RM1d/RM1ds Digital Radio Console User Guide

Software Version 3.0

Safety Guide

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IMPORTANT

Please read this manual carefully before connecting your Interface to the mains for the first time.

This equipment complies with the EMC Directive 89/336/EEC and LVD 73/23/EEC and 93/68/EEC

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Part No. ZM0277

Issue 3.0

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Warranty

1 **Soundcraft** uses trading divisions of Harman International Industries Ltd .

End User means the person who first puts the equipment into regular operation.

Dealer means the person other than Soundcraft (if any) from whom the End User purchased the Equipment, provided such a person is authorised for this purpose by Soundcraft or its accredited Distributor.

Equipment means the equipment supplied with this manual.

2 If within the period of twelve months from the date of delivery of the Equipment to the End User it shall prove defective by reason only of faulty materials and/or workmanship to such an extent that the effectiveness and/or usability thereof is materially affected the Equipment or the defective component should be returned to the Dealer or to Soundcraft and subject to the following conditions the Dealer or Soundcraft will repair or replace the defective components. Any components replaced will become the property of Soundcraft.

3 Any Equipment or component returned will be at the risk of the End User whilst in transit (both to and from the Dealer or Soundcraft) and postage must be prepaid.

4 This warranty shall only be valid if:

A) the Equipment has been properly installed in accordance with instructions contained in Soundcraft's manual; and

B) the End User has notified Soundcraft or the Dealer within 14 days of the defect appearing; and

C) no persons other than authorised representatives of Soundcraft or the Dealer have effected any replacement of parts maintenance adjustments or repairs to the Equipment; and

D) the End User has used the Equipment only for such purposes as Soundcraft recommends, with only such operating supplies as meet Soundcraft's specifications and otherwise in all respects in accordance Soundcraft's recommendations.

5 Defects arising as a result of the following are not covered by this Warranty: faulty or negligent handling, chemical or electro-chemical or electrical influences, accidental damage, Acts of God, neglect, deficiency in electrical power, air-conditioning or humidity control.

6 The benefit of this Warranty may not be assigned by the End User.

7 End Users who are consumers should note their rights under this Warranty are in addition to and do not affect any other rights to which they may be entitled against the seller of the Equipment.

IMPORTANT SAFETY INSTRUCTIONS

- **CAUTIONS**

  To avoid the risk of fire, replace the mains fuse only with the correct type and value fuse, as marked on the rear panel.

- **ATTENTION**

  Afin de réduire le risque de feu remplacer seulement avec fusible de même type.

- **REPLACING MAINS FUSE**

  Switch the ON/OFF switch to the OFF position. Remove the mains lead from the connector. Use a small screwdriver to prise the fuse carrier from its location in the connector. Check the fuse and replace if necessary; also check that the voltage selection is correct for the mains supply level before switching the unit ON again. If the mains fuse fails repeatedly this may be because an electrical safety hazard exists. The unit must be taken out of service and referred to the Soundcraft/Spirit dealer from where the equipment was purchased.

- **THIS UNIT MUST BE EARTHED**

  Under no circumstances should the mains earth be disconnected from the mains lead.

- **ATTENTION**

  Cet appareil doit être branché à la terre.

- The wires in the mains lead are coloured in accordance with the following code:

Earth:	Green and Yellow (Green/Yellow - US)
Neutral:	Blue (White - US)
Live:	Brown (Black - US)

  As the colours of the wires in the mains lead may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

  The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol.

  The wire which is coloured Blue must be connected to the terminal in the plug which is marked with the letter N.

  The wire which is coloured Brown must be connected to the terminal in the plug which is marked with the letter L.

- Ensure that these colour codings are followed carefully in the event of the plug being changed.

- 

  AVIS: RISQUE DE CHOC ELECTRIQUE
  - NE PAS OUVRIR

- This unit is capable of operating over a range of mains voltages as marked on the rear panel. It is important to ensure that the correct mains fuse is fitted before switching on the unit.

WARNINGS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- This unit contains no user serviceable parts. Refer all servicing to a qualified service engineer, through the appropriate Soundcraft dealer.
- Do not use this apparatus near water.
- Clean only with a damp cloth.
- Do not block any of the ventilation openings. Install in accordance with the manufacturers instructions.
- Do not install near any heat sources such as radiators, heat resistors, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. when the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as power-supply cord or plug is damaged., liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
- It is recommended that all maintenance and service on the product should be carried out by Soundcraft or its authorised agents. Soundcraft cannot accept any liability whatsoever for any loss or damage caused by service, maintenance or repair by unauthorised personnel.



- Use only with a cart, stand, hood, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart apparatus combination to avoid injury from tip-over.

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Introduction

NOTE! All information given in bracketed italics refers to the RM1d/s exclusively

Introduction

Thank you for purchasing the oundcraft RM1d Broadcast mixing console, which is brought to you with much pride by the Soundcraft team. Your RM1d console has been manufactured exclusively by Soundcraft in the UK, combining state of the art technology with nearly 30 years of experience in professional console design. The Soundcraft range gives you premier audio quality and features, whatever your mixing requirements.

As always, we welcome User Feedback as part of our ongoing commitment to improving and developing Soundcraft products to the highest degree. Please send any comments to the address on the rear cover of this manual, or e-mail: info@soundcraft.com. Please also visit our website regularly to see the latest product information and software updates at: http://www.soundcraft.com/.

Quick start
See Section 2 Commissioning and Familiarisation but please skim through Section 1 first which serves as a quick reference and an overview of the RM1d.

The Soundcraft RM1d

The RM1d is designed first and foremost as a Broadcast Radio Console, which can simply drop in to any existing setup with a minimum of fuss. This might be as a replacement for older analogue equipment or integration into a totally digital environment. The instantly familiar 'analogue' control style of the RM1d, ensures that users do not have to 'battle' with the technology in order to start using the powerful features on offer. The added benefits of automation to the professional Radio Presenter are obvious - simple single button recall of a complete console state with effects, routing and EQ all configured according to the user's preferences. Whether in a Studio or in an Outside Broadcast vehicle, the RM1d will offer the user repeatable, detailed control over a powerful feature set, in a simple and uncomplicated manner.

All of this control would have been little use without the class-leading intuitive interface incorporating the EDIT STRIP, which allows fast access to all audio parameters on the console, when used in conjunction with the EDIT button present on each channel. Avoiding time-sapping screen based systems, the "Tap and Adjust" functionality of RM1d provides even the first-time operator with a familiar channel strip and conventional meter bridge.

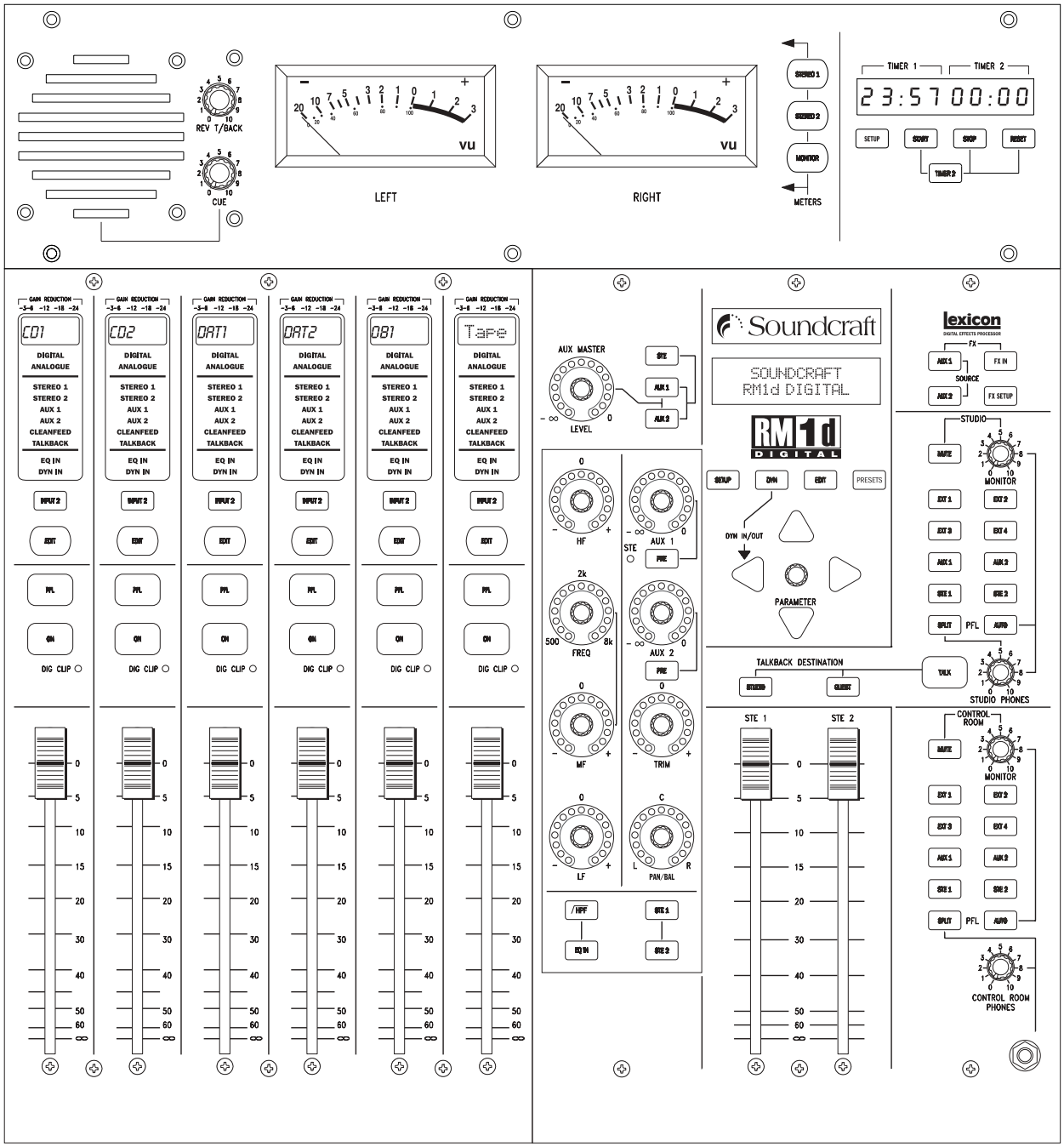
Each channel has full access to the EDIT STRIP, which offers 3 band EQ with Semi-Parametric Midrange Equalisation, variable High Pass Filter and 2 Auxiliary Sends, a digital Trim control with a range of ±12dB and a Pan / Balance control. Every channel has an assignable stereo dynamics processor offering a choice of compression, limiting and gating facilities.

The on-board Lexicon effects processor can be accessed from any channel by configuring either the Aux 1 or Aux 2 send to operate as an effects send.

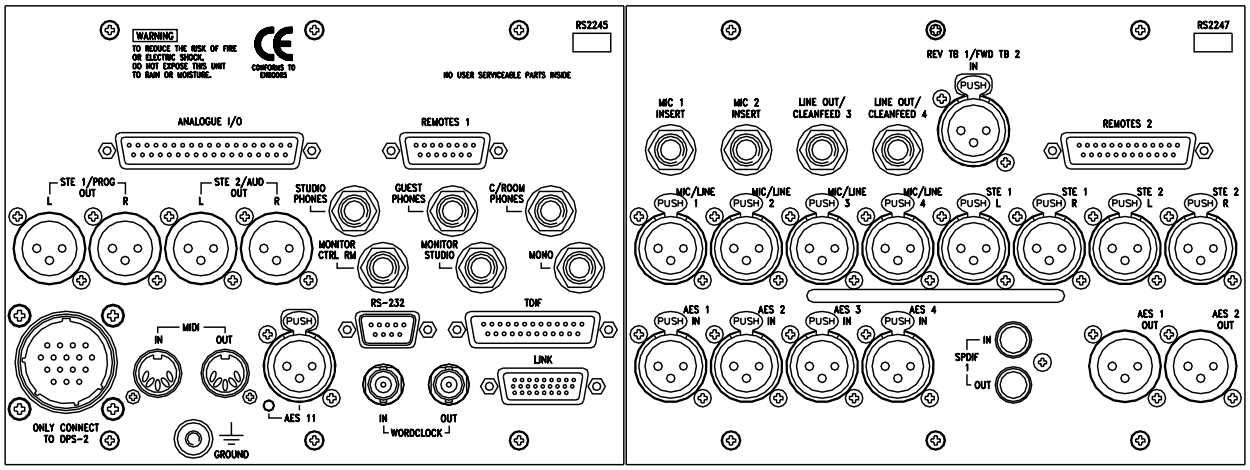
Immediacy is critical in the Broadcast environment and so it was important to have controls on each channel like INPUT 2 switching. Also included are advanced but simple to use functions, like how the Channel On buttons or Fader movements can trigger remote equipment, and how the PFL button can activate talkback to cleanfeeds if required. Comprehensive talkback facilities and compatibility with existing systems, ensure that the user is never out of touch even during the most complex of outside broadcast Links.

The built-in Midi Ports allow full Backup and Restore of Console Presets via Midi System Exclusive data transfers.

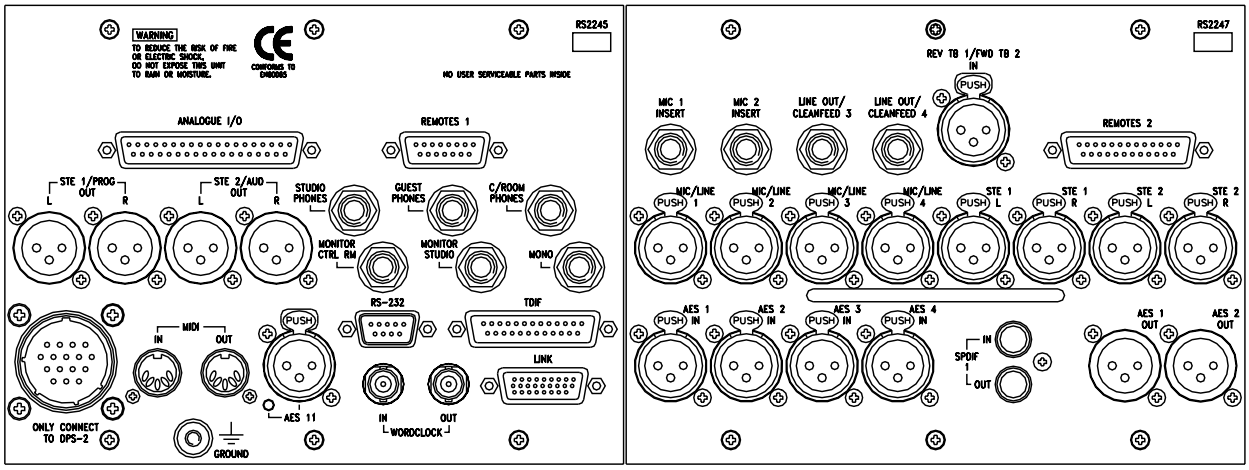
Console Shown is RM1d 6-Fader Version



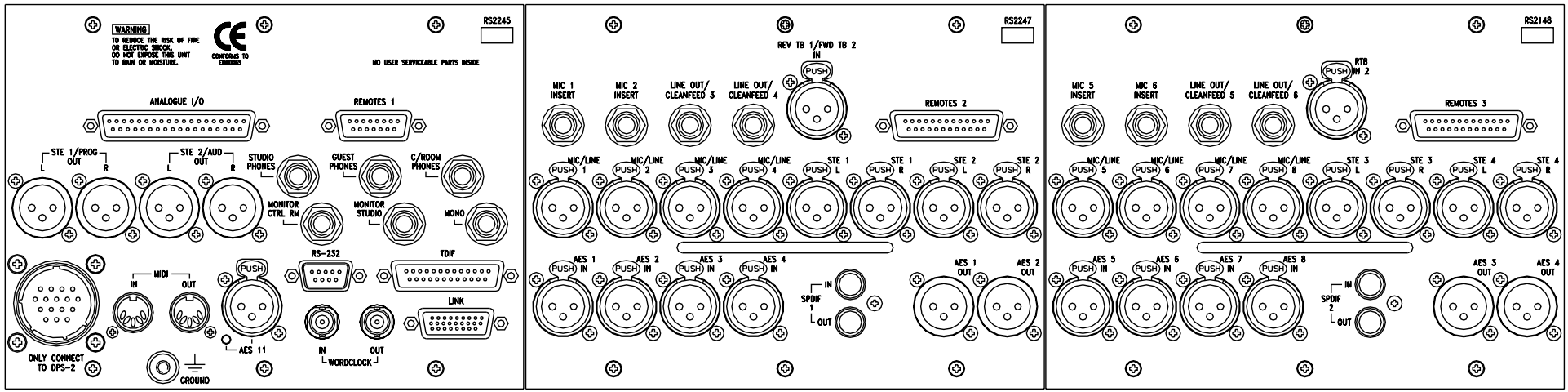
RM1d/s 6-Fader Rearcon



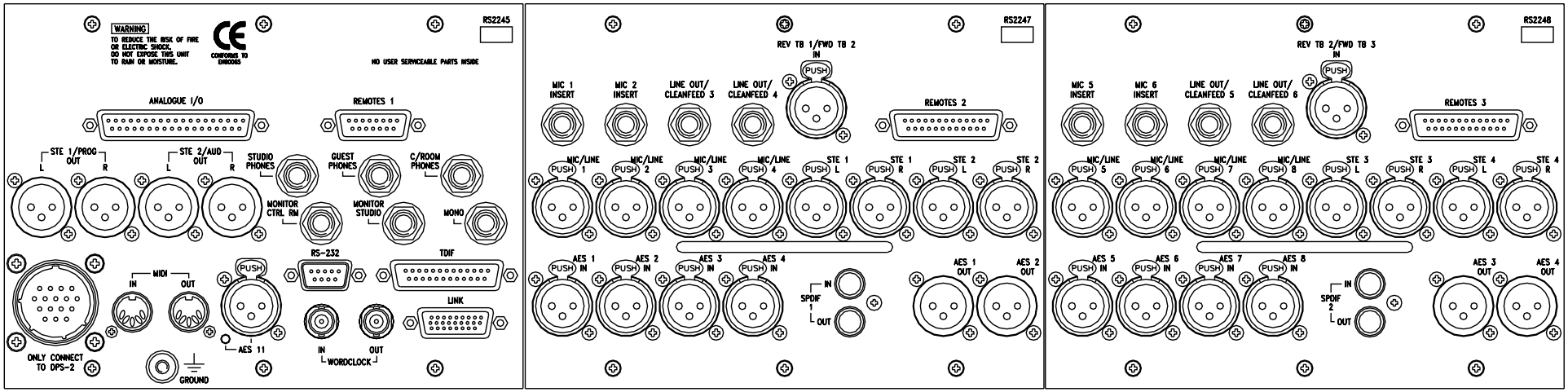
RM1d 6-Fader Rearcon



RM1d/s 12-Fader Rearcon



RM1d 12-Fader Rearcon



Key Features

NOTE: Figures in brackets represent the 12 Fader version of the RM1d

The RM1d offers the following features:

- 6 (12) assignable 100mm faders
- Meter Bridge with choice of VU or PPM metering
- Built-In Cue / Rev Talkback Loudspeaker
- 2 flexible timers for Logging and Scheduling
- Flexible Routing of Inputs
- Easy to use 'analogue' style user interface.
- External monitor muting and equipment control via assignable contact switch outputs
- External control inputs for 'Cough' muting & enabling Reverse Talkback
- Independently assignable Line / Talkback / Cleanfeed Outputs with 'Mix Minus' faciltiy
- Built in LexiconTM Digital Effects processor with 128 available FX presets
- Assignable Channel Dynamics
- 128 desk presets for storage and recall of digital console parameters
- Backup and Restore of Snapshot, Dynamic and FX presets via Midi
- Software upgrades via built in RS232 port
- Backlit LCD Screen for Parameter editing, Global setup and Configuration

NOTE: All information given in bracketed italics refers to the RM1d/s exclusively

Feature Overview

Analogue Inputs

The Soundcraft RM1d offers 4 (8) assignable Mic / Line inputs, using digitally controlled Mic pre-amps. 2 (4) Mic / Line Inputs have an analogue insert point using a Stereo Jack plug, and all have a Gain range from 0dB to +60dB with switchable +48V phantom power. 2 (4) Stereo Inputs are also available with a Gain range from 0dB to +18dB. There are 4 Stereo External Inputs accessible via a 37 pin D sub connector (FEM), with a Gain range from 0dB to +18dB and all of the above inputs feature 24 bit 128 x oversampling A/D converters.

A further 8 analogue inputs can be achieved by connecting either the Soundcraft Mic/Line Interface box, or the Soundcraft Analogue Interface box to the TDIF port found on the rear of the RM1d.

Analogue Outputs

The RM1d offers an array of Analogue Outputs. There are balanced XLR outputs for the STE1 *(PROG)* and STE 2 *(AUD)* mix busses and unbalanced outputs for control room and studio monitors. Headphone outputs for guest, studio and Control Room phones are supplied with a duplicate Control Room headphone socket located on the front panel.

Outputs for auxiliary busses 1 & 2, line/clean-feed busses 1 & 2, Stereo PFL, Mono PFL and cue speaker are located on the 37 way D-sub connector.

A further 8 analogue outputs can be achieved by connecting either the Soundcraft Mic/Line Interface box, or the Soundcraft Analogue Interface box to the TDIF port found on the rear of the RM1d.

Digital Inputs

4 (8) dedicated AES/EBU Inputs, and 1 (2) SPDIF Input for connecting CD, Minidisc and DAT Machines are provided on the rear of the RM1d. Additional digital inputs are accessed by an 8 Channel TDIF connector. With the exception of the TDIF inputs, all other digital inputs are equipped with Sample Rate Converters (SRC), simplifying setup and eliminating the need for all devices in the system to share a common word clock. All digital inputs can be routed freely to any channel in exactly the same way as the analogue inputs, and therefore have the same access to the EDIT STRIP. (There are limitations regarding the routing of the SPDIF inputs - see section 4.2 - Assign channel).

A further 4 AES/EBU inputs (4 stereo or 8 mono) can be achieved by connecting the Soundcraft AES/EBU Interface box to the TDIF port.

Digital Outputs

There are 2 (4) AES /EBU digital output connectors provided on Male XLR, and 1 (2) SPDIF output via a RCA/phono connector. The TDIF connector also provides an additional 8 digital outputs that can be configured to output a variety of mono or stereo sources.

A further 4 AES/EBU outputs (4 stereo or 8 mono) can be achieved by connecting the Soundcraft AES/EBU Interface box to the TDIF port.

