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## Lighting Control Desks Models MP, L(P), XL(P) & XXL(P) Operator Manual



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### **LSC Lighting Systems (Aust) Pty. Ltd.**

ABN 21 090 801 675

65-67 Discovery Road  
Dandenong South, Victoria 3175 Australia

Tel: +61 3 9702 8000

Fax: +61 3 9998 6428

email: [info@lscighting.com.au](mailto:info@lscighting.com.au)

web: [www.lscighting.com.au](http://www.lscighting.com.au)





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## TABLE OF CONTENTS

<b>1</b>	<b>maXim and PatPad QUICK REFERENCE</b>	<b>1</b>	<b>5</b>	<b>PATCHING</b>	<b>16</b>
<b>2</b>	<b>PRODUCT DESCRIPTION</b>	<b>5</b>	5.1	INTRODUCTION	16
2.1	INTRODUCTION	5	5.2	PATCHING DIMMERS	16
2.2	FEATURES	5	5.3	PATCHING FIXTURES	16
2.3	SPECIFICATIONS	6	5.4	SAVING A PATCH	19
2.4	OPTIONS	6	5.5	INVERT PAN OR TILT	19
2.5	CARING FOR YOUR maXim	6	<b>6</b>	<b>MODES OF OPERATION</b>	<b>20</b>
2.6	LABELING YOUR maXim	7	6.1	OVERVIEW	20
2.7	TERMINOLOGY	7	6.2	PRESET MODE	20
2.8	SECONDARY FUNCTIONS	7	6.3	WIDE MODE	20
2.9	SOFTWARE	7	6.4	PLAYBACK MODE	20
2.10	NEW FEATURES IN VERSION 2 SOFTWARE	7	<b>7</b>	<b>MEMORY STRUCTURE</b>	<b>21</b>
2.11	NEW FEATURES IN VERSION 3 SOFTWARE	8	7.1	OVERVIEW	21
<b>3</b>	<b>GETTING CONNECTED</b>	<b>10</b>	7.2	"PLAYBACK" MEMORY ACCESS	21
3.1	POWER INPUT	10	7.3	MODE/PAGE FREEZE	21
3.2	DIGITAL OUTPUTS (DMX 512)	10	7.4	FREEZE INDICATOR	21
3.3	VIDEO MONITOR	10	7.5	"RECORD" MEMORY ACCESS	21
3.4	SWITCHING ON	10	7.6	SELECT PLAYBACK	22
3.5	SWITCHING OFF	10	7.7	EDIT MEMORY	22
3.6	POWER SUPPLY RESET	10	7.8	EXTERNAL STORAGE	22
3.7	FUSE	10	<b>8</b>	<b>SCENES</b>	<b>23</b>
3.8	DESK LAMP	10	8.1	OVERVIEW	23
3.9	USB Connectors	10	8.2	SCENE RECORDING	23
3.10	Capture (optional)	10	8.3	SCENE PLAYBACK	24
<b>4</b>	<b>FRONT PANEL TOUR</b>	<b>11</b>	8.4	EDITING A SCENE	24
4.1	YELLOW BANK FADERS	11	8.5	COPYING A SCENE	25
4.2	YELLOW BANK MASTER	11	8.6	REMOVING (DELETING) A SCENE	25
4.3	MODE RED BANK BUTTON	11	<b>9</b>	<b>CHASES</b>	<b>26</b>
4.4	RED BANK FADERS	11	9.1	OVERVIEW	26
4.5	RED MASTER	11	9.2	CHASE TERMINOLOGY	26
4.6	BLUE PLAYBACKS (L, XL & XXL)	12	9.3	CHASE RECORDING	26
4.7	BLUE MASTER (L, XL & XXL)	12	9.4	CHASE PLAYBACK	27
4.8	FLASH/ASSIGN [f/a] Buttons	12	9.5	FIXTURE PARAMETER CHASE TIMES	28
4.9	MASTERS FLASH/ASSIGN BUTTONS	12	9.6	EDITING A CHASE	28
4.10	IN & OUT TIME FADERS	12	9.7	COPYING A CHASE	29
4.11	FLASH LEVEL & ADD/SOLO BUTTON	12	9.8	REMOVING A CHASE	29
4.12	PAGE RED BANK BUTTON & DISPLAY	13	<b>10</b>	<b>GRAB MASTER (MP only)</b>	<b>30</b>
4.13	PAGE BLUE BANK BUTTON & DISPLAY	13	10.1	OVERVIEW	30
4.14	STACK MASTER	13	10.2	GRAB AS A GRAB MASTER	30
4.15	STACK FLASH	13	10.3	GRAB AS A SCENE MASTER	30
4.16	> (STACK)	13	10.4	GRAB AS A CHASE MASTER	30
4.17	< (STACK)	13	10.5	GRAB AS A MEMORY	30
4.18	STEP/STOP (STACK)	13	<b>11</b>	<b>STACKS</b>	<b>31</b>
4.19	PATPAD	13	11.1	OVERVIEW	31
4.20	DOT MATRIX DISPLAY & LEDS	14	11.2	RECORDING A STACK	31
4.21	RECORD SCENE BUTTON	14	11.3	STACK PLAYBACK	32
4.22	RECORD CHASE BUTTON	14	11.4	STACK TIMES	32
4.23	RECORD STACK BUTTON	14	11.5	EDITING A STACK	33
4.24	ASSIGN COPY BUTTON	14	11.6	COPYING A STACK	34
4.25	SELECT BUTTON	14	11.7	REMOVING (DELETING) A STACK	34
4.26	EDIT BUTTON	14	11.8	CLEARING THE STACK MASTER	34
4.27	REMOVE BUTTON	14			
4.28	ADD BUTTON	15			
4.29	FUNCTION BUTTON	15			
4.30	EDIT WHEEL	15			
4.31	EDIT WHEEL INDICATOR	15			
4.32	> (YES) BUTTON	15			
4.33	< (NO) BUTTON	15			
4.34	STEP STOP (OK) BUTTON	15			

<b>12 FLASH</b>	<b>35</b>	<b>17 EFFECTS</b>	<b>55</b>
12.1 OVERVIEW	35	17.1 OVERVIEW	55
12.2 ADD/SOLO MODE	35	17.2 BASIC EFFECT OPERATIONS	55
12.3 FLASH LEVEL	35	17.3 STOPPING EFFECTS	56
<b>13 FIXTURE PROGRAMMING CONCEPTS</b>	<b>36</b>	17.4 EFFECT MENUS	56
13.1 OVERVIEW	36	17.5 SUB MENUS	56
13.2 REHEARSED / PRE PROGRAMMED.	36	17.6 DETAILED MENU DESCRIPTIONS	56
13.3 LIVE OR AD LIB	36	17.7 COPYING EFFECTS	58
13.4 LTP PLAYBACK	36	<b>18 FANS</b>	<b>59</b>
13.5 COMBINING REHEARSED AND LIVE	37	18.1 OVERVIEW	59
13.6 FIXTURE INTENSITY CONTROL	37	18.2 FAN FUNCTIONS	59
<b>14 BASIC FIXTURE PROGRAMMING</b>	<b>38</b>	18.3 FANNING ORDER	59
14.1 FADING UP FIXTURES	38	<b>19 STL (SOUND TO LIGHT) and SyncoBEAT</b>	<b>61</b>
14.2 GETTING FIXTURES ONTO THE PATPAD	38	19.1 OVERVIEW	61
14.3 ALL MODE	38	19.2 CONNECT STL TO CHASE	61
14.4 SELECTING A FIXTURE	39	19.3 STL (SOUND TO LIGHT) MODE	61
14.5 CONTROLLING THE SELECTED FIXTURE	39	19.4 SYNCODEAT MODE	62
14.6 ADJUSTING PARAMETER VALUES	39	<b>20 MIDI</b>	<b>63</b>
14.7 TRACKBALL OR MOUSE PAN & TILT	40	20.1 OVERVIEW	63
14.8 VARIABLE PARAMETERS	40	20.2 MIDI ON/OFF	63
14.9 WHEEL STOPS	40	20.3 MIDI TRANSMIT ON/OFF	63
14.10 VARIABLES WITHIN WHEEL STOPS	40	20.4 maXim MIDI MAPPING	63
14.11 PARAMETER TIMES	40	20.5 CONTROLLING THE maXim FROM A MIDI DEVICE	63
14.12 HOME	40	20.6 CONTROLLING A MIDI DEVICE FROM THE maXim	64
14.13 FILTERS	40	<b>21 CAPTURE</b>	<b>66</b>
14.14 HI-LIGHTS	40	21.1 OVERVIEW	66
14.15 PAD VIEW	41	21.2 CONNECTING THE CAPTURE PORT	66
14.16 SAVING SCENES	41	21.3 CAPTURE DEMO SHOWS	66
14.17 SAVING CHASES	41	21.4 CAPTURE DEMO MODE	66
<b>15 FIXTURE PLAYBACK</b>	<b>42</b>	21.5 CAPTURE FULL	66
15.1 OVERVIEW	42	<b>22 VIDEO</b>	<b>67</b>
15.2 SCENE PLAYBACK	42	22.1 VIDEO OVERVIEW	67
15.3 PAD TRIGGER	42	22.2 MAIN DISPLAY	67
15.4 SCENE FLASH	42	22.3 SELECTABLE AREAS	67
15.5 PADLOCK	42	22.4 VIDEO 1 TO 4	68
15.6 PALETTE PLAYBACK (E-MOD)	43	22.5 FIXTURE POP-UP WINDOW	70
15.7 PRESET PLAYBACK (P-MOD)	43	22.6 GROUP POP-UP WINDOW	70
15.8 CHASE PLAYBACK	43	22.7 PALETTE POP-UP WINDOW	70
<b>16 ADVANCED FIXTURE PROGRAMMING</b>	<b>44</b>	22.8 PRESET POP-UP WINDOW	70
16.1 LOADING FIXTURES	44	22.9 FILTER POP-UP WINDOW	70
16.2 ALL MODE	44	22.10 PLAYBACK BANK MEMORIES	70
16.3 CLEARING FIXTURES	44	<b>23 UTILITIES</b>	<b>71</b>
16.4 HOME	44	23.1 USB DISK OPERATIONS	71
16.5 P-TRIG	44	23.2 RESET	71
16.6 PARAMETER TIMES	45	23.3 SETUP MEMU	71
16.7 GROUPS	47	23.4 LOCK	71
16.8 FITERS	48	23.5 PREFERENCES	72
16.9 HI-LIGHTS	49	23.6 SOFTWARE UPGRADE	73
16.10 PRESETS	49	23.7 DIAGNOSTICS	73
16.11 PALETTES	51	<b>24 TERMINOLOGY</b>	<b>75</b>
16.12 EDITING PALETTES	52	24.1 FIXTURE.	75
16.13 PALETTE PLAYBACK (E-Mod)	52	24.2 DMX SLOT.	75
16.14 COMBINING PatPad FUNCTIONS	52	24.3 TEMPLATE.	75
16.15 CLONE	53	24.4 LIBRARY.	75
16.16 SAVING SCENES	53		
16.17 NO STORE PARAMETERS	54		
16.18 CLEARING PARAMETERS	54		
16.19 STORING INTENSITY ONLY SCENES	54		
16.20 DIRECT ATTRIBUTE CONTROL	54		

24.5 ATTRIBUTE.	75
24.6 PARAMETER.	75
24.7 WHEEL STOPS.	75
24.8 GROUP.	75
24.9 FILTER.	75
24.10 HI-LIGHT.	75
24.11 PRESET.	75
24.12 PALETTE.	75
24.13 HTP. (Highest Takes Precedence).	76
24.14 LTP. (Latest Takes Precedence).	76
24.15 LOOK	76
24.16 SCENE	76
24.17 CHASE	76
24.18 STACK	76
24.19 DIPLESS CROSSFADE	76
24.20 PLAYBACK	76
24.21 DMX512A	76
24.22 DMX UNIVERSES	76

## **25 COMPLIANCE STATEMENTS 77**

C TICK COMPLIANCE STATEMENT	77
CE COMPLIANCE STATEMENT	77
DISCLAIMER	77

## **26 COMPANY PROFILE 78**

## 1 maXim and PatPad QUICK REFERENCE

[PM] refers to the PaTPad 24 Parameter Matrix buttons.  
[f/a] refers to the flash/assign buttons below the faders.

### PATCHING

#### Patching Dimmers

**HOLD [function]** TAP [patch]. Press [edit].  
Select [PM] (DIMMER) (It flashes).  
Select the dimmers DMX slot using the **EDIT wheel** or [◀] or [▶] buttons.  
Give the dimmer a channel number by pressing a yellow or red [f/a] button.  
Press [edit] to save the patch.

#### Adding a Fixture Template to the Library

Insert the disk containing the Template(s).  
Press [menu], [PM] (LIBRARY), [PM] (Add), [PM] (Template name), [menu].

#### Loading Fixture Templates from the Library into the Patch

**HOLD [function]** TAP [patch]. Press [edit].  
Select [PM] (LIBRARY).  
Select the Fixture Template by brand/model using the [PM] buttons. Press [edit].

#### Patching Fixtures

The Fixture's Template must already be loaded in the patch (above).  
**HOLD [function]** TAP [patch]. Press [edit].  
Select [PM] (Template name) (It flashes).  
Select the fixtures DMX slot using the **EDIT wheel** or [◀] or [▶] buttons.  
Give the fixture a number by pressing a yellow or red [f/a] (Fixture Number).  
Patch further Fixtures by selecting their DMX slot and giving them a Fixture Number.  
Press [edit] to save the patch.

#### Patching Multiple Same Type Fixtures

**HOLD [function]** TAP [patch]. Press [edit].  
Press [PM] (Template name) (It flashes)  
Select the starting DMX slot using the **EDIT wheel** or [◀] or [▶] buttons.  
**HOLD [f/a]** (first Fixture Number), TAP [f/a] (last Fixture Number).  
Press [edit] to save the patch.

### PROGRAMMING

#### Loading and Clearing Fixtures

To load the PatPad with all fixtures that have intensity on the output (and clear all other fixtures from the PatPad) press;  
[get], [flash] (yellow master).

To add a Fixture to the PaTPad, press;  
[get], [f/a] (Fixture Number).

To add several Fixtures;  
**HOLD [get]**, TAP [f/a] (Fixture Number), [f/a] (Fixture Number), etc.

Fixtures can also be loaded from groups, filters, presets and palettes.

To clear the **PaTPad**, press;  
[clear], [all].

#### ALL mode

When multiple fixtures are loaded in the one operation, "all mode" is automatically activated. All

fixtures of the same type as the selected fixture are controlled simultaneously.

To *toggle* "all mode" off or on, press [all].

