



# LIGHTING CONTROL DESK OPERATOR MANUAL

**Version 1.1**

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## maXim BASIC QUICK REFERENCE

To see the type of object recorded in each memory, press and hold either [page red bank] or [page blue bank]. The playback flash/assign buttons in that bank containing Scenes will light, playbacks containing Chases flash quickly, playbacks containing Stacks flash slowly and empty playbacks are not lit.

When you press [edit] or [assign copy] or any [record] button, all Playback flash/assign buttons flash twice, then show their contents as above. If you change pages whilst in "edit", "assign copy" or "record" modes, the contents of each page is shown.

### RECORD A SCENE

To record the current output as a Scene, press

[record scene] [F/A] (scene number) (any of the red bank or blue bank flash/assign buttons).

### GRAB THE OUTPUT IN GRAB MASTER (S, M & MP models only)

To record the current output into the Grab master, press

[record scene] [F/A] (grab master)

### RECORD A CHASE

To record a Chase in the current page, press

[record chase] [F/A] (chase number) (any of the red bank or blue bank flash/assign buttons) (or the grab F/A button on S, M & MP models only).

Each step of a chase consists of either a previously recorded scene or a snapshot of the *maXim* output.

?? To add a scene as a step, press [F/A] (scene number) (any of the red bank or blue bank flash/assign buttons).

?? To record a snapshot (of the current *maXim* output) as a step, press [record scene]

?? Continue to add steps as above.

When all steps have been recorded, complete the chase by pressing [record chase].

### PLAYBACK A SCENE OR CHASE

If the scene or chase was recorded on the red bank, press [mode red bank] until the "scene" LED lights.

If necessary, select the page containing the scene using [page red bank].

Fade up the red Playback containing the scene or chase and also fade up the red master.

If the scene or chase was recorded on the blue bank, select the appropriate page by pressing [page, blue bank].

Fade up the blue Playback containing the scene or chase and also fade up the blue master.

### CONTROLLING A SCENE OR CHASE

The [select] button is used to take control of a playback. The recorded memory is not changed, only the way that it is currently being played back.

Press [select] [F/A] (playback to control). Repeatedly press [function] to cycle through the control parameters.

When finished, press [select] again to de-select it. You can save the changes to memory. If you do not save the changes they will be retained in the playback until you load a different page onto the playback. The changes will then be discarded.

The [edit] button is used to permanently change the contents of a memory. The changes are also seen live on the playback if the playback fader is up.

Press [edit] [page] (optional) [F/A] (memory to edit). Repeatedly press [function] to cycle through the parameters that you can edit. When finished, press [edit] to de-select it. Changes are automatically saved.

### **CHASE MODES**

To change the settings of a chase, press either [select] or [edit] (see above for differences) [F/A] (Chase number)

To control the **RATE**, rotate the EDIT wheel.

To change the **FADE** between steps, press [function] until "in" & "out" LEDs light, then rotate the EDIT wheel.

To change the **MODE** or **DIRECTION** use the 3 buttons below the EDIT wheel as described below.

### **BUTTONS**

### **ACTION**

[step/stop]

**STOPS** a running chase.

[>] (Forward)

**STEPS** a stopped chase (in the direction indicated by the flashing [>] or [<] direction button).

Changes the **DIRECTION** of a reverse running chase (runs it forward).

Changes the **DIRECTION** of a **STOPPED** reverse chase (prepares it to run or step forward).

**STARTS** a stopped forward chase.

[<] (Reverse)

Changes the **DIRECTION** of a forward running chase (runs it reverse).

Changes the **DIRECTION** of a **STOPPED** forward chase (prepares it to run or step reverse).

**STARTS** a stopped reverse chase.

Hold [ > ] Tap [ < ]	Selects <b>BOUNCE</b> mode.
[ > ]	Deselects Bounce mode (runs forward).
[ < ]	Deselects Bounce mode (runs reverse).
Hold [Step/stop] Tap [ > ]	Selects <b>SINGLE SHOT</b> mode.
[ > ]	If [ > ] is flashing, it runs a Single Shot in the forward direction. If [ < ] is flashing, it snaps the chase to the first step and flashes [ > ] in preparation to running a forward single shot.
[ < ]	If [ < ] is flashing, it runs a Single Shot in the reverse direction. If [ > ] is flashing, it snaps the chase to the last step and flashes [ < ] in preparation to running a reverse single shot.
Hold [Step/stop] Tap [ > ]	De-selects single shot mode and enters stop mode.
Hold [ > ] Tap [ < ]	also De-selects single shot and enters Bounce mode.
When finished, press [select] or [edit] (to de-select it).	

## **RECORD A STACK**

To record a stack, press [record stack] [page] (optional) (select a page in either the red or blue banks)  
[F/A] (stack number) (any of the red bank or blue bank flash/assign buttons)  
Each step of a stack consists of either a previously recorded scene, chase or a snapshot of the *maxim* output.

To add a scene or chase as a step, press [page] (optional)

[F/A] (scene or chase number) (any of the red bank or blue bank flash/assign buttons)  
The fade times from the scene will be used for the step in the stack.

To record a snapshot (of the current *maxim* output) as a step, press [record scene].

As each step is added, you can repeatedly press [function] to set the fade IN time, fade OUT time and LINK time (automatically links to next step after link time expires).

Pressing [function] again shows the current step number and allows you to record the next step.  
Continue to record steps as above.

When all steps have been recorded, complete the stack by pressing [record stack].

## **PLAYBACK A STACK**

Stacks can only be played back on the stack master.

To assign a stack to the stack master, press

[assign] [page] (optional) (select the page in either the red or blue banks containing the stack)

[F/A] (stack number) (red or blue banks) [stack flash]

Fade up the stack master to reveal the first step.

### ***INITIATING A CROSSFADE***

To crossfade from the *current* step to the *next* step, press [ > ] (forward).

While the crossfade is *in progress*, the > (forward) button flashes for the duration of the IN fade and the < (reverse) button flashes for the duration of the OUT fade.

### ***STOPPING A CROSSFADE***

To stop a crossfade *in progress* press [step/stop].

The > (forward) button, < (reverse) button and step/stop buttons all flash.

### ***RESTARTING A STOPPED CROSSFADE***

To start a stopped crossfade in the forward direction, press [ > ] (forward).

The crossfade can also be momentarily re-started by holding down [step/stop].

### ***REVERSING A STOPPED CROSSFADE***

To start a stopped crossfade in the reverse direction press [ < ] (reverse).

### ***CROSSFADING TO THE PREVIOUS STEP***

To crossfade from the *current* step to the *previous* step, press [ < ] (reverse).

You may only crossfade back one step but you may step back to any step.

### ***STEPPING A STACK***

To instantly step (snap) a stack in the forward direction, hold [step/stop] tap [ > ] (forward)

To instantly step (snap) a stack in the reverse direction, hold [step/stop] tap [ < ] (reverse)

### ***CLEARING THE STACK MASTER***

To clear the stack master, press [remove] [stack flash] [yes]

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## 1.0 INTRODUCTION

The **maXim** is a powerful yet easy to use lighting control desk that is suited to a wide range of applications.

### 1.1 MODEL RANGE

This manual covers all 6 models in the range:

**maXim S** (Small)

**maXim M** (Medium)

**maXim MP** (medium with integral **PatPad**)

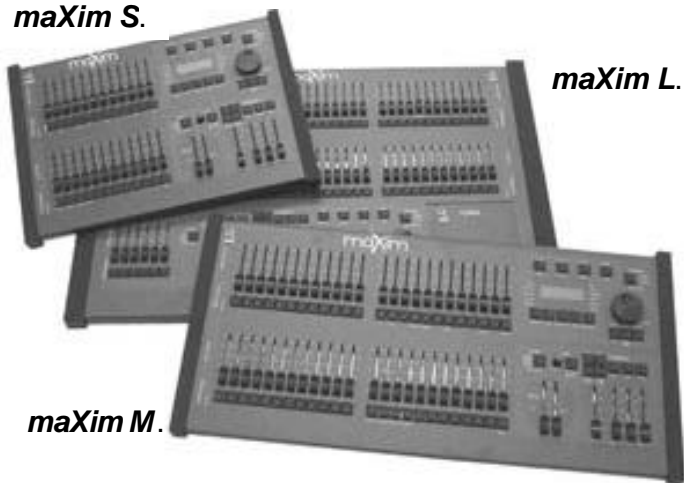
**maXim L** (Large)

**maXim XL** (Extra Large)

**maXim XXL** (Extra Extra Large)

**maXim S.**

**maXim L.**



**maXim M.**

The **maXim S** and **M** are very similar, varying only in their number of faders and memory. They also have a Grab master. The **maXim MP** is very similar to the **maXim M**, but has the **PaTPad** and Video/Disk options permanently fitted.

The **maXim L**, **XL** and **XXL** also vary in their number of faders and memory but also have varying numbers of dedicated blue playbacks. They do not have a Grab Master, but instead have a Master for their blue playbacks. They may also be fitted with the optional **PatPad** moving light controller.

?? At any point in this manual where the model affects the specification, the text will describe the **maXim S** followed by the other models in brackets.

For example,

“The Yellow bank has faders for channels 1 to 12 (24, 36, 48, 60)”.

?? Any reference in this manual to the “**blue bank, blue pages or blue playbacks**” does not apply to the **maXim S, M** and **MP** models.

?? Any reference in this manual to the “**grab master**” does not apply to the **maXim L, XL** and **XXL** models.

### 1.2 FEATURES

The **maXim** incorporates the following features;

- ?? Manual faders for all channels with associated Flash buttons.
- ?? Red, Yellow and Blue (or Stack) masters with associated Flash buttons.
- ?? “Preset”, “Wide” and “Scene” modes of operation.
- ?? 2 banks of 9 pages of Non volatile memory.
- ?? Separate In (up) and Out (down) fade times (0 to 999 seconds).
- ?? Extensive **Recording** and **Editing** facilities for Scenes, Chases and Stacks.
- ?? Scene Fade Times can be derived from the Time Faders or from Memory.
- ?? Dedicated Stack Playback module.
- ?? Electronic labelling of all scenes, chases, stacks and stack steps.
- ?? Fully proportional Softpatch.
- ?? Flash level control, with associated Add or Solo mode button.
- ?? Page freeze retains active output when pages or modes are changed.
- ?? User prompts are scrolled on the display and active buttons flash to make operations simple.
- ?? Different languages are available.
- ?? Multi display SVGA colour video output (optional on S and M models).
- ?? Fully Isolated DMX512/1990 output signal. 2 Universes on larger models.
- ?? Power supply is auto selecting, 90?260 volts, 50/60Hz.



### 1.3 SPECIFICATIONS

	<b>S</b>	<b>M</b>	<b>MP</b>	<b>L</b>	<b>XL</b>	<b>XXL</b>
<b>DMX512 Output Channels</b>	512	512	512	1024	1024	1024
<b>Fader Channels (Wide Mode)</b>	24	48	48	72	96	120
<b>Fader Channels (Preset Mode)</b>	12	24	24	36	48	60
<b>Playback Masters</b>	12	24	24	42	66	90
<b>Pages of Playback memory</b>	9	9	9	9	9	9
<b>Grab Master</b>	1	1	1	N/A	N/A	N/A
<b>Maximum number of Scenes *</b>	108	216	216	378	594	810
<b>Maximum Fade times</b>	>16min	>16min	>16min	>16min	>16min	>16min
<b>Maximum number of Chases*</b>	108	216	216	378	594	810
<b>Steps per chase</b>	250	250	250	250	250	250
<b>Chase speed (Beats Per Minute)</b>	0-999	0-999	0-999	0-999	0-999	0-999
<b>Base Step Chase function</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Maximum number of Stacks *</b>	109	217	217	378	594	810
<b>Steps per Stack*</b>	500	500	500	500	500	500
<b>SVGA Colour Video output</b>	Optional	Optional	Standard	Standard	Standard	Standard
<b>PATPAD Moving light module</b>	N/A	N/A	Standard	Optional	Optional	Optional
<b>3.5" Floppy Disk</b>	Optional	Optional	Standard	Standard	Standard	Standard
<b>15" Halogen Desk Light Port</b>	1	1	1	2	2	2
<b>Dimensions Height(mm)</b>	115	115	165	165	165	165
<b>Width (mm)</b>	500	716	656	797	1014	1230
<b>Depth (mm)</b>	340	340	515	515	515	515
<b>Weight – packed (kgs)</b>	9.0	13.0	18.0	22.0	29.0	33.0

\*Subject to memory availability and whether memory Expansion Module is fitted.

### 1.4 OPTIONS

- ?? **MAXLITE** 15" Gooseneck desk light (2 required for **L**, **XL** & **XXL maXims**).
- ?? **MAX/V** Video and Disk Drive add-on pack for **maXim S** and **M** models.
- ?? **MAX/P** PaTPad moving light module. Not available for **maXim S** and **M** models.
- ?? **MAX/E** Memory Expansion Module.
- ?? **Dustcover** Sizes available for all models.
- ?? **Flightcase** Custom flightcases for all models are available to house the **maXim**, 12V gooseneck lamps, manual, power lead and floppy disks.

### 1.5 CARING FOR YOUR *maXim*

The **maXim** is manufactured from quality components and will give many years of service if you take some basic precautions.

- ?? Do not allow any liquids or foreign objects to enter the **maXim**. If any liquids are spilt onto the **maXim**, the inside should be cleaned and dried as soon as possible. Only suitably qualified personnel should remove the covers and perform any such maintenance.
- ?? Do not apply excessive force to any of the controls. Spare parts and service are available from your LSC agent, but prevention is better than cure.
- ?? When connecting any devices to the **maXim**, make sure that all connections are correct before switching on the power. If any doubt exists, obtain the assistance of qualified personnel.
- ?? If your **maXim** is to be used "on the road", you should use the optional flightcase to protect the desk. Transport the **maXim** with all faders in the fully down position. This gives the faders maximum protection from probable damage.
- ?? When your **maXim** is not in use, cover the upper surface with the optional dust cover.
- ?? If the surface of your **maXim** becomes soiled, clean it with a damp cloth. Do not use any powerful solvents. An alcohol swab may be used to remove any gum from labelling tape.

## 1.6 LABELING YOUR maXim

Areas are provided below the faders for you to write identifying labels. To prevent permanent marking of your *maXim*, LSC recommends that you place strips of “write on” tape in these areas.

## 1.7 BUTTONSTROKE TERMINOLOGY

Certain buttonstroke terminology is used throughout this manual to describe the particular operations being undertaken. Any text enclosed in these symbols, [ ], refers to when that particular button needs to be **pressed**.

For example; Press [record scene], means to press the record scene button.

Flash/assign buttons are often abbreviated to F/A. If the button to be pressed is a Flash/Assign button (of which there are many) then it will be identified by naming it as follows;

[Flash/Assign] (Name) or the shortened version, [F/A] (Name).

Any information that appears on the LED display is printed in “quotes”.

## SECONDARY FUNCTIONS

?? Some F/A buttons have **secondary functions** that are activated by holding down the function button and tapping the F/A button. These secondary functions are printed on the front panel below their F/A buttons.

?? Some flash buttons have hidden **secondary functions** that are activated by holding down the [function] button and tapping the [ok] button. These secondary functions are not labelled but are described in the “Diagnostics” section of the “UTILITIES” chapter.

?? The buttons below the EDIT wheel have **secondary functions** in that they are used to answer either “Yes”, “No” or “OK” to questions that appear on the display when you are performing certain actions. They are typically used to confirm or abort the action that you have selected.

## 1.8 SOFTWARE

LSC has a policy of continuous improvement of its products. As the *maXim* is a computerised lighting desk, its software is subject to this policy as new features are added and existing features improved.

The software version of your *maXim* is momentarily displayed on the LED display when the *maXim* is switched on. The software can be upgraded from a personal computer or floppy disc (if fitted) and the latest version can be downloaded from the LSC website. See the “UTILITIES” chapter for details.

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## 1.9 maXim FORUM

LSC Lighting maintains a “maXim discussion web” at;

**[www.lsclighting.com.au/forum/default.htm](http://www.lsclighting.com.au/forum/default.htm)**

If you have something to say about the maXim console or want advice, log on to the forum. The discussion web has been designed for distributors, clients and designers of maXim consoles to discuss all maXim related topics.

## 2.0 GETTING CONNECTED

### 2.1 POWER INPUT

An IEC mains input socket is located on the rear panel and a mains power lead is provided. The **maXim** has a universal power supply that will operate on voltages between 90 volts and 260 volts with a frequency range from 47 to 63 HZ.

Plug the mains lead into the MAINS INPUT socket and connect it to a source of mains power.

### 2.2 DIGITAL OUTPUTS (DMX 512/1990)

The **maXim S, M** and **MP** models have a single DMX512 connector and the **L, XL** and **XXL** have two DMX512 connectors, one for “Universe 1 DMX channels” and the second for “Universe 2 DMX channels”. Connect a DMX data cable from the Universe 1 DMX512 output of the **maXim** to the DMX512 input of your equipment (dimmers, moving fixtures etc) and set the required channel address on your equipment. Universe 2 is used for complex setups involving more than 512 channels.

**Note:** *DMX512/1990 together with some typical setups and address settings are described in “Appendix A” at the end of this manual.*

### 2.3 VIDEO MONITOR

Connect a SVGA (or better) computer monitor to the 15 pin VIDEO connector on the rear of the **maXim**. Video is an option on the **S** and **M** models. See “VIDEO” in the “UTILITIES” chapter for details.

### 2.4 SWITCHING ON

At this point, with the mains power and DMX connected, the **maXim** is ready to be operated. Simply switch on the “POWER” switch located near the mains input connector. The **maXim** will commence its start up procedure. After briefly displaying the opening message, the **maXim** will commence operating in exactly the same state that it was in when it was last switched off. All the scenes, stacks, chases, patches etc will be as they were.

**Hint;** *If you are starting a new lighting session, LSC recommends that you perform a “TOTAL RESET” of the maXim. This will ERASE all previously recorded memories and will prevent you being confused by previous recordings and settings. If you need to keep your memories, save them to disk (optional on S & M models) before resetting. See the “QUICKSTART TUTORIAL” or “UTILITIES” chapters for details.*

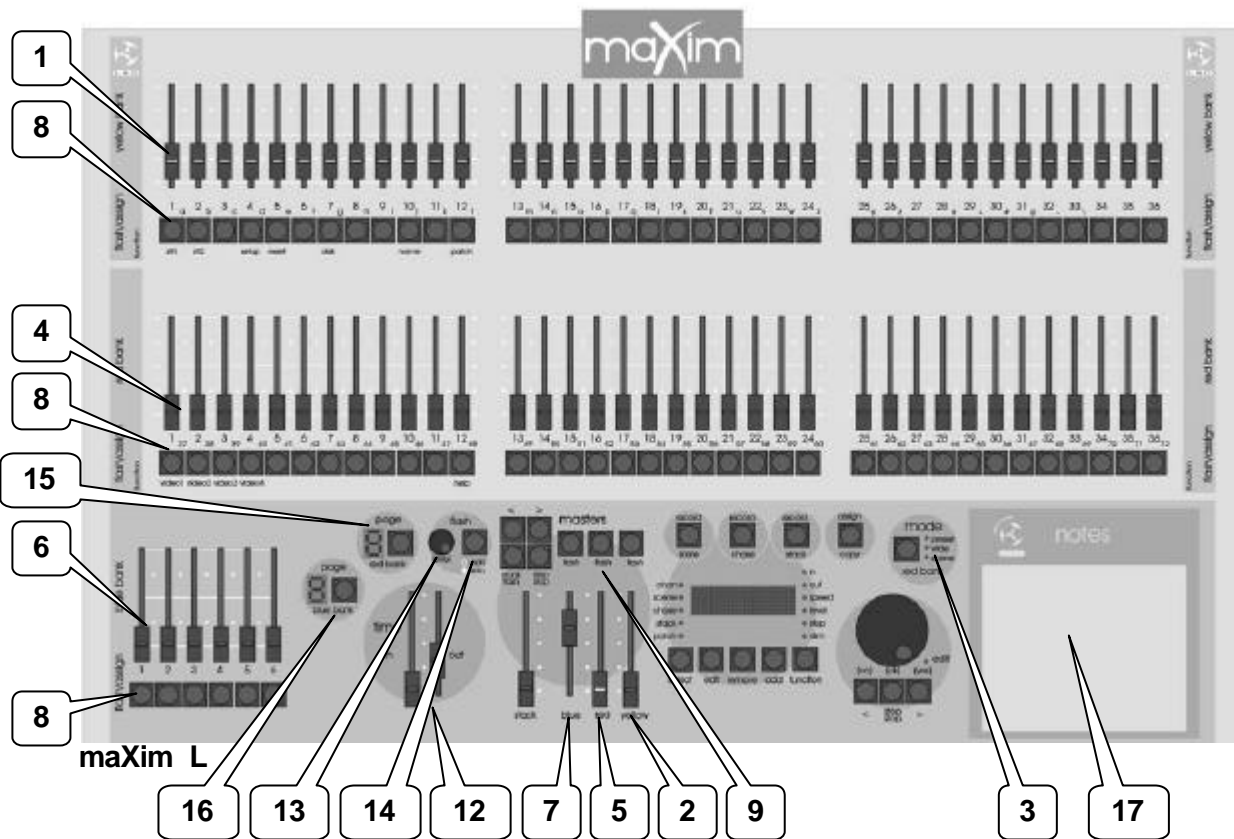
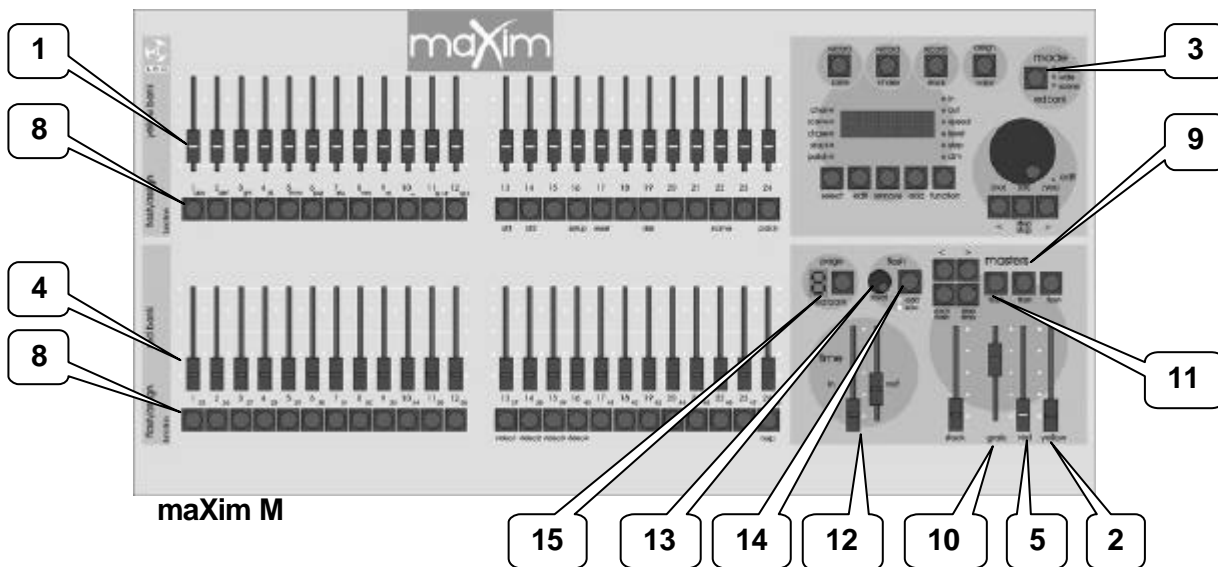
You are now ready to start controlling your lights as described in the “QUICKSTART TUTORIAL” chapter, but before you do, the next chapter gives you a guided tour of the front panel controls of the **maXim**.

