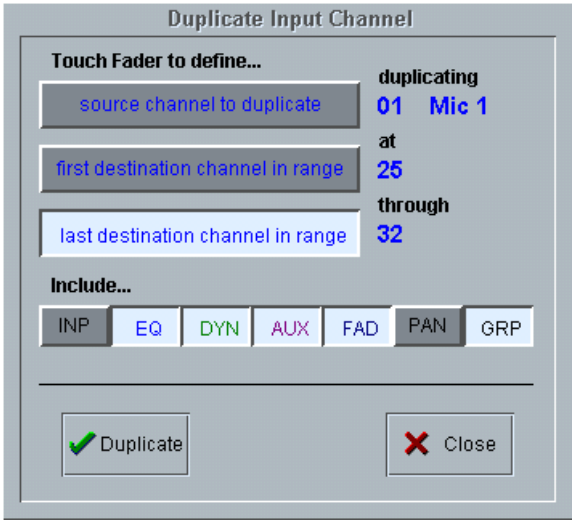
Touch faders to define the start and end of the range to be copied and then touch a third fader to define the destination for the left hand side of the group. The selected group will be highlighted in yellow in the input screen.
The destination channels will be overwritten and their previous settings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

2.4.6 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.



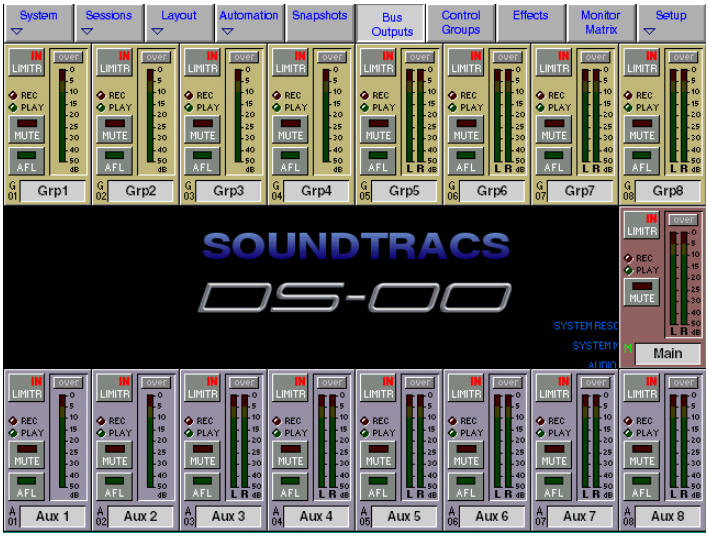
Touch a fader to define which channel will be duplicated and then touch two more channels to define the destination range. The source channel will be duplicated into each channel in the destination range.
Scope is applied in the same way as with Copy Channels (See previous section).

Chapter 3
Busses and Outputs

3.1 Busses and Outputs

3.1.1 Buss Outputs Display .....

The Main, Group and Aux busses are displayed on the **Master Screen**, and the buss levels are controlled by the faders below the screen: The exact appearance of the screen depends on the console's current buss configuration, but the layout will look something like this:



Scrolling the Master Screen

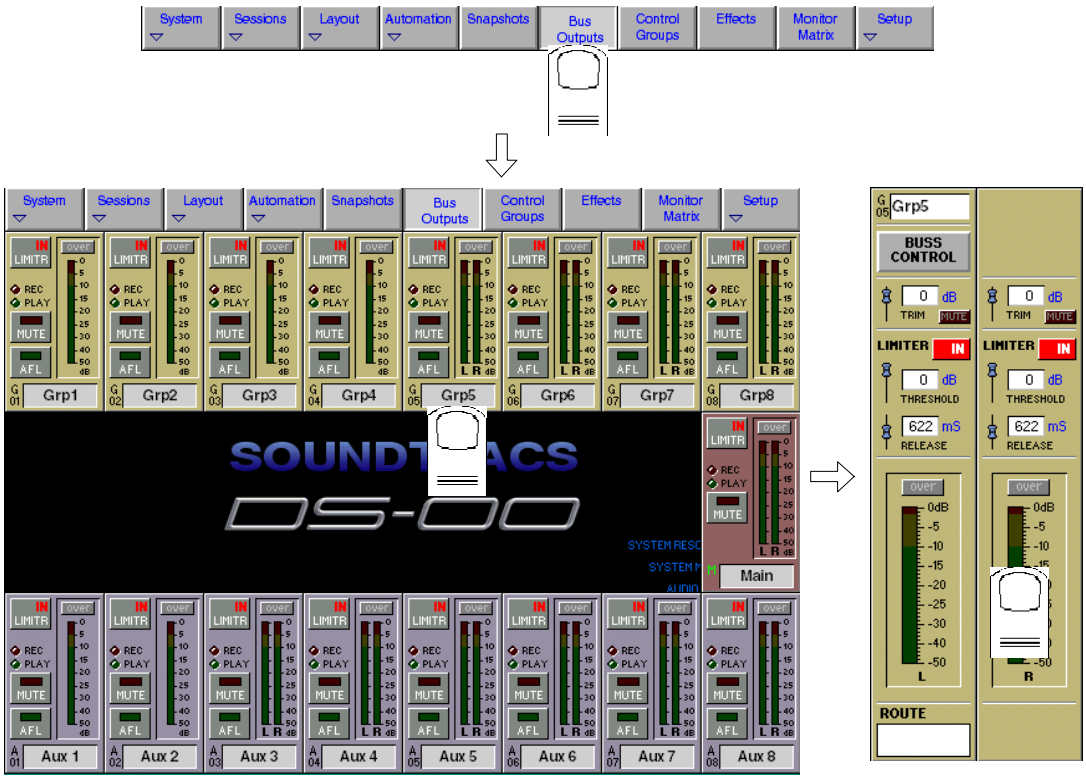
If the console configuration is using more than the 24 outputs which the screen can display, you can "scroll" the screen down the rows of busses using the **Master Screen Scroll** on the left hand side of the section

On Screen Buss Output Controls

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

3.1.2 Expanding the Buss Output View .....

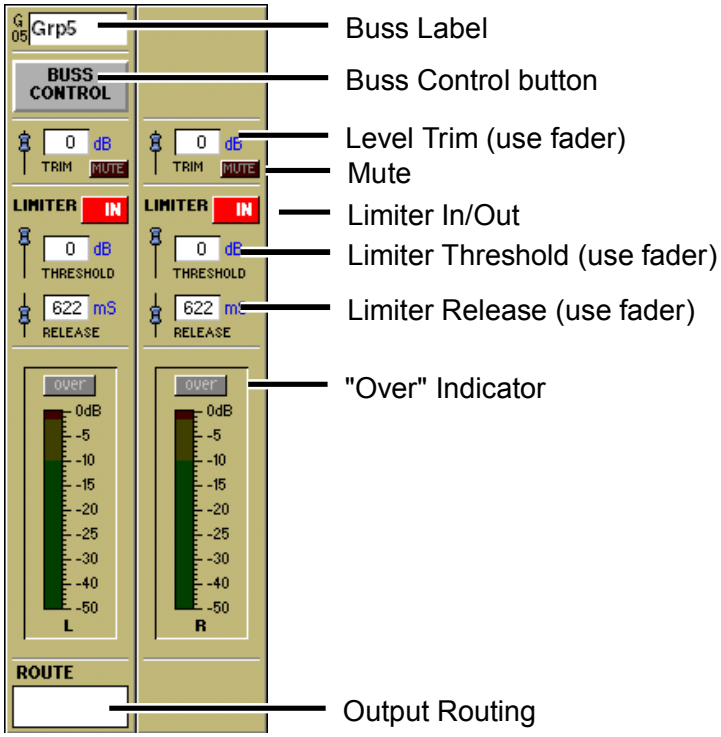
In the default state shown above, the level for each buss is controlled by a single fader, whether the buss is mono, stereo or surround. To see an expanded view of an assigned buss and access additional controls, touch the buss meter display.



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

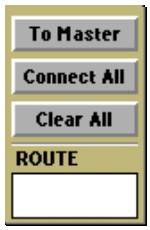
The **Label** operates in the same way as an Input Channel label - to change it, just touch the on-screen label, then type a new name on the computer keyboard or the On Screen Touch Keyboard.

When a buss is labelled its name will appear in the input channel routing display. Mono busses will always be labelled with a single dot and stereo busses with a double dot in the input channel routing screen.

3.2.2 Buss Control Button

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

Group Buss Control



Connect All routes all input channels to the buss.

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

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

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

To Master allows the group to be routed onto the Main Buss. Only groups whose width is the same as the Main 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 Main Mix, audio processing resources are taken from the highest numbered available input channels. If insufficient channels are available a message is displayed quoting the number required.

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

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

Auxiliary Buss Control

Switch All Pre-Mute/Pre-Fader makes the auxiliary sends for this particular buss pre-mute and pre-fader on all channels.
Switch All Post-Mute/Pre-Fader makes the auxiliary sends for this particular buss post-mute and pre-fader on all channels.
Switch All Post-Mute/Post-Fader makes the auxiliary sends for this particular buss post-mute and post-fader on all channels.
Copy Levels from Faders makes the auxiliary send levels for this particular buss the same as the fader levels on each different channel.
Set Levels OFF turns off all the auxiliary sends for this particular buss on all channels.
Set Levels to 0dB makes the auxiliary send levels for this particular buss 0dB on all channels.

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.

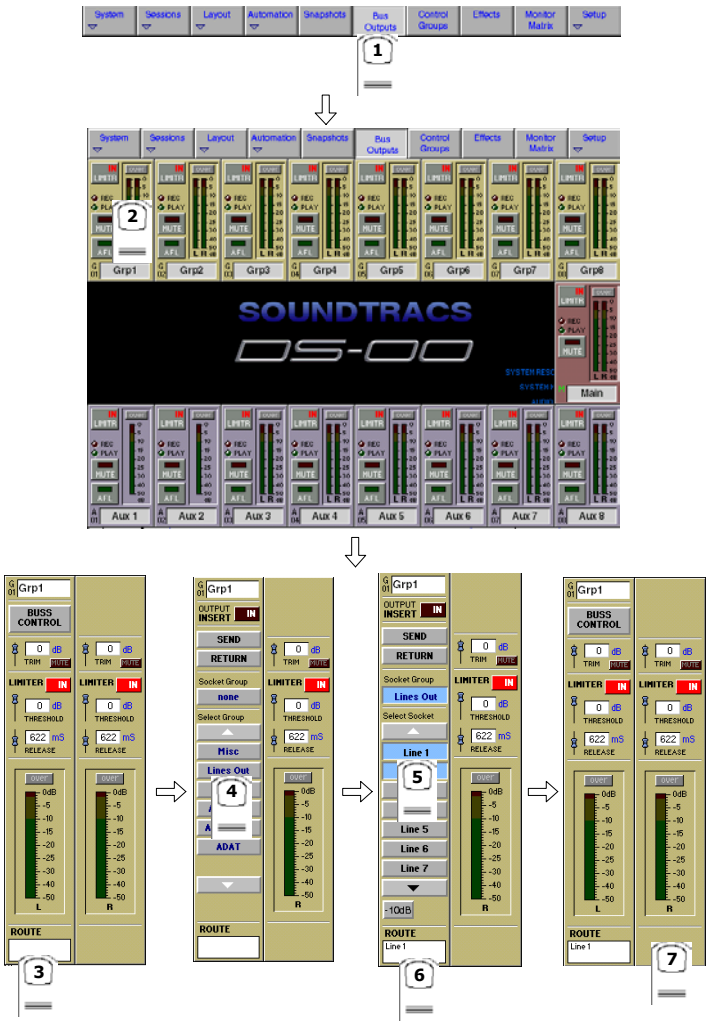
3.2.6 Meters .....

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.

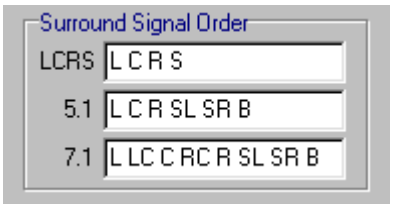


Note that with Stereo or Surround busses, you cannot route the buss signals separately - by assigning the socket for the left most buss channel, you also assign the next socket(s) in the socket Group to the remaining buss signal(s). The illustration above shows a stereo group, so choosing socket **Line 1** would assign the left buss signal to socket **Line 1**, and the right buss signal to socket **Line 2**.

NOTE: The order of signals output from a surround stem can be adjusted by editing an INI file - Please refer to Digico support for further information.

3.2.8 Stem Signal Order .....

The sequence of signals for surround stem outputs (groups and main) may be specified in the **System / Service / Configure Hardware** menu. Pressing this button closes the current session and opens the **DiGiConfig** program. When the settings have been changed and the OK button is pressed, the session is reloaded with the new settings.



The default order shown above can be changed by moving signal letters or letter-pairs.

Therefore each surround format can be specified separately, and the console will use the one appropriate to the current session when automatically routing stem outputs.

For example, a common arrangement for AES-EBU pairs might be:

LCRS order = L R C S

5.1 order = L R C B SL SR

This would mean that the left/right pairs are always together.

3.2.9 Analogue Output Level Selection .....

The Analogue Output Sockets 0dB Level can be set to +4dB or -10dB, for compatibility with a wide range of audio equipment. The default level is +4dB and the level can be changed to -10dB by pressing the button which appears when an analogue socket is selected as an output destination.

3.2.10 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.

3.2.11 Headphones .....

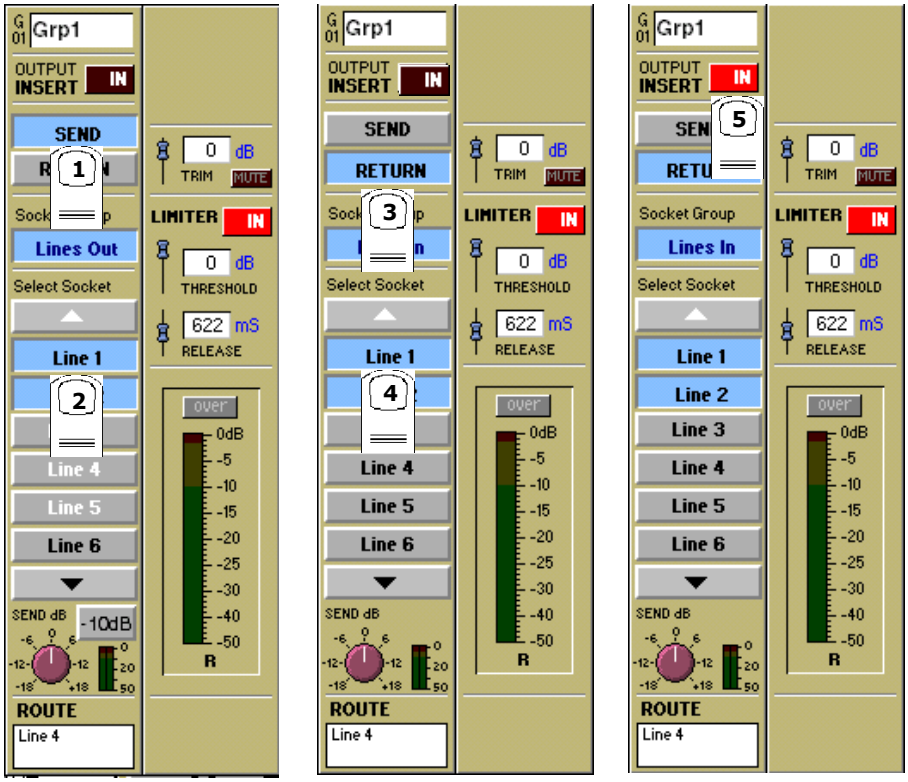
You may send any buss output or input source signal to the console's headphone socket by selecting headphones from the output routing sockets list. The **Headphone Left and Right** option can be found in a socket group labelled **Misc.**

3.2.12 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.

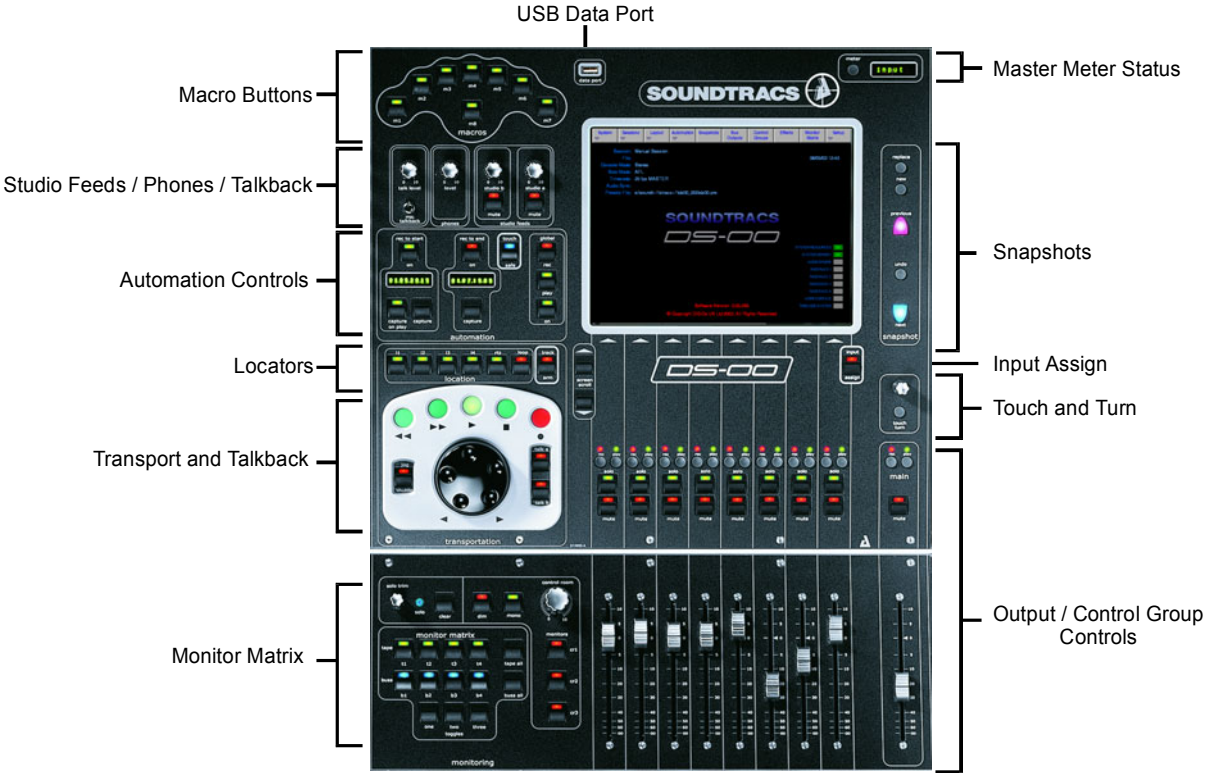
Touch the **Send** button and select the input to the required processor, then touch the **Return** button and select the output from the same unit. Then touch the **Output Insert** button to switch it on.



Chapter 4
Master Section

4.1 Master Section

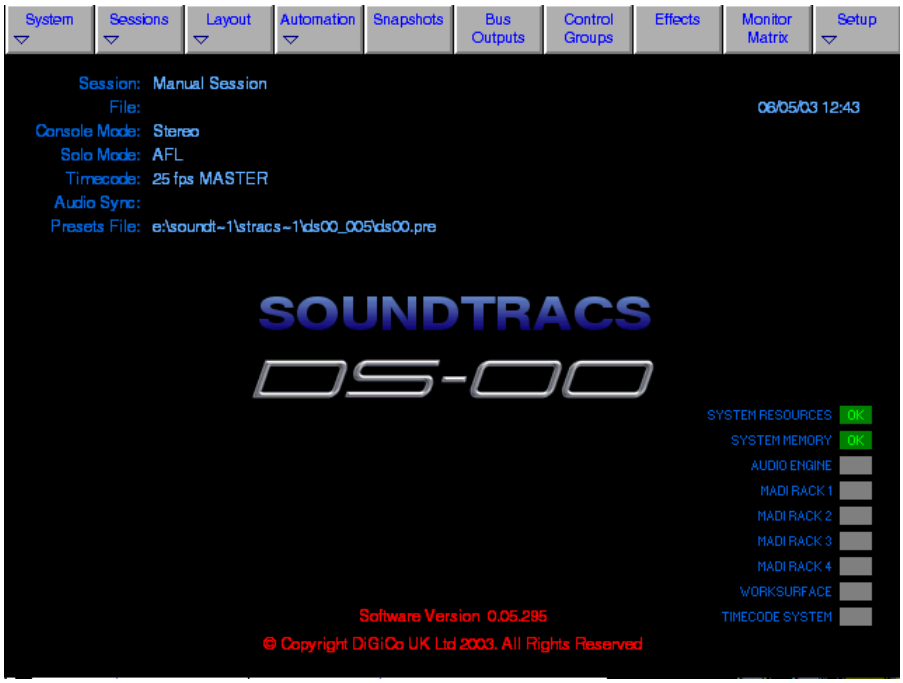
The Master section of the DS-00 console includes the output controls described in the previous chapter and the meter bridge above it:



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).



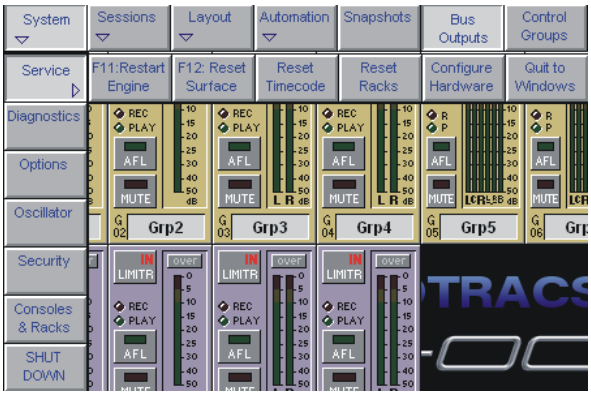
4.1.2 The Menu Buttons .....

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

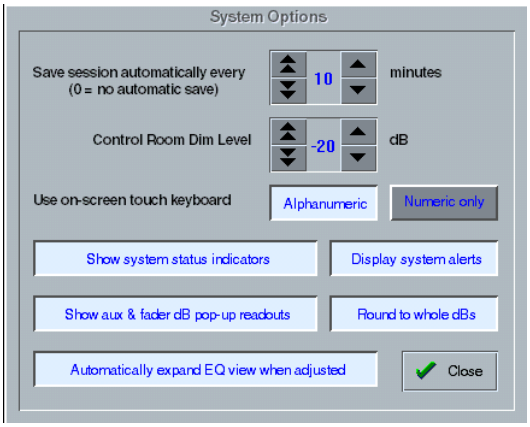
In the Service menu, this button will close the DS-00 program but will remain in a Windows environment. It is unlikely that the user will need this option in normal operation.

System Options

Save Session Time Setting allows the user to set how regularly the console will auto save its settings. The session file which is saved will be accessed if the session is terminated abnormally and the option to reload the session is given when the console software is restarted.

The default time period is 10 minutes.

Control Room Dim Level allows the adjustment of the attenuation applied to the console's speaker outputs when the "Dim" button is pressed.



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 and there is a further option to **Display System Alerts.**

Show aux and fader dB Pop-up Readouts activates yellow boxes which pop up showing the Auxiliary send and fader dB displays. These may optionally show figures **Rounded to whole dBs.**

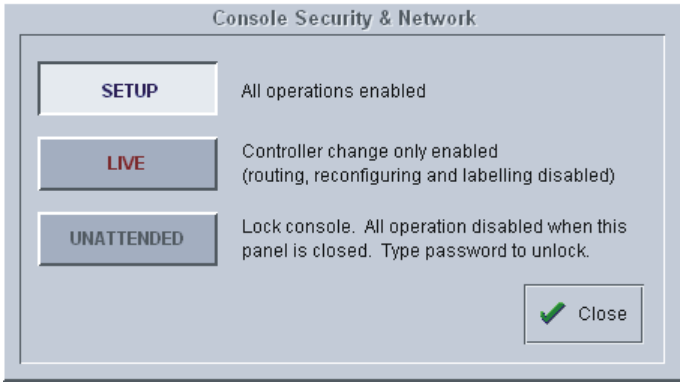
If the **automatically expand EQ view when adjusted** button is pressed, the adjustment of any EQ control will activate the expanded EQ view.

4.1.3 Console Security Settings .....

The console has 3 modes of security which dictate the types of operation 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 DS00.



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.

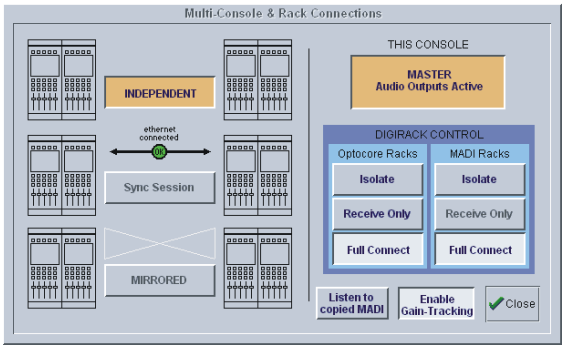
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.

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

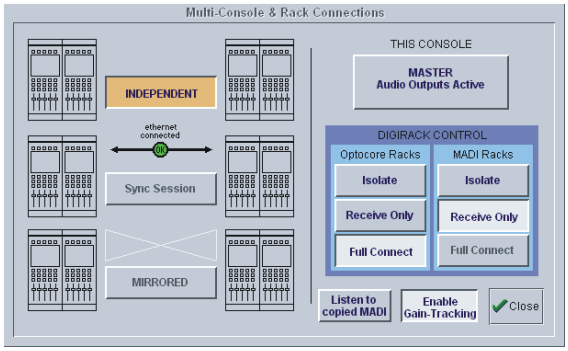
The console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.

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 DS-00 is highly configurable, allowing a wide range of different bussing formats and channel configurations. This section describes how to use the command buttons on the Master Screen to Configure, store and recall sessions.

A Session file contains the following information:

- The console configuration.
- The Snapshots.
- The Dynamic Automation data. (ie The current Mix Pass)
- A list of all the Mix Passes stored during the automation session.

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 Sessions Menu .....

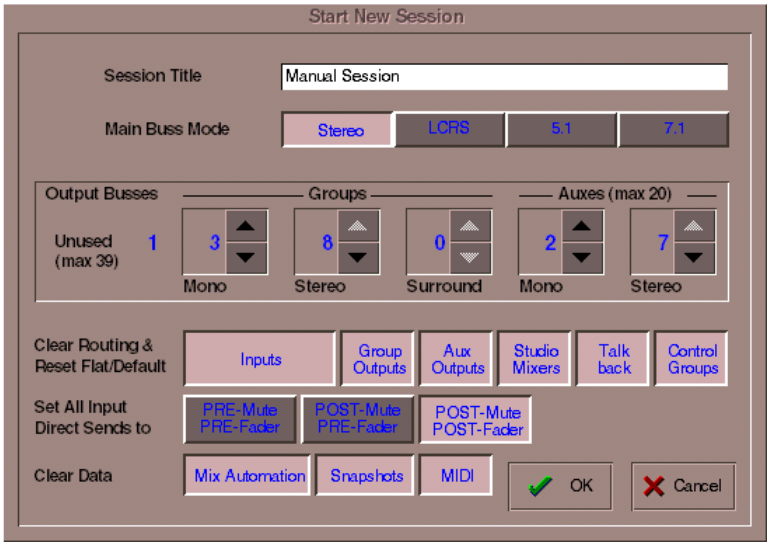
All of the configuration and file management functions are handled in the Sessions Menu which is accessed by touching the button on the Master Screen.