#### Selecting Loaded Fixtures

To step through the fixtures loaded on the PaTPad, tap either end of the [fixture displayer].

To directly select a loaded fixture;

**HOLD** the *centre* of the [fixture displayer], TAP [f/a] (fixture number).

#### Controlling the selected Fixture

To select a parameter on a displayer, press its [PM].  
To control the selected parameter, tap and/or mouse its displayer. When you touch a displayer, its yellow LED flashes and the **EDIT wheel** can also be used to vary the value.

If a mouse or trackball is connected to the maXim's USB connector, it can be used to control the pan and tilt of the selected fixture(s). For fine control, **HOLD** down the LEFT button whilst moving the device. Tapping the RIGHT button cycles through "Pan only", "Tilt only" and "Pan and Tilt".

#### Hi-Lights

Fixtures are automatically Hi-lighted when loaded onto the PaTPad. Only Hi-lighted fixtures are included when you "store" scenes or apply presets or palettes.

To clear the Hi-light of a Fixture, press;  
[clear], [f/a] (Fixture Number).

To clear the Hi-lights from **all** loaded fixtures, press;  
[clear], [fixture displayer].

To Hi-light a fixture, press;  
[get], [f/a] (Fixture Number).

To Hi-light all loaded fixtures, press;  
[group], [fixture displayer].

To **ONLY** Hi-light the fixtures in a **group** (and clear all other Hi-lights), press;  
[group], [f/a] (group number).

To **ONLY** Hi-light the fixtures in several **groups** (and clear all other Hi-lights);

**HOLD [group]**, then TAP; [f/a] (group number), [f/a] (group number), [f/a] (group number), etc, release [group].

#### Filters

If any filters are applied, only filtered parameters are included when you "store" or when you apply presets or palettes. *Only FLASHING parameters will be included.*

To apply a Filter, select the Fixture on the **PaTPad** then press;  
[filter], [PM] (parameter to Filter).

To apply Filters to **ONLY altered** (a) parameters, press; [colour/beam/focus]. Further presses of [colour/beam/focus], will cycle through the groups of colour, beam and focus.

To clear all filters, press;  
[clear], [filter].

To store your filter selections in a memory press;  
[store], [filter], [f/a] (filter number).

To recall a filter memory press;  
**[filter]**, **[f/a]** (filter number).

To load the PatPad with the **fixtures** in a filter memory including the filter selections press;  
**[get]**, **[filter]**, **[f/a]** (filter number).

### Groups

See also "Hi-lights" for more group functions.

To store a Group, get the required Fixtures onto the **PaTPad** then press;

**[store]**, **[group]**, **[f/a]** (Group Number).

Only Hi-lighted fixtures will be stored in the Group.

The order that fixtures were loaded onto the PatPad is also stored in the group. This order is used by the FANS function.

To get a Group onto the PatPad, press;

**[get]**, **[group]**, **[f/a]** (Group Number).

To get several Groups, press **[get]**, **HOLD [group]**, TAP **[f/a]** (Group Number) **[f/a]** (Group Number), etc, release **[group]**.

### Home

Homing a fixture sets all of its parameters to their home values (from their template) and sets the parameter times to their default values.

To home the selected Fixture press;

**[home]**, **[fixture displayer]**

To *momentarily* home a Fixture press;

**[home]**, **[f/a]** (Fixture Number).

To home *filtered* (flashing) parameters press;

**[home]**, **[filter]**.

To home ALL Fixtures on the **PaTPad** press;

**[home]**, **[all]**.

To home ALL *patched* Fixtures clear the PaTPad by pressing; **[clear]**, **[all]**, then press; **[home]**, **[all]**.

To home ALL Fixtures that have an *intensity* level on the output press; **[home]**, **[flash]** (yellow master).

### Clone

Only flashing parameters will be cloned.

To clone the selected Fixture on the **PaTPad** to another Fixture, press;

**[clone]** **[f/a]** (destination Fixture Number).

To clone the selected Fixture to a Group, press;

**[clone]** **[group]** **[f/a]** (Group Number).

### Palette

A palette refers to specific **Fixture types**.

To store a Palette, get one of each *type* of fixture, filter for the desired parameter(s) then adjust the parameter(s) to the desired value(s).

Press; **[store]**, **[palette]**, **[Colour, Beam, Focus]** (optional page), **[f/a]** (Palette Number).

To load a Palette, press;

**[palette]**, **[Colour, Beam, Focus]** (optional page), **[f/a]** (Palette Number).

To load the PatPad with the **fixtures** in a palette memory including the palette selections press;

**[get]**, **[palette]**, **[Colour, Beam, Focus]** (optional page), **[f/a]** (Palette Number).

To clear all palettes (E) from parameters press;

**[clear]**, **[palette]**.

To include a link to a Palette in a scene; load the Palette, then without altering any "E" (palette) (as seen on video screen) parameters, store into the desired scene number.

To remove a link to a Palette from a scene, press; **[clear]**, **[all]** (to clear the **PaTPad**).

Get the scene onto the **PaTPad**, press;

**[get]**, **[store]**, **[page]**, **[f/a]** (scene number).

Clear the link to the Palette, press;

**[clear]**, **[palette]**.

Use either **[record]** (all current output) or **[store]** (only flashing parameters) to save the scene back into the same memory location.

### Palette Playback (E-Mod)

**HOLD [palette]**, it will lock on. You can now use the **[f/a]** (palette number) buttons for live palette playback. Press **[palette]** again to de-select.

### Preset

A preset refers to specific **Fixture numbers**.

To store a Preset, get the fixtures to which the preset will apply, filter for the desired parameters then adjust the parameters to the desired values. Press; **[store]**, **[preset]**, **[Colour, Beam, Focus]** (optional page), **[f/a]** (Preset Number).

To load a Preset, press;

**[preset]**, **[Colour, Beam, Focus]** (optional page), **[f/a]** (Preset Number).

To load the PatPad with the **fixtures** in a preset memory including the preset selections press;

**[get]**, **[preset]**, **[Colour, Beam, Focus]** (optional page), **[f/a]** (preset number).

To clear all presets (p) from parameters press;

**[clear]**, **[preset]**.

To include a link to a Preset in a scene; load the Preset, then without altering any "P" parameters (as seen on video screen), store the desired scene.

To remove a link to a Preset from a scene, press; **[clear]**, **[all]** (to clear the **PaTPad**).

Get the scene onto the **PaTPad**, press;

**[get]**, **[store]**, **[page]**, **[f/a]** (scene number).

Clear the link to the Preset, press; **[clear]**, **[preset]**.

Use either **[record]** (all current output) or **[store]** (only flashing parameters) to save to the same memory.

### Preset Playback (P-Mod)

**HOLD [preset]**, it will lock on. You can now use the **[f/a]** (preset number) buttons for live presets playback. Press **[preset]** again to de-select P-Mod.

### Parameter Times

To change the times of a parameter;

**HOLD [PM]** (parameter to change) until times appear. Tap the ends of the displayer to select either.

**Mov** Move time.

**Dly** Delay time that must expire before the Move time starts.

**Flags----**Flags shows which flags (if any) have been set to "yes".

Tapping the centre of “Flags----” selects the FLAGS menu. When the FLAGS menu is selected, tapping either end steps through the available flags. Tapping the centre of a displayer selects that flag.

**Flags: - - - = No Flags**

**Flags: - P - = As Pan**

**Flags: EP - = End Pan**

**Flags: - T - = As Tilt**

**Flags: ET - = End Tilt**

**Flags: - - C = As Chase**

When the “As Chase” flag is set to Yes, this parameter, when played back as part of a CHASE, will ignore the time setting and instead use the crossfade setting of the chase.

### **p-trig**

The current PatPad settings automatically are stored in “p-trig” memory whenever....

Fixtures are loaded onto the PaTPaD, or

A scene is played back after parameters are altered.

If parameters have been altered, pressing [**p-trig**] recalls the “p-trig” memory to restore the previous

**PaTPad** parameter values.

### **Record Scene**

To record a scene of the entire output, press;  
[**record scene**], [**page**] (optional red or blue page), [**f/a**] (scene number).

### **Store**

To store a scene of only selected (flashing) **parameters**, press;

[**store**], [**page**] (optional red or blue page),

[**f/a**] (scene number).

### **Store + Level**

To store a scene consisting of flashing parameters PLUS all intensity levels on the output PLUS all parameters of any fixtures not loaded on the **PatPad** but with an intensity above zero, press;

[**store + level**], [**page**] (optional red or blue page),

[**f/a**] (scene number).

### **Intensity Only Scenes**

To store a scene containing **only fixture intensities** and no parameters, fade up only the required fixtures and get them onto the PatPad by pressing;

[**get**], [**flash**], (yellow master).

Clear all Hi-lights;

[**clear**], [**fixture displayer**].

With no fixtures Hi-lighted, no parameters will be included. To store the scene with its intensity levels, press;

[**store + level**], [**page**] (optional red or blue page),

[**f/a**] (scene number).

### **Store Altered Parameters**

To store a scene of only altered (a) parameters, press;

[**colour/beam/focus**], [**store**], [**page**] (optional red or blue page), [**f/a**] (scene number).

### **Record Chase**

To record a Chase press;

[**record chase**], [**page**] (optional red or blue page), [**f/a**] (chase number).

- To record a step consisting of a snapshot of the current output press;  
[**record scene**].
- To select an existing scene as a step, press;  
[**page**] (optional red or blue page), [**f/a**] (scene number).

- To store a step consisting only of selected (flashing) parameters press;  
[**store**].
- To store a step consisting only of selected (flashing) parameters PLUS all intensity levels on the output PLUS all parameters of any fixtures not loaded on the **PatPad** but with an intensity above zero on the output press;  
[**store + level**].

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

### **Record Stack**

To record a stack, press;

[**record stack**], [**page**] (optional red or blue page), [**f/a**] (stack number).

- To select a scene as a step, press;  
[**page**] (optional red or blue page), [**f/a**] (scene number).
- To select a chase as a step, press;  
[**page**] (optional red or blue page), [**f/a**] (chase number).
- To record a snapshot (of the current **maXim** output) as a step, press [**record scene**].
- To store the flashing parameters on the PaTPaD press; [**store**].
- To store the flashing parameters on the PaTPaD and all intensity levels press; [**store+level**].
- Continue to record steps as above. You may mix snapshots, parameters, chases or scenes in any order.

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

## **PLAYBACK**

### **Scenes and Chases**

To playback a scene or chase on the red bank press [**mode red bank**] until “p’back” lights.

Select the page containing the scene or chase then fade up the red master and also the red fader containing the scene or chase.

To playback a scene or chase on the blue bank select the page containing the scene or chase then fade up the blue master and also the blue fader containing the scene or chase.

### **Controlling Chases**

Press [**select**], [**f/a**] (chase to control).

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

To change the **CROSSFADE**, press [**function**] until “in” & “out” light, then rotate the **EDIT wheel**.

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

<b>BUTTONS</b>	<b>ACTION</b>
[ <b>step/stop</b> ]	<b>STOPS</b> a chase or <b>STEPS</b> a stopped chase.
[>](Forward)	<b>RUNS A CHASE FORWARD</b>
[<](Reverse)	<b>RUNS A CHASE REVERSE</b>
Hold [>] Tap [<]	Selects <b>BOUNCE</b> mode.
[>] or [<]	De-selects <b>BOUNCE</b> mode.
Hold[ <b>step/stop</b> ] Tap [>]	Selects <b>SINGLE SHOT</b> mode
[>] or [<]	<b>RUNS A SINGLE SHOT</b>
[ <b>f/a</b> ]	<b>RUNS A SINGLE SHOT</b>
Hold[ <b>step/stop</b> ] Tap [>]	De-selects single shot mode

When finished, press **[select]**. The changes that you have made are retained in the PLAYBACK until a page is changed or the memory is reloaded.

To reload the original chase press;

**[copy]**, **[f/a]**, to same **[f/a]**.

To manually step a chase, press **[f/a]** (chase number)

### Chase Global Speed Control

**HOLD [select]** for 1 second. Rotate the **WHEEL** to control **all running chases**. Tapping **[function]** resets all selected chases to the "default" chase speed. When finished press **[select]**.

### Stack Playback

To playback a stack, it must be copied to the stack master. Press;

**[copy]**, **[page]** (optional red or blue page),

**[f/a]** (stack number), **[stack flash]**.

Fade up the stack master.

To crossfade to the next step press **[>]**.

To stop a crossfade, press **[step stop]**.

To momentarily run a stopped crossfade, **HOLD [step stop]**.

To crossfade back to the *previous* step, press **[<]**. You may only crossfade back one step.

To snap forward; **HOLD [step stop]**, tap **[>]**.

To snap backwards; **HOLD [step stop]**, tap **[<]**.

To randomly select a step; **HOLD [stop step]** and rotate the **EDIT Wheel**. When **[stop/step]** is **released**, the stack jumps to the selected step.

### EDITING

To edit a scene, chase or stack, press;

**[edit]**, **[page]** (optional red or blue page),

**[f/a]** (memory number).

Tap **[function]** to cycle through the parameters that you can edit. Press **[edit]** to end and save.

### DEFAULT FADE TIMES

To set your own default fade times;

**HOLD [function]** tap **[f/a]** (set-up).

Press; **[yes]** **[yes]**.

Follow the prompts and set the times with the **EDIT wheel**. When a time is set *lower* than 0 seconds, it will be controlled by the manual "time" fader. To accept the setting press; **[ok]**

### DEFAULT PARAMETER TIMES

To set your own default parameter times, press; **[menu]**, **[TIMES]**. The following choices are offered; **[COLOUR]**, **[BEAM]**, **[FOCUS]**, **[CLEAR?]**

Selecting colour, beam or focus will reveal 3 pages of settings which are the same as described in "Parameter Times" above. Pressing **[clear]** will restore the factory default times.

When finished press; **[menu]**

### STL and SyncoBEAT

To temporarily connect a STL to a Playback;

**HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2).

**HOLD [function]** until the display reads "Pick".

Whilst still holding **[function]**, tap **[f/a]** (chase).

All Playbacks **connected** to the selected STL **flash** continuously. Tapping **[f/a]** again disconnects the STL. Press **[edit]** to finish.

The STL is automatically disconnected when a page or mode is changed.

To permanently connect a STL to a chase, whilst recording or editing a chase, tap **[function]** until the STEP number is displayed then;

**HOLD [function]**, tap either **[stl 1]** or **[stl 2]** (which are flashing). Press **[yes]**.

To disconnect, repeat the procedure.

### STL (SOUND TO LIGHT) MODE

To select STL mode;

**HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2).

Tapping **[yes]**, toggles the STL between either **Sound To Light** mode or **SyncoBEAT** mode.