Main Meters

The RM1d has comprehensive metering using 3 easily selected modes that show either the STE *(PROG)* or STE 2 *(AUD)* output busses or which monitor the control room selection.

Metering can be specified at the time of ordering with either VU or PPM characteristics, the latter with 1-7, DIN or EBU scales.

Faders

The 100mm long throw faders found on the RM1d work just as you would expect on an analogue console. The top end of the fader is calibrated at 0dB (Unity Gain). The Master Faders can be bypassed via the SETUP Menu so that both STE bus outputs are fixed at Unity Gain.

Edit Strip

The EDIT STRIP places the main controls found on a conventional analogue channel strip, in one central easy-to-access area. The EDIT STRIP has 3-band equalisation, variable High Pass Filter, 2 Stereo-linkable Aux Sends which can be switched either Pre or Post channel fader, a Digital Trim control and a PAN /BALANCE control together with STE 1 *(PROG)* and STE 2 *(AUD)* assignment buttons.

Lexicon Effects Processors

The RM1d features a built-in Lexicon Stereo FX Processor that includes Reverb, Delay, Chorus and Flange effects and is fed from AUX Sends 1& 2. Customised effects can be stored in user libraries for later recall.

Stereo Dynamics Processors

Each channel has a Dynamics Processor that is automatically configured depending on the channel source, for either Mono or Stereo operation. It is positioned before the digital TRIM & EQ controls so that limiting can occur during signal peaks.

Snapshot Presets

Complete recall of all console settings can be stored in up to 128 PRESET memory locations for recall.

Audio quality

All analogue inputs and outputs on the RM1d have 24 bit 128 x oversampling Analogue to Digital/Digital to Analogue (AD/DA) converters, ensuring wide dynamic range and superb sonic performance.

Commissioning

Restoring the Factory Default Presets

If your console has been used by someone else previously, you might find it useful to set the control surface back to its default or 'null' position before attempting to go through the start-up guide.

This will avoid confusion as no signals will be routed to any 'hidden' destinations and no other processing of any kind will be applied to any of the signals.

Please note that resetting the control surface to its factory default settings does not delete any of the Snapshots Presets, FX Presets or Dynamics Presets.

To reset the control surface to the factory default settings:

1 Press the PRESETS button.

2 Now turn the PARAMETER encoder fully to the left (anti-clockwise) until the LCD display reads:



3 Now press the DOWN ARROW button to make thr 'Recall Preset' field flash

4 Press the flashing PRESETS button again to recall the factory settings.

NOTE: ***If the display stops at Preset 1 it means that Lockout is ON preventing you from*** **recalling factory default settings. See Menus 4.26.**

NOTE: ***To re-initialise the RM1d completely returning it to the state it was when it left the factory, please refer to section 12 'Re-Initialising the RM1d'.***

Commissioning

Getting Started

The goal of this section is to quickly take you through the installation procedure and basic features of the RM1d.

We will get a signal into the console on Channel 1, give it a custom name, route it to the Mix outputs, add some EQ and then add some Reverb.

Before you Start

Ensure the DPS-2 power supply is NOT connected to the Mains and is turned OFF.

The Power supply can be positioned anywhere within reach of the RM1d and an available power socket, but is best rack-mounted in a position where airflow through the vents is not obstructed and where the power switch or cables cannot be accidentally knocked.

Although not essential to the correct operation of the RM1d, a maintained power feed (UPS) is recommended to protect the station output in case of mains failure. However, if an UPS is to be shared with other items of equipment, ensure that the total load does not exceed the rated specification of the UPS.

Connect the multi-way power cable between the DPS-2 External Power Supply and the RM1d Power connector. Screw the connector locking ring clockwise on both units to secure the cable. The locking ring should be firm, but not tight. Connect an IEC type mains cable with the plug fused at 3 AMPS, to the mains input socket on the DPS-2. Connect the other end to the nearest plug socket and switch on the power to the DPS-2.

The RM1d should take around 40 seconds to boot up. Please be patient! (It is quite normal for all the LEDs on the control surface to light up while booting).

Test Audio Hook-up

For the purpose of this section we will simply use a microphone connected to a MIC/LINE Input. It is assumed that an amplifier with some speakers is connected to the Left and Right STE 1 *(PROG)* outputs.

NOTE: This is a TEST configuration only. The STE outputs are normally used to carry station output. Speakers should normally be connected to the MONITOR outputs.

Before starting, make sure that both STE Main Faders are at - infinity to prevent any unexpected feedback.

Input Assignment

The first step is to decide which input - in this case Mic Input 1 - we want to use and assign it to either INPUT 1 or INPUT 2 of one of the channels found on the RM1d. In this example we are going to use INPUT 1 of channel 1:

1. Press the **SETUP** button and use the PARAMETER encoder to scroll alphabetically to the ASSIGN CHANNEL menu.

2. Press the **SETUP** button again to enter ASSIGN CHANNEL mode.

3. Press the **EDIT** button on channel 1, and then make sure that INPUT 1 is selected (the **INPUT 2** button should not be illuminated). You will notice that the display on the LCD screen will show your selection.

4. Now use the PARAMETER encoder to scroll through the list of named sources, until you find 'Mic/Line 1'. As you scroll through the different input choices, notice how the input names also change in the display found at the top of channel 1

5. You have now assigned Mic/Line 1 to INPUT 1 of channel 1.

   Press the **SETUP** button again to exit SETUP mode.

Input Naming

Although not essential, you may choose to give the input a custom name for ease of recognition. This is limited to four (4) characters.

1. Press the **SETUP** button and use the PARAMETER encoder to scroll alphabetically to the INPUT NAMING menu.

2. Press the **SETUP** button again, the left hand field of the display will flash. Select MIC/LINE 1 using the PARAMETER encoder.

3. Use the **RIGHT** and **LEFT ARROW** buttons to then position the cursor over any of the 4 character spaces in the right hand field of the LCD. 'Character-by-character', use the PARAMETER encoder to scroll through the whole alphanumeric character list, or press the **UP ARROW** button to increment through the NUMBERS or the **DOWN ARROW** button to delete the current character or insert a space.

4. Press the **SETUP** button again to exit SETUP mode.

Connecting an Input

Now that we have assigned Mic/Line 1 to INPUT 1 of channel 1, we need to adjust the input level of the microphone.

1. Press the **SETUP** button under the LCD display and use the PARAMETER encoder to scroll alphabetically to the ANALOGUE INPUTS menu.

2. Press the **SETUP** button again, which should be flashing. Use the PARAMETER encoder to select 'Mic/Line 1'.

3. If the microphone you are using requires 48v phantom power then press the **RIGHT ARROW** button to move to the PHANTOM POWER setting, where you can turn the phantom power for that input ON or OFF by pressing the DOWN ARROW to move to the ON/OFF field then using the PARAMETER encoder.

4. Press the **LEFT ARROW** button to move to the GAIN section.

5. Press the PFL *(CUE)* button on channel 1 and the **MONITOR** button next to the VU or PPM meters found on the meter bridge.

6. You may now use the PARAMETER encoder to adjust the input level of the microphone and monitor the input level on the VU or PPM meter.

7. Once you are happy with input level, press the **SETUP** button again.

You should note that the Mic/Line inputs can be used for either Microphone or Line level input signals. There is no difference in hardware, only you will need to apply more gain to Mic inputs than to Line inputs.

It is however CRUCIALLY important to ensure that PHANTOM POWER is only used when it is needed to avoid potential damage to either the source outputs or the console inputs.

NOTE: Always ensure that Phantom Power is TURNED OFF before connecting to ANY of the MIC/LINE inputs on the Rear of the RM1d. This caution applies also to the RTB input which functions in the same manner.

Channel Output Assignment

You will need to assign Channel 1 to the STE 1 *(PROG)* Master bus output in order to monitor the input signal.

To do this:

1. Press the **EDIT** button on the channel strip, that has Mic Input 1 assigned to it.

2. Press the **STE 1** *(PROG)* button on the EDIT STRIP to assign the selected channel. You will notice the STEREO 1 *(PROGRAM)* legend will illuminate in the status window.

3. Now slowly raise the Master Fader for STE 1 *(PROG)*, (in the Master Section on the right of the RM1d), followed by the Fader for Channel 1. You should now be able to speak into the Microphone, and hear the signal through the speakers connected to the STE 1 *(PROG)* output bus. Be Careful to avoid feedback!

Add Some Equalisation to the Signal

When an **EDIT** button is pressed on a channel the EDIT STRIP becomes active on that selected channel and offers facilities such as panning, equalisation, 2 auxiliary sends and a trim control. To use EQ do the following:

1. Press the **EDIT** button on channel 1
2. The EDIT STRIP is now active for channel 1
3. Press the **EQ IN** button to switch the EQ 'On'.
4. Use the 3 band EQ to make adjustments.
5. You can see the frequencies you are currently adjusting on the LCD display by pressing the EDIT button beneath the LCD display screen.

Add Some Reverb to the signal

Adding an internal reverb effect to a signal is just like working with an external effect processor, but the signal remains in the digital domain at all times without the need for cables. As you would expect we will need to send a signal into the effects processor and blend the return signal into the mix.

1. Select the **AUX 1** Source button on the LEXICON™ Section, this tells the in-built effects unit to receive its input from Aux 1.
2. Ensure the **FX IN** button is illuminated to activate the effects unit.
3. Press the **FX EDIT** button to enter the FX menu.
4. Press the flashing PRESETS button.
5. Now use the PARAMETER encoder to select 'Large Hall' from the factory presets.
6. Press the DOWN arrow button to select the lower line of the LCD display and the use the PARAMETER encoder to select FX Preset Recall.
7. Press the flashing PRESETS button to recall the effect.
8. Next, ensure that the EDIT STRIP is selected for Channel 1 by pressing the **EDIT** button on that channel.
9. Select the **AUX 1** button next to the AUX MASTER control and turn the control fully clockwise.
10. Bring up the fader for Channel 1 along with the STE 1 *(PROG)* MASTER fader so that you can hear your microphone.
11. Now gradually adjust the AUX 1 control to the right of the HF control on the EDIT STRIP until you can hear the effect being mixed in with the microphone signal. You will notice that the AUX 1 legend will illuminate in the channel's status window.

Normal Configuration

Now that you have confidence that the signals do appear on the main program outputs, this would be a good time to unplug the amplifier driving your speakers from the STE 1 L & R *(PROG)* outputs, and connect it to the control room monitor (MONITOR CTRL RM) output using a Stereo 1/4" Jack plug.

Although many studios have their own designations, for our monitoring purposes the room in which the RM1d is located is termed the 'Control Room', and a separate area, (e.g. an interview booth or talk studio), would be termed the 'Studio'.

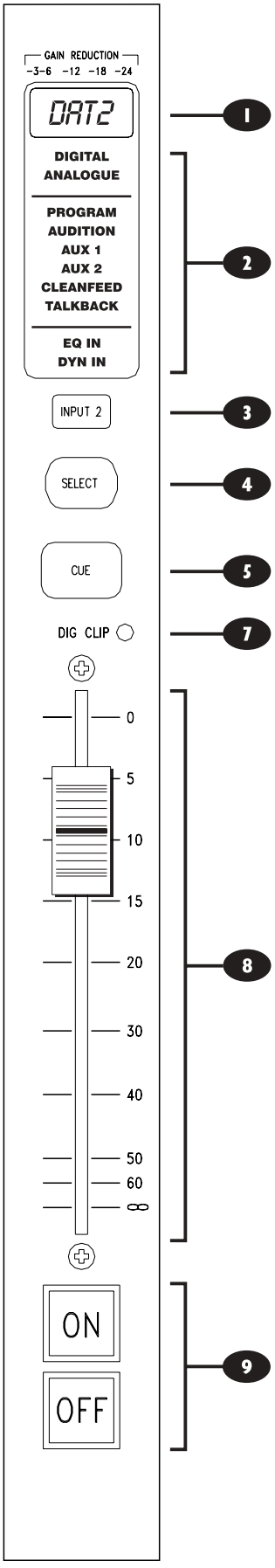
You may find that with the speakers connected to this Monitor output, you can no longer hear the Microphone connected to Channel 1.

You can select a variety of Monitor sources for your Control Room and Studio speakers. In this instance you should select the STE 1 *(PROG)* button on the Control Room Monitor panel.

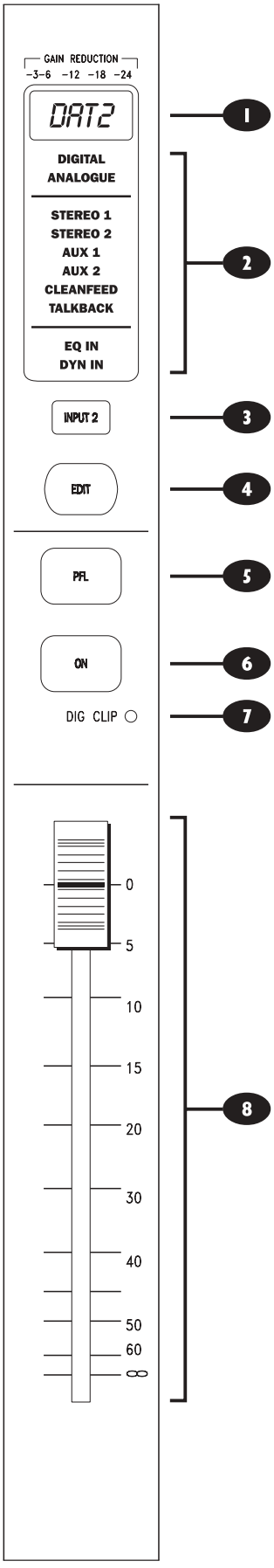
The volume of the speakers can be adjusted using the Monitor control and the speakers can be entirely silenced by pressing the MUTE button. Note that these controls affect only what is heard through the monitors and headphones, NOT what is sent to AIR over the main STEREO programme outputs.

Control Surface

RM1ds


GAIN REDUCTION
-3-6 -12 -18 -24
DAT2
DIGITAL
ANALOGUE
PROGRAM
AUDITION
AUX 1
AUX 2
CLEANFEED
TALKBACK
EQ IN
DYN IN
INPUT 2
SELECT
CUE
DIG CLIP
0
5
10
15
20
30
40
50
60
∞
ON
OFF
1
2
3
4
5
7
8
9

RM1d


GAIN REDUCTION
-3-6 -12 -18 -24
DAT2
DIGITAL
ANALOGUE
STEREO 1
STEREO 2
AUX 1
AUX 2
CLEANFEED
TALKBACK
EQ IN
DYN IN
INPUT 2
EDIT
PFL
ON
DIG CLIP
0
5
10
15
20
30
40
50
60
∞
1
2
3
4
5
6
7
8

The Channel Strip

INPUT Display

The 4 Character Display (1) indicates the currently active channel input.

Status Window

The Status Window (2) contains individual displays that give constant visual information of:

- Whether the input source is ANALOGUE or DIGITAL
- Whether the channel is assigned to the STEREO 1 *(PROGRAM)* or STEREO 2 *(AUDITION)* output busses.
- Whether the AUX 1 or AUX 2 sends are active on the selected channel. (The legend will illuminate as soon as either of the AUX 1 or AUX 2 sends are opened)
- Whether the channel has been configured as a CLEANFEED source.
- Whether the channel has been configured as the Talkback channel
- Whether the **EQ IN** button is active on the channel
- Whether the channel's Dynamics Processor is active or not. (DYN IN)

INPUT 2 Button

The **INPUT 2** button (3) indicates whether Input 1 or Input 2 is the current input source for the channel. If the **INPUT 2** button is extinguished then Input 1 is active. If the **INPUT 2** button is illuminated then Input 2 is active.

NOTE: The Reverse Talkback and External Monitor inputs cannot be used as a channel input

EDIT Button

When the **EDIT** button (4) is pressed, the Edit Strip will be assigned to the selected channel. The **EDIT** button is also used in conjunction with some of the SETUP Menus, for fast configuration of console functions.

PFL (CUE) Button

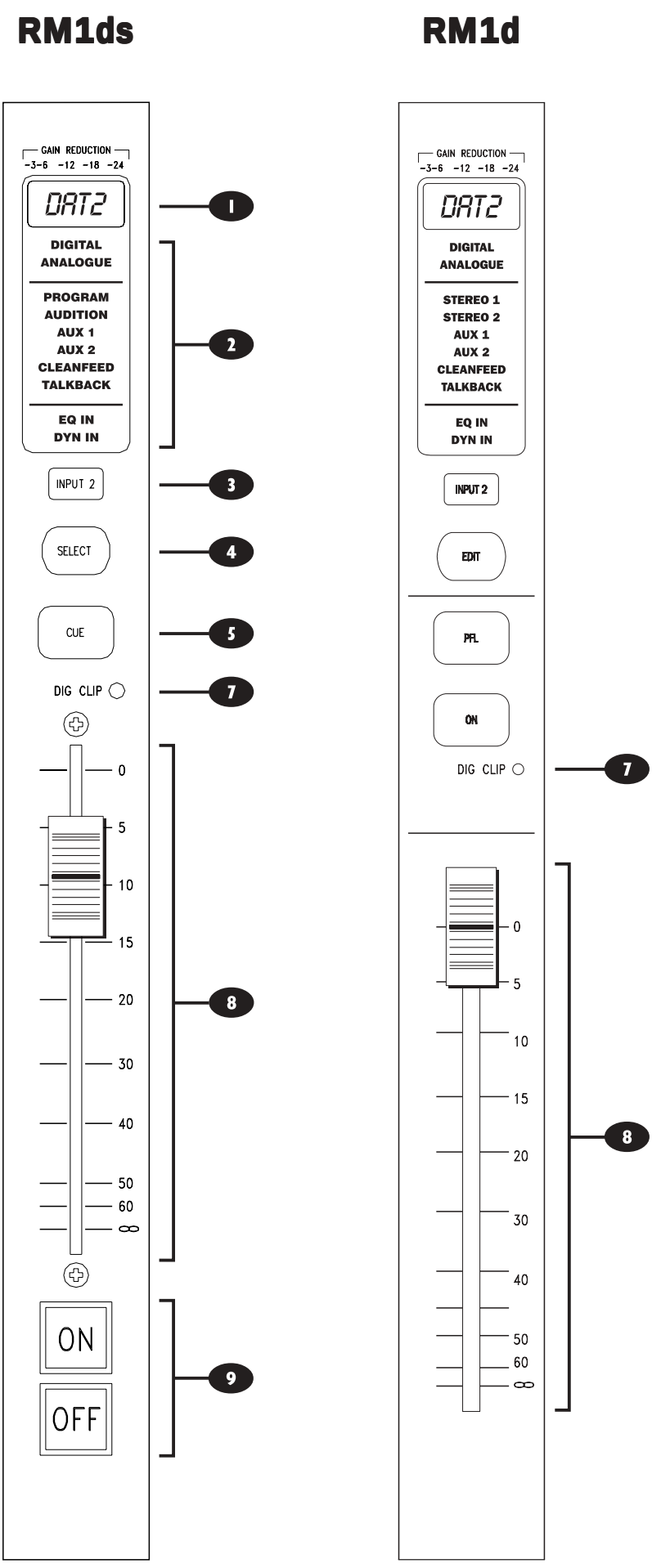
The **PFL** *(CUE)* button (5) places the channel source onto the Pre Fade Listen *(CUE)* bus. This allows the presenter to listen to any channel source before the fader is opened.The **PFL** Button *(CUE)* can also be used in conjunction with the **TALK** button (28) to send Talkback, usually the presenter's microphone, to a designated Cleanfeed output. The **PFL** *(CUE)* button can be latched by giving it a short press or alternatively it can have a momentary action by holding it down.

ON Button (RM1d only)

The **ON** button (6) turns the channel On or Off. It can also be configured in the SETUP Menu to trigger external equipment using the remote relay ports.

DIG CLIP LED

The **DIG CLIP** LED (7) indicates clips occurring in the digital domain.

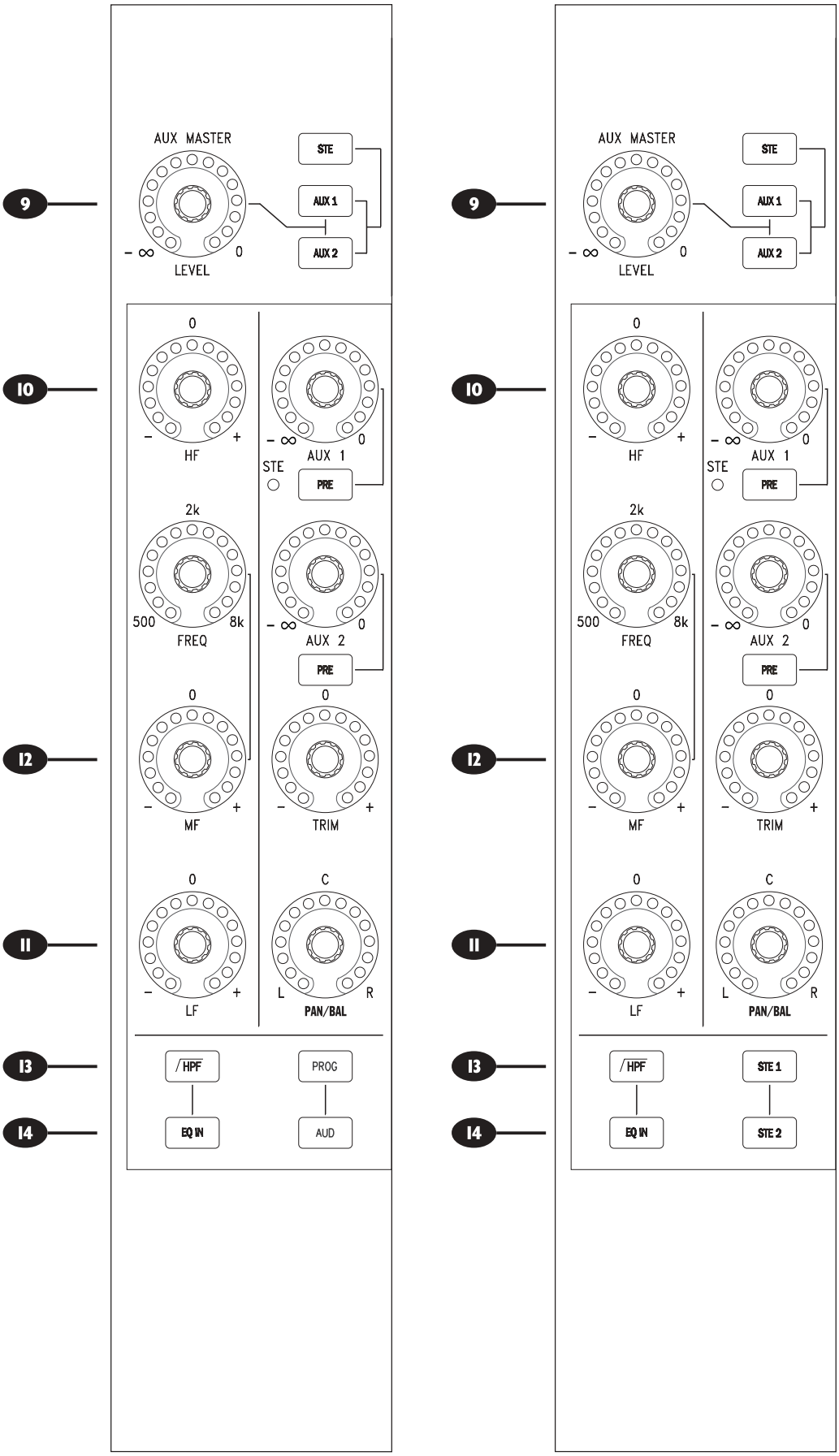

RM1ds
RM1d
GAIN REDUCTION
-3-6 -12 -18 -24
DAT2
DIGITAL
ANALOGUE
PROGRAM
AUDITION
AUX 1
AUX 2
CLEANFEED
TALKBACK
EQ IN
DYN IN
INPUT 2
SELECT
CUE
DIG CLIP
0
5
10
15
20
30
40
50
60
∞
ON
OFF
STEREO 1
STEREO 2
EDIT
PFL
ON
1
2
3
4
5
7
8
9

Channel Fader

The channel fader (8) is a high quality 100mm fader with a logarithmic scale. Any channel fader can be configuredin the SETUP Menu to Start external equipment and also trigger the RM1d's on board timers.