4.2.2 The New Session Panel .....

The **Main Buss Mode** defines the format of the Main buss as Stereo, LCRS, 5.1 or 7.1 Surround. This also affects the options for selecting the Group and Aux buss formats: if the Main buss is stereo, the other busses cannot use the Surround formats, and if the main buss is Surround format, the other busses cannot use a different Surround format (although they can be stereo).

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

The total amount of busses cannot exceed 39 (excluding one PFL Buss).



Note: The total number of busses available will be affected by the choice of solo mode selected in the Setup Menu / Solo

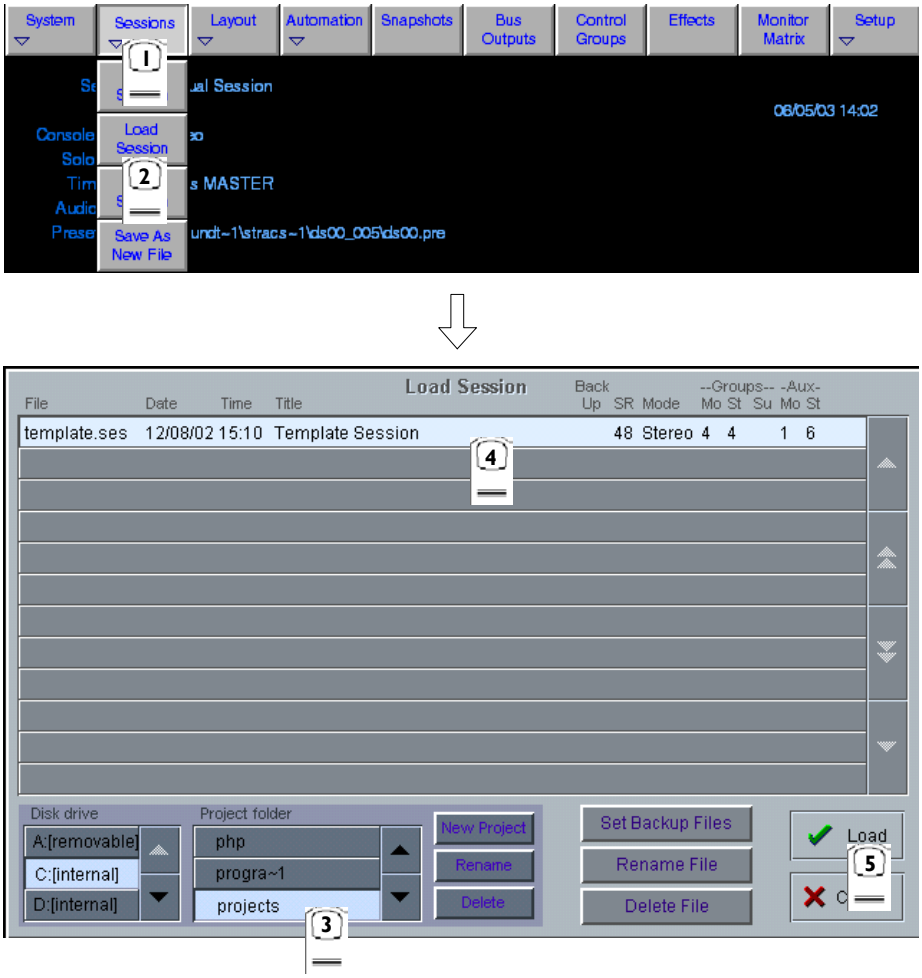
For example, if you wish to use AFL within a 5.1 Surround console configuration, an extra 6 busses will have to be reserved for that purpose.

4.2.3 Clearing Settings .....

When you start a new session all current settings will be inherited by default but Automation and Snapshots will be cleared.
The buttons at the bottom of the **New Session** panel allow you to clear settings according to your own requirements. When the buttons are pressed, the relevant settings will be cleared. If you are simply adjusting the buss configuration of an existing console you are unlikely to wish to clear all of your current settings.
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 worksurface.
Simply select the drive you require in the bottom left corner and then open a folder from the scrolling list next to it by touching it. You can then touch a specific session file to highlight it and touch the **Load** button to open the session.
Sessions can also be renamed or deleted in this panel using the **Rename File** or **Delete File** buttons in the same way.
The smaller **New Project**, **Rename**, and **Delete** buttons all refer to the folder listing and also appear in the **Save As New File Panel**
The **Set Backup Files** button is only relevant if your system is connected to a **NetTracs** server which is used in multiple console environments to store and backup files.

New Project

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

Rename

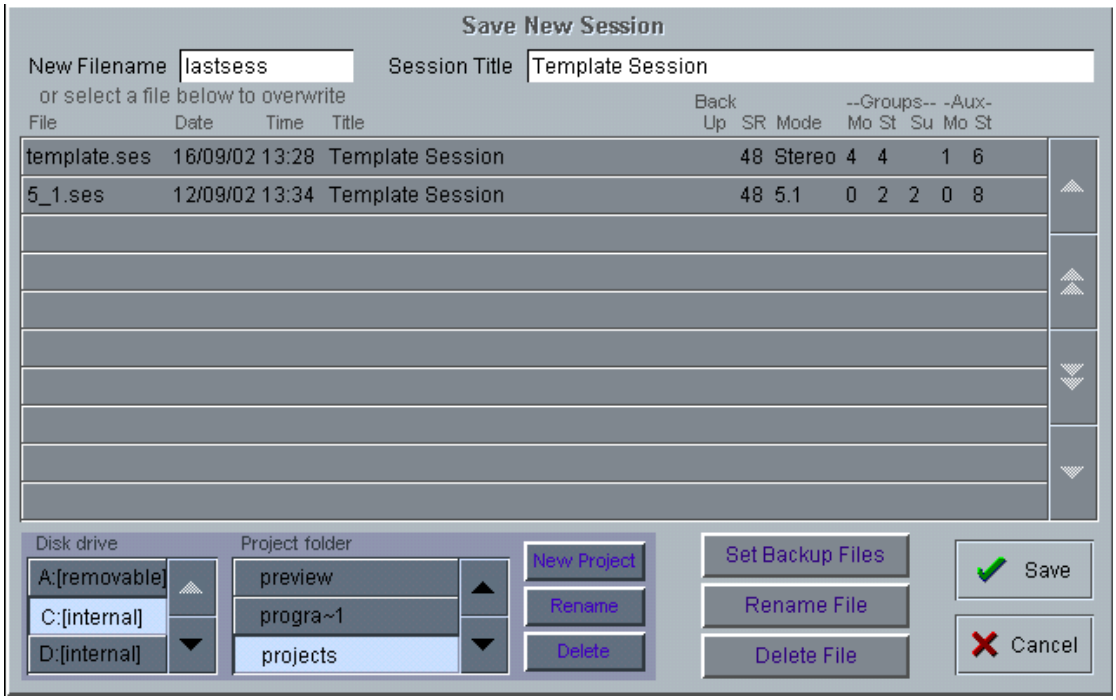
Touch this button and then touch the folder name that you wish to change. This will then be highlighted and you may type a new name.

Delete

Touch this button and then touch the folder name that you wish to delete. You will then be asked to confirm the deletion request.

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.

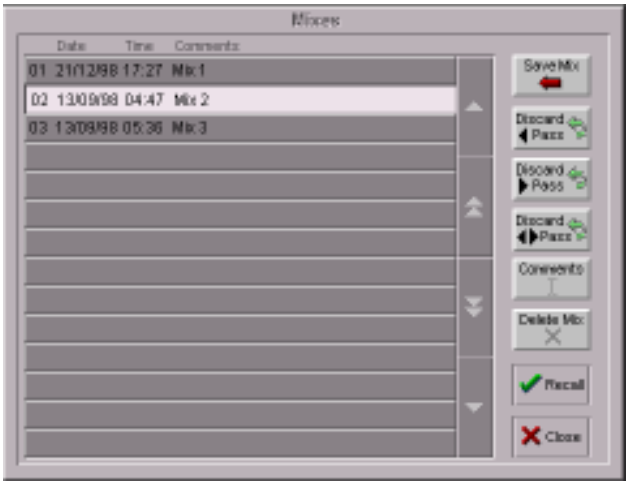
Remember that this function will overwrite your last saved version.

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

4.2.8 Saving Mix Passes .....



You may have several conflicting opinions about which direction your mix should take. You can store them all as Mix Passes.

If you make some updates and are not sure whether you will need to come back to the current mix, keep a pass. Do this by pressing the **Mixes** button in the **Automation Menu** on the Master Screen. Then press the **Save Mix** button and a box will appear to allow you to name the pass.

If you do not require the last pass, you can delete it immediately by touching the **Discard Pass** button with the double headed arrow.

Each version you have kept by pressing Save Mix will be displayed along with the time and date of storage. The session has a capacity of 99 passes.

To revert to any of the previous passes, select the mix from the list and press **Recall**. Be very careful as this function will delete the current pass unless you have already **Saved** it.

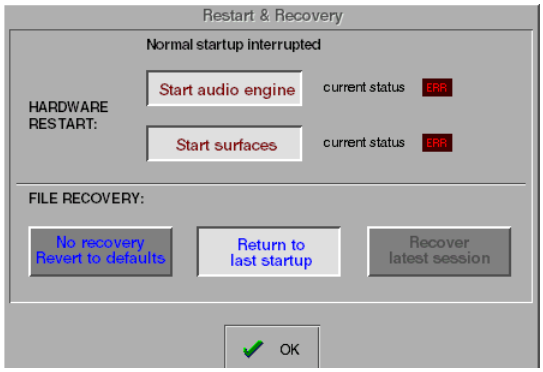
If you are certain that you will not want to return to a mix, press **Delete Mix** and a small panel will appear allowing you to remove it from the Hard Disk.

Press **Select Range,** choose the relevant mixes from the list and then press delete or press **Delete All** and then delete.

4.2.9 Autosave - Mix recovery .....

In addition to the passes you store, the console automatically keeps a version of the current session in a file called _session.ses in the ds00 folder. This is updated at the end of every pass, or every 10 minutes (according to a parameter in system options) if you are not doing mix passes. This file is to guard against power failure.

In normal operation if you try to shut the session down without saving, you will be prompted with the warning that there is some unsaved snapshot or mix data. You then have an opportunity to save your session. If the power fails and you have not had this chance the system will detect the autosave session and give you the following prompt as it restarts:



This allows the options of:

1) Rebooting the audio engine or worksurface.

2) Loading from the recovery session file.

3) Loading from the startup session file.

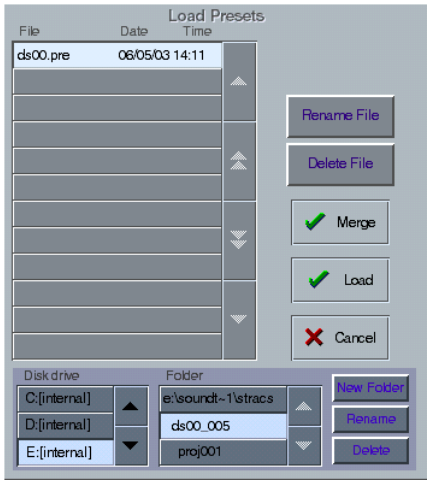
4) Not loading any file and creating a default console configuration.

When your session has been recovered, you should save it under a new session name.

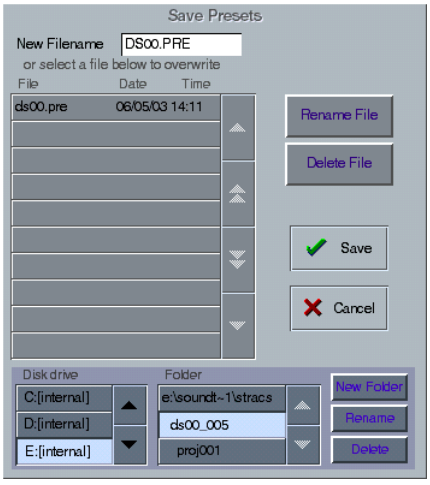
NOTE: Holding the keyboard Shift Key during the reboot will also open the Restart and Recovery panel.

4.2.10 Managing Presets .....

Presets (Channel, EQ and Dynamics) 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:

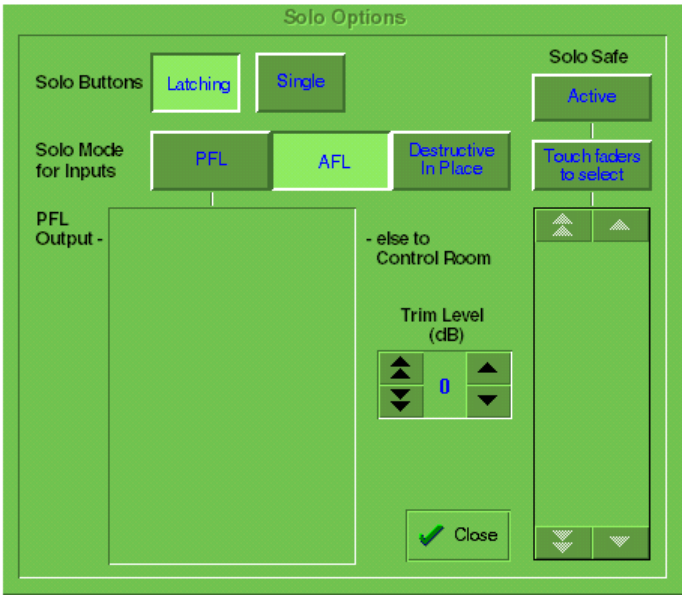


This panel shows the contents of your drives and folders, listing any saved presets.
Simply select the drive you require in the bottom left corner and then open a folder from the scrolling list next to it by touching it. You can then touch a specific preset file to highlight it and touch the **Load** 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

4.2.11 Solo Options



The Solo Options panel can be accessed at any time to change the solo function.

PFL

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 Main stem.

Destructive In Place

If there are insufficient unused busses to create a normal Solo In Place function there is an option to use Destructive In Place This uses the main busses instead of the solo busses and can therefore function as a SIP without using additional buss resources.

Solo Buttons

You can also select **Latching or Non-Latching** mode for the buttons - in non-Latching mode, the Solo buttons only operate as long as they are held down.

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.

PFL Output

This allows you to select a dedicated output socket for the PFL signal. If nothing is selected here, the PFL signal will be sent to the Control Room Monitors in the normal way.

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

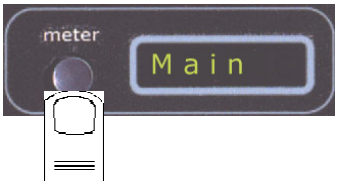
Solo safe may be used in any solo mode.

If the **Active** 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 active button is switched off, the list is not affected but 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.

4.2.12 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 Control Room

The meters will show the selected type of control room signal. (Main buss or selected control room source)

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.

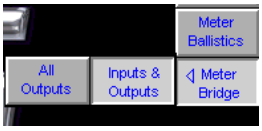
4.2.13 Meter Bridge Options .....

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.

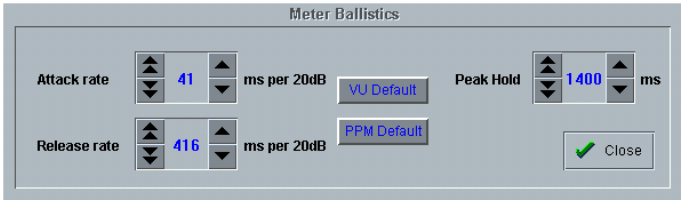
The other option is **All Outputs** where the output signals are shown consecutively across the entire Meter Bridge.

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.



4.2.14 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.

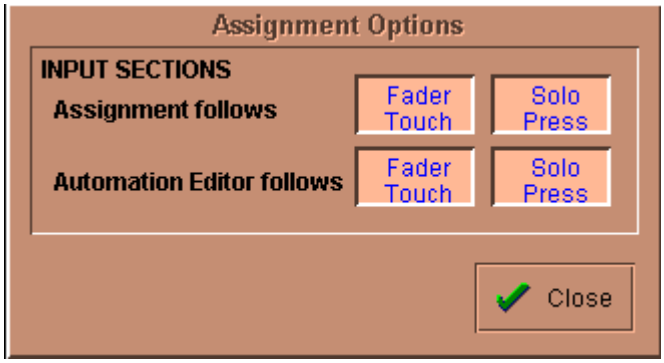
VU Default sets Attack and Release to 300ms.

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

4.2.15 Assignment Options .....

This button displays a panel which configures the different ways in which you can assign a console channel for display and control on the Input screens and control the display in the automation editor.



The **Assignment Follows** buttons provide another way of controlling the Channel Assignment, which in turn controls access to EQ and Dynamics controls.

The **Fader Touch** option changes the assignment to reflect the last channel whose fader was touched, while the **Solo Press** option ensures that any soloed channel is assigned automatically.

4.3 Studio Monitoring - The Studio Feeds

The console provides two separate 15 into 2 mixers to facilitate the mixing of sources to be fed to foldback systems or to other destinations. These are known as Studio A and B and are accessed with buttons in the **Setup Menu**.

Each screen consists of 15 individual channels and a master fader.

The individual channel's source is selected by pressing the label box above the fader and choosing from the normal list.

Buss results (the output signals from the busses) can also be selected as input sources. The master fader can then be routed to a pair of outputs by pressing the box above it and selecting from a list in the normal way.

Each channel also has a **Mute** button and buttons marked "**L**" and "**R**" to determine whether the signal source should be routed to the left, right or both outputs.

The master fader is also equipped with a **Listen** button which will allow you to hear the overall output of the 15 channel mixer through the Control Room Monitors.. This signal does not use the SOLO buss and when the panel is closed the Listen function is cancelled.

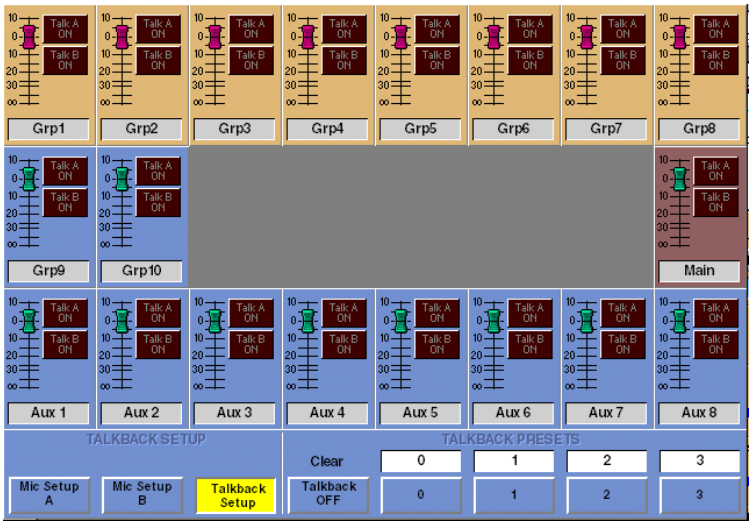
NB: The Studio A and B mixer outputs have physical level and mute controls beneath the Macro buttons on the master worksurface.

4.4 Talkback

The console worksurface includes a built-in talkback microphone situated in the Master section, and there is an input socket provided on the rear panel for a remote talkback microphone. There are two Talkback channels, A and B, each activated by buttons in the transportation section of the worksurface. Both are controlled by a level control on the worksurface.

4.4.1 Talkback Mixer Button .....

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



When you first push 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.

4.4.2 The Talkback Mixer

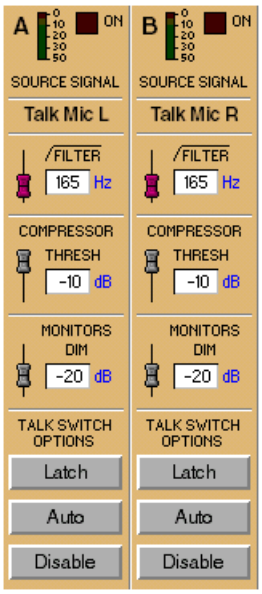
Each output buss has its own level control in the Talkback mixer, along with a switch for connecting each Talkback channel to the buss at the chosen level.

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 - this works in the same way as the fader assignment of output busses in the normal console operation.

To route Talkback A or B to specific busses, press the relevant on screen button on the mixer panel.

4.4.3 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 channel is sourced from the Local (worksurface) mic and B is sourced from the Remote Mic.

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

Below these controls are buttons which configure the talkback switch. The switch can be latching or momentary, or can be set to operate automatically according to whether the worksurface transport system is in Stop/Forward/Rewind (talkback on) or Play/Record mode (talkback off). You can also choose to disable the channel altogether.

4.4.4 Talkback Presets

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

Once you have one or more stored presets, you can switch between them by touching the buttons at the bottom of the Talkback panel, and you can name each routing preset by touching the white label above its button and typing a name on the keyboard. This can be used to set up different talkback routing for communicating with different rooms in the studio.

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.

4.5 Control Groups

4.5.1 Creating Control Groups .....

Any number of input channels and output channels can be connected to one or more of the 8 Control Groups. They can then all be operated from a single worksurface control. Changes to the Control Group fader, mute or solo controls will affect all channels connected to the group.

To set up Control Groups:

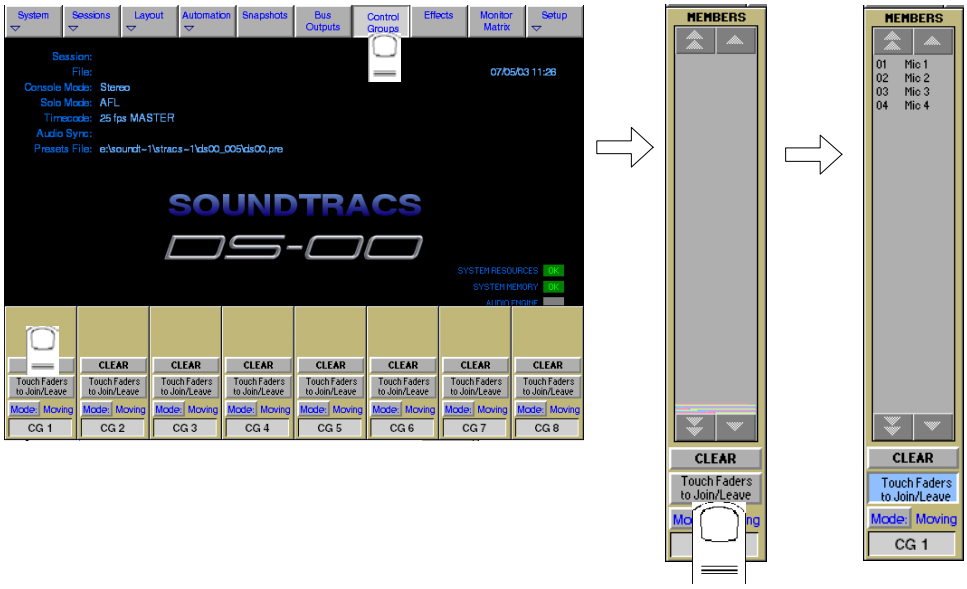
1) Touch the **Control Groups** button on the Master screen.

2) Touch the **Touch Faders To Join/Leave** button on the required Control Group (1-8).

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



Note that as well as adding input channels in this way, you can also add aux and output group masters by touching the relevant row of busses on the Master screen to assign the group faders, then touching the fader for the buss you want to assign to the Control Group. (Remember that the current assignment of the Master section faders is indicated by a different background on the Master screen.)

A list of all the connected channels and their names is displayed above each Control Group display, as shown above. The default display in the illustration can show a limited number channels, but you can touch the on-screen list to expand it and touch it again to return it to normal size:

To disconnect a channel from the Control Group, with the Control Group's **Touch Faders** button depressed, touch the channel fader again.

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

4.5.2 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.

4.5.3 Adjusting Control Group Channels Independently .....

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.

4.5.4 Control Group Modes .....

Successive presses of the **Mode** button above the control group's label changes the way the control group functions. There are 3 modes:

Moving (Default) - The control group fader controls the levels of its members and their faders move accordingly.

VCA - The control group fader controls the level of an input channel without moving the channel's fader.

An additional gain stage immediately after the input fader follows the control group fader's dB level, and the input fader is unaffected. This post-fader gain is applied before any post-fader feeds to auxes, group busses or direct outputs.

Mutes - Only mutes are controlled by the control group, not fader levels.

4.6 Snapshots

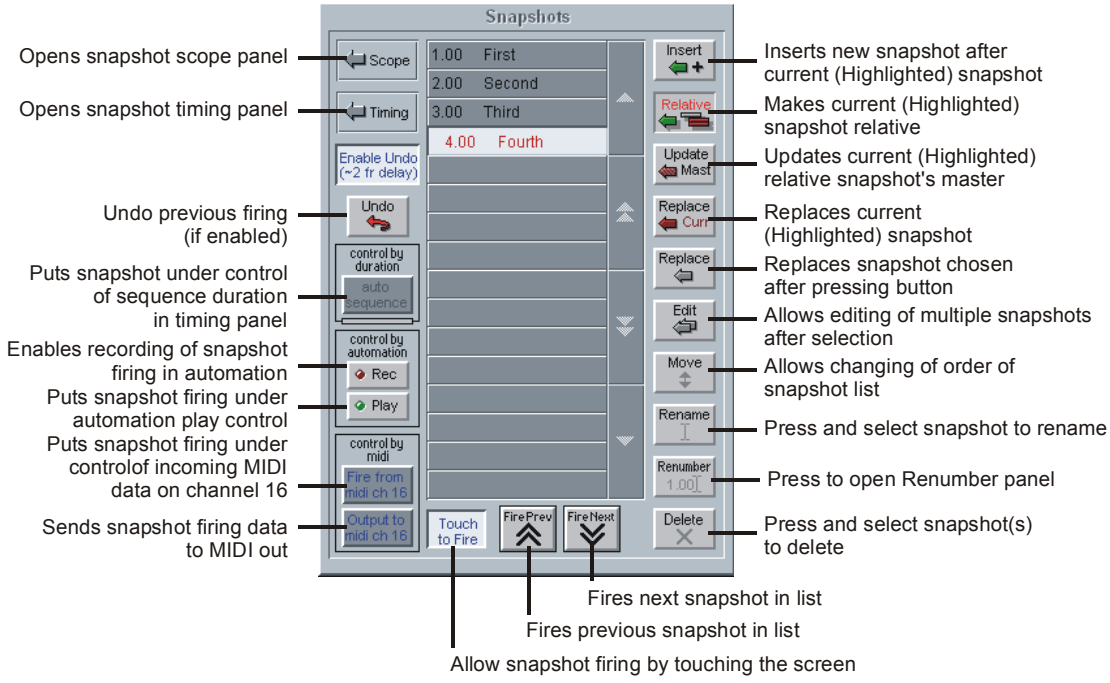
Any number of Snapshots of the entire current console settings can be stored and recalled using the Snapshots panel. (This is only limited by system memory)

These Snapshots can be absolute or relative to another snapshot.

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

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

Worksurface controls can be found to the right of the Master Screen.



Note: The current snapshot appears in the panel as the highlighted button.

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

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

4.6.1 Master and Relative Snapshots .....

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

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

Non dB controls such as Dynamics times, EQ Frequency & Q and Pans that are changed in the Master Snapshot will only be updated in the Relatives if their value is the same.