To select STL mode, turn SyncoBEAT **OFF**.

To adjust the Volume Level, press; **[function]** then rotate the **EDIT wheel**. Set the level so that the bargraph turns **Yellow**. To adjust the audio **frequency**, press; **[function]** then rotate the **EDIT wheel**. When finished press; **[edit]**.

### SYNCOBEAT MODE

To create a SyncoBEAT; **HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2). Tapping **[yes]**, toggles the STL between either **Sound To Light** mode or **SyncoBEAT** mode. Turn SyncoBEAT **ON**; To learn a beat pattern, **HOLD [add]** until the word "**Learn**" appears on the display. Whilst **holding [add]**, enter your beat pattern by **tapping [ok]**.

The beat pattern starts from the first tap of **[ok]** and ends when **[add]** is released. Press; **[edit]** to exit.

### EFFECTS

To apply an effect to the highlighted fixtures on the PaTPaD, press; **[menu]**, **[EFFECTS]**, **[shape]**.

Use the PaTPaD to set the shape, size and rate etc.

To exit and **remove** the effect press **[menu]**.

To exit and **keep** the effect running press **[OK]**

To **record** the entire output including the effect press; **[record scene]**, **[page]** (optional red or blue page), **[f/a]** (scene number).

To **store** the effect with selected parameters press **[store]**. Two options are offered on the PatPad;

1. To store the effect and the current parameter values (subject to filters and Hi-lights) press; **[Effect ++]**, **[page]** (optional red or blue page), **[f/a]** (scene number).

2. To store **ONLY the effect** without parameter values press; **[Effect]**, **[page]** (optional red or blue page), **[f/a]** (scene number).

To **stop** a running effect;

Get the fixtures onto the PatPad then in the effects menu, press **[control]**, **[stop?]**.

Or, press; **[home]**, **[all]**.

### LOCK

**HOLD [function]**, tap **[f/a]** (set-up). The display asks "Lock Console?" and the PaTPaD shows:

-LOCK-	
PATCH	●
SAVE	⚙
ALL	●

- Lock **PATCH**. The patch is locked.
- Lock **SAVE**. Memories cannot be saved or edited.
- Lock **All**. The current *maXim* output continues but all controls are locked except for **[function]**.

Select an option by pressing its **[PM]** button. The selected option flashes. To accept press; **[yes]**.

For low level security press **[ok]**, **[ok]**.

For high level security use the red bank **[f/a]** buttons 1 to 9 (use 10 as 0) to enter a 1 to 4 digit lock code then press **[ok]**. Repeat the same digits then press **[ok]**. The console is now locked.

### UNLOCK

**HOLD [function]**, tap **[f/a]** (set-up). Press; **[yes]**.

If the console was locked with low level security simply press **[ok]**.

If the console was locked with high level security enter the same digits used to lock it then press **[ok]**.

## 2 PRODUCT DESCRIPTION

### 2.1 INTRODUCTION

The **maXim MP, L(P), XL(P) and XXL(P)** models are the larger desks in the extensive **maXim** family of fader based lighting controllers. The letter P in the model name indicates that the PaTPaD moving light controller has been fitted.

This manual describes the operation of the maXim including the PaTPaD. If your **maXim** is not fitted with a PatPad, please disregard any references to it. As you will see, the PaTPaD provides a multitude of features that are essential when operating moving fixtures. If you want to add these features, a PaTPaD can be retrofitted to your maXim by your LSC dealer.

#### Red bank has 3 Modes.

**Preset** (duplicate channels).

**Wide** (additional channels/ fixtures).

**Playback** (for Scenes or Chases) with 9 pages of memory.

**On Board keyboard** for naming of memories etc.

**Yellow bank** channel / fixture faders with associated Flash buttons.

**Add or Solo** Flash modes with level control.

Simple **recording** and **copying** functions.

**Blue Playbacks** for Scenes or Chases with 9 pages of memory.

maXim L(P)

Separate In and Out **Time Masters**.

**Theatrical style Stack** with up to 500 steps

**Masters** for overall control.

Extensive **Editing** and **Control** functions.

**PaTPaD.** Touch pad for control of moving fixtures.

All models are very similar in operation and vary only in their size, layout, number of faders and memories. At any point in this manual where the model affects the specification, the text will describe the **maXim MP** followed by the **maXim L, XL and XXL** in brackets.

For example; "The Yellow bank has faders for channels/fixtures 1 to 24 (36, 48, 60)".

### 2.2 FEATURES

The **maXim** incorporates the following features;

- Manual faders for all channels/fixtures with associated Flash buttons.
- "Preset", "Wide" and "Playback" modes of operation.
- 9 pages of non volatile memory.
- Separate In (up) and Out (down) fade times (0 to 999 seconds).
- Scene Fade Times can be derived from the Time Faders or from Memory.
- Electronic labelling of all fixtures, scenes, chases, filters, presets, palettes, 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 appear on the display and active buttons flash to make operations simple.
- Different languages are available.
- Multi display SVGA colour video output.
- Fully Isolated DMX512/1990 output signal.
- Power supply is auto selecting, 90–260 volts, 47/63Hz.

## 2.3 SPECIFICATIONS

Model	MP	L	XL	XXL
Fader Channels (Preset Mode)	24	36	48	60
Fader Channels (Wide Mode)	48	72	96	120
Fixtures	48	72	96	120
Red Playbacks (Playback Mode)	24	42	66	90
Pages of Red Playback memory	9			
Dedicated Blue Playbacks	N/A	6	18	30
Pages of Blue Playback memory	9			
Grab Master	1	N/A	N/A	N/A
Maximum number of Scenes	216	378	594	810
Maximum Fade times (minutes)	>16			
Maximum number of Chases	216	378	594	810
Steps per chase	250			
Chase speed (Beats Per Min)	0-999			
Sound To Light	Yes			
SyncoBEAT "Learn the Beat"	Yes			
Maximum number of Stacks	217	378	594	810
Steps per Stack	500			
DMX512 Output Channels	512	1024		
Maximum number of Fixtures	48	72	96	120
Max number of fixture attributes	400			
Max Templates in Library	64			
Max Templates in Patch	10			
Video output SVGA Colour	Standard			
USB type A	1 for memory flash disk 1 for trackball or mouse			
USB type B	1 for "Capture" simulation software.			
Desk Light Ports	1	2	2	2
MIDI	In, Out and Thru			
Height (mm)	165			
Width (mm)	656	797	1014	1230
Depth (mm)	515			
Weight packed (kgs)	18	22	29	33

## 2.4 OPTIONS

The following options are available for your **maXim**.

- **PaTPaD**, touch sensitive moving light controller.
- **Wireless** or **ARTnet** DMX output available on L, XL or XXL models.
- **"Capture"** lighting simulation software with "activation dongle" built into the **maXim**.
- **MAXLITE**  
15" Gooseneck desk light.
- **Dustcover**  
Sizes available for all models.
- **Flight case**  
Custom flight cases for all models are available to house the **maXim**, 12V gooseneck lamps, manual, power lead and floppy disks.

Contact your LSC agent for details on the above options.

## 2.5 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 flight case to protect it. 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.

## 2.6 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.

## 2.7 TERMINOLOGY

Certain button stroke 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; [**f/a**] (Name).

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

See also the “TERMINOLOGY” section for definitions of the terms used in this manual.

## 2.8 SECONDARY FUNCTIONS

Some **f/a** buttons have **secondary functions** that are activated by holding down the [**function**] button and tapping an [**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 “Diagnostics” in the “UTILITIES” section.

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.

## 2.9 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 latest version can be downloaded from the **maXim** forum.

<http://forums.lscighting.com.au>

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Whilst every care is taken in the preparation of this manual, LSC takes no responsibility for any errors or omissions.

## 2.10 NEW FEATURES IN VERSION 2 SOFTWARE

### 2.10.1 Fixtures on Red Faders

It is now possible to patch moving fixtures to the Red faders as well as the Yellow faders. This doubles the number of moving fixtures that can be controlled. There is a limit of 400 fixture parameters.

### 2.10.2 Global Chase Speed

It is now possible to take Global control of all running chases at one time. See “GLOBAL SPEED CONTROL” in the “CHASE” section for details.

### 2.10.3 Chase Control

The [**f/a**] button of the chase playback can be used to manually step the chase. This works best if the chase speed is set to 0.

If a chase is in “one shot” mode, the [**f/a**] button of a chase playback can be used to trigger a one shot.

### 2.10.4 Sound To Light

The STL operation has been enhanced and improved.

See the “STL MODE” section for details.

### 2.10.5 SYNCUBEAT

SyncoBEAT is a ‘Tap To The Beat’ feature to control chase stepping.

See the “SYNCUBEAT MODE” section for details.

### 2.10.6 Stack Step Random Selection

You can now instantly jump to any step in a stack. **HOLD [step/stop]** and rotate the **EDIT** wheel.

The display shows the step numbers and a + or – sign before the number shows if the selected step is after (+) or before (–) the current (no sign) step. When the desired step number is shown, **release [stop/step]** and the stack instantly **jumps** to that step.

### 2.10.7 Stack Step Display

When a STACK is stepped, the display momentarily shows the step number. You can now momentarily see the step number again by holding down [**stop/step**] (stack master).

To continuously see the step number on the display press **[select]**, **[stack flash]**. To turn off the display press **[select]**.

The video 3 (Stack) display now shows a percentage countdown of the link time (if the step has a link time) to show how much of the link time (to the next step) has expired.

### 2.10.8 Stack Recording

When recording a STACK, it is possible to enter a range of memories (scenes or chases). Any memory in the selected range that is empty or contains a stack will be ignored.

### 2.10.9 Fixtures with Dimmer/Strobe

Fixtures that use a single parameter to control both intensity (HTP) and strobe (LTP) now operate with the strobe controlled by HTP rules. Previously if a scene was recorded with a strobe, then turning that scene on triggered the strobe, but turning the scene off did not stop the strobe (as per normal LTP rules). In version 2 the strobe now stops when the scene is faded down. This only works with scenes. We will implement chases and stacks once we receive positive feedback on this method.

### 2.10.10 PaTPaD Operations

The **[abs, fine, inc]** button has been renamed **[p-trig]**. See the "ADVANCED FIXTURE PROGRAMMING" section for details.

The operation of the pan and tilt parameters can be inverted. See the "PATCH" section.

A displayer can now be opened up by touching anywhere on the displayer. It was previously just the centre.

Wheel stops can now be moused, not just tapped.

The operation of the **[filter]** button has been simplified. One tap enters filter mode. A second tap exits filter mode.

The **[CBF]** button has also been changed. It now works independently of the Filter button.

Displays that are open on the PatPad now do not close when changing fixtures.

Pressing **[group]**, **[pad]** did not give the fixtures an order (that can be used to create fans). It now does give them an order.

### 2.10.11 Scene Edit

When a scene is selected for editing; **[edit]**, **[f/a]** (scene number), simply pressing a channel/fixture **[f/a]** will automatically select that channel/fixture for level editing. The **[function]** button does not need to be pressed.

### 2.10.12 SELECT

When a playback is **altered** via **[select]**, it is now possible to reload its original memory by pressing **[copy]**, **[f/a]**, (to same) **[f/a]**.

The **[select]** function now automatically "pins" and **reveals** a video display of the selected playback.

### 2.10.13 Minor Changes

The default Move Time for Focus (Pan/Tilt) parameters is now 2.0 seconds.

Files on disk are sorted alphabetically

Lists of manufactures and models are now sorted alphabetically

Dimmers on the yellow faders can be named with the names appearing on video 1.

The Video 3 window is now persistent, so it remains on display even if no stack is loaded.

There is now a Link 'percentage completed' display in the Video 3 (Stack) window, to show how long before the Link is performed.

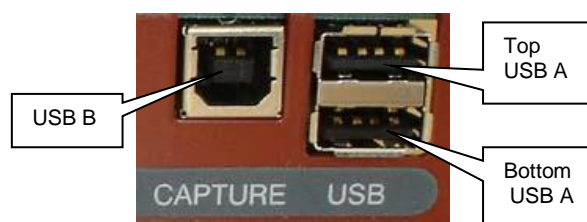
### 2.10.14 Diagnostics error code report.

In diagnostic mode, you can select a video window to show error codes. In the event of any problems, these codes can be reported to LSC to assist in problem solving.

## 2.11 NEW FEATURES IN VERSION 3 SOFTWARE

### 2.11.1 USB Connectors

The floppy disk drive has been replaced by two **USB "A"** (Universal Serial Bus) connectors and one **USB "B"** connector.



The top **USB "A"** connector can be used for connecting USB "flash disk" memory devices and thus replaces all of the functions previously performed by the Floppy Disk Drive.

The bottom USB connector can be used for connecting a mouse or trackball device which can then be used to control the pan and tilt of the selected fixture(s) on the PaTPaD. For fine control, HOLD down the LEFT button whilst moving the mouse or trackball. Tapping the RIGHT button cycles through "Pan only", "Tilt only" and "Pan and Tilt".

The USB “B” connector is labelled “**Capture**” and is used to connect the maXim to a computer running “Capture” software. “Capture” is a lighting simulation program that allows you to see a virtual stage and lights on your computer with the lights controlled by your maXim.

See the separate section on “Capture” for details.

### 2.11.2 MIDI

MIDI (**M**usical **I**nstrument **D**igital **I**nterface) is an international standard for data communication between musical instruments, computers and other equipment such as lighting desks.

The possibility exists to either control lighting channels from a MIDI keyboard or a computer with a MIDI output and suitable sequencing software or to control a MIDI device from the maXim.



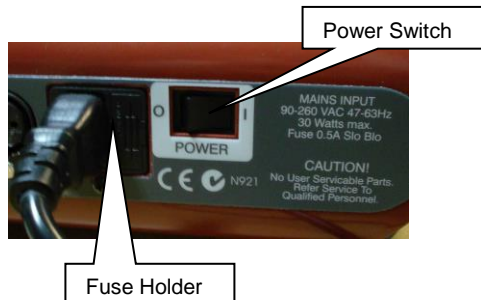
Three MIDI connectors are provided on the rear of the maXim.

See the separate section on “MIDI” for details.

## 3 GETTING CONNECTED

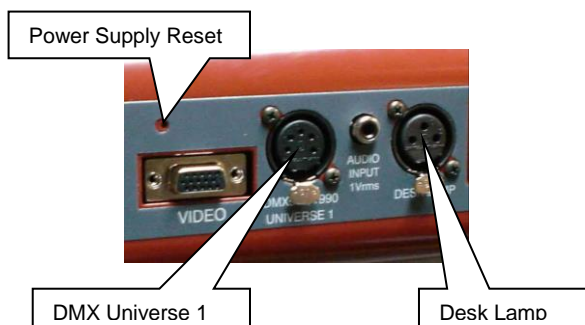
### 3.1 POWER INPUT

An IEC mains input socket is located on the rear panel and a POWER switch is beside the power input. 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.

