Chapter 7 – Session Management™

Chapter 7 Contents

7-1 The Basics

Historically, console automation systems have been used to automate the faders and cut buttons, together with a small number of additional controls, in order to record complex manipulations in synchronisation with the programme material. This avoids the artistic result being limited by the engineer's dexterity, memory and number of arms! The OXF-R3 console extends this concept in that all usefully automated functions can be controlled by the automated Session Management™ System.

During a typical music mixing session, a number of tasks are being performed simultaneously. The overall balance of the individual contributions is adjusted, and many signal processing changes might be made (such as equalisation or compression) to achieve the desired 'sound' from a particular set of sources. These changes are static in nature - for example, the engineer may make a number of adjustments to an equaliser as the programme material is played, listening to the result. When satisfied, the operator will stop moving the equaliser controls, leaving them in the position which achieves this result. The only setting, or automation data, of interest is the final position. The audition moves are of no interest. In other words, the vast majority of control manipulations in a mixing session are of this static type.

At the same time as the balancing is being carried out, some controls are being manipulated which do require to be replayed - called 'dynamic automation moves'. An example would be the use of a cut button to remove unwanted background noises on a particular track or to cut certain passages at specific times. The track may be 'cut' at appropriate times and, from then on, the same operation should occur every time the same programme material is replayed.

From the above, it can be seen that it is essential to have very flexible control over the automation system on an individual control basis. To simply 'record every move and control action' is the wrong approach. More time would be spent subsequently sorting out what was to be kept, compared to creating the mix in the first place. During a single play of a music track, many tens of balancing moves may be made, with perhaps dynamic moves (to be recorded) on just a few controls other than faders.

This assessment of the engineer's requirements leads to the following system requirements for music mixing:

1. By default, the system assumes that automation of the static or balancing type is required. As controls are moved, the most recent values are stored, and are applied throughout the duration of the programme.

2. Controls may be set on an individual basis to be dynamically automated as required. In this case the actual moves, relative to programme time, are recorded and played back on subsequent replays.

7-2 Files Hierarchy and Automatable Controls

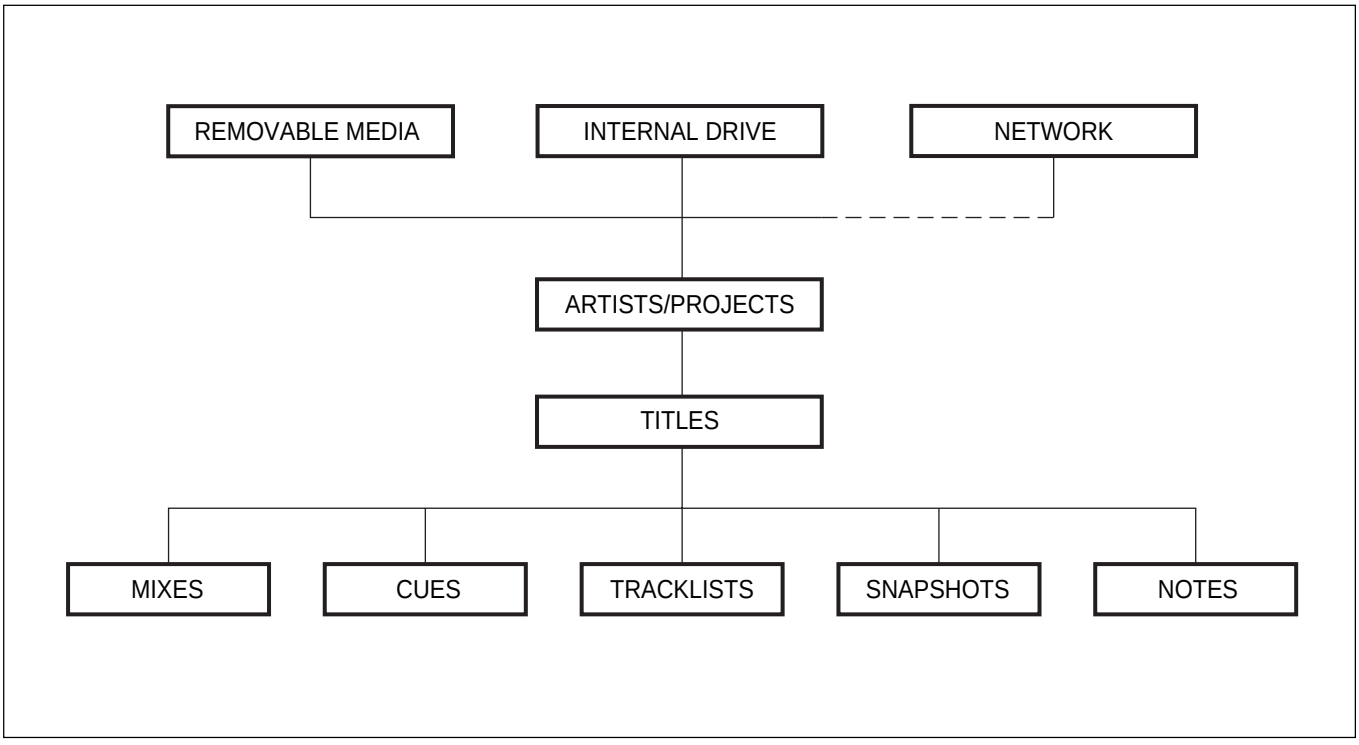
7-2-1 Files Hierarchy

General Files Structure

The automation data (files) are arranged in a traditional hierarchical manner. The layers are ARTIST/PROJECTS, TITLES and MIXES. The level for MIXES may also contain CUES, TRACK LISTS, SNAPSHOTS and NOTES relating to the current TITLE. See the following file structure diagram.

Note:

Refer also to the Screens Structure diagrams in Chapter 5 - Control Screens.



Files Structure

ARTISTS/PROJECTS

Are the headings for the jobs in progress e.g. session, album or show. Associated with the project will be further information such as details about the session, producer, engineer etc.

TITLES

Represent specific sections of programme material - a track on an album for example, or a scene in a show. Creation of a new title implies defining a START and END time for the programme material - e.g. against SMPTE timecode in the case of a present-day tape recorder. Once a TITLE has been defined, it can be used for control of the programme (e.g. PLAY TITLE ENTER) in addition to being the reference as regards data storage. START and END times can be re-defined at any time.

MIXES

A MIX is a specific ‘performance’ of a title. Each mix contains all the data necessary to play the title, all its automated moves, and all static settings including the input and output set-ups and assignments. Many different MIXES may be created for a title, and the final MIX may well be created by combining sections from several earlier mixes.

CUES

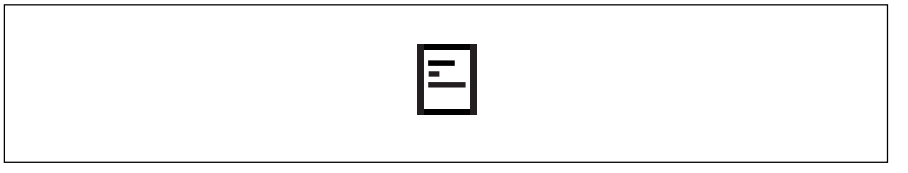
CUE points are specific listed time points within a title. They are numbered for quick reference and may be given names, which is normally more appropriate. CUE points may be added either explicitly by typing, or by actions ‘on the fly’.

TRACK LISTS

A TRACK LIST refers to the list of sound sources on a specific piece of storage e.g. the multitrack tape.

NOTES

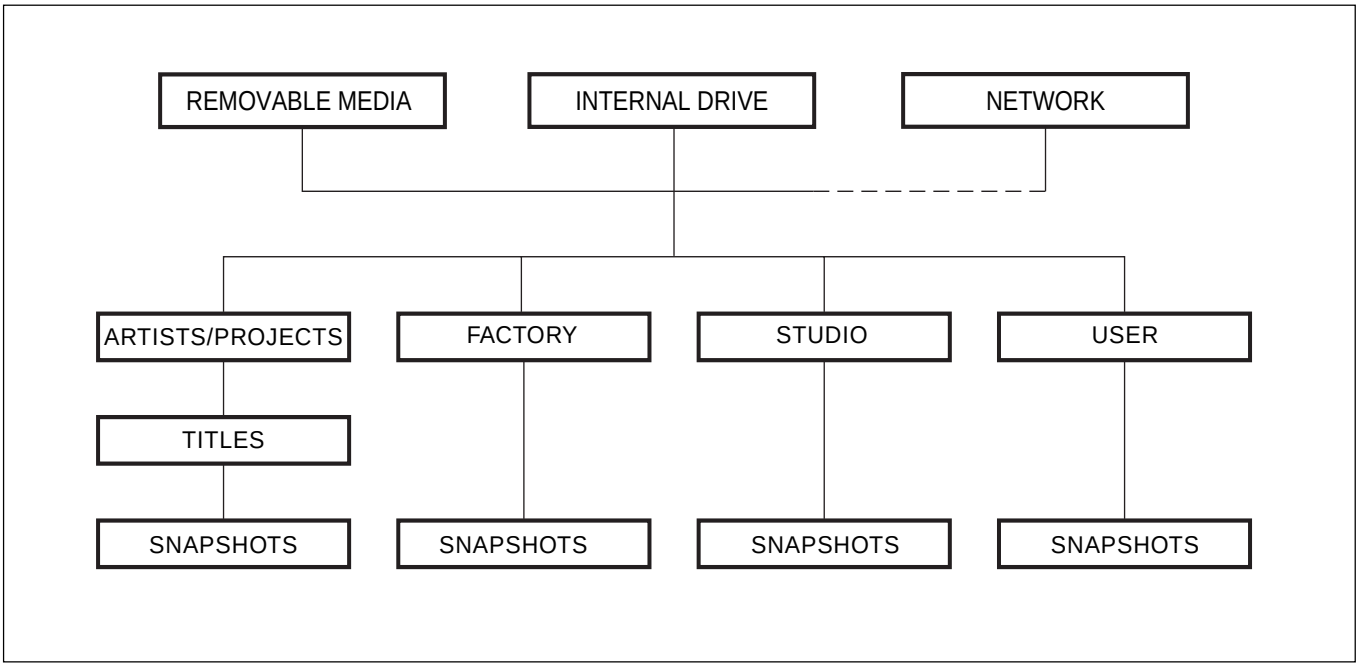
The list fields for entities such as Titles, Mixes and Cues have NOTES columns indicated by the note icon. Clicking on this column adjacent to the appropriate item causes a NOTES pop-up to appear.



NOTES icon

SNAPSHOTS

A SNAPSHOT is a static set-up of all the console control settings and its input/output settings which may be stored and recalled at a later date. It is not time related and may be recalled at any time as a whole entity, or in part, as desired. Snapshots may be stored under various headings to which they relate: Titles, Factory, Studio and Users. Passwords may be used when storing SNAPSHOTS to protect them and to prevent unauthorised use. The Snapshot File Structure diagram is shown below.



Snapshots File Structure

Notes:

Related NOTES may be compiled within all levels of the Session Management™ System on associated pages.

7-2-2 Automatable Controls

Controls that can be automated

The following controls can be dynamically automated, but note that the static settings of all controls are stored alongside dynamic automation data.

- **EQ**
- **Dynamics**
- **Delay**
- **MIDI Parameters**
- **Channel Faders, Control Group Faders and Main Fader**
- **Channel Cuts and Control Group Cuts**
- **Channel Pans and In/Out Buttons**
- **Multitrack Pans including Multi-Format Surround Pans**
- **Multitrack Send Levels and Cuts**
- **Send Levels, Send Cuts, Send Pans**
- **The 8 IN Buttons on the Input Channel & Inserts panel**
- **The A and B Equaliser buttons**
- **MIC, M/T and LINE Input Selector Push-buttons**
- **Knobs and Switches Assigned to MIDI Outputs**

Note:

The 8 IN buttons allow all channel processes such as EQ, Dynamics and Insert to be switched in and out of the channel path.

7-3 File Data Storage

General

Data for any files created is normally stored on the system hard drive, and may be transferred between systems using M.O. discs via the drive at the Host Computer. Systems in the same installation can have data transfer via network connections. This is set up using the PREFERENCES GUI, described later in Chapter 7.

Compatibility between variants of the same S/W release level

Automation data is compatible between variants at the same revision level according to the Automation Compatibility Table below.

Automation Source Data	To DMSK-R3096 - 96Ch	To DMSK-R3072 - 96Ch
DMSK-R3096 - 96Ch		
• Mono Channels 1-72 • Mono Channels 73-96 • Mono Returns 97-120	• Compatible • Compatible • Compatible	• Compatible • Compatible • No Destination Channels
DMSK-R3072 - 96Ch		
• Mono Channels 1-72 • Mono Channels 73-96	• Compatible • Compatible • Mono Returns 96-120 are Reset to Defaults	• Compatible • Compatible

OXF-R3 Automation Data Compatibility Table 1

Automation data created using earlier S/W versions

There are major differences in the V3.0 system structure compared to V2.1 and earlier. The OXF-R3 now has an '8 wide' (7.1) Main Output Bus whereas it was stereo previously. There are a great many other changes too. However, many controls will match exactly and will be compatible. Where, for example, new control objects exist in V3.0, the system will be set to the boot-up default.

Where, within automation data from earlier versions, a multi-channel mix exists using the multitrack stem facility, the 'MAIN WIDTH' will be set to match the stem width. This is because the Main Output Bus is now the monitor path for stem mixes. The monitor path used to be via SSGs.

V3.0 Automation Data and systems using earlier S/W

Loading automation data created on a system using V3.0 into a system using an earlier version such as V2.1, is not defined and therefore cannot be supported.

7-4 Programme Material

As described previously, creating a title will require the user to enter start and end points as times. It is assumed that the programme material is available on a machine (tape recorder, hard disc etc.) which is connected in such a way as to be able to locate to cue points, and to execute normal functions such as play, roll-back etc., under the control of the automation system. It is also assumed that the machine will inform the automation system of its current position (e.g. by timecode) while it is playing. The machine may, in fact, be multiple tape recorders locked by synchronisers, or a single hard disc machine. This makes no difference to the operation of the console automation system.

7-5 Mixing Overview

7-5-1 Getting Started

The Session Manager Screens illustrated in this section are displayed on the LCD Control Screen in the centre section of the OXF-R3 console. The Mixing Overview is intended as an abbreviated guide to enable an experienced operator to start mixing as quickly as possible. In-depth information is provided later in this chapter.

OXF-R3 Logo screen

The OXF-R3 logo screen is displayed after boot-up; the softkey functions at the base of the SMS allow selection of either SYSTEM (selecting pages for machine set-ups etc.), PROJECTS (to go to the Artists/ Projects & Titles Screen) or SCREEN, which accesses a pop-up menu box showing all available screen selections.

Select PROJECTS by pressing the associated softkey.

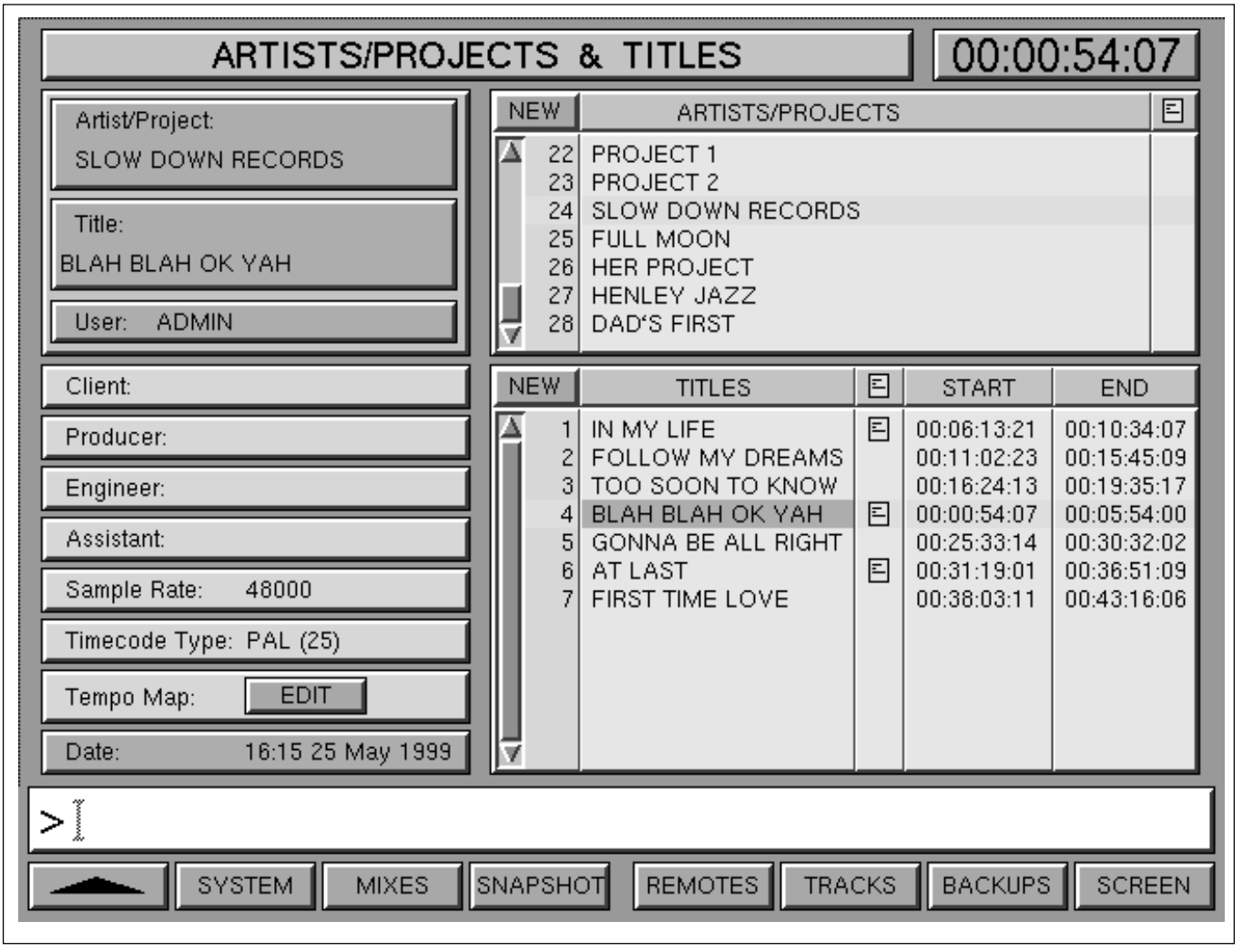
IMPORTANT:

Before mixing is started, make sure the TIMECODE FORMAT and the SAMPLE RATE, for the current programme material, are set correctly in the System screen page.

Note

Instructions requiring an object in a screen to be highlighted are referring to the orange highlight block.

7-5-2 Name the Artist/Project and Title



Artists/Projects & Titles screen

To name ARTISTS/PROJECTS and TITLES

1 On the Control Keyboard, press [PROJECT] [ENTER] for a large pop-up to type in a name. Use the QWERTY keyboard to type in a suitable name, then either click on OK on the screen or press [ENTER] on the keyboard. Selecting OK or [ENTER] without a name will automatically enter a default name, Project 1 (or the next available). After a Project is named a Title pop-up will appear automatically.

2 To name subsequent Titles, press [TITLE] [ENTER] on the Control Keyboard. A large pop-up will appear, prompting the user to type in a name. Use the QWERTY keyboard to type in a suitable name then select OK on the screen or [ENTER]. Selecting OK or [ENTER] without a name enters the next available default.

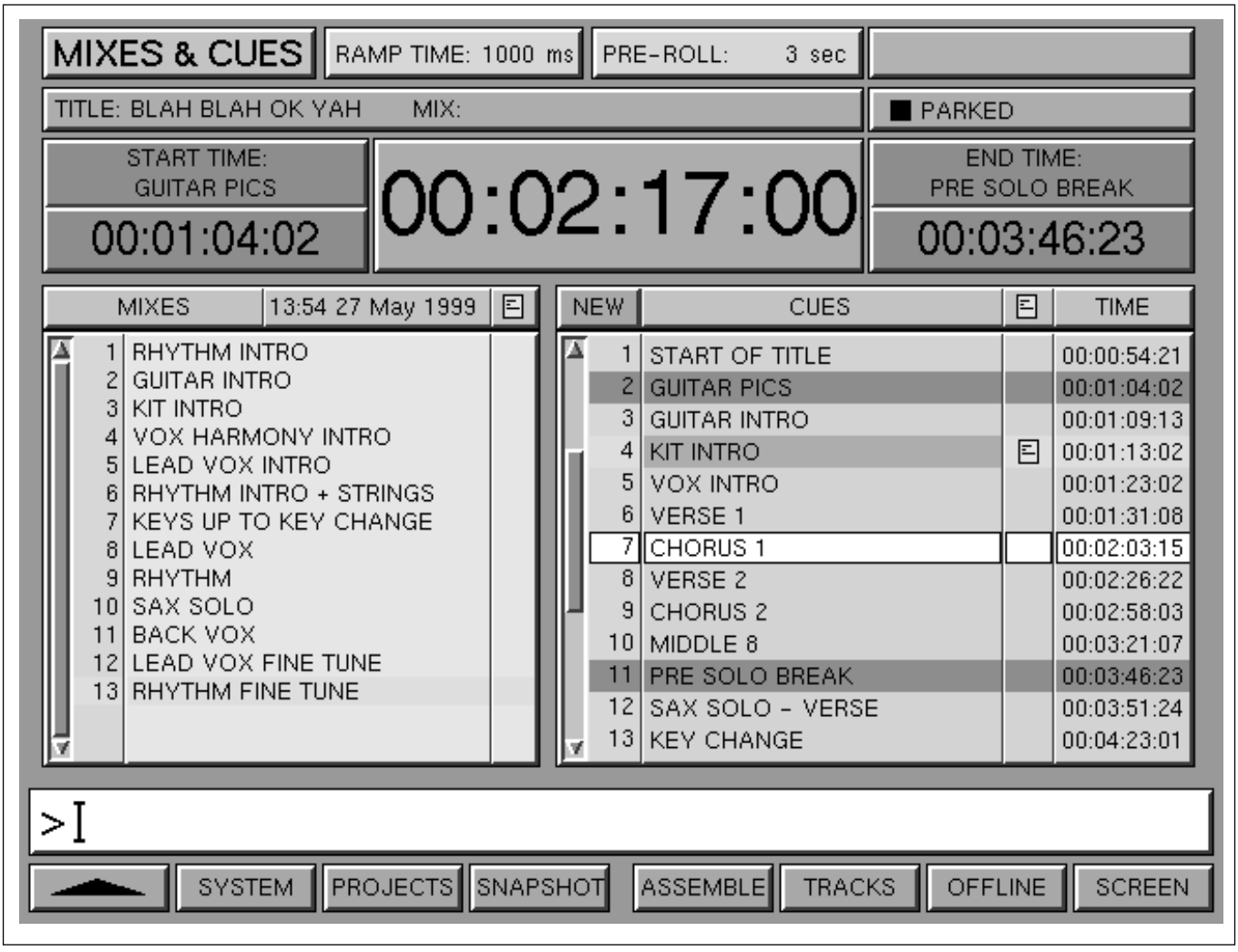
3 All dynamic data such as fader moves and cuts have to be time-related, so it is necessary to set start and end times for each Title. Move the orange cursor to the START column, alongside the new TITLE just named.

4 Click on the START column or press [EDIT] on the Control Keyboard to display a pop-up to type in the start time. Alternatively, enter time 'on the fly' by pressing [NOW] on the Control Keyboard at the appropriate instant whilst the tape is rolling. Roll back and repeat if incorrect.

5 Repeat steps 3 and 4 in the END column for the end time.

7-5-3 To Set Cue Points

Select the MIXES & CUES screen by pressing the MIXES softkey beneath the screen. The Start and End times set for the current Title will be displayed either side of the central timecode display.



Mixes & Cues screen

To set cue points 'on the fly':

1 Roll the tape and press [CUE] on the Control Keyboard in readiness for setting a cue point. At the appropriate time, press [ENTER]. A pop-up will appear, prompting the user to type in a suitable name then either select OK on the screen or press [ENTER] on the keyboard.

Alternatively, press [ENTER] again for the default name of CUE 1, and a new cue point to be added to the list displayed on the right half of the screen.

2 Repeat as necessary for CUE 2, CUE 3, etc. To give useful names to these cues later, move the highlight to each Cue in turn and click on or press [EDIT] on the Control Keyboard for a dialogue box. Type in the name(s) required using the QWERTY keyboard.

To set a cue point off-line

1 Move the orange highlight to the desired line in the TIME column on the screen.

2 Click or press [EDIT] on the Control Keyboard. Type in the timecode and click **OK** or press [ENTER] on the Control Keyboard.

To adjust the time of a cue point off-line

1 Move the orange highlight to the TIME column on the screen and nudge the time with the [+] and [-] keys, or:

2 Click on the time entry or press [EDIT] on the Control Keyboard to display the timecode dialogue box. Type in the timecode and click **OK** or press [ENTER] on the Control Keyboard.

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

To obtain a rough balance

1 On the Control Keyboard, press:
[CYCLE] [TITLE] [ENTER]
The source material will be repeated over and over again between the Start and End times allowing a fader balance to be created.

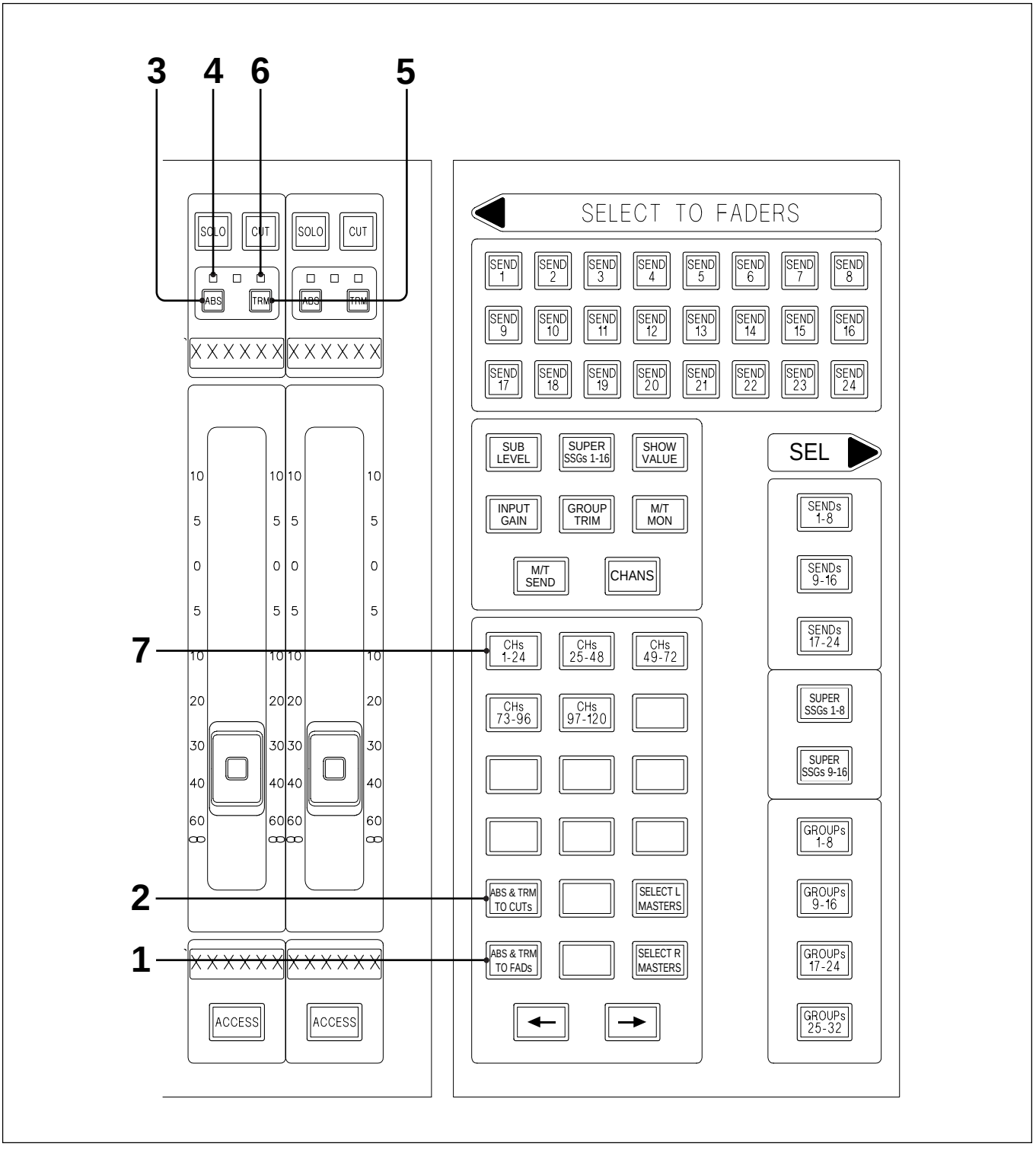
Alternatively, press:
[CYCLE] [CUE] # [CUE] # [ENTER]
to use cue numbers for the selection.

2 Stop the tape when required using the Machine Remote transport ■ stop key or press [CANCEL] on the Control Keyboard.

3 To repeat the operation, press:
[REPEAT] [ENTER] on the Control Keyboard.

7-5-4 To Automate Cuts

Cuts may be set up for automation in two ways, using the local [ABS] (absolute) and [TRM] (trim) buttons above the faders or using the master keys, [READY ABSOLUTE] and [READY TRIM] buttons beneath the central LCD screen. The method for local buttons will be described first.



Setting automation of Cuts locally

To set up Cuts for automation locally

See the diagram - 'Setting automation of Cuts locally'.

1 The [ABS] and [TRM] buttons above the faders are assigned to the faders by default.
[ABS + TRM TO FADs] will be lit to indicate this.

2 Press [ABS + TRM TO CUTs] to assign the [ABS] and [TRM] buttons to the cuts.

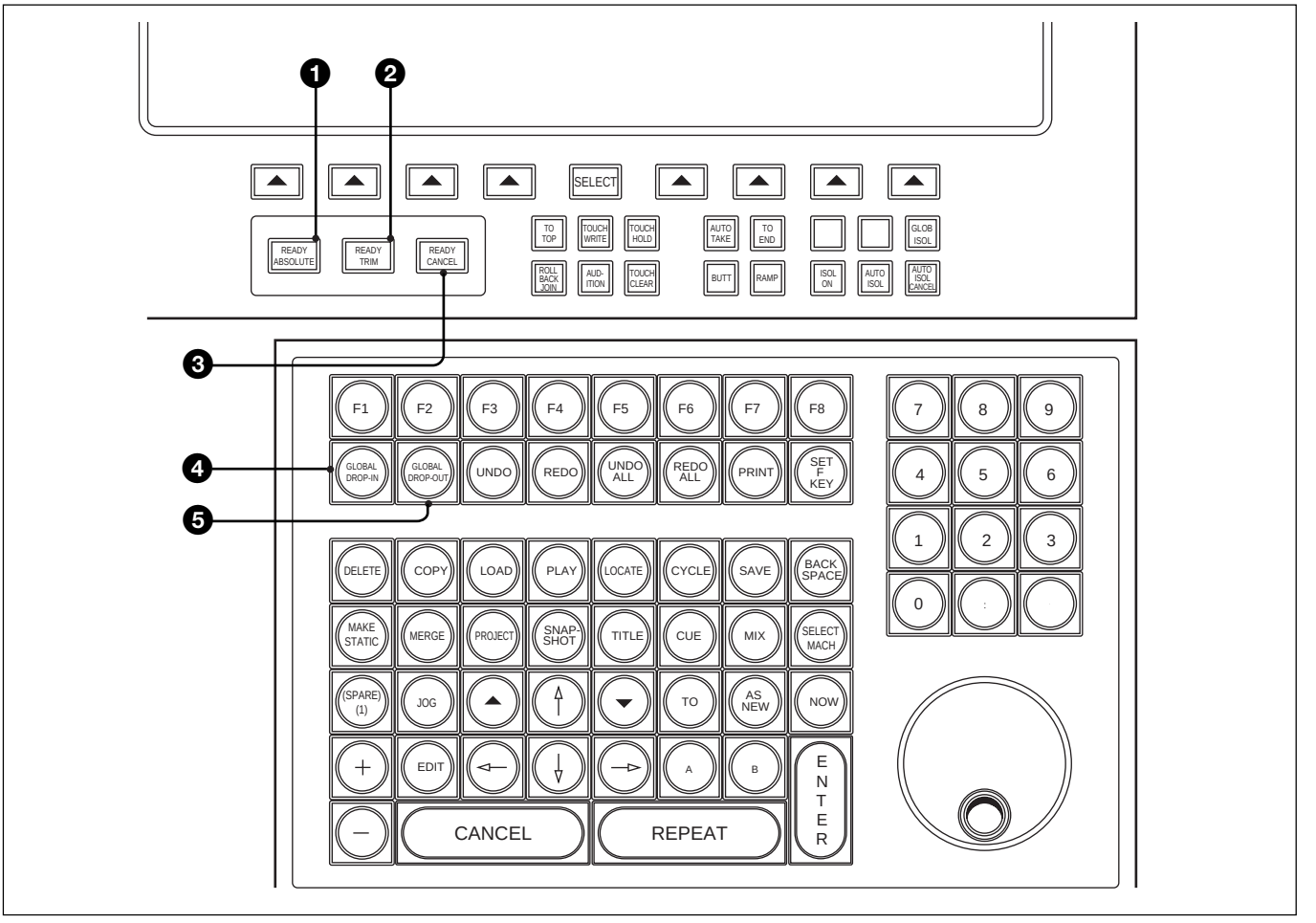
3 Press [ABS] for the cuts to be automated where new data is to be written. This will overwrite previous data.

4 Their red LEDs flash to indicate their 'ready' status.

5 Press [TRM] for cuts to be automated where cut data is to be modified or added to.

6 Their green LEDs will flash to indicate their 'ready' status.

7 To set a bank of 24 cuts into 'ready' status, press and hold [CHS 1-24], for example, until it turns amber and then press any [ABS] or [TRM].



Automation master keys

To set up Cuts for automation using the central master keys

❶ READY ABSOLUTE Push-Button

This latching button allows the user to set cuts into an 'automation ready' state where new cuts can be written which will overwrite previous data. If any cuts were already lit, their lights will go out for the set-up during the period that [READY ABSOLUTE] is latched.

Latch [READY ABSOLUTE] and press any cuts to be automated and they will flash to show that they are enabled. When [READY ABSOLUTE] is pressed again, de-selecting it, the enabled cuts return to their previous states. Rolling the tape causes [READY ABSOLUTE] to be de-selected automatically.

❷ READY TRIM Push-Button
READY TRIM works in the same way as READY ABSOLUTE. It allows cuts to be set up such that existing cuts can be modified, or additional cuts created, without overwriting previous cuts.

❸ READY CANCEL Push-Button
READY CANCEL takes all controls out of the 'ready' state and returns them to a 'safe' mode.

❹ GLOBAL DROP-IN Key
GLOBAL DROP-IN puts the cuts which are set up 'ready' into write and can be actioned either before the tape is rolling or while it is rolling. Once GLOBAL DROP-IN is selected, the cuts can be actioned, whilst the tape is rolling. To revise any cuts, roll the tape back and play again. The cuts will be replayed and none will be overwritten until GLOBAL DROP-IN is pressed once more.

Alternatively, an individual switch will drop into automation record at the moment it is pressed, changing its state at the same time.

Note:
The state of a switch can be retained when dropping in using READY ABSOLUTE by holding its ABS button whilst pressing the switch.

❺ GLOBAL DROP-OUT Key
GLOBAL DROP-OUT causes all controls to drop out of automation record.

To automate cuts

1 To start at the beginning of the Title, on the Control Keyboard press:
LOCATE TITLE ENTER
or:
LOCATE ENTER
to locate to the last entered starting time.

2 'Ready' enable the cuts to be automated with READY ABSOLUTE (or READY TRIM) or: 'Ready' enable cuts using the 'local' method described at the beginning of this section.

3 Press GLOBAL DROP-IN either before or after rolling the tape to drop all 'ready' enabled cuts into automation record, or press switches individually.

4 Write cuts as required.

Note:
To audition a channel which is cut, assign the Definable Knobs to INPUT GAIN and press AFL on the appropriate channel.

5 Press GLOBAL DROP-OUT after writing cuts.

6 Press READY CANCEL and then PLAY ENTER on the Control Keyboard to hear the result and note that automated cuts are indicated by switches lighting amber.

Note:
As soon as any automation has been recorded, the message '(New) 1 DYNAMIC LAYER' is displayed on the MIXES & CUES GUI at the top right, to indicate that un-saved automation data is resident in the system.

UNDO and REDO functions
As passes are made by rolling forwards and back, a set of un-saved passes is built up which is resident in the system memory. Use UNDO to step backwards through individual passes to the last SAVE command and REDO to go forwards. Press UNDO ALL to go all the way back in one step and REDO ALL to go all the way forwards in one step.

Individual channel UNDO
To undo automation actions for an individual channel, press and hold ACCESS for that channel, then press UNDO. All automation data for the last pass will be removed from any controls that were automated. Repeat for other individual channels.

Note:
UNDO operations for individual channels cannot be reversed using REDO.

How to modify cuts using READY TRIM

Note:
Although it is often easier to rewrite cuts rather than modify them, the following online functions are available. (Off-line adjustments can be made using the OFFLINE: CUTS GUI).

1 'Ready' Trim enable the cuts to be automated with the central READY TRIM button or:
'Ready' Trim enable the cuts using the 'local' method described at the beginning of this section.

2 Press GLOBAL DROP-IN either before or after rolling the tape to drop all 'ready' enabled cuts into automation record, or press switches individually.

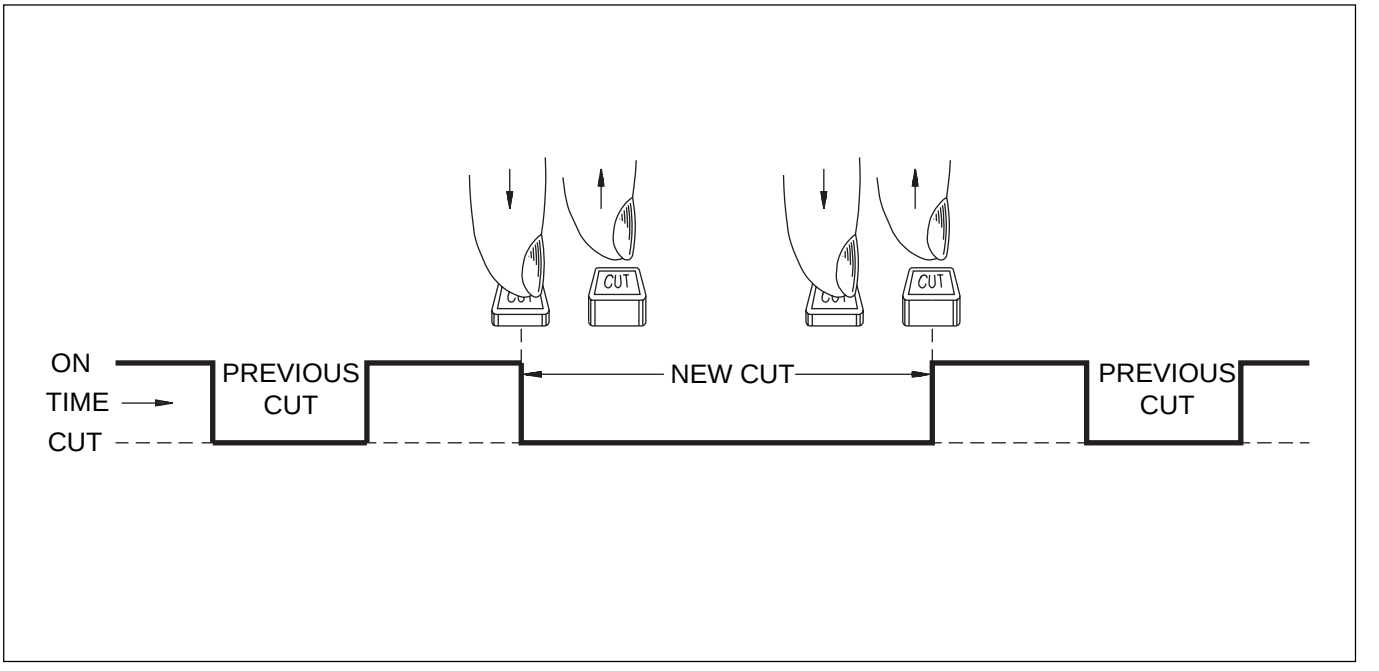
3 Press GLOBAL DROP-OUT after writing cuts and then READY CANCEL followed by PLAY ENTER to hear the result.

Note:

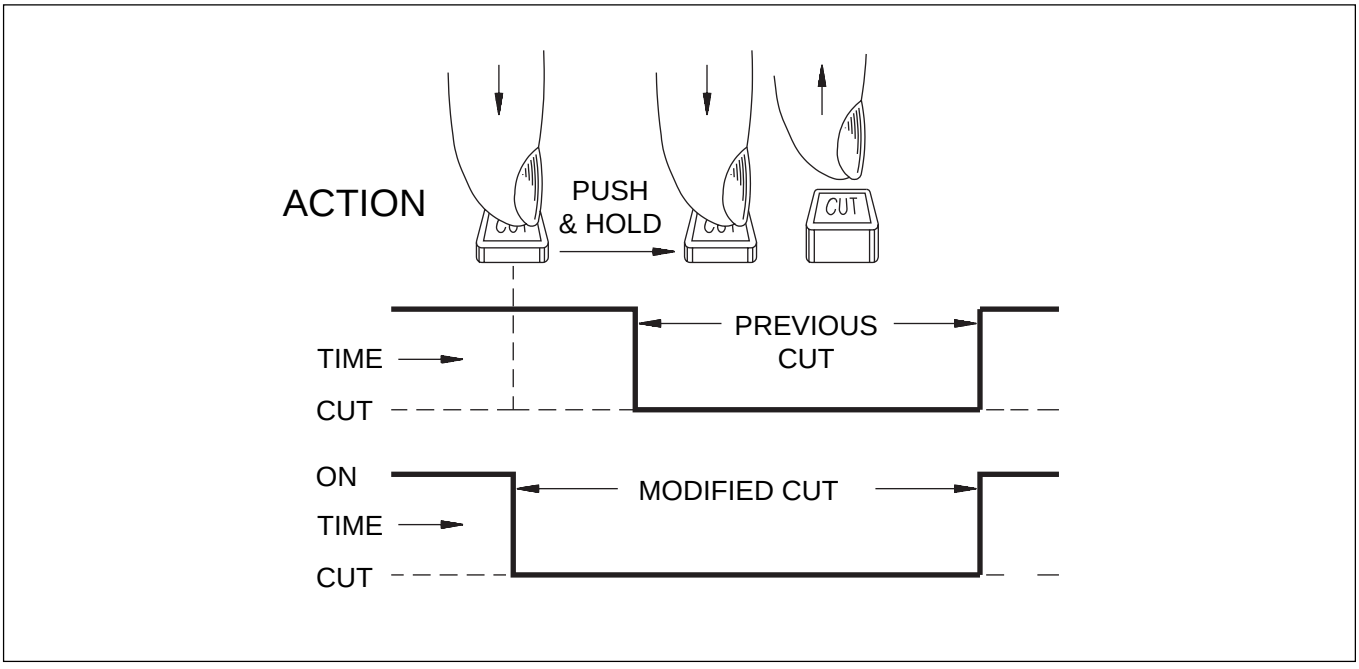
The bi-colour LEDs in the cut switches help with the operation of these functions. The red light indicates manual actions and amber those being performed by the computer. Extra bright red/amber indicates simultaneous manual and computer control.

To add a new cut:

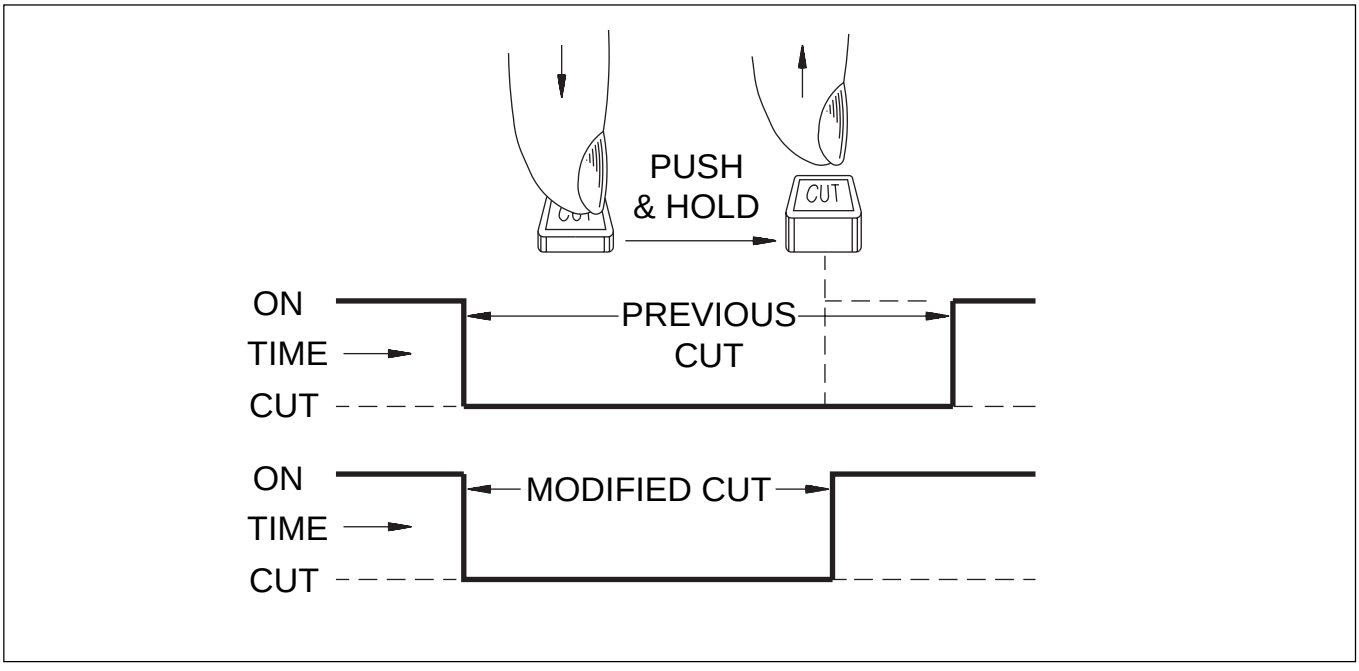
Adding a new cut in between previous cuts, with no overlap, is straightforward. Implement as previously described.