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

4.6.2 Storing a Snapshot

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

To store a Relative Snapshot, you must first create a second Master Snapshot and this can then be changed to Relative by making it current (highlighted) and pressing the **Relative** button. The details of the snapshot should then be shown in red.

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

4.6.3 Recalling a Snapshot

To recall a snapshot, simply touch the snapshot button you require. The button will then remain highlighted until the next snapshot is recalled.

Alternatively, the buttons on the Worksurface on the right of the screen provide **Previous** and **Next** buttons to fire the relevant snapshot named in the panel listing.

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

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

4.6.4 Replacing a Snapshot

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

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

Pressing the **Replace** button on the console worksurface twice will replace the current Snapshot.

4.6.5 Update Master

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

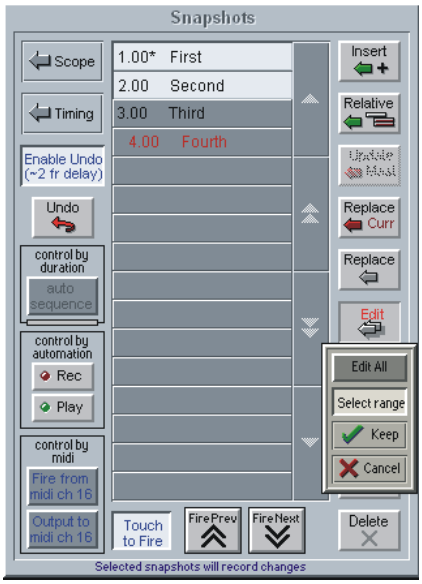
Therefore if you are working in a Relative Snapshot and realise that the changes you are making need to be applied to the other Relatives as well you can immediately press Update Master even though the Master is not the current snapshot.

4.6.6 Editing Multiple Snapshots

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

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

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



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

The selection may be changed by pressing and releasing snapshot buttons at any time during the operation of the Edit command, so a variety of controllers or routes may be changed in a variety of snapshots before completing the operation by pressing the **Keep** button.

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

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

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

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

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

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

Snapshottable controllers

Routing

Relay outputs

Selection of MIDI patches

Crossfade times

Control Group members

Gang members

All Channels and Exclude buttons in Channel Scope

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

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

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

IMPORTANT NOTE:

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

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

4.6.7 Moving a Snapshot .....

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

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

4.6.8 Renaming a Snapshot .....

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

4.6.9 Renumbering Snapshots .....

As snaposhots 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 snapshots panel and a new panel will open. 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 is the default value). Then press the **Renumber** button and the list will be adjusted accordingly.

4.6.10 Deleting a Snapshot .....

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

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

4.6.11 Snapshot Undo .....

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

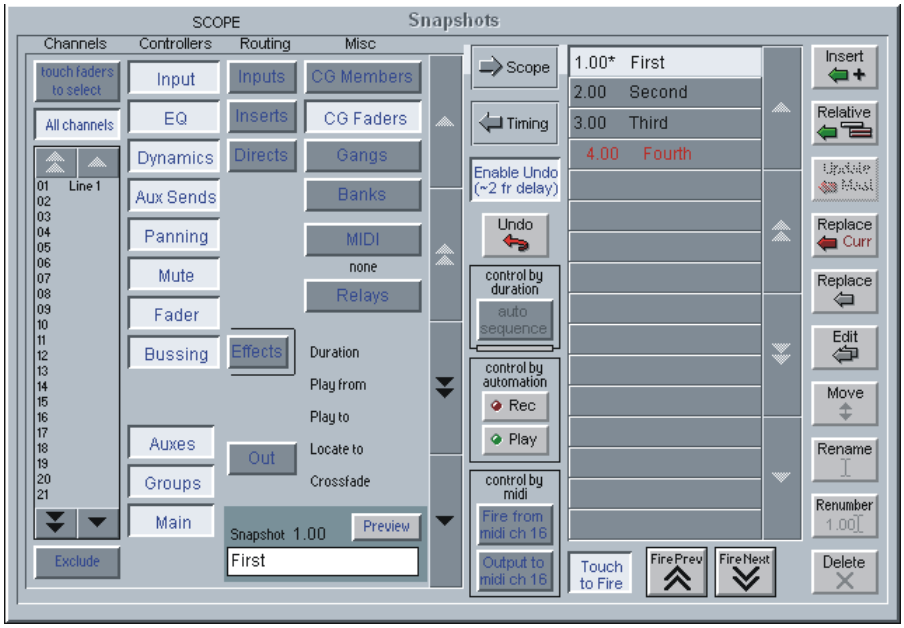
When a snapshot is fired, a separate hidden snapshot of the complete console is stored before the fired snapshot has its effect.

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

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

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

4.6.12 The Snapshot Scope Editor .....



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

4.6.13 Channel Scope .....

The input channels which are included in each snapshot can be set by pressing the **Touch Faders To Select** button and touching the required faders which will be added to the list (touching a fader again will remove it from the list).
Press the **All Channels** button if the snapshot is to be global.
If the **Exclude** button at the bottom left of the panel is pressed then the snapshot will apply to all the channels which **are not** on the list.
Note: If both All Channels and Exclude are highlighted, the snapshot will have no effect on any input channels.
Channel scope is not applied when recalling layouts.

4.6.14 Controller Scope .....

Controllers

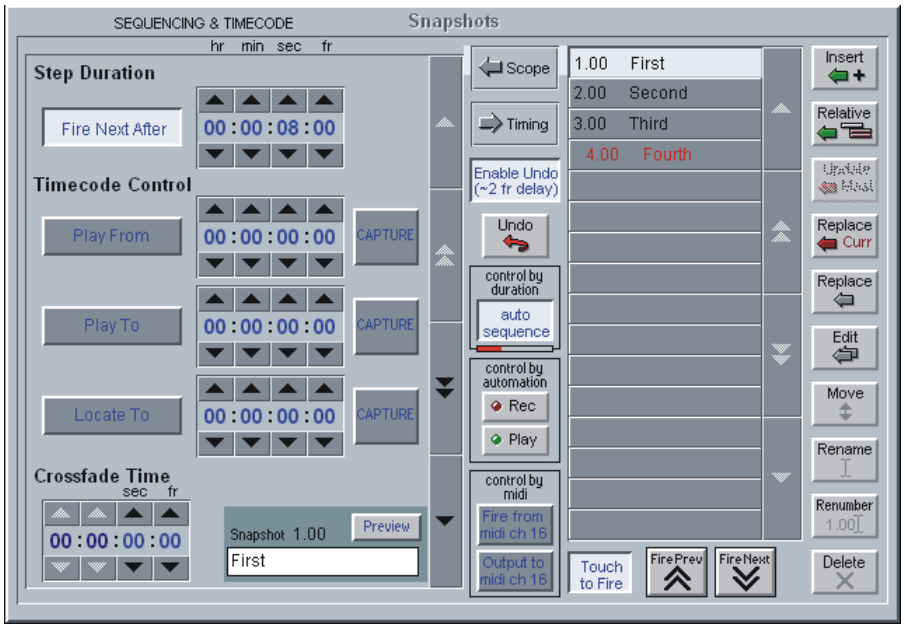
The first eight Controller scope buttons relate to input channels only.
Input - digital trim, delay, label, input balance, ms decode, left right swap. **EXCLUDES Stereo switch.**
EQ - all controllers.
Dynamics - all controllers except stereo link.
Aux Sends - aux send level, on/off, pan, pre/post.
Panning - panner, divergence, sub level.
Mute - channel mute switch.
Fader - channel fader.
Bussing - buss routing buttons.
Effects - all FX controllers. **EXCLUDES FX configuration (Presets).**
Auxes - Aux buss outputs - all controllers and label.
Groups - Group buss outputs - all controllers and label.
Main - Master buss outputs - all controllers and label.

Routing
Input - Channel 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.
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 snapshot stores the current assignment for all controllers on the worksurface:
Fader banks currently assigned to input surfaces but not the names of these banks.
Which channel on each surface is assigned to EQ/Dynamics/Joystick controls.
Which rows of pans or auxes are assigned to rotaries.
The Master Fader Banks assignment.
Note: Banks are not intended to reproduce the exact screen states. Channel views and other panels' visibilities are not stored or recalled.
MIDI - Fires the MIDI Patch associated with the cue.
Relays - The sixteen red indicators below the Relay scope button represent the state of the relays which will be output when the cue is fired (**not** the current state). It is stored at the time the cue is recorded and can be edited by clicking on individual indicators with the trackball.
Restrictions
Important Note: The following features are not included in cues:
The input channel stereo switch.
Dynamics stereo link.
Talkback.
Channel Bank names.

4.6.15 Snapshot Timing .....

To automatically sequence the firing of snapshots:
1) Select the snapshot using the up/down arrows in the centre of the panel.
2) Press the **Fire Next After** button on the left hand side and enter a time in the boxes next to this button.
3) Activate the function by firing the snapshot or pressing the **Auto Sequence** button.
When this snapshot is fired, the next snapshot in the list will automatically be fired after the set time has elapsed and a red progress bar will show the`time remaining until the snapshot is fired. Pressing the **Auto Sequence** button while the progress bar is moving wil halt the process.
Each snapshot may also trigger **Play From, Play To** and **Locate To** timecode commands.
Select the required snapshot and enter a timecode value in the relevant box. Then activate the function by pressing the required button(s).
Play From does a Locate then presses Transport Play if not already playing.
Play To presses Transport Play if not already playing, and sets up an automatic Transport Stop when the **Play To** time is reached.
If **Play To** and **Locate To** are specified together in one snapshot, 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.



4.6.16 Snapshot Crossfades .....

A crossfade time which is measured in frames can be applied to a Snapshot by adjusting the Crossfade value in the Snapshot Timing. Either use the Up/Down arrows or type a value into the box.
The Crossfade time is applied to faders and pans only (including sub level and divergence). A value of zero switches it off.

4.6.17 Snapshots and MIDI .....

There are two separate areas of MIDI control.

1) A snapshot can have a MIDI Patch attached to it, and will output that MIDI when fired. The MIDI Patch must be created separately in the **Setup Menu / MIDI Patches** panel. Switching the MIDI scope on pops up a panel prompting for a MIDI Patch button to be pressed, which will then be linked to the snapshot whose scope is currently displayed.

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

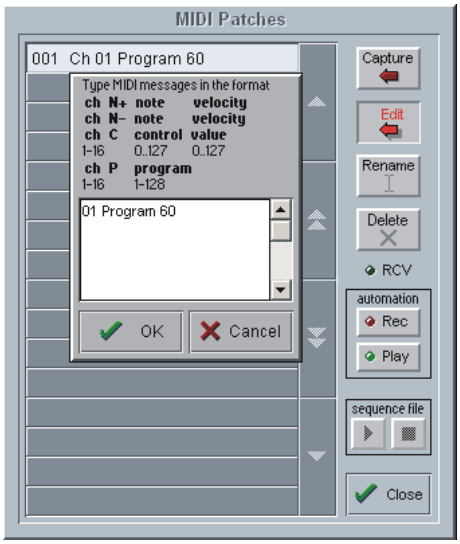
The MIDI Input Control button allows the Snapshot system to respond to the following incoming MIDI messages:-

General Purpose Controller A (Controller 16); Values 0 to 127 will fire snapshots 1 to 128
General Purpose Controller B (Controller 17); Values 0 to 127 will fire snapshots 129 to 256
General Purpose Controller C (Controller 18); Values 0 to 127 will fire snapshots 257 to 384.
General Purpose Controller D (Controller 19); Values 0 to 125 will fire snapshots 385 to 510.
General Purpose Controller D (Controller 19); Value 126 will fire the previous snapshot in list.
General Purpose Controller D (Controller 19); Value 127 will fire the next snapshot in list.

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

4.6.18 MIDI Patches .....

The console's main MIDI port is known as MIDI port T. If your DS00 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 snapshot 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 correct format for the messages is as follows:

Note On

The MIDI Port Number (Port T is assumed if there is no entry here)
A 2 digit MIDI Channel number between 01 and 16
N+ to indicate Note On
A note number between 0 and 127
A velocity value between 0 and 127

eg. A 01 N+ 60 127

Note Off

The MIDI Port Number (Port T is assumed if there is no entry here)
A 2 digit MIDI Channel number between 01 and 16
N- to indicate Note Off
A note number between 0 and 127
A velocity off value between 0 and 127

eg. A 01 N- 60 127

Program Change

The MIDI Port Number (Port T is assumed if there is no entry here)
A 2 digit MIDI Channel number between 01 and 16
P to indicate Program Change
A program number between 0 and 127
eg. A 01 P 127

Control Change

The MIDI Port Number (Port T is assumed if there is no entry here)
A 2 digit MIDI Channel number between 01 and 16
C to indicate Control Change
A controller number between 0 and 127
An equals sign (Optional)
A controller value between 0 and 127
eg. A 01 C 11 = 64

The words Program and Controller may be used or just their initial letters (case-insensitive). The equals sign is optional.

Comments are not stored although anything on a line after a semicolon is ignored. The first message in the editor is used as the snapshot name on the button label, but this may be edited.

When not capturing, editing, renaming or deleting, the snapshot buttons will output the stored MIDI data when pressed.

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.

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

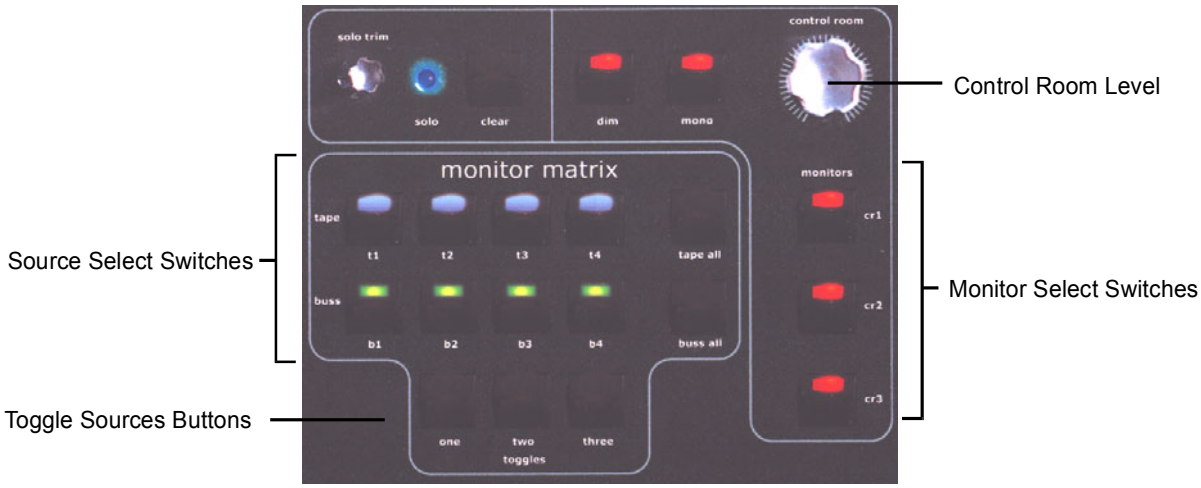
A path can precede the filename, otherwise the current session folder is assumed. Only short filenames with a maximum of 8 characters and no punctuation are accepted.

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.

4.7 Control Room Monitoring

The console's Control Room monitoring system normally monitors the Main buss signal, or the Solo signal if any channels are soloed.



4.7.1 Control Room Level .....

These rotaries simply control the volume of the Control Room monitor signal.

Please note: If CAL is activated in the Control Room Panel, the Control Room rotary will have no effect on the monitor volume.

4.7.2 Solo .....

When any channel on the console is Soloed, the Solo light in the Master section is lit. You can then use the Clear button to clear all Solo settings.

The Solo trim controls the output level of the Solo signal and if it is adjusted the Solo Configuration Panel will appear and reflect any adjustment made.

Solo Modes and Configuration

(See Solo Options in Section 4.2)

4.7.3 Mono and Dim .....

The **Mono** button sends a mono down-mix of the Control Room source signals to the Left and Right Control Room Monitor outputs.

The **Dim** button reduces the monitor signal level - the default value for this reduction is -20dB. The Dim level is set in the **System / Options** menu.

Please note: If CAL is activated in the Control Room Panel, this function is disabled.

4.7.4 Monitor CR 1, 2 and 3 Output Switches .....

They operate as monitor selectors, routing the Control Room signal to three different sets of monitors. A monitor can be defined in the **Control Room** panel.

4.7.5 Control Room Source Buttons .....

There are eight Control Room source buttons (T1 to T4 and B1 to B4), allowing the connection of up to eight sets of signal sources which operate independently of the main console structure. When one or more of the sources is selected, the Main buss is disconnected from the Control Room Outputs and is replaced by the selected source(s).

Two **All** buttons are also provided which, when pressed, control sources T1 to T4 (Tape All) or B1 to B4 (Buss All) together.

These sources are defined in the **Control Room** panel.

4.7.6 The Monitor Matrix .....

The DS-00 contains a fully featured 40 x 8 monitor matrix. This allows you to take up to 40 signals from either console busses or tape returns, and combine them to feed 8 speaker outputs providing for up to 7.1 format monitoring.

These are some examples of its functions:

1) Setting the sources to monitor any combination of music, dialogue and effects for film mixing.
2) Setting the sources to toggle between buss outputs or tape returns (sometimes referred to as PEC/Direct switching).
3) Feeding different speaker systems (for comparisons between main monitors and nearfields).
4) Comparing pre or post Dolby encoded signal using the switchable monitor path insert point.
5) Controlling listening levels to ensure a constant SPL for film mixing purposes using the calibrate function.
6) Checking different mix formats (Stereo, LCRS, 5.1 and 7.1) for compatibility with various speaker configurations.

The Procedure

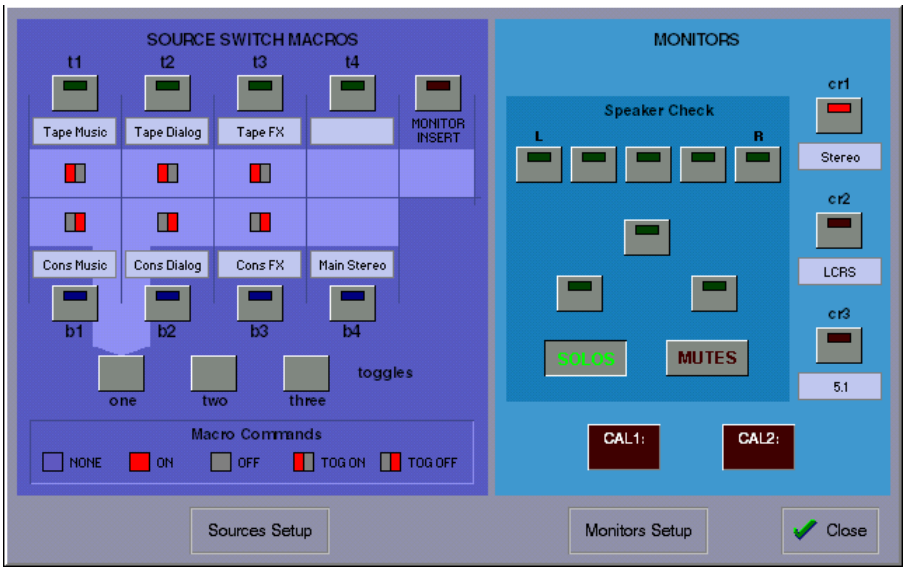
To use the monitor matrix you need to perform 2 steps:

1) Configure the monitors - this involves telling the matrix which speakers to use for any given monitoring format, and what levels to feed them with. Monitors are selected by pressing the CR1, 2 or 3 monitor buttons.

2) Configure the Sources - this involves deciding where tape signals will come from and which buss signals will be brought into the matrix. Sources are selected by pressing the Control Room Source buttons T1 to T4 and B1 to B4.

As an option you may also set up some switching macros - this involves programming the sources to switch on and off automatically when toggle buttons one, two or three are pressed. These provide the tape/direct switching.

Touching the **Monitor Matrix** button at the bottom of the master display shows this panel.

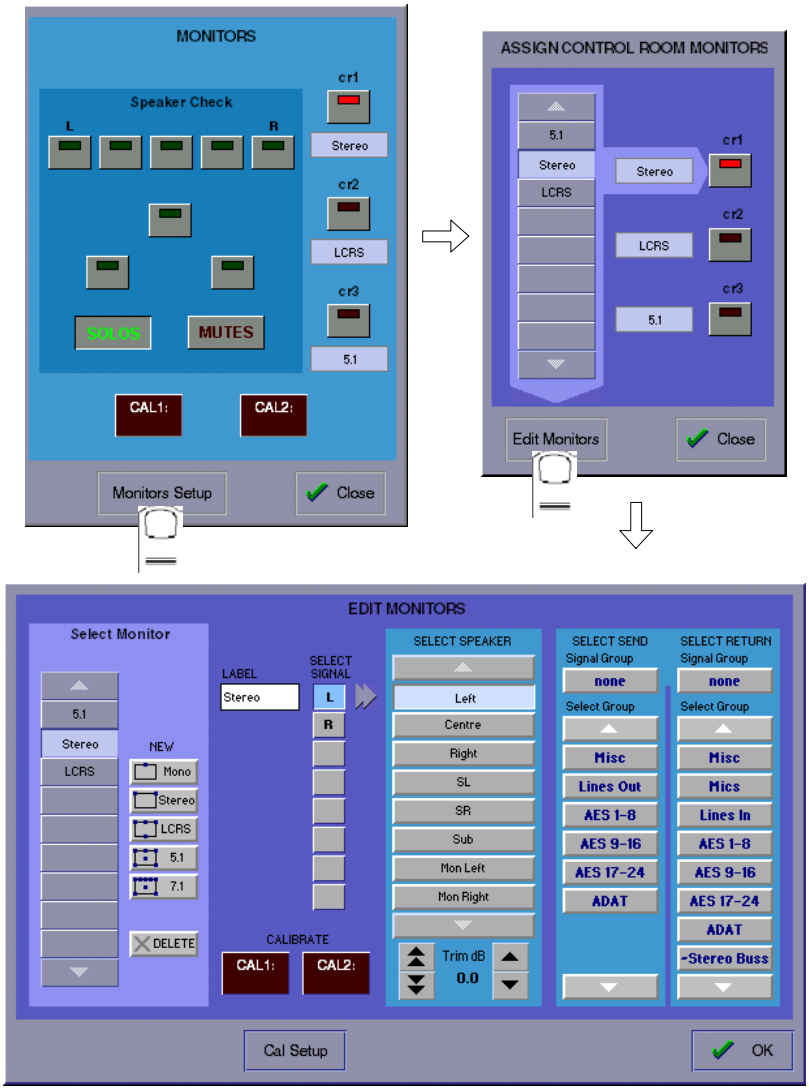


Configuring Monitors

The column of buttons marked Monitor CR1, CR2 and CR3 are assigned to the Output Switches in the Master Section of the console worksurface and can also be selected on this page. When pressed they will switch the control room signal to one of the three sets of monitors. They could, for example, be configured as the stereo main, nearfield and TV monitors or possibly as stereo, LCRS and 5.1 monitors.

To Assign a Monitor to a button

Press the **Monitors Setup** button and a new panel will appear which allows you to select a monitor setup from the user defined list. Touch one of the Monitor CR1, 2 or 3 buttons and then touch one of the entries on the list to assign it to the button.



To Edit or Create a Monitor

Touch the button labelled **Edit Monitors** in the Assign Control Room Monitors panel.

You may select an existing monitor in the column on the left hand side or define a new one by pressing one of the buttons in the column marked **New**.

Touching an existing monitor button a second time will unassign it.

The **Delete** button will remove the selected monitor from the list.

A new monitor can be named in the **Label** box and then each signal of the Control Room Output can be sent to a specific speaker by pressing one of the **Select Signal** buttons and choosing a speaker from the **Select Speaker** column.

The list of speakers is defined in the **Sockets File** at installation.

There is also a **Trim** control at the bottom of the column to adjust the output level to each speaker.

Select Insert

The Select Insert box allows you to define send and return sockets for patching processors into your monitoring system. It works in the same way as the channel insert settings.

Note: Unlike inputs, monitors can share an insert.

Select a send socket which corresponds to your processor's input and a return from the output of the processor. This insert could be used to connect a Dolby encoder / decoder to provide a switchable pre / post monitoring facility. (See Source Switch Macros)

Calibrate

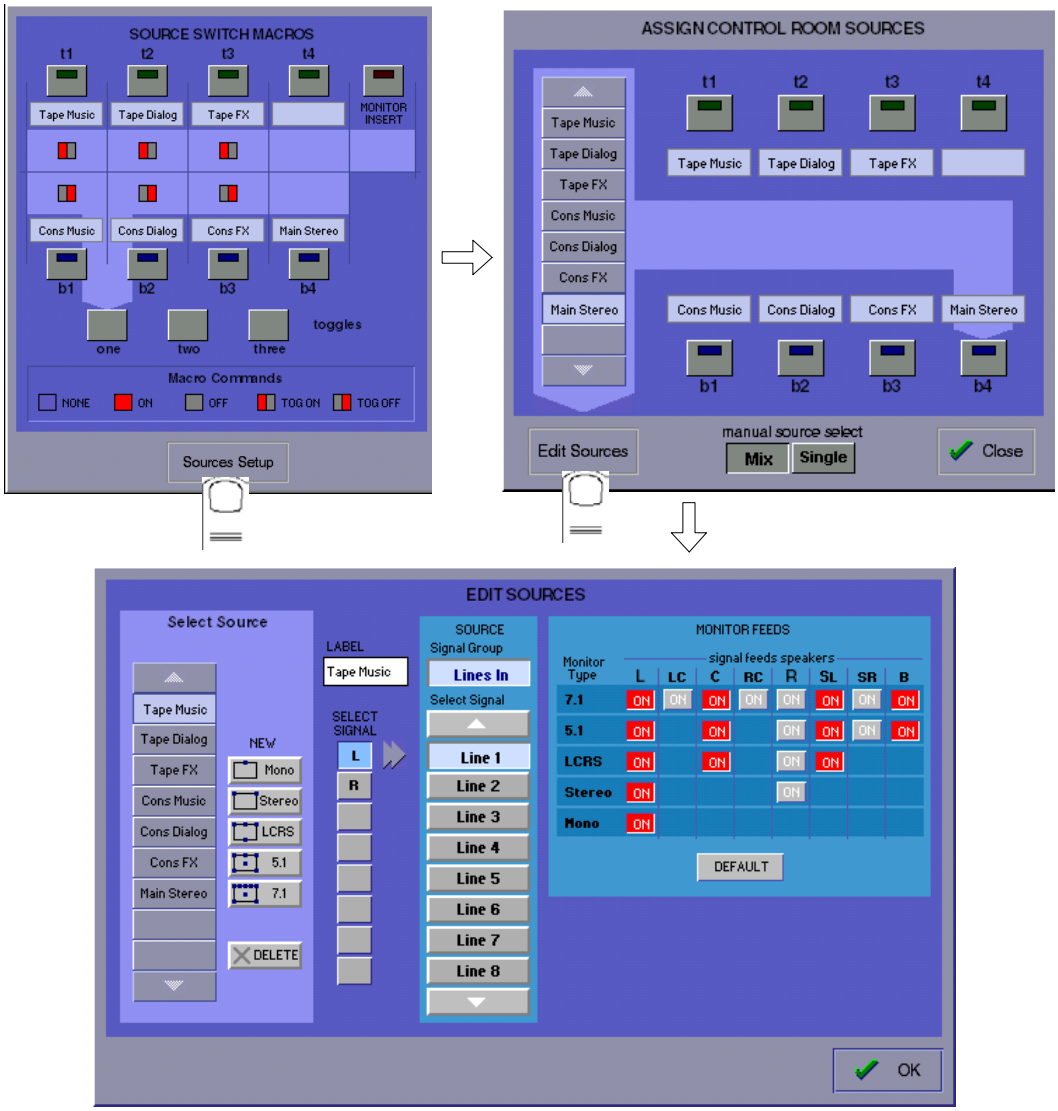
The buttons marked **CAL1** and **CAL2** allow you to set your monitoring levels to preset values (typically 85dB SPL and 87dB SPL) and when pressed, the console's Control Room level rotary pot is bypassed.