**NOTE:** *In the event of a short loss of mains power (a “brown out”) the maXim will continue to operate for a few seconds due to the storage capacity of its internal power supply. When you switch off your maXim you will hear a click followed a few seconds later by another click. The maXim keeps operating until the second click is heard.*

**When the maXim is switched on, it will resume operating in the same state as it was when it was switched off.**

## 3.0 FRONT PANEL LAYOUT

There are 6 *maXim* models (**S, M, MP, L, XL, XXL**) with 2 similar front panel layouts.



The front panel of the *maXim* can be divided into two areas;  
 ?? **Faders and mastering.**  
 ?? **Recording and editing.**

Many of the buttons listed below perform more than one function. The current function depends upon what the operator is doing at the time. Each of these different functions is described under the relevant button below.

## 3.1 FADERS AND MASTERS

### 1. **Yellow Bank Faders**

Control the levels of channels 1 to 12 (24, 36, 48, 60) respectively.

### 2. **Yellow Bank Master**

?? Controls the overall level of the Yellow bank faders.

?? In WIDE mode, it controls the overall level of the single wide preset consisting of the Yellow bank faders and the Red bank faders.

### 3. **Mode Red Bank button**

Selects the current function for the RED bank faders. The choices are;

?? preset.

?? wide.

?? scene (playback).

### 4. **Red Bank Faders**

The Red bank of faders has different functions depending upon the current "MODE" as selected by the mode red bank button.

?? PRESET mode. The Red bank of faders control the levels of channels 1 to 12 (24, 36, 48, 60). A duplicate of the Yellow bank.

?? WIDE mode. The Red bank of faders control the levels of channels 13 (25, 37, 49, 61) to 24 (48, 72, 96, 120).

?? SCENE mode. The Red bank of faders become PLAYBACKS. Each Playback can control the level of a recorded **Scene** or **Chase** or it may be **empty** (does nothing). There are 9 pages of memory for the red playbacks and the function of each playback depends upon the contents of the currently selected red page. You determine what each red page contains when you **record** (or copy) scenes, chases or stacks into them. Although stacks can be recorded on the red bank (stored in red bank memory), they can only be played back on the stack master.

### 5. **Red Master**

?? In PRESET mode, it controls the overall level of the Red bank.

?? In WIDE mode it has no function.

?? In SCENE mode it controls the overall level of the Red Playbacks (Scenes or Chases).

### 6. **Blue Playbacks (L, XL & XXL)**

The blue bank of faders are dedicated PLAYBACKS. Each Playback can control the level of a recorded **Scene** or **Chase** or it may be **empty** (does nothing). There are 9 pages of memory for the blue playbacks and the function of each playback depends upon the contents of the currently selected blue page. You determine what each blue page contains when you **record** (or copy) scenes, chases or stacks into them. Although stacks can be recorded on the blue bank (stored in blue bank memory), they can only be played back on the stack master.

### 7. **Blue Master**

It controls the overall level of the Blue Playbacks (Scenes or Chases).

### 8. **Flash/Assign [F/A] Buttons**

Below each fader in the fader section is a FLASH/ASSIGN button with an integral red indicator LED. As their name implies, these are multi purpose buttons.

They may be used to:

?? FLASH (or bump) the contents of their particular fader, be it a channel, chase or a scene. (See also FLASH level and ADD/SOLO button below).

?? Provide a NUMERIC SELECTION function. When the "number" of a channel, scene, stack, chase, etc needs to be entered, the appropriate Flash/Assign button "number" is pressed. To assist you in making a selection, valid buttons will flash when an entry is required.

?? In conjunction with the FUNCTION button, select various *secondary functions* such as PATCH, SETUP, etc as indicated **below** the F/A buttons.

?? Provide alphanumeric entry when typing names.

## Button Numbering

Between each fader in the **Yellow** bank and its associated F/A button is a number that indicates the channel that the fader and F/A button control. (Letters of the alphabet are also printed and are used when entering names).

Between each fader in the **Red** bank and its associated F/A button are two numbers;

?? The **LARGER** font indicates the channel number of the fader and F/A button when in PRESET mode.

?? The **SMALLER** font indicates the channel number of the fader and F/A button when in WIDE mode.

?? The **LARGER** font also indicates the number of a particular SCENE, STACK or CHASE.

?? The **SMALLER** font also indicates **channel numbers** when editing scenes or chase or stack steps, when viewing channel levels on the FLASH/ASSIGN button LED indicators (refer below) or when patching.

The LED indicators in each F/A button are also multi purpose.

### CHANNEL LEVEL INDICATORS

The brightness of each indicator is proportional to the level of its channel. The red bank indicates the level of the channel numbers printed in the **SMALLER** font.

?? In normal operation, they indicate the level of their particular channel at the *output* of the **maXim**.

?? In edit mode they indicate the level of their particular channel in the Scene, Grab or Step of a Chase or Stack that is being edited.

### VALID ENTRY BUTTON INDICATORS:

When you are required to make a numeric entry or Secondary Function selection, only valid buttons will be active and their LED indicators will light to indicate to you that an entry is required.

### FADE IN PROGRESS INDICATORS:

The indicator for each Playback flashes *slowly* whilst a timed fade is in progress.

## 9. **Masters flash/assign Buttons**

Used to FLASH (bump) the contents of their particular master. (See also FLASH level and ADD/SOLO button below). The brightness of their LED indicators shows the level of the master at the output of the **maXim**. It also will flash *slowly* whilst a timed fade is in progress.

## 10. **Grab Master (S, M and MP only)**

Controls the overall level of the contents of the Grab master. This may be a Grab, a Scene or a Chase. The Grab master can also be used as a memory location for a stack.

## 11. **Grab flash/assign Button (S, M and MP)**

Flash's (or bumps) the contents of the Grab master. (See also FLASH level and ADD/SOLO button below). In conjunction with the RECORD SCENE button, it performs the "GRAB" function, or selects the grab master when required for other various functions. The brightness of its LED indicator shows the level of the Grab master at the output of the **maXim**. It also will flash *slowly* whilst a timed fade is in progress.

## 12. **IN and OUT Time Faders**

Control the IN and OUT fade times of the masters. They may also be individually assigned to control the IN or OUT fade times of any scene or step of a stack. The current time setting of each fader is shown on the display when its fader is moved or presses of the FUNCTION button will toggle through the two time settings.

## 13. **Flash Level Control**

Sets the level to which any Channels, Playbacks, or Masters will be flashed when their respective Flash/Assign button is pressed.

## 14. **ADD/SOLO button**

Toggles the Add/Solo mode between "Add" and "Solo" as shown by a red indicator in the Add/Solo button which flashes in SOLO mode.

?? In ADD mode, when a FLASH/ASSIGN button is pressed, the channels that are being flashed will come on (at the level of the FLASH level master), and normal output is not affected.

?? In SOLO mode, when a FLASH/ASSIGN button is pressed, the channels that are being flashed will come on (at the level of the FLASH level master), and the normal output of the *maXim* will be blacked out, leaving only the channels that are being flashed on stage.

**Note:** *Multiple Flash/Assign buttons may be pressed at the one time.*

**15. Page Red Bank Button and Display**

?? In SCENE mode it is used to select the current page (1 to 9) of red memory that is loaded into the red bank of playbacks.

?? When recording, editing or copying scenes, stacks or chases, it is used to select the required red page (1 to 9) for the scene, stack or chase.

Repeated presses of the Page button will step through the pages.

To *directly* select a page;

Hold [page red bank] then quickly tap [F/A] (red 1 to 9).

The displays shows the red page number as selected by the “page red bank” button.

**16. Page Blue Bank Button and Display**

?? Used to select the current page (1 to 9) of blue memory that is loaded into the blue bank of playbacks.

?? When recording, editing or copying scenes, stacks or chases, it is used to select the required blue page (1 to 9) for the scene, stack or chase.

Repeated presses of the Page button will step through the pages.

To *directly* select a page;

Hold [page blue bank] then quickly tap [F/A] (blue 1 to 9).

The displays shows the blue page number as selected by the “page blue bank” button.

**Hint:** *The maXim can show the types of object recorded in each page. If you press and hold either [page red bank] or [page blue bank], playback flash/assign buttons in that bank containing Scenes will light, playbacks containing Chases flash quickly, playbacks containing Stacks flash slowly and empty playbacks are not lit.*

**17. Notes area / PaTPad (OPTIONAL)**

Use this area for writing notes. The optional PaTPad is fitted in this area (L, XL & XXL models).

**18. Stack Master**

It controls the overall level of the Stack Playback.

**19. Stack Flash**

It is a multi purpose button and can be used to;

?? Select the Stack Master when assigning, editing or copying a stack.

?? FLASH (bump) the contents of the Stack Master. (See also FLASH level and ADD/SOLO button).

The brightness of its LED shows the level of the master at the output of the *maXim*.

**20. > (Stack)**

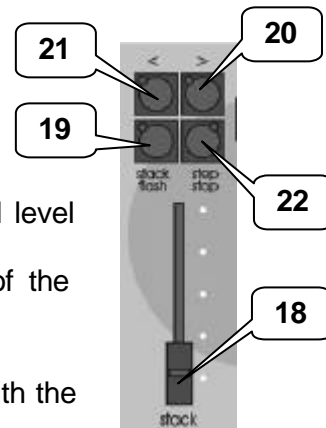
It starts a crossfade from the current step to the next step. In conjunction with the step/stop button (below) it steps (snaps) a stack in the forward direction.

**21. < (Stack)**

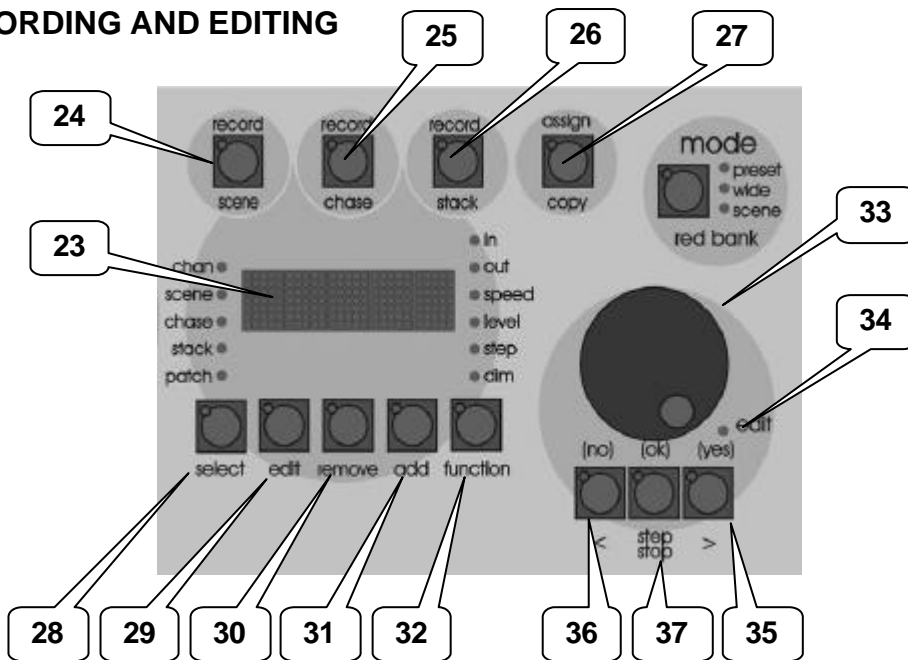
It starts a crossfade from the current step to the previous step. Only one reverse crossfade is allowed. In conjunction with the step/stop button (below) it steps (snaps) a stack in the reverse direction.

**22. step/stop (Stack)**

It stops a crossfade. It momentarily runs a stopped crossfade when held down. In conjunction with the > and < buttons it steps (snaps) a stack in the either direction.



### 3.2 RECORDING AND EDITING



#### 23. Dot Matrix Display and LEDs

The display is used to scroll messages and prompts and to show names and numbers. The small labelled LEDs beside the display are used to *define* the numbers shown on it. For example;  
 ?? If the CHAN LED is lit, then the number displayed is a *channel* number.  
 ?? If the LEVEL LED is lit, then the number displayed is a *channel level*.  
 Comprehensive information (including these messages) are also shown on the video output.

#### 24. Record Scene Button

Used to select RECORD SCENE mode or to record a snapshot of the output of the *maXim* as a step in a stack or a chase or into the Grab master.

#### 25. Record Chase Button

Used to select RECORD CHASE mode and to complete the recording of a chase when all the desired steps have been added.

#### 26. Record Stack Button

Used to select RECORD STACK mode and to complete the recording of a stack when all the desired steps have been added.

#### 27. Assign Copy Button

Used to:

- ?? Assign a stack to the stack master.
- ?? Copy scenes, chases or stacks from one memory location to another.
- ?? Copy scenes, chases or stacks to or from the Grab master. (**S, M & MP** models).
- ?? Copy a Snapshot from the Grab master to a memory. (**S, M & MP** models).

#### 28. Select button

Used to take control of a playback. The recorded memory is not changed, only the way that it is currently being played back.

Press [select] [F/A] (playback to control). Repeatedly press [function] to cycle though the parameters that you can control as indicated by the LEDs beside the display.

When finished, press [select] again to de-select it. You are asked if you want to save your changes to memory. To do so press [yes]. If you do not save the changes (press [no]), they will be retained in the playback until you load a different page onto the playback. The changes will then be discarded from the playback.

**HINT:** If you do not want to save your changes to memory, as a shortcut press [select] twice. This is the same as pressing [select] [no].



**29. EDIT button**

When pressed, it selects Edit mode. You may then choose to Edit any Scene, Chase, Stack, the contents of the Grab master or the Patch (if previously selected via the function button)

**30. REMOVE button**

Used to:

- ?? Remove the contents of the Stack and Grab masters.
- ?? Delete memories, patches or steps of stacks or chases.
- ?? Remove characters from names.

**31. ADD button**

Used to:

- ?? Insert steps in a stack or chase when editing.
- ?? Add a 1 to 1 patch
- ?? Insert spaces in names

**32. FUNCTION button**

- ?? When pressed during normal operations, it causes the display to momentarily show the current time IN or OUT settings of the time faders, whilst it is held down. Subsequent presses will toggle between the two time settings.
- ?? When editing, it toggles through the various parameters that can be changed as indicated on the LEDs above the function button.
- ?? It accesses the secondary functions such as reset, disk or patch etc as indicated **below** the yellow and red bank [F/A] buttons.

To perform secondary functions, press and hold [FUNCTION] tap [F/A] (secondary function).

**33. EDIT Wheel**

Continuously rotatable in either direction and can be used to:

- ?? Set fade and link times and chase rate and crossfade when recording or editing.
- ?? Adjust the level of channels when editing.
- ?? Adjust Sound To Light parameters.
- ?? Select DMX address numbers when patching.
- ?? Select characters for names.
- ?? Scroll the V1 or V2 video displays.
- ?? Adjust selected parameters on the **PatPad** (optional).

**34. EDIT Wheel indicator**

Lights when the EDIT Wheel is active.

**35. > (Yes) button**

- ?? Runs a chase in the FORWARD direction.
- ?? Steps a stack forward when editing.
- ?? Increments through the DMX address numbers when patching.
- ?? Answers "YES" to a request from the **maXim**.
- ?? Select the next parameter on the **PatPad** (optional).

**36. < (No) button**

- ?? Runs a chase in the REVERSE direction.
- ?? Steps a stack backwards when editing.
- ?? Decrements through the DMX address numbers when patching.
- ?? Answers "NO" to a request from the **maXim**.
- ?? Select the previous parameter on the **PatPad** (optional).

**37. STEP STOP (OK) button**

- ?? Used to STOP a chase or STEP a stopped chase.
- ?? Answers "ok" to a request from the **maXim**.

**Note: Combinations of buttons 35, 36 and 37 are used to set and control various chase modes such as bounce and single shot. See the "CHASE" chapter or the "BASIC QUICK REFERENCE" for details.**

# 4.0 MODES OF OPERATION

## 4.1 OVERVIEW

The *maXim* has several banks of faders.

?? The Yellow bank controls the levels of channels 1 to 12 (24, 36, 48, 60)

?? The Red bank has different functions depending upon the current “red mode” of the *maXim* as selected by the mode red bank button. These modes are;

?? PRESET mode. The Red bank controls the levels of channels 1 to 12 (24, 36, 48, 60). (A duplicate of the Yellow bank).

?? WIDE mode. The Red bank controls the levels of channels 13 (25, 37, 49, 61) to 24 (48, 72, 96, 120). (An extension of the Yellow bank)

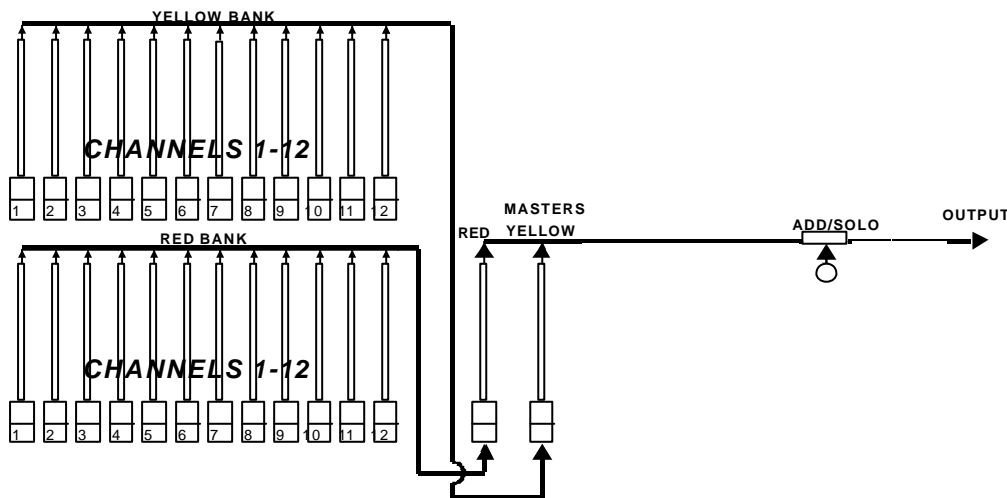
?? SCENE mode. The Red bank faders become PLAYBACKS and control the levels of Scenes or Chases.

?? The Blue bank has dedicated Playbacks and control the levels of Scenes or Chases.

You may freely change red modes at any time during your operation of the *maXim* and the current red mode is **always shown** by the “LED” MODE indicators beside the mode red bank button. Each mode has its particular advantage for different types of operations.

## 4.2 PRESET MODE

Selecting preset mode only changes the operation of the red bank. The red bank becomes a duplicate of the yellow bank. These two identical banks (Yellow and Red) provide duplicate faders for channels. The output of each bank is controlled by its own master.



Simplified block diagram of a *maXim S* in **PRESET** mode.

You create a lighting look by fading up your required channels on one of the colour coded banks and fading up the same colour master. By keeping the other master faded down, another look can be preset on the duplicate set of channel faders without the channels being revealed on stage. At the appropriate time, the new look is revealed by fading up its master whilst the first look is faded down with its master. The *next* look may now be prepared on the bank that has just been faded down.

The fade times of the masters are set by the IN and OUT time faders.

**ADVANTAGE**

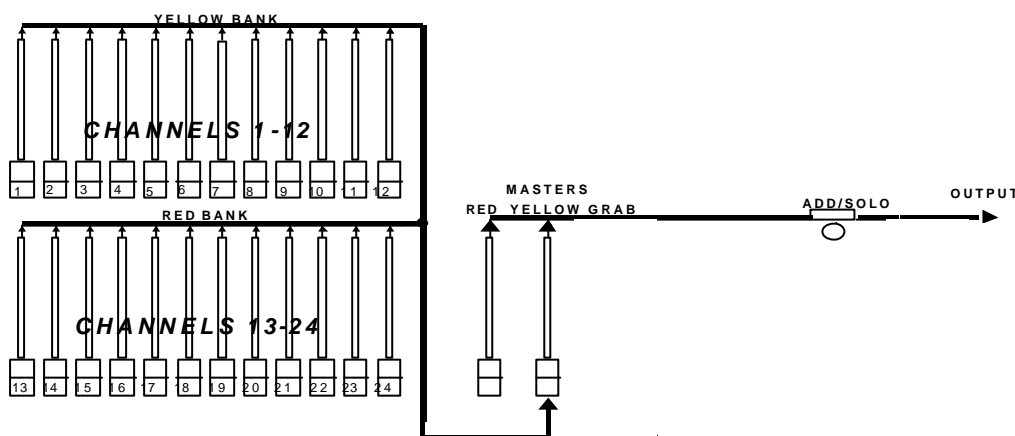
This simple mode of operating is most useful in unrehearsed situations where the next “look” needs to be created “on the fly”. The channel faders provide instant “hands on” control of any channel level.