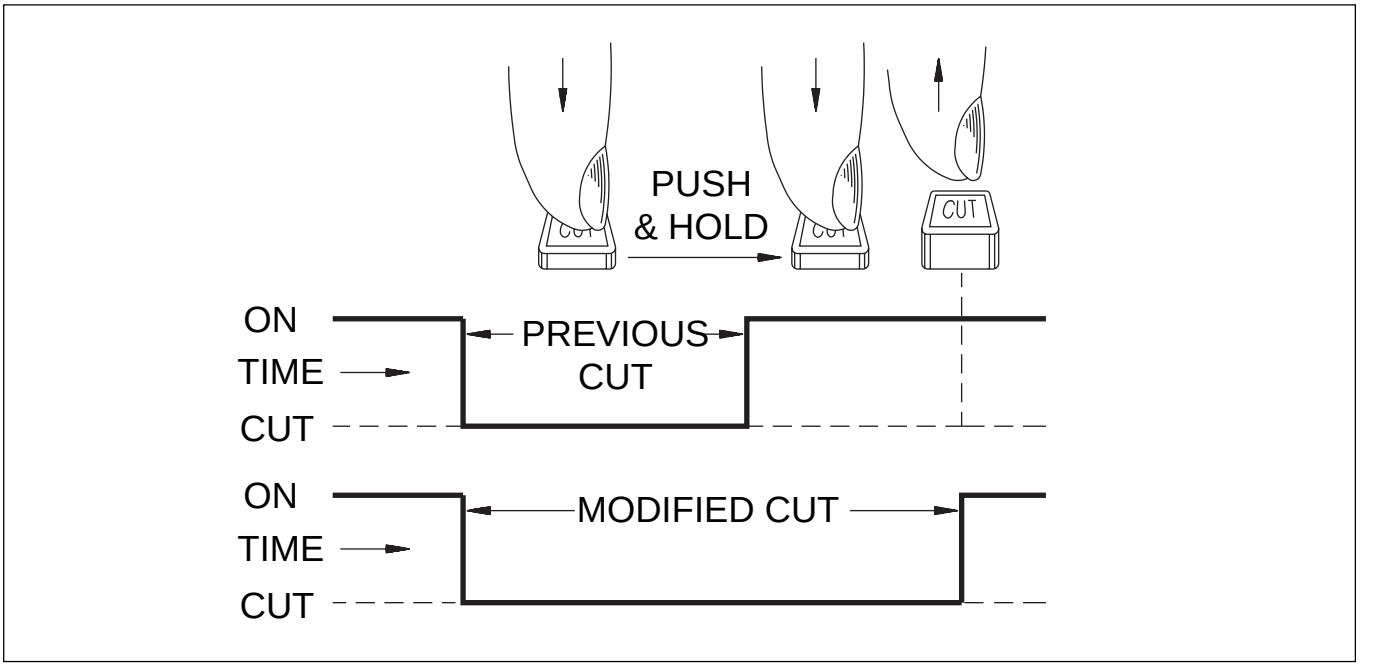
Advance the in-point:
Push the CUT switch earlier and hold until the original in-point is passed, then release.



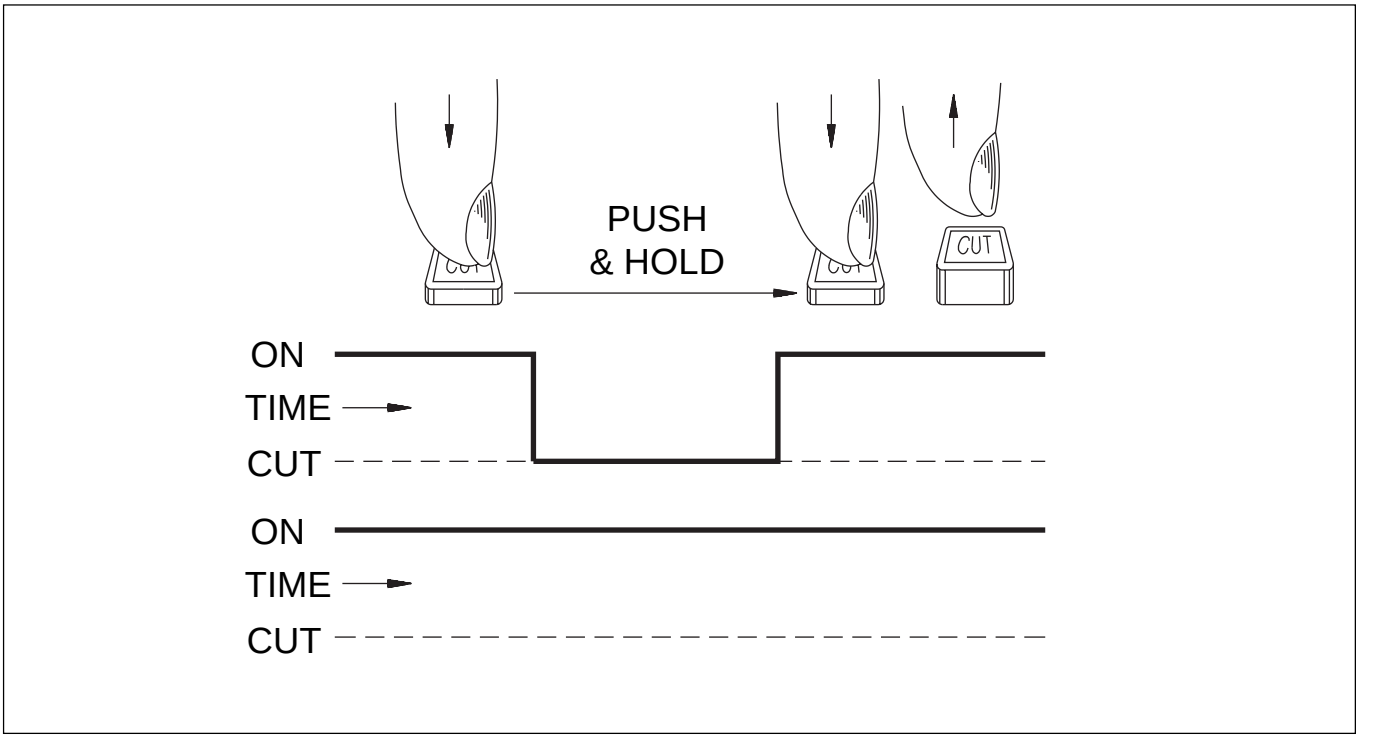
Advance the out-point:
Push the CUT switch and hold during the original cut, then release at the new (earlier) out-point.



To make a cut longer:
Push and hold the CUT switch during the original cut.
Release at the new (later) out-point.

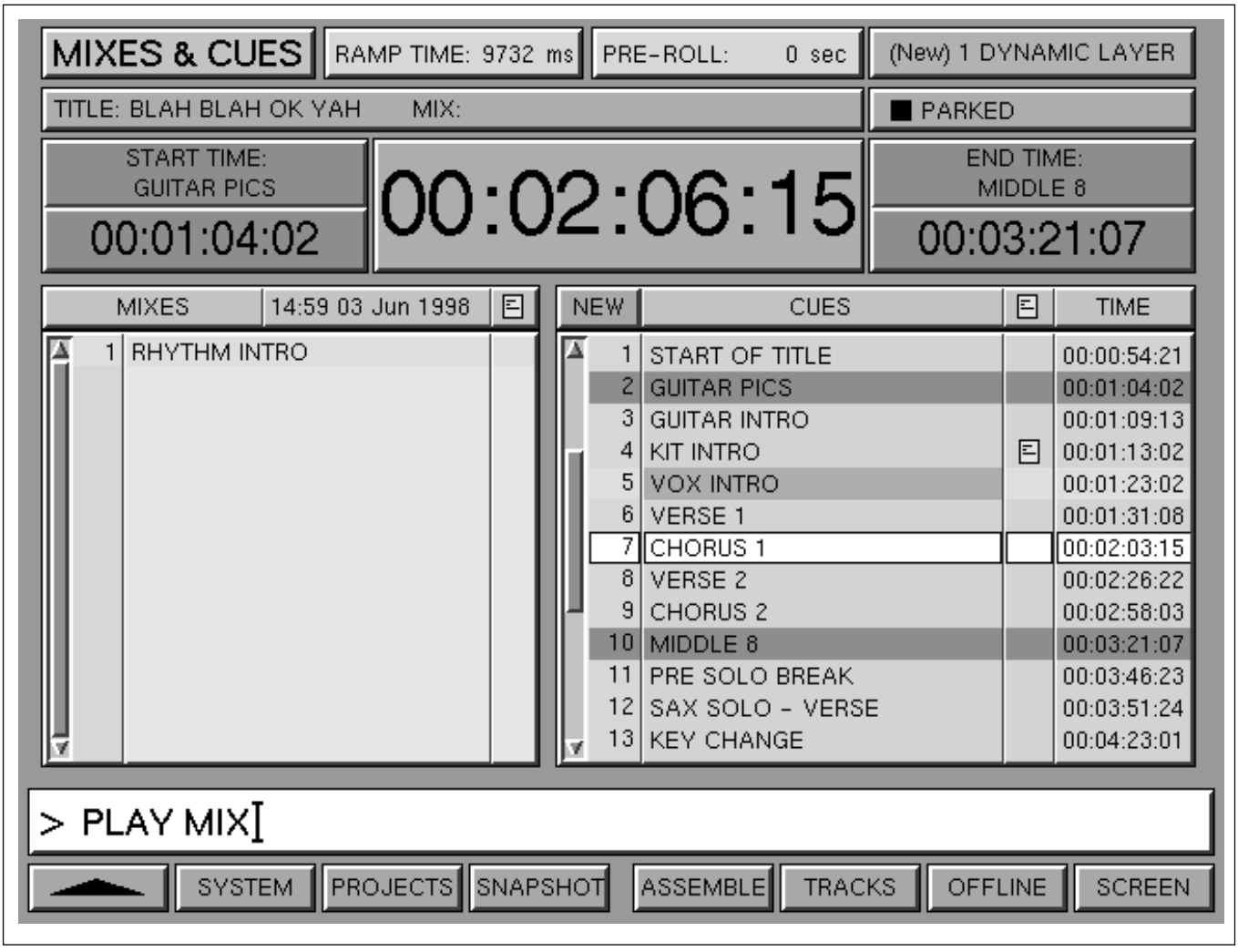


To erase a cut completely:
Push and hold before the original in-point and release after the original out-point.



7-5-5 To Save a Mix

A mix, or part mix, can be saved at any time. So far, the automation data for any cuts has been resident in the 'working mix' and has not been saved to the internal hard drive.



Mixes & Cues screen

To save a mix

To save a mix for the first time, press SAVE MIX ENTER on the Control Keyboard. A pop-up dialogue box will appear for a name entry. Type in an appropriate name on the QWERTY keyboard or press ENTER once more or click on **OK** for the default name, MIX 1. This will appear as the first entry in the MIXES list. To edit mix names later, either highlight and click on or press EDIT for the name dialogue pop-up.

If SAVE MIX ENTER is used again, the new mix will overwrite the previous one, in just the same way as SAVE works on a word processor.

Use SAVE MIX AS NEW ENTER to avoid overwriting the previous mix. A pop-up will appear for a new name entry, or press ENTER or click on **OK** for the next default name.

When a mix is saved, so is the static position of the complete console. If the mix is recalled at a later date, everything will be completely reset to its previous static position, apart from controls which were automated. Their settings and movements will be referenced to timecode.

7-5-6 To Automate Fader Moves

The procedure to automate fader moves is very similar to cuts. [ABS + TRM TO FADs] must be selected on the SELECT TO FADERS panel to assign the [ABS] (absolute write) and [TRM] (trim) buttons to faders. Make sure [BUTT] is the only button selected under the central LCD.

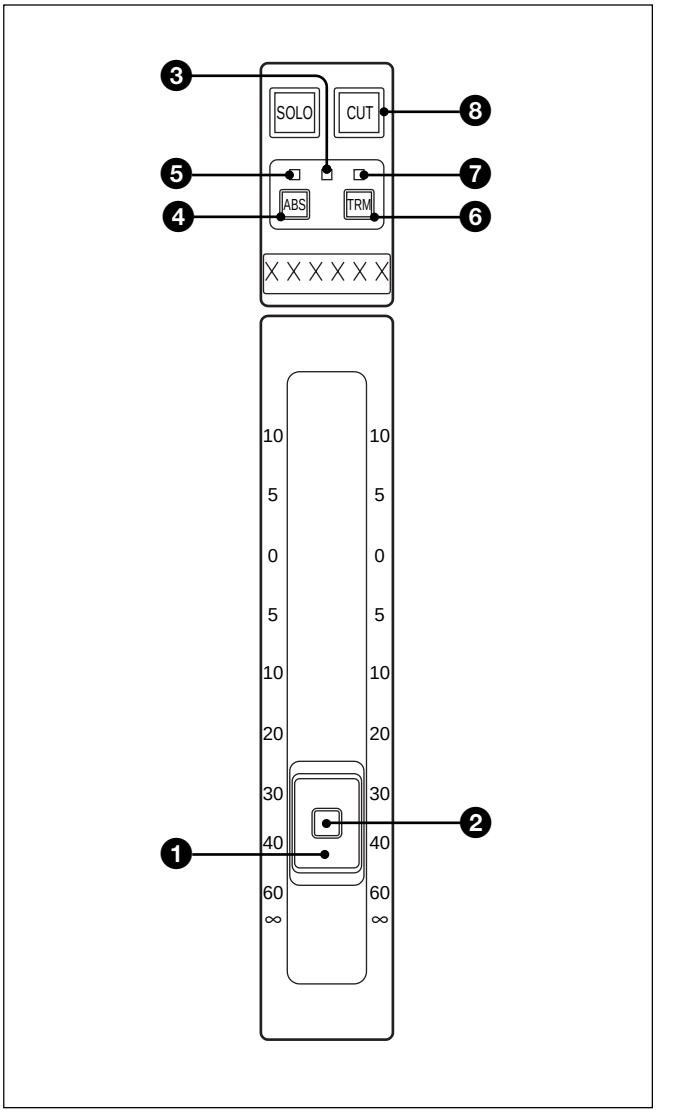
To start at the beginning of a Title, move the highlight to the desired Title in the ARTISTS/PROJECTS & TITLES GUI and press [LOCATE] [TITLE] [ENTER] on the Control Keyboard. To add fader moves to a mix which may already have cuts written, highlight the mix and [LOCATE] [MIX] [ENTER].

Press the [ABS] button above the fader and its red LED flashes indicating 'ready' status. To record fader moves from the very start, press the **WRITE** button in the fader knob and the LED goes on solid. Then roll the tape. To record moves some way into the Title, roll the tape before pressing **WRITE**. To stop moves being recorded, press **WRITE** again and the [ABS] LED flashes. If the moves are over just part of the Title, then the exact position at the drop-in point is assumed to the beginning. Exactly the same fader level will also be applied to the end of the Title from the automation drop-out point. From then on, the fader will snap back for the duration of the whole Title. To take the setting after the last move to the end of the Title, select [TO END] under the central LCD.

To revise any moves, just roll back and play again. The moves from the previous pass will be displayed until the **WRITE** button is pressed once more. The motorised fader will reflect previous moves unless the fader knob is touched. Even when it is touched, the previous moves will still be heard until **WRITE** is pressed, when the absolute fader positions and moves will be heard as well as recorded.

Press [ABS] again when recording moves for a fader is finished, to make it 'safe'. (It is also possible to press [ABS] to drop out whilst the tape is rolling).

To record moves with TOUCH WRITE, select [TOUCH WRITE] beneath the central LCD and then, if Ready [ABS] is selected, just touching the fader knob will write moves. In the event of a mistake, just roll back and try again. The **WRITE** button in the fader knob is still operational in TOUCH WRITE.



Fader controls

❶ Touch-sensitive fader knob

❷ Automation Write button

❸ Yellow Touch LED

❹ Ready ABS (Absolute) Write button

❺ Red Absolute Write LED

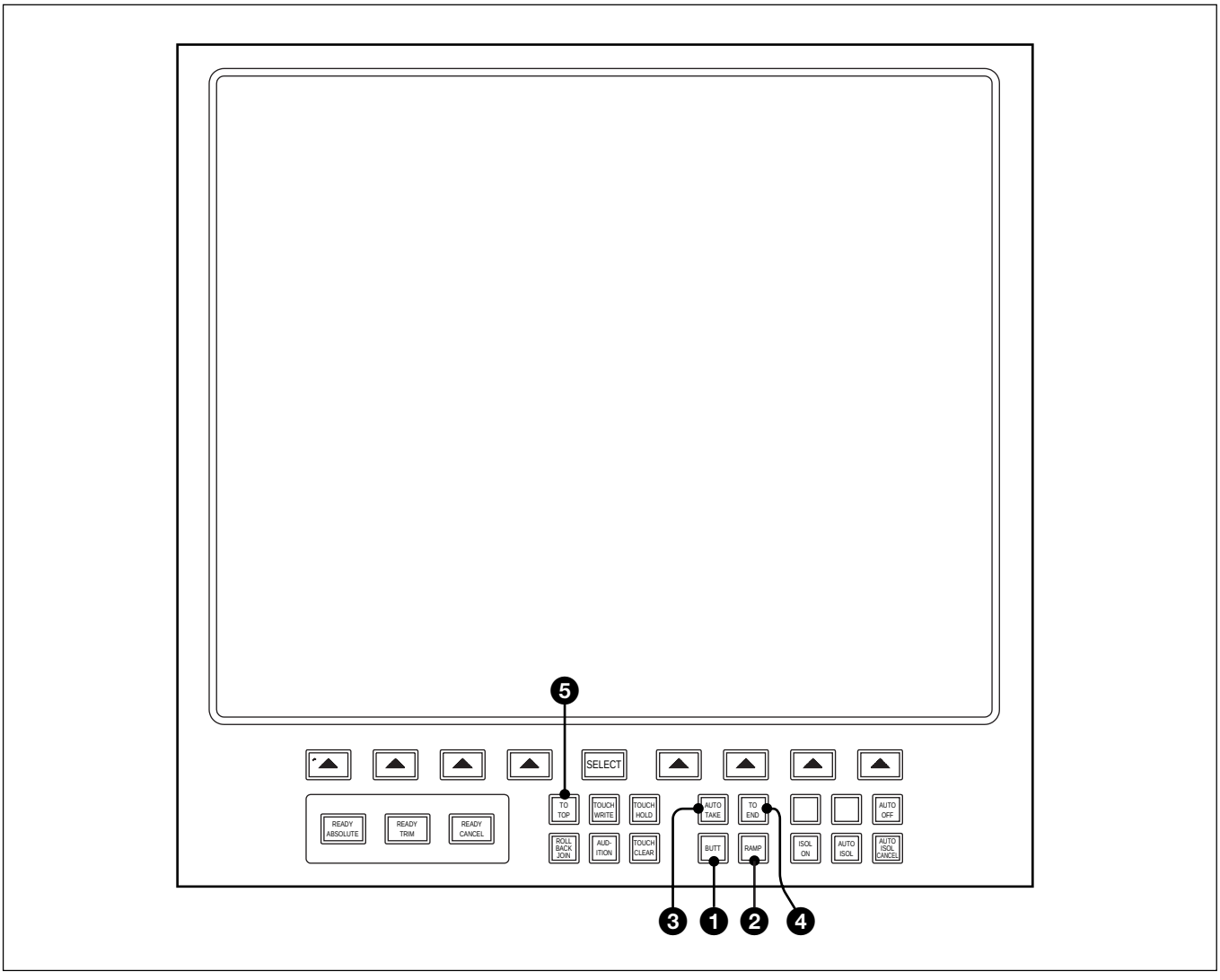
❻ Ready TRM (Trim) button

❼ Green Trim Write LED

❽ Bi-colour - Red/Amber Fader Cut switch

7-5-7 Dropping Out of Write on Subsequent Mix Passes

There are four ways to drop out of WRITE when dropping back to previous moves. The buttons for these four modes are on the mid right part of the panel at the base of the central LCD.



Central LCD Screen panel layout

❶ **BUTT** - (default) Where a jump occurs at the drop-out point.

❷ **RAMP** - Where a user defined time is taken to slew to the previous move. (Set the time in MIXES & CUES GUI).

❸ **AUTO-TAKE** - Where the operator manually fades to the previous move.

❹ **TO END** - Where the fader position at the drop-out point is recorded to the end of the Title for both absolute and trim functions.

These four buttons inter-cancel but it is possible to use different modes on different faders. This is achieved by working in one mode first and then rolling back to use another mode on other faders. Different modes can be used on the same fader at different times.

❺ **TO TOP Push-Button**

A related function allowing fader position to be recorded from any point within the Title to the beginning, for both absolute and trim. If a fader is in record then it is the point at which TO TOP is pressed which determines the level. If TO TOP is already on then it is the point the fader is dropped into record.

7-5-8 To Record Absolute Moves for a Number of Faders

This functions in exactly the same way as for one fader except that once the desired faders are in 'ready ABS' mode, they may be put into full WRITE individually using their local **WRITE** buttons, or simultaneously using the [GLOBAL DROP-IN] button on the Control Keyboard.

[GLOBAL DROP-OUT] takes all faders out of WRITE as with cuts.

This also applies to TOUCH WRITE where **WRITE** buttons in fader knobs have been used to latch automation record.

Use the [READY CANCEL] button below the central LCD to drop all controls completely out of automation record.

7-5-9 To Trim Fader Moves

Select [TRM] locally for the desired fader, and its green LED flashes. Press the **WRITE** button in the fader knob before starting the tape or while it is rolling and the LED goes on solid, indicating that moves will be recorded.

If the tape is rolling, previous moves will be heard and displayed on the fader before the knob is touched.

The moves will still be heard if the fader is touched and moved.

The previous moves will be heard whether or not **WRITE** has been pressed.

Before pressing **WRITE**, move the fader knob to a suitable part of the fader scale with good resolution. This will become the null point around which **TRIM** fader moves can be trimmed, at the moment **WRITE** is pressed. The '0' position is recommended as a good reference point for trimming moves.

Any trimmed moves will add or subtract from the null point according to the fader scale. Dropping out of **TRIM** functions in the same way as coming out of **ABS** mode.

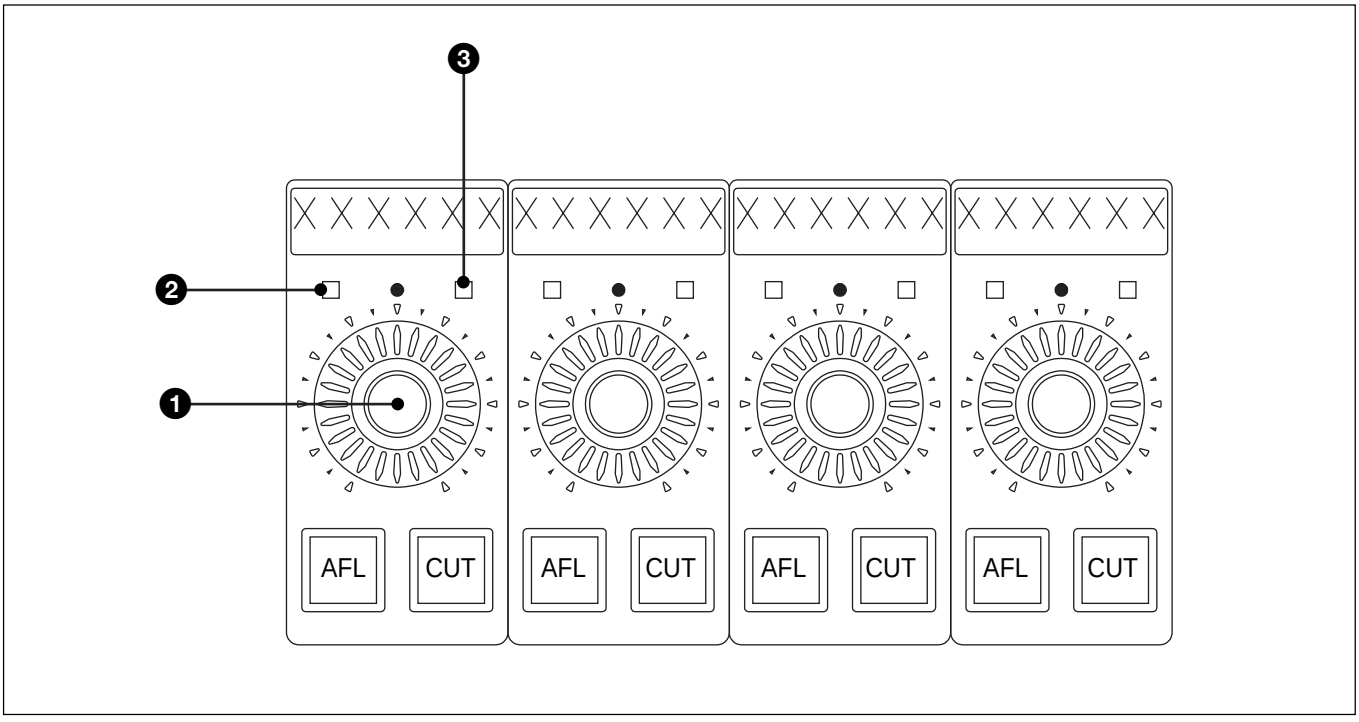
Select [SHOW VALUE] at the SELECT TO FADERS panel to display fader gain settings in dBs on the electronic scribbles.

7-5-10 To Trim Moves for a Number of Faders

Put the desired Faders into ready trim locally by pressing the [TRM] buttons by the faders, and use either local **WRITEs** or [GLOBAL DROP-IN] and [GLOBAL DROP-OUT] to action the recording of moves.

The steps to save a mix are exactly the same as for saving cuts, described in Section 7-5-5.

7-5-11 To Automate a Pan Move (or any other Knob)



Assignable Pan knobs

❶ Pan knob (Press for Switch)

❷ Red Absolute LED

❸ Green Trim LED

To enable a PAN to have its moves recorded, first latch [READY ABSOLUTE] below the central LCD. Then press the **PAN** knob and its red LED flashes to show that the system is ready to record absolute moves. De-select [READY ABSOLUTE] or roll the tape, in which case it will be de-selected automatically.

Press the **PAN** knob again, either before or after the tape is rolling, and the LED will light solidly, indicating that moves will be recorded. Roll-back for the knobs works in the same way that it does for faders. The difference is that instead of the knobs moving, the LEDs in the skirts of the knobs reflect any automation moves.

When the moves are complete, press the **PAN** knob again and the red LED flashes indicating that the mode has reverted to ready absolute. Use [READY CANCEL] to take the **PAN** knob out of 'ready absolute' status.

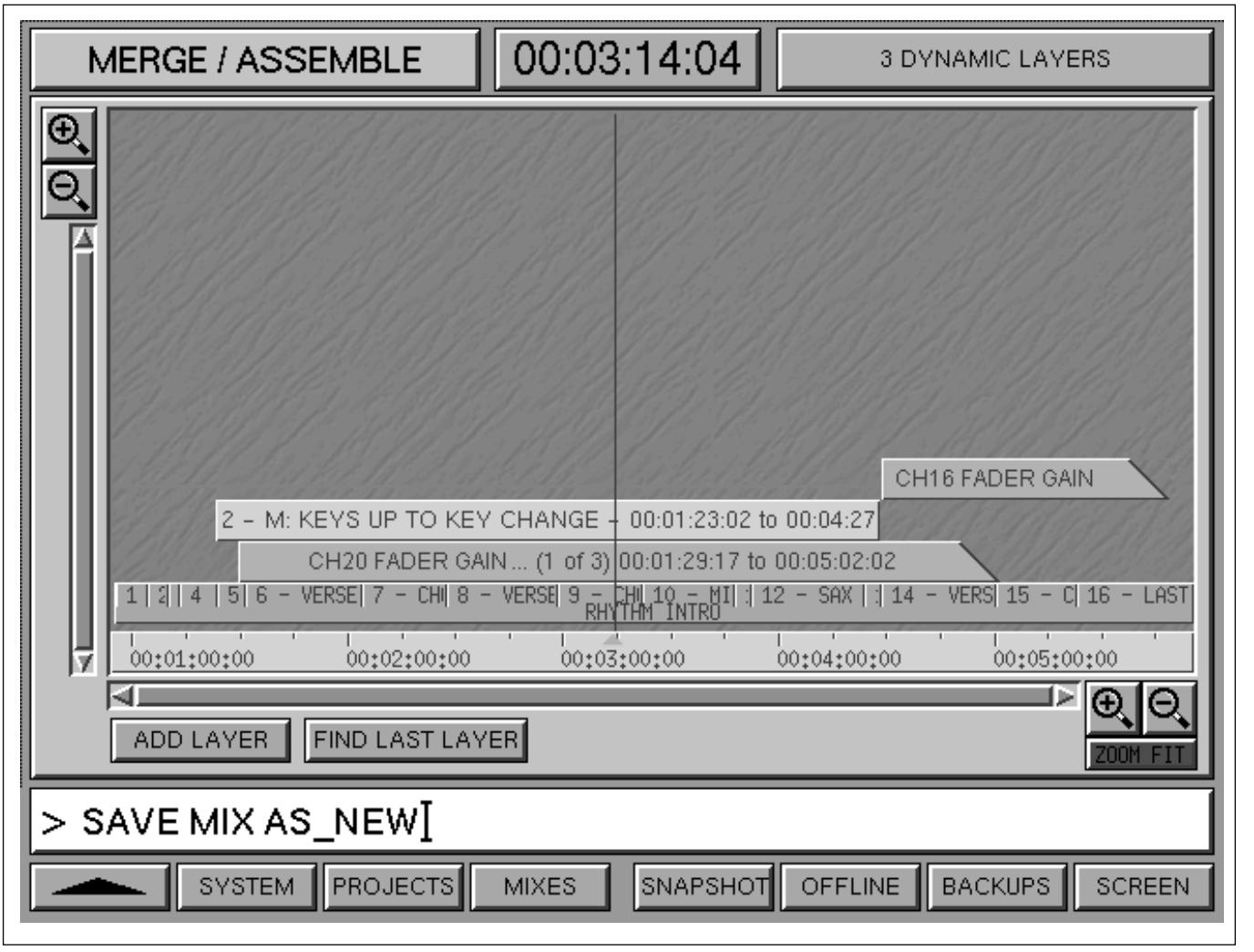
To trim PAN moves, first latch [READY TRIM] below the central LCD, then press the **PAN** knob so that its green LED flashes. De-select [READY TRIM], or allow it to be de-selected automatically when the tape starts rolling. Press the **PAN** knob either before or after rolling the tape. The green LED will light solidly, indicating that any trimming moves will be recorded.

Whilst the knob is in the ready state, the LEDs around the skirt of the knob will indicate previous moves. The position of the knob at the drop-in point i.e. when the knob is pressed, becomes the null point for any trimmed moves.

When the moves are complete, press the **PAN** knob to drop back to ready status, then press [READY CANCEL] to drop out completely.

7-5-12 To Assemble a Mix

The MERGE/ASSEMBLE GUI allows Mixes and Snapshots from any source to be merged with the current Working Mix. Each bar in the GUI represents a Mix Layer and these may include additional Dynamic Layers.



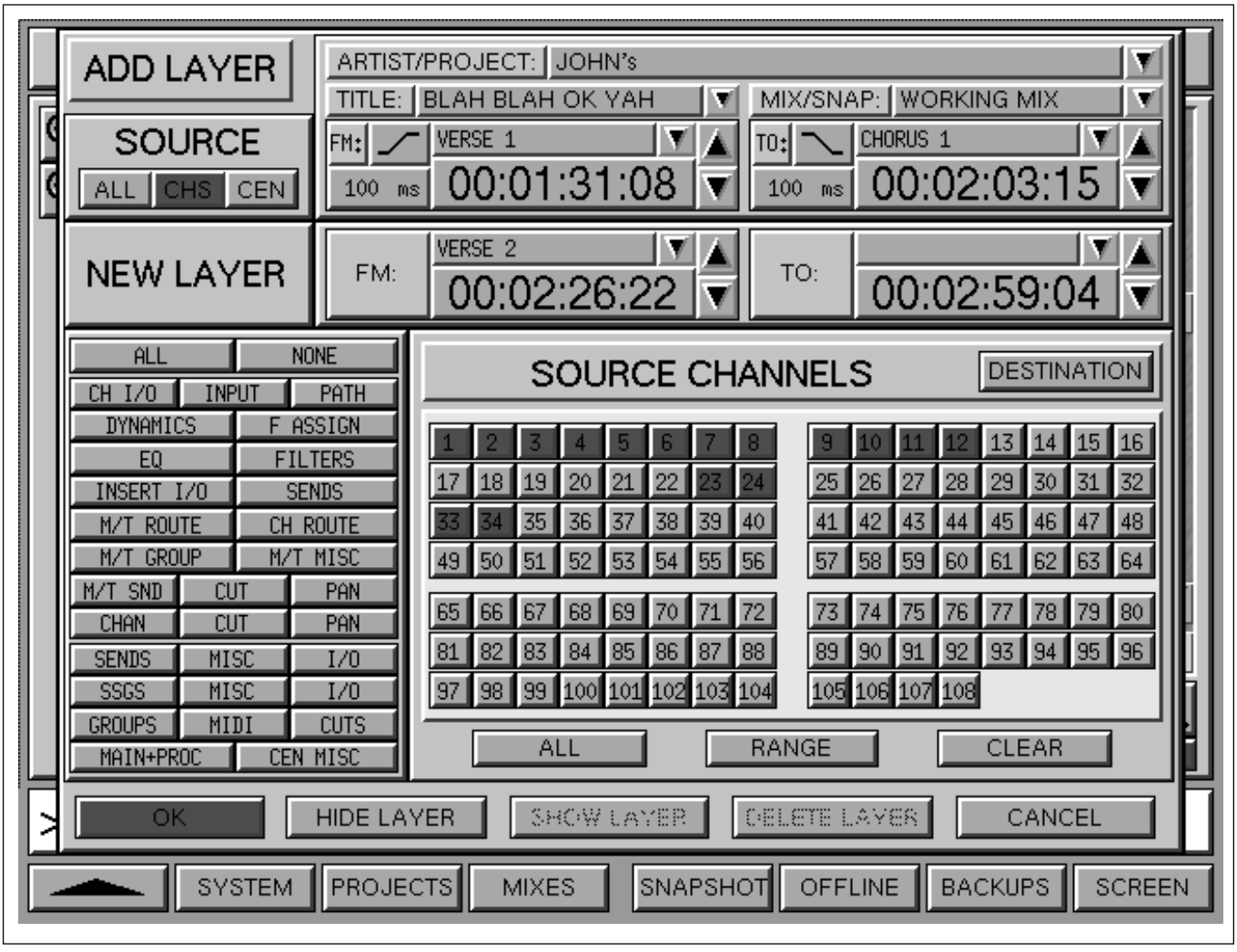
MERGE/ASSEMBLE screen

1 Select the ASSEMBLE softkey at the bottom of the central LCD and a time-line GUI will display the current Working Mix as a bar along the bottom of the screen. Individual bars for each unsaved Dynamic Layer will also be displayed. Any New Dynamic Layers will appear after creation, once the tape is put into rewind.

2 To add a new layer from a previous Mix or Snapshot click on ADD LAYER to view the pop-up on the next page. Extensive options are available but a simple case will be described in this overview which involves copying mix data within a Title from Verse 1 to Verse 2.

3 Select the source data using the upper section of the GUI. The default source is the current Artist/ Project, Title and its Working Mix. The mix data for Verse 1 is already resident in the Working Mix so this is the correct source mix for this example. Any other source can be selected by clicking on the appropriate ▼ to the right of its name strip for a pop-up list.

4 Having established the correct source, set a start time for the source data in the SOURCE 'FM'section which may be a Cue point or timecode entry. 'VERSE 1' is displayed in the example. Click on ▼ to the right of the name strip



MERGE/ASSEMBLE - ADD LAYER pop-up

in the 'FM' section for a different 'from' point as a Cue point or click on the timecode entry for an edit pop-up. Clicking on the large ▲ and ▼ buttons nudges the timecode. The merge transition can be selected as a butt or timed ramp according to the icon to right of the 'FM' label.

5 An end time must be specified in the SOURCE 'TO' section using a similar method used to set the start time, specified in step 4. In this example it is 'CHORUS 1', which is effectively the end of Verse 1.

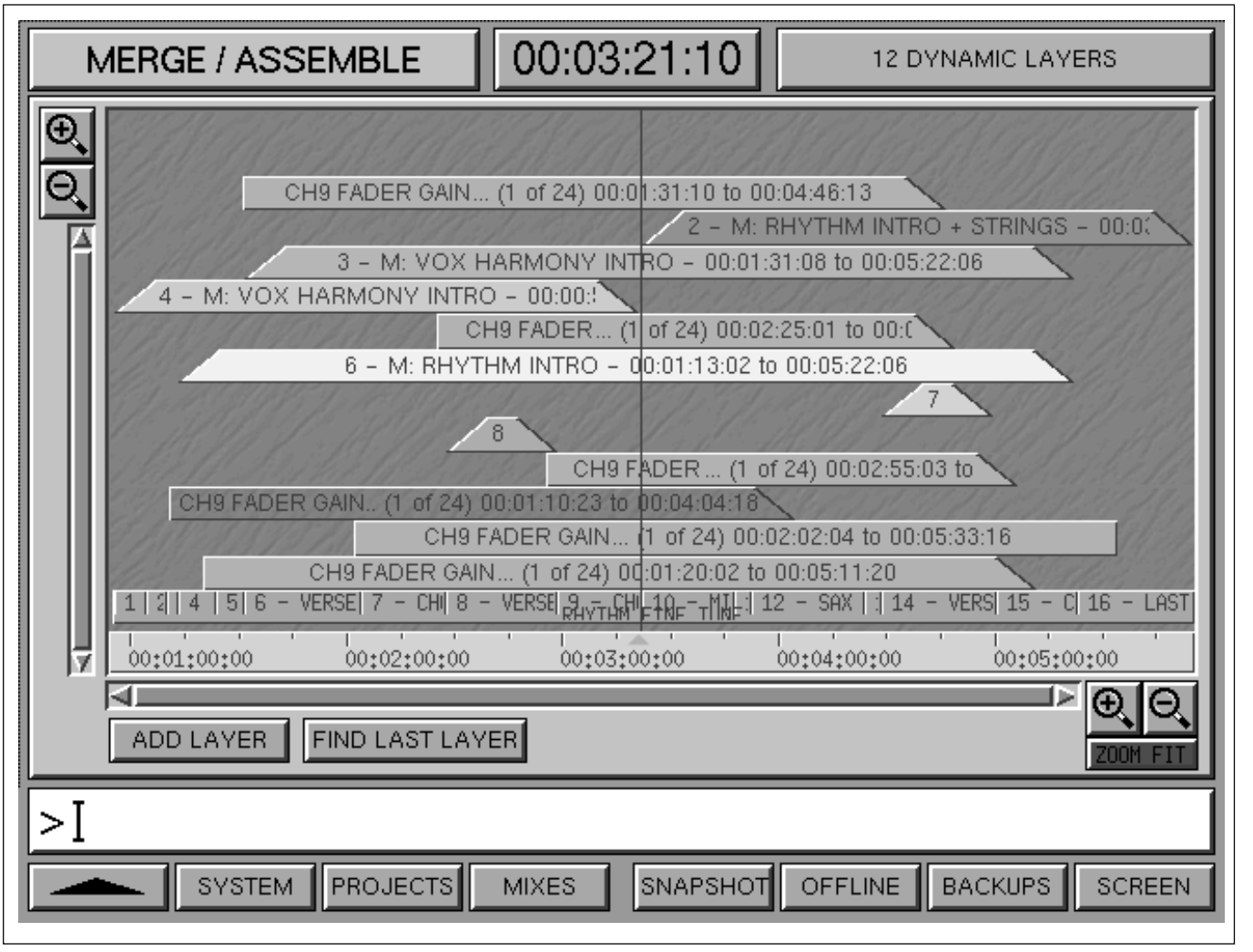
6 A destination within the Working Mix must be specified in the NEW LAYER 'FM' section. The procedure is a repeat of step 4 but without needing to specify a butt or ramp. In the example it is 'VERSE 2'. Once a from ('FM') time is specified the 'TO' time is entered automatically.
The 'TO' entry itself can be edited if required.

7 Further options include selecting the components in the merge, the default being ALL which includes all channels (CHS) and the centre section (CEN). The example shows that CHS has been selected in the SOURCE block upper left.

8 The selection process can be taken further to select specific channels by clicking on the numbered buttons. The example shows that channels 1-12, 23, 24, 33 and 34 have been selected. The source data will be applied to the same numbered channels but can be specified differently by clicking on DESTINATION.

9 A further option, the field at left lower middle, allows individual channel and centre section components to be specified by highlighting them.

10 ENTER or click on OK to complete the merge.



Multiple layers of different types on the MERGE/ASSEMBLE screen

Layer types

There are four categories of layers, colour coded as:

- **WORKING MIX - Blue**
  This is the current underlying base mix accessed by clicking on ADD LAYER. New layers taken from the Working Mix are specified using the ADD LAYER GUI. Click on to edit.
- **DYNAMIC LAYER - Cyan**
  This type of layer is created by automating controls on the control surface, such as faders and cuts, in the normal way and cannot be edited.
- **MIX LAYER - Green**
  This type of layer consists of dynamic data from other mixes from anywhere except the Working Mix. In other words, mix data from other mixes in the current or any other Title. It is specified using the ADD LAYER GUI. Click on to edit.
- **SNAPSHOT LAYER - Yellow**
  This type of layer consists of static data from any Snapshot but must have 'FM' (from) and 'TO' times specified. It is specified using the ADD LAYER GUI. Click on to edit.

UNDO and REDO

Use the UNDO and REDO keys on the Control Keyboard to undo and redo layers.

HIDE or DELETE Layers

Click on any layer for a pop-up. Click on HIDE LAYER or DELETE LAYER as appropriate. The data for a hidden layer will not have any effect on what is heard.

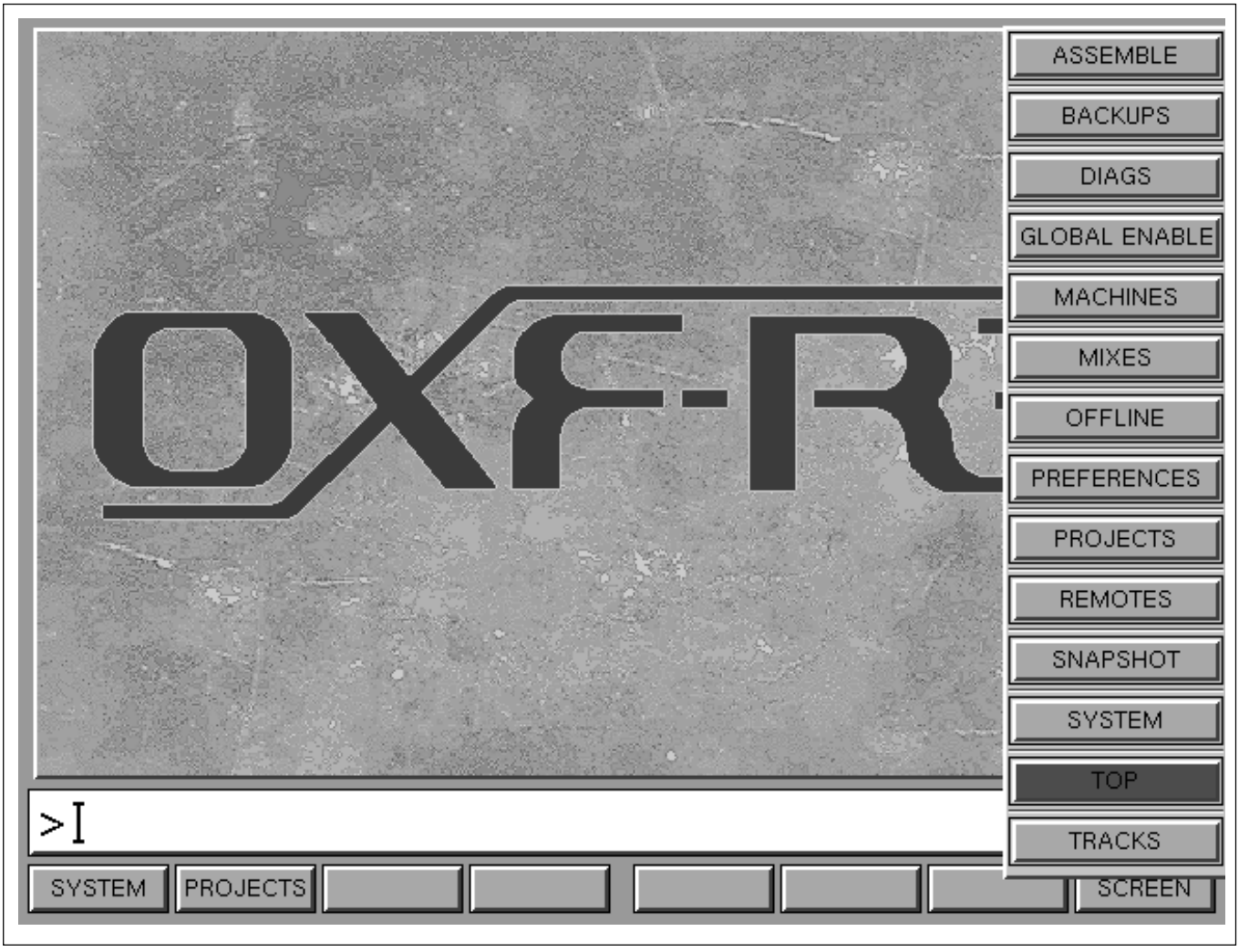
SAVE

SAVE MIX or SAVE MIX AS NEW on the Control Keyboard will collapse all layers into a single entity.

7-6 The Session Management™ Screen Pages

7-6-1 The Start-up Logo Screen

When the system is booted the OXF-R3 logo screen is displayed once the start-up processes are completed.



OXF-R3 LOGO with SCREEN pop-up

General

At the lower part of the screen, note the User Command Dialogue Line bar, which displays commands from the dedicated Control Keyboard and QWERTY Keyboard before entry.

Use the softkey functions at the base of this screen to select one of three menu options:

SYSTEM softkey

Press this softkey to access the SYSTEM screen page on the Session Management™ Screens, giving access to system set-up and peripheral function options.

PROJECTS Softkey

Press this softkey to select the ARTISTS/PROJECTS & TITLES page and all other mixing functions.

SCREEN Softkey

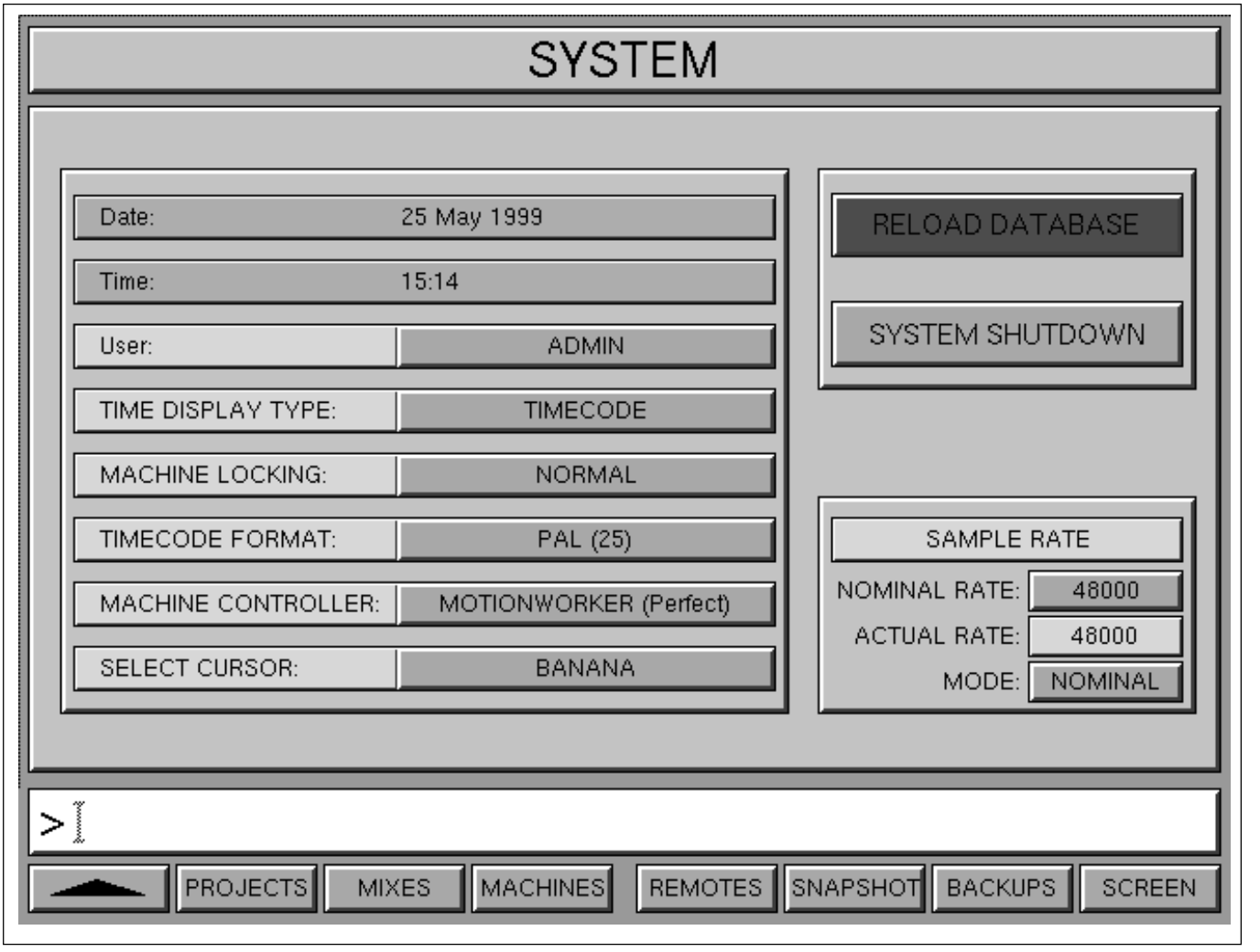
Press this softkey to access a pop-up, as shown, displaying all available screen selections. Click on any one to select it or, alternatively, use the ▲ and ▼ keys on the Control Keyboard to move the highlight and [ENTER].