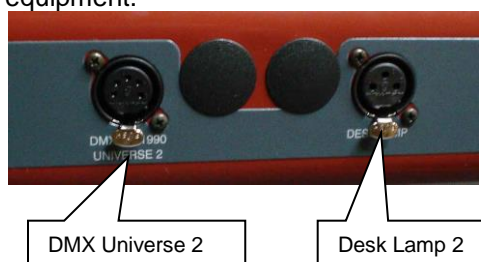


### 3.2 DIGITAL OUTPUTS (DMX 512)

The **maXim MP** has a single DMX512 connector and the **L**, **XL** and **XXL** have two DMX512 connectors, one for "Universe 1 DMX slots" and the second for "Universe 2 DMX slots".



Connect a DMX data cable from the Universe 1 DMX512 output of the **maXim** to the DMX512 input of your equipment (moving fixtures, dimmers, etc) and set the required DMX slots on your equipment.



Universe 2 is used for complex setups involving more than 512 DMX slots or when equipment has been split into different groups. For example, all moving lights on universe 1 and conventional dimmers on universe 2.

### 3.3 VIDEO MONITOR

Connect a SVGA (or better) computer monitor to the 15 pin VIDEO connector on the rear of the **maXim**.

### 3.4 SWITCHING ON

At this point, with the mains power and DMX connected, the **maXim** is ready to be operated. Switch on the "POWER" switch on the rear of the **maXim**. 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.

### 3.5 SWITCHING OFF

The **maXim** has an inbuilt back up power supply. When the power is switched off you will hear a click followed a few seconds later by another click. The **maXim** keeps operating on its own power supply until the second click is heard. During this time all memories are automatically saved to non volatile storage.

**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.**

### 3.6 POWER SUPPLY RESET

In the unlikely event that your **maXim** does not shut down after the second click (above) you can force it to do so by momentarily pressing the **power supply reset** switch. Remove the power then insert a small insulated pointer into the hole to the left of the "DMX UNIVERSE 1" connector.

### 3.7 FUSE

A 0.5Amp slow blow fuse is located in a slide out tray beside 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.

### 3.8 DESK LAMP

The **maXim MP** has a single desk lamp socket and the other models have two sockets. The sockets provide both power and mounting for a goose-neck desk lamp. There is an internal self-resetting thermal fuse for the power to the lamp.

### 3.9 USB CONNECTORS

The top USB connector accepts a USB "flash disk" for the external storage of your **maXim** shows and also for software upgrades. The bottom USB connector accepts a trackball or mouse for Pan and Tilt control of fixtures

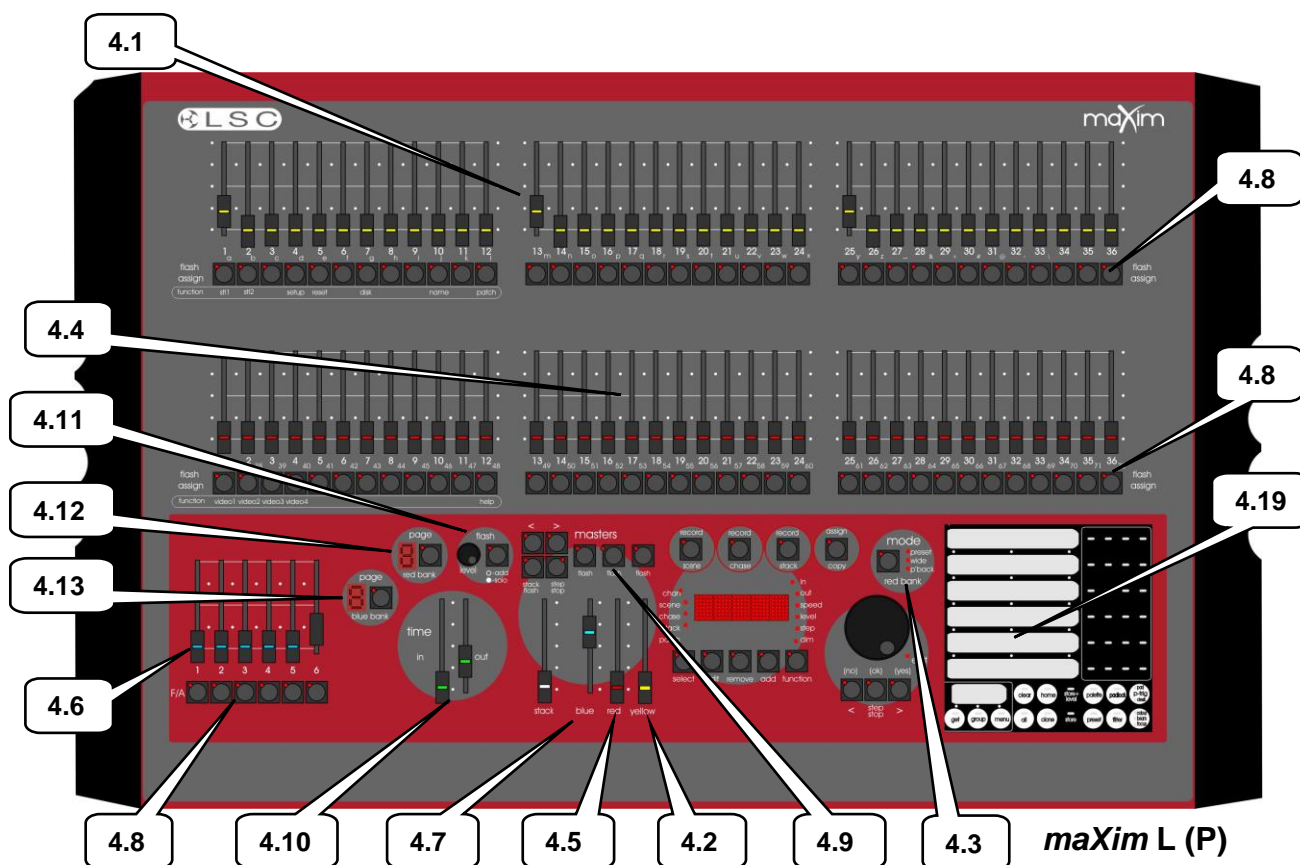


### 3.10 CAPTURE

Capture is a programme that lets you simulate your lighting shows on a computer. See the separate "Capture" section for details

## 4 FRONT PANEL TOUR

The maXim MP, L(P), X L(P), XX L(P) all vary in layout and in the quantity of faders. This front panel tour describes the maXim L(P). The location of some controls might be different on your model of maXim but the names and operation are the same as described here.



### 4.1 YELLOW BANK FADERS

Control the intensity of dimmers or fixtures patched to them.

### 4.2 YELLOW BANK MASTER

- Controls the overall level of the Yellow bank faders.
- In WIDE mode, it controls the overall level of the Yellow bank faders and the Red bank faders.

### 4.3 MODE RED BANK BUTTON

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

- preset.
- wide.
- playback.

### 4.4 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 provide a duplicate of the Yellow bank.

- Wide mode. The Red bank of faders control the intensity of dimmers or fixtures patched to channels 25 (37, 49, 61) to 48 (72, 96, 120).
- PLAYBACK 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.

### 4.5 RED MASTER

- In PRESET mode, it controls the overall level of the Red bank.
- In WIDE mode it has no function.
- In PLAYBACK mode it controls the overall level of the Red Playbacks (Scenes or Chases).

#### 4.6 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.

#### 4.7 BLUE MASTER (L,XL & XXL)

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

#### 4.8 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, fixture, scene, stack, chase, preset, 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, the **f/a** buttons select various *secondary functions* such as PATCH, SETUP, etc as indicated **below** the **f/a** buttons.
- Provide alphanumeric entry when typing names.

##### 4.8.1 Button Numbering

Between each fader in the **Yellow** bank and its associated **f/a** button is a number that indicates the channel/fixture 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.

#### 4.9 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.

#### 4.10 IN & 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.

#### 4.11 FLASH LEVEL & ADD/SOLO BUTTON

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

The “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.**

#### 4.12 PAGE RED BANK BUTTON & DISPLAY

- In “p’back (playback) 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 beside the button shows the red page number.

#### 4.13 PAGE BLUE BANK BUTTON & DISPLAY (L, XL & XXL only)

- 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.

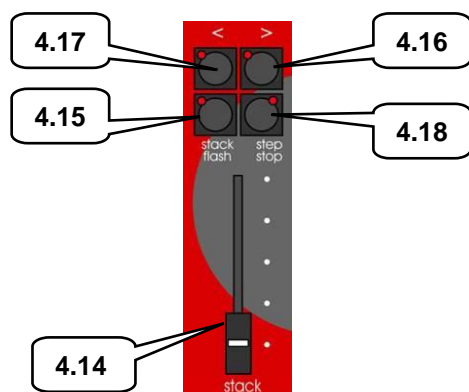
Repeated presses of the Page button will step through the pages.

To *directly* select a page;

HOLD [page blue bank] then quickly tap [f/a] (blue 1 to 9).

The displays beside the button shows the blue page number.

**Hint: The maXim can show the types of object recorded in each page. If you 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.**



#### 4.14 STACK MASTER

It controls the overall level of the Stack Playback.

#### 4.15 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**.

#### 4.16 > (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.

#### 4.17 < (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.

#### 4.18 STEP/STOP (STACK)

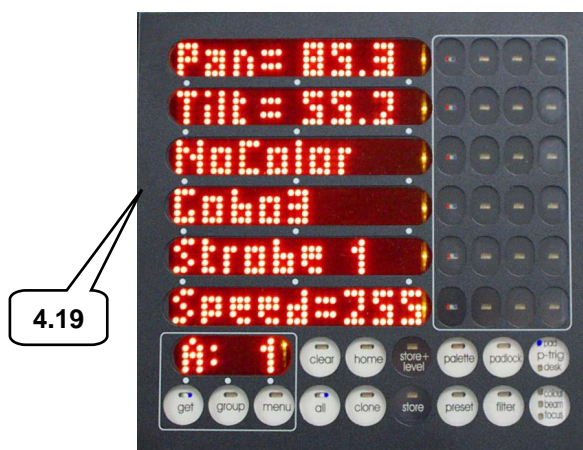
It stops a crossfade. It momentarily runs a stopped crossfade when held down. In conjunction with the > and < buttons it steps (snaps) a stack in the either direction.

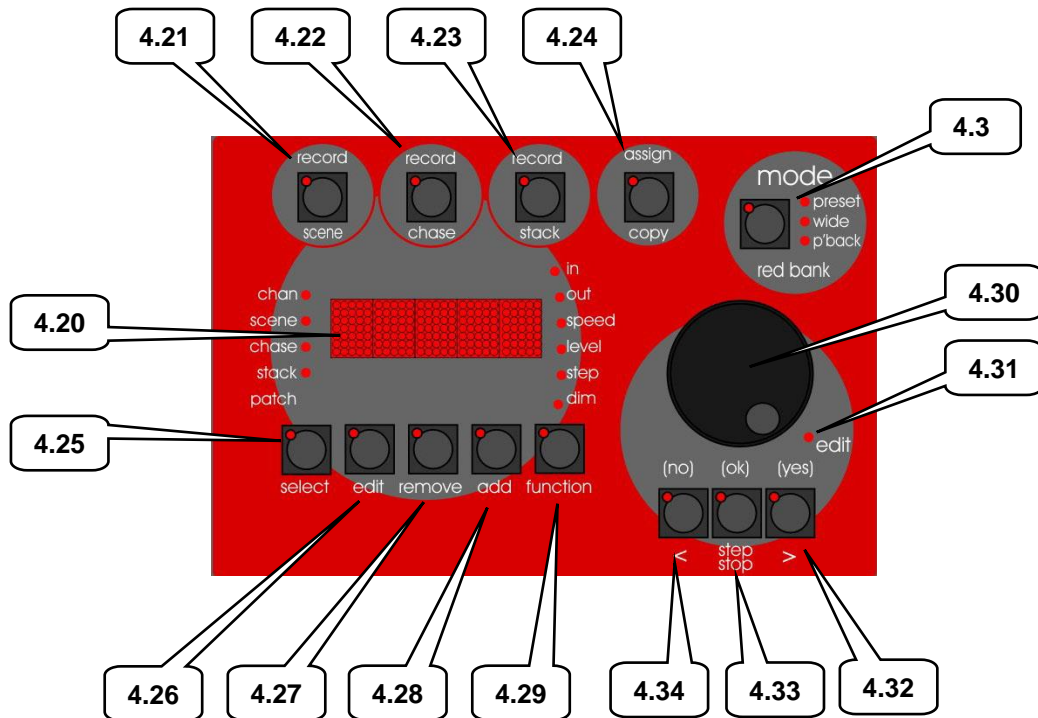
#### 4.19 PATPAD

The PatPad consists of a touch screen with an overlay that divides the touch screen into separate areas. The small areas are *virtual buttons* and the long areas are *displayer scroll bars*.

The touch screen can be operated with either your finger or a stylus such as those available for hand held computing devices. The scrolling bar areas act like control wheels and can be either moused (scrolled) or they can be tapped.

The PaTPaD is used to control the parameters of moving fixtures and to “store” their parameter settings into the memory of the playbacks. The PaTPaD is also used to access “groups”, “palettes”, “presets”, “filters”, “effects”, “fans” and fixture patching. The PaTPaD is extensively described in the “BASIC FIXTURE PROGRAMMING” and “ADVANCED FIXTURE PROGRAMMING” sections.





#### 4.20 DOT MATRIX DISPLAY & 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.

#### 4.21 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 step in a chase (or into the Grab master on the MP model).

#### 4.22 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.

#### 4.23 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.

#### 4.24 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. (**MP** model).
- Copy a Snapshot from the Grab master to a memory. (**MP** model).

#### 4.25 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. The changes that you have made are retained in the Playback until such time as the scene or chase is replaced on that Playback (by changing pages or mode).

To restore the original memory to the playback press [**copy**], [**f/a**] to the same [**f/a**].

"Select" is most useful for making one off changes during a performance or for experimenting with changes without affecting the memory.

#### 4.26 EDIT BUTTON

When pressed, it selects Edit mode. You may then choose to Edit any Scene, Chase, Stack, the contents of the Grab master (MP model).