**DISADVANTAGE**

Only half of the possible channels can be controlled and any look that needs to be used at a later time must be manually reproduced with the channel faders.

**4.3 WIDE MODE**

Selecting wide mode only changes the operation of the red bank. The red bank becomes a set of channel faders for the higher numbered channels. Wide mode utilises both the red *and* yellow banks as a *single* wide bank of 24 (48, 72, 96, 120) channels. The yellow faders control the low numbered channels and the red faders control the high numbered channels. There is an individual fader for **every** channel. The yellow master controls the total output of this single (wide) bank.



Simplified block diagram of a maXim S in **Wide** mode.

As in Preset mode, you can “balance” the look that you are creating by adjusting the intensities of the individual channels with their channel faders. You may fade this “look” up and down with the Yellow master and of course, you may use the In and OUT time faders to set the fade times.

**ADVANTAGE**

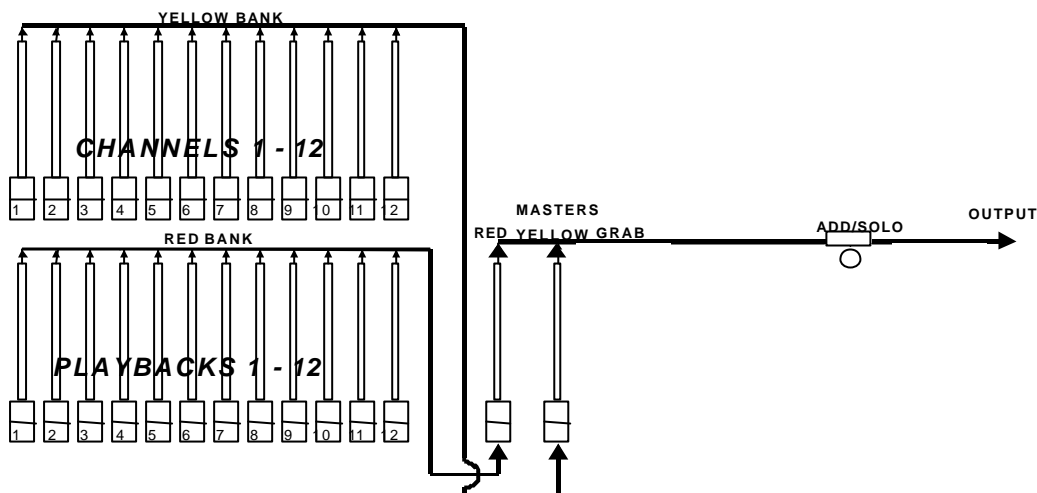
You have access to **all** of the **channels** that are available on the *maXim*. This is most useful when you are RECORDING scenes as you can utilise all channels to create your scenes. (See “Scene Mode” below).

**DISADVANTAGE**

You do not have a second bank on which to create the next look. You can perform crossfades to another “look” by utilising the Grab master as a “phantom” bank (see the “GRAB MASTER” chapter for details) or by recording scenes on the Blue playbacks.

### 4.4 SCENE MODE

Selecting Scene mode only changes the operation of the red bank. In Scene mode the faders of the red fader bank become Playbacks containing **scenes** or **chases**.



Simplified block diagram of a *maXim S* in **SCENE** mode.

Scenes, stacks and chases can be *recorded or edited* whilst operating in any of the three modes but the Red bank may only be used to *replay* scenes and chases in Scene mode.

#### ADVANTAGE

During rehearsal (in any mode), each lighting look can be created and “recorded” into a Scene, (with its own IN and OUT fade times if required). During the performance (in scene mode), the Playback containing each scene is simply faded up when required. The *maXim* remembers (in non volatile memory) all the channels and their levels together with the fade times for all of the scenes. You may also use the Red Playbacks to play chases that you have recorded.

The *maXim L, XL* and *XXL* models all have dedicated blue playbacks that are always available, irrespective of the mode of the red bank.

To simplify the playback of a show, you can record all of your looks into a stack. A stack is a recorded list of steps that are to be replayed in order. Each step in a stack consists of either a scene, a chase or a snapshot. Stepping from one step to the next is a Dipless Crossfade and is usually executed manually but can be automatic. Up to 500 steps may be recorded in each stack. If all the lighting cues in a "show" have been recorded into a "stack", then the entire show may be performed on the stack master by simply pressing the forward " > " button for each lighting cue.

## 5.0 QUICKSTART TUTORIAL

It is assumed that you have your **maXim** connected and turned on as described earlier and that you are familiar with basic lighting terminology. If not, then terminology is explained in Appendix B.

### 5.1 RESET

When the **maXim** is switched on, it displays an initial message on the display and then configures itself exactly as it was when it was last switched off. All the scenes, chases, patches, mode etc will be exactly as they were.

**Note:** *This feature is extremely useful in the case of unexpected power failures. As soon as the power is restored, you may immediately continue with your show.*

When you start a **new lighting session** (a new show) it is preferable to perform a TOTAL RESET of the **maXim** so that you are not confused by any previous recordings or settings that may have previously been made. A TOTAL RESET will **erase everything** that has been "RECORDED" into the **maXim** and select Preset mode. If the current recordings are needed in the future, you should save them onto a floppy disk (optional on **S** and **M** models) before resetting.

To perform a **TOTAL** reset;

Press and hold [FUNCTION] tap, [F/A] (RESET). Release [FUNCTION]

The display asks you, "Do System Reset?". Press [NO]

The display asks you, "Do Total Reset?". Press [YES]

The display warns you, "Reset will clear all memories-Continue?". Press [YES].

All memories are erased, and Preset mode is selected.

See "RESET" in the "UTILITIES" chapter for details on System and Total resets.

### 5.2 CONTROLLING LIGHTS

#### **CREATING A "LOOK" ON STAGE**

Place every fader on the **maXim** to its lower limit. Now fade up the Yellow master to maximum (top). Fade up channel 1 on the Yellow fader bank. The fixture(s) connected to dimmer output 1 fades up on stage. Fade up channel 3 on the Yellow bank and the fixture(s) connected to dimmer output 3 come on. You can "balance" the look that you are creating by adjusting the intensities of the individual channels. This is done by setting the positions of the individual channel faders of the yellow bank. The brightness of the red indicator in each channels F/A button also gives you a visual indication of that channels intensity. You have now created your first lighting "look". You can control the overall level of this look with the Yellow master.

#### **PRESETTING THE NEXT LOOK**

The next look can now be "preset" on the Red bank, which in "Preset mode" provides a *duplicate* set of channel faders. The Red master is in the faded down position so any channels that are faded up on the Red bank will not be revealed on stage. Fade up channels 2 and 5 on the Red bank and set them to the levels that you desire.

#### **CROSSFADING TO THE NEXT LOOK**

To perform a crossfade from the Yellow bank to the Red bank, simply fade UP (in) the Red master and, at the same time fade DOWN (out) the Yellow master. Channels 2 and 5 will fade up on stage whilst channels 1 and 3 will fade down.

As the Yellow master is now down, the next look may be preset on the Yellow channel faders without being revealed on stage. On the Yellow bank, fade down channels 1 and 3 and fade up channels 4 and 7. Crossfade to this new look by fading UP the Yellow master and fading DOWN the Red master. In this manner, whilst one bank is faded UP, a new look can be created on the bank that is faded DOWN and then the crossfade to the next look is performed with the Red and

Yellow masters. The entire show may be performed by fading between the varying looks on the red bank and the yellow bank.

**Hint:** You can obtain different effects by simply varying the timing of your IN fades and OUT fades. If you fade IN fully before commencing your OUT fade, you will have a period where both looks are on at the same time. If you fully fade OUT before commencing your IN fade, then the stage will dip to black between the two looks. The most pleasing crossfades are often accomplished by starting with the IN fade, then commencing the OUT fade when the incoming look is just starting to become visible on stage.

### TIMED FADES BETWEEN BANKS

The fades that you have been performing on the Red and Yellow masters have been “manual” fades. That is, they have directly followed the actual positions of the Red and Yellow masters. The speed that you move the fader determines the time of the fade. This is because the IN and OUT time faders were set to 0 seconds. You can **accurately** control the IN time and the OUT time of these fades by using the IN and OUT time faders to set the required duration. By default, the IN and OUT time faders control the fade times of the Bank masters. Fixed fade times may also be set via the [select] button.

When a Master is moved in an upward direction, the fade will always progress toward the current position of that Master at a rate determined by the IN time. When a Master is moved in a downward direction, the fade will always progress toward the current position of that Master at a rate determined by the OUT time. If the IN time is set to say 5 seconds, and a Master is quickly faded from fully down to fully up, then the actual fade up will take 5 seconds. If you do not bring the Master fully up, then the fade will only fade up to the level of the Master and then stop. If the Master was only faded up half way, and the IN time was set to 5 seconds, then the fade up would reach the Masters position and stop in 2.5 seconds.

The manual fades that you performed earlier were achieved by simply setting the IN and OUT time faders to a time of 0 seconds. At 0 seconds, the fades will *instantly* follow the position of the Bank masters. When a Time fader is moved, the display automatically shows its setting. Set the IN time fader to 3 seconds and the OUT time fader to 5 seconds.

**Hint:** To check the current time settings of the Time faders, press the [FUNCTION] button. When pressed during normal operations, it causes the display to momentarily show the current time IN or OUT settings of the time faders whilst it is held down. Subsequent presses will toggle between the two time settings.

Quickly perform a crossfade between the Red and Yellow masters. The IN-coming bank fades up in 3 seconds whilst the OUT-going bank fades down in 5 seconds. Notice that the LED's in the F/A buttons for the Red and Yellow masters flash whilst the crossfade is occurring. The flashing indicates that a timed fade is in progress.

**Note:** Bank masters, Playbacks and the Grab master all flash their FLASH/ASSIGN buttons when they have a timed fades in progress. This flashing is especially useful when a LONG fade time is being executed, because the physical position of a master does not necessarily represent the actual level of the masters output. If you have some unexplained output from the maXim, check to see if any master's FLASH/ASSIGN button is flashing, indicating that a timed fade is in progress.

All of the “looks” that you have created have been made on a “one off” basis. That is, they have not been recorded into the memory of the **maXim**. If you needed to re-use a look that you had previously created, then you need to take a note all of the channels and their respective levels together with the fade times (if any), and then manually setup the faders for the look and fade times.

The **maXim** allows you to “RECORD”, (also known as “store” or “program” on other manufacturers desks), any of the looks and fade times that you create. When you record a look it is known as a **Scene** and it may be replayed from memory.

### 5.3 RECORDING A SCENE

Scenes are created on the *maXim* by establishing the lighting look that you require on the OUTPUT and then recording this look into the memory in a selected bank (red or blue), page (1 to 9) and scene number (1 to 12, 24, 36, 48, 60).

**Note; Recording a scene in a different page of memory is not covered in this “QUICKSTART TUTORIAL”. See the “MEMORY STRUCTURE” and “SCENES” chapters for details.**

#### **RAPID SCENE RECORDING**

To Record a Scene, first create a look on the output as described earlier, then press **[record scene]**

You will also notice that the F/A buttons below the Red fader bank will flash twice. They indicate possible scene *numbers* and they flash to prompt you to select a scene number.

The display scrolls a message, “Pick Scene Number”.

To complete the recording as scene 1, press **[F/A] (1)** (Red bank).

The display briefly displays “R1.01” (the recorded Bank/Page/Scene number) confirming the recording.

This is the quickest method of recording a scene. It uses the **default values** of;

- ?? Page number        the current page.
- ?? IN fade time        controlled by the IN time fader.
- ?? OUT fade time      controlled by the OUT time fader.

#### **SCENE RECORDING WITH FADE TIMES**

When you record a scene, you may set exclusive IN and OUT fade times for that scene (independent of the Time faders).

Create another “LOOK” using the channel faders. We will now record it in Page 1, Scene 2 with a **recorded** IN time of 5 second and OUT time of 10 seconds.

Press **[record scene] [function]**

The “IN(S)” LED lights and the display reads “IN time-Set with wheel”, then shows the default setting.

Rotate the EDIT wheel and use it to set the IN time to 5.0 seconds.

Press **[FUNCTION]**

The “OUT(S)” LED lights and the display reads “OUT time-Set with wheel”, then shows the default setting.

Rotate the EDIT wheel and use it to set the OUT time to 10.0 seconds.

To complete the recording, give the scene a number by pressing **[F/A] (2)**

The display briefly displays “R1.02”(the recorded Bank/Page/Scene number).

**Note; When the RECORD button is pressed, all Playback flash/assign buttons flash twice, then Playbacks containing Scenes remain lit, Playbacks containing Chases flash quickly, Playbacks containing Stacks flash slowly and empty Playbacks are not lit. If you change pages, the contents of each page is shown.**

## 5.4 REPLAYING A SCENE

The scenes that you recorded were on the red bank, so to play them back you must select SCENE mode. This changes the faders of the Red bank into PLAYBACKS. The function of each Playback depends upon the contents of the currently selected page. You determine what each page contains when you **record** (or copy) scenes, chases or stacks into them. Hence each Playback may control a **scene** or a **chase**. (Stacks are stored in playback memory locations but may only be replayed on the stack master). When you select scene mode on the red bank or change pages in Scene mode, the scenes (and/or chases) in the selected page are assigned, in order, to their respective red bank Playbacks, 1 to 12 (24, 36, 48, 60).

When you change blue bank pages, the scenes (and/or chases) in the selected page are assigned, in order, to their respective blue bank Playbacks, 1 to 6 (18, 30). (**L, XL & XXL** models only)

The output from all of the red Playbacks is under the control of the Red master.

The output from all of the blue Playbacks is under the control of the Blue master.

Fade down all of the faders on the RED bank and both of the Time faders to their lower limit.

To change to SCENE mode, repeatedly press [**mode red bank**] until the “scene” indicator is lit. Earlier you recorded scenes in Red Page 1 Scene 1 (R1.01) and Red Page 1 Scene 2 (R1.02). These scenes are now available on Red Playbacks 1 and 2 respectively because Page 1 is shown as the current red page. Fade up the Red master, then to reveal scene R1.01 on stage, fade up red Playback 1 (Red fader 1).

Scene R1.01 uses the IN and OUT time faders as its time sources for fades. Scene R1.02 has recorded fade times. To crossfade from scene R1.01 to scene R1.02, quickly fade up red Playback 2, whilst at the same time fading down red Playback 1. Scene R1.02 ignores the Time fader settings and uses its own recorded fade times.

Notice that Playback F/A buttons flash whilst a timed fade is in progress.

The **maXim** also provides the following facilities when working with scenes;

?? The channel levels and the fade times in a scene may be edited (modified).

?? Scenes may be copied to other Playbacks and /or banks/pages and to or from the Grab master.

For descriptions of these operations, see the “SCENES” and “GRABMASTER” chapters.

## 5.5 RECORDING A CHASE

Each step of a chase consists of either a previously recorded scene or a snapshot of the **maXim** output.

For simplicity, record a 6 step chase consisting only of snapshots. Make step 1 channel 1, step 2 channel 2, etc. etc. Record it in red Playback 12 using the following steps.

Press [**record chase**] [**F/A**] (red 12)

Fade up channel 1 only on the output for the first step of the chase, then press [**record scene**]

Fade up channel 2 only on the output for the next step of the chase, then press [**record scene**]

Continue to create and add steps until all desired steps have been recorded,

then press [**record chase**]

You can use this chase to experiment with the various ways of playing a chase as described below.



## 5.6 REPLAYING A CHASE

The red bank must be in Scene mode to replay chases. When you select scene mode or change red pages in Scene mode, the chases (and/or scenes) in the selected red page are assigned, in order, to their respective red Playbacks. When you change blue pages the chases (and/or scenes) in the selected blue page are assigned, in order, to their respective blue Playbacks. To replay a chase on the red bank, ensure that you are in Scene mode and that the Red master is up. To reveal the chase, fade up its Playback .

### **CONTROLLING A CHASE**

You may change the way that a chase is playing (Rate, Mode, Direction, and Fade) by either “selecting” the playback or “editing” the chase.

### **SELECT PLAYBACK**

To control a chase on a playback, press [**select**] [**F/A**] (playback to be controlled).

To control the **RATE**, rotate the EDIT wheel. The rate is shown on the display in BPM (Beats Per Minute).

To **STOP** the chase, press [**step/stop**]

To manually **STEP** the stopped chase, press [**step/stop**]

To **RUN** the chase choose either [**>**] (Forward) or [**<**] (Reverse)

When finished controlling, press [**select**] [**no**]

The changes you have made are retained in the playback until you change pages, but the original chase memory remains unaltered.

The *maXim* also provides the following facilities when working with chases;

?? Chases may be run in “Bounce” mode or as “Single Shot” chases.

?? The transition between steps may be set as a crossfade.

?? The channel levels in each step may be edited (modified).

?? Steps may be inserted or deleted.

?? Chases may be created or run on the Grab master.

?? Chases may be copied to other banks/playbacks/pages and to or from the Grab master.

?? Chases may be used as steps in a stack.

For descriptions of these operations, refer to the “CHASES” chapter.

## 5.7 RECORDING A STACK

A Stack is a list of steps consisting of scenes or chases or snapshots (of the *maXim* output) that are arranged in the order that they are to be replayed. A Stack is designed to be played one step at a time with the transitions being a timed DIPLESS CROSSFADE executed by pressing the stack masters > (forward) button. Individual IN and OUT fade times may be recorded for every step. A step may be programmed to "LINK", to the next step after a set time.

### **RECORD A STACK**

To record a stack,

press [record stack] [page] (optional) (select a page in either the red or blue banks)

[F/A] (stack number) (any of the red bank or blue bank flash/assign buttons) (or the grab F/A button, **S, M & MP** models only).

Each step of a stack consists of either a previously recorded scene, chase or a snapshot.

?? To select a scene as a step, press [page] (optional) [F/A] (scene number).

The fade times from the scene will be used for the step in the stack.

?? To record a snapshot (of the current *maXim* output) as a step, press [record scene]

As each step is added, you can repeatedly press [function] to set the fade IN time, fade OUT time and LINK time (automatically links to next step after link time expires).

Pressing [function] again shows the current step number and allows you to record the next step. Continue to record steps as above.

When all steps have been recorded, complete the stack by pressing [record stack]

## 5.8 REPLAYING A STACK

Stacks can only be played back on the stack master.

To assign a stack to the stack master,

press [assign copy] [page] (optional) (select a page in either the red or blue banks)

[F/A] (stack number) (red or blue banks)

[stack flash]

Fade up the stack master to reveal the first step.

### **INITIATING A CROSSFADE**

To crossfade from the *current* step to the *next* step, press [ > ] (forward).

While the crossfade is *in progress*, the > (forward) button flashes for the duration of the IN fade and the < (reverse) button flashes for the duration of the OUT fade.

### **STOPPING A CROSSFADE**

To stop a crossfade *in progress*, press [step/stop]

The > (forward) button, < (reverse) button and step/stop buttons all flash.

### **STARTING A STOPPED CROSSFADE**

To start a stopped crossfade in the forward direction, press [ > ] (forward).

To start a stopped crossfade in the reverse direction, press [ < ] (reverse).

The crossfade can also be momentarily re-started by holding down [step/stop]

### **CLEARING THE STACK MASTER**

To clear the stack master, press [remove] [stack flash] [yes]

## 6.0 MEMORY STRUCTURE

Scenes, Chases and Stacks are stored in non volatile memory. The red bank has 9 pages of memory and the blue bank has 9 pages of memory. Scenes, chases and stacks share the same memory within each bank. For example, if a “bank/page/ [F/A] (flash/assign) number” location has been used for a scene, then it cannot be used for a chase or stack. A chase or stack recorded in the same location would overwrite the scene. The red and blue bank memories are totally separate. Repeated presses of either [page red bank] or [page blue bank] will step through their 9 respective pages of memory.

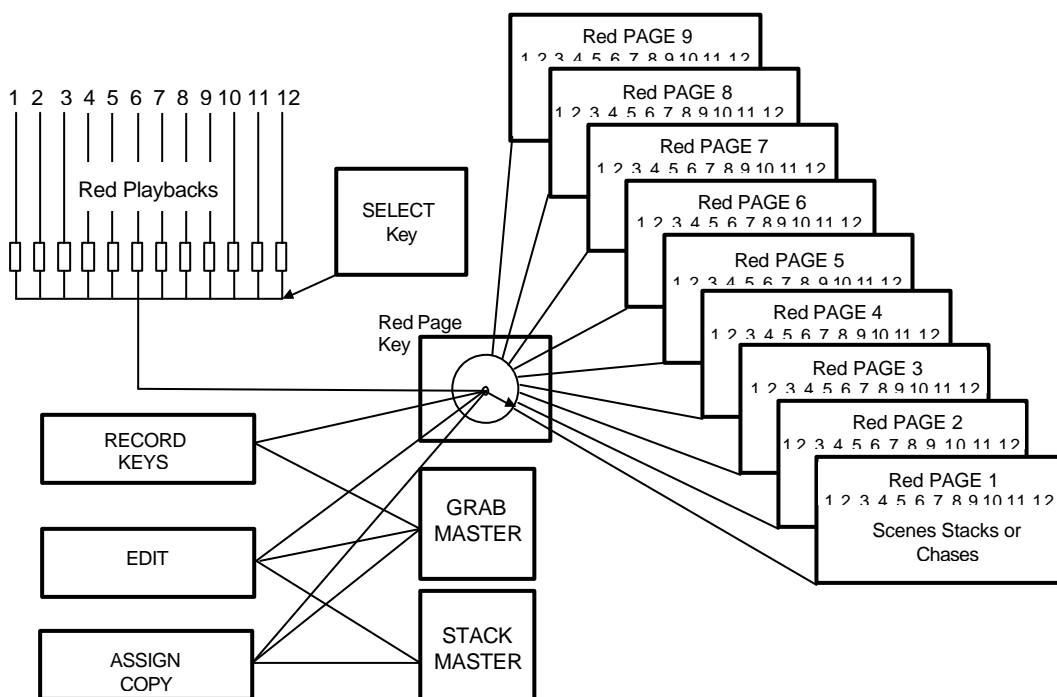
To switch *directly* to a red page, press and hold [page red bank] tap [F/A] (red 1 to 9).