Note:

Other softkeys are not used on this screen page.

7-6-2 The System Screen

The SYSTEM screen allows the set-up of various parameters most of which are session related. The cursor is able to indicate which fields can be edited by changing shape or direction (according to which cursor type has been selected) as it is moved around the screen.



SYSTEM screen page

Date
Displays today's Date which is set automatically.

Time
Displays the current Time which is set automatically.

User
Displays the current User name. Click on it for a pop-up to select or enter an alternative User. Passwords may be entered by Users. New passwords are required to be entered twice, a second time for confirmation.

The pop-up also allows projects to be assigned to Users or deleted from their 'accounts'. This operation may be carried out only by the User 'ADMIN'.

TIME DISPLAY TYPE
Click on to select either Timecode or Bars and Beats.

MACHINE LOCKING
This field is generally set to NORMAL for 'legal' automation operation but allows a NON-LOCKING option. This option may be used where full machine synchronisation lock-up may not be possible.

TIMECODE FORMAT
Displays the current timecode format. Click on it for a pop-up to set an alternative timecode format.

For the system to function correctly, the TIMECODE FORMAT selected here must match the incoming timecode. ***IMPORTANT***!

MACHINE CONTROLLER
Displays the current Machine Control mode. Click on to select an alternative from:-
- MOTIONWORKER (STANDARD)
- MOTIONWORKER (PERFECT)
- NONE - TIMECODE CHASE ONLY

SELECT CURSOR
Displays the current cursor format. Click on it for a pop-up to select an alternative.

RELOAD DATABASE
This function is only available to User 'ADMIN' and is not used during normal operation. It allows the database to be re-loaded from the system hard drive.

SYSTEM SHUTDOWN
This function is available to User 'ADMIN' only and must be confirmed via a dialogue pop-up.

SAMPLE RATE
The Sample Rate must match the incoming word clock. ***IMPORTANT!***

NOMINAL RATE
Displays the current selected Sample Rate. Click on for a pop-up to select an alternative.

ACTUAL RATE
Displays the Actual Rate of the incoming word clock.

MODE
Displays the current Sample Rate Mode. Click on to select:

- **NOMINAL**
  When filters and oscillators within the system are fixed at their absolute frequencies regardless of the incoming word clock frequency.
- **TRACK**
  When filters and oscillators within the system track the incoming word clock frequency.

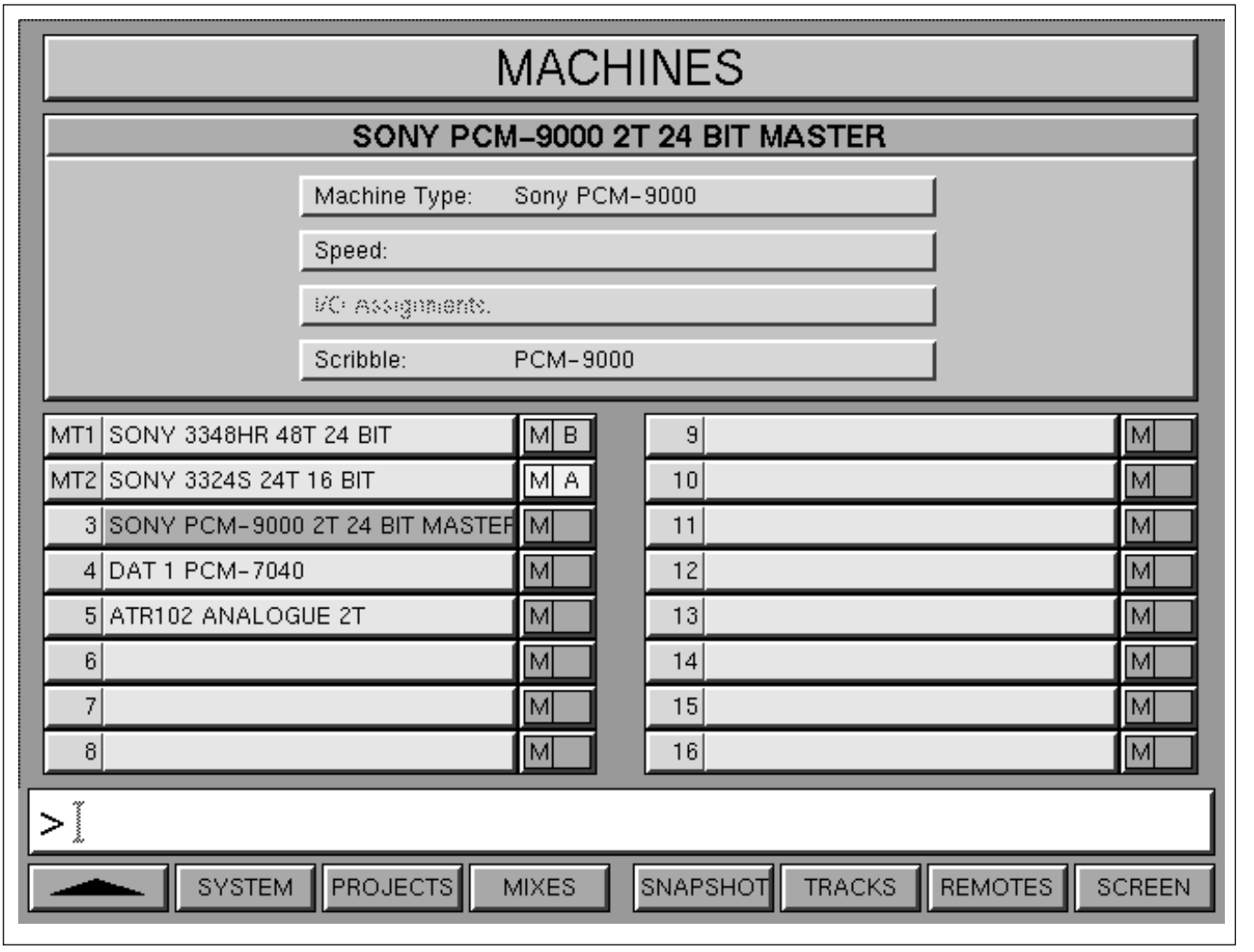
Command Dialogue
At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options
Menu options available using the softkey functions displayed at the base of the System screen page are as follows:

▲	-	Selects the previous screen page.
PROJECTS	-	Selects the ARTISTS/ PROJECTS & TITLES page directly.
MIXES	-	Selects the MIXES & CUES page for all mixing functions.
MACHINES	-	Selects the MACHINES set-up parameters page.
REMOTES	-	Selects the MACHINE REMOTES assignment matrix.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
BACKUPS	-	Selects System BACKUPS function.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-6-3 The Machines Screen

The 16 text fields on this screen provide the facility to name and list the machines associated with the system. (5 machines have been named in the example shown).



MACHINES screen page

To add a Machine to the list

1 To add a machine to the list and name it, highlight one of the 16 fields by clicking on it. Then either click on it again or press [EDIT] for a name pop-up. Type in a suitable name using the QWERTY Keyboard, then click OK or [ENTER] on the Control Keyboard. The name will be displayed in the banner at the top of the screen.

2 Click on the 'Machine Type' field to highlight it. Then either click on it again or press [EDIT] for the machine selector pop-up. Click on an appropriate name and fill in other attributes where necessary including, for example, the 8 character electronic scribble name and number of tracks. The scribble name will be displayed adjacent to tape remote assignments for this machine. When all entries are complete click OK or [ENTER] on the Control Keyboard.

Note:

Additional machines can be set up by clicking on 'NEW MACHINE' in the Machine Type pop-up list and filling in appropriate parameters.

3 Click on the button to the right of the **M** for a pop-up allowing assignment of the new machine to one of the Motionworker channels A-E.

Multitrack Machines and Track Lists

Machines 1 and 2, labelled MT1 and MT2 in the GUI, are designed for primary multitrack machine use and have track lists associated with them. The names entered in the track lists can be propagated to the electronic scribbles.

Command Dialogue

At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

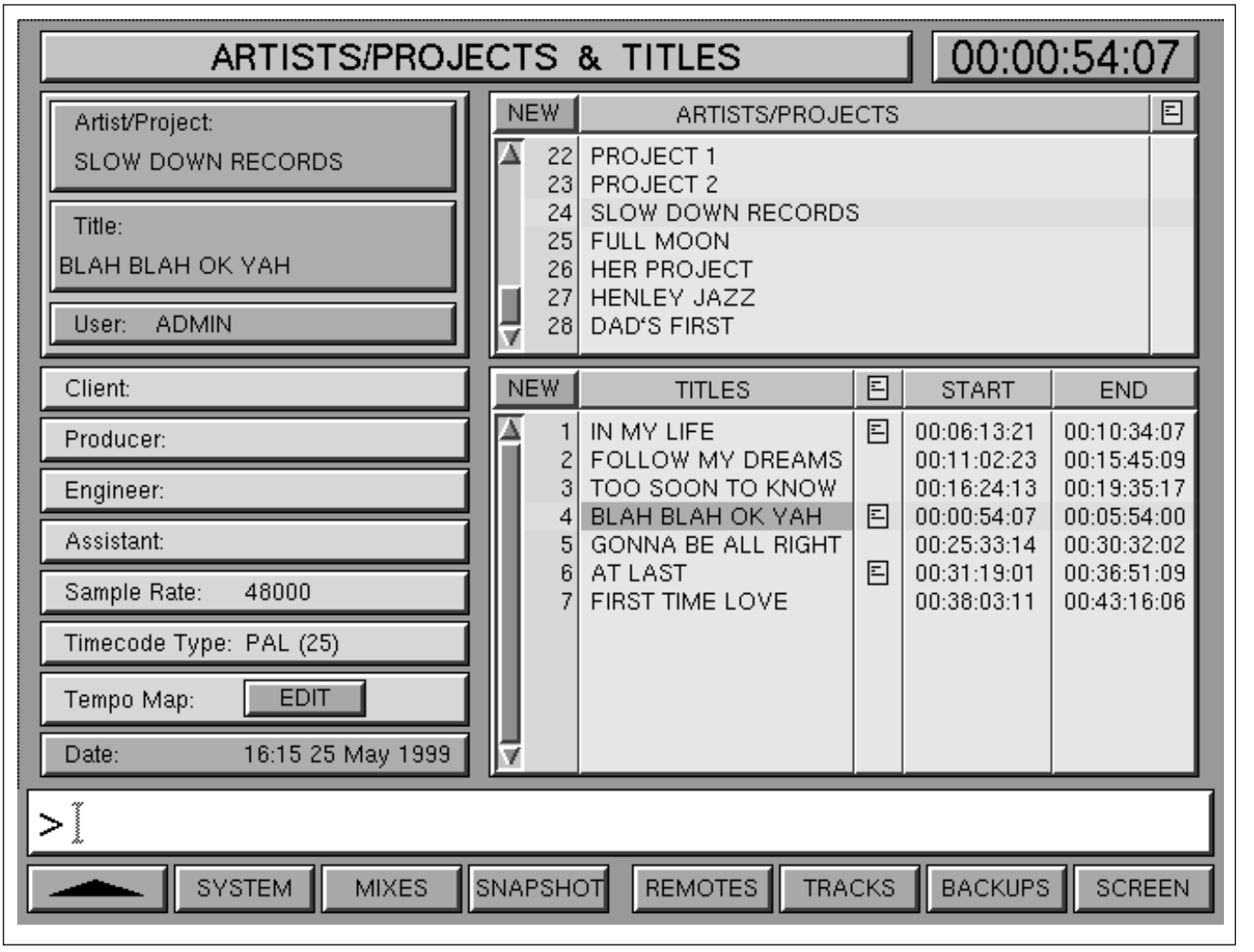
Menu options

Menu options available using the softkey functions displayed at the foot of the Machines screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM Screen page directly.
PROJECTS	-	Selects the ARTISTS/ PROJECTS & TITLES page directly.
MIXES	-	Selects the MIXES & CUES page for all mixing functions.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
TRACKS	-	Selects the TRACK LISTS page.
REMOTES	-	Selects the MACHINE REMOTES assignment matrix.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-6-4 Artists/Projects & Titles Screen

The ARTISTS/PROJECTS & TITLES screen allows access to all entries belonging to the current User. Clicking on or highlighting any individual ARTIST/PROJECT causes all its TITLES to be displayed.



ARTISTS/PROJECTS & TITLES screen page

Upper left status block
Displays the current Artist/Project, the current Title and User.

ARTISTS/PROJECTS field
The ARTISTS/PROJECTS field displays all available entries according to the permissions of the current User.

The Titles belonging to the highlighted entry will be displayed in the TITLES field. The highlight may be moved to a different Artist/Project, either by moving the cursor with a Trackerball and clicking, or by nudging the highlight using the cursor keys.

Note:
This must be done with the orange highlight. If, for any reason, the orange highlight is in the Titles field, use one of the Tab (▲ & ▼) keys to the left and right of the up arrow, on the Control Keyboard, to move it into the ARTISTS/PROJECTS field.

To view Artists/Projects entries above or below those currently displayed in the field, use the adjacent Scroll Bar or the ↑ and ↓ cursor keys on the Control Keyboard.

To enter a new Artist/Project

Click on NEW or [PROJECT] [ENTER] on the Control Keyboard for a pop-up to name a new Artist/Project. Type in a name using the QWERTY keyboard and press [ENTER] or click on OK. [ENTER] or OK without a name will enter the next default number.

To edit the name of an Artist/Project

Move the highlight to that entry and click, or press [EDIT] on the Control Keyboard to display a pop-up dialogue box. Type in a name using the QWERTY keyboard and press [ENTER] or click on OK.

To re-order an Artist/Project entry

Click on its number in the left hand column for a pop-up. Overwrite the current number using the numeric pad on the Control Keyboard, and press [ENTER] or click on OK. The list will re-order itself.

Entering Notes for an Artist/Project

Click on the right hand column, or highlight and press [EDIT] on the Control Keyboard, for the NOTES pop-up related to the Artist/Project on the same line. Use the QWERTY Keyboard to enter notes and press [ENTER] or click on OK. The icon appears only if there is a Notes entry.

TITLES field

This field displays all Titles under the currently selected Artist/Project. The Start and End times for each Title represent the periods for which automation data will be stored. The times can be adjusted to increase or decrease the time periods, at any time.

To enter a new Title

Click on NEW or [PROJECT] [ENTER] on the Control Keyboard for a pop-up to name a new TITLE. Type in a name using the QWERTY keyboard and press [ENTER] or click on OK. [ENTER] or OK without a name will enter the next default number.

To edit a Title name

Highlight and click on the name or press [EDIT] on the Control Keyboard to display a pop-up dialogue box. Type in a name using the QWERTY keyboard and press [ENTER] or click on OK.

To re-order a Title entry

Click on its number in the left hand column for a pop-up. Overwrite the current number using the numeric pad on the Control Keyboard, and press [ENTER] or click on OK. The list will re-order itself.

To set the Start Time for a Title

To set the Start time, highlight the START column at the appropriate line. Click on the highlighted time or press [EDIT] on the Control Keyboard and type in the time. Then [ENTER] or click on OK.

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

To set the Start Time 'On the Fly'

To set the START time 'on the fly', roll the tape and press [NOW] on the Control Keyboard at the appropriate moment. Roll back and repeat if incorrect. (The time pop-up is not required for this method).

To set the End Time for a Title

To set the END time, highlight the END column at the appropriate line, then follow the same procedure as described above for setting the Start time. Typing in the timecode or setting the time 'on the fly' works in the same way.

Entering Notes for a Title

Click on the column to the right of the Title, or highlight and press [EDIT] on the Control Keyboard, for the NOTES pop-up related to the Title on the same line. Use the QWERTY Keyboard to enter notes and press [ENTER] or click on OK. The icon appears only if there is a Notes entry.

Note:

Start and End times will be automatically propagated to the Cues list as the first and last cue points for the Title.

Highlight and click on or press [EDIT] for edit pop-ups for the following banners:

Client
Enter the Client's name here for reference purposes if required. This relates to the current Title only.

Producer
Enter the name of the Producer for the current Title.

Engineer
Enter the name of the Engineer for the current Title.

Assistant
Enter the name of the Assistant Engineer for the current Title.

Sample Rate
Click on for a pop-up to set the Sample Rate for the current Title. Click on the one which is correct for the incoming word clock. ***IMPORTANT!***

Timecode Type
Click on for a pop-up to set the Timecode type for the current Title. It must match the incoming timecode for the system to function correctly. ***IMPORTANT!***

Tempo Map
Click on EDIT for the MIDI Tempo Map pop-up. Details of how to enter and edit the Tempo Map are described in the section on MIDI.

Date
Displays today's date.

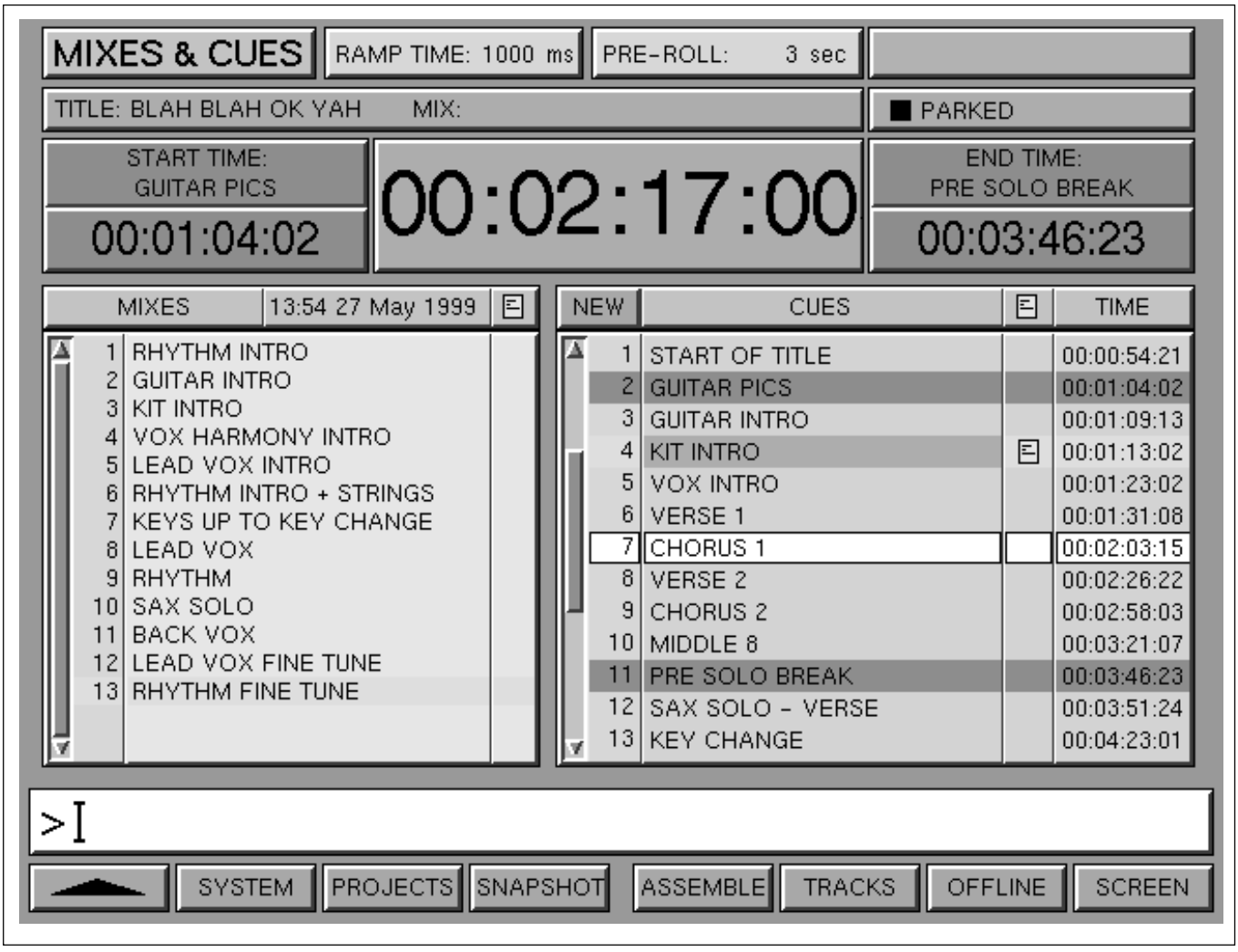
Command Dialogue
At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options
Menu options available using the softkey functions displayed at the foot of the Artists/Projects & Titles screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
MIXES	-	Selects the MIXES & CUES page for all mixing functions.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
REMOTES	-	Selects the MACHINE REMOTES assignment matrix.
TRACKS	-	Selects the TRACK LISTS page.
BACKUPS	-	Selects System BACKUPS functions.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-6-5 Mixes & Cues Screen

This screen page displays all the Mixes & Cues which relate to the current title.



MIXES & CUES screen page

TITLE and MIX bar
Displays the name of the current Title and current Mix.

Machine status bar
Situated to the right of the TITLE and MIX bar, this field indicates the current operational status of the timecode master machine e.g. PLAYING, FAST WIND, FAST REWIND, STOPPED, PARKED.

RAMP TIME bar
(Relates to the RAMP button, beneath the central LCD) This banner shows the Ramp Time currently set for faders to slew to previous levels when joining/editing mixes, or dropping out of automation record when current and previous fader levels do not match. To set the Ramp Time, highlight the field then click on, or press [EDIT] on the Control Keyboard. It may be set at between 1ms and 10s to a resolution of 1ms.

PRE-ROLL bar
The Pre-roll time in seconds is displayed here. When locating to a specific timecode point, the machine parks ahead of that time by the value set in this field. Highlight the field then click on, or press [EDIT] on the Control Keyboard, to obtain its pop-up to set or adjust the Pre-Roll time.

MIXES & CUES screen page

Central large timecode display
Displays the current timecode for the master machine.

Automation status bar (top right)
Indicates whether there is any static or dynamic data in the system memory that could be saved to the hard drive. If the bar is blank then there is nothing to save.

- **STATIC DATA**
  Indicates that some non-automated controls have different static settings compared to the current mix and that those settings can be saved.

- **(New) # DYNAMIC LAYER**
  Indicates that some unsaved automated moves are in memory. The # indicates how many layers have been made.

START TIME
Located to the left of the large timecode display, this field indicates the start time from where the tape will roll or has rolled or cycled from. If a cue has been specified, its name or default number will be displayed instead, e.g.

[PLAY] [CUE] **2** [CUE] **11** [ENTER]

Note:
If a Pre-Roll time is defined, the START TIME field will take account of this in the time it displays.

END TIME
Located to the right of the large timecode display, this field indicates which timecode point the tape will roll to or cycle back from, if a cycle command has been specified.

MIXES
This field, occupying most of the left side of the screen page, displays any mixes that have been saved. The date and time indicates when the currently highlighted mix was created.

As soon as any automated functions have been actioned, 1 DYNAMIC LAYER appears above the large central timecode display indicating a 'Working Mix' is resident in memory. The number will be set according to the number of mix passes and will be affected by UNDO and REDO functions. In other words, automation data exists which has not yet been saved i.e. the tape has been rolled with some faders, switches or knobs in Write. To save a mix, press [SAVE] [MIX] [ENTER] on the Control Keyboard and a pop-up appears with a text line to type in an appropriate name. Press [ENTER] for the default name of MIX 1 for the first mix, or type in a name and press [ENTER]. The DYNAMIC LAYER flag will then disappear.

If a trim or more automated actions are made, the DYNAMIC LAYER flag appears once more. If the [SAVE] [MIX] [ENTER] procedure is followed again, the new data will overwrite the previous mix in the same manner as the SAVE function works on a normal word processor. Use [SAVE] [MIX] [AS NEW] [ENTER] instead, to avoid overwriting the previous mix. The name pop-up will appear as before.

When a mix is saved, so are the static settings of the complete console. If the mix is recalled at a later date, everything will be completely reset to previous static positions, apart from controls which were automated. They will assume their settings according to timecode.

If an attempt is made to load another mix whilst the DYNAMIC LAYER flag is displayed, the user will be prompted to save the current mix data, via a pop-up. This will be indicated in the MIXES list as 'Working Mix Saved' with the next default number. Enter a name instead if desired.

The automation can be turned off during mixing using the command [MAKE STATIC] [ENTER] on the Control Keyboard. A dialogue box will warn that dynamic moves will be lost. In this case, a STATIC MIX will be saved with the next default number. From this point, all controls will behave as if no mix has been recorded e.g. faders will not snap back.

This function is very useful for making a fresh start on a mix with a new starting balance. To go back later to a previous mix, move the highlight to it and select [LOAD] [MIX] [ENTER] on the Control Keyboard. If unsaved data exists, as always, the user will be prompted to save it.

If any changes are made to any un-automated controls, the STATIC DATA flag will highlight this. If the user tries to load another mix, a pop-up will ask if this data should be saved, even though it is for static controls. To delete a mix, highlight the mix in the MIXES field, then select [DELETE] [MIX] [ENTER] on the Control Keyboard. Alternatively, select [DELETE] [MIX] # [ENTER]. A confirmation prompt will appear.

Click on the right hand column, or highlight and press [EDIT] on the Control Keyboard, for the NOTES pop-up related to the mix on the same line.

To edit a Mix name

Highlight and click on the name or press [EDIT] on the Control Keyboard to display a pop-up dialogue box. Type in a name using the QWERTY keyboard and press [ENTER] or click on OK.

To re-order a Mix entry

Click on its number in the left hand column for a pop-up. Overwrite the current number using the numeric pad on the Control Keyboard, and press [ENTER] or click on OK. The list will re-order itself.

Partial Loading of Mixes

This function allows the loading of specified channels or parts of channels according to the SNAPSHOT DEFAULTS. Select the SNAPSHOTS, COPY and LINK GUI to view SNAPSHOT DEFAULTS. (See section 7-6-8).

Note:

All the following command lines apply to the currently ***highlighted mix*** *in the MIXES & CUES GUI.*

Command lines

The commands for loading Partial Dynamic Mixes are all carried out using the Control Keyboard (see section 6-3-3 in Chapter 6).

[LOAD] **1 . . 8** [MIX] [ENTER]
This command will load mix data for Channels 1-8.

[LOAD] **1 . 3 . 5 . 7 . 9 . 11** [MIX] [ENTER]
This command will load mix data for Channels 1, 3, 5, 7, 9 and 11.

[LOAD] **01 . . 0 8** [MIX] [ENTER]
This command will load mix data for Control Group Faders 1-8.

[LOAD] **019** [MIX] [ENTER]
This command will load mix data for a single Control Group Fader 19.

[LOAD] **00** [MIX] [ENTER]
This command will load mix data for the central Main L/R Fader.

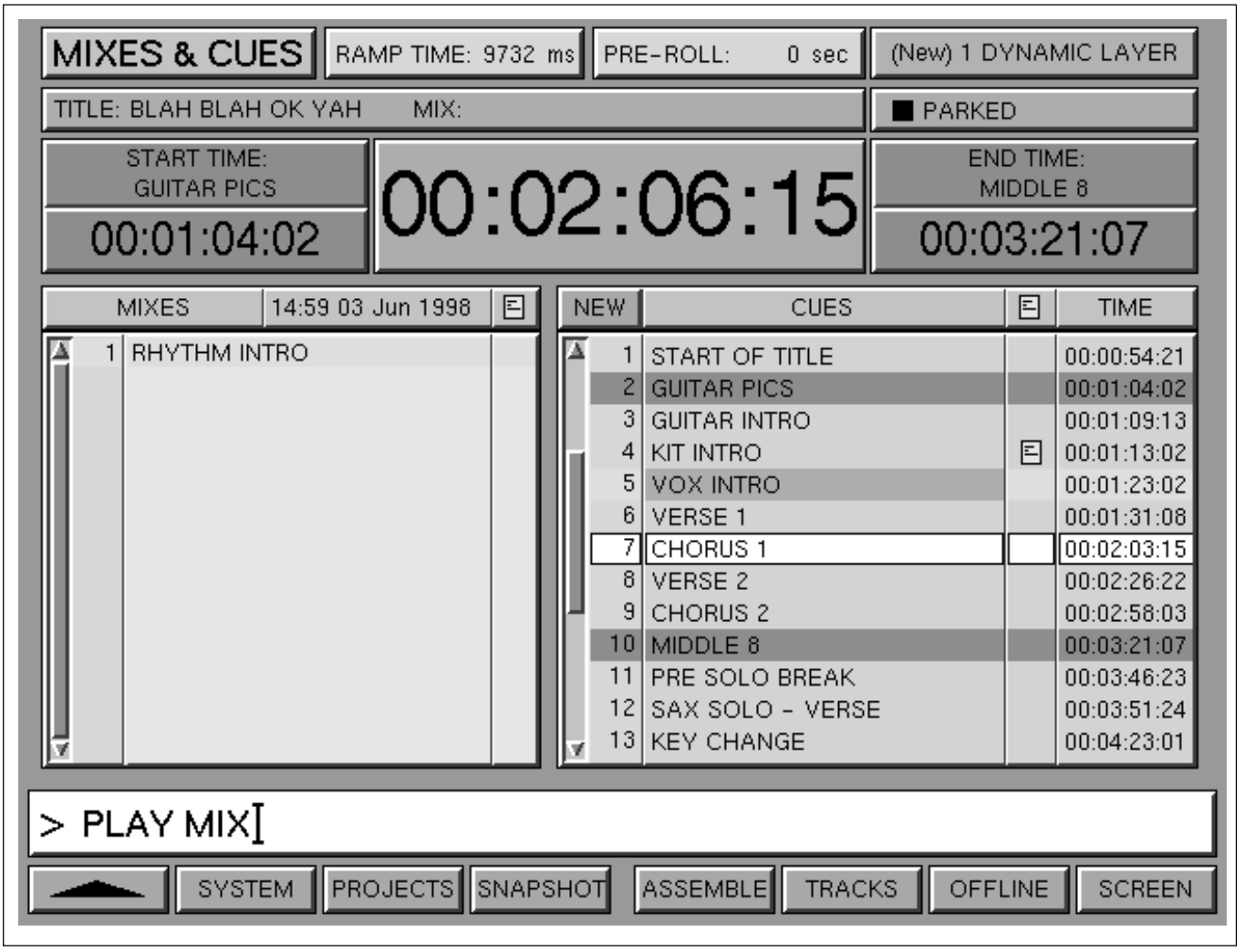
MIX AUTO-SAVE

The OXF-R3 system saves backup mixes automatically. The default settings are for 3 mixes to be saved in rotation, one every 2 minutes. The time can be varied from 1 to 60 minutes between saves, with between 1 and 10 mixes. The settings can be adjusted in the 'config file'.

To load the most recent Auto-Save mix:

[LOAD] [MIX] **0** [ENTER]

Substitute '-1' for the '0' to load the second most recent and '-2' for the third most recent.



MIXES & CUES screen page illustrating the CUES list

CUES field

Cue points are specific listed time points within a Title. They are automatically numbered (in sequence) for quick reference and may be given appropriate names. Cue points may be added by explicitly typing them in or 'on the fly' as the tape is rolling.

Start of Title and End of Title cues are propagated automatically from the Artists/Projects & Titles screen entry. If these times are adjusted on the Mixes & Cues screen page, the changes will automatically be propagated back to the Artists/Projects & Titles page.

Note:

The Start of Title and End of Title cues cannot be deleted.

To set CUE Points

To set a cue point off-line, press CUE ENTER on the Control Keyboard or click on NEW in the Cues list title bar for a pop-up to name a new cue. Type in a name using the QWERTY keyboard and press ENTER or click on OK. ENTER or OK without a name will enter the next default. The TIME column will take on the timecode position of the master machine indicated by the large central timecode display at the time ENTER is pressed or NEW is clicked on.

To edit the time for a cue off-line, move the highlight to the desired line in the TIME column at the right side of the screen page, and click on it or press EDIT on the Control Keyboard. The timecode pop-up will be displayed. Type in the timecode and click on **OK** or press ENTER.

Alternatively, move the orange highlight into the TIME column and press NOW on the Control Keyboard at the appropriate timecode point, either with the tape rolling or stopped.

To set Cue Points 'On the Fly'

To set a cue point 'on the fly', roll the tape and press CUE on the Control Keyboard, in readiness for setting a cue point.

At the appropriate time, press ENTER and a cue point will be added at the time ENTER is pressed. A pop-up will then appear to prompt for a name entry. Either press ENTER for the next default Cue Number or type in an appropriate name and press ENTER. Repeat as necessary for any subsequent cues.

The cues scroll automatically with reference to timecode. The current cue is displayed in the central white bar surrounded by black lines. Any commands which specify Start and End times, such as CYCLE, will cause green highlights to be displayed on those cues.

Cues List Scrolling

The CUES list scrolls through automatically as the tape is rolling. The current Cue is placed in the middle of the list by default but the SCROLL BAR, to the left of the CUES list, can be used to place the current CUE at the most convenient position. It may be preferable to see more of the approaching CUES than those already passed, for example.

If there is a long list of CUES, some of which are above or below the section being displayed, the SCROLL BAR can be used to view them whilst the tape is stopped. However, the current CUE will always be in view when the tape is rolling. If it is out of view (the tape is stopped) and then the tape is rolled, the current CUE will immediately jump into view.

Click on the CUES list header to reset the list so that the current CUE resides in the centre of the list, which is the default.

To edit a Cue name

Highlight and click on the name or press EDIT on the Control Keyboard to display a pop-up dialogue box. Type in a name using the QWERTY keyboard and press ENTER or click on OK.

To re-order a Cue entry

Click on its number in the left hand column for a pop-up. Overwrite the current number using the numeric pad on the Control Keyboard, and press ENTER or click on OK. The list will re-order itself.

To Delete a Cue

To delete a cue, highlight that cue in the CUES field, then on the Control Keyboard select:

DELETE CUE ENTER

or without highlighting it:

DELETE CUE # ENTER

Entering Notes for a Cue

Click on the middle column, or highlight and press EDIT on the Control Keyboard, for the NOTES pop-up related to the cue on the same line. Use the QWERTY Keyboard to enter notes and press ENTER or click on OK. The icon appears only if there is a Notes entry.

Command Dialogue

At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before ENTER.

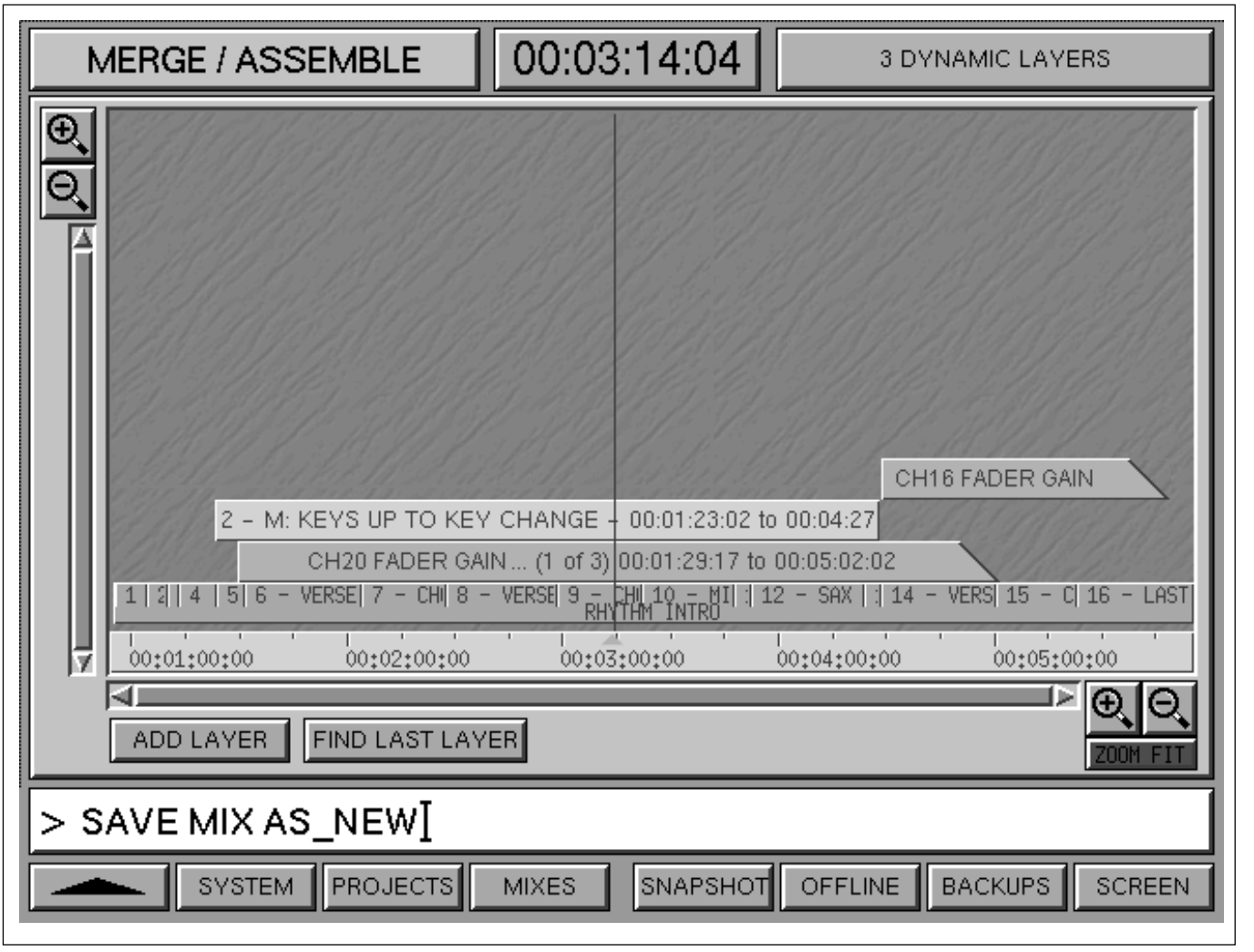
Menu options

Menu options available using the softkey functions displayed at the foot of the Mixes & Cues screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
PROJECTS	-	Selects the ARTISTS/ PROJECTS & TITLES page.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
ASSEMBLE	-	Selects the mix compilation MERGE/ASSEMBLE page.
TRACKS	-	Selects the TRACK LISTS page.
OFFLINE	-	Selects OFFLINE faders and cuts automation edit page.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-6-6 Merge/Assemble Screen

The MERGE/ASSEMBLE GUI allows Mixes and Snapshots from any source to be merged with the current Working Mix. Each bar in the GUI represents a Mix Layer and these may include additional Dynamic Layers.



MERGE/ASSEMBLE screen

General

This time-line GUI displays the current Working Mix as a blue bar along the bottom of the screen. Cue points are displayed as vertical lines along this bar with labels where possible.

Individual bars for any unsaved additional mix layers will also be displayed as they are created or merged. The most recent will be the uppermost. Any New Dynamic Layers, that is those created by automating controls on the console surface, will appear after creation once the tape is put into rewind.

Timecode display

The Timecode display placed centrally at the top of the screen displays the current time for the master machine. The vertical line indicates the related position along the time-line.

Mix Layer Status

The banner at the top right indicates the total number of unsaved Mix Layers in the system memory. The [UNDO], [REDO], [UNDO ALL] and [REDO ALL] keys on the Control Keyboard can be used to undo and redo layers.

Scroll and Zoom

The time-line can be scrolled or zoomed in or out using the independent horizontal and vertical Scroll and Zoom icons.

ZOOM FIT

Highlight ZOOM FIT by clicking on it to have all Mix Layers totally in view. If layers are shortened or extended, the display will adjust accordingly as each layer is completed.

FIND LAST LAYER

Click on FIND LAST LAYER in cases where the latest mix occurs in a portion of the time-line not in view for the display to shift view accordingly.

ADD LAYER

Clicking on ADD LAYER causes a large pop-up to appear which divides into two major areas:

- **SOURCE - Specify:**
  - ARTIST/PROJECT (Current is default)
  - TITLE (Current is default)
  - MIX or SNAPSHOT (WORKING MIX is default)
  - FM Time (can be a Cue Point)
  - TO Time (can be a Cue Point)
  - Independent Ramp or Butt Joins for FM & TO
  - ALL - Complete Console
  - CHS - Source Channels (specify which ones)
  - CEN - Central Master Section
  - Which Channel Sections (e.g. Fader, EQ etc)
- **DESTINATION - Specify:**
  - FM Time (can be a Cue Point)
  - TO Time - Entered Automatically, can be Edited
  - CHS - Destination Channels (same # is Default)

ADD LAYER example

The following example involves copying mix data within a Title from Verse 1 to Verse 2.

1 Select the source data using the upper section of the GUI. The default source is the current Artist/ Project, Title and its Working Mix. The mix data for Verse 1 is already resident in the Working Mix so this is the correct source mix for this example. Any other source can be selected by clicking on the appropriate ▼ to the right of its name strip for a pop-up list.

2 Having established the correct source, set a start time for the source data in the SOURCE 'FM' section which may be a Cue point or timecode entry. 'VERSE 1' is displayed in the example. Click on ▼ to the right of the name strip in the 'FM' section for a different 'from' point as a Cue point or click on the timecode entry for an edit pop-up. Clicking on the large ▲ and ▼ buttons nudges the timecode. The merge transition can be selected as a butt or timed ramp according to the icon to right of the 'FM' label. The ramp time can be adjusted by clicking the label below the ramp icon for a pop-up.

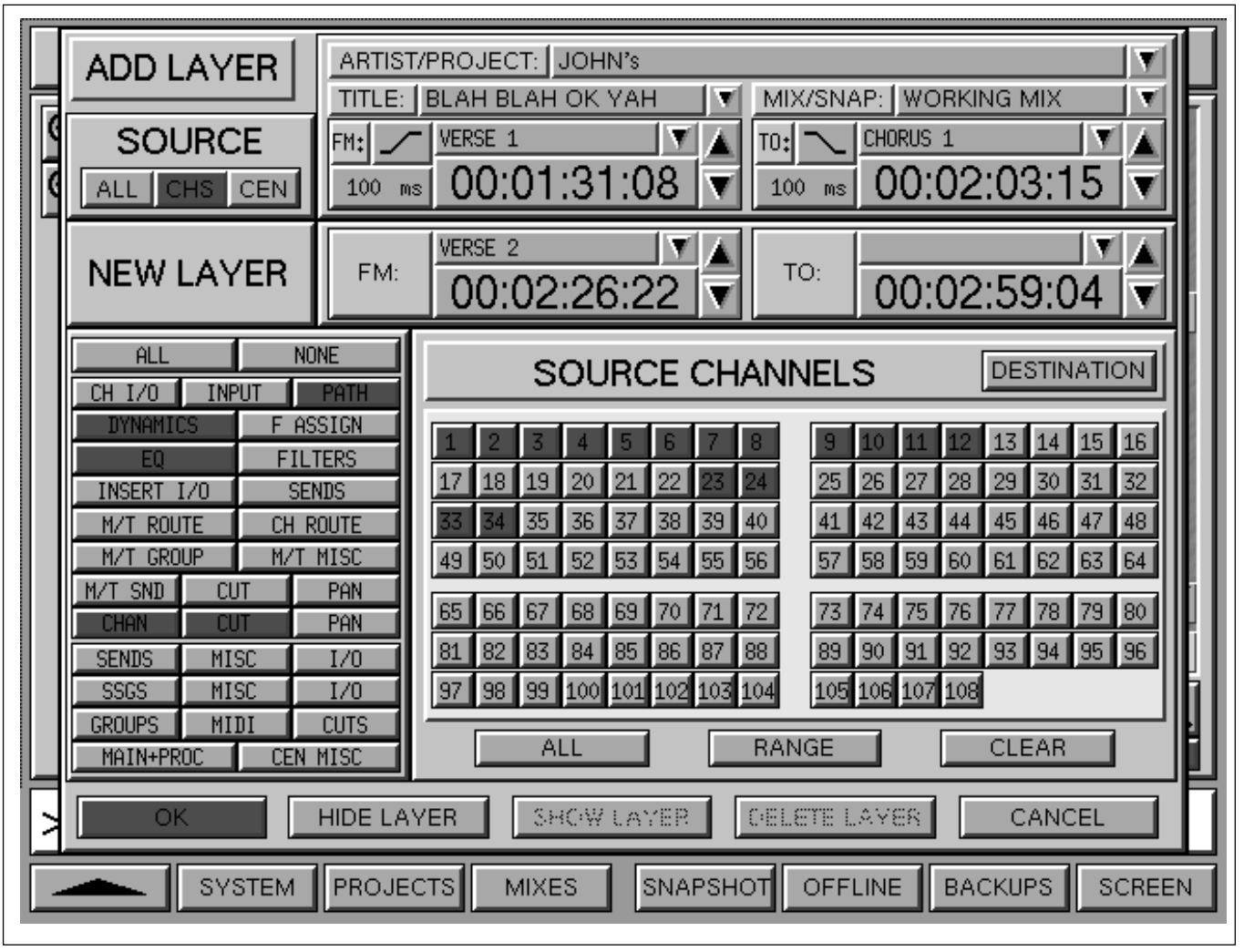
3 An end time must be specified in the SOURCE 'TO' section using a similar method to that used to set the start time, specified in step 2. In this example it is 'CHORUS 1', which is effectively the end of Verse 1.

4 A destination within the Working Mix must be specified in the NEW LAYER 'FM' section. The procedure is a repeat of step 2 but without needing to specify a butt or ramp. In the example it is 'VERSE 2' in order to copy the data from Verse 1 to Verse 2. Once a from ('FM') time is specified the 'TO' time is entered automatically. The 'TO' entry itself can be edited if required.

5 Further options include selecting the components in the merge, the default being ALL which includes all channels (CHS) and the centre section (CEN). The example shows that CHS has been selected in the SOURCE block upper left.

6 Specific channels have been selected by clicking on the numbered buttons. The example shows that channels 1-12, 23, 24, 33 and 34 have been chosen. The source data will be applied to the same numbered channels but can be applied to different channels by clicking on DESTINATION.

7 A further option, the field at left lower middle, allows individual channel and centre section components to be specified. Clicking on ALL will highlight every component whilst clicking on NONE will de-select them all . They can also be selected individually from either starting point. The example shows that PATH, DYNAMICS, EQ, CHAN (Fader) and its CUT have been highlighted.



MERGE/ASSEMBLE - ADD LAYER pop-up

Note

CHS must be highlighted in the upper left SOURCE box for a selection of channels, and CEN for any centre section components.

8 Once the selection process is complete, click on OK or press ENTER on the Control Keyboard and this new layer will be added to the MERGE/ ASSEMBLE screen.