ON/OFF BUTTONS (RM1d/s only)

The ON/OFF BUTTONS (9) are used to switch the channel On and OFF. They may also be used for triggering external devices using the remote relay port.


RM1ds
RM1d
9
10
12
11
13
14
AUX MASTER
STE
AUX 1
AUX 2
– ∞
0
LEVEL
HF
AUX 1
STE
PRE
2k
500
8k
FREQ
AUX 2
MF
TRIM
LF
C
L
R
PAN/BAL
HPF
EQ IN
PROG
AUD
STE 1
STE 2

The EDIT STRIP

The EDIT STRIP is a central panel offering all of the usual facilities you would expect to find on a standard channel strip. The EDIT STRIP can be applied to any channel by pressing the channel's **EDIT** button. The EDIT STRIP will remain active on the selected channel until the **EDIT** button on another channel is selected.

AUX Master Control

Used in conjunction with the **AUX 1** and **AUX 2** buttons, this control (9) adjusts the overall send level for either the AUX 1 or AUX 2 bus. When the associated **STE** button is pressed, both the **AUX 1** and **AUX 2** buttons illuminate to indicate that they are now linked as a stereo pair, (AUX 1=L and AUX 2=R). In this case the AUX MASTER Control will adjust the send level as a stereo pair. The red STE LED found next to the AUX 1 Send control will illuminate to show that the stereo link mode is active.

NOTE: The AUX MASTER control and it's associated buttons are always active regardless of which channel is currently selected to the EDIT STRIP.source.

The HF Control (High Frequency)

The HF control (10) has a shelving characteristic and offers 12dB of cut or boost at a frequency of 10kHz.

The LF Control (Low Frequency)

The LF control (11) has a shelving characteristic and offers 12dB of cut or boost at a frequency of 100 Hz.

The MF Control (Mid Frequency)

The MF control (12) has a semi-parametric characteristic and offers 12dB of cut or boost.

The FREQ control selects the frequency to be adjusted and has a range of 500Hz to 8 kHz.

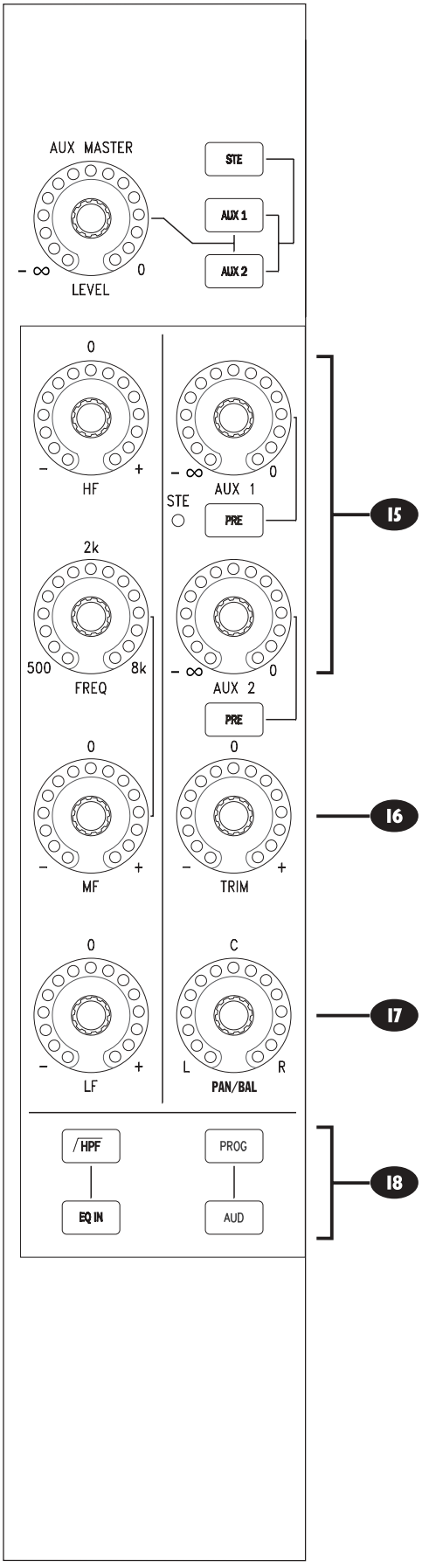
The HPF Button

The HPF button (13) inserts the variable High Pass Filter into the channel. This is useful for reducing unwanted low frequency interference. The choice of frequencies for the High Pass Filter are 80, 100, 150, 200, 250Hz.

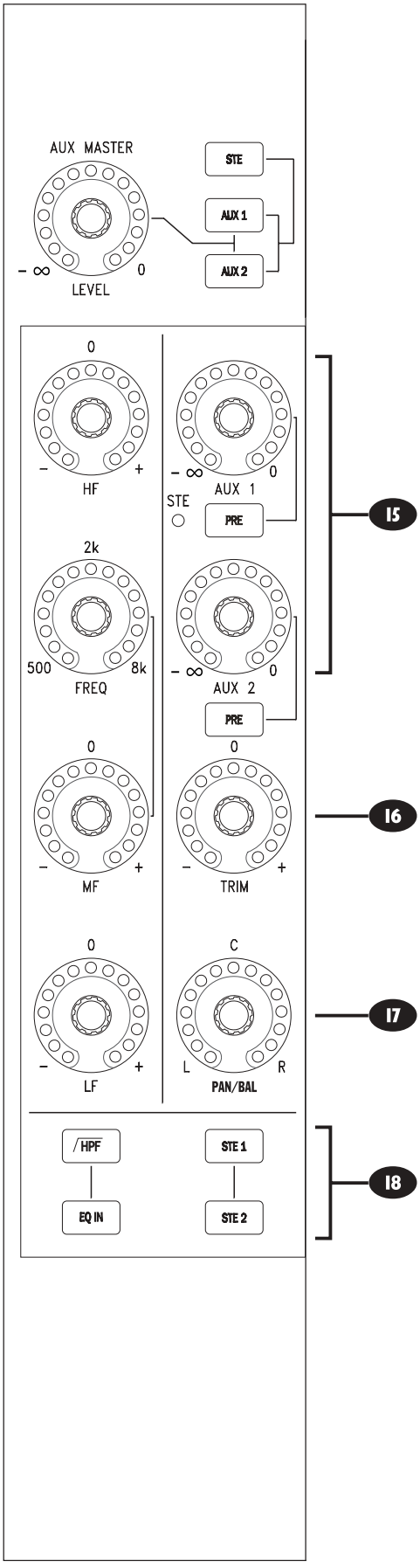
The EQ IN Button

The **EQ IN** button (14) switches the EQ section On and Off, excluding the High Pass Filter (13), which is not affected by this control.

RM1ds


AUX MASTER
STE
AUX 1
AUX 2
– ∞
0
LEVEL
0
HF
– +
– ∞ AUX 1 0
STE
PRE
2k
500 8k
FREQ
– ∞ AUX 2 0
PRE
0
MF
– +
0
TRIM
– +
0
LF
– +
C
L R
PAN/BAL
HPF
EQ IN
PROG
AUD
I5
I6
I7
I8

RM1d


AUX MASTER
STE
AUX 1
AUX 2
– ∞
0
LEVEL
0
HF
– +
– ∞ AUX 1 0
STE
PRE
2k
500 8k
FREQ
– ∞ AUX 2 0
PRE
0
MF
– +
0
TRIM
– +
0
LF
– +
C
L R
PAN/BAL
HPF
EQ IN
STE 1
STE 2
I5
I6
I7
I8

AUX 1 and AUX 2 Controls

Each channel can be routed to the AUX 1 and AUX 2 busses. Turning either control clockwise will activate the AUX Send and the corresponding AUX legend will illuminate in the Status Window of the selected channel.

Turning either control fully anti-clockwise (Off) will mute the AUX send and the corresponding AUX legend in the Status Window will extinguish.

The AUX MASTER control (9) determines the overall level of the AUX 1 or AUX 2 bus output.

The **PRE** button next to each AUX control switches the AUX Send between Pre and Post Fader modes (when selected the **PRE** button will turn Amber). Pre Fade mode will enable an AUX signal to be sent even if the fader is down. If AUX 1 and 2 are stereo linked, the **PRE** button and send level for AUX 2 will be disabled.

TRIM Control

When using EQ, the total amount of signal present on a channel can be radically changed. This can result in the digital signal level clipping, even if the original signal level was ideal before EQ was applied. This is indicated by the DIG CLIP LED (7) on the corresponding channel strip. The TRIM control (16) can cut or boost the digital signal level by ±12dB, to compensate for signals that are either too soft or too loud.

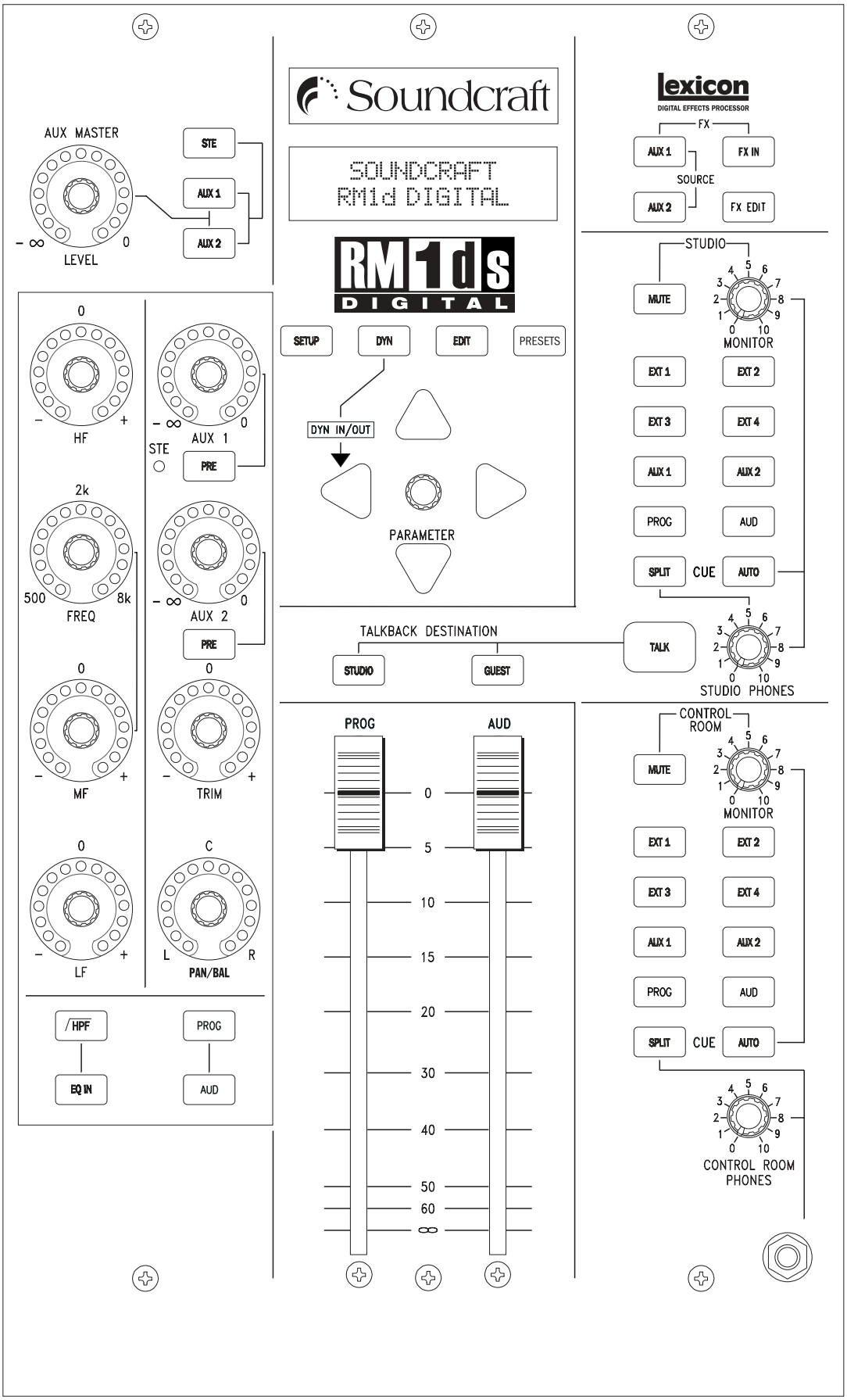
PAN Control

When a stereo source is routed to the Stereo Outputs using one or both of the STE *(PROG/AUD)* buttons (18), the PAN control (17) will act as a balance control adjusting the amount of signal sent to the left and right outputs of the selected stereo bus. If the selected channel is using a mono source, then the PAN control will pan the signal between the left and right outputs of the selected stereo bus.

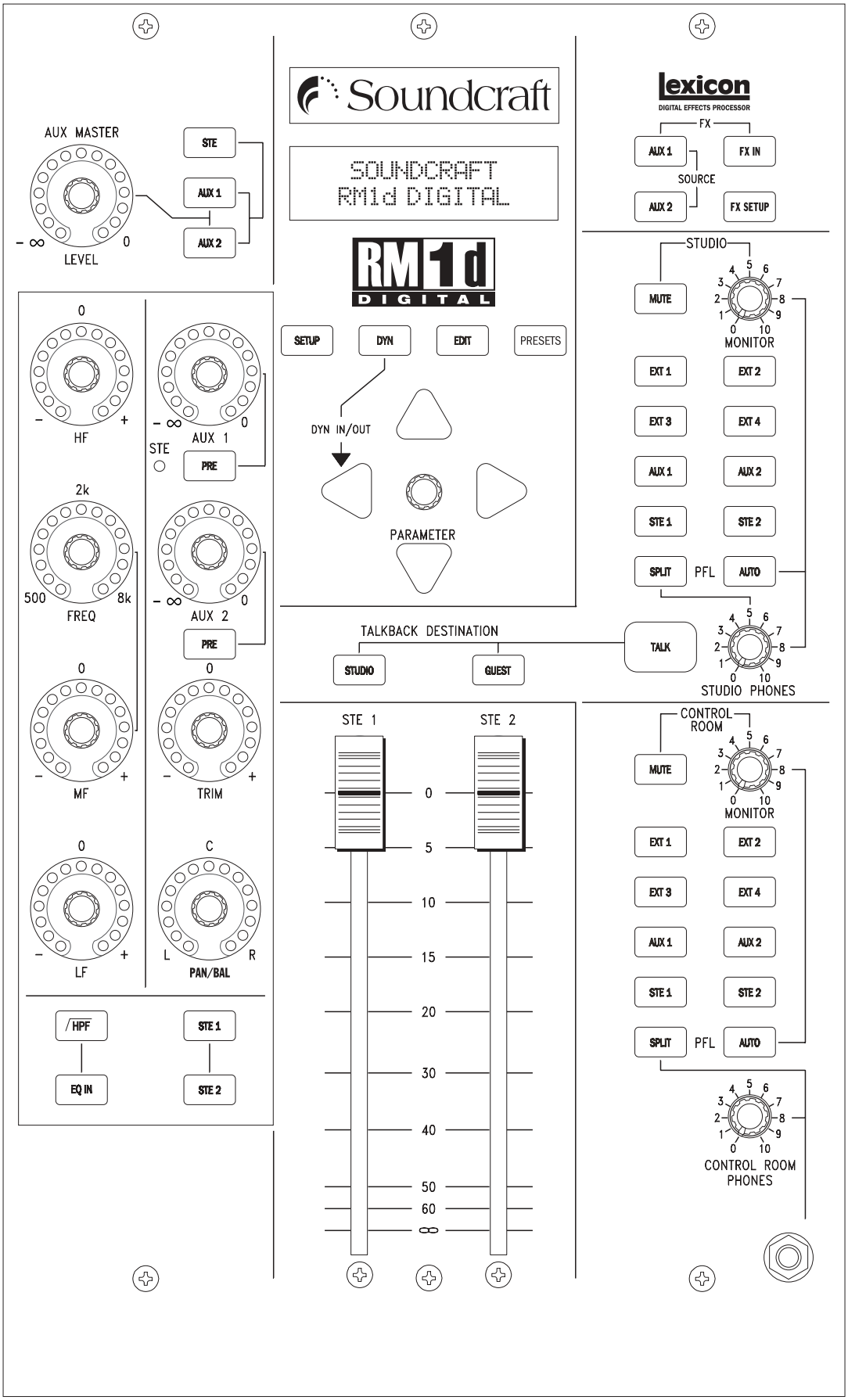
STE 1 *(PROG)* and STE 2 *(AUD)* Buttons

Each button (18) routes the selected channel to either the STE 1 *(PROG)* or STE 2 *(AUD)* output busses (26). When routed the corresponding legend (2) will illuminate in the Status Window. The CHANNEL FADER (8) adjusts the level of the signal in that channel being sent to the STE 1 *(PROG)* and STE 2 *(AUD)* output busses.

RM1ds


AUX MASTER
STE
AUX 1
AUX 2
LEVEL
Soundcraft
SOUNDCRAFT
RM1d DIGITAL
RM1ds DIGITAL
lexicon
DIGITAL EFFECTS PROCESSOR
FX
AUX 1
FX IN
SOURCE
AUX 2
FX EDIT
STUDIO
MUTE
MONITOR
EXT 1
EXT 2
EXT 3
EXT 4
AUX 1
AUX 2
PROG
AUD
SPLIT
CUE
AUTO
SETUP
DYN
EDIT
PRESETS
DYN IN/OUT
PARAMETER
TALKBACK DESTINATION
STUDIO
GUEST
TALK
STUDIO PHONES
HF
AUX 1
PRE
2k
FREQ
500
8k
AUX 2
MF
TRIM
LF
PAN/BAL
HPF
EQ IN
PROG
AUD
CONTROL ROOM
CONTROL ROOM PHONES

RM1d


Soundcraft
SOUNDCRAFT
RM1d DIGITAL
RM1d
DIGITAL
lexicon
DIGITAL EFFECTS PROCESSOR
AUX MASTER
LEVEL
STE
AUX 1
AUX 2
FX
FX IN
SOURCE
FX SETUP
STUDIO
MUTE
MONITOR
EXT 1
EXT 2
EXT 3
EXT 4
SPLIT
PFL
AUTO
SETUP
DYN
EDIT
PRESETS
DYN IN/OUT
PARAMETER
HF
AUX 1
PRE
FREQ
AUX 2
MF
TRIM
LF
PAN/BAL
TALKBACK DESTINATION
STUDIO
GUEST
TALK
STUDIO PHONES
STE 1
STE 2
CONTROL ROOM
CONTROL ROOM PHONES
/HPF
EQ IN

Monitor Section

Studio and Control Room Zones

Both Monitor Sections (19) operate in an identical manner and can be thought of as 'zones'. The CONTROL ROOM zone is where the Presenter and usually the RM1d are located. Any monitor source selected using the monitor source select buttons **(EXT 1, EXT 2, EXT 3, EXT 4, AUX 1, AUX 2, STE 1,** and **STE 2**) will appear on the control room monitor speakers. The RM1d's VU or PPM Meters will display the currently selected monitor source if the MONITOR button (28) is selected.

The STUDIO zone would normally be a recording area acoustically isolated from the control room. It has the same monitor source select options as those for the CONTROL ROOM.

The MONITOR control next to the **MUTE** buttons in each section, adjusts the output level sent to the CONTROL ROOM and STUDIO outputs on the rear of the console. The **MUTE** buttons will silence the speakers in either zone when selected. (The output to the headphones remains active when a **MUTE** button is selected.).

The built-in CUE loudspeaker (29) will also mute with the CONTROL ROOM monitors.

The CONTROL ROOM **MUTE** and STUDIO **MUTE** buttons can be configured to be automatically triggered from any or all of the channel faders. (See AUTO MUTING in the SETUP Menu)

Studio and Presenters Headphones

The controls labelled STUDIO PHONES and CONTROL ROOM PHONES (20) each adjust their associated headphone volumes.

NOTE: The Guest headphone volume is adjusted using the GUEST HEADPHONES page in the SETUP Menu.

What each zone hears, whether over the monitors or the headphones is selected by using one of the monitor source buttons (**EXT 1, EXT 2, EXT 3, EXT 4, AUX 1, AUX 2, STE 1,** and **STE 2**)

The available options are:

- **EXT 1/2/3/4** - External Stereo inputs which cannot be routed to any channel (e.g. an off-air receiver for program monitoring).
- **AUX 1 & 2** - The auxilliary sends. Both the Aux 1 and Aux 2 buttons will illuminate if the AUX MASTER control (9) is in stereo mode.
- **STE 1 & 2** *(PROG & AUD)* - The Main Stereo Master outputs from the console.

NOTE: The PFL bus is automatically routed to the CONTROL ROOM HEADPHONES but not the studio headphones. Pressing the AUTO button in the studio phones section will allow the PFL (CUE) bus to also be routed automatically to the studio headphones.

