Chapter 6 – Technical Descriptions

This chapter provides descriptions of the OXF-R3 system, including the location and function of all elements of the system. The control surface layout and functions are described in detail.

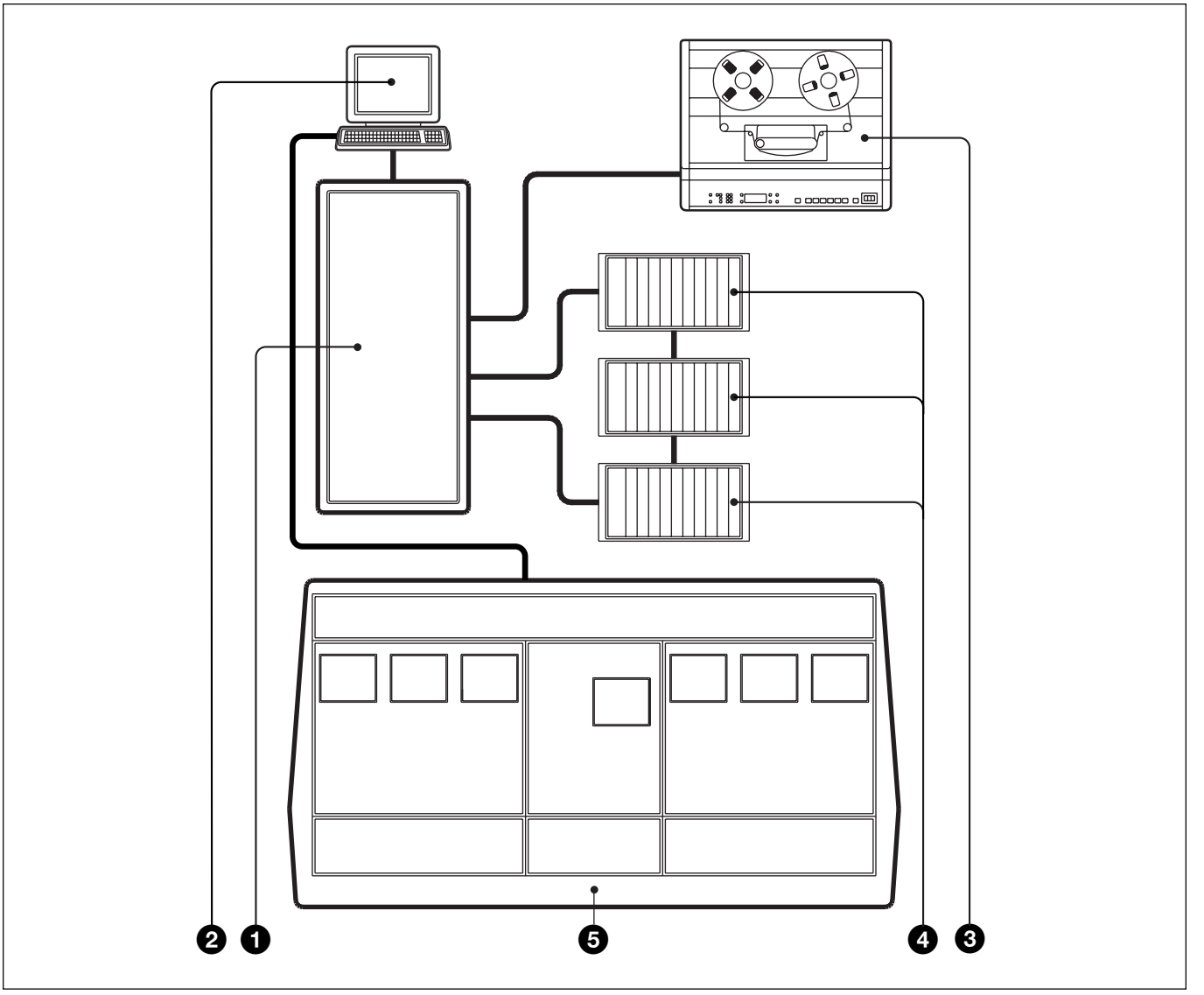
For details of the signal flow in the OXF-R3 system, refer to the Signal Flow Block Diagram in Chapter 1, Overview.

Chapter 6 Contents

6-1 OXF-R3 System Description

The OXF-R3 digital audio mixing console comprises four main elements:

- Control Console with Modular Control Surface
- Host Computer
- Signal Processing (SP) Rack
- Digital and Analogue I/O Rack(s)



System Concept diagram

❶ SP Rack

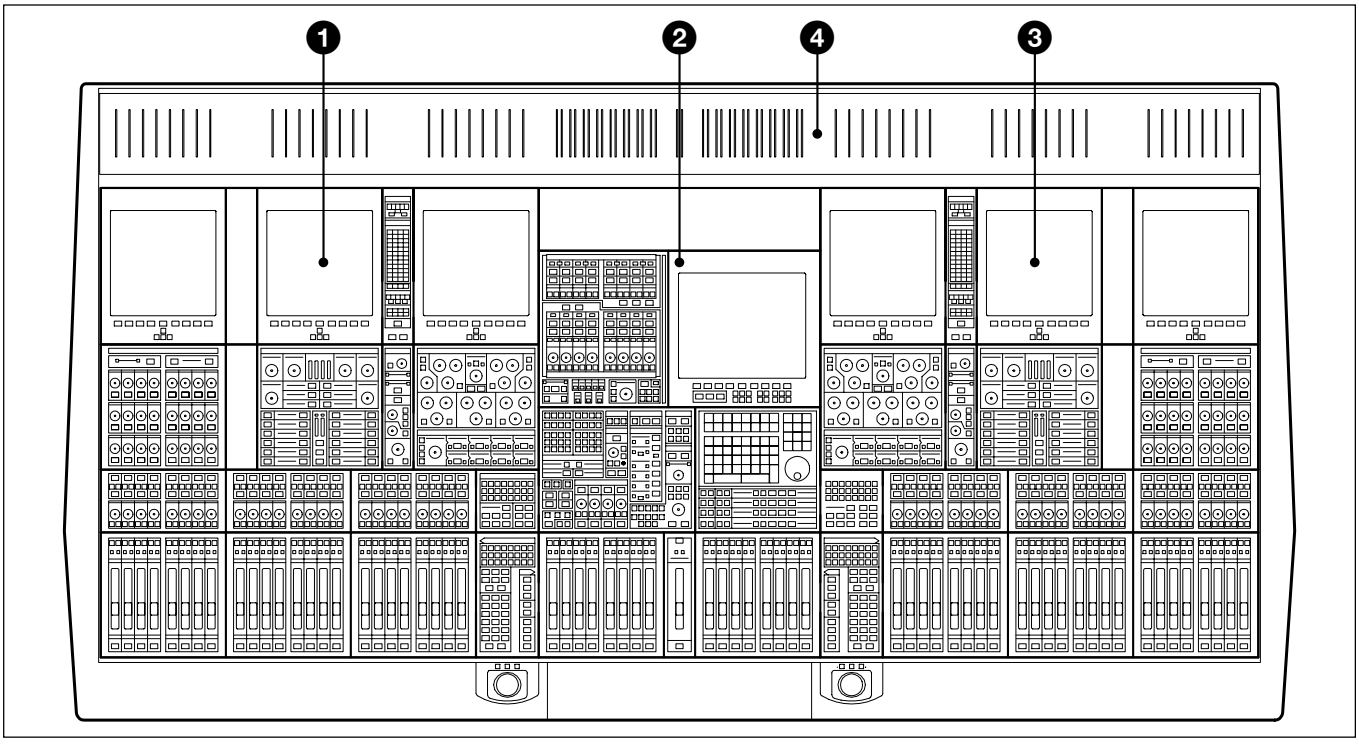
❷ Host Computer

❸ Multitrack Tape Recorder(s)

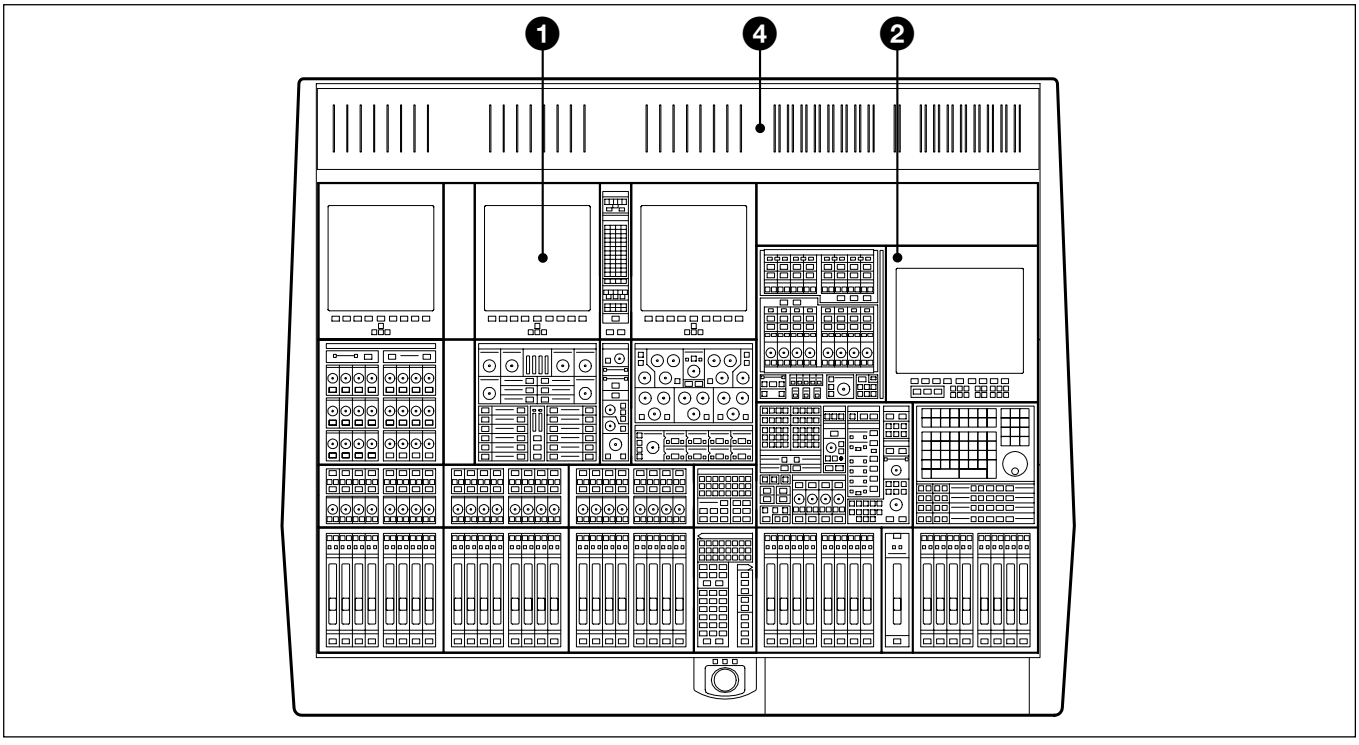
❹ Digital & Analogue I/O Rack(s)

❺ Control Console

6-1-1 Control Surface Configurations



24-C-24 Control Surface Configuration



24-C-0 Control Surface Configuration

❶ Left Hand 24 Fader Channels Section

❷ Central Master Section

❸ Right Hand 24 Fader Channels Section

❹ Meter Bridge

A key feature of the OXF-R3 is that it has Assignable Panels. These can be broken down into 4 basic areas:

- **INPUT CHANNEL, EQUALISER and FILTERS**
- **FREE ASSIGN and DYNAMICS AREA**
- **ROUTING and MULTITRACK**
- **SENDS AREA** (for feeding effects and foldbacks etc)

INPUT CHANNEL, EQUALISER and FILTERS

The Input Channel section is much more flexible than a conventional in-line analogue channel strip in that it allows processing elements to be configured in almost any order.

The 5 Band Equaliser and High and Low Filters sections are independent and can be assigned separately to any position in the channel signal path.

FREE ASSIGN AREA and DYNAMICS

- **GATE**
- **EXPANDER**
- **COMPRESSOR**
- **LIMITER**
- **SIDE-CHAIN EQUALISER (S-C EQ)**

Each section of the Dynamics has its own side-chain and allows very comprehensive control, equivalent to that of high spec outboard units. All the side-chains operate on a single gain control element. The Side-Chain EQ is a 2-band fully parametric element which may be inserted in three ways:

- In the Dynamics Side-Chain only.
- In the Signal Path and the Side-Chain.
- In the Signal Path only, as a second EQ.

- **DELAY EFFECT**

This area includes space for additional effects to be controlled as software upgrades are introduced.

ROUTING and MULTITRACK

- **MULTITRACK**

The Multitrack section is configurable in two ways, either as part of an in-line channel or in a parallel mode, where a multi-channel recording is being made during a live mix, for example.

• **ROUTING**

The Routing section splits into three areas:

- Multitrack Busses 1-48
- Main Output Bus and Super Send Groups 1-8
- Multi-format Monitor

Although just one set of buttons (which follow the channel assignments) is available at each side of the console, 48 channels worth of routing can be displayed simultaneously, with 24 channels being displayed on the LCD screens on each side of the control surface.

SENDS

There are 24 mono Sends that can be linked up as odd/even pairs to provide up to 12 stereos. The levels to the busses can be set using the individual dedicated controls or, alternatively, they can be assigned, one bus at a time, to the faders or assignable knobs (PANs).

In the following panel descriptions, the location of the panel being described will be indicated by an inset view of the OXF-R3 control surface with that panel (or panels of that type) shown highlighted.

6-2 Channels Section Panels

The following descriptions apply equally to the left and right hand channels sections, which are mirror images of each other.

6-2-1 Fader Panel

General

Each Fader Panel (three left and three right) contains 8 touch sensitive linear motorised faders with associated electronic dot display scribbles and local dynamic automation controls. This universal Fader Panel is used for channels as well as master section functions.

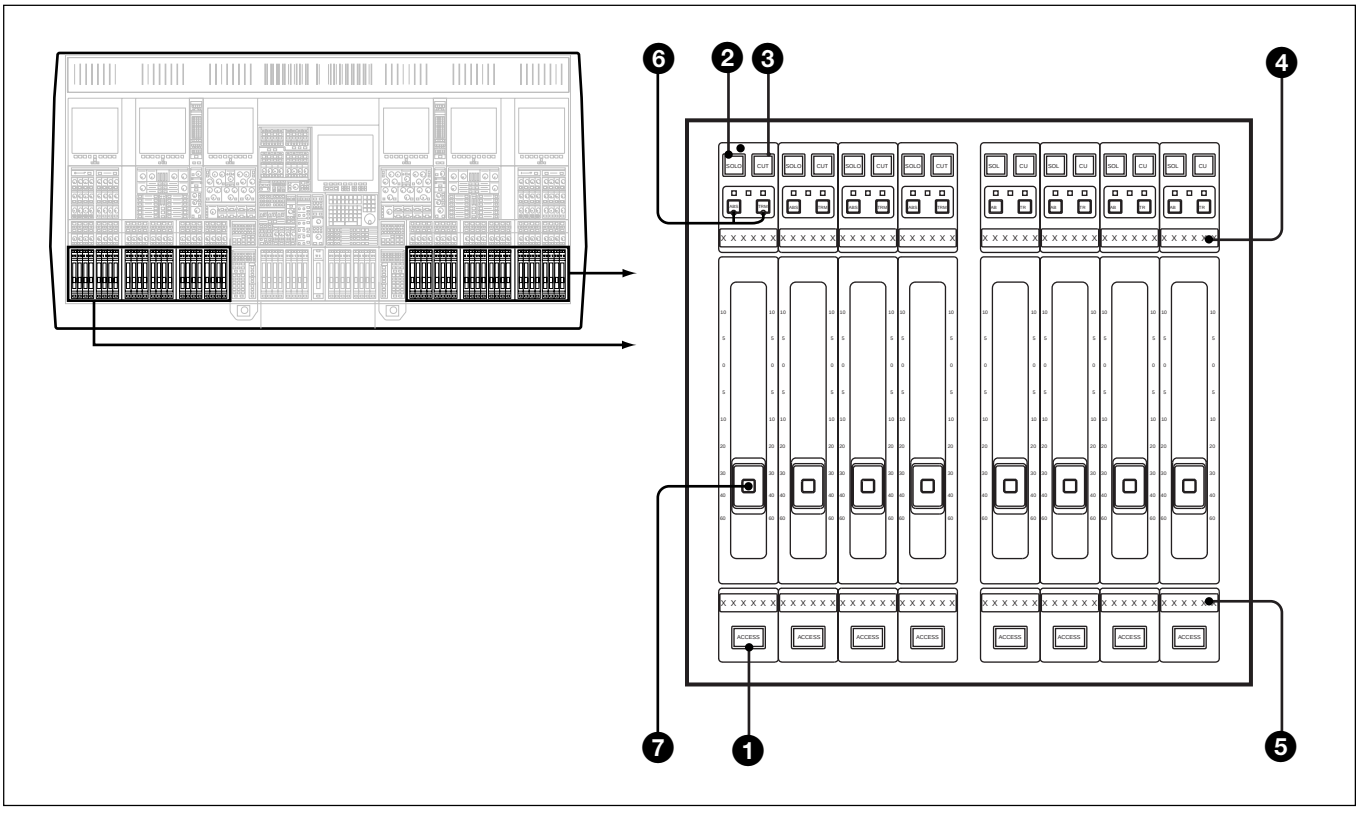
The faders are very important devices in that all channel level control functions may be accomplished using them as selected on the SELECT TO FADERS panel described in the next section. Channel faders may be switched to control:

- **INPUT GAIN** Mic, M/T and Line
- **M/T SEND** Level sent to M/T Bus
- **GROUP TRIM** Gain of M/T Bus Output to M/T Channel
- **M/T MONITOR** Level Sent to Independent M/T Monitor Bus
- **CHANNEL** Level Sent to Main L/R Output Busses
- **SENDS** Levels Sent to Effects & Foldback Outputs
- **SUB LEVEL** Levels Sent to the Sub Bus in Multi-Format Mode

Control Group function

Any fader can be linked or ‘slaved’ to be controlled by any one of the centrally placed Control Group Faders. This works exactly like VCA grouping in an analogue console. Slaves can be set to move according to Control Groups by latching [SLAVE FADs MOVE] on the Monitor panel.

See 6-3-2 for [SLAVE FADs MOVE] function.



Fader panel

❶ ACCESS Push-Button
Selects the set of channel process and routing controls above the faders area to its channel.

❷ SOLO Push-Button
The function of fader Solo push-buttons is dependent upon the master status set on the Monitor Panel in the centre section:

Master Status SOLO - Allows a destructive SOLO function which works on CHANS at all times and M/T SEND faders when in Multi-format mode only. In this mode, CUT buttons light on other channels. AFL (After Fader Listen) functions for all other selections, INPUT GAIN, GROUP TRIM and M/T MON. AFL does not function for Sends 1-24.

Master Status AFL - Sends the AFL signal to the monitor LS for whichever function is assigned to the faders at the time, not including Sends 1-24.

Master Status PFL - Sends the PFL (Pre Fader Listen) signal to the monitor LS for CHANS at all times and M/T SEND faders when in Multi-format mode only.

❸ CUT Push-Button
Mutes the signal for whichever level function the fader is performing at the time.

❹ **Upper Electronic Scribble** (6 Character dot display per Fader)
Displays the audio source name. This may be selected from a table of source names via colour LCD screens when selecting signal sources. The name may also be typed in via the central QWERTY keyboard. It also displays gain level in dBs if the SHOW VALUE function is selected.

❺ **Lower Electronic Scribble** (6 Character dot display per Fader)
Displays the channel number and any grouping assignment. Displays the channel source name if SHOW VALUE is selected.

❻ **ABS and TRM Push-Buttons**
Described under Session Management™ (Chapter 7).

❼ **Touch Sensitive Fader Knob and Tactile 'Write' Button**
Functions described under Session Management™ (Chapter 7).

There are 48 channel faders on the control surface of the OXF-R3, which can control a much greater number of channels using Fader Paging. The SELECT TO FADERS panels, described in the following section, allow any bank of 24 channels to be selected on either side of the centre section at any time.

Control Grouping

Press and hold [ACCESS] on a central Control Group Fader until it turns amber. Latch [ACCESS] on the channel faders to be slaved. A maximum gain of 10dB can be added to a channel using a Control Group.

Use the same procedure to release slaves except that once the the Control Group [ACCESS] has turned amber and its slave [ACCESS] buttons are lit, un-latch the slaves as required.

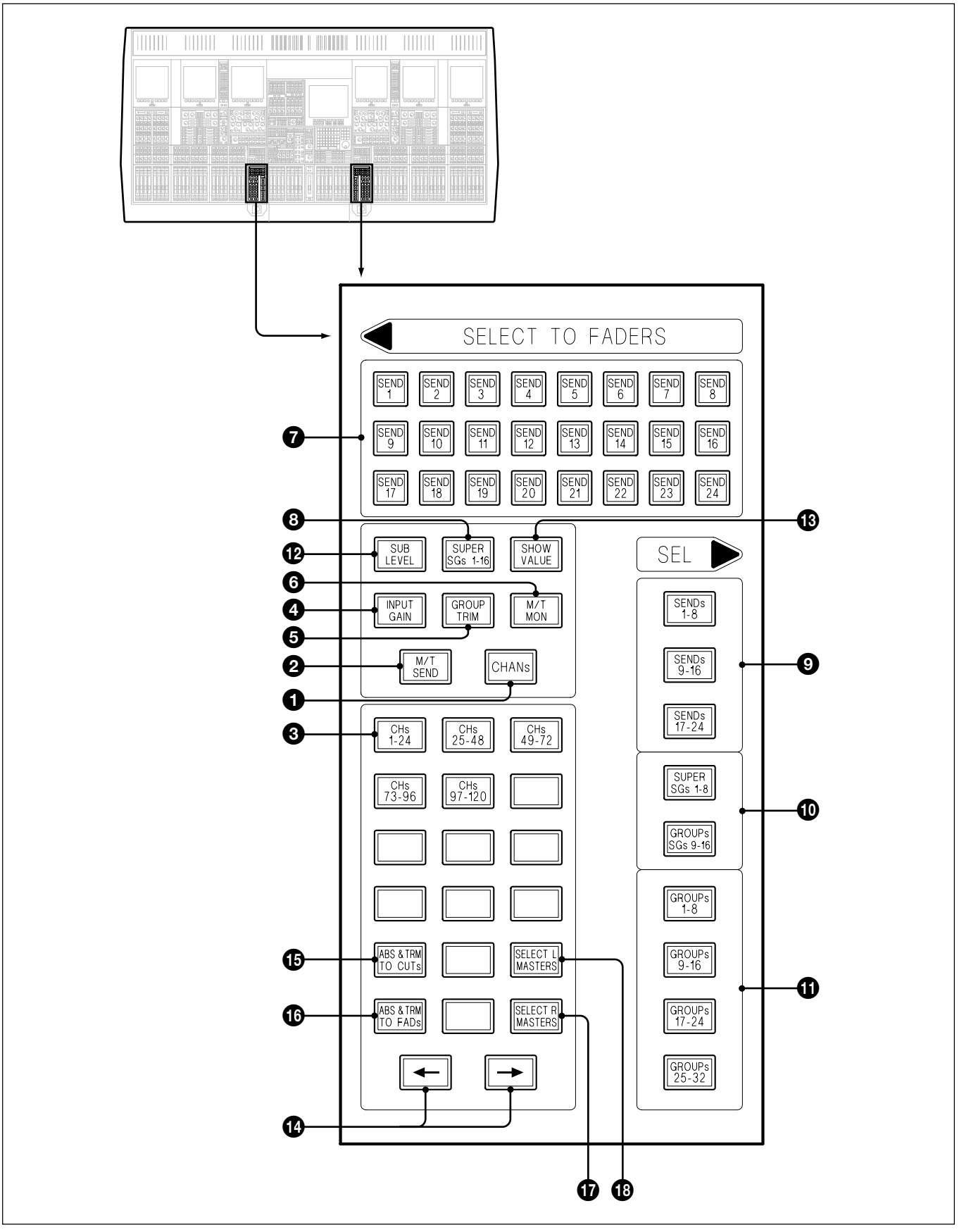
6-2-2 Select to Faders Panel

The following illustration shows the left Select to Faders Panel, which is located immediately to the left of the centre section of the control surface. The right hand Select to Faders Panel, located immediately to the right of the centre section, has a panel layout which is a mirror image of the one described here.

This Panel assigns fader banks to control desired signal paths.

The various push-buttons allow assignment of signal paths to channel faders as per button designation and the previous Fader description. Channel faders may be switched to control:

- **INPUT GAIN** Gain of Mic, M/T and Line
- **M/T SEND** Level sent to M/T bus
- **GROUP TRIM** Gain of M/T Bus Output to M/T Channel
- **M/T MONITOR** Level Sent to Independent M/T Monitor Bus
- **CHANNEL** Channel Level Sent to Main Output Busses
- **SUPER SGs** Levels Sent to Super Send Group Outputs
- **SENDS** Levels Sent to Effects & Foldback Outputs
- **SUB LEVEL** Levels Sent to the Sub Bus in Multi-Format Mode



SELECT TO FADERS panel

❶ CHANS Push-Button (Default)
Allows faders to be switched to control the level sent to the Main Output busses.

❷ M/T SEND Push-Button
Allows faders to be switched to control the level sent to the Multitrack Busses during recording.

❸ Channel Page Push-Button
Allows selection of Channel Fader Pages 1-24, 25-48 and so on.

❹ INPUT GAIN Push-Button
Allows faders to be switched to control Mic, M/T Return and Line input gain, according to the input source currently selected.

❺ GROUP TRIM Push-Button
Allows faders to be switched to control the gain of the M/T bus output to the track on the M/T recorder.

❻ M/T MON Push-Button
Allows faders to be switched to control the level sent to the independent M/T monitor bus, for a live mix situation when a multitrack is being recorded in parallel.

❼ SENDS 1-24 Push-Buttons
Allow faders to be switched to control the levels sent to effects and foldback busses.

❽ SUPER SGs 1-16 Push-Buttons (SUPER SEND GROUPS)
Act as a 'shift' function for the buttons SENDS 1-16 which allow the faders to be switched to control the levels sent to the SUPER SG busses.

❾ SEL Section SENDS 1-8, 9-16, 17-24 Push-Buttons
Allow the assignment of Send Bus Master Output Levels to be controlled by central multi-purpose master faders.

❿ SEL Section SUPER SGs 1-8, 9-16 Push-Buttons
Allow the assignment of SUPER SEND GROUP Output Levels to be controlled by central multi-purpose master faders.

⓫ SEL Section GROUPs 1-8, 9-16, 17-24, 25-32 Push-Buttons
Allow Control Groups (equivalent to analogue VCA Groups) to be assigned to central multi-purpose master faders. These Control Groups may be nested.

⓬ SUB LEVEL Push-Button
When the MT or Main Output Busses are set up for multi-channel surround sound, this button allows the levels sent to the SUB bass channel to be trimmed using the faders.

⓭ SHOW VALUE Push-Button
Allows the display of gain/loss in dB on the upper scribble for the function the fader is presently performing.

⓮ ⬅ & ➡ Push-Buttons
Step the ACCESS button selections one channel at a time in the direction of the arrow.

⓯ ABS & TRM TO CUTS Push-Button
Assigns the [ABS] and [TRM] buttons above the faders to the Cuts.

⓰ ABS & TRM TO FADERS Push-Button
Assigns the [ABS] and [TRM] buttons above the faders to the Faders.

⓱ SELECT R MASTER Push-Button (24-C-0 Control Surface only)
Causes the function selected under SEL in the right hand SELECT TO FADERS panel to be assigned to the right hand 8 centre section faders. This push-button inter-cancels with SELECT L MASTER push-button.

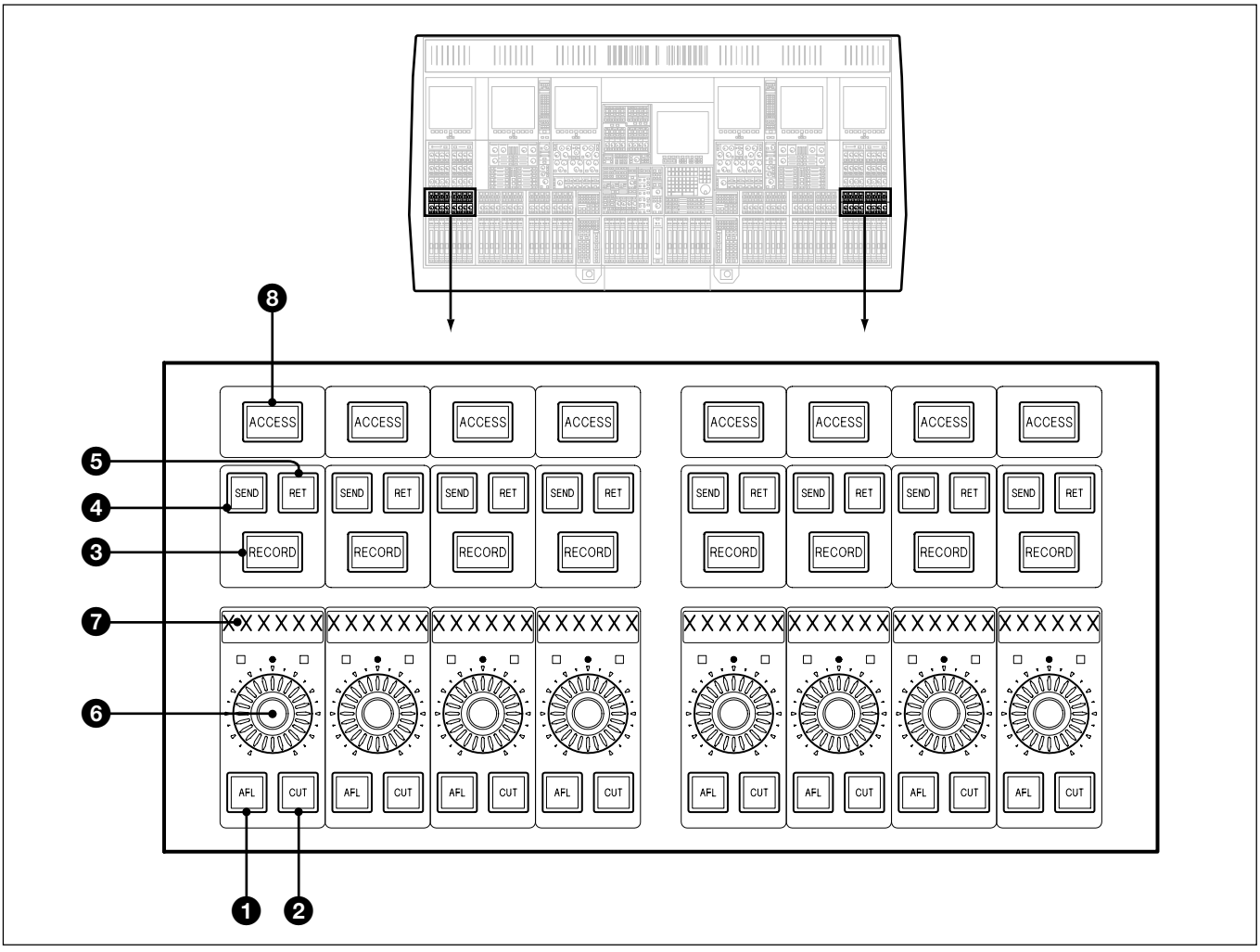
⓲ SELECT L MASTER Push-Button (24-C-0 Control Surface only)
Causes the function selected under SEL in the left hand SELECT TO FADERS panel to be assigned to the left hand 8 centre section faders. This push-button inter-cancels with SELECT R MASTER push-button.

6-2-3 Pans Panel

Each of the 6 Pans Panels (3 each side of the control surface) contains 8 definable knobs, with associated electronic dot display, AFL and CUT buttons. Although the primary purpose of these knobs is panning, their functions may be defined. Any pan or gain function may be selected at the SELECT TO PANS panel. Channel SEND/RET(urn) monitor selection, RECORD remotes and ACCESS buttons are also present on this panel.