9 To edit the layer, click on it for its ADD LAYER pop-up and adjust as necessary.

SOURCE CHANNELS Selector

Channels can be selected individually by clicking on appropriate numbers to highlight them or click on ALL and then de-select individual channels if more convenient.

Click on RANGE to highlight it in order to select contiguous blocks of channels. Then click on the first and last of each block. De-select RANGE when finished.

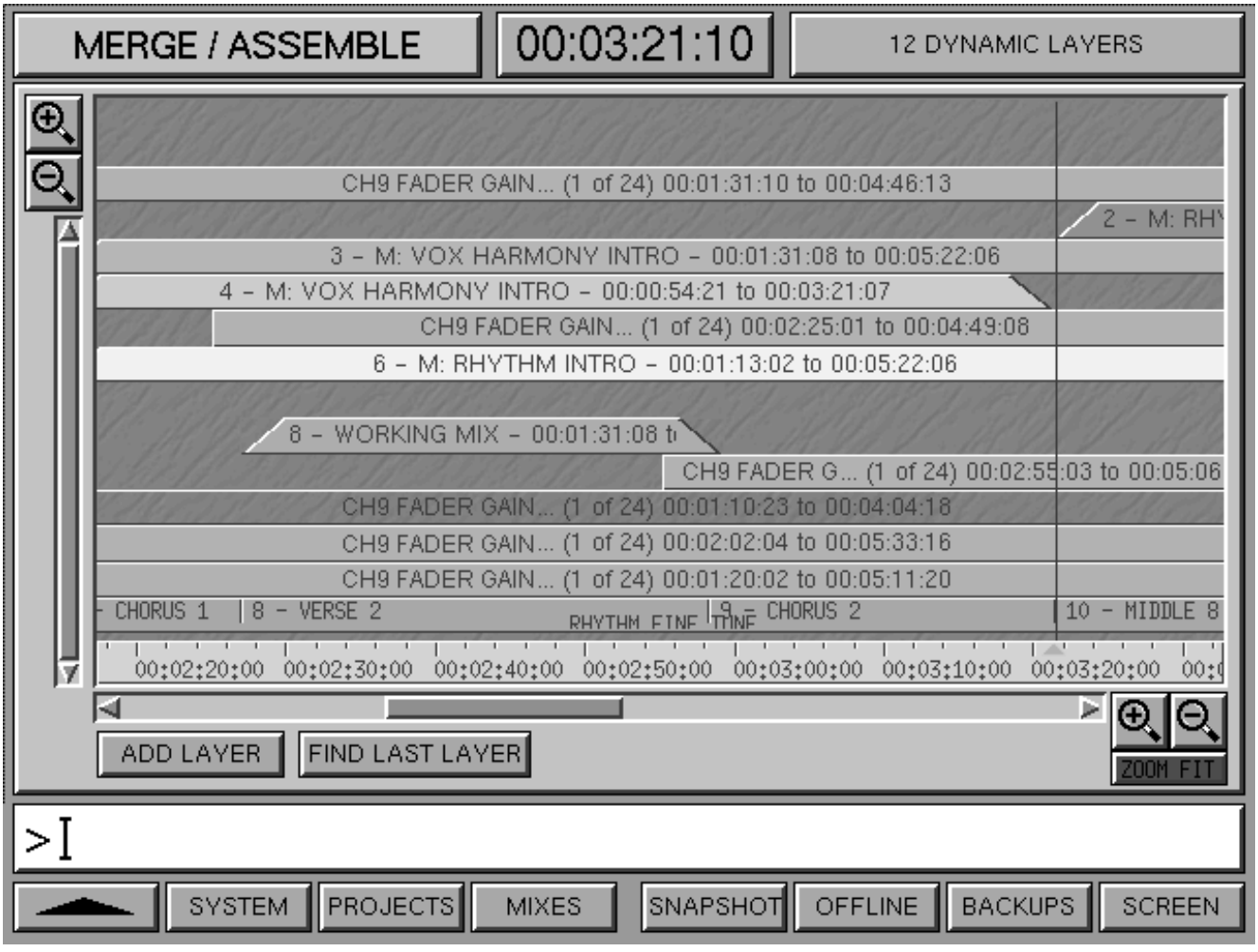
Click on CLEAR to de-select any highlighted channels.

DESTINATION

Click on DESTINATION if the automation data is to be applied to different numbered destination channels. Make sure that the number of destination channels selected matches the number of source channels, including multiple blocks.

HIDE, SHOW and DELETE LAYER

Click on HIDE LAYER or DELETE LAYER as appropriate. The data for a hidden layer will not have any effect on what is heard. Click on SHOW LAYER to bring it back.



Multiple layers of different types on the MERGE/ASSEMBLE screen

Layer types

There are four categories of layers, colour coded as:

- **WORKING MIX - Blue**
  This is the current underlying base mix accessed by clicking on ADD LAYER. New layers taken from the Working Mix are specified using the ADD LAYER GUI. Click on to edit.
- **DYNAMIC LAYER - Cyan**
  This type of layer is created by automating controls on the control surface, such as faders and cuts, in the normal way and cannot be edited.
- **MIX LAYER - Green**
  This type of layer consists of dynamic data from other mixes from anywhere except the Working Mix. In other words, mix data from other mixes in the current or any other Title. It is specified using the ADD LAYER GUI. Click on to edit.
- **SNAPSHOT LAYER - Yellow**
  This type of layer consists of static data from any Snapshot but must have 'FM' (from) and 'TO' times specified. It is specified using the ADD LAYER GUI. Click on to edit.

UNDO and REDO

Use the UNDO and REDO keys on the Control Keyboard to undo and redo layers.

HIDE or DELETE Layers

Click on any layer for a pop-up. Click on HIDE LAYER or DELETE LAYER as appropriate. The data for a hidden layer will not have any effect on what is heard.

SAVE

SAVE MIX or SAVE MIX AS NEW on the Control Keyboard will collapse all layers into a single entity.

Command Dialogue

At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER]. There are command line merge functions available alongside the GUI-based assemble described previously.

MERGE command lines

The merge mix automation data command lines allow specified parts of a saved mix or a snapshot setting to be merged into the current working mix. The parameters which can be specified are:

- which CHANNELS
- which CONTROL GROUP FADERS
- which MIX (including the current working mix) or SNAPSHOT source
- START and END Times from the source mix
- DESTINATION Times for time-shifted merge
- BUTT or RAMP for the merge mix sections
- joining of Static Objects to other Static Objects

The UNDO and REDO functions will work on any merge operations in the normal way.

The constituents of a merge command are as follows:

1 [MERGE] key on the Control Keyboard.

2 Source:
Nothing specified, uses current WORKING MIX
[MIX] = Currently highlighted MIX
[SNAPSHOT] = Currently highlighted SNAPSHOT

3 List or Range of Channels or other Faders:
1..108 = Channels 1-108
01..032 = Control Group Faders 1-32
00 = Main L/R Fader

4 Start Time for Source Data:
[A], [B], Cue, Cue # or Timecode number entry

5 End Time for Source Data:
[A], [B], Cue, Cue # or Timecode number entry

6 Optional Shifted Destination Start Time:
[A], [B], Cue, Cue # or Timecode number entry

7 [ENTER]

Note:

*1 Channel data will be merged according to the control types highlighted in the **SNAPSHOT DEFAULTS**.*

2 Channels and other fader types can be specified in a single string e.g.
00.01.03.05..08.1..24.48..56.65 =
Main L/R, Control Group Faders 1, 3, 5-8 Channels 1-24, 48-56 and 65.

3 If Timecode number entry is used, [TO] key must be used as a separator - see example below.

Example MERGE command lines

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

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

[MERGE] [MIX] 01..032 [TO] 2:00 [TO] 4:00 [TO] 2:01 [ENTER]
Slides the moves on control group faders between 2:00 and 4:00 of highlighted mix to 2:01 on working mix.

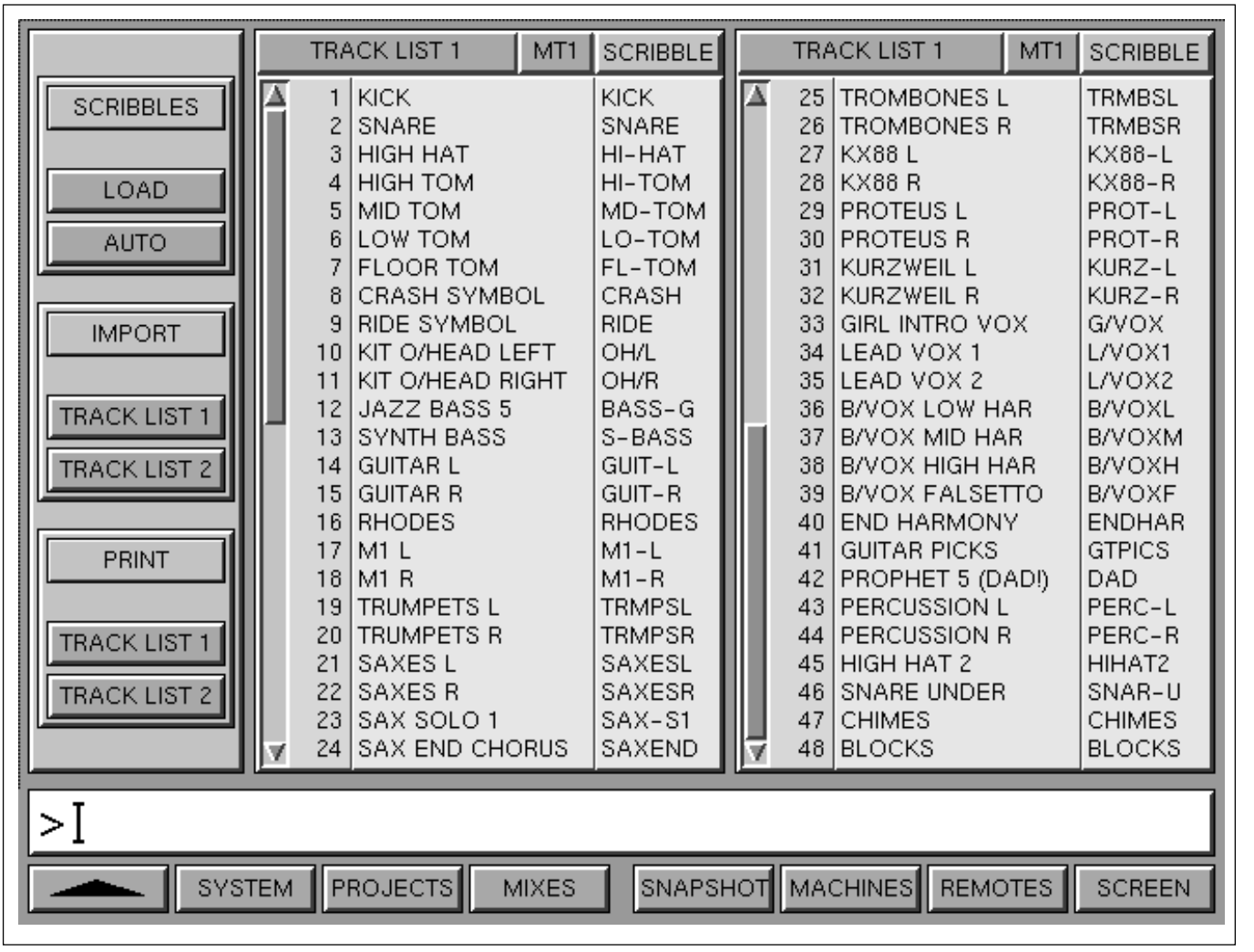
Menu options

Menu options available using the softkey functions displayed at the foot of the Merge/Assemble screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
PROJECTS	-	Selects the ARTISTS/ PROJECTS & TITLE page.
MIXES	-	Selects the MIXES & CUES page.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
OFFLINE	-	Selects OFFLINE faders and cuts automation edit page.
BACKUPS	-	Selects system BACKUP functions.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-6-7 Track Lists Screen

There are two independent Track List pages which are assignable to machines MT1 and MT2 set up using the MACHINES GUI. Track Lists can be imported from other Artist/Projects and Titles.



TRACK LISTS page displaying entries for a 48 track machine

Track Lists page in general

This page displays two columns with up to 24 entries in each. This allows track lists for two machines simultaneously or different tracks on the same machine in each column. Tracks 1-24 and 25-48 for the same machine are shown as an example in the illustration. The vertical scroll bars are used to scroll the track lists on machines with more than 24 tracks.

To select a Track List

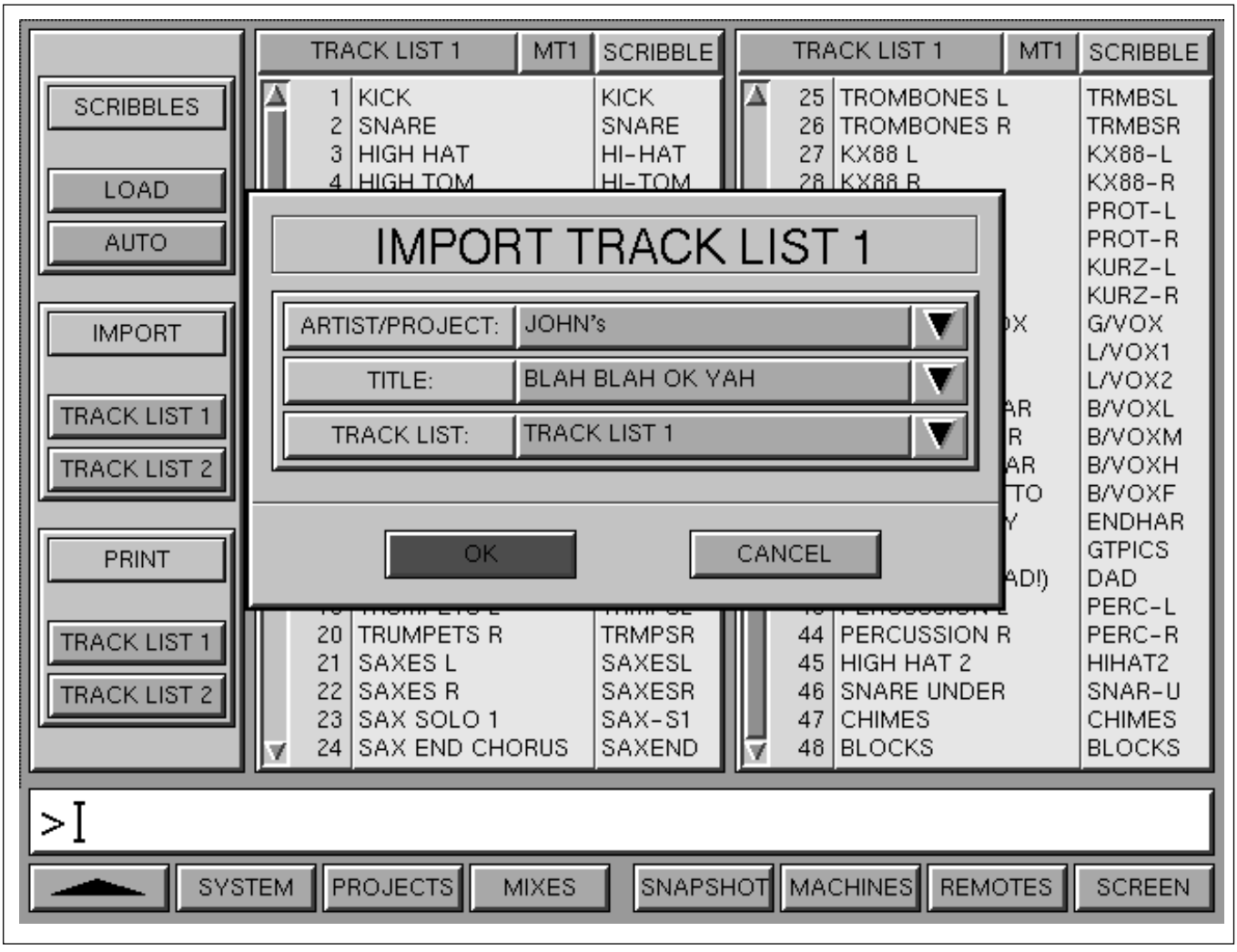
The system holds two independent Track Lists, TRACK LIST 1 and 2. Click on the heading banner to alternate between them.

To select a Machine

The two track lists may be assigned to Machines MT1 and MT2. Click on MT# to alternate between them.

To name Tracks

To name or edit a Track designation, highlight the actual name (not its number in the left hand column) and click on it or press [TAB] on the QWERTY keyboard. A large dialogue box appears in which to type the name. Type in a name and use the ↑ and ↓ keys to move to the next entry. Click on **OK** or [ENTER] by the numeric keys on the QWERTY keyboard when finished.



TRACK LISTS screen displaying the IMPORT TRACK LIST 1 pop-up

To name Scribbles

To name or edit a Scribble entry, highlight it and use the same procedure as is used for naming Tracks. A maximum of 6 characters may be typed in.

Load Scribbles

The Scribble entries can be propagated from Track List 1 and 2 to the Scribble entries in the I/O GUI pages according to the routing of MT1 and MT2.

Click on LOAD to propagate the Scribble names to the appropriate channel I/O M/T Scribble entries.

Click on AUTO to highlight so that channel I/O scribbles are 'on line'. In other words any edits to track lists are propagated immediately.

Importing Track Lists

At the IMPORT block, click on TRACK LIST 1 or 2 for a pop-up. Click on the appropriate ▼ icons for pop-ups, or just click (and click) on the name banners to cycle through what is available. It is possible to view the full TITLES pop-up whilst clicking on the ARTIST/PROJECT BANNER. Having located the desired source Track List to be imported, click on OK or [ENTER] on the Control Keyboard.

Printing Track Lists

At the PRINT block, click on TRACK LIST 1 or 2 respectively for the print pop-up. Make sure the correct printer destination is displayed and click on OK or [ENTER] on the Control Keyboard.

Command Dialogue

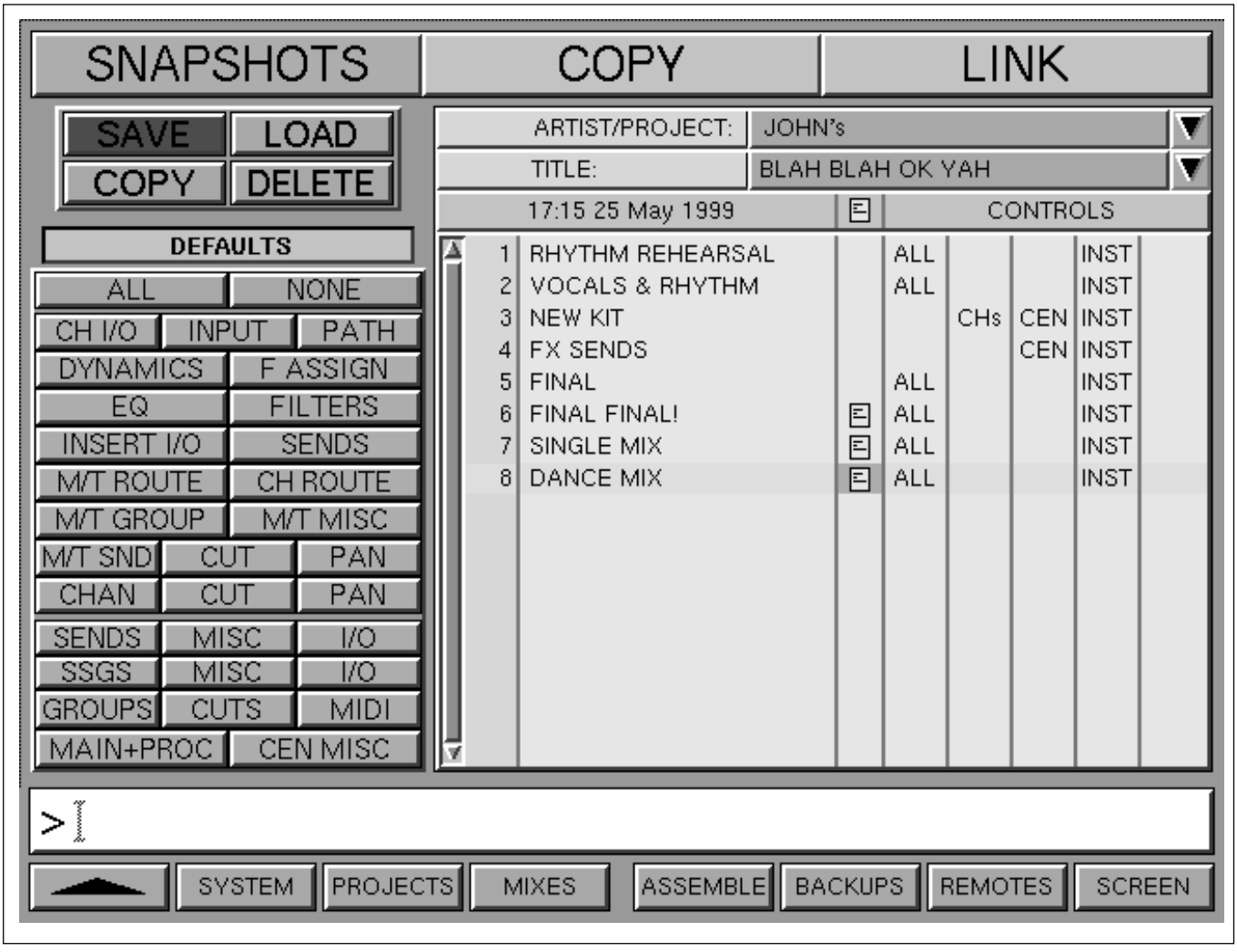
At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options

Menu options available using the softkey functions displayed at the foot of the Track Lists screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
PROJECTS	-	Selects the ARTISTS/ PROJECTS & TITLES page.
MIXES	-	Selects the MIXES & CUES page.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
MACHINES	-	Selects the MACHINES set-up parameters page.
REMOTES	-	Selects the MACHINE REMOTES assignment matrix.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it

7-6-8 Snapshots, Copy & Link Screen



SNAPSHOTS, COPY & LINK GUI displaying the Snapshot DEFAULTS

General

This screen has three pages allowing control of Snapshots, Copy and Link functions. Click on the heading bar for the page required.

Snapshots may be saved ranging from the full system down to a minimum of 1 channel. However, Snapshots may be loaded down to component sections of channels, depending on the Snapshots DEFAULTS selector. Snapshots for elements such as EQ and Dynamics may be loaded individually to their original channel or any number of other channels. For COPY and LINK, there are separate sets of defaults related to the copying and linking of settings from one channel to one or more others.

DEFAULTS block

The availability of buttons in the DEFAULTS block layout will change depending on whether the current operation is SNAPSHOTS, COPY or LINK.

Click on the appropriate buttons to highlight in orange the channel sections required, such as EQ and Dynamics. Click on ALL to highlight the complete channel then de-select the sections not required or, if more convenient, click on NONE to de-select all sections and then click on the ones required.

DEFAULTS selector definitions

As described, three separate selectors are available for SNAPSHOTS, COPY and LINK. The buttons are defined as:

CHANNEL Selector

ALL • All Channel Controls and I/O

CH I/O • Channel Input sources and Output destinations, with gain settings and elcetronic scribbles (not channel insert)

INPUT • Mic, Line and M/T input selector and Phase switches

PATH • 8 section Channel Path selector and IN buttons

DYNAMICS • All Dynamics section controls

F. ASSIGN • All Free Assign Area controls, currently Delay

EQ • All Equaliser controls (not Filters)

FILTERS • All Filter controls

INSERT I/O • Analogue or digital I/O related to the Channel Insert

SENDS • All Send levels, their Pans and Cuts

M/T ROUTE • Multitrack Routing

CH ROUTE • Channel Routing

M/T GROUP • Multitrack Group Cut and Trim

M/T MISC • Multitrack group monitor levels, Pans and Cuts

M/T SND • Multitrack Send Fader
CUT • Multitrack Send Cut switch
PAN • Multitrack Send Pan setting

CHAN • Channel Fader
CUT • Channel Cut switch
PAN • Channel Pan setting

CENTRE SECTION Selector

The following buttons are for centre section settings and apply only to Snapshots:

SENDS • Send levels and cuts
MISC • Send tone and stereo settings
I/O • Send I/O settings

SSGS • Super Send Groups levels and cuts
MISC • Super Send Groups inserts
I/O • Super Send Groups I/O settings

GROUPS • Control Group Faders
CUTS • Control Group Cuts

MIDI • MIDI Set-up Pages 1-24

MAIN+PROC • Main Fader, I/O, Dynamics and EQ settings

CEN MISC • Talkbacks, Foldbacks, Monitoring and Metering

SNAPSHOTS

Snapshots can be saved and loaded by two basic methods: using dedicated keys on the Control Keyboard or clicking on buttons in the Snapshot GUI. The first method is the faster but is restricted to Snapshots of the whole system in the current title whilst the second allows full access to all Snapshot files with selective loading. Channels can be selected down to individual component sections and controls according to the SNAPSHOT DEFAULTS. A single channel can be used as a source for any number of destination channels.

Snapshot SAVE using the dedicated keys

The most convenient way to save a Snapshot is by using the dedicated keys on the Control Keyboard. This functions irrespective of the screen currently displayed. Using the dedicated keys to save a Snapshot always saves a full console-wide Snapshot.

Press [SAVE] [SNAPSHOT] [ENTER] to overwrite the currently highlighted Snapshot on the SNAPSHOTS page. A dialogue pop-up will appear in order to make the user aware of which Snapshot will be overwritten as well as allowing the command to be cancelled.

Press [SAVE] [SNAPSHOT] [AS NEW] [ENTER] to make a new Snapshot and a pop-up appears displaying a new default number which may be changed to a suitable name. With this command, the screen automatically switches to the SNAPSHOTS, COPY and LINK GUI. Select the [ENTER] key or click [OK] in the pop-up to save the Snapshot.

To edit a Snapshot name

Highlight and click on the name or press [EDIT] on the Control Keyboard to display a pop-up dialogue box. Type in a name using the QWERTY keyboard and press [ENTER] or click on OK.

To re-order a Snapshot entry

Click on its number in the left hand column for a pop-up. Overwrite the current number using the numeric pad on the Control Keyboard, and press [ENTER] or click on OK. The list will re-order itself.

Note:

In this case, although the pop-up has a [CANCEL] button, cancelling affects only the naming process and the new Snapshot is always saved.

Snapshot LOAD using the dedicated keys

Press [LOAD] [SNAPSHOT] [ENTER] to load the currently highlighted Snapshot. Using the dedicated keys to load a Snapshot always loads the original complete.

Snapshot DELETE using dedicated keys

Press [DELETE] [SNAPSHOT] [ENTER] to erase the currently highlighted Snapshot on the SNAPSHOTS page. A pop-up will appear, allowing the command to be confirmed or cancelled.

Snapshot SAVE via the GUI

Click on [SAVE] in the Snapshots GUI for pop-ups with more comprehensive options which include:

ALL • Saves Snapshot of the complete system.

CHs • Saves a Snapshot of all the Channels or specified channels depending on what has been selected using the pop-up. A 'GENERIC' channel save can be specified, which is useful for specific instrument settings. It will be labelled CH0 in the Snapshots list.

CEN • Saves a Snapshot of the Centre Section.

INST • Saves a Snapshot of the Installation set-up (the INST set-up is always saved).

Note:

A combination of a number of CHs and CEN is possible.

Click on pop-ups in the GUI to select the items to be stored in the Snapshot. Further options include where the Snapshot is to be stored.

The columns under the CONTROLS banner indicate which sections have been saved for any particular Snapshot.

Snapshot LOAD via the GUI

Click on [LOAD] in the GUI for the load sequence pop-up. The load options are similar to the save options:

ALL • Loads Snapshot of the complete system (provided the Snapshot to be loaded is from an 'ALL' save).

CHs • Loads a Snapshot of all the Channels or specified channels depending on what has been selected in the defaults pop-up.

CEN • Loads a Snapshot of the Centre Section.

INST • Loads a Snapshot of the Installation set-up.

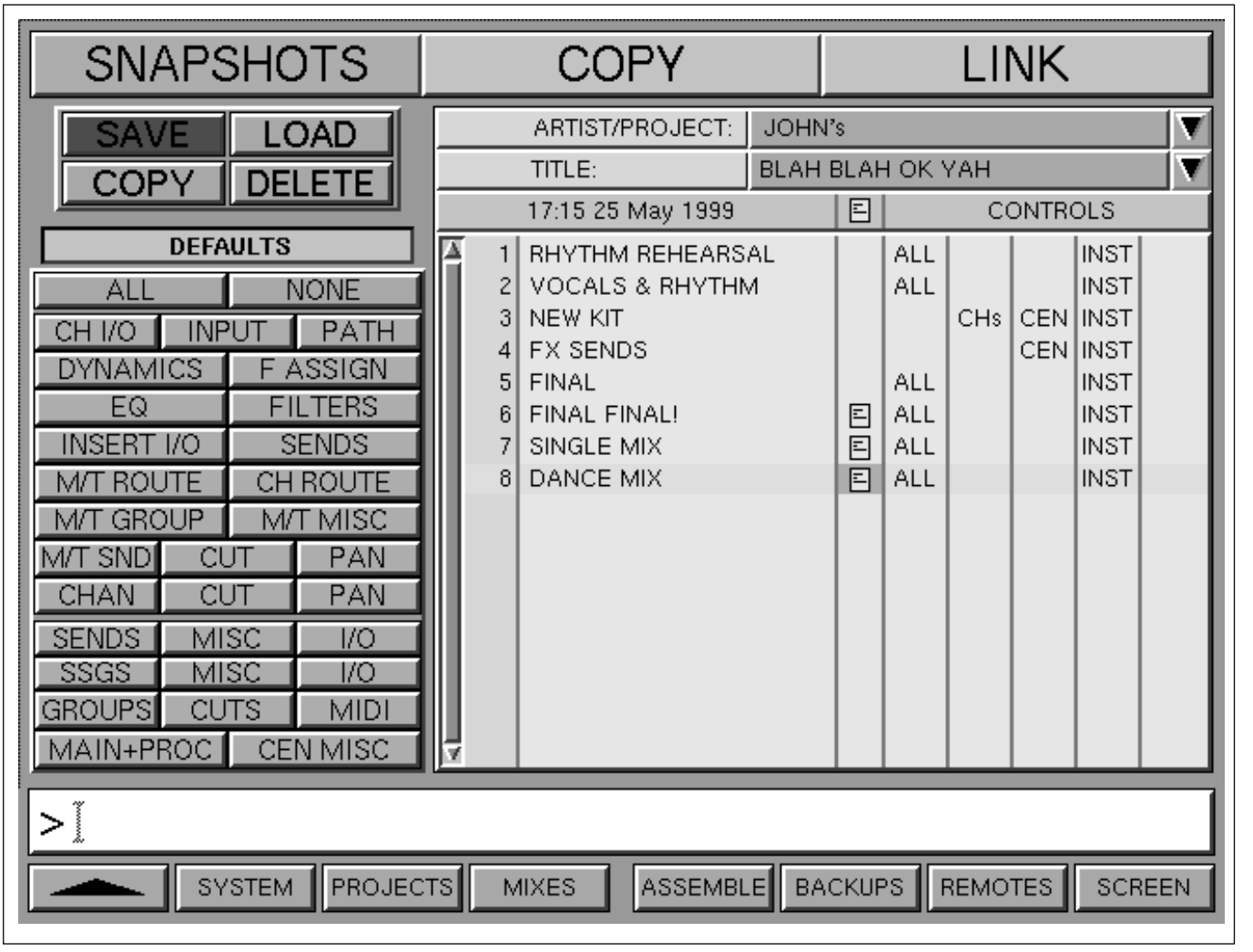
If CHs is selected in the Snapshot LOAD, then a selective load of less than a whole channel is possible. The Snapshot will affect the channel controls depending on what is highlighted in the SNAPSHOT DEFAULTS field.

Snapshot COPY via the GUI

For a copy operation, the source Snapshot will be the one highlighted in the SNAPSHOTS GUI. Click on [COPY] in the GUI for fully comprehensive pop-ups to select the destination for the Snapshot. The name of the Snapshot placed in the destination can be changed during the the COPY process.

Snapshot DELETE via the GUI

Click on [DELETE] in the GUI for a pop-up which allows the currently highlighted Snapshot in the SNAPSHOTS page to be deleted.
Click [OK] ([ENTER] on the Control Keyboard) or [CANCEL] to abort the operation.



SNAPSHOTS, COPY & LINK GUI displaying the Snapshot DEFAULTS

Main SNAPSHOTS list field

The majority of the screen area is taken up by the list of Snapshots. The functions are as follows:

ARTIST/PROJECT

Click on ARTIST/PROJECT for a pop-up of options:

- **ARTIST/PROJECT**
  Once selected, click on the banner to the right of ARTIST/PROJECT to cycle through Artist/Projects one by one. Alternatively, click on ▼ for a pop-up and highlight the desired Artist/Project.

Note

After clicking on ▼, it will reverse (▲) indicating that the pop-up will close if clicked on once more.

- **FACTORY LIB.**
  Click on this option for a list of read-only FACTORY LIBRARY Snapshots supplied with the system.

- **STUDIO LIB.**
  Click on this option to access STUDIO LIBRARY Snapshots designed for safe-keeping of studio-specific set-ups. This library has a password option.

- **USER LIB.**
  Click on this option to access individual USER LIBRARIES. Click on the right side of the banner for a pop-up of Users. Click on the appropriate User name for the Snapshot list. A password option is available for USER LIB. entries.

Note

User names must be set up using the SYSTEM GUI.

TITLE
Title is visible only when ARTIST/PROJECT is selected. Click on the banner to its right to cycle through Titles available for the current ARTIST/PROJECT one by one.
Alternatively, click on ▼ for a pop-up and highlight the desired Title.

Note

After clicking on ▼, it will reverse (▲) indicating that the pop-up will close if clicked on once more.

It is sometimes useful to leave open the pop-up displaying Titles, allowing all Titles to be displayed for each Artist/Project as they are cycled through. Click on the banner to the right of the ARTIST/PROJECT banner to cycle through Artist/Projects one by one.

SNAPSHOTS list
The Snapshot names are listed against the column of numbers to their left. The list can be stepped through using the ⬆ and ⬇ on the Control Keyboard or scrolled through using the scroll bar to the left of the numbers column.

NOTES column
The column to the right of the names allows individual Notes to be made for each Snapshot. Click in this column or highlight and press [EDIT] level with the appropriate name for its notes pop-up. Type in the notes and click on [OK] or press [ENTER] on the Control Keyboard. An icon will then be displayed in the NOTES column against the snapshot.

CONTROLS Column
These columns indicate what any particular Snapshot consists of:

ALL • ALL is displayed if a Snapshot of the complete system has been stored.

CHs • CHs is displayed if all or some channels have been stored as a Snapshot.

CH0 • CH0 indicates a single generic channel has been stored. It has no relation to any previous channel snapshots, hence CH0. This is useful as a setting for a particular instrument type, for example.

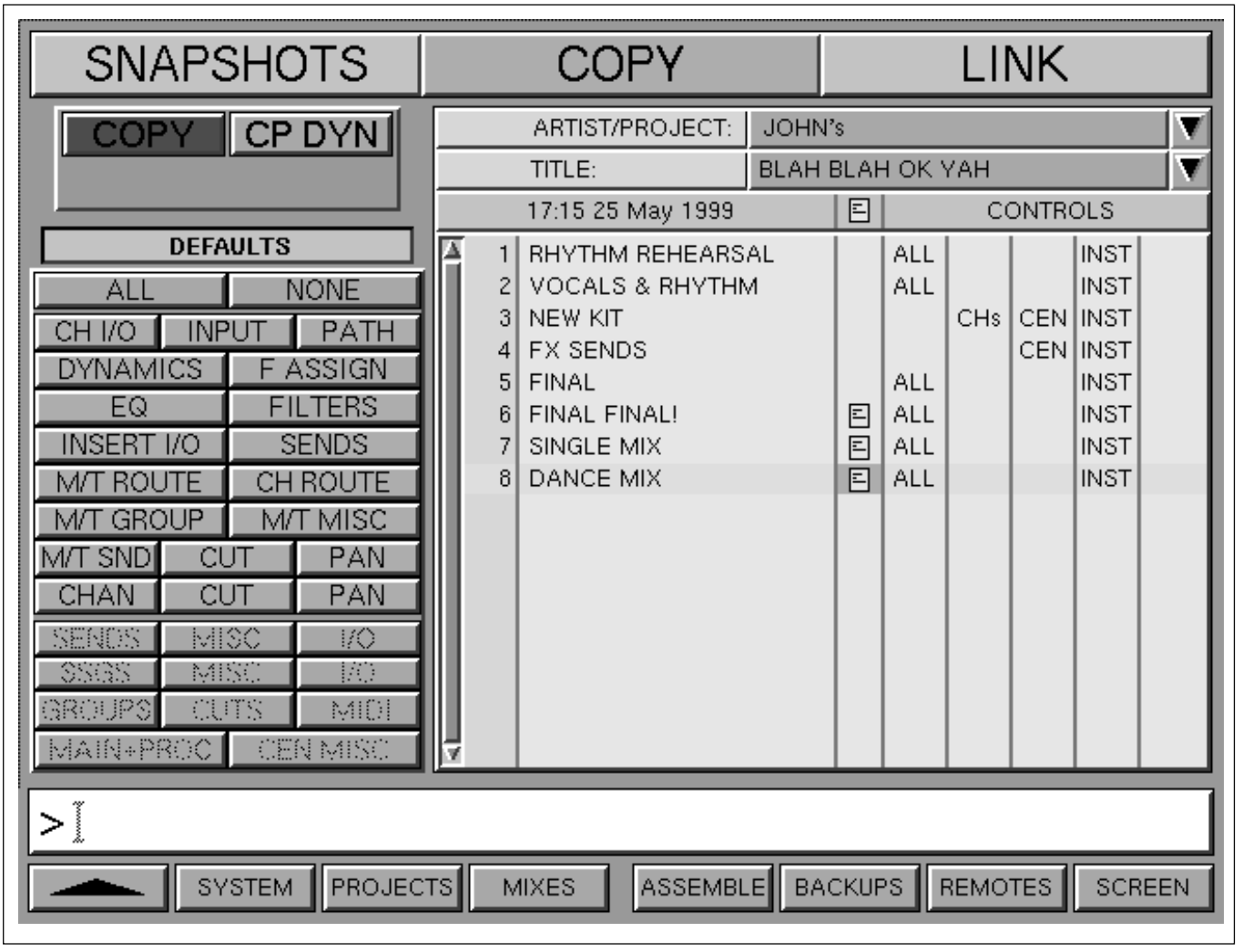
CEN • CEN is displayed to indicate that a Snapshot includes the Centre Section settings.

INST • Will always be displayed indicating that the installation set-up has been stored.

Command Dialogue
At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options
Menu options available using the softkey functions displayed at the foot of the Snapshots, Copy & Link screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
PROJECTS	-	Selects the ARTISTS/PROJECTS & TITLES page.
MIXES	-	Selects the MIXES & CUES page.
ASSEMBLE	-	Selects the mix compilation MERGE/ASSEMBLE page.
BACKUPS	-	Selects system BACKUPS functions.
REMOTES	-	Selects the MACHINE REMOTES assignment matrix.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.



SNAPSHOTS, COPY & LINK GUI displaying the Copy DEFAULTS

COPY and LINK in general

Copy and Link functions can be performed either locally in the channels sections, known as 'Quick Copy' and 'Quick Link', or via GUI control.

Using the 'Quick' method, Copy and Link may be combined into a single operation that allows Copy and Link simultaneously. Since Copy and Link functions can be performed together they will both be described in this section.

QUICK COPY

Channels may be copied without using the GUI. This is accomplished using the **upper row** of [ACCESS] buttons, as follows:

- **Push and hold down the upper [ACCESS] button for the source channel.**
- **Its [ACCESS] will light, first red and then turn amber after half a second.**
- **When it has changed to amber, select the upper ACCESS buttons for the destination channels, one by one.**

This method is often quicker than using the GUI, particularly for small numbers of channels.

The control settings copied in 'Quick Copy' are set according to what is highlighted in the Copy DEFAULTS panel displayed on the COPY page. Click on COPY in the banner at the top of the GUI to see the Copy DEFAULTS.

Note

Quick Copy *will copy static settings only. Automation data must be copied using GUI operations.*

QUICK LINK

This is accomplished using the **lower row** of **ACCESS** buttons, as follows:

- **Press and hold down the lower ACCESS button for the source channel.**
- **Its ACCESS will light, first red and then turn amber after half a second.**
- **When it has changed to amber, select the lower ACCESS buttons for the destination channels, one by one.**

In this case, controls are linked and any offsets between knob settings are retained.

Note

The retention of offsets applies only to those knobs which can be fully automated.

The control settings linked in 'Quick Link' are set according to what is highlighted in the Link DEFAULTS field displayed on the LINK page. Click on LINK in the banner at the top of the GUI to view the LINK DEFAULTS.

Note

Make sure LINK DEFAULTS *is highlighted in red in the* LINK *page. Click on it if not.*

QUICK COPY and LINK

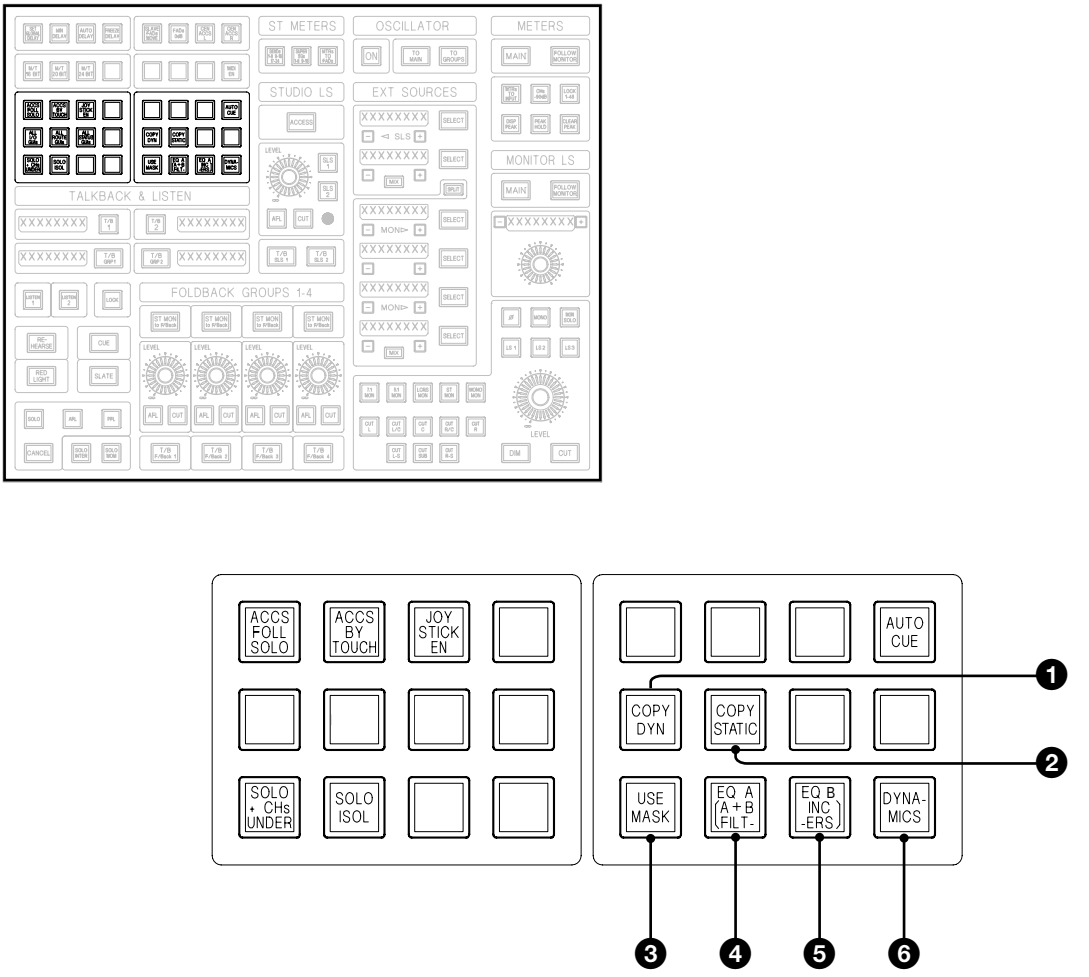
This is accomplished using the **upper and lower rows** of **ACCESS** buttons, as follows:

- **Press and hold down the lower ACCESS button for the source channel.**
- **Its ACCESS will light, first red and then turn amber after half a second.**
- **When it has changed to amber, select the upper ACCESS buttons for the destination channels, one by one.**

The control settings linked in 'Quick Copy and Link' are set according to what is highlighted in the Link DEFAULTS field displayed on the LINK page. Click on LINK in the banner at the top of the GUI to view the LINK DEFAULTS.

Note

Make sure LINK DEFAULTS *is highlighted in red in the* LINK *page. Click on it if not.*



Section of the Monitor panel indicating the buttons related to QUICK COPY

❶ COPY DYN Push-Button
This is a latching function and applies to all 'COPY' and 'QUICK COPY' functions that are performed using button push operations. If [COPY DYN] is selected, any copy operations will include dynamic automation data. [COPY DYN] inter-cancels with [COPY STATIC] ❷, or it can be turned on and off, when it returns to defaults.

❷ COPY STATIC Push-Button
This is a latching function and applies to all 'COPY' and 'QUICK COPY' functions that are performed using button push operations. If [COPY STATIC] is selected, any copy operations will be limited to static settings only. [COPY STATIC] inter-cancels with [COPY DYN] ❶, or it can be turned on and off, when it returns to defaults according to the COPY GUI.

❸ USE MASK Push-Button
Sets Copy and Link operations according to the DEFAULTS in the SNAPSHOTS, COPY & LINK GUI.

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

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

❻ 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.

Adjusting offsets with Faders and Knobs

The offsets between linked control functions can be adjusted in a number of ways.

- **Faders**
  To adjust offsets between faders, touch and hold one and adjust any others in the Link Group.

- **Definable Knobs** (such as Pans)
  To adjust offsets between definable knobs, push and hold one knob and adjust any others in the Link Group.

- **Other Knobs** (e.g. EQ or Dynamics sections)
  To adjust knobs in the assignable channels section areas, de-select the channel from the Link Group, make the adjustments and then re-link that channel into the Link Group.

  It is possible, with EQ panels for example, to press and hold a knob on one side of the control surface and adjust the same knob on a linked channel the other side.

COPY using the GUI

The COPY and CP DYN buttons in the GUI allow the copying of channel functions using two GUI pop-ups.

The definitions for COPY and CP DYN are:

COPY • Copies the static settings of controls.

CP DYN • Copies the Dynamic Automation data for automated controls and static settings for others.

All Copy functions will affect channel controls according to the Copy DEFAULTS fields.

Click on COPY for pop-ups in the following order:

SELECT SOURCE CHANNEL pop-up
Click on the required source channel to highlight a source. As soon as one is highlighted the destinations pop-up will appear.

