DFC Gemini

User Manual

Issue 2

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1 Glossary of Terms

200 Card

This is a processing control card that lives in the right-hand most slot in the SPS rack. It handles communications between the different parts of the system, and is responsible for initiating the boot sequence.
The SPS control card replaces two Trancon cards and the TranSCSI card. It consists of a possible five transputers namely:

- TranSCSI
- File Server
- Assignments
- Automation
- Allocation

AFU

AFU is an abbreviation of Assignable Facilities Unit. This is an area of the console that can be used by any signal path to allow adjustment of the full signal processing in the path.
The AFU takes the place of dedicated controls that would normally be on the fader strips. This means the fader strips can have a minimal set of controls without affecting the functionality of the console.

The AFU provides individual controls for each signal processing function (EQ, filters, etc.).

Alpha Display

The term alpha (or alpha display) refers to the alphanumeric digital displays used on the console surface. Alpha displays use led arrays to show text and numbers. For example the Assignable and Pan Logicators each have an associated four character alpha display.

AutEngX

This is part of the Automation system (contraction of **Aut**omation **Eng**ine **X**). Previously, when Automation data was written and the timeline stopped, this data was stored on the SUN820-200 card and then written to the console hard drive. This could take up time as the full bandwidth of the communications was being used when transferring and writing this automation.
Using **AutEngX**, the data is held in the RAM of the PC and only written to disc at either user-defined intervals (every x passes) or when the user decides. This speeds up the response time of the console, and improves Save and Load times of automation.

Automation Mode

This refers to the states of controls that are used to record and re-play control moves against timecode. The two basic Automation Modes are **Record** and **Play**, and variations on these are used to perform different functions.
Controls can also be in Isolate mode which is used to exclude them from the automation system.

Banks

As the number of audio paths on the DFC Gemini may be greater than the number of actual faders, then paths are assigned to the console surface using Layers and Banks. There are 6 Banks (**1-6**), each comprising of 4 layers on each (**A**, **B**, **C** & **D**) giving 24 separate and discreet layouts.

Desk Setup

A Desk Setup is a file that contains the current configuration of the console.
The information stored in a Desk Setup is:

- The number of signal paths of each type (ie number of Channels, Tracks, Auxes, etc.)
- The signal processing allocated to each signal path and the current settings for processing parameters.
- The user names for signal paths.
- The internal routing between signal paths (eg which Channels are routed to which Tracks).
- The routing between signal paths and physical inputs and outputs (ie I/O patching).
- The assignment of signal paths to the console surface.
- The configuration of the PreDubs.
- The configuration of the Film Stems (ie which Tracks in which Stems).
- Which paths are inhibited from Solo, the automation system, and/or being allocated.
- Pan designation of Tracks and mono Groups.
- The current configuration of Gangs and Links.

Events

Events are changes to control settings that are recorded against timecode by the automation system. They are recorded in timecode order to make the **Event List**. When a **Mix/Pass** is played back, it is the settings in the Event List that are used to automate the controls.
Events make up the majority of the data stored by a Mix/Pass. Individual Events can be manipulated directly using the Event List functions. Events are also manipulated using the offline automation functions.

Encore Plus

Encore Plus is a PC-based module within the DFC Gemini that is used in conjunction with the console surface to provide functions for configuring and setting up the console, using snapshots and automating the console.
Configuration functions include setting the tone frequency and volume, selecting the internal sample rate, deciding how the solo system operates and so on.
Console set up functions include rapid port routing (similar to using a patch bay), setting how many paths of each type are to be used, applying the same signal processing functions to multiple paths, etc.

Snapshots are used to record the settings of controls for later recall. The number of controls affected by a Snapshot can be changed with **Snapshot Scope**. Encore Plus is used to store multiple lists of Snapshots. Encore Plus provides management of automation data and a automation functions such as labelling user selected timecode points, mix conforming and event list editing.

Function Key

The Function Keys are the row of keys at the top of the Encore keyboard that are marked F1 to F12, and they act as shortcuts to various functions and menus within Encore Plus.
A table of these shortcuts is shown in the Encore Plus manual.

Glide

Glide is an automation function. This is when a continuously variable control (fader, Logicator controlling frequency, etc.) moves or is moved smoothly to match the Play Pass. There are three types of Glide:

- Manual Glide
- Auto Glide
- Manual Match.

Icon

An icon is a small picture that represents a function or program that can be executed. There is usually a small text description that clarifies the operation that will be initiated by an icon.
There are generally two types of icons: program icons used to start complete applications, and function icons used to start a function or apply an effect.
Program icons can be found on the Windows XP desktop.
Program icons are double-clicked to start the associated program.

Function icons can be found as part of an application. Function icons only need to be clicked once (single clicked or clicked) to use them. For instance, there are two sets of icons on the right hand side of the main Encore screen and a single click on one of them will start the relevant function.

Initial Snapshot (ISS)

The Initial Snapshot (**ISS**) list contains the initial state of all controls which are not in Isolate when the system is put into Play or which are taken out of Isolate while the system is in Play. There is also an option in Automation Preferences (**First Mode Change Updates ISS**) that will force the Initial Snapshot to be updated with the current setting for a control when it is taken out of Isolate for the first time.
The Initial Snapshot settings are stored as automation events at the beginning of a Mix/Pass.

Layers

The concept of layers is used to allow a digital console to control more signal paths (Channels, Tracks, etc.) than there are fader strips on the control surface. Switching between layers is instant and reduces the size of a console so that all controls are in reach all the time.

Logicator

This is a patented touch-sensitive rotary control with internal green leds to indicate control value positions. An internal red led indicates when the logicator is being touched. Knob settings are easily visible at a glance and, when automation moves are replayed, the controls give the appearance of movement.

MADI

Acronym for Multichannel Audio Digital Interface. Up to 48 tracks of digital audio are sent (Tx) and received (Rx) using a single pair of wires, either using coaxial cable or optical links.

MIOS

Acronym for Modular Input / Output System.
Each MIOS rack can consist of up to 6 (in total) of the following modules in any configuration:

- Mic/Line (4 Mic A, 4 Mic B and 4 Line Input)
- Input (16 Line Inputs)
- Output (16 Line Outputs)
- AES (8 Inputs & 8 Outputs)

The audio from the rack is converted into Madi for handling by the Quad Madi II card. Each rack has a headphone socket and 2 stereo monitor outputs (as L & R XLRs

Mix/Pass

A Mix/Pass stores the data for one complete automation pass. Each Mix/Pass contains:

- An Event List containing an Initial Snapshot (ISS) followed by Automation Events
- Automation Modes and Automation Scope as they were when timecode stopped at the end of the pass
- A Label List
- A Safety Snapshot

Mix/Pass Tree

Mix/Passes are organised in a Mix/Pass Tree. The Mix/Pass Tree stores the structure of dependence between Mix/Passes - this means that it shows the order in which Mix/Passes were created and the lines of revision used to create each Mix/Pass. The Mix/Pass Tree is displayed graphically so that Mix/Pass dependencies are shown clearly. A Mix/Pass Tree always starts with Mix/Pass 1.1. A Mix/Pass Tree is displayed graphically for selecting a Mix/Pass revision as the Play Pass or for editing the Tree.

MonFac Rack

Shortened form of Monitor Facilities rack. This is hardware that allows the creation, monitoring and control of (up to) 9-wide film stems.

Pan Designators

A pan designator is used to determine which portion of a panned signal will be received by a Track (bus) or Group. For example: Channel 1 is routed to Track 1, Track 2 and some other destinations. Track 1 is pan designated as Mono (ie true mono) and Track 2 is pan designated as Front Left. Panning of Channel 1 will not affect Track 1 because it is a true mono destination. However, Track 2 will only receive the portion of Channel 1 for Front Left, according to the panning on Channel 1.

Mono
This is a normal mono path. The signal received Track or Group will not be affected by surround panning. A Track designated as Mono would not normally be used in a Film Stem.

Centre Mono
This causes a Track to act as a normal mono routing destination (ie un-affected by surround panning), but is routed to the Centre film monitor when used in a stem. If the Centre Mono designator is used in Surround Sound Manager then the Tracks it is applied to are auto-routed to the Centre film monitor. This can be applied to Groups, but only has the same effect as normal Mono.

Left and Right
These are normal stereo left leg and right leg routing destinations. The signal received by a Track or Group is only affected by left/right panning (ie front/back, surround left/right and divergence controls have no effect). These should be used when Stereo is selected for Film paths in the Desk Edit Config page.

Front Centre, Front Left and Front Right
These are the surround destinations corresponding to the front speakers. Front Centre is often fed directly by dialogue to 'lock' dialogue to the screen.

Surround Mono
This panning destination has two different uses. In LCRS format, it is the panning destination for rear surround. In wider formats (5.1 and 7.1) it is the destination corresponding to the sub-woofer.

Surround Left and Surround Right
These are the panning destinations for the rear left and right speakers. These are normally only used with the wide formats (5.1 and 7.1).

Surround Centre
This is the rear centre destination (ie opposite front centre) used by the 6.1 format (also known as Surround EX).

Inner Left and Inner Right
These are panning destinations that sit between Front Left/Front Centre and Front Right/Front Centre to provide a smoother image across the front. These are normally only used with 7.1 format.

Path

Path (or signal path) is the term used to describe a discrete part of the signal flow through the console that has a distinct input and output, either to the outside world or to another path. In an analogue console, there is a fixed number of signal paths and they are hard-wired into different parts (or modules) in the console. 88D is a digital system and this makes it 'assignable'.
This means that the number of paths is not fixed but is selected according to the task in hand. This is done using the utility called Desk Edit that is part of Encore Plus. The path type indicates the way that a path is used. For instance, Channels are the main console inputs, similar to channel modules in an analogue console.

Play Pass

The Play Pass is the Mix/Pass that is being used to play back a previous recording of automation moves (events). Any Mix/Pass can be selected from the current Mix/Pass Tree to be the Play Pass.

Processing Element

DFC Gemini is a digital console that has a certain amount of processing power available. The processing power is provided by the XSP cards in the System or SPS Rack. The processing power is assigned in portions according to how the console is configured for the current session. Each signal path requires a certain amount of processing power. A signal path can contain audio processing, such as EQ or dynamics, and this also uses processing power.

A processing element is one of the individual items of audio processing (a gate, three band equaliser, etc.). The processing elements (and the processing power required) are assigned (or allocated) to the signal paths in advance of being used. The system works out how much processing power would be required for the configuration requested and if there is too much then the excess is rejected. Anything that applies changes to a signal in a path uses processing.

Quad-Madi II Card

Each Quad-Madi II card has 4 pairs of madi ports, each pair consisting of one Transmit port (**Tx**) and one Receive port (**Rx**). These pairs of ports are usually accessed from the back of the SPS rack (or they can be accessed from the front of the card itself (the upper port in each pair is Rx).

QuadMadi cards bring madi signals into the system and place the data on the backplane where the XSP cards can access, process, and then return this information.
QMII cards are available in three versions, depending on the amount of assignable delay required (none, 5secs total or 10secs total).
The card is also responsible for:

- Assigning Delay to a signal, either on Input or Output.
- Generating most (if not all) of the meter data seen on the meter bridge and fader beds.
- Dither on Outputs.

The system timing, ensuring all of the XSP processing cards run in sync.

Record Pass

A Record Pass is made when the transport is in play and changes to control values are recorded against timecode. At least one new automation event must be created by a control in a record mode. A new Mix/Pass number is created and displayed in red on the Encore Plus screen.

Routing

This refers to making electronic connections between the different signal paths within the console. Digital consoles provide routing control that is tailored for mixing down to surround sound formats in film post-production. In addition, 'standard' routing control is provided to give the console maximum flexibility and allow for non-post production applications.

Safety Snapshot

A record of the settings of all controls that can be automated, regardless of the automation mode the control is in. A Safety Snapshot is taken when New Mix is executed and when the system is put into Play. For New Mix, the Safety Snapshot is stored with Mix/Pass 1.0.
When the system is put into Play, the Safety Snapshot is taken but it is not stored unless the Mix/Pass is saved after the transport has been stopped.
The Safety Snapshot is stored with a Mix/Pass but separately from the automation event data.

SPS Rack

The largest rack in the system, responsible for the main audio processing.

Sync Source

This is the source for the word clock synchronisation signal that is used to ensure that samples of digital audio are sent and received simultaneously by digital audio devices that are connected together.

Virgin Territory

This is an expression used to describe parts of a Mix/Pass (or a series of Mix/Passes) for which there is no automation data and no settings in the Initial Snapshot. DFC Gemini takes an Initial Snapshot of all controls that can be automated. This means that DFC Gemini never has virgin territory, so any problems that virgin territory may cause are prevented.

Word Clock

This is a synchronisation signal that is used by digital audio equipment. Word clock ensures that the digital audio itself is synchronised so that artefact's such as distortion, crackle and drop outs do not occur. For instance, if the DFC Gemini is recording to a digital multi-track tape machine then they must be synchronised to send and receive each digital sample of audio simultaneously.
If they were not synchronised (out of phase) then the tape machine would record the samples incorrectly, so that the recording would not match the output from the console.
The rate at which word clock is running sets the sample rate (eg 44.1kHz) for the devices reading the word clock.

This should not be confused with timecode (or timeline) which is used to keep devices lined up at the same time position.

XSP

Acronym for Xtra Signal Processing. These are the main processing cards in the SPS rack, and are responsible for all the Audio and Dynamic processing.

2 Introduction

The DFC Gemini is the first all digital console designed specifically for use in film post-production and can be tailored to the requirements of users in every area of mixing sound for film. It can handle large numbers of inputs, mixed down to any current surround format, within a comfortable physical layout.

The DFC Gemini has dynamic automation of all signal processing controls, fully configurable DSP for processing and bussing, flexible I/O provision and an assignable control surface.

All aspects of feature film mixing are addressed:

- Multi-format surround panning.
- Flexible monitor formatting with insertion of matrix processors.
- Multi-operator capability (up to three) with separate console zones.
- Shared or discreet auxiliary and recorder busses.

Multiple configurations (setups) can be created and modified, and setups and automation are freely transferable between consoles of similar specification.

Signal Path Capabilities

The signal processing in the DFC Gemini is assignable to any signal path.
Each signal path only needs to have the signal processing it requires.
The processing available includes:

- Full stereo and surround panning.
- One to eight bands of fully parametric EQ.
- One or two high and/or low pass filters.
- Dynamics, in the form of Limiter, Compressor, Expander, Gate. The dynamics elements can have a key input, derived from any other signal path and sidechain EQ.
- One or two insert points, with analogue and/or digital interfacing.
- Up to 12 Auxiliary Sends per zone. Each auxiliary can be mono or stereo.
- Up to 10 seconds of Input / Output delay (hardware dependent).
- Three sets of Film Outputs.

Predubs

DFC Gemini allows up to 48 Predubs of linked input paths to be defined. A Predub is then assigned to one fader strip to conserve space. A Predub can be expanded into the PreDub Zone for adjusting fader offsets and making individual changes to EQ, dynamics, etc.

Auxiliary Sends

Each operating zone of the console (partition) can feed up to 12 Auxiliary sends. There can be up to three partitions, as determined by the hardware specification. Auxiliaries can be shared across the whole console (eg Auxiliaries 1-4 could be common, with Auxiliaries 5-12 discrete to each partition).

Bussing

DFC Gemini can provide up to 48 record busses, with associated tape returns. These are referred to as Tracks by this manual, by Encore and by displays on the console surface. The Tracks are used to form up to six film stems. Each film stem can be up to eight Tracks wide. The film stems can be set up in different surround formats simultaneously.
Input Channels feature full surround pan capability and can be routed to any or all Tracks simultaneously. Intelligent pan configuration automatically establishes the correct pan law for each stem that a Channel contributes to.

If a Channel is routed to a single bus, or busses that have no surround designation, then panners are disabled. Individual panning controls can also be removed altogether and this allows Channels to be double punched to the outputs with no panning in the circuit.

Metering

The meters are high resolution TFT, operating with Digital Peak, VU, or PPM characteristics. The meters can be assigned to any signal path with the Meter Designer utility in Encore.

Monitoring

The surround monitoring system can be configured for any of the current surround formats, or customised for non-standard monitoring. Also, up to three playback-only machines can be monitored directly, and each machine can have up to 24 tracks.
Standard studio/control room monitoring is also available.

Recorder Control

The Tracks can be configured to feed up to 6 stem recorders. These are accessed through the PEC/Direct Panel, which provides:

- Bus/Tape (PEC/Direct) monitor switching
- Cut or Solo of any bus in the monitors
- Safe/Ready switching and Bias control for the recorders

Parallel hardware interfacing allows dubbers, multitrack AIRS or workstations to be connected, with record tallies from the machines displayed on the panel (if supported by the record device). Similarly Bus/Tape (PEC/Direct) switching monitor logic accommodates the requirements of various types of recorder. Both monitor and bias switching can be Linked or Grouped.

Automation

The automation system for DFC Gemini is **Encore Plus**. It provides full dynamic automation of all signal processing functions. Linear motor faders and Logicator controls with led illumination actively show a Play Pass. Faders and Logicators are touch sensitive.

Automation functions include:

- Manual and Auto Glide matching for smooth transitions.

- **Collect Touch** facilitates scene changes by allowing a range of controls to be selected and then automation can be previewed and written in context.
- **Safety Nets** for restricting the action of controls to a defined period of timecode, such as a particular scene.
- Fader trimming for offsetting by small amounts.
- Automation conforming for adding, moving or removing sections when a reel is re-cut.

Automation modes can be selected globally but independently in each operating zone or individually for each control. Encore can work with any of the common timecode rates and can also display time in film footage. Mix/Passes can be automatically saved to the Encore hard drive and added to a graphical Mix/Pass Tree. At the end of a session any or all passes can be permanently saved in a multi-level filing system. Mix/Pass files can be exported or archived to a variety of media.

System Processing Limitations

SSP	Limited to 252 paths.
ESP	Up to 448 paths on a single mix setup (502 including necessary system paths ie Films, LSs etc).
XSP	Up to 448 paths on a single mix setup (502 including necessary system paths ie Films, LSs etc).

Desk Edit

Desk Edit in Encore is always the starting point for a new Desk Setup and console configuration. It is an Encore utility that is used for the basic Desk Setup which determines how many of each type of path is available.
Additional features of Desk Edit are placing signal processing elements in each path, assigning paths to the console surface (**Desk Designer** page) and setting up Predubs.

I/O Manager

I/O Manager is used for configuration of input and output ports (eg dither, delay, SRC, etc.) and assigning those ports to paths (Input/Output routing).

Console Setup Function and Input/Output Patching

Some of the functionality of Desk Edit and I/O Manager is duplicated using controls on the console surface.
The **SETUP** key activates three functions which duplicate some of the Desk Edit functionality:

- Turbo Allocation - assigning signal processing elements to paths
- Path Placement - assign paths to the console surface
- Path Process Switching (PPS) - change the order of processing elements in a path.

The **INPUT PATCH** and **OUTPUT PATCH** keys activate **Input** and **Output Patching** respectively, which allows the ports assigned to paths to be changed without using **I/O Manager**.

Surround Sound Facilities

The DFC Gemini is designed for use in the film and post-production industries. Surround Sound Facilities describes all the features for setting up routing and monitoring for film Stems.

Automation

Automation provides an overview of using automation on the DFC, and describes the use of the console surface for selecting automation modes.

For more information on Encore automation, see the separate **Encore Plus** User Manual.

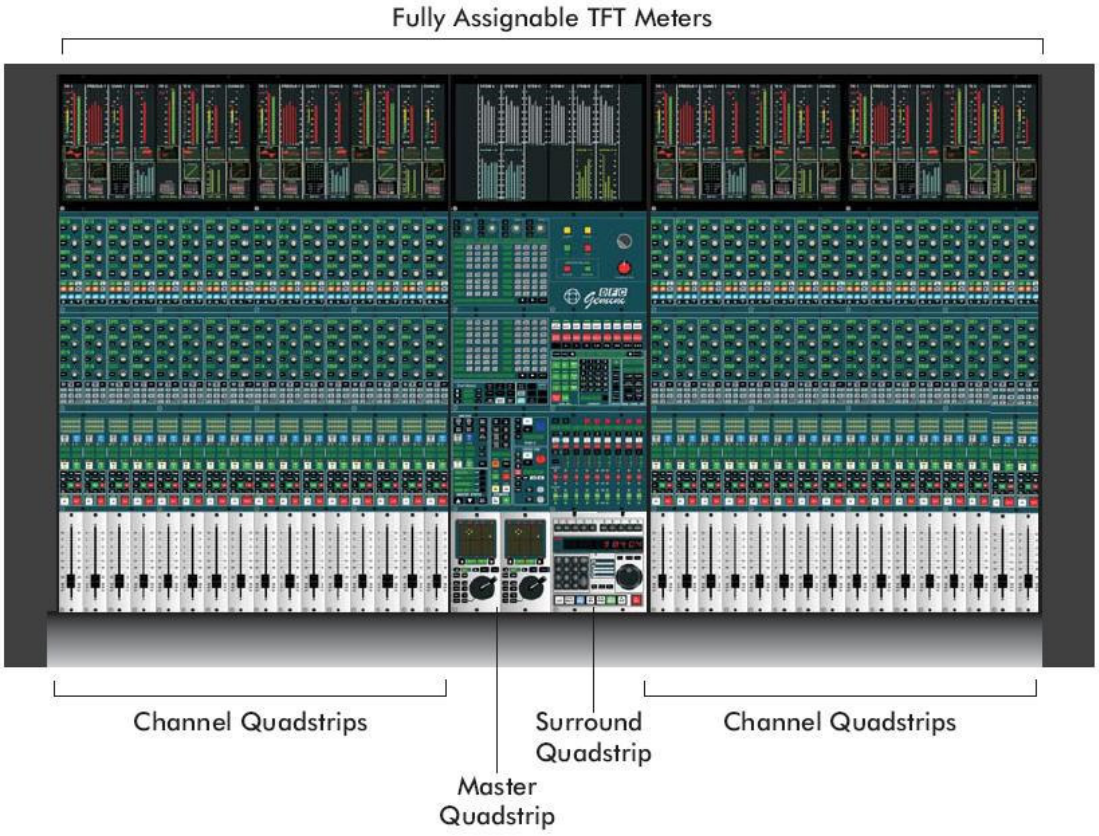
Note on Routing and Monitoring

The Routing and Monitoring appendices at the end of this user manual describe the 'standard' routing and stereo monitoring capabilities of the DFC Gemini which are not specific to the film industry.

3 DFC Gemini Console Surface

Quadstrips

The DFC Gemini console is constructed from standard sections, each of which is four channel strips wide. Each of these sections is called a **Channel Quadstrip**. There are two special Quadstrips called the Master Quadstrip (for global operations, routing, monitoring, etc.) and the Surround Quadstrip (with controls for surround monitoring, track arming, etc.).



A DFC Gemini also has a separate Encore workstation, and may have the optional Machine Control Panel, Graphic Equaliser Panel and/or Status Panel.

Fully Assignable TFT Meters

The DFC Gemini has 2 types of meter display, one for above the faders (above left), and a dedicated Centre meter panel (above right).

The fader meters can be set to show input signal level (for faders and a layer of signals not on the console surface) path information, EQ curve, Dynamic processing, surround routing and signal placement within the soundfield.

The Master meter panel shows individual stem routing and outputs, plus Group, Auxiliary and total Film outputs.

Stereo Bargraph Meters shows the level of the left and right legs of a stereo signal. A mono signal will be shown on the left bargraph. The overload bar shows how much the signal is overloading.

AB/MS and Phase Invert Indicators shows the stereo type being metered. The phase invert indicators illuminate separately for the left and right legs.
The Port Indicator shows the Input, Output or Insert port associated with the path.

The Channel Number Display shows the System Name of the signal being metered.

Phantom Power and Overload Indicators show when Phantom Power is active on a metered mic/line signal and when there is a signal overload.
Meter Mode Indication shows the currently selected metering mode, VU, PPM or PEAK.

Dynamics Scale and Indicators shows which Dynamic elements are active and their effect on the signal.

Routing and Metering Panel

The meter selection controls are used to assign a port to each of the Wild meters in a Meter Design.
Note that the Wild meters need not necessarily be part of the currently displayed Meter Design.

The Logicator is used to select the port to be metered on the corresponding Wild Meter.

The number keys and associated alpha displays on the Upper Routing Section are used to select internal routing destinations.

The left and right direction keys are called nudge keys and are mainly used for selecting the routing destination path type.

The section is also used for Path Process Switching (**PPS**) and the **SETUP** key activates Turbo Allocation.

Channel Strip

Each Channel Strip can be used to control up to four signal paths. Predub masters can also be assigned to a Channel Strip.

Each Channel Strip provides full control over the signal processing assigned to each path and the stem routing of inputs.

Controls are also provided for automation, auxiliary sends, control linking, fader ganging and Predub expansion.

A group of eight Channel Strips (which must use two whole Channel Quadstrips) can be designated as the **PreDub Zone**.

The PreDub Zone is used for expanding Predubs and for the AFU Function.

The AFU Function is used to expand the signal processing controls for a single path across the eight strips in the PreDub Zone.

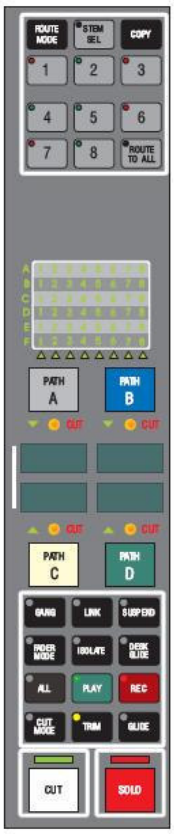
Channel Fader

The faders are touch sensitive and use linear motor drives to dynamically indicate position. Fader positions are read and translated digitally into the appropriate gain settings in the processing.

Faders can be driven by the dynamic automation system and also have their positions set by loading a Desk Setup, setting defaults or calling a path to the surface.

The faders have PFL switching which operates from an overpress against a spring after infinity has been reached. This is only relevant if the PFL bus is routed to some separate speakers (using the system path LS2) or if the console is not operating with Surround Monitoring (no Film paths).

Routing, Automation and Path Control



Routing Selection and Display

The Stem Routing keys are used to select which Stem to route the signal to, and which Paths within the Stem to route to. The Stem Routing Display shows which parts of which Stems the signal is routed to.

The triangular leds below the Stem Routing Display show the width of the current path. One will illuminate for a mono path and two for a stereo path.

When a Predub is on the surface, the leds will illuminate to show how many paths are in the Predub.

Path Selection

The path Access keys are used for a variety of special purposes. The primary use is to access the four signal paths which assigned to the channel strip. The second use is for routing where a Group or Main Path access key may be held down while those of the Channels are pressed. A similar procedure is used to route the Groups to the Main.

This action causes the Channel or Group Path access keys to illuminate as long as the Group or Main key is held. The latter remain lit to confirm subsequent routing.
The Channel to Group routing can be forward interrogated by holding down the Channel key when the illumination of all but the Group/Main Path access keys to which it is routed are extinguished.

By holding down the **ALL** key on a strip and pressing a Path access key on the same strip that layer will be brought to the surface of the console for all channel strips.

Channel Automation and Mode Controls

GANG and **LINK** are used for setting up groups of controls across separate Channel Strips. **SUSPEND** is used to isolate a control from a linked group so that its offset can be changed.

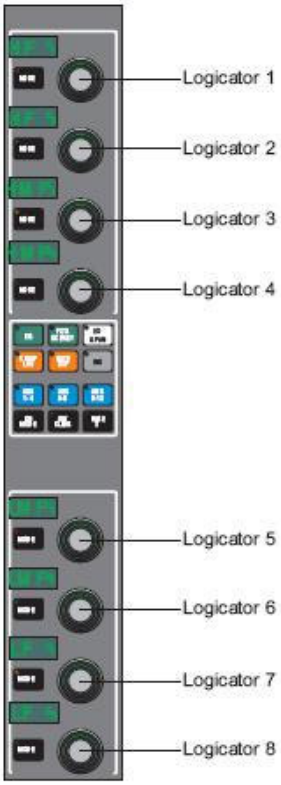
PFL routes the pre-fader signal to the AFL mix whose output appears either at its own interface for an external amplifier and loudspeaker or over-riding the Main Monitor Output.

FADER MODE and **CUT MODE** determine the automation mode of the fader and **CUT** key as selected with the **ISOLATE**, **PLAY**, **REC**, **TRIM** and **GLIDE** keys. The **ALL** key is used to control automation scope and to set the automation mode for all controls in a strip simultaneously.

Cut and Solo Keys

CUT mutes the signal completely.
SOLO routes the after fader signal to the AFL mix. When **PFL** is operated any AFL (SOLO) is removed.

Signal Processing and Auxiliary Control



The function of the Logicators depends on the selection made with the Function Selection keys in the middle. By convention, the Logicators are referred to as Logicator 1 (top) to Logicator 8 (bottom).
Each Logicator has an alpha display and a MODE key associated with it.

Logicators are touch sensitive and have led indicators that illuminate the top of the Logicator to show the setting. The 4 character alpha display shows the setting of the current parameter assigned to the Logicator.
It also shows what parameter is assigned to the Logicator when a Function Selection key is pressed and held.

The **MODE** key is used for automation modes and scope, and in conjunction with **ON/CLEAR** to reset a value to its default.

Each key has a led to show which functions are available and which is currently active. The **PAGE 2** key is used to access additional parameters for some of the functions. Its led illuminates green when the active function has a second set of parameters and red when the **PAGE 2** is pressed to access those parameters.

The **ON/CLEAR** key is used to enable and disable functions and reset values to defaults. The **ON MODE** key is for automation of the on/off function on the **ON/CLEAR** key.

Master Quadstrip

There can be up to three Master Quadstrips in a DFC, each of which provides control over an operator zone (partition).

Some functions (such as **Turbo Allocation**) are console-wide operations that can be activated from any Master Quadstrip.

Note that the Joystick Panel may or may not be fitted in the Surround Quadstrip.

Routing, Tone and Talkback Panel

Lower Routing Section Routing mode is activated when a button is held down on the Upper Routing Section.

The Lower Routing Section then displays available sources and allows them to be routed to the destination selected on the Upper Routing Section.

The **AFU** key activates AFU Mode when the panel is used to select the path expanded to the AFU.

The numbered keys 1 to 8 are also used for selecting the active meter design when the **METER DESIGN** key is pressed.

Tone/Talkback Section

The current Desk Setup must include a Talkback path for this section to work. Tone and talkback can be injected separately or together.

The **LS SEL** and **LS** keys are used to select and temporarily route alternative mono or stereo sources to the Film monitor output paths.

Quick Keys Section

Currently, this is only used to select one of the eight designs in the loaded Meter Design file.

Master Automation and Monitoring Panel

Main Path Section

This section is mainly used to globally bring one of the four layers to the surface.
It is also used in conjunction with other parts of the console for a range of functions, including patch modes for rapid changes to input and output routing from the surface.

Master Automation Section

Used for setting automation modes globally, and changing or interrogating automation scope.

Studio Loudspeaker Section

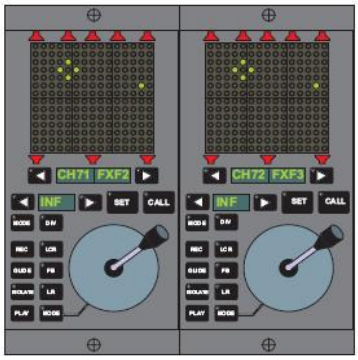
Used to control the level, status and source of the studio loudspeaker outputs. This is only applicable when not using Surround Monitoring.

Control Room Section

Used to control the level and status of the control room speaker outputs. Note that the large pot can be used to provide overall level control of the surround

monitor speakers but all other surround monitoring functions are controlled from the Surround Monitoring panel.

Twin Joystick Panel



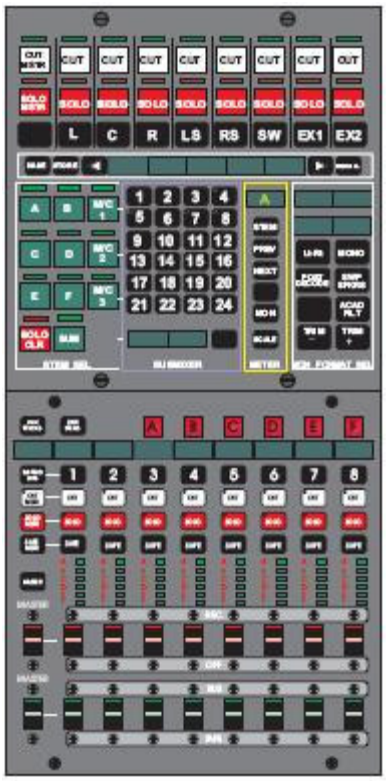
The twin joysticks allow fully automated surround panning of any two paths simultaneously. Any number of paths can be panned in turn using the joysticks with repeated passes.

The green led matrix displays show the position of the joystick (a dot) and the panned position of the sound (a diamond).

The dot is used to pick up the diamond and form a cross - the joystick then controls the panning of the sound.

The red speaker symbols illuminate to show the speakers which will be used in the target surround format. The keys on the panel allow control over which path is being panned, the automation mode, freezing of a panning axis and whether or not the joystick has control of the panning.

Surround Quadstrip



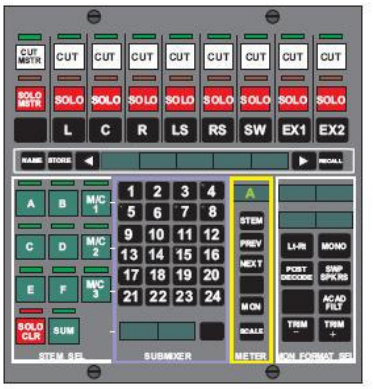
There can be up to three Surround Quadstrips according to the number of operator zones (partitions) that the console has.

If there is more than one partition then it is probable that only one Surround Quadstrip will have a Surround Monitor panel.

This is because the controls on the Surround Monitor Panel will give duplicate functionality if there is more than one.

Multiple PEC/Direct Panels provide control over the same set of film stems, but different stems can be controlled on each PEC/Direct Panel.

Surround Monitoring Panel



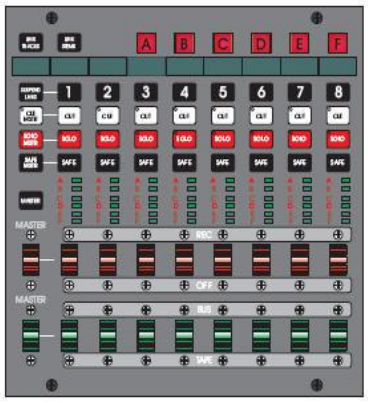
Allows the assignment of monitor outputs to either 6 (A to F) or 12 (A to L) stems. There are also three sets of external inputs which can have up to 24 inputs each.

The stems and external inputs are then routed to the speaker matrix and the Film Monitor paths.

The panel allows for operation at 3 calibrated levels and includes insertion points for matrix surround decoders.

Cut and Solo of any speaker along with small speaker and mono functions are provided.

PEC/Direct Panel



The PEC/Direct panel provides stem recorder control and configuration of the film stems.

It is used in conjunction with the Surround Monitoring Panel for fully configurable routing of track monitors to speakers.

Encore Plus Workstation

The Encore Workstation consists of a colour monitor, a mini keyboard and a trackball.

The monitor is used to display the main Encore screen and the screens and dialogue boxes for the various functions that Encore provides.

The main Encore application is described in the separate **Encore Plus** manual.

The mini keyboard and the trackball are used to enter information and select and control the Encore functions.

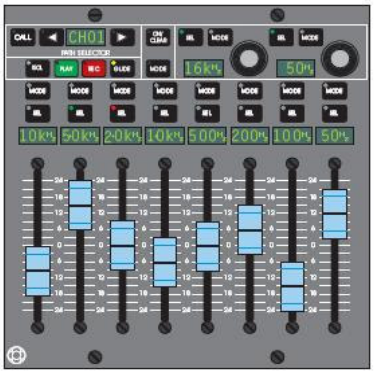
Optional Panels

MCS Panel

The MCS Panel is a hardware option that is used to control multiple transport devices (up to the first eight that are detected on power up).