To switch *directly* to a blue page, press and hold [page blue bank] tap [F/A] (blue 1 to 9).

To see the type of object recorded in each memory, press and hold either [page red bank] or [page blue bank]. A window pops up on the video showing memory usage and the playback flash/assign buttons in that bank containing Scenes will light, playbacks containing Chases flash quickly, playbacks containing Stacks flash slowly and empty playbacks are not lit. When you press [edit] or [assign copy] or any [record] button, all Playback flash/assign buttons flash twice, then show their contents as above. If you change pages whilst in “edit”, “assign copy” or “record” modes, the contents of each page is shown.

When the red bank is selected to “scene” mode or when a red bank page is changed whilst in scene mode, the contents (scenes and chases) of the indicated red page are loaded into the red playbacks. When a blue bank page is changed, the contents (scenes and chases) of the indicated blue page are loaded into the blue playbacks.

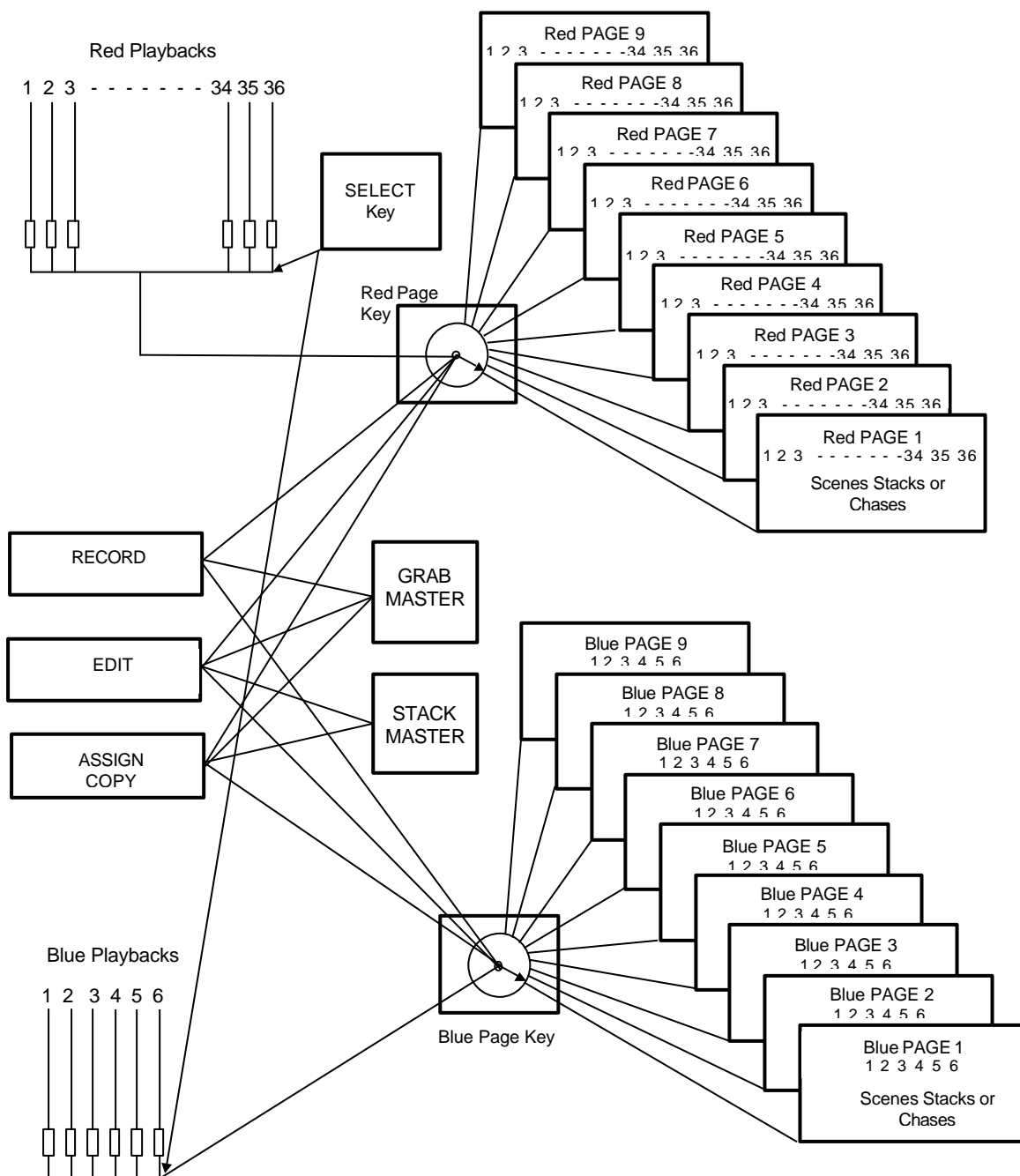
Stacks occupy memory locations on the red and blue pages but do not load onto playbacks. They must be individually assigned from red or blue memory to the stack master for playback.



Basic Memory structure of a **maXim S**.

In Scene mode, any one of the 9 red pages may be selected as the current page and the scenes or chases in that page are assigned, in order, to their respective red Playbacks, 1 to 12.

- ?? When a **[record]** button is pressed, a Scene, Stack or Chase may be recorded into any number in any red page or into the Grab Master.
- ?? When the **[edit]** button is pressed, the contents of any number in any page or the grab or stack master may be edited.
- ?? When the **[assign/copy]** button is pressed, the contents of any number in any page may also be copied to or from any number in any page including the Grab master. If a memory contains a stack, then it may also be assigned/copied to the stack master.
- ?? When the **[select]** button is pressed, the parameters in a playback can be varied without affecting the memory. When **[select]** is de-selected, the changes are retained in the playback and can be saved to the memory if required.



Basic Memory structure of a **maXim L**.

The storage capacity of your *maXim* is noted in the specification table in the “Introduction” chapter. The *maXim* is continually checking its memory and compacting it to give you the maximum storage capacity. A Memory Expansion Module is available as an option. You can check the current memory usage via the diagnostics. See the “UTILITIES” chapter for details.

## 6.1 MODE/PAGE FREEZE

A “MODE/PAGE FREEZE” feature prevents the contents of a live fader from being changed if its level is above 5% when a mode or page is changed.

The current contents of any *live* fader is held until such time as that fader is faded down below 5% when it will be automatically updated with its **pending** assignment for the new mode or page. This prevents scenes, chases or channels “crashing in” on stage if their fader is contributing to the output when a different mode or page is selected.

Whenever there is a pending scene, chase or channel change due to a 'Mode or Page freeze', the “LED” indicator in the MODE RED BANK button will flash. This acts as a warning to you that the contents of a fader on the Red or blue bank may change after it is faded down.

## 7.0 FADE TIMES & CHANNELS

### 7.1 OVERVIEW

#### **TIME FADERS**

The time faders allow individual IN (up) and OUT (down) fade times to be set. The times may range from 0 seconds up to 190 seconds (3 minutes 10 seconds).

?? When either Time fader is moved, its current time setting is shown on the display.

?? Pressing [function] during normal operations causes the display to momentarily show the current time IN or OUT settings of the time faders whilst it is held down. Subsequent presses will toggle between the two time settings.

#### **MEMORY TIMES**

Individual IN (up) and OUT (down) fade times may be recorded for every scene and every step in a stack. The times may range from 0 seconds up to 16 minutes 39 seconds (999 seconds).

#### **TIMED FADES**

When a Bank master or Playback is moved, the output level of that master will always progress towards the current physical position of that master at a rate set by the relevant time setting.

?? On *upward* movements of masters the IN time will be used

?? On *downward* movements of masters the OUT time will be used.

For example, if an IN fade time of 3 seconds has been set, then to execute a fade in exactly 3 seconds, the master must be moved from bottom to top in less than 3 seconds. If you take longer than 3 seconds to move the master, then the fade will keep pace with the fader movement. If the master were only faded to the half way position, then the fade would take 1.5 seconds to reach that point and then stop. If the master were then moved to the end of its travel, the fade would take another 1.5 seconds to complete.

#### **MANUAL FADES**

A fully manual fade is achieved by setting the fade times to 0 seconds. The fade will then *instantly* follow the position of the fader as you move it.

### 7.2 CHANNELS FADE TIMES

All individual channel faders perform manual fades.

### 7.3 MASTERS FADE TIMES

The In and Out fade times of the masters are by default controlled by the Time faders. You can set individual fixed in and out times. To change the fade time of each master,

press [select] [flash] (master to set) [function]

The IN(s) LED lights. The IN fade time may be set by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the “in time” manual fader.

Press [function]

The OUT(s) LED lights. The OUT fade time may be set by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the “out time” manual fader.

To end the process, press [select]

## 7.4 PLAYBACK FADE TIMES

- ?? When a Playback contains a **Scene**, its in and out fade times may be controlled by the Time faders (default) or its In and Out fade times may be recorded in memory as part of the scene. “**Select**” allows you to *change* the RUN TIME conditions (in time and out time) on the *selected Playback*. When you have finished adjusting the time, and you exit “Select” (press [select] again) the *maXim* asks “Save Changes To Memory?” If you answer “no”, the original memory is not affected, but the changes that you have made are retained in the Playback until such time as the scene is replaced on that Playback (by changing pages or mode). If you answer “yes”, the changes are also copied to memory.
- ?? When a Playback contains a Chase, its overall In and Out fade times are controlled manually. The transitions between steps of a chase may be instantaneous (snaps) or crossfades.
- ?? When the Grab master contains a “grab”, its In and Out fade times are controlled by the Time faders but you may Edit the Grab master to set individual times as with scenes.
- ?? When a “Scene” is copied to the Grab master, it’s In and Out fade times are controlled by the settings recorded in that scene.

## 7.5 STACK FADE TIMES

When a stack is assigned to the stack master, the times of the crossfade from one step to the next are determined by the settings that have been *recorded* for each step. This can be the manual time faders.

When a scene is used as a step in a stack, the fade times from the scene will be used for the step in the stack. If the scene is edited, the changed times will be used by the stack.

The transition from one step to the next is in the form of a DIPLESS CROSSFADE. The incoming step will fade *up* in the IN time for that step and the outgoing step will fade *down* in the OUT time for that step.

### LINK TIMES

If a step contains a LINK time, then when that step is played, its link time starts counting down. At the completion of the link time the stack will automatically step to the next step. If every step has a link time, then the stack will play like a chase, but with the following differences.

- ?? The duration of every step may be individually set by its link time.
- ?? The in and out fade times of every step may be individually set.
- ?? A step may be a chase.

## 7.6 CHANNEL CAPACITY

In all modes of operation, the maximum number of channels will always be *available* on the output, regardless of the number of channels directly controlled by channel faders. In Preset or Scene mode where not all channels are controlled with manual faders, **all** channels may still appear on the output in the form of **scenes**, **stacks**, **chases**, or **grabs** and the level of *any* channel in a scene, stack, grab or chase may always be controlled by editing it with the EDIT wheel.

## 8.0 SCENES

### 8.1 OVERVIEW

A SCENE is a recorded snapshot of the *maXims* output, together with In and Out fade time settings and a descriptive name, that is stored in non volatile memory. Scenes are recorded by Bank/Page and Scene number. Scenes may be randomly recorded into any Bank/Page and scene number at any time, irrespective of the current “MODE” (Preset, Wide or Scene) of the red bank. Scenes may be created “blind” (not appearing on the output) using the “EDIT “ function.

Scenes can be replayed on the red bank (in Scene mode), on the blue bank, as steps in chases or stacks or on the grab master (**S, M & MP** models). When a red bank page is changed or when the red bank is selected to “scene” mode, the contents (scenes and chases) of the indicated red page are loaded into the red playbacks. When a blue bank page is changed, the contents (scenes and chases) of the indicated blue page are loaded into the blue playbacks. A scene may be *copied* onto another Bank/Page/number or onto or from the **Grab** master.

See the “MEMORY STRUCTURE” chapter for more details on banks and pages.

Scene Playback fade times may come from the Time faders or may be recorded in memory as part of the scene. Individual IN, and OUT fade times may be recorded for every scene.

### 8.2 SCENE RECORDING

The *maXim* provides a *variable* method of recording scenes. The fastest method takes just 2 button strokes and uses the default parameters that may be set by the user. The longest method lets you select a different page in memory and also record separate IN and OUT fade times. As you record a scene, you may select and set each parameter (Bank/Page, IN time and OUT time) for the scene. You **complete** the recording by giving the scene a number (via the Red or Blue F/A buttons). You can complete the recording at any time in the process regardless of whether you have set each parameter or not. If a parameter has not been set, it will be recorded with its default value. The **DEFAULT** values are;

- ?? Page The number on the red or blue page Indicator when [RECORD] is pressed.
- ?? IN fade time Controlled by the IN time fader.
- ?? OUT fade time Controlled by the OUT time fader.

#### **RAPID SCENE RECORDING**

To record a scene with the default settings (above), create the desired look on the output, then press [record scene] [F/A] (Scene number) (Red or Blue F/A buttons)

The display briefly confirms the recorded Bank/Page/Scene number.

#### **GENERAL DESCRIPTION**

To record a scene, create the desired look on the output, then press [record scene]

The Record Scene button flashes and the display scrolls “Pick Scene Number”.

The PAGE indicators show the current red and blue pages. Both PAGE buttons and the FUNCTION buttons flash to show that they are active. All Playbacks will flash twice to indicate possible memory location choices, then Playbacks already containing scenes in that page will light. (Playbacks containing chases flash quickly, stacks flash slowly and empty playbacks are not lit.) This acts as a warning to you of existing scene (and chase or stack) numbers and unused numbers in each page.



### **Page Selection**

Repeated presses of either PAGE button will cycle through the 9 respective pages of memory.

To switch *directly* to a page;

Press and hold [PAGE] tap [F/A] (Page number).

As you select each page, all Playbacks will flash twice then indicate their contents as above.

Choose a Bank/Page number for the scene.

### **Fade Times**

Both the IN time and the OUT time may be individually recorded as being controlled by their respective Time fader (default setting) or they may have a time set in memory.

?? If a time is recorded as being set by the Time fader, then when the scene is replayed, the playback controlling the scene will use the current setting of the appropriate time fader. This allows you to use the IN and OUT time faders to adjust fade times “on the fly”.

?? If a set time is recorded, this is a fixed time exclusive to the scene. A scene may even have a set IN time and a Fader OUT time or vice versa.

See “FADE TIMES” in the “FADE TIMES AND CHANNEL LEVELS” chapter for more details on the operation of fade times.

Repeated presses of [FUNCTION] will cycle the display through the IN time setting, the OUT time setting and the prompt for you to enter a Scene number. When either of the time settings are indicated, the EDIT wheel lights to show that it is active.

Rotate the EDIT wheel to set the desired time. The maximum time is 16 minutes and 39 seconds and the minimum time is 0 seconds. When a time is set *lower* than 0 seconds, it reverts to “Fader” (IN or OUT time Fader) control. Set the desired times then ensure that the lighting “Look” on the output of the **maXim** is as you require and complete the recording (take a snapshot of the **maXims** output), by pressing [F/A] (Scene number)

The display briefly displays the recorded Bank/Page/Scene number.

**Note; Recording over an existing chase, stack or scene number will erase the previous contents.**

**Hint; Comprehensive recording of scenes as described above takes several buttonstrokes to complete and would be time consuming when time is short, such as in a fast moving rehearsal where you need to quickly create a look, record it as a scene and immediately create the next look. If this is the case, you may use the rapid recording method described above and then when time permits, edit the scenes to set the desired fade times.**

**Hint; If you connect a SVGA monitor to the maXim, when a scene is recorded, the display automatically displays the times and channel levels of the new scene.**

### **ABANDONING A RECORDING**

When you have created your look, pressed [record scene], set the fade times and/or selected a page, you still have one last chance to abandon the scene you are recording with out destroying any previous contents of the scene.

To abandon RECORD SCENE without making any changes, press [record scene] a second time.

**BLIND RECORDING**

Scenes may be created blind (not appearing on the output) by editing a scene number that is no longer required. Simply EDIT the scene number and *create* the blind scene by setting channel levels and fade times using the *editing* functions. See “EDITING A SCENE” below for details.

*Hint; If you are required to record several “blind” scenes during a performance, make some preparations by recording a special scene (only 1 channel on at low level) in a spare scene number. (The maXim will not record a scene if there are no channels on the output.) When a blind recording is needed, copy your special scene to the bank/page/scene number where it is required then edit that scene and set the single channel to 0 and turn on the required channels.*

**NAMING A SCENE**

Each scene is by default given its bank, page and F/A number as a name. For example, b1:01 (blue bank, page 1, scene 1).

To enter or change a name;

Press and hold [function] tap [F/A] (name), a yellow bank function button.

The display says “Pick Object to Name”.

Press [page] (optional) [F/A] (scene number)

The default name is automatically deleted or the existing name is shown and the blinking cursor on the display is ready for you to enter characters. Either rotate the EDIT wheel or press the yellow bank [F/A] buttons for the desired characters as labelled below the buttons. On the **S, M & MP** models where several characters are printed below each button, multiple presses select the next character in a similar fashion to mobile telephone keypad. Press [<] or [>] to move the cursor and press [remove] or [add] to remove or add characters or spaces.

Names may be up to 15 characters long.

When finished, press [ok]

**8.3 SCENE PLAYBACK**

Scenes may be replayed on the:

- ?? Red Playbacks (in Scene mode)
- ?? Blue Playbacks (**L, XL & XXL** models)
- ?? Grab master (**S, M & MP** models).

**SCENE MODE AND PAGES**

- ?? When you set the red bank mode to “scene”, the scenes (or stacks or chases) in the current red page are assigned, in order, to their respective red playbacks, 1 to 12 (24, 36, 48, 60).
- ?? When you change red pages the scenes (or stacks or chases) in the selected red page are assigned, in order, to their respective red playbacks, 1 to 12 (24, 36, 48, 60). Any one of the 9 red pages may be selected using the [red page] button.
- ?? When you change blue pages the scenes (or stacks or chases) in the selected blue page are assigned, in order, to their respective blue Playbacks, 1 to 6 (18,30). Any one of the 9 blue pages may be selected using the [blue page] button.
- ?? Press [red page] or [blue page] to increment to the next page, or to switch *directly* to a page press and hold [red page] or [blue page] tap [F/A] (Page number).

**Note; Mode/Page freeze rules apply. See the “MEMORY STRUCTURE” chapter for more details.**

### CONTROLLING A SCENE

To reveal a scene recorded on the red bank on the output, press [mode red bank] until its “scene” LED lights. If necessary, select the page containing the scene using [red page]. Fade up the red Playback containing the scene and also the red master. If the scene was recorded on the blue bank, select the page containing the scene using [blue page]. Fade up the blue Playback containing the scene and also the blue master.

The scene can be faded in or out as required or the scene may be “Flashed” (soloed or bumped) via its F/A button.

### FADE TIMES

To control the fade times of the scene you can either **select** the *playback* controlling the scene or **edit** the *memory* containing the scene.

?? “**Select**” allows you to *change* the RUN TIME conditions (in time and out time) on the *selected Playback*.

Press [Select] [F/A] (scene to control) [FUNCTION]

The IN(S) indicator lights. The display prompts you then shows the IN fade time. The fade time may be changed by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the “in time” manual fader.

Press [FUNCTION] until the OUT(S) indicator lights. The display prompts you then shows the OUT fade time. The fade time may be changed by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the “out time” manual fader.

When you have finished adjusting the time, press [Select]

The *maXim* asks “Save Changes To Memory?” If you answer “no”, the original memory is not affected, but the changes that you have made are retained in the Playback until such time as the scene is replaced on that Playback (by changing pages or mode). If you answer “yes”, the changes are also copied to memory.

?? “**Edit**” allows you to directly change the memory settings of the scene. In addition to changing the fade times you can edit the channel levels of the scene. These changes are automatically saved to memory as you edit. If the scene is currently on a Playback, then these changes are also seen live on that Playback. Edit is described below.

### GRAB MASTER AS A SCENE MASTER

A scene may be copied to the Grab master allowing it to act like a Playback containing a scene.

See the “GRABMASTER” chapter for details.

## 8.4 EDITING A SCENE

You may **edit** a scene live or blind (faded down) on its Playback or directly in its memory location. If the scene is faded up on stage you will see the changes. When you edit the scene its channel levels are shown on LED indicators and on the SVGA monitor. The LEDs will fade up in the fade time (if any). Their final *intensity* reflects the levels of those channels in the scene.

?? To edit a scene on a Playback, press **[edit] [F/A]** (scene number).

?? To edit a scene (in the Grab master), press **[edit] [F/A]** (Grab master)

?? To edit a scene in a different page, press **[edit] [red page]** or **[blue page]**, (repeated presses until desired page is shown), or hold **[page]** tap **[F/A]** (page number).

As each page is selected, all Playbacks containing scenes in that page will light.

Playbacks containing chases flash quickly, stacks flash slowly and empty playbacks are not lit.

To edit a scene in the selected page, press **[F/A]** (Scene number).