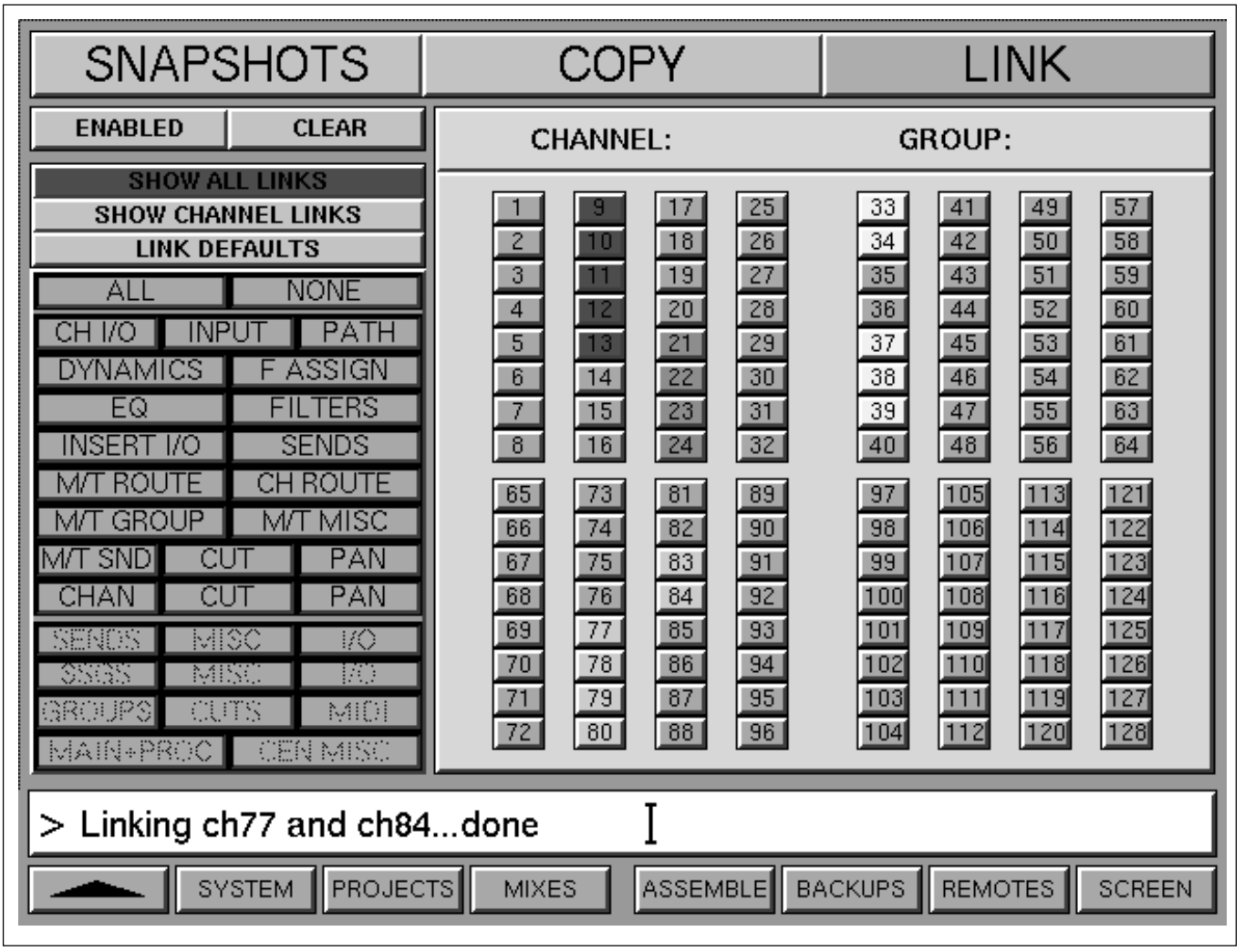
DESTINATIONS FOR SOURCE CHANNEL
Click on DESTINATION CHANNELS to highlight them or click on the screen menu buttons:

ALL • To send copy data to all channels.

RANGE • Highlight the first and last channel of a range.

It is possible to mix these function i.e. click on ALL and un-highlight a number of channels, for example.

Click OK, and the SELECT SOURCE CHANNEL pop-up appears ready to select another source channel and more destinations, or click OK to finish the operation.



SNAPSHOTS, COPY & LINK GUI displaying SHOW ALL LINKS

LINK GUI in general

Click on LINK in the banner at the top of the screen to display the Link Groups set-up and display fields. This page aids the set-up of Link Groups, each of which can have different control selections. All Link Groups can be viewed simultaneously with the aid of colour coding for each group.

LINKS DEFAULTS

Click on the title banner above the channel defaults, as shown in the GUI illustration above, to view the LINK DEFAULTS. Any channel linking operations will link the controls according to what is highlighted in orange in this field. Click on the options to adjust what will be linked. To link some channels:

QUICK LINK

This is accomplished using the **lower row** of **ACCESS** buttons, as follows:

- **Press and hold down the lower ACCESS button for the source channel.**
- **Its ACCESS will light, first red and then turn amber after half a second.**
- **When it has changed to amber, select the lower ACCESS buttons for the destination channels, one by one.**

In this case, controls are linked and any offsets between knob settings are retained.

SHOW ALL LINKS

Click on SHOW ALL LINKS to display all the current Link Groups simultaneously. Each group has its own colour code.

SHOW CHANNEL LINKS

When the ACCESS on a channel in a Link Group is pressed and held until it changes colour to amber, the GUI switches automatically to indicate the channels in the group and highlight the sections linked. The SHOW CHANNEL LINKS banner highlights red to confirm what is being displayed. The indications in the channel numbers area are as follows:

Heading banner

CHANNEL: • the channel number accessed.

GROUP: • the Group number.

The groups are numbered consecutively as they are created. If a group is disbanded then the number will be re-used later when another group is created.

Highlights in channel numbers panel:

Orange • the channel accessed.

Red • the other members of the group.

ENABLED (LOCKED) button

Clicking on this button (immediately below the SNAPSHOT legend) changes it to LOCKED, which inhibits accidental linking changes by locking the existing Link Groups.

CLEAR button

Clicking on this button (to the right of the ENABLED button), allows all links to be cleared. A dialogue pop-up requires confirmation.

7-6-9 Copy Channel Fader Balance to M/T Faders and M/T to Channels

General

This function allows the copying of the Main Output Bus balance (serves as monitor bus), set by the Channel Faders, to the M/T Send Faders balance and vice versa. This will also include Surround Pan settings.

Copy Channel Faders to M/T Send Faders

On the Select To Faders panel, press and hold [CHANS] until it turns amber. Then press the [M/T SEND] button.

Note

[M/T SEND] *remains selected.*

Copy M/T Send Faders to Channels

On the Select To Faders panel, press and hold [M/T SEND] until it turns amber. Then press the [CHANS] button.

Note

[CHANS] *remains selected.*

7-6-10 Copy Monitor and M/T Send Fader Balance to Cues

General

This function allows the copying of the Main Output Bus balance (serves as monitor bus) and the M/T Send Fader balance to any of the Send Busses. This copy can be carried out for one bank of 24 channels at a time or all channels simultaneously.

Copy Monitor mix from ALL CHANNELS

On the Select To Faders panel, press and hold [CHANS] until it turns amber. Then press the desired [SEND #] button on the same panel. Release [CHANS].

Note

The destination [SEND #] *remains assigned to the faders after such an operation.*

Copy Monitor mix from ALL M/T SENDS

On the Select To Faders panel, press and hold [M/T SEND] until it turns amber. Then press the desired [SEND #] button on the same panel. Release [M/T SEND].

Note

There are 120 CHAN faders and 72 M/T SEND faders in the largest configuration.

Copy mix from a bank of 24 CHANNELS

On the Select To Faders panel, make sure [CHANS] is selected then press and hold the source bank button, [CHS 1-24] for example, until it turns amber. Then press the desired [SEND #] button on the same panel. Release [SEND #].

Copy mix from a bank of 24 M/T SENDS

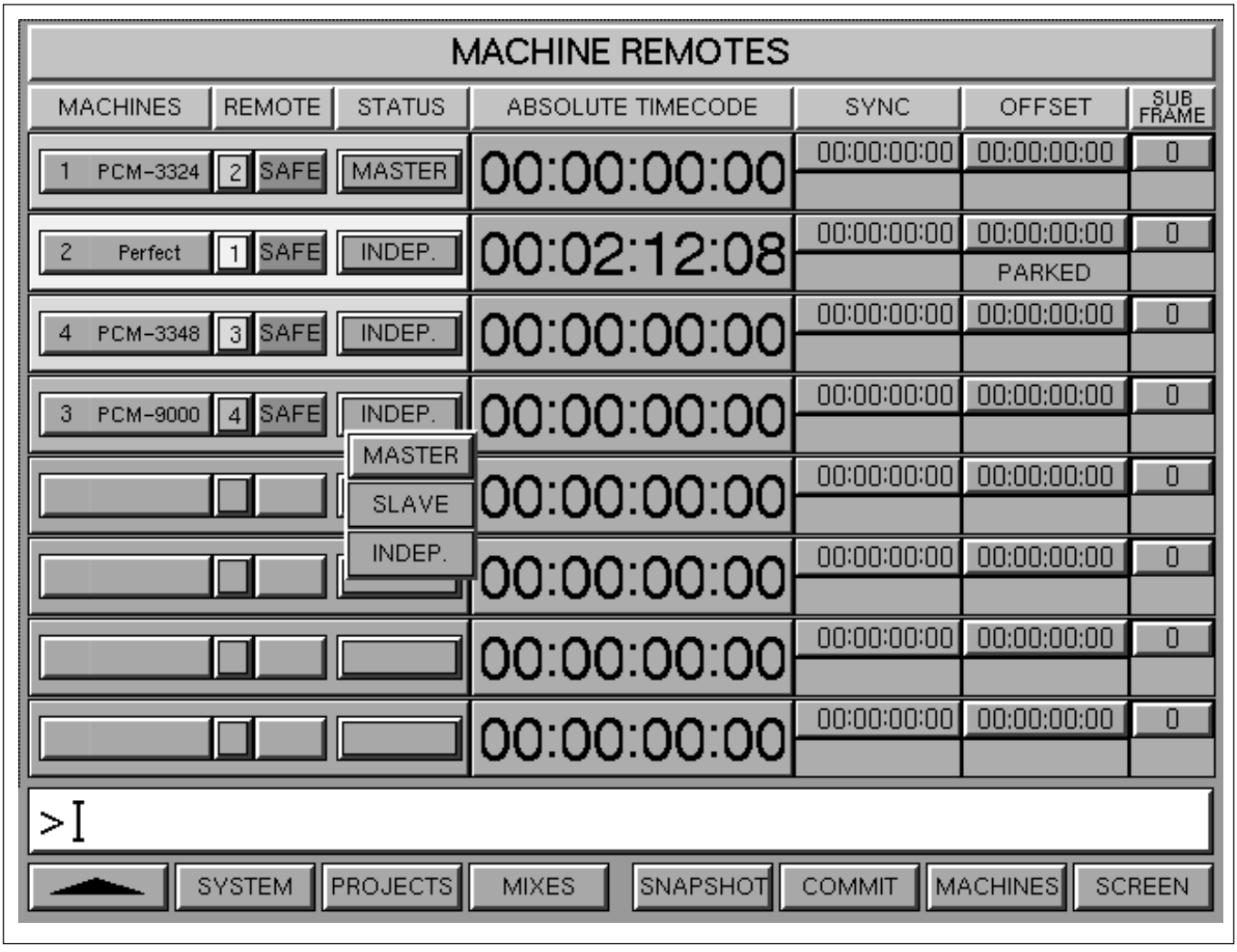
On the Select To Faders panel, make sure [M/T SENDS] is selected then press and hold the source bank button, [CHS 1-24] for example, until it turns amber. Then press the desired [SEND #] button on the same panel. Release [SEND #].

7-6-11 Quick Copy EQ A to B and B to A

On the EQUALISER & FILTERS panel, press and hold [A] until it turns amber, then press [B]. Reverse this procedure to copy [B] to [A].

All knob and switch settings get copied along with the Equaliser Type. Default settings copy automation data too. This may be set in the 'config set-up' to copy static settings only.

7-6-12 Machine Remotes Screen



MACHINE REMOTES screen page

General

This GUI allows machines available in the system to be assigned to any one of the Machine Remote sets on the panel beneath the Control Keyboard. It allows selection of machines as Timecode Master, Slaves or Independent and displays the status of machines in general.

Note

As soon as any selections are made in this screen, the COMMIT softkey will change colour to orange. Any changes will not be actioned until the COMMIT softkey is pressed.

MACHINES column

Click on the machine name or # for a pop-up of the machines available in the system set-up.

REMOTE column

Click on the square button below the REMOTE heading for a pop-up to select one of the Machine Remote sets 1-4 depending on where the machine is required to be controlled from.

Click the SAFE/REC flag to toggle between ‘Machine Record Status Safe’ and ‘Armed’.

STATUS column
This uses a pop-up to allow the selection of the status of machines as follows:

- **MASTER**
  Selects a machine as the Timecode Master. There can be only one Timecode Master so selecting MASTER (and the COMMIT) will take the Timecode Master status away from any other machine.

- **SLAVE**
  Selects a machine as a Slave to the Timecode Master machine. The remotes for this machine will follow whatever the Master does but will not be operative themselves.

- **INDEP**
  Selects a machine to be Independent and fully operative.

ABSOLUTE TIMECODE
The ABSOLUTE TIMECODE display indicates the timecode for its machine.

SYNC column
If belonging to a Slave, the Timecode Display shows 00:00:00:00 when locked, or the difference between itself and the Master whilst becoming synchronised. If the system is unable to synchronise this machine with the Master, the timecode difference will be displayed.

The Sync Flag**,** situated below the sync timecode readout for each machine, displays the SYNC status i.e. LOCKED, UNLOCKED.

OFFSET column
Click on the Timecode Display for a pop-up to allow OFFSET adjustment.

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

The Motion Status Flag, situated below the timecode offset readouts, displays the motion status: PARKED, PLAYING, WINDING, REWINDING etc.

SUBFRAME column
Click on for a pop-up to type in a Subframe offset between 0 and 99 which can be negative or positive. Prefix with '-' for a negative number.

Command Dialogue

At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options

Menu options available using the softkey functions displayed at the foot of the Machine Remotes screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
PROJECTS	-	Selects the ARTISTS/ PROJECTS & TITLES page.
MIXES	-	Selects the MIXES & CUES page.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
COMMIT	-	Lights up orange when changes made on screen. Press this softkey to implement changes. Reverts to its normal (blue) colour.
MACHINES	-	Selects the MACHINES set-up parameters page.
SCREEN	-	Selects pop-up showing all available screens selections. Click on any one to select it.

7-7 Dynamic Automation Moves

7-7-1 Motorised Fader Controls

❶ Touch-sensitive fader knob
When dynamically automated moves are replaying, touching the fader knob inhibits the electronic servo control. Control of the audio level depends on the system mode at the time.

❷ Automation Write button
The small tactile button in the fader knob allows single finger operation when dropping in to write moves in absolute or trim. Whilst the fader is moving, take control of the fader with one finger and - at the appropriate time - press the Write button with the same finger.

Note

*The Ready **ABS** or **TRM** button must be selected to record moves, indicated by their LEDs flashing.*

❸ Yellow Touch LED
This LED lights when the system detects that a finger is touching the fader.

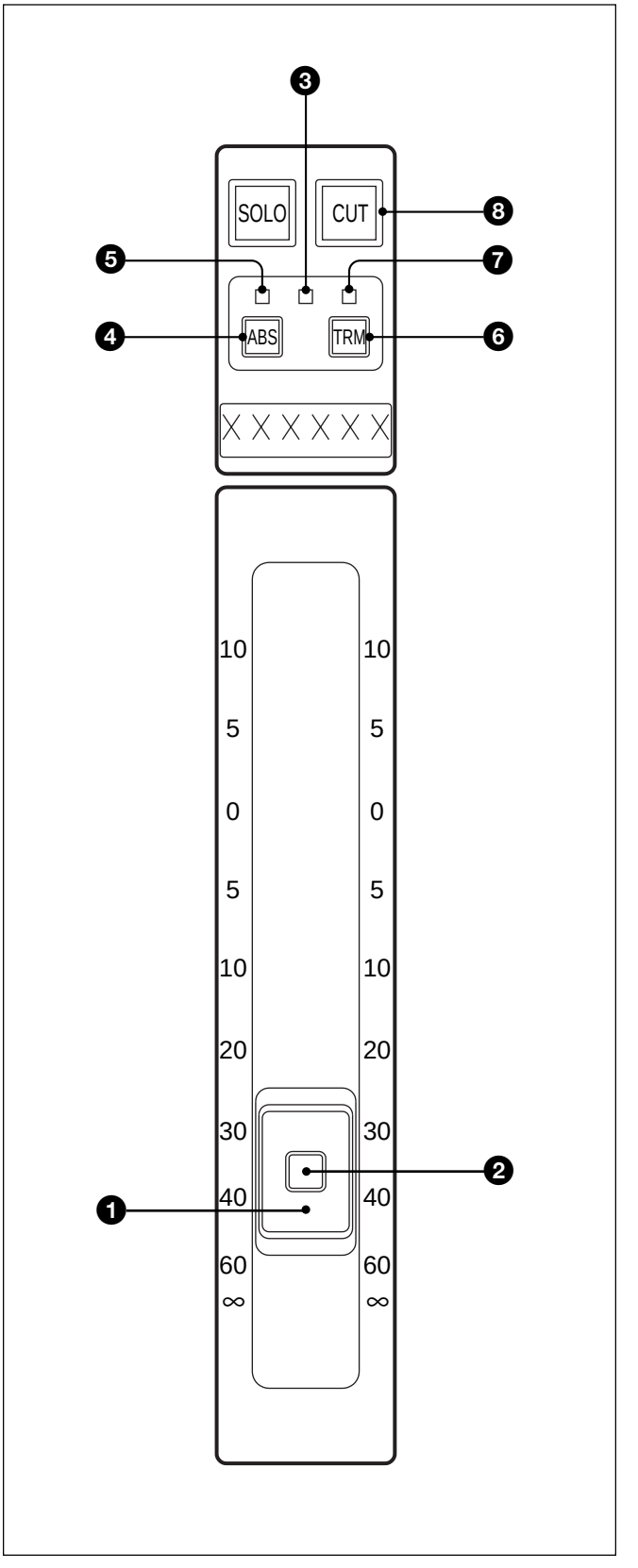
❹ Ready ABS (Absolute) Write button
Pressing the **ABS** button puts the fader into the 'ready absolute' status. If the Automation Write button in the fader knob is then pressed, automation data will be written.

❺ Red Absolute LED
This LED indicates the Absolute write record status of the fader. Flashing indicates a record ready status and fully lit means that move data is being recorded.

❻ Ready TRM (Trim) button
Pressing the **TRM** button puts the fader into the 'ready trim' status. The **TRM** and **ABS** buttons inter-cancel.

❼ Green Trim LED
This LED indicates the Trim write record status of the fader. Flashing indicates a record ready state and fully lit means that any trimming move data will be recorded.

❽ Bi-colour fader CUT switch
This switch illuminates red when the cut is implemented manually, and amber if the cut is controlled by the automation system. It is lit extra bright and amber if manual and automated cuts are performed simultaneously.



Motorised Fader controls

7-7-2 Automating Faders

To automate moves on one Fader

There are two ways to set data to be written for fader moves, either by using the tactile button in the middle of the fader knob or in Touch Write mode, where just touching the fader puts it into record. A write ready state must be selected in both cases.

The first time that moves are recorded for a fader (or any other object), the system assumes automation data from the start to the finish of the title for that fader. If the moves are over less than the full duration of the Title, then the exact position prior to moves is assumed to the beginning of the Title. The same fader level will also be applied after the last recorded fader move to the end of the Title. From then on, the fader will snap back for the duration of the whole Title. To take the setting after the last move to the end of the Title, select [TO END] under the central LCD.

1 Select ready **ABS**. The red **ABS**olute write LED flashes.

2 Press automation write in the fader knob. The red LED lights solidly indicating that any moves will be recorded. Press the Write button either before or after the tape is rolling. Pressing the button once more drops the fader back to 'ready absolute' indicated by the LED flashing again. Pressing **ABS** will also drop out of record returning the fader to 'safe'.

3 For Touch Write, latch [TOUCH WRITE] beneath the central LCD. Select ready [ABS] so that the red 'ready' LED flashes. Then, every time a fader knob is touched, it will drop in to writing move data. This will be indicated by the red LED lighting solidly for the touch period. As soon as finger contact is released, the LED will flash again. To keep the fader in record, just press [ABS] whilst it is being touched. Then when the finger is removed, the red LED will still be fully on, indicating data is still being written. But remember that if the fader is touched again, it will drop out of record when released, unless [ABS] **is pressed and held** whilst removing the finger.

Note

The write button in the fader knob is operable in Touch Write mode.

4 To revise any moves, roll back using the transport keys and play again. As soon as the tape is rewinding, the red LED will flash indicating the ready state. Put the tape into play and previous moves will be heard and will be displayed by the motorised fader. In Touch Write, touching the fader will overwrite previous moves and the audio will follow fader moves accordingly.

Otherwise (if Touch Write is not selected) even if the fader is touched, the previous moves will still be heard up to the moment the Write button is pressed. From then, absolute fader positions and moves will be recorded as well as heard. It is possible to roll back and stop the tape to go into Write mode before playing the tape again, if that is more convenient.

To Trim moves for one Fader

1 Press the (ready) [TRM] button on the selected fader. The green trim LED flashes.

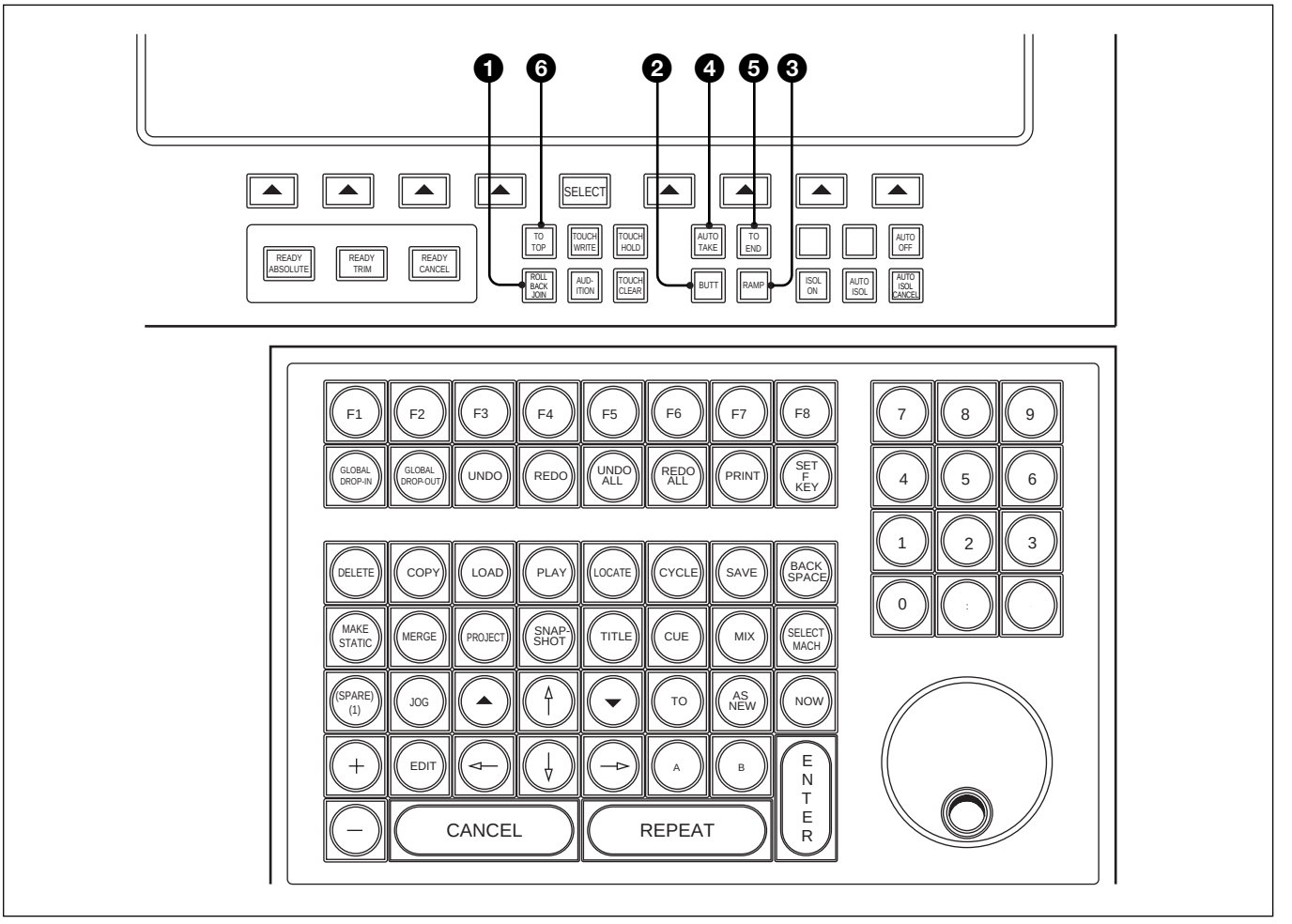
2 Pressing the automation write in the fader knob will set the null about which trimming moves are based. This can be done before starting the tape or after it is rolling. In Touch Write, the point at which the knob is touched sets the null point.

If Touch Write is not selected, before pressing the write button to set the null point, move the fader to a suitable part of its scale with good resolution. The '0' dB point is often a good setting.

Note

1 *It is useful to have [SHOW VALUE] selected on the Select to Faders panel so that fader dB values will indicate the trimmed difference compared to the source mix.*
2 *An AUDITION function, described later in this chapter, allows dropping-in at a preset auditioned level point.*

If the tape is rolled before write is pressed, the previous moves will be heard and displayed. Even if the fader is touched, the moves will still be heard.



ROLL-BACK JOIN, the four mode keys for dropping out of write and TO TOP

3 Move the fader knob to a suitable position. The green LED will continue to flash. Press the Write button (this is the null point) and the green LED will light solidly indicating that any trimming moves will be recorded. Again, the previous moves will be heard, along with any new trimming moves.

4 Make the desired trim moves which will add or subtract from the previous mix according to the fader scale at the null point. The combination of the previous mix and the trimming moves will be heard exactly. Dropping out of **TRM** works in exactly the same way as coming out of **ABS**.

❶ ROLL-BACK JOIN Push-Button

Select ROLL-BACK JOIN to drop into automation record automatically after rewind and play. If, whilst any faders are in automation write, the tape is rolled back a little and put in play again, those faders will drop back into record at the point of rolling back.

Dropping out of write on subsequent mix passes

There are four ways to drop out of write mode when dropping back to previous moves:

❷ **BUTT -** Where a jump occurs at the drop-out point (current default).

❸ **RAMP -** Where a user defined time is taken to slew to the previous move. To adjust, click on **RAMP TIME** in the MIXES & CUES GUI to display the RAMP TIME pop-up.

❹ **AUTO-TAKE -** Where the operator manually fades to the previous move. When the Write button is pressed to drop out of write, the fader does not drop out immediately. Instead, arrows in the electronic scribble above the fader indicate which way to move to go back to the underlying mix.

An indication in dBs shows how far the fader has to be moved and the moves are also reflected in the balance. As the fader is moved, it drops back to ready when it matches the original level.

In Touch Write, just releasing the finger for an instant indicates to the system that the user wants to drop out of recording moves. Then the scribble display indicates direction and level difference as described above.

❺ **TO END -** Where the fader position at the drop-out point is recorded to the end of the Title.

One drop-out mode is allowed at a time, so these four buttons inter-cancel. Different modes can be used on different faders by working in one mode first, and then rolling back to use another mode on different faders. Different modes can also be used on the same fader at different times. When finished writing moves, de-select ready absolute (press [ABS] or [TRM] again) to make the fader completely 'safe'.

❻ **TO TOP Push-Button**
To Top is a related function allowing fader position to be recorded from any point within the Title to the beginning, for both absolute and trim modes.

If a fader is in record then it is the point at which [TO TOP] is pressed which determines the absolute level or trim offset. If [TO TOP] is already on then it is the point at which the fader is dropped into record.

Note:
A Preferences set-up option allows the level point to be determined at the automation drop-out point. [TO TOP] *must be latched to work in this mode. See section 7-11 later in this chapter.*

Global, Touch and Audition functions

See illustration 'Global, Touch and Audition keys'.

❶ **GLOBAL DROP-IN Key**
Causes all controls in automation 'ready'status, both **ABS** and **TRM**, to drop in to automation write.

❷ **GLOBAL DROP-OUT Key**
Causes all controls in write 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).*

❸ **READY CANCEL Push-Button**
Causes all controls in automation 'ready' status, both **ABS** and **TRM**, to drop out of 'ready' back to 'safe'.

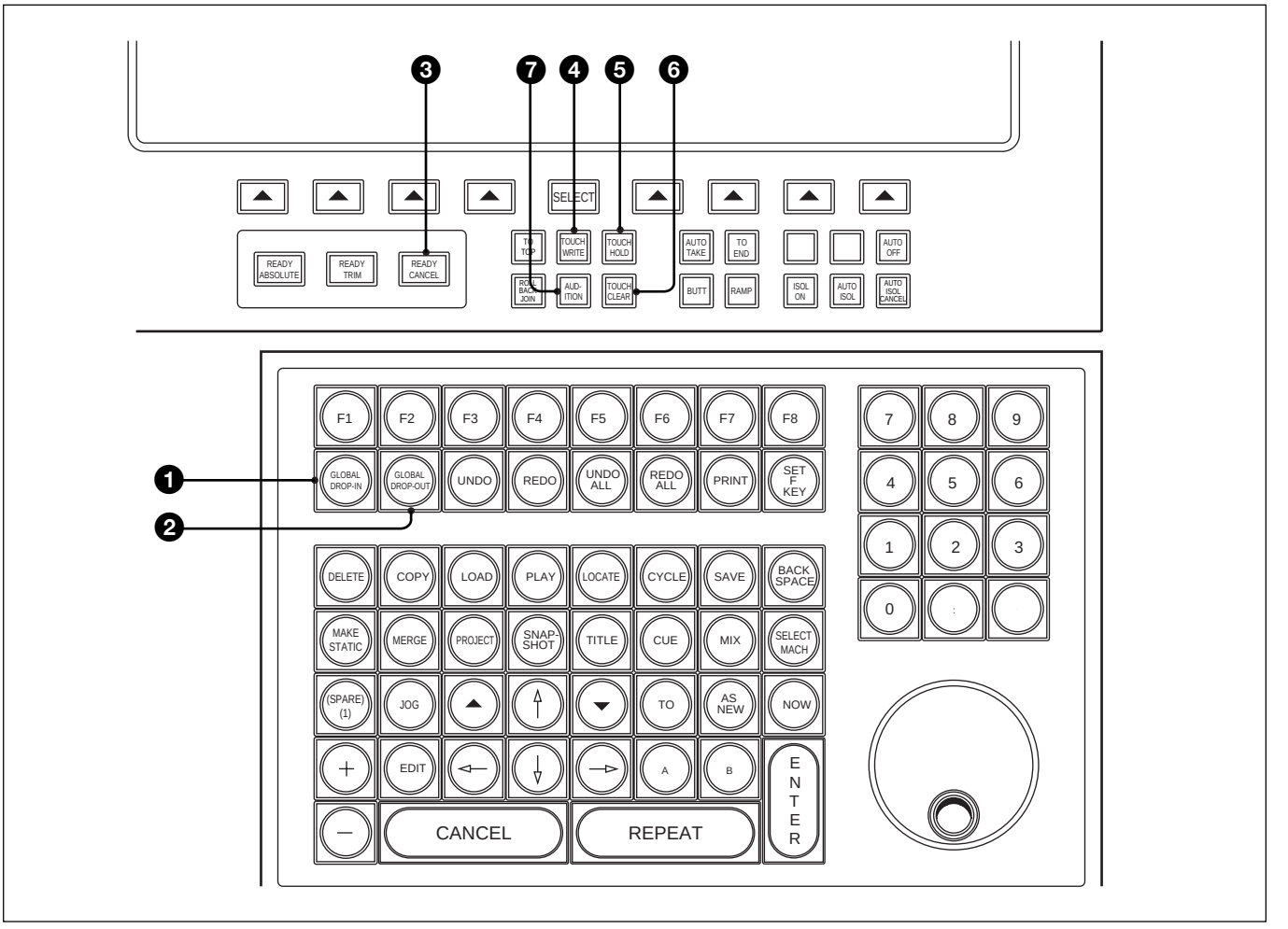
Note:
Any controls in write mode will not be affected.

To record absolute moves for a number of faders

1 Select ready [ABS] on the faders and their red LEDs flash. They can be selected individually or in banks of 24. For a bank of 24 faders, on the Select to Faders panel, press and hold the bank button, [CHS 1-24] for example, until it turns amber and then press an [ABS] button on one of the faders. The **ABS** LEDs for the whole bank of 24 then flash indicating ready **ABS** status.

2 The faders can be dropped into write individually using their fader Write buttons or by touch in Touch Write mode. To drop them all into write simultaneously, use the [GLOBAL DROP-IN] key on the Control Keyboard. This works in Touch Write mode as well. But remember that if a fader is touched, it will drop out of write when released. Push the [ABS] button before letting go to continue to have data recorded.

To revise moves, roll back and play again, then press [GLOBAL DROP-IN] at the right time. As for all write functions, the user can rewind and stop the tape before going into write mode.



Global, Touch and Audition keys

To take all faders out of write mode, press GLOBAL DROP-OUT on the Control Keyboard and then READY CANCEL, below the central LCD, to make the faders completely 'safe'.

To trim moves for a number of faders

To trim moves for a number of faders, put the desired faders into ready **TRM** individually or in banks of 24 as described above for recording absolute moves

Use local Write buttons in fader knobs or GLOBAL DROP-IN and GLOBAL DROP-OUT on the Control Keyboard to action the recording of moves in just the same way as for absolute moves.

Fader TOUCH modes

❹ TOUCH WRITE Push-Button
This button latches, allowing any faders set in ready **ABS** or ready **TRM** to have their moves recorded whilst their fader knobs are being touched.

❺ TOUCH HOLD Push-Button
Latch TOUCH HOLD to set any number of faders to have their touch function set on permanently, which is indicated by the yellow touch LEDs.

Once a number of faders have been set in Touch Hold, this button can be de-selected. Their touch status will be retained, indicated by yellow LEDs. This function allows a new balance to be set irrespective of underlying automation data.

Latch the TOUCH HOLD button at any time and touch any individual fader knobs to take them out of Touch Hold.

❻ TOUCH CLEAR Push-Button
This momentary button clears all faders of Touch Hold.

❼ AUDITION Push-Button
The audition function works for any automated fader or knob which is in a 'ready' state i.e. its red or green LED is flashing. When this button is latched on, touching a fader or moving a knob puts it into audition mode. Audition is designed to be used when revising mixes.

In ready **ABS Audition** mode, the current absolute fader/knob position will over-ride any automation playback, allowing an absolute auditioned setting to be established. The tape can then be rolled back and the fader dropped in to record the new absolute setting or moves.

In ready **TRM Audition** mode, the point at which the fader/knob is touched becomes the null point, allowing a trimmed audition setting to be established based on the underlying mix. The tape can then be rolled back and the fader dropped in to record the new trim setting or moves.

Faders and knobs **ABS** or **TRM** ready will operate in audition mode until [AUDITION] is de-selected.

To record auditioned levels from a specified time

1 Set an in-point from which the auditioned levels are to be written e.g. set a Cue point with [A] [ENTER]. Cue points already available in the Cues List may be used or a timecode point can be entered.

2 Having made sure that [AUDITION] is selected, set the fader balance for any faders in ready **ABS** or **TRM** mode as desired.

3 Enter the following command using the Control Keyboard. A is assumed as the time point in the following example but Cue or timecode entries are 'legal' too: [MIX] [A] [ENTER]

The system will then roll back past point A to include the Pre-Roll Time and then play forward. The previous automation balance will be heard up until point A. At point A the auditioned faders will drop into automation write and the previous balance will change to the new audition levels.

To record auditioned levels between specified times

1 Set an in- and an out-point from which the auditioned levels are to be written e.g. set Cue points with [A] [ENTER] and [B] [ENTER]. Cue points already available in the Cues List may be used or timecode points can be entered.

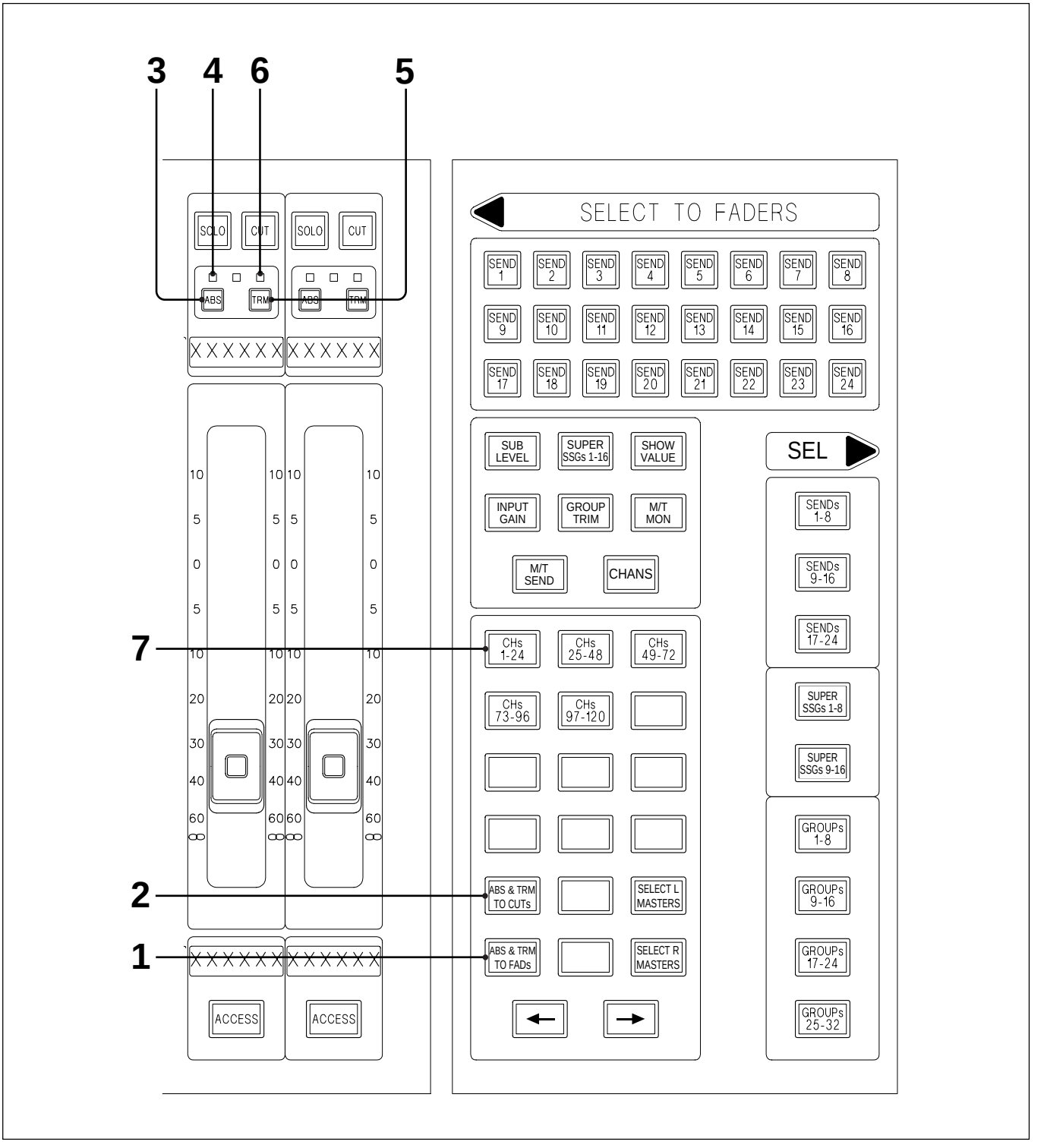
2 Having made sure that [AUDITION] is selected, set the fader balance for any faders in ready **ABS** or **TRM** mode as desired.

3 Enter the following command using the Control Keyboard. A and B are assumed as the time points in the following example but Cue or timecode entries are 'legal' too: [MIX] [A] [B] [ENTER]

The system will then roll back past point A to include the Pre-Roll Time and then play forward. The previous automation balance will be heard up until point A. At point A the auditioned faders will drop into automation write and the previous balance will change to the new audition levels. At point B the faders will drop out of automation write and the previous underlying balance will be heard once more.

7-7-3 To Automate Cuts

Cuts may be set up for automation in two ways: using the local ABS (absolute) and TRM (trim) buttons above the faders or using the master keys, READY ABSOLUTE and READY TRIM buttons beneath the central LCD screen. The method for local buttons will be described first.



Setting automation of Cuts locally

To set up Cuts for automation locally

See the diagram - 'Setting automation of Cuts locally'.

1 The [ABS] and [TRM] buttons above the faders are assigned to the faders by default.
[ABS + TRM TO FADs] will be lit to indicate this.

2 Press [ABS + TRM TO CUTs] to assign the [ABS] and [TRM] buttons to the cuts.

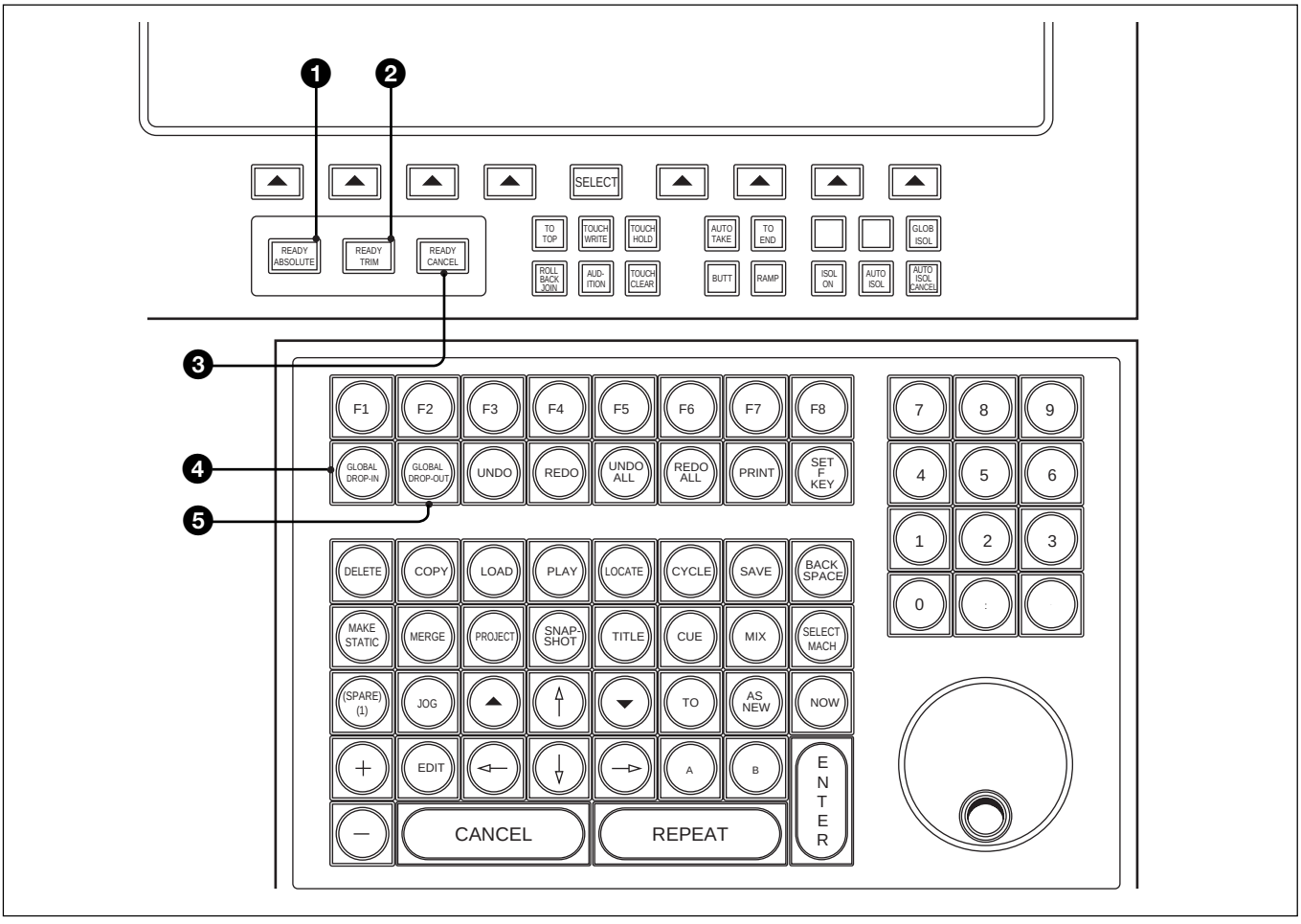
3 Press [ABS] for the cuts to be automated where new data is to be written. This will overwrite previous data.

4 Their red LEDs flash to indicate their 'ready' status.

5 Press [TRM] for cuts to be automated where cut data is to be modified or added to.

6 Their green LEDs will flash to indicate their 'ready' status.

7 To set a bank of 24 cuts into 'ready' status, press and hold [CHS 1-24], for example, until it turns amber and then press any [ABS] or [TRM].



Automation master keys

To set up Cuts for automation using the central master keys

❶ READY ABSOLUTE Push-Button

This latching button allows the user to set cuts into an 'automation ready' state where new cuts can be written which will overwrite previous data. If any cuts were already lit, their lights will go out for the set-up during the period that [READY ABSOLUTE] is latched.

Latch [READY ABSOLUTE] and press any cuts to be automated and they will flash to show that they are enabled. When [READY ABSOLUTE] is pressed again, de-selecting it, the enabled cuts return to their previous states. Rolling the tape causes [READY ABSOLUTE] to be de-selected automatically.

❷ READY TRIM Push-Button

READY TRIM works in the same way as READY ABSOLUTE. It allows cuts to be set up such that existing cuts can be modified, or additional cuts created, without overwriting previous cut data.

❸ READY CANCEL Push-Button

READY CANCEL takes all controls out of the 'ready' state and returns them to a 'safe' mode.

❹ GLOBAL DROP-IN Key

GLOBAL DROP-IN puts the cuts which are set up 'ready' into write and can be actioned either before the tape is rolling or while it is rolling. Once GLOBAL DROP-IN is selected, the cuts can be actioned, whilst the tape is rolling. To revise any cuts, roll the tape back and play again. The cuts will be replayed and none will be overwritten until GLOBAL DROP-IN is pressed once more.

Alternatively, an individual switch will drop into automation record at the moment it is pressed, changing its state at the same time.

Note:

The state of a switch can be retained when dropping in using READY ABSOLUTE by holding its ABS button whilst pressing the switch.

❺ GLOBAL DROP-OUT Key

GLOBAL DROP-OUT causes all controls to drop out of automation record.

To automate cuts

1 To start at the beginning of the Title, on the Control Keyboard press:
LOCATE TITLE ENTER
or:
LOCATE ENTER
to locate to the last entered starting time.

2 'Ready' enable the cuts to be automated with READY ABSOLUTE (or READY TRIM), or 'Ready' enable cuts using the 'local' method described at the beginning of this section.

3 Press GLOBAL DROP-IN either before or after rolling the tape to drop all 'ready' enabled cuts into automation record, or press switches individually.

4 Write cuts as required.

Note:

To audition a channel which is cut, assign the Definable Knobs to INPUT GAIN and press AFL on the appropriate channel.

5 Press GLOBAL DROP-OUT after writing cuts.

6 Press PLAY ENTER on the Control Keyboard to hear the result and note that automated cuts are indicated by switches lighting amber.

7 Roll back and repeat GLOBAL DROP-IN until the cuts are satisfactory.

8 Press READY CANCEL ENTER once cuts have been completed.

Note:

As soon as any automation has been recorded, the message '(New) 1 DYNAMIC LAYER' is displayed on the MIXES & CUES GUI at the top right, to indicate that unsaved automation data is resident in the system.

UNDO and REDO functions

As passes are made by rolling forwards and back, a set of unsaved passes is built up which is resident in the system memory. Use UNDO to step backwards through individual passes to the last SAVE command and REDO to go forwards. Press UNDO ALL to go all the way back in one step and REDO ALL to go all the way forwards in one step.