Use the SELECT TO PANS panel to control:

- **PAN** Left/Right Pan for all occasions where the Fader Output is feeding a Stereo Bus or Front Surround
- **INPUT GAIN** Gain of Mic, M/T Return & Line
- **GROUP TRIM** Gain of M/T Bus Output to M/T channel
- **M/T MON** Level sent to Independent M/T Monitor Bus
- **M/T SEND** Level sent to M/T Bus
- **CHANS** Controls the Level to the Main Output Bus
- **SENDS 1 (-24)** Levels sent to Effects & Foldback Busses.



Pans panel

❶ AFL Push-Button
Sends AFL signal to monitor LS for whichever level function is assigned to the knob at the time.

❷ CUT Push-Button
Mutes the signal assigned to knob. When a pan function is assigned, CUT becomes the pan in/out switch. A pan setting is cleared by CUT.

❸ RECORD Push-Button
Switches its related track on multitrack machine into record. (Can be armed only if either its SEND or RET monitor switch has been selected).

❹ SEND Push-Button
Selects the channel signal being sent to M/T as monitor source. May be controlled from tape remote master SENDS push-button (see section 6-3-3).

❺ RET Push-Button
Selects the return signal being received from M/T as monitor source. May be controlled from tape remote master RET push-button (see section 6-3-3).

Note:

If the associated track is in Record, the monitoring system switches over to the Send signal automatically even though RET is selected.

Note:

If both SEND and RET are selected, then a mix of both send and return signals becomes the M/T monitor source.

❻ Definable Knob
May be defined to have any gain or pan function depending on what is selected on the SELECT TO PANS panel.

❼ Dot Character Display
When SHOW VALUE is selected, the Pan angle of displacement is indicated in degrees. When the knobs are defined as gain controls, the gain value is indicated in dBs.

❽ ACCESS Push-Button
Selects the assignable channel area to its associated Channel.

Using Keyboard Entry to Record Arm Tracks

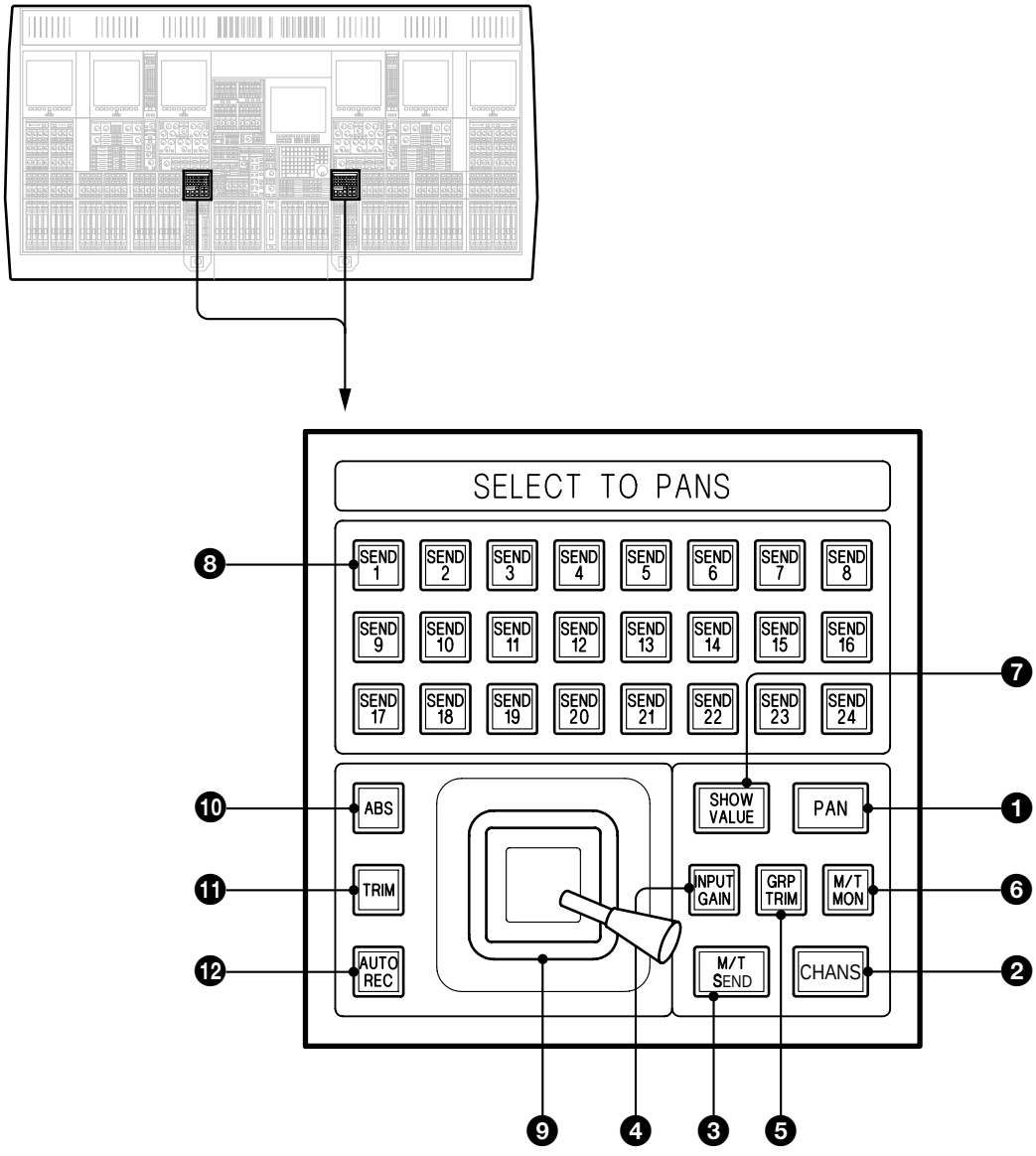
Press [RECORD] at the appropriate machine remotes in the master section. Then use the QWERTY Keyboard: *Specify Channels as Below* [ENTER]

- Channels ranges are specified with '..' as a separator:
  1..32 = Channels 1-32
- Individual items are separated by '.'
  2 . 4 . 25 = Channels 2, 4, and 25
- Unlimited strings are possible in the same entry:
  e.g. 1 . 3 . 5 .. 08 . 12 .. 42 = Channels 1, 3, 5-8 and 12-42

Press [RECORD] [0] [ENTER] to disarm all the tracks that are armed.

6-2-4 Select to Pans Panel

This panel allows assignment of functions to the PAN panels adjacent to it. The default and primary setting is PAN. The options are as follows:



SELECT TO PANS panel

❶ PAN Push-Button
Left/Right Pan for all occasions where the Fader Output is feeding a Stereo Bus (default setting).

❷ CHANS Push-Button
Allows pans to be switched to control the level sent to the Main output busses.

❸ M/T SEND Push-Button
Allows pans to be switched to control the level sent to M/T bus during recording.

❹ INPUT GAIN Push-Button
Allows pans to be switched to control gain of Mic, M/T Return and Line Input.

❺ GRP TRIM Push-Button
Allows faders to be switched to control the gain of the M/T bus output to the M/T channel.

❻ M/T MON Push-Button
Allows pans to be switched to control the level sent to the independent M/T Monitor Bus.

❼ SHOW VALUE Push-Button
Allows the display of pan positions in degrees or gain/loss in dB on the pans panel's 6 character dot displays according to the function selected. Press and hold [SHOW VALUE] and the current input device, e.g. ADC183, will be displayed for each individual channel.

Note:
It is the 'raw' input device which will be displayed, not the 'alias' name, if one has been set.

❽ SENDS 1-24 Push-Buttons
Allow pans to be switched to control the levels sent to the effects and foldback busses.

❾ Joystick
The joystick surround sound panner is in parallel with the M/T Send Pan. It allows 2D surround panning in multi-format mode and left/right pan in stereo mode. Its knob is touch sensitive, indicated by the AUTO REC push-button lighting when touched.

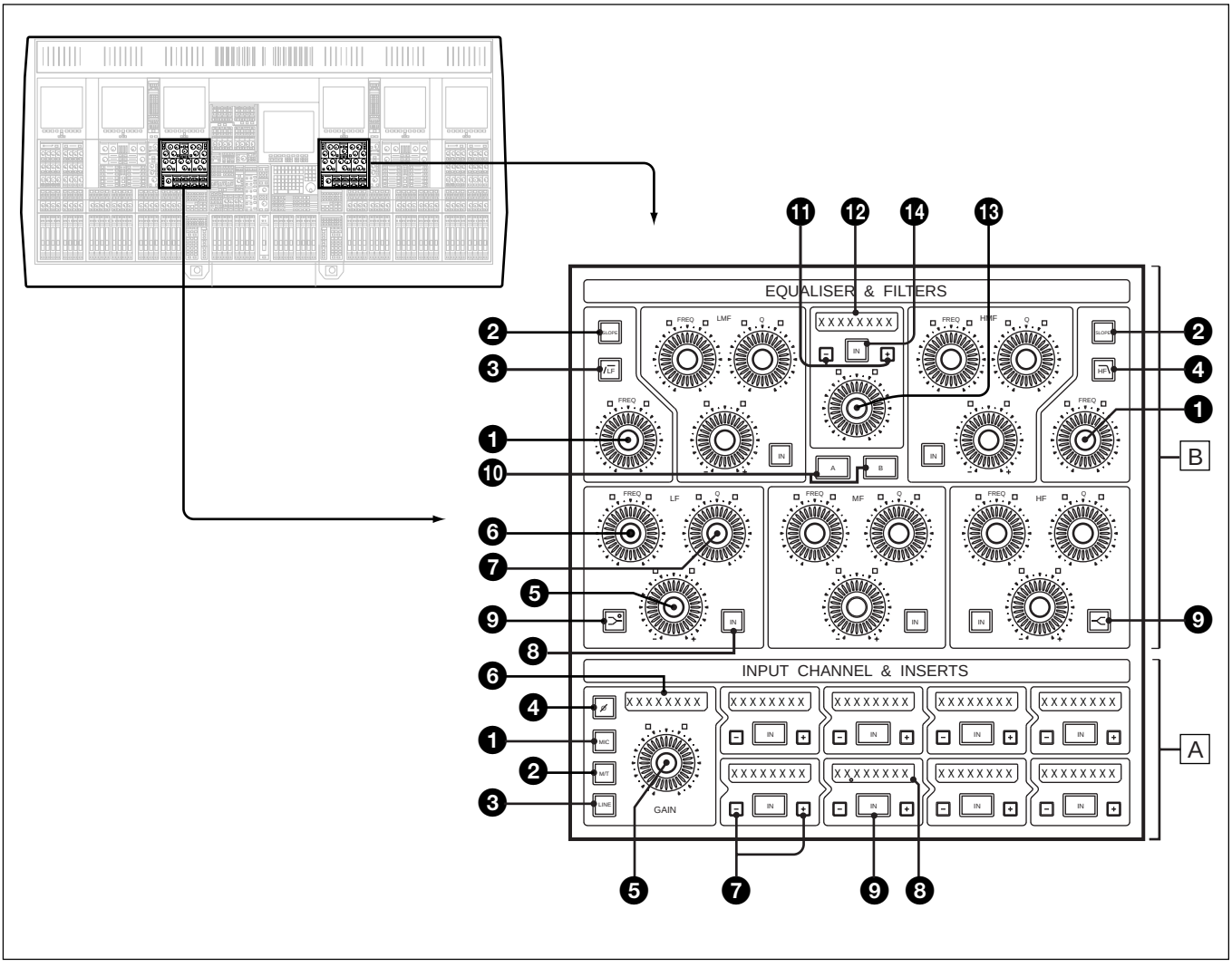
❿ ABS Push-Button
Used to select 'ready absolute' status when automating joystick panning movements (see Chapter 7).

⓫ TRIM Push-Button
Used to select 'ready trim' status when automating joystick panning movements (see Chapter 7).

⓬ AUTO REC Push-Button
Used to switch the joystick into automation record according to the ABS or TRM status (see Chapter 7).

6-2-5 Input and Equaliser Panel

This panel is divided into two distinct sections, the INPUT CHANNEL & INSERTS section and the EQUALISER & FILTERS section, designated A and B respectively in the illustration.



INPUT CHANNEL & INSERTS and EQUALISER & FILTERS panel

A INPUT CHANNEL & INSERTS section

❶ MIC Push-Button
Selects the MIC input amp as the source as assigned on the Mic Inputs GUI.

❷ M/T Push-button
Selects the digital or analogue M/T return input as assigned on the M/T Return Inputs GUI.

❸ LINE Push-Button
Selects the digital or analogue LINE input as assigned on the LINE Inputs GUI.

❹ Ø Push-Button
Reverses phase of the selected input source.

❺ GAIN Knob
Allows gain adjustment for the selected source.

❻ 8 Character Display
Indicates the gain for the current source in dBs.

Note:
The gain and phase settings may be different for all three inputs simultaneously.

Channel Path Selectors

The channel signal passes through each selector block from top left to right and then from bottom left to right. Each selector block may have a single process element such as EQ, Insert or Dynamics from the pool available. The sequence of processing may be set up in any order and easily changed according to the task in hand.

❼ +/- Push-Buttons
Select the processor function into position in the signal chain but they will not be inserted and operational until the **IN** button is selected. Step through them until the one required is displayed. Press +/- together to clear display.

❽ 8 Character Display
Indicates processor selection.

❾ IN Push-Button
Puts the process displayed into operation.

Note:
Any processes in use may only be re-ordered or de-selected whilst their IN buttons are not lit i.e. whilst the process is out of the signal path.

Currently available processes and functions: FILTERS, EQ, DYNAMICS, MULTITRACK, INSERT, DELAY and FADER. The FADER is automatically placed at the end of the bottom right block, at the channel output, unless it is selected in one of the blocks. It need be selected only if, for example, Dynamics is required post fader.

Ⓑ EQUALISER & FILTERS SECTION

Equaliser and Filter parameters can be displayed on Channel Screens.

High and Low Pass Filters

❶ FREQ Knobs
Set the turnover frequencies.

❷ SLOPE Push-Buttons
Set dB/Octave 6-36dB in 6dB increments.

❸ / LF Push-Button
Switches the high pass filter in/out.

❹ HF \ Push-Button
Switches the low pass filter in/out.

Five Band Equaliser (LF, LMF, MF, HMF & HF)

❺ +/- Knobs
Set the boost or cut levels.

❻ FREQ Knobs
Set the centre frequencies or turnover frequencies for shelf curves.

❼ Q Knobs
Set the bandwidth of EQ curves.

❽ IN Push-Buttons
Allow individual EQ sections to be switched in/out.

❾ (LF & HF) Push-Buttons
Select shelving curves for high and low sections.

When LF or HF are in shelf mode, their 'Q' knobs control overshoot.

❿ A & B Push-Buttons
Two complete EQ (but not Filter) settings may exist simultaneously. The A and B buttons allow toggling between them for comparison purposes.

⓫ +/- Push-Buttons
Select the functions for the EQ definable knob and [IN] button.

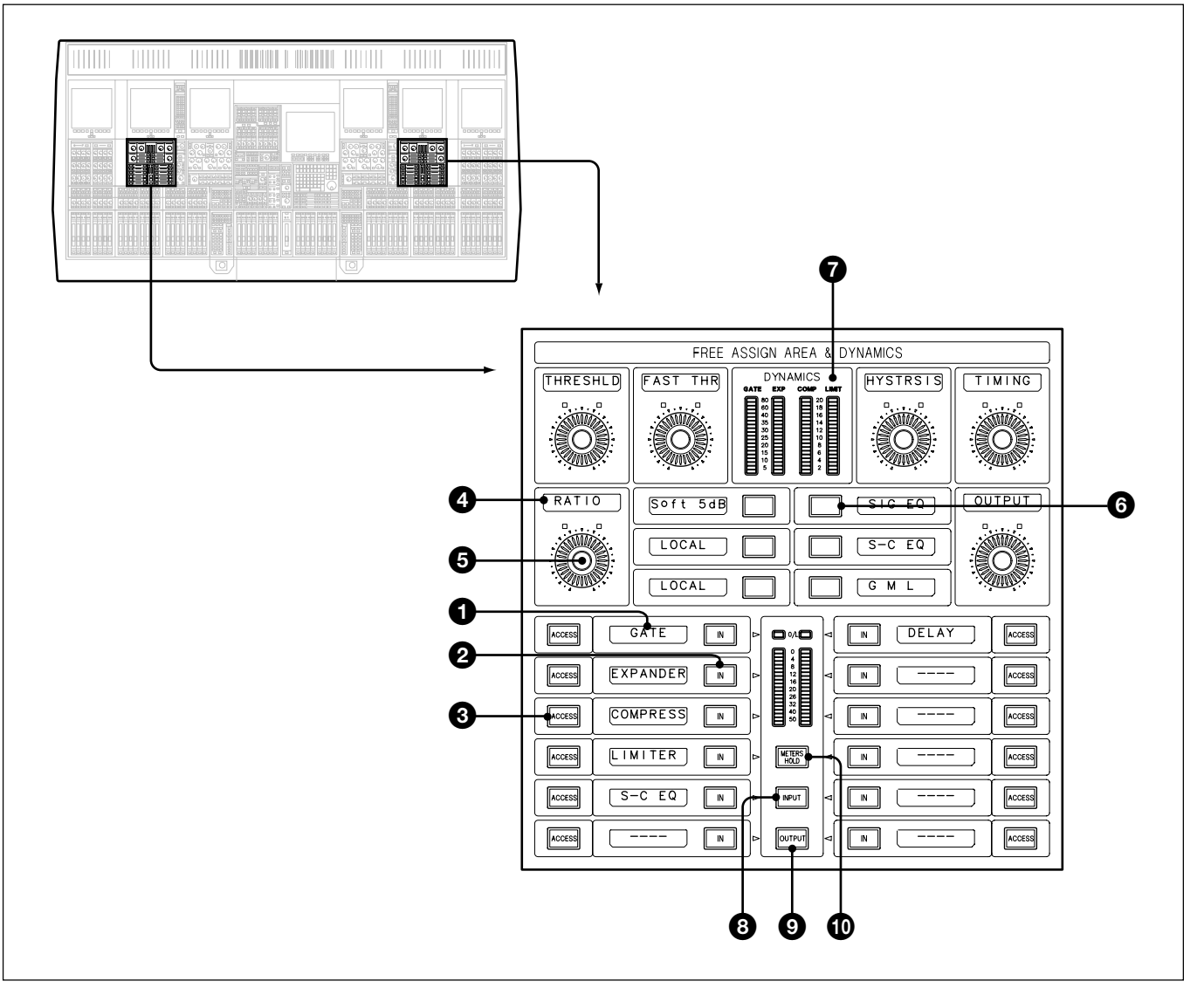
⓬ 8 Character Display
Displays the function type selected using the [+] / [-] buttons ⓫.

⓭ Definable Knob
Used to adjust or further select options set according to the [+] / [-] buttons ⓫.

⓮ IN Push-button
Switches in options set according to the [+] / [-] buttons ⓫ and the EQ definable knob.

6-2-6 Free Assign Area & Dynamics Panel

This Panel allows control of Dynamics and Delay functions and is designed such that future additional option processing elements may easily be accommodated.



FREE ASSIGN AREA & DYNAMICS panel

12 x Selector Blocks (Lower Left & Right)

These selectors display, and allow selection of, available processing elements which may be accessed in the channel path selectors on the Input Channel & Inserts panel section.

❶ 8 Character Displays

Indicate the processing elements available.

❷ IN Push-Button(s)

Puts its displayed process element into operation.

❸ **ACCESS Push-Button(s)**
Allows Free Assign controls to access control of selected process.

Note:
*Selecting any **IN** button selects its associated ACCESS automatically.*

6 Definable Knobs and 6 Switches

❹ **8 Character Displays**
Indicate the functions of adjacent definable knobs and switches.

❺ **DEFINABLE Knobs**
Allow adjustment of parameter indicated.

❻ **Push-Buttons**
Allow switched function as indicated.

❼ **Dynamics Meters**
4 x 20 segment meters indicate gain reduction within the Dynamics section for the GATE, EXPANDER, COMPRESSOR and LIMITER functions. Back-lit legends above each meter indicate which particular Dynamics sections are switched into the signal path.

The IN button below the window selected to DYN on the Input Channel & Inserts section can be used as a master in/out switch for the whole dynamics section.

Stereo Meter [Lower centre] (Not operational in this version)

The two meters between the two columns of **IN** buttons indicate audio levels within the process currently accessed. A back-lit arrow will point to the appropriate **IN** button. The Meter switch functions are as follows:

❽ **INPUT Push-Button**
Switches the meter to read the input of the accessed process.

❾ **OUTPUT Push-Button**
Switches the meter to the process output.

❿ **METERS HOLD Push-Button**
Fixes the meter to the process accessed at the time. Once selected, the meters will not follow further access functions until METERS HOLD is released.

The Dynamics Area

- **GATE**
- **EXPANDER**
- **COMPRESSOR**
- **LIMITER**
- **SIDE-CHAIN EQUALISER**

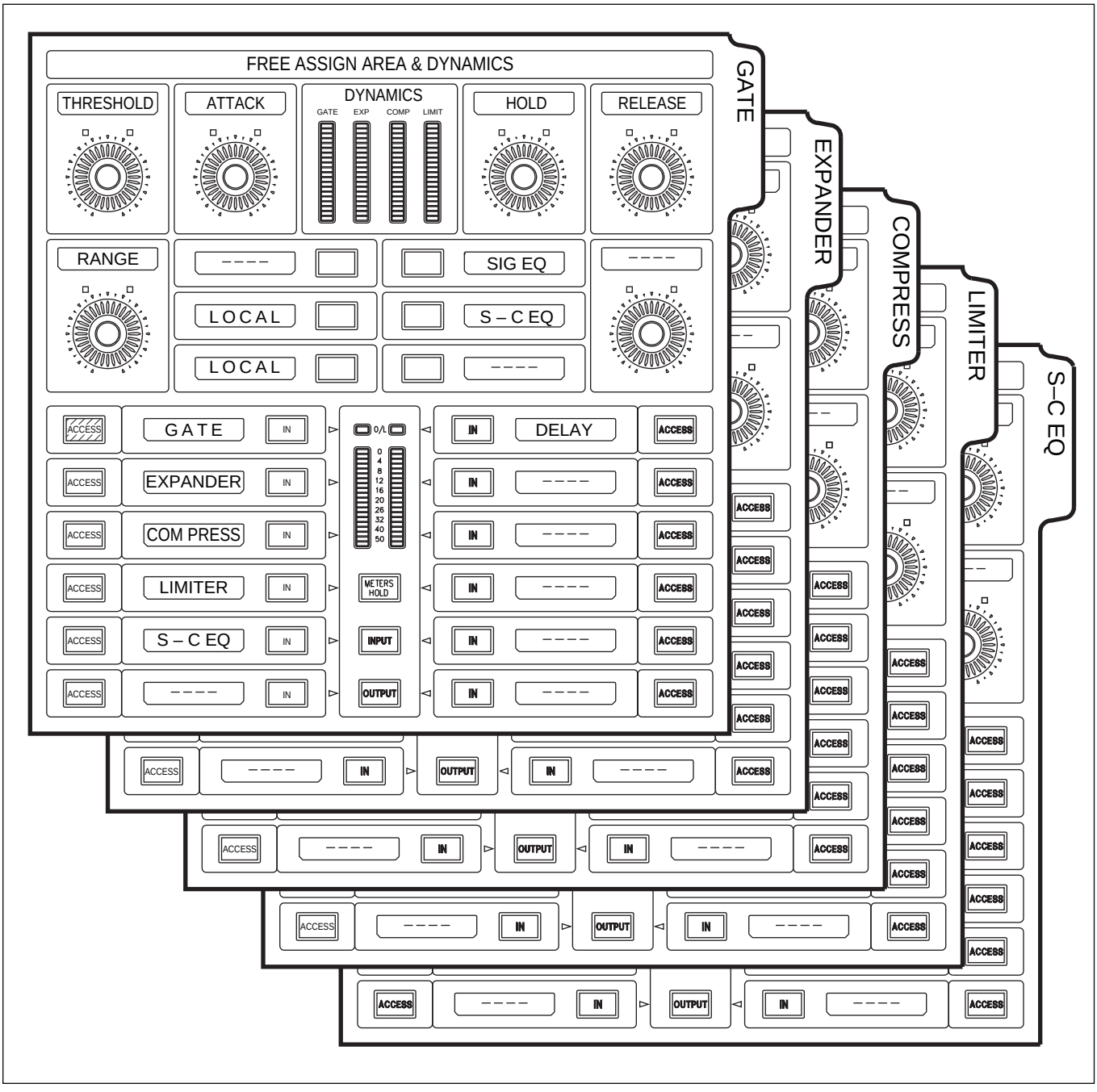
The names of these functions appear in small display windows on the panel. By pressing the **ACCESS** button to one side of the window, control of that function is assigned to the six knobs at the top of the panel.

The following diagram shows an example in which the **ACCESS** button has been pressed for the GATE and its controls are now available on the panel. It can be switched in and out of circuit by pressing the **IN** button. The diagram also shows how, as each **ACCESS** button is pressed, the Free Assign area of the panel is assigned to the function selected.

By switching between **ACCESS** buttons, the six knobs are being paged to control the different functions which are being accessed.

A dynamics page is available on the channel screens displaying the settings for each process and a graphical representation of the processing on that signal.

The **IN** button below the window selected to DYN on the Input Channel & Inserts section can be used as a master in/out switch for the whole dynamics section.



FREE ASSIGN AREA ‘virtual panels’ illustration

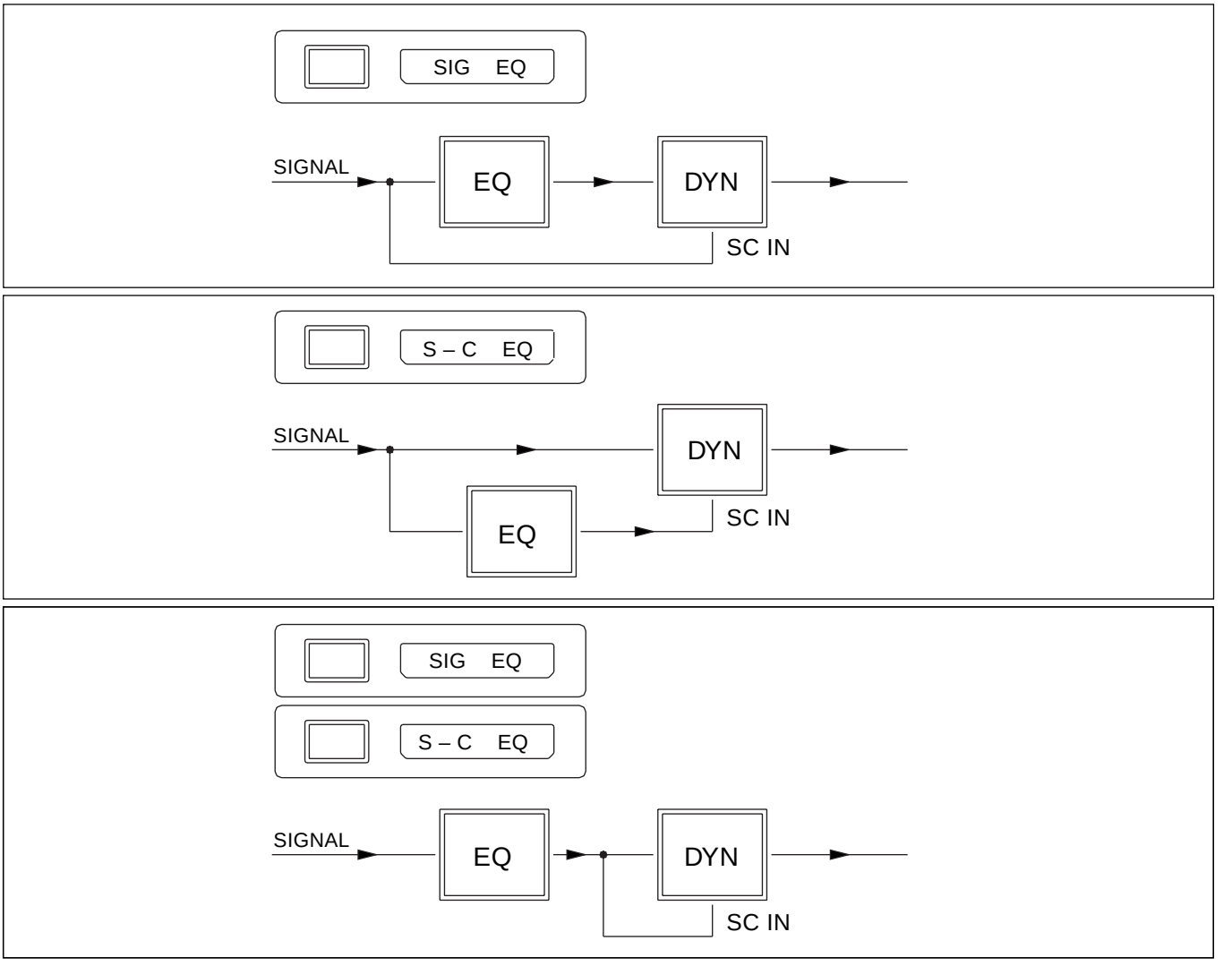
Dynamics Side-Chain Equaliser

The Side-Chain EQ is a two-band parametric covering a bandwidth from 20Hz to 20kHz. It can be used as an additional EQ in the signal path as well as the Dynamics Side-Chain.

Select the **ACCESS** button by the window displaying S-C EQ and the knobs and switches will be assigned to the Side-Chain EQ. Select its **IN** button.

The assignable buttons allow two selections, SIG EQ and S-C EQ, as illustrated in the following diagram. They work as follows:

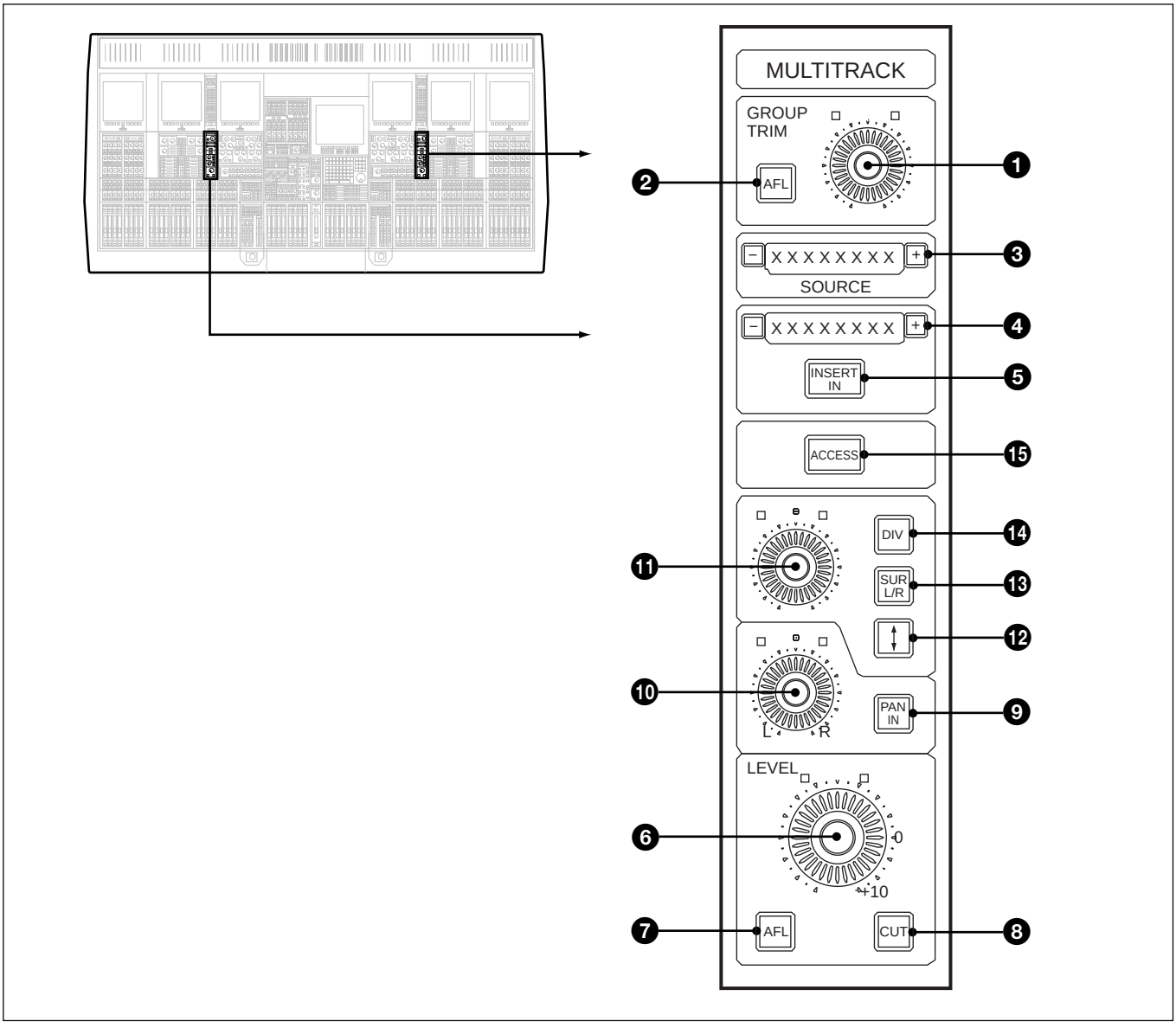
- **Select SIG EQ** to have the equaliser affect the signal path alone.
- **Select S-C EQ** to insert the equaliser in the Dynamics Side-Chain alone.
- **Select both SIG EQ and S-C EQ** to affect the signal path and dynamics side-chain.