AUTO button

When selected the associated Monitors will automatically switch from the previously selected source to the PFL *(CUE)* Bus when any **PFL** *(CUE)* Button (5) is pressed. Pressing the auto button (21) in the studio phones section will also route the PFL *(CUE)* bus to the studio headphones.

SPLIT button

If the **SPLIT** button (22) is pressed, then the Left earpiece of the Studio or Presenter headphones will provide PFL *(CUE)*, and the Right earpiece will carry a mono sum of whatever stereo source is selected above. Guest headphones can not be split in this manner.

Master Section

Backlit LCD Display

Global console parameters and channel settings can be viewed and edited from this screen. The LCD display (23) can operate in one of 6 modes which are selected either by pressing one of the 4 buttons directly underneath the LCD display window, or by pressing the **FX EDIT** button in the Lexicon™ section, or by pressing the timer **SETUP** button found below the left hand timer (TIMER 1) (see page 8.3).

The available modes are:

SETUP Enters the SETUP menu pages

DYN Enters the DYNAMICS menu pages

EDIT LCD screen display of EDIT STRIP parameter adjustments.

PRESETS Enters the PRESETS menu pages

FX EDIT Enters the Lexicon FX EDIT menu pages

SETUP (TIMER Section) Enters the timer SETUP menu pages

NOTE: If none of the above modes are active the display will show the currently 'last recalled' preset name in the bottom line and RM1d DIGITAL in the top line

Navigation Buttons and PARAMETER encoder

Used in conjunction with the LCD display above, the four triangular buttons (24) allow the user to navigate the various menus in order to select parameter data.

The PARAMETER encoder is used to scroll through lists of available parameter data. When making alphanumeric entries, you can scroll from 'A-Z' (Upper Case), through 'a-z' (Lower Case) and through '0-9'.

The **UP** arrow button will step through numeric values '0-9' only and the **DOWN** arrow button will insert a space. Certain punctuation characters are also available.

Most changes happen in 'real time', i.e. as the encoder is turned, new data is applied immediately. The only time you need to confirm an entry is if the **SETUP** button blinks. The navigation buttons will illuminate to guide you to the next line of the LCD display or to the next branch of the menu tree.

LEXICON™ Control Buttons

The in-built LEXICON™ effects processor offers an array of different digital effects including reverb, delay, chorus, flange and others.

The two source buttons (25) **AUX 1** and **AUX 2** select the input signal to the effects processor from either the Aux 1 or Aux 2 bus. When the Aux Master control (9) is in Stereo Mode, (**STE** button illuminated), then both AUX buttons on the Effects control panel will illuminate to indicate that the processor is receiving a stereo input. It is not possible to deselect the input to the effects processor, i.e. the processor must always be assigned to one or the other Aux source. The amount of effect which is heard, (i.e. the FX mix), is adjusted by controlling the input to the processor by using the Aux Master control (9), alternatively the FX Level out parameter in the FX setup menu, can be used.

The **FX IN** button switches the effects On or Off. When the **FX IN** button is illuminated the effects are switched on. Pressing the **FX EDIT** button puts the LCD display into the effects editing mode where different effects parameters can be edited. (See the Lexicon™ Effects Processor section later in this User Guide)

Master Faders - STE 1 *(PROG)* and STE 2 *(AUD)*

Identical in specification to the Channel Faders, the Master Faders (26) adjust the amount of signal sent to the main stereo output busses. These faders can be completely bypassed, (i.e. set to full output at 0dB), via the SETUP menu if required.

Talkback Section

The **TALK** button (27) activates the internal Talkback function, which routes the assigned talkback channel to any one of 3 possible destinations.

- Studio headphones output
- Guest headphones output
- Talkback to a selected Line/Cleanfeed output

There can be only one talkback channel assigned using the SETUP Menu - usually the presenter's microphone. The associated **STUDIO** and **GUEST** talkback destination buttons will route talkback to the Studio and / or Guest headphones.

The main **TALK** button can be latched or momentary by holding 'On', and either of the talkback destination buttons (STUDIO or GUEST) can then send talkback to the intended destination as soon as they are pressed.

In conjunction with the main **TALK** button, any channel which has been assigned to a 'Mix-Minus' cleanfeed output using the SETUP Menus (Line/CF Outputs) will be able to send Talkback out of that same cleanfeed output when its corresponding PFL button (5) is active. To enable this mode of operation both the **TALK** and **PFL** *(CUE)* buttons must be illuminated, either latched or momentarily.

Meter Bridge

Meter Source Select Buttons

The main Left and Right meters (28) are either VU or PPM types depending on the options specified at the time of purchasing your RM1d. The audio source which the meters display can be selected by one of three source buttons.

The available sources are:

STEREO 1 ***(PROGRAM)*** Used to monitor the output of the Main STE 1 *(PROG)* bus (Post Fader)

STEREO 2 ***(AUDITION)*** Used to monitor the output of the Main STE 2 *(AUD)* bus (Post Fader)

MONITOR When selected the meters will display the signal currently selected in the CONTROL ROOM monitor select panel. Alternately the signal from any channel with a PFL (CUE) button active will be displayed.

If SPLIT PFL *(SPLIT CUE)* mode is selected the LEFT meter will display the PFL *(CUE)* signal, and the RIGHT meter the main program output signal, during a PFL *(CUE)* condition.

NOTE: The 12 fader version of the RM1d has an additional pair of meters. The available sources are: Stereo 1 (PROGRAM) Stereo 2 (AUDITION) or Monitor These are selected from the 2nd meter source menu page

CUE Loudspeaker

The built-in CUE loudspeaker (29) can relay Reverse Talkback signals (i.e. Talkback from an external location via the RTB IN connector on the rear panel of the RM1d), and signals from the PFL (CUE) bus.

These signals are entirely independent of any Monitor Settings and can each be adjusted in volume by using the associated controls marked REV TALKBACK and CUE. The CUE control adjusts the overall loudspeaker volume, whereas the REV TALKBACK control only adjusts RTB signal levels.

NOTE: The REV TALKBACK volume control CANNOT be turned all the way down (OFF). This is normal to protect essential communications. The cue loudspeaker will automatically mute along with the CONTROL ROOM MUTE button (19)

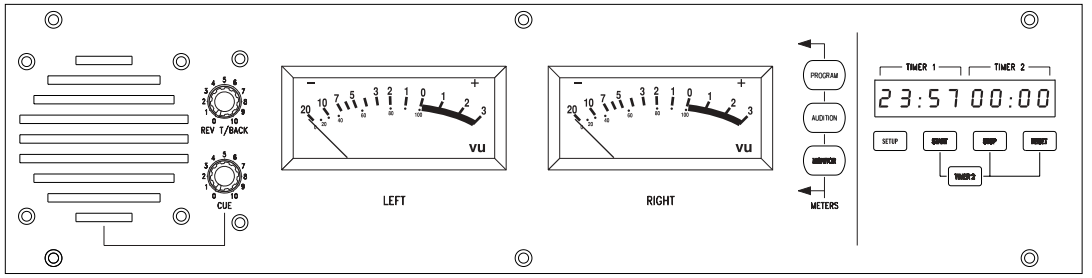
Dual Event Timers

The timers (30) can be triggered automatically from any of the channel faders* or manually using the associated **START**, **STOP** and **RESET** buttons.

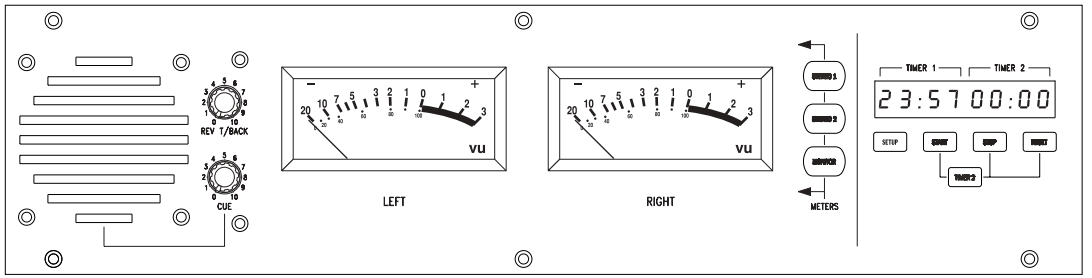
NOTE: The TIMER 2 button directly below the timer buttons will allow you to switch these controls between Timer 1 and Timer 2.

* see the Automatic operation 8.3 in Section 8 Timer Operation

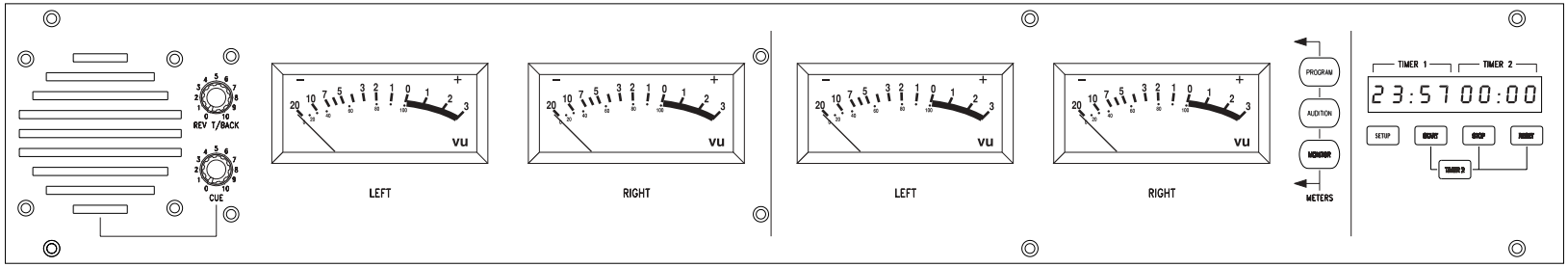
RM1d / s 6-Fader Meterbridge



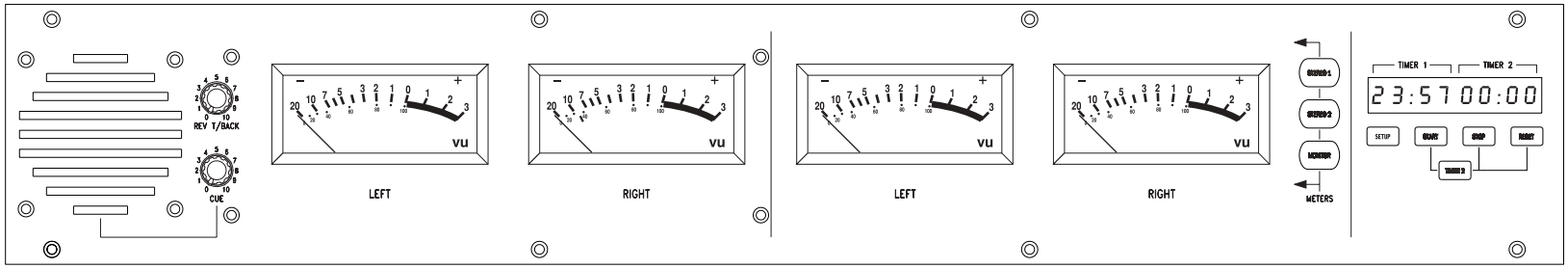
RM1d 6-Fader Meterbridge



RM1d/s 12-Fader Meterbridge



RM1d 12-Fader Meterbridge



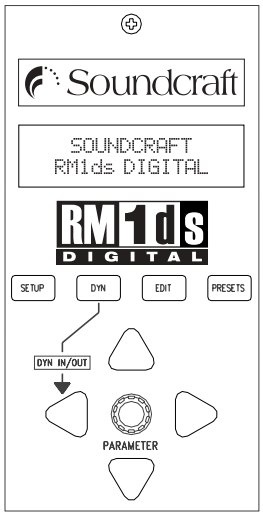
The Menus Pages

The Menu Pages

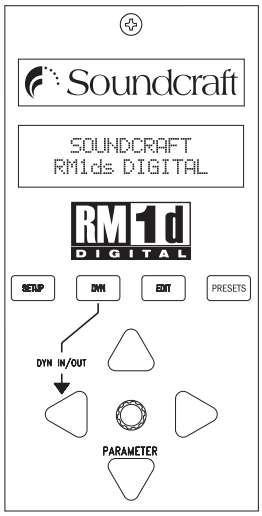
Pressing the **SETUP** button accesses the Setup Menu pages where specific console configurations can be programmed.

You will use the **SETUP** button, the PARAMETER (ENCODER) and the **UP / DOWN / LEFT / RIGHT** arrow buttons to navigate around the Menu pages.

RM1d / s



RM1d



On pressing the **SETUP** button the following LCD display will appear.



You may now use the PARAMETER (ENCODER) to select one of the Menu pages that you would like to enter. Press the **SETUP** button to enter the selected Menu page.

For fast access the alphabetical list of Menus as found on the RM1d are found on the following pages.

Menu	Page	Menu	Page
1 Analogue Inputs	4.4	15 Lockout Setup	4.24
2 Assign Channel	4.6	16 Lockout Status	4.26
3 Auto Muting	4.9	17 Mch. Start/Stops	4.27
4 Channel Phases	4.10	18 Master Faders	4.30
5 Clock Source	4.11	19 MIDI Backup	4.31
6 Digital Outputs	4.12	20 Mono Output	4.33
7 Digital Out Adv	4.13	21 PFL Autocancel	4.34
8 Display Settings	4.15	22 Remote Inputs	4.35
9 External Input Gain	4.16	23 Software Version	4.36
10 Guest Headphones	4.17	24 System Menu	4.37
11 HPF Frequency	4.18	25 Talkback Assign	4.38
12 Input Naming	4.19	26 TDIF Outputs	4.39
13 Line/CF Outputs	4.20	27 TDIF Out Adv	4.41
14 Lockout Pin	4.23	28 2nd Meter Source (in the case of a 12 fader)	4.43

Analogue Inputs

The analogue inputs page allows fast access to all of the analogue inputs available on the RM1d.

The Gain settings for each input can be adjusted here and where applicable 48V phantom power can be switched On or Off. Options are as follows:

Input Type	Gain Range	48V Phantom Power
Mic/Line 1, 2, 3, 4 (5, 6, 7, 8)	0 to +60dB	Yes
Reverse Talkback 1 (2)	0 to +60dB	Yes
Stereo Inputs 1, 2, (3, 4)	0 to +18dB	No

Selected stereo analogue inputs also have a choice of the following preferences:

Mode	Action
LR	Default mode - Left and Right input signals are supplied to the Left and Right channels
LL	Left input signal only is supplied to both the Left and Right channels
RR	Right input signal only is supplied to both the Left and Right channels
RL	Left and Right input signals are reversed with the Left input being supplied to the Right channel and the Right input being supplied to the Left channel

All settings made here can be stored as part of a snapshot Preset for instant recall.

Selecting and adjusting an Analogue input

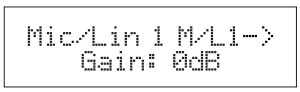
1 Press the SETUP button found below the LCD display

This will enter the SETUP mode.

2 Use the PARAMETER encoder to scroll through the menu pages to locate the Analogue Inputs menu. The LCD display will show:



3 Press the SETUP button to enter the Analogue Inputs mode. The LCD display will read:



4 Use the UP/DOWN arrow buttons to select the top line of the LCD display, and then using the PARAMETER encoder you may scroll through the available analogue input options.

5 Once you have selected the desired input you may then use the DOWN arrow button to select the Gain adjustment field and then adjust the Gain by using the PARAMETER encoder.

NOTE: It is recommended that input gain adjustments are performed in conjunction with selecting the PFL (CUE) button on the relevant channel, and by switching the main meter to MONITOR mode so that adjustments to the input gain level can be accurately displayed.

6 For Mic/Line Inputs, the RIGHT arrow key can then be used to select the Phantom Power On/Off field of the display and the PARAMETER encoder used to select either On or Off.

NOTE: When switching 48V phantom power On or Off it is recommended that the relevant Channel ON and PFL (CUE) buttons be switched off so as to avoid possible damage to monitor speakers.

7 For Stereo Inputs, the RIGHT arrow button can be used to enter the LR, LL, RR, RL select field of the display and the PARAMETER encoder can the be used to select the desired mode.

8 Pressing the SETUP button will exit the menu.

NOTE: If you are in the Analogue Inputs Menu, pressing EDIT button on any channel with an Analogue Input assigned to it, will automatically select that input for adjustment. This is very useful for quickly accessing different microphone Gain levels in a multi-microphone application.

Assign CHANNEL

The RM1d is designed to offer maximum flexibility concerning input routing. Every channel has two inputs, that can handle mono or stereo analogue or digital input sources. These input signals can be sourced from a pool of digital or analogue inputs.

(See table below).

A complete input set-up configuration can then be saved as part of a snapshot Preset for instant recall. This allows the operator to quickly reconfigure the console for different applications.

Input Type	Mono or Stereo	Analogue or Digital
1kHz Test Tone	Mono	Digital
None	-	-
Mic/Line 1, 2, 3, 4 (5, 6, 7, 8)	Mono	Analogue
STE 1, STE 2 (STE 3, STE 2)	Stereo	Analogue
AES 1, 2, 3, 4 (5, 6, 7, 8)	Stereo	Digital
SPDIF 1 (SPDIF 2)	Stereo	Digital
TDIF 1, 2, 3, 4, 5, 6, 7, 8	Mono	Digital
TDIF 1-2, 3-4, 5-6, 7-8	Stereo	Digital

Choosing and Assigning the Input Source

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode.

2 Use the PARAMETER encoder to scroll through the menu pages to locate the ASSIGN CHANNEL menu.

The **SETUP** button will flash upon selection.

3 Press the SETUP button to enter the ASSIGN CHANNEL mode.

The LCD display will read:

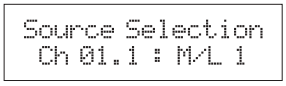
```
Source Selection
Ch 01.1 : M/L 1
```

You can now choose what type of input source you would like to assign, and to which of the two inputs of the chosen channel you would like to assign the input to.

4 Press the **EDIT** button on the desired channel and select either Input 1 or Input 2 using the **INPUT 2** button (this will be unlit for Input 1 or lit for Input 2).
The LCD display will now show the selected channel, and which input is currently selected. If for example the **EDIT** button is selected on Channel 1 and the **INPUT 2** button pressed (illuminated), Input 2 will become active. The LCD display will read:

```
Source Selection
Ch 01.2 : M/L 3
```

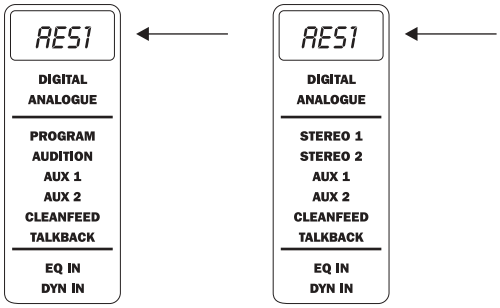
Alternatively if the **EDIT** button is selected on Channel 1 and the **INPUT 2** button is not illuminated meaning that Input 1 is active, the LCD display will read:



5 Now use the PARAMETER encoder to scroll through the selection of different inputs until you reach the desired input source.

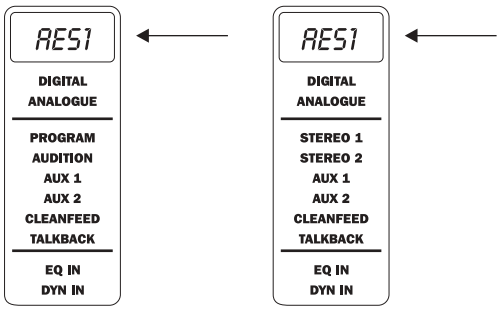
As you scroll through the different input sources you will see the names of those inputs appearing on the small LCD display at the top of the selected channel.

RM1d/s **RM1d**



You will also notice that the DIGITAL or ANALOGUE legend just below the small LCD screen on the selected channel will illuminate, to confirm that the input source is either digital or analogue.

RM1d/s **RM1d**



6 You may now repeat the above procedure for the alternate input on the selected channel

7 If you are happy with your selection then press the **EDIT** button on the next channel you want to set-up.

8 Press the **SETUP** button to exit the Menu.

NOTE: You can also use the PARAMETER encoder to select the channel and input number without using the EDIT buttons to select the channels.

NOTE: On 12 fader consoles the SPDIF-1 input can only be selected to one of the first six faders (1-6) and the SPDIF-2 input can only be selected to one of the last six faders (7-12).

Auto Muting

The RM1d channel faders can be configured so that when a designated fader is opened a number of different MUTE activations can be performed.

The available options are as follows:

Mute command	Action
Nothing	No mutes are activated
Studio	Mute studio monitor speakers only
Control Rm	Mute control room speakers only
Stu & CtlRm	Mute studio and control room speakers

Configuring a Channel for Mute activation

1 Press the **SETUP** button found below the LCD display.

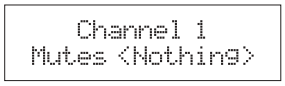
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the AUTO MUTING menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the AUTO MUTING set-up mode.

The LCD display will show:



The LCD display will show the selected channel.

4 Press the **EDIT** button on the channel you want to configure.

5 Now use the PARAMETER encoder to select the type of Mute activation you require. (See table above).

6 Press the **SETUP** button to exit the Menu page.

Channel Phases

It may be necessary in certain applications to reverse the phase of one side of an incoming stereo source to correct for phase problems. There may also be times when inverting the phase of an incoming microphone (mono) may be necessary to prevent phase problems with other microphones set up nearby.

Reversing the Phase of a Stereo or Mono Input Source

1 Press the **SETUP** button found below the LCD display.

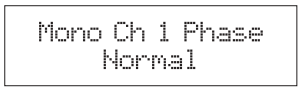
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the CHANNEL PHASES menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the CHANNEL PHASES set-up mode.

The LCD display will show the current selection:



4 Press the **EDIT** button on the channel you want to edit. The number of the selected channel should appear in the LCD display. The display will also show whether the selected channel is mono or stereo.

5 Use the down arrow button to select the normal/inverted field of the display.

6 You may now use the parameter encoder to select between 'normal' or ' inverted'.

7 Press the **SETUP** button to exit the Menu.

Clock source

The RM1d can operate at either 44.1kHz or 48kHz when set to it's own internal Word Clock, but can also be configured to lock to incoming Word Clock appearing at either the AES 11 or BNC digital inputs.