To define the calibrate levels, press **Cal Setup** and set appropriate labels and levels for CAL 1 and 2.

When you have completed your monitor setup you can return to the Assign Control Room Monitors panel by pressing OK.

Configuring Sources

The 2 rows of buttons marked T1 to T4 and B1 to B4 are assigned to the Control Room Source buttons in the Master Section of the console worksurface. Each of these buttons can represent a set of signals which will be a potential feed to the Control Room Monitors. They will typically include different sets of Mono, Stereo, LCRS,5.1 and 7.1 busses and the returns from your recorders.



In the illustration, sources T1, T2 and T3 are defined as Tape Music, Tape Dialogue and Tape FX whilst B1, B2 and B3 are Console Music, Dialogue and Effects. With this configuration you could press any combination of source buttons T1, T2 and T3 to monitor the different elements of your mix returning from tape and similarly, press any combination of buttons B1, B2 and B3 to monitor the buss outputs which are feeding those tape tracks.

If required, you could also set up a Source Switch Macro which would toggle between these two sets of sources by simply pressing one of the 3 Toggle Switches.

To Assign Control Room Sources

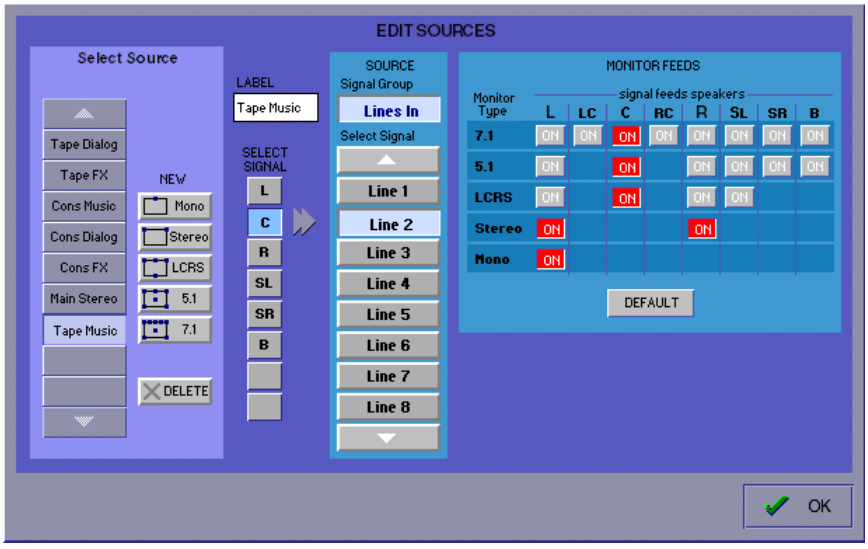
If you press the **Sources Setup** button in the Control Room Panel, a new panel will appear which allows you to assign the sources.

Touch one of the source button labels and then touch one of the existing sources on the list to assign it to the button.

Selecting **Mix** mode for the sources will allow you to monitor several sources together and **Single** mode will switch off the current sources when a new one is selected.

To Create or Edit Control Room Sources

Touch the button labelled **Edit Sources** in the Assign Control Room Sources panel.



You may select an existing source in the column on the left hand side or define a new one by pressing one of the buttons in the column marked **New**.

Touching an existing source button a second time will unassign it.

The **Delete** button will remove the selected source from the list.

A new source can be named in the **Label** box and then each signal of the source can be defined by pressing one of the **Select Signal** buttons and choosing a source from the list of signal groups and signals in the next column.

Note: If you select a source for the left signal at the top of the list the following signals will, by default, be set to consecutive sockets in that group.

These selections do not have to be consecutive sockets, you may manually override the default selection and choose sources from different groups.

Monitor Feeds

The box on the right hand side of the screen shows which speakers will be fed by which signals in the different monitor configurations. For example, in the previous diagram, the centre signal is chosen in the select signal column and in the monitor feed section you can see the speakers which will be fed by this signal in the different monitor configurations.

Centre signal feeds the centre speaker in LCRS, 5.1 and 7.1 but feeds both left and right speakers in a stereo configuration. The settings can be changed by pressing the **ON/OFF** buttons.

Pressing **Default** will reset the Monitor Feeds for this signal to their original settings. The default configurations provide settings recommended by Dolby for the purposes of checking different mix formats on various speaker sets. E.g.. A surround mix on a stereo speaker set.

Source Switch Toggles

The Toggle switches one, two and three can be configured to change control room sources. When pressed, they can select a specific source or set of sources. If you wish to make A/B comparisons between two different sets of sources the buttons can toggle on repeated presses. (The first press for one set of sources and the second press for another).

To achieve this you must put Macro commands into the nodes which represent the eight different Control Room Sources.

To enter Macro commands touch the **Node** of the required source and then touch the relevant **Macro Command** in the box at the bottom of the panel. There are 5 different commands:

ON - The source will be switched on at each press of the output switch.

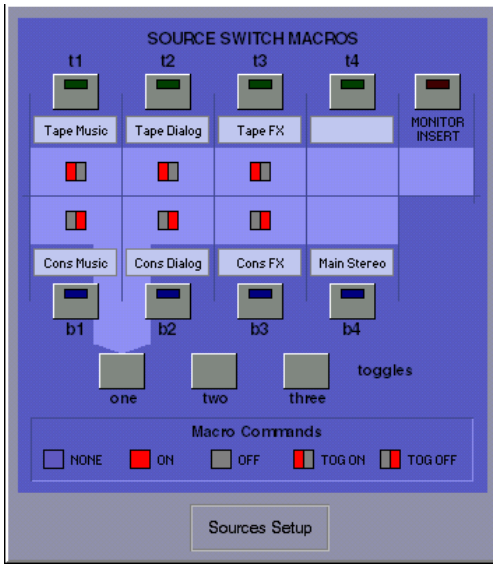
OFF - The source will be switched off at each press of the output switch.

TOGGLE ON - The source will be switched on at the first press of the output switch and off at the second press.

TOGGLE OFF - The source will be switched off at the first press of the output switch and on at the second press.

NONE - The source will not be affected by the action of the output switch. This is different to the **OFF** setting as that will specifically turn the source off when the output switch is pressed.

Example: Pressing Toggle button one once will monitor sources T1, T2 and T3. Pressing it again will monitor sources B1, B2 and B3.



The Insert Point

The setting of the monitor insert point can also be programmed with the above macro commands in the column beneath the insert button.

For example, if you programmed the insert to **TOGGLE ON**, and the required sources to **ON** you would be able to hear your sources with or without processing by toggling the relevant Output Switch.

Speaker Check

On the right hand side of the Monitor Matrix panel there is a set of Speaker Check buttons which allow you to hear your individual speaker outputs in different combinations. Touching the buttons for the individual speakers will either **Solo** or **Mute** that speaker according to the mode selected in the middle of the panel.

4.8 Macros

The 8 Macro buttons at the top of the Master Section can be programmed to fire either single or multiple console functions.

Press the **Macros** button in the **Layout** menu on the Master screen and the following panel will open.

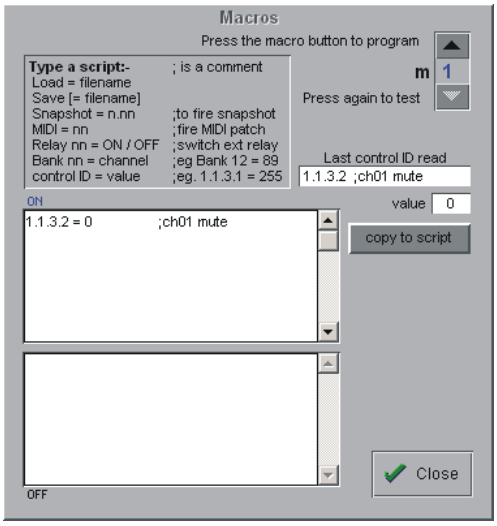
Press the worksurface Macro button that you wish to program or use the up down arrows to select a Macro button.

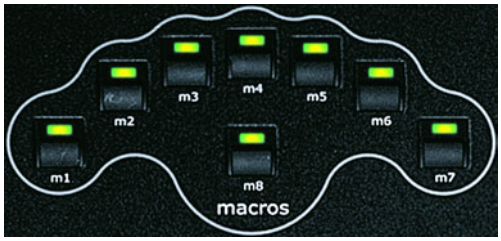
The panel displays two scripts for each button. The top script is what to do when the button is switched on, the bottom script when it is switched off. If either script is blank, the buttons LED comes on when pressed, off when released, and the same script will be fired the next time that button is pressed.

When a control is adjusted on the console, the resulting control ID and value is shown in the relevant boxes in the panel.

To assign the function to the Macro, position the cursor in the **ON** or **OFF** box according to which position of the Macro button you require to fire the function. This can then be copied to the Macro script by pressing the **Copy To Script** Button.

If you require multiple functions on one button, repeat the above procedure for the other controls.





If you require the Macro to include functions other than standard controllers, then the following messages can be manually typed into the message boxes.

Note: Anything after a semi-colon on each line is ignored, as are any commands which are not understood

Macro Commands

n1.n2.n3.n4 = value

Four 1 byte numbers (0 to 255) separated by dots identifies a unique controller on the console.

See the GPI Scripts section in DS-00Setup.rtf for a table of numbers.

Value is 0 to 255 for faders and rotaries, 0 (off) or 255 (on) for switches.

Snapshot = *n.nn* **or**
Cue = *n.nn*

The snapshot numbered *n.nn* (eg. 1.00 is usually the first) in the current snapshot list is fired, if it exists. PREV and NEXT are not recognised in Macros, since separate buttons exist on the master worksurface.

MIDI = *nn*

The MIDI Patch number *nn* in the current MIDI Patches list is fired if it exists.

Load = *string*

The Load Session command is invoked to load the session file named in *string*.

Save = *string*

The Save Session command is invoked to save the session in a file named in *string*.

Shutdown

The Shutdown command is invoked from the System Menu, bypassing the confirm stage, to terminate the console software and operating system. The system will be powered off if an ATX supply is present.

Relay *nn* = ON or OFF

If one or more relay (GPO) cards are fitted, this switches the external relay on or off. *nn* is the relay number, 1 to 16 for the first card, 17 to 32 for the next, etc.

Bank *nn* = *cc*

This assigns a block of eight input channels to one of the fader banks on the surface. *nn* is the bank number (1 to 6 on the first surface, 7 to12 on the second, etc) and *cc* is any channel number within a block of eight, ie. 1 to 8 means the first eight channels, 9 to 16 means the next eight, etc. It is not possible for a bank to start on anything but an eight-channel boundary, ie. 1, 9, 17, etc.

4.9 Transport Controls and Timecode

The console's Transport controls allow you to control a recording or playback device directly from the worksurface. The exact use of these controls depends on your studio installation, but the console supports a wide variety of transport and timecode options.

4.9.1 Transport Controls & Locate Points .....

If the console is configured to output **Machine Control** signals, the Transport buttons can be used to control one or more external devices. You can also store a Zero position, and any number of Locate Points, each assignable to one of four locate buttons on the worksurface. Once you have stored Zero or Locate points, you can move to them simply by pressing the relevant button.

Reverse Play

If you are using 9-Pin Machine control, holding the play button and pressing rewind will allow play in reverse.

Deferred Play

If the transport is locating a point and the play button is pressed, play will not occur until the locate point is reached.

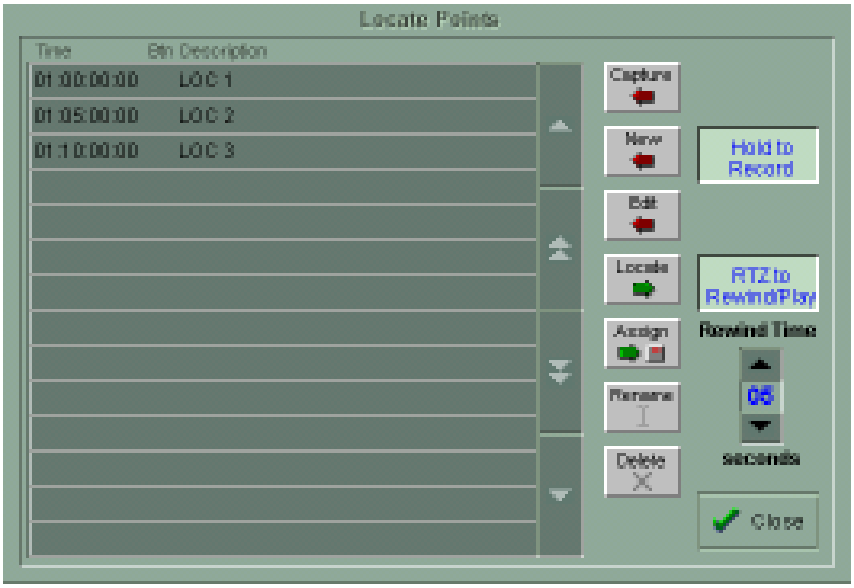
Storing a Locate or Zero Point

To store a particular point in the Timecode as a Locate or Zero point, run the timecode until the display shows the point you want to store, then hold down the Record transport button and press one of the Locate or Zero buttons.

Alternatively, if the **Hold To Record** button in the Locate Points panel is pressed, simply holding one of the Locate buttons for 2 seconds will store the position when the button was first pressed.

Locate Points Button

An alternative method of storing and locating timecode positions is to touch the **Locate Points** button in the **Automation** menu which will show the following display. Any locate points which have been stored using the above method will already appear on the screen but new points can also be stored directly onto the list.



To store a new locate point, run the timecode to the point you want to store, touch the **Capture** button and type a name in the highlighted entry.

Alternatively, touch the **New** button and a panel will appear which allows you to touch a number and type a value or increase and decrease values with up and down arrows.

Touching one of the listed locate points followed by the **Locate** button will locate that point.

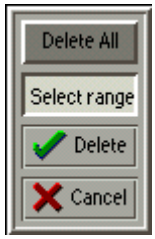
Existing locate points can be changed by touching the **Edit** button and entering new data.

The locate points which appear on the list can be assigned to any of the five worksurface locator buttons by touching the required point on the list, touching the **Assign** button and then pressing the required locate button on the worksurface. All current assignments are displayed next to the time in the locate point list.

You can also **Rename** entries in the usual way.

Pressing the **Delete** button will open a small panel which allows a selected range or all locator points to be deleted.

Press **Select Range,** choose the relevant locators from the list and then press delete or press **Delete All** and then delete.



If the **RTZ To Rewind/Play** is pressed the RTZ button on the console worksurface switches from being an ordinary locate to rewinding a number of seconds and then playing.

The rewind time can be set between 1 and 99 seconds.

Transport Control Tally

When you are controlling external machines, and you press a Locate or Transport button, the button will begin flashing. It continues flashing until the console receives confirmation back from the controlled device that it has successfully executed the command - this confirmation message is called a **Tally**. The Sony 9-pin control protocol supports specific Tally signals, but if you are using MIDI Machine Control, and reading timecode from the target machine, the Tally status is derived by reading the timecode which is arriving from the device.

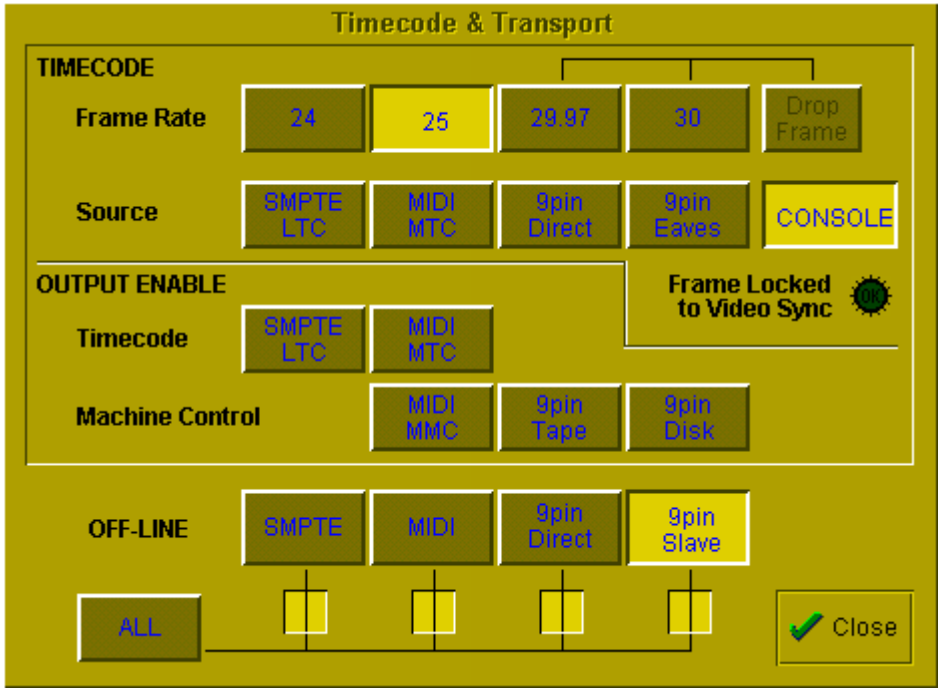
Tallies are particularly important with tape-based recorders, where it can take a considerable time for the machine to reach a particular Locate point.

Loop

To create a loop, hold the loop button down and then press the two locate buttons for the required start and end of the loop.

4.9.2 Transport / Timecode Configuration Panel .....

You can display this panel by touching the Transport & Timecode button on the **Setup Menu**:



Frame Rate

This must be set up for the frame rate used by your other studio 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 studio, 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 installation manual for details). The option is provided for studios 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's Transport buttons only send Control signals if you have enabled a Machine Control output. This can be MIDI Machine Control (MMC) and/or 9-pin Direct. 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 when using the Jog and Shuttle controls, to prevent external machines trying to chase the console timecode.

Each Off-line Option also has its own switch so that it can be removed from the **ALL** function - touch the switch icon below the item and an open switch will appear to indicate that the item is no longer included.

Shuttle and Jog

The Shuttle and Jog wheel can be used to move forwards or backwards through timecode positions and if timecode output has been enabled, these changes in the timecode position will be sent to external machines.

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 console is acting as a slave this will improve the accuracy of the automation. If the lock is operating, the green indicator on the panel lights up to indicate this.

4.9.3 Track Arming .....

If you are using the Sony 9 Pin protocol, the control of the status of tracks on recorders can be associated with the outputs which feed those tracks.

The arming of tracks can be controlled by:

1) An input channel with a direct output routed to a socket which has a track number defined for it

2) An output channel (Aux or Buss Group/Stem) which is routed to a socket which has a track number defined for it

To define track numbers for sockets, add the following message to an output socket definition in the **Sockets File**:

, TrackArm ##

Where ## is the track number (1 - 48)

Then ensure that Machine Control Output Enable: 9-Pin Direct is selected in the Timecode & Transport panel. If it is not enabled the Master Arm button will not function.

When Track Arming has been correctly configured proceed as follows:

1) Press the Master Track Arm button on the console worksurface.

2) Use the Channel Automation Record button as a Track Arming button for the channel whose Direct Output is connected to the required recorder track.

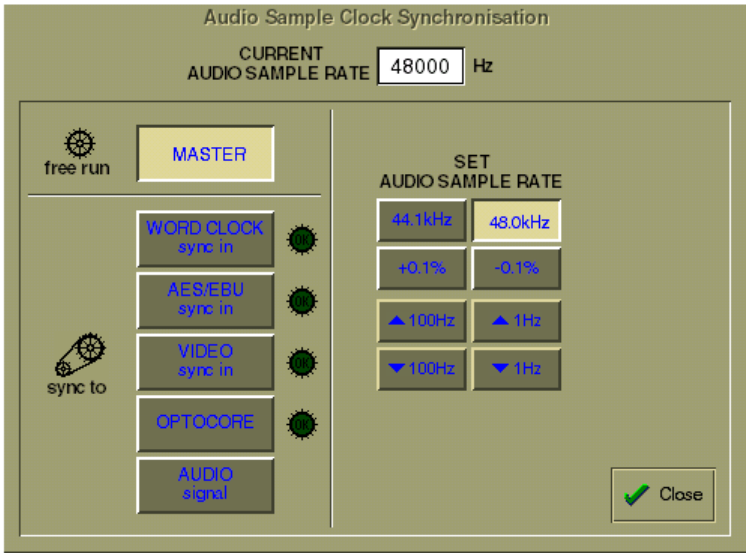
or Use the Group Automation Record button as a Track Arming button for the output channel which is connected to the required recorder track.

Please Note: Automation record buttons on channels which are not configured for Track Arming will continue to function in the normal way when Master Track Arm is pressed.

4.10 Audio Synchronisation

To ensure glitch-free audio, digital signals must be correctly synchronised using a "Word Clock" or "Digital Sync". The DS-00 console can act as Master, generating the word clock for other digital units in the studio, 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, SP-DIF 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:



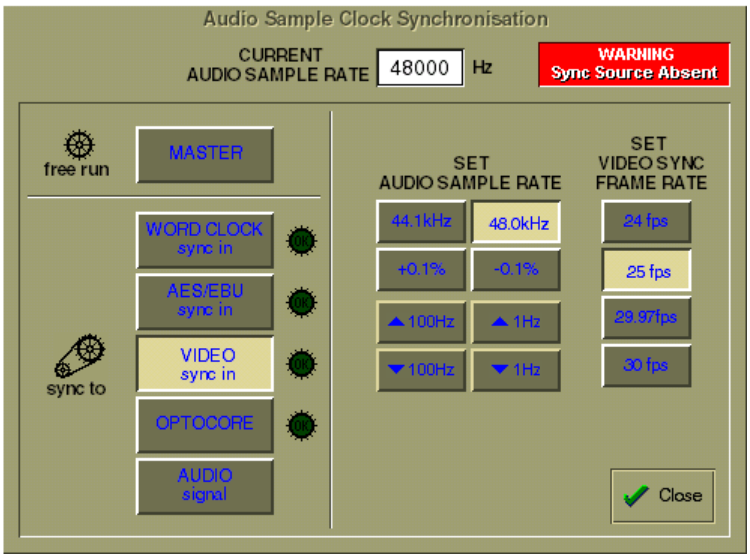
4.10.1 Internal Sync - Console As Master .....

If you choose to use the console as the master sync source for the studio, 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.

4.10.2 External Sync .....

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.



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.

Optocore

If your console is connected to your DiGiRack using an optocore connection, the optocore option must be selected and the sample rate set to 48KHz.

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.

4.10.3 Sync Outputs .....

All digital audio signals have their own inherent sync, but there are also Word Clock outputs on the Rack Unit(s) and on the console rear panel. You can use any of these to sync external digital equipment to the console.

4.10.4 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 studio.

Sample Rate Convertors

The AES/EBU Rack Modules are equipped with Sample Rate Convertors. This allows 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. The TDIF and ADAT digital inputs do not have sample-rate convertors, so to synchronise correctly with equipment connected to these sockets, you must either choose the socket as the master sync source for the console, or make sure that the unit itself is synchronised to a master video or word clock which is also connected to the relevant input on the console rear panel, and selected as the console sync source.

Chapter 5
Automation

5.1 Real Time Automation

DS-00's automation system can record and play back the movements of most of the console's channel or buss controls.

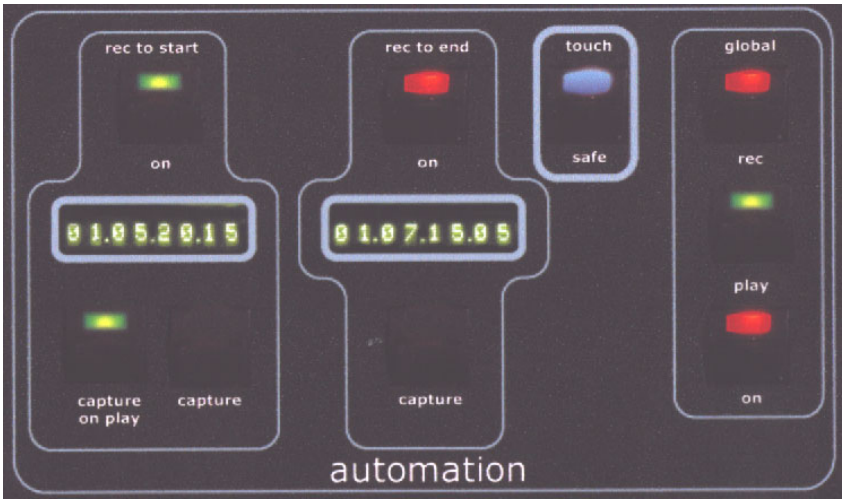
Real Time Automation operates while timecode is running, and allows you to record the adjustments you make while listening to the audio. Note that this depends on the presence of timecode, so if you are not using the console as your timecode source, you must ensure that it is properly synchronised with your recording and/or sequencing units, before you can use automation.

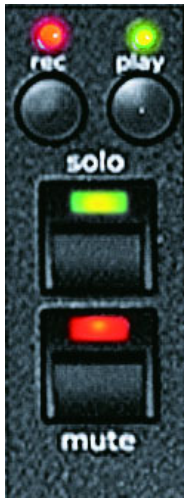
You can also use the special on-screen editor, which displays the adjustments (or "events") which you made in Real Time, and lets you edit the effect and the timing of each event. When automating a mixdown, you would normally begin by making a "first pass" in Real Time. You can then edit the result of 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 5.2.

Real Time Automation Modes

The Global Automation Buttons allow you to change the mode of all the console's controls together. You can choose how the automation system operates for each channel using the Automation Mode Record and Play buttons, above the channel faders. In addition the Automation Editor provides buttons to change the mode of each control on a channel.





The Record and Play lights 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

5.1.2 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 Snapshot.

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.

5.1.3 Record Mode .....

When a channel's Record LED is lit and its Play LED 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 5.1.5)** 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.