It can be used and configured directly or in conjunction with the Encore screen and options on the
Transport Menu. Machines are controlled in groups.

Only one group can be actively controlled at a time. Each group can contain up to eight machines. Machines can be 'hot plugged' and will be automatically detected by the MCS.



Graphic Equaliser Panel

The Graphic EQ Panel is an optional hardware upgrade which provides dedicated control of EQ on one Channel, Track or Group. The panel is used to control up to eight bands of EQ according to the EQ assigned to the path on the panel.

There can be up to two Graphic EQ Panels per console partition which can be assigned to any Channel, Track or Group in the same partition.

They can not be assigned to the same path at the same time.

Status Panel

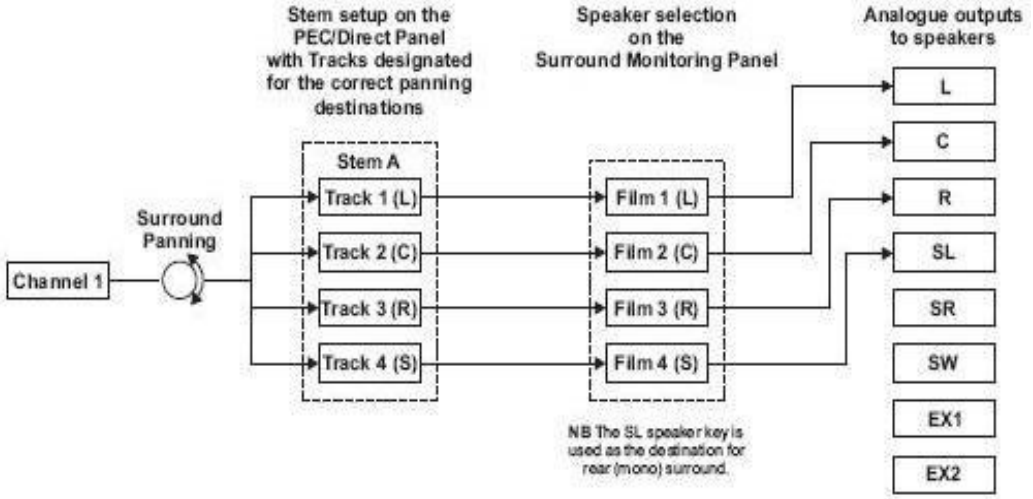
The optional Status Panel provides indication of overload, solo, automation lock (Alarm 1 goes out) and speaker swap (Alarm 2).

The master tally indicators are not used.

It also has a talkback microphone and talkback gain control.

4 Getting Started

This section gives a practical example of configuring the console with a minimal Desk Setup that will be used to generate an LCRS surround mix. The eventual configuration is summarised in the Surround Monitoring diagram.



It is advisable to read through this tutorial before going through it on your console.

The steps in this tutorial are:

- Log in to Encore.
- Create a new Desk Setup with **Desk Edit**.
- Use **I/O Manager** to patch the inputs and outputs.
- Setup the Film Stems on the console surface.
- Setup up the routing on the console surface.
- Monitor an audio source to demonstrate the surround panning.

Logging in to Encore

Logging in provides data security and segregation of different user's data. A screen (or monitor), trackball and keyboard that are separate from the main DFC Gemini console are used to interact with Encore. It should be noted that although these items are not physically part of the console surface (except where this is requested) they are an integral component of the DFC Gemini system.
The main uses for Encore are configuration and offline editing.

To log in, press and hold **Ctrl**, **Alt** and **Del** on the Encore keyboard.
The **Welcome** dialogue box will be displayed and this is used to provide the user name and password.

Type the Username. Press Enter or click on **OK**.

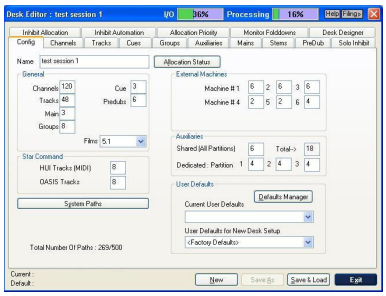
Double-click the desktop Encore icon and the main Encore screen will be displayed.

Creating a new Desk Setup

The utility used for basic configuration of the console is called **Desk Edit**.
This is used to setup the number of signal paths that are required, provide paths with basic processors such as EQ, filters, etc., and to decide the placement of the paths on the console surface.

The signal paths are called Channels, Tracks, Auxiliaries, etc. They are used for the same functions as they would be on an analogue console eg Channels are used for inputs to the console, just as Channel Strips would be on an analogue console.
The main difference when using the DFC Gemini is that the number of paths is not fixed and the appropriate number can be used according to a particular task. There are also some special path types used by the DFC Gemini (eg the Film paths that are used as part of the surround sound system).

To start a new Desk Setup
Click the Desk Edit icon and the Desk Editor will be displayed with the Config page on top. Information about the currently loaded Desk Setup will be shown.



Desk Edit is used to provide a large amount of information. This would be too much to fit on one screen, so **Desk Edit** has multiple pages selected with tabs at the top of each page.

Click the **New** button.

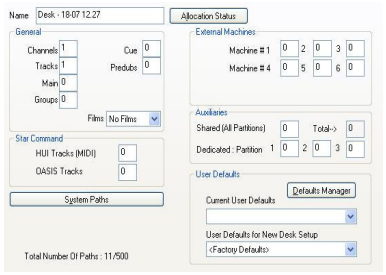
A dialogue box will be displayed asking which type of Desk Setup you wish to create.

Click **User Desk Setup**, if it is not already selected and click **OK**.

The **Config** page will be cleared and a blank Desk Setup is now ready for configuration.

Number of Signal Paths

The **Config** page will show the default name and numbers of paths, similar to the following example:



This is where the basic configuration of the **Desk Setup** is created.
The name is used to identify the purpose of the particular Desk Setup, and is also the name of the file that the Desk Setup will be saved in on the Encore hard disk.

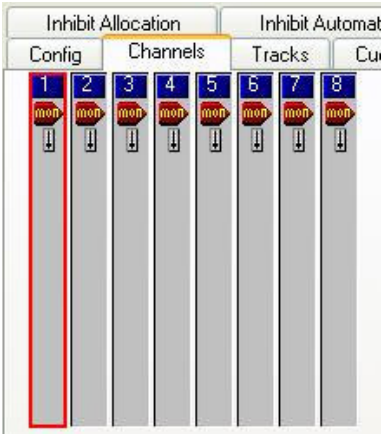
Type a name on the keyboard (eg 'Tutorial 1'). The default name will be replaced by whatever is typed.
Press the **Tab** key to jump to the Channels box, and enter the number **8**. Press the **Tab** key to move to each path number box in turn and enter **8** Tracks, **4** Groups and **1** Main.

Click on the down pointing arrow at the end of **Films** box.

A small drop down list will be displayed that shows the available Film monitoring formats. Click on **LCRS** in the list. The list will close and **LCRS** will be shown in the **Films** box.
The next step is to setup the signal processing that will be available to the Channels.

Signal Processing in the Channels

Click the **Channels** tab.



The **Channels** page will now be displayed.

It shows eight channels, each of which has the default processing of a mono input and a fader. Channel **1** is currently selected with the red highlight.

You are going to add four bands of EQ, two filters, a DRC, a sidechain and an insert to Channel 1 and then copy this to all the other Channels.

A DRC is a Dynamic Range Controller. This is a special type of dynamics processor that is a combination of a Compressor and fixed ratio Expander. It is convenient because it uses less processing power than two separate dynamics processors and is sufficient for most purposes. However, it is not quite as flexible as a separate Compressor and Expander would be.

At the bottom right of the page is a box showing the available processing.

The scroll bar at the bottom of the box is used to view additional processing elements.

Click the **EQ** icon labelled **EQ 4** and then click the **<-Add** button.
The EQ 4 icon will move to the box that shows the processing that is designated for Channel 1.

Click and **<-Add** the **DRC**, **Dyn EQ**, **Filter 2** and **Insert** icons.

Note that the processing is also shown in Channel 1 where it is highlighted in red. Click the **Copy** button.
This copies the processing setup in Channel 1 and the **Paste** button becomes available. Click the **Paste** button.

A dialogue box will be displayed that shows the processing that will be pasted and various options.

The **All** radio button is selected by default and this is the required option. Click **OK**.

The processing will be duplicated across all eight Channels.

This Copy and Paste operation only affects the current page of Paths. It is not possible to copy processing elements between path types.

Now that the Channels have been setup, it is necessary to designate the Tracks as surround panning destinations for our LCRS example.

Setup the Film Stems

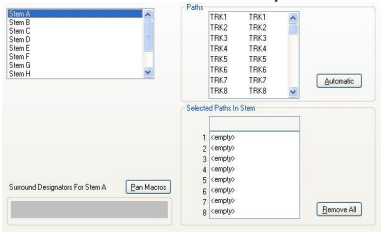
Now that the Channels have been setup, it is necessary to create **Film Stems** that the Channels can be routed to. This can be done automatically on the **Stems** page of **Desk Edit**.

Each Film Stem is a set of Tracks, and a Track can only be used in one Film Stem. Each Track in a Film Stem is also given a pan designator that corresponds to a speaker position. For LCRS, each Film Stem uses four Tracks and the pan designators used are Left, Centre, Right and Surround Mono.
In addition to this, automatically configuring the Film Stems will route each Track to the Film path that corresponds to the pan designator. The Film paths should already be routed to the outputs to the correct speakers.

The surround diagram shows a schematic form of the final result. Notice that the diagram mentions using the PEC/Direct and Surround panels for achieving this configuration - this is because the DFC Gemini is highly flexible and allows for manual configuration of Film Stems and Surround Monitoring.

The Tracks on DFC Gemini are traditionally referred as the 'busses' on analogue consoles used for film mixing.

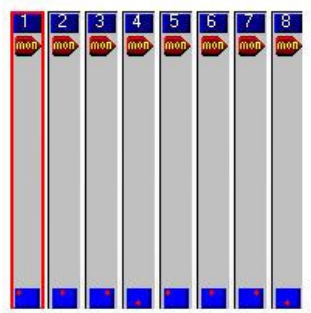
Click the **Stems** tab, and the Stems page will be displayed.



Click the **Automatic** button. A warning dialogue box will be displayed, indicating that all Stems will be reconfigured.

Click the **Yes** button, and the Stems will be configured automatically.
Note that the Pan Designators are shown for Stem A.

Click the Tracks tab.



Notice that the icons at the bottom of the Tracks show that Track 1 is a left speaker destination, Track 2 is a centre speaker destination, Track 3 is a right speaker destination, and Track 4 is a rear mono surround destination.

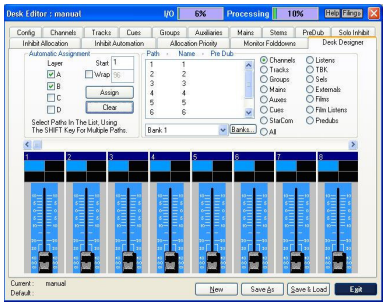
This pattern is repeated across Tracks 5 to 8.
If there were more Tracks it would continue repeating up to the last Track used in a Stem.

There are no more changes to be made to the paths in the Desk Setup, but it is worth having a look at the other pages.

Click on each of the tabs for **Cues**, **Groups**, **Auxiliaries** and **Mains**. Note that the **Cues** and **Auxiliaries** pages are blank because you entered **0** for them on the Config page.

Path Placement

The next task is to decide the placement of paths on the console surface. For the purposes of this tutorial, only the Channels need to be assigned to the surface, but we will also assign the Tracks and Groups so that it becomes a familiar process.
Click the **Desk Designer** tab, and the Desk Designer page will be displayed, with Channels listed for placement by default.



Placing the Channels
Click the check box for **Layer A**. The tick in the check box means that we are going to assign the Channels to the Path A Access keys on the surface.

Click **Channel 1** in the list to highlight it.

Click the scroll bar so that **Channel 8** is visible. Hold down one of the **SHIFT** keys on the keyboard and click on **Channel 8**.
All the Channels will be highlighted.
Click the **Assign** button.
When the highlight in the list is removed, the channel numbers will change colour to indicate that they have been assigned. The representation of the faders in the bottom half of the screen will show the numbers **1** to **8** in the boxes that correspond to the alpha displays for the Path A Access keys.

Placing the Tracks
Click the check box for **Layer A** and the check box for **Layer B**. There should now be a tick in the **Layer B** check box, but not in any of the other Layer check boxes.
Click the radio button for **Tracks**.
Click the first Track in the list and then **Shift/Click** the last Track (remember to scroll down to Track 8).
Click the **Assign** button again.
The Tracks are now assigned to the first 8 Path B Access keys.

Placing the Groups
Assign the Groups to **Layer C**, using a similar procedure to assigning the Tracks to Layer B.

Save and Allocate

The new Desk Setup is complete so it must now be saved and allocated to the console. Click the **Save** button. A **Confirm Create Desk Setup** dialogue box will be displayed showing the name you have given the Desk Setup.
Click **Yes**.

The **Copy Porting** dialogue box will now be displayed (before the **Desk Setup** is saved or allocated). This is displayed because it is the first time that the new Desk Setup has been saved.
It allows the port routing to be re-used from the **Desk Setup** that is currently allocated on the console before it is replaced by the new **Desk Setup**.

The porting of all path types is selected by default.

Click the **Copy Porting** button.

It is advisable to ensure that the **Listens**, **Talkbacks**, **Sels**, **Externals** and **Films** options are always checked – at least. This ensures that even if all of the I/O to the console has changed, the monitoring and solo systems will still retain the same porting.

The dialogue box will be replaced by a timer that is displayed while the Desk Setup is being saved and then allocated on the console.

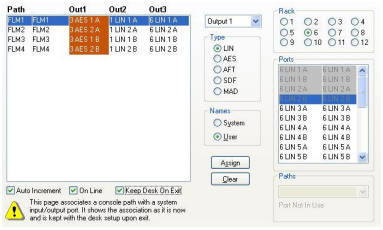
When this is complete, a dialogue box will be displayed confirming that the allocation process has finished.
Click the **OK** button, and click the **Exit** button to quit **Desk Edit**.

If you inspect the console surface, you will see that the first eight fader strips will have the Channels, Tracks and Groups assigned to Layers A, B and C respectively.

The next task is to use **I/O Patching** to check the Film paths are patched to the correct outputs, and then patch the Channels to suitable inputs.

Check the Film Outputs

Click on the **I/O Patching** icon and **I/O Patch** will be displayed.
The tabbed **Channels** page will be on top. Click the **Films** tab.



The **Films** page will be displayed with the four Film paths.

Their current outputs are shown in the **Out 1/2/3** column. Check that the port names are correct.
If the ports are not correct then go to **Route Films to Output Ports** below.

If the ports are correct then skip to **Route Input Ports to Channels**.

Routing Films to Output Ports

Click in the **Out** column. This will set the port selection to **Outputs**.

Click a **Film** path that does not have the correct output port.
Click the radio buttons for the **Rack** number and the correct port **Type**.
The **Ports List** will show all the output ports of the selected type in the selected rack number.
Click the correct port name in the **Ports** list.

If the port is already being used, the Paths box will show the name of the path using the port and a flashing message indicating the port is used by 1 path.
Click the **Assign** button. If the port is already used, a dialogue box will be displayed asking for re-assignment confirmation. This is because Output ports can only be attached to one Output path at a time.
Click the **Yes** button.

The port will be assigned to the selected Film path. The port name will be shown against the Film path in the relevant Out column.

Repeat the procedure for any other Film paths that are not routed to the correct port.

Routing Input Ports to Channels

it is possible for every input to be assigned 2 input ports (**A** & **B**), and to freely swap between them on the console surface.

Click the **Channels** tab. The tabbed **Channels** page will be displayed on top.
Click the **In A** column. Click **1** in the **Path** column to select **Channel 1**.

Click the radio buttons for the **Rack** number and the correct port Type according to the port names you have been supplied with.
The **Ports List** will show all the output ports of the selected type in the selected rack number. Click the correct port name in the list.

If the port is already being used, the **Paths** box will show the name of the path using the port and a flashing message indicating how many paths are using the port. Any number of paths can use an input port.
Click the **Assign** button. The port will be routed to the **Channel**. The port name will be shown against the Channel number in the In column.
If desired, repeat the procedure for **In B** and for any other Channels that you wish to assign inputs to.

When you have finished making changes, click the **Exit** button.
The Desk Setup will be saved automatically and this will save the I/O Routing changes.

A Note on Port Naming Conventions
The system names for input and output ports indicate the rack number, the port type, the port number, if the port is mono or stereo and whether the port is an input or output.

Rack Number
The leading digit(s) in the port name indicate the rack number, according to which **MADI** port the rack is connected to from the main DSP Rack. For instance, 2 lin 3a is a line input from an ADC card in the IOS Rack connected to the second MADI port, and this is referenced as Rack 2.

Port Type
The port type is summarised by the three letters following the rack number. For instance, 3 aes 1ab is a stereo input from an AES/EBU card in Rack 3.
The exception is for ports that are connected by MADI that are not part of the DFC Gemini system. For instance 6 mad 10 is the tenth input on MADI port 6. This could be from AMS Neve outboard equipment (eg a TDIF/MADI Interface unit) or any third party device (eg a tape machine) that has a MADI interface.

Port Number and Mono/Stereo Status
The trailing numbers and letters indicate the port number within rack. For instance, 2 lin 5a is mono input that is the right leg of line input 5 in rack 2.
Any pair of ports can be combined as a stereo pair (this is the default for AES ports). Line and AES ports are numbered in the sequence 1A, 1B, 2A, 2B and so on. A matching pair of ports is combined to make a stereo pair, eg 1AB, 2AB, 3AB and so on.
Other port types can be combined into a stereo pair using an odd numbered port for the left leg and the following even numbered port for the right leg. For instance, 6 mad 11/12 is a stereo MADI input using MADI inputs 11 and 12 on MADI port 6.

Input or Output
The port type in system names for inputs are in lower case (i.e. small letters) and for outputs are in upper case (i.e. Capital letters). For instance, 1 AES 2AB is a stereo output and 1 aes 2ab is the matching stereo input.

To Route **Channel 1** to **Stem A**, press the **Path A** key on either the master **Main Paths** panel or on the first fader strip on the console. This will ensure that **Channel 1** is assigned to the fader strip.

Look at the Stem Routing Display on the fader strip for Channel 1.
If the letter A is not illuminated, press the **STEM SEL** key until it is. The leds in the 1 to 4 keys will illuminate green.

Press the **ROUTE TO ALL** key.

The leds in the 1 to 4 keys will change from green to red and the digits 1 to 4 next to A on the Stem Routing Display will illuminate.

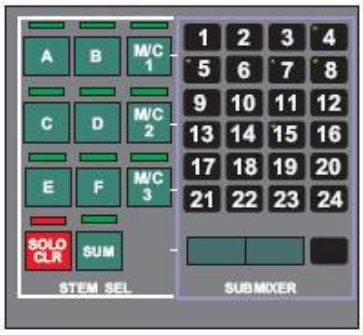
Channel 1 is now fully routed to Stem A.

Press and hold the **I/O & PAN** key for Channel 1.

You will see that the alpha displays associated with Logicators 6 to 8 will display F-b, Div and Lcr respectively. This shows that these panning controls have been enabled automatically by routing Channel 1 to Stem A. Release the **I/O & PAN** key.
At this point, do not route any more Channels to Stem A.
This will allow you to use a single audio source to hear the effects of the panning controls. You can add more Channels at a later time.

To save changes, press the **KEEP** key on the console surface. This will save the routing changes to the Desk Setup.

Monitoring the Surround Mix



Press the **A** key in the **STEM SEL** section of the Surround Monitoring panel.

Channel 1 is now fully routed through to the Film outputs via Stem A.

Activate the audio source that is connected to the input port for Channel 1 (eg if it is a tape machine, put it into play).
Gradually turn up the level control pot on the Control Room panel until the signal is audible on the speakers at a satisfactory level. Press the **I/O & PAN** key on the fader strip for Channel 1.

Turn Logicators 6 to 8.

You will hear the effects as the changes are made to the pan position.

You have now configured your DFC Gemini for a simple surround mix.

At this stage, it may seem that the configuration is a long process, but it should be remembered that setting up the console for a particular session is a 'once only' task.

Also, the actual work of making mixes and monitoring the results depends on proper configuration of the console for the project in hand.

This is why this tutorial has concentrated mainly on the setup phase.

Some other points to note about the operation of the DFC Gemini are:

Saving the configuration in the **Desk Setup** means that most of the work has already been done when a similar setup is required for a new project.
The setup can be changed 'on-the-fly' from the console surface to refine each Desk Setup. The Desk Setup only uses and allocates the resources that are required for the task.

Other useful information for users new to DFC Gemini and digital consoles, See
- How the Surround Sound System Works.
- Signal Paths.
- Automation.
- Metering.

Updating the Static Desk Setup Snapshot

Within each Desk Setup, there is a snapshot called the **Desk Setup Snapshot**. This is a static snapshot of all processing values, button switch states, mic gain etc. and it is updated every time on a **Save & Load** operation within **Desk Editor**.
It is possible to update this snapshot without a **Save & Load** operation.

On the Master Automation events panel, hold down the **All/Scope** key.
Press **KEEP**.
Release the **All/Scope** key.

A message will appear in the alphanumeric display above the **KEEP** key showing the status of the Keep operation.

Message	Explanation
ReadOnly	Desk Setup failed to update due to file being Read Only
All OK	Desk Setup and Automation saved successfully
DeskONLY	Desk Setup saved, Automation failed to save – timeline running or Automation not enabled in Encore.
DeskFAIL	Desk Setup failed due to Filer error.

If you are also logged onto Automation, performing this action will:

- Write a new Mix/Pass to the tree
- Increment the Mix/Pass number by 1
- Clear the automation memory buffer.

5 Signal Paths

A **Path** is a discrete part of the signal flow through the console that has a distinct input and output, either to the outside world or to another path.
A **Port** is an interface to the outside world, eg a D/A output converter, an AES/EBU input or a digital MADI input or output.

Note that all path types can make use of any signal processing functions, including using up to two inserts each. The total amount of processing available depends on the hardware configuration.

Channels

Channels provide the main inputs to the console. They can be mono or stereo. Channels are assigned to the faders according to the **Desk Designer** page of **Desk Edit** when a new Desk Setup is created.
The default path names for Channels are just the number for the path (eg 1, 2, 3, etc.).
Channels must be connected (port routed, patched) to an **Input Port**. This is achieved using **I/O Manager** or **Input Patching**.
A Channel can also have a direct output assigned to it.

Channels are usually routed to the Tracks that make up **Film Stems**. They can also be routed to Tracks that are not in stems, Main Outputs and Groups. They can also make contributions to Auxiliaries.
Channels are also where most of the initial signal processing is applied.

Tracks (Busses)

The Tracks provide the same functionality as 'busses' (tape monitors, track sends and Film Stem elements) on conventional analogue consoles.
Tracks are mono only. They are used to create the Film Stems on the PEC/Direct panel. Bus/Tape switching is provided by the PEC/Direct panel.
The default path names are TRK1 to TRK9, then TK10, TK11, etc.

Tracks have a track send (output) and track return (input) at the beginning of the signal path. These can be connected (port routed, patched) to an Output and an Input Port. This is achieved using **I/O Manager** or **Input Patching** and **Output Patching**.

Tracks can have Channels, Groups and other Tracks as routing sources. Tracks are usually routed to Films (to feed the Surround Monitor), but they can also be routed to Main Outputs, Groups and other Tracks. The software that controls routing prevents any feedback loops from occurring.
They can also make contributions to Auxiliaries.

Groups

Groups are mono or stereo paths that can be used to provide extra outputs from the console. Mono Groups can also have pan designators applied so that any Channels routed to them will pan to the Group according to the designated speaker position.
This would be useful, for instance, in feeding an out-board effects unit with the panned signal(s) for the rear surround, which could then be looped back into the console via an input to a Channel.

Groups are not used in Film Stems. They cannot use Bus/Tape switching and are therefore unable to use the PEC/Direct panel.

Channels and Tracks can be routed to Groups. Groups can be routed to Main Outputs, Auxes and Tracks.

Auxiliaries

The Auxes provide additional auxiliary outputs that can be used for a variety of purposes to increase the flexibility of the console. For instance, an Aux could gather several Channels together and output to an effects unit.
The return from the effects unit can then be the input to another Channel which is in turn routed to a Surround Stem.

Another application is to use an Aux to change the contribution levels from Channels to a sub-woofer. The Aux can output to a spare MADI port that loops back into another Channel which is in turn routed to the sub-woofer part of a surround Stem.
Changing the contribution level from one Channel to the Aux would then change that Channel's contribution to the sub-woofer without affecting the rest of the surround mix.

Up to 36 stereo or mono Auxiliary Sends are available. The Auxes assigned to the **AUX** selection keys will depend on whether or not Split Console is in operation and how many Shared Auxes are configured. Only the first 12 Auxiliary Sends are available when not using **Split Console**.

Each Aux can be Pre- or Post- fader, and can have the contribution level adjusted from -102dB to +10dB and be balanced when stereo.

Auxes can take contributions from Channels, Tracks and Groups, and can be routed to Cues or a physical output.

Cues

Cues are traditionally used (on non-film consoles) to provide audio to an artist in a studio, and so on.
Cues are present on the DFC Gemini for compatibility with Logic series consoles. It is not anticipated that the Cues will be used in a film post-production environment.
Cues provide outputs that are generally fed to headphones or extra sets of speakers in a studio.

Auxiliaries and Main Outputs can be routed to Cues.

Main Outputs

Main Outputs (or **Mains**) traditionally provided the stereo mix and monitoring outputs from Logic systems.
Main Outputs would only be used if a plain stereo mix is required without using the Surround Monitoring system.

Films

Film paths are used by the Surround Monitoring system as outputs to the monitoring speakers.

Films can be assigned to the console surface, although this is not necessary for their operation.

The number of Film paths determines which speaker keys are available on the Surround Monitoring panel.
There can be 0, 2, 4, 6 or 8 Film paths with speakers keys available as follows:

No. of Film paths	Speaker keys available
0	None
2	L, R
4	L, C, R and LS
6	L, C, R, LS, RS and SW
8	All

The number of Films also determines the number of Film Listens. The default path names for Films are **FLM1** to **FLM8**.

Films must be routed to the outputs to the monitoring speakers with **I/O Manager** (or **Output Patching** can be used if the Films are assigned to the surface).

The Films also have Encode/Decode inserts, and Lt-Rt/Mono returns which must be patched to the appropriate inputs and outputs with **I/O Patching** (or see Patching Film Inserts for Post Decode and Lt/Rt if the Films are assigned to the surface).

When there are 2 Films (Stereo) the Pan Designators Left and Right are used (not Front Left and Front Right), and the **ACAD** (Academy filter), **POST DECODE** and **Lt-Rt** keys are disabled.
Also, LS Sel, Tracks and Externals are routed to both left and right when **MONO** is selected.

Externals

Externals are used to provide additional direct inputs to the Surround Monitoring System from up to three tape machines (or other direct sources).

Each External machine can provide up to 24 inputs, giving a maximum of 72 Externals. The number of inputs from each external device is specified as part of the Desk Setup in the **Config** page of Desk Edit.

The Externals are selected for monitoring using the **STEM SEL** and **SUBMIXER** sections of the Surround Monitoring panel.

PreDub Masters

PreDub Masters are a control only path type used to control the Predub members (comprising of Channels or Tracks).
A PreDub Master uses no processing resources.
All controls in the Predub members are linked to the PreDub Master.

PreDub Masters are assigned to the surface using the **Desk Designer** page of **Desk Edit**.

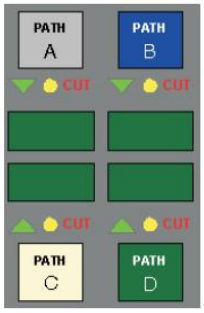
If a PreDub Master is not assigned to the surface then it is not possible to expand it and access the member paths.

The **PreDub Zone** is a block of (up to) eight channels strips (two quadstrips) on which **Layer A** is used for expanding Predubs.
The PreDub Zone is also used for expanding the signal processing and aux controls in **AFU** Mode.
The location of the PreDub Zone is set using **Partition Designer** in **Preferences**.
A console that has multiple partitions can have a PreDub Zone for each partition.

PreDub Masters can control a group of up to 8 Channels and/or Tracks in any combination/order.

The Predub members are 'stacked' under the PreDub Master and are accessed individually by expanding the Predub across the PreDub Zone.
A Predub can not be expanded on a console (or partition) that does not have a PreDub Zone.

To change the overall level of a Predub, press the **Path** access key for the Predub and move the fader.
The signal width indicators below the Stem Routing matrix will indicate how many paths are in the Predub.



To expand Predubs, press and hold the **Path** access key for the Predub master.

The associated alpha will display the user name for the Predub.
The signal width indicators below the Stem Routing matrix will indicate how many paths are in the Predub.

The leds in the **GANG** and **LINK** keys will illuminate red.

Press the **LINK** key on the same channel strip, and release the Path access key.
The paths in the Predub will be expanded across **Layer A** in the Predub zone. Each path can now be controlled in the same way as a normal path (i.e. changing EQ, etc.).

The PreDub Master will remain in place and changing its controls will change the slaved controls in the Predub zone.

- Continuous controls (faders, EQ frequencies, etc.) can be moved to change the offset from the PreDub Master. The offset is retained.
- Stepped controls (phase reverse, aux pre/post, etc.) can be changed, but if the PreDub Master is changed then the Predub members will follow the Master settings.

To collapse the Predub slaves, press the and hold Path access key for the Predub master. Press the **LINK** key on the same channel strip, and release the Path access key.

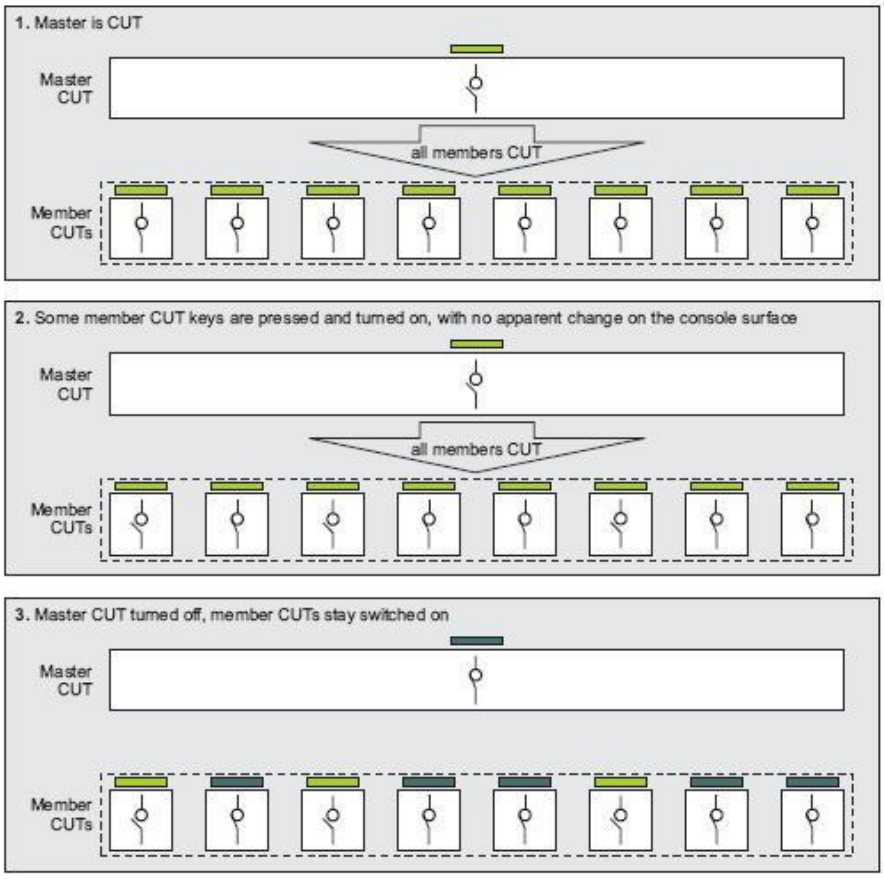
PreDub CUT and SOLO
A **CUT** or **SOLO** on a PreDub Master will cut or solo all the paths in the PreDub.

While a PreDub Master **CUT** or **SOLO** is on, the individual CUT or SOLO on a PreDub member can be switched on or off, but will not override the CUT or SOLO imposed by the Master. The individual CUT or SOLO on a PreDub member only takes effect when the CUT or SOLO for the PreDub Master is off.

An individual CUT or SOLO on a PreDub member will remain on, even when CUT or SOLO on the PreDub Master is turned off. This is illustrated below.

For example, if a PreDub Master is CUT while the PreDub is expanded, the CUT keys for the PreDub members can be pressed with no apparent effect. However, the status of CUT keys for the PreDub members is registered, and when the CUT for the PreDub master is turned off there could still be PreDub members that are CUT.

This could also happen if the PreDub is collapsed before the Master **CUT** is turned off (ie the member is cut but this cannot be seen on the surface).



System Paths

The System Paths are special path types that are used by DFC Gemini for the solo, talkback and tone functions to operate correctly. The number of each type of System Path can be changed for a particular Desk Setup but it is strongly recommended to keep the defaults for these path types.

SEL

There are three stereo **SEL** paths by default (**SEL** is an abbreviation of **Select**), **SEL1** to **SEL3**, that are used by the (legacy) monitoring system.

SEL1 is often used to output to near-field speakers (i.e. normal domestic quality speakers) to test compatibility of a surround mix with home hi-fi or stereo televisions.

Listens

There are two **LISTEN** paths by default, **LS1** and **LS2**, that are used by the normal **AFL** and **PFL** solo busses.
These should not be confused with the small loudspeakers (L/S 1 and L/S 2) that can be fed by SEL1 and SEL3.

Talkback

There is one **TALKBACK** path that is used for the talkback system and the tone/slate generator.

Film Listens

These are used to provide a non-destructive AFL solo bus that feeds the Surround Monitors directly. The number of **Film Listens** is automatically changed to match the number of Film paths, and this should not be changed manually. They are named **FLS1** to **FLS8**.
The following table summarises the maximum quantities of each path type and the names used in different displays:

Path	Maximum paths	Desk Edit Config Page name	Encore Path Names	Meter Designer Names	Name Displayed on Meters	Path Type Display on Matrix Panel
Channels	192	Channels	*n*	Channels	*n*	Chan
Tracks	96	Tracks	TRK*n* to TR*nn*	Tracks	{stem} A/tr*nn*	Trk
Groups	32	Groups	GRP*n* to GR*nn*	Groups	Gr *n*	Grp
Auxiliaries	36	Auxiliaries	AU *n*	Auxes	Au *n*	Aux
External Machines	72 (up to 24 per machine)	External Machines	Externals	Externals	E *n*	MC 1, 2, 3
Predubs	48	Predubs	PD *n*	Pre Dubs	-	PD
Surround Monitor Busses	7.1	Films	FLM*n*	Films	FM *n*	Film
Talkbacks	1	Talkbacks	TBK	TBK	tb	Talk
Surround Solo Bus	8	Film Listens	FLS*n*	Film Lstn	FL *n*	Flsn
Mains	4	Main	MAIN then MAI*n*	Mains	Mn *n*	Main
Cues	12	Cue	CUE*n* to CU*nn*	Cues	Cu *n*	Cue
Stereo Monitor Buses	6	Sels	SEL*n*	Sels	SEL*n*	Sel
Stereo AFP/PFL Solo Buses	2	Listen	LS *n*	Listens	LS *n*	Lstn

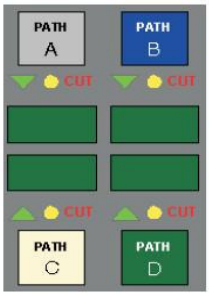
Where *n* = path number

The Encore Path Name is used in the **System Name** column when paths are listed in Encore functions and utilities.
This is also used on the alpha displays associated with the **Path Access** keys and can be overridden with a User Name. Mains, Cues, SELs and Listens are shown separately because they are not necessary to normal operation of the DFC.