Side-chain EQ settings

6-2-7 Multitrack Panel

This panel allows control of all Multitrack functions, apart from track routing assignments, for the channel currently accessed.



MULTITRACK panel

GROUP TRIM section

❶GROUP TRIM Knob
Controls gain of the M/T bus output to M/T channel.

❷AFL Push-Button
Sends post Group Trim signal to monitor LS.

SOURCE section

❸8 Character Display
Indicates signal source point in channel chain from where the signal to feed the Multitrack is derived.

+/- Push-buttons allow selection of the junction in channel path from where the Multitrack signal is sourced. The signal will be taken directly from the ouput of the function displayed.

Note:
Operable only if the IN button for the Multitrack (displayed as MULTI) is not selected on the Input Channel & Inserts panel.

INSERT section

❹+/- Push-Buttons (Not operational in this version)
Allow the list of insertable devices to be displayed, one at a time, on the 8 character display.

❺INSERT IN Push-Button
Inserts the device selected via the I/O GUI (see Chapter 5).

Note:
It is not possible to change insert selection when the INSERT IN is selected.

Multitrack LEVEL and Pan section

❻LEVEL Knob
Controls the level of signal being sent to the M/T routing bus switching.

❼AFL Push-Button
Sends the signal post the M/T Level to monitor LS.

❽CUT Push-Button
Mutes the signal post M/T Level control.

❾PAN IN Push-Button
Switches in the Pan functionality according to format selected (Stereo or Multi-Format selected in the centre section). For stereo panning, at least one odd and one even track must be selected in the Multitrack routing section.

❿L/R PAN Knob
Allows left/right panning.

⓫ Definable Knob
Works in conjunction with the front/back, the surround left/right and divergence panning if a multi-format mode has been selected.

⓬ Back/Front Push-Button
Assigns the definable knob to back/front panning.

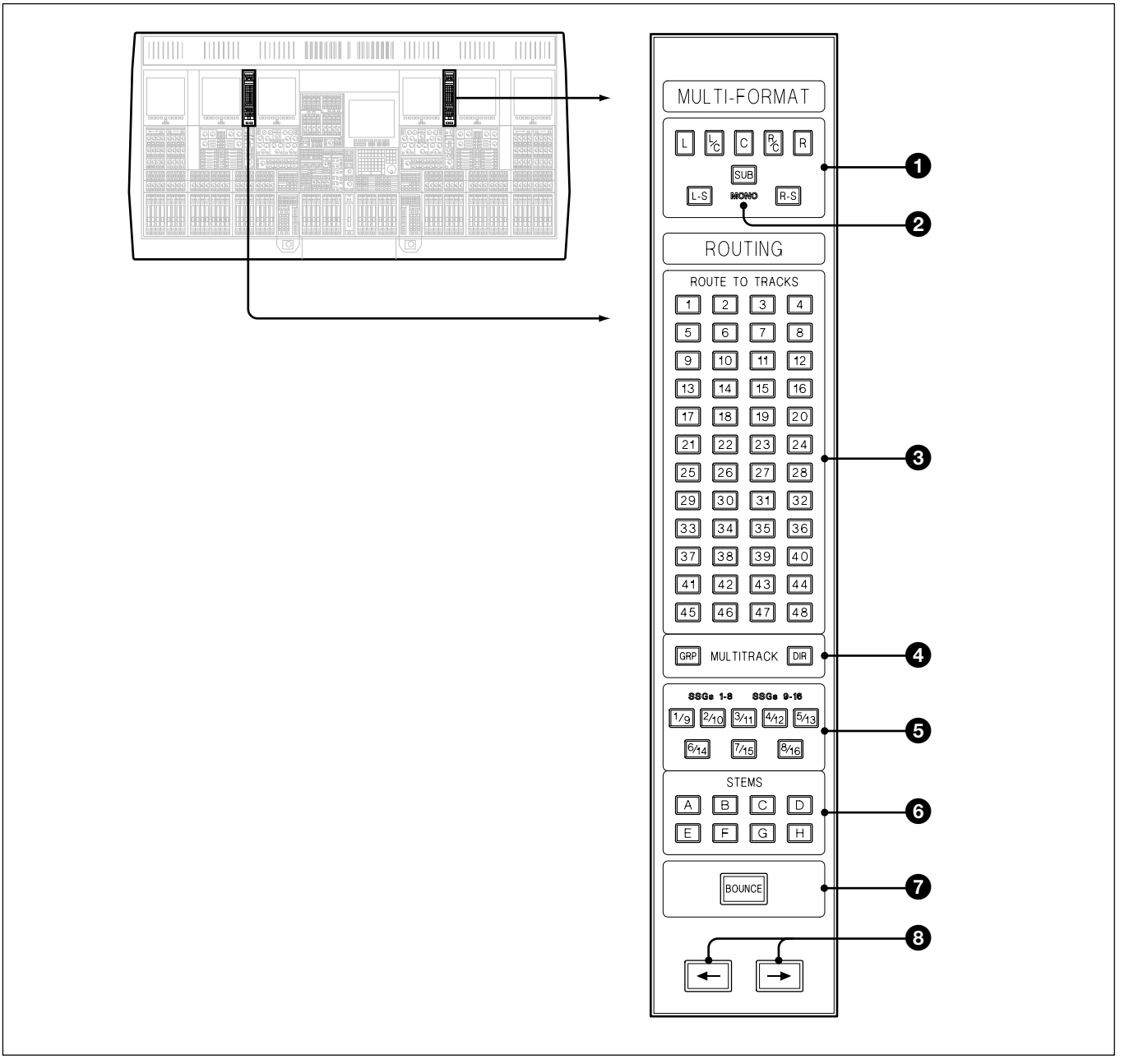
⓭ SUR L/R Push-Button
Assigns definable knob to rear surround left/right panning.

⓮ DIV Push-Button
Assigns the definable knob to control of divergence.

⓯ ACCESS Push-Button (Not operational in this version)
Allows process elements in the multitrack signal path to be accessed.

6-2-8 Routing Panel

The Routing panels allow signals to be routed to Multitrack busses, the Main Output bus and the Super Send Groups. Multi-Format routing and its monitor are also set using this panel.



ROUTING panel

MULTI-FORMAT Section

❶MULTI-FORMAT L, L/C, C, R/C, R, L-S, SUB, R-S Push-Buttons
These allow surround routing for a number of sources. Their function is set depending on which function is selected to the faders in the channels section.

The button layout mimics the Multi-Format LS set-up for easy recognition when routing Multi-Channel sources. With this scheme it is not necessary to remember track numbers.

Channel Faders

If [CHANS] is selected on the SELECT TO FADERS panel, then the surround routing buttons assign the Channel Output signal (post the Channel Pan) to the the Main Bus according to the format selected for the Main Bus: Stereo, LCRS, 5.1 or 7.1.

Multitrack Send Faders

The surround routing buttons are operational for Multitrack Sends if Stems have been set up. In this case, if [M/T SEND] is selected on the SELECT TO FADERS panel, the surround routing buttons assign the Multitrack Send Fader Output signal (post M/T Pan) to those Multitrack Busses, according to the current Stem. See ❻below.

When a surround routing button is selected, the related track button, one of 1-48, is selected automatically and also lights.
(See Chapter 4 for details of Stem Set-up)

Note:

The above applies only for Multitrack Surround modes and does not apply when the Multitrack Busses are set for stereo use.

❷MONO Legend

Illuminates if the format selected has mono rear surround.

ROUTE TO TRACKS Section

❸1- 48 Push-Buttons

This matrix is used to select which M/T busses are fed from channel M/T output.

❹GRP (Group) & DIR (Direct) Push-Buttons

GRP (fire-up default) sends the Group Mix Bus output to the Multitrack 1 MADI Output (SP-Link 2 Loop 0) for any routing button selected for the currently accessed channel. DIR sends the direct M/T Fader output signal to Multitrack 1 MADI Output. Group Outputs 1-48 will continue to feed Multitrack 2 MADI Output (SP-Link 2 Loop 1). DIR selected on any channels from 49-96 will cause their direct M/T Fader output signals to feed Multitrack 2 MADI Output in place of any of the Groups 1-48. For example DIR and button 1 selected on channel 49 will replace the Group 1 signal with the M/T Fader signal from channel 49. In other words this allows any combination of Group or Direct signals to Multitrack MADI Outputs 1 and 2.

Note:

Normal M/T Monitoring is available only for M/T Groups 1-48. M/T Fader AFL must be used to listen to Direct Output Sends.

Super Send Group O/Ps

❻1/9 – 8/16 Push-Buttons

Allow the channel output signal, i.e. the same signal that routes to the Main Output Bus, to be routed to the Super Send Group outputs. The "width" of an SSG can be different to that of the Main Output Bus. As an example, the Main could be operating with a 5.1 output whereas an SSG could be set up as:

- **Stereo**
- **LCR**
- **LCRS**
- **5.0**
- **5.1**
- **7.0**
- **7.1**

SSGs 1-8 back-lit legend indicates that the buttons will operate for SSGs 1-8. This means that the [SUPER SGs 1-8] button has been selected in the centre section.

SSGs 9-16 back-lit legend indicates that the buttons will operate for SSGs 9-16. This means that the [SUPER SGs 9-16] button has been selected in the centre section.

❻ A-H Push-Buttons (Stems)

Inter-cancelling buttons that select which stem is fed according to the settings of the Multi-Format routing buttons ❶

❼BOUNCE Push-Button

Re-directs the channel output from the Main Output Bus to the Multitrack Busses. For a 'bounce-down', select [BOUNCE] and then, depending on whether the Main Output Bus is set to Stereo or a Surround Mode:

- **Stereo**
  In the ROUTE TO TRACKS section, select from routing buttons 1-48 accordingly. Odd numbered buttons will assign the L output of channels and even will assign the R output.
- **Surround**
  In this case the channel outputs can only be bounced to Stems which are already set up. Select a Stem button, one of A–H. Then make assignments using the the surround buttons at the top of the Routing panel in the MULTI-FORMAT section.

The level and pan settings are retained, making this operation extremely easy and convenient.

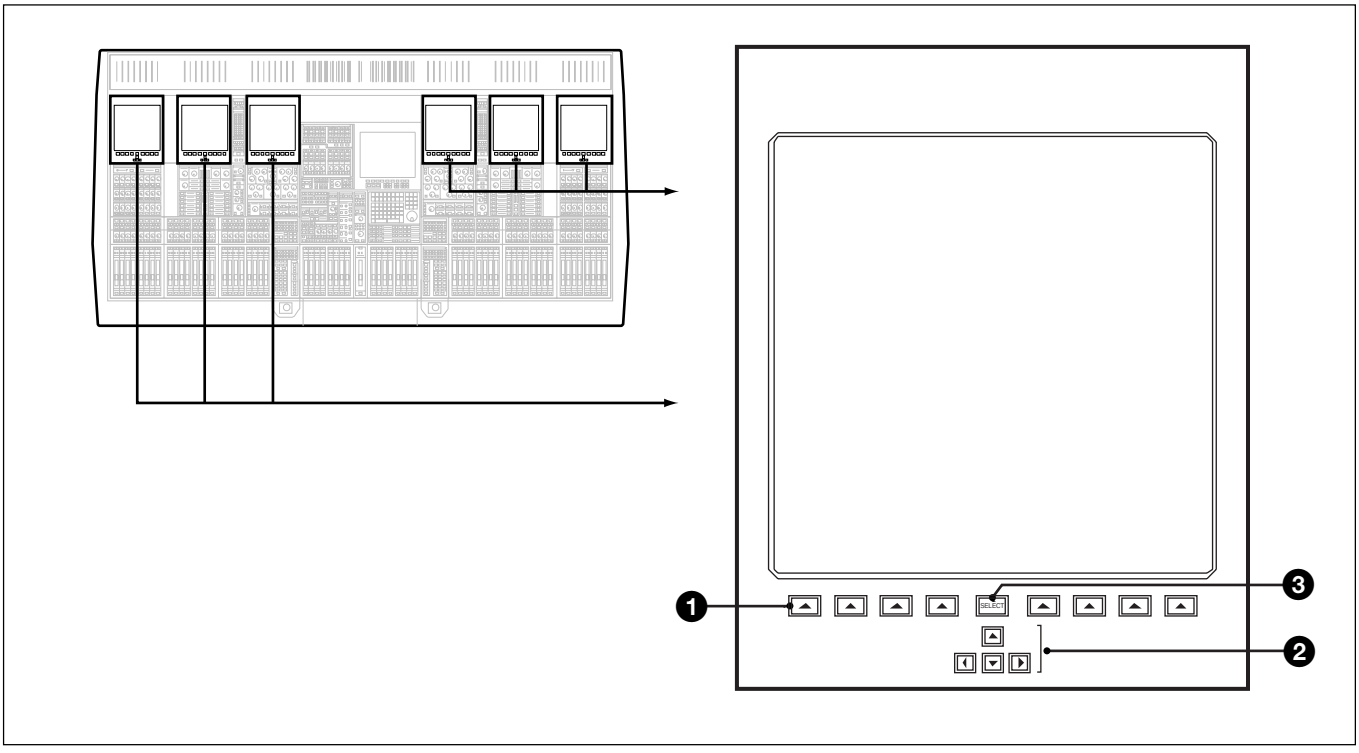
Access Function

❽← & → Push-Buttons

Are linked to the channel ACCESS buttons and are used to move the channel Access assignment left or right across the channels. A highlighted area within the appropriate LCD channel control screens reflects any change in assignment, highlighting relevant information such as routing set-up, for example.

6-2-9 LCD Channel Screen Panel

Three LCD Channel Screens are provided in each channels section of the OXF-R3 control surface. Each panel contains a 10.4 inch colour TFT LCD VGA screen for displaying channel input and output routing, EQ and dynamics transfer curve and parameters.



LCD Channel Screen panel

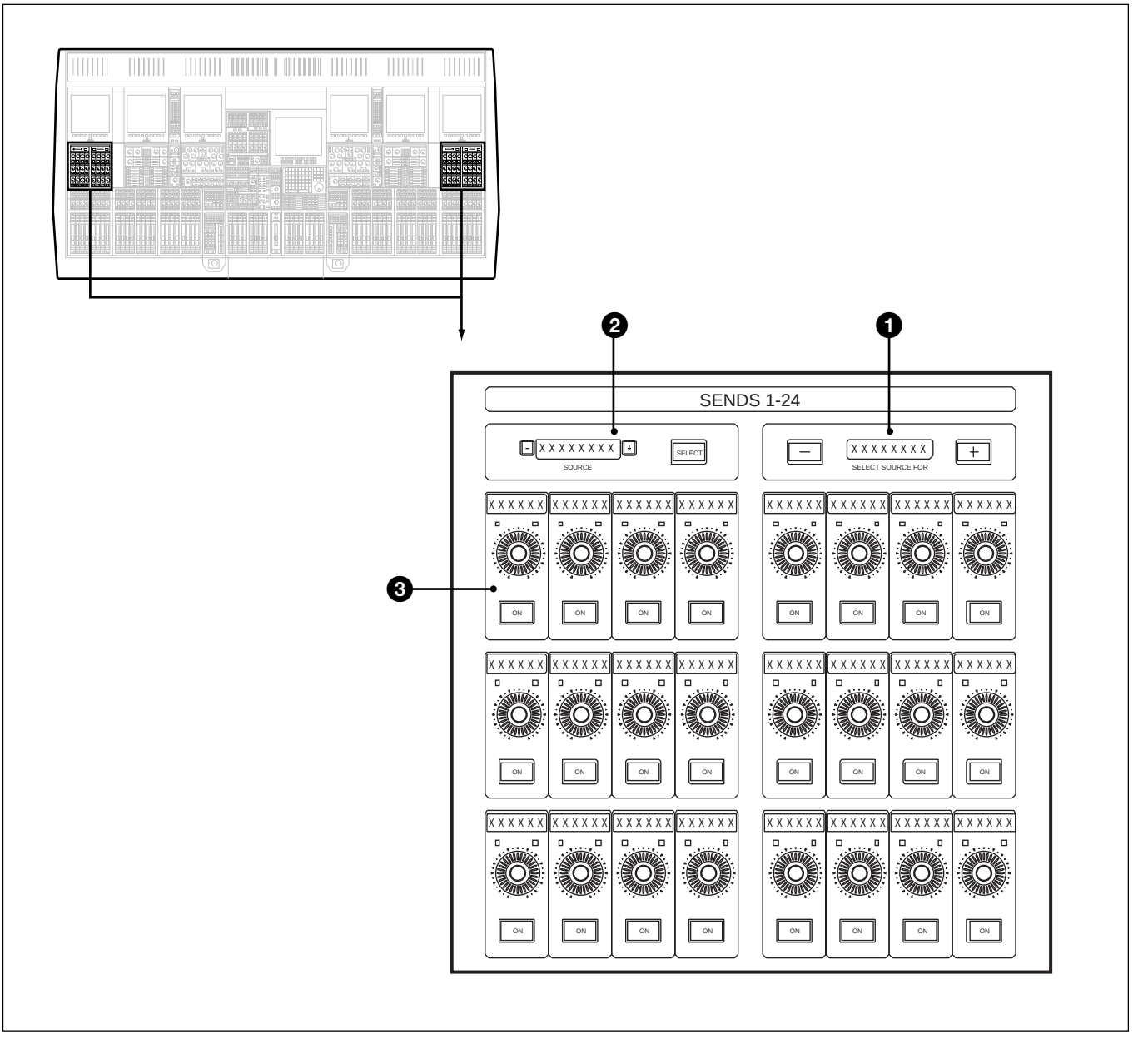
❶▲ (x 8) Push-Buttons
Select screen pages as indicated by labels within the screen above each button.

❷◀ ▲ ▼ ▶ Push-Buttons
Allow page selection within sub-divisions of screen pages *(see Chapter 3 for details).*

❸SELECT Push-Button
Selects the cursor to the centre of the LCD screen.

6-2-10 Sends 1-24 Panel

This panel contains a Level control and an ON button for each Send and allows control of the signals sent from the channel currently accessed. The source point can be set individually for each Send.



SENDS 1-24 panel

❶Bus Access Push-Buttons
The + and - Push-buttons (large rectangular type) allow access to each bus in turn in order to allow source point selection for each Send individually.

The 8 character display indicates the bus number or name.

❷SOURCE Selection Push-Buttons

The + and - Push-buttons (small square type) allow the source points within the channel signal path to be viewed one at a time on the 8 character display, by stepping through them.

The [SELECT] Push-button allows selection of the Source point displayed for the Send bus indicated in ❶ The signal will always be sourced from a point directly after the process displayed.

Note:

The [SELECT] button will illuminate as a warning as soon as a different source from the current one is displayed in the SOURCE window. In other words, once lit, the source point will change if it is pushed. Then its light will go out.

Global selection

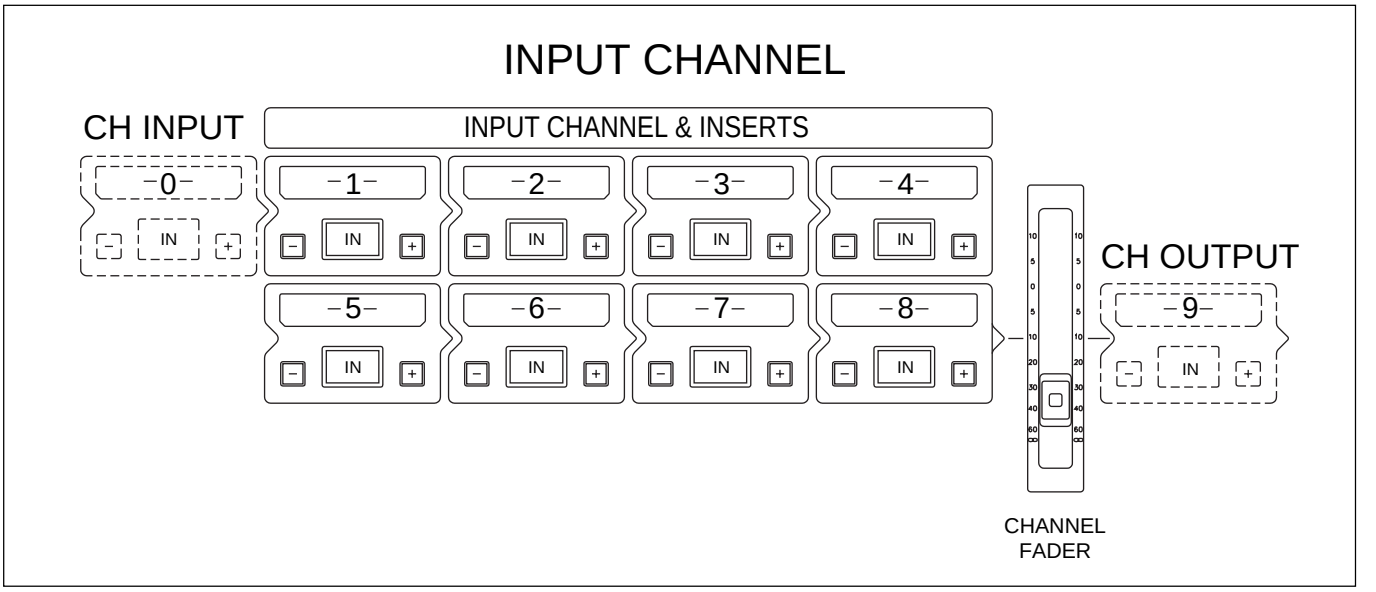
Selecting the Main L/R fader [ACCESS] before pressing the Send Source [SELECT], will cause the Source point to be selected on all channels.

❸Send Bus Levels and ON Push-Buttons

Each knob controls the level to its bus with a range from infinity (completely off) to +10dB of gain. Its associated [ON] push-button allows preset Send levels to be switched on and off. The 6 character display above each Level knob and [ON] switch pair indicates the bus number or name accordingly.

Each odd/even pair of Sends can be linked to form a Stereo Send bus. This is achieved at the Send Outputs panel in the centre section by selecting the [STER](eo) button between the odd/even pair of Sends to be linked. In this case, on the panels in the channel areas, the odd numbered knob is retained as a level control whilst the even numbered knob becomes a left/right pan.

All Send settings are displayed simultaneously for a single channel at this panel. The balance for any single Send bus can be achieved by assigning that Send bus to the Faders or Definable Knobs (Pans by default). See the Select to Faders panel description (section 6-2-2) or the Select to Pans panel description (section 6-2-4).



Source point options for Sends

Input channel source points for the Sends in detail

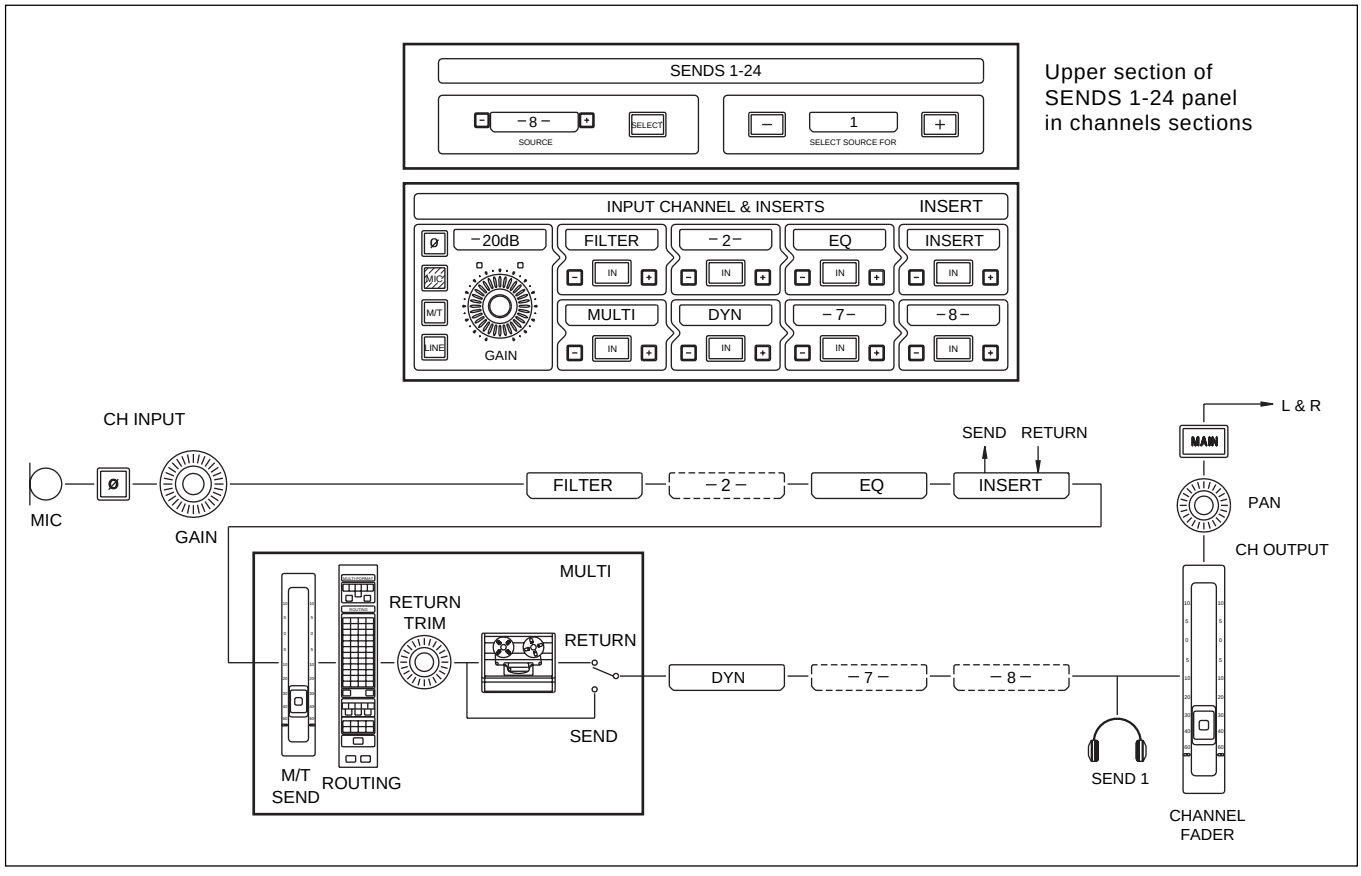
This diagram illustrates the channel path as laid out at the Input Channel & Inserts panel. Source points may be taken from after any of the processing block windows, 1-8, as well as before the first block, and after the last one, post the channel fader. The diagram shows the extra source points as imaginary windows within the channel path. The Source point pre window -1- will be displayed as CH INPUT, which takes a totally clean signal from post the input gain stage. The Source post fader is labelled C OUTPUT as displayed on the 8 character display in the SOURCE selector area.

M/T Send Fader source point for Sends

A further option as a source point for Sends, is the signal post the M/T Send Fader. This is indicated by MT SEND in the Source display (see page 6-35 for more details).

Pre Fader headphones feed

The example below illustrates an in-line channel set up at the Input Channel & Inserts panel. The right hand window in the Sends panel has Send 1 selected. The left hand window shows the source as -8- for Send 1. The block schematic illustrates how this set-up is equivalent to a pre fader send on a conventional in-line console, useful for headphone feeds.

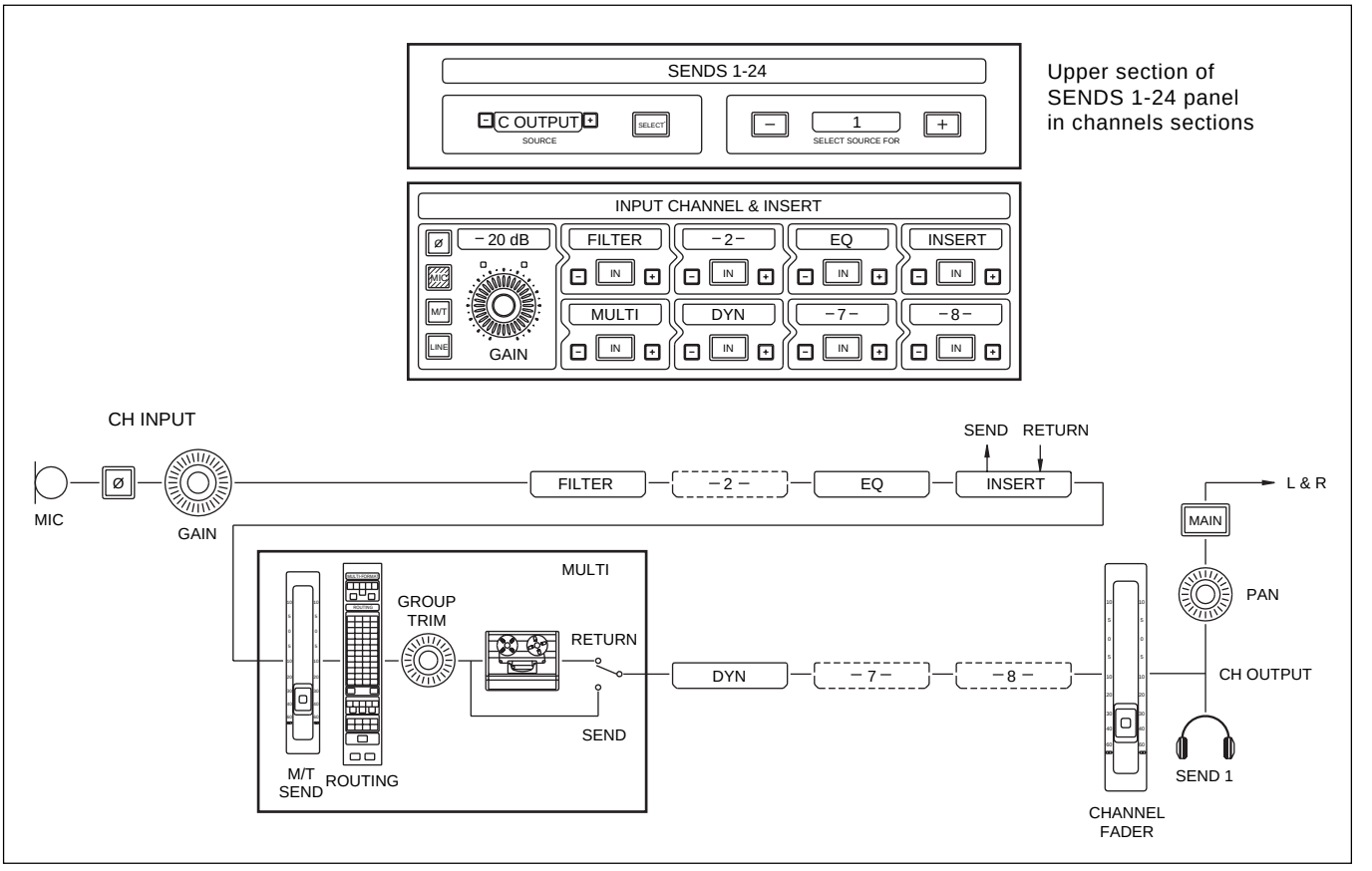


Send 1 - Pre Fader headphones feed

Post Fader headphones feed

To change the previous set-up to post fader, simply toggle the SOURCE window to C OUTPUT. The SELECT will light, indicating that a new selection is available. Press it to invoke the new source point.