NOTE: The 4 (8) AES/EBU digital inputs and the (2) S/PDIF digital input incorporate Sample Rate Converters (SRC) which allows external digital signals to be connected without the need for the RM1d to be synchronised to the incoming Word Clock contained in the digital source signal.

Configuring the Clock Source

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the CLOCK SOURCE menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the CLOCK SOURCE set-up mode.

The available options are:

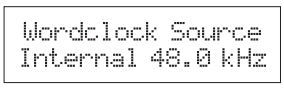
Internal 48.0 kHz

Internal 44.1 kHz

External BNC

External AES11

The LCD display will show the current selection:



4 Use the PARAMETER (ENCODER) to select which word Clock source you want to use.

The SETUP button will flash.

5 Press the **SETUP** button to store the new clock settings.

6 Press the SETUP button to exit the Menu.

NOTE: If Word Clock is lost whilst connected to an external Word Clock source the following display



Digital Outputs

The RM1d has 2 (4) AES/EBU digital outputs and 1 (2) S/PDIF digital output.

These outputs can be configured to output a number of different source signals.

Configuring the Digital Outputs

1 Press the **SETUP** button found below the LCD display.

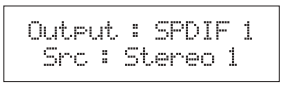
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the DIGITAL OUTPUTS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the DIGITAL OUTPUTS set-up mode.

The LCD display will show the current selection:



4 Use the PARAMETER encoder to select which Digital Output you want to use.

The available choices are:

SPDIF 1 (SPDIF 2)

AES 1 (AES 3)

AES 2 (AES 4)

5 Press the **DOWN** arrow button to select the 'Src' field, and use the PARAMETER encoder to choose the source for the selected digital output.

The available options are:

Unsourced

Stereo 1 (PROGRAM)

Stereo 2 (AUDITION)

Auxiliaries

CleanFds 1 & 2

CleanFds 3 & 4

6 Press the **SETUP** button to exit the Menu.

Digital out adv.

The settings found in this menu are for configuring the Status Bits of the SPDIF and AES/EBU outputs. In most applications the default settings for these outputs are used, but in certain circumstances it may be necessary to make manual adjustments.

The table below shows the options available for each output.

Digital Output	Config Mode	Sample Rate Flag (FS)	Word Length	Pro Flag
SPDIF1	Auto	No selection	No selection	No selection
AES 1 AES 2 (SPDIF 2) (AES 3) (AES 4)	Manual	Undefined 32 kHz 44.1kHz 48kHz	16 Bit 20 Bit 24 Bit	Professional Consumer

Working with SPDIF Devices

When the RM1d is synchronised to an external Word Clock source, most digital devices connected to the RM1d's SPDIF digital outputs will happily synchronise to the Word Clock being sent from the RM1d via the SPDIF digital output.

In most applications the SPDIF digital output can be set to 'Auto' configure in the DIGITAL OUT ADV. Setup Menu.

In the uncommon event that a receiving device connected to the RM1d's SPDIF digital output is not synchronising correctly it may be necessary to manually configure the Status Bits for the SPDIF output.

This will normally involve setting the Sample Rate Flag (Fs) to the same Word Clock setting that the RM1d is receiving and setting the Word Length (WL) to match that of the device connected to the RM1d's SPDIF digital output.

The Pro Flag (Pro) setting would normally be set to 'Consumer' (CON) but could be switched to 'Professional' (PRO) if the CON setting does not work correctly.

Working with AES/EBU Devices

When the RM1d is synchronised to an external Word Clock source, most digital devices connected to the RM1d's AES/EBU digital outputs will happily synchronise to the Word Clock being sent from the RM1d via the AES/EBU digital output.

In most applications the AES/EBU digital output can be set to 'Auto' configure in the DIGITAL OUT ADV. Setup Menu.

In the uncommon event that a receiving device connected to the RM1d's AES/EBU digital output is not synchronising correctly it may be necessary to manually configure the Status Bits for the AES/EBU digital output.

This will normally involve setting the Sample Rate Flag (Fs) to the same Word Clock setting that the RM1d is receiving and setting the Word Length (WL) to match that of the device connected to the RM1d's AES/EBU digital output.

The Pro Flag (Pro) setting would normally be set to 'Professional' (PRO).

Changing Settings

1 Press the **SETUP** button found below the LCD display.

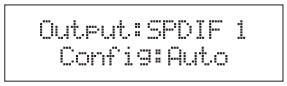
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the DIGITAL OUT ADV. menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the DIGITAL OUT ADV. set-up mode.

The LCD display will show the current selection:

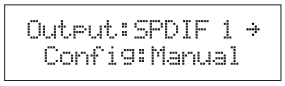


4 You may now use the PARAMETER encoder to select between the SPDIF 1, AES/EBU 1 or AES/EBU 2 (SPDIF 2, AES/EBU 3 or AES/EBU 4)digital outputs.

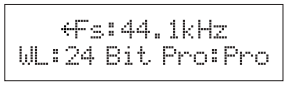
5 Once the correct digital output is selected press the **DOWN** arrow button to enter the 'Config' field of the LCD display.

6 The PARAMETER encoder can now be used to toggle between 'Auto' or 'Manual'. (If 'Auto' is selected there is no further access to the other menu pages as these settings are automatically configured.)

7 Select 'Manual'. The LCD display will now show:



8 Press the **RIGHT** arrow button to enter the manual configuration settings page. The LCD display will show:



9 You can now use the arrow buttons to navigate between the Sample Rate (FS), Word Length (WL) and Pro Flag (Pro) parameter settings. The PARAMETER encoder is used to make the necessary adjustments to the selected parameters. (See the table above for parameter choices)

Display Settings

Adjusting the Display

1 Press the **SETUP** button found below the LCD display.

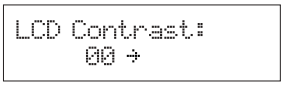
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the DISPLAY SETTINGS menu page.

The **SETUP** button will flash upon selection.

3 Press the SETUP button to enter the DISPLAY SETTINGS set-up mode.

The LCD display will show the current selection:



4 Use the PARAMETER encoder to adjust the contrast of the LCD display.

5 Press the **SETUP** button to exit the Menu.

External Input Gain

The EXTERNAL INPUT GAIN menu allows any of the 4 External Inputs found on the rear of the console to be adjusted through a range of infinity dB to +18dB.

Selecting and Input

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode.

2 Use the PARAMETER encoder to scroll to the External Input Gain menu.

3 The following LCD display will appear:



4 The EXT 1 field will be flashing and you may now use the PARAMETER encoder to select EXT 1, EXT 2, EXT 3 or EXT 4.

5 Once you have made your selection, press the RIGHT arrow button to select the Gain field and then use the PARAMETER encoder to adjust the Gain.

6 Press the SETUP button again to exit the menu.

GUEST Headphone Level

The level adjustment for the GUEST headphone output is adjusted from the GUEST HEADPHONES menu page.

Adjusting the Guest Headphones Level

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the GUEST HEADPHONES menu.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the GUEST HEADPHONES mode.

The LCD display will show:



The adjustment range is - infinity to 0dB.

The default setting is -10dB.

4 Press the **SETUP** button to exit the Menu page.

HPF Frequency

The HPF Frequency menu allows the frequency for the High Pass Filter located in the EDIT STRIP to be selected.

The frequencies available are 80, 100, 150, 200 and 250 Hz.

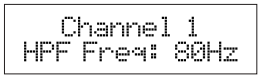
Selecting the HPF Frequency

1 Press the SETUP button found below the LCD display

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the list of menu pages to locate the HPF FREQUENCY menu.

3 The following LCD display will appear:



4 The frequency field will be flashing.

5 Press the EDIT button on the channel you want to adjust. The channel number should appear in the upper line of the LCD display.

6 Once you have made your selection use the PARAMETER encoder to select the HPF frequency you wish to use.

7 Press the SETUP button again to exit the menu.

Input Naming

Any of the inputs discussed in Chapter 2 'Assign Channel', can be given a personalised name if required.

This is very useful for example in permanent set-ups where the inputs to the console do not change often.

If a CD player is connected to AES/EBU 1 then the display name could be changed from AES 1 to read CD 1.

Microphone inputs could also be renamed in this way to show for example the presenter's name.

NOTE: The naming of inputs is limited to 4 characters.

Naming an Input Source

1 Press the **SETUP** button found below the LCD display.

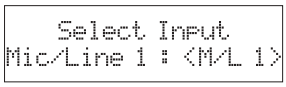
This will enter the SETUP mode

2 Use the **PARAMETER** encoder to scroll through the menu pages to locate the INPUT NAMING menu.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the INPUT NAMING mode.

The LCD display will now show the currently selected input and next to it the current name of that input for example:



4 Use the **LEFT / RIGHT** arrow buttons to select the left hand field of the LCD display and then using the PARAMETER (ENCODER) scroll through the different input sources until you find the one you want to rename.

5 Now use the **LEFT / RIGHT** arrow buttons to select one of the four characters on the right side of the LCD display.

7 You may now use the PARAMETER encoder to scroll alphanumerically through all of the available character choices.

You can also use the **UP** arrow button to increment through numbers, and the **DOWN** arrow button to delete the currently selected character or create a space.

8 Press the **SETUP** button to exit the Menu page.

Line/CF Outputs

The RM1d has 4 (6) Line/Cleanfeed outputs that can be used either as Direct Outputs (Post-Fade) for any mixer channel, or for creating a 'Mix Minus' output from either of the STE 1 *(PROG)* or STE 2 *(AUD)* busses. (This is useful for sending a cleanfeed signal back to an incoming telephone caller).

The Talkback bus can also be routed to any of the 4 (6) Line/Cleanfeed outputs in Continuous Talkback mode. This allows any microphone channel that has been set-up as a Talkback channel to speak directly to a designated Line/Cleanfeed output as soon as the Talkback bus is activated. This is intended for feeding the designated talkback microphone signal to an external talkback routing system.

Any of the 4 (6) Line/Cleanfeed Outputs can be configured as mono Direct Outputs for a selected channel (e.g. for use with a single microphone), or as a 'mono summed' outputs if the channel has been set-up as a stereo channel (e.g. a CD player).

Stereo Direct Outputs can also be achieved by linking Line Outputs1-2 and 3-4 (5-6).

Configuring a Channel as a Direct Output

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the LINE/CF OUTPUTS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the LINE/CF OUTPUTS set-up mode.

The LCD display will show:

```
Line Output 1 →
Outs 1+2 Mono
```

4 Use the PARAMETER (ENCODER) to select which of the 1-4 (5-6) Line/Cleanfeed Outputs you want to use.

5 Press the **DOWN** arrow button and then use the PARAMETER encoder to choose whether Line/Cleanfeeds Outputs 1-2 and 3-4 are configured to operate as individual mono outputs or stereo pairs.

6 Press the **RIGHT** arrow button to enter Channel Selection page

The LCD display will show:

```
← Mode : Direct OP
    Channel 1
```

7 Press the **UP** arrow button and then use the PARAMETER encoder to select Direct OP mode (the other choices are Ste 1 *(PROG)* Mix -, Ste 2 *(AUD)* Mix -, Cont Talk and Unsourced.)

8 Press the **DOWN** arrow button and then use the PARAMETER encoder to select which channel you want to send to the selected Line/Cleanfeed Output.

9 Press the *SETUP* button to exit the Menu.

Configuring a Channel as a Cleanfeed channel

The 4 (6) Line/Cleanfeed Outputs can be used to supply 4 (6) mono cleanfeed outputs or 2 (cleanfeed outputs.

The selected Line/Cleanfeed Output will contain either the STE 1 *(PROG)* or STE 2 *(AUD)* program output signal minus the designated channel

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the LINE/CF OUTPUTS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the LINE/CF OUTPUTS set-up mode.

The LCD display will show:

```
Line Output 1 →
Outs 1+2 Mono
```

4 Use the PARAMETER (ENCODER) to select which of the 4 (6) Line/Cleanfeed Outputs you want to use.

5 Press the **DOWN** arrow button and then use the PARAMETER encoder to choose whether Line Outputs 1-2 and 3-4 (5-6) are configured to operate as individual mono outputs or stereo pairs.

6 Press the **RIGHT** arrow button to enter the Channel Selection page

The LCD display will show:

```
← Mode: Ste 1 Mix-
    Channel 1
```

7 Press the **DOWN** arrow button and then use the PARAMETER encoder to select which channel you want to set up as a Cleanfeed channel.

8 Now press the **UP** arrow button and use the PARAMETER encoder to select whether the Cleanfeed Output will be sourced from the STE 1 *(PROG)* or STE 2 *(AUD)* busses.

9 Press the **SETUP** button to exit the Menu.

Continuous Talkback Mode

In this mode the selected Talkback channel can also talk directly to any one of the Line/Cleanfeed Outputs.

Any output that is set-up as a Continuous Talkback output will receive the Talkback bus signal as soon as the fader on the Talkback channel is closed.

1 Press the **SETUP** button found below the LCD display.

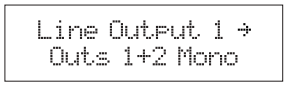
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the LINE/CF OUTPUTS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the LINE/CF OUTPUTS set-up mode.

The LCD display will show:



4 Use the PARAMETER (ENCODER) to select which of the 1-4 (5-6) Line/Cleanfeed Outputs you want to use.

5 Press the **DOWN** arrow button and then use the PARAMETER encoder to choose whether Line/Cleanfeed

Outputs 1-2 and 3-4 (5-6) are configured to operate as individual mono outputs or stereo pairs.

6 Press the **RIGHT** arrow key to enter the Channel Selection page

The LCD display will show



7 Use the PARAMETER encoder to select Continuous Talkback (Cont Talk)

8 Press the **SETUP** button to exit the Menu.

Lockout PIN

The Lockout PIN menu allows a personal identification number (PIN) to be chosen for accessing the Lockout capabilities of the RM1d.

Any number with a maximum of 4 digits may be used.

Selecting the Lockout PIN

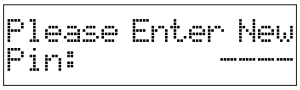
1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

2 Now use the PARAMETER encoder to scroll to the Lockout PIN menu.

3 Press the flashing SETUP button to enter the menu.

The following LCD display will appear:



4 You may now use the PARAMETER encoder or the UP arrow button to select a digit from 0 to 9. Use the LEFT and RIGHT arrow buttons to move the cursor until you have entered your 4 chosen digits.

5 Now press the flashing SETUP button again and you will be prompted to confirm you chosen PIN. Do this by re-entering your chosen number and then pressing the SETUP button.

6 The display should then read 'New PIN set for lockout' confirming that your new PIN can be used for setting up the lockout facility.

7 Press the SETUP button again to exit the menu.

NOTE: You can reset the PIN to blank (----) at any time by pressing the DOWN arrow button.

Lockout Setup

The Lockout Setup menu is used for choosing which functions are to be 'locked out' i.e. made inaccessible when the Lockout function is enabled.

You can either select to lockout 'All Functions' or choose individually which facilities you wish to lock out.

Lockout Options

The following table lists the options available.

Option	Action
All Functions	All RM1d functions except for **PFL** buttons, **EDIT** buttons, **TALK** buttons, **SETUP** button and **MUTE** buttons are locked out
Auxes Sends	Locks out access to the Auxiliary sends 1 and 2
Control Room Src	Locks out access to the Control Room source selection buttons
Channel On	Locks out access to the Channel **On** buttons
Dynamics	Locks out access to the dynamics processors
EQ/HPF	Locks out access to the equaliser and High Pass Filter
FX All - (In/Out)	Locks out access to the all FX facilities except for the **FX IN** button
FX In/Out	Locks out access to the **FX IN** button
Input 2 select	Locks out access to the **INPUT 2** button
Meter Source	Locks out access to the meter source select buttons
Pan/Balance	Locks out access to the **PAN/BAL** control
Presets Rcl/St/D1	Locks out access to the **PRESETS** button
Presets St/D1	Locks out access to the Recall Preset function within the Presets menu
STE1/2 Routing	Locks out access to the **STE 1** and **STE 2** routing buttons
Setup Menus	Locks out access to the **SETUP** menus
Split/Auto	Locks out access to the Split/Auto buttons
Studio Src	Locks out access to the Studio source selection buttons
Talk to C/F	Locks out access to the Talk to Cleanfeed facility
Timer	Locks out access to the timers
Trim	Locks out access to the Trim function

1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

2 Now use the PARAMETER encoder to scroll to the Lockout Setup menu.

3 Press the flashing SETUP button to enter the menu.

The following LCD display will appear:



4 You may now use the UP/DOWN arrow buttons to step through the various options (see above table) and use the PARAMETER encoder to select the chosen facility to be either 'Locked' or 'Unlocked'

5 When you have selected all of the options you require press the SETUP button again to exit the menu page.

6 The LCD display will now prompt you to re-enter your PIN number again.

7 Re-enter your PIN number and then press the SETUP button again. The display will show 'Operation Completed'

8 Press the SETUP button to exit the Menu page.

Lockout Status

The Lockout Status menu is used for setting the status (either Enabled or Disabled) of the Lockout facility. Once enabled RM1d functions will then be locked out in accordance with the selections made in the Lockout Setup menu.

Enabling the Lockout Facility

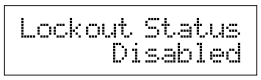
1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

2 Now use the PARAMETER encoder to scroll to the Lockout Status menu.

3 Press the flashing SETUP button to enter the menu.

The following LCD display will appear:



4 You may now use the PARAMETER encoder to set the Lockout Status to 'Disabled' or 'Enabled'.

5 When you have selected the correct status setting, press the SETUP button again.

6 The LCD display will now prompt you to re-enter your PIN number again.

7 Re-enter your PIN number and then press the SETUP button again. The display will then confirm that the current status is either 'Enabled' or 'Disabled'.

Machine Starts

The channel faders on the RM1d can be used to remotely control external devices such as CD and Mini Disc players

This is achieved by connecting external equipment to either the Remotes 2 or Remotes 3 (12 fader console only) ports on the rear of the RM1d. Each Remote port offers 12 contact closures. (see Appendix B for wiring information)

Each input on the RM1d can be assigned to a remote output. The remote start facility will then be active on whichever channel fader the relevant input is assigned to.

The default setting for pin assignments is as follows

Remotes 2 (25 pin D sub)

Input Type	Relay number
Mic/Line 1	01
Mic/Line 2	02
Mic/Line 3	03
Mic/Line 4	04
Stereo 1	05
Stereo 2	06
AES/EBU 1	07
AES/EBU 2	08
AES/EBU 3	09
AES/EBU 4	10
SPDIF 1	11
Unassigned	12

Remotes 3 (25 pin D sub) (12 fader only)

Input Type	Relay number
Mic/Line 5	01
Mic/Line 6	02
Mic/Line 7	03
Mic/Line 8	04
Stereo 3	05
Stereo 4	06
AES/EBU 5	07
AES/EBU 6	08
AES/EBU 7	09
AES/EBU 8	10
SPDIF 2	11
Unassigned	12

Configuration of the Machine Starts

1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the MACHINE STARTS menu page.

The SETUP button will flash upon selection

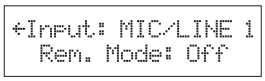
3 Press the SETUP button to enter the MACHINE STARTS set-up mode.

The LCD display will show the current setting:



4 Now press the **RIGHT ARROW** button to enter the Remote Mode page.

The LCD display will now read



5 Press the DOWN ARROW button to select the lower field of the page. The currently selected remote mode should flash.

6 Use the PARAMETER encoder to select one of the following modes

Off

Latch

Moment (pulse)

7 When the selected input is assigned to a channel, it should now be possible to audition the remote start facility by opening and closing the channel or by toggling the channel **ON** button on and off. The channel **ON** button should toggle between amber (ready) and green (activated)

8 Press the **SETUP** button to exit the Menu.

Custom Configuration of the Machine Starts

Although the default settings will suffice for most applications there may be times when you might want to change the relay assignment for a particular input.

1 Press the **SETUP** button found below the LCD display

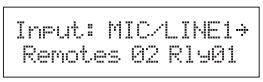
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the MACHINE STARTS menu page.

3 The SETUP button will flash upon selection

4 Press the SETUP button to enter the MACHINE STARTS set-up mode.

5 The LCD display will show the current setting:



6 To change the relay assignment for MIC/LINE 1 press the **DOWN ARROW** button so that 'Rly 02' flashes in the lower field of the display.

7 Now use the PARAMETER encoder to select the relay number you want to use.

8 Press the **SETUP** button to exit the Menu

NOTE: Relay assignments work according to the table found above i.e. on a 12 fader console some inputs are fixed for use on Remotes 2 and 3 respectively and cannot be reassigned.

Master Faders

The Master faders for the STE 1 *(PROG)* and STE 2 *(AUD)* Outputs can be switched off if necessary, the output will then be set at unity gain.

Configuring the STE 1 and STE 2 Master Faders

1 Press the **SETUP** button found below the LCD display.

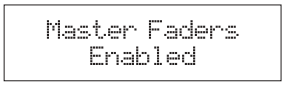
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the MASTER FADERS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the MASTER FADERS set-up mode.

The LCD display will show the current selection:



4 Use the PARAMETER encoder to select the Master Faders to be either ENABLED or DISABLED.

5 Press the **SETUP** button to exit the Menu.

MIDI Backup

A MIDI data filer or MIDI sequencer can be used for archiving RM1d set-up information for recall at a later stage.

The following options are available:

Type of Information	Description
Receive Data	Console will wait for any incoming MIDI data
Desk Preset	Archive a single RM1d Preset
All Presets	Archive all current RM1d Presets
1 DYN Preset	Archive a single Dynamics Preset
DYN Presets	Archive all Dynamics Presets
1 FX Preset	Archive a single FX Preset
FX Presets	Archive all FX Presets
All Data	Archive all current RM1d data

Executing a MIDI Dump

1 Press the **SETUP** button found below the LCD display.

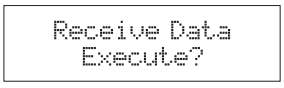
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the MIDI Backup menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the MIDI Backup set-up mode.

The LCD display will show the current selection:



4 Use the PARAMETER encoder to select the type of MIDI Action you want to perform.

(See the table above for a full description of each option)

5 Press the **DOWN** arrow button to select 'Execute'.

6 Now press the **SETUP** button to activate the MIDI dump to the MIDI recording device.

7 Press the **SETUP** button to exit the Menu.

Receiving MIDI Data

1 Press the **SETUP** button found below the LCD display.

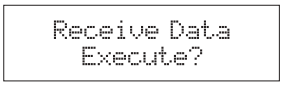
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the MIDI Backup menu page.