The FUNCTION button flashes to show that it is active. It allows you to read and edit actual channel levels and fade times for the scene (see below). Repeated presses of the FUNCTION button will cycle the display through channel LEVEL(%), IN time setting, OUT time setting and the bank/page/scene number.

### CHANNEL LEVELS

To read and/or edit the level of any channel in a scene, edit the scene (above) then, press **[FUNCTION]**

The "SCENE" and "LEVEL" LED indicators beside the display show that it will read the LEVEL (%) of a channel in a SCENE.

To see the level of any channel, press **[F/A]** (channel number).

Whilst the channels F/A button is held down, the display shows the channel number.

When the F/A button is released, the display shows the level of that channel in the scene.

To edit the level of the selected channel, rotate the EDIT wheel.

If the level is varied **above** its recorded value it is prefixed by a + sign. When a parameter is varied **below** its recorded value it is prefixed by a - sign. If the level is restored to its original value no sign is shown.

Press and release further channel F/A buttons to read and/or edit their levels.

Exit from edit mode by pressing **[edit]**. Changes are automatically saved.

### FADE TIMES

To read and/or edit the IN or OUT fade times in a scene, edit the scene as described above then use the function button to select each time.

#### IN TIME

Repeatedly press **[FUNCTION]** until the IN(S) indicator lights. The display prompts you then shows the IN fade time. The fade time may be edited by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the "in time" manual fader.

#### OUT TIME

Repeatedly press **[FUNCTION]** until the OUT(S) indicator lights. The display prompts you then shows the OUT fade time. The fade time may be edited by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the "out time" manual fader.

## ENDING EDIT

Edit may be ended at any time by pressing [edit]

**Any changes that you have made will automatically be saved in memory.**

## EDITING A SCENE NAME

Names are edited in the same way as they are recorded, not from edit mode. See "NAMING A SCENE" above for details.

## 8.5 COPYING A SCENE

Any scene may be copied to any other bank/page/ [F/A] number.

To copy a scene, press [assign/copy] The display reads "Pick memory to copy from". If the source is not in the current red or blue pages, use the red or blue page buttons to select the **source** bank/page number.

When the source scene number F/A button is pressed, the display will briefly scroll, "Pick location to copy to".

Use the red or blue page buttons and the scene F/A buttons to select the **destination** page and scene number.

Memories containing scenes are lit. Memories containing chases flash rapidly. Memories containing stacks flash slowly. Empty memories are not lit. This acts as a warning to you of existing scene, stack and chase numbers in each page.

When the destination scene number F/A button is pressed, the display will briefly confirm the source and destination of the copy.

**Note; When you make a copy of a scene, any scene (or stack or chase) that is currently in the destination number will be overwritten by the copy.**

The copy process may be abandoned at any time prior to entering the destination scene number by pressing [assign/copy] a second time. That is, de-selecting it.

**Hint; In a show or performance, the transition from one scene to the next will often only involve a change of a few channels. The majority of channels will remain the same. If this is the case, it is quickest to make a copy of the first scene and then edit the copy to create the next scene. This method ensures that any channels that are to be the same in both scenes will have identical levels.**

## 8.6 REMOVING (DELETING) A SCENE

To remove (delete) a scene from memory, press [remove]

If required, repeatedly press [red page] or [blue page] until the required page number is displayed, then press [F/A] (Scene number) of the scene to be removed.

The display asks you to confirm your action. Press [yes]

## 9.0 CHASES

### 9.1 OVERVIEW

A chase is a recorded list of steps that are to be replayed in order, stepping continuously from one step to the next and automatically repeating the list when it has reached the end. Each step in a chase consists of a scene or a snapshot of the output (which is taken when that step is added to the chase). Up to 250 steps may be recorded for each chase and up to 810 separate chases may be recorded into the memory, depending upon your *maXim* model. See the specifications table in the “Introduction” chapter for details.

Chases are recorded by bank/page/chase number. Bank/page numbers are selected with the red page or blue page buttons and chase numbers are selected with the red F/A buttons. Chases may be randomly recorded into any bank/page/chase number however scenes, chases and stacks share the same memory within each bank. Chases may also be recorded directly into the Grab master (**S, M & MP** models).

Chases can be replayed on the red bank (in Scene mode), on the blue bank, as steps in stacks or on the grab master (**S, M & MP** models).

A chase can be given a descriptive name.

Chases can be recorded and replayed on any of the red or blue playbacks or the grab master.

When a red bank page is changed or when the red bank is selected to “scene” mode, the contents (scenes and chases) of the indicated red page are loaded into the red playbacks.

When a blue bank page is changed, the contents (scenes and chases) of the indicated blue page are loaded into the blue playbacks.

Chase rate and crossfade times are recorded in memory as part of each chase. Up to 90 simultaneous chases may be running at the one time (**XXL** model).

Chases may be run in any of the following modes;

- ?? FORWARD
- ?? REVERSE
- ?? BOUNCE (Auto reverse at each end)
- ?? SINGLE SHOT (Run once and stop) (in either direction)
- ?? STOPPED
- ?? MANUALLY STEPPED FORWARD
- ?? MANUALLY STEPPED REVERSE

The chase RATE is recorded into memory in BPM (Beats Per Minute). You may smoothly take manual control of the rate of any chase with the EDIT wheel.

Chase stepping may be synchronised to the beat of an audio input signal (Sound To Light).

Traditionally, chases will snap (instantly switch) from step to step but you may also elect to record a FADE time for the chase so that the chase will crossfade from step to step.

A chase may be edited. The contents of any step may be changed, the rate varied and steps may be inserted or deleted.

A chase may be *copied* onto another bank/page/playback or onto or from the Grab master. See the “MEMORY STRUCTURE” chapter for more details.

**NOTE: Extremely complex chases can be created by recording a stack of “linked” steps. See the “STACKS” chapter for details.**

## 9.2 CHASE RECORDING

### **RAPID METHOD**

To record a chase, press [record chase] [page] (optional) (select a page in either the red or blue banks) [F/A] (chase number) (any of the red bank or blue bank flash/assign buttons) (or the grab F/A button, **S, M & MP** models only).

Each step of a chase consists of either a previously recorded scene or a snapshot.

?? To select a scene as a step, press [page] (optional) [F/A] (scene number).

?? To record a snapshot (of the current *maXim* output) as a step, press [record scene]

Continue to record steps as above.

When all steps have been recorded, complete the chase by pressing [record chase]

### **GENERAL DESCRIPTION**

To record a Chase, press [record chase]

The record chase button flashes and the display scrolls "Pick Chase Number".

The PAGE indicators show the current red and blue pages. Both PAGE buttons and the FUNCTION buttons flash to show that they are active. All Playbacks will flash twice to indicate possible memory location choices, then Playbacks already containing chases in that page will flash quickly. (Playbacks containing scenes are lit, stacks flash slowly and empty playbacks are not lit.) This acts as a warning to you of existing chase (scene or stack) numbers and unused numbers in each page.

### **PAGE SELECTION**

You can record chases in any page of memory. Repeated presses of either red or blue PAGE button will cycle through the 9 respective pages of memory.

To switch *directly* to a page press and hold [PAGE] tap [F/A] (Page number).

As you select each page, all Playbacks will flash twice then indicate their contents as above.

Choose a Bank/Page number for the chase.

Give the chase a number by pressing [F/A] (Chase number), (any red or blue F/A button) or press [F/A] (Grab), to record the chase on the Grab master (**S, M & MP** models).

**Note; Recording over an existing chase, stack or scene number will erase the previous contents.**

The display will scroll "Record Snap or select Memory".

The [record scene] and the [function] buttons flash.

Each step of a Chase consists of either a snapshot of the output or an existing scene.

### **RECORDING SNAPSHOTS AS STEPS**

To record snapshots, create the look, then record it as a step, press [record scene]

### **ADDING SCENES AS STEPS**

To add a scene as a step, simply press the F/A buttons of the scene.

If the required scene is in a different page to the current page, select the required red or blue page then press the F/A button of the scene.

Continue to create and record steps as above. You may mix snapshots and scenes in any order.

The display shows the last step number.

### **REMOVING STEPS**

If the step that you add is not correct, the last step may be deleted by pressing [remove]

**HINT: If a step other than the last step is incorrect, complete the recording then Edit the chase and step the chase to the incorrect step then press [remove].**

### **CHASE RATE**

At any point after giving the chase a memory number, repeated presses of the [FUNCTION] button will toggle the display between the STEP number, the RATE setting in BPM (Beats Per Minute) and the crossfade percentage. When the RATE is displayed, the EDIT wheel may be used to set the desired rate.

The default setting is 100 BPM but you may change this in the “Setup Preferences”.

### **STL (Bass Step)**

Chase stepping may be synchronised to the beat of an audio input signal. At any point after giving the chase a memory number, repeated presses of the [function] button will toggle the display between the STEP number, the RATE and the crossfade. When the STEP number is displayed, you can connect a STL (sound to light) signal to the chase.

Press and hold [function] tap either [STL1] or [STL2] (which are flashing). Press [yes] to make the connection. When the connected STL produces an output pulse, the chase will step to the next step. The output pulses of the STL are dependent upon the level and frequency of the audio input. See the “Sound To Light” chapter for details on how to adjust the STL level and frequency settings.

If the chase rate is set lower than the beat frequency of the audio input (music), the chase will step in time with the music beat but will continue to run at its own (lower) rate when the music stops.

If the chase is only to step when triggered by the music, set the chase rate to 0 (zero).

### **CHASE CROSSFADE**

Traditionally chases will snap (instantly switch) from step to step but in the *maXim* you may also elect to record a crossfade value for the chase so that it will crossfade from step to step.

The Crossfade is recorded as a percentage of the chase rate.

Repeated presses of the [FUNCTION] button will toggle the display between the STEP number, the RATE setting in BPM (Beats Per Minute) and the crossfade percentage. When the IN & OUT indicators are lit, the EDIT wheel may be used to set the percentage of the chase rate that is used for the crossfade.

The default setting is 0% (no crossfade) but you may change this in the “Setup Preferences”.

See “CONTROLLING A CHASE”, “CROSSFADE”, later in this chapter for more details.

### **COMPLETING THE CHASE**

When all steps have been recorded, complete the chase by pressing [record chase]

The display briefly displays the recorded Bank/Page/Chase number.

The chase will be a conventional forward running chase. To select other chase modes either [select] or [edit] the chase as described below.

### **NAMING A CHASE**

Each chase is by default given its bank, page and F/A number as a name.

For example, b1:01 (blue bank, page 1, chase 1).

To enter or change a name, press and hold [function] tap [F/A] (name) (a yellow bank function button)

The display says “Pick Object to Name”. Press [page] (optional) [F/A] (chase number)

The default name is automatically deleted or the existing name is shown and the blinking cursor on the display is ready for you to enter characters. Either rotate the EDIT wheel or press the yellow bank [F/A] buttons for the desired characters as labelled below the buttons. On the S, M & MP models where several characters are printed below each button, multiple presses select the next character in a similar fashion to mobile telephone keypad.

Press [<] or [>] to move the cursor and press [remove] or [add] to remove or add characters or spaces. Names may be up to 15 characters long.

When finished, press [ok]



### 9.3 CHASE PLAYBACK

Chases may be replayed on the:

- ?? Red Playbacks (in Scene mode)
- ?? Blue Playbacks (L, XL & XXL models)
- ?? Grab master (S, M & MP models).

#### SCENE MODE AND PAGES

- ?? When you set the red bank mode to “scene”, the chases (or stacks or scenes) in the current red page are assigned, in order, to their respective red playbacks, 1 to 12 (24, 36, 48, 60).
- ?? When you change red pages the chases (or stacks or scenes) in the selected red page are assigned, in order, to their respective red playbacks, 1 to 12 (24, 36, 48, 60). Any one of the 9 red pages may be selected using the [red page] button.
- ?? When you change blue pages the chases (or stacks or scenes) in the selected blue page are assigned, in order, to their respective blue Playbacks, 1 to 6 (18,30). Any one of the 9 blue pages may be selected using the [blue page] button.
- ?? Press [red page] or [blue page] to increment to the next page, or to switch *directly* to a page press and hold [red page] or [blue page] tap [F/A] (Page number).

**Note; Mode/Page freeze rules apply. See the “MEMORY STRUCTURE” chapter for more details.**

To reveal a chase on the output and the chase was recorded on the red bank, press [mode, red bank] until the “scene” LED lights.

If necessary, select the page containing the chase using [red page]

Fade up the red Playback containing the chase and also the red master.

If the chase was recorded on the blue bank, select the page containing the chase using [blue page]. Fade up the blue Playback containing the chase and also the blue master.

#### GRAB MASTER AS A CHASE MASTER

A chase may be copied to the Grab master allowing it to act like a Playback containing a chase. See the “GRABMASTER” chapter for details.

#### CONTROLLING A CHASE

The OVERALL level of a chase is controlled by the Playback or Grab master containing the chase. The chase can be faded in or out as required (its fade times are controlled manually) or the chase may be “Flashed” (soloed or bumped) via its F/A button.

To control a chase you can either [select] the *playback* running the chase or [edit] the *memory* containing the chase.

- ?? “**Select**” allows you to *change* the RUN TIME conditions (rate, crossfade, mode and direction) on the *selected Playback*. When you have finished controlling the chase, and you exit “Select” (press [select] again) the *maXim* asks “Save Changes To Memory?” If you answer “no”, the original memory is not affected, but the changes that you have made are retained in the Playback until such time as the Chase is replaced on that Playback (by changing pages or mode). If you answer “yes”, the changes are also copied to memory.
- ?? “**Edit**” allows you to directly change the memory settings of the chase. In addition to changing rate, crossfade, mode and direction you can *add* or *remove* steps and edit the *contents* of each step. These changes are automatically saved to memory as you edit. If the chase is currently on a Playback, then these changes are also seen live on that Playback. Edit is described below.

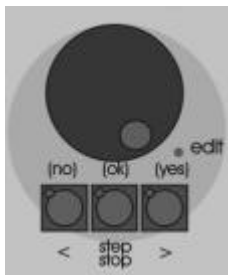
**“SELECT” CHASE PLAYBACK**

Press [select] [F/A] (Chase number)

?? To control the **RATE**, rotate the EDIT wheel. The display indicates the rate in BPM (Beat Per Minute)

?? To change the **CROSSFADE** between steps, press [function] until “in” & “out” LEDs light, then rotate the EDIT wheel. The display indicates the percentage of time between beats to be used for the crossfade. See **CROSSFADE** below for more details

?? To change the **MODE** or **DIRECTION** use the 3 buttons below the EDIT wheel as described below.



Chase control buttons and wheel.

**BUTTONS**

**ACTION**

[step/stop]	<b>STOPS</b> a running chase. <b>STEPS</b> a stopped chase (in the direction indicated by the flashing [>] or [<] direction button).
[>] (Forward)	Changes the <b>DIRECTION</b> of a reverse running chase (forward). Changes the <b>DIRECTION</b> of a <b>STOPPED</b> reverse chase (prepares it to run or step forward). <b>STARTS</b> a stopped forward chase.
[<] (Reverse)	Changes the <b>DIRECTION</b> of a forward running chase (reverse). Changes the <b>DIRECTION</b> of a <b>STOPPED</b> forward chase (prepares it to run or step reverse). <b>STARTS</b> a stopped reverse chase.
Hold [>] Tap [<]	Selects <b>BOUNCE</b> mode.
Hold [<] Tap [>]	Also selects Bounce mode.
[>]	Deselects Bounce mode (runs forward).
[<]	Deselects Bounce mode (runs reverse).
Hold [Step/stop] Tap [>]	Selects <b>SINGLE SHOT</b> mode.
[>]	If [>] is flashing, it runs a Single Shot in the forward direction. If [<] is flashing, it snaps the chase to the first step and flashes [>] in preparation to running a forward single shot.
[<]	If [<] is flashing, it runs a Single Shot in the reverse direction. If [>] is flashing, it snaps the chase to the last step and flashes [<] in preparation to running a reverse single shot.
Hold [Step/stop] Tap [>]	De-selects single shot mode and enters stop mode.
Hold [>] Tap [<]	De-selects single shot and enters Bounce mode.

When finished, press [select] (to de-select it). The display asks if you want to save the changes. Press [yes] to update the chase memory or press [no] to retain the original memory. In both cases, the changes that you have made are retained on the playback until a different chase or a scene is loaded.

## MODE DESCRIPTIONS

**NORMAL:** A conventional chase that steps from one step to the next and when it reaches the last step it loops around to the beginning and repeats the steps in the same order.

**BOUNCE:** The chase runs but automatically changes direction when it reaches the last or first step. In this manner, it continuously “bounces” from end to end. The indicators in the “>” (forward) button and the “<” (reverse) button indicate bounce mode as each only flashes (at the chase rate), when the chase runs in its indicated direction.

**SINGLE SHOT:** The chase is normally stopped. When it is started, it will run through its recorded steps **once** in the direction in which it is started. It will then stop and wait until it is manually started again in either direction.

*Hint: When recording a chase that is to be run as “Single Shot”, record the first and last steps with no channels on (a blackout). This allows the chase Playback to be kept faded up with no output appearing from the chase.*

## CROSSFADE

Traditionally, chases will snap (instantly switch) from step to step but in the *maXim* you may also elect to record a CROSSFADE time for the chase so that the chase will crossfade from step to step. The crossfade is recorded as a percentage of the chase rate.

For example, if the chase rate is set at 60 BPM (which is one step per second), then with crossfade set at 0% (that is, no fade), the chase will wait for one second, then snap to the next step. None (0%) of the available rate time will be used for crossfading.

If the crossfade is set to 50%, then the chase will perform a 0.5 second crossfade to the next step, wait for 0.5 seconds and then perform the next crossfade. That is, 50% of the Rate time is used to perform a crossfade and 50% of the Rate time is spent waiting before starting the next crossfade.

If the crossfade is set to 100%, then the Chase will use all of the Rate time performing a crossfade to the next step. When the crossfade is complete, the next crossfade will commence immediately, as 100% of the available rate time has been used by the crossfade.

## 9.4 EDITING A CHASE

(Also see “CONTROLLING A CHASE” above)

You may **edit** a chase live or blind (faded down) on its Playback or directly in its memory location. If the chase is faded up on stage you will see the changes. If the chase is not live on stage, its steps are displayed on the channel LED indicators and on the SVGA monitor. You can add or delete steps, change rate and crossfade, connect or disconnect the STL (bass step) function and edit the contents of each step (including channels not already on in the step).

?? To edit a chase on a Playback, press [edit] [F/A] (chase number).

?? To edit a chase (in the Grab master), press [edit] [F/A] (Grab master)

?? To edit a chase in a different page, press [edit] [red page] or [blue page] (repeated presses until desired page is shown), or hold [page] tap [F/A] (page number).

As each page is selected, all Playbacks containing chases in that page will flash quickly. (Playbacks containing scenes light, stacks flash slowly and empty playbacks are not lit.)

To edit a chase in the selected page, press [F/A] (chase number).

The display shows the bank/page/chase number or name and the indicators in the channel F/A buttons show the channels of the running chase. Their *intensity* reflects the levels of the channels in each step.

?? To control the **RATE**, rotate the EDIT wheel. The display indicates the rate in BPM (Beat Per Minute)

?? To change the CROSSFADE between steps, press [function] until “in” & “out” LEDs light, then rotate the EDIT wheel. The display indicates the percentage of time between beats to be used for the crossfade. See CROSSFADE above for more details.

?? To change the **MODE** or **DIRECTION**, use the 3 buttons below the EDIT wheel as described above.

?? To connect or disconnect a STL (bass step) from the chase, repeatedly press and hold [function] until the STEP number(s) are shown and the STL key LEDs flash. Whilst holding [function] tap either [STL1] or [STL2]. Press [yes] to connect or disconnect the selected STL. See “Recording a Chase, STL (Bass Step)” earlier in this chapter and the “Sound To Light” chapter for details on how to adjust chase rate and the STL level and frequency settings.

The [remove] and [add] buttons also flash to show that they are active.

### **ADD A STEP**

To add a step, first edit the chase (above), then press [step/stop] to *stop* the chase and continue pressing to *step* the chase to the step **prior** to the point where the new step is to be added.

Press [add] then either;

?? Create the look for the new step on the output and record it by pressing [record scene]

or

?? To add a scene as a step, simply press the F/A buttons of the scene. If the required scene is in a different page to the current page, select the required red or blue page then press the F/A button of the scene.

If necessary press [>] or [<] to start the chase again in the desired direction then press [edit] to end the editing function. All changes are automatically saved.

### **REMOVE A STEP**

To remove a step, first edit the chase (above), then press [step/stop] to *stop* the chase and continue pressing to select the step to be removed.

To remove the step, press [remove] [yes]

If necessary, press [>] or [<] to start the chase again in the desired direction, then press [edit] to end the editing function. All changes are automatically saved.

### **MODIFY A STEP**

To modify the channel levels of a step, first edit the chase (above), then press [step/stop] to *stop* the chase and continue pressing to select the step to be modified. Press [function] until the “chan” LED indicator lights and the display reads “Pick channel to edit”.

To see the level of any channel, press [F/A] (channel number).

Whilst the channels F/A button is held down, the display shows the channel number.

When the F/A button is released, the display shows the level of that channel in the step.

To edit the level of the selected channel, rotate the EDIT wheel.

If the level is varied **above** its recorded value it is prefixed by a + sign. When a parameter is varied **below** its recorded value it is prefixed by a - sign. If the level is restored to its original value no sign is shown.

Press and release further channel F/A buttons to read and/or edit their levels.

**NOTE:** *If the chase step that you modify is a scene, then that actual scene memory is edited, not just the chase step. If you directly edit a scene memory and that scene is a step in a chase, then the changes will be seen in the chase.*

To modify other steps, press [step/stop] to step the chase then again select any channels to be modified with their F/A buttons.

When finished modifying, if necessary press [>] or [<] to start the chase again in the desired direction, then press [edit] to end the editing function. All changes are automatically saved.