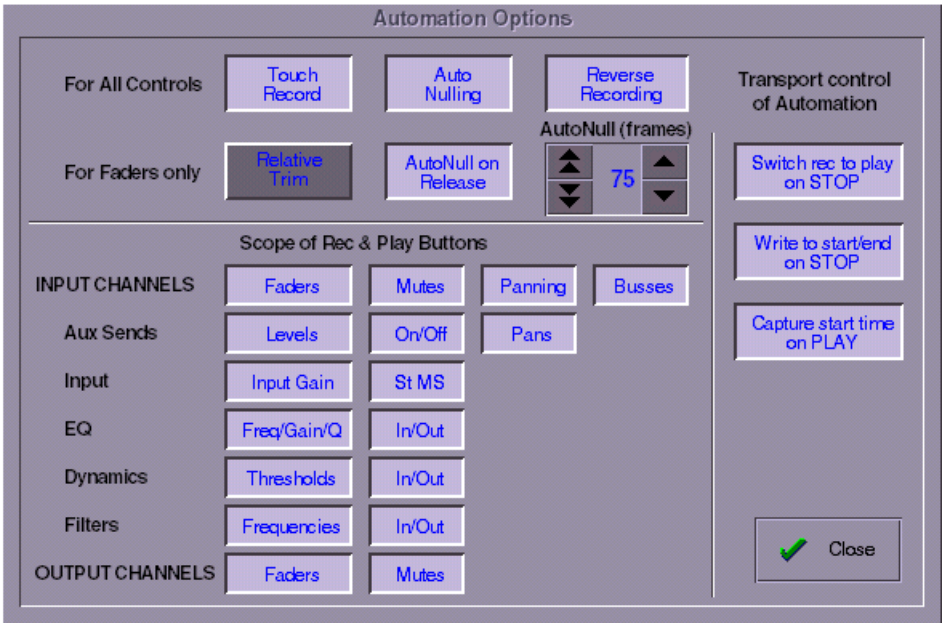
5.1.4 Play (Update) Mode .....

When a channel's Play LED is lit and its Record LED 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.

5.1.5 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 5.2.10 - 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 5.2.10 - 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 5.2.10 - 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 5.1.6), 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 LED stays lit, but the Record LED 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 LED is lit, touch the fader and the Record LED 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.

5.1.6 Safe Mode .....

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 5.2.5.

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 snapshots. This status is saved with the session. See **Snapshot Automation** for more information about combining snapshot and dynamic automation.

5.1.7 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.

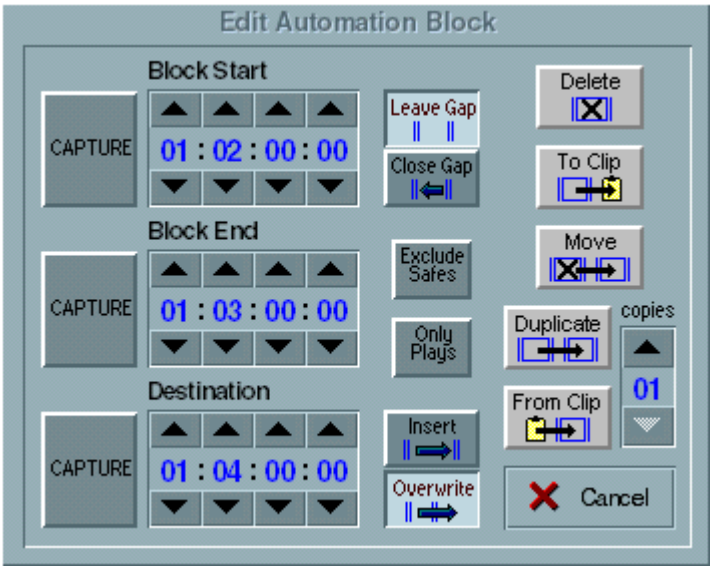
Touch the **"+"** button to move the mix forwards and the **"-"** button to move it backwards.

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.

5.1.8 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.

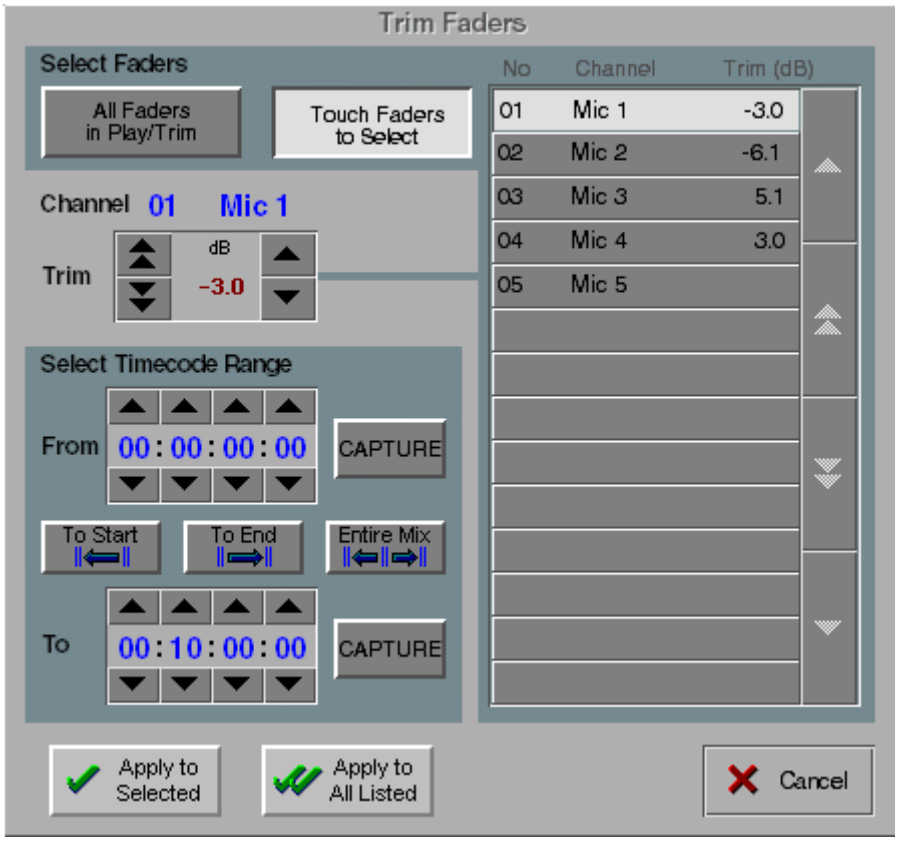
Select **Insert** or **Overwrite** as appropriate.

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

Touch the **From Clip** button.

5.1.9 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.

5.1.10 Snapshot Automation .....

The snapshots 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 snapshots see section **4.6.**

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

1) By firing the Snapshot 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 Snapshots into Isolate.

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

The first method does not automate the snapshot 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 Snapshots

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

To record the firing of a snapshot at a certain time, touch the Record button in the Snapshots panel, run the timecode and press the snapshots buttons. The snapshots will be replayed at the same timecode, and the labels for the snapshots will be inserted in the Snapshot line at the top of the Automation Editor. (See section **5.2 for more information about the Automation Editor.)**

Snapshot Update Mode

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

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

To edit the timing of snapshots, use the timeline (**see 5.2 Automation Editor**).

Combining Snapshots and Dynamic Automation

You will have noticed that the Snapshot Mode buttons and the channel mode buttons are completely independent - changing either does not affect the other. Even pressing the global automation buttons in the Master section of the console will not affect snapshots.

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 Snapshot and dynamic automation - here are a few examples:

Snapshot only - all channels in Isolate and snapshots in Play or Update.

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

All Channel Controls and Snapshots in Play:

Any control which is dynamically automated is automatically locked out from the snapshots. This means that when a snapshot fires, a fader in play will not move to the position which was stored for it in the snapshot 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, Snapshots Isolated:

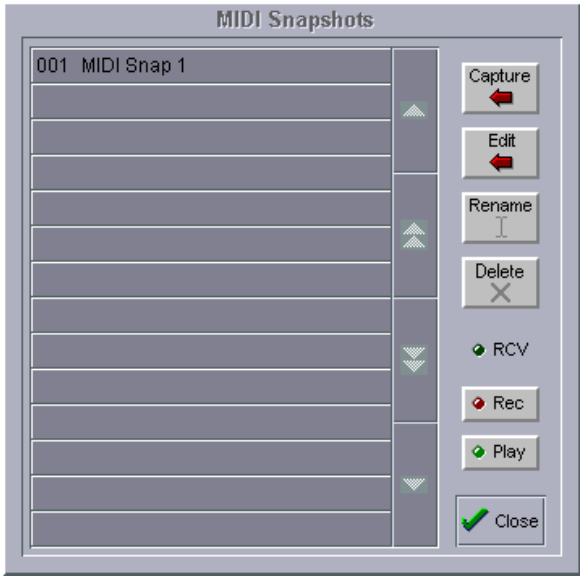
Faders will move dynamically as normal but ignore snapshots. Manually pressing snapshots will make and store changes to the EQ controls.

Channel Controls in Record, Snapshots Isolated: Firing a snapshot will reset all controls *including* dynamically automated controls. The result is that the "contents" of the snapshot 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.

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 snapshot. Even a single band of a particular EQ section could be taken out of dynamic automation and put under snapshot control. The only restriction is that controls are not automatically switched from dynamic to snapshot 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 snapshot to an EQ which is basically dynamically automated this is still possible using the **Channel Controls in Record, Snapshots isolated** combination described above.

5.1.11 MIDI Snapshots .....

Touching the **MIDI Snapshots** button in the **Automation** menu opens the MIDI Snapshots panel which allows any MIDI program change or controller change message to be recorded and played back manually or against timecode.



This panel is implemented just like existing ("controller") snapshots.

MIDI is received and transmitted via the timecode card. An indicator on the MIDI panel shows when any MIDI data is being received.

When the **Capture** button is pressed a text panel is displayed and any incoming MIDI controller or program change information is recorded.

The captured text may be edited or new text entered from scratch by touching the **Edit** button and typing. This text is then compiled into the required stream of MIDI data when OK is pressed. Errors are reported at this stage.

The correct format for the messages is as follows:

Program Change

A 2 digit MIDI Channel number between 1 and 16
P to indicate Program Change
A program number between 0 and 127

eg. 01 P 127

Control Change

A 2 digit MIDI Channel number between 1 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. 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 snapshot name on the button label, but this may be edited.

When not capturing, editing, renaming or deleting, the snapshot buttons will output the stored MIDI data when pressed.

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

In the **Automation Editor** the strip beneath controller snapshots will display recorded MIDI snapshot events.

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

MIDI snapshots 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.

5.1.12 Control Groups and Automation .....

Control Groups have their own automation controls and these operate by passing mode changes on to individual channels. Therefore, pressing a control group's Record button will put all the channels in that group into record mode.

Fader Movement

Although Control Group faders have their own automation Record and Play buttons, the movements of Control Group faders are not stored as Group events by the automation system. Instead, the separate movements of all the channel faders connected to that Group are stored. This also means that they appear in the Automation Editor section as individual channel fader movements on all connected channels, so that the movements for each channel can be edited separately.

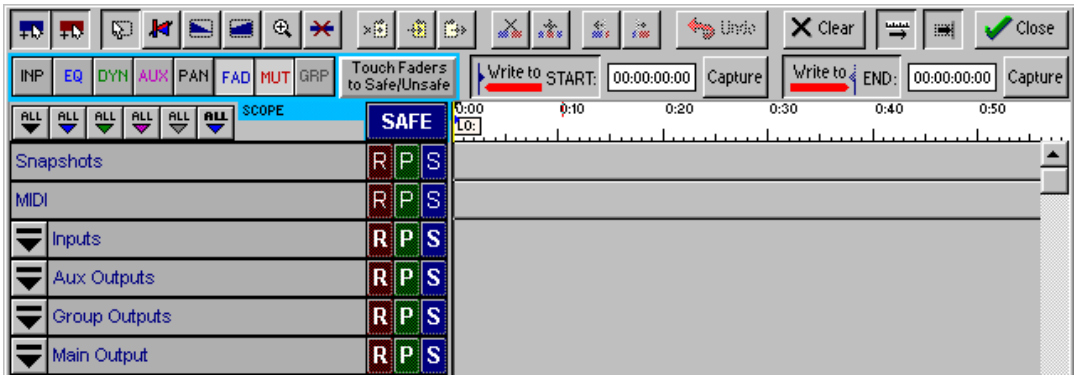
Record and Play Buttons

The Control Group Record and Play buttons operate the corresponding Record and Play buttons on all the channels connected to the Group. Pressing Record or Play on a Control Group puts all the connected channels into that mode.

If the members of the Control Group are in different automation modes because they have been changed on the channels themselves, the Control Group record and play buttons will override their previous settings and force them into the mode selected with the Control Group master.

5.2 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.

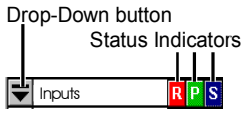


The Automation Editor initially shows a line for each section of the console's automation.

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

5.2.1 Channel Display .....

The channels themselves are listed according to their type at the left side of the screen - initially there are entries for the Snapshots, Inputs, Auxiliary, Group and Main 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 Record and Play behave in exactly the same way as the corresponding lights and buttons on the channels. The third button is used to select Safe Mode - see **Safe Mode**, section 5.1.6.

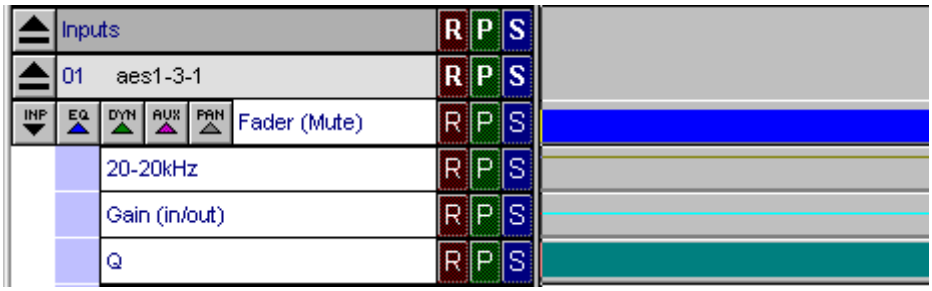
Channel Control Drop-Down Buttons

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 

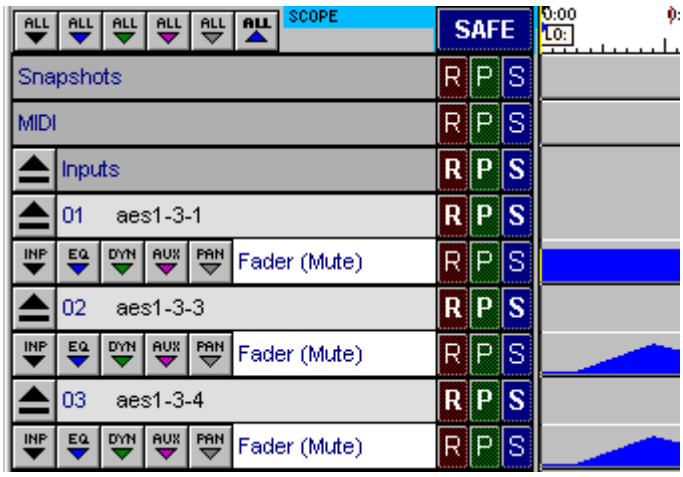
and then the 

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.



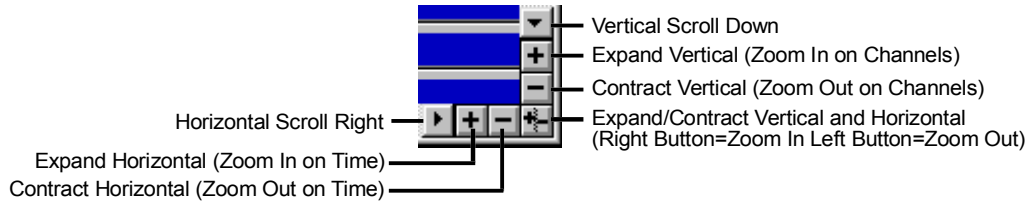
The other buttons perform the same function on the other sections but their effect will not be visible unless the channel's fader and mute view is already open. The effect of the button will, however, be visible if the channel view is expanded subsequently.

Scroll Automation View on Touch

Buttons in the **Assignment Options** panel (See Section 4.2.10) force the Automation Editor to scroll vertically in response to a fader touch or solo press so that the fader and mute strip is displayed as near the centre of the editor as possible. This function will only work if the channels automation section is in expanded view. For example, touching a fader in the Input section will only scroll the display to the relevant channel if the Inputs are visible on the display at that time.

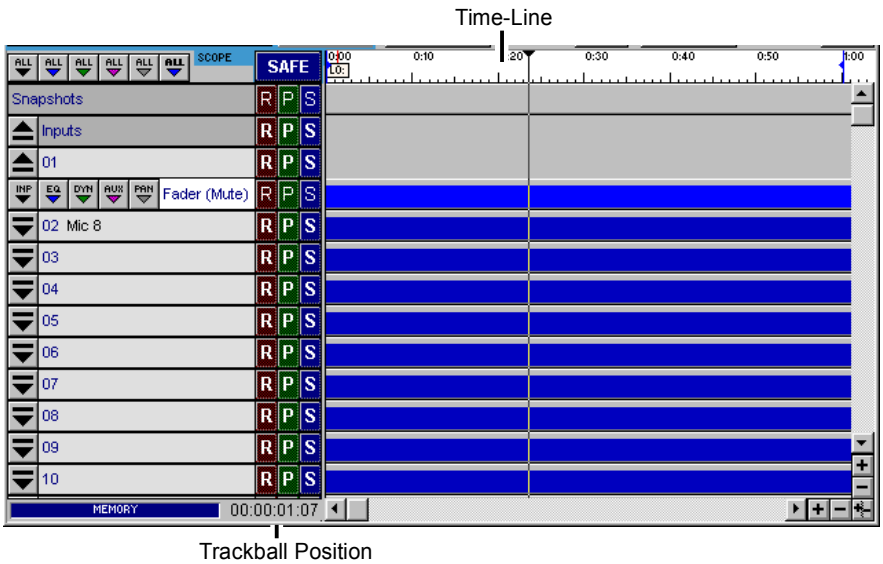
5.2.2 Scaling the Automation Editor Display .....

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:



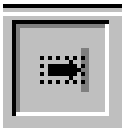
5.2.3 The Time-Line .....

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.



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.



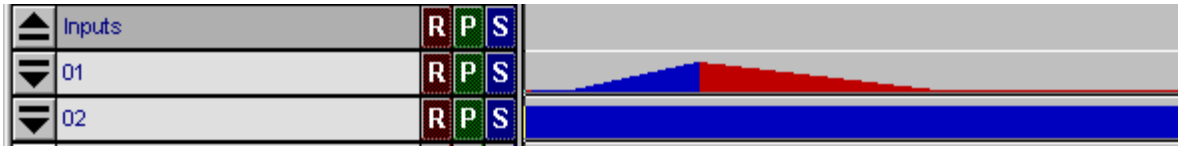
Following the Timecode: the Follow Button

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.

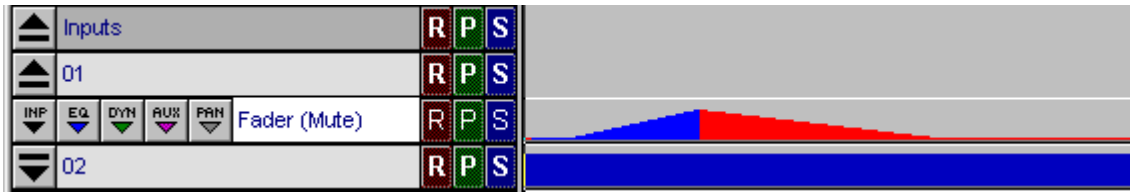
5.2.4 Event Display .....

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 5.1), 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.



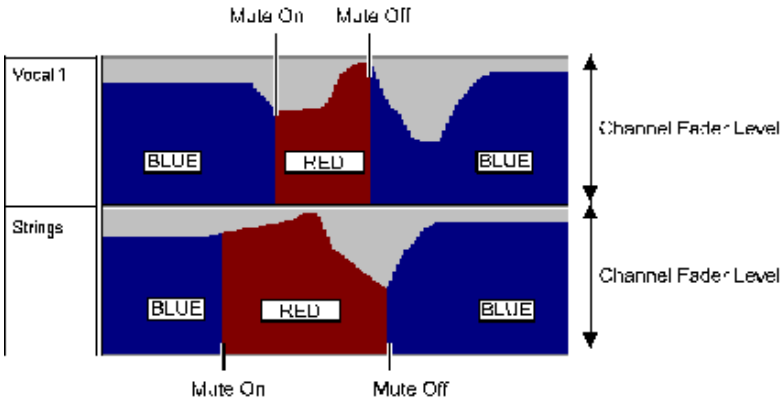
To edit individual types of event the view must be expanded to show the relevant events by touching the down arrow next to the channel number.



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:



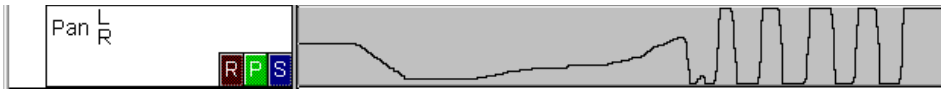
Areas which are coloured red are Muted, and areas which are coloured blue are un-Muted. Each change in the height of the blue/red area represents a fader movement.

Input Gain Events

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

Stereo Panning Events

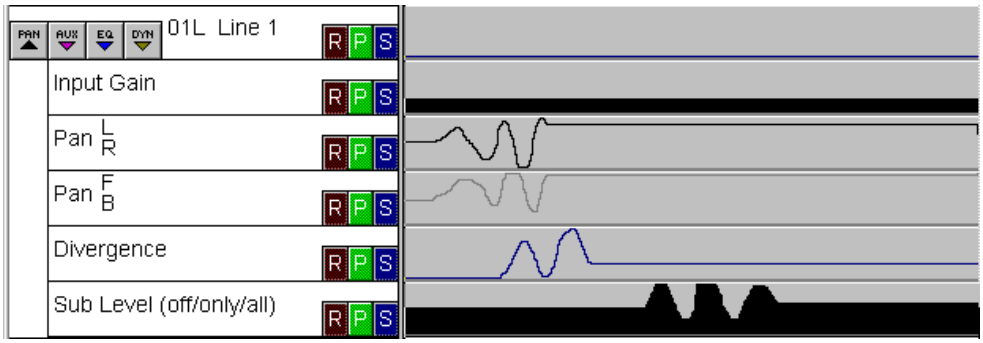
Pan is shown as follows:



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)

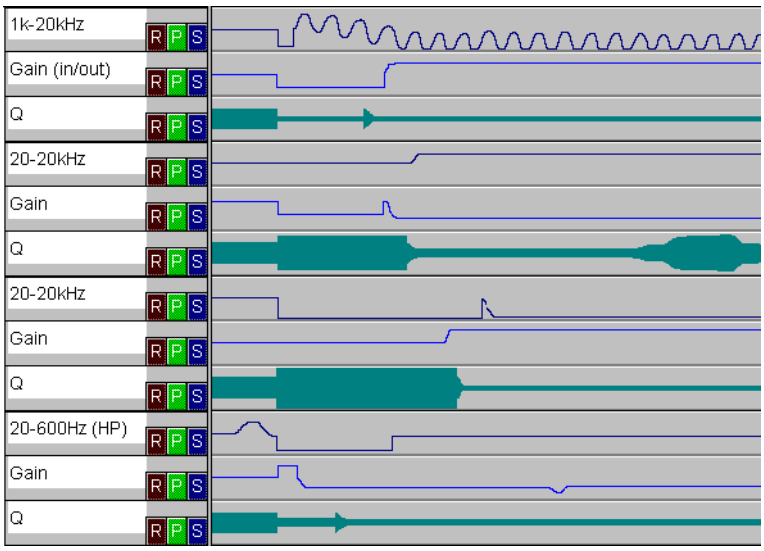
Bright magenta = All on (LCRSSB on)

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:

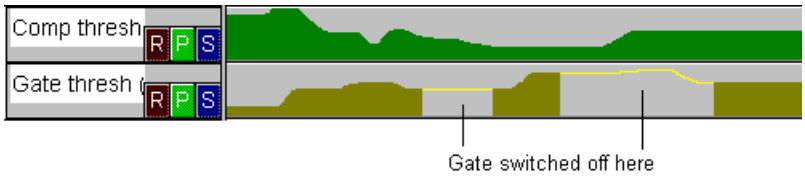


The frequency range of each band is indicated. The Gain of the HF is followed by the words **in/out**. This line indicates the automation of the entire EQ circuit being switched in and out. Note that for some filter curve types, the gain and Q data lines will have no effect. They are stored nevertheless, 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

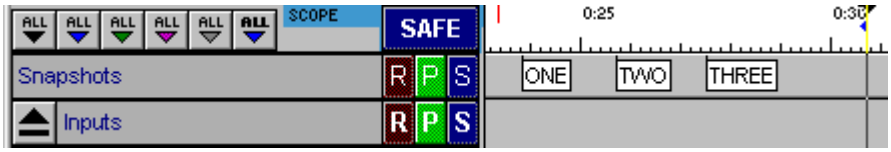
Only the threshold and on/off events for the compressor and gates are automatable.



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

Snapshot Events

Snapshots 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 Snapshot 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.

5.2.5 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 and they will have the same effect as the channel buttons. You will also see them respond as you change the status of the controls in the usual method, by touching or by pressing the channel Rec and Play buttons. 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, either by touching or by initiating global commands,

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.

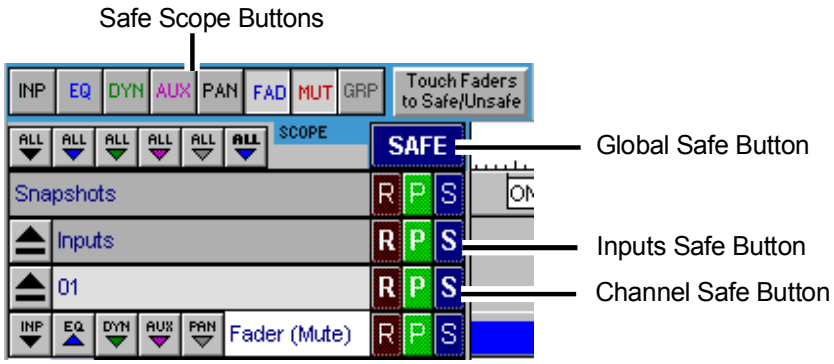
You can use this facility when editing. If you need to affect a group of channels except one or two, place them in Safe mode and use the drag-select tools to select everything around them.

Safe mode is also useful when you are combining dynamic automation of some controls with snapshot automation. For more information about using Safe mode with dynamic automation and with snapshots, see section 5.1.6.

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.

Global Safe



Above the column of Rec/Play/Safe switches there is a **Global Safe** button. Pressing this will make all the controllers on all the console channels safe if they are included in the **Safe Scope**.

The safe button next to each console section name (eg Inputs) will perform a similar function on the controllers and channels in that section.

The safe button next to the channel label (eg 01) will make all the controllers in one channel safe.

As well as switching the safe status of all the controllers in the safe scope, these global, section or channel buttons indicate whether none (dark), some (dim), or all (bright) of the controllers in the safe scope are safe. In addition, the text on the button will appear blue rather than black or white if any controller is safe but not in the safe scope.

These colours are also used on fader/mute safe buttons when the fader and mute safe states or scope states are different.

Colour coding for Global Safe buttons

If only controllers in Safe Scope are Safe

None Safe	-	White text on dark blue background
Some Safe	-	White text on mid blue background
All Safe	-	Black text on bright blue background

If some controllers are Safe but not in Safe Scope

None Safe	-	Blue text on dark blue background
Some Safe	-	Blue text on mid blue background
All Safe	-	Blue text on bright blue background

Pressing the **Touch Faders to Safe/Unsafe** button allows a whole channel to be switched safe or not by touching the channel fader. This is equivalent to pressing the safe button on an unexpanded channel strip and is subject to the safe scope.