To edit the patch;

**HOLD** [**function**] tap [**f/a**] (patch). Press [**edit**].

#### 4.27 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.

#### 4.28 ADD BUTTON

Used to:

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

#### 4.29 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 as indicated by the “in” or “out” LEDs above it.
- When editing, pressing [function] steps through the various parameters that can be changed as indicated on the LEDs above the function button.
- After pressing [select], [f/a], pressing [function] steps through the various parameters that can be changed on the selected playback.
- It accesses the secondary functions such as reset, (USB) disk or patch etc as indicated **below** the yellow and red bank [f/a] buttons.  
To perform secondary functions;  
**HOLD [function] tap [f/a]** (secondary function as printed below red and yellow bank “f/a” buttons).

#### 4.30 EDIT WHEEL

Continuously rotatable in either direction and can be used to:

- Set fade and link times plus 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**.

#### 4.31 EDIT WHEEL INDICATOR

Lights when the EDIT Wheel is active.

#### 4.32 > (YES) BUTTON

- Runs a selected or edited 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**.

#### 4.33 < (NO) BUTTON

- Runs a selected or edited 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**.

#### 4.34 STEP STOP (OK) BUTTON

- Used to STOP a selected or edited chase or STEP a stopped chase.
- Answers “ok” to a request from the **maXim**.

## 5 PATCHING

### 5.1 INTRODUCTION

When dimmers are connected, the **maXim** needs to know the DMX slot of each dimmer and which **maXim** channel is to be used to control each dimmer.

When lighting fixtures or other DMX controlled devices are connected, the **maXim** needs to know each fixture's manufacturer, model and starting DMX slot. A fixture number is then assigned to the fixture allowing it to be controlled by the **maXim**.

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. When any patch is made by the user, the bypass is automatically removed and only the users patches will exist.

### 5.2 PATCHING DIMMERS

#### 5.2.1 PATCHING

Patching is performed by "editing the patch".

To edit the patch;

**HOLD [function]**, tap **[patch]**, press **[edit]**.

If a PaTPaD is fitted, ensure that the [PM] button beside "DIMMER" is flashing. If not, press **[PM]** (DIMMER).

To select the dimmers DMX slot number, press **[<]** or **[>]** or rotate the **EDIT** Wheel.

To patch the selected DMX slot to a channel number, press the **[f/a]** button of the channel number (any yellow or red **f/a** button).

The channel **f/a** button will flash to show the patch.

Select another DMX slot with the **EDIT** wheel, **[<]** or **[>]** and patch it to a channel by pressing the channels **[f/a]** button. Continue to select DMX slots and patch them to **maXim** channels.

Patched channels **f/a** buttons remain lit. As each patch is made, the "V2 Output & Patch" video shows the channel number and name, DMX slot and patch level.

When scrolling through the DMX slots, as each slot number is selected, if a channel is patched to that slot, its **f/a** button will flash.

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

#### 5.2.2 PATCHING MULTIPLE SLOTS

To automatically patch a sequential range of DMX slots to a sequential range of channels, edit the patch (above), then select the first DMX slot number in the sequence. **HOLD** the **[f/a]** button of the channel number to be patched to that slot then tap the **[f/a]** button of the channel to be patched to last DMX slot number in the sequence. All

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

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

#### 5.2.3 SET A PATCH LEVEL

All patches can have a proportional patch level. See "INTENSITY PATCH LEVEL" below.

#### 5.2.4 UNPATCH A DMX SLOT FROM A CHANNEL

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

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

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

#### 5.2.5 REMOVE ALL PATCHES

To remove **ALL** patches;

**HOLD [function]**, tap **[patch]**.

Press; **[remove]**, **[yes]**.

The patch is now automatically bypassed.

#### 5.2.6 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 slot 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.

### 5.3 PATCHING FIXTURES

#### 5.3.1 TEMPLATE LIBRARY

In order for the **maXim** to control a fixture, it needs to know all of the functions of that fixture. It gets this information from a computer file called a *Fixture Template*. This file tells the **maXim** the function of each control channel for that type of fixture and it also defines the unique parameter controls and labels that will appear on the **PaTPad** and video screen. Every different *type* of Fixture that you control from the **maXim** requires a Template. Many popular templates are already loaded in the **maXim's** library plus additional templates are available from the LSC website;

**www.lscighting.com.au**

If the template for your fixture is not on the website you can contact LSC by posting a request on the LSC forum providing details of manufacturer, model and software version number. The forum URL is;

<http://forums.lscighting.com.au>

Detailed instructions on how to write your own Templates using a text editor program on a personal computer can also be obtained from the LSC forum.

Templates are loaded into the **maXim** library via the disk drive

The **maXim** stores its Templates in a library that can hold up to 64 Fixture Templates. When you want to use a particular model of Fixture, you select its Template from the library and load it into the patch. The **maXim** can have up to 10 different types of Fixture Templates (from the library) in use in the patch at the same time.

### 5.3.2 VIEW LIBRARY CONTENTS

To see if the Templates for the Fixtures you are using are in the **maXim**'s Fixture library, press **[menu]**, **[library]**, **[view]**.

Templates are organised in the library by manufacturer and model. The **PaTPad** shows a list of Fixture manufacturers. If more than 6 manufacturers are loaded in the library, press the ">" or "<" symbol on the Fixture Displayer to change pages.

Press the **[PM]** button beside the required manufacturers name. The **PaTPad** shows a list of Template names (models) from that manufacturer. If more than 6 templates for that manufacturer are loaded in the library, press the ">" or "<" symbol on the Fixture Displayer to change pages.

Press **[menu]** to finish.

### 5.3.3 ADDING TEMPLATES

To add a template to the library, insert the floppy disk containing the template into the **maXim** disk drive then press;

**[menu]**, **[library]**, **[add]**.

The display shows the Templates on the disk. If more than 6 are on the disk, press the ">" or "<" symbol on the *Fixture Displayer* to change pages. Press the **[PM]** button corresponding to the required Template.

### 5.3.4 ADDING ALL TEMPLATES

If the disc contains many Templates they can **all** be added to the library in a single operation. Press;

**[menu]**, **[library]**, **[add]**, **[all]**, **[yes]**.

### 5.3.5 COPY A TEMPLATE TO DISK

Templates can be copied from the library to disk so that they can be archived or edited. Press;

**[menu]**, **[library]**, **[CopyToDsk]**.

Use the **[PM]** buttons to select the manufacturer, then the model.

### 5.3.6 REMOVE A TEMPLATE

To remove a Fixture Template from the library; press;

**[menu]**, **[library]**, **[remove]**.

Use the **[PM]** buttons to select the manufacturer, then the model.

### 5.3.7 REMOVE ALL TEMPLATES

To remove the entire contents of the library; press **[menu]**, **[library]**, **[remove]**, **[all]**, **[yes]**.

### 5.3.8 CLEARING THE PATCH

If you are patching a new installation of fixtures it is advisable to clear the patch.

**Hold** **[function]**, tap **[patch]**. Press **[remove]**, **[yes]**.

**Warning.** This will erase ALL existing patches. If you need to keep the patch, save your show to disk.

### 5.3.9 PATCHING FIXTURES

**Hold** **[function]**, tap **[patch]**, press; **[edit]**.

The **PaTPad** shows;

DIMMER	☀
LIBRARY	●

The PM button beside "DIMMER" will be flashing, indicating that the **maXim** is ready to patch a dimmer. Before you can patch a Fixture, its Template must be loaded from the library into the patch.

### 5.3.10 LOADING TEMPLATES INTO THE PATCH

To load a Fixture Template into the patch, edit the patch (above) then press the **[PM]** button beside "LIBRARY". The **PaTPad** shows a list of Fixture manufacturers in the library. If more than 6 manufacturers are loaded, press ">" or "<" on the Fixture Displayer to change pages. Press the **[PM]** button beside the manufacturers name. The **PaTPad** shows a list of Template names (models) from that manufacturer that are in the library. If there are more than 6 Templates (models) for that manufacturer, press ">" or "<" on the Fixture Displayer to change pages.

Press the **[PM]** button beside the required template to load it into the patch.

The **PaTPad** shows;

DIMMER	●
SCAN-X	☀
LIBRARY	●

In this example the selected Fixture is a fictitious "scan-x" but you will see the name of the actual Template you selected. The **[PM]** button beside it will be flashing, indicating that the **maXim** is ready to patch that Template (type of Fixture). This Template is now loaded into the patch (from the library) and does not need to be loaded again. You can use it every time that you need to patch that type of Fixture. If you are using several

different types of Fixtures you can load their Templates now or you can patch the currently loaded Fixture (see below) then return to the library later and load the other Templates. To load more Templates now press the **[PM]** button beside “LIBRARY” and make your selection as above.

### 5.3.11 DMX SLOT AND FIXTURE NUMBER

Each Fixture that you patch will have its own DMX slot (that you set on that Fixture). This is the starting DMX slot for that Fixture and each Fixture will use a quantity of DMX slots, as defined in its Fixture Template.

Select the template for the type of fixture you want to patch by pressing the **[PM]** button beside its name. The **[PM]** button will flash. All patches that you now make will use this (flashing) template.

Select the starting DMX slot of the fixture to be patched by pressing **[<]** or **[>]** or rotating the **EDIT wheel**.

The *maXim* has 2 DMX universes (2 DMX outputs) and uses “U1” or “U2” to indicate DMX Universe 1 or Universe 2. When the DMX slot number is incremented above the highest number in Universe 1 (U1-512), it changes to the first slot in Universe 2 (U2-1).

To patch a fixture you must give it a “Fixture Number” by pressing a yellow or red **[f/a]** button.

When a fixture number is selected, the *maXim* automatically patches all of the remaining DMX slots for that Fixture according to the information contained in the Fixture Template. The DMX slot number automatically advances to the slot after the last slot used by the patched Fixture, ready for the next fixture (or dimmer) to be patched.

To patch further Fixtures of the same type (flashing **[PM]** button on the **PaTPad**), select the starting DMX slot of the Fixture by pressing **[<]** or **[>]** or rotating the **EDIT wheel**, then give it a Fixture number by pressing; **[f/a]** (Fixture Number).

To patch a different type of Fixture, select its template by pressing the **[PM]** button beside its template name (it flashes) then select the starting DMX slot of the Fixture by pressing **[<]** or **[>]** or rotating the **edit wheel**, then give it a Fixture number by pressing; **[f/a]** (Fixture Number).

Each patch that is made will use the Template indicated by the flashing **[PM]** button. If the Template you require is not shown, load it from the library as above.

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

### 5.3.12 PATCHING MULTIPLE

#### FIXTURES

Whilst patching (above), you can automatically patch a sequential range of Fixtures of the same type with contiguous DMX slots, to a sequential range of Fixture Numbers.

Select the DMX slot of the first Fixture by pressing **[<]** or **[>]** or rotating the **edit wheel**.

Select the Fixture Template on the **PaTPad**.

**HOLD** the **[f/a]** button of the first Fixture Number then tap the **[f/a]** button of the last Fixture Number in the sequence.

All Fixtures in the selected range are automatically patched.

For example, to patch 10 Fixtures of the same type to Fixture Numbers 6 to 16 respectively and with the starting DMX slot of the first Fixture set to 100, press **[<]** or **[>]** or rotate the **edit wheel** to select DMX slot 100. **HOLD** **[f/a]** (6) and tap **[f/a]** (16)).

All patches for all 10 Fixtures are automatically made.

If finished patching press; **[edit]**. The patch is automatically saved.

### 5.3.13 PATCHING SCROLLERS OR FIXTURES WITH EXTERNAL DIMMERS

Colour scrollers and some brands of fixture require a separate dimmer to control their intensity. The dimmer usually has a DMX slot number that is not related to the DMX slot numbers used by the scroller or fixture. Whilst patching (above), select the DMX slot of Fixture by pressing **[<]** or **[>]** or rotating the **EDIT wheel**. Select the Fixture Template on the **PaTPad**. Patch the fixture to a fixture number by pressing **[f/a]** (fixture number). The *maXim* display scrolls the message, “Fixture needs HTP channel”. The *maXim* knows that this scroller or fixture needs an external dimmer because it is defined in its template. Press; **[OK]**. Use the **EDIT wheel** or **[<]** or **[>]** to select the DMX slot of the external **dimmer** then press; **[OK]**. The fader of the “fixture number” button that was selected for the fixture number now controls the intensity of the dimmer and the **PaTPad** controls the scroller colours or fixture parameters. If finished patching press; **[edit]**. The patch is automatically saved.

### 5.3.14 INTENSITY PATCH LEVEL

All fixture **intensity** attributes and **dimmers** can have a proportional (adjustable) patch level.

When patching (above), select the DMX slot of the intensity channel (use **EDIT wheel**, **[<]** or **[>]**). The fixtures (or dimmers) **[f/a]** button will flash showing the existence of the patch. **Hold** down the FLASHING **[f/a]** button and the display shows the patch level.

Whilst **holding** down the **[f/a]** button, rotate the **edit wheel** to set the patch level. The level of the patch is shown on the display. If you inadvertently

select the DMX slot of a fixtures LTP attribute (instead of the HTP intensity attribute) the **maXim** will automatically adjust the patch level of the HTP intensity attribute associated with that fixture.

### 5.3.15 PATCH INDICATORS

Whilst you are patching, the LEDs of any Fixture Number buttons that are patched are lit to show that they have been used.

As each DMX slot is selected (with [<] or [>] or the **EDIT** wheel), if the displayed DMX slot is used (patched), it's Fixture Number LED will *flash*.

The "V2 Output & Patch" video screen shows the Fixture Number and name, parameter names, DMX slots and DMX levels for each Fixture.

The "FIXTURES" pop up video window also shows each Fixture name beside its number.

### 5.3.16 REMOVING A FIXTURE FROM THE PATCH

If a fixture is no longer required, it can be removed from the patch

**HOLD [function]**, tap **[patch]**.

Press **[edit]**.

Select **any** DMX slot that is used by the Fixture to be removed.

Press; **[remove]**, **[yes]**.

When finished patching press; **[edit]**.

### 5.3.17 REMOVING A TEMPLATE FROM THE PATCH

If a template is removed from the patch, all patches for that type of fixture are also removed.

To remove a Template from the patch;

**HOLD [function]**, tap **[patch]**. Press **[edit]**.

The **PaTPaD** shows the Templates in the patch, for example,

DIMMER	●
TRACKSPOT	●
MAC250	☀
LIBRARY	●

Press; the **[PM]** button beside the template to be removed (it flashes).

Press; **[clear]**, **[yes]**, **[edit]**.

### 5.3.18 LOADING SHOWS CONTAINING TEMPLATES

When a show is loaded from disc onto the **maXim**, the system checks to see if the templates in the show are already in the library. It does this by comparing manufacturer and model names. If the templates are already in the library, it then compares the version numbers. The **highest version** is always used.

- If the **library** template is the newer version, it will be used for the show and also saved to disk when the show is saved replacing the older show template.