The **SETUP** button will flash upon selection.

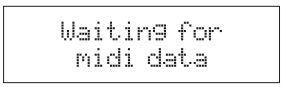
3 Press the SETUP button to enter the MIDI Backup set-up mode.

The LCD display will show the current selection:



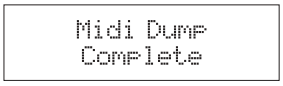
4 Use the PARAMETER encoder to select the RECEIVE DATA command, press DOWN arrow so that Execute? is flashing then press the **SETUP** button.

The LCD display will show the following message:



5 Now start playback of the MIDI device where the data is stored.

When the Data transfer is complete the LCD display will show the following message:



6 Press the **SETUP** button to exit the Menu.

Mono Output

The Mono Output located at the rear of the console can derive its signal from either the STE 1 *(PROG)*, STE 2 *(AUD)*, AUX 1 & 2, AUX 1 or AUX 1 or AUX 2 busses.

Configuring the Mono Output

1 Press the **SETUP** button found below the LCD display.

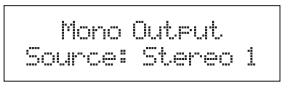
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the Mono Output menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the MONO SUM set-up mode.

The LCD display will show the current selection:



4 Use the PARAMETER encoder to select the source for the Mono Output.

5 Press the **SETUP** button to exit the Menu.

PFL Autocancel (CUE AUTOCANCEL)

The RM1d can be setup globally so that any active PFL *(CUE)* button will be cancelled by opening the fader on the same channel.

Selecting the PFL Autocancel *(CUE AUTOCANCEL)* Function

1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

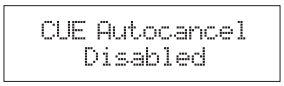
2 Use the PARAMETER encoder to scroll through the menu pages to locate the PFL AUTOCANCEL (*CUE AUTOCANCEL*) menu page.

The SETUP button will flash upon selection

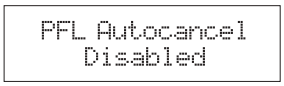
3 Press the SETUP button to enter the PFL AUTOCANCEL (*CUE AUTOCANCEL*) set-up mode.

The LCD display will show the current setting:

RM1d/s



RM1d



4 Now use the PARAMETER encoder to select either ‘Enabled’ or ‘Disabled’

5 Press the SETUP button to exit the Menu

Remote Inputs

There are 4 Remote Inputs accessible via the Remote 1 connector on the rear panel of the RM1d.

The Remote Inputs can perform the following functions:

LCD Display Option	Action
No Action	No action is taken
Enable RTB	Selected Remote Input enables the Reverse Talkback signal to the presenters headphones
Mute Channel 1-6 (7-12)	Selected Remote Input can be configured to mute any of the channels

Configuring the Remote Inputs

1 Press the **SETUP** button found below the LCD display.

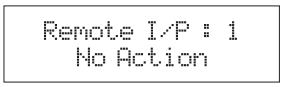
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the REMOTE INPUTS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the REMOTE INPUTS set-up mode.

The LCD display will show the current selection:



4 Use the PARAMETER encoder to select one of the 4 Remote Inputs

5 Press the **DOWN** arrow button and then use the PARAMETER encoder to select which type of action the Remote Input will control.

6 Press the **SETUP** button to exit the Menu.

Software Version

The Software Version menu is used to check which version of software is currently installed in the RM1d.

Checking Software Version

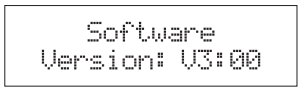
1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

2 Now use the PARAMETER encoder to scroll to the Software Version menu.

3 Press the flashing SETUP button to enter the menu.

The following LCD display will appear:



4 Press the SETUP button to exit the Menu.

System Menu

The System menu is used for setting global features such as Auto Edit, Talkback Swap, FX Send, Pre-Post.

- **Auto Edit - On/Off**

  When Auto Edit mode is selected to be 'On', the LCD display will automatically show parameter values whenever any encoder in the EDIT STRIP is adjusted.

- **Talkback Swap - On/Off**

  This setting allows the user to activate the Talkback Swap facility. (Please see Appendix A 'RM1d Talkback Modes' for further information.

- **FX Send - Pre/Post Master**

  This setting allows the user to choose whether or not the selected send to the Lexicon processor is routed via the AUX MASTER control or not.

Setting System Preferences

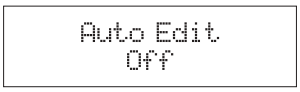
1 Press the **SETUP** button found below the LCD display

This will enter the SETUP mode

2 Now use the PARAMETER encoder to scroll to the System menu.

3 Press the flashing SETUP button to enter the menu.

The following LCD display will appear:



4 You may now use the **UP/DOWN** arrow buttons to select Auto Edit-On/Off, Talkback Swap-On/Off, FX Send-Pre Master/Post Master.

5 Use the PARAMETER encoder to make your sselection.

6 Press the SETUP button to exit the Menu.

Talkback ASSIGN

Any of the 4 (8) MIC LINE inputs (or any other input) can be configured to operate as a Talkback source.

The Talkback circuit is activated when the fader on a microphone channel - that has been set-up for Talkback use - is pulled down to infinity (ie. closed).

When the fader is fully closed, the microphone's output is routed to the Talkback bus.

The Talkback facility will switch off as soon as the channel fader is opened. (For further information regarding the Talkback capabilities of the RM1d please read Appendix A 'RM1d Talkback Modes'.

Assigning the Talkback Microphone

1 Press the **SETUP** button found below the LCD display.

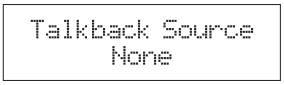
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the TALKBACK ASSIGN menu.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the TALKBACK ASSIGN mode.

The LCD display will show:

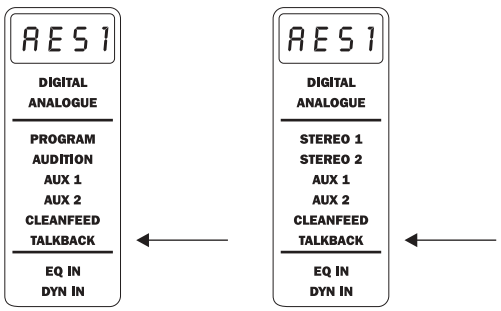


4 Use the PARAMETER encoder to select either CHANNEL 1-6 (7-12) or NONE, or press the edit button on the channel you wish to assign.

You will notice that the TALKBACK legend will illuminate in the display panel of the selected channel, giving instant visual recognition.

NOTE: When the Talkback facilty on the selected channel is in-active, the talkback legend will flash

RM1d/s **RM1d**



5 Press the **SETUP** button to exit the Menu page.

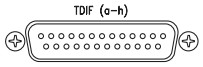
TDIF Outputs

The TDIF connector found on the rear of the RM1d is very useful for creating more inputs and outputs in either digital or analogue formats.

The TDIF connector can very simply be connected for example to an 8 track digital tape machine or hard disk recorder for playback or recording, or it could be connected to a Soundcraft TDIF interface box to expand both analogue or digital input capabilities.

The choices available are:

- **Mic / Line** - Balanced x 8.
- **AES / EBU Interface** - x 8 (mono) 4 (stereo).



- **Unbalanced Analogue** - x 8.

TDIF Output	Source
1 & 2	Undefined
3 & 4	Stereo 1 (PROGRAMME)
5 & 6	Stereo 2 (AUDITION)
7 & 8	Auxiliaries
	Lin/CInfd 12
	Lin/CInfd 34
	(Lin/CInfd 56)

The TDIF outputs are configured in pairs and may derive their output signals from the following sources:

Configuring the TDIF Outputs

1 Press the **SETUP** button found below the LCD display.

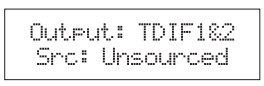
This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the TDIF OUTPUTS menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the TDIF OUTPUTS set-up mode

The LCD display will show the current selection:



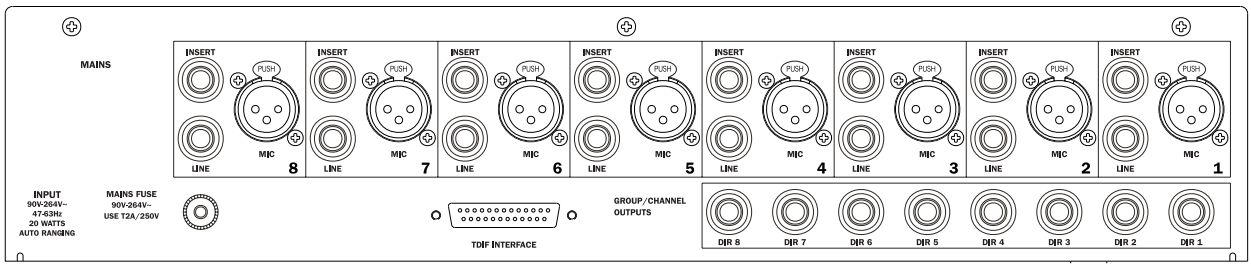
4 Use the **UP / DOWN** arrow buttons to select the upper field of the LCD display, and the PARAMETER encoder to select which pair of TDIF outputs you want to configure.

5 Now use the **UP / DOWN** arrow buttons to select the lower field of the LCD display and the PARAMETER encoder to select where the output signal is derived from.

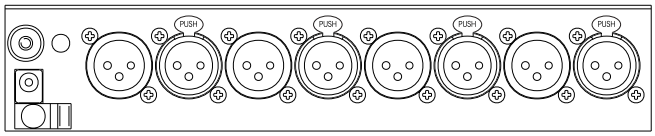
6 Press the **SETUP** button to exit the Menu.

NOTE: It is important that you read through the TDIF OUT ADV. USER section of this User Guide before using the TDIF outputs.

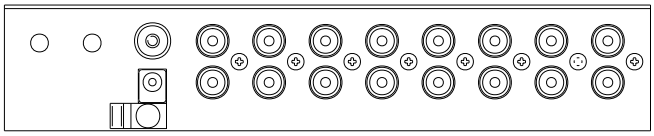
Soundcraft TDIF Boxes



Mic / Line Interface



AES-EBU Interface



Analogue Interface

TDIF Out Adv.

The settings found in this menu are for configuring the Status Bits of the TDIF outputs. In most applications the default settings for these outputs are used, but in certain circumstances it may be necessary to make manual adjustments.

The table below shows the options available for each output.

Digital Output	Sample Rate Flag	Output Buffer
TDIF	Auto 48kHz 44.1kHz 32kHz Undefined	Other Soundcraft

Working with TDIF Devices

When the RM1d is synchronised to an external Word Clock source, most digital devices connected to the RM1d's TDIF digital outputs will happily synchronise to the Word Clock being sent from the RM1d via the TDIF digital output or BNC Word Clock Output.

In most applications the TDIF digital output can be set to 'Auto' configure in the TDIF OUT ADV. Setup Menu. (See below)

In some cases the receiving device connected to the RM1d's TDIF digital output may not synchronise correctly and it may be necessary to manually configure the Sample Rate for the TDIF output.

The Sample Rate Flag will need to be set to the same Word Clock setting that the RM1d is receiving i.e. if the external clock being sent to the RM1d is 48kHz then the Sample Rate Flag should also be set 48kHz.

The Output Buffer

The RM1d has two different modes of operation depending on what type of TDIF equipped device is being connected to the TDIF port.

1 There are three different interface boxes that can connect to the TDIF port on the rear of the RM1d to provide additional digital or analogue inputs and outputs, these are:

- **Analogue Tape Interface** - 8 x Unbalanced RCA/Phono inputs and outputs.
- **AES/EBU Interface** - 4 x AES/EBU inputs and outputs.
- **Mic/Line Interface** - 8 x Balanced inputs and outputs, with 48v phantom power.

When any of the above I/O interface boxes are connected the 'Output Buffer' setting should be set to Soundcraft.

2 Other TDIF based devices such as Tascam digital tape machines and Soundscape digital audio workstations can also connect directly to the TDIF port.

In this case the 'Output Buffer' should be set to 'Other'.

Configuring the TDIF OUT ADV. Settings

1 Press the **SETUP** button found below the LCD display.

This will enter the SETUP mode

2 Use the PARAMETER encoder to scroll through the menu pages to locate the TDIF OUT ADV. menu page.

The **SETUP** button will flash upon selection.

3 Press the **SETUP** button to enter the TDIF ADV.USER set-up mode.

The LCD display will show the current selection:



4 You may now use the PARAMETER encoder to select the Sample Rate Flag between Auto, 48kHz, 44.1kHz, 32khz or Undefined.

5 Once the correct Sample Rate Flag has been selected press the **RIGHT** arrow button to enter the 'Output Buffer' field of the LCD display.

6 The PARAMETER encoder can now be used to toggle between 'Other' and 'Soundcraft'

7 Press the **SETUP** button to exit the Menu.

NOTE: If you experience any digital noise problems when connecting a TDIF equipped device to the RM1d, please try both the 'Soundcraft' and 'Other' settings for the output buffer.

2nd Meter Source (12 Fader consoles only)

The 12 fader RM1d has an additional set of meters that can be selected to monitor either of the Stereo 1 *(PROG)* or 2 *(AUD)* busses, or to display the signal currently selected in the CONTROL ROOM monitor select panel.

Configuring the 2nd Meter Source

1 Press the SETUP button found below the LCD display

This will enter the SETUP mode

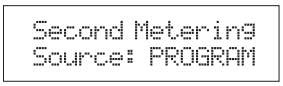
2 Use the PARAMETER encoder to scroll through the menu pages to locate the 2ND METER SOURCE menu page.

The SETUP button will flash upon selection

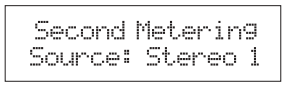
3 Press the SETUP button to enter the 2nd Meter Source set-up mode.

The LCD display will show the current setting:

RM1d/s



RM1d



4 Use the PARAMETER encoder to select Stereo 1 (PROG), Stereo 2 (AUD) or Monitor.

5 Press the SETUP button to exit the Menu.

Dynamics

Dynamics

The RM1d offers Gating, Compression and Limiting capabilities to each input channel on the console. The choices are:

- Gate
- Compressor
- Compressor Gate
- Limiter
- Limiter Gate

When the DYN button is selected the INPUT DISPLAY on any channel with a Dynamics Processor active will automatically switch to showing Gain Reduction and/or Gate Open/Close activity.

Gate

A Gate (also referred to as a Noise Gate) is used to control unwanted background noise. This is achieved by setting a Threshold level where loud signals will be able to pass through (Gate Open) and softer ones will not (Gate closed).

A typical example might be a low level noise coming from an air conditioning unit in the studio that is picked up by the presenterís microphone. When the presenter is talking into the microphone his voice is sufficiently loud to ëmaskí the sound of the air conditioning unit, but when he stops speaking the unwanted sound can be clearly heard.

A Gate could be set-up to only remove the low-level noise coming from the air conditioning unit i.e. when the presenter stops speaking the Gate closes and no signal is passed.

The following parameters are available for adjustment.

Threshold

As mentioned above the Threshold is the point at which the Gate closes which results in the signals being muted. Signals above the Threshold level pass through unaffected. Signals below the Threshold level will not be able to pass through the Gate.

Attack

The Attack time determines how quickly the Gate opens when a signal exceeds the Threshold level.

Hold

The Hold time determines how long the Gate stays open after the input signal has dropped back below the Threshold level.

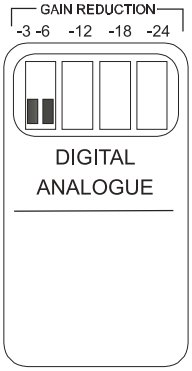
Decay

The Decay time determines how quickly the Gate will close after the Hold time has expired.

Depth

The Depth control determines to what level the Gate closes. A level of 0dB will mean that the Gate does not close at all and all signals pass through. A level of -80dB will mean that the Gate closes completely whenever the signal level drops below the Threshold setting. This control can be used to prevent the Gate's action being too abrupt and noticable.

Displaying Gate Activity



When a Gate is assigned to a channel and the DYN button is pressed, the INPUT DISPLAY will show Gate Open/Close activity by illuminating the first two blocks of the lower line of the INPUT DISPLAY when the Gate is Closed.

Compressor

A Compressor is a device that acts almost like an 'automatic hand' placed on a channel fader. It can reduce the level of signals that are too loud thus preventing signal overload. This is achieved by setting a Threshold level whereby signals that exceed the Threshold are reduced (compressed) by a pre-determined amount (the Ratio setting). Signals falling below the Threshold level will pass through unaffected.

A typical example of this would be compressing the DJ microphone to avoid sudden jumps in output level if the DJ moves too close to the microphone.

The following parameters are available for adjustment.

Knee

The Knee setting determines what the transition between the uncompressed signal and the compressed signal is going to be. If Hard Knee is chosen then at the point where the signal passes through the Threshold point, compression will begin immediately. If Soft Knee is chosen then compression will begin slightly before the point at which the signal passes through the threshold point. The Soft Knee setting will usually make the transition between uncompressed and compressed states sound more subtle and natural.

Threshold

The Threshold level determines the point at which compression begins to occur. Signals that are above the Threshold setting will be compressed according to the setting chosen in the Ratio menu. Signals below the Threshold level will pass through unaffected.

Ratio

Once the signal has exceeded the Threshold level it will be reduced (compressed) by the amount set using the Ratio setting. If for example a Ratio setting of 5:1 is chosen a change, in signal level of 10dB above the Threshold will result in a 2dB change in Output level.

Attack

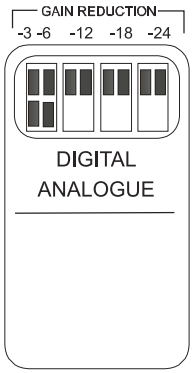
The Attack time determines how fast the Compressor will start to act once the signal has passed the Threshold point.

Release

The Release time determines how fast the Compressor returns to its normal state once the signal has dropped back below the Threshold point.

Makeup

The Makeup control is used to increase the output level of the Compressor. Adding compression will normally reduce the average level of the signal. The Makeup control allows for this level drop to be compensated.



When a Compressor Gate (or Limiter) is assigned to a channel, and the DYN button is pressed, the INPUT DISPLAY will show gain Reduction by illuminating-from left to right-the blocks in the upper line of the INPUT DISPLAY.

Limiter

The Limiter functions in a very similar manner to the Compressor and shares all of the same parameter options except for the Ratio control.

The Limiter has a very high fixed Ratio setting that is not adjustable. The reason for this is that the Limiter is normally used as a safety mechanism to prevent a sudden 'loud' signal from overloading the channel. The Limiter will usually be 'invisible' until a very loud signal comes along at which point it will apply heavy compression (limiting) to prevent the loud signal from possibly overloading equipment further down the line.

Compressor Gate / Limiter Gate

The Compressor Gate and Limiter Gate are simply a combination of the Compressor (Limiter) and Gate mentioned above.

The parameter adjustments for the Compressor (Limiter) appear before the parameter adjustment for the Gate. (See table below for parameter list)



When a Compressor Gate or Limiter gate is assigned to a channel, gain reduction is displayed from left to right in the top row of the INPUT DISPLAY and gate Open/Close activity is represented by the first two blocks in the bottom row of the INPUT DISPLAY. When the blocks are illuminated the gate is Closed.

Assigning the Dynamics Processors

1. Press the **DYN** button found below the LCD display

   This will enter the Dynamics mode

2. Now press the EDIT button on the channel you want to assign a Dynamics processor to. (The LCD display will show the selected channel number)

3 Use the DOWN and UP arrow buttons to select the 'Type' page.

4 Now use the PARAMETER encoder to choose the type of Dynamics processor you require.

5 The UP/DOWN arrow buttons can now be used to select the 'DYN In/Out' page, and the PARAMETER encoder can be used to switch the Dynamics processor In or Out.

TIP: The LEFT arrow button can be used to toggle the Dynamics processor In and Out.

NOTE: Whenever the DYN button is selected, the INPUT DISPLAY will change from showing the name of the input source to showing Gain Reduction and Gate Open/Close activity on any channel that has a Dynamics processor switched 'On'.

Adjusting Dynamics Processor Settings

1. Once you have assigned a Dynamics processor to a channel, you may use the UP/DOWN arrow buttons to step through the relevant parameters and adjust them accordingly.

2. Available parameters are as follows:

Parameter	Gate	Compressor	Comp Gate	Limiter	Limiter Gate
Comp/Lm Knee	-	Hard/Soft	Hard/Soft	Hard/Soft	Hard/Soft
Comp/Lm Threshold	-	-60dB ~ 0dB	-60dB ~ 0dB	-60dB ~ 0dB	-60dB ~ 0dB
Comp/Lm Ratio	-	1:1 ~ 8:1	1:1 ~ 8:1	1:1 ~ 8:1	-
Comp/Lm Attack	-	1ms ~ 500ms	0ms ~ 500ms	0ms ~ 500ms	0ms ~ 500ms
Comp/Lm Release	-	10ms ~ 10s	10ms ~ 10s	10ms ~ 10s	10ms ~ 10s
Comp/Lm Makeup	-	-12dB ~ +12dB	-12dB ~ +12dB	-12dB ~ +12dB	-12dB ~ +12dB
Gate Threshold	-60dB ~ 0dB	-	-60dB ~ 0dB	-	-60dB ~ 0dB
Gate Attack	0ms ~ 150ms	-	0ms ~ 150ms	-	0ms ~ 150ms
Gate Hold	1ms ~ 500ms	-	1ms ~ 500ms	-	1ms ~ 500ms
Gate Decay	10ms ~ 10s	-	10ms ~ 10s	-	10ms ~ 10s
Gate Depth	-80dB ~ 0dB	-	-80dB ~ 0dB	-	-80dB ~ 0dB

Storing and Naming a Dynamics Preset

Once you have programmed the Dynamics processor to your requirement, you may store it for later recall by doing the following:

1. Make sure the DYN button is selected.

2. Press the flashing PRESETS button

   The LCD display will show the following:



3. Use the PARAMETER encoder to locate the Preset memory location you would like to save to.

4. Now use the DOWN arrow button to select the 'Dyn Preset Store' line in the display. The PRESETS button will begin to flash.

5. Press the PRESET button to select the 'Store To' page (you may also use the PARAMETER encoder to select a Preset memory location)

6. Press the flashing DYN button.

7. You will be prompted to rename the Preset, which you may do using the PARAMETER encoder and the UP/DOWN/LEFT/RIGHT arrow buttons.