How to modify cuts using READY TRIM

Note:

Although it is often easier to rewrite cuts rather than modify them, the following online functions are available. (Offline adjustments can be made using the OFFLINE: CUTS GUI).

1 'Ready' Trim enable the cuts to be automated with the central READY TRIM button, or
'Ready' Trim enable the cuts using the 'local' method described at the beginning of this section.

3 Press GLOBAL DROP-IN either before or after rolling the tape to drop all 'ready' enabled cuts into automation record, or press switches individually.

4 Press GLOBAL DROP-OUT after writing cuts followed by PLAY ENTER to hear the result and note that automated cuts are indicated by switches lighting amber.

5 Roll back and repeat GLOBAL DROP-IN until the cuts are satisfactory.

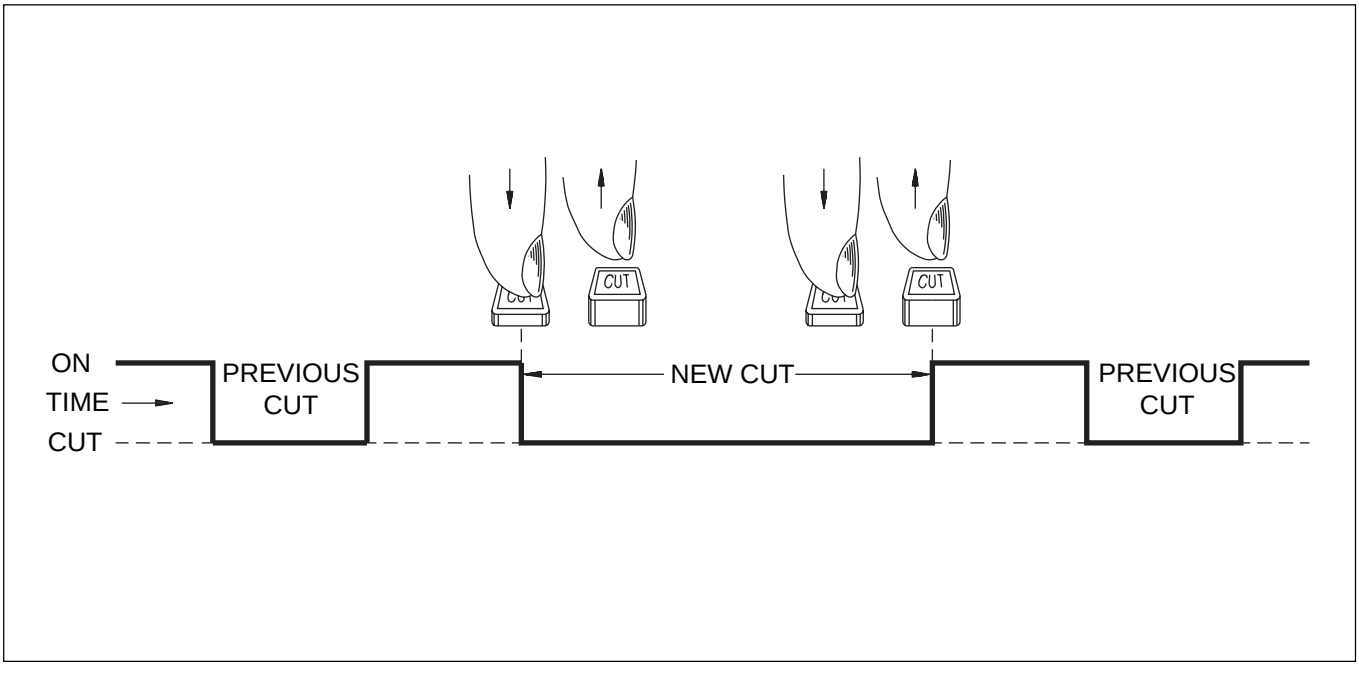
6 Press READY CANCEL ENTER once cuts have been completed.

Note:

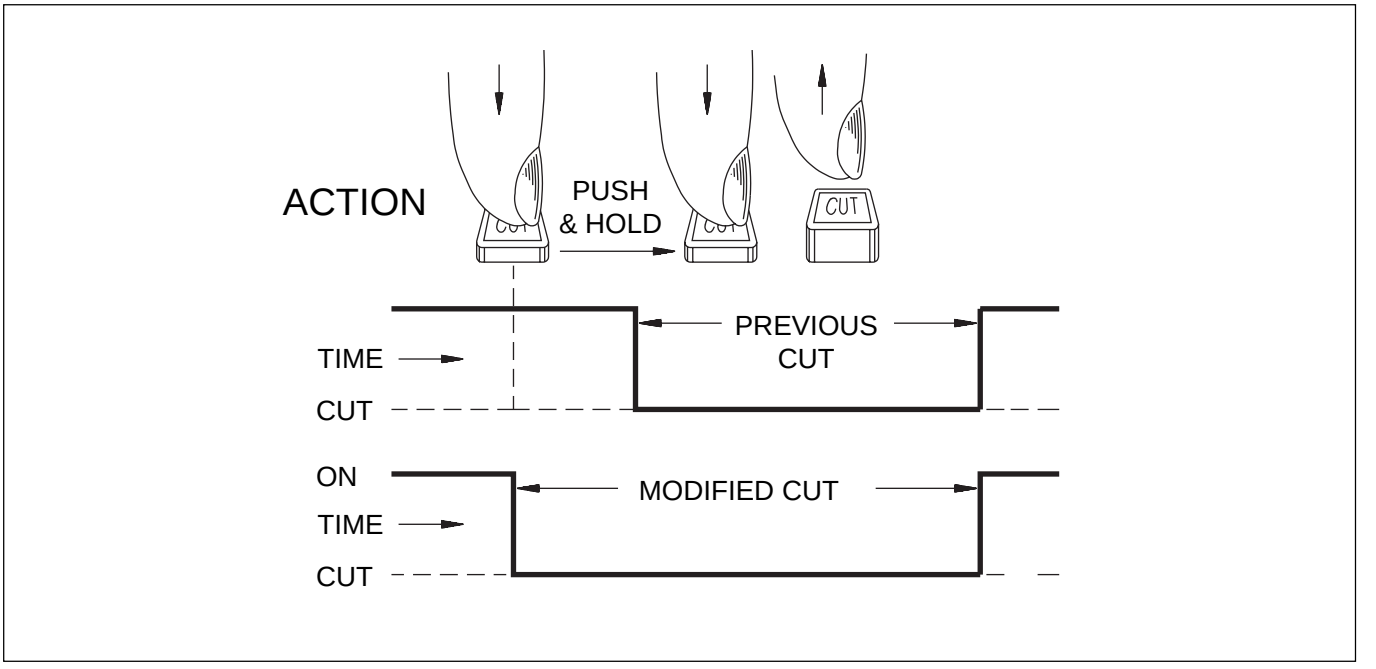
The bi-colour LEDs in the cut switches help with the operation of these functions. The red light indicates manual actions and amber those being performed by the computer. Extra bright red/amber indicates simultaneous manual and computer control.

To add a new cut:

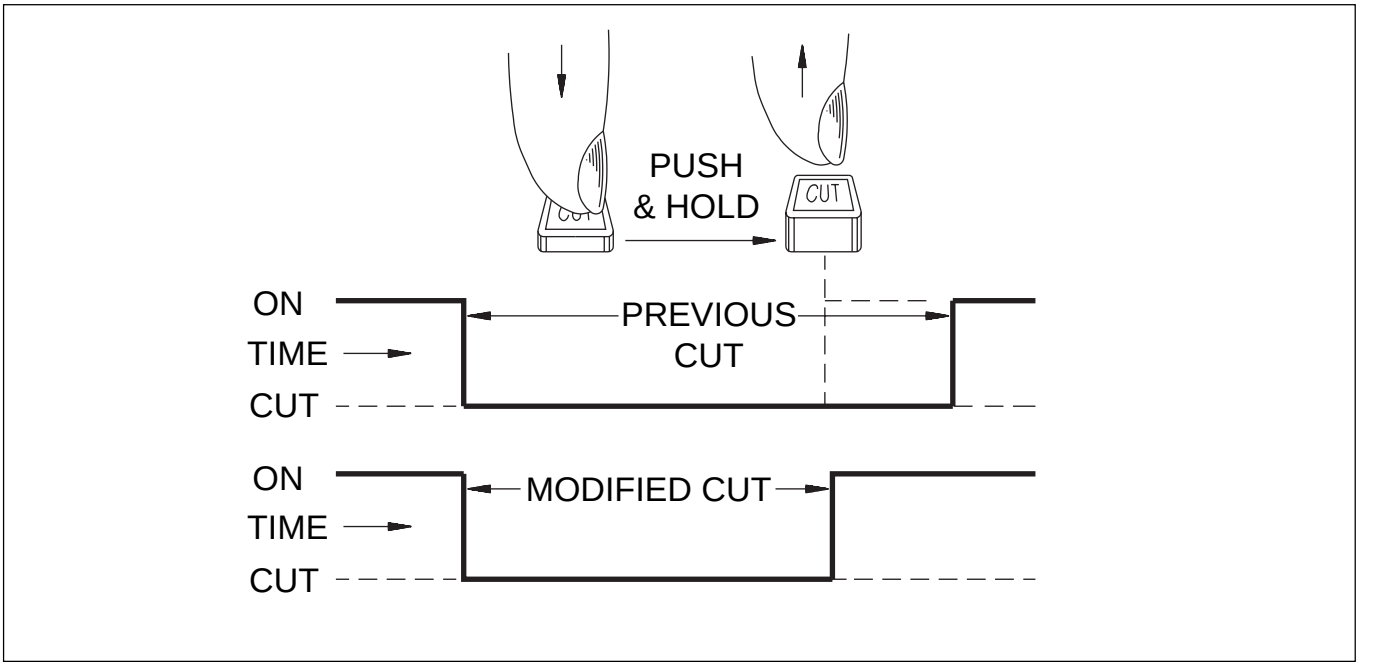
Adding a new cut in between previous cuts, with no overlap, is straightforward. Implement as previously described.



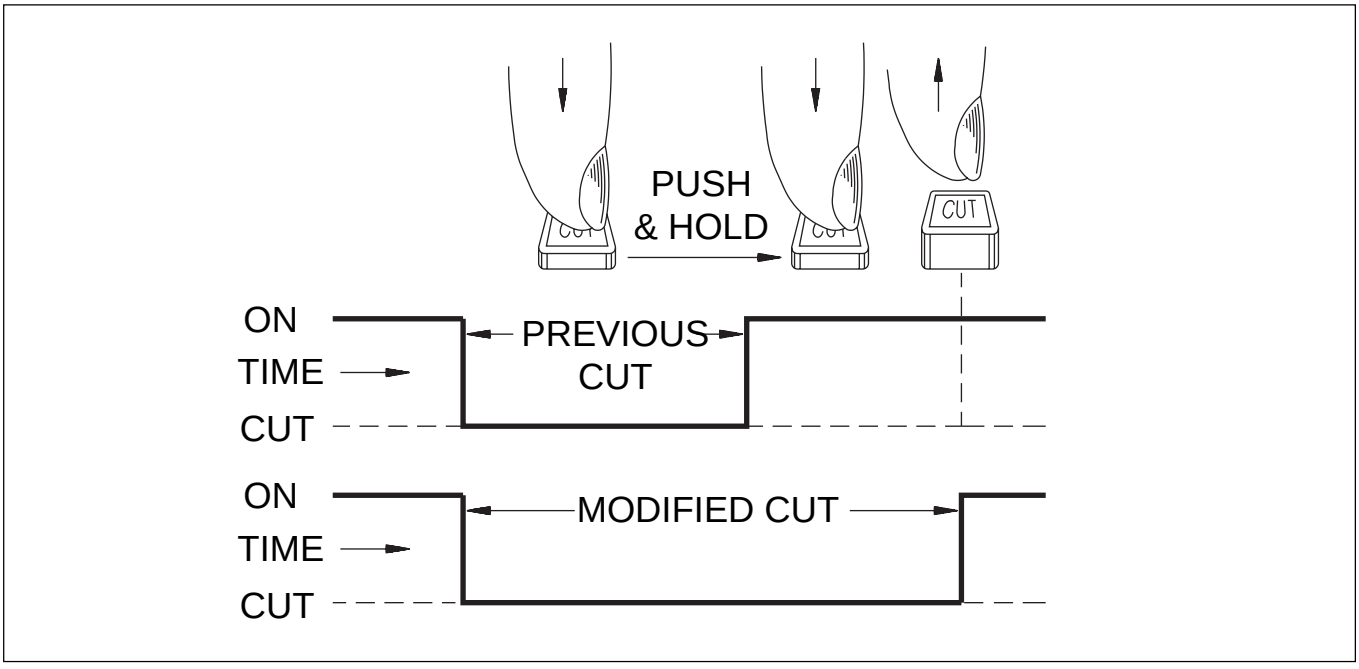
Advance the in-point:
Push the CUT switch earlier and hold until the original in-point is passed, then release.



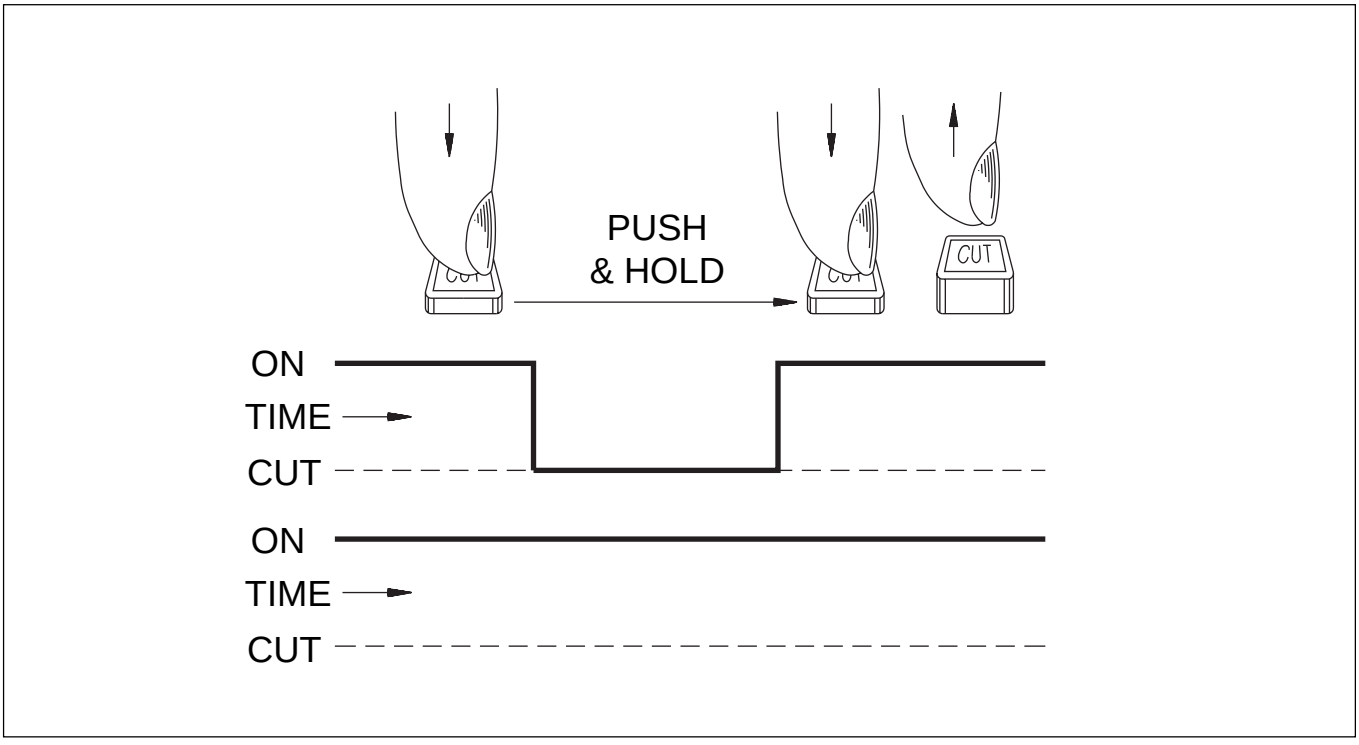
Advance the out-point:
Push the CUT switch and hold during the original cut, then release at the new (earlier) out-point.



To make a cut longer:
Push and hold the CUT switch during the original cut.
Release at the new (later) out-point.



To erase a cut completely:
Push and hold before the original in-point and release
after the original out-point.



7-7-4 To Automate Other Switches

This works in exactly the same way as for CUTs but note that all switches except CUTs, which can be assigned to Faders, must be set up using the global [READY ABSOLUTE] and [READY TRIM] buttons beneath the central LCD.

Other switches which can be automated currently include:

- **Channel Pan IN/OUT switches**
- **Multitrack Cuts**
- **Multitrack Pan IN/OUTs including Surround**
- **Multitrack Send Cuts**
- **Send Cuts and Pan IN/OUTs**
- **The 8 IN Buttons (Input Channel & Inserts panel)**
- **The Equaliser IN/OUTs and A/B switches**
- **Dynamics switches (2 state)**
- **MIC, M/T and LINE Input Selector switches**
- **Switches assigned to MIDI**

Select Master [READY ABSOLUTE]

All automatable switches which are lit will go out. Select the switches to be automated by pressing them; they will flash indicating that they are in Ready Absolute mode. De-select [READY ABSOLUTE] and all switches return to their previous status.

Select [GLOBAL DROP-IN] (Control Keyboard)

This puts the switches into write and can be done before or after the tape is rolling. Switches can be put into write individually as they are pushed, they will change state simultaneously. Roll the machine with its remote and perform the switch actions.

Check which switches are being automated

To check which switches have been set up for automation, press master [READY ABSOLUTE] and just those switches in ready or write will flash. When the tape is in play, [READY ABSOLUTE] has a momentary action.

To revise any switches

To revise any switches, roll back and play again. The automated switch actions will be replayed. They will illuminate amber indicating control by the automation system.

Nothing will be overwritten until [GLOBAL DROP-IN] is pressed once more or switches are pressed individually when they will drop into write and change state simultaneously.

[GLOBAL DROP-OUT] may be used to drop back to a safe Ready state at any time.

To finish

After pressing [GLOBAL DROP-OUT] to drop all controls out of automation record, select [READY CANCEL] to make all switches 'safe'.

Note

[READY CANCEL] *will work only for switches in a Ready state. Switches in automation write will not be affected.*

Switching manually when automation moves are present

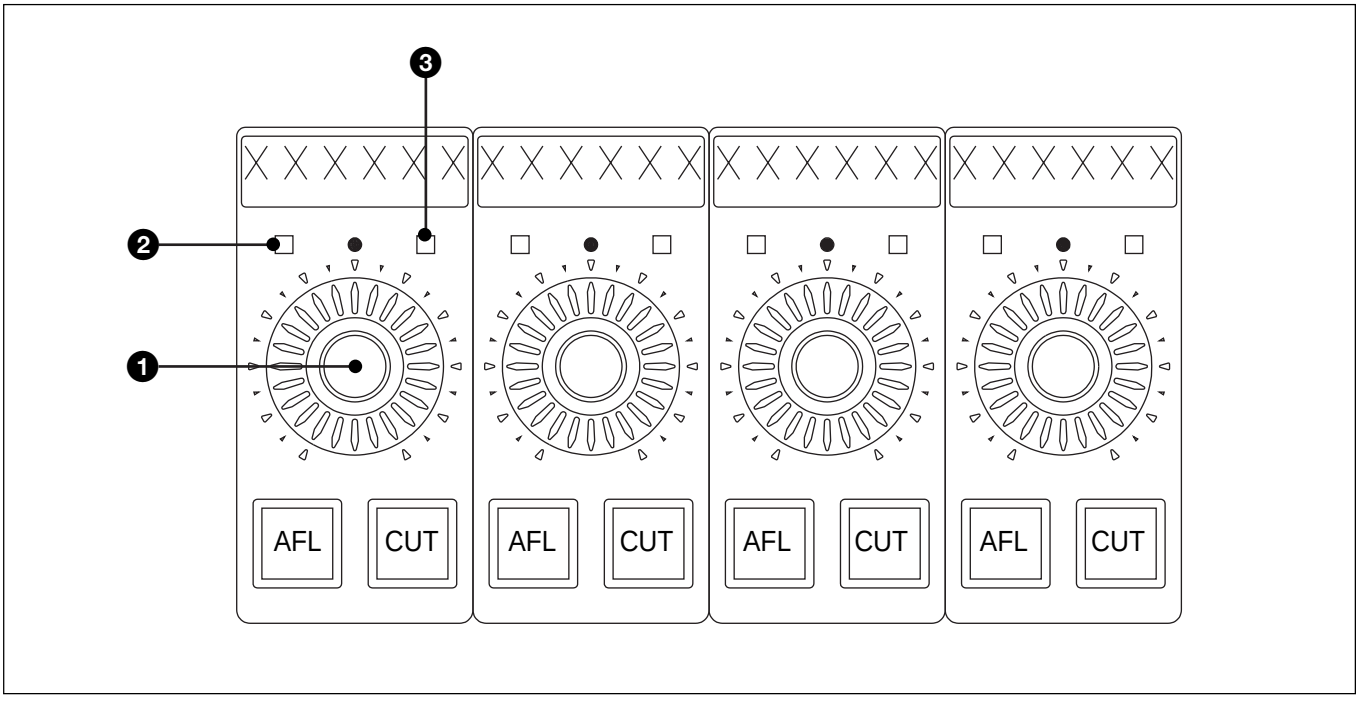
Once automated switch moves are 'safe', the switches can be operated manually at any time. The highest priority is given to manual operation which, although it will override automation, will not overwrite the automation data.

Note

To trim automated switch actions use the procedure as described above except substitute [READY TRIM] *for* [READY ABSOLUTE].

7-7-5 To Automate a Pan Move (or any other knob)

The principles for automating knobs are the similar to those for faders, but note that all knobs, except levels which can be assigned to Faders, must be set up using the global READY ABSOLUTE and READY TRIM buttons beneath the central LCD.



Functions for automating knobs illustrated with a Pan knob

Other knobs which can be automated currently include:

- **Channel Pans**
- **Multitrack Pans including Surround Pans**
- **Multitrack Send Levels**
- **Send Levels**
- **Equaliser Knobs**
- **Dynamics Knobs**
- **Delay Knobs**
- **Knobs assigned to MIDI**

Switch and displays for automating knobs

❶ Write Switch
Press knob to switch for Automation write.

❷ Red Absolute LED

❸ Green Trim LED

To automate a PAN (or any other knob)

1 Latch the READY ABSOLUTE button on the panel below the central LCD and push the PAN knob. Its red LED flashes to show that it is in ready absolute mode. De-select READY ABSOLUTE or play the tape when it will de-select automatically.

2 Press the PAN knob again either before or after the tape is rolling and the LED will light full on, indicating that moves will be recorded. Make the desired moves.

3 To revise moves, roll back and press the knob once more. Whilst the tape is rolling back, the red LED will flash again. Either whilst the tape is stopped, or when it is playing again, press the PAN knob once more and its LED lights solidly indicating the absolute write function overwriting previous moves. Roll-back for the knobs works in the same manner as for faders, except that instead of the knobs moving, the LEDs in the skirt of the knob reflect previous move data.

7-7-6 Dropping Out of Write on Subsequent Mix Passes for Knobs

As with the faders, there are four ways to drop out of automation write for knobs (see section 7-7-2 for more details). The switches are just to the right of centre beneath the central LCD.

• BUTT
Where a jump occurs at the drop-out point (current default).

• RAMP
Where a user defined time is taken to slew to the previous move. To adjust, click on **RAMP TIME** on the Mixes & Cues page to display the dialogue box.

• AUTO-TAKE
Where the operator manually moves the knob to the previous move. When the PAN button is pressed in this mode, the knob does not drop out of write immediately. Instead, the 6-character display above the PAN knob indicates the direction in which to rotate the knob. As the knob is turned, it drops back to ready just when it matches the original position, indicating by the appropriate changing state from being lit solidly to flashing.

Note

Knobs other than PAN do not currently display which direction a knob should be rotated in order to match previous data.

• TO END
Where the knob position at the drop-out point is recorded to the end of the Title.

When the moves are complete, press the PAN button to drop out of write and the red LED flashes. Then press READY CANCEL on the panel below the SMS to make the pan completely 'safe'.

• TO TOP
To Top is a related function allowing knob position to be recorded from any point within the Title to the beginning, for both absolute and trim modes.

If a knob is in automation record then it is the point at which TO TOP is pressed which determines the absolute level or trim offset. If TO TOP is already on then it is the point at which the knob is dropped into record.

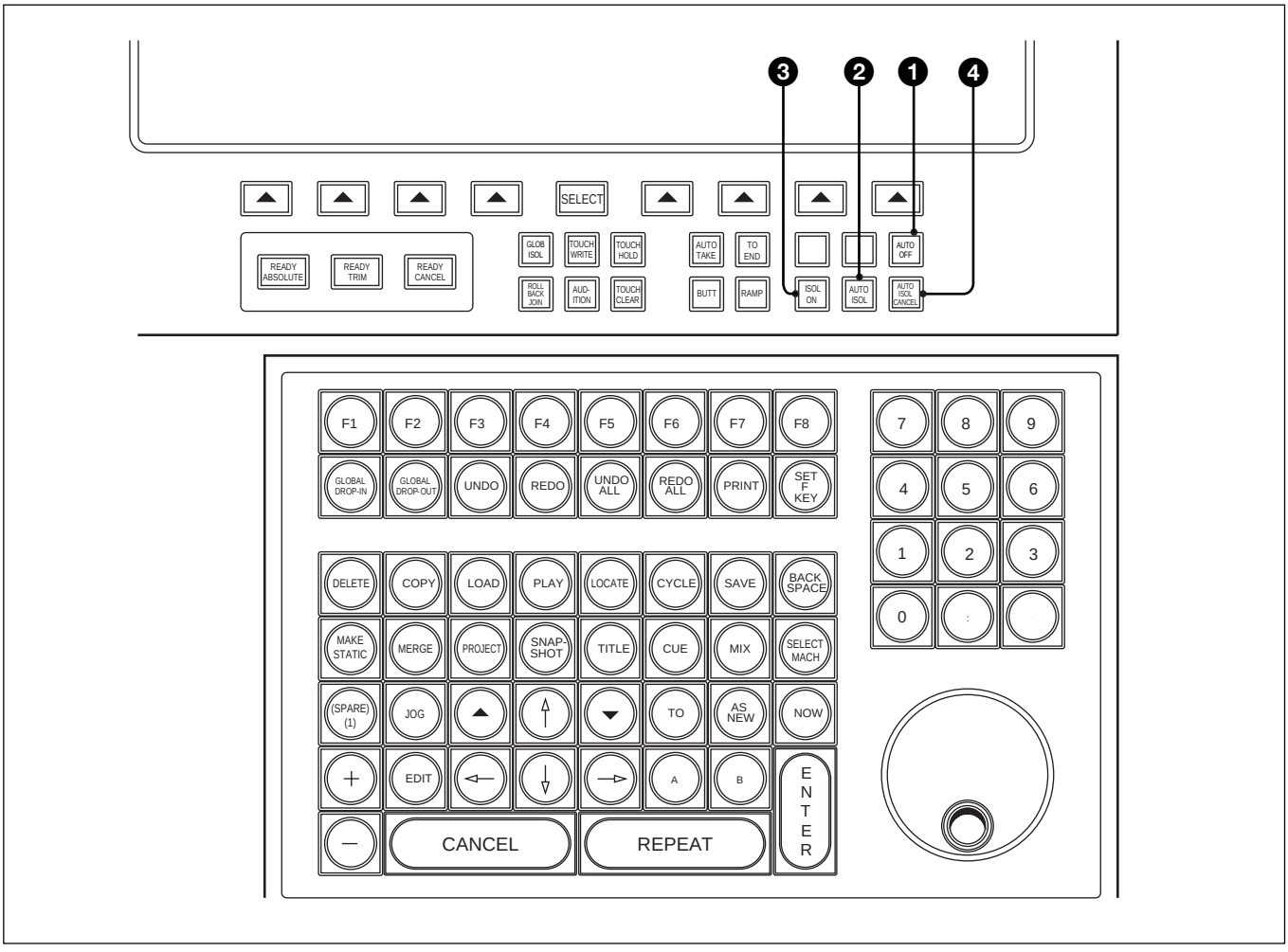
7-7-7 To Trim Pan Moves (or any other knob)

1 Latch the master READY TRIM button on the panel below the central LCD, then press the PAN knob and its green LED flashes indicating ready trim. De-select READY TRIM or allow it to de-select automatically when the tape is played.

2 Press the PAN knob either before or after rolling the tape and its green LED lights solidly indicating that any trimming moves will be recorded. Whilst the knob is in the ready trim state, the LEDs will indicate previous moves. The position of the knob at the drop-in point i.e. when the knob is pressed, becomes the null point for any trimming moves.

3 When the moves are complete, press the PAN knob to drop back to ready indicated by the green LED flashing again, then press READY CANCEL on the panel below the central LCD to drop out completely.

7-7-8 Automation Off and Selective Automation Isolate



Automation Off and Isolate set-up buttons

Automation Off

❶ AUTO OFF Push-Button

Press [AUTO OFF] to isolate automation control of the whole console, setting all controls to a static mode when they can be freely adjusted. In other words, even though automation moves have been recorded, the controls stay wherever they are set. This function is useful to find a new static starting point where a dynamic mix is not felt to be going in the right direction. A further use for Automation Off is to enable the balance to be changed for a short while, in an over-dub situation for example. Any automation data is still resident and can be re-invoked at any time by de-selecting [AUTO OFF].

Selective Automation Isolate

This function allows individual channels with automated controls to be isolated from the control of the automation system during playback.

When channels are taken out of isolate, their objects (such as faders) switch back to the state (playback, ready abs, ready trim etc.) that they were in before being isolated. The exceptions to this are controls in the active state of recording automation data when isolate is selected, in which case they default to play.

❷ AUTO ISOL Push-Button

Latch [AUTO ISOL] to set up the channels to be isolated. Select the lower [ACCESS] buttons for the channels to be isolated. They stay lit. De-select [AUTO ISOL] when the channels have been selected. Select again to add or subtract channels.

❸ ISOL ON Push-Button
Select [ISOL ON] to actually isolate the channels selected from their automation data. De-select [ISOL ON] to re-invoke automation data to the isolated channels.

❹ AUTO ISOL CANCEL Push-Button
Touch [AUTO ISOL CANCEL] to delete the current channels set up for the Isolate function in readiness for another selection.

Note

1 AUTO ISOL *can be pressed at any time to check which channels are isolated. It has a momentary action whilst the tape is rolling.*

2 *Saving a MIX or SNAPSHOT will cause the isolated settings to be stored. A COPY from an isolated channel will also take the isolated settings.*

3 *Loading a MIX or SNAPSHOT will cause the isolated settings to be overwritten. A COPY to isolated channels will overwrite isolated settings.*

7-7-9 Film Mode

General
In Film Mode, Faders Cuts and Pans are isolated from [GLOBAL DROP-IN], [GLOBAL DROP-OUT] and [READY CANCEL] for Audition functions.

Note

Film Mode is operational only whilst [AUDITION] is selected.

Faders, Cuts and Pans can still be automated at the same time as other controls, but on a local basis. In other words, faders can be left 'ready enabled' or in Touch Write and [READY CANCEL] will not affect them, for example.

To enable or disable Film Mode
Type [F], [I], [L], [M] and [ENTER] on the QWERTY keyboard for a pop-up requesting confirmation. Click on OK or press [ENTER]. Use the same command line to disable if already enabled.

Film Mode for Knobs
Turning any knobs will set them into ready absolute mode indicated by their red LEDs flashing. The effect they will have on the audio will also be heard, or auditioned. Once satisfactory, press [GLOBAL DROP-IN] to write the auditioned settings, indicated by the red LEDs lighting solidly. When the new setting is written press [GLOBAL DROP-OUT] to drop back to ready and knobs return to their previous settings. Press [READY CANCEL] to return to a 'safe' mode.

Note

[READY CANCEL] *will not work for knobs with an audition setting. To return a knob to its previous non-audition setting de-select and re-select* [AUDITION].

Film Mode for Switches
Pressing a switch will change its state from on to off or vice versa and set it into ready absolute mode at the same time. Its effect will also be heard or auditioned. Press [GLOBAL DROP-IN] to write the new setting and [GLOBAL DROP-OUT] when complete. The switch will return to its orignal state. Note that the switch will still be in a ready status. This can be verified by selecting [READY ABSOLUTE], when all switches in ready absolute will flash. Press [READY CANCEL] to return to a 'safe' mode.

Note

[READY CANCEL] *will not work for switches with an audition setting. To return a switch to its previous non-audition setting de-select and re-select* [AUDITION].

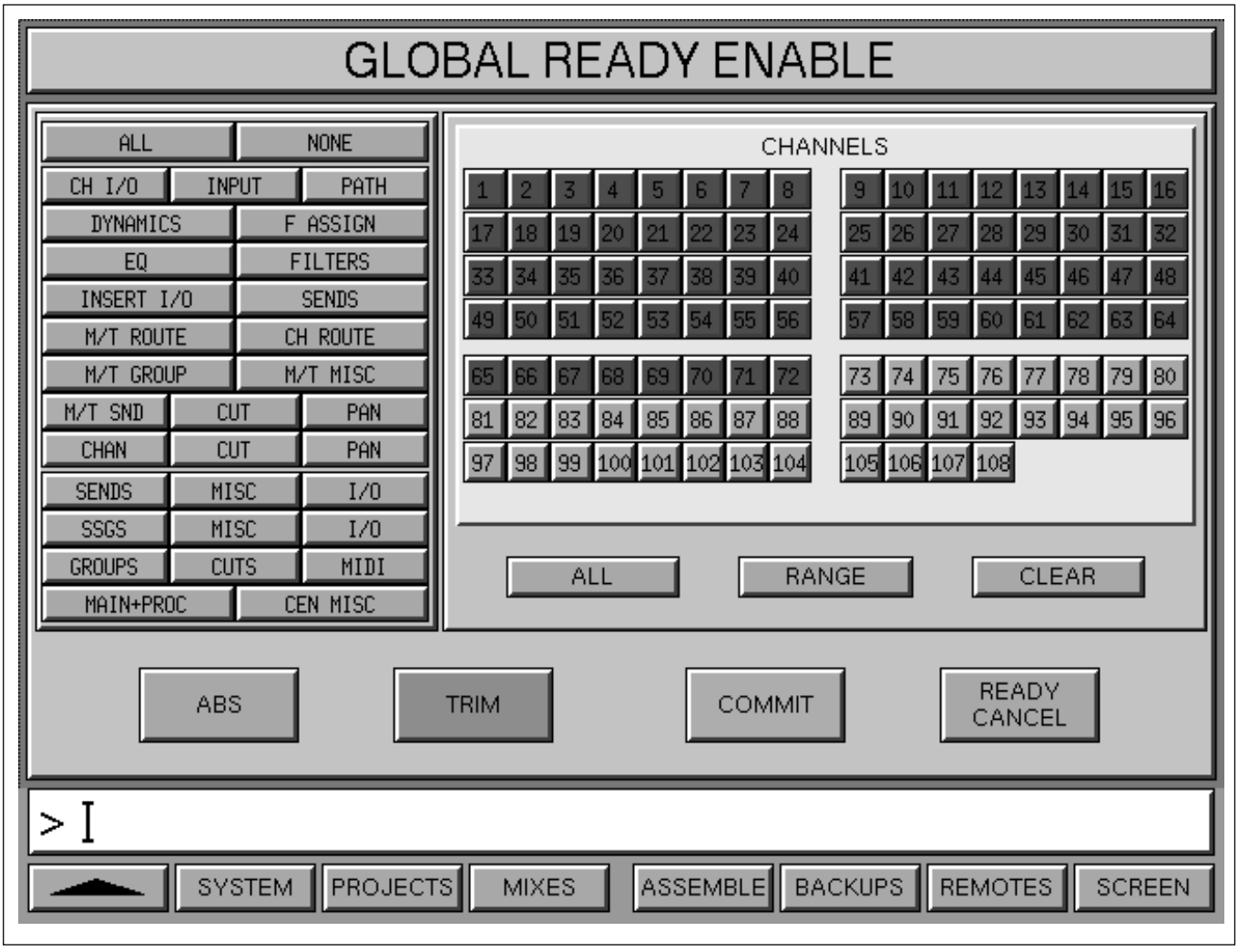
Copy Audition values
QUICK COPY (see section 7-6-8) used in Film Mode works on automation ready controls only. The following conditions must be in place:

- **Film Mode** must be enabled.
- [AUDITION] must be set on.
- [COPY STATIC] must be set on, or both [COPY STATIC] and [COPY DYN] must be set to off.

In this case QUICK COPY functions will copy the Audition settings only from those controls set in automation Ready ABS and Ready TRIM. The destination controls will be set into Ready ABS and TRIM during the QUICK COPY operation.

7-7-10 Global Ready Enable

Setting all or a large number of controls into an automation ‘ready enabled’ is possible using the GLOBAL READY ENABLE GUI and also by keyboard entry.



GLOBAL READY ENABLE GUI

General

This GUI allows the setting up of automation ‘ready enable’ in Absolute or Trim modes for:

- **The Complete Console**
- **Ranges of Channels**
- **Individual Channels**
- **All Controls for Selected Channels**
- **Sections of Controls for Selected Channels**
- **Key Individual Controls for Selected Channels**

Using GLOBAL READY ENABLE GUI

Select the GUI using the GLOBAL softkey at the bottom of the SNAPSHOTS, COPY & LINK GUI or press the SCREENS softkey at the bottom right of the central LCD. Then click on GLOBAL ENABLE or use the ▲ and ▼ keys on the Control Keyboard to move the highlight to GLOBAL ENABLE and [ENTER] on the Control Keyboard.

ABS or TRIM

When the GUI appears the ABS (absolute) button will be lit red as the default mode. Click on TRIM for Trim mode, which lights green and inter-cancels with ABS.

Selecting Channels

Channels can be selected individually by clicking on appropriate numbers to highlight them, or clicking on ALL and then de-selecting individual channels if more convenient.

To select adjacent channels in a block, click on RANGE which highlights orange. Then click on the first and last of each block. De-select RANGE when finished.

As soon as any channels are selected the COMMIT button lights orange and clicking this will action the ready enable function. But first make sure the correct control types are highlighted in the selector block to the left.

Selecting Controls

The control types are selected using the block on the left of the GUI. Click on the appropriate buttons to highlight in orange the channel sections required, such as EQ and Dynamics.

Click on ALL to highlight the complete channel then de-select the sections not required or, if more convenient, click on NONE to de-select all sections and then click on the ones required.

CHANNEL Selector

Below is a brief description of what control types each button will select.

Note

Some of the controls, such as Routing Switches, are not automated dynamically but will be loaded as Snapshot Automation. Each section below is annotated accordingly.

ALL
• Highlights All Channel Controls and I/O.

CH I/O (Snapshot)
• Channel Input sources and Output destinations, with gain settings (not channel insert).

INPUT (Dynamic)
• Mic, Line and M/T input selector and Phase switches.

PATH (Dynamic)
• 8 section Channel Path selector and IN buttons.

DYNAMICS (Dynamic)
• All Dynamics section controls.

F ASSIGN (Dynamic)
• All Free Assign Area controls, currently just Delay in this version.

EQ (Dynamic)
• All Equaliser controls (not Filters).

FILTERS (Dynamic)
• All Filter controls.

INSERT I/O (Dynamic)
• Analogue or digital I/O related to the Channel Insert.

SENDS (Dynamic)
• All Send levels, their Pans and Cuts.

M/T ROUTE (Snapshot)
• Multitrack Routing.

CH ROUTE (Snapshot)
• Channel Routing.

M/T GROUP (Dynamic)
• Multitrack Group Cut and Trim

M/T MISC (Dynamic)
• Multitrack group monitor levels, Pans and Cuts.

M/T SND (Dynamic)
• Multitrack Send Fader.

CUT (Dynamic)
• Multitrack Send Cut switch.

PAN (Dynamic)
• Multitrack Send Pan setting.

CHAN (Dynamic)
• Channel Fader.

CUT (Dynamic)
• Channel Cut switch.

PAN (Dynamic)
• Channel Pan setting.

Note

Global Ready Enable does not apply to the Centre Section items in the lower part of the selector.

Using Keyboard Entry

Keyboard entry allows 'ready enable' in Abs or Trim for the whole console or specific channels entered using the QWERTY Keyboard. Controls will be enabled according to the CHANNEL Selector described previously.

To Ready Enable the Whole Console

At the QWERTY Keyboard type:

READY ENTER

A confirmation pop-up will appear. Clicking on OK, which is highlighted red, or pressing ENTER will set the complete console to 'ready absolute' status.

Clicking on NO gives rise to a further confirmation pop-up to set the complete console to 'ready trim' status. Click on OK or press ENTER. NO will cancel the operation.

To Ready Enable Channels & Control Groups

Keyboard entry has an additional function allowing Control Group Faders to be specified as well as Channels.

At the QWERTY Keyboard type:

READY *Specify Channels as Below* ENTER

• Channels and Control Group Faders:

Ranges are specified with '..' as a separator:
1..72 = Channels 1-72
01..032 = Control Group Faders 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. 01 . 03 . 05 .. 08 . 1 .. 24 . 48 .. 56 . 65 =
Control Group Faders 1, 3, and 5-8
Channels 1-24, 48-56 and 65

7-8 Offline Automation

This screen page allows automation data for Faders and Cuts to be written and modified offline. Click on either FADERS or CUTS as required.

OFFLINE FADERS automation edit GUI

General

This GUI allows the editing of automation data for selected faders with new or trimmed levels between specified times. Similarly new cut events can be written between specified times and cut transitions can be time-shifted.

A number of fields in the GUI apply to both Faders and Cuts. These are described first:

Control type Selector

Situated in the upper left, this allows selection of fader and cut type e.g. Channel Faders, Control Groups.

Numbers field

Allows selection of channels to work on, according to the control type highlighted in the upper left selector.

Upper Timecode bar

Indicates the current timecode for the master machine.

FM, TO and DURATION

This field (upper centre) allows the start time, end time and duration of an offline operation to be set. This field may also be used to specify a butt or ramp in and out (faders only).

C/GROUP DATA TO SLAVES

This section (top right of screen) allows control group data to be propagated to slaves. NEXT LAYER propagates to the next lowest layer. ALL LAYERS propagates to all layers of nested groups such that channel faders alone retain the move and cut data.

CUES field

This field (lower right of screen), displays the CUES list from the MIXES GUI. During OFFLINE CUTS operations, this list also displays Cut Events in timecode order.

SELECTOR block

The selector block on the upper left of the screen allows the selection of the control type on which the offline editing will be performed. Only one type of control can be worked on at a time.

CHANS • Channel Faders & Cuts

MTSEND • Multitrack Send Faders & Cuts

CHSEND • 24 Send Levels & Cuts
(A Channel must be selected first, then the appropriate Sends)

SNDMIX • All Channel Levels & Cuts for a Single Send Bus
(The Send must be selected first, then the appropriate Channels)

GROUPS • Control Group Faders & Cuts

SSGs • Super Send Group Faders & Cuts

SENDS • Send Bus Output Faders & Cuts

MAIN • Main Fader

ALL/NONE • Used in channel selection

RANGE • Used in channel selection

To set the duration

Data editing has to be within time constraints. The time can be specified in three ways (FM = from):

Enter FM and TO
The DURATION is set automatically.

Enter FM and DURATION
The TO time is set automatically.

Enter TO and DURATION
The FM time is set automatically.

The FM and TO times can be entered either directly by clicking on a timecode field for a pop-up or by using cue times. Enter a cue time by highlighting that cue in the cues list, then click on the bar below the FM or TO legends to transfer the time. The cue time will be entered and its name displayed. If a timecode set by using a cue is subsequently altered, the cue name will disappear.

To nudge times with the [+] and [-] keys on the Control Keyboard, click on a timecode field for a pop-up then nudge as required.

For faders, the transitions can be set as butt or ramp. Click on the butt icon for it to change to ramp and vice versa. Click on the ramp time for a pop-up to set the ramp time. In and out ramps can have different times.

OFFLINE FADERS EDIT PROCEDURE

To select Faders

For Channel Faders, click on CHANS in the selector block. It highlights red and the channel faders are displayed in the numbers field. Click on the channels to be worked and they highlight red. Click on them again to de-select.

This procedure also applies to MTSEND, GROUPS, SSGs and MAIN.

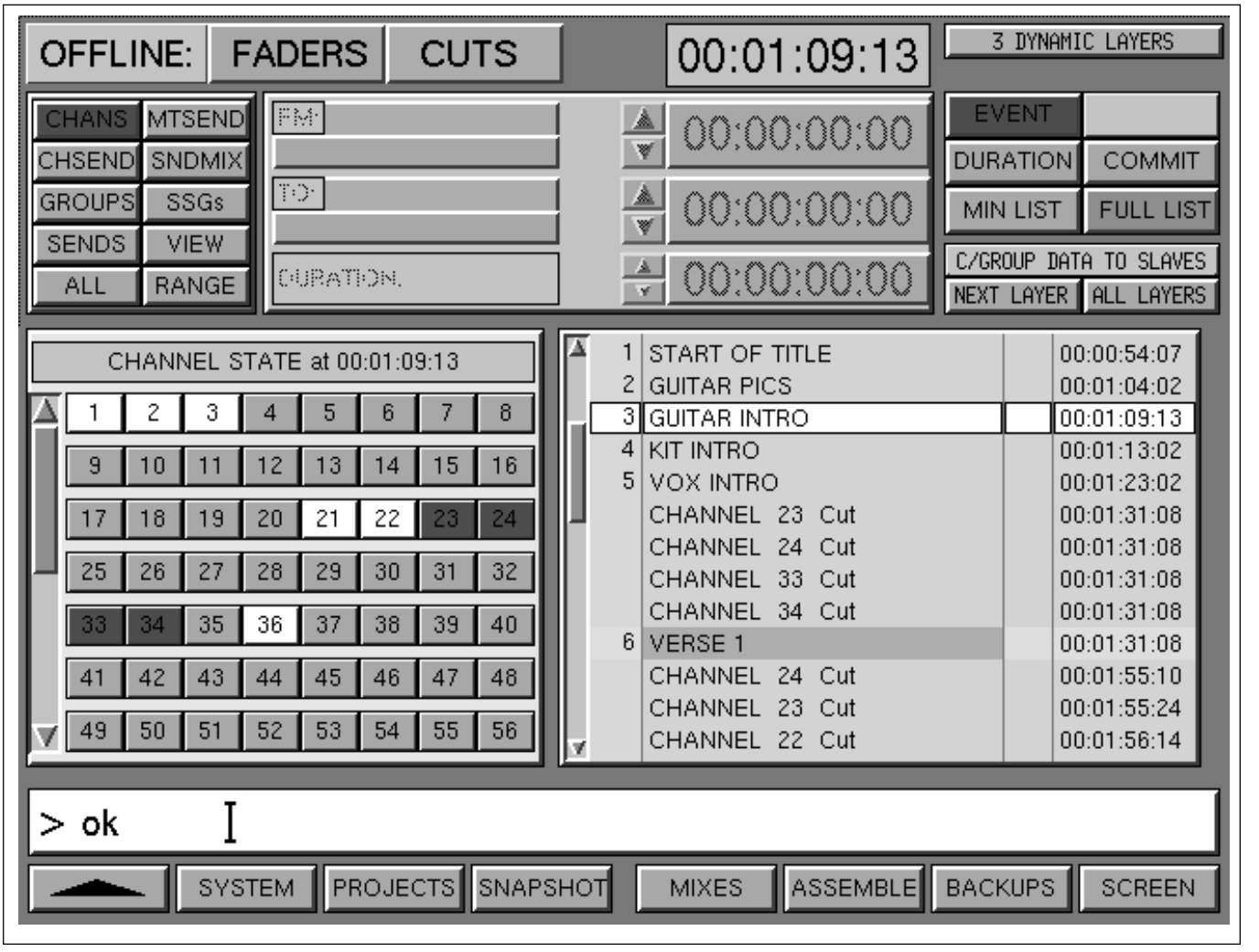
To select Sends

For Send levels for a particular channel, click on CHSEND; it highlights red and the channels are displayed in the numbers field. Click on the required channel and its Sends, 1-24, are displayed in the numbers field. Click on the required Sends and they highlight red.