This function may also be accessed from the worksurface automation controls:

5.2.6 Selecting and Editing Events .....

The events displayed in the Automation Editor can be selected and manipulated using the Tool buttons at the top left of the Editor section:

Channel and Fader Strips

The default view of a channel strip in the Automation Editor contains only one view button, the channel number, title, Rec/Play/Safe switches, and the fader and mute automation display. Selection of events on this strip will include all recorded events for the channel, not just the displayed fader and mute. This makes it easy to copy or move a segment of automation for a whole channel.

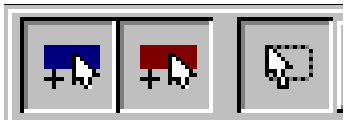
The Rec/Play/Safe switches on this strip also apply to the whole channel. The Rec & Play switches corresponding to the worksurface switches beside the channel faders.

If you wish to edit events for individual controllers within one channel, press the **View** button to show the strips for fader and mute, EQ etc as appropriate.

Selected events may be dragged vertically to copy or move them onto other controllers or channels. If both source and destination strips are in the default channel view state, all events for the channel will be copied or moved. If either are in a more expanded state, showing individual controllers, only displayed automation is copied or moved.

5.2.7 The Selection Tools .....

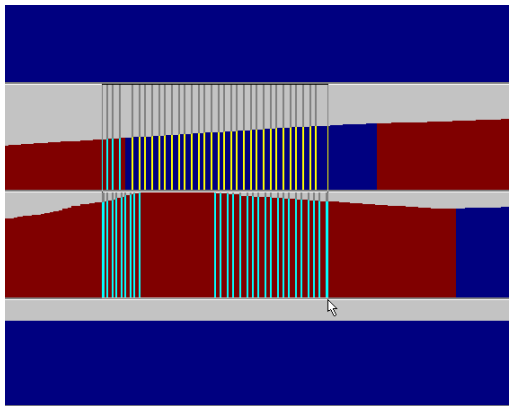
These tools are used to select Events.



Selection Tool

To select a single event, click on the Selection tool, then on the Event. To select a group of events, move the selector tool pointer to one corner of the range you want to select, then hold down the left button and drag the pointer to the opposite corner.

The red and blue buttons next to the selection tool are toggles which control the way the Selector tool operates. Once you have clicked the Selector tool button, you can choose whether to select only Switch events, or Level events, or both, by clicking these buttons.



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:

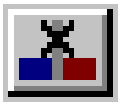
- Channel Mute
- Output Channel Mute
- MS Decode On/Off
- Aux On/Off
- Filter In/out
- EQ in/out
- Gate In/out
- Compressor In/Out
- Sub Mode

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

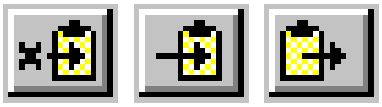
5.2.8 The Editing Tools .....

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.



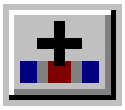
Delete

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

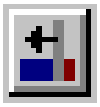
These buttons use the *Clipboard* for temporary storage of events. The **Cut** button deletes the selected events from the mix, but stores a copy on the Clipboard. The **Copy** button leaves the selected events in place, but stores a copy of them on the Clipboard. The **Paste** button inserts a copy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



Duplicate

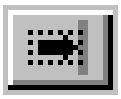
This button simply creates a duplicate of the selected group of events, in the same position as the original group, and selects the duplicate set. You can then drag this group of events to any position you wish.

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

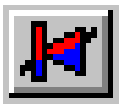
This button is a toggle, and it allows you to use the Timeline for precise positioning of selected events. If you are positioning a selected group of events, switching on the Snap button allows you to align the left or right edge of the selected group precisely with the Timeline, just by moving the selection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

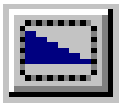
5.2.9 The Event Tools .....

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



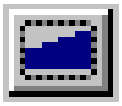
Insert Switches

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.



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 **5.2.2 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.

5.2.10 Write to Start and Write to End .....

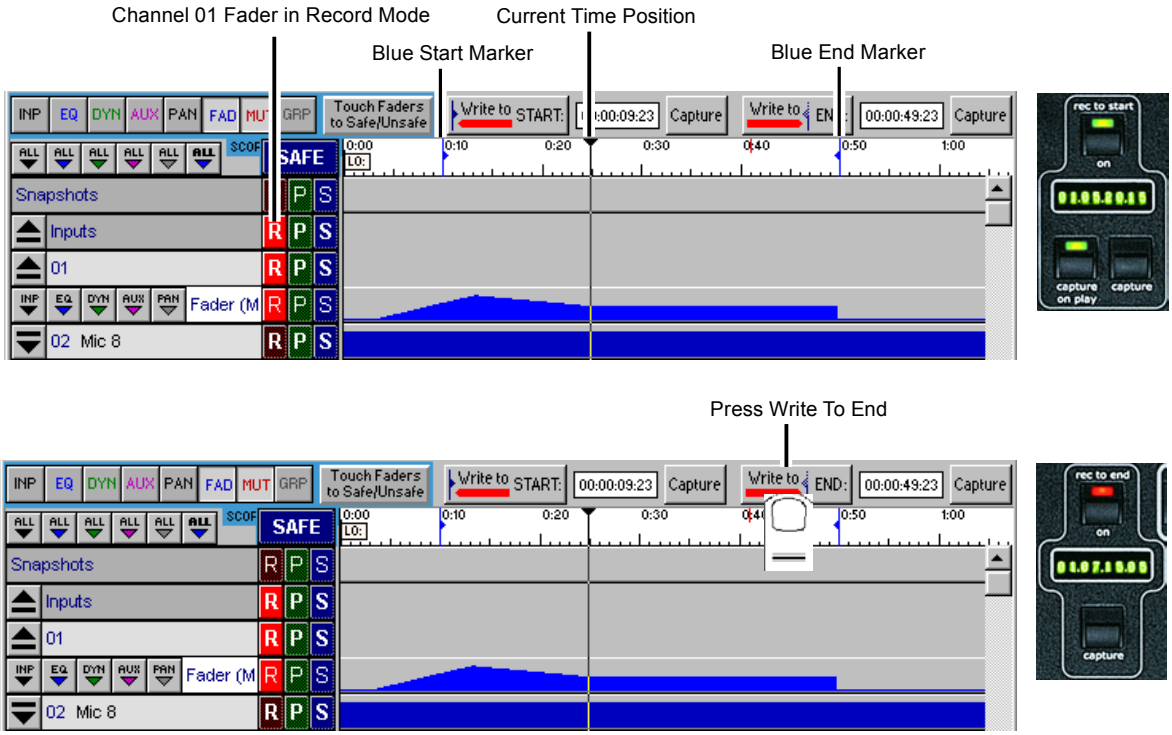
In the timeline there are two blue lines which represent **Write to Start** and **Write to End** markers. Automation can be written from the current time to either of these markers. The markers may be set by pressing **Capture** when the current time is at the desired point.

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.

NOTE: The Write to Start, Write to End, Capture Start Time and Capture End Time buttons are also accessible from the console worksurface in the Automation controls section.



Chapter 6
Options

6.1 Effects

If The Effects are not active, touch **Setup / Service / Configure Hardware** button to open the DiGiConfig program, select the console that you want to configure by pressing the relevant **This** 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 - each FX module can be made **Safe** from **Snapshots** by pressing the on screen Safe button in the relevant FX parameters panel.

FX1 is always a stereo reverb unit and is the only one that can use the top line of reverb presets.

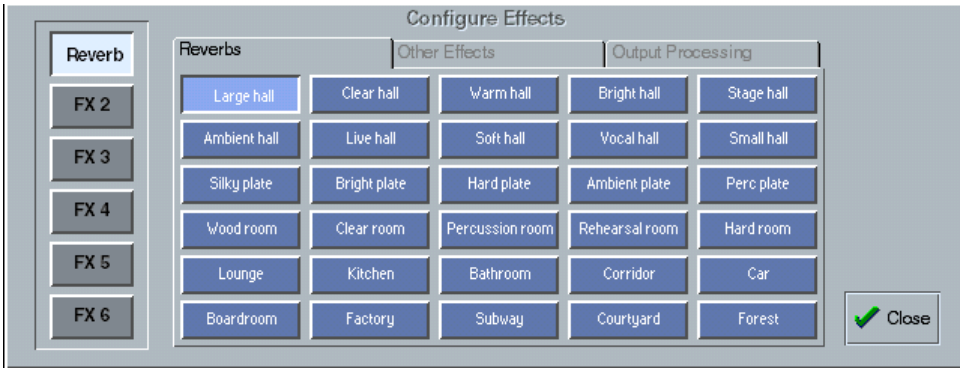
FX2, 3 and 4 can be configured as reverbs or any of a selection of other effects.

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.

Note: Only one Delay preset can be used between the 6 FX slots. For example, if a delay effect is selected for FX2 then all delay presets will become unavailable for the other FX slots.

6.1.1 Selecting Effects .....

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



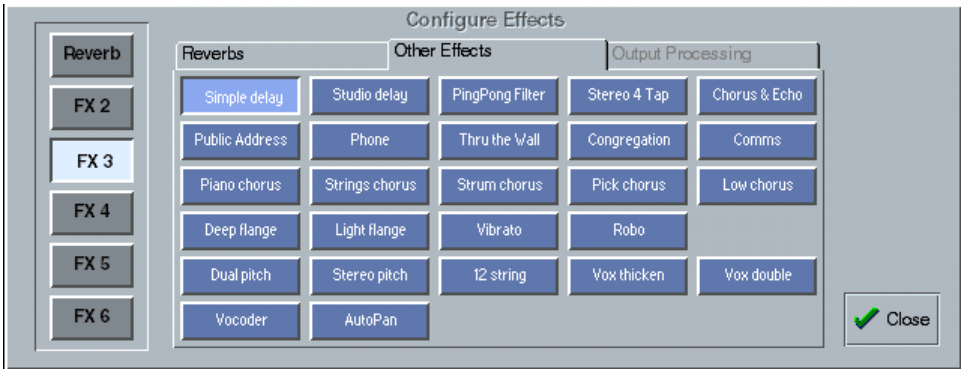
Touch one of the buttons on the left to select an effects module and assign an effect to it by selecting from the grid of buttons labelled with the effect names.

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)

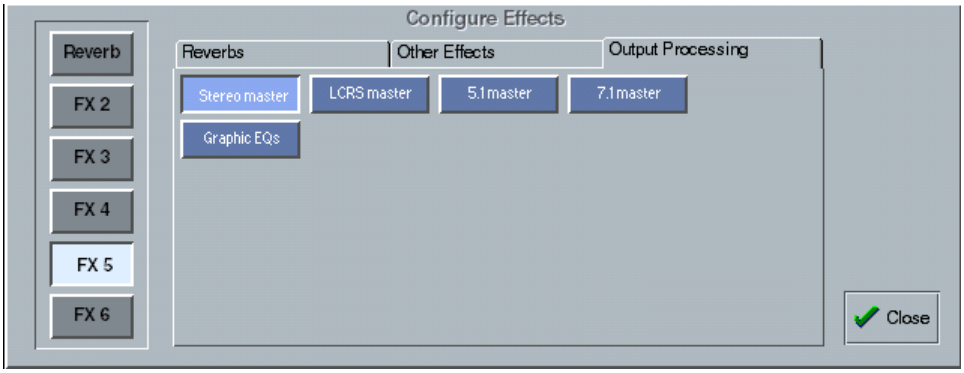
Selection for modules 2, 3 and 4 can be made from a similar list of reverb effects but by selecting the tab labelled Other Effects there are further choices including delay, chorus flange and pitch shifters.



Output Processing (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 select Graphic EQ.

The output options are Stereo, LCRS, 5.1 or 7.1.

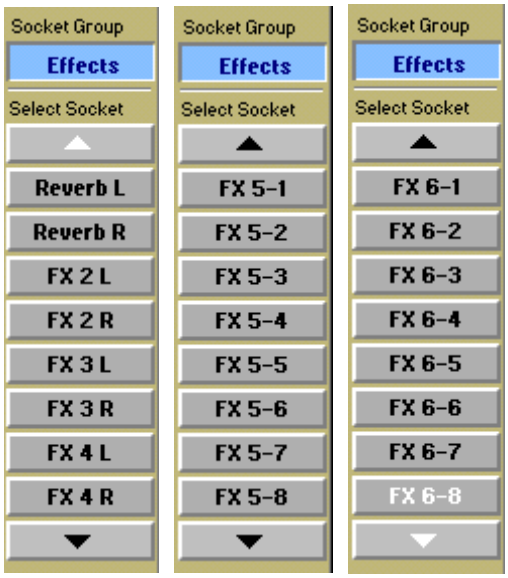


Output Processing consists of input and output gain, 3 band compression and limiting and 4 band EQ for each channel.

Graphic EQ consists of 6 channels, each with 28 bands and an input trim control.

6.1.2 Effects and Routing .....

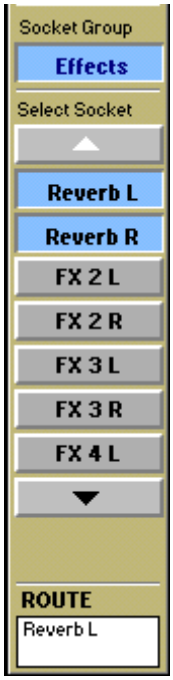
Signals can be routed to the effects modules from Direct Outputs, Insert Sends, Auxiliary Outputs and Group Outputs. An output routing Socket Group named Effects which contains the list of all the effects modules' inputs appears in the output socket routing panel.
In a similar way, the returns from the effects modules appear in a signal group named Effects in the input socket routing panel.



This group contains left and Right sockets for FX 1 to 4 and 8 sockets each for FX5 and FX6. Therefore FX5 and FX6 can be used for output processing on stereo or surround busses.
When using Graphic EQ on FX5 or FX6, FX5-1 to FX5-6 and FX 6-1 to FX 6-6 can be used as 12 separate mono EQ's or 6 stereo EQ's.

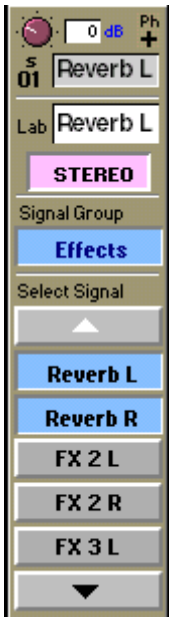
6.1.3 Effects and Auxiliaries .....

Touch the relevant auxiliary bus on the Master Screen to open it and then touch the Routing box beneath the meter to show the output socket routing.
Select the effects socket group and then the output which you require eg Reverb L
Note: If the auxiliary is stereo, selecting Reverb L will automatically route the left and right signals to Reverb L and Reverb R.



To Effects

The output of the Reverb module must then be monitored in a channel by opening the input routing screen, selecting the Effects signal group and then selecting Reverb L from the signal list. Touch the **Stereo** button to monitor Reverb L and Reverb R in the same channel.



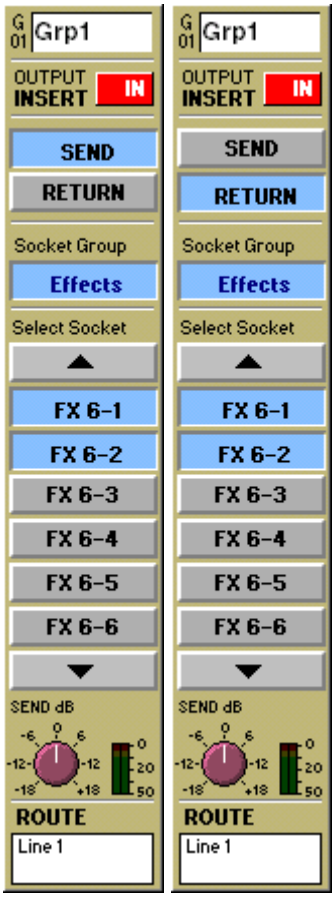
From Effects

6.1.4 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.

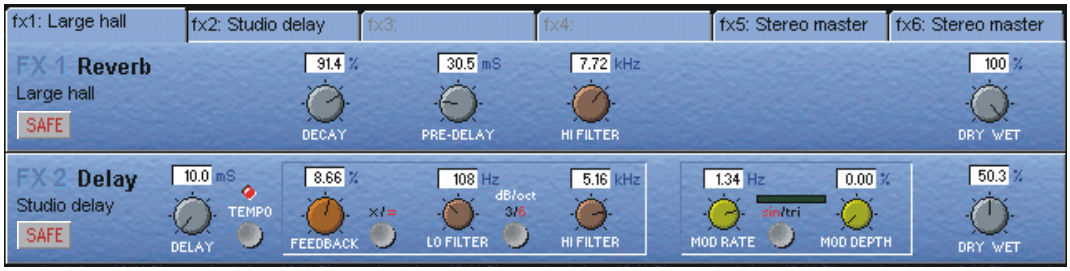
Touch the **Send** button and select the input to the required effects module, then touch the **Return** button and select the output from the same module. Then touch the **Output Insert** button to switch it on.



6.2 Effects Control

5.2.1 Effects Parameters .....

Touching the **Effects** button in the Master Screen opens the following panel:



Touch the tabs at the top of the panel to select the effect that you wish to adjust. Normally, two effects modules are shown in the panel but the output processing module uses the whole panel on its own.

If the name on the tab is greyed out, an effect type has not yet been assigned **(See 5.1.1 - Selecting effects)**.

The effects parameters available will differ according to the type of effect chosen.

To adjust a parameter touch the on screen control that you wish to change and use the **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.

5.2.2 Output Processing Parameters .....

If you are using FX5 or FX6 as output processing modules the appearance of the Effects Control panel will depend on the size of the master that you have selected eg. Stereo, LCRS or 5.1

Stereo Master

Successive presses of the button in the lower left corner shows each of 3 sets of controls but the **Trim** and **In/Out** controls are global and appear on all of the panels.

Input Normalising

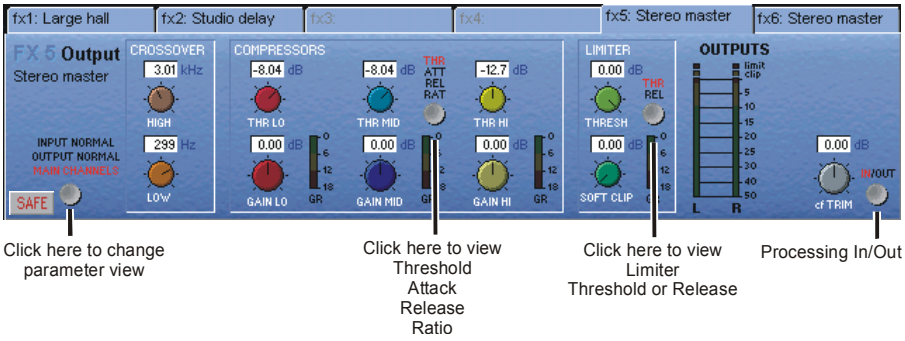
Provides Input **Gain** and **Phase** controls for the left and right signals.

Output Normalising

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

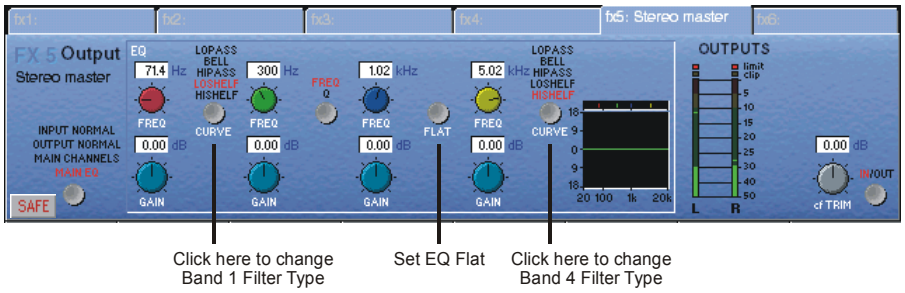
Main Channels Dynamics

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



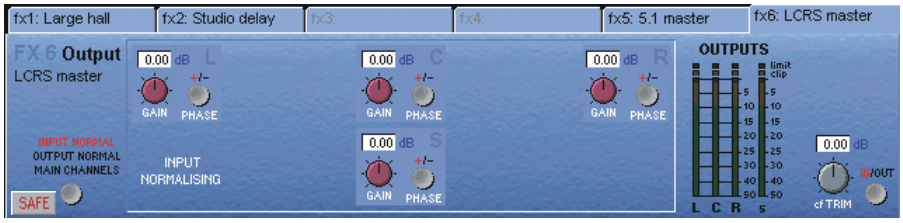
Main EQ

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



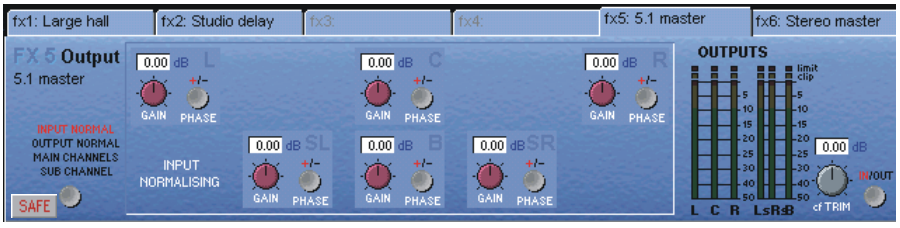
LCRS Master

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.



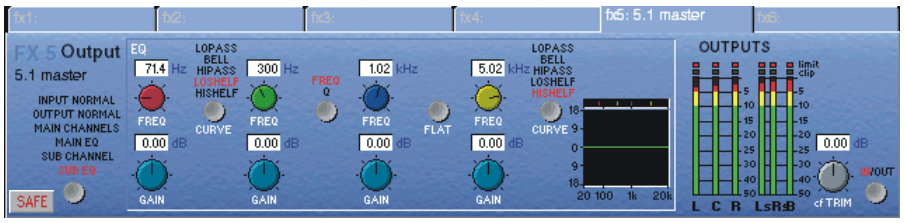
5.1 Master

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.



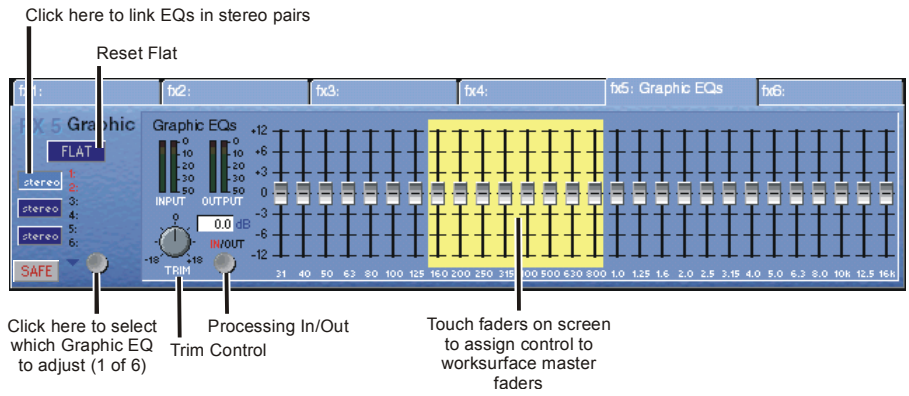
Sub Channel Dynamics

Sub Channel EQ



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.

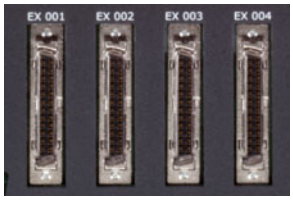
If FX 5 is configured as a Graphic EQ the six units are FX 5-1, FX 5-2, FX 5-3, FX 5-4, FX 5-5 and FX 5-6.

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.

6.3 EX-00 Fader Expander Unit

Up to four EX-00 eight fader expander units can be added to the console to provide a worksurface with up to 49 faders. These units are exactly the same as the standard Input Section and provide the same functions.

Each expander unit is connected to the rear panel of the Master worksurface using a SCSI cable.



6.4 FP-00 Film Panel Expander Unit

Designed specifically for mixing larger scale feature films, this unit has dedicated paddle switches to switch between buss and tape and user presets providing recall of the sources which are routed to each of the paddles.

6.5 HD-00 Expander Unit

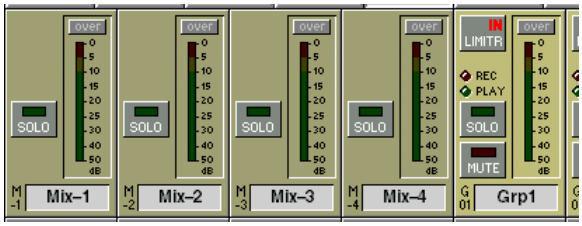
A 19in rack or surface mounted section to provide space for either a hard disk editor controller or other outboard equipment.

6.6 Broadcast Options

The following information is specific to the DS-00B and deals with additional features that do not appear on the DS-00.

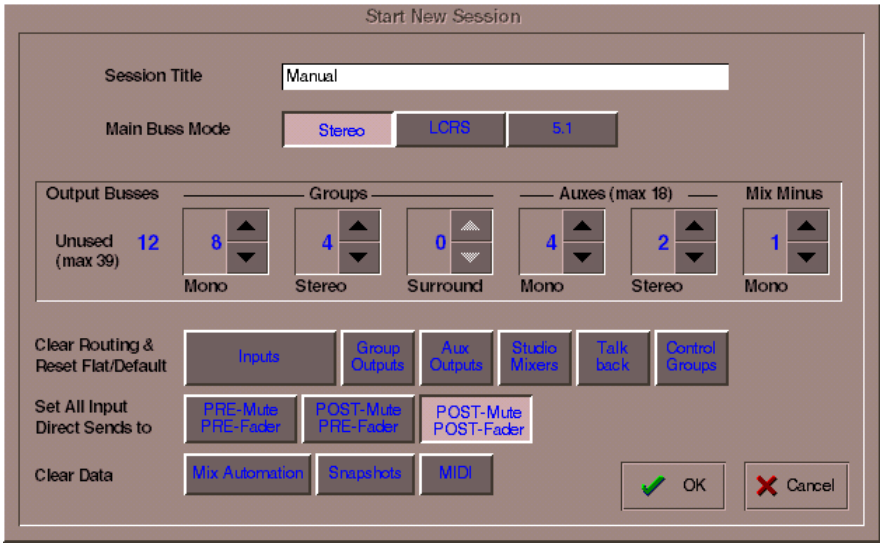
6.6.1 Mix Minus .....

The first four mono group busses can be designated for mix minus in which case they have no fader, mute or limiter and appear differently coloured. They are provided as an additional direct send from input channels with the channel signal removed.