8. Once you have finished renaming the Preset press the DYN button again the store the Preset.

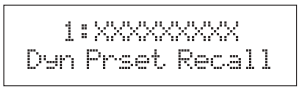
Recalling a Dynamics Preset

You may recall a Dynamics Preset and assign it to any channel. To recall a Dynamics Preset do the following:

1. Make sure the DYN button is selected.

2. Press the flashing PRESETS button

   The LCD display will show the following:



3. Use the PARAMETER encoder to select the Dynamics Preset you want to recall

4. Press the DOWN arrow button to select the 'Dyn Preset Recall' line of the LCD Display

5. Now press the EDIT button on the channel to which you want to assign the Dynamics Preset.

6. Press the flashing PRESETS button to recall the Dynamics Preset to the chosen channel.

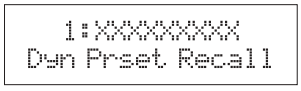
Deleting a Dynamics Preset

To delete a Dynamics Preset do the following:

1. Make sure the DYN button is selected.

2. Press the flashing PRESETS button

   The LCD display will show the following:



3. Use the PARAMETER encoder to select the Dynamics Preset you want to delete.

4. Press the DOWN arrow button to select the ‘Dyn Preset Recall’ line of the LCD Display

5. Use the PARAMETER encoder to select ‘Dyn Preset Delete’.

7. Press the flashing PRESETS button to delete the chosen Dynamics Preset.

Lexicon FX

Lexicon Effects

The RM1d has a built in Lexicon Digital Effects Processor that offers a range of superb effects that can be used to add another dimension to On Air or production applications.

The effects are accessed by using either the AUX 1 or AUX 2 sends (or both in Stereo Mode) to send signal from a selected channel into the Lexicon Digital Effects Processor. The effect output is sent directly to either the STE1 *(PROG)* or STE2 *(AUD)* (or both) output busses.

The Choice of factory preset effects are as follows.

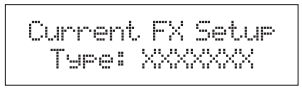
Large Hall	Drum Plate	Bright Hall	Open Harp
Vocal Hall	Vocal Plate	Dark Hall	Rich Resonator
Piano Hall	Flanger	Big Hall	Delay
Music Club	Chorus	Plate	Long Delay
Small Room	Canyon	Church	Chorus Delay
Inverse	Multi Tap	Small Gate	Long Echoes Sheen
Gated Reverb	Resonate	Large Gate	Chorus
Rich Plate	Small Hall	Meal Gate	Multi Echoes

Choosing an Effect

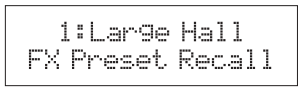
1. Before choosing one of the above effects, you must decide which of the AUX 1/AUX 2 busses will be used as the 'send' control to the Lexicon processor.

2. To do this press either the AUX 1 or AUX 2 button in the Lexicon Digital Effects Processor section to select which one will be the 'source'.

3. Now press the FX EDIT button. The LCD display will show the currently loaded effect:



4. Now press the flashing PRESETS button to enter the FX PRESETS menu. The LCD display will show:



5. You can now use the PARAMETER encoder to select one of the effects from the above list.

6. Once you have located the desired effect press the DOWN arrow button to select the 'FX PRESET RECALL' line of the LCD Display.

7. Press the flashing PRESETS button to recall the chosen effect.

Applying the Effect to a Signal

Once you have chosen the desired effect you will want to apply it to one or more of the channel signals in order to hear how it sounds.

1. Press the EDIT button on the channel to which you want to apply the effect. (This will select the EDIT STRIP to the channel)

2. Make sure that the FX IN button is seleceted

3. Now turn up the AUX 1 or AUX 2 control (depending on which one you selected as the source)

4. You should now begin to hear the effect on your monitor speaker or headphones

5. Use the AUX 1 or AUX 2 send control to vary the amount of effect you require.

Editing, Storing and Renaming an Effect

It is possible to edit the parameters of any of the preset effects to suit your own individual requirements.

1. Start by selecting an effect from the presets menu that is close to what you want.

2. Press the FX EDIT button

3. Now use the DOWN/UP arrow keys to step through the various parameters. The PARAMETER encoder is use to adjust the parameter value.

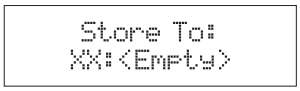
4. Once you are happy with the new edited effect press the flashing PRESETS button.

5. Use the DOWN arrow button to select the 'FX Preset Recall' line of the LCD Display

6. Use the PARAMETER encoder to select 'FX Preset Store'

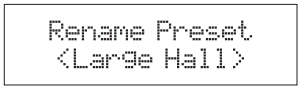
7. Now press the flashing PRESETS button

8. The LCD Display will now read



9. Confirm the storing procedure by pressing the flashing FX EDIT button (or cancel by pressing the PRESETS button)

10. The LCD Display will now read



11. You may now use the PARAMETER encoder and the UP/DOWN/LEFT/RIGHT arrow buttons to rename the effect.

12. Now press the flashing FX EDIT button to store the new name

Deleting and an Effects Preset

1. Press the FX EDIT button to enter the effects editing mode

2. Press the flashing PRESETS button

3. Use the PARAMETER encoder to scroll to the preset you want to delete (Only Presets 33 - 128 can be deleted)

4. Press the DOWN arrow button to select the 'FX Preset Recall' line of the LCD Display

5. Use the PARAMETER encoder to select 'FX Preset Delete'

Presets

The Presets Button

The **PRESETS** button allows access to the menu from where the 128 Snapshot Presets are Stored, Named and Recalled and deleted.

The Snapshot Presets are one of the most powerful functions of the RM1d because complete console set-ups can be stored and recalled instantly, allowing the RM1d to be completely reconfigured for different applications.

For example a set-up could be stored as 'Preset 1' that included various CD and Mini Disc players and a couple of presenter's microphones for a live music show. Another set-up could be stored as 'Preset 2' that included more microphones and a couple of telephone inputs for a talk show.

The two different Snapshot Presets could then be instantly recalled when required, with out the need for re-patching any of the inputs to the console, as all we would be doing is re-routing the available inputs to a different destination.

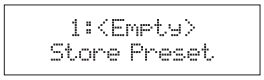
(See table below). (Example is based on 6 fader version of the RM1d)

RM1d Input	Source Type	Preset 1 assignment	Preset 2 Assignment
Mic/Line 1	Microphone 1	Channel 1 (Mono)	Channel 1 (Mono)
Mic/Line 2	Microphone 2	Channel 2 (Mono)	Channel 2 (Mono)
Mic/Line 3	Microphone 3		Channel 3 (Mono)
Mic/Line 4	Microphone 4		Channel 4 (Mono)
Stereo Analogue 1	Telephone Hybrid 1		Channel 5 (Mono)
Stereo Analogue 1	Telephone Hybrid 2		Channel 6 (Mono)
AES/EBU 1	CD Player 1	Channel 3 (Stereo)	
AES/EBU 2	CD Player 2	Channel 4 (Stereo)	
AES/EBU 3	Mini Disc Player 1	Channel 5 (Stereo)	
AES/EBU 4	Mini Disc Player 2	Channel 6 (Stereo)	
SPDIF 1	CD Player 3		

Storing a Snapshot Preset

1. Press the **PRESETS** button to enter the Presets Menu.

   The following LCD display will appear:

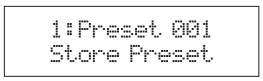


2. Press the **DOWN** arrow button.

   The 'Store Preset' field should begin to flash along with the **PRESETS** button.

3. Press the **PRESETS** button to store the current console settings.

   The LCD display will now show:



4. Press the **UP** arrow key. The 'Preset 001' field will begin to flash.

5. Press the **PRESET** button again to exit the Menu.

Renaming a Snapshot Preset

1 Press the **PRESET** button to enter the Presets Menu.

The following LCD display will appear:

```
1:Preset 001
Recall Preset
```

2 Press the **DOWN** arrow button.

The 'Recall Preset' field should begin to flash along with the **PRESETS** button.

3 Use the PARAMETER encoder to select 'Rename Preset' and then press the **PRESETS** button.

The LCD display will now show:

```
Rename Preset
<Preset 001>
```

4 Now use the **UP / DOWN / LEFT / RIGHT** arrow buttons to navigate through the characters and the PARAMETER (ENCODER) to choose the characters. For this example will use the new name 'Drive Show'.

NOTE: The UP arrow button can be used to increment numbers and the DOWN arrow button can be used to delete a character or create a space.

5 Once you have completed the naming process press the **PRESET** button.

The LCD display will show

```
Renamed
Preset!
```

And then revert to showing:

```
1:Preset 001
Recall Preset
```

6 Press the **PRESET** button again to exit the Menu.

Recalling a Snapshot Preset

1 Press the **PRESET** button to enter the Presets Menu.

The following LCD display will appear:



2 Use the PARAMETER encoder to select the Snapshot Preset that you want to recall.

3 Press the **DOWN** arrow button. The lower field of the LCD display should begin to flash along with the **PRESETS** button.

4 Use the PARAMETER encoder to select 'Recall Preset' and then press the **PRESETS** button to recall the chosen Snapshot Preset.

5 Press the **UP** arrow key to return to the 'Preset 001' field of the LCD display.

6 Press the **PRESETS** button to exit the Menu.

WARNING:

Recalling a Snapshot Preset has the potential to completely re-configure console settings - use with caution

Deleting a Snapshot Preset

1 Press the **PRESET** button to enter the Presets Menu.

The following LCD display will appear:

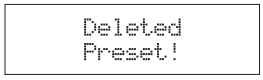


2 Use the PARAMETER encoder to select the Snapshot Preset that you want to delete.

3 Press the **DOWN** arrow button.

The 'Recall Preset' field of the LCD display should begin to flash along with the **PRESETS** button.

4 Use the PARAMETER encoder to select 'Delete Preset' and then press the **PRESETS** button to delete the chosen Preset. The LCD display will show



5 Press the **UP** arrow button to enter the top field of the LCD display.

6 Press the **PRESETS** button to exit the Menu.

NOTE: There is NO UNDO facility when deleting Presets!

Recalling Factory Default Preset

Recalling the Factory Default Preset will reset the control surface to it's default settings. This is useful as a starting point when you are setting up a new layout for the Control Surface.

1 Press the PRESETS button to enter the PRESETS menu.

2 Turn the PARAMETER encoder left (anticlockwise) to select the 'Factory Default' preset for recalling.

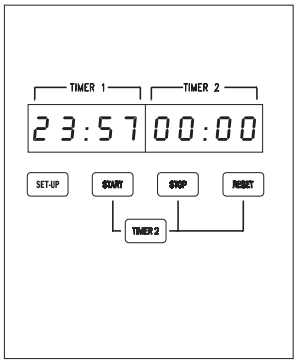
3 Press the DOWN arrow to highlight the 'Recall Preset' field of the LCD display.

4 Press the PRESETS button to recall the Factory Default preset.

Timer Operation

Timer Operation

The RM1d contains two timers. These can be controlled either directly from the buttons on the meterbridge, or automatically from the channel faders.



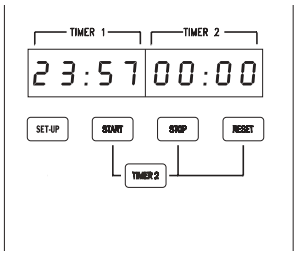
Manual Operation

The TIMER 2 LED indicates which timer the START, STOP and RESET buttons will operate.

If the TIMER 2 LED is illuminated then the START, STOP and RESET buttons control TIMER 2 (the red LED display on the right), and if the TIMER 2 LED is not illuminated, the START, STOP and RESET buttons control TIMER 1.

If the timer is running the START button will be illuminated, otherwise the STOP button will be illuminated.

Button Actions:

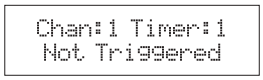


- Pressing the **STOP** button will stop the active timer.
- Pressing the **START** button will start the currently active button.
- Pressing the **RESET** button will reset the currently active timer, but will not alter its stopped/running state.
- Pressing the **TIMER 2** button will change the currently active timer from 1 to 2 or from 2 to 1.

Automatic Operation

The timers can be controlled automatically by the channel faders. (There is a menu to enable the triggering actions to be configured).

1. Press the **SETUP** button just below the timer displays. The LCD display will show:



2. Press the **EDIT** button on the channel you want to configure.

3. Now press the **RIGHT** arrow button and use the PARAMETER encoder to select which mode you would like to use. (See the table below)

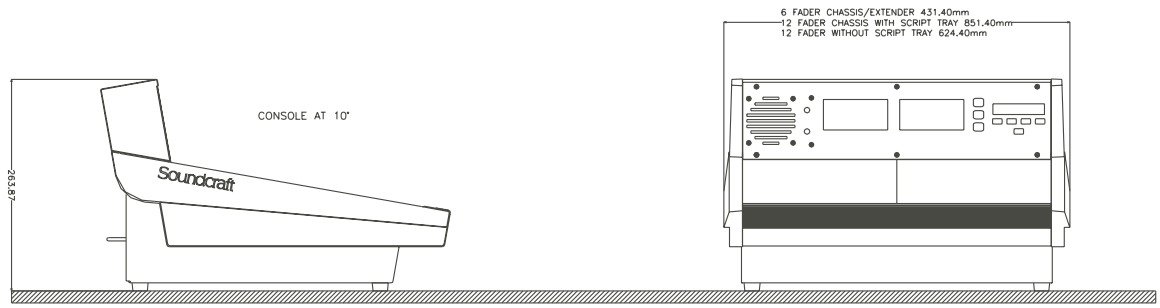
Action	Effect
Not Triggered	Moving the fader has no effect on the timer
Trigger	When the fader is moved from the lowest position (minus infinity) the corresponding timer is started. When the channel fader is moved to its lowest position the corresponding timer is stopped.
Reset & Trigger	When the channel fader is moved from its lowest position the corresponding timer is first reset, and then started. When the channel fader is moved to its lowest position the corresponding timer is stopped.

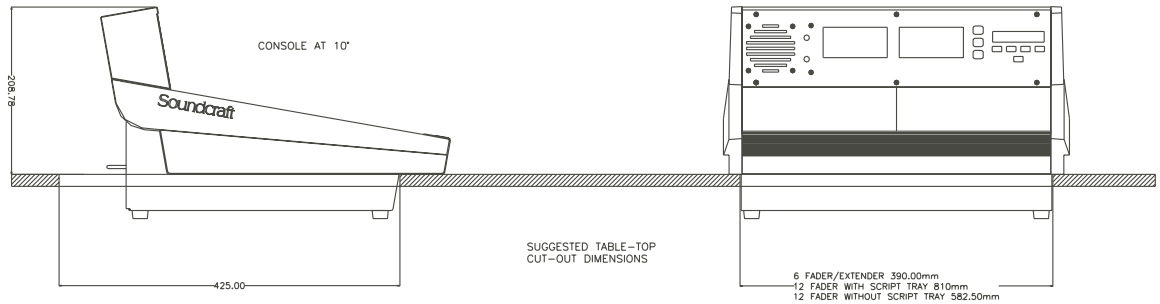
NOTE: The automatic timer Setup does not effect the manual operation of the timers, i.e. a timer may be manually operated even though it is configured for automatic fader operation.

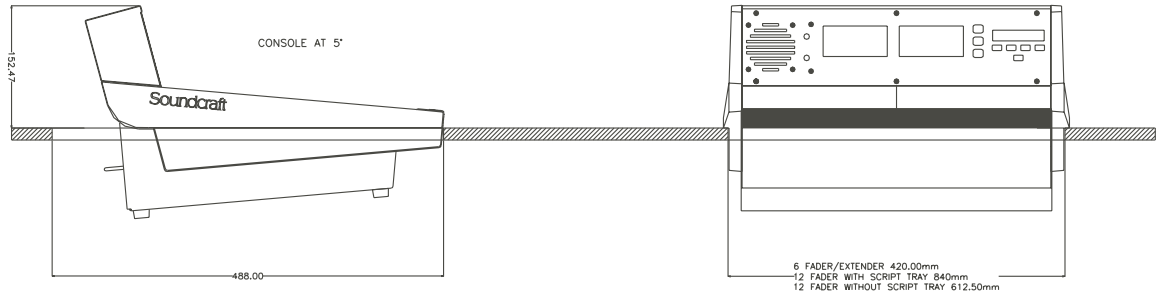
NOTE: The channel fader action on the timers is independent of the channel ON/OFF state.

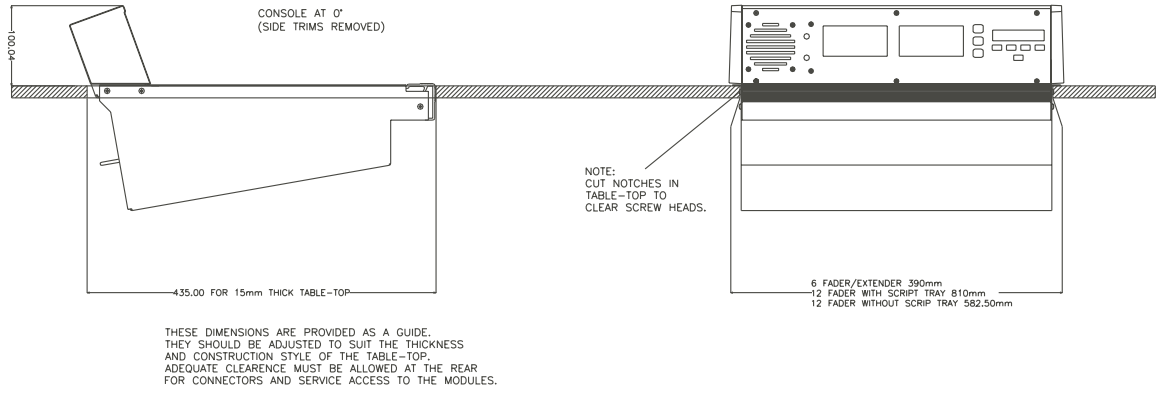
Specifications

Standard Dimensions



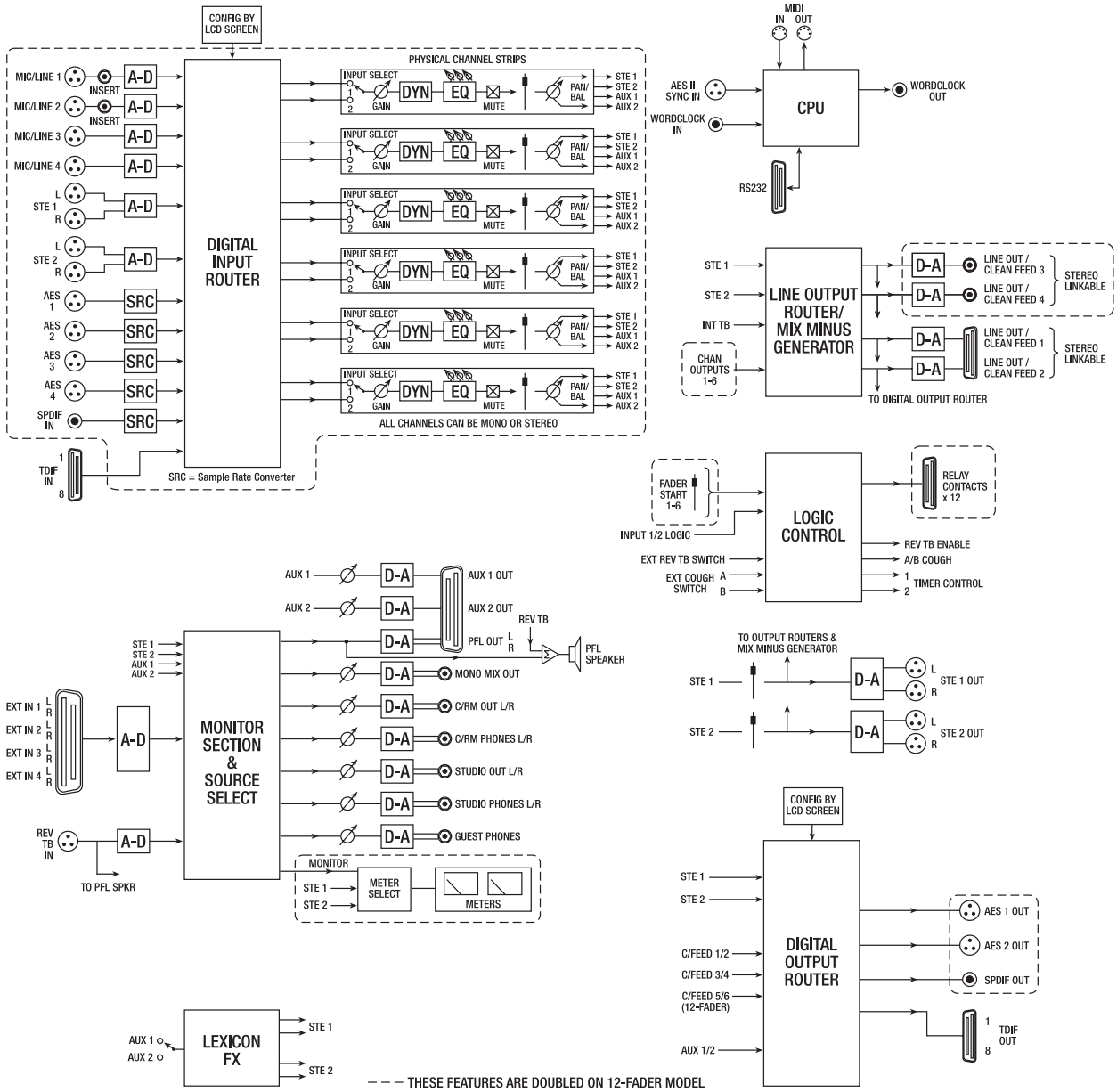






THESE DIMENSIONS ARE PROVIDED AS A GUIDE.
THEY SHOULD BE ADJUSTED TO SUIT THE THICKNESS
AND CONSTRUCTION STYLE OF THE TABLE-TOP.
ADEQUATE CLEARENCE MUST BE ALLOWED AT THE REAR
FOR CONNECTORS AND SERVICE ACCESS TO THE MODULES.

RM1d Flow Diagram



NOTE: The above diagram represents the RM1d not the RM1d/s. 'S' versions of the RM1d have PROG and AUD in place of STE1 and STE2 output buses and the PFL bus is renamed as 'cue'. All other facilities are identical.

RM1d – Typical figures

Measurements made using 6 Fader console using measurement bandwidth <10-22kHz (unweighted) unless otherwise stated.