This action rearranges the schematic as in the illustration below.

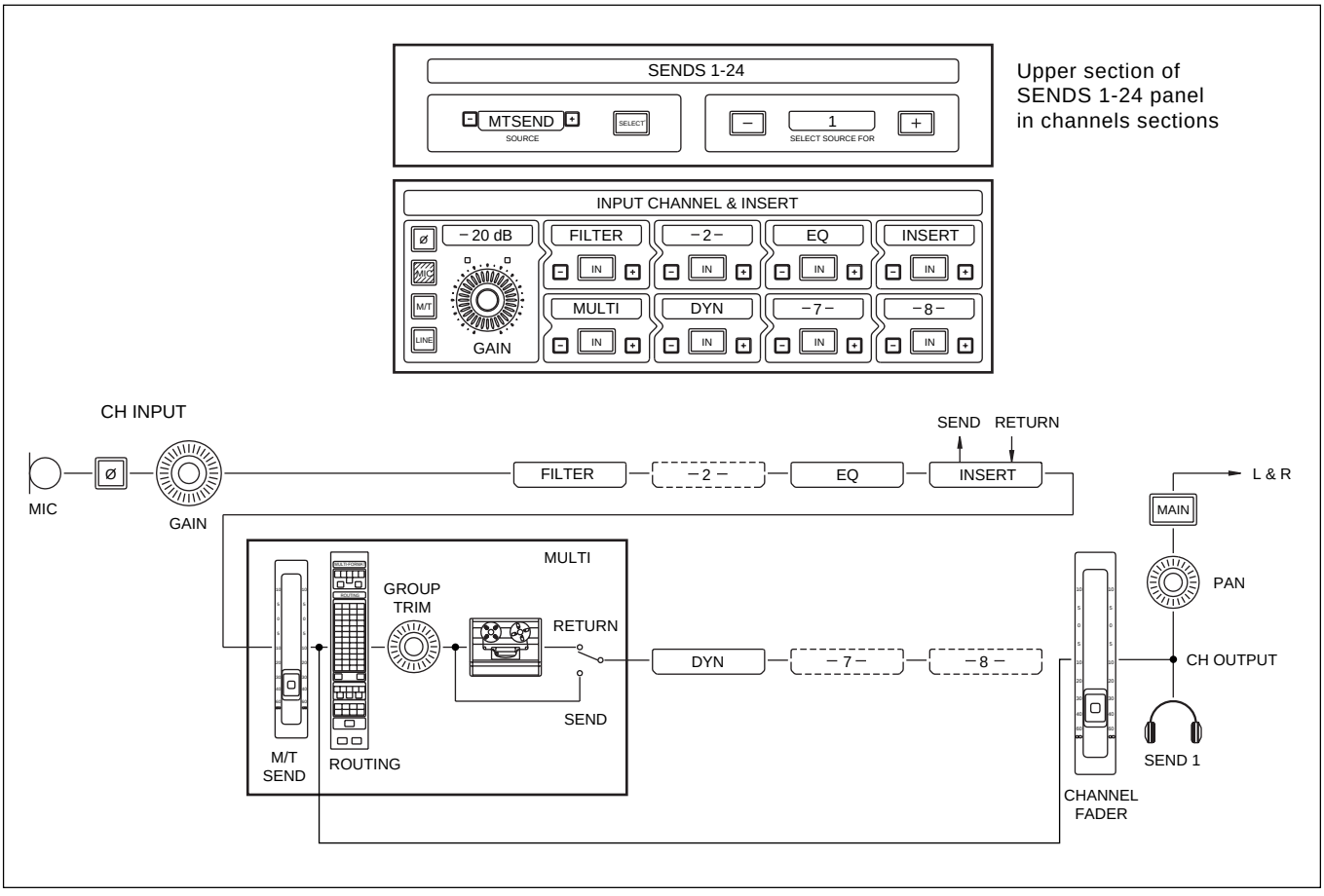


Send 1 - Post Fader headphones feed

Post M/T Send Fader headphones feed

To change the previous set-up to post multitrack send fader, simply toggle the SOURCE window to MTSEND. The SELECT will light indicating a new selection is available. Press it to invoke the new source point.

This action rearranges the schematic as per the illustration below.



Send 1 - Post M/T Send Fader headphones feed

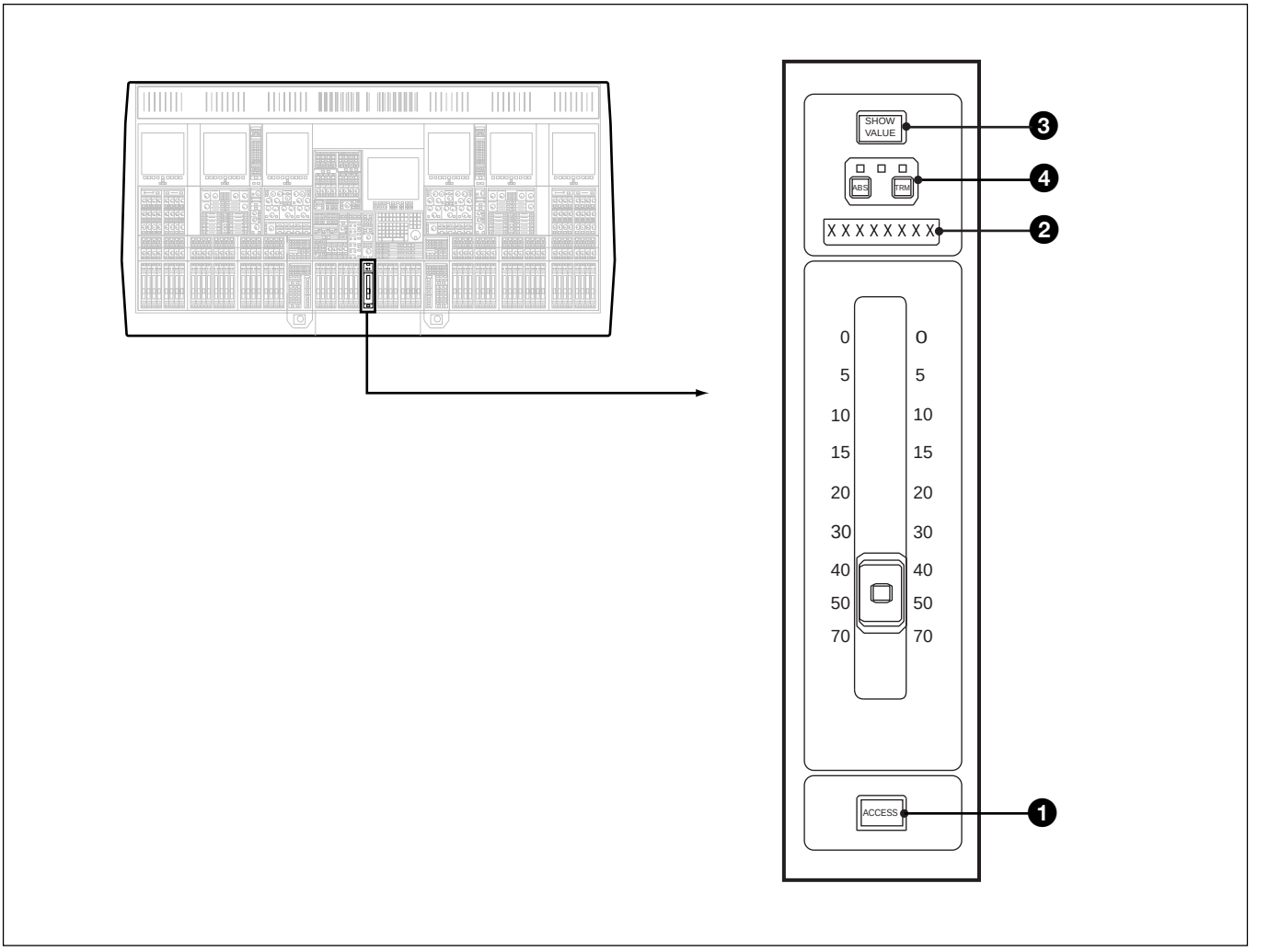
This flexible set-up procedure allows each Send to be sourced from any point in the channel signal path. Once a useful set-up has been created, it can be copied to other channels or saved in a Snapshot to be recalled later.

Procedures for these functions are described in Chapter 7.

6-3 Central Section Panels

6-3-1 Master Fader Panel

The Master Fader panel contains a linear, touch sensitive motorised fader with associated electronic dot character scribble display and local dynamic automation controls. This centrally placed master fader controls the level of the MAIN Stereo Output bus.



❶ ACCESS Push-Button
Allows access to an Insert, full featured Stereo Compressor and 2 band EQ to the Main Output Bus. The controls for these functions are accessed using **CEN ACCS L** and **CEN ACCS R** buttons on the Monitor panel.

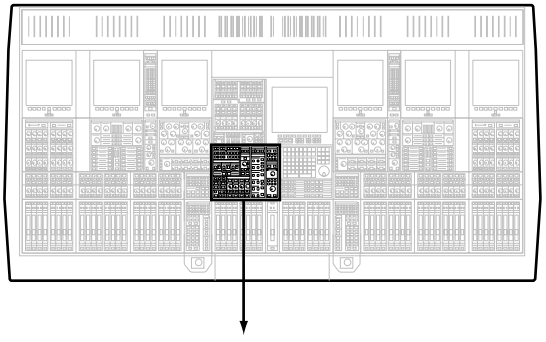
❷ 8 Character Display
Displays the Main Output Bus active format - Stereo, LCRS, 5.1 or 7.1

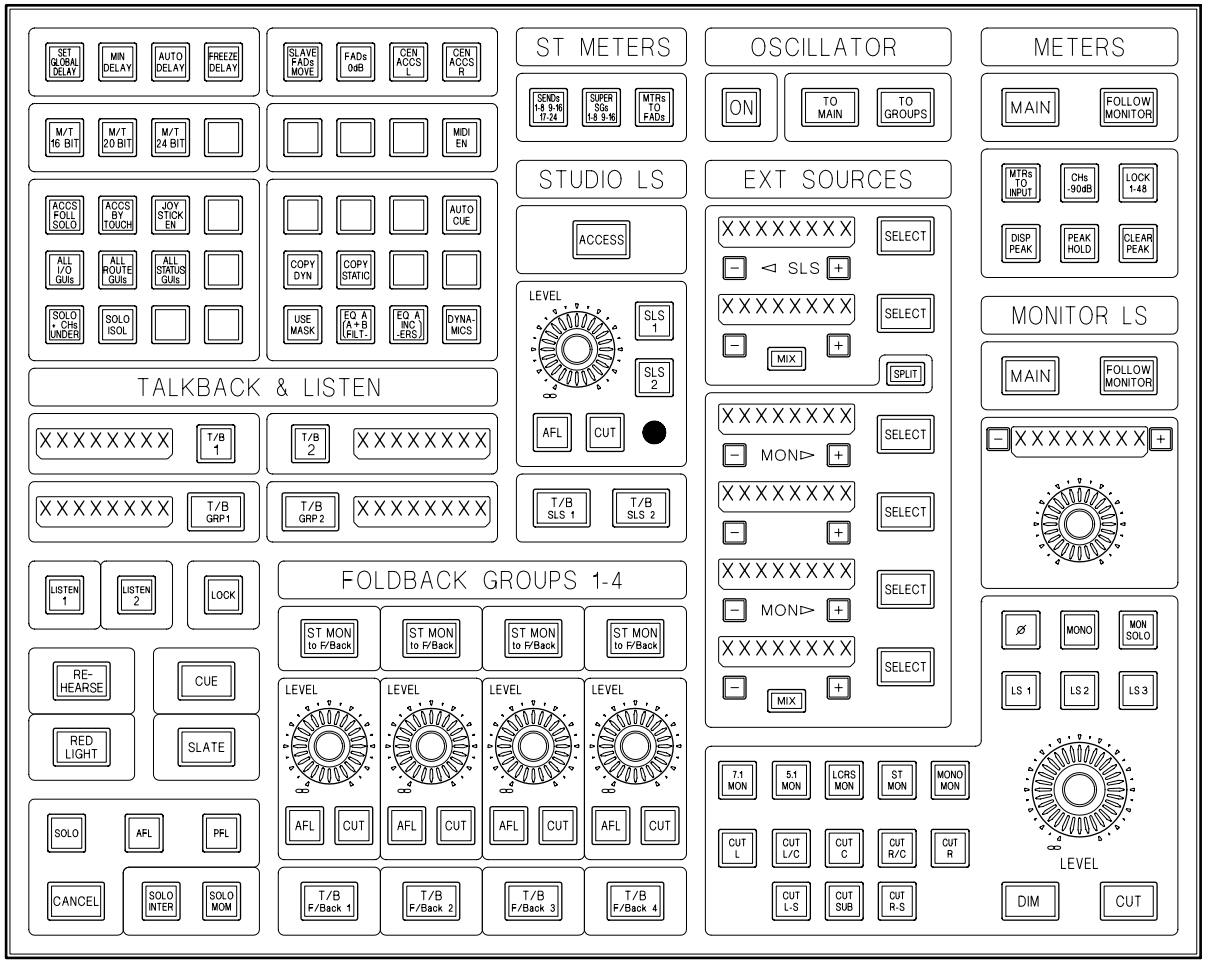
❸ SHOW VALUE Push-Button
Allows the display of Master Fader gain/loss in dBs on the 8 character display. It switches on this function for all Centre Section Faders.

❹ Automation Buttons (Described in Chapter 7)

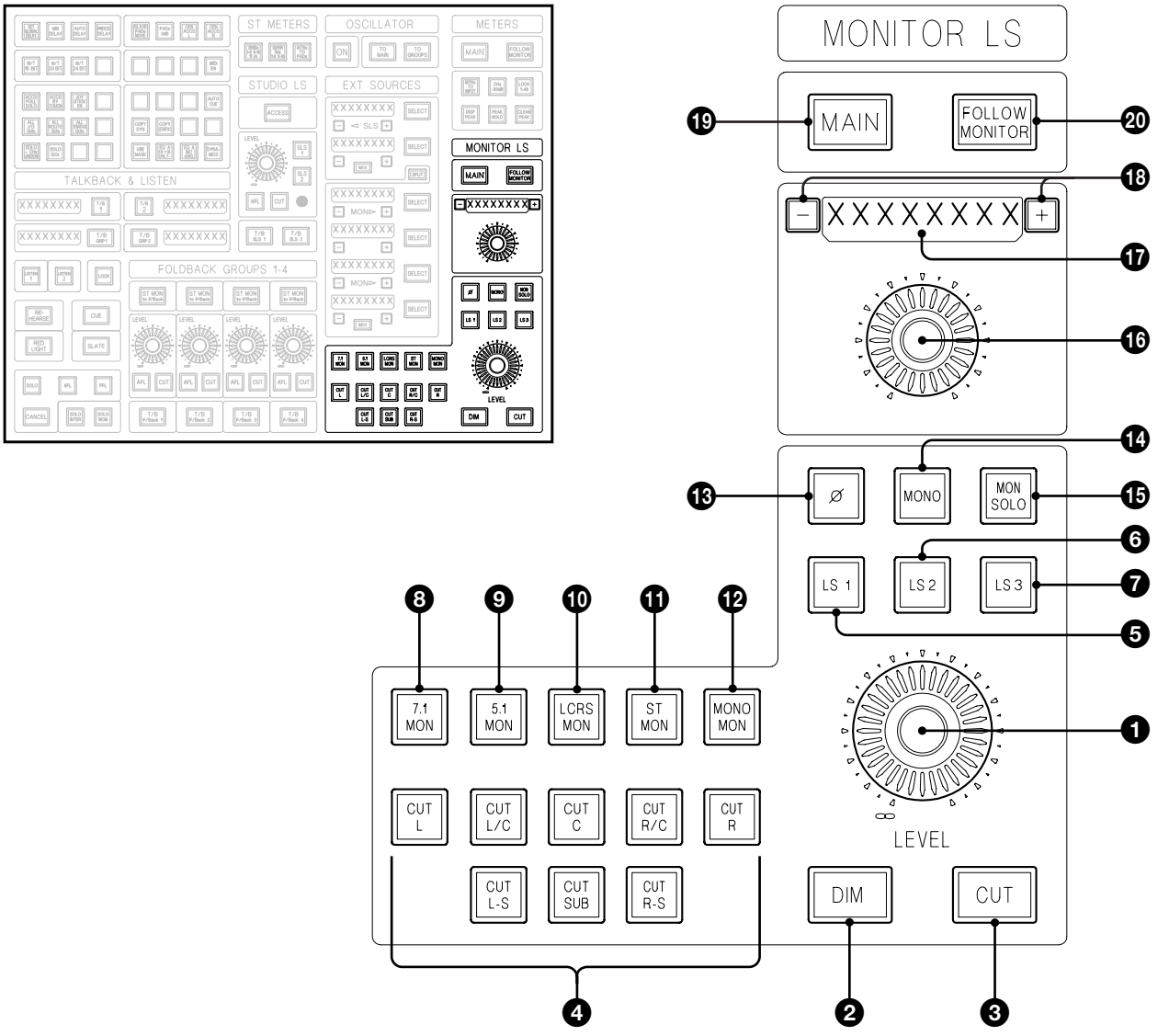
6-3-2 Monitor Panel

This panel contains all the monitoring, foldback, metering and communications functions for the OXF-R3 control surface, together with a number of central control functions.





6-3 Central Section Panels



CR MONITOR Section

❶ LEVEL Knob
Controls the level to 3 sets of Monitor LS, the LS1 (main set), LS2 and LS3. LS1 and LS2 are surround outputs, up to 7.1, and LS3 is stereo.

❷ DIM Push-Button
Dims all Monitor LS outputs according to the dim level setting. Set on automatically when Oscillator ON button is selected, but can be turned off manually.

❸ CUT Push-Button
Cuts all Monitor LS outputs simultaneously.

❹ CUT L – CUT R-S Push-Buttons
Individual Monitor LS Cuts.

❺ LS1 Push-Button
Selects the Main Surround Monitor LS set and inter-cancels with LS2. The Calibration settings, [CAL] button selected on MULTI-FORMAT panel in the centre section, apply to LS1.

❻ LS2 Push-Button
Selects the Secondary Surround Monitor LS set and inter-cancels with LS1. The Calibration settings do not apply to LS2.

❼ LS3 Push-Button
Independent Stereo LS which may be switched on simultaneously with LS1 or LS2. Once LS3 is selected, LS1 and LS2 can be de-selected.

Note:
If LS3 has been selected, and LS1 or LS2 has been de-selected, LS3 can be de-selected too. This means there will not be any monitor LS signal. As a warning, the LS1, LS2 and LS3 light red in rotation.

❽ 7.1 MON Push-Button
Selects the 7.1 output from the input to the Fold-Down Matrix. "FOLDDOWN" must be selected as a source in the EXT SOURCE section of the Monitor panel. Its [SELECT] button must also be selected, in order to monitor this signal.

❾ 5.1 MON Push-Button
Selects the 5.1 output from the input to the Fold-Down Matrix. "FOLDDOWN" must be selected as a source in the EXT SOURCE section of the Monitor panel. Its [SELECT] button must also be selected, in order to monitor this signal.

❿ LCRS MON Push-Button
Selects the LCRS output from the input to the Fold-Down Matrix. "FOLDDOWN" must be selected as a source in the EXT SOURCE section of the Monitor panel. Its [SELECT] button must also be selected, in order to monitor this signal.

⓫ ST MON Push-Button
Selects the STEREO output from the input to the Fold-Down Matrix. "FOLDDOWN" must be selected as a source in the EXT SOURCE section of the Monitor panel. Its [SELECT] button must also be selected, in order to monitor this signal.

⓬ MONO MON Push-Button
Selects the MONO output from the input to the Fold-Down Matrix. "FOLDDOWN" must be selected as a source in the EXT SOURCE section of the Monitor panel. Its [SELECT] button must also be selected, in order to monitor this signal.

⓭ Ø Push-Button
Selecting Ø sets the individual LS Cuts into a phase reverse mode. It will flash, lighting orange.

Only the LS currently on will be affected by this operation. In other words, if an LS is cut before selecting the Ø button, it will remain cut, illuminated red.

Pressing [CUT **] for any other LS will cause a phase reversal for that LS. It will flash, alternating between amber and red. Any number of LS can be phase reversed.

De-selecting the Ø button will return to normal operation with all LS in phase again. Selecting Ø again will return to the previous phase reverse set-up which is memorised, allowing comparison.

⓮ MONO Push-Buttons

Select [MONO] and it will flash, lighting orange. A mono mix of the monitor source will be fed to either the Centre LS or both the L and R LS, according to the "MONO MEANS" Preference in the PREFS GUI.

Monitor LS can be freely turned on and off using the cut switches, including any which were cut before selecting [MONO]. The LS Cuts are independent of the Mono function and their settings will remain, having de-selected [MONO] in order to return to normal operation.

The overall level is compensated in accordance with the number or sources which make up the Mono signal.

⓯ MON SOLO Push-Button

Sets the LS Cut switches into a Solo mode which is totally independent of their cut functions. Having selected [MONO SOLO], selecting any [CUT **] will cause its LS to be soloed, indicated by its button lighting amber. The other LS, which are cut, will light red.

De-selecting [MONO SOLO] will resume normal operation including the previous LS Cut settings. The Solo settings are memorised and will return if [MONO SOLO] is selected again.

⓰ Definable Knob

Controls a number of parameters as listed below:

- **LS2 and LS3**
  The levels for LS2 and LS3 can be set independently relative to the LS1 setting which they track.
- **DIM Level**
- **TALKBACK Level**
- **LISTEN Level**
- **MAIN OSCILLATOR**
  Frequency and Level for the general purpose tone source within the R3 system.
- **HEADPHONES Level**
  Sets the Level for a separate Headphones output which is taken pre the Monitor LS level. See Chapter 5 for assigning the Headphone output.

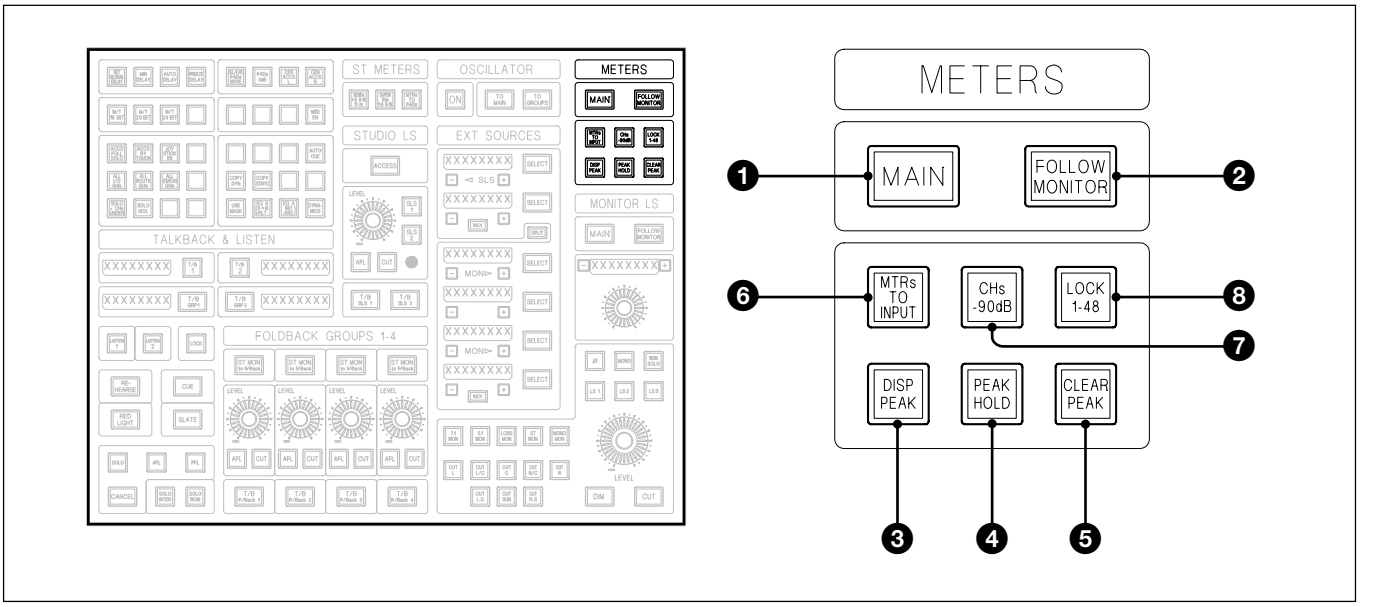
• SOLO DIM Level
Sets the output level of channels which are not soloed when SOLO + CHs UNDER is selected.

⓱ 8 Character Display
Displays the current Definable knob function.

⓲ +/– Push-Buttons
Select the Definable knob function.

⓳ MAIN Push-Button
Fixes the Main Output Bus as the source for all Monitor LS outputs.

㉑ FOLLOW MONITOR Push-Button
Allows LS to follow all monitor source selections including AFL signals.



CENTRE SECTION METERS

The meters in the centre section consist of two sets of 8 stereo meters, one set each side of a central stereo meter. They can be switched to monitor a number of sources and their function can also depend on whether the Main Output Bus is set for Stereo or Surround operation.

Left set of 8 Meters

The left hand 8 meters will display the output levels of SSGs 1-16 and Sends 1-24 according to the meter selector described later in this section. This is irrespective of whether Stereo or Surround is in operation.

Central Stereo Meter

The source for the Central Stereo Meter depends on whether the Main Output Bus is set for Stereo or Surround:

- **Stereo Main Output**
  Indicates output level for Main Stereo Output Bus.
- **Surround Main Output**
  Indicates output level for the Stereo Output from the Fold-Down Matrix which is derived from the Surround signal.

Right set of 8 Meters

The sources for the right hand 8 meters depend on whether the Main Output Bus is set for Stereo or Surround:

- **Stereo Main Output**
  Indicate output level for SSGs 1-16 and Sends 1-24 according to the meter selector described later in this section.
- **Surround Main Output**
  Indicate output levels for the Main Output Bus

❶ MAIN Push-Button

Depends on whether the Main Output Bus is set for Stereo or Surround.

Selecting [MONO] ensures that the Main Output Bus sources are fixed to the meters irrespective of what is selected to the CR Monitor LS:

- **Stereo Main Output**
- Central Stereo Meter indicates output level for Main Stereo Output Bus.
- Right set of 8 Meters indicate output level for SSGs 1-16 and Sends 1-24 according to the meter selector described later in this section.

- **Surround Main Output**
- Central Stereo Meter indicates output level for the Stereo Output from the Fold-Down Matrix which is derived from the Surround signal.
- Right set of 8 Meters indicate output levels for the Main Output Bus.

❷ FOLLOW MONITOR Push-Button
Depends on whether the Main Output Bus is set for Stereo or Surround. Selecting [FOLLOW MONITOR] allows the central meters to follow all monitor source selections including AFL and PFL signals:

- **Stereo Main Output**
- Central Stereo Meter indicates output level for Main Stereo and all other sources which are listened to on the CR Monitor LS, including AFL and PFL signals.
- Right set of 8 Meters indicate output level for SSGs 1-16 and Sends 1-24 according to the meter selector described later in this section.

- **Surround Main Output**
- Central Stereo Meter permanently indicates output level for the Stereo Output from the Fold-Down Matrix, which is derived from the Surround signal.
- Right set of 8 Meters indicate output levels for the Main Output Bus and all other sources which are listened to on the CR Monitor LS, including AFL and PFL signals.

Global meter functions

This section describes functions which apply to all meters in the the meter bridge for all but ❽, which applies just to the channels sections.

❸ DISP PEAK Push-Button (Global function)
Meters continue to display peaks as single segments for a period of 1.5 seconds after the signal has ceased.

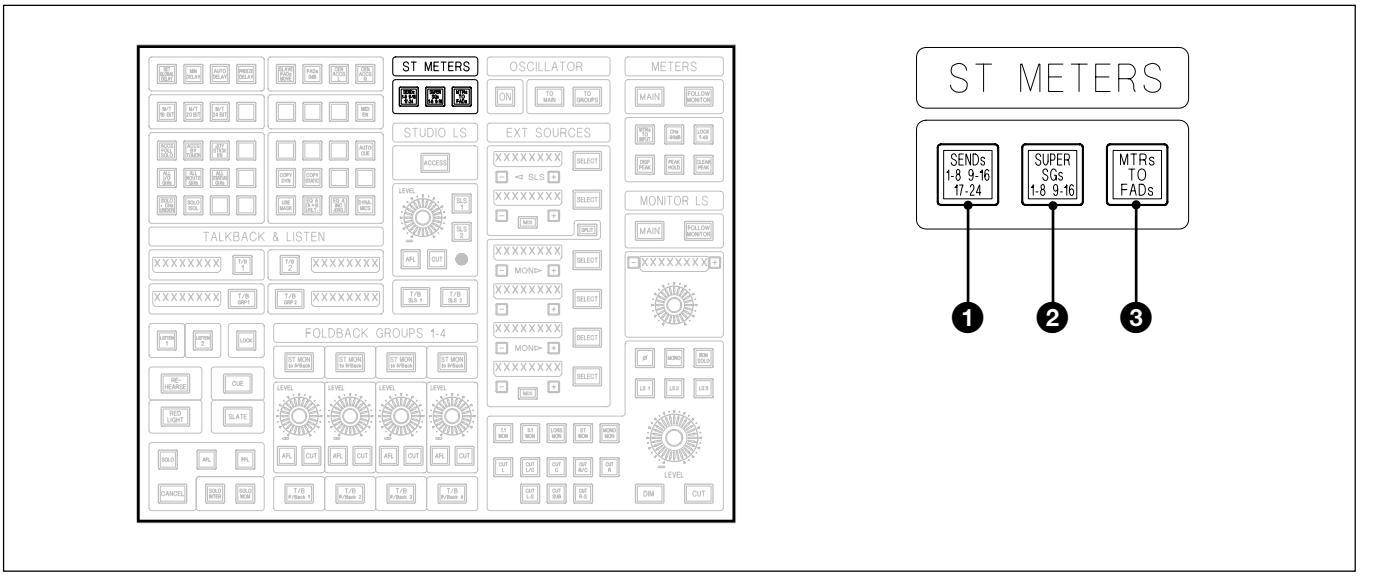
❹ PEAK HOLD Push-Button (Global function)
Meters continue to display highest peak as a single segment until CLEAR PEAK is pressed.

❺ CLEAR PEAK Push-Button (Global function)
Clears the Peak Hold memory.

❻ MTRs to INPUT Push-button (Global function)
Meters the channel signal immediately post input gain control.

❼ CHs -90dB Push-Button (Global function)
Selects the -90dB scale on the mono channel meters. (The default scale is -60dB).

❽ LOCK 1-48 Push-Button
Locks the 48 channel meters to channels 1- 48.



Central Stereo Meters

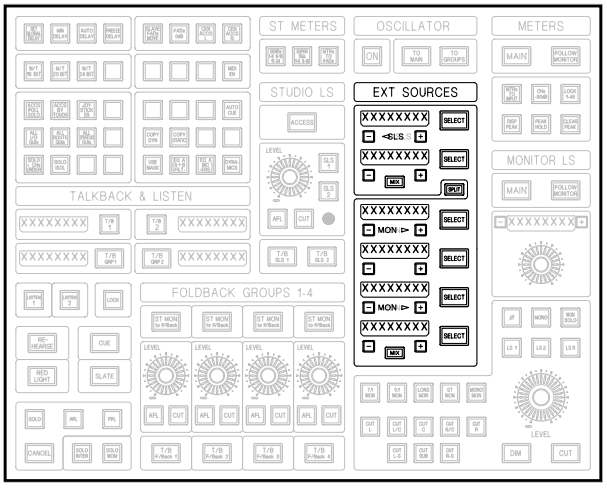
These functions apply to the 16 Stereo Meters, in two groups of 8, above the centre section of the control surface. Their function depends on whether the Main Output Bus is set for Stereo or Surround.