For a mix of all channels for a particular Send bus, click on SNDMIX; it highlights red and Sends 1-24 are displayed in the numbers field. Click on the required Send and the channels are displayed in the numbers field. Click on the required channels and they highlight red.

Using ALL, NONE and RANGE

To select all faders of any type, click on ALL and all numbers will be highlighted red. ALL will change to NONE.



OFFLINE CUTS automation edit GUI

To select a number of consecutive faders, click on RANGE then click, one at a time, on both ends of the range. Separate ranges may co-exist.

Level Adjustment

Fader levels are set in the upper right hand block. To write new absolute data, click on ABS which highlights red. Then set the level by either clicking on the up/down arrows (below the dB legend), or clicking on the number for a pop-up where it can be typed in or nudged with the [+] and [-] keys on the Control Keyboard.

To trim previous data, click on TRIM which highlights green. Use the same method for setting the level as with ABS. The level will apply to the faders selected except that the level adjustment will be referenced to the underlying mix.

Once all settings are satisfactory, click on COMMIT and play through the section to check the edit. Repeat the procedure as necessary for other faders and levels.

OFFLINE CUTS GUI

Upper right hand block

The functions of the upper right hand block are specific to Cuts, apart from COMMIT.

EVENT

Event mode allows cut events, that is cut and uncut transitions, to be displayed and edited. New cut events can also be inserted.

DURATION

Duration mode allows new cut data to be written for a specified duration. Any underlying data within that duration will be overwritten.

COMMIT
Commit is used to confirm actions as necessary.

MIN LIST
The list of cut events can be minimised where events occur at exactly the same timecode.

FULL LIST
Every cut event is displayed individually, even if it occurred at the same timecode as other events. This allows adjustment of every individual event.

OFFLINE CUTS EDIT PROCEDURE

To select Fader Cuts
For Channel cuts, click on CHANS in the selector block. It highlights red and the channels are displayed in the numbers field.

To set the Cuts to be worked on
Click VIEW and it highlights. Then click on the channels to be worked on and they highlight red. Click on them again to de-select them individually.

This procedure also applies to MTSEND, GROUPS and SSGs.

To select Send Cuts
For Send Cuts for a particular channel, click on CHSEND; it highlights red and the channels are displayed in the numbers field. Click on the required channel and its Sends, 1-24, are displayed in the numbers field. Click on the required Sends and they highlight red.

For a mix of all channels for a particular Send bus, click on SNDMIX; it highlights red and Sends 1-24 are displayed in the numbers field. Click on the required Send and the channels are displayed in the numbers field. Click on the required channels and they highlight red.

Using ALL, NONE and RANGE
To select all cuts of any type, click on ALL and all numbers will be highlighted red. ALL will change to NONE.

To select a number of consecutive cuts, click on RANGE then click, one at a time, on both ends of the range. Separate ranges may co-exist.

Once the desired cut type and numbers have been selected, click on VIEW again to de-select it. Any events related to the cuts selected in VIEW mode will be displayed in the Cues list.

Cut EVENT edit
EVENT mode is the default and it will highlight red. Cut events for the selection will be displayed in the list along with the cues, and the current state of the cuts will be indicated in the numbers field according to the following colour coding:

BLUE • **Uncut without any data written**
WHITE • **Uncut controlled by the automation**
AMBER • **Cut controlled by the automation**
RED RING • **Cut event(s) at the current timecode**

Note
A red ring around the outside of a number box indicates the first timecode point for the new state, cut or uncut.

Automated cut events will be displayed in the numbers field as the tape is rolling and their entry in the cues list will also be highlighted.

Note
The GUI display has a lower priority than the cut events and therefore the screen may not react in real time as the tape is rolling.

New EVENT Cuts
Any cuts selected using VIEW which have no automation data (blue coding) can be automated using this GUI. Click on a channel to cycle through:

RED • **Cut from the highlighted timecode**
WHITE • **Uncut from the highlighted timecode**
BLUE • **No automation**

To Nudge or Change a Cut Event Time
Highlight its timecode entry in the cues list, then use the [+] and [-] buttons on the control keyboard to change the time. Alternatively, click on its timecode for a pop-up and nudge to adjust or type in a new timecode.

Using DURATION mode for New Cut Data

Use the following procedure to enter new cut data against a specified duration.

Select the Cut type

Click on DURATION and then select the cut type in the upper left hand selector block.

Set the Duration

Click DURATION in the upper left selector to set the duration. This procedure is described at the beginning of this section since it applies to both faders and cuts.

Set cuts and uncuts

Click on the channels of interest. They cycle through 3 states:

RED • **Cut for the duration**
WHITE • **Uncut for the duration**
BLUE • **No change for the duration**

Note
Any underlying data within the duration will be overwritten.

When the cuts are displaying the desired cut statuses reflected by the colour coding, click on COMMIT to confirm the edit.

Command Dialogue

At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options

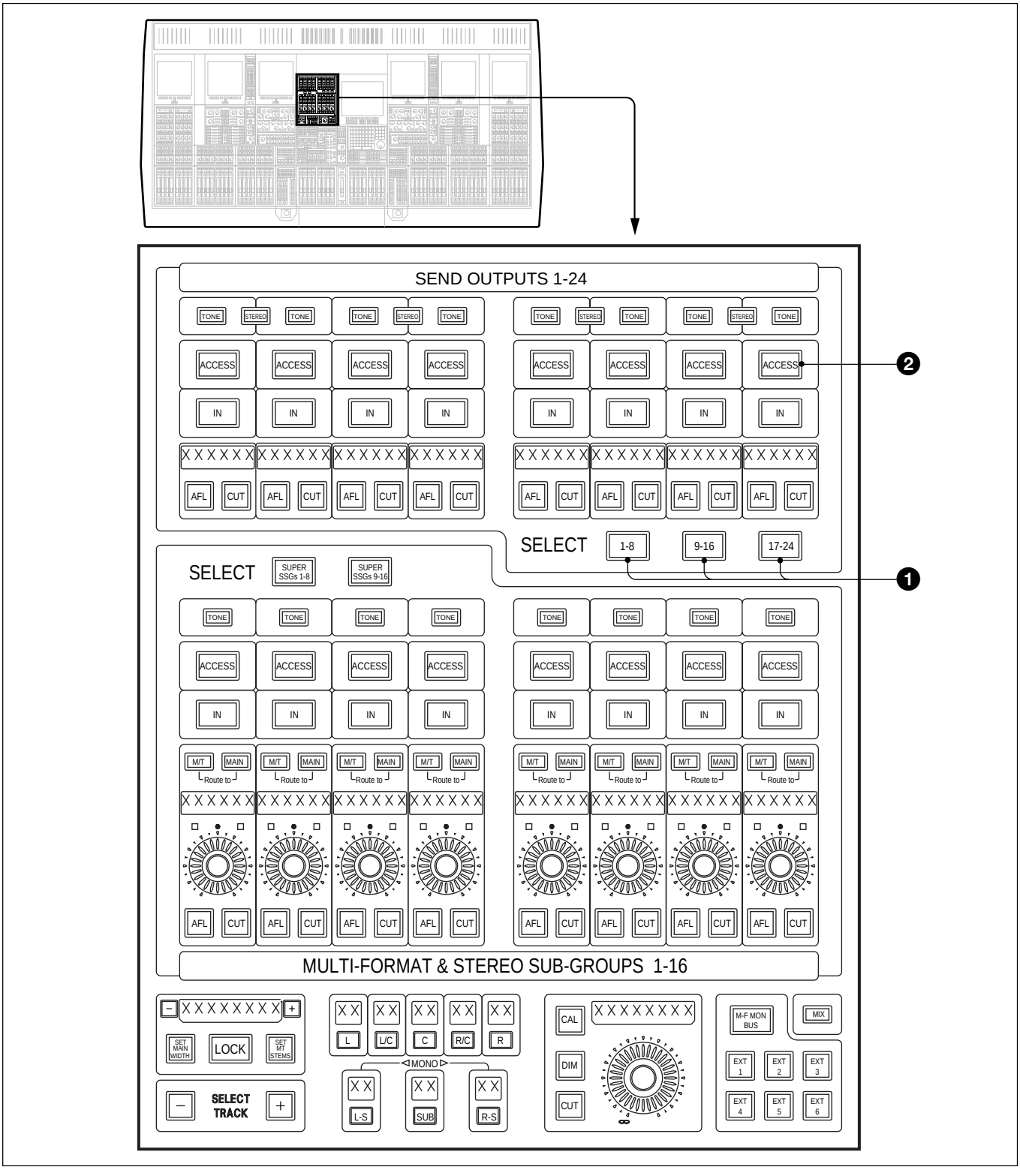
Menu options available using the softkey functions displayed at the foot of the Offline screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the System screen page directly.
PROJECTS	-	Selects the Artists/Projects & Titles page.
SNAPSHOT	-	Selects the Snapshots, Copy and Link page.
MIXES	-	Selects the Mixes & Cues page.
ASSEMBLE	-	Selects the mix compilation assembly field and the Mixes & Cues page.
BACKUPS	-	Selects system Back-up functions.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-9 MIDI

Two aspects of MIDI are covered by the OXF-R3: control of external MIDI devices on up to 16 MIDI ports via Free Assign Area controls in conjunction with MIDI GUIs, and the display of Bars and Beats in place of timecode.

7-9-1 MIDI Control Pages



Selecting MIDI Control Pages

Accessing MIDI Control Pages

Although not directly related, the 24 MIDI Pages are accessed using the [ACCESS] buttons for Send Outputs 1-24.

See the illustration 'Selecting MIDI Control Pages' on the previous page.

❶ Select [1-8], [9-16] & [17-24] Push-Buttons
Allow selection of MIDI Control Page banks.

❷ [ACCESS] Push-Buttons
Allow selection of individual MIDI Control Pages according to the banks selected. Pages should be displayed on channel LCD screens above the Free Assign Area panels by selecting the appropriate MIDI softkey.

7-9-2 Setting MIDI Parameters

General

The system allows control of MIDI parameters via 6 assignable knobs and 6 assignable switches. Their settings are displayed on the MIDI GUI which is laid out to reflect the positions of the knobs and switches. The MIDI port, channel and command type can be selected for each control as well as 2 parameters for each control.

GUI Upper Right

The panel at the upper right of the GUI indicates which MIDI page of 1-24 is displayed.

Clicking on **Clear** will select the NOTE OFF command and set all MIDI values to 0.

Clicking on **Enabled** will toggle to **Disabled** switching off transmission of MIDI data. Controls can be adjusted when the **Disabled** flag is displayed.

SETTINGS for KNOBS ❶ and ❷

The settings for the 6 knobs are displayed on the left and right panels in the GUI. Clicking on each field in turn going from top to bottom allows set-up and control as follows:

CARD (Upper field)

Click on for a pop-up to select the MIDI I/O Port from 1-16. There is one port per Card with a maximum of 16 per system.

CHANNEL (Second field)

Click on for a pop-up to select the MIDI Channel from 1-16.

COMMAND (Third field)

Click on for a pop-up to select the MIDI Command type.

PARAMETER (Fourth field)

Displays a 'first' Parameter depending on which COMMAND type has been selected.
Click on to select the Parameter to the knob for adjustment, indicated by an orange highlight.

PARAMETER (Fifth field)

Displays a 'second' Parameter depending on which COMMAND type has been selected.
Click on to select the Parameter to the knob for adjustment, indicated by an orange highlight.

ENABLED [DISABLED] (Sixth field)

Click on to Enable or Disable MIDI control from the associated knob. The Parameter values can be adjusted whilst disabled. The value settings will be transmitted at the point Enable is clicked on.

SCRIBBLE (Lower field)

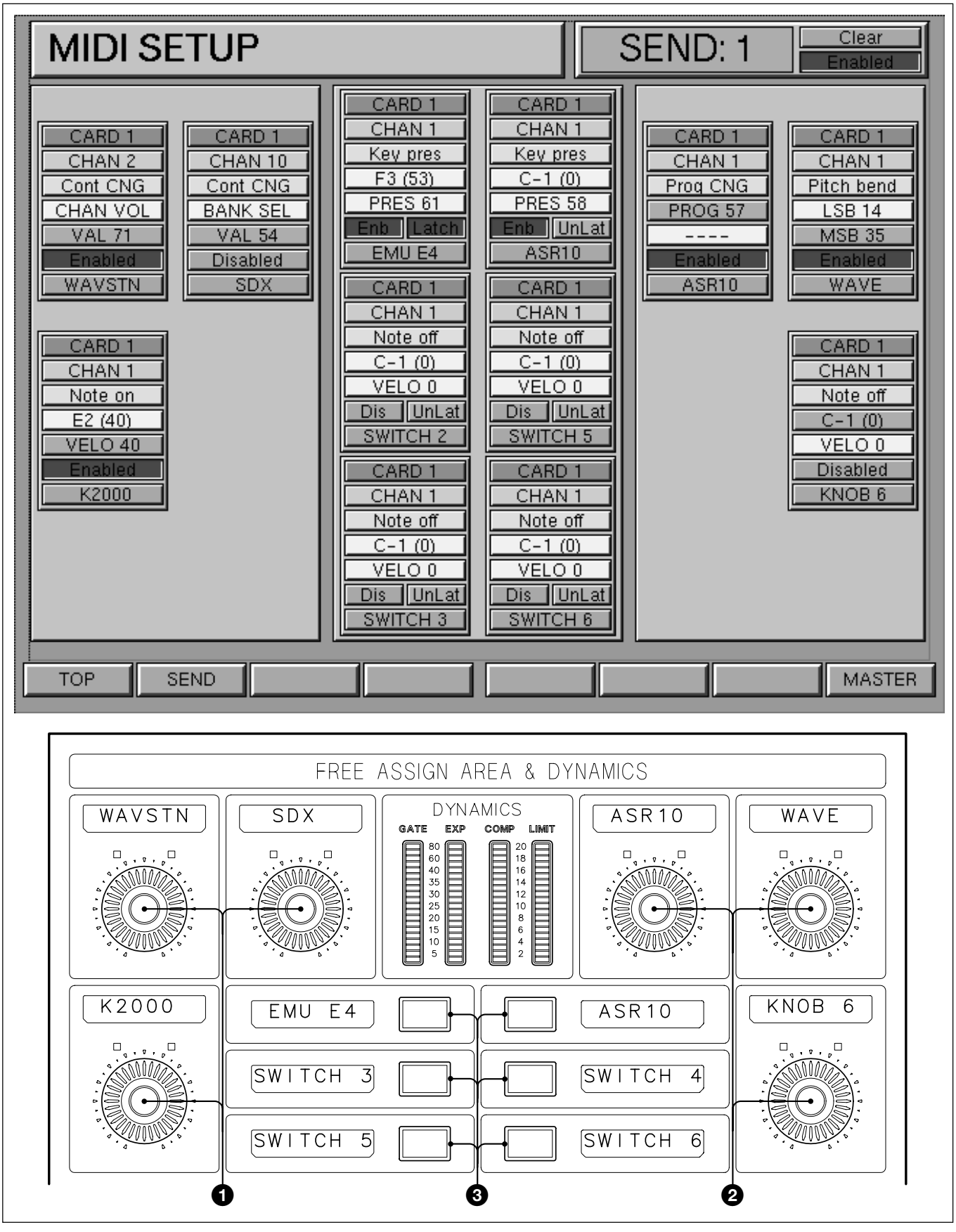
Click on for a pop-up to enter an appropriate electronic scribble name which will appear on the display above the associated knob. Either click on a name in the list or click on NEW ENTRY and then use the QWERTY keyboard to type in a new name of up to 6 characters. Then click on OK or press [ENTER].

SETTINGS for SWITCHES ❸

The settings for the 6 switches are displayed on the central panel in the GUI. Clicking on each field in turn allows set-up and control as follows:

CARD (Upper field)

Click on for a pop-up to select the MIDI I/O Port from 1-16. There is one port per Card with a maximum of 16 per system.



MIDI GUI Page and Free Assign Area (FAA) controls

CHANNEL (Second field)
Click on for a pop-up to select the MIDI Channel from 1-16.

COMMAND (Third field)
Click on for a pop-up to select the MIDI Command type.

PARAMETER (Fourth field)
Displays a 'first' Parameter depending on which COMMAND type has been selected. Click on for a pop-up to select a new Parameter. Click on a suitable entry in the pop-up or click on NEW ENTRY to type in a value using the QWERTY Keyboard. Then click on OK or press [ENTER].

Every time the switch is pressed the MIDI values displayed will be transmitted provided **Enabled** is set in the sixth field.

PARAMETER (Fifth field)
Displays a 'second' Parameter depending on which COMMAND type has been selected. Click on for a pop-up to select a new Parameter. Click on a suitable entry in the pop-up or click on NEW ENTRY to type in a value using the QWERTY Keyboard. Then click on OK or press [ENTER].

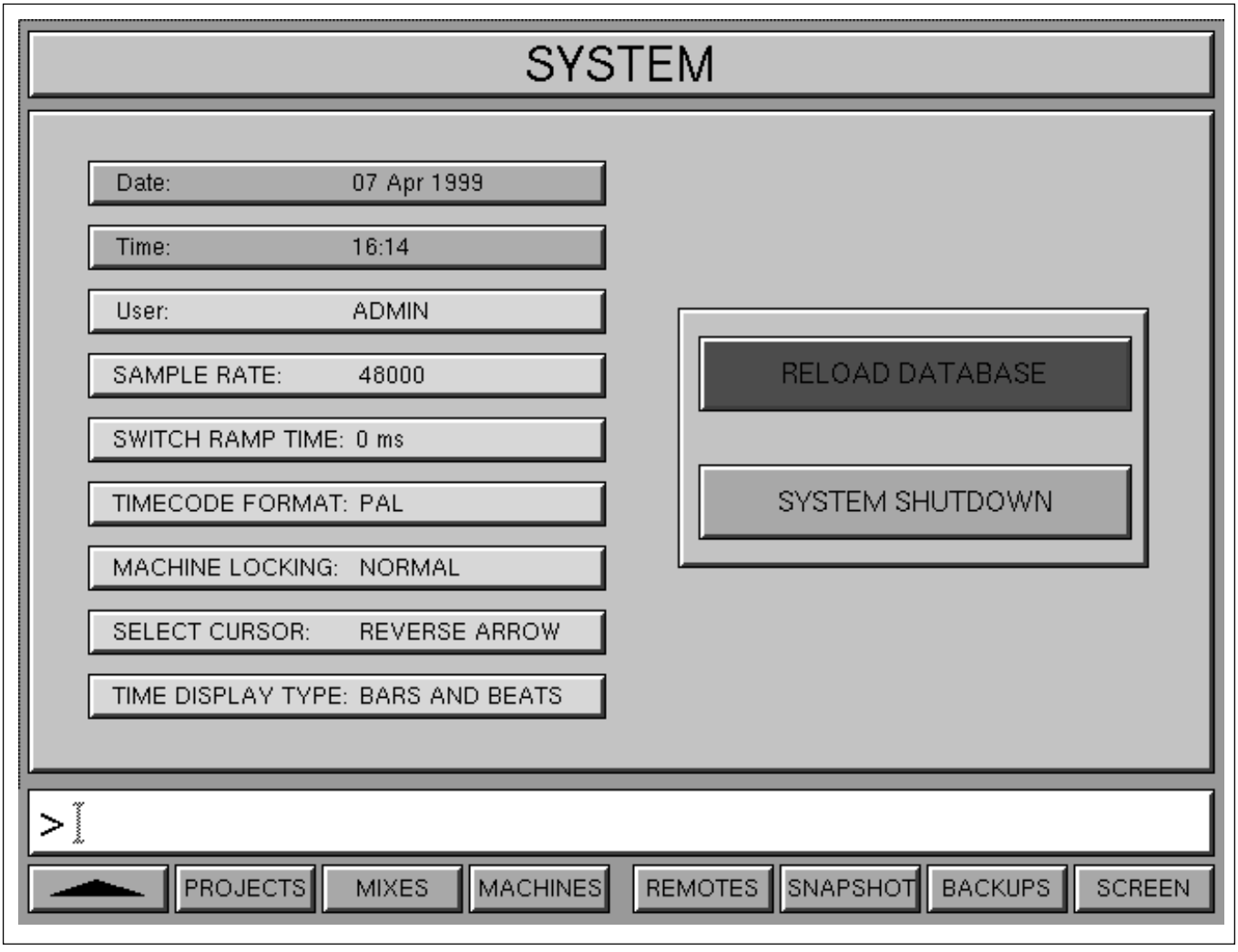
Every time the switch is pressed the MIDI values displayed will be transmitted provided **Enabled** is set in the sixth field.

ENABLED [DISABLED] (Sixth field - left)
Click on to Enable or Disable MIDI control from the associated switch.

LATCH [MOMENTARY] (Sixth field - right)
The default operation of the switches is a Momentary action when MIDI data is transmitted as the switch is pressed. Selecting Latch will cause NOTE ON to be transmitted on the downward push. The button will stay lit when released. When pressed again and released, NOTE OFF will be transmitted on the upward release action.

SCRIBBLE
Click on for a pop-up to enter an appropriate electronic scribble name which will appear on the display to the side of the associated switch. Either click on a name in the list or click on NEW ENTRY and then use the QWERTY keyboard to type in a new name of up to 6 characters. Then click on OK or press [ENTER].

7-9-3 MIDI Bars & Beats



SYSTEM screen

General

Bars and Beats can be displayed in all places where timecode is normally displayed except the start and end times of titles in the Artists/Projects & Titles page.

The system allows up to 9,999 bars to be displayed down to a resolution of 16 beats per bar with 99 ticks per beat.

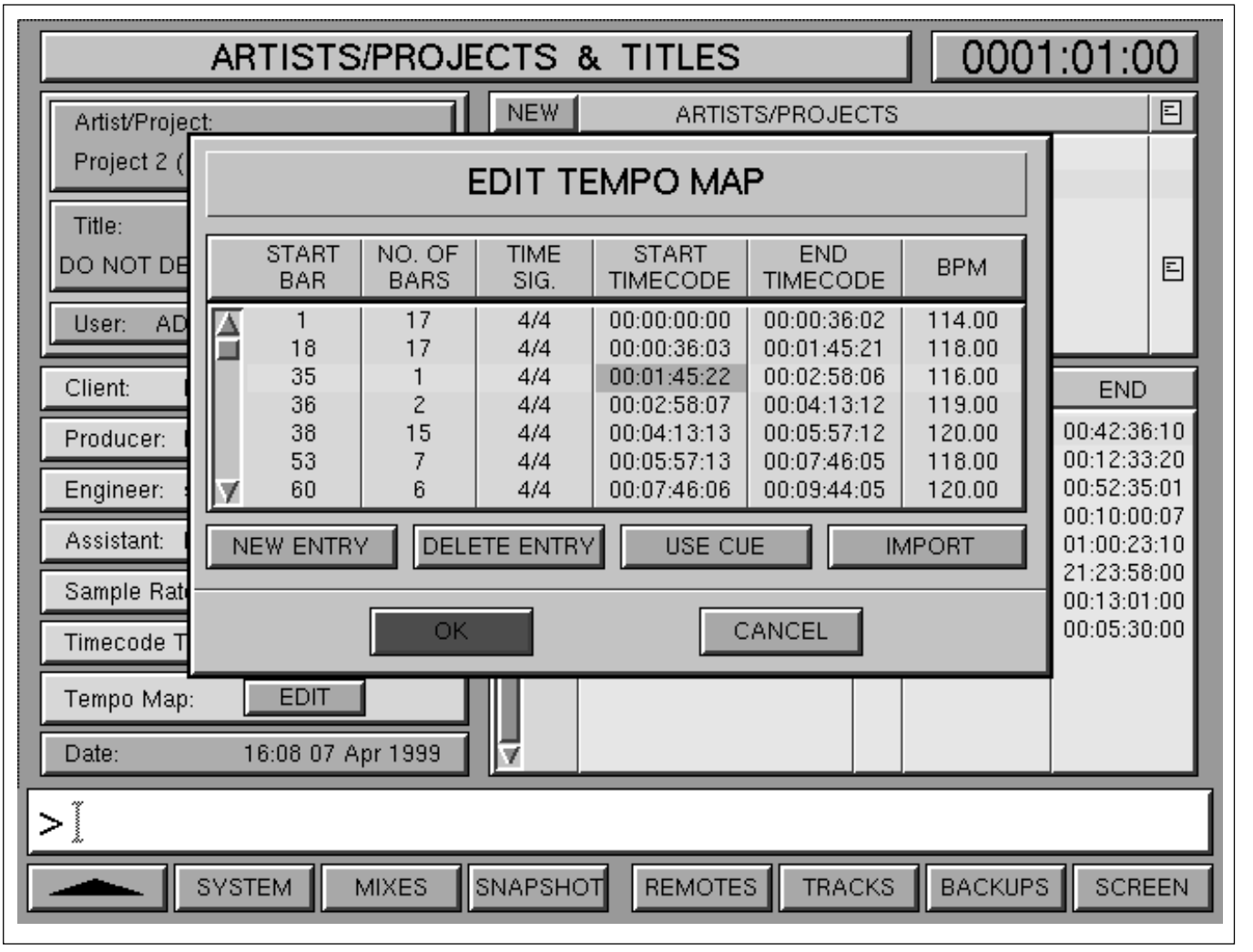
Bars and Beats tempo maps can be programmed via the ARTISTS/PROJECTS & TITLES GUI or imported from Standard MIDI Files (.MID) via 3.5 inch floppy.

Cue points may be specified in Bars and Beats and the automation will also locate to points typed in as such.

Selecting BARS & BEATS

The bar on the System page marked ‘TIME DISPLAY TYPE’ allows alternate selection of either TIMECODE or BARS & BEATS by clicking to the right of the bar.

When displaying BARS & BEATS, the large time display in the MIXES & CUES GUI has an animated graphic display of the beats, whilst the tape is rolling, depending on the current time signature.



ARTISTS/PROJECTS & TITLES screen displaying EDIT TEMPO MAP pop-up

Default TEMPO MAP

A default Tempo Map is created automatically when a NEW TITLE is entered. The Tempo Map assumes a single line of default settings as a starting point. The Start and End Times of the Title are used to calculate the number of bars with a default tempo of 120 BPM (Beats Per Minute).

Editing a TEMPO MAP

To edit a Tempo Map, click on or highlight and press [EDIT] for an entry to display its pop-up. Make changes and then press [ENTER] or click on OK and the other entries will be re-calculated accordingly.

Click on NEW ENTRY to add a new line which may also be edited.

The START TIMECODE and END TIMECODE entries can be specified using the number keys or adjusted using the Jog wheel. To link a time point to a Cue click on USE CUE, which lists the Cues for the current Title, and then click on the one required.

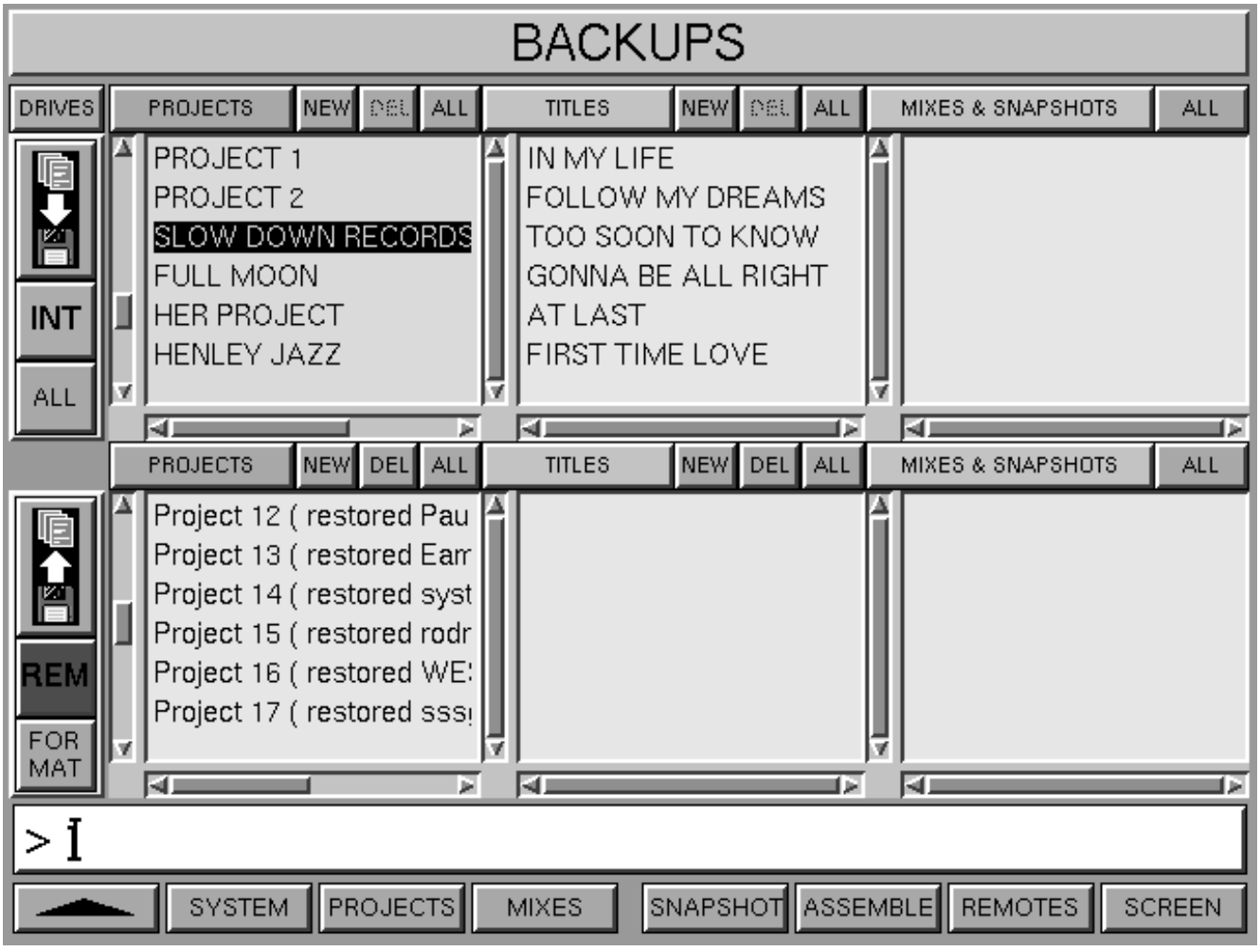
Note

If the tape or storage device overruns the boundaries of a Tempo Map, the tempo at the boundaries will continue outside the current map.

Importing a TEMPO MAP

Insert the 3.5 inch floppy in the host computer drive and click on IMPORT. Once the list of .MID files is displayed, highlight the desired file and click on IMPORT or press [ENTER] on the Control Keyboard. The new imported Tempo Map will appear, replacing any current entries.

7-10 Backups



BACKUPS screen

General

The BACKUPS GUI is designed to allow the user to store work on M.O. disks for archiving and transferring to other systems. A Networking facility is also provided for use where there is more than one OXF-R3 in the same installation.

Work should be backed up at least once per day. It is recommended that backups be taken more often, when a number of projects are being worked on in the same day for example.

This system allows data to be backed up from the internal hard drive to a removable M.O. disk, or vice versa, as well as making copies. All OXF-R3 systems are compatible, allowing projects to be moved freely between installations.

Layout overview

The BACKUPS GUI primarily consists of two rows of scrolling lists, each with three columns and their own buttons. Either row can select the Internal, Network or Removable drive via a pop-up. The Removable drive must be mounted first before data can be accessed, which will occur automatically when it is selected.

The following description applies to the operation of both drives.

Columns

The left column displays a list of all Projects on the relevant drive. This allows all Projects to be viewed on both Drives simultaneously. Clicking on the FACTORY legend gives access to further source options:

- **FACTORY SNAPSHOTS**
  Basic set-up 'Read Only' Snapshots supplied with the system accessible by User 'ADMIN' only in the Backups GUI.
- **STUDIO SNAPSHOTS**
  'Read Only' Snapshots set-up relating to the Studio, accessible by User 'ADMIN' only in the Backups GUI.
- **USERS**
  Allows access to Snapshots belonging to the current User. User 'ADMIN' has access to Snapshots belonging to all Users. For ADMIN, the list of Users will be displayed in the left column and Snapshots will be displayed in the middle column depending upon which User is highlighted.

The middle column displays all Titles for a single Project when a single Project is selected. If more than one Project is highlighted then the middle column is blank.

The right column displays all Mixes and Snapshots for a Title when a single Title is selected.

Selecting anything other than exactly one item from a list will clear all lists to the right of the list in question.

Selection System

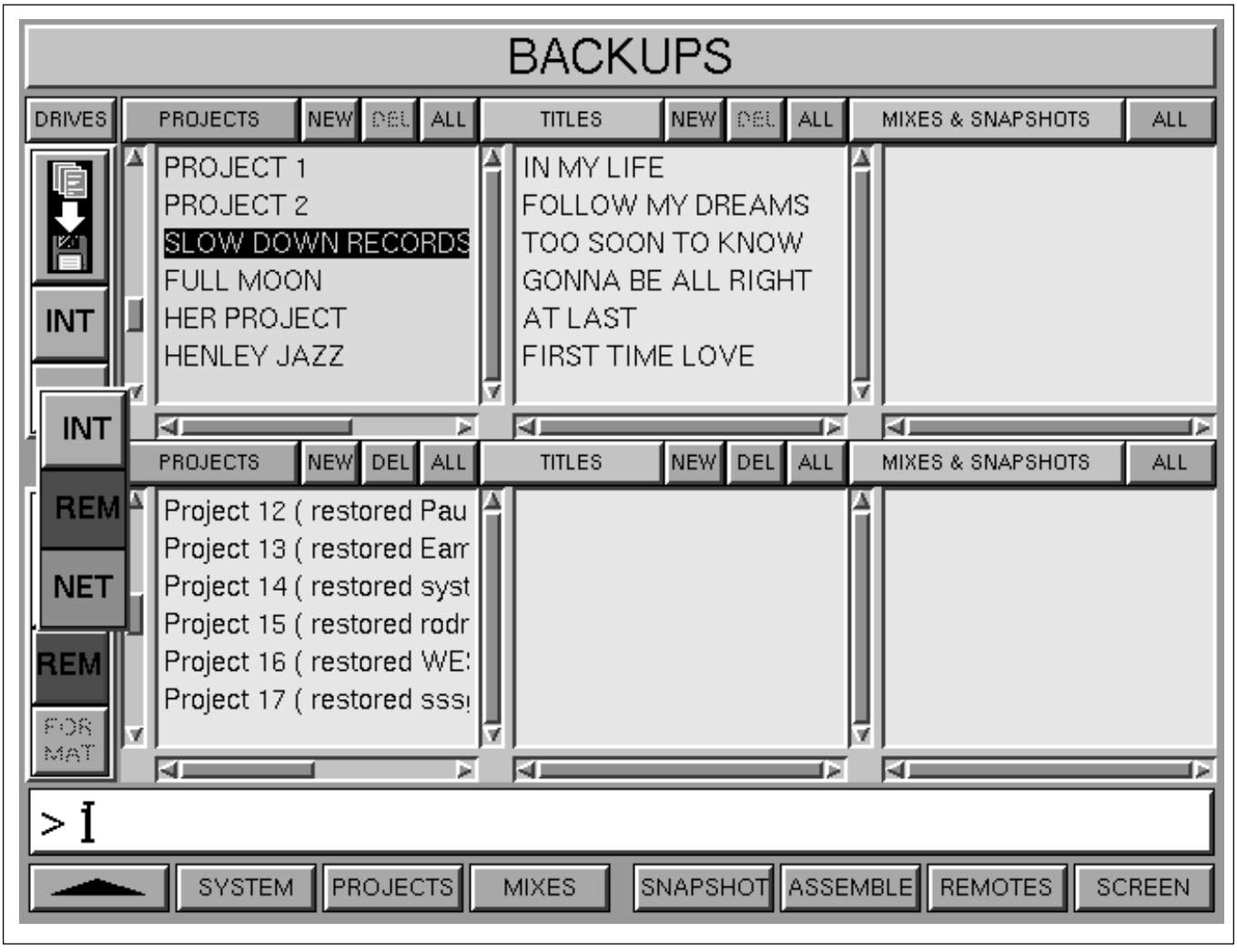
Use a Trackerball to select Projects, Titles, Mixes and Snapshots:

1 To select individual items click on them one at a time.

2 To select a range of items:
- Click on an item and keep the button pressed, then move the cursor across the desired items to highlight them.
- Hold down CTRL on the QWERTY keyboard and click on the items required one at a time.
- To select a range, click the first item then hold down SHIFT on the QWERTY keyboard and click on the last.

3 To select all items in any column, click ALL at the top of the column.

4 To de-select a multiple or range just click on a single item.



BACKUPS screen displaying the Drives pop-up

Backup, Restore and Copy operations

A Backup is when the source is the Internal drive and the destination for data is the Removable drive. A Restore constitutes this procedure in reverse. A Copy is when the source and destination are the same drive.

File names

New projects and titles may be created by clicking on the relevant NEW button. This may be necessary to copy a Mix or Snapshot into a Project but not have placed in a current Titles.

Whenever a files operation occurs, a new item of the correct type is created. Individual files can never be deleted or overwritten using the BACKUPS GUI. For example, a Backup of **My Project** could be named:

Project # (backup of My Project)

In other words, the backup has a new name with the original name in ( ). The # is a unique number which has been assigned automatically. The words in the ( ) will be set according to the operation involved i.e.

(backup of XXXX) for a backup operation

(restored XXXX) for a restore operation

(copy of XXXX) for a copy operation

If **Project 12 (backup of My Project)** is restored, it is likely to be restored with another unique number e.g. **Project 17 (restored My Project).** The important point here is that no files can be overwritten and the original name is always there. After any Backup file operation, a pop-up will appear and confirm successful completion.

DRIVES

Click on DRIVES, upper left, for a pop-up displaying the status of the drives within the system.

Note

This pop-up must be selected in order to eject an M.O. disk in a removable drive.

Backup buttons in the GUI

There are three buttons to the left of each row:

Upper Icon

This Icon indicates the direction of the data flow, either to the Internal, Removable or Network drive, depending on which drives have been selected in each row. Clicking on the Icon will action the Backup or Copy transaction.

Middle button

Click on this for a pop-up allowing the selection of INT(ernal), REM(ovable) or NET(work) drives. Click on one and its files are displayed accordingly.

Lower button

The function of this button changes according to the drive selected using the middle button:

Internal drive	• **ALL**
Removable	• **FORMAT**

ALL button

Clicking on ALL causes a Backup to be made of All the files on the Internal drive.

FORMAT button

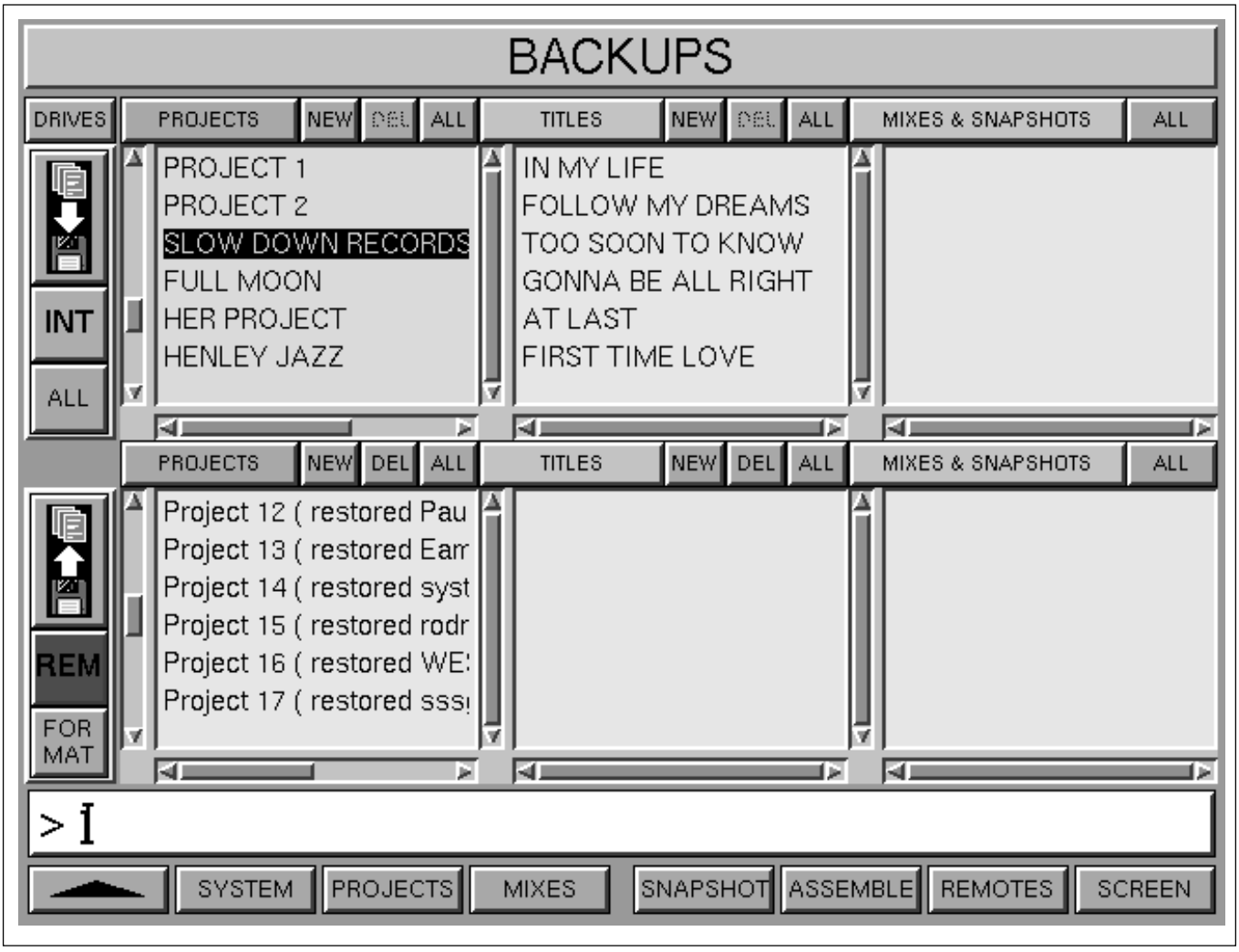
Click on FORMAT to Format the M.O. disk in the Removable drive.

Note

1 *The* ALL *operation replaces all data on the Removable drive.*
2 *The* FORMAT *operation erases all data. Any files on the M.O. will be lost. A warning is given which requires confirmation.*

DELETE

The Delete function for Projects and Titles is operable for the M.O. drive only.



BACKUPS screen

Backup, Restore and Copy procedure

This procedure applies to specified files.

Note

1 If a Backup is being made to the Removable drive, make sure an M.O. disk is inserted and that the drive itself is Mounted.

2 It is important to remember that if a Mix, Title or Snapshot is to be copied, the destination must have already been created i.e. a copy of a Title must have a suitable Project available and a Mix requires a Project and a Title. Click on NEW *to create a* PROJECT *or* TITLE.

1 Select the desired drives at the left side of the two rows.

2 Click on the desired source files. Any selection that has subordinate files, such as a Title with Mixes, will have all such files copied. The background at the level to be copied will be highlighted so that the user is aware of exactly what will be copied.

3 Click on the desired destination file. Again, the background will be highlighted in the destination file area to make the user aware.

4 Click on the Icon on the left side of the source row to action the Copy. If, for any reason, the transaction cannot be completed, a pop-up will appear explaining why.

Note

1 *Whilst the Copy is in operation, an* ABORT *button appears in the left hand column between the drive buttons. Click on this* ABORT *button to stop the operation. (Note:* ABORT *is also available during the FORMAT operation).*

2 *Whilst Backup operations are taking place, a pop-up gives details of the operation and its progress.*

Command Dialogue

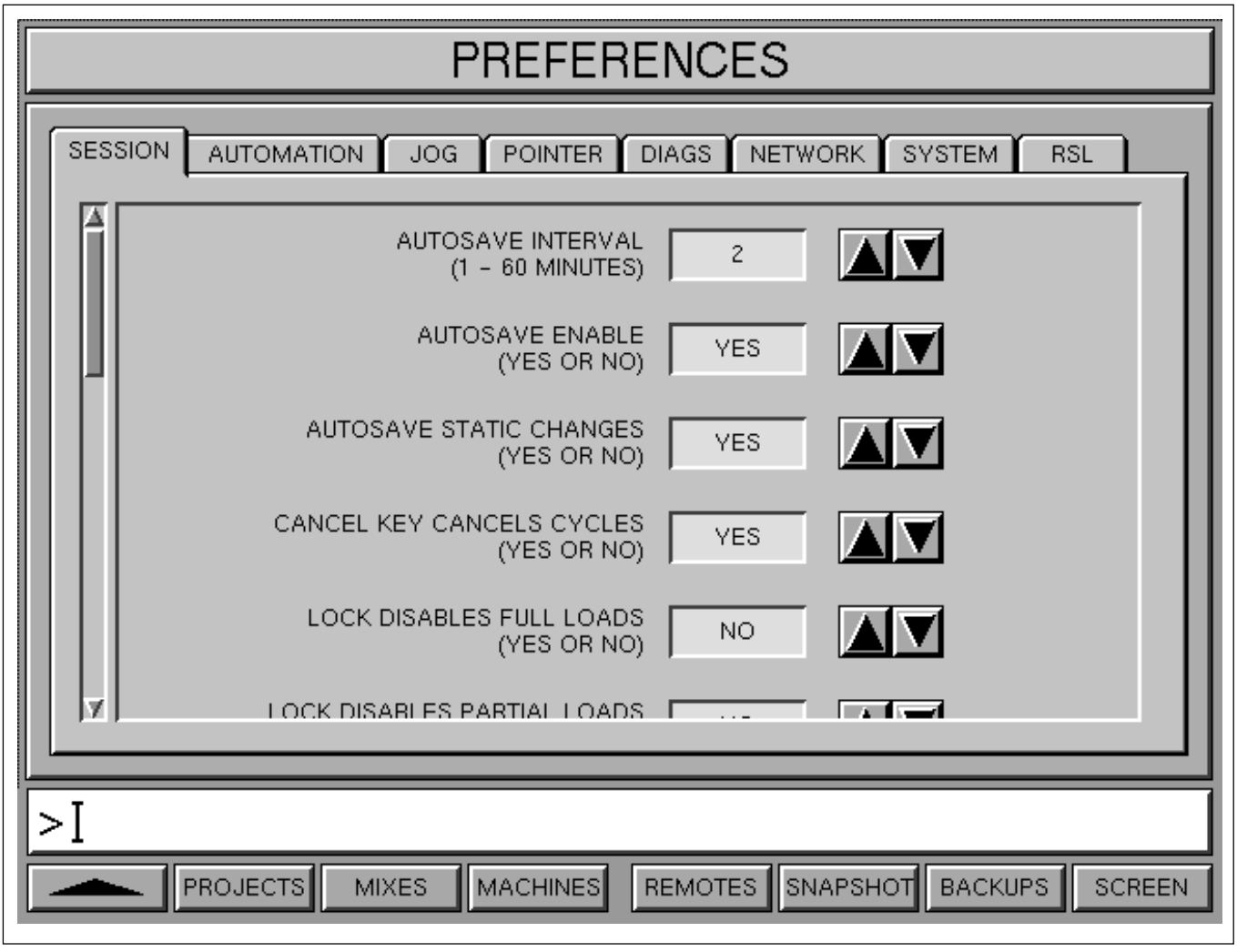
At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before ENTER.