AD/DA Conversion	
Sampling rates	44.1kHz, 48 kHz
Bit Resolution All Inputs	24 bit (128 x oversampling)
Bit Resolution All Outputs	24 bit (128 x oversampling)
Sample Rate Conversion range	40 – 50 kHz
Signal Delay	Less than 1.4 ms @ 48kHz (Channel In to Mix Out)
External Word Clock	AES 11/BNC

Dynamic Range	
Internal DSP	24 Bit (56 Bit – Bussing)
Mic/Line Input to Mix Output	106 dB
Stereo Input to Mix Output	106 dB

Noise			
Mic equivalent input noise	-127 dBu (150Ω source)		
Mix Output with Mix Fader down	- 90 dBu		
Mix Output with Mix Fader at unity	-90 dBu No channel routed	-88dBu 1 channel routed	-86 dBu 2 channels routed
Total Harmonic Distortion	Mic/Line Input 1kHz @ 30dB gain, to Mix Output at +14dBu, 600 Ω = < 0,01%		
	Ste input Input1kHz @ 0dB gain to Mix Output at +14dBu, 600 Ω = < 0,005%		

Crosstalk @ 1kHz	
Adjacent channels	> 90 dB
Fader Attenuation	> 100 dB
Channel Mute Attenuation	> 100 dB

General	
Frequency response	+/- 0.5dB 20Hz –20 kHz All outputs
Power consumption (External power supply DPS-1)	100W

Analogue Inputs	Sensitivity	Nominal	Max before clip	Connector type	Impedance
Mic/Line Inputs	-60 dBu	0 dBu	+18 dBu	XLR Female (Balanced)	2.2 kΩ
Stereo Inputs	-18 dBu	0 dBu	+18 dBu	XLR Female (Balanced)	10 kΩ
Reverse Talkback	-60 dBu	0 dBu	+18 dBu	XLR Female (Balanced)	2.2 kΩ
Mic/Line Insert Return	0 dBu	0 dBu	+18 dBu	¼ jack, Tip = Return (Unbalanced)	20 kΩ
EXT 1, 2, 3, 4 Inputs	0 dBu	0 dBu	+18 dBu	37 Pin D-sub (Balanced)	10 kΩ

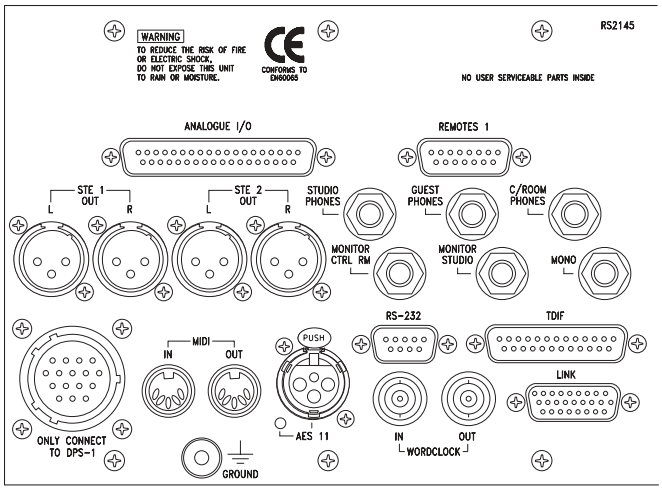
Analogue Outputs	Impedance	Nominal Output level	Max before clip	Connector type
Stereo Outputs	50 Ω	+4 dBu	+18 dBu	XLR Male (Balanced)
Control Room and Studio Monitor Outputs	50 Ω	+4 dBu	+18 dBu	¼'' Stereo Jack (Unbalanced)
Mono Output	50 Ω	+4 dBu	+18 dBu	¼'' Stereo Jack (Balanced)
Line/Cleanfeed Outputs 1 and 2	50 Ω	+4 dBu	+18 dBu	37 Pin D-sub (Balanced)
Line/Cleanfeed Outputs 3 and 4	50 Ω	+4 dBu	+18 dBu	¼'' Stereo Jack (Balanced)
Auxiliary Outputs 1 and 2	50 Ω	+4 dBu	+18 dBu	37 Pin D-sub (Balanced)
Mic/Line Insert Send	50 Ω	+4 dBu	+20 dBu	¼ jack Ring = Send (Unbalanced)
Studio, Guest and Presenters Headphones	For use with headphones of 50 Ω or greater. Typical power output = 95 mW with 200 Ω load.			¼'' Stereo Jack (Unbalanced)

Please note - Depending on the meter option fitted to RM1d, the nominal level will vary according to the meter calibration.

Standard meter calibration is as follows:
VU meter: 0VU = +4dBu output level
1-7 PPM: 5PPM = +4dBu output level

Updating Software

RM1d/RM1d/s


WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
CONFORMS TO EN60065
RS2145
NO USER SERVICEABLE PARTS INSIDE
ANALOGUE I/O
REMOTES 1
STE 1 OUT
L
R
STE 2 OUT
L
R
STUDIO PHONES
GUEST PHONES
C/ROOM PHONES
MONITOR CTRL RM
MONITOR STUDIO
MONO
RS-232
TDIF
MIDI
IN
OUT
PUSH
LINK
ONLY CONNECT TO DPS-1
AES 11
IN
OUT
WORDCLOCK
GROUND

How to Upgrade the Software in RM1d

Prerequisites

Before you start you will need the following:

- the file containing the new software file on your PC. This will be in the form 'RM1dVxx.abs'. If you have downloaded the software from the Internet, it may be in .zip format, in which case make sure you extract the .abs file before attempting to download to the console. Put the .abs file into a known location on your PC, such as C:\RM1d Software.

- a cable to connect the PC to the desk. This is a standard PC serial port extension cable, ie RS232 9-pin D-type, male to female. This cable should be readily available from most computer accessories outlets. (If you have a Mac, you will also have to obtain a 9-pin D-type to 8-pin mini-DIN adapter for use with a PC serial cable).

NOTE: Software updates are obtainable from the RM1d section on the Soundcraft website.

Preparing the Hardware

Connect the PC to the desk using the serial cable. Use one of the COM port connections on the PC and the connection labelled 'RS232' on the desk.

Preparing the PC

Start Hyper Terminal by double-clicking the 'Hypertrm' icon in Windows\ProgramFiles\Accessories\HyperTerminal. Although any communication program that supports Xmodem file transfer protocol may be used, these instructions show "Hyper Terminal" (Mac users can use 'Z-Term'.)

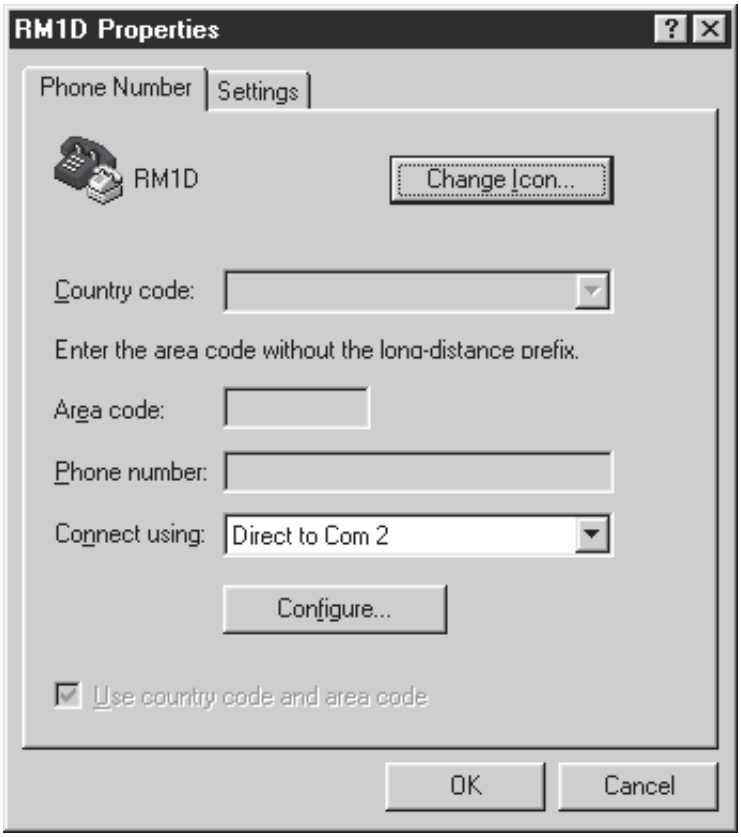
- In the dialogue box that appears, enter a name for the connection, eg, 'RM1d Download'. This will create an icon with the correct settings stored which can be used at any time in the future when a software upgrade is required.

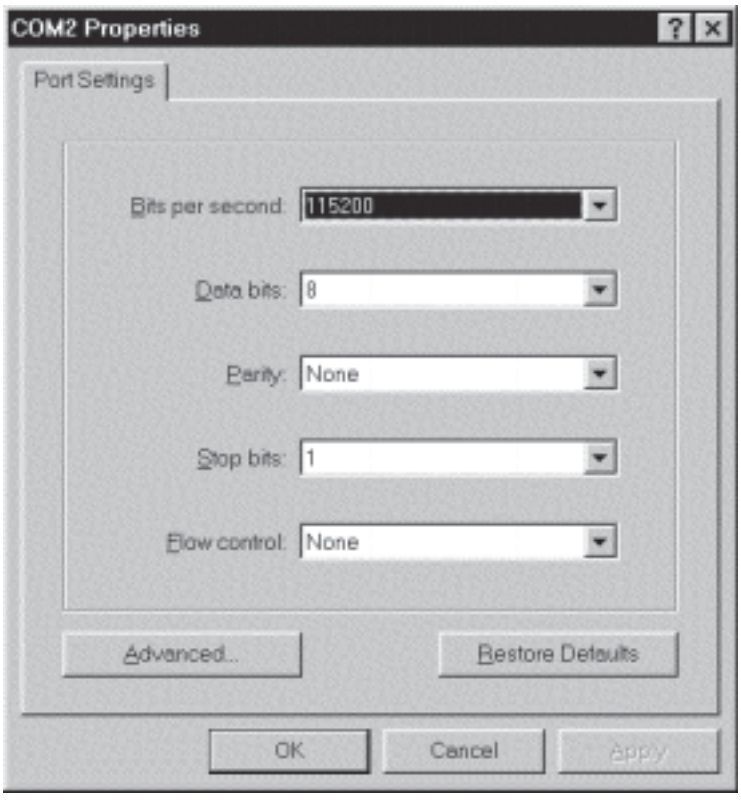
- In the Phone Number dialogue box, go straight to the 'Connect Using' drop down menu and select 'Direct to Com2' and click OK. (Other Com ports could be used - select the one to which you have connected the serial cable).

- Set up the properties in the COM2 Properties dialog box, as shown.

- Set up the properties in the COM2 Properties dialog box, as shown.

- Click OK. The HyperTerminal main screen will appear. Select Call|Connect to establish the connection with the desk.


RM1D Properties
Phone Number
Settings
RM1D
Change Icon...
Country code:
Enter the area code without the long-distance prefix.
Area code:
Phone number:
Connect using:
Direct to Com 2
Configure...
Use country code and area code
OK
Cancel


COM2 Properties
Port Settings
Bits per second:
115200
Data bits:
8
Parity:
None
Stop bits:
1
Flow control:
None
Advanced...
Restore Defaults
OK
Cancel
Apply

Transferring the Software

Once the download cable is connected between the PC and the RM1d and the PC configured as described, the following procedure needs to be completed to enable the new software to be downloaded.

Make sure that the RM1d is switched off.

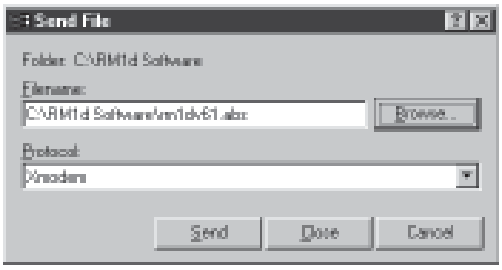
Hold down the 'U' key on your PC keyboard whilst switching the DPS-2 power supply on.

The following message should appear in the window of Hyperterminal:

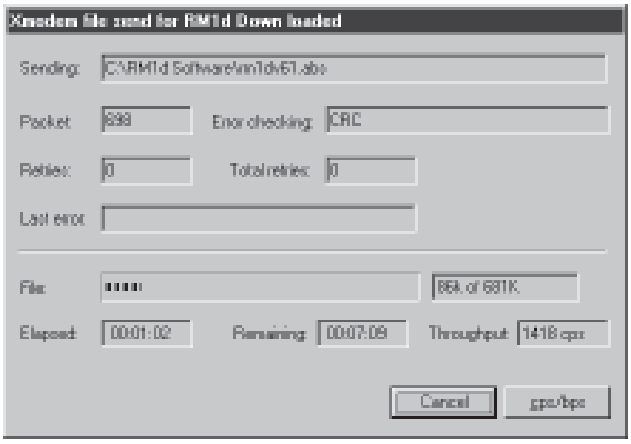
"Waiting for application code Upload"

Once the above message appears you can release the 'U' key.

Select, Transfer | SendFile and click Browse... to locate and select the .abs file from wherever you put it (eg, c:\RM1d Software). Select the 'Xmodem' protocol in the lower box.



Click "send".



While the program is being transferred Hyper terminal should show a progress box.

The transfer will take about 3 minutes 20 seconds. During the transfer the RM1D desk will be blank. This is OK. So long as the "Packet" number is changing on the PC the new software is being transferred OK.

When the transfer is complete the following message should be displayed:

“Press ‘P’ to Program Flash or any key to quit”

Now Press the ‘P’ key to program the flash memory this will take a short while and the following message will appear.

“Programming Flash. Please wait”

Once the flash memory has been programmed the following messages will appear:

“GOOD: Upgrade complete. Please Reboot RM1d now”

Reboot the RM1d at this point.

Remotes

RM1d Remotes and External Analogue I/O D-Type Pin-Outs

Remotes 2 (Remotes 3) Fader Starts

The Fader Start remotes are isolated relay contacts. These can be configured as either momentary (pulsed) operation or latched via the software.

The contacts are normally open, and can be configured to be closed for Start.

The two terminals of each relay contact are designated A and B below:

25wy D-type FML

Pin	Function	Pin	Function
1	Chassis Ground	14	Rly 1B
2	Rly 1A	15	Rly 2B
3	Rly 2A	16	Rly 3B
4	Rly 3A	17	Rly 4B
5	Rly 4A	18	Rly 5B
6	Rly 5A	19	Rly 6B
7	Rly 6A	20	Rly 7B
8	Rly 7A	21	Rly 8B
9	Rly 8A	22	Rly 9B
10	Rly 9A	23	Rly 10B
11	Rly 10A	24	Rly 11B
12	Rly 11A	25	Rly 12B
13	Rly 12A		

NOTE: It is important that no two devices are assigned to the same relays simultaneously as this may cause the RM1d to malfunction

Remotes 1 (Master Remotes)

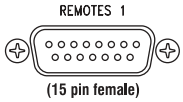


The Master Remotes comprise dedicated normally open relay contacts which operate from the Studio and Control Room (CRM) mute logic, and hence can be used for 'On Air' Light control.

An additional 4 normally open contacts can be assigned to control various functions from within the software. The two terminals of each relay contact are designated A and B below:

There are also 4 Remote Inputs, which are high-impedance logic lines that must be pulled low (to Logic Ground) via an external switch, to activate. The functions of each Remote Input are assignable from within the software.

15wy D-type FML



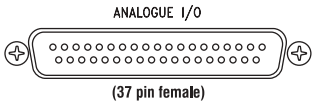
Pin	Function	Pin	Function
1	Remote In 4	9	Logic Ground
2	Remote In 3	10	Logic Ground
3	Remote In 2	11	Logic Ground
4	Remote In 1	12	RESERVED
5	RESERVED	13	RESERVED
6	RESERVED	14	Studio Mute B
7	Studio Mute A	15	CRM Mute B
8	C/RM Mute A		

A note on the Analogue I/O Connector

The Analogue I/O connector is used for the following analogue inputs and outputs:

External stereo monitor source inputs 1-4, Aux 1,2 outputs, Clean Feed 1,2 outputs, Stereo PFL outputs and Cue Speaker outputs. All inputs and outputs are balanced.

37wy D-type FML



Pin	Function	Pin	Function
1	Audio Ground		
2	Ext In 1 Left +	20	Ext In 1 Left -
3	Ext In 1 Right +	21	Ext In 1 Right -
4	Ext In 2 Left +	22	Ext In 2 Left -
5	Ext In 2 Right +	23	Ext In 2 Right -
6	Ext In 3 Left +	24	Ext In 3 Left -
7	Ext In 3 Right +	25	Ext In 3 Right -
8	Ext In 4 Left +	26	Ext In 4 Left -
9	Ext In 4 Right +	27	Ext In 4 Right -
10	Chassis Ground	28	Audio Ground
11	PFL (CUE) Out Left +	29	PFL (CUE) Out Left -
12	PFL (CUE) Out Right +	30	PFL (CUE) Out Right -
13	Aux 1 Out +	31	Aux 1 Out -
14	Aux 2 Out +	32	Aux 2 Out -
15	Clean Feed 1 Out +	33	Clean Feed 1 Out -
16	Clean Feed 2 Out +	34	Clean Feed 2 Out -
17	Cue Spkr 1 Out +	35	Cue Spkr 1 Out -
18	Cue Spkr 2 Out +	36	Cue Spkr 2 Out -
19	Chassis Ground	37	Audio Ground

Re-Initialising The RM1d

Re-Initialising the RM1d

There are four different re-initialising processes that can be performed on the RM1d.

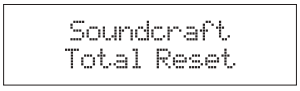
Total Reset of the RM1d

Totally resetting the RM1d will take it back to the state it was in when it left the factory and will delete all information stored in the console. This mode is useful if you have purchased the console second hand and would like to reset it to its default state. To perform a total reset do the following:

1 Make sure the console is turned off.

2 Whilst holding down the UP/DOWN/LEFT/RIGHT arrow buttons switch the console on again.

3 Continue to hold the arrow buttons until the LCD display shows the following message:



FX/DYN Presets Reset

Performing this reset will delete only the FX and Dynamics Presets stored in the user memory locations.

1 Make sure the console is turned off.

2 Whilst holding down the LEFT/RIGHT arrow buttons switch the console on again.

3 Continue to hold the arrow buttons until the LCD display shows the following message:



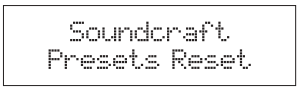
Presets Reset

Performing this reset will delete only the Presets used for storing 'snapshots' of the control surface configuration.

1 Make sure the console is turned off.

2 Whilst holding down the UP/DOWN arrow buttons switch the console on again.

3 Continue to hold the arrow buttons until the LCD displays shows the following message:



Appendix A

RM1d Talkback Modes

The RM1d offers two different modes of Talkback operation that provide solutions for both Self-Op and non Self-Op applications.

The information provided below is used in conjunction with the TALKBACK ASSIGN menu (See Section 4.38) and the

Talkback Swap function found in the SYSTEM menu (See Section 4.37).

General Studio Lay-Out

For this explanation we will assume that the room housing the console is known as the Control Room and the area on the other side of the glass is known as the Studio.

It is quite possible for guests, performers or indeed the Presenter (DJ) to be located in either the Control Room or the Studio.

The default settings of the RM1d assume that the Presenter is operating the console from the Control Room (this is commonly known as Self-Op).

However, at the request of broadcasters who operate with the Presenter in a different room (usually the Studio) from the console, the RM1d provides the TALKBACK SWAP feature.

Below, we have outlined how you should operate the console in each scenario.

Scenario 1 - Presenter (DJ) in Control Room (Talkback Swap 'Off')

The Presenter is operating the console and will use his 'On Air' microphone to talk to his guests as well (Talkback). This is very convenient and means that there is no need for a separate talkback microphone.

The way this works is that the same channel that the Presenter's microphone is connected to, is set-up as the 'Talkback' channel.

The Presenter can then talk to the Studio/Guest phones whenever all three of the following conditions are met:

- The TALK button is ON. (either momentary or latched)
- The fader on the Talkback Channel is at -infinity (fully closed)
- The Talkback Destination is enabled (Studio and/or Guest button selected)

Presenter can talk to any of the Cleanfeed outputs

The Presenter can then talk to any of the Cleanfeed outputs whenever all three of the following conditions are met:

- The TALK button is ON. (either momentary or latched)
- The fader on the Talkback Channel is at -infinity (fully closed)
- The PFL *(CUE)* button is ON for those Cleanfeed outputs to which you want to speak (either momentary or latched)

Talking to the Presenter

Someone wanting to talk to the Presenter can use one of the Reverse Talkback (RTB) inputs.

They must have access to a switch physically connected to the relevant connection on the Remote Inputs 1 connector. There are four such switches. The relevant switch must be set, via the Remote Inputs page, to 'Enable RevTB' (See Remote Inputs)

Then, for as long as they depress the switch, the programme feed to the Presenter's phones will be dimmed, and they will be able to talk to the Presenter through their Control Room headphones.

Scenario 2 - Presenter in Studio (Talkback Swap 'On')

In this scenario an Engineer is operating the console from the Control Room and a Presenter is in the Studio.

Selecting 'Talkback Swap' to 'On' allows the RTB inputs to act as the Talkback channel, and for the Talkback channel to act like the RTB input.

This allows the Presenter and Engineer to talk to each other without the Engineer's microphone taking up a channel on the Input control surface. A microphone will need to be connected to the RTB input for this to work correctly.

The Engineer can talk to the Presenter in the usual way by pressing the TALK button, and enabling the Studio as the Talkback Destination. The only difference is that the Talkback bus is deriving its input from the RTB input and NOT from the nominated Talkback Channel.

Likewise the Presenter can talk to the Engineer whenever the following conditions are met:

- The Presenter's channel fader is at -infinity (Fully closed)
- The chosen Remote Input switch is depressed
- The relevant switch is set to 'Enable RevTB' on the Remote Inputs page

In other words, when the Presenter's microphone is moved to -infinity to take them off the air, the Presenter can speak to the Engineer by pressing the Remote Inputs switch they have beenprovided with. For as long as they depress the switch, the programme feed to the Presenter's phones will be dimmed, and they will be able to talk to the Engineer.

Talkback Swap, in this way, allows the Presenter to speak to the Engineer when he is OFF AIR, using the same microphone.

In this way, Talkback Swap connects the RTB inputs to the Studio & Guest phones whereas in the default mode it would only ever go to the Control Room phones.