Bank / Layer Selection on the Fader Strips

The DFC Gemini uses four Banks (**1** to **6**), each of which has four layers (**A**, **B**, **C** & **D)**. This means that any fader strip can have up to four signal paths assigned to it, one for each of the Path Access keys.
Signal paths are initially assigned to the fader strips using the **Desk Designer** page of **Desk Edit**. The console surface **Setup** function can also be used to change fader assignment.

To select which **Bank** to use, press the **Bank** button in the **Quick keys** section of the console. Now use the numbered **1-6** buttons above to select the desired Bank.
The bank name will be displayed in the long alpha. The 4 **Path Select** keys will change to showing the layer names for that Bank as set in Encore's Desk Designer.



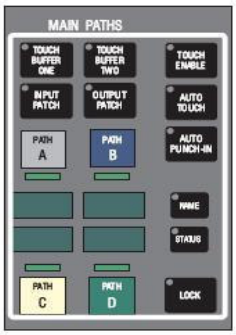
To select a path on a fader strip, press the **Path A**, **Path B**, **Path C** or **Path D** key as required. These keys are referred to as the **Path Access** keys.

The path name in the alpha display associated with the key will illuminate brightly.

The fader will move and the other controls in the path will change their display according to their settings for the selected path.

The selected path is now 'on the surface'.

If a **Path Access** key is pressed where there is no path assigned then the press will be ignored.



To select a layer across the whole console (or partition), press the **Path A**, **Path B**, **Path C** or **Path D** key on the **MAIN PATHS** section of the master quadstrip, or

press and hold the **ALL** key on any fader strip, press the **Path A**, **Path B**, **Path C** or **Path D** key on the same fader strip, then release the **ALL** key.

All the fader strips that have a path assigned to the selected layer will have that layer 'brought to the surface'.

To view the settings of controls on a layer

Press and hold the **Path A, Path B, Path C** or **Path D** key on the **MAIN PATHS** section of the master quadstrip.

The controls on the fader strips will change according to the selection.

Release the key, and the fader strips will return to their previous assignments.

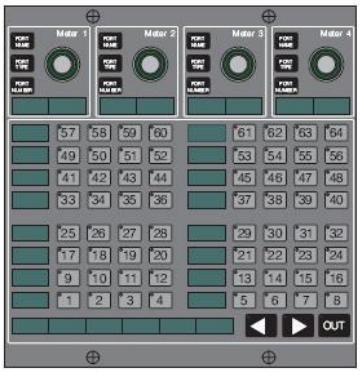
Console Setup function

The Setup Function is activated with the **SETUP** key on the Upper Routing Matrix and allows Path Process Switching, Turbo Allocation and Path Placement.

The Setup Function provides a surface based alternative to some of the functionality of **Desk Edit** and **Path Edit**.

Path Placement allows the assignment and movement of paths on the strips and layers on the console surface.

Turbo Allocation allows the processing elements in a path to be changed.
Path Process Switching allows the order of processing elements in a path to be changed.



To activate the Setup Function, press the **SETUP** key on the Upper Routing Panel.

The long alpha will display Select Path.

Path Placement in Setup

Setup Mode allows paths to be assigned and de-assigned to strips/layers on the console surface and moved from one strip/layer to another.

To place a path on the console surface, press and hold a **Path** access key where there is no path present. The Lower Routing Panel will display available paths to allow a path to be selected.

The alphas will show the path type and **CHAN** will be displayed by default.
The leds in the numbered keys will illuminate green to show the available paths.
If necessary, press the nudge keys to change the path type.

Press the number key (on the Lower Routing Panel) corresponding to the required path. The integral led in the number key will illuminate red.
The alpha associated with the Path access key will display the path name.

To de-assign a path from the console surface, press and hold the path **Access** key for the required path. The Lower Routing Panel will display available paths. If necessary, press the nudge keys to change the path type.

The led in the corresponding numbered path key on the Lower Routing Panel will be illuminated red. Press the number key corresponding to the required path.
The alpha associated with the Path access key will go blank.

To move a path, press and hold the Path access key for the required path.
Press the Path access key for the destination, and the alpha displays will swap.
If a path was already allocated to the destination then the two paths will be swapped.

Turbo Allocation

Turbo Allocation (**Setup Mode**) allows signal processing to be assigned and de-assigned directly from the console surface.

The functions which can be assigned and de-assigned with Turbo Allocation are EQ, Filters, Sidechain Filter and Key Input, Output, Compressor, Limiter, Gate, Expander, Inserts and the Dynamic Range Controller.
If **Path Edit** is active on the Encore screen and changes are made to the path displayed then the changes made in Turbo Allocation will be shown on the screen. If changes are made in Encore then the allocation process will disable **Turbo Allocation**.

On entering **Setup** mode, Pre-dub members are collapsed, and the turbo-ing of Pre-dub members is disallowed.
The **AUX** and **ON MODE** keys are not active in Turbo Allocation.
The order of processing may be changed using Path Process Switching.

To enable Turbo Allocation, press the **SETUP** key on the Upper Routing Panel:

- The long alpha display on the panel will display **Turbo - Select Path**.
- The alphas associated with Logicator 1 on the channel strips will display **SET**.
- The leds in keys with processes already assigned will illuminate red.

The console is now in **Setup Mode**.

To allocate a process where none is already allocated, press the required Signal Processing key. The integral led will illuminate green.
The alpha associated with Logicator 4 will display the processing available. Rotate Logicator 4 to select other processing options.

For example, if the **EQ** key is pressed the alpha will display **EQ 1** meaning a single band of EQ. Rotating the Logicator clockwise allows up to four bands of EQ to be selected. Press the **ON/CLEAR** key. A rotating bar will be displayed in alpha 2 while the process is allocated.

When allocation is complete:

- Alpha 2 will display OK.

- The integral led in the selected Signal Processing key will illuminate orange.
- The integral led in the **ON/CLEAR** key will illuminate red.

Rotating Logicator 4 will now have no effect.

To un-allocate a process, press the required Signal Processing key which has its led illuminated red (the integral led will illuminate orange and the integral led in the **ON/CLEAR** key will illuminate red).

Press the **ON/CLEAR** key (the integral led will cease to be illuminated). The led in the selected Signal Processing key will illuminate green.

Logicator 4 may now be rotated to select a different processing option which can then be re-allocated using the **ON/CLEAR** key.

To end Turbo Allocation, press the **SETUP** key on the Upper Routing Panel again.

Turbo Allocation Processing Options

When Logicator 4 is rotated, alpha 4 will display options according to the selected signal processing as follows:

Key	Alpha 4 Display
EQ	EQ 1, EQ 2, EQ 3, EQ 4, EQ 5, EQ 6, EQ 7, EQ 8 (1 – 8 bands of EQ)
Filter SCF / Key	1 FLT, 2 FLT (1 or 2 Filters
Filter SCF / Key + Page 2	SCEQ, Key, S+K (Sidechain EQ, Key Input or both)
I/O & Pan + Page 2	Mono or AB, ABW, MS (Port signal type)
Comp Lim	CMP 1, CMP 2 (1 or 2 Compressors / Limiters)
Exp Gate	EXPR, GATE, X+G, DRC (Expander, Gate, both or DRC)

Notes on Turbo Allocation

8 Band EQ

If more than four bands of EQ are allocated then Filters and the sidechain elements may not be allocated. Similarly, if any Filters or sidechain elements are already allocated then a maximum of four bands of EQ can be allocated.

Sidechain Elements

The Sidechain Filter and Key Input are accessed using the **PAGE 2** key.
If the **FILTER SCF/KEY** key is pressed and a Sidechain element is active then the led in the **PAGE 2** key will illuminate red.

If there is no dynamics processing in the path then a Sidechain may not be added.

Similarly, if all dynamics is removed from the path then any Sidechain elements will also be removed and must be re-allocated, if required, after further dynamics have be re-allocated.

Ports
The ports are accessed using the **PAGE 2** key. Only Channels, Tracks, Groups and Mains may have their ports modified by Turbo Allocation.

If the **I/O & PAN** key is pressed, the led in the **PAGE 2** key will illuminate red. If the **PAGE 2** key is pressed then alpha 4 will display the input/output type (eg MONO, AB, etc.).

Only Channels and Groups allow the optional output to be added and removed. Tracks and Mains allow the port type to be modified if it is stereo.

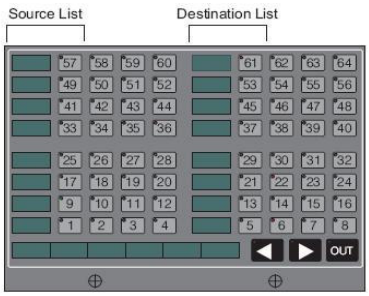
In Turbo Allocation, only one output may be manipulated for Main paths. If two outputs are required on a Main path then the extra port must be allocated in Path Edit or Desk Edit.

Path Process Switching

PPS allows instant changes in the order of processing elements within a path. The results are immediately audible, allowing A/B comparisons to be made.

Press the **SETUP** key on the Upper Routing panel (the long alpha display will display "Turbo - Select Path").

Press the required Path key on the console surface (the long alpha display will show the channel selected and its Input/Output status).



The left-hand column of alphas (source) will show a list of processing in that path.

The leds on the keys next to the source list (57, 49, 41, etc.) will illuminate red.

Using PPS to change the order of processing elements
Press and hold a matrix key next to a process in the source list.
Press the matrix key to the right of the desired position in the destination list.
The destination alpha will show the copied processing and the led on the key next to it will illuminate green.

The led on the key to the right of the source key pressed will illuminate yellow as shown in the PPS.

Example: Repeat these two steps until all processing has been copied to its destination. If there are more than eight processing modules in the source list, the source and destination lists may be scrolled up and down together.

- To scroll up, press and hold the lowest key of the second numeric column from the left (i.e. 2).
- To scroll down, press and hold the uppermost key of the second column from the left (i.e. 58).

To copy processing from the bottom of the source list to the top of the destination list (or vice versa and when there are more than eight processing modules present). Scroll the lists to show the required element in the source list.

Press and hold the key adjacent to the required processing module in the source list.
Scroll down/up the destination list using either the **58** or **2** key, and press the destination key.

To implement the change (having established the new list), press the  key to implement the change (the leds for the source list will illuminate green and the destination leds will illuminate red to show the new processing order is active).

All parameter settings for processing elements are preserved throughout the switching process.

To select a different path for **PPS**, press the required **Path** key on the console surface.
The changes to the existing path will be saved as part of the current Desk Setup before the new path is called into the panel.

PPS Example
This is a partially completed PPS example.
The source list is on the left hand set of alpha displays (red leds).
The destination list is on the right hand set of alpha displays (green leds).

Using PPS for A/B comparisons
Use the  and  keys to toggle between the processing order in the left and right windows. The leds of the selected set of processing will turn red and the de-selected set will turn green.
The signal processing will toggle between the two different versions. Any difference in audio will be heard.

To exit PPS

Press the **OUT** key.
The new processing order will be saved as part of the current Desk Setup.
Changes made to the Desk Setup with the Setup function are not automatically saved. Changes can be saved manually from the console surface.

To update the **Desk Setup** after making changes from the console surface, press and hold the **ALL/SCOPE** key. Press the **KEEP** key, then release both keys.

This also saves any changes to control values, gang structures, etc. If automation is active and there is a Record Pass in the automation buffer then this will also be saved to the current Mix/Pass Tree.

6 Surround Sound Facilities

The surround features of the DFC Gemini are provided by the Surround Monitoring panel, PEC Direct panel, Joystick panel and controls in the Channel Strips.

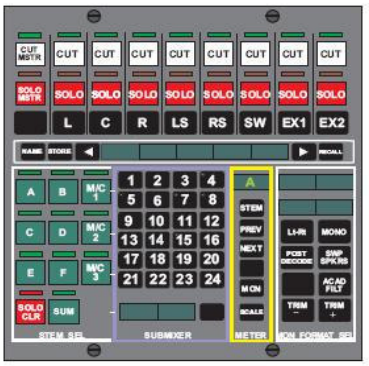
5.1 Format Surround Sound Example
A 5.1 Format Surround Sound setup on Stem A is used as an example for some of the features in this chapter. This is a very simple setup for illustration purposes only.

This format is known as 5.1 because there are five surround destinations (Front Left, Front Centre, Front Right, Rear Surround Left and Rear Surround Right) plus the sub-woofer.
The setup will be as follows:

- 5.1 Format Surround Sound using L, C, R, LS, RS and SW (sub-woofer).
- Tracks 1 to 6 will form Stem A.
- Channel 10 as a stereo input from 1lin 1AB.
- Channels 11 and 12 as mono inputs 1lin 2A and 1lin 2B.
- Channels are on layer A, Tracks are on layer B and Film Mons are on layer D.

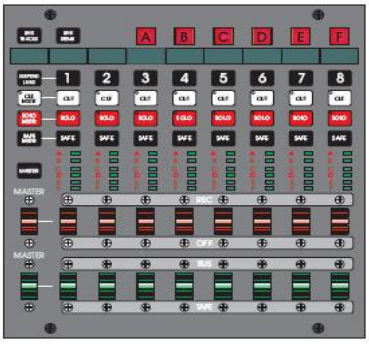
All the examples listed below refer to this setup and the steps towards obtaining it. It is assumed an appropriate Desk Setup with enough Channel, Track (bus) and Film paths has been loaded. It is also assumed that the Films are patched to the correct outputs for the speakers (the particular outputs used for the speakers will be different from one DFC Gemini to another).

The other panels that relate to this example are:
- Select Paths to form the Stem
- Select the speakers for monitoring the Stem
- Select inputs to the Stem
- Monitor the result.



The Surround Monitoring Panel

Provides controls for selecting the Stems to be monitored and the formats to use for monitoring.

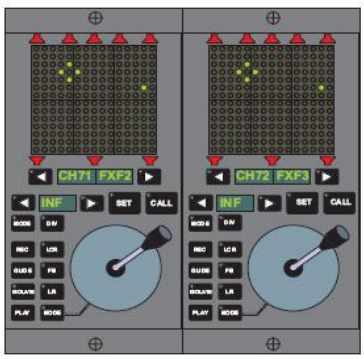


The PEC/Direct Panel

Used to configure up to 12 Stems, labelled **A** through **L**. Each Stem can consist of up to eight Tracks (busses) which are then routed to the Film paths in conjunction with the Surround Monitoring panel.
Each Track in each Stem also has Solo and Cut control. This only affects the signals routed to the Film paths and is the same as using AFL Solo and Cut on the corresponding fader strips.

It can be used to control the Record status of Mag and Multitrack tape machines, with Bus/Tape switching that allows monitoring of the Track Send (**Bus**) or Track Return (**Tape**).

An array of red tally leds indicate the record status of tracks in the Stems. Green leds next to each tally show the Bus/Tape switching.
A safe mechanism is provided which operates internally to disable Record on individual Tracks and prevent further Record enable commands being sent to the tape machines for the safe Tracks. Fully configurable master control grouping can also be used for Record, Bus/Tape and Safe.



The Joystick Module provides an intuitive means of panning a signal in a surround sound field.

The **Channel Strip Controls** have a special routing and display section, specifically designed for routing to film Stems.

How the Surround Sound System Works

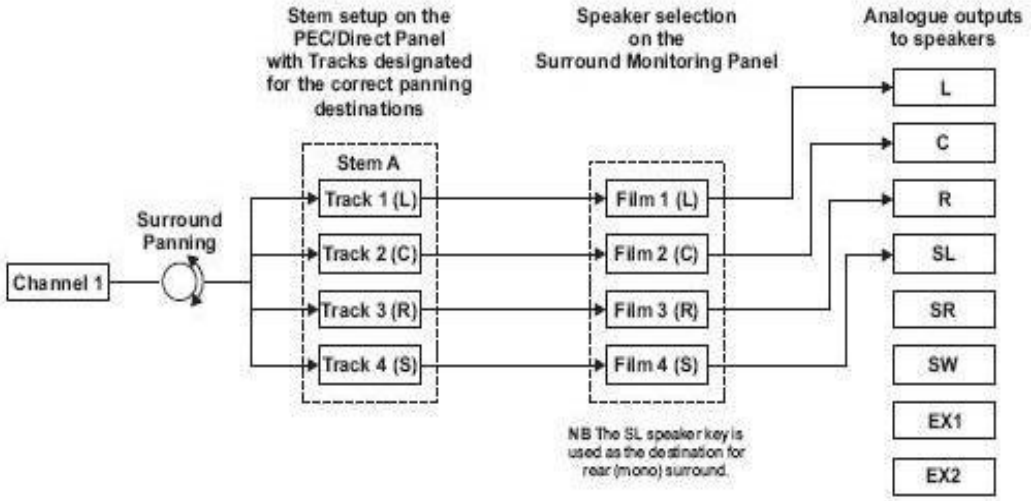
A surround sound setup on the DFC Gemini consists of three main parts:

- Signal sources that are panned.
- Film stems that accept the panned signals.
- Film monitoring that controls which stems are output to the speakers.

Film stems are made up of Tracks that have had suitable pan designators applied to them using Desk Editor.

The pan designator means that when a Channel is routed to a particular Track then the Track only receives the relevant portion of the signal that is panned to that speaker position.

The Simplified Surround Monitoring diagram shows how this works:



Stem A consists of the first four Tracks in the current Desk Setup, and the **LCRS Pan Macro** has been used to designate the Tracks appropriately.

Channel 1 is routed to all the Tracks in Stem A. If Channel 1 is panned fully to the left and front, then the only significant signal will be sent to Track 1 because Track 1 is designated in the panning position of (Front) Left.
If the **FB** pan control (or a Joystick) is used to move the signal back from this position then the signal will slowly diminish to the Left (Track 1) and gradually increase to the Mono Surround (Track 4).

The Tracks must then be routed to the correct Film paths in the Surround Monitoring Panel. The Film paths are automatically assigned to speaker positions according to the number of Film paths selected in the current Desk Setup.

There can be 0, 4, 6 or 8 Film paths. In the example in the simplified Surround Monitoring diagram there are 4 Film paths that have been automatically assigned to the speaker buttons that are used for LCRS monitoring (**L**, **C**, **R** and **LS**).

Stem Configuration

The Stems are normally pre-configured using **Stem Setup** in Desk Edit. However, the Stems can also be configured or modified from the console surface.

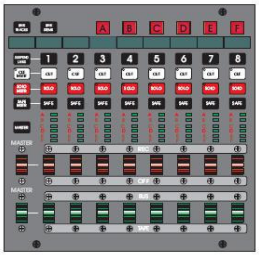
To change the pan designators for Tracks (busses) and Groups, bring the required Tracks (busses) and mono Groups to the surface with the Path access keys.
Press the **OUTPUT PATCH** key.

Rotate Logicator 5 on the required paths to set the pan designators.

Press the **OUTPUT PATCH** key again when all changes have been made.

5.1 Format Surround Sound Example: Selecting which Paths form the Stem
Click on Desk Edit in the drop down Tools Menu, and the Filing page of Desk Edit will be displayed.
Click on the Tracks tab to show the Tracks page and click the Pan Macros key.
The Pan Macros dialogue box will be displayed.
Click the radio button for 5.1 Format and click OK (the 5.1 Format will be propagated across all the Tracks in sets of 6).
Click the Filing tab (making sure the Allocate On Save check box is checked. Click the Save button.
The Desk Setup will be saved and the changes will be allocated to the console.
Click the Exit button.

To assign Tracks 1 to 6 to Stem A
Press the Stem A key on the PEC/Direct Panel. Press and hold the 1 key on the PEC/Direct Panel.
Press the 1 key on the Lower Routing Panel. TRACK 1 will be displayed in the alpha above the 1 key. The led in the 1 key on the Lower Routing Matrix will illuminate red.
Repeat for the 2 to 6 keys on the PEC/Direct Panel, assigning Tracks 2 to 6 respectively.
Tracks 1 to 6 now form Stem A.



To select the Tracks (busses) for a Stem
Press the required Stem key (**A-L**) on the PEC/Direct Panel. Press and hold the **1**.

The Lower Routing Matrix will display available sources (green leds).

Select the pages for Tracks (busses) by pressing the nudge keys if there are more than 64 Tracks.

Press the number key of the required path on the Lower Routing Matrix (the led will illuminate red). Release the **1** key. The Track name will be displayed above the **1** key.

Repeat for the remainder of the Stem (keys 2, 3, 4, etc.) according to the Stem Type (eg 4 for LCRS, 6 for 5.1, etc.).

Tracks (busses) are de-routed from Stems in the same way by pressing the selected source (red led) to toggle it out (green led).
Only Tracks (busses) can be used to build the Film Stems. This is because there is no Bus/Tape switching or Tape Sends/Returns on Groups, so Groups can not make used of the PEC/Direct Panel. However, pan designators on mono Groups can be useful to output a panned signal to an effects unit (for instance) which is then looped back into the console.

To select the speakers for monitoring a stem
Press the **A-L** key on the PEC/Direct Panel for the required stem. Press and hold the required speaker key on the Surround Monitoring panel.

Press the **1-8** keys on the PEC/Direct panel with a Track (bus) which has the correct Pan Designation.

The integral led in the number key will turn red or orange flashing according to whether or not the Stem is selected for monitoring on the **STEM SEL** section of the Surround Monitoring Panel.
Release the speaker key. Continue to select Stem elements to the speakers.

- *This can also be done in reverse - press and hold the number key then press the speaker key. The speaker select key leds will be illuminated according to the FILM type in the current Desk Setup. eg If four way surround sound (LCRS) is selected, the L, C, R and LS key leds will illuminate.*

- *It is possible to use Stems for 'narrower' surround formats than the Desk Setup has provided with the number of Film paths. For instance, an LCRS Stem can be monitored on a 5.1 monitoring setup by routing the rear surround channel to both the left and right surround monitors.*

- *It is possible for more than one Track within a Stem to feed the same speaker, such as two LCR dialogue sets in one Stem.*

5.1 Format Surround Sound Example : Select the speakers for monitoring the Stem
Press and hold the 1 key on the PEC/Direct panel. Press the L key on the Surround Monitoring panel. The led in the L key will change from green to either solid red or flashing orange, depending on whether or not Stem A is currently selected to the Monitor outputs.
Release the 1 key. Repeat in sequence for the remaining Stem members (i.e. 2 on C, 3 on R, etc.).
It is also possible to do this routing in reverse by holding down a speaker key and selecting which track in a Stem is routed to it.

Stem Routing

This procedure is used to route Channels, Tracks (not used in Stems), Groups and PreDubs to Tracks (busses) in Stems.

Bring the required path or Predub to the surface by pressing its Path access key.
Press the **STEM SEL** key.

The Stem letters (A, B, C, etc.) will illuminate in sequence on the Stem Routing Display each time the **STEM SEL** key is pressed.

As each Stem is selected, the leds in the number keys will illuminate green to indicate the availability of Stem members which can be routed destinations. No leds will illuminate for Stems which have not been configured.

Press the required number keys or **ROUTE TO ALL**. The leds in the selected number keys will illuminate red.

5.1 Format Surround Sound Example: Select Inputs to the Stem

➤ Press the Path A key in the Main Paths section.

This will bring all the Channels on layer A to the surface.

On the strip for Channel 10

➤ Press the STEM SELECT key so that A is illuminated in the Stem Routing Display.

➤ Press the ROUTE TO ALL key.

The LEDs in the 1 to 8 keys will illuminate red.

➤ Press the I/O & PAN key.

➤ Press and hold the ON/CLEAR key.

The alpha displays will change from displaying the default settings to Rear, F-b, Div and Lcr respectively. This shows that full surround panning is now available for the stereo input on Channel 10.

➤ Release the ON/CLEAR key.

➤ Repeat the steps for Channels 11 and 12.

The corresponding numbers on the Stem Routing Display will illuminate.

*Tip: A shortcut is available for Stem selection. Hold down the **STEM SEL** key and then press number 1 for Stem A, 2 for Stem B, etc.*

Routing/Stem Selection Keys Example

This shows a 6-way Stem has been selected (i.e. a 5.1 surround format Stem) - keys 1 to 6 have LEDs illuminated.

The channel has been routed to the front speakers only - keys 1 to 3 with red LEDs.

If the STEM SEL key has been used to select Stem B, then the display will be illuminated as shown in the Routing/Stem Display example.

Routing/Stem Display Example

This example assumes the console has been set up for 6-way surround sound (5.1 format).

The channel has been routed to the front speakers on Stem B and all the speakers on Stem D.

Additionally, the STEM SEL key has been used to select Stem B for routing which will cause the Routing/Stem Selection keys to illuminate as shown in the Routing/Stem Selection keys example.

Panning Controls

The appropriate panning controls are automatically enabled according to the pan designators on routing destinations (Tracks or Groups) for the path.

The panning controls can be switched out completely from the strip, or a panning axis can be frozen when the path is panned by a Joystick.

To completely disable a panning axis, press **I/O & PAN**, and press and hold **ON/CLEAR**. Touch Logicators 5 to 8 as required.

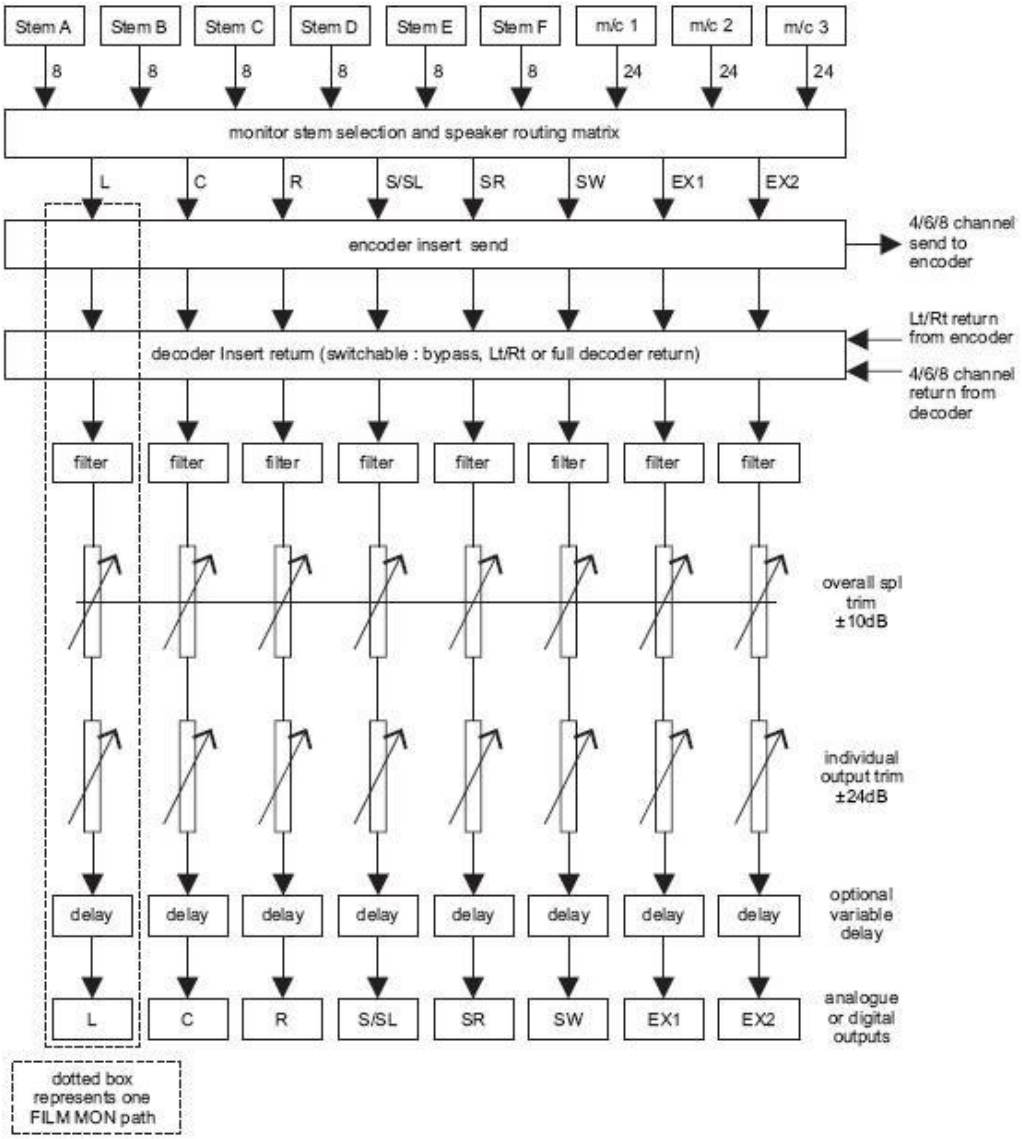
The associated alphas will display **OUT** when the Logicators are disabled. Release **ON/CLEAR**.

A panning axis can be frozen at a required setting (as opposed to being completely inactive) using the Joystick Module.

Surround Monitoring

When the film stems have been fully configured, the Surround Monitoring Panel allows various monitoring options, including pre-defined sets of active speakers, summing of film stems and/or external sources, mono sum, etc.

The outline monitoring schematic shows how the Surround Monitor panel handles the signal paths.



Monitoring the Stems

The **STEM SEL** section of the Surround Monitoring panel is used to select which Stem and/or external machine is being monitored.

To select a single Stem to monitor
Make sure the led above the **SUM** key is off (press the key if the led is illuminated). Press the **A** to **L** key on the **STEM SEL** section. The led above the key will illuminate and the previous selection will be cancelled.

To select multiple Stems (and/or external machines) to monitor, press the **SUM** key. The led above the key will illuminate. Press the **A** to **L** keys and/or the **M/C 1**, **M/C 2**, **M/C 3** keys as required. The leds above the selected keys will illuminate. All the selected Stems and machines will be monitored.

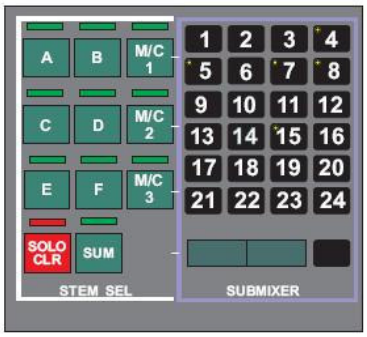
Each time a key is pressed it will toggle on or off.

Monitoring External Machines

The Surround Monitoring Panel provides three keys (M/C 1, M/C 2 and M/C 3) for selecting up to three external multitrack sources which can be routed to the surround monitor outputs.

The Submixer section is used to route the signals from the external sources to the surround monitor outputs. The number of tracks available on each external machine must be setup on the **Config** page of **Desk Edit**.

To select an external machine for routing



Press and hold the blank key next to the alpha display on the Submixer section.

Press the required machine key (M/C 1, M/C 2 or M/C 3). The alpha on the Submixer section will display the selected source.

The leds in the number keys will illuminate green to indicate the available number of tracks.

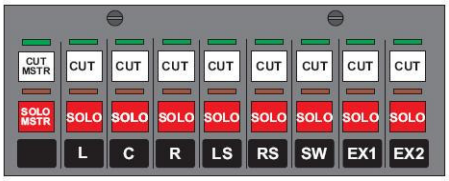
5.1 Format Surround Sound Example: Monitoring the Surround Sound Audio
Press the **A** key in the **STEM SEL** section of the Surround Monitoring panel.
The Channels are now fully routed through to the Film outputs via Stem A. Activate the audio source(s) (eg if it is a tape machine, put it into play). Gradually turn up the level control pot on the Control Room panel until the signal is audible on the speakers at a satisfactory level.

Press the **I/O & PAN** key on the fader strips for Channel 10 to 12.
Turn Logicators 5 to 8. You will hear the effects as the changes are made to the pan position.

Alternatively
Call Channel 10, 11 or 12 to a Joystick and adjust the pan position with the Joystick.

To route the external tracks to surround monitor outputs

Press and hold the required track number key. Press the required surround speaker key(s) (**L, IL, C**, etc.) which has an led illuminated green.



The leds in the number key and the speaker key will illuminate red.

Release the track number key.

This can also be done in reverse by holding down the speaker key and selecting tracks. Tracks are de-routed in the same way by pressing keys with red leds to toggle the routing off.

To interrogate external track routing, press and hold the track number key of interest. The leds in the speaker keys the track is routed to will illuminate red, or press and hold the speaker key of interest. The leds in the track number keys which are routed to the speaker will illuminate red or orange according to whether or not the Stem is selected for monitoring.

To monitor an external machine, place the machine into play and press the required machine key (M/C 1, M/C 2 or M/C 3).

To monitor a mix of external machines and surround Stems
Place the required machines into play, and press the **SUM** key. Press the **A** to **L** and M/C 1, M/C 2 and M/C 3 keys in the **STEM SEL** section as required.

CUT and SOLO Master Controls

The **CUT** and **SOLO** master controls will follow the (Bus/Tape and Track Arming) Master selection on each stem. The CUT and SOLO controls can now be added to the PEC master groups. The **CUT** Master key will now action all the paths in the master group.

Stack Mode
This feature maps the master (paddle) PEC strip for each stem on to (Paddles) strips 1-12. In this mode, the Bus/Tape, Track Arming, SAFE, CUT and SOLO keys that are normally mapped to tracks 1-6 of a stem will be 'master' controls of Stem A-L.
This mode is activated by pressing and holding the **MASTER** key on the PEC/Direst panel and **MASTER RECORD PADDLE**. The led in the **MASTER** key will indicate when this mode is active.

Surround Monitoring Formats

The **Mon Format Sel** section allows the operator to override the output to the surround monitoring speakers to check the mix in different formats. The section also has trim control for fine adjustment of the monitor level.

The section has two alpha displays.
The top alpha shows the current sound pressure level (SPL) which will be 82dB, 85dB, 88dB or Vari according to the selection on the Control Room section of the Master Automation and Monitoring Panel.
The bottom alpha shows the trim set with the **TRIM+** and **TRIM–** keys.

To monitor a mono mix of the surround outputs, press the **MONO** key in the **Mon Format Sel** section (the integral led will illuminate red) The output to all the speakers except Front Centre will be cut.
A true mono mix of the surround monitor output will be heard on the Front Centre speaker.

To trim the surround monitor outputs, press the **TRIM+** or **TRIM–** key. Trim has a range of -10dB to +10dB. The applied trim is shown in the bottom alpha on the **Mon Format Sel** section. If the **TRIM+** or **TRIM-** key is held down then the trim level will change continuously. For safety reasons, when this is done the trim stops at 0dB and the key must be pressed again to carry on increasing (or decreasing) the level.

To engage the Academy Filter, press the **ACAD** key. The Academy Filter is a standard filter which cuts high and low frequencies for mono output.

To swap the front L/R outputs with the Main Monitor Output (SEL 1)
Press the **SWAP SPKRS** key (the integral led will illuminate red). The led(s) for the currently selected Stem(s) in the **Stem Sel** section will flash.

The output for front left and front right will be sent to SEL 1.

The output routed to SEL 1 will appear on the front left and front right speakers and the remaining surround speakers will be cut. The SEL1 system path is often used as an output to near-field speakers.
If near-field speakers are being used (to test mixes on domestic quality speakers) then the output format can be changed (eg Using **Lt-Rt** or **MONO**) to test compatibility with non-surround domestic systems.

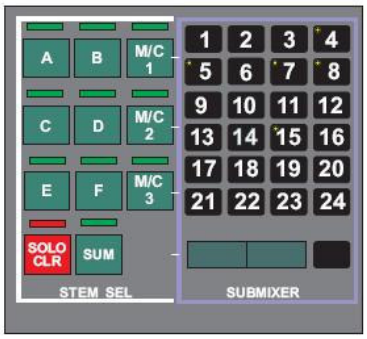
'Studio' Monitoring

A second SEL path has been activated to provide an additional stereo monitoring output. This activated the **Studio LS** facility on the master section.
In **LS** mode (activated by **LS SEL 1** key in the Tone/Talkback section), the FL and FR film outputs are also routed to SEL 1 (Control Room).
In this mode, the **Swap L/R, Phase Left / Right, Cut L / R, M/S** and **Mono** keys in the control room section will affect the SEL1 output.