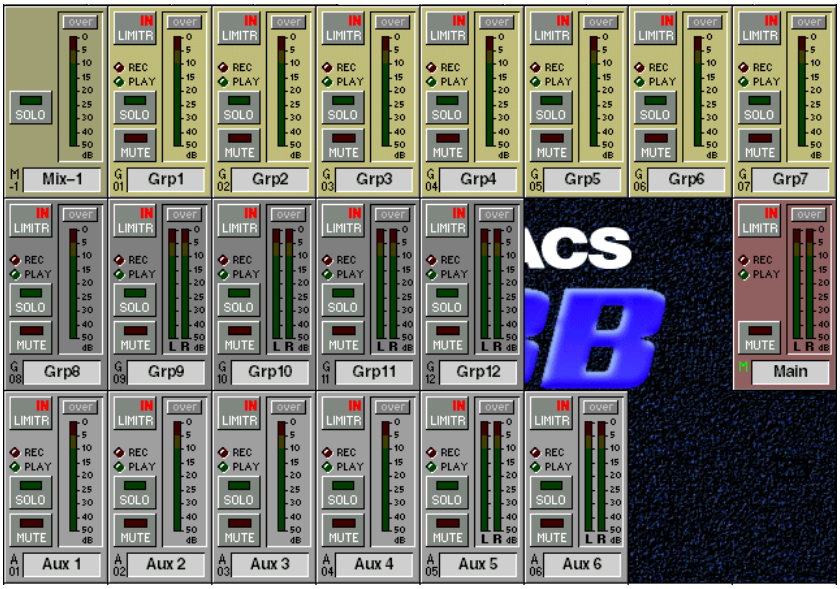


6.6.2 Creating Mix Minus Busses .....

In the **New Session** panel, create a console configuration with the required number of mix minus busses by entering a number (maximum four) in the **Mix Minus** box. In the following example, one mix minus buss will be created.



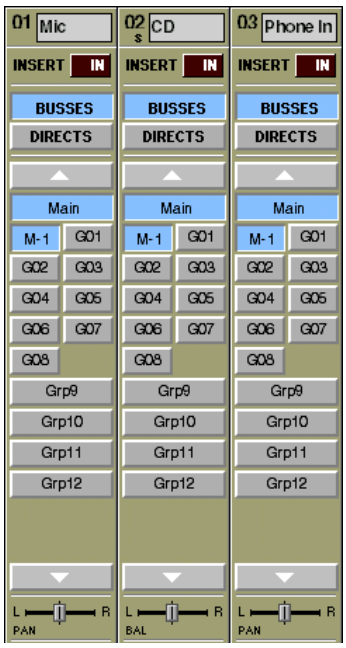
The resulting output channel configuration should look something like this:



6.6.3 Routing Signals to the Mix Minus Buss .....

To set up the mix minus buss, all the required signals should be routed to it.

Signals can be routed to the mix minus buss in the normal way, by pressing the relevant **M-** button in the buss routing panel. The following example shows a **Mic,** a **CD** and an **incoming phone signal** routed to the **M-1 and Main** busses.

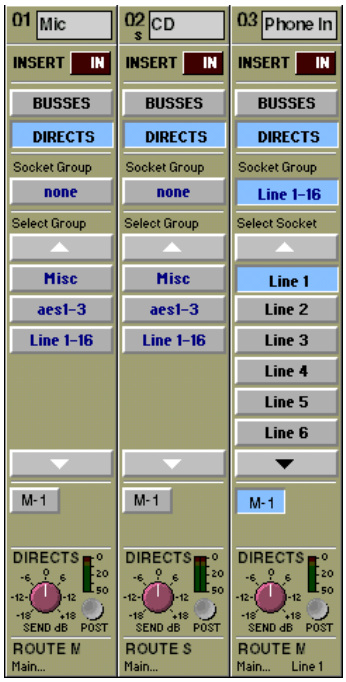


6.6.4 Routing the Mix Minus Signal to an Output .....

Mix minus feeds can now be sent from any input channel (with that channel's signal removed) to any available output socket.

Touch the **Directs** button in the routing panel of the required channel and then touch the relevant **M-** button at the bottom of the output socket list.

Then select an output socket for the signal. In the example below, the mix minus signal is routed to an output socket called **Line 1** and because it has been fed from the **Phone In** channel, the **Phone In** signal has been removed.



6.6.5 Talk To Direct Send and Direct Send Gain .....

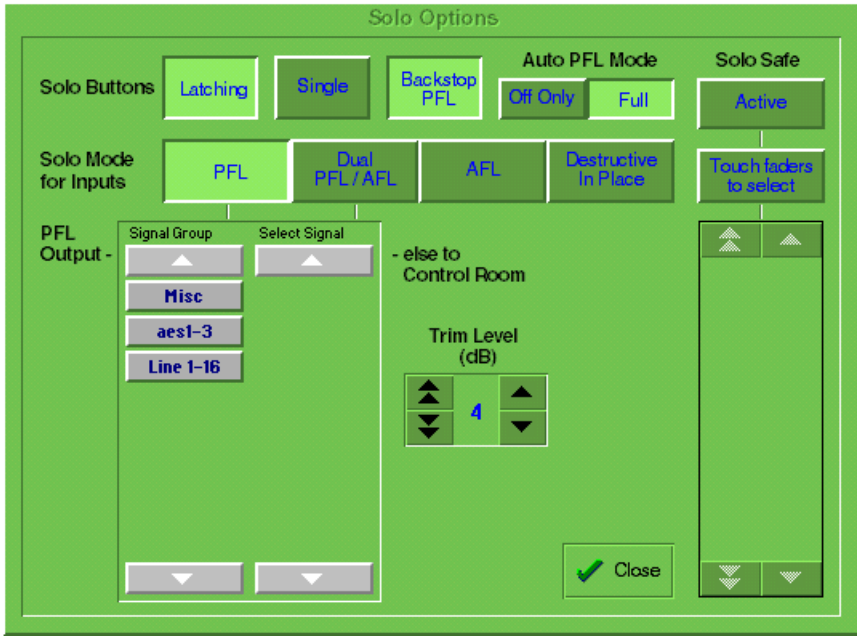
The Direct Send Gain and Talk to Direct Send controls are accessed by scrolling down through the auxiliaries and past the pan control.

The relevant worksurface rotary and switch can be used to access these controls in the normal way.

The **Direct Send Gain** duplicates the control at the bottom of the **Directs** routing panel and allows quick access to the direct output level adjustment.

The **Talk to Direct Send** button routes the Local Talkback microphone to that channel's direct output. When it is pressed and held, the talkback signal cuts the normal output signal. When it is released, the direct output signal returns to normal.

6.6.6 Solo Options .....



6.6.7 Backstop PFL .....

To activate this function touch the **Backstop PFL** button in the **Setup Options / Solo panel.** It is a global function which applies to all input channels.

When a channel fader is held against the backstop, that channel will be soloed automatically and when it is released the solo will go off.

The threshold level for the backstop can be set in the DS00.ini file. The required syntax is:

Backstop = n where n is number in the range 0 to 255.

A setting of 0 turns the function off and 1 to 255 represents the fader scale from the bottom to the top.

This function can be used with either PFL or Dual PFL/AFL Solo Modes.

6.6.8 Auto PFL .....

This function can be applied to any number of individual input channels and is switched on by touching the **Auto PFL** button in the input routing panel for the required channels.

If an input socket has Auto PFL declared in the sockets file (eg. Line1 = 1.1.1, AutoPFL), then selecting it as an input source for a channel will automatically switch that channel's Auto PFL on. The button can then be switched on or off as required.

In the **Setup Options / Solo panel** there are two Auto PFL Mode options:

Full Mode

With Auto PFL switched on, when a channel fader is moved down below the **FaderRelayDown** threshold, that channel will be soloed automatically and when it is moved above the **FaderRelayUp** threshold the solo will go off.

Off Only Mode

With Auto PFL switched on, moving a channel fader down below the **FaderRelayDown** threshold will have no effect on the solo. However, assuming that the solo is already on, when the fader is moved above the **FaderRelayUp** threshold the solo will go off

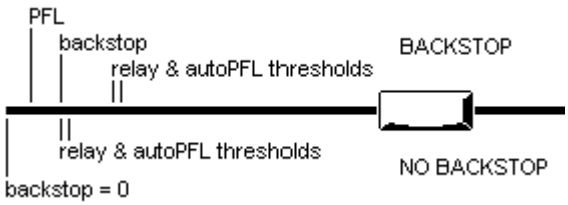
The threshold levels can be set in the DS00.ini file. The required syntax is:

FaderRelayDown = n where n is number in the range 0 (bottom) to 255 (top).

FaderRelayUp = n where n is number in the range 0 (bottom) to 255 (top).

This function can be used with either PFL or Dual PFL/AFL Solo Modes.

NOTE: If Backstop PFL is switched on, the Auto PFL thresholds are automatically moved above the Backstop PFL threshold.



6.6.9 Solo Modes .....

PFL

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 Main buss.

Dual PFL/AFL

PFL or AFL solo mode is determined by the position of the fader - PFL when the fader is down and AFL otherwise.

This mode uses a single buss plus the same number of busses as the Main buss.

Destructive In Place

This uses the main busses instead of the solo busses and can therefore function as a SIP without using additional buss resources

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.

PFL Output

This allows you to select dedicated output sockets for the PFL signals. Touch the required Output Signal Group button and then the output that you require from that group.

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.

Chapter 7
Troubleshooting

7.1 Troubleshooting

If you are experiencing any difficulty with DS-00 operation, please check the following commonly asked questions and answers.

If any user*s 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 Main buss.

The number of console processing channels is fixed so by setting one to stereo you are actually using a second one as well.

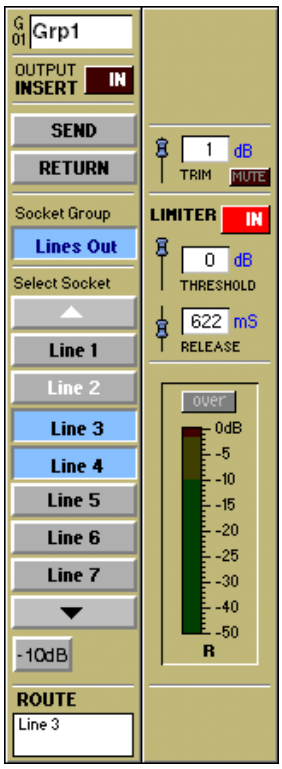
Routing a group buss directly to the Main buss uses the same number of channels as there are buss signals eg. 2 for a stereo buss or 6 for a 5.1 buss.

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 1 is routed to Lines 3 and 4 but Line 2 appears "greyed out" as well. A stereo buss cannot be routed to Lines 2 and 3 as Line 3 is already in use. It can however be routed to Lines 1 and 2

If you were routing a mono buss, Line 2 would be available.

The console has crashed but when it tries to recover the session there is still a problem.
The session file may have become corrupted. Reload the DS00 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 DS00 software then Quit To Windows using the System / Service Menu and then load the DS00 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.
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 and the internal Effects module.
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" above 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
Multiple Console Setups

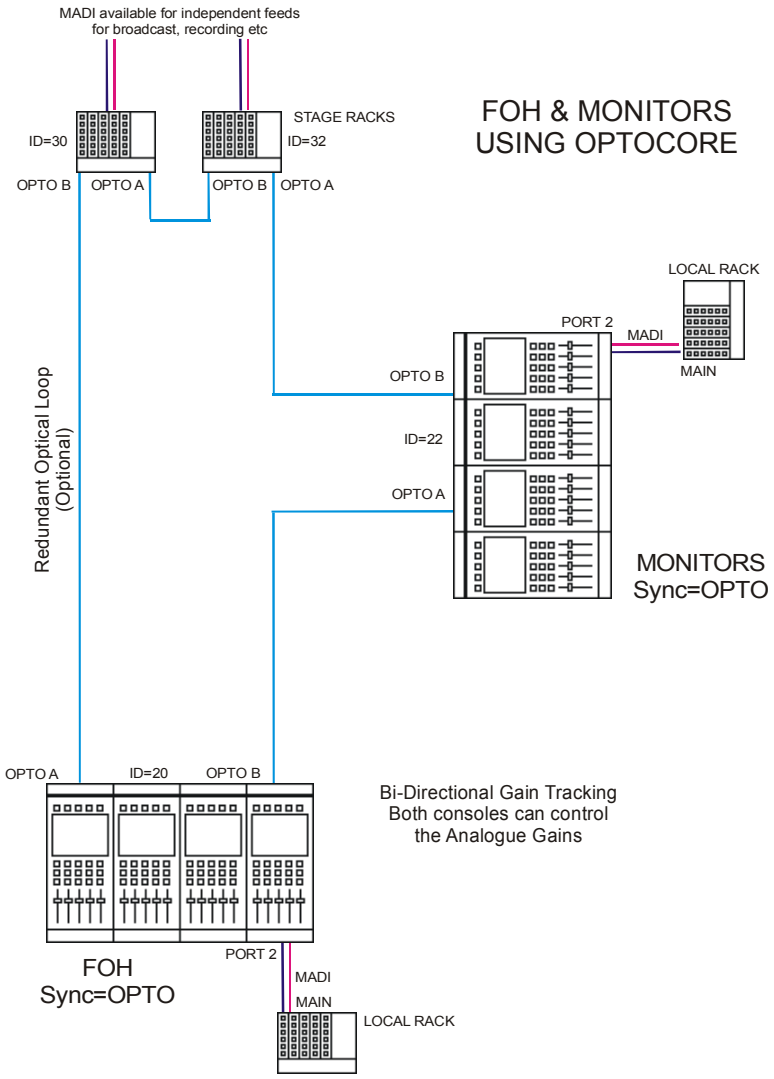
The following information relates to any "D" Series console which is used in a multiple console configuration - The examples refer to a DiGiCo D5.

A.1 FOH and Monitors Setup

Front of House and Monitor consoles (with 1 local rack each) may independently share input signals from up to 3 stage racks and have individual control of input gains with the use of Gain Tracking.

The local racks may be completely different but the sockets file on each console must contain identical entries for the shared racks.

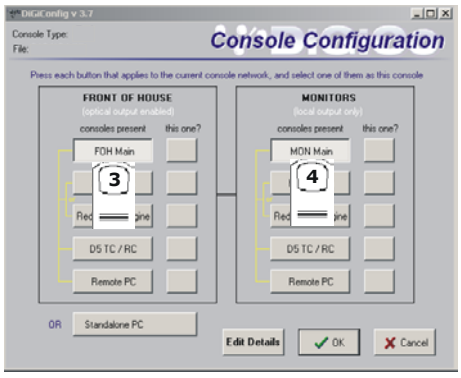
The rest of the configuration must match the hardware of the actual console but the two consoles do not need to be identical.



To set up the hardware configuration open the **DiGiConfig** program in the **System / Service / Configure Hardware** menu. D5 software will automatically close to enable configuration changes.

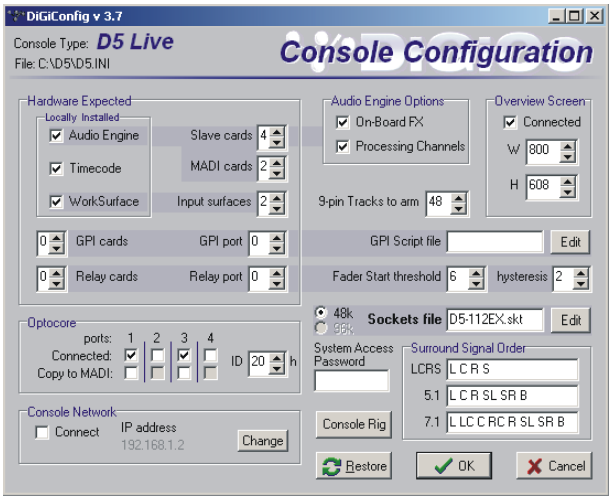
Select all the consoles in the rig (**FOH Main** and **MON Main**) and then select the console that you are configuring by pressing the **THIS ONE?** button. You can check the configuration by pressing the **EDIT Details** Button but clicking **OK** will confirm the setup and return to D5 software. Repeat this process for the other console.

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

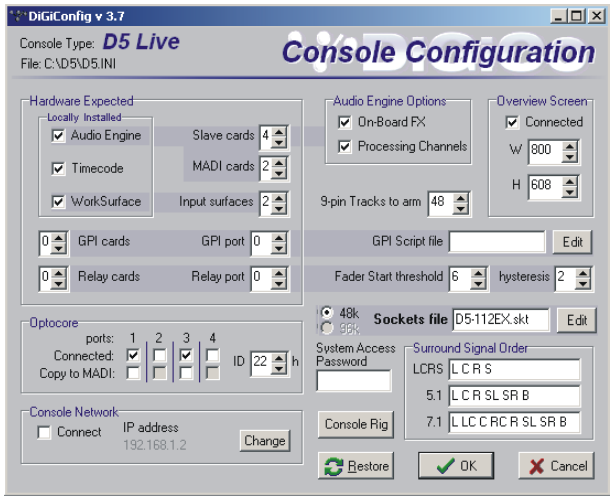


The following configuration details will have been created:

FOH Console Details



Monitor Console Details



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

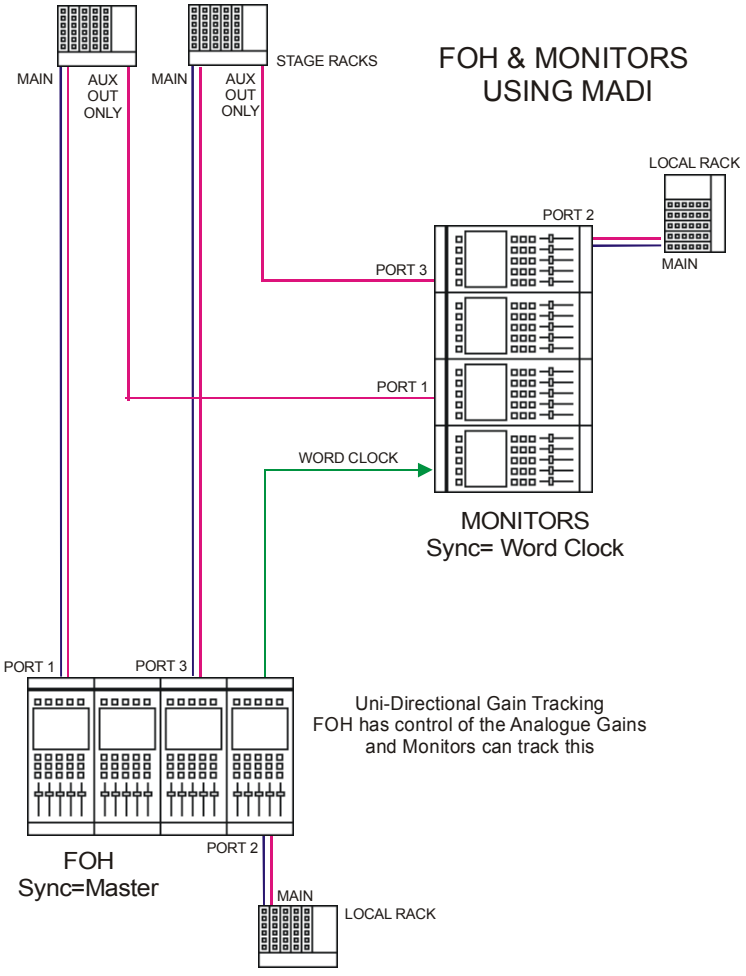
MADI Connections

If the consoles are to be connected via MADI, the setup would be as follows but Gain Tracking would only be unidirectional with the FOH acting as Master and the Monitor console tracking the changes.

Note: This configuration requires a Word Clock connection from the FOH to the Monitor console. The FOH console should be set to Setup / Audio Sync = Master and the Monitor console to Setup / Audio Sync = Word Clock.

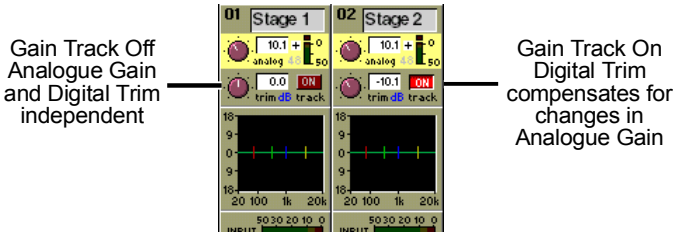
The recommended connection between the Monitor console and Stage Racks is a single MADI OUT from each Stage Rack's AUX MADI connected to the console's MADI 1 IN for Stage Rack 1 and MADI 3 IN for Stage Rack 2.

If both MADI INs and OUTs were connected to the Monitor console then the console could take control of the racks' analogue gains when the **Full Connect** procedure took place. This is potentially confusing as, in this situation, the FOH console would no longer have control of the racks' analogue gains as only one console can be the "master" for the gains when connecting via MADI.



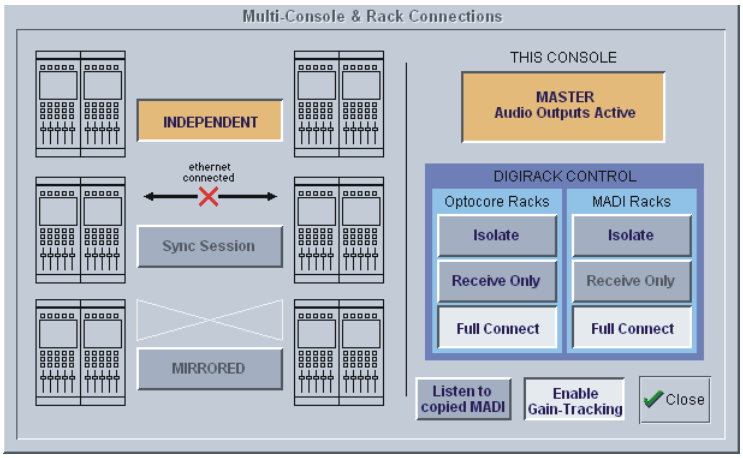
A.1.1 Gain Tracking Settings .....

With the Optocore connection, Gain Tracking can be bidirectional. If either console adjusts the analogue gain, the other console can compensate for that change by applying an opposite digital trim. Each Input Channel has a **Track On/Off** switch next to the **Digital Trim** control. This is controlled by touching the screen in the area of the switch and using the worksurface phase button beneath the gain control. If it is switched off, the Analogue Gain and Digital Trim are completely independent but if it is switched on for both consoles, any change in the Analogue Gain by either user is compensated by an opposite Digital Trim. This means that the overall level remains the same on both consoles when the Analogue Gain is adjusted.



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:

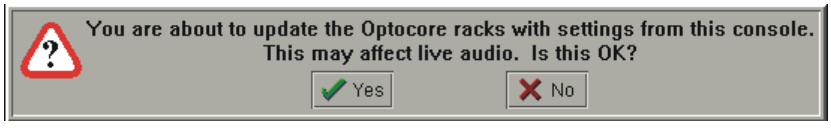
Isolate where the console will not communicate with the racks and therefore any adjustment of input gain or +48V switch will have no effect on the rack settings.

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



A.1.2 Gain Tracking Procedures .....

The suggested setup for two consoles which are sharing the same racks is as follows:

a) One operator will be responsible for adjusting the analogue gains on the racks (Recommended):

1) One console should fully connect to the racks using the **System / Consoles and Racks** panel's **Full Connect** button for the Optocore racks.

2) The operators should agree on and set a level of analogue gain that provides enough headroom for the required application.

3) The second console should connect to the racks in **Receive Only** mode to ensure that it doesn't send its own current gain levels to the racks.

4) Gain Tracking should be switched on for the console that is in **Receive Only** mode consoles for all the channels that are being shared.

5) Both operators should use their own console's digital trims to adjust their overall operating level from this point onwards.

If the analogue gains need to be changed, only the console that is in Full Connect will be able to do this but the second console will be not be affected by these changes as it has its Gain Tracking switched on.

b) Both operators want to be able to control the analogue gain on the racks:

1) One console should fully connect to the racks using the **System / Consoles and Racks** panel's **Full Connect** button for the Optocore racks.

2) The operators should agree on and set a level of analogue gain that provides enough headroom for the required application.

3) The second console should connect to the racks in **Receive Only** mode to ensure that it doesn't send its own current gain levels to the racks. This console may then do a **Full Connect** to the racks.

4) With both consoles in **Full Connect**, Gain Tracking should be switched on for both consoles for all the channels that are being shared.

5) If either operator changes the analogue gain there will be no overall level change on either console as the digital trims will always compensate for the change in analogue gain.

Note: If either operator wishes to change the analogue gain and not have their own console's digital trim compensating, they should temporarily switch off Gain Tracking on the required channel, make the gain change and then switch gain tracking back on again.

A.1.3 Gain Tracking and Snapshots.....

In a FOH and Monitors system, a great deal of care must be taken if analogue gains are to be changed with snapshots. There are a number of methods of doing this but as the following points illustrate, there are several things to consider.

Note: Analogue gains are included in the snapshot Input Routing Scope and digital trims are included in the Input Controller Scope.

It is intended that one console will not have analogue gains in any of its snapshots' scopes. This prevents it from sending any rack commands at all and therefore it cannot change analogue gains with snapshots.

A similar situation could be created by making the console **Receive Only** for rack control but this will also prevent manual analogue gain changes.

In either case, the other console is then in complete control of snapshot gain changes.

When a session is loaded it starts in **Isolate**, so if you go to **Receive Only** then **Full Connect** you can join the rack sharing without making any gain changes. If you are responsible for the analogue gains, it is likely that you will want to go straight to **Full Connect** after load session.

Subsequently, both consoles can be in **Full Connect** at all times; this way if either operator spots an over (or under) they can manually adjust the analogue gain on either console and if **Gain Tracking** is on for both consoles the balance will not be disturbed.

Note: Problems may occur if both consoles are using snapshots and they have digital trim changes in their snapshots.

In this situation, snapshots must be stored at the same time on both consoles so that the analogue gain changes on the controlling console will be reflected in a stored digital trim level on the other console which is recalled with the firing of the snapshot.

The console that is not controlling analogue gains should normally have Gain Tracking switched on to enable its digital trims to compensate for the other console's analogue gain changes. This system will work correctly but if the digital trims are subsequently changed with an in dependent snapshot then the automatic adjustment may be overridden and unanticipated overall levels may result.

Suggested methods:

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

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

Both consoles can be in **Full Connect** so that either operator can adjust analogue gains manually.

Gain Tracking can be switched on for both consoles to ensure that neither is affected by manual gain changes that are made by the other.

Digital trim changes can be made manually or in snapshots on both consoles as these changes are completely independent of the other console and cannot affect it in any way.

Note: The drawback of this method is that by removing Input Routing Scope from all console snapshots, the input socket selection cannot be changed with snapshots.

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

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

The second console should have either:

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

OR

b) It should be in **Receive Only** for rack commands so that it cannot send its own analogue gain changes but can still have **Input Routing Scope** on and therefore change input socket routing with snapshots.

Gain tracking should be switched on for the second console so that unforeseen gain changes on the first will not affect its overall balance.

Gain tracking may also be switched on for the first console but this is not really necessary as the second console will not be controlling the analogue gains at all.

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

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

A.2 Redundancy and Mirroring

A.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.

A.2.2 Redundant Mirror Console or Engine .....

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

The significant difference between the two situations is that a Redundant Engine only provides console control using a conventional computer monitor and a keyboard with trackball. With a Redundant Console, full worksurface control is possible.

The Mirror console is normally connected to the console and stage racks with optical fibre cables and two 5 metre BNC MADI cables are connected to the auxiliary MADI port on the local Rack.

An Ethernet Crossover cable (**not a standard CAT5 cable**) is also connected between the Main console and Mirror consoles or both devices are connected to an Ethernet switch if some form of Remote control is also used with the system eg. a Remote PC running the console software.

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

The Mirror console can be set to mirror the Main console's settings and therefore, in the case of loss of worksurface control on the Main console, the Mirror console's worksurface can be used to perform any function.