Menu options

Menu options available using the softkey functions displayed at the foot of the Backups screen page are as follows:

▲	-	Selects the previous screen page.
SYSTEM	-	Selects the SYSTEM screen page directly.
PROJECTS	-	Selects the ARTISTS/PROJECTS & TITLES page.
MIXES	-	Selects MIXES & CUES page.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
ASSEMBLE	-	Selects the mix compilation MERGE/ ASSEMBLE page.
REMOTES	-	Selects the MACHINE REMOTES assignments matrix.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

7-11 Preferences



PREFERENCES screen

General

The PREFERENCES GUI gives access to a number of options available previously in the system 'config file'. To access this GUI, press the softkey below SCREEN at the right hand side of the central LCD. A pop-up list will appear. Use the ⇧ ≥ on the Control Keyboard to highlight PREFERENCES and ENTER.

To access a preference, move the cursor over the appropriate tab in the upper part of the GUI using a Trackerball. Click on the tab using the 'activate' button by the Trackerball.

Preferences are changed by clicking on the ▲ and ▼ arrows. Where a YES/NO decision is required, clicking on either will change the setting whereas numbers are incremented and decremented according to the direction of the symbols.

Each entry line in the GUI has a DEFAULT button which is only displayed when other than the default has been selected. Click on this to obtain the system default setting.

SESSION Tab

AUTOSAVE INTERVAL
- Sets the interval, from 1 to 60 minutes, between Autosaves of the working mix. Saves will occur only if there is new data which has not been saved.

AUTOSAVE ENABLE
- Allows Autosave to be turned on or off.

AUTOSAVE STATIC CHANGES
- Allows Autosave to be triggered to Autosave static non-automated changes.

CANCEL KEY CANCELS CYCLES
- Allows the system to be set so that [CANCEL] on the Control Keyboard cancels machine cycle commands.

Note:

The following LOCK Preferences refer to the [LOCK] push-button on the Monitor panel in the centre section. When [LOCK] is on, a number of functions can be locked out of operation. These are useful safety settings in live and broadcast situations where the loading of Automation and/or Snapshot data could overwrite a critical console set-up.

LOCK DISABLES FULL LOAD
- Disables the Loading of Full console-wide Snapshots and Mixes.

LOCK DISABLES PARTIAL LOADS
- Disables the Loading of Partial Snapshots and Mixes which would affect less than the full console.

LOCK DISABLES COPIES
- Disables the Copying of settings from a source channel to one or more other channels.

LOCK DISABLES NEW LINKS
- Disables the channel Link set-up mechanism but leaves channels already linked intact.

LOCK DISABLES MAKE STATIC
- Disables the [MAKE STATIC] key on the Control Keyboard which normally removes automation from the working mix.

LOCK DISABLES OFFLINE OPS
- Disables all Offline operations whether GUI or keyboard entry.

VPANEL ENABLE
- Enables transport control via GPIO from an external panel or virtual panel.

VPANEL IS MACHINE CONTROLLER

- Sets the external or virtual panel as the master machine remotes in control of the R3 and Motionworker or 9-P control.

SHOW REMOTES FRAMES

- Sets the TC display by the transport remotes to display frames.

TRACK ARMING USES GPIO

- Sets Record Ready buttons, one above each channel fader, to control the GPIO record relays and display the state of tally inputs. The GPIO card will be installed in one of the I/O racks.
- Selecting NO for this option will cause the Record Ready buttons to operate on whichever machine control interface is currently in use.

TRACK ARMING FORCES INPUT - 9 PIN ONLY

- Switches tracks into input mode automatically when they are record enabled.

LOCK DISABLES SHUTDOWN

- Prevents display of the SYSTEM SHUTDOWN pop-up and related command.

LOCK DISABLES NESTED GROUPS

- This relates to the Control Group Faders 1-32. It prevents the setting up or alteration to nested Control Groups since this could cause jumps in level.

AUTOMATION Tab

PLAYBACK WHEN MASTER LOCKED

- Allows playback of automation data with just the master machine locked to the system. In other words, there is no delay waiting for slave machines to become synchronised.

Note:

The following MUTE Preferences relate to elements which may be set to mute during partial loading of Snapshots and Mixes preventing any signals being fed to busses during the load operation. This may be desirable when the new data will load a significantly different set-up to the current one.

MUTE CHANNELS ON LOAD

- Mutes the Channel Outputs for the channels affected by the loading of a Snapshot or Mix.

MUTE CH MTSENDS ON LOAD

- Mutes the Channel Multitrack Sends for the channels affected by the loading of a Snapshot or Mix.

MUTE CHAN INPUTS ON LOAD

- Mutes the Channel Inputs for the channels affected by the loading of a Snapshot or Mix.

MUTE CHAN SENDS ON LOAD
- Mutes the Channel Sends for the channels affected by the loading of a Snapshot or Mix.

MUTE ON FULL LOADS
- Mutes Channel Outputs, Multitrack Sends, Inputs and Sends for all channels during the loading of a full Snapshot or Mix, according to the individual options selected above.

TO TOP ON DROP IN
- With the TO TOP button on, any controls dropped in to automation write in Abs or Trim will have their settings propagated to the Start Time or 'top' of the Title, from the point of drop in.
- Selecting NO for this option will cause settings to be propagated from the point of dropping out.

JOG Tab

ROTATIONAL SENSE
- Sets the rotational direction of Jog Wheel:
  0 - suitable for digital machines
  1 - analogue tape machines, where it follows the direction of tape spools.

DEFAULT MODE
- Sets the mode for the Jog Wheel when the system is booted:
  0 = Off
  1 = Jog Mode
  2 = Crawl Mode
  3 = Shuttle Mode
  4 = Data (+/-) Entry Mode

JOG TRIGGER
- Sets the sensitivity to movement for Jog mode, 1 being the most sensitive and 100 being the least sensitive.

JOG SPEED
- Sets the ratio of Jog Wheel rotation against that of the machine for Jog mode. The 1 setting gives the finest control and 15 is coarse.

CRAWL TRIGGER
- Sets the sensitivity to movement for Crawl mode, 1 being the most sensitive and 20 being the least sensitive.

CRAWL SPEED
- Sets the ratio of Jog Wheel rotation against that of the machine for Crawl mode. The 1 setting gives the finest control and 20 is coarse.

USE LOCATES FOR JOGGING

- Sets an alternative method for jogging remote machines. In this mode the JOG SPEED preference is ignored and the JOG TRIGGER has an increased effect on the sensitivity of the Jog Wheel.

POINTER Tab

INDEPENDENT TRACKERBALLS

- Sets the two Trackerballs to operate independently. The left Trackerball controls the cursor or pointer in the 3 LCDs on the left of the console whilst the right controls the 3 LCDs on the right plus the central LCD.

  Pressing [SELECT] under the central LCD will put its cursor control under the right Trackerball. The left Trackerball cursor can be moved into the central LCD too, but by manual control only. This allows either or both Trackerballs to control the central LCD cursor. If both Trackerballs are controlling the central LCD then the last one moved takes precedence.

TRACKERBALL SPEED

- Sets the gearing ratio of the Trackerball movement to cursor movement, 1 being the slowest and 8 the fastest.

DIAGS Tab

PRINT TIMECODE WARNINGS TO GUI

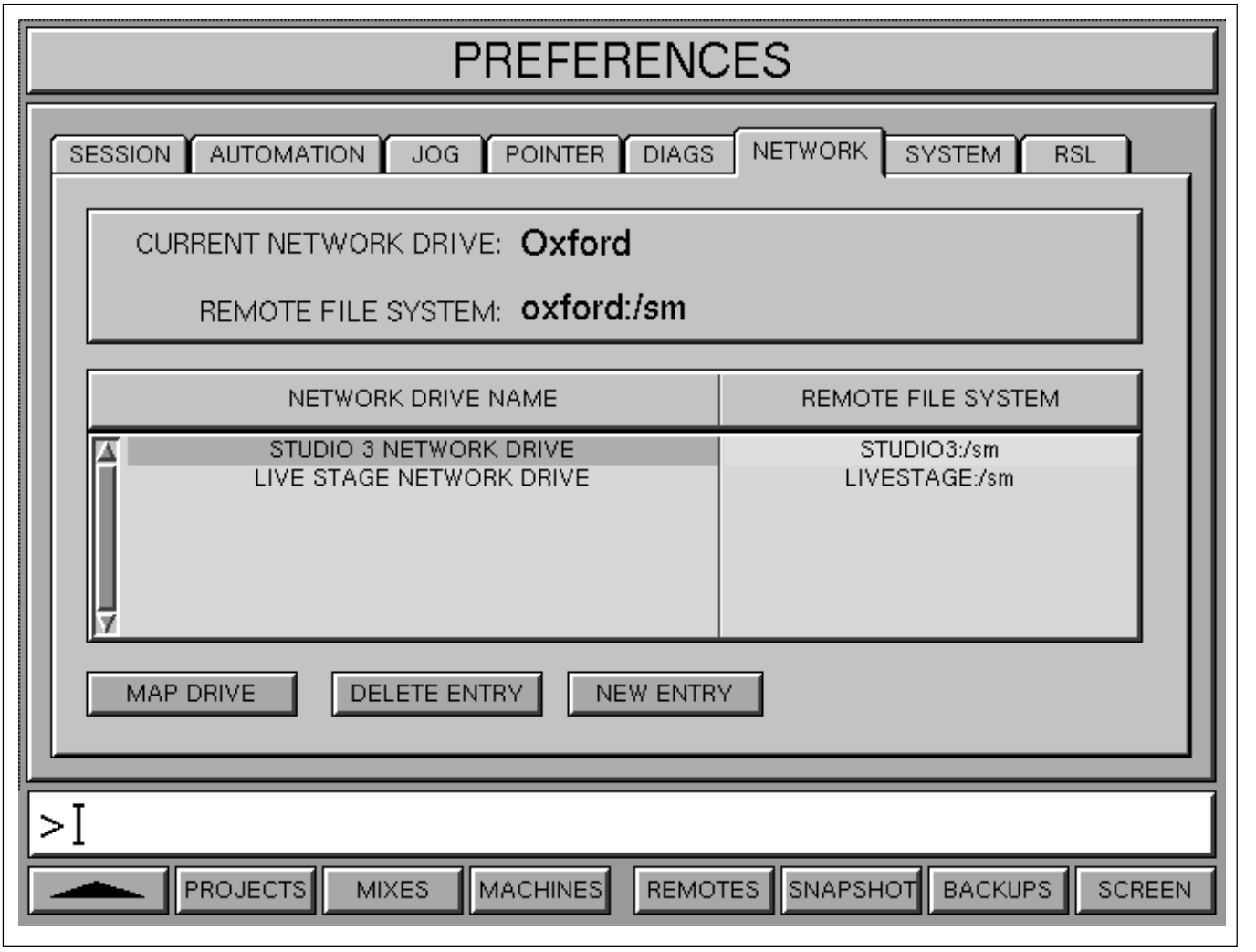
- Displays Timecode error messages, such as drop-outs, on the centre LCD.

SHOW TIMECODE GLITCHES

- Displays non-contiguous or jumps in Timecode.

NETWORK Tab

The NETWORK function allows other R3 systems, which are on the same 'computer network', to be assigned as remote drives that can be accessed via the Backups GUI. This allows data in the form of Projects and/or associated lower level data, such as Titles, Mixes and Snapshots, to be copied from an external system.



NETWORK ADMINISTRATION screen

Setting up a NETWORK DRIVE

Each networked drive requires a suitable name along with the name of the host computer relating to the network itself.

1 Click on NEW ENTRY for a pop-up to enter a suitably familiar name relating to the remote system. Type it in using the QWERTY Keyboard and then click on OK or ENTER.

2 Move the orange highlight in the same row to the REMOTE FILE SYSTEM column. Click on it or press EDIT on the Control Keyboard for a pop-up. Enter the host name and file path, which normally ends '/sm' for the remote host computer.

Type it in using the QWERTY Keyboard and then click on OK or ENTER.

3 Click on MAP DRIVE for the local system to make the connection to the remote system. Once completed, a pop-up will appear for confirmation.

4 Select the Backups GUI using the appropriate softkey at the foot of the GUI in order to copy files from the remote system.

SYSTEM Tab

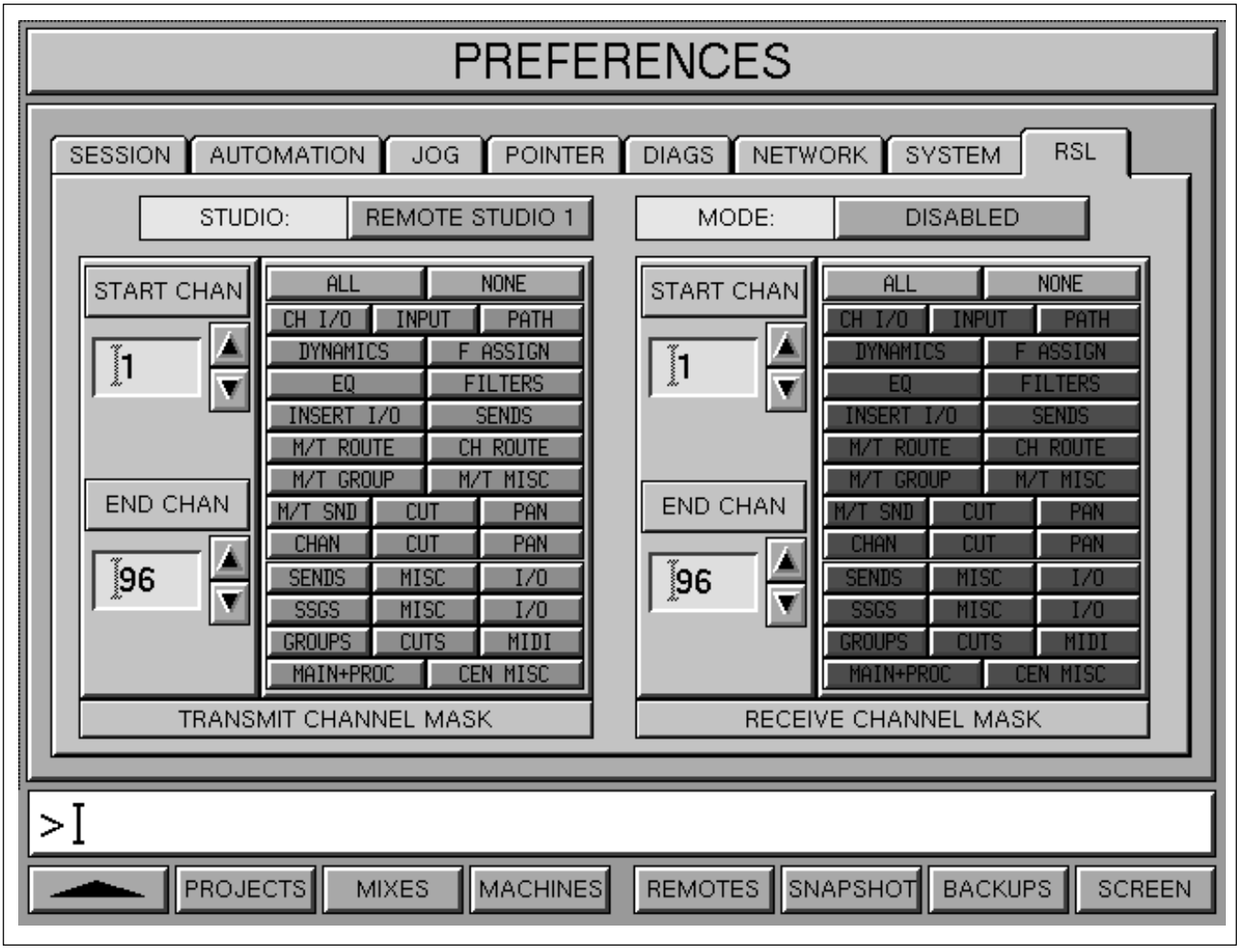
DETECT POWER FAILURE

- Sets the OXF-R3 to react to Power Failure messages according to the settings in the Uninterruptable Power Supply (UPS) management software. The R3 can react in one of two ways according to priority levels set within the software.

  Lower priority functions can display a warning message on the central GUI according to a script in the UPS software. Higher priority levels, when power capacity is very low, for example, can instigate an immediate Save of Mix Data. In this case, no warning will be given, but a pop-up will confirn the save after the event. A new entry will appear in the Mixes GUI, 'UPS EMERGENCY SAVE'.

RSL (Remote Studio Link) Tab

The RSL facility allows control linking between two OXF-R3 systems in order to allow collaboration between two locations, which could be anywhere in the world, so long as an ISDN link is feasible. A simultaneous two way link allows changes at either end to affect the audio mix, automation and machine control at the other.



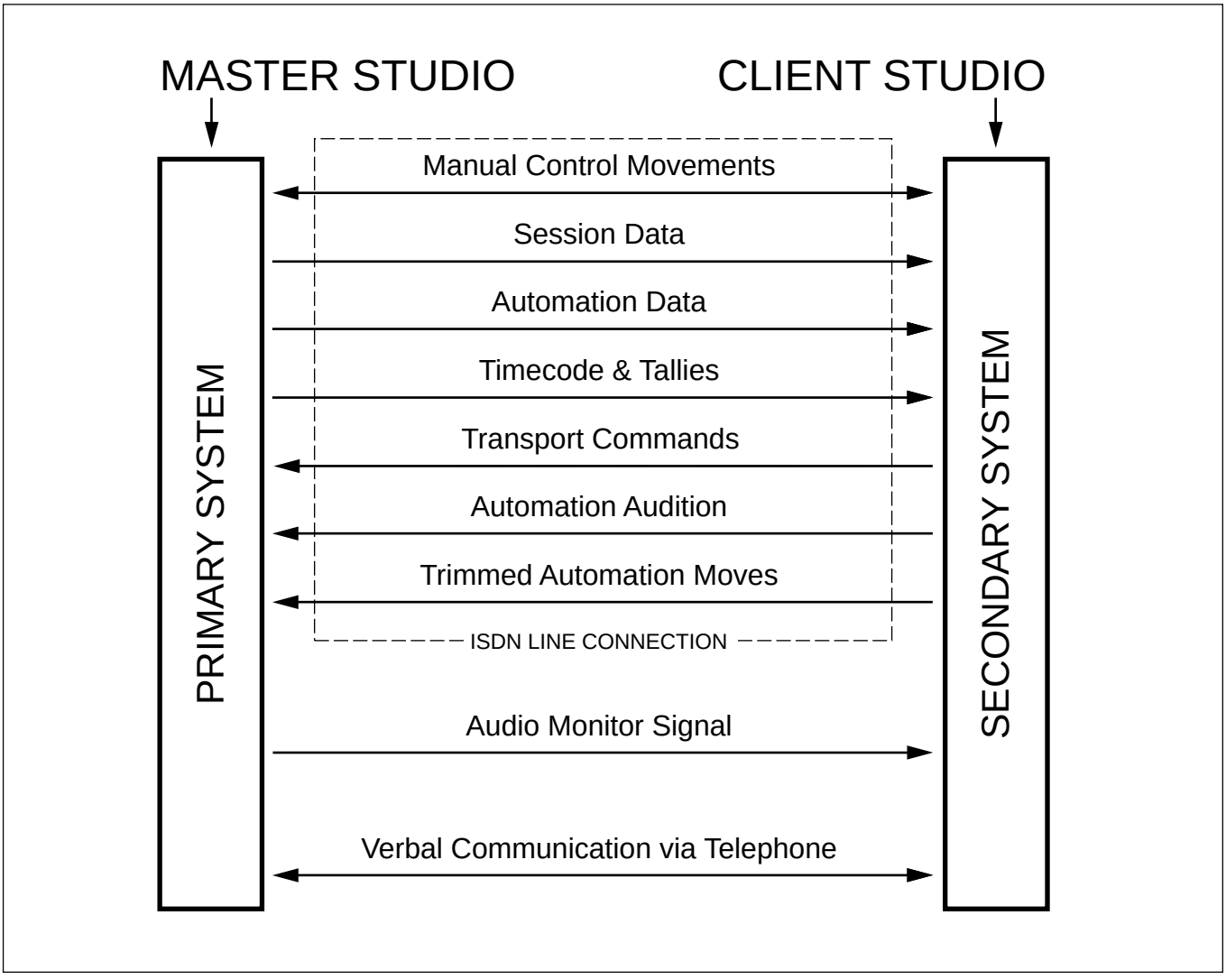
RSL (Remote Studio Link) screen

General

The operation of RSL involves one studio, which will be called the Primary System (P-S), to run the source material from a multitrack system on tape or hard disc system. The mix can be monitored locally and must be fed to the remote studio, or Secondary System (S-S), via a high quality external audio communications system.

The two way control link, via ISDN, will cause the settings in the P-S to be mapped exactly to the remote S-S . The current title on the P-S will apear in the titles list on the S-S, along with its cues. All the transport commands, such as PLAY TITLE, PLAY CUE, Quick Rollback work as normal on the S-S. Automation moves in the P-S will be displayed on the S-S. New automation settings can be created on the S-S using Audition

Mode. The new S-S settings will be visible on the P-S but can only be written using the P-S. Set-up via an ISDN line allows near real-time operation for the S-S.



Overview of RSL connections

RSL Set-up GUI

The set-up procedure applies to both the P-S and the S-S and the set-ups at each end do not need to match. It may be that the P-S will send lots of data in order that the S-S can monitor a full mix, whilst the S-S returns data for just a few important channels.

Note:

The instructions that follow apply for systems set up for RSL. The set-up configuration requires help from Sony Support Personnel.

Data sent from the Primary System

1 Click on the button to the right of the STUDIO legend for a pop-down listing 4 remote locations. Click on the one that is required.

2 Click on the button to the right of the MODE legend to set the status of the local OXF-R3, which can be the Master, Client or Disabled. The local system will then seek and set up appropriate communications.

3 In the TRANSMIT CHANNEL MASK section, select the range of channels for which data will be transmitted from for the local system. Set the START CHAN and the END CHAN, by clicking on the ▲ and ▼ arrows.

4 A further option in the TRANSMIT CHANNEL MASK field at the left, allows individual channel and centre section components to be specified. Clicking on ALL will highlight every component whilst clicking on NONE will de-select them all. They can also be selected individually, turning them on or off, from either starting point.

5 In the RECEIVE CHANNEL MASK section, select the range of channels for which data will be received from for the remote system. Set the START CHAN and the END CHAN, by clicking on the ▲ and ▼ arrows.

Command Dialogue

At the base of the screen, the User Command Dialogue Line bar displays commands from the dedicated Control Keyboard and QWERTY Keyboard for confirmation before [ENTER].

Menu options

Menu options available using the softkey functions displayed at the foot of the Network Administration screen page are as follows:

▲	-	Selects the previous screen page.
PROJECTS	-	Selects the ARTISTS/PROJECTS & TITLES page directly.
MIXES	-	Selects the MIXES & CUES page for all mixing functions.
MACHINES	-	Selects the MACHINES set-up parameters page.
REMOTES	-	Selects the MACHINE REMOTES assignment matrix.
SNAPSHOT	-	Selects the SNAPSHOTS, COPY & LINK page.
BACKUPS	-	Selects system BACKUPS functions.
SCREEN	-	Selects pop-up showing all available screen selections. Click on any one to select it.

Appendixes

General

Software Installation

Please refer to the Software Installation Procedure supplied with the release package. Since Sony is constantly simplifying and improving the ease of installation of software, publication of a single and fixed procedure in the Operation Manual is inappropriate.

Release Notes

Please refer to the Release Notes supplied with software releases, particularly those relating to interim upgrades, for details of new features and functional enhancements.

Multi-Format LS Calibration

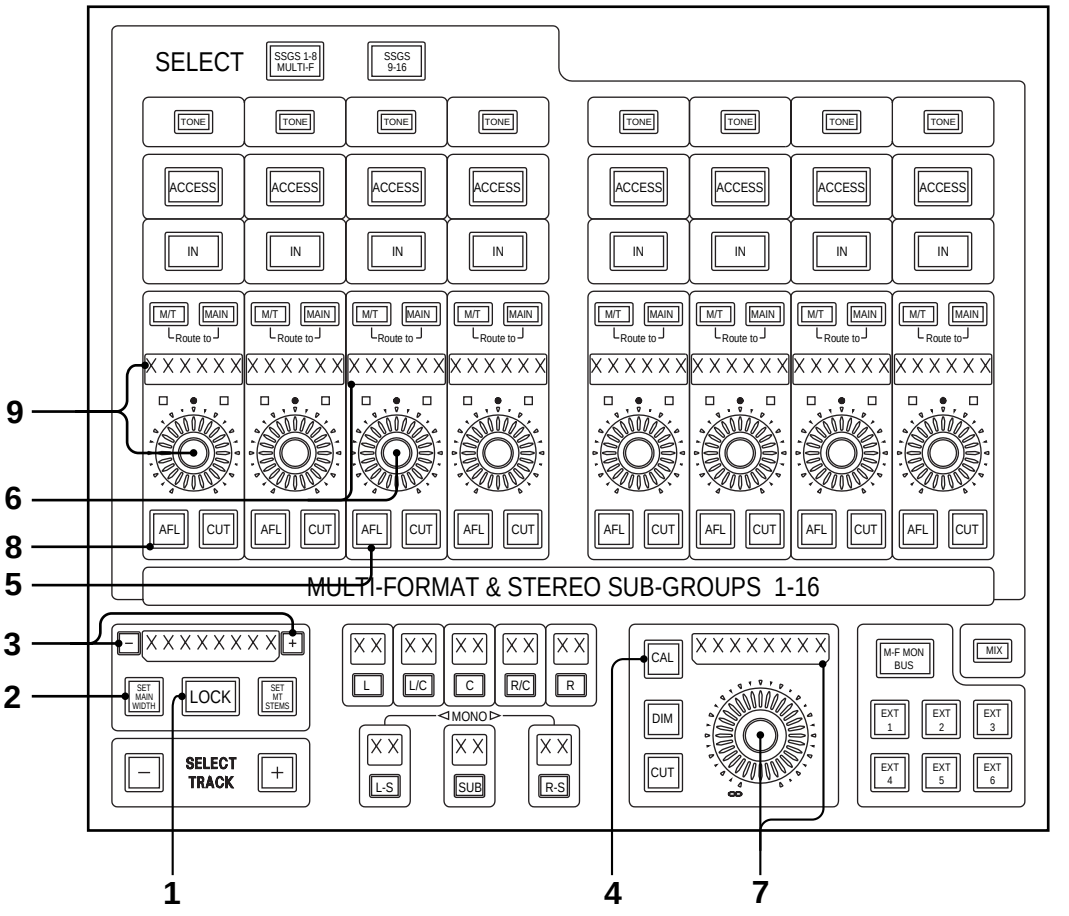
The following procedure assumes that the necessary equipment, such as a test set with a precision pink noise generator and reference calibration microphone, is available and connected to the system. Further, that all monitor amplifier input levels are set to known and fixed settings.

General

The calibration function for multi-channel LS allows trimming LS outputs as follows:

- **Overall tandem trim of +/- 20dB for all LS**
- **Individual trims of +/- 10dB for each LS**

Normal rotation of the knobs gives a fine resolution multi-turn adjustment. Push and turn knobs for coarse adjustment.



Calibration Procedure

The following calibration procedure should be carried out for each format. The settings are stored with the system.

Before calibration can begin, make sure 'CAL MODE' is set to ON in the PREFERENCES GUI found on the channel LCDs.

1 Press [LOCK] to unlock and its light goes off. It is linked to the set-up buttons and times out 10 seconds after the last button press.

2 Whilst unlocked, select [SET MAIN WIDTH] and it lights.

3 Whilst unlocked, select the desired format such that it includes all the LS outputs that need calibration.

4 Whilst unlocked, press and hold [CAL] until it starts to flash. At the same instant, all knobs and displays enter set-up mode automatically.

5 Select the [AFL] (solo) for the centre LS.

6 Adjust the trim for the centre LS to read 0.0dB in its associated dot character display.

7 Adjust the overall trim, which trims all LS in tandem, until the measuring equipment reads the required reference level. Its calibration setting will be reflected in its dot character display. The calibration for the centre LS is complete for the first format chosen.

8 Solo another LS using its AFL button.

9 Adjust its trim until the measuring equipment reads the correct level.

10 Repeat 8 and 9 for the remaining LS for the current format.

11 Repeat the whole procedure for other formats.

Specifications

General

Performance and Temperature Range

Operation of the complete system to performance specification guaranteed 10º C to 35º C. Operation guaranteed from 5º C to 40º C.

AC Input Power Requirements

Control Panel OXF-CP3048

AC100-240V~	50/60Hz	500W	7.5A×2

SP Rack OXF-SP3000

USA/Canada:	AC120V~	50/60Hz	750W 10A
Other destinations:	AC220-240V~	50/60Hz	700W 5A

I/O Rack OXF-IO3000

USA/Canada:	AC120V~	50/60Hz	240W 3A
Other destinations:	AC220-240V~	50/60Hz	240W 2A

Input Channels

- 72 FULL MONO Channels.
- 24 MONO RETURN Channels.
- 12 STEREO RETURN Channels.

Busses, Master Inputs & Outputs

- Main Stereo Bus Output.
- 8 Stereo Sub-Group Bus Outputs.
- 24 Send Bus Outputs (switchable to up to 8 stereos).
- 48 Multitrack Busses.
- 3 Stereo Control Room Monitor LS Outputs.
- 2 Studio LS Outputs with Talkback.
- 4 Stereo Foldback Group Outputs with Individual Talkbacks.
- Up to 9 Stereo External Sources Input Switcher.

Session Management™ System

- Control and storage of data for Projects, Titles, Mixes, Snapshots & Cue points.
- Fully integrated dynamic automation including machine control.
- Mix and set-up data easily transferred between systems.

Analogue I/O (2 Types - 4 or 8 channels per module)

- 4 ADCs per module with separate Mic & Line inputs.
- 8 ADCs per module with single combined Mic/Line inputs.
- 4 DACs per module ideal for monitor output.
- 8 DACs per module ideal for line output.

Digital I/O

- MADI, connected directly to the SP Rack.
- AES/EBU, 4 stereo inputs and outputs per module.
- SDIF-2 (24)
- Timecode, 9-Pin and Dash REC Ready.

Audio Specifications

Note:

1 Wherever dB values are specified, the following conventions apply:

0dBu	=	0.775V RMS Reference
0dBm	=	1mW (0.775V RMS) into 600Ω
dBfs	=	Referenced to Digital Full Scale
dBr	=	Referenced to Max. Analogue Operating Level
dB	=	Referenced to Unity Gain

2 Noise figures are measured with a bandwidth from 20Hz–20kHz.

3 The following specifications apply with FS at 48 kHz and the internal Operating Level set to +20dBu.

4 The measurements apply to a complete OXF-R3 system.

Sample Rates

44.1 - 48kHz +/- 12.5%
(The OXF-R3 always requires an external BNC audio word clock and will chase a varispeed reference)

4 Ch Analogue MIC & LINE Inputs

Gain Control

- MIC -20dB to +80dB in 1dB steps
- LINE -30dB to +20dB in 1dB steps

Input Impedance

- MIC 1.5kΩ or 100kΩ switchable
- LINE 16kΩ

Max Input Level

- MIC 50V @ 50Hz for 1 Minute
- LINE 200V DC–1kHz for 1 Minute

Noise Floor

- MIC < -124dBfs Equivalent Input Noise (Zin = 200Ω, Gain = 80dB)
- LINE < -108dBfs (Gain = 0dB)

CMRR
- MIC > 45dB 20Hz–20kHz (Gain = 0dB)
- LINE > 50dB 20Hz–20kHz (Gain = 0dB)

Frequency Response
- 20Hz–20kHz +/- 0.2dB

Distortion 20Hz–20kHz
- Full Scale Signal < -96dBfs (0.005% THD + N)
- -20dBfs Harmonic content < -115dBfs

Phantom Power
- 48V for MIC inputs, individually switched from control surface.

Crosstalk Between Inputs
- 20Hz–20kHz < -90dBfs

8 Ch Analogue MIC & LINE Inputs

Gain Control
- MIC -20dB to 80dB in 1dB steps
- LINE -30dB to +20dB in 1dB steps

Input Impedance
- MIC < 7k5Ω Balanced
- LINE < 7k5Ω Balanced

Max Input Level
- MIC 50V @ 50Hz for 1 Minute
- LINE 200V DC–1kHz for 1 Minute

Noise Floor
- MIC < -124dBfs Equivalent Input Noise (Zin = 200Ω, Gain = 80dB)
- LINE < -105dBfs (Gain = 0dB)

CMRR
- MIC > 45dB 20Hz–20kHz (Gain = 0dB)
- LINE > 50dB 20Hz–20kHz (Gain = 0dB)

Frequency Response
- 20Hz–20kHz +/- 0.2dB

Distortion 20Hz–20kHz
- Full Scale Signal: < -96dBfs (0.005% THD + N)
- -50dBfs: < -135dBfs

Phantom Power
- 48V for MIC inputs, individually switched from control surface.

Crosstalk Between Inputs
- 20Hz–20kHz < -90dBfs

4 Ch Analogue LINE Outputs

Output Type
- Electronic Floating type with performance identical, balanced and unbalanced. Maximum output level +24dBm.

Equivalent Source Impedance
- 20Hz–20kHz < 10Ω

Output Balance
- 20Hz–20kHz < 60dB (0.1%)

Minimum Destination Load
- 300Ω

Frequency Response
- 48kHz Sample Rate 20Hz–20kHz, +/- 0.2dB

Output Noise
- < -109dBr

Distortion 20Hz–20kHz
- -1dBfs: < -96dBfs (0.005% THD+N)
- -50dBfs: < -135dBfs

Crosstalk Between Outputs
- 20Hz–20kHz < -100dBfs

Stability
- Unconditional

Compliance
- +/- 15V

Short Circuit Tolerance
- Indefinite in all modes

8 Ch Analogue LINE Outputs

Output Type
- Electronic Servo type
- Maximum output level into a balanced load +24dBu
- Maximum output level into an unbalanced load +20dBu

Equivalent Source Impedance
- 100Ω

Output Balance
- 20Hz–20kHz < 46dB (0.5%)

Minimum Destination Load
- 300Ω

Frequency Response
- 48kHz Sample Rate 20Hz–20kHz, +/- 0.2dB

Output Noise
- < -104 dBfs

Distortion 20Hz–20kHz
- -1dBfs: < -90dBfs 20Hz–20kHz (0.005% THD+N)
- -50dBfs: < -120dBfs

Crosstalk Between Outputs
- 20Hz–20kHz < -100 dBfs

System Signal to Noise Performance

Since the internal architecture of the OXF-R3 is 32 bit, with a dynamic range of greater than 190dB in general, the system signal to noise ratio is almost entirely dependent upon the noise performance of its sources. Currently, the conversions from analogue to digital and back are the most critical stages.

The OXF-R3 has two types of converter module, 4 and 8 channel units. The more comprehensive 4 channel type have slightly better performance than the 8 channel units.

Although the gain control resolution is 1dB, the analogue stages are switched in 6dB steps. The 1dB steps are achieved in the digital domain, thereby amplifying the noise of the converter stages accordingly. This means that the greatest dynamic range is achieved where no digital amplification takes place. In practice, the best case noise floor set by any single input will vary depending on its gain setting as follows:

4 Ch MIC ADC Source

- Variation from -106dBfs to -112dBfs

4 Ch LINE ADC Source

- Variation from -104dBfs to -110dBfs

8 Ch ADC MIC or LINE Source

- Variation from -102dBfs to -108dBfs

Note:

The figures above are derived using a single input source. The measurement is taken from a 24 bit digital output.

Full Channels Equaliser & Filters

Section	Gain	Frequency	Q/Slope	Overshoot
LF Filter	-6dB Steps	20-500Hz	0 -36dB/Oct	-
LF Peak/Shelf	+/-20dB	20-400Hz	0.5 - 16	0 – 50% (Q adjust in ‘Shelf’)
LMF	+/-20dB	30-600Hz	0.5 - 16	-
MF	+/-20dB	100Hz-6kHz	0.5 - 16	-
HMF	+/-20dB	900Hz-18kHz	0.5 - 16	-
HF Peak/Shelf	+/-20dB	2-20kHz	0.5 - 16	0 – 50% (Q adjust in ‘Shelf’)
HF Filter	-6dB Steps	1-20kHz	0 -36dB/Oct	-

Return Channels Equaliser & Filters

Section	Gain	Frequency	Q/Slope	Overshoot
LF Peak/Shelf	+/-20dB	20-400Hz	0.5 - 16	0 – 50% (Q adjust in ‘Shelf’)
MF	+/-20dB	100Hz-6kHz	0.5 - 16	-
HF Peak/Shelf	+/-20dB	2-20kHz	0.5 - 16	0 – 50% (Q adjust in ‘Shelf’)

Dynamics

Dynamics Gain Reduction:
All levels in the table below are referenced to full scale and time constants apply to a 10dB gain change. The time constant marked * denotes a calculated value for 10dB gain change since the true figure is 40dB gain change in 20.8uS (1 sample).

Full Channels Dynamics

Section	Threshold	Ratio/Range	Attack	Hold	Release
Gate	-80 - 0dB	0 - -80dB	5µS* - 26mS	10mS - 10S	7.8 - 519mS
Expander	-60 - 0dB	0 - -80dB	0.26 - 104mS	10mS - 20S	5.2 - 519mS
Compressor	-60 - 0dB	1:1 - Limit	519µS - 52mS	10mS - 30S	52mS - 3.1S
Limiter	-60 - 0dB	-	100µS - 500mS	50mS - 30S	100mS - 10S
	Gain Make-up		**Soft Curves**		
Compressor	0-20dB		5dB, 10dB, 15dB, 20dB across Threshold		

Full Channels Dynamics Side-Chain EQ:
The 2 band side-chain equaliser can be inserted in :
- the Dynamics Side-Chain alone
- the Signal Path alone
- both the Side-Chain and the Signal Path

Section	Gain	Frequency	Q/Slope	Overshoot
LF Peak HF Peak	+/-20dB +/-20dB	20Hz - 1kHz 500Hz -20kHz	0.5 - 16 0.5 - 16	- -

Return Channels Dynamics

Section	Threshold	Ratio/Range	Attack	Hold	Release
Gate Compressor	-80 - 0dB -60 - 0dB	0 - -80dB 1:1 - Limit	5µS* - 26mS 519µS - 52mS	10mS - 10S 10mS - 30S	7.8 - 519mS 52mS - 3.1S
	Gain Make-up		**Soft Curves**		
Compressor	0-20dB		5dB, 10dB, 15dB, 20dB across Threshold		

I/O Rack System

The I/O system for the OXF-R3 utilises a universal rack design to house both analogue and digital I/O. It may, under certain circumstances, be possible to mix analogue and digital I/O modules in the same rack**.** Each rack requires AC mains power.

I/O Rack Modules

Each I/O rack contains:

- 1 x Digital Link Card Module
- Up to 10 Device Card Modules such as ADCs, DACs etc.

I/O Module	Inputs	Outputs	Con. Type	Notes
Digital Link	1 MADI RS422 General Purpose Port RS232 Diagnostic Port	1 MADI	2 BNC 75Ω (1 Optical) 1 9P-Dsub 1 9P-Dsub	For Connection to SP Rack
Analogue In	4 MIC, 4 Line (Mic & Line inputs cannot be used simultaneously)		8 XLR-3-31	112 dB Dynamic Range
Analogue In	8 MIC/Line		8 XLR-3-31	107 dB Dynamic Range
Analogue Out		4 Line	4 XLR-3-32	110 dB Dynamic Range
Analogue Out		8 Line	8 XLR-3-32	104 dB Dynamic Range
AES/EBU In	4 Stereo	4 Stereo	4 XLR-3-31	
AES/EBU Out	4 Stereo	4 Stereo	4 XLR-3-32	
SDIF-2 (24)	24 Mono	24 Mono	2 50P-Dsub	
TC In	Timecode	Timecode	1 XLR-3-31	
MIDI	In	Out	3 5P-DIN 180° + THRU CON.	
Video Ref	In		1 BNC 75Ω	
Multi Remote Control	REC/RDY tally	READY command	1 100P	
GPI	OPTO In (photo coupler)	Relay Closures	25P-Dsub	Relay & Opto 30V Max. Relay 30mA Max.

MADI Connections

MADI connections may be made directly to the SP Rack without the need for I/O Racks.

	Inputs	Outputs	Con. Type	Notes
MADI	56	56	2 BNC 75Ω (1 OPTICAL)	Connect Directly to SP Rack

Maximum I/O Configurations

Below are the maxima for each type of I/O module type per system. It should be noted, however, that the total number of audio connections, whether analogue or digital, should not exceed:
The Maximum of 448 Inputs and 448 Outputs per System

I/O Type	Maximum	Maximum Number of Modules by Type
Analogue In	128	32 4-ADC Units, 16 8-ADC Units
Analogue Out	128	32 4-DAC Units, 16 8-DAC Units
AES/EBU In	56 Stereo	4 (Inputs & Outputs on same module)
AES/EBU Out	32 Stereo	4 (Inputs & Outputs on same module)
TC/9P/MIDI/Video	1	1
GPI In/Out	12	1 (Includes 48 Tracks of Dash Record Remotes)
MADI In/Out	112	2 Connections (Direct to SP Rack)

Each I/O Rack can have up to a maximum of 56 Audio Inputs and Outputs, analogue or digital.

Dimensions & Weight

Equipment	Width	Height	Depth	Weight
24C24 Control Console	2516mm 99.1”	1046mm 41.2”	1215mm 48”	382 kg 842 lb 3 oz
24C0 Control Console	1620mm 63.9”	1046mm 41.2”	1215mm 48”	221 kg 487 lb 4 oz
Signal Processor Rack	480mm 19”	670mm 26.5” (15U)	600mm 23.7”	60 kg 132 lb 4 oz
Analogue Digital I/O Rack	480mm 19”	315mm 12.5” (7U)	455mm 18.0”	25 kg 55 lb 2 oz

Supplied Accessories

OXF-CP3048: Control Panel

Power Cable	... x2
Operation Manual	... x1

OXF-SP3000: SP Rack

PCI I/F Cable	... x1
Power Cable	... x1

OXF-IO3000: I/O Rack

Power Cable	... x1

DMSK-R3/3096: Digital Console Software

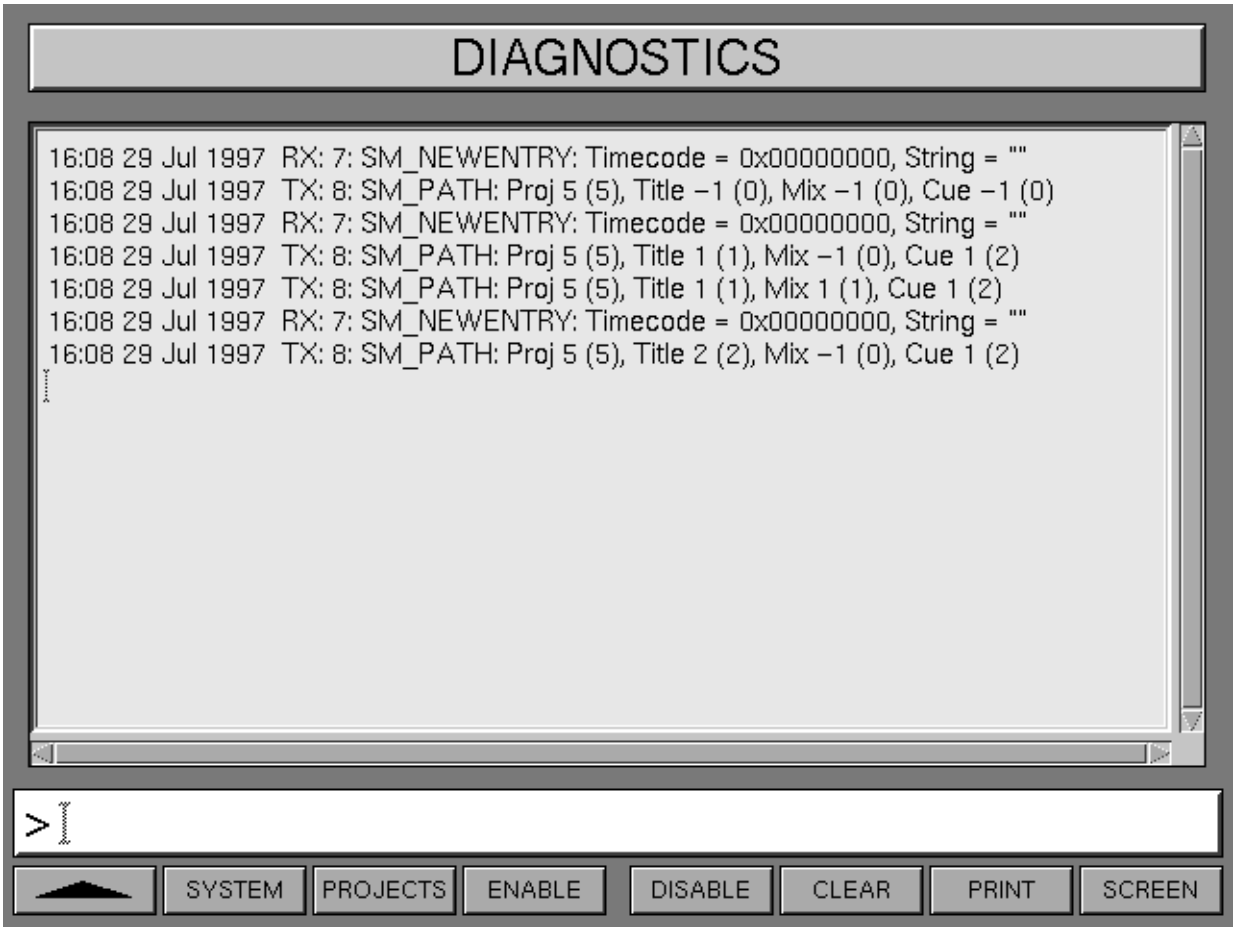
Software Disk License Agreement	... x1

Product Identities

Model Name	Product Code
OXF-R3	Sony Digital Audio Mixing Console
OXF-R/24	Sony Digital Audio Mixing Console
OXF-CP3024	Sony Control Panel
OXF-CP3048	Sony Control Panel
OXF-SP3000	Sony SP Rack
OXF-I/O3000	Sony I/O Rack
DMBK-R3001	Sony Mic/Line A/D Converter
DMBK-R3002	Sony Monitor D/A Converter
DMBK-R3003	Sony Line A/D Converter
DMBK-R3004	Sony Line D/A Converter
DMBK-R3005	Sony SP Board
DMBK-R3006	Sony SP Link Board
DMBK-R3007	Sony SDIF-2 Board
DMBK-R3008	Sony AES/EBU D I/O Board
DMBK-R3009	Sony Timecode Board
DMBK-R3010	Sony GPI Control Board
DMBK-R3011	Sony Producer Desk
DMBK-R3010	Sony Speaker Stand
DMSK-R3096	Sony Digital Console Software

OXF-R3 Diagnostics

Operator Diagnostics are not available in this version. The following screen pages are included in the OXF-R3 for the use of Qualified Service Personnel.



Diagnostics screen page

Index

G

I

L

M

N

O

OXF-R3 (UC/CE)
3-860-150-**04**(1)

Sony Corporation
Broadcasting & Professional Systems Company

Printed in Japan
1999.08.13