The source for SEL 2 (**Studio**) can be selected by pressing the **SEL** key in the **Studio LS** section which puts the lower matrix panel into **Studio LS SEL** mode. Alternatively, if Follow mode is selected by pressing the **FOLL** key, SEL2 will follow SEL1 (Control Room) selection.
If **TALK** is held the Tone/Talkback path is temporarily routed to SEL 2.

LCRS Pre and Post Decode Monitoring

Both of these functions use inserts to switch the Film paths through external equipment for encoding and decoding. To monitor the Left Total and Right Total output from the Dolby matrix encoder, press the **Lt-Rt** key (the integral led will illuminate orange).



The led(s) for the currently selected Stem(s) in the **Stem Sel** section will flash.

The output to all the speakers except Front Left and Front Right will be cut.

This allows the operator to hear how an LCRS mix will sound on an ordinary left/right stereo system with the LCRS encoded in the stereo tracks.

To monitor the decoded output from the Dolby matrix encoder, press the **POST DECODE** key (the integral led will illuminate orange).

The led(s) for the currently selected Stem(s) in the **Stem Sel** section will flash. The output to speakers other than Front Left, Front Centre, Front Right and Rear Surround Mono will be cut. This allows the operator to hear the LCRS mix after it has been encoded into a stereo signal (Lt-Rt) and then decoded back to LCRS.

The **Lt-Rt** and **POST DECODE** keys are interlocked with each other so only one can be selected at a time.

Calibrated Monitor Level

This feature is intended for use with the VCA controlled 8-Way Remote Level Control Unit. When the system is installed, the 8-Way Remote Level Control Unit

is calibrated to the sound pressure level so that the VCAs are set to the correct level for each preset.

To monitor at a pre-set sound pressure
Press the **CAL ON/OFF** key (the integral led will illuminate red). The main level rotary control (red top) will be disabled. Press the **CAL SET** key.

Each time the key is pressed, the preset level will cycle round the values 82dB, 85dB and 88dB. The integral led will be red for 82dB, orange for 85dB, or green for 88dB.

The selected SPL is displayed in the lower alpha on the **MON FORMAT SEL** section of the Surround Monitoring panel.

Surround Monitor Solo and Cut

The SOLO and CUT keys on the Surround Monitor panel only affect the output to the surround monitors (speakers).

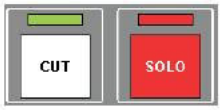
To cut all speakers
Press the **CUT MSTR** key. The led above the key will illuminate green.

To CUT an individual speaker
Press the **CUT** key above the required speaker key. The led above the **CUT** key will illuminate green.

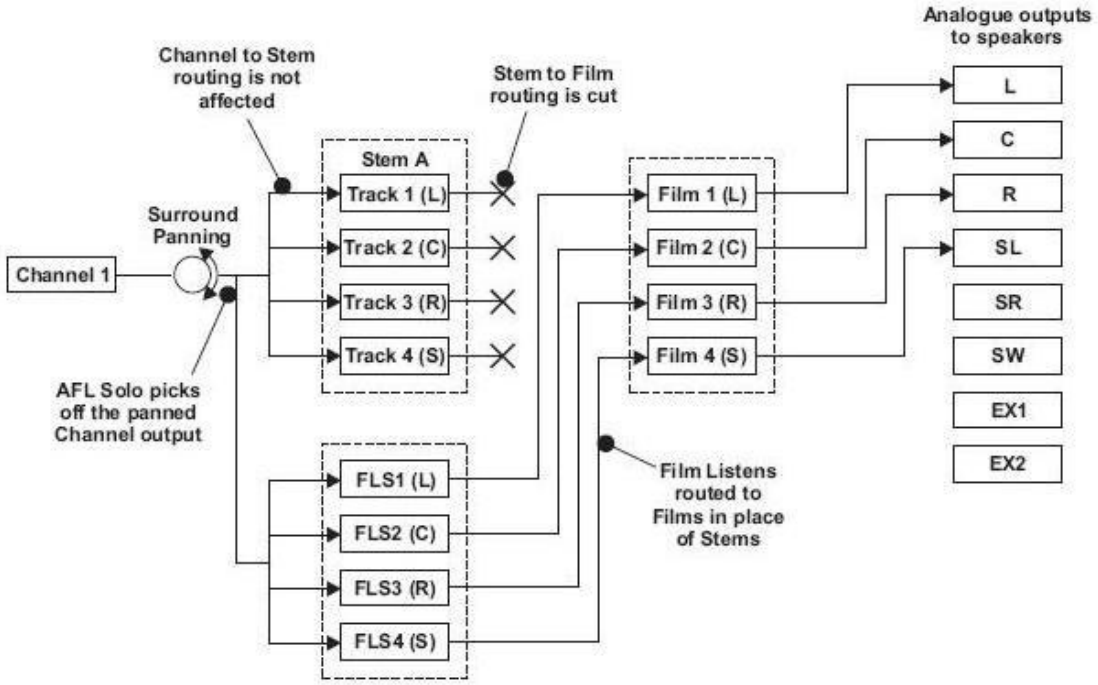
To SOLO an individual speaker
Press the required **SOLO** key.
The led above the key will illuminate red. The leds above the **CUT** keys for the other speakers will illuminate green.

Solo is additive so L and R could be soloed by pressing their SOLO keys in turn.

To use AFL solo



Press the **SOLO** key on the required fader strip(s).



The panned signal from the selected path will now be routed to the Film Listen paths and then to the Film paths to output to the monitor speakers.

The connection between the Stems and the Film paths is cut while **AFL Solo** is active.

The signal will appear on the speakers according to how it is panned. This should match the routing through any Stems, assuming that the Tracks in the Stems are routed to the correct speakers according to their pan designators.
All the surround monitoring capabilities in the Surround Monitoring panel can be used to test the Solo signal (eg **Lt-Rt**).

Any number of **SOLO** keys can be pressed, and the **Path Access** keys can be used to bring other paths to the surface for solo.

The led in the **SOLO CLR** key on the **CONTROL ROOM** section of the master quadstrip will flash orange.

To cancel solo, press the **SOLO** keys to turn them off, or press **SOLO CLR** on the **CONTROL ROOM** section of the master quadstrip (the integral led in the **SOLO CLR** key will stop flashing).

Monitoring Other Sources

Any signal path can be monitored un-panned on the centre mono or front left/right speakers. This is useful for checking that there is audio on a particular signal path, and so on.
This operates in a similar manner to the AFL Solo system. The monitored signal is routed to the Film Listens, and the Film Listens are routed to the Film paths for monitoring, replacing the current selection on the **STEM SEL** section of the Surround Monitoring Panel.
All other routing remains intact, so that the Stems are unaffected and all panning remains the same (i.e. it is non-destructive in the same way as AFL Solo).

To select paths to monitor
Press the **LS SEL** key on the Tone/Talkback section.

The integral led will illuminate red and the output to the surround monitors will switch to the current selection.

Number keys with green leds indicate valid sources.
Press the lower matrix nudge keys to change the path type to be monitored, and press the number key for the path to be monitored. The integral led in the key will illuminate red flashing.

Each key press selects a source and toggles off the previous source. The current selection is saved as part of the Desk Setup. The default is **Main Output 1** for new Desk Setups.

To monitor the selected path
Press the **LS key**.
The integral led will illuminate red and the output to the surround monitors will switch to the current **LS SEL** selection. If required, the **LS SEL** source can be changed.

- Mono paths will be monitored (without panning) on the front centre speaker.
- Stereo paths will be monitored (without pan/bal) on the front left and right speakers.

*If Solo is used so that the AFL Solo system is activated, this will override the **LS SEL** monitor source**. LS SEL** monitoring will be restored when Solo is cancelled.*

To return the monitors to normal operation
Press the **LS** key again, and the integral led will cease to be illuminated.

Surround Panning

Surround panning is controlled using the panning Logicators when **I/O & PAN** is selected or by using the Joysticks. The Joysticks provide an intuitive means of controlling the pan position, particularly where sound must be matched to objects moving about on film.

Panning with Logicators

To access the Panning controls, press the **I/O & PAN** key. The integral led will illuminate orange.
Logicators 5 to 8 are assigned to panning and the alpha descriptions are **Rear**, **F-b**, **Div** and **Lcr** respectively.

If appropriate Tracks (busses) in Stems have not been selected (i.e. the path is not routed through to the appropriate speakers), the alphas will display **OUT**.

All the Stems are taken into account for panning controls. For instance, if a path is routed to front speakers on one Stem and surround speakers on another Stem then all panning controls will be available.

To adjust front pan/balance
Rotate Logicator 8 to the required setting.

This is a pan control for mono signals and a balance control for stereo signals.

To adjust divergence of a mono signal
Rotate Logicator 7 to the required setting. The Logicator displays an arc which spreads from the centre as divergence is increased.

This control is not available on stereo paths.

To adjust width of a stereo wide signal
Rotate Logicator 7 to the required setting. The Logicator displays an arc which spreads from the centre as width is increased.

This control is not available on normal stereo or mono paths.

To adjust front to back pan
Rotate Logicator 6 to the required setting.

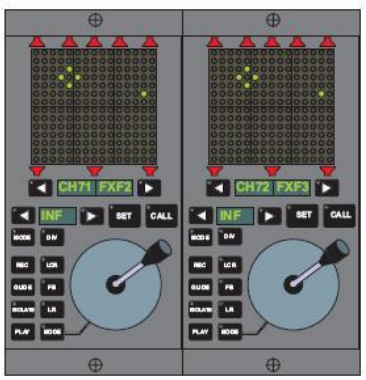
To adjust the rear surround pan/balance
Rotate Logicator 5 to the required setting.

This control is only available when a surround format with both left and right rear surround speakers is in use.

To switch a panning control in or out
Press and hold the **ON/CLEAR** key. The alpha for controls which are on will display the current setting. The alpha for controls which are off will display **OUT**.

Touch the required Logicators to toggle the control in or out.

Panning with Joysticks



The twin Joystick module is used to pan up to two signals across surround speaker destinations.

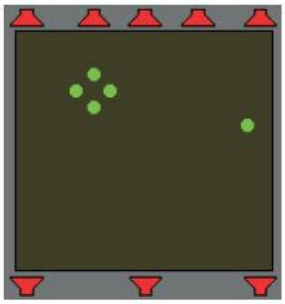
Channels, Tracks and PreDub Masters can be assigned to a joystick. The regular panning controls on the channel strip are locked out.

If **I/O & PAN** is selected for a path on which panning is controlled by a joystick then the alphas and Logicators will display changes as the joystick is moved.

Also, a path in a Link (of pan controls) can be assigned to a Joystick and this will lock out the pan controls on all the linked paths. Only one path from the link can be assigned to a Joystick at any given time.

The joystick provides full automation for recording panning information. This makes it possible to pan as many paths as required with repeated passes.

Calling Multiple Paths into the Joysticks
Hold the **SET** key on the joystick panel and call in up to 8 paths using the layer keys or the matrix panel. The panning controls of the called paths will be automatically linked. The link will be broken when another path (or set of paths) are called into the joystick.



PanPos Display
The led matrix above each joystick is called the **PanPos** display.

The position of the joystick is indicated by a single dot.

The notional panned position of the signal (i.e. where the signal seems to be when listening to it) is indicated by an open diamond of four dots.

When the joystick is in control of the panning, the dot and diamond join together to form a cross.

To select the path to be controlled by a joystick

Press the nudge keys on either side of the alpha display below the **PanPos** and speaker display. The alpha will cycle through the available paths and shows both the system and user names.

The speaker symbols will illuminate to show the speakers the path is routed to (If a nudge key is held down then the paths names will scroll rapidly),
Or
press and hold the **SET** key.
Select the required path from the Lower Routing Panel. Release the **SET** key.
In both cases, the alpha will flash the selected system path name and user path name.

To control the panning with a joystick
Press the **CALL** key. The integral led will illuminate red.
The diamond on the PanPos display will jump to the dot to form a cross.
The path name will stop flashing. Move the joystick as required.

NB: To prevent the sound jumping when the **CALL** key is pressed, first move the spot to the diamond.

Calling multiple paths into the joystick
Hold the **SET** key on the joystick panel and call in up to 8 paths using the layer keys or the matrix panel. The panning controls of the called paths will be automatically linked. The link will be broken when another path or set of paths are called into the joystick.

To freeze a panning axis or divergence

Press the **DIV**, **LCR**, **FB** and **LR** keys as required.

The integral led will cease to be illuminated.
If **LCR**, **FB** or **LR** is frozen then the diamond will separate from the dot as it moves according to the remaining panning axes.
If a control is un-frozen then the diamond will jump to the dot.

If a control is switched out completely with the **ON/CLEAR** key then the axis will remain frozen at its default value regardless of whether the corresponding freeze key is on or off.

If all panning controls are switched out completely with the **ON/CLEAR** key then there will be no diamond on the **PanPos** display.

To adjust divergence

Press and hold the nudge keys on either side of the divergence alpha display and the display will run between **0** and **INF** (>99).

Surround Metering

The **Meter** section of the Surround Monitoring Panel is used to select the signal displayed on the Stem meters which have been assigned to follow the Surround Monitoring Panel.
This depends on an appropriate Meter Design being displayed on the meter bride.

To select the Stem to meter
Press the **STEM** key. The integral led will illuminate red.
Press the **NEXT** and **PREV** keys to cycle round Stems A to F. The meters will show the current Stem letter at the top in the System Name display.

To meter the surround monitor outputs
Press the **MON** key. The integral led will illuminate red. The meter will display **FILM** at the top.

The PEC/Direct Panel

The PEC/Direct Panel has two main functions: Stem configuration and recorder control.

Stem Configuration
The PEC/Direct Panel is used to configure up to 12 Stems, labelled A through L. Each Stem can consist of up to eight Tracks (busses) which are then routed to the Film paths in conjunction with the Surround Monitoring panel. Each Track in each Stem also has **Solo** and **Cut** control. This only affects the signals routed to the Film paths and is the same as using **AFL Solo** and **Cut** on the corresponding fader strips.

Recorder Control

The PEC/Direct Panel can be used to control the Record status of Mag and Multitrack tape machines. Bus/Tape switching is provided to allow monitoring of the Track Send (**Bus**) or Track Return (**Tape**). An array of tally leds indicates the record status with red letters which correspond to the Stems. Green leds next to each letter show the Bus/Tape switching.

A safe mechanism is provided which operates internally to disable Record on individual Tracks and prevent further Record enable commands being sent to the tape machines for the safe Tracks. Fully configurable master control grouping can also be used for Record, Bus/Tape and Safe.

Requirements
A relay control unit must be installed: either a **Relay Control Unit** (also known as a **Fader Start Box**) or a Recorder Interface Unit. An I/O configuration must be loaded that associates the output ports on Track Sends with the correct relays.

This can only be configured using I/O Patching. Multitrack and mag machines must be in play for REC enable to be possible.

Relay Control Unit
The Relay Control Unit can control either multitrack or mag machines.

- For multitrack machines there are 48 record enable relays and tally inputs.
- For mag machines there are 32 record enable relays and tally inputs.

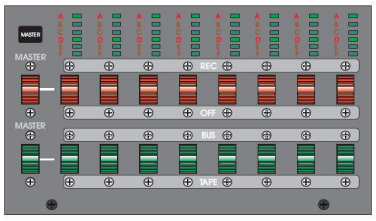
The DFC Gemini Installation manual provided with the system will have details of the connections that are made to the Relay Control Unit.

Recorder Interface Unit
This is an updated version of the Relay Control Unit that provides relay connections to both mag and multitrack tape machines. The Recorder Interface Unit has 96 record enable relays:

- 48 for mag machines (dubbers), and
- 48 for multitrack machines.

There are also 8 Master Control relays for multitrack machines. There are corresponding tally inputs for the record enable relays.
The Recorder Interface Unit User Guide has details of the connections that are made to the unit.

To put an individual Track (bus) into record, press the A-L key for the Stem with required Track. Push the **REC/OFF** paddle switch for the Track to record.

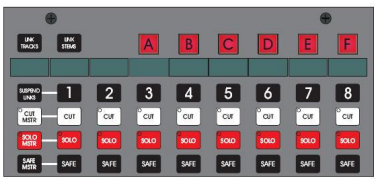


The paddle will illuminate red and a Rec Enable will be sent to the tape machine.
When the track on the tape machine goes into record, the tally line will cause the corresponding tally led to illuminate red. The tally led are the red letters showing which Tracks on which Stems are being recorded.

To take the track out of record, push the **REC/OFF** paddle switch to **OFF**.

To put a group of Tracks into record, push the **MASTER** record paddle switch to **REC**. All the Tracks that are in the master control group (see **Control Linking** in this section) and that are not safe will send Rec Enables. The appropriate tally leds will illuminate to show which Tracks are being recorded.

Bus/Tape Switching
The switch will illuminate green when **BUS** is selected, and the relevant green led in the tally array will illuminate. The bus input to the Track will be selected for monitoring.
The **MASTER** Bus/Tape paddle switch can be used to switch all Tracks in the master control group (see Control Linking in this section).



To make a Track safe
The **SAFE** keys are used to prevent record enable from operating.

Press the A-L key for the Stem with required Track.
Press the **SAFE** key for the Track.

The led in the **SAFE** key will illuminate green. If the Track was record enabled then this will be cancelled. The **REC/OFF** paddle for the Track will remain off. Bus/Tape switching is not affected.

To make a group of Tracks safe, press the **SAFE MSTR** key. All Tracks in the master control group will be made safe (see **Control Linking** in this section).

Solo and Cut
This is the same as using **SOLO** or **CUT** on the corresponding fader strips.

This uses the current AFL Solo system that is selected in Solo Settings & Relay Control Preferences. This will normally be the non-destructive surround AFL Solo, as described elsewhere.

NB: Signals cut by the SOLO and CUT keys on the /Direct panel are still sent to the Track outputs.

To cancel Solo, press the **SOLO CLR** key on the Surround Monitoring Panel.

Control Linking

To use master linking, press the **A-L** key for the required stem, and press and hold the **MASTER** key next to the tally leds.
Press the number keys for the required tracks.

The leds in the **SAFE** keys for the selected tracks will flash. The **REC/OFF** paddles for the selected tracks will illuminate red. The **BUS/TAPE** paddles for the selected tracks will illuminate green.
Release the **MASTER** key.

When the **SAFE MSTR** key or the Master **REC/OFF** and **BUS/TAPE** paddles are operated for the selected stem then the selected tracks will be switched as a group.

To setup individual controls in a master group
This allows the master groups of **REC/OFF** and **BUS/TAPE** paddles and the **SAFE** keys to be customised by control type.

Press the **A-L** key for the required stem, and press and hold the **MASTER** key.
Press the required **SAFE** keys or toggle the required paddles, the release the **MASTER** key.

To force the track paddles to operate in stereo pairs
Press the A-L key for the required stem, then press the **LINK TRACKS** key.
The integral led will illuminate red.

The paddles will now operate in pairs (1 and 2, 3 and 4, 5 and 6 & 7 and 8). When any paddle in a pair is operated then the other paddle in the pair will take the same setting.

If one paddle of a pair is in the master group for the stem and the master paddle is switched, then the paddle that is not in the group will be forced to follow the one that is.

To link a set of stems
Press and hold the **LINK STEMS** key (the integral led will illuminate red).
Press the A-L keys for the required stems, and the stem keys will illuminate.
Release the **LINK STEMS** key.

The integral led will remain illuminated until the set of stems is un-linked.

Operating the **SAFE** keys or the **REC/OFF** and **BUS/TAPE** paddles will switch the function for all stems in the linked set. The tally leds will indicate this where applicable.

If master groups have been set up for any of the stems then operating the **SAFE MSTR** key or the Master paddles will switch all controls in master groups across all stems in the linked set. Tracks that have been set to operate in pairs (by **LINK TRACKS**) will also be affected in a similar manner.

To select the set of linked stems
Press the **LINK STEMS** key or any of the A-L keys for stems in the linked set.
The A-L keys for the stems in the linked set will illuminate.

To un-link the stems
Press and hold the **LINK STEMS** key and press any **A-L** key.
All the A-L keys will cease to be illuminated in the integral led in the **LINK STEMS** key will cease to be illuminated.

7 Signal Processing

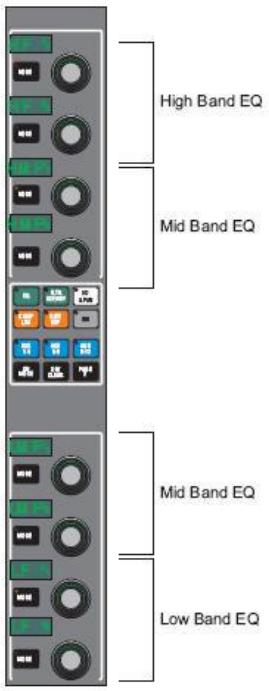
Each channel strip has multi-function signal processing controls, consisting of eight Logicators and a set of Function Selection keys. The keys are used to select the function of the Logicators.

The availability of each function depends on whether or not the processing element has been assigned to the current path in **Desk Edit**, **Path Edit** or **Turbo Allocation**.

- When a function is available, the integral led in the key will illuminate green.
- When a function is on (i.e. enabled), the integral led in the key will illuminate red.
- When a function is selected, the integral led in the key will illuminate orange and the **ON/CLEAR** key will indicate the on/off status of the function.

Each of the descriptions for the processing elements assumes the element has been allocated to a path.

Equalisation



EQ is provided with up to eight bands. The bands of EQ available will depend on the processing assigned in **Path Edit** or **Desk Edit**.

The Logicators are assigned in pairs for each band.

The first Logicator always controls **Frequency** on the first EQ page and **Shape** settings on the second EQ page.

The function of the second Logicator on each page varies according to the **Shape**.

EQ Band Availability

The bands of EQ will be available as follows:

1 band assigned:	High frequency (HF) band on Logicators 7 and 8.
2 bands assigned:	HF band on Logicators 5 and 6, high mid frequency (HMF) band on Logicators 7 and 8.
3 bands assigned:	HF band on Logicators 3 and 4, HMF band on Logicators 5 and 6, low mid frequency (LMF) band on Logicators 7 and 8.
4 bands assigned:	HF band on Logicators 1 and 2, HMF and LMF bands on Logicators 3 to 6, low frequency (LF) band on Logicators 7 and 8.
5 to 8 bands assigned:	The extra bands are assigned to the FILTER SCF/KEY key in the same way that bands 1 to 4 are assigned to the EQ key (eg with 5 bands, band 5 is an HF band on Logicators 7 and 8).

Shape Settings

Shape	Filter Type	Page 1 Logicator	Page 2 Logicator
	High Pass	+/- 24dB Cut and Boost	Slope: FLAT, 6dB or 12dB
	Low Shelf	+/- 24dB Cut and Boost	As Page 1
	Bell	+/- 24dB Cut and Boost	Q
	High Shelf	+/- 24dB Cut and Boost	As Page 1
	Low Pass	+/- 24dB Cut and Boost	Slope: FLAT, 6dB or 12dB
	Notch	Q	As Page 1

Page 1 Logicator means the second Logicator for an EQ band when the EQ key has been pressed.

Page 2 Logicator means the second Logicator for an EQ band when the PAGE 2 key has been pressed for EQ.

Cut and **Boost** is continuously variable in 0.1dB steps over the +/-24dB range.

Q is continuously variable in increments of 0.1 from 0.1 to 10.

Default Settings

The default settings for each band of EQ are as follows:

Band	Frequency	Filter Shape	Filter Name
HF	10kHz		High Shelf
HMF	1kHz		Bell
LMF	400Hz		Bell
LF	100Hz		Low Shelf

To enable EQ
Press the **EQ** key and the led will change from green to orange.
The **FILTER SCF/KEY** key can also be selected if there are more than 4 bands of EQ.

Press the **ON/CLEAR** key, and the led will change from green to red.
The leds on top of the Logicators for each EQ band will illuminate.
Changes may be made to the EQ settings before EQ is switched on.

To set EQ frequency
Press the **EQ** key for bands 1 to 4 or the **FILTER SCF/KEY** key for bands 5 to 8.
The led in the **EQ** key will illuminate orange.

This will ensure that the first page of EQ controls is on the surface for the required path. Rotate the first Logicator of the band pair until the alpha shows the required setting.

The frequency range is **12Hz** to **20kHz** (values above **999Hz** are displayed in kHz).

To set EQ filter shape
Press the **EQ** key for bands 1 to 4 or the **FILTER SCF/KEY** key for bands 5 to 8, and the integral led will illuminate orange.

Press the **PAGE 2** key (the integral led will illuminate orange).
Rotate the first Logicator in each band to set the filter shape. The associated alpha will display the shape.

The function of the second Logicator will change according to the shape.

EQ Control Grouping
The **ON/CLEAR** key toggles the on/off status of EQ bands which are in the EQ group.
Each band can be switched out of the group so that the **ON/CLEAR** key will be ignored.

To remove an EQ band from the group
Press and hold the **EQ** key until the alphas display **EQ 1, EQ 2,** etc., and **In G**.
The indicator leds on the second Logicator for each EQ band will illuminate.
While still holding the **EQ** key, touch the second Logicator in each band to be removed from the group. The associated alpha displays will change to **OutG**.

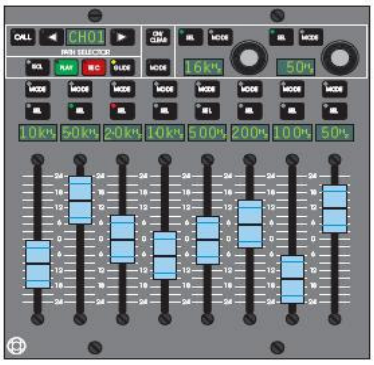
If EQ is on (**ON/CLEAR** led is red) when this is done, then when **ON/CLEAR** is pressed again the bands which are out of the group will remain active (the leds on top of the Logicators will remain illuminated to confirm this).

This allows the effect of switching one or more bands of EQ on and off to be heard while the remaining EQ is still active.

The same thing can also be done in reverse (i.e. if EQ is off, bands taken out of the group will remain off).

When bands are put back in the group, they do not automatically toggle to match the state of the other bands.

Optional Graphic Equaliser Panel



The Graphic EQ Panel is an optional hardware upgrade which provides dedicated control of EQ on one Channel, Track or Group.

There can be up to two Graphic EQ Panels per console partition which can be assigned to any Channel, Track or Group in the same partition.

They can not be assigned to the same path at the same time.

To switch EQ on and off
Press the **ON/CLEAR** key. All bands of EQ will be switched on or off (see **EQ Control Grouping** note at the end of this section).

New Desk Setups
When a new Desk Setup is Loaded for the first time, the Graphic EQ Panels in each partition will be assigned to the first available Groups, Channels or Tracks (in that order) in the same partition. A path does not need any EQ processing to be assigned to the Graphic EQ Panel.

Existing Desk Setups
When an existing Desk Setup is Loaded for the first time after installing one or more Graphic EQ Panels then the panels in each partition will be assigned to the first available Groups, Channels or Tracks (in that order) in the same partition. A path does not need any EQ processing to be assigned to the Graphic EQ Panel.

Saving and Loading Desk Setups
The assignment of the Graphic EQ Panels is saved as part of the Desk Setup and will be restored when the Desk Setup is Loaded again.
If the partitions are changed before a Desk Setup is Loaded again then the Graphic EQ Panels may be reassigned to default paths if the path they were assigned to is no longer in the same partition.
This also happens if the partitions are changed while a particular Desk Setup is loaded.

Assigning Paths to the Graphic EQ Panel

Loading a Desk Setup automatically assigns paths to the Graphic EQ Panels. See Desk Setups and the Graphic EQ Panel above. The path assignment can then be changed as required by the user.
To assign a path with the nudge keys

Press the left or right arrow key on either side of the path name display.
The path names will cycle through the available Channels, Tracks and Groups as the keys are pressed. An arrow key can be held to cycle continuously.

To assign a path with the Path Access keys
Press and hold the **CALL** key. Press a **Path Access** key for a Channel, Track or Group in the same partition. Release the **CALL** key.

To assign a path with the Lower Matrix Panel
Press and hold the **CALL** key. The long alpha in the Lower Matrix Panel will display **Select Eq Path -** followed by the path type of the path currently assigned to the Graphic EQ Panel.

The led in the number key for the currently assigned path will flash red. Leds for available paths will flash green; leds for unavailable paths will flash orange (eg paths in other partitions).

If required, press the **Nudge** keys on the Lower Matrix Panel to change the path type and/or path numbers.

Press the number key (with a green flashing led) corresponding to the required path. Release the **CALL** key.

In all three cases, the Graphic EQ Panel is immediately reassigned to the selected path. Band 1 is assigned to the left-most fader, followed by Band 2 and so on. The level faders will move to indicate the cut and boost in each EQ band and the alpha displays above the faders will indicate the precise level settings.

The fader will be unassigned and the fader and alpha will indicate zero and blank respectively if a band is a Notch filter or is unused.

The leds in the fader **SEL** keys will illuminate orange for bands which have parameters assigned to the Logicators.

The Logicator assignment depends on the assignment from the previously selected path. For instance: the previous path had 4 bands of EQ and the new one has 3 bands - the left Logicator was assigned to Band 1 Q, and the right Logicator was assigned to Band 4 Freq; the new path will still have the left Logicator assigned to Band 1 Q, but the right Logicator will now be assigned to Band 1 Freq because there is no Band 4.

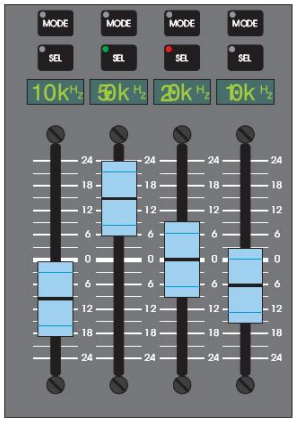
EQ Graphical Display

There is a dedicated **Graphic EQ/Dyn** button on the **Tone/Talkback** panel.

Press this to show a visual display of the EQ Curve and any Dynamics processing which may be applied.

For more information, see the Encore Plus manual.

To assign both Logicators to one band of EQ



Press the fader **SEL** key for the required band (the integral led will illuminate orange).

The left hand Logicator will be assigned to Frequency. The right hand Logicator will be assigned to Q, or Filter Shape if there is no Q parameter.

To assign one Logicator to a band of EQ
Press and hold the **SEL** key associated with the Logicator.
Press the fader **SEL** key for the required band of EQ.

The led in the fader **SEL** key will illuminate orange and the Logicator will be assigned to Frequency. Release the Logicator **SEL** key.

To interrogate Logicator assignment
Press and hold the **SEL** key associated with the Logicator. The led in the fader **SEL** key of the assigned band will flash orange. Release the Logicator **SEL** key.

This is only necessary when the Logicators are assigned to different bands of EQ (.e. two fader **SEL** keys have orange leds).

To change the parameter on a Logicator
Press and hold the **SEL** key associated with the Logicator (the led in the fader **SEL** key of the assigned band will flash orange).

Press the fader **SEL** key with the orange flashing led. Each time the fader **SEL** key is pressed the parameter will change and the parameter name will be indicated in the alpha associated with the Logicator.
Release the Logicator **SEL** key.

If the Filter Type is changed then the Logicator assignments will also change if the current parameter does not exist for the selected Filter Type. The fader will also be unassigned or assigned if the Filter Type is changed to or from Notch, respectively.

Clearing the Graphic EQ Panel to Defaults

The **ON/CLEAR** key can be used to reset individual parameters or all EQ bands to default values.

To reset a parameter to the default value
Press and hold the **MODE** key associated with a Logicator, a level fader or the **ON/CLEAR** key. Press the **ON/CLEAR** key. Release the **MODE** key.

*When the **MODE** key for **ON/CLEAR** is selected then all bands of EQ will be reset to the default on/off status.*

To reset all parameter in all EQ bands to default values
Press and hold the **CALL** key.
Press the **ON/CLEAR** key.
Release the **CALL** key.
The default values depend on the currently loaded User Defaults file.

Automation of the Graphic EQ Panel

The panel has keys that can be used to set the Automation Mode of an individual EQ parameter, all EQ parameters in scope or all EQ parameters (overriding scope).
This only affects the Automation Mode of EQ parameters for the path currently assigned to the Graphic EQ Panel. The Automation Control keys default to displaying the current Automation Mode of **ON/CLEAR** (i.e. EQ on/off automation).

To set the Automation Mode of an individual control

Press and hold the **MODE** key for the required parameter. The Automation Control keys will show the current status. Press the Automation Control keys as required. Release the **MODE** key.

To change the Automation Mode of all EQ parameters in scope
Press the Automation Control keys as required.

Although the Automation Control keys show the on/off status by default, the **MODE** key for **ON/CLEAR** must be pressed to set the on/off Automation Mode.

To override scope and change the Automation of all EQ parameters
Press and hold the **CALL** key.
Press the Automation Control keys as required.

See the Automation chapter in the Encore Plus manual for more information on setting specific Automation Modes.

Copy and Link
The **MODE** keys on the Graphic EQ Panel are not used by the **Copy** or **Linking** function. Both of these operations must be done using the channel strip controls.

EQ Control Grouping
The Graphic EQ Panel is not used for EQ Control Grouping. The **ON/CLEAR** key switches all EQ bands to follow Band 1 on or off. EQ Control Grouping is not affected and the bands in the EQ Control Group can be toggled separately with the **ON/CLEAR** key on the channel strip.

Changing Path Processing
When **Path Edit** is used to alter the EQ assigned to a path then the Graphic EQ Panel is updated immediately with the changes if it affects the path on the panel.

When Turbo Allocation is used, all the Graphic EQ Panels are disabled and display **Disabled – Setup Mode Active** on the alphas above the faders. On exit from **Turbo Allocation**, the panels are updated if there are changes to EQ on the assigned paths.

Channel Strip and Graphic EQ Panel Controls
Controls on the Graphic EQ Panel can not be used in combination with controls on the channel strip for the assigned path (eg holding down **Mode** on a channel strip and selecting an automation mode on the Graphic EQ Panel will be ignored). However, changes made to controls on the channel strip will be shown on the Graphic EQ Panel and vice-versa.

Filters
One or two filters may be in the path, depending on the processing assigned in Path Edit or Desk Edit. If two filters are assigned, they will be at the same position in the path. Each filter can be high or low pass.
When filters are assigned to a path then bands 5 to 8 of EQ are no longer available to that path.

If a single filter is in the path, it will default to a Low Frequency filter on Logicators 5 to 7 with a **FLAT** slope at **100Hz**.
If two filters are in the path, the Low Frequency filter will appear on Logicators 1 to 3. Logicators 5 to 7 will control the High Frequency filter with a **FLAT** slope at **10kHz** by default.

To enable the Filters
Press the **FILTER SCF/KEY** key (the led will change from green to orange).
Press the **ON/CLEAR** key (the led will change from green to red).
The leds on top of the Logicators for each EQ band will illuminate.
Changes may be made to Filter settings before the Filters are switched on.

To change the Filter Shape
Rotate the first Logicator for each Filter to the left and right to toggle between high or low pass. The associated alpha will display the selected shape.

To change the Filter slope
Rotate the second Logicator. The associated alpha will display the selected value. The available values are FLAT (0dB/octave), 6dB/octave and 12dB/octave.

To change the frequency
Rotate the third Logicator.
The associated alpha will display the selected value.
The range is 12Hz to 20kHz (values above 999Hz are displayed in kHz).

Filter Control Grouping

The **ON/CLEAR** key toggles the on/off status of the Filters which are in the Filter group. Each Filter may be switched out of the group so that the **ON/CLEAR** key will be ignored.

To remove a Filter from the group
Press and hold the **FILTER SCF/KEY** key until the first alphas display **Flt1** and **Flt2** and the second alphas display **In G**.

The indicator leds on the second Logicator for each Filter will illuminate.
While still holding the **FILTER SCF/KEY** key, touch the second Logicator of the Filter to be removed from the group.
The associated alpha display will change to **Out G**.

If the Filters are on (**ON/CLEAR** led red) when this is done, then when **ON/CLEAR** is pressed again the Filter which is out of the group will remain active (the leds on top of the Logicators will remain illuminated to confirm this).
This allows the effect of switching one of the Filters on and off to be heard while the other Filter is still active.
The same thing can also be done in reverse (i.e. if the Filters are off, the Filter taken out of the group will remain off).