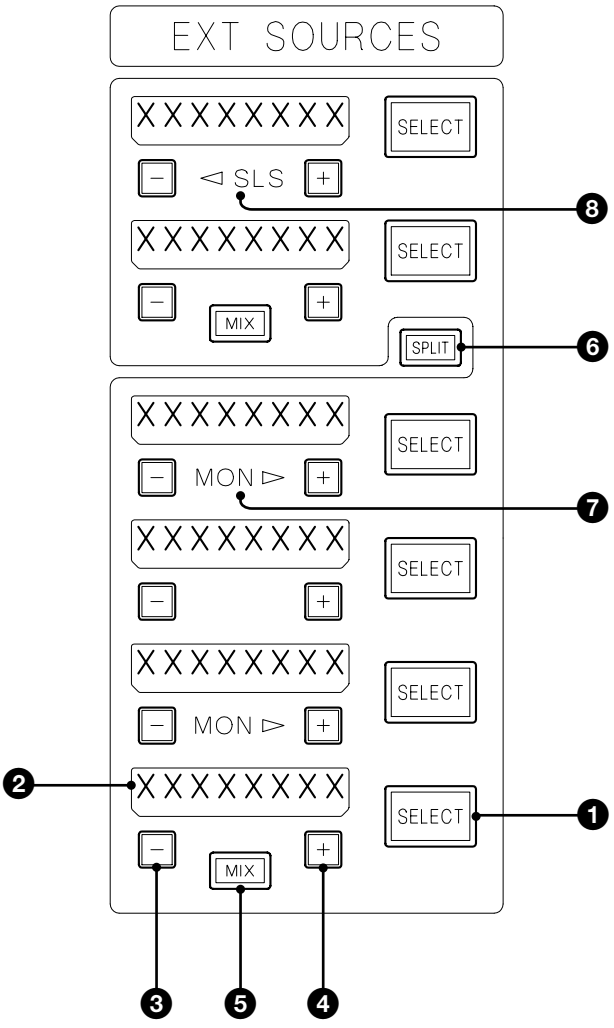
- **Stereo Main Output**
  Both groups of 8 meters are used for this function, allowing 16 outputs to be metered simultaneously.
- **Surround Main Output**
  Just the left hand groups of 8 meters are used for this function, allowing 8 outputs to be metered simultaneously.

❶ SENDs 1-8 9-16 17-24 Push-Button
If not already selected, pressing [SENDs 1-8 9-16 17-24] for the first time sets the meters source as Sends 1-8 and 9-16 for when the Main Output is Stereo, or 1-8 if the Main Output is Surround. Further presses rotate the sequence.

❷ SUPER SGs 1-8 9-16 Push-Button
If not already selected, pressing [SUPER SGs 1-8 9-16] for the first time sets the meters source as Super SGs 1-8 and 9-16 for when the Main Output is Stereo, or 1-8 if the Main Output is Surround. Further presses rotate the sequence for Surround Main Output.

❸ MTRs TO FADs Push-Button
Sources for the Meters are selected depending on which faders are assigned in the SEL section of the SELECT TO FADERS panel.





External Sources

The External Source selector allows selection of multiple surround and stereo external audio sources.

❶ SELECT Push-Buttons

Feed the source, indicated in their adjacent displays, to the monitor LS in place of the current monitor source. De-selecting will return to the Main Output source. The 6 SELECT buttons inter-cancel. (Refer to Chapter 5 for details of External I/O Input assignments)

❷ 8 Character Displays

Indicate External Source names.

❸, ❹ +/- Push-Buttons

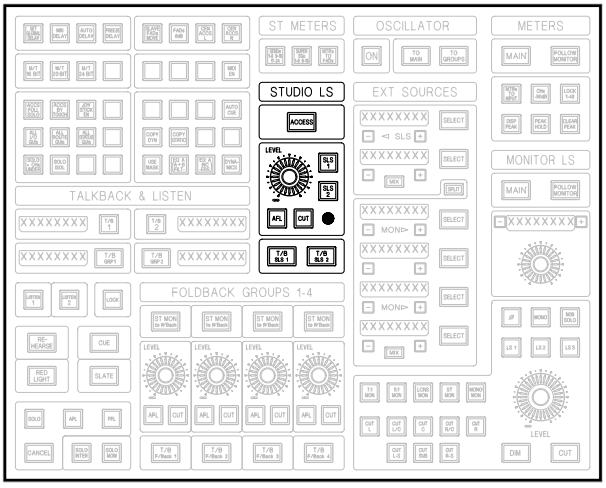
Allow selection of external sources for each individual SELECT button.

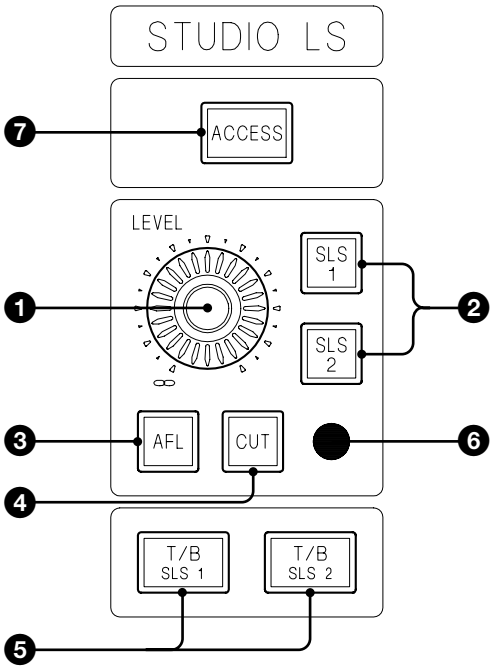
❺ MIX Push-Buttons

SELECT push-buttons normally inter-cancel unless MIX is selected, in which case the switches do not inter-cancel and the sources add together.

❻ SPLIT Push-Button

All 6 external source selections will normally feed both Control Room Monitor LS and Studio LS outputs. If SPLIT is selected, the upper pair of SELECT SOURCE buttons feed the studio LS only, and the lower 4 selectors feed the Control Room Monitors. Their MIX functions are also separated.





Studio LS

This section allows control of 2 pairs of Studio LS. The source selection for the Studio LS has been described in the previous section.

❶ LEVEL Knob
Controls the level to the 2 stereo Studio LS outputs.

❷ SLS1 and SLS2 Push-Buttons
Allow the two Studio LS outputs to be switched on individually.

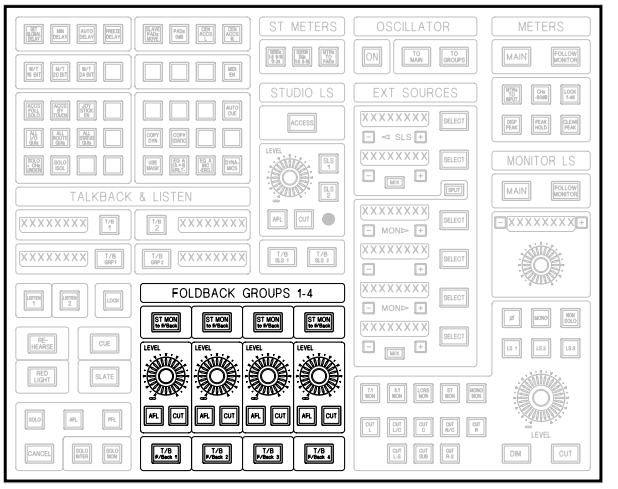
❸ AFL Push-Button
Sends After Fader Listen (AFL) signal to CR monitor LS regardless of the status of SLS1 and SLS2 push-buttons.

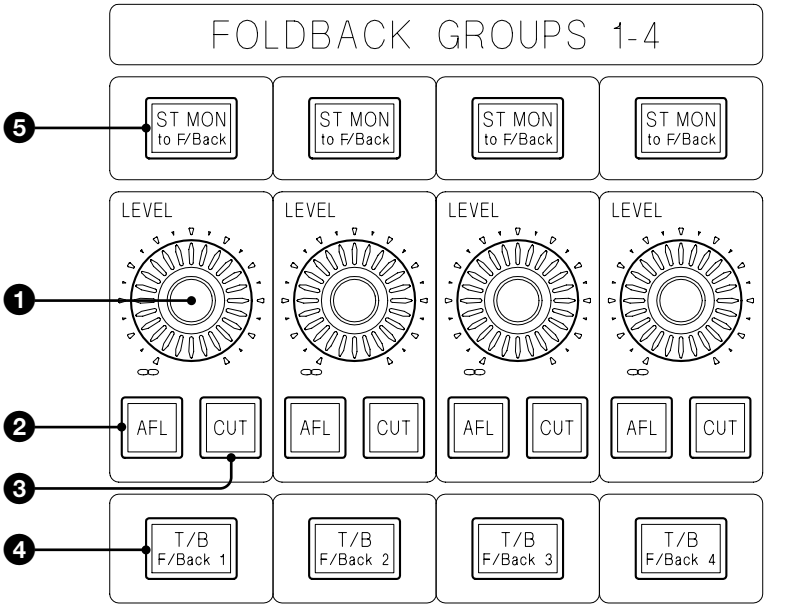
❹ CUT Push-Button
Mutes SLS regardless of status of the SLS1 and SLS2 push-buttons.

❺ T/B SLS1 and T/B SLS2 Push-Buttons
Allows talkback to be fed to SLS1 and SLS2 individually.

❻ Talkback Microphone

❼ ACCESS Push-Button
Not operational in this version.





Foldback Groups 1-4

The 4 Stereo Foldback Groups have fixed source assignments as follows:

- **F/B1L – Send Bus 17**
- **F/B1R – Send Bus 18**
- **F/B2L – Send Bus 19**
- **F/B2R – Send Bus 20**
- **F/B3L – Send Bus 21**
- **F/B3R – Send Bus 22**
- **F/B4L – Send Bus 23**
- **F/B4R – Send Bus 24**

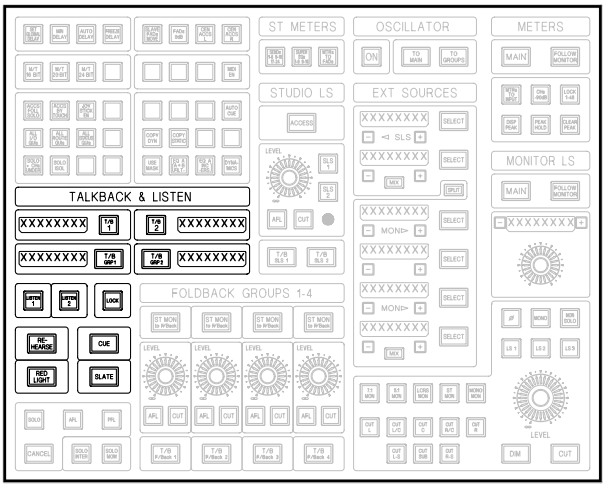
❶ LEVEL Knobs
Set output levels for each individual Foldback Group.

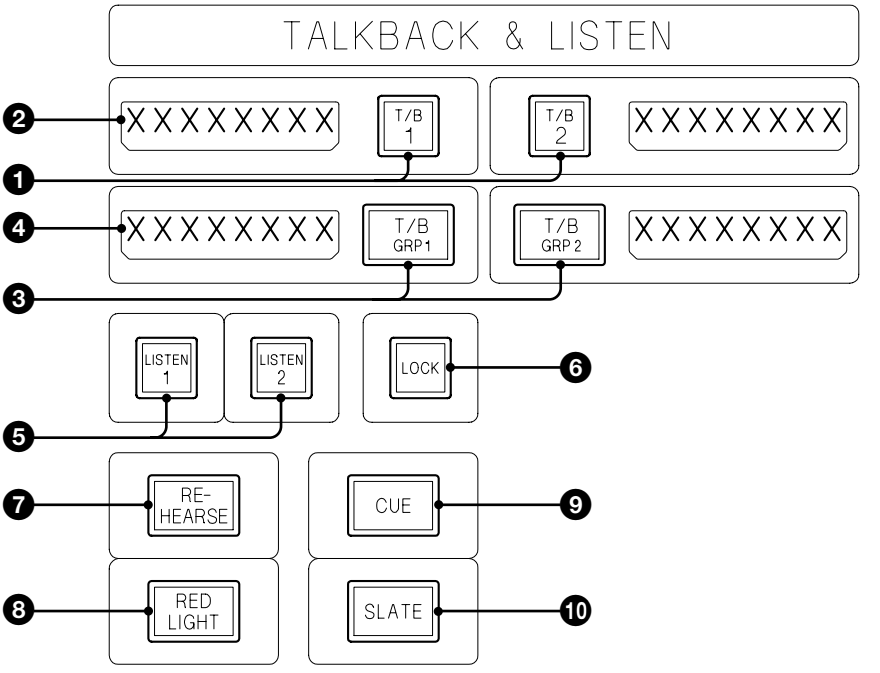
❷ AFL Push-Buttons
Send After Fader Listen (AFL) signals to CR monitor LS.

❸ CUT Push-Buttons
Mute individual Foldback Group outputs.

❹ T/B F/Back 1 (-4) Push-Buttons
Enable individual talkback feeds to be sent to each of the four Foldback Groups. T/B F/Backs may be assigned to Talkback Groups 1 and 2.

❺ ST MON to F/back Push-Buttons
Replaces the signal from the Send Busses with the Stereo Monitor signal when the Main Output Bus is set for stereo. Replaces the Send Bus signals with the Stereo Output from the Fold-Down Matrix for a surround Main Output.





Talkback & Listen

❶ T/B 1 & T/B 2 Push-Buttons

Pressing a T/B button sends talkback to the destination displayed within its dot display. A short press latches the switch on, requiring a further press to release it. Holding the switch down enables a momentary action. The CR monitors may optionally dim when talkback is in use.

❷ 8 Character Displays

Display T/B destinations names as designated in the PREFS GUI.

❸ T/B GRP 1 & T/B GRP 2 Push-Buttons

Allow combinations of T/B outputs to be switched on simultaneously. A group is set up by pressing and holding one of the T/B GROUP buttons

and momentarily pushing other T/B buttons required in that group. The T/B GROUP button is then released. Any T/B button, such as Foldback or SLS, may be selected as part of a group. Any T/B button which belongs to a group retains its individual functionality. T/B GROUPS have latching and momentary actions and may optionally dim CR monitor LS.

❹ 8 Character Displays
Display T/B Group names as designated in the PREFS GUI.

❺ LISTEN 1 Push-Button
Send the listen Mic signal to CR monitors with either a momentary or latching action. The Listen signal replaces the normal monitor signal.

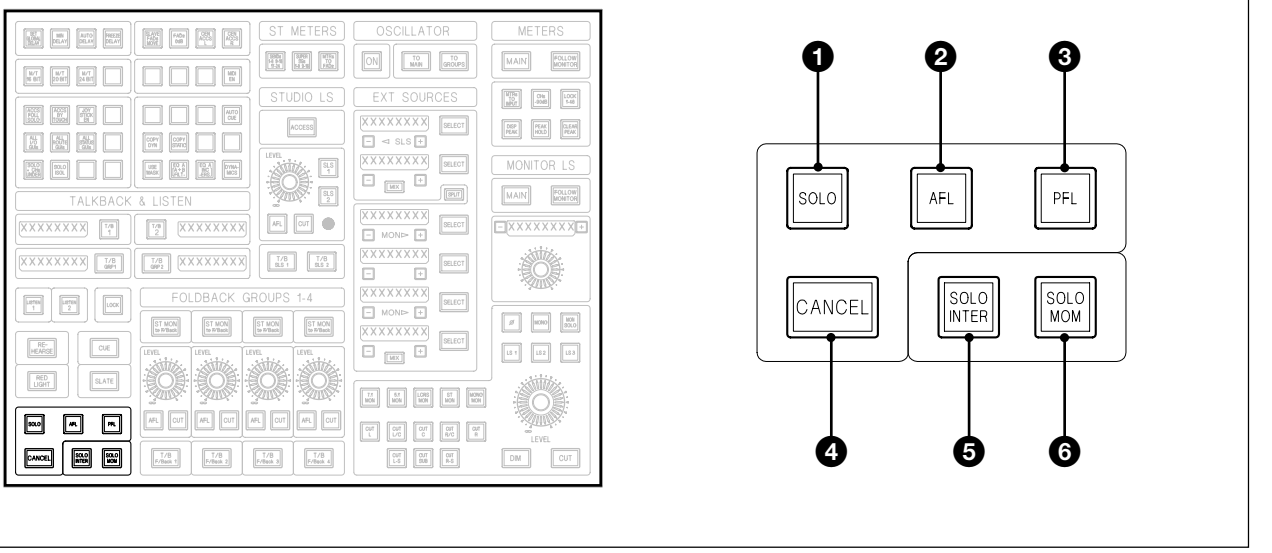
❻ LOCK Push-Button
Locks out SOLO-IN-PLACE, which is replaced with AFL. The Oscillator is locked out, as is the Slate function.

❼ REHEARSE Push-Button
Latches a relay closure for the Rehearse signal. A further press unlatches it.

❽ RED LIGHT Push-Button
Latches a relay closure for RED LIGHT signal. A further press unlatches it.

❾ CUE Push-Button
Enables a momentary relay closure to send a CUE signal.

❿ SLATE Push-Button
Sends talkback to all normal destinations and, additionally, to the channel Group outputs.



Solo, AFL & PFL Modes

❶ SOLO Push-Button
Sets the channel fader SOLO buttons to destructive SOLO-IN-PLACE mode. Stereo AFL continues to operate for all buttons designated as such.

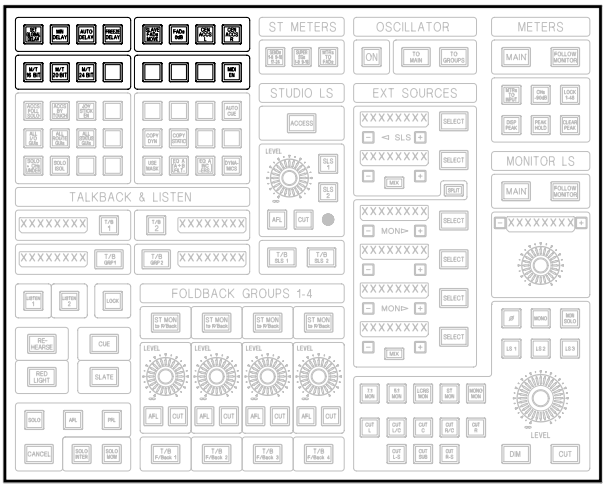
❷ AFL (After Fader Listen) Push-Button
Sets channel fader SOLO buttons to a non-destructive AFL mode. Other AFL buttons continue as normal.

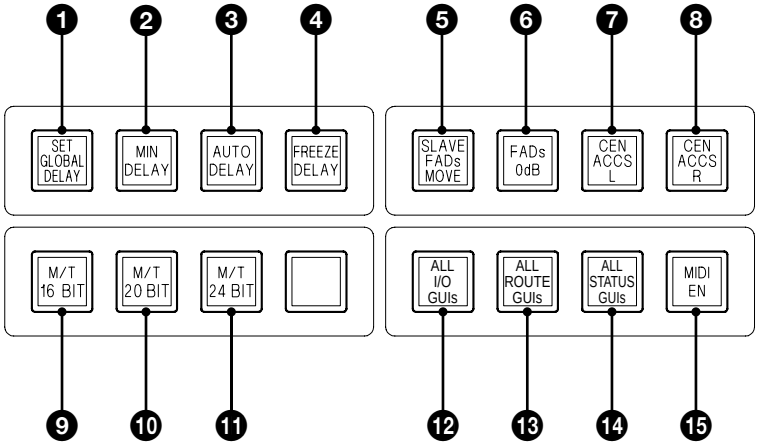
❸ PFL (Pre Fader Listen) Push-Button
Sets channel fader SOLO buttons to non-destructive PFL mode. Other AFL buttons continue as normal.

❹ CANCEL Push-Button
Cancels any latched SOLO or AFL buttons.

❺ SOLO INTER Push-Button
Puts the SOLO and AFL buttons into an inter-cancelling mode.

❻ SOLO MOM Push-Button
Puts the SOLO and AFL buttons into a momentary mode.





Upper Ancillary Push-Button Block

❶ SET GLOBAL DELAY Push-Button

This delay function, up to 80ms, is in addition to the delay function within channels. It allows channels to be delayed or advanced, relative to other channels, on a global basis. The delay is inserted at the channel output, pre fader.

Note:

The Global Delay function is usable only when CHANS *is selected at the SELECT TO FADERS panel. It is not operable when* FADs 0dB *is selected either.*

Global Delay procedure:

1 Press SET GLOBAL DELAY and it flashes. The 8 character dot display above the definable knob situated above the Monitor Level indicates the current Global Delay value. An arrow to the left of the display alternates to alert that this function is displayed. The lower ACCESS buttons will also go out.

2 Adjust the definable knob to change the delay factor for all channels. The delay is displayed in ms or samples. Use [+] and [−] buttons either side of the display to change the parameter type. The knob normally operates in a fine-tune mode. Press and hold the knob whilst turning it for coarse adjustments.

3 To isolate individual channels from the Global Delay adjustment, select [SET GLOBAL DELAY] but before making any adjustments, press the [ACCESS] buttons on the individual channels. Those channels will remain at their current Global Delay setting.

4 De-select [ACCESS] buttons and select others if necessary, or release [SET GLOBAL DELAY] to return to normal operations.

To reset Global Delay, select [SET GLOBAL DELAY] and then press and hold the [+] and [−] buttons, either side of the display above the definable knob, for at least 2 seconds.

Channel Delay
Channels have local Delay control allowing offsets from Global Delay. To adjust the local Delay:

5 Select [ACCESS] for the channel to be adjusted. Select [DELAY] at the FREE ASSIGN AREA & DYNAMICS panel.

6 Adjust the knob labelled 'GLOBAL DELAY' at the right hand side of the panel. The offset value will be displayed whilst the knob is adjusted, and for a few seconds after its release. For continuous display of the offset value, click on 'ALWAYS' on the GDC DISPLAY option in the PREFS GUI (see Chapter 5 for details).

❷ MIN DELAY Push-Button
The processing delay in the SP system has no compensation. In other words, the delay through any channel is at its minimum, totally dependent upon the amount of processing inserted in that channel.

❸ AUTO DELAY Push-Button
Delay compensation is inserted in the SP system for all channels according to the processing of the channel with most processing, and hence the longest delay, in order that the outputs of all channels are time-aligned.

❹ FREEZE DELAY Push-Button
The delay compensation factor in the SP system is fixed for all channels according to the delays in operation at the time FREEZE DELAY is latched.

❺ SLAVE FADs MOVE Push-Button
Faders slaved to Control Group faders will move according to the Control Group fader, displaying their exact contribution to the mix.

❻ FADs 0dB Push-Button
To set faders at unity gain, latch FADs 0dB and press ACCESS for the appropriate faders and they will light. Then de-select FADs 0dB if the faders are to retain their 0dB setting, in other words they will 'rubber band' back, or de-select ACCESS buttons before FADs 0dB is released.

❼ CEN ACCS L Push-Button
Selects the left hand Channels Section to be assigned to the Main L/R Fader when its ACCESS, or any other centre section ACCESS, is latched.

❽ CEN ACCS R Push-Button
Selects the right hand Channels Section to be assigned to the Main L/R Fader when its ACCESS, or any other centre section ACCESS, is latched.

Note:
CEN ACCS L and CEN ACCS R may be latched simultaneously.

❾ M/T 16 BIT Push-Button
Sets Word Length for the MADI output feeding the multitrack to 16 bits.

❿ M/T 20 BIT Push-Button
Sets Word Length for the MADI output feeding the multitrack to 20 bits.

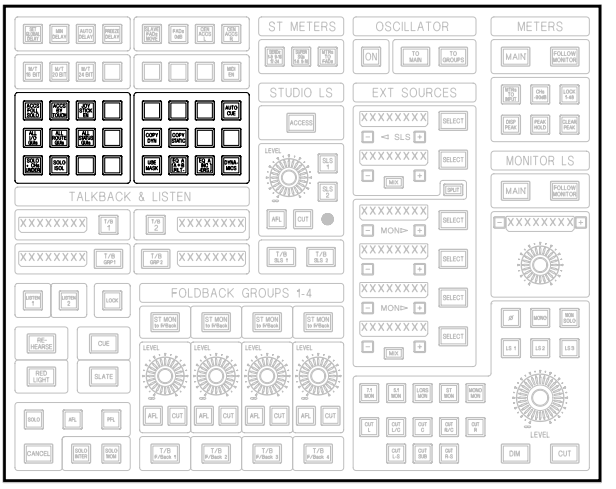
⓫ M/T 24 BIT Push-Button
Sets Word Length for the MADI output feeding the multitrack to 24 bits.

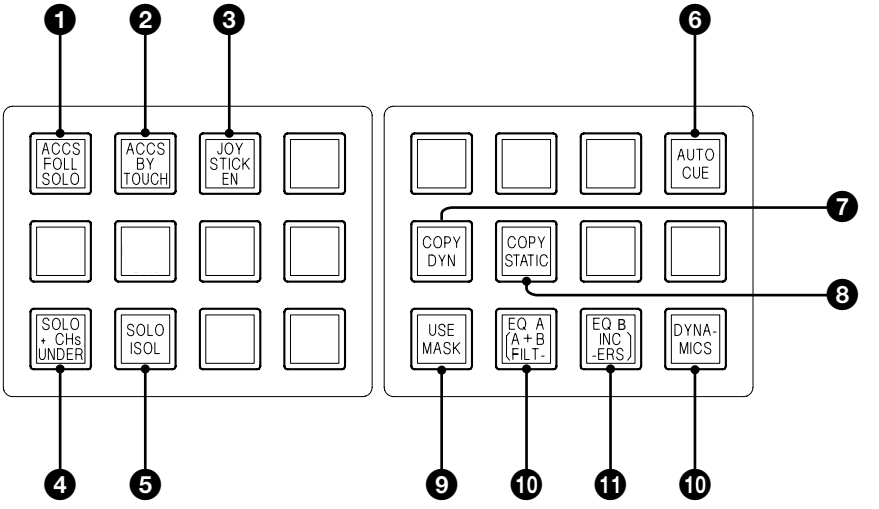
⓬ ALL I/O GUIs Push-Button
Latching function which sets the I/O GUIs on all 6 LCD screens. Release [ALL I/O GUIs] to return to previous GUIs.

⓭ ALL ROUTE GUIs Push-Button
Latching function which sets the ROUTE GUIs on all 6 LCD screens. Release [ALL ROUTE GUIs] to return to previous GUIs.

⓮ ALL STATUS GUIs Push-Button (Not operational in this version)
Latching function which sets the STATUS GUIs on all 6 LCD screens. Release [ALL STATUS GUIs] to return to previous GUIs.

⓯ MIDI EN(able) Push-Button
Overall MIDI enable/disable for all MIDI outptuts.





Lower Ancillary Push-Button Block

❶ ACCS FOLL SOLO Push-Button
Any Channel ACCESS function is selected automatically by pressing its Fader [SOLO] push-button, equivalent to pressing the [SOLO] and [ACCESS] simultaneoulsy.

❷ ACCS BY TOUCH Push-Button
Any Channel ACCESS function is selected automatically by touching its fader knob.

❸ JOY STICK EN(able) Push-Button
Latching function which enables the motor power in the Motorised Joy Sticks.

❹ SOLO + CHs UNDER Push-Button
Sets a Solo mode where channels which are not soloed, can be heard at a reduced level. The level is set using the Definable knob above the Monitor Level control. Use the [+] and [−] buttons either side of the 8 character display above the Definable knob to select DIM LEVEL, and adjust to suitable level.

❺ SOLO ISOL Push-Button
To isolate channels from the solo-cut bus, latch SOLO ISOL and select their channel SOLO buttons. Then de-latch SOLO ISOL. Reverse the procedure to de-isolate channels. Latching SOLO ISOL will cause the SOLO buttons on isolated channels to light.

❻ AUTO CUE Push-Button
Latching function linked to T/B GROUP 2 push-button. When AUTO CUE is selected, T/B GROUP 2 will be permanently latched on apart from when the tape is rolling. This enables talkback at all times except when the tape is playing or recording. Talkback buttons (e.g. T/B F/Back 1-4) must be assigned to T/B GROUP 2 for this function.

Buttons related to Copy
The following descriptions relate to Copy function which are carried out using the Channel [ACCESS] buttons decribed in detail in Chapter 7. Here is a brief description of copying and/or linking the settings of one channel to others:

COPY
- Press and hold upper [ACCESS] button of source channel until it turns amber.
- Press and release upper [ACCESS] buttons on destination channels.

LINK
- Press and hold lower [ACCESS] button of source channel until it turns amber.
- Press and release lower [ACCESS] buttons on destination channels.

COPY & LINK
- Press and hold lower [ACCESS] button of source channel until it turns amber.
- Press and release upper [ACCESS] buttons on destination channels.

❼ COPY DYN Push-Button
This is a latching function and applies to to all 'COPY' and 'QUICK COPY' functions, which are performed using button push operations (these are described in Chapter 7). If [COPY DYN] is selected, any copy operations will include dynamic automation data. [COPY DYN] inter-cancels with [COPY STATIC] ❽, or it an be turned on and off, when it returns to defaults.

❽ COPY STATIC Push-Button
This is a latching function and applies to to all 'COPY' and 'QUICK COPY' functions, which are performed using button push operations (these are described in Chapter 7). If [COPY STATIC] is selected, any

copy operations will be limited to static settings only. [COPY STATIC] inter-cancels with [COPY DYN] ❼, or it an be turned on and off, when it returns to defaults.

❾ USE MASK Push-Button
Sets Copy and Link operations according to the DEFAULTS in the SNAPSHOTS, COPY & LINK GUI (see Chapter 7 for details).

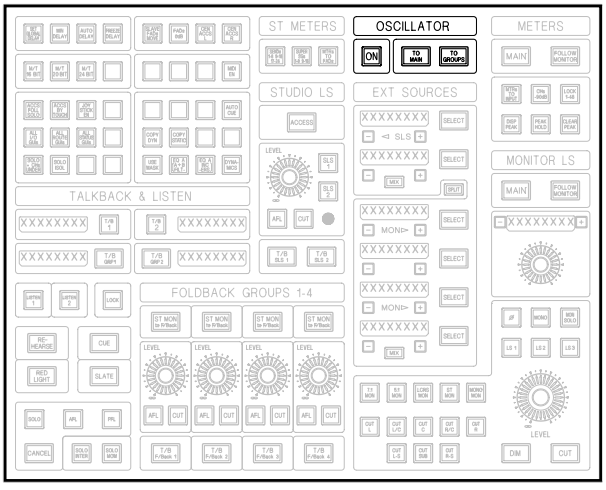
❿ EQ A Push-Button
Limits Copy and Link functions to Equaliser A settings.

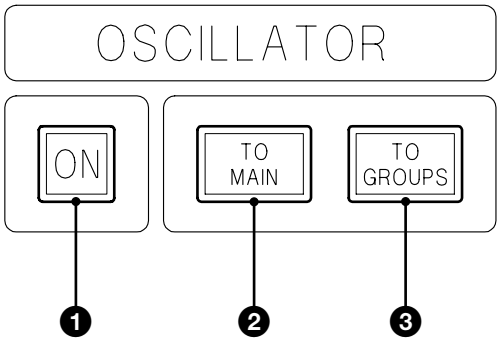
⓫ EQ B Push-Button
Limits Copy and Link functions to Equaliser B settings.

⓬ DYNAMICS Push-Button
Limits Copy and Link functions to Dynamics section settings.

Note:

[USE MASK] inter-cancels with [EQ A] or [EQ B] or [DYNAMICS]. But [EQ A], [EQ B] and [DYNAMICS] can be used in any combination. If [EQ A] and [EQ B] are on simultaneously, the Filters are also included in Copy and Link operations.