- If the **show** (disk) template is the newer version, it will be used for the show and also copied into the library, replacing the older library template

### 5.3.19 EDITING FIXTURE NAMES

The default name of each Fixture as shown on the video screens is defined in its Template. Hence all Fixtures of the same type have the same name. You can individually edit the name of every Fixture to make it more descriptive for your application.

To edit a name, **HOLD [function]**, tap **[f/a]** (name).

Press; **[f/a]** (Fixture Number).

Either rotate the edit wheel or press the yellow bank **[f/a]** buttons for the desired characters as labelled below the buttons. Press [<] or [>] to move the cursor and press **[remove]** or **[add]** to remove or add characters or spaces.

When finished, press **[ok]**.

### 5.4 SAVING A PATCH

Whenever you finish editing a patch it is automatically saved. When you save or load a show from disk, you copy the entire contents of the **maXim's** memory. This includes the Patch. See the "UTILITIES" section for details.

### 5.5 INVERT PAN OR TILT

You can invert the operation of the PaTPaD pan and tilt displayers. This makes operation easier when a fixture is rigged such that mousing a displayer from left to right, pans the fixture from right to left or if it tilts in the wrong direction.

To invert the operation of a fixtures pan or tilt parameters the fixture must be loaded on the PaTPaD.

Press **[get]**, **[f/a]** (fixture number).

Press **[menu]** **[PM]** (INVERT)

The PaTPaD shows the selected fixture number and the current state of its pan and tilt as either "normal" (green PM button) or "inverted" (red PM button).

PAN	
normal	●
TILT	
inverted	●
Fx #	

To reverse a parameter press its flashing **[PM]** button.

Tapping either end of the **[fixture displayer]** steps through the fixtures loaded on the PaTPaD. When finished press **[menu]**.

Video screens 1 and 2 indicate **inverted** pan or tilt parameters as follows;

**PAN -i**  
**TILT-i**

## 6 MODES OF OPERATION

### 6.1 OVERVIEW

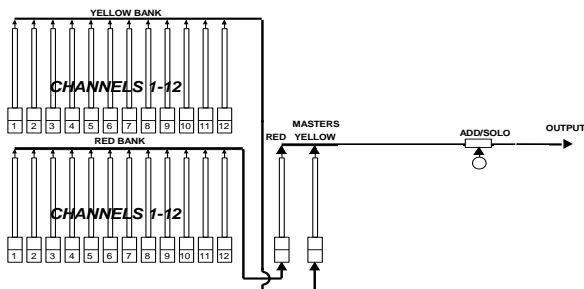
The **maXim** has several banks of faders.

- The Yellow bank always controls the levels of channels/fixtures 1 to 24 (36, 48, 60)
- The Red bank has different functions as selected by the “mode red bank” button;
  - PRESET** mode. The Red bank controls the levels of channels/fixtures 1 to 24 (36, 48, 60). (A **duplicate** of the Yellow bank).
  - WIDE** mode. The Red bank controls the levels of channels/fixtures 25 (37, 49, 61) to 48 (72, 96, 120). (An **extension** of the Yellow bank providing **double** the number of channel/fixture faders)
  - PLAYBACK** mode. The Red bank faders become **PLAYBACKS** and control the levels of recorded 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.

Each mode has its particular advantage for different types of operations.

### 6.2 PRESET MODE



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

You can 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. 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 “preset” on the bank that has just been faded down. The fade times of the masters are set by the IN and OUT time faders.

#### 6.2.1 PRESET ADVANTAGE

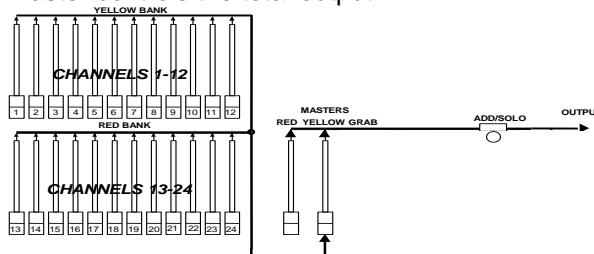
This simple mode of operating is most useful in unrehearsed situations where the next “look” needs to be created “on the fly”. The channel faders provide instant “hands on”.

#### 6.2.2 PRESET DISADVANTAGE

Only half of the possible **maXim** channels/fixtures can be intensity controlled by dedicated faders.

### 6.3 WIDE MODE

Wide mode utilises both the red *and* yellow banks as a *single* wide bank thus doubling the number of channel/fixture faders. The yellow faders control the low numbered channels and the red faders control the high numbered channels. The yellow master controls the total output.



Simplified diagram of a **maXim** in **WIDE** mode.

#### 6.3.1 WIDE ADVANTAGE

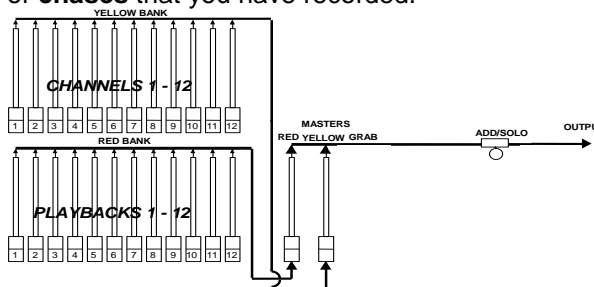
You have individual access to **all** of the **channels** that are available on the **maXim**. This is most useful when you are **RECORDING** scenes as you can utilise all channels to create your scenes. (See “Playback Mode” below).

#### 6.3.2 WIDE DISADVANTAGE

You do not have a second “preset” bank on which to create the next look and you have less playbacks.

### 6.4 PLAYBACK MODE

Selecting Playback mode only changes the operation of the red bank. The faders of the red fader bank become Playbacks containing **scenes** or **chases** that you have recorded.



Simplified diagram of a **maXim S** in **Playback** mode.

Scenes, stacks and chases can be *recorded or edited* whilst operating in any modes but scenes and chases can only be played back on the Red bank when it is in Playback mode.

#### 6.4.1 PLAYBACK ADVANTAGE

During rehearsal (in any mode), each lighting look can be created and “recorded” into a Scene. During the show (in Playback mode), the Playback containing each scene is faded up when required. The **maXim** remembers all the channels and their levels together with the fade times. You may also use the Red Playbacks to playback chases that you have recorded.

## 7 MEMORY STRUCTURE

### 7.1 OVERVIEW

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. Memories are organised by Page number and f/a (flash/assign) number. Scenes, chases and stacks share the same memory within each bank. You determine what each memory contains when you **record** (or copy) scenes, chases or stacks into them.

For example, if a “page and f/a 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 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;

**HOLD [page red bank]** tap **[f/a]** (red 1 to 9).

To switch *directly* to a blue page;

**HOLD [page blue bank]** tap **[f/a]** (blue 1 to 9).

To see the type of object recorded in each memory, **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 indicate their contents as follows;

Playback Contents	Playback f/a LED
Scene	On steady
Chase	Fast Flash
Stack	Slow Flash
Empty	Off

When you press [edit] or [assign copy] or any [record] or [store] button, all Playback flash/assign buttons flash twice (to indicate that they are possible choices), then they show their contents as above.

If you change pages whilst in “edit”, “assign copy” or “record” modes, the contents of the selected page is also shown.

Groups, Presets, Palettes and Filters each have dedicated memory which is accessed via the yellow **[f/a]** buttons.

### 7.2 “PLAYBACK” MEMORY ACCESS

When the **red bank** is changed to “scene” mode or when a **red bank page** is changed whilst in “p’back (playback) mode”, the contents (scenes and chases) of the indicated red page are COPIED (subject to any “Page Freeze” below) into the red playbacks.

When a **blue bank page** is changed, the contents (scenes and chases) of the indicated blue page are COPIED (subject to any “Page Freeze” below) into the blue playbacks.

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

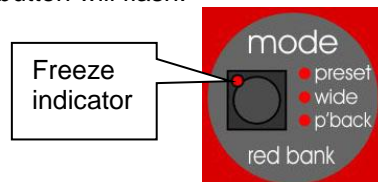
### 7.3 MODE/PAGE FREEZE

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.

### 7.4 FREEZE INDICATOR

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.

The video screen also shows the current page number loaded on each playback.

### 7.5 “RECORD” MEMORY ACCESS

During recording, storing, editing or copying, you can directly access any of the memory locations on any page by using that bank’s **[page]** and **[f/a]** buttons. Changing pages when recording, editing or copying does not affect the current contents of a playback.

If you attempt to record, store or copy over an existing memory a warning will appear on the **maXim’s** display. To overwrite the memory either press **[yes]** or press the locations **[f/a]** button a second time.

To pick a different memory location press; **[page]** (optional), **[f/a]** (new location).

## 7.6 SELECT PLAYBACK

When **[select]**, **[f/a]** is pressed, the copy of a scene or chase in a playback can be varied without affecting the original memory.

You can vary a scenes fade times or you can change the rate, crossfade and mode of a chase.

When **[select]** is de-selected, the changes are retained in the playback until a new memory is loaded onto the playback.

To reload the original memory onto a playback press;

**[copy]**, **[f/a]** (to same) **[f/a]**.

## 7.7 EDIT MEMORY

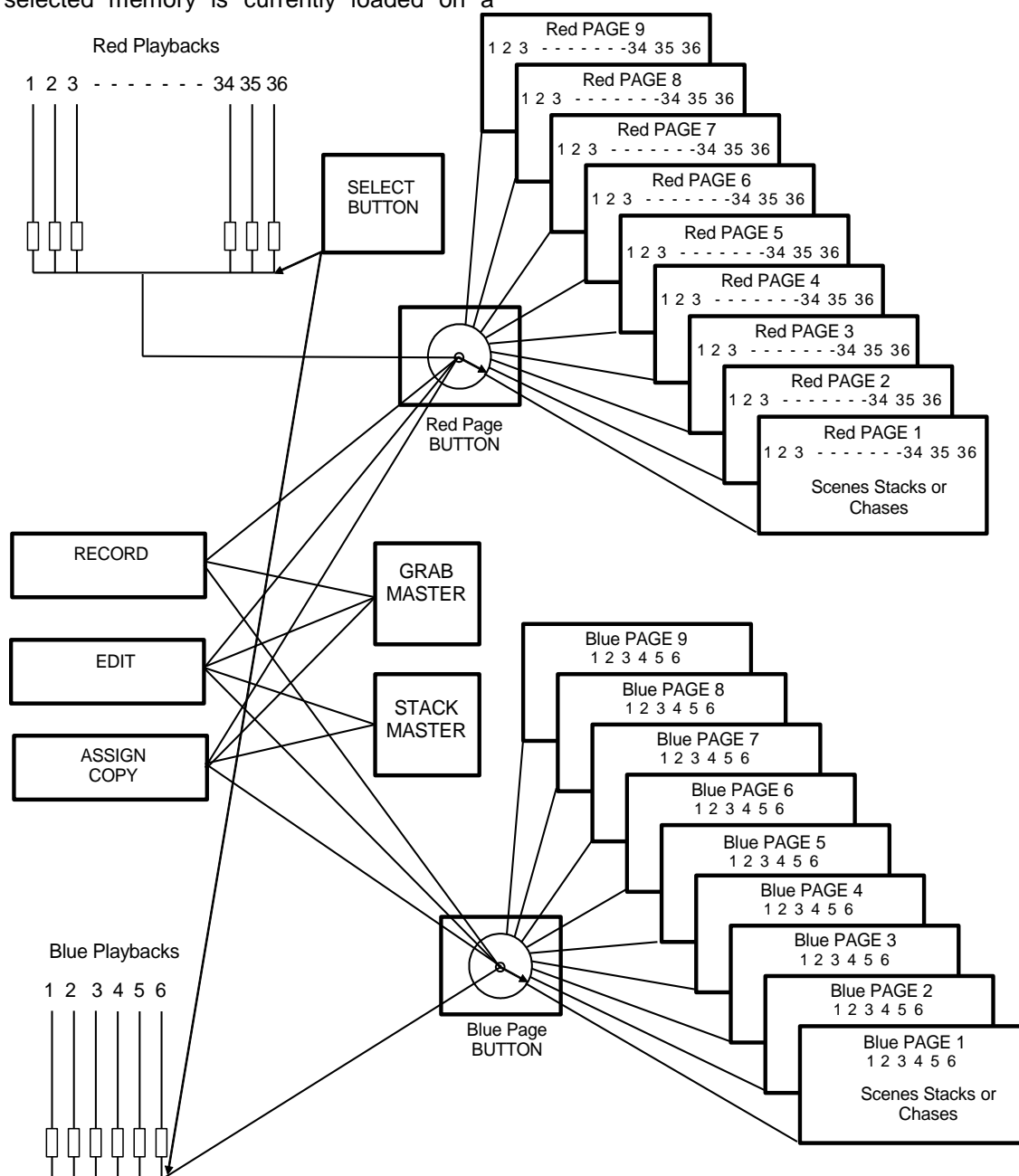
When **[edit]**, **[page]** (optional red or blue page), **[f/a]** is pressed, the original memory is edited. If the selected memory is currently loaded on a

playback, then the changes will also be seen on that playback.

In addition to the changes that can be made by “select”, “edit” also allows you to change the *contents* of a *scene* or a *step* in a chase or stack and to insert or delete steps in a chase or stack.

## 7.8 EXTERNAL STAORAGE

The top USB connector allows you to plug in a USB “flash disk” memory device and then save or load a “show” using the USB disk. A “show” contains the entire contents of the **maXim's** memory. This includes all Scenes, Chases, Stacks, SyncoBEATs and the Patch.



Basic Memory structure of a **maXim L**

## 8 SCENES

### 8.1 OVERVIEW

A “recorded” SCENE is a snapshot of the **maXims** output, together with In and Out fade time settings and a descriptive name, that is stored in non volatile memory.

The PaTPaD allows you to “store” scenes that contain selected fixture parameters. See the “FIIXTURE PROGRAMMING CONCEPTS” section for details.

Scenes are recorded by page/scene number. Page numbers are selected with the [**page red bank**] or [**page blue bank**] buttons and scene numbers are selected with the red or blue [**f/a**] buttons (no blue bank on MP model but a scene can be recorded onto the MP’s Grab Master).

See the “MEMORY STRUCTURE” section 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 times and current page or you can choose to record in a different page or to set separate IN and OUT fade times. 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.
- IN time = Controlled by the IN time fader.
- OUT time = Controlled by the OUT time fader.

#### 8.2.1 Rapid Scene Recording

To record a scene with default settings (above), create the desired look on the output, then press; [**record scene**], [**f/a**] (Scene number).

#### 8.2.2 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 buttons and the function button 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.

#### 8.2.3 Page Selection

Repeated presses of either [**page red bank**] or [**page blue bank**] will cycle through the 9 pages of memory.