### **EDITING A CHASE NAME**

Names are edited in the same way as they are recorded, not from edit mode. See "NAMING A CHASE" above for details.

## **9.5 COPYING A CHASE**

Any chase may be copied to any other bank/page/ [F/A] number.

To copy a chase, press [assign/copy] The display reads "Pick memory to copy from". If the source is not in the current red or blue pages, use the red or blue page buttons to select the **source** bank/page number.

When the source chase number F/A button is pressed, the display will briefly scroll, "Pick location to copy to".

Use the red or blue page buttons and the scene F/A buttons to select the **destination** page and chase number.

Memories containing chases flash rapidly. Memories containing scenes are lit. Memories containing stacks flash slowly. Empty memories are not lit. This acts as a warning to you of existing chase, stack and scene numbers in each page.

When the destination chase number F/A button is pressed, the display will briefly confirm the source and destination of the copy.

**Note; When you make a copy of a chase, any chase (or stack or scene) that is currently in the destination number will be overwritten by the copy.**

The copy process may be abandoned at any time prior to entering the destination scene number by pressing [assign/copy] a second time. That is, de-selecting it.

## **9.6 REMOVING (DELETING) A CHASE**

To remove (delete) a chase from memory, press [remove]

If required, repeatedly press [red page] or [blue page] until the required page number is displayed, then press [F/A] (chase number) of the chase to be removed.

The display asks you to confirm your action. Press [yes].

## 10.0 GRAB MASTER (S, M & MP Models)

### 10.1 OVERVIEW

The Grab master is a multi function master. It can be used as either;

?? A Grab master.

?? A Scene master.

?? A Chase master.

?? A storage location for a stack.

You change its function by *recording* or *copying* either a Grab, a Scene, a Chase or a Stack into it.

### 10.2 GRAB AS A GRAB MASTER

The Grab master allows you to “GRAB” and maintain the current output of the *maXim* by taking a “snapshot” of the output and holding it the Grab master, thus freeing the rest of the *maXim* for other operations.

To “Grab” the output of the *maXim*, press [record scene] [F/A] (grab)

By default, the fade time for the Grab master is controlled by the Time Faders. The contents of the Grab master (including its fade times), may be edited and named in exactly the same manner as a scene. See the “SCENES” chapter for details.

#### TYPICAL GRAB OPERATIONS

When you perform a “Grab” and then fade up the Grab master, it allows the Bank masters (and hence the channel faders and/or Playbacks) currently producing the output to be faded down whilst the Grab master maintains the output. This allows the next look to be preset *blind* on either of the preset banks. This is most useful in Wide and Scene modes as the Grab master effectively provides a second (or “Phantom”) bank.

In a typical operation, the current look is created on any of the channel faders or Playbacks. To enable the next look to be created, take a “Grab” of the output, fade up the Grab master to full and then fade down the Bank masters. The look is maintained by the Grab master. Preset the next look using any of the channel faders or Playbacks. To crossfade to the next look, simply fade up the Bank masters and fade down the Grab master. In order to create the next look, “Grab” the current look in the Grab master, fade it up to full and then fade down the Bank masters. As before, create the next look “blind” on the channel faders or Playbacks.

You may continue to “Preset” and “Grab” for every new look that you require.

### 10.3 GRAB AS A SCENE MASTER

Any existing Scene from any Page may be copied to the Grab master. The Grab master then performs like any other Playback containing a Scene. The fade times are determined by the time settings that were recorded into the Scene that has been copied.

To copy a scene from any page of memory to the Grab master, press [assign/copy]

The display reads “Pick memory to copy from”.

If the source is not in the current red page, use the red page button to select the source page number then press [F/A] (scene number). The display will briefly scroll,

“Pick location to copy to”.

Press [F/A] (grab). The display will then confirm the copy.

The Scene in the Grab master may be edited in exactly the same way as a scene in a Playback. Refer to “EDITING A SCENE” in the “SCENES” chapter.

*Hint; The Grab master may be used as a scene master in any mode of operation and is especially useful when operating in "Preset mode" or "Wide mode" where Playbacks are not available to replay scenes.*

## 10.4 GRAB AS A CHASE MASTER

Any existing Chase from any Page may be copied to the Grab master, or a chase may be recorded directly into the Grab master. The Grab master then performs like any other Playback containing a chase. See the "CHASES" chapter for details on how to control the chase.

### **COPYING A CHASE TO THE GRAB MASTER**

To copy a chase from any page of memory to the Grab master, press [assign/copy]

The display reads "Pick memory to copy from".

If the source is not in the current red page, use the red page button to select the source page number then press [F/A] (chase number). The display will briefly scroll, "Pick location to copy to".

Press [F/A] (grab). The display will then confirm the copy.

### **RECORDING A CHASE ON THE GRAB MASTER**

This is the same procedure as recording a chase on a Playback except that the Grab master is selected as the chase number. The Chase in the Grab master may be controlled and edited in exactly the same manner as a chase in a Playback. Refer to the "CHASE" chapter for details.

## 10.5 GRAB AS A MEMORY

### **COPYING A STACK TO THE GRAB MASTER**

Any existing stack from any Page may be copied to the Grab master. The Grab master cannot replay the stack but does provide a handy storage location for a stack.

To copy a stack from any page of memory, to the Grab master, press [assign/copy]

The display reads "Pick memory to copy from".

If the source is not in the current red page, use the red page button to select the source page number then press [F/A] (stack number). The display will briefly scroll, "Pick location to copy to".

Press [F/A] (grab). The display confirms the copy.

### **COPYING FROM THE GRAB MASTER**

A grab (snapshot), a scene, a chase or a stack in the Grab master can be copied to any page/number memory.

Press [assign/copy] [F/A] (grab)

The display reads "Pick location to copy to".

If the destination is not in the current red page, use the red page button to select the destination page number then press [F/A] (memory number). The display will then confirm the copy.

A stack in the Grab master can be also copied to the stack master.

Press [assign/copy] [F/A] (grab) [stack flash]

## 11.0 STACKS

### 11.1 OVERVIEW

A stack is a recorded list of steps that are to be replayed in order. Each step in a stack consists of either a scene, a chase or a snapshot of the output (which is taken when that step is added to the stack). Stepping from one step to the next is a Dipless Crossfade and is usually executed manually but can be automatic. A Stack can be given a descriptive name and each step may also be named.

Up to 500 steps may be recorded in each stack and between 108 and 810 separate stacks may be recorded into the memory depending upon the model or your *maXim*. See the specifications table in the "Introduction" chapter for details. If all the lighting cues in a "show" have been recorded into a "stack", then the entire show may be performed on the stack master by simply pressing the forward ">" button for each lighting cue.

Stacks are recorded by bank/page/stack number. Bank/page numbers are selected with the red page or blue page buttons and chase numbers are selected with the red F/A buttons. Stacks may be randomly recorded into any bank/page/chase number however scenes, chases and stacks share the same memory within each bank. Stacks may also be recorded directly into the Grab master (**S, M & MP** models).

Stacks may only be replayed on the Stack Master, which provides comprehensive facilities to control the replay of the Stack. Crossfade times for each step are recorded into memory or can be under control of the time faders. Each step can be given a "link" time causing it to automatically step after an elapsed link time.

A stack may be edited. The contents of any step may be changed, the fade and link times varied and steps may be inserted or deleted. A stack may be *copied* onto another bank/page/number or onto or from the Grab master. See the "MEMORY STRUCTURE" chapter for more details.

### 11.2 STACK RECORDING

#### **RAPID METHOD**

To record a stack, press [record stack] [page] (optional) (select a page in either the red or blue banks) [F/A] (stack number) (any of the red bank or blue bank flash/assign buttons) (or the grab F/A button, **S, M & MP** models only).

Each step of a stack consists of either a previously recorded scene or a snapshot or a chase.

?? To select a scene as a step, press [page] (optional) [F/A] (scene number).

The fade times from the scene will be used for the step in the stack.

?? To record a snapshot (of the current *maXim* output) as a step, press [record scene]

?? To select a chase as a step, press [page] (optional) [F/A] (chase number).

Continue to record steps as above.

When all steps have been recorded, complete the stack by pressing [record stack]

#### **GENERAL DESCRIPTION**

To record a stack, press [record stack]

The record stack button flashes and the display scrolls "Pick Stack Number".

The PAGE indicators show the current red and blue pages. Both PAGE buttons and the FUNCTION buttons flash to show that they are active. All Playbacks will flash twice to indicate possible memory location choices, then Playbacks already containing stacks in that page will flash slowly. (Playbacks containing scenes are lit, chases flash quickly and empty playbacks are not lit.) This acts as a warning to you of existing stack (scene or chase) numbers and unused numbers in each page.



### **PAGE SELECTION**

You can record stacks in any page of memory. Repeated presses of either red or blue PAGE button will cycle through the 9 respective pages of memory.

To switch *directly* to a page, press and hold [PAGE] tap [F/A] (Page number).

As you select each page, all Playbacks will flash twice then indicate their contents as above.

Choose a Bank and Page number for the stack.

Give the stack a number by pressing [F/A] (stack number), (any red or blue F/A button) or press [F/A] (grab), to record the stack in the Grab master memory (**S, M & MP** models).

**Note; Recording over an existing stack, chase or scene number will erase the previous contents.**

The display will scroll "Record Snap or select Memory".

The [record scene] and the [function] buttons flash.

Each step of a stack consists of either a snapshot of the output or an existing scene or chase.

### **RECORDING SNAPSHOTS AS STEPS**

To record snapshots, create the look on the output, then record it as a step, press [record scene]

### **RECORDING (ADDING) SCENES AS STEPS**

To record an existing scene as step, press the F/A button of the scene.

If the required scene is in a different page to the current page, select the required red or blue page then press the F/A button of the scene.

### **RECORDING (ADDING) CHASES AS STEPS**

To record an existing chase as a step, press the F/A buttons of the chase.

If the required chase is in a different page to the current page, select the required red or blue page then press the F/A button of the chase.

Continue to create and record steps as above. You may mix snapshots, chases and scenes in any order. The display shows the last step number.

### **REMOVING STEPS**

If the step that you add is not correct, the last step may be deleted by pressing; [remove]

**HINT: If a step other than the last step is incorrect, complete the stack recording then Edit the stack and remove the incorrect step.**

### **FADE AND LINK TIMES**

As each step is added you may set the fade IN, OUT and LINK times (automatically links to next step after link time expires) for that step.

When a step has been added, repeatedly press [function] to cycle through the fade IN time, fade OUT time and LINK time. When any of the time settings are indicated, the EDIT wheel lights to show that it is active. Rotate the EDIT wheel to set the desired time. The maximum time is 16 minutes and 39 seconds and the minimum time is 0 seconds. When a fade time is set *lower* than 0 seconds, it reverts to "Fader" (IN or OUT time Fader) control.

If you do not enter a time then the default settings will be used. The default times are;

- ?? SCENE            The in and out fade times from that scene
- ?? LINK             None
- ?? SNAPSHOT      Time faders

(You can change the default times with the “Setup Preferences” function).

See REPLAYNG STACKS below for more details on fade and link times.

Pressing [function] again shows the current step number and allows you to record the next step.

**COMPLETING THE STACK**

When all steps have been recorded, complete the stack by pressing [record stack].

The display briefly displays the recorded Bank/Page/Stack number.

**NAMING A STACK**

Each stack is by default given its bank, page and F/A number as a name.

For example, b1:01 (blue bank, page 1, scene 1).

To enter or change a name; press and hold [function] tap [F/A] (name), a yellow bank function button. The display says “Pick Object to Name”. Press [page] (optional) [F/A] (stack number)

The default name is automatically deleted or the existing name is shown and the blinking cursor on the display is ready for you to enter characters. Either rotate the EDIT wheel or press the yellow bank [F/A] buttons for the desired characters as labelled below the buttons. On the **S, M & MP** models where several characters are printed below each button, multiple presses select the next character in a similar fashion to mobile telephone keypad. Press [<] or [>] to move the cursor and press [remove] or [add] to remove or add characters or spaces. Names may be up to 15 characters long.

When finished, press [ok]

**NAMING EACH STEP IN A STACK**

See “EDITING A STACK” below.

**11.3 STACK PLAYBACK**

Stacks can only be replayed on the stack master.

**ASSIGNING A STACK**

To assign a stack to the stack master, press [assign/copy]

[page] (optional) (select a page in either the red or blue banks)

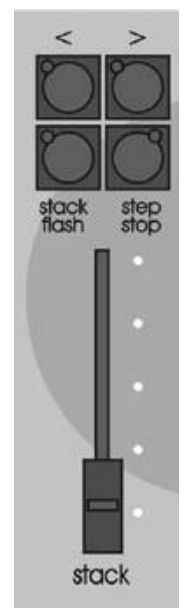
[F/A] (stack number) (red or blue banks)

[stack flash]

Fade up the stack master to reveal the first step.

**STACK LEVEL**

The OVERALL output level of a stack is controlled by the stack master. The stack can be manually faded in or out as required or the stack may be flashed via its [flash/assign] button.



**STACK VIDEO**

To see a comprehensive display of the status of the stack on the video screen,

Press and HOLD [function], tap [F/A] (video 3).

You can also “Pin” a smaller stack status video display. See section 16.4 for details.

**STACK PLAYBACK**

When a stack is idle, its output comes from the *current* step.

The step that will follow this step is called the *next* step.

When a crossfade is initiated, the stack master performs a Dipless Crossfade from the current step to the next step.

When the stack reaches the end, it will wrap around to the start.

**INITIATING A CROSSFADE**

To crossfade from the *current* step to the *next* step, press [ > ] (forward).

The crossfade will occur with the *incoming* step fading in, in its IN time and the *outgoing* step fading out in its OUT time. The display momentarily shows the step number of the incoming step. While the crossfade is *in progress*, the > (forward) button flashes for the duration of the IN fade and the < (reverse) button flashes for the duration of the OUT fade.

Each press of the [ > ] (forward) button will start the crossfade to the next step. You do not have to wait for a step to complete before starting the next step.

**CROSSFADING TO THE PREVIOUS STEP**

To crossfade from the *current* step to the *previous* step, press [ < ] (reverse).

You may only crossfade back one step. You may however STEP back to any step.

See “STEPPING A STACK” below.

**STOPPING A CROSSFADE**

To stop a crossfade *in progress*, press [step/stop]

When a crossfade has been stopped, the > (forward) button, < (reverse) button and step/stop buttons all flash.

**STARTING A STOPPED CROSSFADE**

To start a stopped crossfade in the forward direction, press [ > ] (forward).

To start a stopped crossfade in the reverse direction, press [ < ] (reverse).

The crossfade can also be momentarily run by holding down [step/stop]

**REVERSING A CROSSFADE**

To reverse a crossfade *in progress* and return to the previous step, press [ < ] (reverse).

**STEPPING A STACK**

If a stack is stationary (idle between steps), you may step (instant change, no times executed) through the stack in either direction.

To instantly step (snap) a stack in the forward direction; hold [step/stop] tap [ > ] (forward)

To instantly step (snap) a stack in the reverse direction; hold [step/stop] tap [ < ] (reverse)

**CLEARING THE STACK MASTER**

To clear the stack master, press [remove] [stack flash] [yes]

**FADE TIMES**

When a stack is assigned to the stack master, the times of the crossfade from one step to the next are determined by the settings that have been *recorded* for each step. This can be the manual time faders. The transition from one step to the next is in the form of a DIPLESS CROSSFADE. The incoming step will fade *up* in the IN time for that step and the outgoing step will fade *down* in the OUT time for that step.

## LINK TIMES

If a step contains a LINK time, then when that step is played, its link time starts counting down. At the completion of the link time the stack will automatically step to the next step. If every step has a link time, then the stack will play like a chase, but with the following differences.

- ?? The duration of every step may be individually set by its link time.
- ?? The in and out fade times of every step may be individually set.
- ?? A step may be a chase.

This allows you to create very complex and interesting chases.

**Hint: If you need a link time in every step of a stack (to make it chase) set the default link time using the preference function. See the "UTILITIES" chapter for details.**

## 11.4 EDITING A STACK

You may edit a stack live or blind (faded down) on the stack master or directly in its memory location. If the stack is faded up on stage you will see the changes. If the stack is not live on stage, its steps are displayed on the channel LED indicators and on the video monitor. You can add or delete steps, change fade and link times and edit the contents of each step (including channels not already on in the step).

?? To edit a stack on the stack master, press **[edit]** **[stack flash]**

?? To edit a stack in memory, press **[edit]** **[red page]** or **[blue page]** (repeated presses until desired page is shown), or hold **[page]** tap **[F/A]** (page number) **[F/A]** (stack number)

As each page is selected, all Playbacks containing stacks in that page flash slowly. (Playbacks containing scenes are lit, chases flash quickly and empty playbacks are not lit.)

The display momentarily shows the bank/page/stack number or name and then it shows step number and its contents. If you edit the stack on the stack master, the current step will be selected. If you edit a stack in memory, step 1 will be selected.

Step through the stack using the **[<]** or **[>]** buttons below the EDIT wheel.

The indicators in the channel F/A buttons show the channel levels in each step.

The **[function]**, **[remove]** and **[add]** buttons also flash to show that they are active.

Their uses are described below.

When finished editing, press **[edit]**. Changes are automatically saved.

### ADD A STEP

To add a step to a stack, first edit the stack (above) then step through the stack using the **[<]** or **[>]** buttons below the EDIT wheel.

Select the step after which the new step is to be inserted, then press **[add]**

?? To select a scene as the added step, press **[page]** (optional) **[F/A]** (scene number).

?? To record a snapshot (of the current **maXim** output) as the added step, press **[record scene]**

?? To select a chase as the added step, press **[page]** (optional) **[F/A]** (chase number).

Exit from edit mode by pressing **[edit]**. Changes are automatically saved.

### REMOVE A STEP

To remove a step from a stack, first edit the stack (above) then step through the stack using the **[<]** or **[>]** buttons below the EDIT wheel.

Select the step that is to be deleted, then press **[remove]** **[yes]**

Exit from edit mode by pressing **[edit]**. Changes are automatically saved.

### **EDIT THE TIMES OF A STEP**

To edit the times of a step in a stack, first edit the stack (above) then step through the stack using the [**<**] or [**>**] buttons below the EDIT wheel to select the step to be edited.

Press [**function**] until the in(s) indicator lights. The display prompts you then shows the IN fade time. The fade time may be edited by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the “in time” manual fader.

Press [**function**] until the out(s) indicator lights. The display prompts you then shows the OUT fade time. The fade time may be edited by rotating the EDIT wheel. When a time is set *lower* than 0 seconds, it is controlled by the “out time” manual fader.

Press [**function**] again. The “in” and “out” LED lights. Use the EDIT wheel to set the “link” time. A link time causes the stack to automatically step to the next step after link time expires.

Exit from edit mode by pressing [**edit**]. Changes are automatically saved.

### **EDIT THE CHANNELS LEVELS OF A STEP**

If the step is a snapshot or a scene you can edit the channel levels of the step.

**NOTE: If the step that you are editing is a scene, the channel levels in the original scene are edited, not just the step. Likewise, if you edit the actual scene, the changes will also be seen in the step of the stack that contains that scene.**

To edit the channel levels of a step in a stack, first edit the stack (above) then step through the stack using the [**<**] or [**>**] buttons below the EDIT wheel to select the step to be edited. The display shows the step number, type of step (Scn (Scene), Chs (Chase) or SNAP) and its name.

Repeatedly press [**function**] until the “level” LED lights and the display reads “Pick Channel to edit”.

To see the level of any channel, press [**F/A**] (channel number).

Whilst the channels F/A button is held down, the display shows the channel number.

When the F/A button is released, the display shows the level of that channel in the step.

To edit the level of the selected channel, rotate the EDIT wheel.

If the level is varied **above** its recorded value it is prefixed by a + sign. When a parameter is varied **below** its recorded value it is prefixed by a - sign. If the level is restored to its original value no sign is shown.

Press and release further channel F/A buttons to read and/or edit their levels.

### **NAMING EACH STEP IN A STACK**

To name a step in a stack, first edit the stack (above) then step through the stack using the [**<**] or [**>**] buttons below the EDIT wheel to select the step to be named. The “step” LED is lit and the display scrolls the step number.

Press and hold [**function**] tap [**F/A**] (name), a yellow bank function button.

The display says “Edit Step Name”.

The default name is automatically deleted or the existing name is shown and the blinking cursor on the display is ready for you to enter characters. Either rotate the EDIT wheel or press the yellow bank [**F/A**] buttons for the desired characters as labelled below the buttons. On the **S**, **M** & **MP** models where several characters are printed below each button, multiple presses select the next character in a similar fashion to mobile telephone keypad. Press [**<**] or [**>**] to move the cursor and press [**remove**] or [**add**] to remove or add characters or spaces.

Names may be up to 15 characters long.

When finished, press [**ok**]

### **ENDING EDIT**

Edit may be ended at any time by pressing [edit]

**Any changes that you have made will automatically be saved in memory.**

### **EDITING A STACK NAME**

Names are edited in the same way as they are recorded, not from edit mode.  
See "NAMING A STACK" above for details.

## **11.5 COPYING A STACK**

Any stack may be copied to any other bank/page/ [F/A] number.

To copy a stack press [assign/copy] The display reads "Pick memory to copy from".  
If the source is not in the current red or blue pages, use the red or blue page buttons to select the **source** bank page number.

When the source stack number F/A button is pressed, the display will briefly scroll,  
"Pick location to copy to".

Use the red or blue page buttons and the scene F/A buttons to select the **destination** page and stack number.

Memories containing stacks flash slowly. Memories containing scenes are lit. Memories containing chases flash rapidly. Empty memories are not lit. This acts as a warning to you of existing chase, stack and scene numbers in each page.

When the destination stack number F/A button is pressed, the display will briefly confirm the source and destination of the copy.

**Note; When you make a copy of a stack, any stack (or chase or scene) that is currently in the destination number will be overwritten by the copy.**

The copy process may be abandoned at any time prior to entering the destination scene number by pressing [assign/copy] a second time. That is, de-selecting it.