OSCILLATOR Section

The Sine Wave oscillator source frequency and level are controlled from the definable knob above the CR Monitor level knob. The frequency is variable from 20Hz to 20kHz and the level is variable between -70dB and 0dB (digital full scale) in 1dB increments. The default Oscillator output is 0dB @ 1kHz. The push-button controls on the Monitor Panel function as follows:

❶ ON Push-Button

Switches the oscillator on, which also automatically sets monitor DIM on. (It can be switched off again if required). TONE buttons in SSGs and Sends sections are inoperative unless the Oscillator ON is selected.

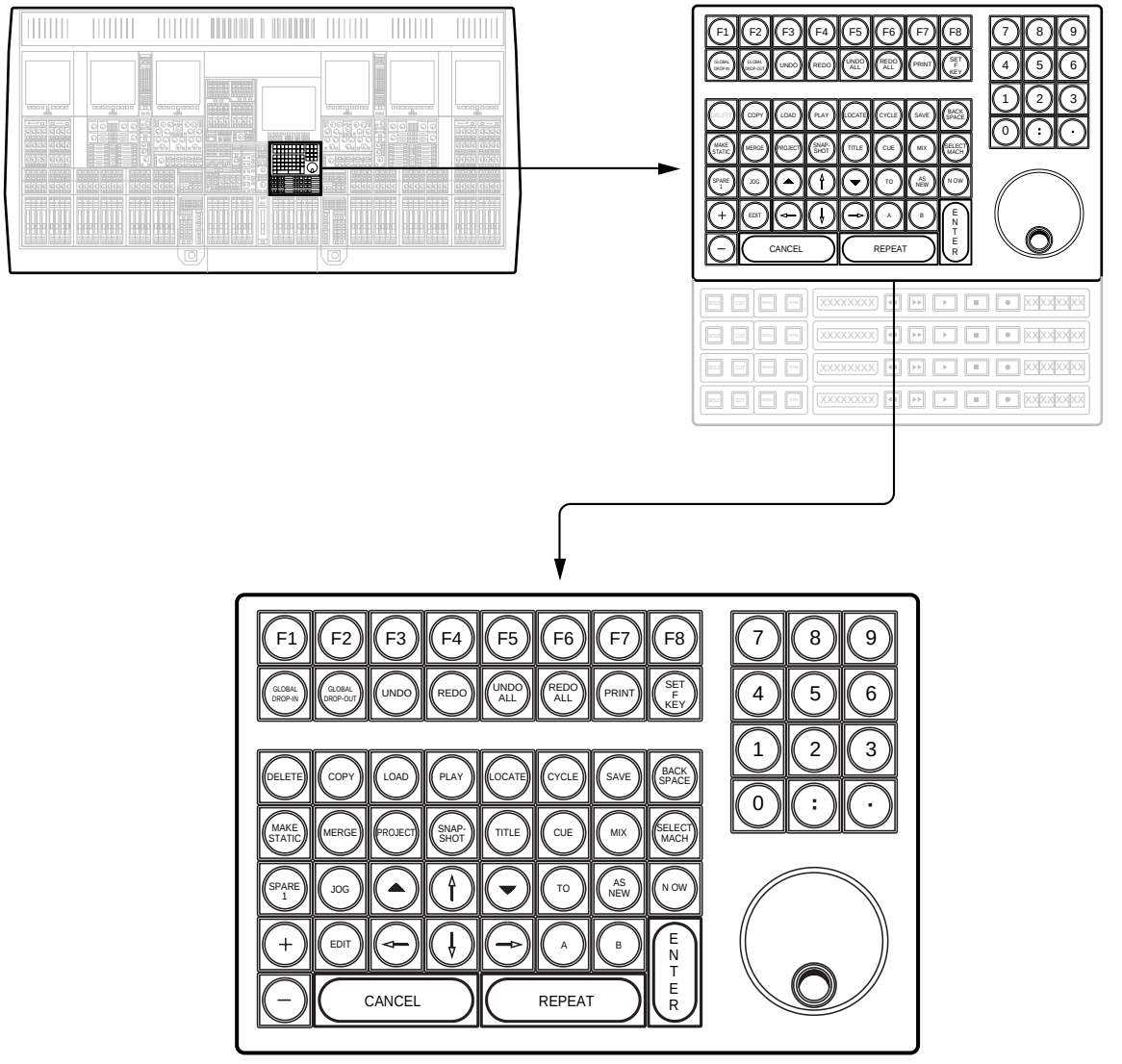
❷ TO MAIN Push-Button

Replaces the Main Output bus signal with the oscillator signal. The Oscillator ON button must be selected. The CR Monitor LS dim automatically.

❸ TO GROUPS Push-Button

Sends the Oscillator output to all multitrack Group outputs replacing bus signals. The Oscillator ON must be selected.

6-3-3 Control Keyboard Panel



CONTROL KEYBOARD

This panel contains the Control Keyboard dedicated to the Session Management™ and system automation, along with 4 sets of Tape Remotes.

Dedicated Keys

The majority of commands are implemented using the dedicated command keys on this keyboard. The QWERTY keyboard, housed under a sliding cover between the Trackerballs in the centre section, is used mainly to type in specific names for Titles, Cues and Tracks, etc.

Jog Wheel functions

The Jog Wheel can be used for various functions which are set using the JOG key on the Control Keyboard. Pressing JOG will cause the current Jog Knob function to be displayed in the Command Line bar at the bottom of the central LCD screen situated above the Control Keyboard. Further presses will cycle through the Jog Wheel functions one at a time. Display the function required. No further action is necessary.

Note:

1 *The Jog Wheel works for the Master Machine only during transport control.*
2 *The transport keys ◀◀ and ▶▶ light up amber for normal operation but light green during operations involving the Jog Wheel.*

The Jog Wheel functions are as follows:

Jog

Rotating the Jog Wheel will cause the tape to move in the direction of rotation and in relation to the speed of rotation. The tape motion will stop once the Jog Wheel is released.

Crawl

Crawl causes the tape to shuttle progressively faster according to the rotation of the Jog Wheel, but only during rotation.

Shuttle

Rotating the Jog Wheel will cause the tape to roll progressively faster in the direction of rotation up to Fast Forward and Rewind speeds. The motion is retained when the wheel is released. To stop the tape either rotate the wheel in the reverse direction and return to the null point or press the transport ■ key which will redefine the null point to the current position.

Data +/-

Adjustments may be made to numerical values such as timecode according to the placement of the orange highlight in the central LCD screen. This function applies to any pop-ups where numerical values can be set such as timecode and dBs.

Off

Jog function not operational.

CONTROL KEYBOARD Command Lines

Command Lines (sequences of commands) always require [ENTER] as the last keystroke of the sequence: e.g. [PLAY] [MIX] [ENTER].

The 'boxed' upper case words such as [PLAY] and [MIX] refer to the legends printed on the dedicated keys.

Note:

There are exceptions which do not require [ENTER] to action commands or functions: the Function Keys, [F1] - [F8] when they have macros stored which include [ENTER], the [NOW] and [JOG] keys.

Function Keys

Frequently used Command Lines may be stored on Function Keys [F1] - [F8] for fast access.

To store a Command Line, perform the sequence of keystrokes then:

Press: [SET F KEY] [F1]

This action stores the sequence under Function Key F1, overwriting any sequence stored previously. Alternatively:

Press: [SET F KEY]
Perform the sequence of key strokes
Then press: [F1]

To execute a stored Command Line which includes [ENTER]:

Press: [F1]

To execute a stored Command Line which does not include [ENTER]:

Press: [F1] [ENTER]

Note:

In this case, just pressing F1 displays the command line in the User Command Dialogue Line bar.

To delete a stored Command Line:

Press: [DELETE] [F1]

"PRINT" Command Lines

[PRINT] [F#]
Displays the command strings stored in F#.

[PRINT] [ENTER]
Prints the GUI currently displayed on the central LCD.

[PRINT] [PROJECT] [ENTER]
Prints details of the current Project.

PRINT TITLE ENTER
Prints details of the current Title.

Note:
"Print" output commands require the system to be configured with a Postscript compatible printer.

Command Key Functions

GLOBAL DROP-IN **Key**
Causes all controls in automation 'ready' status to drop in to automation write.

GLOBAL DROP-OUT **Key**
Causes all controls to drop out of automation record returning to automation 'ready' status.

Note:
'Film Mode' allows the system to be set up so that GLOBAL DROP-IN *and* GLOBAL DROP-OUT *are operational on all controls except Faders, Cuts and Pans (see section 7-7-9).*

"UNDO" & "REDO" for Automation Data

UNDO **Key**
Causes the system to go back one mix pass at a time for each **UNDO** through the currently unsaved mixes in memory, until the point of the last SAVE MIX command point is reached.

REDO **Key**
Reverses the effect of **UNDO** commands one by one.

UNDO ALL **Key**
Reverts all the way back to the last SAVE MIX command point.

REDO ALL **Key**
Cancels the effect of the **UNDO ALL** key.

Ranges and Lists

Channels, Control Groups and the Main L/R Fader can be specified in command lines for certain functions:

Ranges are specified with '..' as a separator.
1..108 = Channels 1-108
01..032 = Control Group Faders 1-32
00 = Main L/R Fader

Individual items are separated by '.'
2 . 4 . 25 = Channels 2, 4, and 25

Unlimited strings are possible in the same entry
e.g. 00 . 01 . 03 . 05 .. 08 . 1 .. 24 . 48 .. 56 . 65 =
Main L/R Fader, Control Group Faders 1, 3, and 5-8
Channels 1-24, 48-56 and 65

"UNDO" & "REDO" for Static Settings

[UNDO] **Key**
[UNDO] used in conjunction with the key labelled SPARE 1 in the illustration, [_____] on the Control Keyboard itself, allows the undoing of static changes, such as knob adjustments and button pushes. Press and hold [_____] and then press [UNDO] to undo static changes one at a time. Up to 256 static changes are held memory.

[REDO] **Key**
Holding [_____] and pressing [REDO] reverses the **UNDOs**, one at a time for each press.

[UNDO ALL] **Key**
Holding [_____] and pressing [UNDO ALL] once, removes all static changes in the memory.

[REDO ALL] **Key**
Holding [_____] and pressing [REDO ALL] once, reverses the effect of the **UNDO ALL** key.

"DELETE" Command Lines

When using DELETE commands, a dialogue box requires confirmation or cancellation.

[DELETE] [PROJECT] [ENTER]
Deletes the currently highlighted PROJECT, including its TITLES, MIXES, SNAPSHOTS and CUES.

[DELETE] [PROJECT] **#** [ENTER]
Deletes the specified numbered PROJECT.

[DELETE] [PROJECT] **1 . 3 . 5** [ENTER]
Deletes PROJECTS 1, 3 and 5.

[DELETE] [PROJECT] **1 . . 5** [ENTER]
Deletes PROJECTS 1-5 inclusive.

Note:
The Command Lines above may be applied in a similar way for deleting Titles, Mixes, Snapshots and Cues, substituting the appropriate word for PROJECT in each instance.

[DELETE] [TITLE] [ENTER]
Deletes the currently highlighted TITLE (including its MIXES, SNAPSHOTS & CUES).

[DELETE] [F1] (or other F Key) [ENTER]
Deletes the F1 (or other F Key) macro sequence.

"COPY" Command Line

[COPY] [ENTER]
Cause the SNAPSHOTS, COPY & LINK GUI to appear along with the pop-up allowing Snapshots to be copied. Make appropriate selections according to the pop-up and click on OK or press [ENTER].

"LOAD" Command Lines

[LOAD] [SNAPSHOT] [ENTER] or [LOAD] [SNAPSHOT] # [ENTER]
Loads the currently highlighted SNAPSHOT or one specified by number according to SNAPSHOT Defaults settings in the Snapshots GUI.

Ranges and Lists can be specified when loading Snapshots:

[LOAD] 1..5 [SNAPSHOT] [ENTER] or
[LOAD] 1..5 [SNAPSHOT] # [ENTER]
Loads the currently highlighted SNAPSHOT or one specified by number according to SNAPSHOT Defaults for channels 1-5.
(See page 6-65 for details of how to specify Ranges and Lists)

[LOAD] [TITLE] [ENTER] or [LOAD] [TITLE] # [ENTER]
Loads the appropriate CUES list for the currently highlighted TITLE or one specified by number.

[LOAD] [MIX] [ENTER] or [LOAD] # [MIX] [ENTER]
Loads the currently highlighted MIX, or one specified by number, into memory.

Note:
Auto-Saved mixes can be loaded as above. MIX 0 is the most recent whilst MIX -1 and MIX -2 are earlier Auto-Saves.

Ranges and Lists can be specified when loading Mixes:

[LOAD] 1..5 [MIX] [ENTER] or [LOAD] 1..5 [MIX] # [ENTER]
Loads the currently highlighted MIX or one specified by number according to SNAPSHOT Defaults for channels 1-5.
(See page 6-65 for details of how to specify Ranges and Lists)

"PLAY" Command Lines

[PLAY] [ENTER]
Plays from the last locate point.

[PLAY] ***Timecode*** [ENTER]
Plays from a timecode point which is entered using the numeric key-pad.

[PLAY] [TITLE] [ENTER] or [PLAY] [TITLE] # [ENTER]
Plays currently highlighted TITLE or one specified by number.

[PLAY] [CUE] [ENTER] or [PLAY] [CUE] # [ENTER]
Plays from the currently highlighted CUE or from CUE #.

[PLAY] [CUE] **3** [CUE] **4** [ENTER]
Plays from CUE number 3 to 4 and stops.

[PLAY] [MIX] [ENTER] or [PLAY] [MIX] # [ENTER]
Plays the currently highlighted MIX or one specified by number.

[PLAY] [A] or [B] [ENTER]
Plays from the timecode locations stored in bookmarks A or B as selected.

[PLAY] [A] [B] [ENTER]
Plays from time location A to location B and stops.

[PLAY] **.** [ENTER]
Plays from the current timecode minus the 'quick rollback time' (see page 6-73).

"LOCATE" Command Lines

[LOCATE] [ENTER]
Locates the system to the last location timecode point.

[LOCATE] ***Timecode*** [ENTER]
Locates the system to a specified timecode location entered using the numeric key-pad.

[LOCATE] [TITLE] [ENTER] or [LOCATE] [TITLE] # [ENTER]
Locates the system to the start of the current TITLE or TITLE #.

[LOCATE] [CUE] [ENTER] or [LOCATE] [CUE] # [ENTER]
Locates to the currently highlighted CUE or CUE #.

[LOCATE] [MIX] [ENTER] or [LOCATE] [MIX] # [ENTER]
Locates to the currently highlighted MIX or one that is specified by number.

[LOCATE] [A] or [B]
Locates the system to timecode locations in set at A or B as selected.

[LOCATE] **.** [ENTER]
Locates to the current timecode minus the 'quick rollback time' (see page 6-73).

"CYCLE" Command Lines

CYCLE TITLE ENTER or CYCLE TITLE # ENTER
Plays and repeats the current or specified TITLE continuously.

CYCLE CUE # CUE ## ENTER
Repeatedly plays the passage between CUE # and CUE ##.

CYCLE MIX ENTER or CYCLE MIX # ENTER
Plays and repeats current or specified MIX continuously.

CYCLE . ENTER
Plays and repeats from the current timecode minus the quick rollback time (see page 6-73).

"SAVE" Command Lines

SAVE MIX ENTER or SAVE MIX # ENTER
Saves the WORKING MIX by overwriting the one currently highlighted in the list of mixes or a MIX specified by number.

SAVE MIX AS NEW ENTER
Saves the WORKING MIX to a new file for which a default name is created (or the MIX can be named at the time of saving via a pop-up).

SAVE SNAPSHOT ENTER or SAVE SNAPSHOT # ENTER
Saves a SNAPSHOT by overwriting the one currently highlighted in the list of Snapshots or a Snapshot specified by number.

SAVE SNAPSHOT AS NEW ENTER
Saves a SNAPSHOT to a new file for which a default name is created (or the SNAPSHOT can be named at the time of saving via a pop-up).

BACK SPACE **Key**
Deletes the last command or character entry in the Command Dialogue Line at the bottom of the central LCD.

"MAKE STATIC" Command Lines

MAKE STATIC ENTER
Returns the system to a non-automated manual state allowing a restart with a static mix. The balance will be set depending on where the tape was stopped in the current mix. If there is any unsaved automation data in memory then a pop-up appears in order to prompt saving it.

MAKE STATIC # ENTER
Removes the moves data from the working mix for channel # for controls according to the Snapshot DEFAULTS in the Snapshots GUI.

[MAKE STATIC] #..# [ENTER]
Removes the moves data from the working mix for a range of channels # . . # for controls according to the Snapshot DEFAULTS in the Snapshots GUI (see page 6-65 for details of how to specify Ranges and Lists).

"MERGE" Command Lines

Note:
Comprehensive control of "MERGE" functions is available via GUI and is described in Chapter 7.

MERGE command lines require ranges and/or lists to be specified (see page 6-65 for details of how to specify Ranges and Lists). Mix data can be copied and pasted in the working mix or imported from other mixes. Snapshot settings can also be merged into mixes.

The MERGE Command Line has the general form:

[MERGE] (Source Range/List) from (Specified Start Time) to (Specified End Time) to (New Specified Start Time) [ENTER]

Times can be specified in various ways: [A], [B], [CUE], [CUE] # or typed in using the numeric keypad on the Control Keyboard. Where timecode is typed in, a blank [___] or [TO] key must be used between numbers as a separator. Examples:

[MERGE] 1..48 [MIX] [CUE] 3 [CUE] 6 [CUE] 9 [ENTER]
Adds a new automation layer to the working mix that copies all the moves for channels 1-48 between Cue 3 and Cue 6 to repeat starting at Cue 9.

[MERGE] 1..2 [SNAPSHOT] [A] [B] [ENTER]
Adds a new automation layer to the working mix that will switch to the currently highlighted Snapshot settings at point A and back to existing data at point B for channels 1 and 2.

[MERGE] 01..032 [MIX] # [___] 2:00 [TO] 4:00 [TO] 2:00 [ENTER]
Adds a new automation layer to the working mix that will switch to the Control Group Faders move data for Mix # between 2:00 and 4:00 minutes.

"PROJECT" Command Line

[PROJECT] [ENTER]
Creates a new Project.

"TITLE" Command Line

[TITLE] [ENTER]
Creates a new Title.

"CUE" Command Line

CUE ENTER
Creates a new Cue in the CUES list at the current time for the master machine. A pop-up appears allowing a name to be assigned to the new Cue. Click on ENTER or click on OK for the next default Cue number or type in a name using the QWERTY Keyboard first.

"MIX" Command Lines

MIX Command Lines are related to Audition functions within the Mix Automation. See section 7-7 for details.

Other Command Key Functions

SELECT MACH **Key**
Allows machines other than the Timecode Master to be controlled by the system Transport Control. Once the SELECT MACH key has been pressed, pressing any Transport Remote button on any machine causes the system to control that machine until another is selected in the same way.

JOG **Key**
Displays the current Jog function in the Command Dialogue Line and allows its other functions to be set. See page 6-63 for details.

▲ and ▼ Keys
Are tab and back-tab functions to move the orange highlight around the various fields within GUIs.

⇧, ⇦, ≥ and ÷ Keys
Allow the orange highlight to be moved around in the current field.

TO **&** AS NEW **Keys**
Are used specifically in conjunction with other command lines described previously within this section.

NOW **Key**
Allows the current time point to be set on a timecode pop-up or list entry which is highlighted orange.

+ **&** - **Keys**
Allow a timecode entry, which is highlighted orange, to be nudged up or down in frames. This applies to timecode pop-ups too except that the category to be nudged, hours, minutes, seconds or frames, can be selected using the ⇦ and ÷ keys.

EDIT **Key**
To use the EDIT function, move the orange highlight to the desired entry, then touch the **EDIT** key to display a pop-up Dialogue Box.

“A” & “B” Command Lines

[A] [ENTER] & [B] [ENTER]
Create convenient temporary Cue points displayed in the CUES list; useful for commands such as:

[LOCATE] [A] or [B]
Locates the system to timecode points set for Cue A or B.

[PLAY] [A] [B]
The system plays from Cue point A to Cue B and stops.

[CYCLE] [A] [B]
The system plays from Cue point A to Cue B then rewinds and repeats the passage between A and B continuously until stopped by pressing either [CANCEL] or the ■ transport key.

The A and B Cue points may be revised at any time.

[CANCEL] **Key**
Cancels the current command. It will also delete commands on the Command Line prior to pressing [ENTER].

[REPEAT] [ENTER]
This key sequence repeats the last-entered command. To access earlier commands, press [REPEAT] the relevant number of times (up to a maximum of 40). The stored command is displayed at each press. The command will be executed when [ENTER] is pressed.

Using the Numeric Key-pad to Enter Timecode

The entry form is exactly the same as that used for PCM-3324/48 series remote control units:

1	=	00:00:01:- -
12	=	00:00:12:- -
1234	=	00:12:34:- -
12345	=	01:23:45:- -
123456	=	12:34:56:- -
12345621	=	12:34:56:21
12:34:56:21	=	12:34:56:21
12:34:56	=	12:34:56:- -

Timecode shortforms:

::	Separates hours/minutes
:	Separates minutes/seconds
.	Separates seconds/frame

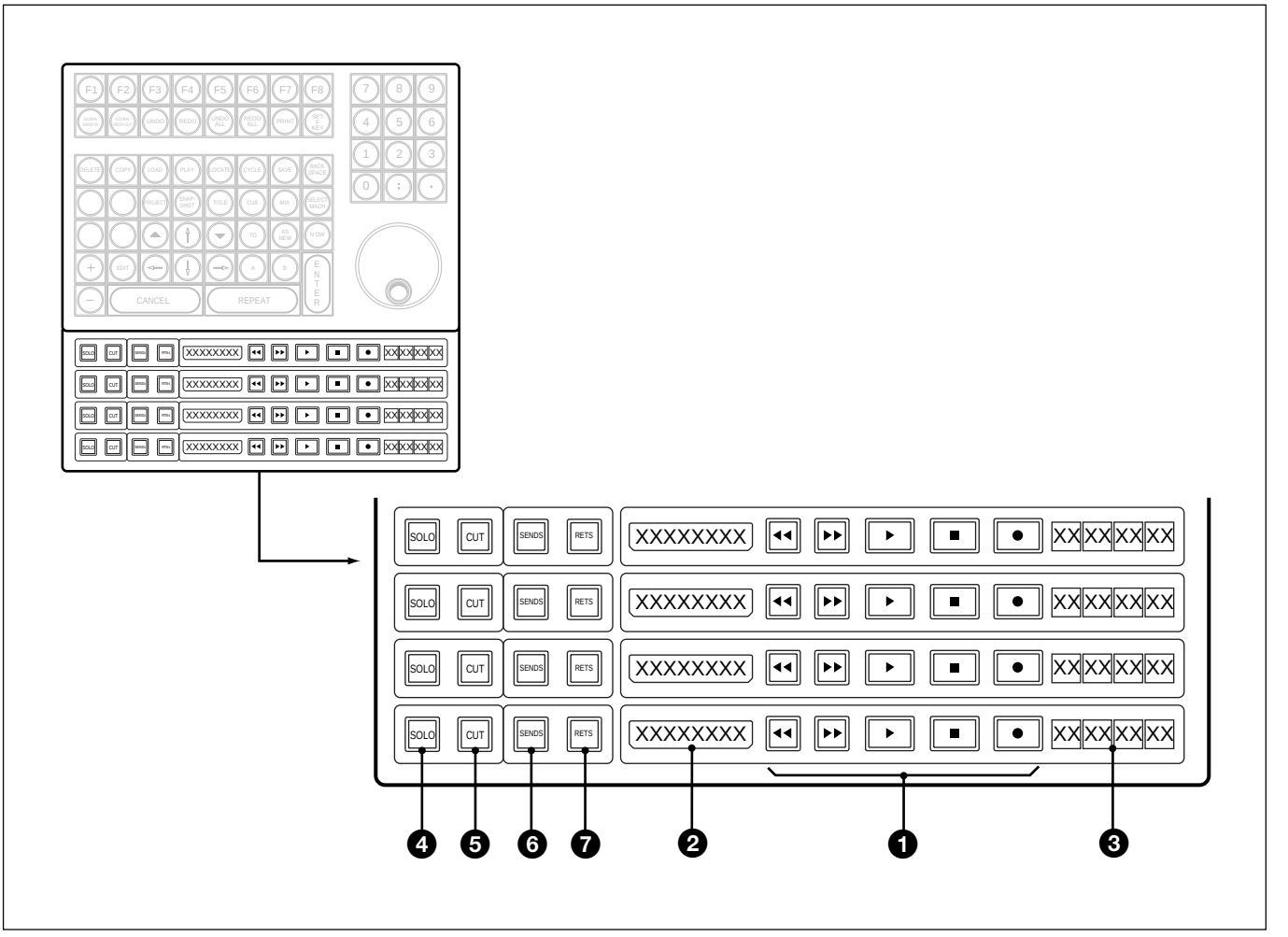
12::	=	12:00:00:00	Specifies hours
34:	=	00:34:00:00	Specifies minutes
56	=	00:00:56:00	Specifies seconds
.21	=	00:00:00:21	Specifies frames

Example:

3:4 = 00:03:04:00 (Any combination is allowed)

To set and use 'QUICK ROLLBACK'

Press **. # ENTER**, where **#** = the rollback time in seconds. To 'quick rollback' on the machine transport keys, press and hold PLAY and press STOP for an instant. See also PLAY, LOCATE, and CYCLE.



Tape Remotes

The assignment of machines to Tape Remotes is accomplished using the MACHINE REMOTES GUI in the Session Management & Dynamic Automation system. Each set of remotes may be assigned to an individual machine.

❶ Transports Push-Buttons

Are marked and function according to international standards.

❷ 8 Character Displays

To the left of the Tape Remotes, display the machine names or numbers, as assigned in the Machines GUI.

❸ 8 Character Displays

To the right of the Tape Remotes, and divided into 2-character blocks, indicate timecode positions for their particular machines.

❹ SOLO Push-Buttons
Allow grouped Solo function according to the groups set up. See ❻ and ❼ below.

❺ CUT Push-Buttons
Allow grouped Cut function according to the groups set up. See ❻ and ❼ below.

❻ SENDS Push-Buttons
Select the channel signal being sent to the M/T as monitor source. May be linked to control SEND buttons on Pans panels as groups (see section 6-2-3); hold down this button (it will flash) then select SEND(s) on the channels that are required to be grouped. Latching SENDS will set all SEND buttons in the group.

❼ RETS Push-Buttons
Select the return signal from the M/T. May be linked to control RET buttons on Pans panels as groups (see section 6-2-3); hold down this button (it will flash) then select RET(s) on the channels required to be grouped. Latching RETS will set all RET buttons in the group.

Note:

1 *Setting up a group with either SENDS or RETS will cause the group to be set for channel SENDs, RETs, SOLOs and CUTs.*

2 *The grouping function is not operable in Multi-Format mode if any of these buttons sets are assigned to control the monitor switching of a Stem or number of Stems (see sections 4-12-4 and 4-12-5).*

Using Keyboard Entry to Record Arm Channel Tracks

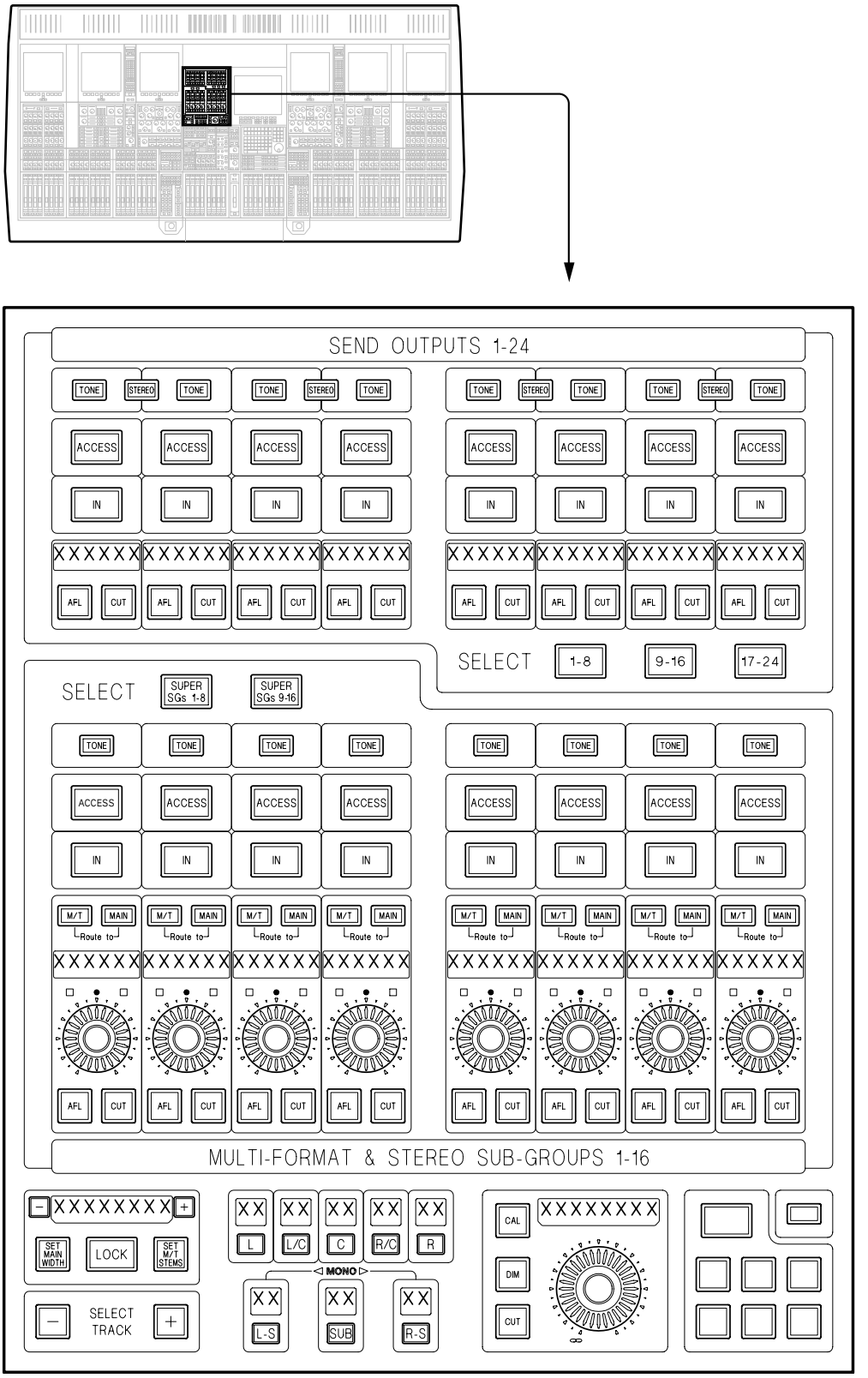
Press [RECORD] at the appropriate machine remotes in the master section. Then use the QWERTY Keyboard: *Specify Channels as Below* [ENTER]

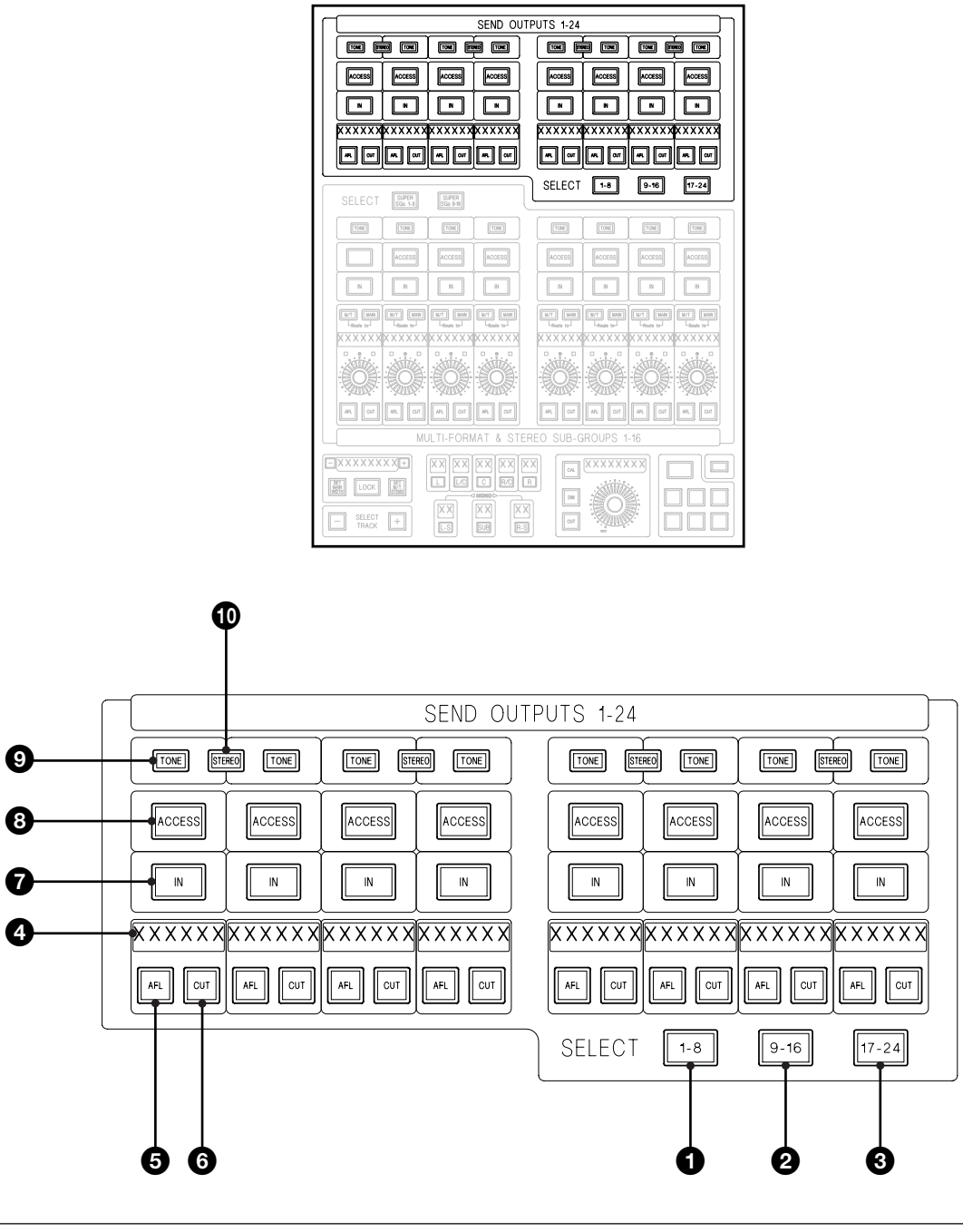
- Channels ranges are specified with '..' as a separator:
  1..32 = Channels 1-32
- Individual items are separated by '.'
  2 . 4 . 25 = Channels 2, 4, and 25
- Unlimited strings are possible in the same entry:
  e.g. 1 . 3 . 5 .. 08 . 12 .. 42 = Channels 1, 3, 5-8 and 12-42

Track arming using the keyboard is not additive and must be accomplished using a single entry. In other words the latest entry overwrites the previous one.