To directly select a red page;

**HOLD** [**page red bank**] tap [**f/a**] (red 1 to 9).

To *directly* select a page;

**HOLD** [**page blue bank**] tap [**f/a**] (blue 1 to 9).

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

When a page is selected, if you **HOLD** either [**page**] button, a window pops up on the optional video screen showing you the contents and name of every memory location.

Choose a Page number for the scene.

#### 8.2.4 Fade Times

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

- If a time fader is selected, 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 that 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” section 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).

If the selected memory location has already been used, the display will read “WARNING memory exists – overwrite?” You now have two options.

- To erase the existing memory and replace it with the current output either press **[yes]** or **[f/a]** (existing memory to overwrite).
- To pick another memory location press **[f/a]** (new memory location).

**Note; The maXim will not record a scene if all channels are at zero level.**

### 8.2.5 NAMING A SCENE

Each scene is by default given its bank, page and **f/a** number as a name. For example, r1:01 (red bank, page 1, scene 1).

To enter or change a name;

**HOLD [function]**, tap **[f/a]** (name).

The display says "Pick Object to Name".

Press **[page]** (optional), **[f/a]** (scene number).

Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to 10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a 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

### 8.3.1 PLAYBACK Mode AND PAGES

When you set the red bank **mode** to "p'back" (playback), the scenes (and chases) in the current page are copied, in order, to their respective red playbacks.

If you change pages, the scenes (and chases) in the selected page are copied, in order, to their respective red or blue playbacks.

**Note; Mode/Page freeze rules apply. See the "MEMORY STRUCTURE" section for more details.**

### 8.3.2 CONTROLLING A SCENE

To reveal a scene recorded on the red bank on the output, press **[mode red bank]** until its "p'back" LED lights. If necessary, select the page containing the scene using the **[page red bank]** button. Fade up the red Playback containing the scene and also the red master.

To reveal a scene recorded on the blue, if necessary, select the page containing the scene using the **[page blue bank]** button. Fade up the blue Playback containing the scene and also the blue master.

The scenes can be faded in or out as required or they may be "Flashed" (soloed or bumped) via their **[f/a]** buttons. See the "FLASH" section for more details.

### 8.3.3 PLAYBACK 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 in and out fade times in the selected PLAYBACK without affecting the original scene *memory*.

Press **[Select]**, **[f/a]** (playback to control), **[function]**.

The "in" 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" 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 times, press **[Select]**.

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).

To restore the original memory to the playback press **[copy]**, **[f/a]** to the same **[f/a]**.

"**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.

## 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 the channel **[f/a]** LED indicators and on the optional VGA monitor. The LEDs *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) (MP model only).
- To edit a scene in a different page, press; **[edit]**, **[page]** (red or blue page), **[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 **[function]** will cycle the display through channel LEVEL(%), IN time

setting, OUT time setting and the page/scene number. These editing processes are described below.

#### 8.4.1 Channel Levels

To read and/or edit the level of any channel in a scene, edit the scene (above) then press a channels **[f/a]** button. Whilst the **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.

When finished editing press **[edit]**.

All changes are automatically saved.

#### 8.4.2 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” 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” 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.

#### 8.4.3 Ending Edit

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

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

#### 8.4.4 EDITING A SCENE NAME

Names are edited in the same way as they are recorded.

See “NAMING A SCENE” above for details.

### 8.5 COPYING A SCENE

To copy a scene, press;

**[assign/copy]**.

**[page]** (optional red or blue source page)

**[f/a]** (source scene number),

**[page]** (optional red or blue destination page)

**[f/a]** (destination scene number).

If the selected memory location has already been used, the display will read “WARNING memory exists - overwrite?”. You now have two options.

- To erase the existing memory and replace it with the copy either press **[yes]** or **[f/a]** (existing memory to overwrite).
- To pick another memory location press **[f/a]** (new memory location).

The copy process may be abandoned at any time prior to entering the destination scene number by pressing **[assign/copy]** a second time.

***Hint; In a show or performance, the transition from one scene to the next will sometimes 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]**.

**[page]** (optional)

**[f/a]** (scene number).

The display asks you to confirm your action.

Press **[yes]**.

## 9 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 can consist of a previously recorded 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.

The chase stepping can be controlled by an audio input or by a beat pattern that you teach the maXim. See the "STL and SyncoBEAT" section for details.

Chases are recorded by page/chase number. Page numbers are selected with the **[page red bank]** or **[page blue bank]** buttons and chase numbers are selected with the red or blue **[f/a]** buttons. (no blue bank on MP model but a chase can be recorded onto the MP's Grab Master).

Chase mode, speed in BPM (Beats Per Minute) and crossfade times are recorded in memory as part of each chase.

### 9.2 CHASE TERMINOLOGY

#### 9.2.1 BOUNCE

The chase automatically changes direction when it reaches the last or first step. In this manner, it continuously "bounces" from end to end.

#### 9.2.2 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.

#### 9.2.3 CHASE CROSSFADE

Traditionally chases will snap (instantly switch) from step to step but in the **maXim** you may also set a crossfade value so that it will fade from step to step. The Crossfade is set as a percentage of the chase speed.

For example, if the chase speed 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 speed 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 time is used to perform a crossfade and 50% of the time is spent waiting before starting the next crossfade.

If the crossfade is set to 100%, then the Chase will use all of the time performing a crossfade to the next step. When the crossfade is complete, the next crossfade will commence immediately.

### 9.3 CHASE RECORDING

To record a chase, press;

**[record chase]**,

Select a memory number for the chase, press;

**[page]** (optional) (Select a red or blue page number),

**[f/a]** (memory number) (any red or blue **f/a** number).

Each step of a Chase consists of either an existing scene, a snapshot of the output or selected parameters of moving fixtures.

- To select a scene as a step, press;  
**[page]** (optional red or blue page),  
**[f/a]** (scene number).
- To record a snapshot (of the current **maXim** output) as a step, press;  
**[record scene]**.
- To store the flashing parameters on the PaTPaD press **[store]**.
- To store the flashing parameters on the PaTPaD and all intensity levels press **[store+level]**.

Continue to record steps as above. You may mix snapshots, scenes or parameters in any order.

When all steps have been recorded, complete the chase by pressing;

**[record chase]**.

#### 9.3.1 REMOVING STEPS

Whilst recording (above), if the step that you add is not correct, the last step may be deleted by pressing **[remove]**.

#### 9.3.2 CHASE SPEED

At any point after giving the chase a memory number (above), repeated presses of **[function]** will toggle the display between the STEP number, the SPEED in BPM (Beats Per Minute) and the CROSSFADE percentage. When the SPEED is displayed, the **EDIT wheel** may be used to set the desired speed. The default setting is 100 BPM but you may change this in the "Setup Preferences". See the "UTILITIES" section.

#### 9.3.3 CHASE CROSSFADE

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 SPEED 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 speed time that is used for the crossfade.

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

#### 9.3.4 COMPLETING THE CHASE

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

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

### 9.3.5 NAMING A CHASE

Each chase is by default given its bank, page and **f/a** number as a name. For example, r1:02 (red bank, page 1, chase 2).

To enter or change a name, **HOLD [function]**, tap **[f/a]** (name) (a yellow bank **f/a** button). The display says "Pick Object to Name". Press **[page]** (optional) **[f/a]** (memory number). Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad.

Press **[<]** or **[>]** to move the cursor and press **[remove]** or **[add]** to remove or add characters or spaces. When finished, press **[ok]**.

### 9.4 CHASE PLAYBACK

Chases may be replayed on the:

- Red Bank (in Playback mode).
- Blue Bank (not on MP model).
- Grab master (only on MP model).
- As a step in a stack.

#### 9.4.1 PLAYBACK MODE AND PAGES

When you set the red bank **mode** to "p'back", the chases (and scenes) in the current page are copied, in order, to their respective red playbacks. If you change pages, the chases (and scenes) in the selected page are copied, in order, to their respective red or blue playbacks.

**Note; Mode/Page freeze rules apply. See the "MEMORY STRUCTURE" section for more details.**

#### 9.4.2 CHASE INTENSITY

The OVERALL level of a chase is controlled by the Playback 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.

If the chase is faded down to zero, the chase automatically stops.

#### 9.4.3 CONTROLLING A CHASE

"**Select**" allows you to change the speed, crossfade, mode and direction of the *copy* of the chase in the selected PLAYBACK without affecting the original chase *memory*. To make permanent changes to a chase see "Editing a Chase" below.

Press **[select]**, **[f/a]** (chase to control), **[function]**.

- To control the **SPEED**, rotate the **EDIT wheel**. The display shows the speed in Beat Per Minute.
- To change the **CROSSFADE** between steps, press **[function]** until both "in" & "out" LEDs light, then rotate the **EDIT wheel**. The display indicates the percentage of time between steps 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 follows;

BUTTON	ACTION
<b>[step/stop]</b>	<b>STOPS</b> a running chase or <b>STEPS</b> a stopped case
<b>[&gt;]</b> (Forward)	<b>RUNS A CHASE FORWARD</b>
<b>[&lt;]</b> (Reverse)	<b>RUNS A CHASE REVERSE</b>
<b>Hold [&gt;] Tap [&lt;]</b>	Selects <b>BOUNCE</b> mode
<b>[&gt;] or [&lt;]</b>	De-selects BOUNCE mode
<b>Hold [step/stop] Tap [&gt;]</b>	Selects <b>SINGLE SHOT</b> mode
<b>[&gt;] or [&lt;]</b>	<b>RUNS A SINGLE SHOT</b>
<b>Hold [step/stop] Tap [&gt;]</b>	De-selects single shot mode

When finished controlling press **[select]**.

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).

To restore the original memory to the playback press **[copy]**, **[f/a]** to the same **[f/a]**.

#### 9.4.4 STEPPING A CHASE

A chase may be manually stepped at any time by pressing its **[f/a]** button. If the chase is already running, this will immediately step it to the next step.

To manually step a chase, stop the chase (above), then step it by pressing its **[f/a]** button.

#### 9.4.5 RUNNING A SINGLE SHOT

If a chase has been set to "single shot" mode (above), pressing its **[f/a]** button will run a single shot.

#### 9.4.6 GLOBAL SPEED CONTROL

Global speed control allows you to speed up or slow down all chases that are running on the output of the *maXim* whilst still retaining any different relationships in speed that might exist between each other.

Global speed does not affect chases running in "syncoBEAT" mode.

To activate "Global Speed Control";  
**HOLD [select]** for **1 second** then release.  
Rotate the **EDIT wheel** to speed up or slow down all running chases.

The speed can be increased by up to 1999% of its original value. The maximum speed is limited to 999 BPM.

The speed can be decreased to 0% of its original speed.

For example:

- r1.01 has a recorded speed of 120BPM and its fader is at 100%.
- r1.02 has a recorded speed of 200BPM and its fader is at 0%.
- r1.03 has a recorded speed of 60BPM and its fader is at 10%.

**HOLD [select]** for 1 second to activate “Global Speed Control”. This will assign r1.01 and r1.03 to Global Speed Control.

Now fade up chase r1.02. As it was not active when global speed was selected, it will not be affected when the global speed is varied.

Rotate the **EDIT wheel** until the display reads 50%.

- r1.01 is now running at 60 BPM.
- r1.02 is still running at 200 BPM.
- r1.03 is now running at 30 BPM

Rotate the **EDIT wheel** until the display reads 200%;

- r1.01 is now running at 240 BPM.
- r1.02 is still running at 200 BPM.
- r1.03 is now running at 120 BPM

Tapping **[function]** resets all selected chases to the “default” chase speed as set in the “Setup”, “Preferences” menu.

If the default is set to 100 BPM, then in this example, tapping **[function]** results in;

- r1.01 is now running at 100 BPM.
- r1.02 is still running at 200 BPM.
- r1.03 is now running at 100 BPM

Rotate the **EDIT wheel** until the display reads 150%;

- r1.01 is now running at 150 BPM.
- r1.02 is still running at 200 BPM.
- r1.03 is now running at 150 BPM

To exit Global Speed press **[select]**.

All chases remain at their modified speed. The original speed of a chase can be restored by copying the chase from its memory back to the playback. Press; **[copy]**, **[f/a]**, to the same **[f/a]**.

### 9.5 FIXTURE PARAMETER CHASE TIMES

The chase speed can be varied, which changes the time between steps however the times taken for Fixture parameters to move when their step is triggered, is dependent upon the “As Chase” flags.

The default settings for these flags depends upon the type of parameter.

- Colour and beam parameters have their “As Chase” flag set to “No” by default. They therefore use the times that are in the scenes that make up the steps. They ignore the chase crossfade setting.
- Focus parameter have their “As Chase” flag set to “Yes” by default. Their times are therefore under the control of the chase crossfade setting. This allows the speed of Fixture movement (focus) to be easily controlled by the **EDIT** wheel without the need to edit the times in every step. If the chase is snapping from step to step, the focus parameters also snap. If the chase has a crossfade setting, the focus parameters will fade from step to step as determined by the chase rate and percentage crossfade.

By default, only the focus parameters are affected by the chase crossfade. Therefore, when a chase crossfade is used, parameters such as gobo or colour wheels will not make slow movements from step to step. Typically they will be set to zero time so that they snap change.

**Hint; If your fixtures have colour mixing features, set the colour parameter “As-Chase” flag to “yes” and the colour mixing will be under control of the chase crossfade.**

### 9.6 EDITING A CHASE

“**Edit**” allows you to permanently change the speed, crossfade, mode and direction plus you can add or delete steps, connect or disconnect the STL (Sound To Light) processors and edit the contents of each step.

These changes are applied to the chase memory and if the chase is currently on a playback, they will also be applied to the playback. 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.

- 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) (MP model only)
- To edit a chase in a different page, press; **[edit]**, **[page]** (red or blue page) **[f/a]** (chase number).

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 **SPEED**, rotate the **EDIT wheel**.
- To change the **CROSSFADE** between steps, press **[function]** until both “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 above.
- To connect or disconnect a STL (Sound To Light or SyncoBEAT) from the chase, repeatedly **HOLD [function]** until the STEP number(s) are shown on the display and the STL button LEDs flash. Whilst **holding [function]** tap either [STL1] or [STL2]. Press **[yes]** to connect or disconnect the selected STL. See the “STL and SyncoBEAT” section for more details.

### 9.6.1 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 press **[record scene]**.  
or
- To add a scene as a step, press **[page]** (optional red or blue page), **[f/a]** (scene number).  
or
- To record flashing PaTPaD parameters press **[store]** or **[store + level]**.

If necessary press **[>]** or **[<]** to start the chase again in the desired direction.

When finished editing press **[edit]**.

All changes are automatically saved.