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

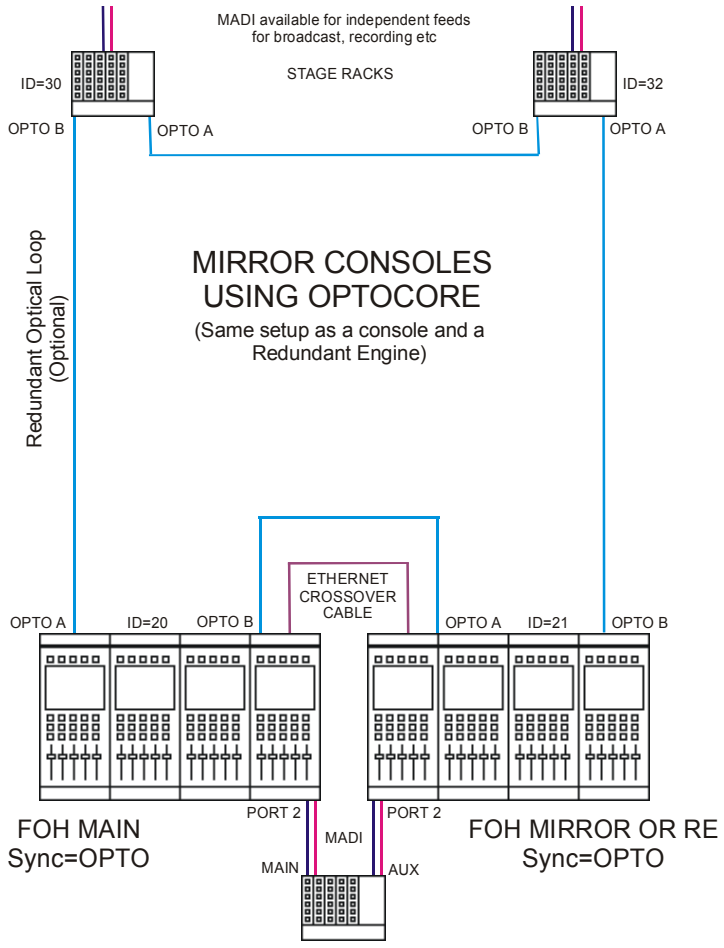
NOTE: The most important aspect of the connection system is that the optical fibre cables are always in a strict Port A to Port B configuration. Connecting any device's A port to another device's A port may result in a malfunction of the system. The same applies to B to B connections. If your system has more devices simply continue with the A to B rule.

When using optical connections, the Main and Mirror consoles should both be set to OPTOCORE sync in the Setup/Audio Sync panel on the Master Screen.

Stage Racks should always be next to each other in the chain so if you were connecting a third rack into the system below, it should be positioned between Stage Rack 2 and the Mirror console.

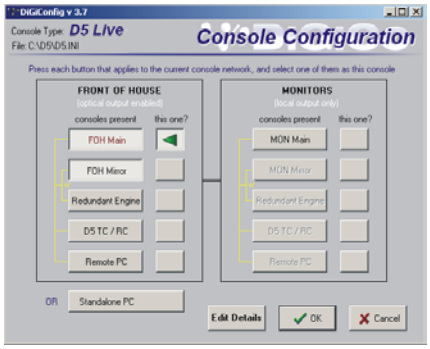
In this example there are 2 consoles with 1 local rack sharing signals from 2 stage racks:

When the consoles have been connected and started their **Sessions** must be **Synced** using the **SYNC CONSOLE** function on the **Consoles & Racks** panel. There are also options to **Sync Sockets Files** and **Presets.**

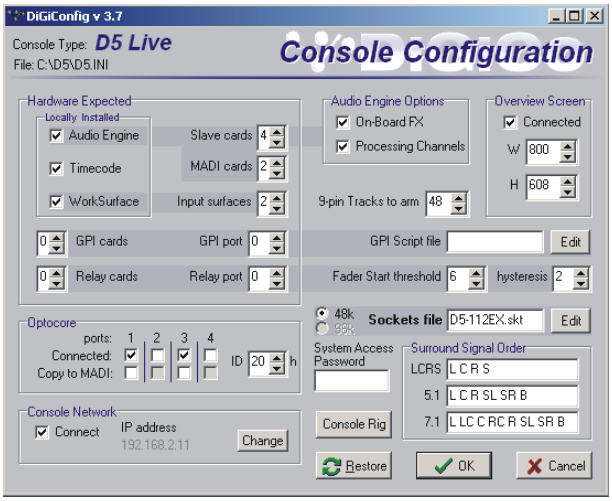


Having ensured that the consoles are identical in both hardware and software, run the **DiGiConfig** program in the **System / Service / Configure Hardware** menu. D5 software will automatically close to enable configuration changes.

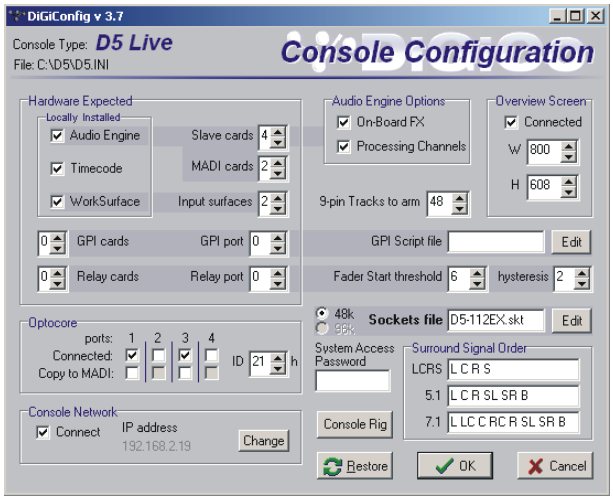
Select all the consoles in the rig (**eg. FOH Main** and **FOH Mirror**) and then select the console that you are configuring by pressing the **THIS ONE** button. You can check the configuration by pressing the **EDIT Details** Button but clicking **OK** will confirm the setup and return to D5 software. Repeat this process for the other console.



FOH Console Details



Mirror FOH Console Details



Note that the Optocore IDs are 20 (FOH) and 21 (MIRROR). In this example the network details show that the FOH Main console has an IP address of 192.168.2.11 and the FOH Mirror console has an IP address of 192.168.2.19. All other aspects of the two consoles are identical.

The console IP Address which should be unique to each device but only differ in the last of the four numbers (The number after the last dot):

These IP Addresses are assigned to the consoles and engines at the factory and should not be changed unless two devices in the same system have the same address.

The console Optocore ID which should be unique to each device in the system that is connected to the optical loop (Settings on Remote Control devices such as a remote PC or RC are not significant).

Console Optocore ID's should be as follows:

FOH Main Console = 20

FOH Main Console's Mirror = 21

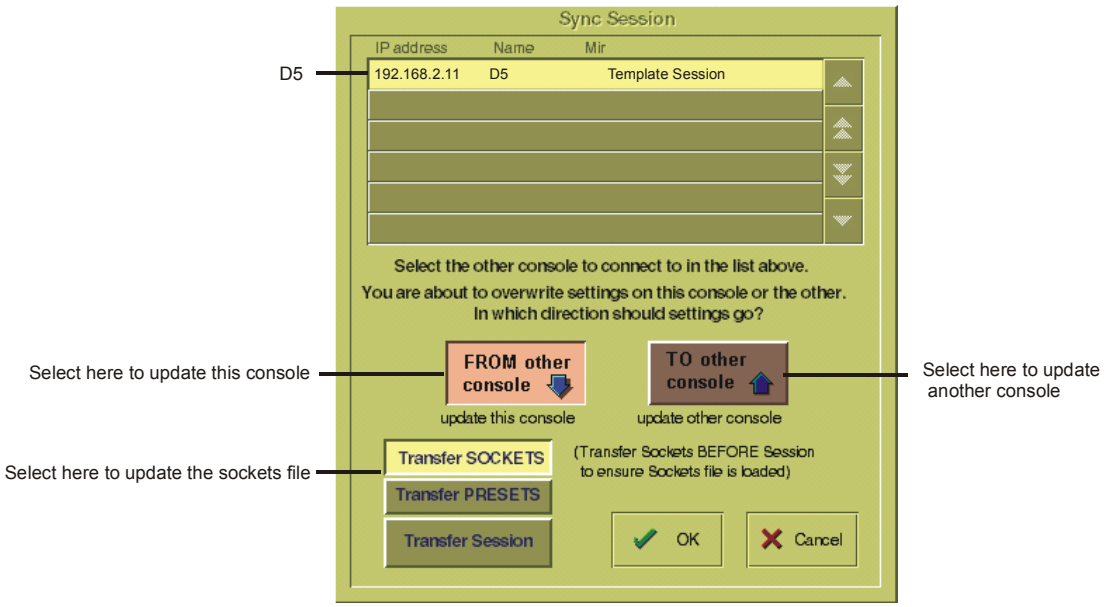
Monitor Console = 22

Monitor Console's Mirror = 23

A.2.3 Sync Session .....

The Main console and Mirror must have the same Sockets File, Presets File and Session File and this can be achieved by using the Sync Session Functions. Assuming that a session has already been created on the Main console and its Sockets file is as required then proceed as follows:

Working on the Mirror Console (used to mirror the Main console), press the **Sync Session** button and this panel will open:



This shows a list of the devices that are connected on the network and in this example there is a D5.

1) Select the device from the list that you wish to transfer from (the D5 in this example).

2) Press the **Transfer Sockets** button and the **FROM other console** button.

3) Press **OK** - This will transfer the Sockets File to the Mirror console and the **Consoles and Racks** panel will reopen.

4) Press the **Sync Session** button again.

5) Select **Transfer Presets**

6) Press **OK** - This will transfer the Presets File to the Mirror console and the **Consoles and Racks** panel will reopen.

7) Select **Transfer Session**

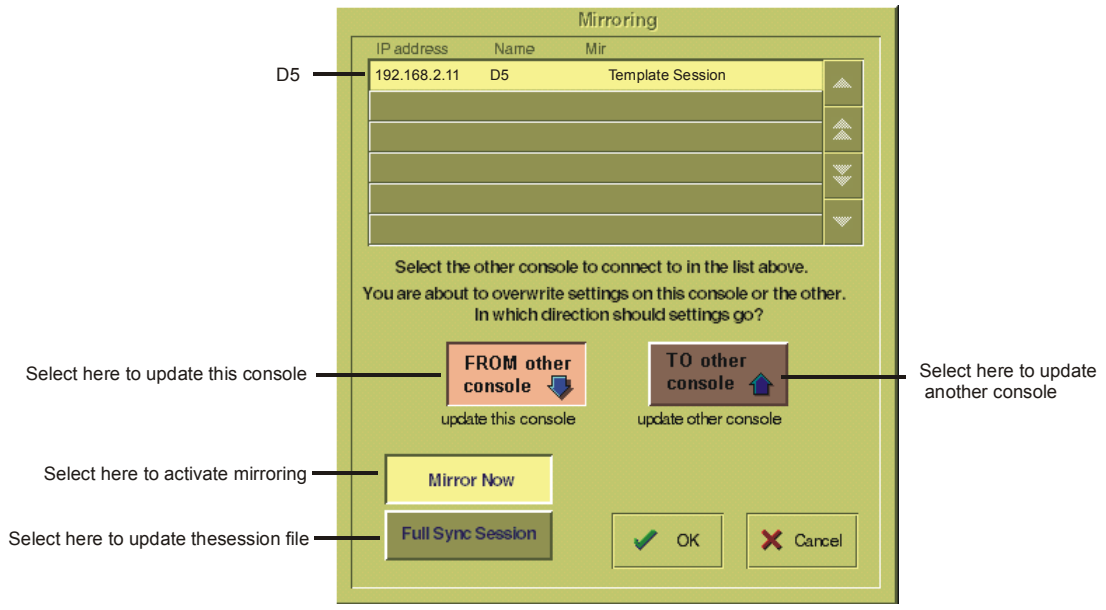
8) Press **OK** - This will transfer the Session File to the Mirror console, the **Consoles and Racks** panel will reopen and the Sync Session button will be highlighted in orange.

A session can be synced in either direction; the default setting is from the current audio master.

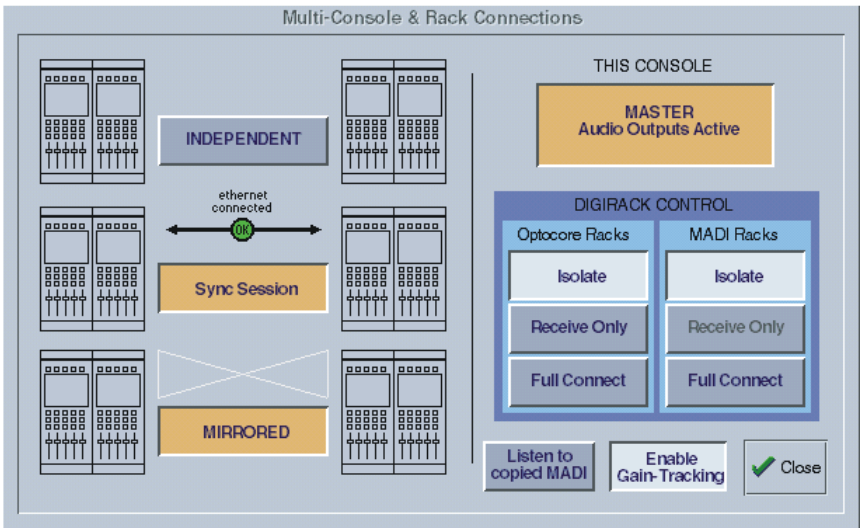
NOTE: If you have already transferred the Sockets and Presets files, you can sync the sessions by pressing the MIRRORED button, selecting Full Sync Session and pressing OK. This will automatically activate Mirroring after syncing the sessions.

A.2.4 Mirroring .....

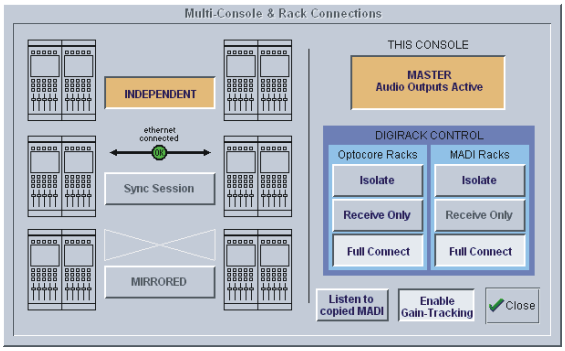
When the Sessions have been synced, Mirroring can be activated by pressing the **Mirrored** button on the Mirror console and the following panel will open:



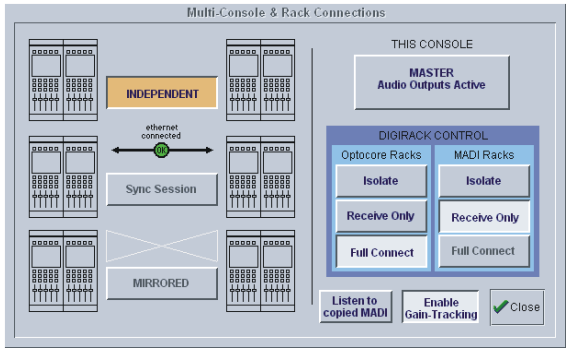
1) Select the device from the list that you wish to Mirror from (the D5 in this example).
2) Select **FROM other console** and **Mirror Now** and then press **OK**.
When the process is complete, the **MIRRORED** Button will be highlighted in orange as seen below. There will also be a pop up message to confirm that mirroring has taken place.
If you have other devices in your system such as a Remote Controller then this process should be repeated on each device, always transferring sockets, syncing sessions and mirroring **From** the Main console.



A.2.5 DiGiRack Control .....



Main Console



Redundant Engine, Mirror Console or Remote

If the system has been defined as consisting of more than one device, the **Consoles & Racks** panel will automatically open on boot up or load session.
This panel can also be opened from the **System** menu.
If the Ethernet crossover cable or Ethernet switch has been connected, then the **Ethernet Connected** line should show a **green OK light** and not a red cross.
The initial state will have no connection between the devices (**Independent**) or the racks (**Isolated**) and the panel appears in order to prompt the operator to make the necessary connections.
In this state, any gain adjustments made on the console will have no effect as the racks will not be receiving any data.
The Main console's **MASTER Audio Outputs Active** button will normally be highlighted in orange to show that it is the master responsible for audio processing at this time.
The same button on the Mirror should not be highlighted at all.
The MADI Rack's connect states Receive Only and Full Connect are enabled/disabled and set according to the Audio Master active state – an inactive engine cannot output to a MADI rack.
When the Main console and the Redundant Engine have been mirrored, the communication with the DiGiRacks should be activated.
In a system where there is only a single console and a mirror, on the Main console, press the Full Connect buttons for the Optocore and MADI racks. You will then be required to confirm the action, the session settings will be sent to the racks and the console will have full control over them.

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

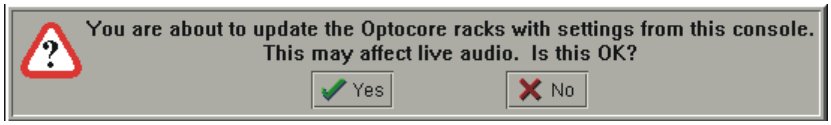
Options are:

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

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

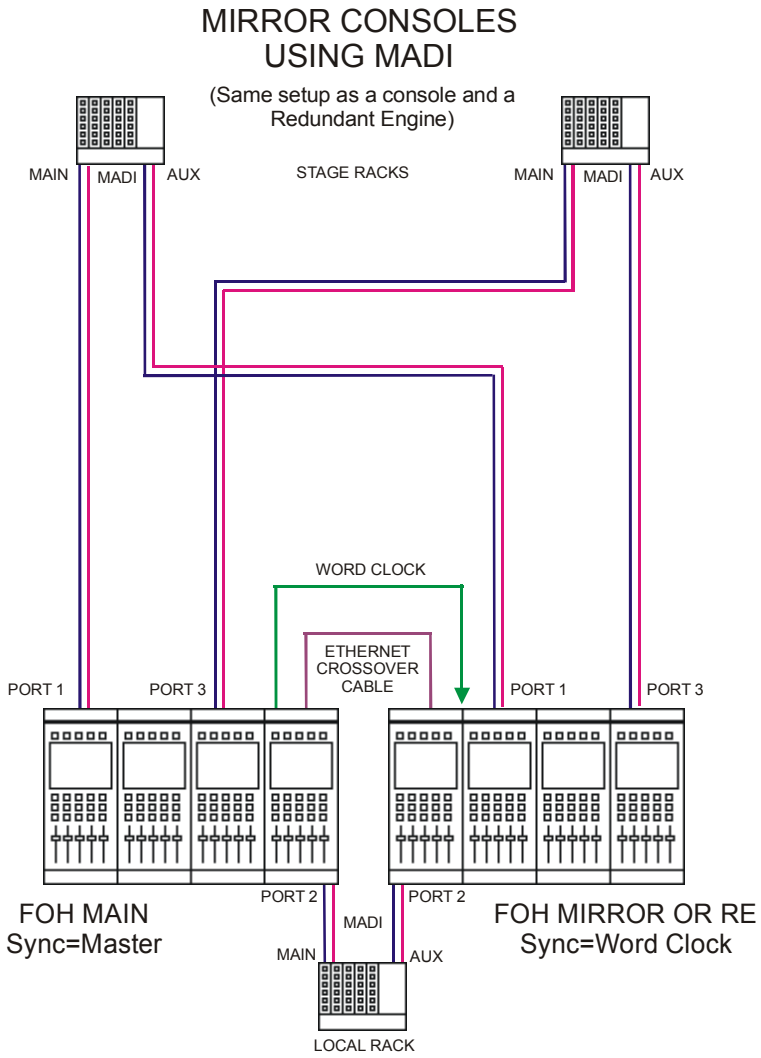
Full Connect where the console will send its settings to the racks and change them accordingly.

Full Connect

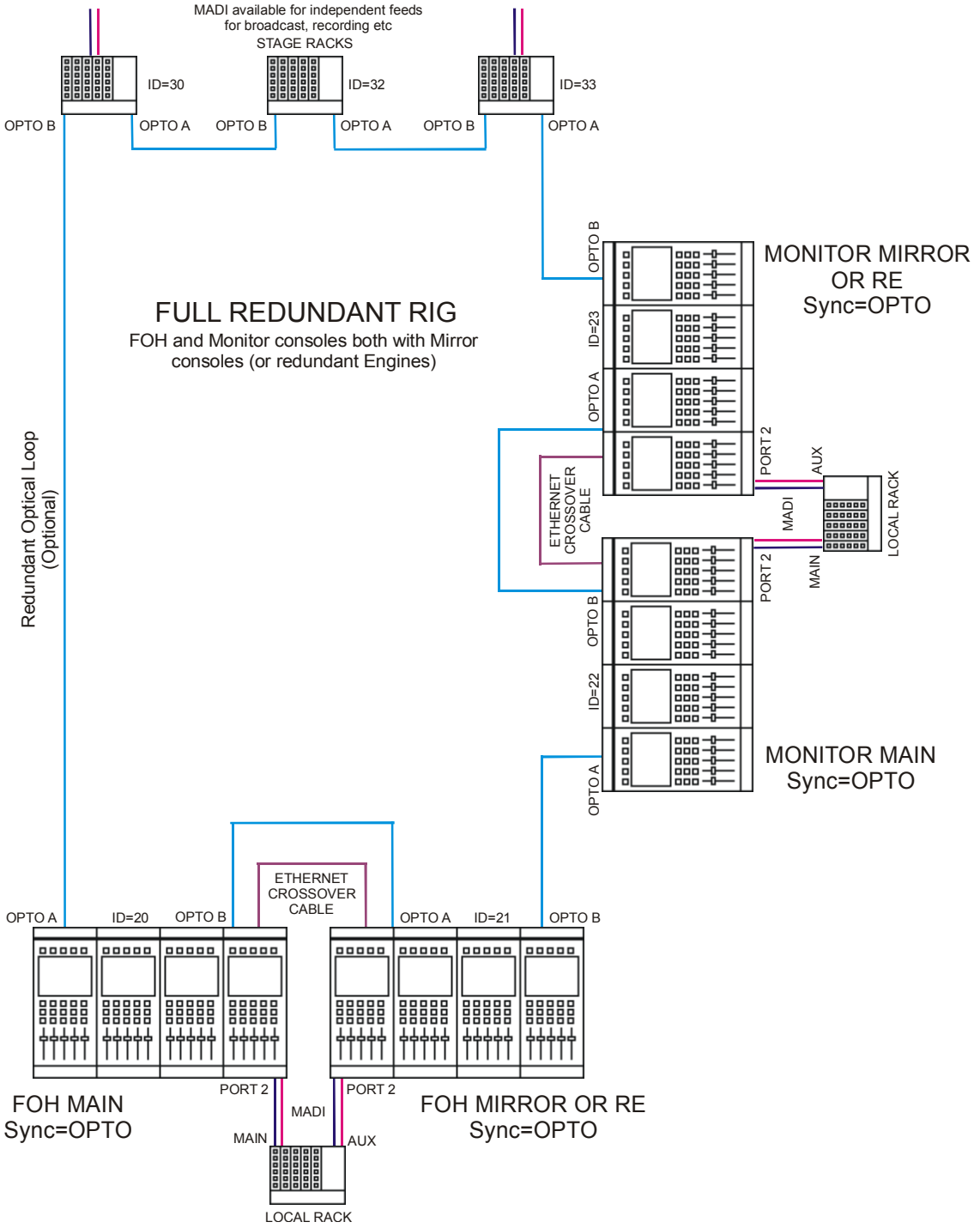


Receive Only

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



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.



A.3 PC Remote Control

If the console 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.

A.3.1 Remote PC Setup .....

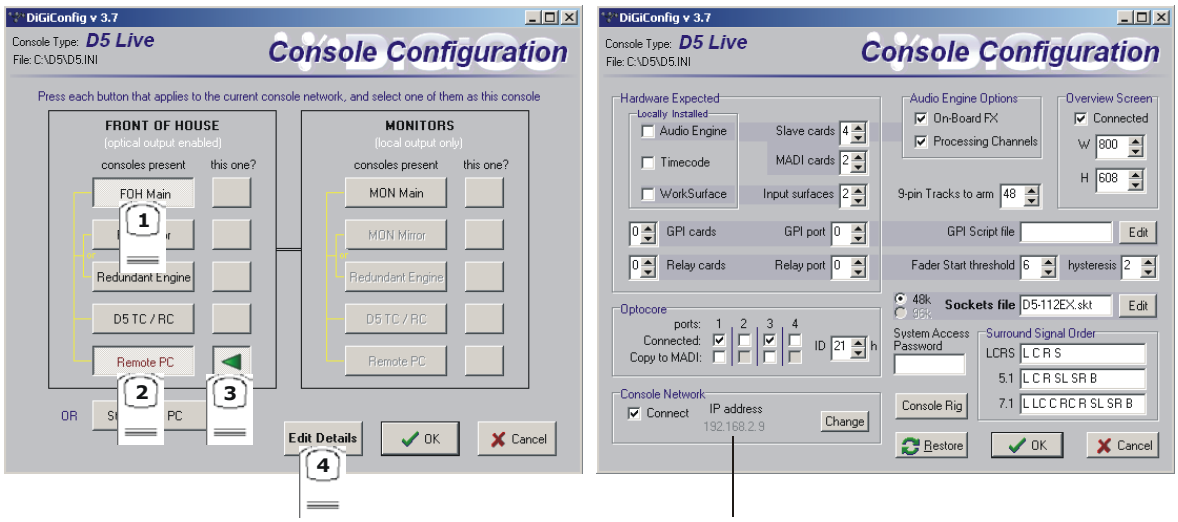
DiGiCo recommend that the Remote PC is running under Windows ME or XP and that the operator has sufficient knowledge of the operating system to change IP addresses and set up a standard network connection.

Note: With Windows XP the built in Firewall should be disabled as this may cause operational problems.

1) An Ethernet Crossover cable (**not a standard CAT5 cable**) should be connected between the Main console and the Remote PC or both devices should be connected to an Ethernet switch if there is a third device in the system eg. a Mirror console or Redundant Engine.

2) Set the Remote PC's IP address to 192.168.2.xxx (where xxx is a number between 0 and 255 that is unique within the system).

The IP address can be checked by opening the **System/Service/Configure Hardware** panel, pressing all the buttons for the devices that are present in the system (eg FOH Main and Remote PC) and then selecting the **This One** button for the device that you are working on. Then press **Edit Details** and the IP address can be seen in the bottom left of the panel.



3) Repeat his process for the other device(s) and start the D5 application on all of them.

As the system has been defined as consisting of more than one device, the **Consoles & Racks** panels should open automatically and the **Ethernet Connected** line should show a **green OK light** and not a red cross.

4) Proceed with **Syncing** the **Sockets, Presets** and **Session** files and then **Mirroring** as described in the previous sections on Mirror consoles (6.2.3 and 6.2.4).

A.3.2 Remote PC Operation .....

To use the software with a mouse and keyboard the following functions are necessary:

Left mouse click on a non active window makes it active.

Right mouse click on a window functions as a screen touch.

Left mouse click on a switch to turn it on or off.

Hold down left mouse button and drag to adjust rotaries and faders.

Up/Down (arrows) = scroll rotary assignment on all input screens.

Page Up/Down acts as the screen scroll button in the Master section.

The Shift key acts as the All button for all surfaces.

Running on a laptop or desktop PC, a single knob and button device can be connected to the RS232 COM port and used to alter controllers on the PC screen under the mouse cursor. A new entry in the D5.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).

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