Press [RECORD] [0] [ENTER] to disarm all the tracks that are armed.

6-3-4 Super Send Groups, Send Outputs and Multi-Format Panel





SEND OUTPUTS 1-24 panel section

This section of the panel allows control of up to 24 Send Outputs in blocks of eight 1-8, 9-16 and 17-24.

The default gain setting for the Send Outputs is unity or 0dB. They do not have gain controls in their panel area but their output level can be adjusted using the multi-purpose faders in the centre section (described in section 6-2-2).

❶ 1-8 Push-Button
Assigns Sends 1-8 to the control panel.

❷ 9-16 Push-Button
Assigns Sends 9-16 to the control panel.

❸ 17-24 Push-Button
Assigns Sends 17-24 to the control panel.

❹ 6 Character Display(s)
Indicates Send number or signal name defined in the 'Send Outputs' page of the MASTER GUI (see section 5-2-6 in Chapter 5).

❺ AFL Push-Button(s)
Sends the After Fader Listen signal to CR monitor LS. Becomes destructive SOLO-IN-PLACE in Multi-Format Calibration mode.

❻ CUT Push-Button(s)
Mutes the signal post Level control.

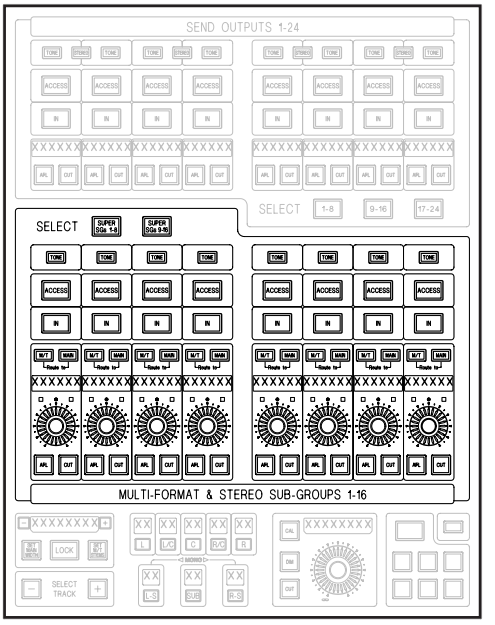
❼ IN Push-Button (Not operational in this version)
Switches in any processing elements selected using ACCESS.

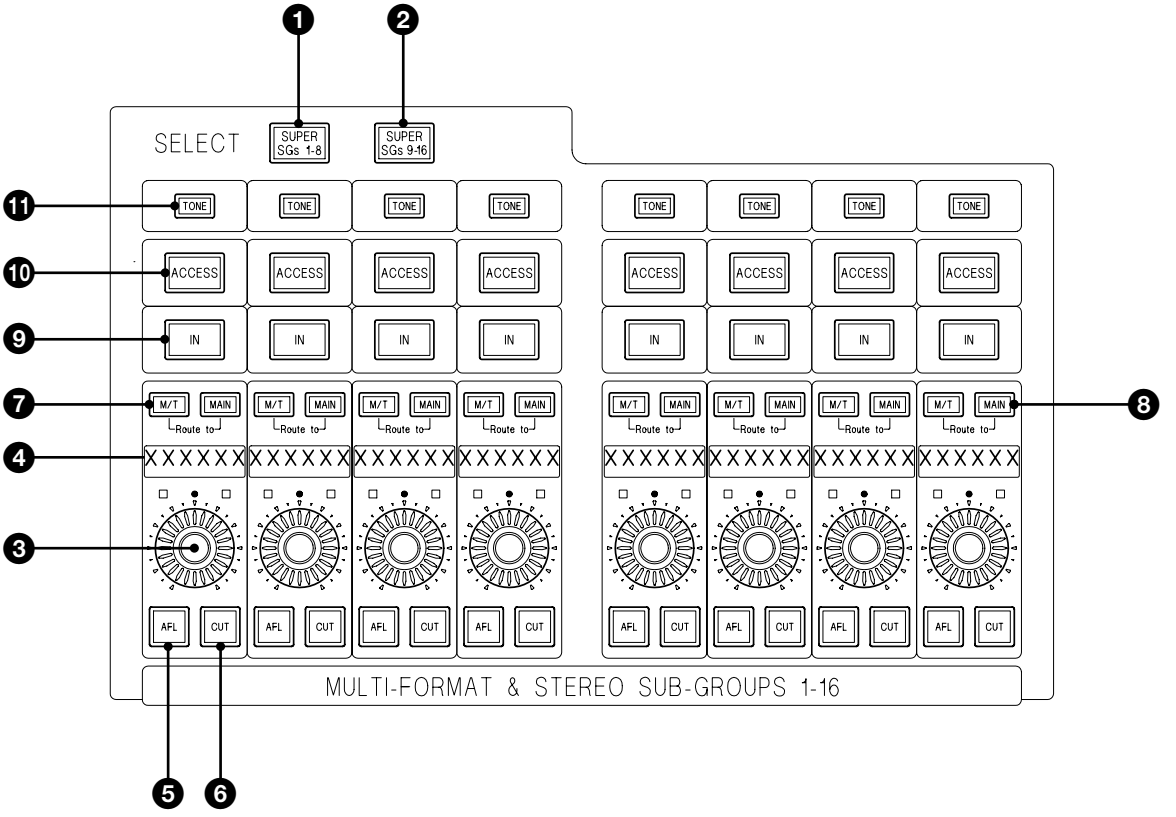
❽ ACCESS Push-Button
Selects MIDI pages, one of 1-8, 9-16 or 17-24, depending on which Sends page is selected. The MIDI GUI is selected from the SENDS GUI which is found in the MASTER GUI.

❾ TONE Push-Button
Enables Tone from the oscillator to be injected into a Send output post the level control, in place of signals routed to that Send.

Note:
The oscillator must be switched on at the Oscillator section before the Send TONE button will function.

❿ STEREO Push-Button
Links its odd/even pair of SENDs as a stereo output so that AFL, CUT and level functions are ganged. The stereo function is propagated through to the channels such that the appropriate Send sections are automatically set up for stereo operation.


SEND OUTPUTS 1-24
SELECT
MULTI-FORMAT & STEREO SUB-GROUPS 1-16


1
2
SELECT
SUPER SGs 1-8
SUPER SGs 9-16
11
TONE
10
ACCESS
9
IN
7
M/T
MAIN
Route to
8
4
3
AFL
CUT
5
6
MULTI-FORMAT & STEREO SUB-GROUPS 1-16

SUPER SEND GROUPS (SSGs) 1-16 panel section

The SSGs can configured flexibly in a number of combinations:

- **Mono**
- **Stereo**
- **LCR**
- **LCRS**
- **5.0**
- **5.1**
- **7.0**
- **7.1**

Any groups that are set up cannot span across the two pages, 1-8 and 9-16. Any group must consist only of consecutively numbered SSGs.

❶ SUPER SGs 1-8 Push-Button
Assigns SSGs 1-8 to control section.

❷ SUPER SGs 9-16 Push-Button
Assigns SSGs 9-16 to control section.

SSG set-up procedure

The fire-up default for the 16 SSGs is 8 Stereo but they can be flexibly set up in a great many combinations.

1 Press and hold the [ACCESS] button ❿ and it will turn amber. Simultaneously, [ACCESS] buttons of any other SSGs in the same same group will light amber.

2 To add to the group, whilst still holding the [ACCESS], press the next [ACCESS] button at the end of the group or the [ACCESS] before the first SSG in the group if appropriate.

3 To make the group smaller, whilst still holding the [ACCESS], press a lit [ACCESS] button which is either the first or last of the group to de-select it from the group.

Note:
Adding an SSG to a group will 'steal' it from its current group, without warning, if it happens to be set up that way.

Level and Pan settings

The signal level sent from a channel to an SSG is exactly the same as feeds the Main Output Bus. The Pan settings are the same too except that it is possible to have an SSG which is set up to be 'wider' than the Main Output Bus.

In other words, the Main Output could be set up for Stereo for example, whilst one of the SSGs might be set for 5.1. The panner creates full surround information at all times which would be fed to the 5.1 SSG. But the Stereo Main would receive the full signal based on L/R Pan settings only.

❸ Level Knob(s)
Controls signal output level for its Super Send Group.

❹ 6 Character Display
Indicates Send Group number or signal name as defined in the MASTER page which is available on any of the Channels LCD screens.

❺ AFL Push-Button(s)
Sends After Fader Listen signal to CR monitor LS.

❻ CUT Push-Button(s)
Mutes the signal post Level control.

Note:

SSG Level controls, and buttons are linked as a fire-up default. These controls can be optionally un-linked according to settings in the Config-File set-up.

❼ M/T Push-Button(s)
Routes its SSG output to M/T routing for 'bounce-down'. The SSG [ACCESS] button must be selected to gain access to channel M/T routing buttons for track assignments. Then select one (or more) buttons in the ROUTE TO TRACKS section at the Routing panel.

❽ MAIN Push-Button(s)
Routes its SSG output to feed the MAIN L/R output busses. The SSG [ACCESS] button must be selected to gain access to channel routing buttons. Then select (one more) of the surround routing buttons in the MULTI-FORMAT section at the Routing panel.

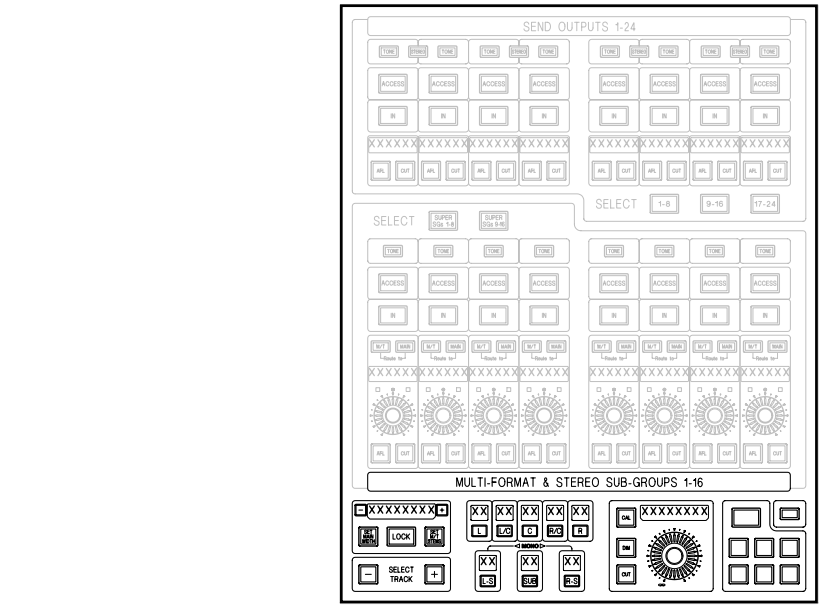
❾ IN Push-Button(s)
Switches its SSG Insert into the signal path. (Refer to Chapter 5 for details of SSG Insert I/O assignments).

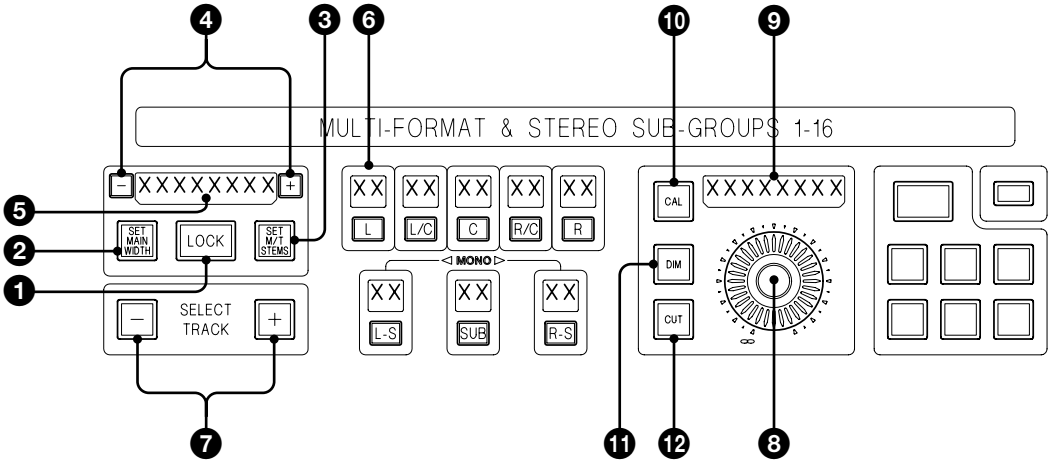
❿ ACCESS Push-Button(s)
Assigns SSGs to the routing panel.

⓫ TONE Push-Button(s)
Enables Tone from the Oscillator to be injected into its SSG output, post the level control, in place of signals routed to that SSG.

Note:

The oscillator must be switched on at the oscillator section before the SSG TONE button will function.





Multi-Format and Monitor

❶ LOCK Push-Button

Is set locked (lit up) as default as a safety measure to prevent inadvertent set-up changes. Press it to unlock to allow set-up. It times out after 10 seconds or 10 seconds after the last button press during set-up.

❷ SET MAIN WIDTH Push-Button

Allows the format of the Main Output Bus to be set: STEREO, LCRS, 5.1 or 7.1 using the [+] and [–] buttons either side of the 8 character dot display, which indicates the current format. The [SET MAIN WIDTH] function is locked unless [LOCK] has been pressed to unlock it first. It inter-cancels with the [SET M/T STEMS] button.

❸ SET M/T STEMS Push-Button
Allows the format of the Multitrack Stems to be set: STEREO, LCRS, 5.1 or 7.1 using the [+] and [–] buttons either side of the 8 character dot display, which indicates the current format. The [SET M/T STEMS] function is locked unless [LOCK] has been pressed to unlock it first. It inter-cancels with the [SET MAIN WIDTH] button.

With [SET M/T STEMS] set and [LOCK] lit, indicating lock status, the [+] and [–] buttons can be used to step through Stems A-H, indicated by the letter at the right in the 8 character display. Set-up settings relating to each Stem will be displayed accordingly, in other sections of this panel.

❹ + / – Push-Buttons (either side of character display)
Enable the appropriate format to be selected for the Main Output Bus and Multitrack Stems, depending on whether [SET MAIN WIDTH] or [SET M/T STEMS] is selected. [LOCK] must be pushed first to unlock the set-up facility.

❺ 8 Character Display
Indicates the format selected STEREO, LCRS, 5.1 or 7.1 and stem, one of A-H.

❻ L, L/C, C, R/C, R, L-S, SUB and R-S Push-Buttons (each with track number display)
These buttons, combined with the [+] and [–] push-buttons ❼, allow assignment of surround routing buttons, in the MULTI-FORMAT section of the Routing panel, to the Multitrack Busses in order to set up Stems. (The set-up procedure is described in detail in Chapter 4)

To make an assignment, unlock [LOCK], then press and hold the desired destination [L], [L/C] etc. Step through the tracks with the [+] and [–] buttons ❼, until the desired track number is displayed in the two character display. Release the destination button. Push [LOCK] to re-lock the set-up or allow it to time out.

❼ + / – Push-Buttons
Combined with the buttons described in ❻, these buttons allow toggling through the Multitrack routing bus numbers in order to set up Stems using the Multitrack Busses.

❽ ❾ Monitor Level Knob & 8 Character Display
Controls the overall level to the Control Room Monitor LS level when [CAL] is not selected. This control operates in parallel with the Monitor Level on the Monitor panel.

The 8 Character Dot Display indicates level setting in dB SPL including calibrated settings. When [CAL] is selected, push and rotate to define a new calibration setting. CAL MODE in the PREFS GUI must be set to 'ON' in order that the calibrated settings are active.

Note:
The CAL indications are accurate only if the Calibration Procedure has been carried out as described in Appendix A-3.

⑩ CAL Push-Button
Fixes the monitor level to the current calibration setting. The knob is not operational when CAL is selected.

⑪ DIM Push-Button
Dims all monitor LS outputs according to the dim level setting. Operates in parallel with the DIM button on the Monitor panel.

⑫ CUT Push-Button
Cuts all the Monitor LS outputs. Operates in parallel with the CUT button on the Monitor panel.

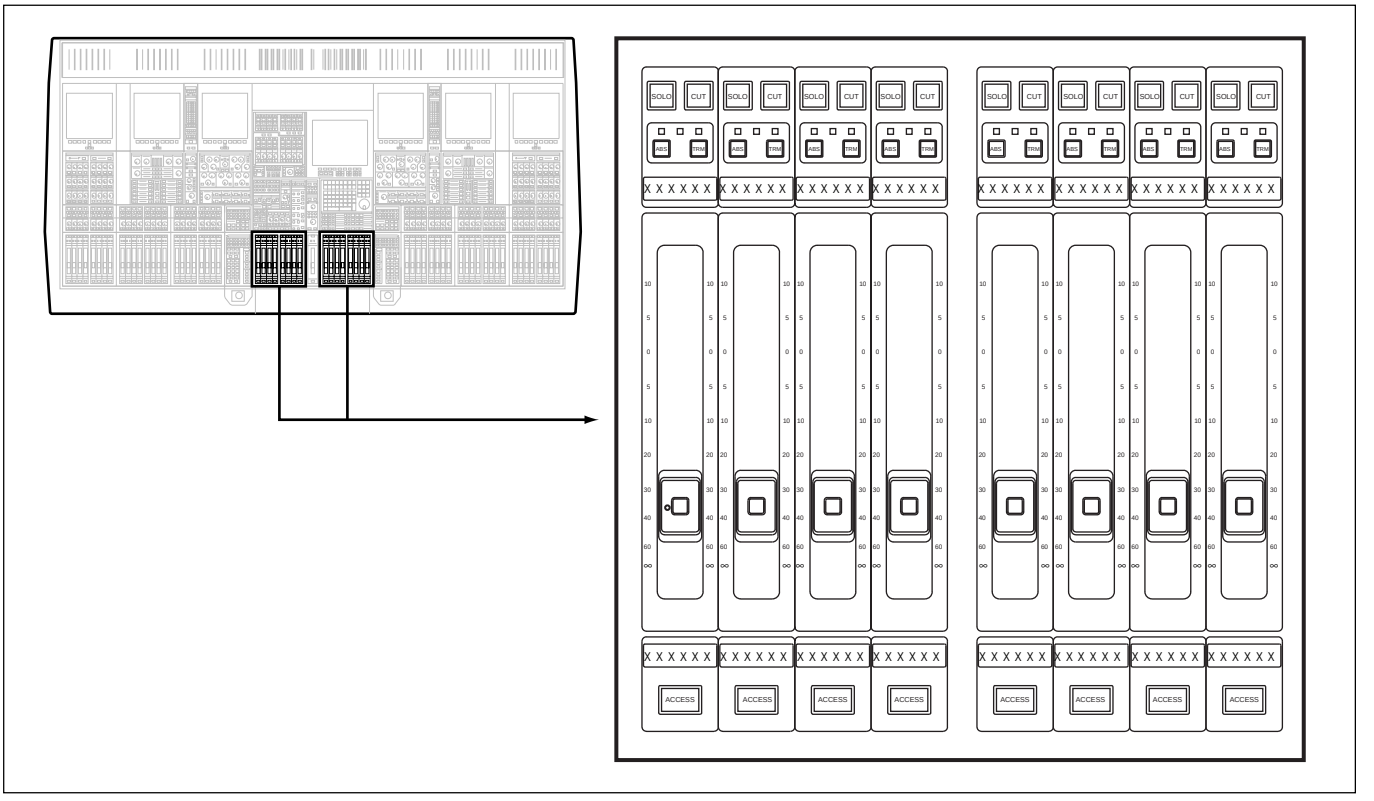
6-3-5 Central Section Faders

The two banks of 8 Faders in the console centre section are identical to the faders used in the channel sections of the control surface.

(Refer to Section 6-2-1 in this chapter for details of the Fader Modules)

Assignment of these central Multi-purpose Faders is effected from the **SEL** push-buttons at the Select To Faders Select panels.

(Refer to Section 6-2-2 in this chapter for details of the Select To Faders modules)



Central section Multi-purpose Faders

Control Groups and Slaves

Press and hold ACCESS on a central Control Group Fader until it turns amber. Latch ACCESS on the channel faders to be slaved. A maximum gain of 10dB can be added to a channel using a Control Group.

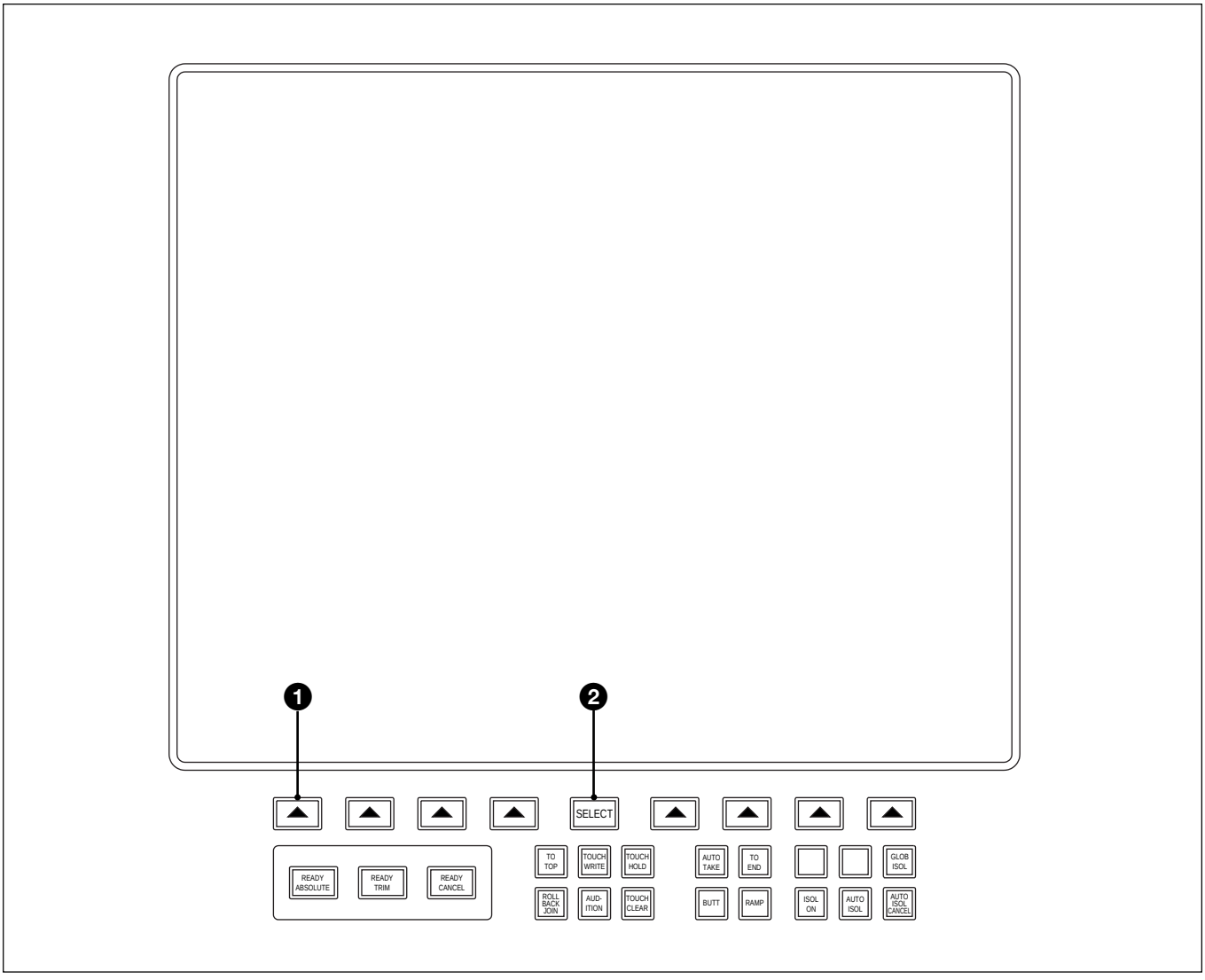
Use the same procedure to release slaves except that, once the the Control Group ACCESS has turned amber and its slave ACCESS buttons are lit, un-latch the slaves as required.

Nested Control Groups

Control Groups can be slaves to other Control Groups without limits except that they must have hierarchies. Circular routes are blocked. They are set up using their ACCESS buttons in exactly the same way as channel faders are set as slaves.

6-3-6 Control LCD Screen Panel

Contains a 10.4 inch colour TFT LCD VGA screen. It displays major System Set-up details and all the Session Management™ information relating to dynamic automation, including screens for Projects, Titles, Mixes, Snapshots and Track Lists etc.



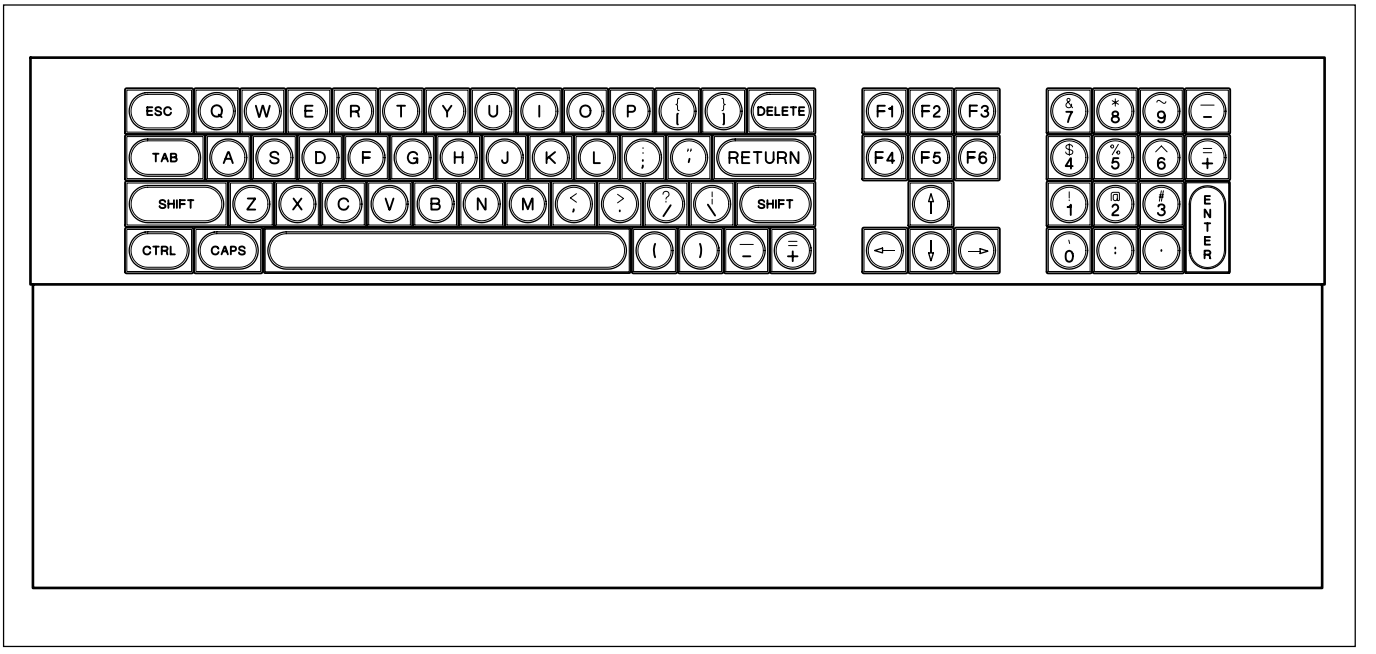
Control LCD Screen panel

❶ ▲ Push-buttons (x 8)
Allow screen pages to be selected as indicated on labels within the screen area above each button.

❷ SELECT
Selects the cursor to the centre of the LCD screen

All other push-buttons are related to the Dynamic Automation described elsewhere in this manual. *(Refer to Chapter 7 for details)*.