When a Filter is put back in the group, it does not automatically toggle to match the state of the other Filter.

Control grouping can be turned off in Encore.

Panning

The panning controls which are available will depend on the path type (mono, stereo, stereo wide) and which surround destinations the path is routed to (front speakers, surround speakers, etc.).

Logicators 5 to 8 are used for panning across surround sound and stereo destinations. The twin joysticks are also used as an intuitive means of controlling the pan position of a soundfield.

Panning with Logicators

Press the **I/O & PAN** key (the integral led will illuminate orange).
Logicators 5 to 8 are assigned to panning and the alpha descriptions are **Rear**, **F-b**, **Div** and **Lcr** respectively.

If appropriate Tracks in Stems have not been selected (i.e. the path is not routed through to the appropriate speakers), the alphas will display **OUT**.

All the Stems are taken into account for panning controls. For instance, if a path is routed to front speakers on one Stem and surround speakers on another Stem then all panning controls will be available.

To adjust front pan/balance

Rotate Logicator 8 to the required setting.
This is a pan control for mono signals and a balance control for stereo signals.

To adjust divergence of a mono signal

Rotate Logicator 7 to the required setting. The Logicator displays an arc which spreads from the centre as divergence is increased.
This control is not available on stereo paths.

To adjust front to back pan

Rotate Logicator 6 to the required setting.

To adjust the rear surround pan/balance

Rotate Logicator 5 to the required setting.
This control is only available when a surround format with both left and right rear surround speakers is in use.

To switch a panning control in or out

Press and hold the **ON/CLEAR** key. The alpha for controls which are on will display the current setting.
The alpha for controls which are off will display **OUT**. Touch the required Logicators to toggle the control in or out.

Panning with Joysticks

The twin Joystick module is used to pan up to two signals across surround destinations. **Channels**, **Tracks** and **PreDub Masters** can be assigned to a joystick. The regular panning controls on the channel strip are locked out. If **I/O & PAN** is selected for a path on which panning is controlled by a joystick then the alphas and Logicators will display changes as the joystick is moved.

Also, a path in a Link (of pan controls) can be assigned to a Joystick and this will lock out the pan controls on all the linked paths. Only one path from the Link can be assigned to a Joystick at any given time.

The joystick provides full automation for recording panning information. This makes it possible to pan as many paths as required with repeated passes.

PanPos Display
The led matrix above each joystick is called the **PanPos** display. The position of the joystick is indicated by a single dot. The notional panned position of the signal (i.e. where the signal seems to be when listening to it) is indicated by an open diamond of four dots.
When the joystick is in control of the panning, the dot and diamond join together to form a cross.

To select the path to be controlled by a joystick
Press the nudge keys on either side of the alpha display below the **PanPos** and speaker display.
The alpha will cycle through the available paths and shows both the system and user names.
The speaker symbols will illuminate to show the speakers the path is routed to.
If a nudge key is held down then the paths names will scroll rapidly.
or
Press and hold the **SET** key.
Select the required path from the Lower Routing Panel.
Release the **SET** key.

In both cases, the alpha will flash the selected system path name and user path name.

To control the panning with a joystick
Press the **CALL** key (the integral led will illuminate red).
The diamond on the **PanPos** display will jump to the dot to form a cross, and the path name will stop flashing. Move the joystick as required.

*To prevent the sound jumping when the **CALL** key is pressed, first move the spot to the diamond.*

*If panning controls are in a record ready mode (eg Lock Record) then automation data will start to be written when the **CALL** key is pressed (this is the same as touching the relevant Logicators).*

To freeze a panning axis or divergence
Press the **DIV**, **LCR**, **FB** and **LR** keys as required (the integral led will cease to be illuminated).

If **LCR**, **FB** or **LR** is frozen then the diamond will separate from the dot as it moves according to the remaining panning axes.
If a control is un-frozen then the diamond will jump to the dot.

*If a control is switched OUT completely with the **ON/CLEAR** key then the axis will remain frozen at its default value regardless of whether the corresponding freeze key is on or off.*

To adjust divergence
Press the nudge keys on either side of the divergence alpha display.

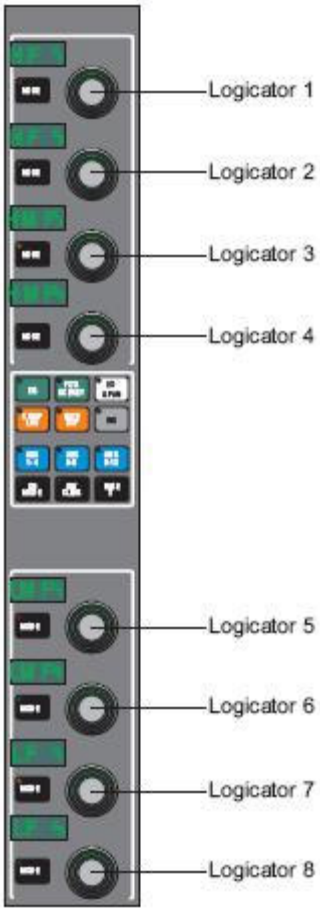
Inserts

Inserts are used to provide send/returns to external processing devices such as special effects units, reverb boxes, special delay units, etc.

A path can have up to two inserts for which the input and output ports must be selected.

To access controls for the first insert
Press the **INS** key (the integral led will illuminate orange).
If a second insert is present then the led in the **PAGE 2** key will illuminate green.

To access the controls for the second insert
Press the **PAGE 2** key (the integral led will illuminate orange).



The controls for both inserts are identical and the Logicators are assigned as follows (the alpha descriptions are shown in brackets):

Logicator 1 Insert send port type
Logicator 2 Insert send port number
Logicator 3 Send level trim (Levl)
Logicator 5 Insert return port type
Logicator 6 Insert return port number
Logicator 7 Insert return level trim (Levl)
Logicator 8 Insert on/off toggle (Ins1 or Ins2)

To enable the insert
Press the **ON/CLEAR** key.
or
Rotate Logicator 8 clockwise.
Alpha 8 will display **ON**, and the led in the **ON/CLEAR** key will illuminate red.
The insert is now switched into the signal path.

Note that the ports for the insert send and return must have been selected and switched on, otherwise the insert will do nothing. However, the ports for the insert send and return are not patched until the insert is enabled. If the output port is already in use elsewhere when the insert is enabled then alphas 1 to 4 will display **OP USED BY [*path]*** and the insert will not be enabled. The path indicated must be de-routed before the port can be used by the insert.

Insert Send Port Select
Logicators 1 and 2 are used to select the output port for the insert send.

To select the rack/port type
Rotate Logicator 1.
The alpha display will cycle through the available racks/port types (eg 1LIN is rack 1, line level output ports).

The rack numbers correspond to the MADI port they are connected to on the SPS rack. If the MADI port is not connected to a rack the display will show MAD (eg if MADI 4 is not connected, the alpha will show 4MAD).

To select the port number
Rotate Logicator 2.
The alpha display will cycle continuously through the output ports (i.e. when the Logicator is rotated clockwise past the last available port then the first port will be displayed again).
If the insert is allocated to a stereo path then the ports will be displayed in pairs (eg 4AB).

If the output port is already in use elsewhere and an attempt is made to enable the insert then alphas 1 to 4 will display **OP USED BY [*path]***. The path indicated must be de-routed before the port can be used by the insert.

The insert ports do not have default settings.

Insert Send Level Trim
The signal level sent to the output port can be trimmed using Logicator 3.

To change the insert send level
Rotate Logicator 3.
The range is +/-24dB with a default of 0dB.

Insert Return Port Select
Logicators 5 and 6 are used to select the input port for the insert return.

To select the rack/port type
Rotate Logicator 5.
The alpha display will cycle through the available racks/port types (eg 1lin is rack 1, line level output ports).

The rack numbers correspond to the MADI port they are connected to on the SPS rack. If the MADI port is not connected to a rack the display will show MAD (eg if MADI 4 is not connected, the alpha will show 4mad).

To select the port number
Rotate Logicator 2.
The alpha display will cycle continuously through the output ports (i.e. when the Logicator is rotated clockwise past the last available port then the first port will be displayed again).
If the insert is allocated to a stereo path then the ports will be displayed in pairs (eg 4AB).

The insert ports do not have default settings.

Insert Return Level Trim
The signal level returned from the input port can be trimmed using Logicator 7.

To change the insert return level
Rotate Logicator 7.

The range is +/-24dB with a default of 0dB.

Sidechain Filter and Key Input
The sidechain provides control over the dynamics processing in the path based on the pre-dynamics signal in the path or the pre or post fader signal from another path. The sidechain output acts as a trigger to determine when the dynamics in the path become active.

A path may not have a sidechain if there are 5 or more bands of EQ assigned to the path.

Sidechain Filter
Also referred to as **Dynamic EQ** or **Sidechain EQ**.
The Sidechain Filter is assigned to Logicators 1 to 4.
The shape defaults to a Bell filter with 0dB of cut/boost, Q of 0.7 and a frequency of 400Hz.

Listen
Logicator 5 controls the listening mode for the whole sidechain.

Key Input
The Key Input controls are assigned to Logicators 6 to 8.
The sidechain input defaults to the pre-dynamics signal in the path.

To access the Sidechain Filter and Key Input controls
Press the **FILTER SCF/KEY** key (the integral led will illuminate orange).
If the Sidechain is in the path, the **PAGE 2** key led will illuminate green.

Press the **PAGE 2** key (and the integral led will illuminate orange).
The Sidechain Filter is assigned to Logicators 1 to 4 and the Key Input is assigned to Logicators 6 to 8.
Logicator 5 is used by both the Filter and Key Input to allow monitoring of the sidechain.

To change the filter shape
Rotate Logicator 1 to the left and right. The shapes available are:

	Low Shelf
	Bell
	High Shelf

To change the level, rotate Logicator 2.

The level will be displayed in alpha 2. The range is +/-24db of cut and boost.

To change Q, rotate Logicator 3.
The value will be displayed in alpha 3. The range is 0.1 to 10.

To change the frequency, rotate Logicator 4.
The selected frequency will be displayed in alpha 4. The range is 12Hz to 20kHz.

To listen to the sidechain
Rotate Logicator 5 clockwise. Alpha 5 will display **LSTN**.
The sidechain output will be inserted in the path before any post-dynamics processing.

If this is done in conjunction with a solo on the path, you will be able to hear the signal from the sidechain.

If the Sidechain Filter is being used then you can tune the filter to the specific part of the key input which is required to trigger the dynamics in the path.

To stop listening to the sidechain, rotate Logicator 5 anti-clockwise.
Alpha 5 will display **NORM**, and the path output will return to normal.

To select the Key Input
The key input is selectable between the pre-dynamics signal of the path and a pre or post fader key source from another path.

To select the path input, rotate Logicator 6 anti-clockwise.
Alpha 6 will display **NORM** and the signal will be picked off immediately before the dynamics in the path.

To select a key source from another path
Rotate Logicator 6 clockwise, and alpha 6 will display **KEY**.

To select the path for the key input
Press and hold the **PAGE 2** key.
Alpha 7 will display **Num** or **Type**.
Touch Logicator 7 so that alpha 7 displays Type.

*Each time the Logicator is touched the alpha display will toggle between **Num** and **Type**.*

Release the **PAGE 2** key.
Rotate Logicator 7 to select the desired path type (CHAN, TRK, GRP, etc.).
Press and hold the **PAGE 2** key.
Touch Logicator 7.
Alpha 7 will display **Num**.

Release the **PAGE 2** key.
Rotate Logicator 7 to select the desired path number of the selected type.

To select the pre or post fader signal from the key input path, rotate Logicator 8 to the left and right.
Alpha 8 will toggle between **PRE** (default) and **POST**.

*The key input source path and pre or post fader tap point can be selected before the key input is switched to **KEY**.*

To enable the sidechain
Press the **ON/CLEAR** key (and the integral led will illuminate red).

Compressor/Limiter

Up to two compressor/limiters can be assigned to a path.
If a **DRC** is assigned in the path then no compressor/limiters can be assigned.

To access the controls for the first compressor/limiter.
Press the **COMP/LIM** key, (the integral led will illuminate orange).
If a second compressor/limiter is present then the led in the **PAGE 2** key will illuminate.

To access the controls for the second compressor/limiter
Press the **PAGE 2** key (the integral led will illuminate orange).

The controls for both compressor/limiters are identical and the Logicators are assigned as follows (the alpha descriptions are shown in brackets):

Logicator	Control	Displayed as:
1	Threshold	Thrs
2	Ratio	Rtio
3	Attack time	Atk
4	Release time	Rel
5	Knee	Knee
6	Manual / Automatic make-up Gain	MkUp
7	Manual Gain make-up	MkGn

Threshold
This is the dB level above which gain reduction of the signal will occur. This is expressed in decibels relative to normal program line-up level and has a range of –60dB to +30dB with a default of +8dB.

The Logicator shows an arc with the fixed point at the maximum position (+30dB) increasing in size anti-clockwise as the threshold is lowered.
This provides a visual display of the size of the region under compression (or being limited).

To change the threshold level
Rotate Logicator 1 to the desired setting.

Compression Ratio
This is the level of gain reduction applied to the signal above the threshold point (i.e. the ratio between changes in level (in dB) of the input to the compressor/limiter and its output). This has a range of 1:1 to 99:1.

The default is 1:1 (ie no compression) and can be changed in steps of 0.1 up to 9.9:1. From 10:1 to 99:1 the ratio is changed in steps of 1.

To increase the ratio
Rotate Logicator 2 clockwise. The logicator will show a dot to indicate the setting.

Attack Time
The attack time is speed at which the compressor/limiter responds to a signal once it has entered the compression region.

The attack and release filter section (peak detection circuit) is one bilinear filter fed by a dB value of audio level minus compressor/limiter curve level for that input. If audio is below the threshold, 0dB is passed in.

The attack filter is used when the input level is larger than the output of the peak detection circuit (switching to release when it drops below). The attack time has a range from 0.7µs to 50ms with a default of 1ms.

To increase the attack time
Rotate Logicator 3 clockwise. The Logicator will illuminate in an increasing arc.

Release Time
This is the time taken for the compressor/limiter to switch off when the signal level falls below the threshold.
The range is 0 (instant release) to 5sec. The default is 0.10s and is changed in steps of 0.01s.

To increase the release time
Rotate Logicator 4 clockwise. The Logicator will illuminate in an increasing arc.

Soft Knee
This is the number of dBs below the threshold at which compression/limiting is gradually introduced (increasing smoothly to full compression/limiting above the Threshold point). The range is 0dB to 60dB with a default of 1dB.

To increase the knee size
Rotate Logicator 5 clockwise.
The Logicator shows an arc increasing in both directions from the centre as the knee size is increased.

Gain Make-Up Method
Make up gain is used to compensate for the noticeable average gain level drop as compression is increased. This can be added manually or automatically.

To select manual gain make-up
Rotate Logicator 6 anti-clockwise.
The alpha will display **Man**. The Logicator will show a point at the 11 o'clock position. The make-up gain set on Logicator 7 will be applied.

To select automatic gain make-up
Rotate Logicator 6 clockwise.
The alpha will display Auto. The Logicator will show a point at the 1 o'clock position.
Make-up gain will only be applied when the threshold level is below 0dB. The amount of positive gain applied is that which will restore a 0dB level signal back to 0dB.

Manual Gain Make-Up
This is the amount of Manual make-up gain added if **Manual** is selected. It is not added in **Auto** mode.
The range is 0dB to 20dB with a default of 0dB and is adjusted in steps of 0.1dB.

To increase make-up gain
Rotate Logicator 7 clockwise. The Logicator will illuminate in an increasing arc.

To switch a compressor/limiter into circuit
Press the **ON/CLEAR** key (the integral led will illuminate red).
The Logicators will illuminate to show their settings.

If two compressor/limiters are present, they are switched in and out of the signal path independently.

Gate

The gate can be used to cut out signal noise which may be apparent when the level of program material drops off. A gate can not be allocated to a path which already has a DRC allocated.

To access the controls for the gate
Press the **GATE EXP** key.
The integral led will illuminate orange.

The controls are assigned to the Logicators as follows (the alpha descriptions are shown in brackets):

Logicator	Control	Displayed as:
1	Threshold	Thrs
3	Attack time	Atk
4	Release time	Rel
5	Hysteresis	Hyst
7	Depth	Dpth

Threshold Level
This is the dB level at which the Gate switches on and allows the signal to pass through. This is expressed in decibels relative to normal program line-up level and variable between –60 and +30dB. The default is –20dB and changes in steps of 1dB.

To change the threshold level
Rotate Logicator 1 to the desired setting. The Logicator illuminates in arc for a visual display of the setting.

Attack Time
This determines the rate at which the gate switches on (opens) once the input signal has risen above the Threshold level. The range is 0 (instant attack) to 50ms with a default of 1ms.

To increase the attack time
Rotate Logicator 3 clockwise. The Logicator shows an arc which increases with attack time.

Release Time
This determines the rate at which the gate switches off (closes) when the input signal level drops below the threshold level minus the hysteresis size.
The range is 0 (instant release) to 5sec with a default of 0.1sec.

To increase the release time
Rotate Logicator 4 clockwise. The Logicator shows an arc which increases with release time.

Hysteresis
The hysteresis control is used to select the level below threshold at which the gate closes. The threshold at which the gate turns off is always below the threshold at which the gate turns on.
The range is 0dB to 20dB with a default of 6dB.

To change the hysteresis
Rotate Logicator 5 to the desired setting. The Logicator shows an arc starting in the centre which increases as hysteresis increases.

Depth
This is the number of dBs below Threshold at which the input/output gain change returns to 1:1, with a fixed gain reduction of depth dBs. The range is 0dB to 60dB with a default of 30dB.

To change the depth
Rotate Logicator 7 to the desired setting. The Logicator will show an arc which increases in both directions from the centre as depth increases.

To switch the gate into circuit
Press the **ON/CLEAR** key. The integral led will illuminate red.
The Logicators will illuminate to indicate their settings.

Expander

The expander is used to reduce the signal level below the expander threshold. An expander can not be allocated to a path which already has a DRC allocated.

To access the controls for the expander
Press the **GATE EXP** key. The integral led will illuminate orange.
The led in the **PAGE 2** key will illuminate green.
Press the **PAGE 2** key. The integral led will illuminate orange.
The controls are assigned to the Logicators as follows (the alpha descriptions are shown in brackets):

Logicator	Control	Displayed as:
1	Threshold	Thrs
2	Ratio	Rtio
3	Attack time	Atk
4	Release time	Rel
5	Knee	Knee
7	Depth	Dpth

Threshold
This is the dB level below which gain reduction of the signal will occur. This is expressed in decibels relative to normal program line-up level and has a range of –60dB to +30dB with a default of -20dB.

To change the threshold level
Rotate Logicator 1 to the desired setting.
The Logicator shows an arc which increases with the threshold level to indicate the size of the region under expansion.

Ratio
This is the level of gain reduction applied to the signal below the threshold point (i.e. the ratio between
changes in level (in dB) of the input to the expander and its output). This has a range of 1:1 to 9.9:1 with a default of 1:1.

To increase the ratio
Rotate Logicator 2 clockwise.
The Logicator shows a dot to indicate the setting.

Attack Time
The attack time determines the rate at which the gain applied to the input signal is increased from the depth setting to 0dB. The range is 0 (instant attack) to 50ms with a default of 1ms.

To increase the attack time
Rotate Logicator 3 clockwise. The Logicator will illuminate in an increasing arc.

Release Time
The release time determines the rate at which the gain applied to the input signal decreases from 0dB to the Depth setting. The range is 0 (instant release) to 5sec with a default of 0.10sec.

To increase the release time
Rotate Logicator 4 clockwise. The Logicator will illuminate in an increasing arc.

Soft Knee
The soft knee is the number of dBs above Threshold at which expansion is gradually introduced (increasing smoothly to full expansion below the Threshold point).
The range is 0dB to 60dB with a default of 1dB.

To increase the knee size
Rotate Logicator 5 clockwise. The Logicator shows an arc increasing in both directions from the centre as the knee size is increased.

Depth
This is the number of dBs below Threshold at which the input/output gain change returns to 1:1 with a fixed gain reduction of depth dBs. The range is 0dB to 60dB with a default of 30dB.

To change the depth
Rotate Logicator 7 to the desired setting. The Logicator will show an arc which increases in both directions from the centre as depth increases.

To switch the expander into circuit
Press the **ON/CLEAR** key.
The integral led will illuminate red. The Logicators will illuminate to indicate their settings.

Dynamic Range Controller

The **DRC** is a combined dynamics processor which is a combination of a compressor and an expander with a fixed-ratio of 2:1.
It uses significantly less processing than two separate dynamics elements. The DRC is mutually exclusive of other dynamics processing in the path.
A sidechain can be used to control a DRC.

To access DRC compressor controls
Press the **COMP LIM** key. The leds in the **COMP LIM** and **GATE EXP** keys will illuminate orange.

Logicators 1 to 4 will be assigned as follows (the alpha descriptions are shown in brackets):

Logicator	Control	Displayed as:
1	Threshold	CmpT
2	Ratio	Rtio
3	Attack time	Atk
4	Release time	Rel

To access DRC expander controls
Press the **GATE EXP** key. The leds in the **COMP LIM** and **GATE EXP** keys will illuminate orange.

Logicators 1 to 4 will be assigned as follows (the alpha descriptions are shown in brackets):

Logicator	Control	Displayed as:
1	Threshold	ExpT
3	Attack time	Atk
4	Release Time	Rel

DRC Compressor Threshold
This is the dB level above which gain reduction of the signal will occur. This is expressed in decibels relative to normal program line-up level and has a range of –60dB to +30dB with a default of +8dB.

The Logicator shows an arc with the fixed point at the maximum position (+30dB) increasing in size anti-clockwise as the threshold is lowered. This provides a visual display of the size of the region under compression (or being limited).

To change the threshold level
Rotate Logicator 1 to the desired setting.

DRC Compressor Ratio
This is the level of gain reduction applied to the signal above the threshold point (i.e. the ratio between changes in level (in dB) of the input to the compressor and its output). This has a range of 1:1 to 99:1.
The default is 1:1 (i.e. no compression) and can be changed in steps of 0.1 up to 9.9:1. From 10:1 to 99:1 the ratio is changed in steps of 1.

To increase the ratio
Rotate Logicator 2 clockwise. The logicator will show a dot to indicate the setting.

DRC Compressor Attack Time
The attack time is speed at which the compressor responds to a signal once it has entered the compression region. The attack and release filter section (peak detection circuit) is one bilinear filter fed by a dB value of audio level minus compressor curve level for that input.
If audio is below the threshold, 0dB is passed in.
The attack filter is used when the input level is larger than the output of the peak detection circuit (switching to release when it drops below). The attack time has a range of 0.7µs to 50mS with a default of 1ms.

To increase the attack time
Rotate Logicator 3 clockwise. The Logicator will illuminate in an increasing arc.

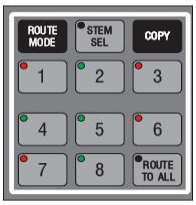
DRC Compressor Release Time
This is the time taken for the compressor to switch off when the signal level falls below the threshold.
The range is 0 (instant release) to 5sec. The default is 0.10s and is changed in steps of 0.01s.

To increase the release time
Rotate Logicator 4 clockwise. The Logicator will illuminate in an increasing arc.

To switch the DRC into circuit
Press the **ON/CLEAR** key. The integral led will illuminate red.

*When a different signal processing selection key is pressed after the DRC is enabled, the leds in the **COMP LIM** and **GATE EXP** keys will both illuminate red. Similarly, if the DRC is disable but still allocated the leds will both illuminate green when a different signal processing selection key is pressed.*

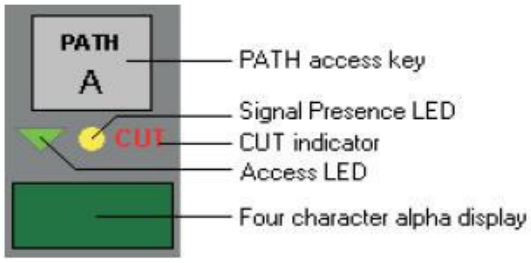
Copy Function



The **COPY** key allows signal processing settings to be copied between paths.

To select a source path
Press the Path access key of the required path. This will ensure the path is on the surface.

Press the **COPY** key on the same channel strip. The led in the **COPY** key will flash.

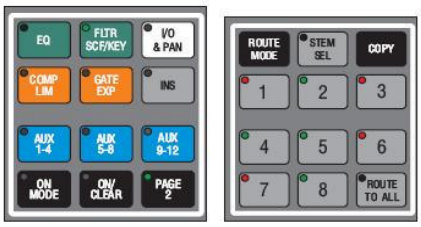


The console will enter Copy Mode. The alpha displays associated with the Path access keys will flash alternately between the path names and **COPY**.

The long alpha on the lower matrix panel will display **Select Copy Dest** and the path type that was selected for copying.

The led in the number key that corresponding to the source path will flash red.
The leds in the available destination keys will illuminate green.
All processes in the path and the stem routing will be selected for copying.

To create a copy template



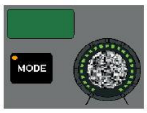
Press the required Signal Processing Selection key or the **ROUTE MODE** key. Press the same key again (except **ROUTE MODE**).

All other items will be de-selected for the copy operation. Press a different Signal Processing Selection key and/or the **ROUTE MODE** key.

Press the same key again (except **ROUTE MODE**). The item will be added to the copy template.

The **ROUTE MODE** key toggles the stem routing in and out of the copy template with a single press.

To select the settings in an individual processor to be copied
Press the required Signal Processing Selection key.



The leds in the **MODE** keys associated with the Logicators will illuminate orange to indicate the settings that will be copied.

Press the Logicator **MODE** keys to toggle individual parameters in and out of the copy template.

- The settings for the Aux contributions can also be copied.
- Input/Output Ports can not be copied.
- The **ON MODE** and **ON/CLEAR** keys are not relevant in **Copy** mode.

To copy the selected settings to other paths
Press the Path Access keys on the required target paths.
or
Press the number keys on the lower matrix panel.
The keys for the selected destination paths in the lower matrix panel will illuminate orange.

To copy to a range of faders
The Recall button in the Master Status section of the Master Panel is redefined to be a latching **Select** key. It can only be activated when automation is not running.

If Select is active, paths can be added and removed from the Copy selection without applying the Copy operation.

Individual paths can be toggled in and out of the selection by pressing the channels' path access key.
A range of paths on the active layer can be specified by pressing and holding the layer key of the first path and pressing the layer key of the last path.

All the paths on a layer can be specified by pressing and holding the master **ALL** key and pressing one of the channel layer keys.
Pressing **SELECT** then applies the Copy operation from the source path to the selected destination paths.

Pressing **COPY** again on the source path exits copy mode without applying the copy operation to the selected paths.

To change the source path
Press the **COPY** key on the required path.
The copy template will remain un-changed but it can now be modified as required.
Destination paths will have to be re-selected.
To end Copy Mode
Press the **COPY** key on the source path. The copy template is reset to the default (all processes and stem routing).

Channel Range

This allows a range of channel strips to be specified by the operator, so that setup controls operate across this range.
Either:

- Select a Master Path key (**A, B, C** or **D)**, and press & hold 2 Path Keys to specify a range (eg Path A on channel strip 1 and channel strip 12);
- Select individual paths from the matrix panel, or
- Press and hold 2 keys from the matrix panel to specify a range.

Predub Slaves are automatically added to the selection if the Predub Master is selected and the predub is collapsed.
The channel name will flash when it is included in the range.
Each operator partition can set up a range of controls independently.

Press the **UNDO** key and the current selection will be cleared. By default, the current selection is saved when exit **Channel Range Mode** and will be recalled next time you enter the mode. This can be over-ridden using the **Clear Selection On Exit** preference in Encore.

Controls which can operate across this range are:

- Parameter Null (eg clearing EQ, faders etc)
- Copy
- Channel Stem Select
- I/O Port Name
- I/O Port Number
- I/O Port A/B

Notes on Copy

To see the settings being copied for a particular function
Press and hold the **ALL** key, then press the required Signal Processing Selection key.
The selected function will be displayed across the console.
Release the **ALL** key.
When settings are copied they will be seen immediately in the alpha displays for the function brought to the surface.

Using the AFU Function with Copy
AFU Mode can be used to set and select the settings to be copied.
Press the **AFU** key in the Lower Routing Panel. AFU Mode will be activated.
The default path will be expanded in the Predub zone.

Select the path in the AFU using the Lower Routing Panel.
Press the Signal Processing Selection and **MODE** keys in the AFU as required.
Press the **COPY** key in the first channel strip in the AFU (Predub zone). The leds in all the **COPY** keys in the AFU will flash.
Press the Path access keys to copy the settings to.
Press the **COPY** key in the first channel strip in the AFU to turn off Copy Mode.
Press the **AFU** key to turn off AFU Mode.

Logicator Function Summary

Equaliser:

Logicator	1 Band Page 1	1 Band Page 2	2 Bands Page 1	2 Bands Page 2	3 Bands Page 1	3 Bands Page 2	4 Bands Page 1	4 Bands Page 2
1	-	-	-	-	-	-	HF Freq	HF Shape
2	-	-	-	-	-	-	±24dB or Q	Slope, ±24dB or Q
3	-	-	-	-	HF Freq	HF Shape	HMF Freq	HMF Shape
4	-	-	-	-	±24dB or Q	Slope, ±24dB or Q	±24dB or Q	Slope, ±24dB or Q
5	-	-	HF Freq	HF Shape	HMF Freq	HMF Shape	LMF Freq	LMF Shape
6	-	-	±24dB or Q	Slope, ±24dB or Q	±24dB or Q	Slope, ±24dB or Q	±24dB or Q	Slope, ±24dB or Q
7	HF Freq	HF Shape	HMF Freq	HMF Shape	LMF Freq	LMF Shape	LF Freq	LF Shape
8	±24dB or Q	Slope, ±24dB or Q	±24dB or Q	Slope, ±24dB or Q	±24dB or Q	Slope, ±24dB or Q	±24dB or Q	Slope, ±24dB or Q

Filters / Sidechain:

Logicator	1 Filter (Page 1)	2 Filters (Page 1)	Sidechain Filter/ Key Input (Page 2)
1	-	LF Filter Shape	SCF Shape
2	-	Slope	SCF Level
3	-	Freq	SCF Q
4	-	-	SCF Freq
5	LF Filter Shape	HF Filter Shape	Sidechain Listen On/Off
6	Slope	Slope	Key Input On/Off
7	Freq	Freq	Key Input Path
8	-	-	Key Input Pre/Post

I/O, Panning & Insert:

Logicator	I/O & Pan	Input Patch	Output Patch	Insert 1 (Page 1)	Insert 2 (Page 2)
1	-	Port Type	Port Type	Send Port Type	Send Port Type
2	Trim	Port Number	Port Number	Send Port Number	Send Port Number
3	Delay	Input Trim	Output Trim	Send Level Trim	Send Level Trim
4	Phase	-	-	-	-
5	Rear Surround	-	Pan Designator	Return Port Type	Return Port Type
6	Front-Back	-	Pre/Post Output Pickoff	Return Port Number	Return Port Number
7	Divergence	Phase Reversal	-	Return Trim Level	Return Trim Level
8	LCR Pan, Front Pan or Balance	Input Delay	Output Delay	Insert 1 In/Out	Insert 2 In/Out

Dynamics:

Logicator	Compressor (Page 1)	Limiter (Page 2)	Gate (Page 1)	Expander (Page 2)	DRC Compressor	DRC Expander
1	Threshold	Threshold	Threshold	Threshold	Threshold	Threshold
2	Ratio	Ratio	-	Ratio	Ratio	-
3	Attack Time	Attack Time	Attack Time	Attack Time	Attack Time	Attack Time
4	Release Time	Release Time	Release Time	Release Time	Release Time	Release Time
5	Knee	Knee	Hysteresis	Knee	-	-
6	Manual or Automatic Gain Make-Up	Manual or Automatic Gain Make-Up	-	-	-	-
7	Manual Make-Up Gain	Manual Make-Up Gain	Depth	Depth	-	-
8	-	-	-	-	-	-

Auxiliaries:

Logicator	Aux Sends 1-4 Page 1	Aux Sends 1-4 Page 2	Aux Sends 5-8 Page 1	Aux Sends 5-8 Page 2	Aux Sends 9-12 Page 1	Aux Sends 9-12 Page 2
1	Aux 1 Contrib Level	Aux 1 Pre/Post	Aux 5 Contrib Level	Aux 5 Pre/Post	Aux 9 Contrib Level	Aux 9 Pre/Post
2	Aux 1 Pan/Balance	Aux 1 On/Off	Aux 5 Pan/Balance	Aux 5 On/Off	Aux 9 Pan/Balance	Aux 9 On/Off
3	Aux 2 Contrib Level	Aux 2 Pre/Post	Aux 6 Contrib Level	Aux 6 Pre/Post	Aux 10 Contrib Level	Aux 10 Pre/Post
4	Aux 2 Pan/Balance	Aux 2 On/Off	Aux 6 Pan/Balance	Aux 6 On/Off	Aux 10 Pan/Balance	Aux 10 On/Off
5	Aux 3 Contrib Level	Aux 3 Pre/Post	Aux 7 Contrib Level	Aux 7 Pre/Post	Aux 11 Contrib Level	Aux 11 Pre/Post
6	Aux 3 Pan/Balance	Aux 3 On/Off	Aux 7 Pan/Balance	Aux 7 On/Off	Aux 11 Pan/Balance	Aux 11 On/Off
7	Aux 4 Contrib Level	Aux 4 Pre/Post	Aux 8 Contrib Level	Aux 8 Pre/Post	Aux 12 Contrib Level	Aux 12 Pre/Post
8	Aux 4 Pan/Balance	Aux 4 On/Off	Aux 8 Pan/Balance	Aux 8 On/Off	Aux 12 Pan/Balance	Aux 12 On/Off

Resetting Controls

The **ON/CLEAR** key can be used with processing controls to reset them to their default values.

The default value that the control takes depends on the setting in the currently loaded User Defaults, as set with **Defaults Manager**.

To reset a whole processing element
Press and hold the key for the required processing element or Aux bank.
Press the **ON/CLEAR** key.

All the settings for the selected element will be reset to the default values according to the currently loaded User Default file created with **Defaults Manager**.

*When resetting **I/O & PAN**, only the surround panning controls are reset unless **Input** or **Output Patching** is active, in which case the port settings are cleared to their defaults (the port will not be de-routed).*

To clear faders only
Pressing **FADER MODE** and **Path A, B, C** or **D** will clear that fader to it's default value on each channel strip.

To reset Logicator settings to their default values
Press and hold the **MODE** key associated with the required Logicator.
Press the **ON/CLEAR** key.

The alpha display associated with the Logicator will show the default setting.

To reset the Stem Routing only
Hold the **Route Mode** and **On/Clear** keys on the channel strip for the current path.

Auxiliaries

Up to 36 stereo or mono Auxiliary Sends are available.
The Auxes assigned to the **AUX** selection keys will depend on whether or not Split Console is in operation and how many Shared Auxes are configured. Only the first 12 Auxiliary Sends are available when not using Split Console.

Each Aux can be Pre- or Post- fader, have the contribution level adjusted from 102dB to +10dB and be balanced when in stereo.

Auxes can take contributions from Channels, Tracks and Groups, and can be routed to Cues or a physical output.

To select AUX 1 to 4
Press the **AUX 1-4** key. The green led in the key illuminates to confirm selection.

The Logicators are assigned in pairs to the Auxes for Contribution Level and Pan/Balance, i.e. the first available Aux on Logicator 1 and 2, the second available Aux on Logicator 3 and 4, etc.

To switch on Auxes
Press and hold the **ON/CLEAR** key. The alpha for the first Logicator for each AUX will display **OFF**.
Rotate the required Logicators clockwise so the alphas display **ON**. Release the **ON/CLEAR** key.
Or
Press the **PAGE 2** key. The alpha for the second logicator for each Aux will display **OFF**.
Rotate the required Logicators clockwise so the alphas display **ON**. Press the **AUX** 1-4 key to return to Page 1.