**Hint: If you have recorded a stack and you want to experiment with some changes, make a copy of the stack and edit the copy. In the event that your changes are unsatisfactory, the original remains unaltered.**

## **11.6 REMOVING (DELETING) A STACK**

To remove (delete) a stack from memory, press [remove]

If required, repeatedly press [red page] or [blue page] until the required page number is displayed, then press [F/A] (stack number) of the stack to be removed.

The display asks you to confirm your action. Press [yes]

## **11.7 CLEARING THE STACK MASTER**

To remove (clear) a stack from the stack master, press [remove] [stack flash].

The display asks you to confirm your action. Press [yes]

## 12.0 FLASH

### 12.1 OVERVIEW

The FLASH section of the *maXim* utilises the FLASH/ASSIGN buttons in the fader bank sections and the FLASH buttons of the Master's to provide extensive flashing control. When a channel is "flashed" (also known as "bumping") it can be either added to the current output of the desk or it can be "soloed" (also known as swap or kill) where it replaces the current output of the desk.

You may Flash any channel or multiple channels, any Playbacks, any master, or any multiple combination of the above at the one time. The only limit is your ability to hold down multiple buttons. The Flash function is a momentary action. As soon as **all** Flash buttons are released, normal output is restored.

There are no times associated with the FLASH function. All actions are instantaneous.

### 12.2 ADD/SOLO MODE

You may select what effect the Flash buttons have on the *output* of the *maXim*, by selecting either ADD mode or SOLO mode. Pressing the ADD/SOLO button will toggle from one mode to the other. SOLO mode is indicated when LED indicator in the ADD/SOLO button flashes.

?? In ADD mode, pressing any FLASH button will add the flashed channels to the output (at the FLASH control level) without having any effect on the current output of the *maXim*.

?? In SOLO mode, pressing any FLASH button will add the flashed channels to the output (at the FLASH control level) and at the same time it will KILL (black out) all other output of the *maXim*. The flashed object is now the solo output from the *maXim*.

### 12.3 FLASH LEVEL

The FLASH level control sets the *percentage level* at the output of the FLASH section for all channels when they are flashed. For individual channels the Flash level sets the level of any flashed channels. For the contents of any Playback it will be the *percentage* of the channels recorded level.

For example, if the Flash level is set to its mid (50%) position;

?? Flashed **channels** will come on at a level of 50%.

?? If a scene is Flashed and it contains a channel at a level of 80% then that channel will come on at 40% (50% of 80%).

If the FLASH level is set to minimum, then no channels will come on when a FLASH button is pressed.

If the *maXim* is in ADD mode, and a channel is already ON when it is flashed, the flash level acts together with any existing level for that channel on a Highest Takes Precedence (HTP) basis.

**Warning:** *Setting the FLASH LEVEL control to minimum and the ADD/SOLO mode to SOLO will cause all of the FLASH buttons to act as DBO (Dead Black Out) buttons because pressing a FLASH button will cause its channel(s) to come on at 0% and all normal output to be killed.*

**Hint:** *To safeguard against inadvertently "flashing" any lights on stage or killing the output, you can set the FLASH LEVEL control to minimum and the ADD/SOLO mode to ADD. Pressing any FLASH button will now have no affect.*

## 13.0 PATCH

### 13.1 OVERVIEW

The “patch” allows you to patch (connect) DMX (dimmer) slots (addresses) to **maXim** channel numbers enabling the **maXim S, M & MP** models to control up to 512 DMX slots (one universe) and the **maXim L, XL & XXL** models to control up to 1024 DMX slots (two universes).

Patches are required when;

- ?? A particular **maXim** channel number is to control a different DMX (dimmer) slot number.
- ?? A single **maXim** channel is to control several different DMX slots.
- ?? There are more DMX slots to be controlled than there are desk channels.
- ?? The PatPad is fitted and you want to control moving fixtures

A direct 1 to 1 connection from **maXim** channels to their respective DMX addresses (Universe 1) can be selected for simple operations.

The patch allows you to patch any DMX slot to any **maXim** channel number. A patch **level** may be set for every patch. A single **maXim** channel may be patched to multiple DMX slots.

If no patches exist, either due to a “Total Reset” or if all patches have been removed (below) the patch will be automatically bypassed giving a direct 1 to 1 connection between **maXim** channel numbers and their matching DMX slot numbers. This feature assists inexperienced operators. When any patch is made by the user, the bypass is automatically removed and only the users patches will exist.

### 13.2 PATCHING

If you wish to create an entirely new patch, then it is best to clear the patch so any previous patches will not give unexpected results.

If your **maXim** is fitted with a **PaTPad** moving light controller, refer to the separate **PaTPad** Operational Manual for details on how to patch fixtures.

#### **REMOVE (DELETE) ALL PATCHES**

To remove **ALL** patches, hold [function] tap [patch]

Press [remove] [yes]. The patch is now automatically bypassed.

*Hint; Plan your patch by firstly writing it down on a “patch sheet”. When patching DMX slots to channels, start with the fixture to be controlled, allocate the DMX (dimmer) number that is to control it, and then patch that dimmer output to the desired desk channel.*

#### **EDIT THE PATCH**

To edit the patch, hold [function] tap [patch]

Press [edit]

#### **PATCHING DMX SLOTS TO CHANNELS**

**maXim** models with 2 DMX universes (2 outputs) use U1 or U2 to indicate DMX Universe. When the DMX slot is incremented above the highest number in universe 1 (U1-512), it changes to universe 2 (U2-1).

Press [<] or [>] or rotate the EDIT Wheel to select the dimmers DMX slot.

To patch the selected DMX slot to a channel, press the [F/A] button of the channel number (any yellow or red F/A button). When patching dimmers, the DMX slot does not automatically increment when the patch is made. This allows you to set a patch level (below) without inadvertently patching multiple slots to the same desk channel.



The channel F/A button will light to show that the patch exists. Select another DMX slot with the EDIT wheel, [**<**] or [**>**] and patch it to a channel by pressing the [**F/A**] button of that channel number. Continue to select DMX addresses and patch them to **maXim** channels.

When scrolling through the DMX slots, as each number is shown, if a channel is patched to it, that channel's F/A button will flash. Each DMX slot may only be patched to any one channel. If a particular DMX slot is already patched to a channel and you attempt to patch that same DMX slot to a different channel (by pressing that channel's F/A button) then the display will ask

"DMX # patched to channel # - replace ?". If you press [**no**] the patch remains. If you press [**yes**] the patch is deleted and the new patch made.

### **PATCHING MULTIPLE DIMMERS**

To automatically patch a sequential range of dimmers to a sequential range of channels, press [**<**] or [**>**] or rotate the EDIT Wheel to select the DMX slot of the first dimmer.

Press and HOLD the [**F/A**] button of the channel number to be patched to that dimmer then tap the [**F/A**] button of the channel to be patched to last dimmer number in the sequence.

All channels in the selected range are automatically patched to their respective dimmer.

For example, to patch a rack of 12 dimmers with a starting DMX address of 100 to **maXim** channels 13 to 24 respectively, press [**<**] or [**>**] or rotate the EDIT Wheel to select DMX slot 100, then press and HOLD [**F/A**] (13) and tap [**F/A**] (24).

### **SET A PROPORTIONAL PATCH LEVEL**

All dimmers can have a proportional patch level.

When patching (above), select the DMX slot (EDIT wheel, [**<**] or [**>**]) then hold down the FLASHING [**F/A**] button of the patched channel. The display shows the patch level.

Whilst holding down the channel [**F/A**] button, rotate the EDIT wheel to set the patch level. The level of the patch is shown on the display.

### **PATCH INDICATORS**

- ?? When editing the patch, the F/A LED will be lit on any **maXim** channel that is patched to a DMX slot. This indicates used **maXim** channel numbers.
- ?? As each DMX slot is selected with [**<**] or [**>**] or the EDIT Wheel, if the DMX slot is patched to a **maXim** channel, then the F/A LED of that channel will *flash*.
- ?? As each patch is made, the "V2 Output & Patch" video shows the channel number and name, DMX slot and patch level.

When finished patching, press [**edit**] The patch is automatically saved.

### **UNPATCH A DMX SLOT FROM A CHANNEL**

To delete a single patch, edit the patch and select the DMX slot (above) then press [**remove**]

The display scrolls, "Delete patch to DMX#?" Press [**yes**]

Alternately, select the DMX address and set the proportional patch level to zero.

### **1 TO 1 PATCH**

A 1 to 1 patch is available to speed the patching process. It directly connects each **maXim** channel number to its matching DMX number.

To add a "1 to 1 patch", hold [**function**] tap [**patch**]

Press [**add**] [**yes**]

**Note; Adding a 1 to 1 patch will replace any existing patches.**



## 15.0 SOUND TO LIGHT (STL)

### 15.1 OVERVIEW

The **maXim** is fitted with a RCA type jack to accept an audio signal. The audio signal should have a nominal level of 1 volt RMS (line level). The audio is fed to two Sound To Light (STL) processors called STL1 and STL2. Each STL produces an output signal that is dependent upon the audio level (volume) and the frequency (bass through treble) of the audio input. There are separate level and frequency selection adjustments for each STL. The output signals of the STL's can be connected to Playbacks and used to either;

- ?? modulate (vary) the level of a scene . (This feature is yet to be implemented).
- ?? trigger the stepping of a chase (bass step). The two STL processors may be used individually on different chases or both may be connected to give dual frequency control of the one chase.

### 15.2 CHASE STEP

When recording or editing a chase, repeated presses of the [function] button will toggle the display between the STEP number, the RATE and the crossfade. When the STEP number is displayed, you can connect a STL (sound to light) signal to the chase.

Press and hold [function] tap either [STL1] or [STL2] (which are flashing).

Press [yes] to make the connection. When the connected STL produces an output pulse, the chase will step to the next step. The output pulses of the STL are dependent upon the level and frequency of the audio input as described below.

If the chase rate is set lower than the beat frequency of the music, the chase will still step in time with the music beat but will continue to run at its own (lower) rate when the music stops.

If the chase is only to step when triggered by the music, set the chase rate to 0 (zero).

See the "CHASES" chapter for more details

### 15.3 SCENE STL

(This feature is yet to be implemented)

### 15.4 STL LEVEL

To adjust a STL audio level, press and hold [function] tap [F/A] (STL1) or (STL2)

The display asks "Alter STL# settings?", press [yes]

The display asks "Alter STL# Level?", press [yes]

Rotate the EDIT wheel to set the level. The display shows the audio level from 0 to 128. Set the level just high enough to get the chase to step.

When the level is satisfactory press; [ok]

### 15.5 STL FREQUENCY

To adjust a STL frequency, press and hold [function] tap [F/A] (STL1) or (STL2)

The display asks "Alter STL# settings?", press [yes]

The display asks "Alter STL# Level?", press [no]

The display asks "Alter STL# Frequency?", press [yes]

Rotate the EDIT wheel to set the frequency. The display shows the frequency from 10 Hertz to 3600 Hertz. Set the frequency to a low frequency to pick the bass beat such as a drum or bass guitar or set the frequency high to select a treble sound such as a cymbal.

When the frequency is satisfactory, press [ok]

**Note:** When you select a different frequency, the audio level of that frequency might be different. You may repeat the "level" and "frequency" adjustments to get satisfactory stepping of your chase.

## 16.0 UTILITIES

### 16.1 DISK OPERATIONS

The **maXim** is fitted with a 3.5 inch double sided, high density, (1.44 MB), disk drive (optional on **S** & **M** models). This is the same type of disk used with IBM compatible computers. When you save or load a show from disk, you copy the entire contents of the **maXim's** memory. This includes all Scenes, Chases, Stacks, and the Patch (including any templates used by the PatPad).

#### **SAVE SHOW TO DISK**

To save a show to disk place a formatted disk in the disk drive, then press and hold [function] tap [F/A] (disk) release [function]

The display asks "Save show to disk?". Press [yes]

A video window pops up showing any files currently on the disk.

By default, the **maXim** offers a name of "SHOW1". To accept the show number, press [ok]

To change the show number, rotate the EDIT wheel. Up to 9 show numbers may be used.

To save the show number, press [ok]. To confirm, press [yes]

When the save operation is complete the display confirms "Show # saved to disk."

Press [ok]

**NOTE: Saving a show takes a few moments. During this time normal operation of the maXim is not possible.**

#### **LOAD SHOW FROM DISK**

When you load a show from disk, you replace the entire contents of the **maXim's** memory with the show data from the disk. This includes all Scenes, Chases, Stacks, and the Patch.

**WARNING: Once a load from disk is initiated, the current contents of the maXim's memory will be erased and cannot be recovered.**

To load a show from disk, place the disk in the disk drive, then press and hold [function] tap [F/A] (disk) release [function]

The display asks "Save show to disk?". Press [no]

The display asks "Load show from disk?". Press [yes]

A video window pops up showing any files currently on the disk.

The display shows a show number. Rotate the EDIT wheel to change the show number.

To load the show, press [ok]. The display asks "Load "Show#" - are you sure?".

Press [yes].

When the load operation is complete the display confirms "Show # loaded." Press [ok]

**NOTE: Loading a show takes a few moments. During this time normal operation of the maXim is not possible.**

### 16.2 RESET

The **maXim** provides two different types of reset function. SYSTEM reset and TOTAL reset.

#### **SYSTEM RESET**

In the unlikely event that the **maXim** fails to respond to your button strokes or fader movements, the operating system may be reset so that the software may initialise and recommence normal operation. See also "POWER ON RESET" below.

Performing a system reset will **not** affect any of the recorded memory or settings, except that the **maXim** resumes operation in PRESET mode with the patch bypassed.

To perform a SYSTEM RESET,

Press and hold [function] tap [F/A] (reset) release [function]

The display asks "Do SYSTEM RESET?". Press [yes]

The display asks "SYSTEM RESET. Are you sure?". Press [yes]

### **TOTAL RESET**

Total Reset will **ERASE** all the recorded memory from the *maXim* and reset the operating system. All Scenes, Stacks Chases and Patches are erased. The *maXim* resumes operation in PRESET mode with the patch bypassed. See also "POWER ON RESET" below.

To perform a TOTAL RESET,

Press and hold [function] tap [F/A] (reset) release [function]

The display asks "Do SYSTEM RESET?". Press [no]

The display asks "Do TOTAL RESET?". Press [yes]

The display asks "RESET will clear all memories-Continue?" Press [yes]

### **POWER ON RESET**

If the *maXim* is not responding to your actions you will not be able to perform a reset as described above. In this case, switch off the *maXim* and wait for approximately 10 seconds then;

?? To perform a "system reset", hold [function] switch on the power, release [function]

?? To perform a "total reset", hold [no] switch on the power, release [no]

### **HARDWARE RESET**

To perform a hardware reset, remove the power then press the RESET switch on the rear of the *maXim* by inserting a small insulated pointer. Re-connect the power and switch on.

## **16.3 SETUP**

The setup function provides access to the "Preferences" settings.

### **DEFAULT TIMES**

To set your own default times that are used when you record scenes (in and out), stacks (in, out and link) and chases (speed and crossfade %):

Press and hold [function] tap [F/A] (setup). The display asks "Set Preferences?".

Press [yes] The display asks "Set default times and speeds?". Press [yes]

Follow the prompts and set the times with the EDIT wheel.

You can set default times for the following;

?? Scenes - In time, Out time

?? Chases – Rate, Crossfade

?? Stacks - In time, Out time, Link time

Stack default In and Out times are only used if the step is a snapshot or a chase. If the step is a scene it will use the times from the scene memory. When a fade time is set *lower* than 0 seconds, it is controlled by the manual "time" fader.

To accept the setting, press [ok]

### **LANGUAGE (FUTURE RELEASE)**

To set the language shown on the display:

Press and hold [function] tap [F/A] (setup). The display asks "Set Preferences?".

Press [yes] The display asks "Set default times and speeds?". Press [no]

The display asks "Set Language default?". Press [yes]

Choose from English, French, Spanish, German, Japanese or Chinese by using the [yes] or [no] buttons.

**DEFAULT FILE NAME (FUTURE RELEASE)**

To set the default file name for saving shows to disk: Press and hold [function] tap [F/A] (setup). The display asks "Set Preferences?". Press [yes]  
 The display asks "Set default times and speeds?". Press [no]  
 The display asks "Set Language default?". Press [no]  
 The display asks "Set FILE NAME Default?". Press [yes]  
 To change the name, move the cursor with [<] or [>] and select characters the EDIT wheel or the channel [F/A] buttons. To save, press [OK]

**INVERT YELLOW MASTER**

The operation of the Yellow Bank master may be inverted so that its output is at maximum when the fader is at the bottom of its travel. This allows crossfades between the Red and Yellow masters to be performed with the fader knobs side by side.  
 To set the Yellow master inversion, press and hold [function] tap [F/A] (setup).  
 The display asks "Set Preferences?". Press [yes]  
 The display asks "Set default times and speeds?". Press [no]  
 The display asks "Set Language default?". Press [no]  
 The display asks "Set FILE NAME Default?". Press [no]  
 The display asks "Set Yellow Inversion?". Press [yes]  
 If the Yellow master is not inverted,  
 the display asks "Yellow Master is not inverted - Invert?" Press [yes]  
 If the Yellow master is inverted,  
 the display asks "Yellow Master is inverted - Set Normal?" Press [yes]

**16.4 VIDEO**

**VIDEO MONITOR**

Your *maXim* is fitted with a VIDEO output connector (optional on **S & M** models). Simply plug a SVGA monitor into the VIDEO connector and connect the monitor to mains power. The *maXim* provides all the necessary video and synchronisation signals for the SVGA monitor.

**VIDEO DISPLAYS**

Typical video screen on a *maXim L*.

The video screen is divided into the main display (the white area on this simulation) and the selectable areas (the dark areas on the left):

**MAIN DISPLAY**

The main part of the screen *always* shows the fixture intensities (cyan bargraphs) at the top, a message area in the middle and the status of the playbacks and masters at the bottom. The bargraphs are laid out in a similar fashion to the *maXim* faders. Their intensity levels are shown in *tens* on the side axis of the display and in *units* inside each individual bar.

The “Fixture Intensity” levels are shown prior to the patch.

The contents of each playback is shown in the “TYP” row by a symbol and colour. The colour is repeated in the bargraph.

In this example;

Playback 1, 11, 12 & 13 control channels (cyan).



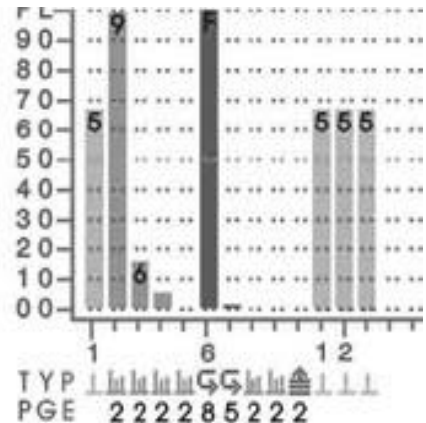
Playback 2, 3, 4, 5, 8 & 9 contain scenes (orange).



Playback 6 and 7 contain chases (green).



Playback 10 is a stack memory (magenta).



The page number that the memory is recorded in is shown in the “PGE” row. This may be different to the current page due to a “page freeze”.

**SELECTABLE AREAS**

The left side of the screen is selected by the operator and shows either:

- ?? 1 of 4 selectable video pages (not shown above, see below) or
- ?? If none of the 4 pages are selected it further divides the left side into 4 areas and allows you to select any 4 Playbacks or the stack master and “pin” a status display for that Playback or stack into any of the 4 positions (as shown on previous page).

**Note: The maXim must be in “Scene Mode” to pin a playback. A stack must be assigned to the stack master to pin the stack master.**

**VIDEO 1 TO 4**

To turn on one of the 4 video pages on the left of the screen, press and hold [function] tap [F/A] (video 1 to 4).

- ?? Video 1 is “Channel View”
- ?? Video 2 is “DMX Output”
- ?? Video 3 is “Stack Cue List”
- ?? Video 4 is “PaTPad”

To turn off the current video page on the left of the screen, press and hold [function] tap [F/A] (video 1 to 4).

If a PaTPad is fitted, additional video information windows may be displayed. These are described in the separate “PatPad Operator Manual”.

**PINNED VIDEO**

To “pin” a Playback status display into any of the 4 areas firstly de-select any of the 4 selectable video pages that might be active (see above). When any of the 4 video pages are displayed they will cover any Playback status or the stack status displays that you “pin”.

Press [select], [F/A] (playback to pin) or [stack flash] (stack video to pin).

Press and HOLD [function], tap [F/A] (video 1 to 4).

(Video 1 is at the top left of the screen and video 4 is at the bottom).

Holding [function] and tapping [F/A] (video 1 to 4) again, turns off (unpins) the display.

Press [select] (de-selects select)

Up to 4 pinned displays may be viewed at the same time.

## 16.5 DIAGNOSTICS

The *maXim* provides diagnostics which allow you to;

- ?? Test the operation of all buttons, LEDS, faders, the EDIT wheel and the floppy disk.
- ?? Check internal battery voltage and charge condition.
- ?? Check memory capacity and usage.

### **DIAGNOSTICS MODE**

To select diagnostics mode, press and hold [function] tap [ok] release [function]

Several unlabelled red bank [F/A] buttons flash to show they are active.

#### **LED AND BUTTON TEST**

Press red bank [F/A] (1).

All LEDs should be lit. If a LED is not lit, then there is a possible problem at this particular LED.

To test a button, press it and its LED will go off. This indicates a command from that button has been received at the processor and it is operating correctly.

To exit, press and hold [function] tap [ok] release [function]

#### **FADER TEST**

Press red bank [F/A] (2).

To test a fader, press the [F/A] button for that fader then move the fader. Use the [<] button above the Stack Master to select the IN fader and the [<] button above the Stack master to select the OUT fader. The display reads from 0 to 255 as the fader is moved through its range.