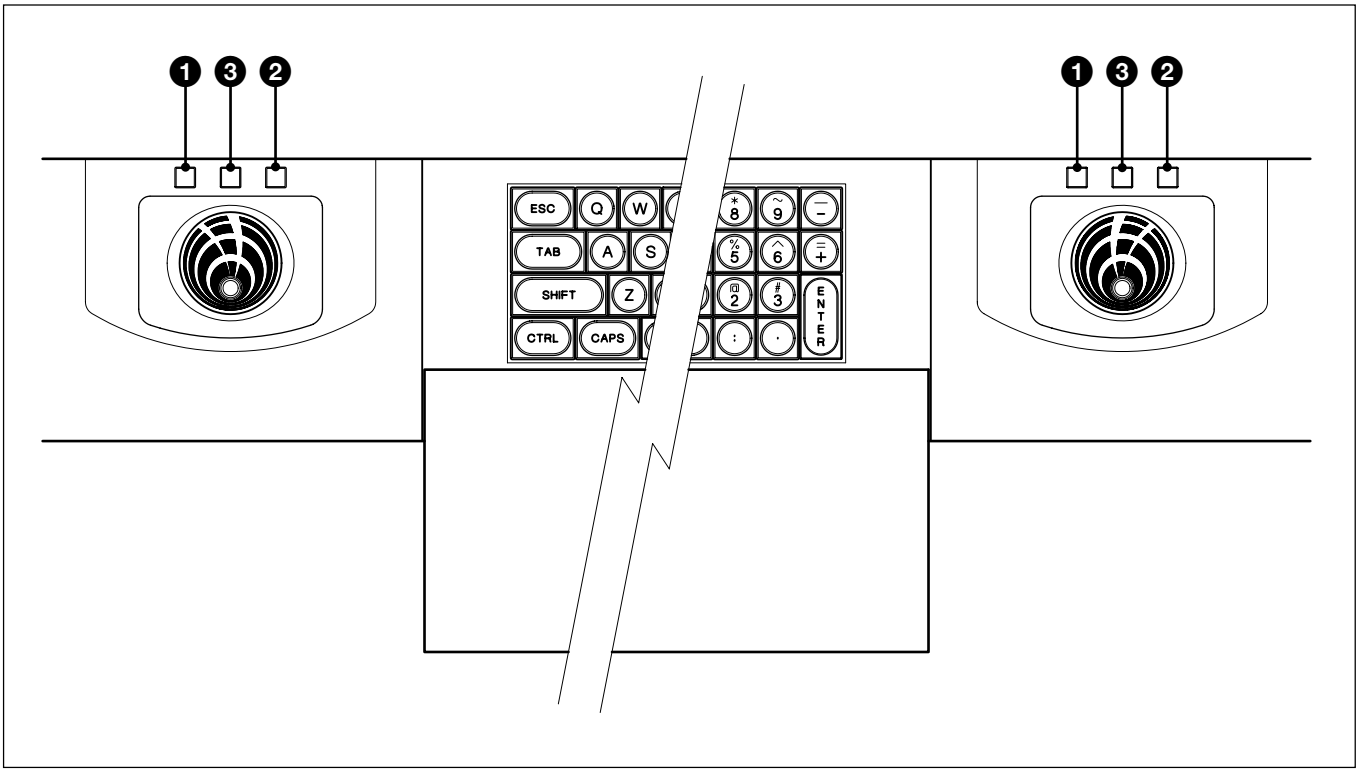
6-3-7 QWERTY Keyboard



QWERTY KEYBOARD

The QWERTY Keyboard, used to type in specific names for Titles, Cues and Tracks, etc., is conveniently housed at the front of the centre section of the OXF-R3 console. A protective sliding cover, pulled towards the operator when the keyboard is in use, doubles as a palm rest when typing.

6-3-8Trackerballs



TRACKERBALLS

There are two Trackerball pointing devices to allow easy operation for left- or right-handed personnel. They can both control the same cursor/pointer which can be moved into any screen on the OXF-R3 control surface. It is possible to split the control in order that the left Trackerball controls the three LCDs in the left channels section, and the right Tracker Ball controls the three LCDs in the right channels section, plus the central LCD. See the PREFERENCES GUI on the central LCD and click on the POINTER tab to change the operation.

❶ Move Cursor Left Push-Buttons

Cause the Cursor to jump one screen left for each press.

❷ Move Cursor Right Push-Buttons

Cause the Cursor to jump one screen right for each press.

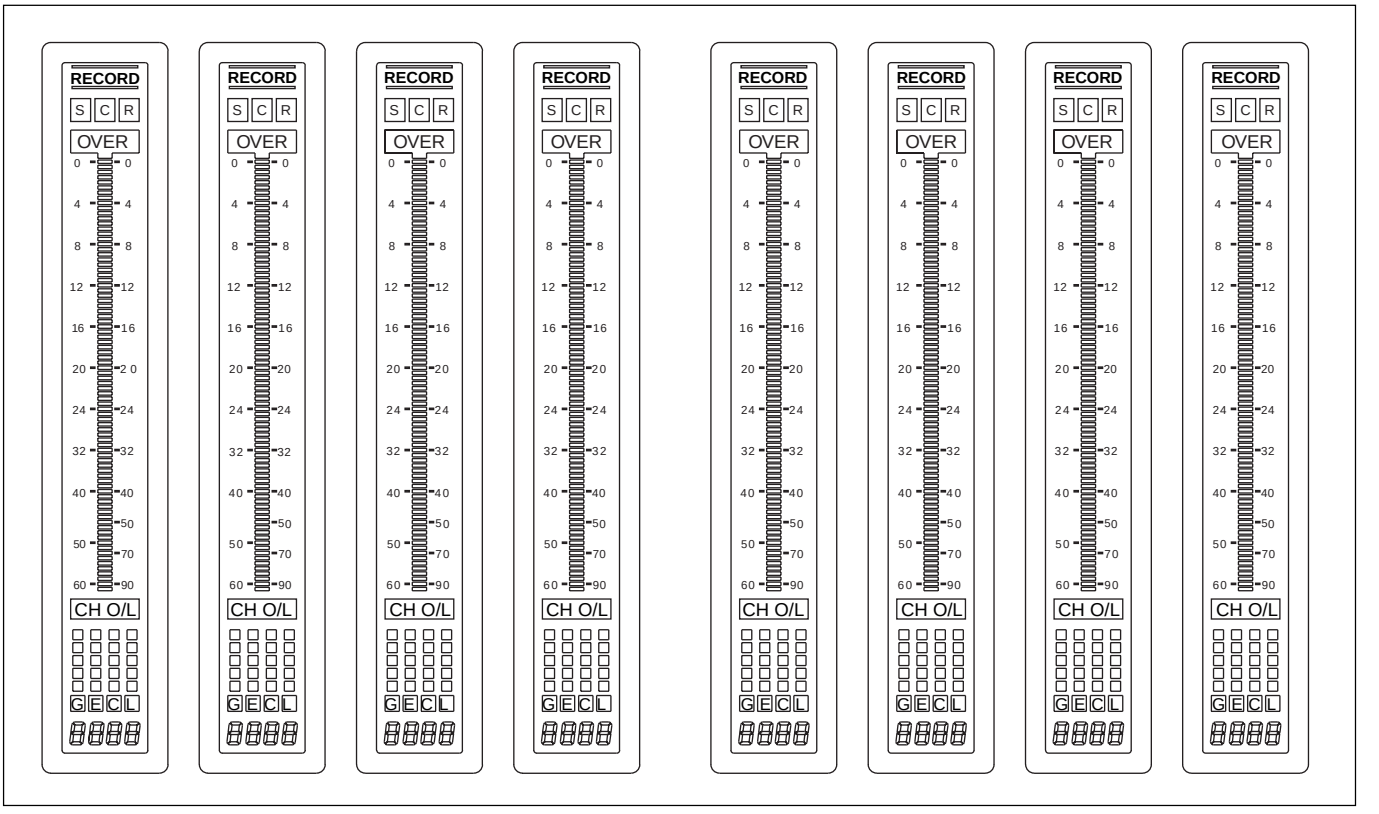
❸ Action Push-Button

Press to action the function or button beneath the cursor, or cause a pop-up be displayed where appropriate.

6-4 Meter Bridge

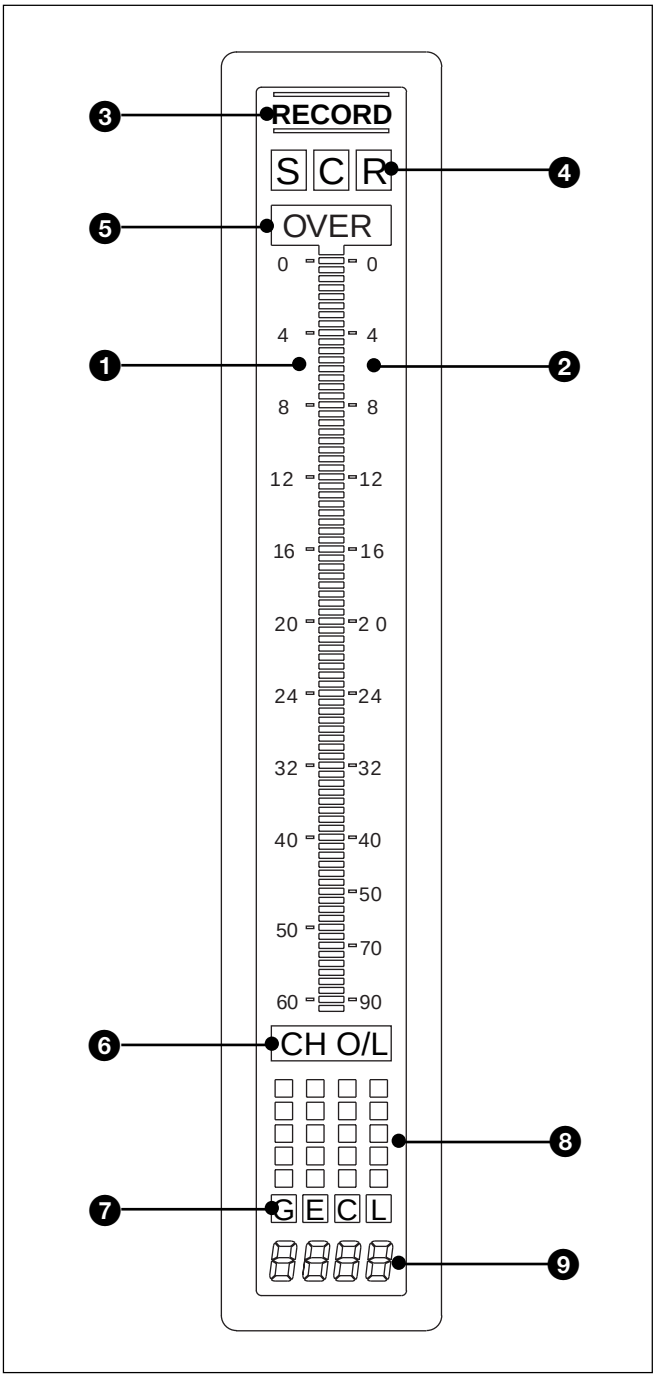
The standard meters used on the Meter Bridge of the OXF-R3 are a bargraph type utilising back-lit LCD technology with digital scales.

6-4-1 Mono Channel Meters



MONO Channel Meters block

Channel meters are fitted, one per channel fader, in blocks of eight. Each meter block is situated directly above a channel's LCD screen. This layout enables channel related information, such as routing assignments which are also displayed in blocks of eight, to line up with their associated meters.



Mono meter

❶ Left Scale
-60dB - 0dB Full Scale

❷ Right Scale
-90dB - 0dB Full Scale. This is a more specialised scale which allows monitoring of lower level noises such as air-conditioning etc.

❸ RECORD Legend
This follows the channel Record switch function.

❹ S Legend
Indicates that the meter is reading the SEND Monitor signal.

C Legend
Indicates it is reading the CHANNEL Pre Fader signal.

R Legend
Indicates it is reading the RETURN Monitor signal.

Note:

These legends are not lit when MTRs to INPUT is selected (see section 6-3-2).

❺ OVER Legend
Indicates a digital signal greater than full scale at the pre-fader stage.

❻ CH O/L Legend
Indicates an overload within the channel signal at the input stage.

❼ G Legend
Indicates that the dynamics GATE function is selected.

E Legend
Indicates that the dynamics EXPANDER function is selected.

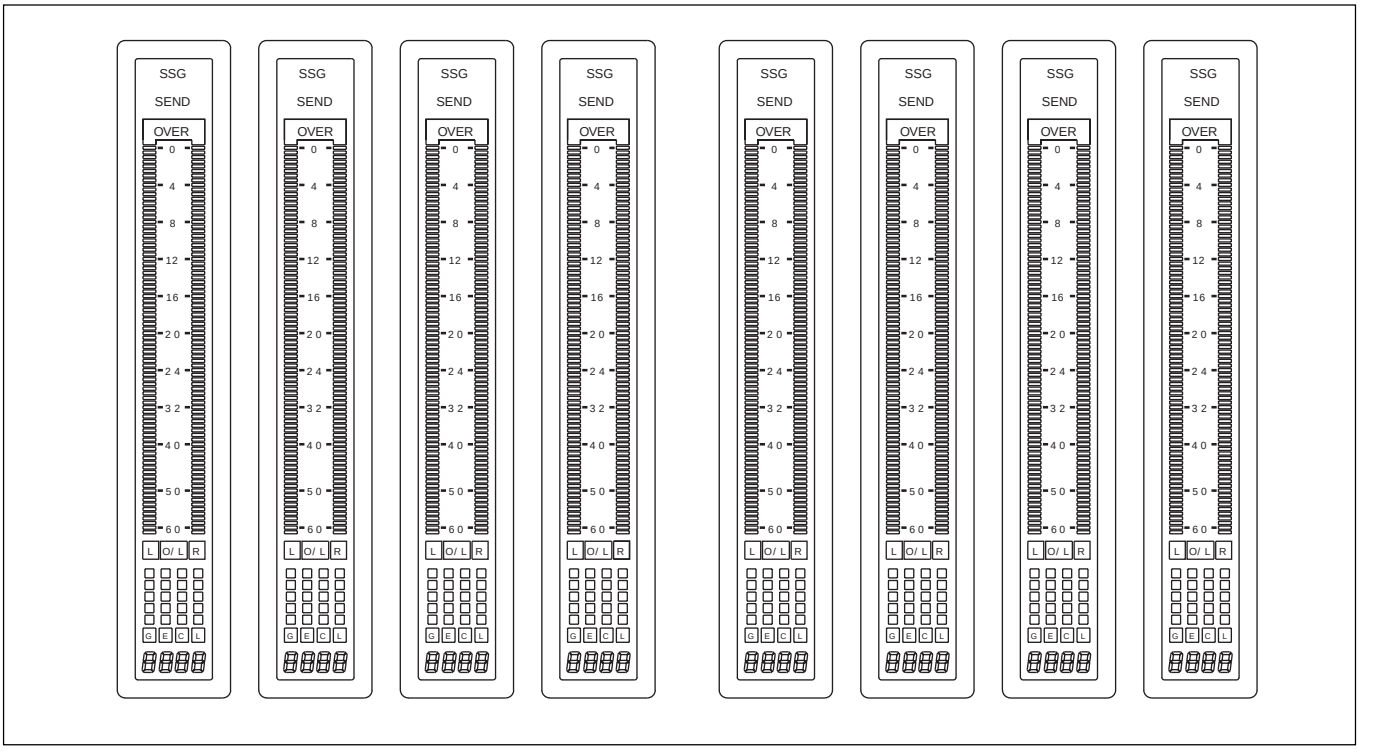
C Legend
Indicates that the dynamics COMPRESSOR function is selected.

L Legend
Indicates that the dynamics LIMITER function is selected.

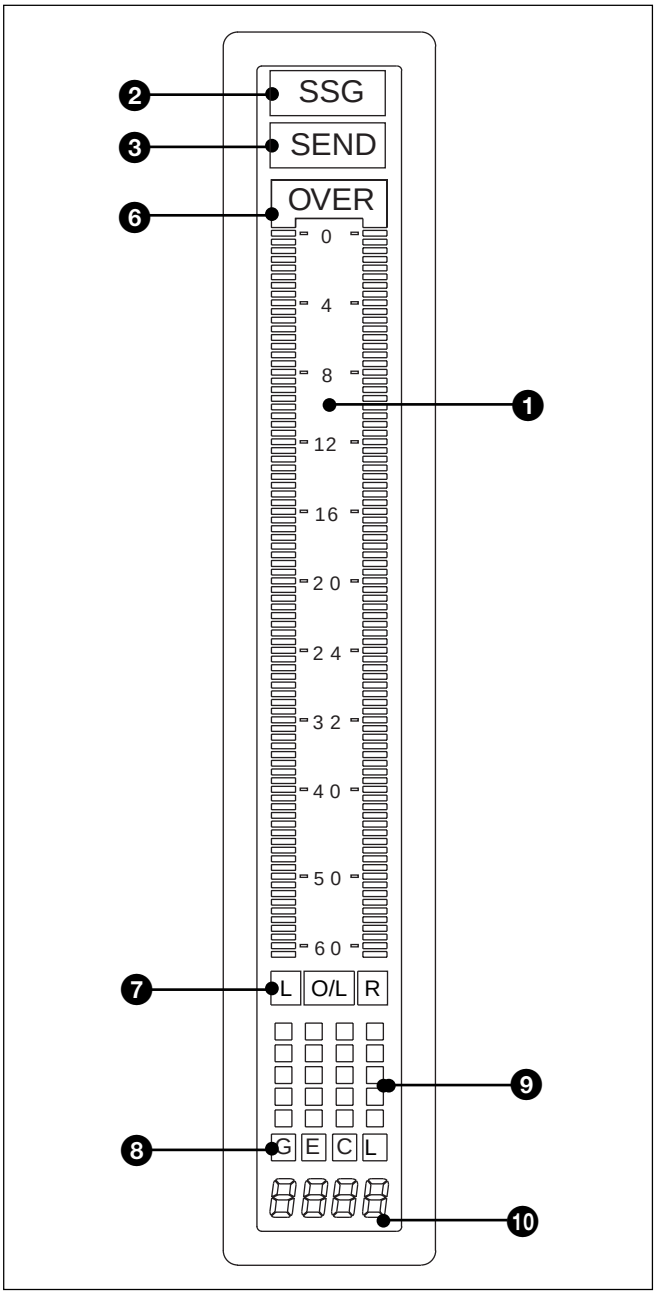
❽ 5 Segment Bar Meters (Not in this version)
The 4 mini bar meters rising vertically above G, E, C and L legends give a lower resolution display of the channel gain reduction meters.

❾ 4 x Seven Segment Characters
Indicate the channel number for meter signals being displayed.

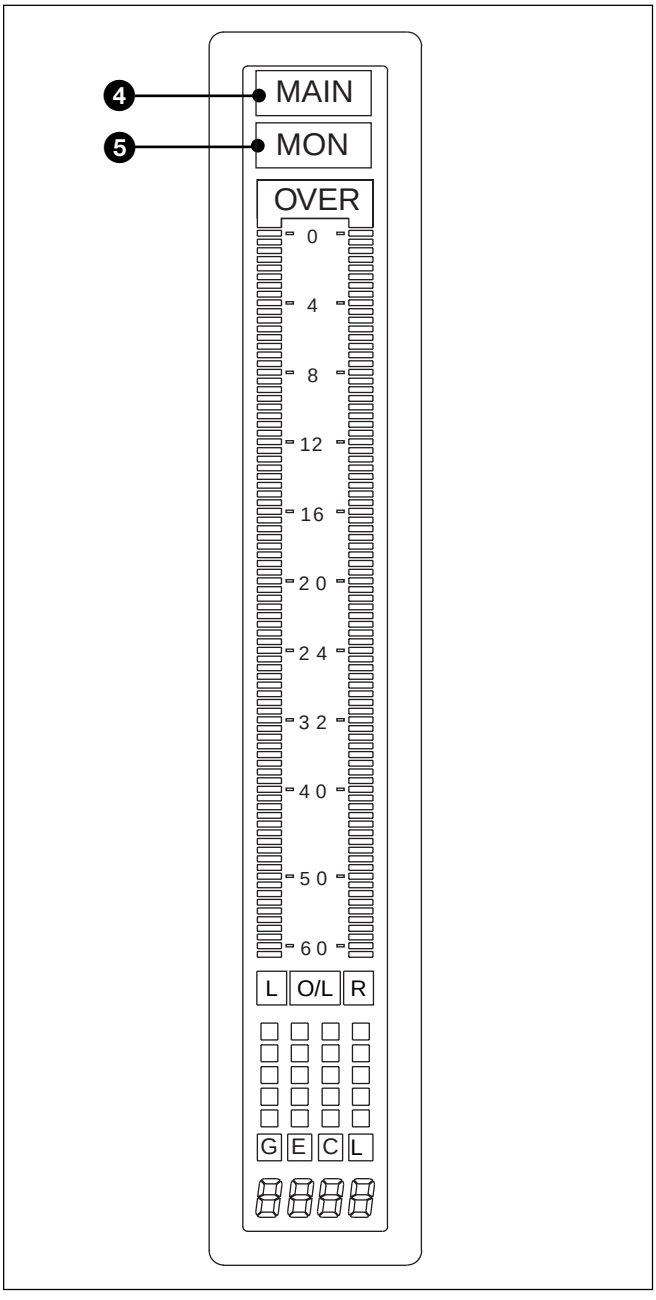
6-4-2 Stereo Centre Section Meters



SUPER SEND GROUP and SEND OUTPUTS Meters block



Stereo Meters for SUPER SEND GROUPS and SENDS



Central Stereo Meter for the MAIN Output

❶ Scale
-60dB - 0dB Full Scale.

❷ SSG Legend
Indicates a SUPER SEND GROUP meter signal.

❸ SEND Legend
Indicates a SEND Output meter signal.

❹ MAIN Legend (Central Meter)
Indicates that the Central Stereo Meter is locked to the MAIN output.

❺ MON Legend (Central Meter)
Indicates that the Central Stereo Meter will follow all centre section monitor selections.

❻ OVER Legend
Indicates a digital signal greater than full scale.

❼ L O/L Legends
Indicate an overload within the left channel signal path, pre the Main fader (operational on Main L/R only).

O/L R Legends
Indicate an overload within the right channel signal path, pre the Main fader (operational on Main L/R only).

L O/L R Legends
Indicate an overload within both the left and right channel signal paths, pre the Main L/R bus fader.

❽ G Legend (Not operational in this version)

E Legend (Not operational in this version)

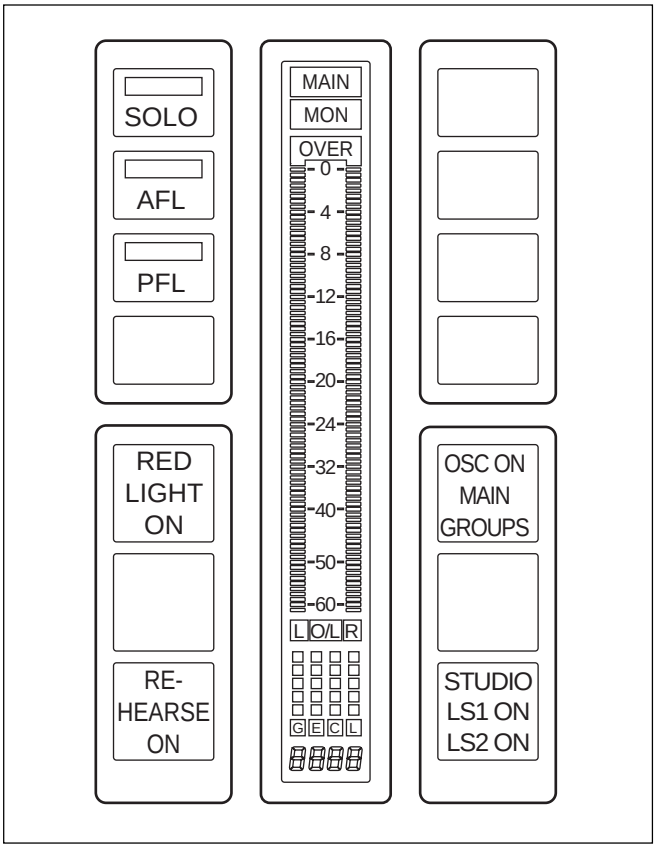
C Legend (Main L/R only)
Indicates that the dynamics COMPRESSOR function is selected.

L Legend (Not operational in this version)

❾ 5 Segment Bar Meters
The 4 mini bar meters rising vertically above G, E, C and L legends give a lower resolution display of gain reduction (only 'C' mini bar meter operational for the Main L/R in this version).

❿ 4 x Seven Segment Characters
Indicate the SSG or SEND number according to the meter signals being displayed.

6-4-3 Other Meter Bridge Indicators



Central Stereo Meter with additional flags

SOLO and AFL
To the left of Main L/R meter, SOLO or AFL legends indicate the current mode. Larger rectangular flags illuminate to indicate an active function.

RED LIGHT ON
The Red Light function has an ON indicator situated to the middle left of the Central Stereo Meter.

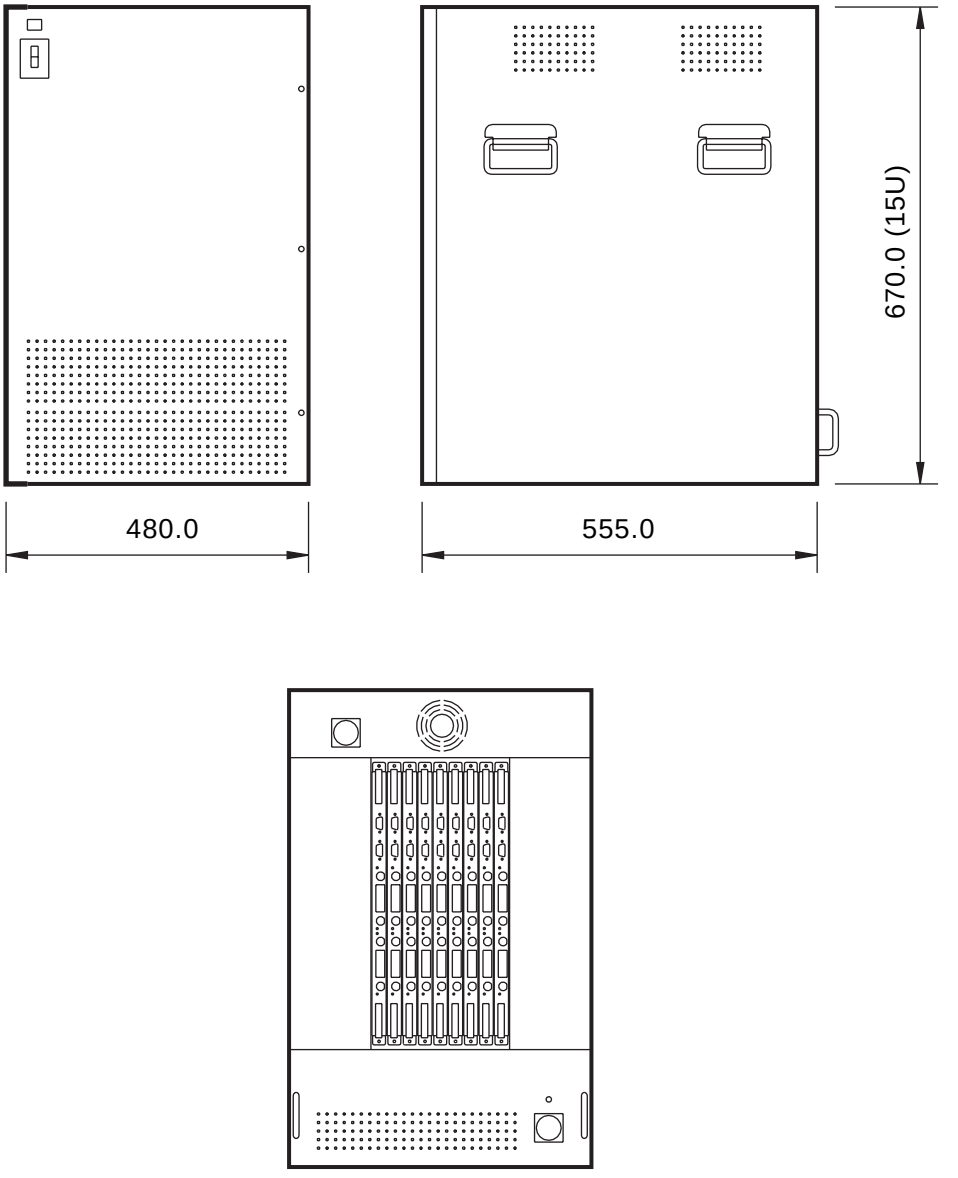
REHEARSE ON
The Rehearse function has an ON indicator situated to the lower left of the Central Stereo Meter.

OSC ON (MAIN, GROUPS)
The Oscillator has ON, MAIN and GROUPS indicators situated to the middle right of the Central Stereo Meter.

STUDIO (LS1 ON, LS2 ON)
The Studio LS switching has Studio LS1 and LS2 indicators situated to the lower right of the Central Stereo Meter.

6-5 Signal Processing Rack

The Signal Processing (SP) Rack is one standard size for all OXF-R3 installations.



SP Rack

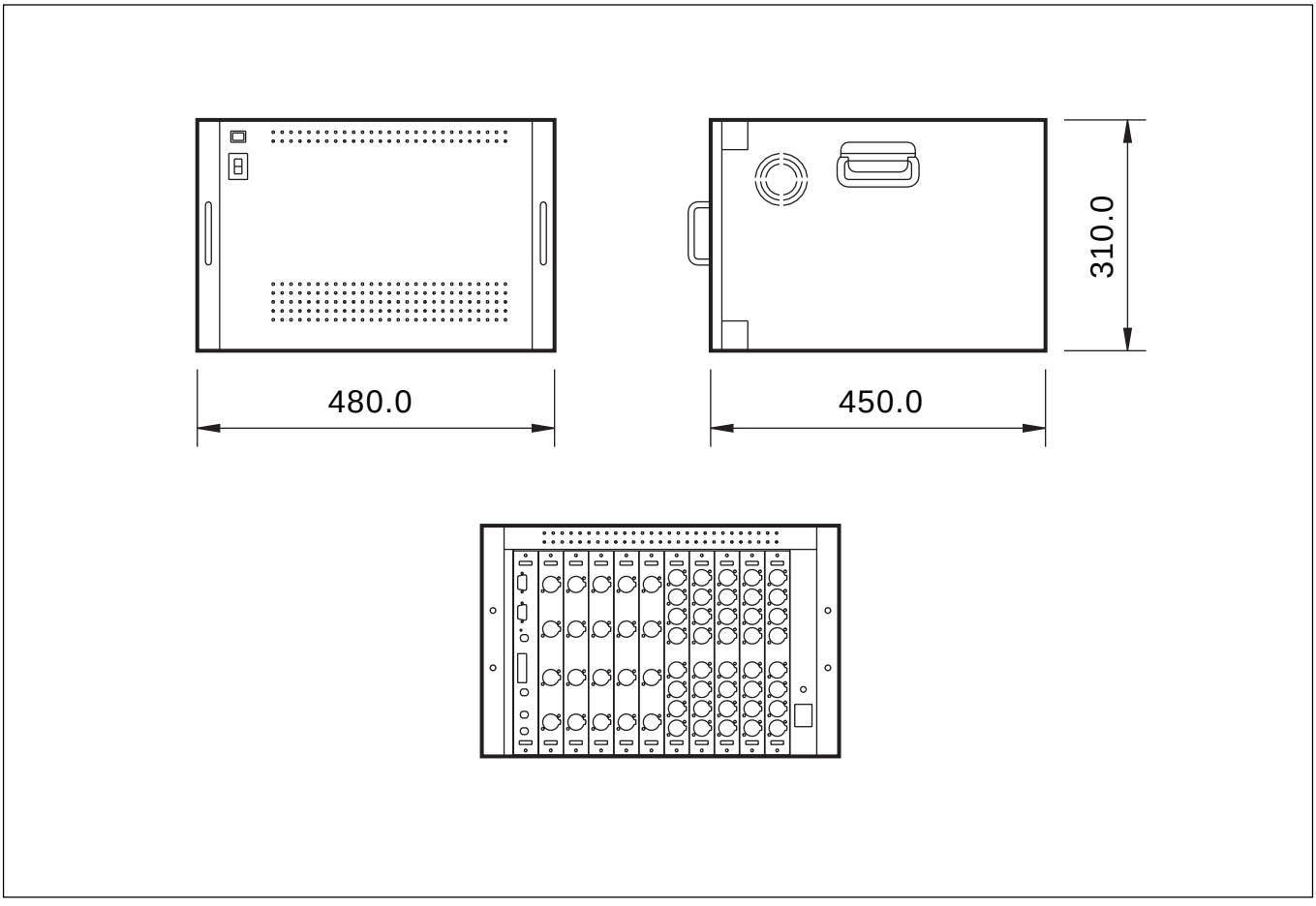
6-5-1 SP Rack Modules

The SP rack contains the following modules:

- 1 x SP Buffer Module - Interface between SP rack and host computer.
- Up to 4 x SP Link Module - Interfaces between SP and I/O racks.
- Up to 16 SP PCBs - Quantity according to SP power requirement.
- PSUs - For cards as above.

6-6 I/O Racks

The I/O system for the OXF-R3 utilises a universal rack design for both analogue and digital I/O input and output modules.



I/O Rack

6-6-1 I/O Rack Modules

Each I/O rack contains:

- 1 x Digital Link Card Module
- Up to 10 x Digital or Analogue I/O Modules