The Logicators for the activated Auxes will illuminate to show the current settings for Contribution Level and Pan/Balance.

Additional Auxes available in the console partition are selected and switched on in the same way using the **AUX 5-8** and **AUX 9-12** keys.

To change the Contribution Level
Press the required **AUX** selection key to show **Page 1** of the aux settings. The auxes are assigned to pairs of Logicators. Rotate the first Logicator for the required Aux.
The Logicator shows an arc relative to the setting and the alpha shows the actual value.

To adjust Pan/Balance
Press the required **AUX** selection key to show **Page 1** of the aux settings.
The auxes are assigned to pairs of Logicators. Rotate the second Logicator for the required Aux.

The Logicator displays a spot relative to the Pan/Balance setting. Pan/Balance ranges to a typical balance taper over 180º (being 0dB at full left or right and 3dB at the centre).
Balance control is not geared.

The alpha displays ranges -44º to +44º with **CNTR** at the centre, **LEFT** when full left (-90º) and **RGHT** when full right (+90º).

To select Pre or Post fader
Press the required Aux selection key to show Page 1 of the aux settings. The auxes are assigned to pairs of Logicators.

Press the **PAGE 2** key to select the second set of aux parameters. The first Logicator for each Aux acts as a two position switch for selecting between Pre- and Post-. The alpha shows the current setting.
Rotate the first Logicator for each Aux as required.

Shared Auxiliaries

Shared Auxes are only applicable when Split Console is enabled and the console is split into two or three sections.

There are 36 Auxes available in total. They can only all be used when the console is split into three sections and no Auxes are shared (i.e. each section has 12 separate Auxes each available).

The number of shared Auxes plus the number of 'private' Auxes for each partition is configured as part of the basic **Desk Setup** using **Desk Edit**.

When Auxes are shared, all of the console may make contributions to those Auxes. For instance, if 4 Auxes are shared then each partition can contribute to the first 4 Auxes, while still having up to 8 Auxes for 'private' use in each partition.

Note that the **AUX 1-4**, **AUX 5-8** and **AUX 9-12** keys are for selecting the first four, next four and last four Auxes assigned to the partition.

Auxiliary Control Grouping

The Auxiliaries send controls on each strip are not grouped by default. The grouping function allows more than one Auxiliary send to be switched on and off simultaneously with the **ON/CLEAR** key.

This can only be done within each bank of Auxes so that Auxes 1 to 4 can be grouped, as can Auxes 5 to 8 and 9 to 12, but Auxes 3 and 7 could not be grouped together, for instance.

To add an Aux send to a group
Press and hold the required **AUX** key until the first alphas for each band display the aux name, and the second alphas for each band display **OutG**.

While still holding the **AUX** key, touch the second Logicator for each Aux to be added to the group. The associated alpha displays will change to **In G**.
The indicator leds on the second Logicator for each Aux selected will illuminate.
The **ON/CLEAR** key can now be used to switch the selected Auxes on and off together.

Control grouping can be turned off Encore.

Assignable Facilities Unit (AFU) function

AFU Mode allows instant access to all controllable parameters in any path without leaving the monitoring sweet-spot.

AFU Mode uses the Predub zone as a fully assignable virtual AFU and allows simultaneous adjustment of more than one signal processing element.

To start the AFU
Press the **AFU** key on the Lower Routing Panel. The AFU will be placed in the Predub zone.
The alpha display associated with the **Path A** key in the first Predub zone strip will display AFU.
The long alpha display on the Lower Routing Panel will display **AFU Path-** and the name of the path expanded on the AFU.

If any other function is active (eg **Copy**, **Link**, **Input Patch**, etc.) then it will be cancelled. The first time that AFU Mode is invoked the first available path on the console surface will be assigned to the AFU.

The console is searched from left to right for a path assigned to **Layer A**, then **Layer B** and so on until a path is found.

To select the path expanded on the AFU
Use numbered keys on the Lower Routing Panel to select the path number.
Use the nudge keys to change the path type.
or
Press the **Path Access** key for the required path.

To change the functions displayed on the AFU
Press the Signal Function Selection keys as required on each strip.
Eg Press the **INS** key on the eighth strip to access the Insert controls instead of the AUX 9-12 controls. The assignments within the AFU (i.e. which strip displays which controls) will be saved as part of the current Desk Setup.

To interrogate which path is expanded on the AFU
Press and hold the **Path A** key on the first Predub zone strip, and the associated alpha will display the path name.

To cancel the AFU
Press the **AFU** key on the Lower Routing Panel.

AFU Strip Usage
The first time that AFU mode is invoked, Page 1 of the functions will be assigned to the strips in the Predub zone in the following order:

AFU Strip	Function
1	EQ
2	Filter
3	I/O
4	Compressor / Limiter
5	Gate
6	Aux 1 - 4
7	Aux 5 - 8
8	Aux 9 - 12

The leds in the corresponding Signal Processing Selection keys will illuminate orange (eg the led in the **EQ** key will illuminate orange on the first strip).

All of the first strip in the Predub zone will be used for the path expanded on the AFU. Only the Logicators and Signal Processing Selection keys in the other seven strips will be used for the AFU.

- The actual Auxes will depend on whether or not Shared Auxes are in use on a split console.
- The I/O shown will depend on the Path Type and port assignment.
- The Logicator alphas will be blank for functions which have not been configured into the selected path (eg if there is no Gate then strip 5 will not show anything).

Using Paths in the PreDub Zone when the AFU is active
When **AFU Mode** is active, the paths in the Predub zone will be overlayed by the AFU. The whole of the first strip in the Predub zone will be assigned to the AFU.

The other seven strips will have their Logicators and Signal Processing Selection keys assigned to the AFU and the Stem Selection and Routing keys will be inactive.
The remaining controls (fader, automation, cut, solo, etc.) can still be used for each of the paths on the surface.

To use all the controls for a path overlayed by the AFU
Press the required **Path** key.
The selected path will be expanded across the AFU. The strips assigned to the AFU can now be used to change settings for the selected path.

Using the AFU with I/O patching
The **AFU** can be used in conjunction with **Input** and **Output Patching** so that the I/O routing can be changed from the console surface without leaving the monitoring sweet-spot.

To start Input Patch AFU or Output Patch AFU
Press the **AFU** key. The led in AFU key will flash.
Select the path to be expanded on the AFU.
Press the **INPUT PATCH** or **OUTPUT PATCH** key.
The AFU will now use only the first strip in the Predub zone to show input or output patch information as selected.

The path called to the AFU can be selected as normal with the Lower Routing Panel.
The mode can be toggled between input and output patching with the interlocked **SHOW INPUT PATCH** or **SHOW OUTPUT** Path keys.

If the **SHOW INPUT PATCH** or **SHOW OUTPUT** Path key is pressed to turn the patch mode off, the AFU will be restored to all eight strips in the Predub zone.

*If a Predub is expanded when the AFU is active AFU Mode will be terminated, NS The led in the **AFU** key will cease to be illuminated. The long alpha display in the Lower Routing Panel will return to displaying Select Monitor Source.*

If the AFU is activated when a Predub is already expanded
The AFU will be overlayed on top of the expanded Predub.

When the AFU is subsequently cancelled, the expanded Predub will be restored in the Predub zone (and will override any path selected in the Predub zone).

8 Input & Output Patching

The **INPUT PATCH** and **OUTPUT PATCH** keys in the Main Paths section of the Master Quadstrip are used for fast input and output routing on the console surface.
This is an alternative to using **I/O Patching** or **Path Edit**.

Input Patching

Input Patching allows fast assignment of Input Ports to channels from the console surface.
Each Input can have an **A** and a **B** port attached, but the signal can only be taken from one port at a time.

To activate Input Patching, Press the **INPUT PATCH** key. The integral led will illuminate.

The **I/O & PAN** key will be automatically selected on all channel strips.

INPUT PATCH *and* ***OUTPUT PATCH*** *are interlocked (pressing one will toggle the other one off if it is active).*

The Logicators on paths with inputs will be assigned as follows:

Logicator	Control
1	Port type
2	Port number
3	Input trim
7	Phase
8	Delay

To select an input port
Press the **Path Access** key for the required path.
Rotate Logicator 1 to select the port type.
The associated alpha display will cycle through the available inputs (eg 1lin indicates line inputs in rack 1).

Rotate Logicator 2 to select the port number.
The alpha display will cycle through the available ports in the rack. This depends on how many cards of the selected type are in the rack.
The alpha display cycles continuously so that when the last port number is shown, turning the Logicator a little further clockwise will cycle round to the first port and vice versa.

To enable the input to the path
Press the **ON/CLEAR** key. The integral led will illuminate red.
Logicators 1 and 2 will not change the port selection while it is enabled.

Logicator 4 (which shows **A**) can now be rotated so that it shows **B,** and the above procedure repeated for assigning a second input on **In B**

MIOS Inputs

If you have any MIOS modules attached, then the lower 4 logicators will display MIOS-specific parameters:

Logicator	Parameter	Page 2
1	Mic A / Mic B / Line	
2	Gain	
3	Phase	48v On / Off
4	Delay (if assigned)	Limiter/Filter on/off individually or together

Output Patching

Output Patching allows fast assignment of Output Ports to Tracks (busses), Mains, etc. from the console surface.

To activate Output Patching
Press the **OUTPUT PATCH** key. The integral led will illuminate.
The **I/O & PAN** key will be automatically selected on all channel strips.

INPUT PATCH and **OUTPUT PATCH** are interlocked (pressing one will toggle the other one off if it is active).

The Logicators on paths with outputs will be assigned as follows:

Logicator	Control
1	Port type
2	Port number
3	Output trim
5	Pan type
6	Pre / Post fader selection
8	Delay

To select an output port
Press the **Path** access key for the required path.
Rotate Logicator 1 to select the port type.
The alpha display will cycle through the available outputs (eg 1LIN indicates line outputs in rack 1).

Rotate Logicator 2 to select the port number.
The alpha display will cycle through the available ports in the rack. This depends on how many cards of the selected type are in the rack. The alpha display cycles continuously so that when the last port number is shown, turning the Logicator a little further clockwise will cycle round to the first port and vice versa.

To enable the output to the port
Press the **ON/CLEAR** key.
The integral led will illuminate red.
Logicators 1 and 2 will not change the port selection while it is enabled.

If the port is already used by another path
When the **ON/CLEAR** key is pressed the output to the port will not be enabled.
Alphas 1 to 4 will display **PORT USED BY** [**path**].
The led in the **ON/CLEAR** key will not illuminate.

Patching Film Inserts for Post Decode and Lt-Rt

The insert sends and returns that are used by **Post Decode** and **Lt-Rt** can be patched from the console surface. The sends are shared, but the returns are set separately.

*If Stereo is selected as the current Film format in **Desk Edit** then **Post Decode** and **Lt-Rt** are not used.*

To patch the Post Decode and Lt-Rt inserts
Make sure Film paths are assigned to fader strips (eg with **Desk Designer**).
Press the **Path** access keys for the Film paths.
This is to assign them to the surface so that they will be visible during patching.
Press the **INPUT PATCH** or **OUTPUT PATCH** key.
The console will enter **Input Patch** or **Output Patch** mode as selected.

On any of the Film paths, press and hold the **ALL** key.
Press the **INS** key on the same fader strip.
Release the **ALL** key.
The Film paths are now ready for the appropriate set of inserts to be selected.

To set the Post Decode sends and returns
Press the **POST DECODE** key. The integral led will illuminate red.
The current ports used by the send and return on each Film path will be shown on the Logicators, sends (outputs) on the top four Logicators and returns (inputs) on the bottom four.
Ports must be turned off with **ON/CLEAR** before they can be changed.

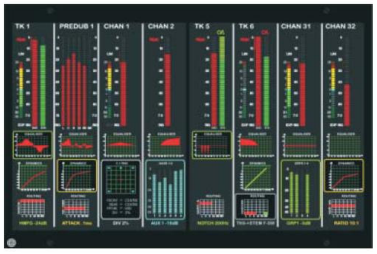
Logicators 1 and 2 are used to change the send ports and Logicators 5 and 6 are used to change the return ports.

Logicators 3 and 7 provide trim control.

To set the return for Lt-Rt
Press the **Lt-Rt** key.
The insert returns for **Lt-Rt** will be shown on **FLM1** (Left) and **FLM3** (Right).
They can not be modified individually.
Press the **MONO** key.
The insert returns will be shown as a stereo pair on **FLM2** (Centre).
The stereo port must be turned off with **ON/CLEAR** before it can be changed.
Logicators 5 and 6 are used to change the return port and Logicators 7 provides trim control.

When all changes have been made
Turn off **POST DECODE** or **Lt-Rt** and **MONO**.
Turn off the **INPUT PATCH** or **OUTPUT PATCH** key, as selected earlier.

9 Metering



The DFC Gemini has a fully assignable meter bridge.

The overall meter assignments are selected from the eight Meter Designs in the currently loaded Meter Design file.

Each Meter Design can contain a mixture of 'fixed' meter assignments (eg a meter assigned to the input on Channel 1) and selectable meter assignments (eg a set of four meters assigned to the Wild Meter controls).

The file of designs is configured using the Encore utility **Meter Designer**. The files are managed using the Filing utility.

Once a file of Meter Designs has been loaded, the individual designs are selected using the console surface. The signals on the Stem, Surround Monitor and Wild Meters are also selectable from the console surface, when they are included in a design.

Using meter designs from the console surface

Press and hold the **METER DESIGN** key in the Quick Keys section.

The **1** to **8** keys on the Lower Routing Panel can now be used to select the required design number.

The long alpha will display Select Meter Design and the small alphas (next to the 1 and 5 keys) will display **MDES**.
The led in the number key corresponding to the current design on the meters will illuminate red and the remaining leds in the 1 to 8 keys will illuminate green.
Press the required number key. The selected design number will be displayed on the meters.

Release the **METER DESIGN** key.

Surround Metering

The Meter section of the Surround Monitoring Panel is used to select the signal displayed on the Stem meters which have been assigned to follow the Surround Monitoring Panel.

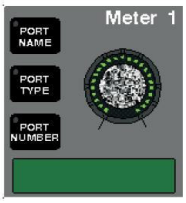
This depends on an appropriate Meter Design being displayed on the meter bridge.

To select the Stem to meter
Press the **STEM** key.
The integral led will illuminate red.
Press the **NEXT** and **PREV** keys to cycle round Stems **A** to **L**.
The meters will show the current Stem letter at the top in the System Name display.

To meter the surround monitor outputs
Press the **MON** key.

The integral led will illuminate red.
The meter will display **FILM** at the top.

Wild Meters



The Wild Meter controls in the Routing and Metering panel are used to select the port metered by the Wild Meters.

The Wild Meters are a block of four meters which are placed on the meter bridge according to the selected meter design (it is usual to place them above or near the Wild Meter controls).

*In Split Console operation there will be one set of Wild Meters available for each console section and **Meter Designer** makes it possible to have Wild Meters on the bridge for any or none of the sections.*

To select input or output ports

Press the **PORT TYPE** key. The integral led will toggle between red and green each time the key is pressed. Red indicates input ports; green indicates output.

A Note on Port Naming Conventions
The system names for input and output ports indicate the rack number, the port type, the port number, if the port is mono or stereo and whether the port is an input or output.

Rack Number
The leading digit(s) in the port name indicate the rack number, according to which MADI port the rack is connected to from the main DSP Rack. For instance, 2 lin 3 A is a line input from an ADC card in the IOS Rack connected to the second MADI port, and this is referenced as Rack 2.

Port Type
The port type is summarised by the three letters following the rack number. For instance, 3 aes 1AB is a stereo input from an AES/EBU card in Rack 3.
The exception is for ports that are connected by MADI that are not part of the DFC Gemini system. For instance 6 mad 10 is the tenth input on MADI port 6. This could be from AMS Neve outboard equipment (eg a TDIF/MADI Interface unit) or any third party device (eg a tape machine) that has a MADI interface.

Port Number and Mono/Stereo Status
The trailing numbers and letters indicate the port number within rack. For instance, 2 lin 5 A is mono input that is the right leg of line input 5 in rack 2.
Any pair of ports can be combined as a stereo pair (this is the default for AES ports). Line and AES ports are numbered in the sequence 1A, 1B, 2A, 2B and so on. A matching pair of ports is combined to make a stereo pair, eg 1AB, 2AB, 3AB and so on.
Other port types can be combined into a stereo pair using an odd numbered port for the left leg and the following even numbered port for the right leg. For instance, 6 mad 11/12 is a stereo MADI input using MADI inputs 11 and 12 on MADI port 6.

Input or Output
The port type in system names for inputs are in lower case (i.e. small letters) and for outputs are in upper case (i.e. Capital letters). For instance, 1 AES 2AB is a stereo output and 1 aes 2AB is the matching stereo input.

To select the port name

Press the **PORT NAME** key. The integral led will illuminate orange.
Rotate the Logicator.

The alpha display will cycle round the available hardware port names (i.e. the card types in each rack).

To select the port number
Press the **PORT NUMBER** key. The integral led will illuminate orange.
Rotate the Logicator.
The right hand half of the alpha display will cycle round the port numbers for the selected port name. The corresponding Wild Meter will display the level on the selected port.

Monitoring the signal on a Wild Meter
The **METER** key in the **LS SEL** section allows a Wild Meter to be selected from the Lower Routing Panel.
The signal on the selected Wild Meter can then be monitored on the control room or studio loudspeakers.

To select the Wild Meter to be monitored
Press the **METER** key in the **LS SEL** section. The integral led will illuminate red.
The alpha next to the 1 key on the Lower Routing Matrix will display **METR**.
The leds in the 1 to 4 keys will be illuminated green, with the currently selected key illuminated red.
Press the number key corresponding to the required Wild Meter.

If split console is in operation, there will be four meters selectable per console zone (i.e. 1-4 for Zone 1, 5-8 for Zone 2, 9-12 for Zone 3).

10 Tone & Talkback

For Tone and Talkback to operate, a Talkback path must be included in the current Desk Setup.
This is in the **System Paths** box on the **Config** tab of **Desk Edit**.

Tone and Talkback share a common path, so it is not possible to use both at the same time.

To route Tone/Talkback destinations

Press and hold the **TONE SEL** or **TBK SEL** key.
The long alpha on the Lower Routing Matrix will display **Route Talkback/Tone**.
Available destinations will have green leds. Selected destinations will have red leds.
Press the required number keys on the Lower Routing Matrix to select and de-select destinations.

Release the **TONE SEL** or **TBK SEL** key.

To select Tone type

Press the **TYPE** key.
Press the nudge keys to select the tone type.
The lower alpha next to the **TYPE** key will display the tone types which are **SINE**, **EBU** and **BBC**.

Press the **LEVEL** key.
Press the nudge keys to change the level.
The middle alpha next to the **LEVEL** key will display the selected level.
The range is -60dB to +10dB.

Press the **FREQ** key.
Press the nudge keys to change the frequency.
The top alpha next to the **FREQ** key will display the selected frequency.
The range is 20Hz to 16kHz.

To select common frequencies

Press the blank key next to the lower alpha.
The top alpha will cycle round the frequencies 100Hz, 1kHz and 10kHz each time the key is pressed.

To inject Tone and Talkback

Press the **TONE** and **TBK** keys as required. The integral led(s) will illuminate red.
Tone and talkback will be injected to the selected destinations.

*The **TONE** and **TBK** keys have momentary action if they are held down, i.e. they switch off when released.*

Using the Talkback output to trigger an external talkback system

The Talkback path must be routed to a destination.
Operating the **TBK** key will control the led and the relay.

The Talkback input does not need to be routed.

11 Ganging

A multi-level "VCA" style ganging system is supported for faders. This has a maximum depth of four layers.

If a fader is already part of a Link then it can not be added to a Gang.

Slaves and Sub-Master Slaves

The faders of slaves or sub-masters will move when the master fader is moved and always indicate the true gain through the fader element in the path. Offsets between slaves and other masters are always maintained and can be changed at any time by moving a slave's fader.

PreDubs in Gangs

A PreDub Master can be selected as a Gang Sub-Master, but are automatically only a Sub-Master to the paths in the PreDub. They can not be a Sub-Master of other paths. The PreDub members are Slaves of the PreDub Master only.

When the Gang Master or Sub-Master is moved, the PreDub Master and the subsequent Predub members move to follow the Master or Sub-Master.

To setup a Gang Structure

Press and hold the **GANG** key on the path which is to be the master.
The integral led will illuminate.
The Path leds of the master and its slaves will illuminate green to indicate members of the gang. The alpha displays will alternate between the path names and the status of the path within the gang as follows:

- **MST** for an overall master
- **SLV** for a slave
- **sub X** for a submaster of level X relative to the overall
- master
- **xMST** for masters of other gangs (including PreDubs), n/a for paths that can not be added to the gang.

Press the **Path** access keys on the paths to be controlled as slaves by that master.
When the gang is complete, press the **GANG** key again on the master path.
The integral led will cease to be illuminated and the console will return to normal operation.

Gang slaves can also be selected from the Lower Routing Matrix. When this is done, paths on other partitions can be selected as slaves.

Gang Member leds

When the master **GANG** key is released the leds on the gang members' **GANG** keys will remain illuminated as follows:

Master	Red
Sub-Master	Yellow
Slave	Green
Uncommitted	Green (flashing)

To interrogate a gang structure

Press and hold the **GANG** key of any member of the gang.
The path leds and alphas will then display the gang structure as above.

If a gang master or sub-master is placed on the **AFU** (Assignable Facilities Unit) then slaves may be added and subtracted from it.

To add or subtract slaves to a Master on the AFU
Hold down the **GANG** key on the first strip in the Predub zone.
Press the keys on the Lower Routing Panel for paths required to be slaves.

To save the Gang Structure

Press and hold the **ALL/SCOPE** key.
Press the **KEEP** key.
Release the **ALL/SCOPE** key.

The relative values of a master and its slaves are established as a new mix. Only the movements of a Master or Sub-master are recorded to the mix path unless an individual slave is forced into write when its new relative value will also be saved with the mix.

Gang CUT and SOLO

A **CUT** or **SOLO** on a Gang Master (or Sub-Master) will CUT or SOLO all the paths in the Gang hierarchy.

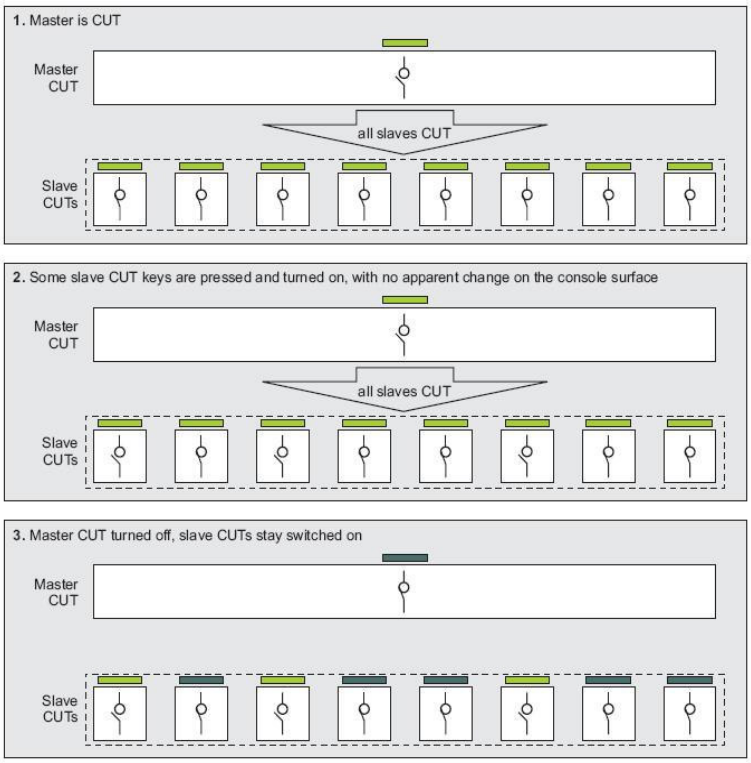
While a Master CUT or SOLO is on, the individual CUT or SOLO on a Slave can be switched on or off, but will not override the CUT or SOLO imposed by the Master.

The individual CUT or SOLO on a Slave only takes effect when the CUT or SOLO for the Master is off.

An individual CUT or SOLO on a Slave will remain on, even when CUT or SOLO on the Master is turned off. This is illustrated below.

For example, if a Master is CUT then the CUT keys for the Slaves can be pressed with no apparent effect.

However, the status of CUT keys for the Slaves is registered, and when the CUT for the Master is turned off there could still be Slaves that are CUT.



12 Linking

Paths can be Linked together so that when a control is changed on any path in the Link then the same control on all the other paths also changes. Offsets are retained for continuous controls (faders, EQ frequency, etc.).

Gangs and Links
If a fader is already part of a Gang then it can not be added to a Link. This does not affect any other controls in the Link or the Link Template on other paths.

PreDub Masters can not be included in a Link.

Links and Automation

Controls in a Link will have the same Automation Modes (i.e. all faders will have the same Automation Mode, all Cut keys will have the same Automation Mode, etc.).
This means that the Automation Modes can be changed from any member of the Link (eg all EQ Band 1 frequency controls in the Link can be Isolated in one operation).

The Automation Modes remain the same even when controls are suspended from the Link. This is because suspending the control from the Link allows its setting to be changed independently, but the Automation Mode will still remain in force.
If a different Automation Mode is required then the requisite path must be removed from the Link.

If a path is added to a Link then its controls will be forced into the same Automation Modes as the same controls in the Link (eg if faders are in Lock Record then the fader in the path added to the Link will have its Automation Mode changed to Lock Record).

Configuring Links

To link paths together
Press the **LINK** key on one of the paths that is to be part of the Link.
The integral led will flash red.

The long alpha in the lower matrix will display **Select Link Paths** and the path type that the **LINK** key was pressed on.

The led in the number key on the lower matrix that corresponds to the selected path will flash red.

The leds in number keys of paths available to the Link will illuminate green.

Link Template

By default, all controls except Stem Routing are included in a Link. This can be changed. When the first item is selected for the Link Template, everything else is excluded. Items are then added to the Link Template.

To select the first control in a Link Template
Press the **ROUTE MODE, FADER MODE** or **CUT MODE** key.
or

Press the selection key for the required processing element twice (if it is already active, just press it once).
This is used to select a whole processing element for the Link Template.
or
Press the selection key for the required processing element, then press the Logicator Mode key for the required parameter.
This is used to select an individual parameter for the Link Template.
The integral led in the Mode key(s) for the selected item will illuminate orange.
Use the same actions to add further items to the Link Template.

To select the other Link members

Press the **Path Access** keys or number keys on the lower matrix for paths that are to be in the Link.
The leds in the number keys of selected paths will flash orange.

To end link creation
Press the **LINK** key that is flashing red, and the console will revert to its previous state.

To Delete a Link

Press the **LINK** key for one of the link members. The integral led will flash red.
The led in the number key on the lower matrix that corresponds to the selected path will flash red.

The leds in the number keys of other paths in the Link will flash orange.
Press the number keys with orange flashing leds.
The leds will turn green.
When all leds are green (except the red flashing one) the Link is deleted.

Suspending Links

Links and parts of Links can be suspended to temporarily turn off the Link for the selected controls. This allows offsets to be changed or the rest of a Link to be changed without affecting the selected path or controls.

To Suspend the entire Link
Press and hold the **ALL** key on one of the Link member paths.
Press the **SUSPEND** key on the same path.
Release the **ALL** key.
The leds in the **SUSPEND** keys for the Link members will illuminate orange.
Repeat the procedure to restore the Link.

To Suspend a Path from a Link
Press and hold the **SUSPEND** key on the required path.
Press the Path Access key for the path.
Release the **SUSPEND** key.
The led in the **SUSPEND** key will illuminate orange.
Repeat the procedure to restore the path to the Link.

To Suspend individual controls from a Link
Press and hold the **SUSPEND** key on the required path.
Press the **MODE** keys for the required controls.

*The processing selection keys can be used while **Suspend** is held down to select which processing element is displayed to provide access to the **Mode** keys for individual parameters.*

*Pressing a **MODE** key for a control that is not in the Link will have no effect.*

The leds in the selected **MODE** keys will flash orange.
Release the **SUSPEND** key.
The led in the **SUSPEND** key will illuminate orange.
Repeat the procedure to restore controls to the Link.

It is also possible to use **Suspend** and the **Path Access** key to toggle all of a path into **Suspend** and then out again to restore controls that have been individually suspended.

13 Split Console Operation

A DFC Gemini that has more than one Master Section (Master and Surround Quadstrip pair) will operate as a Split Console. A console with one Master Section cannot operate as a Split Console.

In Split Console, the surface is divided into a number of partitions, equal to the number of Master Sections (Master Quadstrip and Surround Quadstrip) the console has. This will be two or three, depending on the installed system. The **Partition Designer** page in Encore Preferences can be used to see where the split points are.

The number of channel strips and the location of the Predub zones are determined by the Partition Designer in Preferences.

Master Layer Selection
The layer selection keys in the Main Paths section only affect the partition they are in.

Console Setup Function
The **SETUP** key activates **Turbo Allocation**, **Path Placement** and **Path Process** Switching (PPS). Turbo Allocation is a console-wide process.

Path Placement is local to each partition. However, a path can be removed from the surface in one partition and then put back on the surface in a different partition. **PPS** is local to each partition.

PreDub Zones
Each console partition will have its own Predub zone which will be used for the Predubs assigned to channel strips in that partition and the AFU Function when the AFU key in the partition's Master Quadstrip is used.

Automation
Making a Mix/Pass is a single operation across the console but the Master Automation Controls operate independently over each partition.

Routing
The Stems are shared across the console, so any input path can be routed to any Tracks (busses) or Groups which are formed into Stems.

Surround Monitoring & PEC/Direct Panels
The resources for surround monitoring are shared. If there is more than one Surround Monitoring Panel then they will operate in tandem. Only the Meter controls will operate independently on each partition.

If there is more than one PEC/Direct Panel then changes made on one panel will happen on the other(s), but different Stems may be selected on each panel.

Joysticks
The Joystick Modules can only select and call paths which are assigned to the partition they are in or paths which are not assigned to the console surface.

Control Room Level Controls
The rotary controls (pots) for monitoring level control on the Control Room section are disabled on the second and third partitions.

Meters

The Partition Designer page of Preferences in Encore is used to set the number of meters assigned to each partition.

14 Automation

This introduction provides an overview of DFC Gemini automation for users who may have had limited experience with automation systems in general.

The automation system on the DFC Gemini uses Mix/Passes to store control changes against timecode they are made on the console surface.

A control change is recorded as an Automation Event and is initially stored in a Record Pass. A control change is recorded when a suitable Automation Record Mode is selected for a control, the system is in play and the control is adjusted.

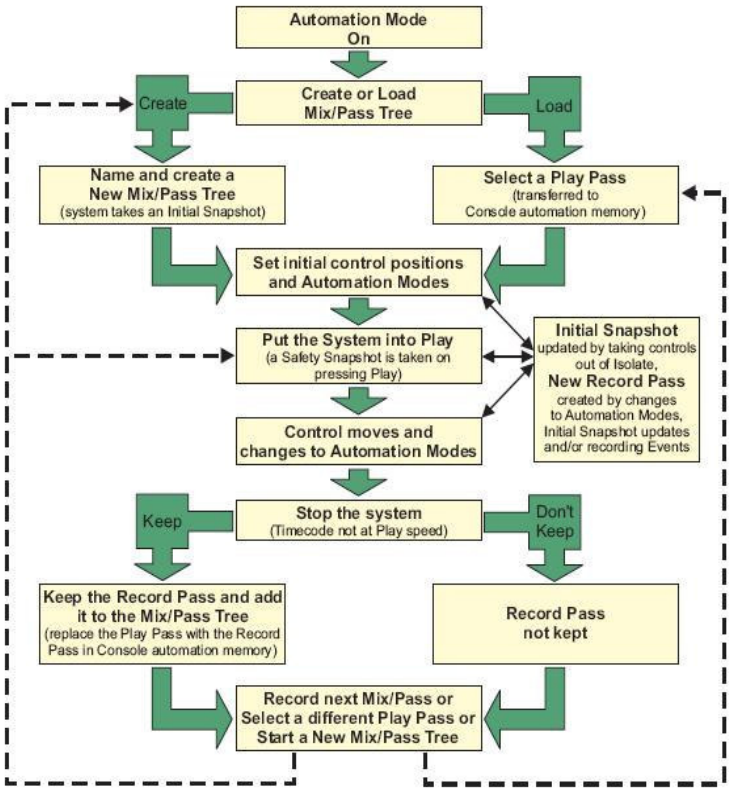
When the system is taken out of play, the Record Pass is complete and can be saved (kept) as a Mix/Pass in the current Mix/Pass Tree.

Mix/Passes are organised in a Mix/Pass Tree. The Mix/Pass Tree stores the structure of dependence between Mix/Passes - this means that it shows the order in which Mix/Passes were created and the lines of revision used to create each Mix/Pass.

The Mix/Pass Tree is displayed graphically so that Mix/Pass dependencies can be clearly seen. A new Mix/Pass starts to record when timecode is running at play speed (i.e. the system is in play) and a recordable control change is made.

- The new Mix/Pass is called the Record Pass.
- The Mix/Pass that is playing back is called the Play Pass.

The Record Pass is a revision of the Play Pass. If the Record Pass is kept to the Mix/Pass Tree then it will become the Play Pass. The dependence between these two Mix/Passes can be seen by displaying the Mix/Pass Tree.



Offline Automation

Mix/Passes are also created when using Encore's offline automation functions (**Copy Path Data**, **Mix Conforming**, **Fader Moves List**, etc.). When an offline automation function is used to make changes, a new Mix/Pass is created so that the existing Mix/Pass (i.e. source Mix/Pass) is preserved.

Mix/Pass Trees and individual Mix/Passes can also be transferred to a separate computer that has **Offline Encore** installed on it.
This allows offline automation functions to be performed without interrupting work on the DFC.

Switching Automation On and Off

Switching automation on and off is controlled by Automation Mode in Encore and the **AUTO RUN** key on the console surface.
The **AUTO RUN** key can start the automation system overall, but it can only suspend automation on the console surface.

To start the automation system
Press the **AUTO RUN** key.
The integral led will illuminate.
or
Click **Automation Mode** in the drop down **System Menu** in the main Encore screen.
or
Click the **Automate** icon in the main Encore screen.

In all cases, a dialogue box will be displayed to select how to start up the Automation System.

See separate Encore Plus manual for full operational instructions on the Automation system.

To suspend the automation system from the console surface

Press the **AUTO RUN** key while timecode is stopped.
The integral led will cease to be illuminated.
Timecode will not run when machines are in play, fast forward, etc., although the MCS panel will still have control of attached machines.
The automation system is still active in Encore, so any automation functions in Encore that do not directly use the console can be executed.

Selecting an offline automation function in Encore (eg **Mix Conforming**, **Fader Moves List**) will also automatically switch off the **AUTO RUN** key. The **AUTO RUN** key will be switched on again when the offline function is closed.

Controls that can & cannot be Automated

All controls that can form part of a signal path can be automated (eg fader, cut, aux contribution levels, etc.). In addition to this, the **Stem Routing** switches (for routing Channels and Tracks to Film Stems) can be automated.

Controls that are not automated include all the Mic gain, delay, monitoring controls, transport controls and other miscellaneous functions. This includes Solo, as this is part of the monitoring system.

Each control that can be automated has an associated **MODE** key. The **MODE** key shows the current automation status and can also show if a control is in Automation Scope.

All controls that are in Automation Scope can have their automation modes changed by the Master Automation Controls and the Fader Strip Automation Controls.

Mode Keys

Each control on a fader strip that can be automated has a **Mode** key. This is so that each control can, if required, have its automation mode set independently. The Mode keys are:

- Fader Mode Key
- Cut Mode Key
- Logicator Mode Key
- On Mode Key
- Route Mode Key

The Mode keys are also used by other functions, such as **Automation Scope** and **Link Suspend**.