To exit, press and hold [function] tap [ok] release [function]

#### **EDIT WHEEL TEST**

Press red bank [F/A] (3).

Rotate the EDIT wheel to test it. The display should smoothly count up or down as the wheel is rotated.

To exit, press and hold [function] tap [ok] release [function]

#### **FLOPPY DISK TEST**

Insert a floppy disk in the disk drive.

**Note: Any files on this disk will be erased during the test.**

Press red bank [F/A] (4).

The *maXim* will write to and read from the disk to test the disk system. The test takes several minutes to complete. To abort the test, press; [no]. At the completion of the test press; [ok]

#### **BATTERY TEST**

Press red bank [F/A] (5).

The display will show the battery voltage. It should lie between 5.8 and 6.4 volts approximately.

Press [ok]

The display will show the state of the battery, charging or charged.

To exit, press [ok]

#### **MEMORY TEST**

Press red bank [F/A] (12).

The display will show the percentage of memory used.

Press [ok]

The display will show the percentage of heap used. (Maintenance use only).



Press [ok]

The display will show the memory capacity fitted to the *maXim*.

To exit, press [ok]

To exit diagnostics mode press [no]

## 16.6 SOFTWARE UPGRADE

The *maXim* operating system (firmware) can be upgraded via **floppy disk** (if fitted) or by using the **CODELINK** kit which consists of a connection cable and installation software. If your *maXim* is not fitted with a floppy disk you will need the **CODELINK** kit to upgrade your software.

If you do not have a **CODELINK** kit either contact LSC or an LSC distributor or you can download the software and instructions from the LSC website, [www.lscighting.com.au](http://www.lscighting.com.au).

To upgrade your *maXim* you will also need the latest version of the *maXim* software. This can be obtained from the LSC web site at [www.lscighting.com.au](http://www.lscighting.com.au) or by emailing [techsupp@lscighting.com.au](mailto:techsupp@lscighting.com.au)

To receive email notification when a new version of *maXim* software has been released, simply send an email to: [lists@lscighting.com.au](mailto:lists@lscighting.com.au) with "SUBSCRIBE maXimUpdate" as the first line of the message. The subject line may be left blank.

Each *maXim* model has its own version of the software. Note which model of console you are upgrading and select the correct one when you download the software from the web site. The model type of your maXim (**S, M, MP, L, XL or XXL**) is printed on the rear panel.

***Before any software upgrade save to disk any shows that you want to keep should.***

### UPGRADING BY DISK

To upgrade the operating software by disk, place the disk containing only the correct software upgrade file for your model of desk in the disk drive. The files are named as follows;

mx12v???. PRG	Software for the <i>maXim S</i> desk.	(where ??? is the version number).
mx24v???. PRG	Software for the <i>maXim M</i> desk.	(where ??? is the version number).
mxMPv???. PRG	Software for the <i>maXim MP</i> desk.	(where ??? is the version number).
mx36v???. PRG	Software for the <i>maXim L</i> desk.	(where ??? is the version number).
mx48v???. PRG	Software for the <i>maXim XL</i> desk.	(where ??? is the version number).
mx60v???. PRG	Software for the <i>maXim XXL</i> desk.	(where ??? is the version number).

Press and hold [function] tap [F/A] (disk) release [function]

The display asks "Save show to disk?". Press [no]

The display asks "Load show from disk?". Press [no]

The display asks "Upgrade from disk?". Press [yes]

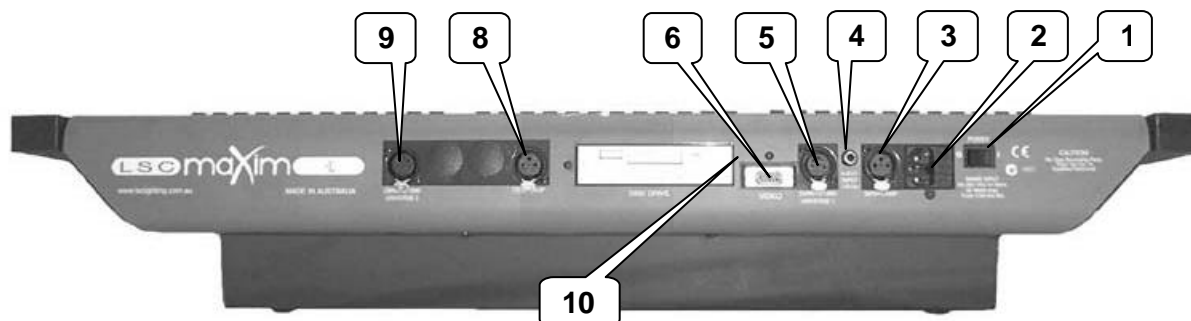
The system will then check the integrity of the file on the disk and if it is OK it will say that the upgrade will take 3+ minutes. Press [yes].

During the upgrade, the LED's in yellow [F/A] buttons 1 to 12 act as a progress bargraph. When the upgrade is complete, the desk will do a total reset and resume normal operation.

### UPGRADING BY CODELINK

CODELINK is a communication program that runs on a PC based computer. The CODELINK cable connects a personal computer (PC) comm port to the *maXim* (DMX512 Universe1 connector) to enable new software to be loaded into the *maXim*.

## 17.0 REAR PANEL



Rear panel layout of a *maXim L*.

The rear panel of a *maXim L* is shown. The smaller *maXims* do not have the second desk lamp (8) or DMX512 Universe 2 (9) connectors and the video and disk drive are optional.

### 1 POWER SWITCH

### 2 MAINS INPUT AND FUSE

The *maXim* has a universal power supply that will operate on voltages between 90 volts and 260 volts, 47-63 Hz. The mains fuse is located in a slide out tray in the side of the mains input socket. Should the fuse blow, remove the mains lead and slide out the fuse tray. Pop out the blown fuse and replace it with a 0.5 Amp slow blow fuse. A **spare fuse** is provided in the slide out fuse tray. Replace the spare fuse if you use it.

### 3 DESK LAMP

A halogen goose-neck desk lamp may be connected to this socket. The socket provides both power and mounting for the lamp. There is an internal self-resetting thermal fuse for the power to the lamp.

### 4 AUDIO INPUT

The RCA audio input connector is used for the Sound To Light feature. It accepts an audio level of 1 volt RMS (line level). For operational details, refer to the "SOUND TO LIGHT" chapter.

### 5 DMX512/1990

This 5 pin DMX connector has 2 functions;

- ?? It provides the DMX512 output for DMX Universe 1 (channels 1 to 512).
- ?? It connects the *maXim* to a computer serial port for software updates.

### 6 VIDEO

The VIDEO output (optional on *maXim S & M* models) allows a standard SVGA computer monitor to be directly connected to the *maXim* to provide visual displays of channel levels, stacks, fade times etc. For operational details, refer to the "VIDEO OUTPUT" section in the "UTILITIES" chapter.

### 7 DISK DRIVE

The *maXim* is fitted with a 3.5 inch double sided, high density, (1.44 MB), disk drive (optional on *S & M* models) for show storage. See the UTILITIES chapter for details.

### 8 DMX512/1990 UNIVERSE 2 (WHERE FITTED)

This 5 pin DMX connector provides the DMX512 output for DMX Universe 2.

### 9 DESK LAMP (not available on the *S & M* models.)

A second halogen goose-neck desk lamp may be connected to this socket. The socket provides both power and mounting for the lamp. There is an internal self-resetting thermal fuse.

### 10 RESET SWITCH

In the unlikely event the *maXim* fails to shut down correctly when turned off, remove the power connector then press the reset switch by inserting a small object (such as a pen tip) in the hole as indicated above. Re-connect the power and switch on.

## 18.0 COMPLIANCE STATEMENTS

### 18.1 C TICK COMPLIANCE STATEMENT

All LSC products with CE Compliance automatically comply with C-Tick requirements as per Section 182 of the Radiocommunications Act 1992. LSC Company Registration number is N921.

### 18.2 CE COMPLIANCE STATEMENT

The *maXim* range of lighting control desks from LSC Lighting Systems (Aust) Pty. Ltd. have been designed and tested to the European Committee for Electrotechnical Standardization (CENELEC) standard– EN55022 (Information Technology Equipment).

### 18.3 DISCLAIMER

LSC Lighting Systems (Aust) Pty. Ltd. has a corporate policy of continuous improvement, covering areas such as product design and documentation. In light of this policy, some detail contained in this manual may not match the exact operation of your product.

In any event, LSC Lighting Systems (Aust) Pty. Ltd. can not be held liable for any direct, indirect, special, incidental, or consequential damages or loss whatsoever (including, without limitation, damages for loss of profits, business interruption, or other pecuniary loss) arising out the use or the inability to use this product for its intended purpose as expressed by the manufacturer and in conjunction with this operating manual.

Servicing of this product is recommended to be carried out by LSC Lighting Systems (Aust) Pty. Ltd. or its authorised service agents. No liability will be accepted whatsoever for any loss or damage caused by service, maintenance or repair by unauthorised personnel. In addition servicing by unauthorised personnel may void your warranty.

# 19.0 APPENDIX A: DMX 512

## 19.1 DMX512/1990

DMX512/1990 is the industry standard for the transmission of digital control signals between lighting equipment. It utilises just a single pair of wires on which is transmitted the level information for the control of up to 512 DMX slots (addresses or channels). The information for each slot is sent sequentially. The level of slot 1 is transmitted, then the level of slot 2, then 3, etc. up to a maximum of 512 slots. This stream of data containing the levels for all 512 DMX slots is repeated a minimum (generally) of 44 times per second. This provides sufficient updates of channel information for smooth fade transitions.

When good quality data cables are used, DMX512 cable runs may be up to 1,000 metres in length. Most DMX receiving equipment (dimmers, scrollers, moving lights, etc) are provided with a DMX512 input and DMX512 output. This allows the DMX512 feed to be looped through various pieces of equipment. DMX512 splitters may also be employed to provide multiple DMX512 feeds. If a piece of DMX equipment *regenerates* the DMX signal, then the calculation of the 1,000 metre cable length limit begins again from the output of the regenerating device.

As the DMX512 signal contains the level information for all slots, each piece of equipment needs to be able to read the level(s) of the slots(s) that apply only to that piece of equipment. To enable this, each piece of DMX512 receiving equipment is fitted with an address switch. This switch is set to the slot number to which the equipment is to respond. If the equipment is a rack of 12 dimmers, then the address switch is set to the slot number to which the first dimmer in the rack is to respond. The other 11 dimmers will follow on from the slot number on the address switch in numerical order.

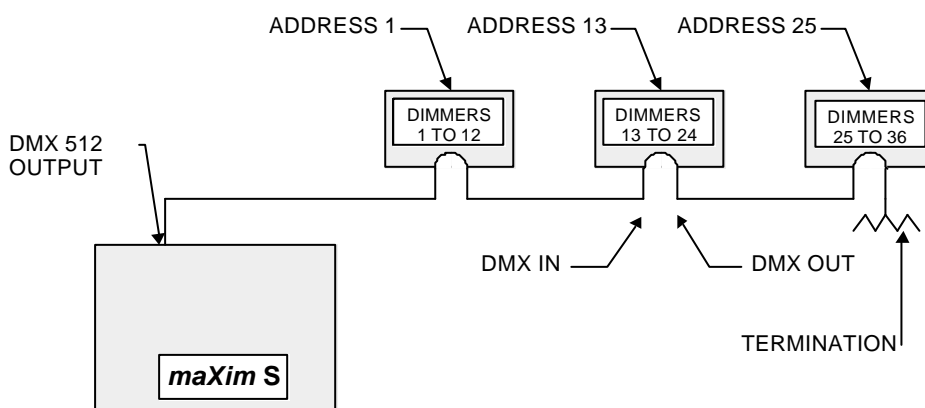
## 19.2 DMX UNIVERSES

If more than 512 slots are required, then a second DMX output is provided. The slot numbers on this second DMX output will also be 1 to 512. To differentiate between the two feeds, each one is called a "Universe".

- ?? Universe 1 is slots 1 to 512.
- ?? Universe 2 is slots 513 to 1024 (inside the *maXim*) even though its actual DMX slots are 1 to 512 on the Universe 2 output.

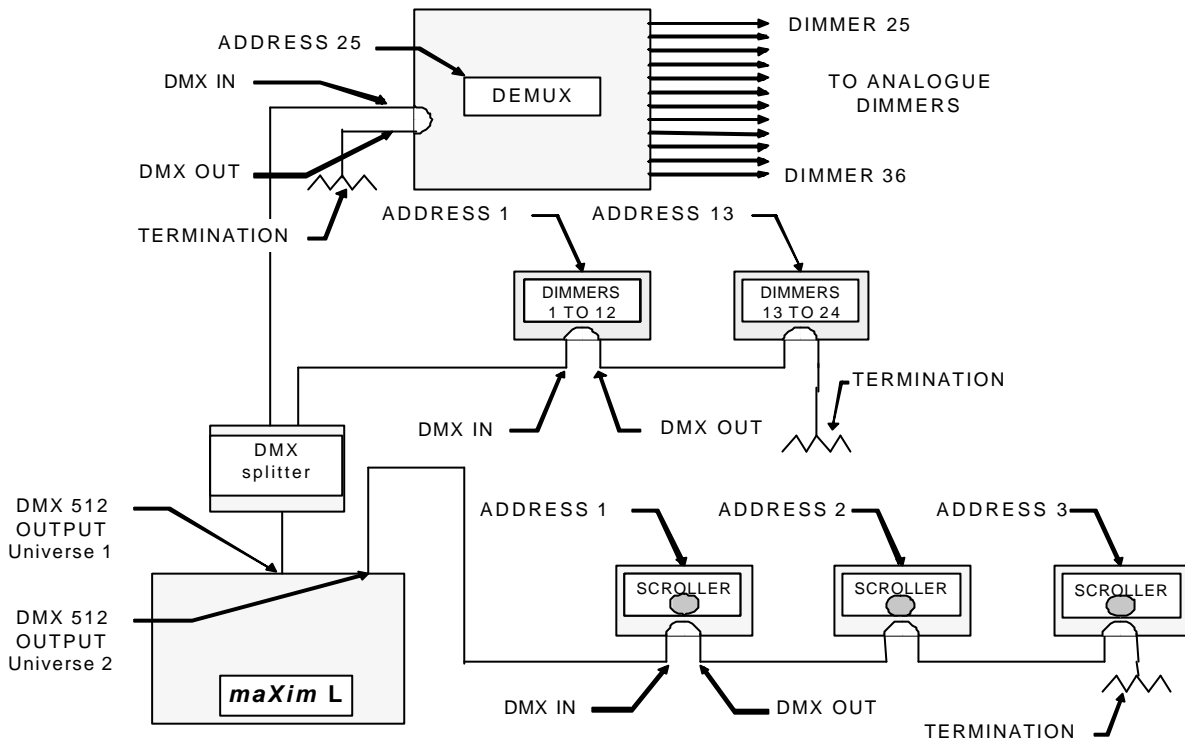
## 19.3 DMX512 APPLICATIONS

The following diagrams illustrate some simple setups utilising DMX512.



In this setup, the DMX output signal from the *maXim* is fed to the DMX input of the first dimmer rack. As the first dimmer in this rack is to be controlled by DMX slot 1, the address switch is set to

slot 1. The DMX output connector of the first rack is connected to the DMX input of the second dimmer rack whose address switch is set to 13 because the first dimmer in this rack is to be controlled by slot 13. Further dimmer racks are connected in this daisy chain manner and their addresses set accordingly. Address switches can be set to any desired address. They do not have to follow in numerical order. If a dimmer further along the line is to be also controlled by say slot 13, then simply set its address switch to 13. The end of the DMX line is terminated (120 Ω) to prevent the signal reflecting back up the line and causing possible errors.



In this setup, DMX universe 1 is first fed to a splitter which isolates the DMX input from the DMX outputs. In the event of a fault on one of the output loops, the other loop will not be affected. One output from the splitter loops through dimmers and another feeds the De-mux. Each device has its address set to read its own channel levels.

The DEMUX box converts the DMX signal into analogue signals to control analogue dimmers. As the DEMUX box is set to DMX address 25, the 12 analogue dimmers would be controlled by slots 25 through 36.

The dimmer racks are set to DMX 1 and 13 respectively.

The scrollers are connected to DMX universe 2 and are set to addresses 1 to 3. In the MaXim patch, these Universe 2 DMX slots have been patched to individual channel faders so that each scroller can be individually controlled.

The end of each DMX line must be terminated.

## 20.0 APPENDIX B: TERMINOLOGY

### **FIXTURES**

Fixtures are also known as “Lanterns”, “Luminaires”, “Instruments” or “lights”. A fixture might be a simple lamp that is connected to a dimmer or it might be a moving fixture requiring many DMX channels to control its various features such as pan, tilt, colour, gobo etc.

### **LOOK**

A lighting “LOOK” is the collection of channels at their various levels (intensities) that are contributing to the output of the **maXim** at any one time. A “look” may be made up of a collection of channels or a single scene (see below) or a combination of several scenes. It may even be a single channel.

### **CHANNEL**

A Channel is the basic element of a Lighting Control System. The faders on the red and yellow banks are channel faders. Channels are connected to DMX slots (below) via the patch. The number of dimmers and fixtures connected to a channel is variable depending on your installation and/or application. The most basic application will have just one dimmer and fixture (light) patched to a channel, so that as you vary the level of that channel, you vary the level of that fixture.

### **PRESET OR BANK**

When many channels are assembled in a group of adjacent faders they form a “Preset” and each channel in the preset has an individual fader to control its level. It is common to have two presets available to the operator. The first lighting “look” is created on one preset by fading up the required channels. The next lighting “look” is prepared (or “preset”) on the other preset without appearing on stage (as its preset master is kept faded down). At the appropriate time, the first preset is faded down whilst the second preset is faded up. The next lighting “look” is now prepared on the first preset. These alternate crossfades from preset to preset form the standard operation of a manual preset lighting board.

### **PRESET MASTER**

A Preset master controls the overall level of all the channels in a preset (above). The **maXim** provides a Red and a Yellow Bank Master to control the overall level of the red and yellow banks respectively.

### **GRAB MASTER**

A Grab master is similar to a Bank master in that it can control the level of a number of channels. It differs from a Bank master in that it does not have dedicated channel faders under its control. It “grabs” or stores the channels that it controls from other areas of the **maXim**. Typically, it would be used to grab the current **output** of the **maXim**.

When a grab is performed, an exact copy of the channels that are on (including their levels) is loaded onto the Grab master. This is often referred to as taking a “snapshot”.

### **SCENE**

A Scene is a *recorded* group of channels (at their respective levels) plus “IN” and “OUT” fade times and a name. Once you have recorded some scenes, you may of course fade up several scenes at once and record the combination as a new scene.

### **CHASE**

A stack is a list of steps that are replayed in order, stepping continuously from one step to the next and automatically repeating the list when it has reached the end.

**STACK**

A **Stack** is a list of steps consisting of scenes, chases or snapshots (of the *maXim* output), that are recorded in the order that they are to be replayed. The transition (crossfade) from one step to the next is usually executed by the operator. A Stack is also known as a "Sequence" or "Cue Sheet".

**PLAYBACK**

A Playback provides a means of playing back and controlling the overall level of a scene or a chase.

**HIGHEST TAKES PRECEDENCE (HTP)**

If a level for a particular channel is emanating from several places at the same time, then the highest of all those levels will be the level at the output.

**DIPLESS CROSSFADE**

When a dipless crossfade is performed, the output level of any channel that is on in *both* the OUT fading scene and the IN fading scene will fade directly from its outgoing level to its incoming level and will **not dip** below a level equal to the current sum of the two scenes

**DMX512/1990**

DMX512/1990 is the industry standard for the transmission of digital control signals between lighting equipment. See APPENDIX A for more details.

**SLOT**

DMX Slot is the term used to describe each address (1 to 512) in the DMX data stream. See APPENDIX A for more details.

**DMX UNIVERSES**

If more than 512 DMX slots are required, then more DMX outputs are used. The numbers on each DMX output are always 1 to 512. To differentiate between each DMX output they are called Universe1, Universe 2 etc.

## 21.0 COMPANY PROFILE

The LSC name is synonymous within the Entertainment Lighting Industry for producing leading edge lighting control products that are innovative, stylish and functional.

Furthermore, its dedication to developing products that are inherently reliable and easily serviceable, has enhanced LSC's reputation with owners and operators alike. A great deal of pride is instilled in the people who design, manufacture and sell LSC products, whereas every sale is regarded as not just a purchase, but an important element in cementing a long term relationship with each customer.

The product range is diverse and covers control desks, digital dimmers and a comprehensive selection of DMX512 and power distribution equipment. LSC has forged a reputation for many years as a pioneer in DMX512 technology and this will be further enhanced with the release of new products over the next twelve months.

Our products are distributed through a worldwide sales network of over 52 Distributors in 36 Countries. Users of LSC equipment range from high profile corporate and professional clients to churches, museums, schools, amateur theatre groups, convention and exhibition industries, broadcast industry, production and rental companies; - basically anywhere good entertainment lighting is required.



**e-Series** – featuring the **ePAK**, **ePRO** and **e1220** rackmount 6 and 12 channel digital dimmers



**i-Series** – featuring the **iPAK** and **iPRO** range of professional installation dimmers.



**DELTA** – DMX512 data splitters and Power Distribution Products.



**e24** – 24 channel dimming system with patch bay, monitoring and mains distribution



**maXim** – advanced lighting consoles in 5 models from 12 to 120 faders, up to 1024 DMX channels with moving light control



**MINIM** – entry level lighting console with manual/memory DMX512 control.



**monoPAK** – single unit portable dimmer



**DNA** – range of isolated inlets, outlets and power supply's for distributing DMX512.



**TDS** – 48 channel dimming system with patch bay, digital monitoring and mains distribution



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**—G—**

GRAB MASTER .....8, 40, 64  
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**—H—**

HIGHEST TAKES PRECEDENCE .....65

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