Fader Mode Key

The **Fader Mode** key is used to set and display the automation mode of the fader.
The fader can use the full range of automation modes. The automation keys on the fader strip show the automation status of the fader unless another mode key is held down somewhere on the fader strip.

When the **Fader Mode** key is held down, the automation keys on the fader strip can be used to change the automation mode of the fader without affecting any other controls.

Automation led Indication

The led in the **Fader Mode** key displays the automation status of the fader:

Off	Isolate
Green	Play
Red (steady)	Armed (in Lock Record)
Red (flashing)	Recording automation
Orange (steady)	Armed (in Trim)
Orange (flashing)	Recording Trim moves

Cut Mode Key

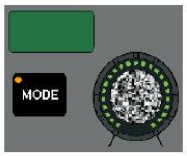
The **Cut Mode** key is used to set and display the automation mode of the CUT key. The **CUT** key can be set to Isolate, Play, Lock Record and Touch Record. The **CUT** key can also be set to AutoGlide when the **Cut Mode** key is held down, but it will behave in the same way as for Touch Record.

When the **Cut Mode** key is held down, the leds in the automation keys on the fader strip will illuminate to show the automation mode of the **CUT** key, and the automation keys can be used to change the automation mode of the **CUT** key without affecting any other controls.

Automation Status Indication
The led in the **Cut Mode** key displays the automation status of the **CUT** key:

Off	Isolate
Green	Play
Red (steady)	Armed
Red (flashing)	Recording

Logicator Mode Key



Each **Logicator Mode** key is used to set and display the automation mode of the function currently assigned to the Logicator.
When a different function is selected (eg switching from **EQ** to **COMP**) then the **Mode** key will indicate and control automation for the newly selected function.
The previously selected function will retain its automation status, although this will not be visible until the function is selected again.

When a **Logicator Mode** key is held down, the leds in the automation keys on the fader strip will illuminate to show the automation mode of the current function on the Logicator (eg Frequency for EQ Band 1), and the automation keys can be used to change the automation mode of the Logicator function without affecting any other controls.

Automation Status Indication
The led in a **Logicator Mode** key displays the automation status of the current Logicator function:

Off	Isolate
Green	Play
Red (steady)	Armed
Red (flashing)	Recording

On Mode Key

The **ON MODE** key is used to set and display the automation mode of the **ON/OFF** switch for the function currently selected to the Logicators (eg when **EQ** is selected, **ON MODE** shows the automation mode of the **EQ ON/OFF** switch).

When the **ON MODE** key is held down, the leds in the automation keys on the fader strip will illuminate to show the automation mode of the **ON/OFF** switch for the current function selected to the Logicators (eg the **EQ ON/OFF** switch), and the automation keys can be used to

change the automation mode of the **ON/OFF** switch without affecting any other controls.

Automation Status Indication
The led in the **ON MODE** key displays the automation status of the **ON/OFF** switch for the current function selected to the Logicators:

Off	Isolate
Green	Play
Red (steady)	Armed
Red (flashing)	Recording

Route Mode Key

The **ROUTE MODE** key is used to set and display the automation mode of the adjacent **Stem Routing** keys.

This is the only part of the routing system that is automated. When automation of the **Stem Routing** keys is recorded, each switch is recorded individually.

When the **ROUTE MODE** key is held down, the leds in the automation keys on the fader strip will illuminate to show the automation mode of the **Stem Routing** keys, and the automation keys can be used to change the automation mode of the Stem Routing keys without affecting any other controls.

Automation Status Indication
The led in the Route Mode key displays the automation status of the Stem Routing keys:

Off	Isolate
Green	Play
Red (steady)	Armed
Red (flashing)	Recording

Master Automation Controls

The Master Automation Controls are used for global control of automation.

The **AUTO RUN** key is used to switch the automation system online and offline. It operates in conjunction with Automation Mode control in Encore. Automation must be on-line for Mix/Passes to be made. The automation system may not be taken offline when the system is in play.

The **ISOLATE**, **PLAY**, **REC**, **TRIM** and **GLIDE** keys change the automation mode of controls across the whole of the console (ie globally), including controls for paths which are not on the surface.

The set of controls which is changed by the global mode keys can be limited by taking controls out of Scope or by switching off the **DESK AUTO, CUT AUTO** and **FADER AUTO** keys.

The **ALL/SCOPE** key can be used to override Scope but not the effect of the **DESK AUTO**, **CUT AUTO** and **FADER AUTO** keys.

The **KEEP** key is used to make a manual keep of the current Record Pass to the Mix/Pass tree, and also saves the any changes to the current **Desk Setup**.

The **COLLECT TOUCH**, **MASTER TOUCH ISOLATE** and **MASTER TOUCH RECORD** keys are used for Collect Touch.

Fader Strip Automation Controls

The Automation Controls on each fader strip fall into two groups:

- **Mode** keys for the controls that can be automated.
- **Automation** keys for selecting automation modes.

Mode Keys

Each control on a fader strip that can be automated has a **Mode** key. This is so that each control can, if required, have its automation mode set independently.

The **Mode** keys are:

- Fader Mode Key
- Cut Mode Key
- Logicator Mode Key
- On Mode Key
- Route Mode Key

They are described earlier in this chapter.

Automation Keys

These are the **ISOLATE**, **PLAY**, **REC**, **GLIDE** and **TRIM** keys used to select automation modes, and the ALL key used for automation scope and overriding automation scope.

Automation Modes and Scope are described on the following pages.

Overview of Automation Modes

The automation modes determine whether a control will:

- Have moves recorded
- Have moves played back
- Use a combination of record and play back
- Be ignored by the automation system

Automation modes are controlled locally on the fader strips and globally by the master automation controls. The basic automation modes are:

Isolate: The control will not have automation recorded or played back.
Lock Record The control will replay previously recorded moves until it is touched or used. The control will then Record until the mode is changed manually, glide is initiated or timecode stops.

Play: The control will only replay previously recorded moves.

Touch Record: The control will replay previously recorded moves until it is touched or used. The control will then Record until it is released, at which point it will snap back to the Play Pass position and resume replay.

Auto Glide: The control will replay previously recorded moves until it is touched or used. The control will then Record until it is released, at which point it will Glide back to the Play Pass position and resume replay. The control uses the Auto Glide Time to match back to the Play Pass.

In addition, Faders have two additional modes:

Trim: The fader moves to the centre of its travel (centre trim position) and plays back by staying there. When it is touched it starts to record moves as offsets from the Play Pass. The fader stays in record the mode is changed manually, glide is initiated or timecode stops.

Auto Trim: This is the same as Trim, except that when it is released the fader matches back to the Play Pass position using the Auto Glide Time.

The term arm is used to describe the action of selecting a record mode for a control, so that it is ready to start recording when it is touched.

Automation Scope

Controls that are within **Automation Scope** can have their automation modes changed in groups, either globally with the Master Automation Controls or locally with the Fader Strip Automation Controls.

This is described in detail in the following section on **Setting Automation Modes**.
The Master **ALL/SCOPE** and Fader Strip **ALL** keys can be used as an override to also change modes of controls which are out of Scope.
Scope can be suspended using the **FADER AUTO**, **CUT AUTO** and **DESK AUTO** keys. The **ISOLATE**, **PLAY**, **REC**, **TRIM** and **GLIDE** keys on a channel strip change the automation mode of the controls for the path on the surface.

The Master **ISOLATE**, **PLAY**, **REC**, **TRIM** and **GLIDE** keys change the automation mode of controls across the whole of the console, including controls for paths which are not on the surface.

Controls are automatically put in Scope the first time that their automation mode is changed from **Isolate** to something else.
If a Mix/Pass has not yet been made, then putting a control back into **Isolate** will take it out of Scope.

Once a Mix/Pass has been started then all controls which are in Scope will remain so unless specifically taken out of Scope.

To interrogate which controls are in Scope

Press and hold the **ALL/SCOPE** key.
The leds in the **Mode** keys for controls on the surface which are in Scope will flash orange.
or
Press and hold the **ALL** key on a channel strip.
The leds in the **Mode** keys for controls in that strip which are in Scope will flash orange.

To remove an individual control from Scope
Press and hold the **ALL/SCOPE** key or the **ALL** key on the required channel strip.
Press the **Mode** key for the required control.
The control will be taken out of Scope and the led in the **Mode** key will cease to be illuminated.

Each press of a **MODE** key will toggle the control in and out of Scope.

When the **ALL/SCOPE** or **ALL** key is released, the **MODE** keys will resume indication of automation status.

To remove an entire path from Scope
Press the required **Path** access key to bring the path to the surface.
Press and hold the **ALL/SCOPE** key.
Press the **ALL** key on the channel strip the path is assigned to.
All the controls for the path will be taken out of Scope and all the **MODE** keys will cease to be illuminated.

*Each press of the **ALL** key will toggle the controls in the path in and out of Scope.*

When the **ALL/SCOPE** key is released, the **MODE** keys will resume indication of automation status.

To remove all of one type of control from Scope
Press and hold the **MODE** key for the required control.
Press the **ALL/SCOPE** key.

*Each press of the **ALL/SCOPE** key will toggle the controls in and out of Scope.*

To remove all controls on the console from Scope
Press and hold the **ALL/SCOPE** key.
Press the **UNDO** key.

There is no method of putting all controls on the console back in Scope.

Suspending Fader, Cut and Desk Scope

The **DESK AUTO**, **CUT AUTO** or **FADER AUTO** keys are used to suspend controls from Automation Scope.

For instance, if the **FADER AUTO** key is used to suspend Faders from Automation Scope then the Master Automation Controls and the Fader Strip Automation Controls can be used to change Automation Modes of other controls without affecting the faders.

To toggle Faders in and out of Automation Scope
Press the **FADER AUTO** key.
Faders in Scope are suspended from Scope when the integral led in the **FADER AUTO** key is not illuminated.

To toggle CUT keys in and out of Automation Scope
Press the **CUT AUTO** key.
CUT keys in Scope are suspended from Scope when the integral led in the **CUT AUTO** key is not illuminated.

To toggle all other controls in paths in and out of Automation Scope
Press the **DESK AUTO** key.
Desk Controls in Scope are suspended from Scope when the integral led in the **DESK AUTO** key is not illuminated.

Timecode Display

A consequence of the method of storing time values is that the display format can be changed at will (although this would probably not be done in practice). Timecode can be displayed in standard HH:MM:SS:FF format or as Foot-Frames, as long as the same frame rate is used.

Mix/Pass Trees

Mix/Passes are organised in a Mix/Pass Tree. The Mix/Pass Tree stores the structure of dependence between Mix/Passes - this means that it shows the order in which Mix/Passes were created and the lines of revision used to create each Mix/Pass. The Mix/Pass Tree is displayed graphically so that Mix/Pass dependencies are shown clearly.
A Mix/Pass Tree always starts with Mix/Pass 1.1.
A Mix/Pass Tree is displayed graphically for selecting a Mix/Pass revision as the Play Pass or editing the Tree.

Each Mix/Pass contains:

- An Event List containing an Initial Snapshot (ISS) followed by Automation Events
- Automation Modes and Automation Scope as they were when timecode stopped at the end of the pass
- A Label List
- A Safety Snapshot

Play Pass
The Play Pass is used to play back control moves. As timecode runs at play speed, the automation system uses the times stored against the Automation Events to determine when the control value in each event should be played back.

Record Pass
A new Record Pass is made when changes are made to the Play Pass. When a Record Pass is kept then it becomes the new Play Pass.

Timecode Considerations for Mix/Passes

The timecode at which an event is recorded is stored in a format that is independent of timecode.
However, each event time that is stored will depend on the current frame rate. This means that the frame rate is significant for a particular Mix/Pass. For instance, a Mix/Pass that is recorded at 25 frames per second (fps) can only be played back at 25fps.

This prevents a Mix/Pass from being played back at a different frame rate, and if an attempt is made to load a mix created with a different frame rate than is currently selected, Encore will warn you of this.

Safety Snapshot

A **Safety Snapshot** is taken when **Play** is pressed to start timecode running.
It is a Snapshot of the whole console (ie it is not affected by Automation Scope).
The Safety Snapshot is not affected by (and does not affect) the automation system. However, it is stored with a Mix/Pass (when a **Record Pass** is kept).
A Safety Snapshot is only used when loading a Mix/Pass revision from the Mix/Pass Tree. It can optionally be loaded or ignored at this point. One way in which this can be used is to have an empty Mix/Pass Tree that has a Safety Snapshot with favourite control settings. This could be loaded so that, for instance, the Safety Snapshot is applied before a New Mix/Pass Tree is created.

Initial Snapshot

The **Initial Snapshot** (**ISS**) is at the beginning of the **Event List**.
The **ISS** contains the settings of all controls that can be automated when a New Mix/Pass Tree is created. The **ISS** settings are saved in special Automation Events which all have a Timecode of zero.
Only **ISS** events can have a Timecode of zero. ISS event values can be edited with the **Event List** functions in Encore, although their time can not.
The **ISS** is updated when a control is taken out of **Isolate** for the first time. The **ISS** takes the control setting either when the system goes into **Play** (for controls that are taken out of **Isolate** before **Play**) or when a control is taken out of **Isolate** if the system is already in **Play**.
Updating the **ISS** creates a **Record Pass** (when the system goes into **Play** or if it is already in **Play**). The new **ISS** settings are not saved unless the **Record Pass** is saved.
The primary function of the **ISS** is to provide an initial setting for any control. This is so that the control has a value to return to, such as when using **Glide** or when the system comes out of **Play**.

Automation Events

A dynamic automation event is a record of a change made to a control.

Each event records:

- The path it occurred on
- The control that was changed
- The timecode (resolved at frame level)
- The value of the setting

For instance, if a fader is moved continuously then a change in level will be recorded against every frame of timecode until the fader is released. This can be seen in the **Event List** as a series of individual events at each frame.

Setting Automation Modes

The Automation Modes are:

- Isolate
- Play
- Lock Record
- Touch Record
- AutoGlide
- Trim and AutoTrim

The following pages describe each **Automation Mode** and how each is selected and used.

To interrogate the **Automation Mode**, press and hold the required **Mode** key. The automation function keys will indicate the automation mode (eg the leds in the **PLAY** and **REC** keys being illuminated indicates **Touch Record**).

When the **Mode** key is released, the automation function keys will return to indicating the automation mode of the fader.

Automation Modes and the Mix/Pass

The current Automation Modes are part of the **Mix/Pass**. If no other actions have or would cause a **Record Pass** to be created then any changes to Automation Modes will create a **Record Pass** (when the system goes into **Play** or if it is already in **Play**).

Changes to Automation Modes are not saved unless the **Record Pass** is saved.

*A transition from armed to recording (eg in **Lock Record**) does not count as a change to the Automation Mode.*

Record Modes and Stop

When the system comes out of **Play** (i.e. timecode is no longer running at play-speed, usually because of a **Stop** command), any controls that are Recording will return to their armed state. No glide rates are used, so the control will snap back in one frame. This will also happen to controls that are part way through a glide (i.e. they will snap back from whatever value they have when the system comes out of **Play**).

Modifiers to Automation Modes

DFC Gemini has two extra automation function keys that are used to make three specialised modifications to the behaviour of the automation system:

- Auto Touch
- To End
- Touch Enable

They are described on the pages following the Automation Mode descriptions.

Isolate

A control in **Isolate** will not play back or record moves. If a control in **Isolate** is moved then the audio will be affected but no automation data will be recorded. This can be useful for testing a move without recording a new Mix/Pass.

To Isolate a control

Press and hold the **MODE** key for the control.
Press the **ISOLATE** key on the same fader strip.
Release the **MODE** key.

The led in the **MODE** key will be extinguished to show that the control has no active automation mode.

To Isolate all controls in a path that are in automation scope
Press the **ISOLATE** key on the required fader strip. The leds in **MODE** keys for controls in automation scope on the fader strip will be extinguished.

To Isolate all controls in a path
Press and hold the **ALL** key on the required fader strip.
Press the **ISOLATE** key on the same fader strip.
The leds in all **MODE** keys on the fader strip will be extinguished.
Release the **ALL** key.

To Isolate all controls in Automation Scope
Press the Master **ISOLATE** key.

To Isolate all controls
Press and hold the **ALL/SCOPE** key.
Press the Master **ISOLATE** key.
Release the **ALL/SCOPE** key.

Play
A control in **Play** will replay previously recorded moves.
If a control is moved then the audio will not be affected and no automation data will be recorded. Also, the control will snap back to the **Play Pass** position as soon as it is released. The **Play Pass** position (control value) will be displayed in the appropriate alpha display while the control is touched (eg if a fader is touched, the **Play Pass** values will be displayed in the fader strip alpha display until the fader is released, assuming that **Fader Level Indication On Touch** is enabled).
To put a control into Play
Press and hold the **MODE** key for the control.
Press the **PLAY** key on the required fader strip.
The integral led in the **MODE** key will illuminate green.
Release the **MODE** key.

To put all controls that are in automation scope in a single path into Play
Press the **PLAY** key on the required fader strip.
The integral leds in the **MODE** keys of controls in automation scope will illuminate green.

To put all controls in a path into Play (overriding scope)
Press and hold the **ALL** key on the required fader strip.
Press the **PLAY** key on the same fader strip.
The integral leds in the **MODE** keys will illuminate green.
Release the **ALL** key.

To put all controls in automation scope into Play
Press the Master **PLAY** key.

To put all controls into Play
Press and hold the **ALL/SCOPE** key.
Press the Master **PLAY** key.
Release the **ALL/SCOPE** key.

*This should not be confused with the system being in **Play**, which is receiving valid timecode at Play speed.*

Lock Record
A control in **Lock Record** will play back moves until it is touched, at which point it will start to record.
When a control is released it will stay at the current position until it is moved again, **Lock Record** is reselected, a different automation mode is selected or the control is glided back to the **Play Pass**.
When the system drops out of play (eg timecode stops), a control that is recording will snap back to the **Play Pass** if there are existing moves at the point where the system drops out of play. If there is no **Play Pass** value, then a control will stay at its current position unless it has previously been **To Ended**.

When the system drops out of play beyond the end of the **Play Pass**, controls in record that have been **To Ended** will jump back to the positions they had when **To End** was used.

To put a control into Lock Record
Press and hold the **MODE** key for the control.
Press the **REC** key on the same fader strip.
The integral led in the **MODE** key will illuminate red.

The control is now armed for Lock Record and will play back any moves in the Play Pass. Release the **MODE** key.

To put all controls in automation scope in a single path into Lock Record
Press the **REC** key on the required fader strip.
The integral leds in the **Mode** keys of controls in automation scope will illuminate red steady.

To put all controls in a path into Lock Record (overriding scope)
Press and hold the **ALL** key on the required fader strip.
Press the **REC** key on the same fader strip.
The integral leds in the **MODE** keys will illuminate red steady.
Release the **ALL** key.

To put all controls in automation scope into Lock Record

Press the Master **REC** key.

To put all controls into Lock Record
Press and hold the **ALL/SCOPE** key.
Press the Master **REC** key.
Release the **ALL/SCOPE** key.

Recording Automation in Lock Record
To Record control changes
Adjust the control as required.
The led in the relevant **Mode** key will flash red when touch is detected.

Any moves in the **Play Pass** will be overwritten.

When the control is released, it will stay at the same value, the led in the **Mode** key will continue to flash red and moves in the **Play Pass** will continue to be overwritten.

To glide a control back to the Play Pass, press and hold the **Mode** key for the control and press the **Glide** key.

The control will start matching back to the **Play Pass** when the **Glide** key is released. For continuous controls (eg the fader), the **Manual Glide Time** is used. Switches (eg the **CUT** key) will return to the play pass in one frame.
Release the **MODE** key.

When the glide is complete, the led in the **Mode** key will stop flashing and return to steady red.

To glide all controls in automation scope in a path back to the Play Pass
Press the **Glide** key on the required fader strip.
The controls will start matching back to the Play Pass when the **Glide** key is released. For continuous controls (eg the fader), the **Manual Glide Time** is used. Switches (eg the **CUT** key) will return to the play pass in one frame.
When the glide is complete, the leds in the **Mode** keys will stop flashing and return to steady red.

To glide all controls in a path back to the Play Pass
Press and hold the **ALL** key on the required fader strip.
Press the **Glide** key on the required fader strip.
The controls will start matching back to the Play Pass when the **Glide** key is released. For continuous controls (eg the fader), the **Manual Glide Time** is used. Switches (eg the **CUT** key) will return to the play pass in one frame.
Release the **ALL** key.

When the glide is complete, the leds in the **Mode** keys will stop flashing and return to steady red.

To manually match a control back to the Play Pass
Manual match is only used with continuous controls (the fader, EQ frequency, etc.).
Hold the control.
Press the **GLIDE** key.
The alpha display for the control will display arrows to show which way the control should be moved to match back to the Play Pass.

- For a fader, the alpha display will arrows pointing up or down.
- For a Logicator, the alpha display will display an arrow pointing left (turn anti-clockwise) or right (turn clockwise).

Move the control in the direction indicated.
When the control passes through the **Play Pass**, it will drop out of **Record**, the alpha display will stop displaying arrows and the led in the relevant **MODE** key will stop flashing.
Release the control.
The control will move to the Play Pass position and continue replaying the Play Pass.

Touch Record
A control in Touch Record will play back moves until it is touched, at which point it will start to record.

The control will snap back to the Play Pass position in 1 frame when it is released.

Put Controls into Touch Record
Press and hold the **MODE** key for the control.

Press the **REC** and **PLAY** keys together on the same fader strip.
The integral led in the **MODE** key will illuminate red.

The control is now armed for Touch Record and will play back any moves in the Play Pass.
Release the **MODE** key.

To put all controls that are in automation scope in a single path into Touch Record
Press the **REC** and **PLAY** keys together on the required fader strip.
The integral leds in the **MODE** keys of controls in automation scope will illuminate red steady.

To put all controls in a path into Touch Record (overriding scope)
Press and hold the **ALL** key on the required fader strip.
Press the **REC** and **PLAY** keys together on the same fader strip.
The integral leds in the **MODE** keys will illuminate red steady.
Release the **ALL** key.

To put all controls in automation scope into Touch Record
Press the Master **REC** and **PLAY**.
To put all controls into Touch Record
Press and hold the **ALL/SCOPE** key.
Press the Master **REC** and **PLAY** keys together.
Release the **ALL/SCOPE** key.

Recording Automation in Touch Record
To Record control changes

Adjust the control as required.
The led in the relevant **MODE** key will flash red when touch is detected.
Any moves in the **Play Pass** will be overwritten.
When the control is released, it will snap back to the Play Pass in one frame.

To manually match back to the Play Pass
Manual match is only used with continuous controls (the fader, EQ frequency, etc.).

Press the **GLIDE** key without releasing the control.
The alpha display for the control will display arrows to show which way the control should be moved to match back to the Play Pass.

For a fader, the alpha display will arrows pointing up or down.
For a Logicator, the alpha display will display an arrow pointing left (turn anti-clockwise) or right (turn clockwise).

Move the control in the direction indicated.
When the control passes through the **Play Pass**, it will drop out of Record, the alpha display will stop displaying arrows and the led in the relevant **Mode** key will stop flashing.
Release the control.

The control will move to the Play Pass position and continue replaying the **Play Pass**.

AutoGlide

AutoGlide is normally only used with faders and other continuously variable controls (i.e. EQ Level, Gate Attack Time, etc.).
The control will replay moves until it is touched, at which point it will start to record. The control will glide back to the previous play pass position when it is released, using the **Auto Glide Time**.

Switching controls (eg **CUT**, **EQ ON/OFF**, etc.) that are put into **AutoGlide** will behave as if they are in **Touch Record** (i.e. they will snap back to the **Play Pass** in one frame when they are released). This will happen when they are put into **AutoGlide** by specifically using their **MODE** keys and selecting **AutoGlide**. Otherwise, when **AutoGlide** is selected (eg by the Master **REC** and **GLIDE** keys) it is ignored by switching controls (this is also true when using **ALL** or **ALL/SCOPE** to override scope).

To put a control into AutoGlide

Press and hold the **MODE** key for the control.
Press the **REC** and **GLIDE** keys together.

The integral leds will illuminate. The control is now armed for Record and will play back any moves in the Play Pass.

Release the **MODE** key.

To put all controls in automation scope in one path into AutoGlide
Press the **REC** and **GLIDE** keys together on the required fader strip.

The integral leds in the **MODE** keys of continuous controls in automation scope will illuminate red steady. The controls are now armed for Record and will play back any moves in the Play Pass.

To put all continuous controls in one path into AutoGlide
Press and hold the **ALL** key on the required fader strip.
Press the **REC** and **GLIDE** keys together.
The integral leds in the **MODE** keys of continuous controls in the path will illuminate red steady.

The controls are now armed for Record and will play back any moves in the Play Pass.
Release the **ALL** key.

To put all continuous controls in automation scope into AutoGlide
Press the Master **REC** and **GLIDE** keys together.

To put all continuous controls into AutoGlide
Press and hold the **ALL/SCOPE** key.
Press the Master **REC** and **GLIDE** keys together.
Release the **ALL/SCOPE** key.
To Record control moves
Move the control as required.
The led in the relevant **MODE** key will flash red when touch is detected.
Any moves in the **Play Pass** will be overwritten.

When the control is released, it will glide back to the **Play Pass** using the **Auto Glide** time.

Trim and AutoTrim

This is for Faders only.

The fader will move to the **Trim** position (by default the centre of the fader travel) and will start to record on touch. Moves are recorded as an offset from the **Play Pass** according to the fader position.
Trim can be applied in the range from +20dB to -92dB. The trim value is shown in the alpha display.

If the cumulative effect of the Play Pass and trim drops the signal below -102dB then the signal is cut. For instance, if a particular fader has a Play Pass position of -20dB, then applying -83dB of trim (or below) will cut the signal.

Trim

To put a fader into Trim
Press the **TRIM** keys on the required fader strip.

The led in the **FADER MODE** key will illuminate orange and the fader will move to the centre trim position. The fader is now armed. The fader will stay at the centre trim position as the Play Pass is played back.

If the fader is not in automation scope then it will be necessary to hold down the **FADER MODE** key before pressing **TRIM**.

To put all faders in automation scope into Trim
Press the Master **TRIM** key.

All faders in automation scope are now armed. The faders will stay at the centre trim position as the Play Pass is played back.

To put all faders into Trim
Press and hold the **ALL/SCOPE** key.
Press the Master **TRIM** key.
All faders are now armed. The faders will stay at the centre trim position as the Play Pass is played back.
Release the **ALL/SCOPE** key.

To record Trim adjustments
Move the fader as required.
The led in the **FADER MODE** key will flash orange when fader touch is detected. The alpha display shows the trim offset.
Any moves in the Play Pass will be overwritten according to the offset position of the fader.

When the fader is released, it will stay in the same position, the led in the **FADER MODE** key will continue to flash orange and moves in the Play Pass will continue to be overwritten.

To glide back to the Play Pass
Press the **GLIDE** key.

The fader will match back to the Play Pass by returning to the centre trim position. The **Manual Glide Time** is used.
The led in the **TRIM** key will stop flashing and return to steady yellow.

To manually match back to the Play Pass
Hold the fader.
Press the **GLIDE** key.
The alpha display for the path will display arrows to show which way the fader should be moved to match back to the Play Pass.
Move the fader through the centre trim position.

When the fader passes through the Play Pass (centre trim), the fader will drop out of Record, the alpha display will stop displaying arrows and the led in the **TRIM** key will stop flashing.
Release the fader.
The fader will snap back to the centre trim position (i.e. the Play Pass).

To snap back to the Play Pass
Press the **TRIM** key again on the required fader strip.

AutoTrim

To put a fader into AutoTrim

Press the **TRIM** and **GLIDE** keys together.

The led in the **FADER MODE** key will illuminate orange and the fader will move to the centre trim position. The fader is now armed. The fader will stay at the centre trim position as the Play Pass is played back.

If the fader is not in automation scope then it will be necessary to hold down the **FADER MODE** key before pressing **TRIM** and **GLIDE**.

To put all faders in automation scope into Trim

Press the Master **TRIM** and **GLIDE** keys together.
All faders in automation scope are now armed. The faders will stay at the centre trim position as the Play Pass is played back.

To put all faders into Trim
Press and hold the **ALL/SCOPE** key.
Press the Master **TRIM** and **GLIDE** keys together.
All faders are now armed. The faders will stay at the centre trim position as the Play Pass is played back.
Release the **ALL/SCOPE** key.

To record Trim adjustments
Move faders as required.
The led in the **FADER MODE** key will flash orange when fader touch is detected. The alpha display shows the trim offset.
Any moves in the Play Pass will be overwritten according to the offset position of the fader.
When the fader is released, it will glide back to the centre trim position using the AutoGlide time.

Coalesce Trim

When applied, any faders' trim events are combined (merged) with their corresponding fader level events, the trim events are then deleted and the trim fader returned to its Null position.

The button is situated directly below the TONE button in the Tone/Talkback panel **TRIM COALESCE** can only be performed when the automation is not running.

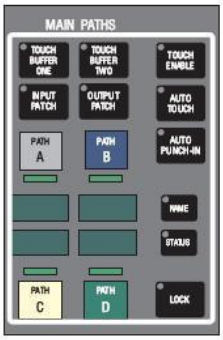
Coalesce Trim – will coalesce all paths in the partition which are currently in **Trim Write**.
Pressing Master All + Coalesce Trim – will coalesce all paths in the partition.
Pressing the Lock button + Coalesce Trim - enables automatic coalesce on stop.

Auto Touch

This is used to automatically treat controls as being touched when they are armed for Touch Record or Trim (only faders can be in Trim).

AUTO TOUCH is switched on in advance of selecting **Touch Record** or **Trim**. When **Touch Record** or **Trim** is selected, all the controls put into the selected mode are treated as if they had been touched at the same time as the automation mode was selected.

To use Auto Touch with Touch Record or Trim



Press the **AUTO TOUCH** key, and the led above the key will flash.

Put the required controls into **Touch Record** and/or the required faders into **Trim**.

The leds in the relevant **MODE** keys that would normally illuminate steady will flash instead. This is because the controls have been 'touched' at the same time as being armed.

To End

The **TO END** key is used to force all recording controls to record their current values to the end of the **Record Pass** and then return to being armed. This will overwrite any subsequent moves that there may be in the Play Pass, and also clears virgin territory on the affected controls.

This is useful when the controls that are recording need to overwrite all subsequent moves and there is a long time to wait for the end of the Play Pass. Controls affected by **TO END** will drop back to being armed (eg if a control is Recording in Lock Record it will return to being armed for Lock Record).

Timecode can be stopped or other moves can be made after executing **TO END**. If **ALL/SCOPE** is held down when **TO END** is pressed then the whole Pass will be overwritten with the current control setting.

Example

A fader in **Lock Record** is moved. The fader is now recording (in **Lock Record**) and the led in the **FADER MODE** key is flashing to indicate this.

The fader is overwriting any moves there may be in the Play Pass. There may be other fader moves a long way into the Play Pass (for instance, an hour later) that also need overwriting with the new fader position.

One option would be to wait until the **Play Pass** reached that time. This would waste time resources and reduce the amount of work that could be done.
Another option would be to use the **Fader Moves List** to delete the unwanted moves.
The final, and most efficient, option is to use **TO END**. When the **TO END** key is pressed, all subsequent moves are overwritten with the current fader setting - this is done by deleting all fader moves that would come after the current time so that the current setting is used to the end.

To End & Safety Nets

If **Safety Nets** are active then the operation of **TO END** behaves as if the **Safety Net Start Time** was the beginning of the mix and the **Safety Net End Time** was the end of the mix.

To use the current settings of controls in Record up to the end of the current Mix/Pass
Press the **TO END** key.

All controls which are in Record (i.e. **MODE** key led red flashing) will write the current value when **TO END** is pressed to the end of the Mix/Pass.

If **Safety Nets** are active then the current values will be written to the **Safety Net End Time** instead of the end of the Mix/Pass.

To use the current settings of controls in Record for the whole of the current Mix/Pass
Press and hold the **ALL/SCOPE** key.
Press the **TO END** key.

All controls which are in Record (i.e. **MODE** key led red flashing) will write the current value when **TO END** is pressed to the whole of the Mix/Pass.

If Safety Nets are active then the current values will be written to the extent of the **Safety Net Start** and **End** times instead of the whole of the Mix/Pass.

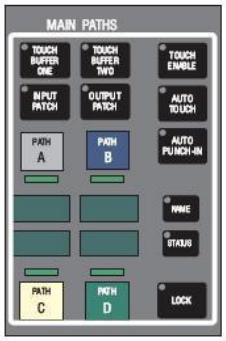
Touch Enable

Touch Enable is used to enable and disable touch detection on controls while the system is in stop (i.e. timecode is not running at play speed).
This prevents controls from accidentally being put into record (by being moved or touched) before the system is put into play, so that existing automation is not overwritten downstream from the point at which the system is put into play.
Touch detection is enabled on all controls by default.

The controls are split into three groups for enabling and disabling touch:

- Faders
- CUT keys
- All other controls (Desk Controls)

To disable touch on a group of controls



Press and hold the **TOUCH ENABLE** key.
The leds in the **FADER AUTO**, **CUT AUTO** and **DESK AUTO** keys will illuminate to show which groups currently have touch enabled.

Press the **FADER AUTO, CUT AUTO** and **DESK AUTO** keys as required.

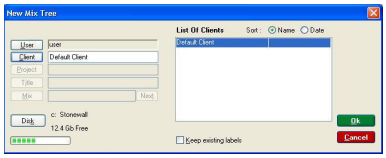
Each time one of the keys is pressed the integral led will toggle on or off. Touch is enabled when the led is lit.

Release the **TOUCH ENABLE** key.

Making a Mix/Pass

(If the automation system is off then it will be switched on when a New Mix is started)

Click on **New Mix Tree** in the drop down Automation menu.
The **New Mix Tree** dialogue box will be displayed.



Select the Client, Project and Title, or create a new Client, Project or Title as required.

The **Next** button can then be used to automatically select the next Mix Tree number.

If required, edit the Mix Tree name.

When the details are correct, click the **OK** button.
The new Mix Tree will be created. A progress bar will be displayed while the Initial Snapshot is taken and the new files are created. The Initial Snapshot and the automation modes of controls are stored as Mix/Pass 1.1.

When the process is complete a confirmation dialogue box will be displayed.

If the automation system was off, it will be switched on.
Make the first Mix/Pass
Set controls to the required starting values.
Also, controls can be reset with the Reset Wizard in Defaults Manager or with the **ON/CLEAR** key.
Arm the required controls with an appropriate Record mode.
It is usual to make initial moves in **Lock Record**.
Put the system into **Play**.
Make control moves and change Automation Modes as required
Take the system out of Play.

Taking the system out of Play means that timecode is no longer running at Play speed. This can be done by issuing any transport command that ends Play (eg Stop, Fast Forward, etc.).
If a Record Pass was made then it is now complete. A Record Pass is made if there are changes to Automation Modes, Automation Scope or the Event List.
Going from armed to recording does not count as a change in Automation Mode (eg if a fader in Lock Record is touched).

Touching an armed control will not necessarily cause an Event to be recorded (eg touching a fader in Lock Record without moving it). However, this may cause Events to be overwritten, in which case the Event List will change.

Auto Keep

If AutoKeep is enabled in **Automation Preferences** then the **Record Pass** will be automatically kept to the Mix/Pass Tree when the system drops out of **Play**. The **Record Pass** will become the **Play Pass**. The new Mix/Pass numbers are shown in the Play boxes on the Encore Screen.

Manual Keep

If the **Keep Mode** is manual then the word **MANUAL** will flash red on the status line of the Encore Screen to show that there is an un-saved Record Pass.
Press the **KEEP** key.
The Record Pass will be saved to the Mix/Pass Tree and will become the Play Pass. The new Mix/Pass numbers are shown in the Play boxes on the Encore Screen.

Regardless of the Keep mode selected, a message will appear in the alphanumeric display above the **KEEP** key after a Save command showing the status of the Save.

Message	Explanation
Auto OFF	Automation NOT saved, not enabled in Encore.
AutoFAIL	Automation failed to save – timeline running
Auto OK	Automation saved successfully

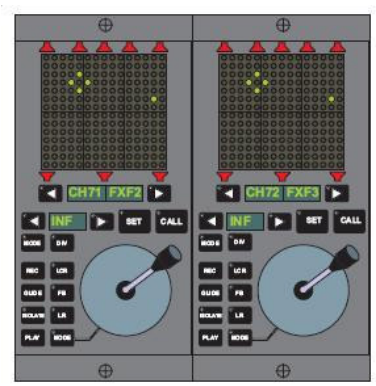
Making further Mix/Passes

The procedure is very similar to that above, except that a New Mix Tree does not need to be started.

When the transport is put into play, the moves recorded in the previous Mix/Pass will be played back (according to the Automation Modes selected).

Also, controls for which moves are now correct can be put into Play to prevent the recorded moves from being changed.

Joystick Automation



The Joystick Module has two **MODE** keys for selecting automation modes of the **Divergence** controls and the panning axes.

The path to be assigned to a joystick is selected with the nudge keys or by using the **SET** key in conjunction with the Lower Matrix Panel.
The path can then be called to the Joystick by the **CALL** key.

The Joystick Automation Controls will take over from the automation controls for panning on the fader strip. This allows the full functionality of the panning controls to be controlled and automated from one location.

- The upper **MODE** key for each Joystick controls the automation mode of the Divergence controls.
- The lower **MODE** key with a line leading to the joystick controls the automation mode of the panning controls as a group.

If an automation mode has already been selected for the panning controls then the **MODE** key will indicate the automation status of the LCR panner.
The selection of automation modes is identical to that for a channel strip.
Note that there is no **TRIM** key because trim is for faders only. Automation is recorded against the panning controls for the path called to a Joystick, and the Joystick module is treated as an extension of the channel strip for Scope.

Collect Touch

For an introduction to **Collect Touch** see Making a Scene Change.

Collect Touch Scope

Collect Touch Scope is set in the same way as normal Automation Scope but is completely separate to Automation Scope.
The method used to put controls into Collect Touch Scope depends on the Collect Touch Auto Scoping option in Automation Preferences.

To interrogate Collect Touch scope

Press and hold the **ALL/SCOPE** key while **COLLECT TOUCH** is active.

The mode indicators for all controls in scope will flash orange.

To clear Collect Touch scope
Press and hold **ALL/SCOPE** while **COLLECT TOUCH** is active.
Press **UNDO**.
or
Press **COLLECT TOUCH** to turn it off.

This last depends on the Clear Scope/Buffers On Exit option in Automation Preferences. The Collect Touch Buffers will also be cleared.

Using Collect Touch

Collect Touch can be used to create an 'arming group' for use with the normal Automation Modes.

Everything that is in **Collect Touch Scope** will be affected by changing the global automation modes.

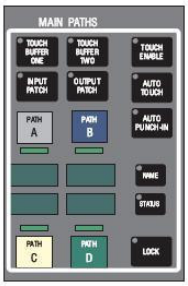
*To take full advantage of **Collect Touch**, the **Collect Touch Hard Write** option should be checked in **Automation Preferences**. This allows all controls in Collect Touch Scope to drop directly into hard record when a Record mode is selected (eg if global **REC** is pressed to activate **Lock Record**, the controls in scope will write automation data).*

An example of using Collect Touch
Press **COLLECT TOUCH**.
Put the required controls into scope.
Press the global **ISOL** key.

All controls in scope are now in Isolate and will not be affected by playing back automation.
Adjust controls to the required settings.
Start the transport.
Press the global **REC** key at the point where the new control values are required.
The automation mode indicators for controls in scope will flash red (this assumes the Collect Touch Hard Write option is active).
Toggle between **ISOL** and **REC** to switch between Play Pass settings and the new settings. If required, use **GLIDE** to smoothly transition controls back to the Play Pass.
Stop the transport.
Press **COLLECT TOUCH** to turn it off.

Individual controls can also be Isolated, Glided, etc., by selecting their Automation Modes as normal. However, the controls will remain in scope until scope is cleared.

Notes
It is highly recommended to experiment with Collect Touch, including changing the **Automation Preferences** for **Collect Touch** to get a feel for how it operates. It is also recommended to leave the Collect Touch preferences at their defaults for real work until a thorough familiarity is established.



Using Collect Touch Buffers

The Collect Touch Buffers provide an extra level of control for Collect Touch, especially for such tasks as scene changes.

Using both Buffers is ideal for rapid scene changes, the classic example being a phone conversation that is cut from one participant to the other.
In addition, the buffers allow new control values to be rehearsed in context without creating a new Record Pass.

The Collect Touch Buffers are controlled **by MASTER TOUCH ISOLATE** (for rehearsing) and **MASTER TOUCH RECORD**.

If Collect Touch Buffers are disabled then **MASTER TOUCH ISOLATE** and **MASTER TOUCH RECORD** operate identically to **ISOL** and **REC** as above.

To set the contents of a buffer
Press **COLLECT TOUCH.**
Press **MASTER TOUCH ISOLATE.**
The integral led will illuminate green flashing.
Press **TOUCH BUFFER ONE** or **TOUCH BUFFER TWO** as required.
The integral led will illuminate red.
Make changes to the settings of required controls.
The new settings of all touched controls will be saved in the selected buffer.

Rehearsing Collect Touch
Put the transport into play.
Toggle **MASTER TOUCH ISOLATE** on and off as required.
Switch between **Buffer One** and **Buffer Two** as required.
Make control adjustments as required.
Stop the transport and rewind to the beginning of the required section.
MASTER TOUCH ISOLATE is turned off when timecode stops unless it has been locked on.

Repeat the whole procedure as often as required.

To keep buffering active when timecode stops
Press and hold **LOCK**.
Press **MASTER TOUCH ISOLATE**.

To clear a buffer
Press and hold **TOUCH BUFFER ONE** or **TOUCH BUFFER TWO** as required.
Press **UNDO**.

To use buffers to write automation
Put the transport into play.
Press **TOUCH BUFFER ONE** or **TOUCH BUFFER TWO** as required
Toggle **MASTER TOUCH RECORD** on and off as required.
When **MASTER TOUCH RECORD** is activated, the settings in the selected buffer will be recorded by the automation system.
Stop the transport.
MASTER TOUCH RECORD is turned off automatically when timecode stops running.

Making a Scene Change

The main strength of Collect Touch lies in making scene changes.
These instructions assume that there is existing automation up to the beginning of a new scene and that Collect Touch Scope and the Collect Touch Buffers are clear. It is also assumed that the installation defaults have been used for the Collect Touch options in Automation Preferences.

Setting and rehearsing the control values
Press **COLLECT TOUCH**.
The integral led will illuminate red.

Press **MASTER TOUCH ISOLATE**.
The integral led will illuminate green flashing.

Press **TOUCH BUFFER ONE** if it is not already selected.
The integral led will illuminate red.
Make the required control changes for the scene.
The selected controls will be added to Collect Touch Scope and their Mode indicators will flash green.
Controls in Collect Touch Scope can be verified by holding down **ALL/SCOPE**.
This will cause the Mode indicators to flash orange.
The new settings for the controls will be saved in Collect Touch Buffer One.
Put the transport into play for the new scene.

Press **MASTER TOUCH ISOLATE** to toggle monitoring between the new settings stored in Touch Buffer One and the settings for the Play Pass.
Make further adjustments to controls as necessary when **MASTER TOUCH ISOLATE** is active.

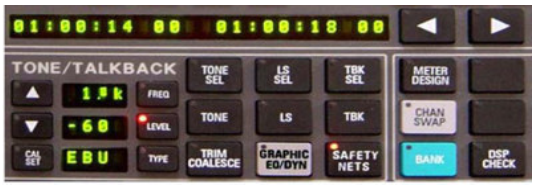
Extra control values
If another set of control values is required for the scene, these can be stored in Touch Buffer Two. The Play Pass settings will be used as the starting point, but any controls that are already in Collect Touch Scope will also be in scope for Buffer Two.

Note that using **LOCK + MASTER TOUCH ISOLATE** will cause **MASTER TOUCH ISOLATE** to remain active when the transport is stopped. This is useful if it is not necessary to hear the Play Pass (eg if both buffers are being used alternately to replace a section of the Mix).

Recording the new Mix/Pass
Put the transport into play.
Press **MASTER TOUCH RECORD** to write values in the selected buffer to the Record Pass.
MASTER TOUCH RECORD can be toggled on and off at the punch in and out points and/or switch between Buffer One and Buffer Two.
Stop the transport.

Safety Nets

Safety Nets can be accessed from the console surface using the **Safety Nets** button on the Tone/Talkback panel.



When the **Safety Nets** are active, the **<** & **>** arrow keys will step the **In** and **Out** points through the Encore label list, these times being displayed on the long alpha display.

This is a quick method of setting up safety nets for the next or previous scene in one keystroke.

Each operator can access the **Safety Nets** key from the master section independently, and each operator section can activate/deactivate safety nets independently.

Using Safety Nets for automatic punch in and out

Rehearse the control settings for the new scene with **MASTER TOUCH ISOLATE**.
Create labels for the beginning and end of the scene being worked on.
Rewind the transport to shortly before the beginning of the scene.
Use Safety Nets in the Options Menu to set the Safety Net Start and End to the new labels, and activate the Safety Nets.

Press **MASTER TOUCH RECORD.**
Put the transport into play before the beginning of the scene.
When timecode passes the beginning of the Safety Net, the selected controls will automatically drop into Record and new data will be written to create a new Mix/Pass. This will be according to the control values stored in Collect Touch Buffer One. The effects will be heard.
When timecode reaches the end of the Safety Net, the controls will revert back to the Play/Pass values.

Stop the transport.

This has assumed that the new control values are applicable to the whole scene. Safety Nets can be activated as part of the rehearsal stage to judge the effect of the automatic punch in and out.

When the scene is complete
Press **COLLECT TOUCH** to turn it off.
This will clear Collect Touch Scope and the buffers.

15 Transport Control

Transport devices can be controlled from either the main Encore screen or using the optional MCS Panel.

Encore Screen
See Encore Plus manual for more detailed information.

MCS Panel

The MCS Panel is a hardware option that is used to control multiple transport devices (up to the first eight that are detected on power up).

It can be used and configured directly or in conjunction with the Encore screen and options on the Transport Menu. Machines are controlled in groups. Only one group can be actively controlled at a time, and each group can contain up to eight machines.
Machines can be 'hot plugged' and will be automatically detected by the MCS.

Grouping Machines

The MCS system uses Groups to select which machines are currently controlled by the system.
Machines can not be controlled until they are assigned to a Group.
On power up for the first time, Group 1 is selected by default. There are no machines assigned to any Groups and video reference is enabled. This condition will also occur if the selection of machines connected to the MCS is changed.

To select which Group is current
Press and hold the **M/C GROUP** key.
The integral led will illuminate green.
Press a numeric key between 1 and 8.
The corresponding number will be illuminated in the **GROUP** row of the led array.
If there are machines in the group then the corresponding numbers in the **ONLINE** row will illuminate and the **ONLINE** number for the group master will flash.
Release the **M/C GROUP** key.

Machines in the group will be sent a command to locate to the position of the group master. This prevents machines from being out of position because they have been used in another group.

To assign a machine to the current Group
Press the **M/C GROUP** key.
The integral led will illuminate red.
Available machines are shown by the illuminated leds in the **MACH** row of the led array.
Press a numeric key between 1 and 8 that corresponds to an available machine.
The corresponding number in the **ONLINE** row of the led array will illuminate.
If it is the first machine assigned to the group then it will be the Group Master and its **ONLINE** led will flash.
Further machines can be added to the group while the **M/C GROUP** key is active (red led).

To remove a machine from the current Group
Press the **M/C GROUP** key.
The integral led will illuminate red.
Machines in the Group are shown by the illuminated leds in the ONLINE row of the led array.
Press a numeric key between 1 and 8 that corresponds to a machine in the Group. The corresponding number in the **ONLINE** row of the led array will cease to be illuminated.
Further machines can be removed from the group while the **M/C GROUP** key is active (red led).

Set Film Machine Position

Timecode is not encoded onto film, so the timecode position of a film machine is arbitrary (eg a Colin Broad or a film machine controlled via Synchronet ES/2). The current position of a film machine can be given a timecode so that the film can be synchronised to audio.

To set the film machine position
Recall a stored time.
or
Type in the timecode (or foot-frame) value on the numeric keypad.

When entering times, the +key operates as 00 when it is pressed after a numeric key has been pressed.

Press the **STORE** key.
Press the **M/C SOLO** key.
Press the numeric key between 1 and 8 that corresponds to the film machine.

Status Indication

When a transport control is in operation the timecode display shows the position of the current group master.
The **BUSY** leds flash to indicate which machines are executing transport operations. When a machine locks to the master and timecode is resolved then the LOCK led illuminates for the machine instead of the **BUSY** led. When all machines are locked then the master **LOCK** led illuminates.

Play

Press the **PLAY** key or click the Play icon on the screen.
The **PLAY** key will flash until timecode is resolved, when it will illuminate green steady. The Play icon on the screen will change from dark green to light green when timecode is resolved and timecode is running on the screen.

Stop

Press the **STOP** key or click the Stop icon on the screen. Any other transport mode (Play, Locate, Shuttle, etc.) will be cancelled and the group will stop.
With some machines, the **SHUTTLE** key will flash as the group master shuttles to a stop.

Fast Forward

Press the **FAST FORWARD** key or click the Fast Forward icon on the screen.

The **FAST FORWARD** key will illuminate. If the Single press Fast Forward and Rewind option is set to "y" then the transport will fast forward; otherwise, the **SHUTTLE** key will also illuminate and the transport will shuttle forward.
Press the **FAST FORWARD** key again. The transport will toggle between fast forward and shuttle. This happens each time the **FAST FORWARD** key is pressed.

Rewind

Press the **REWIND** key or click the Rewind icon on the screen. The **REWIND** key will illuminate. If the Single press Fast Forward and Rewind option is set to "y" then the transport will rewind; otherwise, the **SHUTTLE** key will also illuminate and the transport will shuttle in reverse. Press the **REWIND** key again. The transport will toggle between rewind and reverse shuttle. This happens each time the **REWIND** key is pressed.

Record

This applies when single press record is not selected. Press and hold the PLAY key until it illuminates green steady. Press the **RECORD** key at the required point. The **RECORD** key will illuminate red steady to indicate that the armed Tracks are recording. If no Tracks are armed then the **RECORD** key will flash red. Release the **PLAY** key. Press any transport key (other than **RECORD**) to terminate record mode.

*If **Jog** is used to terminate record then the group will stay in record until the jog wheel is moved. **Cycle** and **Locate** terminate record when the cycle or locate process actually starts.*

Single Press Record

Press and hold the **RECALL** key. Press the **STORE** key. Release the **RECALL** key. The alphanumeric display on the MCS panel will change to show options. If "Sngl Rec n" is not displayed, press + or - to scroll through the options. Press the **ENTER** key to toggle the option to "Sngl Rec y". The selection (y or n) will remain in force until it is changed. Press and hold the **RECALL** key and press the **STORE** key to end options mode.

Set Single Press Record to yes as above. Press the **PLAY** key to start the transport. At the required point, press the **REC** key (i.e. without holding down **PLAY**).
The **REC** key will illuminate red steady to indicate that the armed Tracks are recording.
If no Tracks are armed then the **REC** key will flash red.
Press any transport key (other than **REC**) to terminate record mode.
or
Press **PLAY** to terminate record and keep the transport running.
Press **REC** again to punch-in at a different point.
This can be repeated as many times as necessary if multiple punch-ins are required.

MCS Panel Options

There are two user selectable options for altering the operation of the MCS Panel:

- Single press record
- Single press Fast Forward and Rewind

To enter options mode
Press and hold the **RECALL** key.
Press the **STORE** key.
Release the **RECALL** key.
The alphanumeric display on the MCS panel will change to show options.

To select the required option
Press + and - on the MCS Panel to scroll through the options.
There are unused options which display as "option 3" through to "option 8".

To toggle an option setting
Press the **ENTER** key on the MCS Panel.
The selection (**y** or **n**) will remain in force until it is changed.

Single press Record
This option is shown as **Sngl Rec** in the alphanumeric display. When it is set to **y**, record can be activated with the **REC** key only, rather than holding down **PLAY** and pressing **REC**.

Single press Fast Forward and Rewind
This option is shown as **Sngl FF** in the alphanumeric display. It is used to change the order of shuttle and fast forward/rewind when the **FAST FORWARD** and **REWIND** keys are used. When it is set to **n**, the transport will shuttle forward or reverse on the first press. When it is set to **y**, the transport will fast forward or rewind on the first press. Subsequent presses of **FAST FORWARD** and **REWIND** toggle between full speed and shuttle.

To end options mode
Press and hold the **RECALL** key.
Press the **STORE** key.
Release the **RECALL** key.

Pressing PLAY or any other transport control key will also end options mode.

Shuttle and Jog

Shuttle

Shuttle is used to run the current group of machines forwards or backwards at variable rates.

To use Shuttle
Press the **SHUTTLE** key.
The key will flash.
Rotate the jog wheel in the required direction.
The **SHUTTLE** key will illuminate steady. Initially, clockwise will shuttle forwards and anti-clockwise will shuttle backwards. The faster or further the wheel is moved, the faster the group will shuttle. If the maximum shuttle speed is exceeded then the group will go into fast forward or rewind, as appropriate. The jog wheel will still have control of the group.
The shuttle speed can be reduced by moving the jog wheel slowly in the opposite direction.

Jog

Jog is used to move the current group of machines forwards or backwards without running constantly. The group will only shuttle while the jog wheel is being moved.

To use Jog
Press the **JOG** key.
The key will flash.
Rotate the jog wheel in the required direction.
The group will shuttle according to how much the wheel is moved. The **JOG** key will illuminate steady while the group is shuttling.
When the wheel is not being moved, the group will stop shuttling and the **JOG** key will flash again.

To Jog frame-by-frame
Press the + and - keys on the MCS Panel while the **JOG** key is flashing.
The +key moves the group forward by one frame and the - key moves the group back by one frame. The + and - keys can be pressed several times at once to jog a multiple number of frames without waiting for each frame jog to complete. For instance, rapidly pressing **+++** will jog forward three frames, even though the transport may only have moved by one frame by the time the third **+** is entered.

Grabbing and Storing Times

To dynamically capture the machine position
Press the **GRAB TIME** key. The time at which the key is pressed will be saved as the current Grab Time. Press the STORE key. Press one of the **IN**, **OUT**, **F1**, **F2** or **F3** keys or one of the numeric keypad digits (0 to 9).
The time at which the **GRAB TIME** key was pressed will be saved under the selected key.

To store a fixed time
Type in the timecode value on the numeric keypad.

When entering times, the +key operates as 00 when it is pressed after a numeric key has been pressed.

The timecode display will show the value as it is entered. Press the **STORE** key. Press one of the IN, OUT, F1, F2 or F3 keys or one of the numeric keypad digits (0 to 9). The entered value will be saved under the selected key.

To recall a stored time
Press the **RECALL** key.
Press the one of the **IN**, **OUT**, **F1**, **F2** or **F3** keys or one of the numeric keypad digits (0 to 9). The selected time can then be used for the next operation; eg the time could be stored in a different location.

Locate with the MCS Panel

Locate is used to position the current group of machines at a particular point in timecode. Locate can be executed from the MCS Panel, or by using **Locate Labels** from the Encore screen.

There are four different methods of locating with the MCS Panel:
To Locate to a specific time
Press the **LOC** key. Type in the timecode value on the numeric keypad.
The timecode display will show the value as it is entered. Press the **ENTER** key.

The transport will locate to the entered time.

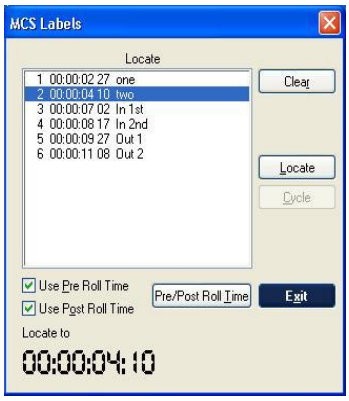
To Locate to a time stored by a function key
Press the **LOC** key.
Press the **IN**, **OUT**, **F1**, **F2** or **F3** key.
Press the **ENTER** key.
The transport will locate to the recalled time.

To Locate to a time stored by a numeric key
Press the **LOC** key.
Press the **ENTER** key.
Press one of the numeric keys 0 to 9.
The transport will locate to the recalled time.

To repeat the last Locate
Press the **LOC** key twice in succession.

Locate Labels
The Label selected for Locate can be chosen using the MCS Labels dialogue box on the screen. A timecode can also be adjusted or entered manually in the MCS Labels dialogue box.

To select a Label on the screen
Click on the **LOC** icon on the screen. The MCS Labels dialogue box will be displayed on the screen showing the current Label List.



Click on a Label. The Label will be highlighted in blue and the Locate button will become available. Make sure only one Label (with the required timecode) is highlighted. If required, make manual changes to the timecodes. Click the Locate button, press the **L**OC key, press the **Enter** key or press the **Play** key. The transport will wind or rewind to the required timecode. If the Play key was used, it will drop into play.

The Label List can also be used to create or edit a Label if there is no Label with the required timecode.

To change a Timecode manually
Click on the Timecode. The cursor will change to a plus or minus sign according to whether the cursor is over the top or bottom half of a digit. Click on a digit to increment or decrement it.

To zero the Timecode
Press the Z key on the Encore keyboard. The displayed timecode will be set to zero.

To use a Timecode Preset
Press the A, B, C, D, E or F key on the Encore keyboard. The Timecode will be set to the value from the selected preset.

Loop

The current group of machines can loop between two timecodes. The MCS Panel uses the **IN** and **OUT** keys to set these times. Encore can only use **Cycle**, and the **Cycle From** and **Cycle To** times are selected from the MCS Labels dialogue box.

To use any looping modes from the MCS Panel, times must be stored by the **IN** and **OUT** keys as described in Grabbing and Storing Times.

*If the **IN** time is set after the **OUT** time then the **OUT** time will be automatically set to 1 second before midnight. If the **OUT** time is set before the **IN** time then the IN time will be set to the same as the OUT time.*

The three loop functions are **Cycle**, **Rehearse** and **Edit**

Cycle

To Cycle from the MCS Panel
Press the **CYCLE** key. The **CYCLE** key will illuminate. The current group will locate to 4 seconds before the IN time and play through until 1 second after the OUT time. This will repeat until a different transport mode is selected. The other transport keys will indicate the transport status (i.e. rewind, play, stop, etc.).

Rehearse

Rehearse is used to check the effect of making a recording without actually recording any audio. Rehearse uses the **IN** and **OUT** times for automatic punching of the EE command.
To Rehearse, press the **REH** key. The current group will locate to 4 seconds before the IN time, play through until 1 second after the OUT time and then stop. EE commands will be sent to machines with armed tracks at the **IN** and **OUT** times. If no machines in the current group have armed tracks then a warning will be displayed.
The other transport keys will indicate the transport status (i.e. rewind, play, stop, etc.).

Edit

This uses the **IN** and **OUT** times for automatic punching of record commands to armed machines.

To use Edit for automatic record punching
Press the **EDIT** key.
The current group will locate to 4 seconds before the IN time, play through until 1 second after the **OUT** time and then stop. Record commands will be sent to machines with armed tracks at the **IN** and **OUT** times. If no machines in the current group have armed tracks then a warning will be displayed.
The other transport keys will indicate the transport status (i.e. rewind, play, stop, etch).

Pre Roll
The **Pre Roll** time set in **MCS Preferences** can be used with **Locate** and **Cycle**. **Pre Roll** places the transport an extra amount in front of the **Locate To** or **Cycle From** time to allow the automation system to resolve timecode correctly before reaching the **Locate To** or **Cycle From** time.

Post Roll
The Post Roll Time set in **MCS Presets** can be used with **Cycle**. **Post Roll** causes the transport to continue playing by an extra amount after the **Cycle To** time has been reached. When the **Cycle To** time plus the **Post Roll** is reached then the transport will rewind back to the **Cycle From** time (minus **Pre Roll**).

Post Roll is useful for preventing sudden transitions at the **Cycle To** time. **Post Roll** can also be useful when **Safety Nets** are enabled. If the **Safety Net** times are matched to the **Cycle** times (eg using the same Labels), then **Post Roll** will allow some audio to be heard immediately after the **Safety Net** end time so that the changeover can be heard in context.

Roll Back
Roll Back is the amount by which the transport is moved back when the **ROLL BACK** key is pressed. The **Roll Back** time is set with **Encore** or directly from the MCS panel. When the MCS Panel starts up (when the console is switched on), the **Roll Back** time is set to a default of 10 seconds. When Encore starts up, the current **Roll Back** time set in **MCS Preferences** is sent to the MCS.

Track Arming

To arm (or disarm) Tracks
Press the **REC** key while the machines are stopped.
The key will flash.
Press the numeric key between 1 and 8 corresponding to the required machine.
The display will show which row is currently accessed for arming (eg tr1 row2 means machine 1, second row of tracks). Press the + and - keys to move to different rows of tracks.
The display will indicate the current row accordingly.
Press the numeric key between 1 and 8 corresponding to the required track.
The corresponding led in the array will illuminate steady.
A track will toggle between armed and safe each time it is selected.

To change the machine being armed (without coming out of track arming mode)
Press the **M/C SOLO** key. Press the numeric key between 1 and 8 corresponding to the required machine.

When all the required tracks have been armed
Press the **REC** key, and the key will stop flashing.
The **REC** indicators in the led array will illuminate to show which machines have armed tracks.

Machine Solo

The **Machine Solo** function allows a machine to be operated in isolation from its Group.

To Solo a Machine
Press and hold the **M/C SOLO** key.
Press the numeric key between 1 and 8 corresponding to the required machine.
Release the **M/C SOLO** key. The integral led will flash to show that the Solo function is active. Transport operations will now only control the machine selected for solo. The keys will indicate the state of the selected machine.

To cancel Solo
Press the **M/C SOLO** key again.
The integral led will cease flashing, and the panel will return to normal operation.

Machine Offset

A machine's offset is the difference between its position and the group master position. The offset value for the group master is always zero.

Automation can be offset from the transport position using Set Offset in the Automation Menu.

To set a machine's offset to a specific value
Type in the timecode value on the numeric keypad. The timecode display will show the value as it is entered. Press the **STORE** key. Press the **M/C OFFSET** key.
The integral led will illuminate red. Press the numeric key between 1 and 8 corresponding to the required machine.
The offset entered will be stored against the selected machine.

To use auto-offset
Press and hold the **M/C OFFSET** key.
Press the numeric key between 1 and 8 corresponding to the required machine.
The machine's offset will be set to the difference between its position and the position of the master of the current group.

To briefly display a machine's offset
Press the **M/C OFFSET** key.
The integral led will illuminate red.
Press the numeric key between 1 and 8 corresponding to the required machine.
The timecode display will show the offset. The display will revert to normal after a short time.

To persistently display a machine's offset
Press the **RECALL** key.
Press the **M/C OFFSET** key.
The integral led will illuminate red.
Press the numeric key between 1 and 8 corresponding to the required machine.
The timecode display will show the offset.
Press the **M/C OFFSET** key again to return the timecode display to normal.

To trim a machine's offset
Press the **TRIM** key.
Press the **M/C OFFSET** key.
The integral led will illuminate red.
Press the numeric key between 1 and 8 corresponding to the required machine.
The timecode display will show the offset.
Rotate the jog wheel.
The offset value will be adjusted according to how much the jog wheel is moved.
Press the **TRIM** or **M/C OFFSET** key again to end offset trim.

Appendix A: Routing

The **SHOW INPUT PATCH** and **SHOW OUTPUT PATCH** keys in the Main Paths section of the Master Quadstrip are used for fast input and output routing on the console surface.

This is an alternative to using **I/O Manager** or **Path Edit**.

Standard Routing

The DFC Gemini supports standard routing (i.e. not specific to film use) with the Upper and Lower Matrix Panels.

The matrix of keys on the Upper Routing Panel is used to select an internal routing destination (mix bus, aux bus, etc.).

The matrix of keys on the Lower Routing Panel is used to select sources to route to the destination.

Paths which have been placed on the surface may also be routed using only the Path access keys.

FILM paths can only be routed using the PEC/Direct and Surround Monitoring Panels. See Surround Stem Selection and Routing.

Paths can also be routed to Aux busses directly from the channel strips. See Auxiliaries.

Routing with the Upper and Lower Routing Panels

To select the destination path type, press the nudge keys on the Upper Routing Panel.

If there are more than 64 of a path type then pressing the nudge keys will cause the Upper Routing Panel to show extra 'pages' of the same path type.

The alpha displays next to the number keys will change to show the path types which can be routing destinations.

Tracks will be shown as REC in the alpha displays on the Upper Routing Panel.

To select the destination path

Press and hold the number key on the Upper Routing Panel which corresponds to the path number of the routing destination.
The Lower Routing Panel and the Path access keys will now allow sources to be selected.

The leds in the number keys on the Lower Routing Panel will illuminate green to show sources not routed to the current destination or red if they are already routed.

To select the source path type

Press the nudge keys on the Lower Routing Panel.

If there are more than 64 of a path type then pressing the nudge keys will cause the Lower Routing Panel to show extra 'pages' of the same path type.

Tracks (busses) will be shown as **MON** in the alpha displays on the Lower Routing Panel.

To select source paths, press the number keys on the Lower Routing Panel which correspond to the path numbers of the sources.
The integral leds in the number keys will illuminate red.
or
Press the Path access keys on the channel strips.
The triangular access leds associated with the Path access keys will illuminate green.

In both cases, the long alpha on the Lower Routing Panel will indicate the success or failure of the routing operation.

When all sources have been selected, release the destination key.

If Film Stems have been set up with Tracks (busses), then the Stem Selection Keys and Routing Displays on the channel strips will indicate changes to the routing to those Tracks (if the paths routed are on the surface).

Routing Paths with the Path Access Keys

To select the destination, press and hold the required Path access key.
The associated triangular access led will illuminate.
The triangular access leds of paths already routed to this path will also illuminate.

To select the sources, press the required Path access keys.
The associated triangular access leds will toggle on and off to indicate which paths are and are not routed to the selected destination.

When all sources have been selected, release the Path access key.

To enable the output to the port, press the **ON/CLEAR** key. The integral led will illuminate red. Logicators 1 and 2 will not change the port selection while it is enabled.
If the port is already used by another path, when the **ON/CLEAR** key is pressed the output to the port will not be enabled. Alphas 1 to 4 will display **PORT USED** BY Path and the led in the **ON/CLEAR** key will not illuminate.

Appendix B: Monitoring

Standard stereo monitoring facilities are available on the DFC Gemini in addition to the Surround Monitoring capabilities.
See the Surround Sound Facilities chapter for information on the normal surround monitoring operation of the DFC.
The standard monitor outputs are separate from the Surround Monitor (Film) outputs.

The standard monitoring facilities provide a wide range of sources for the control room and studio loudspeakers.

This type of monitoring is only applicable when there are no Film paths in the current Desk Setup.

Path Requirements for Standard Monitoring

For standard monitoring (i.e. stereo monitoring that does not use the surround system) to operate correctly, the appropriate number of Listens and SELs must be provided as part of the Desk Setup.

The System Paths button on the Config page of Desk Edit provides access to the number of stereo paths used for monitoring and talkback.

Listens

Two listens are used. One for PFL (LS2) and one for standard AFL (LS1). LS1 and LS2 are connected to outputs to optional AFL and PFL speakers.
Standard AFL Solo is only available if there are no Film paths.

Talkback

One Talkback path is required for Talkback and Tone. See the Tone and Talkback chapter.

SELs

Three SELs are required for standard monitoring to be fully operational.

- **SEL1** is used for the main control room monitors. SEL1 can also be switched to the first small loudspeaker output (SMALL LS1).
- **SEL2** is used for the studio loudspeaker output.
- **SEL3** is used for the second small loudspeaker output (SMALL LS2). SEL3 is normally fed by the PFL bus.

Control Room Monitoring

The **LS SEL** key on the Routing and Talkback panel is used for selecting monitoring sources for the control room loudspeakers when there are no Film paths in the current Desk Setup.

These instructions are included to provide complete coverage of the operation of the DFC. It is not anticipated that 'standard' stereo monitoring of this type will be used on a properly configured DFC Gemini system.

To select a Control Room Monitor source, make sure the AFU key on the Lower Routing Matrix is not on. The integral led should be off. Press the **LS SEL** key. The integral led will illuminate red.

The long alpha in the Lower Routing Matrix will indicate the current type of the source path. The number keys will illuminate to how many sources of the selected type are available.

If a source has previously been selected then its led will be red. Press the nudge keys to change the path type and/or scroll through path numbers above 64. Press the required number key.
The integral led will illuminate red.

The selected source will be sent to the monitor output and the source name will be displayed in the Control Room alpha.

Sources can be de-selected with the same operation, simply press keys that have red leds to turn them off. This is useful if stray signals are routed to near-field speakers by accident.

To adjust the control room loudspeaker level, turn the main level rotary control (red top) to the required setting.

This also operates as a master level control for the surround monitor outputs.

The following monitoring keys can be used:

CUT	Cuts the speakers. Also cuts the feed to the surround monitoring speakers and Small L/S 2 (SEL3).
CUT LEFT	If **MONO** is active then the right hand leg of the stereo pair will be fed to both speakers.
CUT RIGHT	If **MONO** is active then the left hand leg of the stereo pair will be fed to both speakers.
DIM	This also dims the level of the surround monitoring speakers and Small L/S 2 (SEL3) by the amount set in Encore Preferences.
SWAP L/R	swaps the L and R signals over.
PHASE LEFT	inverts the phase of the Left side of the stereo mix.
PHASE RIGHT	inverts the phase of the Right side of the stereo mix.
M/S	Mid/Side.
MONO	An equal mix of the left and right signals will be fed to both speakers.
SWAP SPKRS	uses the 2nd set of stereo speakers.

To listen to the Control Room Monitor source when there are no speakers for the Monitor output, Press the key on the **MON FORMAT SEL** section of the Surround Monitoring Panel. The integral led will illuminate red.
The led(s) for the currently selected Stem(s) in the **STEM SEL** section will flash.
The output routed to SEL 1 will appear on the front left and front right speakers and the remaining surround speakers will be cut.
The output for front left and front right will be sent to SEL 1.

Small Loudspeakers

The Small Loudspeaker outputs provide alternative destinations for the monitoring system. Small Loudspeaker 1 is a direct alternative to the main control room speaker output (fed by SEL1). Small Loudspeaker 2 is normally an

output for the PFL bus (via SEL3) but can be switched to the current source for the control room.

To switch SEL1 from the main control room speakers to Small Loudspeakers 1, Press the **SMALL L/S** 1 key. The integral led will illuminate red.
The speaker level is controlled by the rotary control adjacent to the **SMALL L/S 1** key.
The **CUT** and **DIM** keys remain in circuit.

To switch the feed to Small Loudspeakers 2 from the PFL bus to the control room source, press the **SMALL L/S 2** key. The integral led will illuminate red.
The feed from the LS SEL source to SEL1 will be switched to SEL3 and the PFL bus will be disconnected from SEL3.
The speaker level is controlled by the rotary control adjacent to the **SMALL L/S 1** key.

Studio Loudspeakers

To select a Studio Loudspeaker source, press and hold the **SEL** key on the **STUDIO LS** section. The integral led will illuminate red while the key is held. Make the required selection on the **LS SEL** section as above. The selected source will be displayed on the **STUDIO LS** alpha. Release the **SEL** key.

To adjust the Studio Loudspeaker level
Turn the rotary control to the required setting.

To cut the Studio Loudspeakers
Press the **CUT** key.
The integral led will illuminate orange.

To reduce the level of the left and right feeds to the setting in defaults
Press the **DIM** key.
The integral led will illuminate orange.

To use the same source as selected for the Control Room
Press the **FOLL** key.
The integral led will illuminate red.
The **STUDIO LS** alpha will display **FOLLOW**.

When the key is turned off, the source will stay the same until a new one is selected and the alpha will show the same source as the CONTROL ROOM alpha (i.e. it does not revert to the source selected before follow was engaged)