### 9.6.2 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.

When finished editing press **[edit]**.

All changes are automatically saved.

### 9.6.3 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 its **[f/a]** (channel number) button.

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. If it 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.

If necessary press **[>]** or **[<]** to start the chase again in the desired direction.

When finished editing press **[edit]**.

All changes are automatically saved.

### 9.6.4 EDITING A CHASE NAME

Names are edited in the same way as they are recorded.

See “NAMING A CHASE” above for details.

### 9.7 COPYING A CHASE

To copy a chase, press;

**[assign/copy]**.

**[page]** (optional red or blue source page)

**[f/a]** (source chase number),

**[page]** (optional red or blue destination page)

**[f/a]** (destination chase number).

If the selected memory location has already been used, the display will read “WARNING memory exists - overwrite?”. You now have two options.

- To erase the existing memory and replace it with the copy either press **[yes]** or **[f/a]** (existing memory to overwrite).
- To pick another memory location press **[f/a]** (new memory location).

The copy process may be abandoned at any time prior to entering the destination scene number by pressing **[assign/copy]** a second time

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

### 9.8 REMOVING A CHASE

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

**[page]** (optional)

**[f/a]** (chase number).

The display asks you to confirm your action.

Press **[yes]**.

## 10 GRAB MASTER (MP only)

### 10.1 OVERVIEW

The Grab master is a multi function master that is only available on the **maXim** MP model. The MP does not have any Blue playbacks.

The Grab master 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).

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” section for details.

#### 10.2.1 Typical Grab Operations

When you perform a “Grab” and then fade up the Grab master, it allows the Bank masters currently producing the output to be faded down whilst the Grab master maintains the output. This allows the next look to be preset *blind* (not faded p) on either of the preset banks. This is most useful in Wide and Playback 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 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. You may continue to “Grab” and “Preset” for every new look that you require.

### 10.3 GRAB AS A SCENE MASTER

To copy a scene to the Grab master, press;

[**assign/copy**].

[**page**] (optional)

[**f/a**] (scene number).

[**f/a**] (grab).

### 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” section for details on how to control the chase.

To copy a chase from any page of memory to the Grab master, press;

[**assign/copy**],

[**page**] (optional)

[**f/a**] (chase number).

The display will briefly scroll,

“Pick location to copy to”.

Press; [**f/a**] (grab).

The Chase in the Grab master may be edited in exactly the same way as a Chase in a Playback. Refer to “EDITING A CHASE” in the “CHASE” section.

#### 10.4.1 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.

### 10.5 GRAB AS A MEMORY

#### 10.5.1 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 another storage location for a stack.

To copy a stack to the Grab master, press;

[**assign/copy**].

[**page**] (optional),

[**f/a**] (stack number).

[**f/a**] (grab).

#### 10.5.2 Copying FROM The Grab Master

A grab (snapshot), a scene, a chase or a stack in the Grab master can be copied to any memory location. Press;

[**assign/copy**],

[**f/a**] (grab)

[**page**] (optional),

[**f/a**] (destination)

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

Press [**assign/copy**],

[**f/a**] (grab),

[**stack flash**].

## 11 STACKS

### 11.1 OVERVIEW

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

Up to 500 steps may be recorded in each stack and up to 217(MP) 378(L), 594(XL), 810(XXL) separate stacks may be recorded into memory. 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 page/stack number. Page numbers are selected with the **[page red bank]** or **[page blue bank]** buttons and stack numbers are selected with the red or blue **[f/a]** buttons. Stacks may be randomly recorded into any page, **f/a** number, however scenes, chases and stacks use the same memory locations. A stack recorded in a previously used number will overwrite the previous contents.

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 page/ f/a number or onto or from the Grab master (MP only).

### 11.2 RECORDING A STACK

To record a stack, press;

**[record stack]**,

**[page]** (optional) (Select a red or blue page number),

**[f/a]** (stack number) (any red or blue f/a).

Adding steps:

- To select a **scene** as a step press;  
**[page]** (optional red or blue page),  
**[f/a]** (scene number).
- To select a **chase** as a step press;  
**[page]** (optional red or blue page),  
**[f/a]** (chase number).
- To record a **snapshot** (of the current **maXim** output) as a step press;  
**[record scene]**.  
A blackout can be recorded as a step
- To add a **range of memories** (scenes and or chases) select the page (optional red or blue

page) then **HOLD [f/a]** (first memory in range), and **tap [f/a]** (last memory in range). Any memory in the selected range that is empty or contains a stack will be ignored.

- To record flashing PaTPaD **parameters** press;  
**[store]** or **[store + level]**.

Continue to add steps. You may mix snapshots, chases, parameters or scenes in any order.

When all steps have been added, complete the stack by pressing;

**[record stack]**.

#### 11.2.1 REMOVING STEPS

Whilst recording the stack (above), the last step may be deleted by pressing; **[remove]**.

#### 11.2.2 FADE AND LINK TIMES

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

After each 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, rotate the **EDIT** wheel to set the desired time. The maximum time is more than 16 minutes and the minimum time is 0 seconds. When a time is set *lower* than 0 seconds, it reverts to "Fader" control (IN or OUT time fader).

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

- SCENE = The fade times from that scene.
- LINK = No link.
- SNAPSHOT = In time and Out time faders.

(You can change the default times with the "Setup Preferences" function. See the "UTILITIES" section).

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

#### 11.2.3 NAMING A STACK

Each stack is by default given its bank, page and **f/a** number as a name. For example, r1:03 (red bank, page 1, stack 3).

To enter or change a name, **HOLD [function]**, tap **[f/a]** (name).

The display says "Pick Object to Name".

Press **[page]** (optional) **[f/a]** (stack number)

Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad.

Press **[<]** or **[>]** to move the cursor and press **[remove]** or **[add]** to remove or add characters or spaces. When finished, press **[ok]**.

### 11.2.4 NAMING EACH STEP IN A STACK

See "EDITING A STACK" below.

### 11.3 STACK PLAYBACK

To playback a stack, it must be copied from its memory location to the stack master. Press;

[copy],

[page] (optional red or blue page),

[f/a] (source stack number),

[stack flash]

Fade up the stack master to reveal the first step.

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 last step, it will wrap around to the first step.

#### 11.3.1 STACK INTENSITY 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 [stack flash] button.

#### 11.3.2 STACK VIDEO

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

**HOLD [function]**, tap [f/a] (video 3).

You can also "Pin" a smaller stack status video display. See the "VIDEO" section for details.

#### 11.3.3 STARTING 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.

To momentarily see the current step number again, **HOLD [stop/step]** (stack master).

To continuously see the step numbers on the display press; [select], [stack flash]. To turn off the display press [select].

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.

**Note: You do not have to wait for a step to complete before starting the next step.**

### 11.3.4 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.

### 11.3.5 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.

### 11.3.6 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).

To **momentarily** run a stopped crossfade in the current direction;

**HOLD [step/stop]**.

The crossfade only progresses whilst [stop/step] is held down.

### 11.3.7 REVERSING A CROSSFADE

To reverse a crossfade *in progress* and return to the previous step, press;

[<] (reverse).

### 11.3.8 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 a stack in the forward direction;

**HOLD [step/stop]**, tap [ > ] (forward).

To instantly step a stack in the reverse direction;

**HOLD [step/stop]**, tap [ < ] (reverse).

### 11.3.9 RANDOM STEP SELECTION

To randomly jump to any step in a stack;

**HOLD [stop/step]** and rotate the **EDIT** Wheel.

The display shows the selected step number. A + or – sign indicates that the selected step is higher or lower than the current step. The current step has no sign.

When the [stop/step] button is **released**, the stack **jumps** to the selected step.

## 11.4 STACK TIMES

### 11.4.1 FADE TIMES

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 as well as a set time. 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.

### 11.4.2 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) it is much quicker to set the default link time using the preference function rather than setting every individual step. See the "UTILITIES" section for details.**

## 11.5 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 the stack on the stack master, press; **[edit]**, **[stack flash]**.
- To edit a stack in memory, press; **[edit]**, **[page]** (optional red or blue page), **[f/a]** (stack number)

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.

### 11.5.1 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 red or blue page), **[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 red or blue page), **[f/a]** (chase number).

When finished editing, press **[edit]**.

Changes are automatically saved.

### 11.5.2 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]**.

When finished editing, press **[edit]**.

Changes are automatically saved.

### 11.5.3 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.

- To edit the **IN** time, press **[function]** until the "in" LED 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.
- To edit the **OUT** time, press **[function]** until the "out" LED 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.
- To edit the **LINK** time, press **[function]** until 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.

When finished editing, press **[edit]**.

Changes are automatically saved.

### 11.5.4 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.

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

To see the level of any channel, press its **[f/a]** button. 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.

When finished editing, press **[edit]**.

Changes are automatically saved.

### 11.5.5 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.

**HOLD [function]**, tap **[f/a]** (name), a yellow bank function button.

The display says "Edit Step Name".

Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad.

Press **[<]** or **[>]** to move the cursor and press **[remove]** or **[add]** to remove or add characters or spaces. When finished, press **[ok]**.

### 11.5.6 ENDING EDIT

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

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

### 11.5.7 EDITING A STACK NAME

Stack names are edited in the same way as they are recorded.

See "NAMING A STACK" above for details.

### 11.6 COPYING A STACK

To copy a stack, press;

**[assign/copy]**.

**[page]** (optional red or blue source page),

**[f/a]** (source stack number)

**[page]** (optional red or blue destination page)

**[f/a]** (destination stack number).

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

If the selected memory location has already been used, the display will read "WARNING memory

exists - overwrite?". You now have two options.

- To erase the existing memory and replace it with the copy either press **[yes]** or **[f/a]** (existing memory to overwrite).
- To pick another memory location press **[f/a]** (new memory location).

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.**

### 11.7 REMOVING (DELETING) A STACK

To remove (delete) a stack from memory, press;

**[remove]**,

**[page]**, (optional red or blue page),

**[f/a]** (stack number).

The display asks you to confirm your action.

Press;

**[yes]**.

### 11.8 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 FLASH

### 12.1 OVERVIEW

The FLASH section of the **maXim** utilises the “f/a” (Flash/Assign) buttons in the fader bank sections and the “flash” buttons of the Master’s to provide extensive flashing control. When a channel or master is “flashed” it can either “add” to the current output of the desk or it can be “solo” where it becomes the ONLY output of the **maXim**. You may Flash any channel, fixture or multiple channels or fixtures, 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** 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(s) 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 and fixtures, the Flash level sets the actual 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/fixtures** 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. 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 FIXTURE PROGRAMMING CONCEPTS

### 13.1 OVERVIEW

There are two basic situations in which Fixtures (moving lights) are used in a show:

- A rehearsed show where every lighting cue is pre programmed and executed “on cue”.
- A live and unrehearsed show where the lighting looks are created “on the fly”. This is also known as “ad lib” or “busking”.

The **maXim** provides all the tools to control fixtures in both situations.

### 13.2 REHEARSED / PRE PROGRAMMED.

In a rehearsed and pre programmed show, each lighting cue provides a *total lighting look* that has been recorded into the **maXim** using the [**record scene**] button. This type of show has usually had many rehearsals in which the lighting cues have been refined (edited). The lighting cues are the scenes and/or chases that you have recorded. The cues are often recorded in order into a stack for easy sequential playback on the stack master.

### 13.3 LIVE OR AD LIB

Many “one off” or live shows do not have rehearsals. The lighting looks are created “on the fly” using “building block” scenes that you record into the **maXim** prior to the show using the [**store**] or [**store + level**] buttons on the **PaTPad**. During the show, you combine different combinations of these “building block” scenes to create each total lighting “look”.

The difference between these “building block” (store button) scenes and the “complete” (record scene button) scenes of a fully programmed show are that “building block” scenes contain *Filtered* information (only specific parameters) for the Fixture(s) in that scene. Some scenes would only contain focus parameters. For example, one scene might only position the beams in a fan pattern, another positions them on some scenery and yet another might set the beams in a cross pattern. These scenes might also include intensity information but they will not contain any settings for any other parameters. Other scenes might only contain Fixture colour parameters, that is, one scene might set its Fixtures to yellow, another scene sets them to blue or another to red. Other scenes might only select different gobos on the Fixtures to say “stars” or “dots”.

Fading up the playback containing the fan pattern will not change the gobo or the colour because the fan scene has been *Filtered* to only contain pan and tilt parameters. Fading up the red scene changes the Fixtures to red but does not change any other parameters because colour was the only *Filtered* parameter when the scene was

stored. Fading up the blue scene only changes all of its Fixtures to blue.

*Filters* are a powerful tool that you will often use on the **PaTPad**.

Thus by playing back various “filtered and stored” scenes, you can create different combinations of focus (position), colour and beam (gobo). If, for example, you create **10** different focus (positional) scenes, **8** different colour scenes and **6** beam (gobo) scenes then you can instantly create **480** (10x8x6) different looks on stage by using different combinations of these **24** “building block” scenes.

### 13.4 LTP PLAYBACK

Fixture parameters are played back on a LTP (Latest Takes Precedence) basis. This is fully explained in the “TERMINOLOGY” section, but in practice this means that as soon as a scene fader is raised above zero, the parameters in that scene are “triggered” (played back). They will go to their level in that scene (in the time stored in that scene) regardless of any further fader movement. So in the example above, to change the colour of some Fixtures, grab the fader of the “red” building block scene and simply raise it (from zero). The scene is triggered and the Fixtures change to red. The fader can be returned to zero or it can be left in the up position to show you which scene you last triggered. Video 1 (channel view) also shows you the latest source for every parameter. To change to blue raise the “blue” scene fader from zero. To change to “star” gobos, raise the “star” scene fader from zero. To move the focus to the cross pattern, raise the cross pattern scene fader from zero. Each scene that you trigger only changes the (*Filtered*) parameters that you stored in that scene.

You only have to fully fade up a scene if it contains intensity levels for the Fixtures because intensity is always under fader control.

The [**f/a**] button below each scene fader can also be pressed to *momentarily* trigger the parameters in a scene. For example, if the look on stage is currently blue, pressing the [**f/a**] button for the red scene will change the look to red. Releasing the [**f/a**] button will restore the blue look.

In another example, you might record a chase where each step contains a different focus (position) scene. When the chase is faded up, the Fixtures move from position to position with each step of the chase. To make the chase blue, raise the blue scene fader from zero. To make the chase red, raise the red scene fader from zero. To momentarily change the chase to yellow, press the [**f/a**] button of the yellow scene. You could make a chase of only colour scenes and run it at the same time as the focus chase or only keep it

faded down and momentarily reveal its chasing colours by pressing its **[f/a]** button. The possibilities are endless.

By organizing your “building block” scenes you can have a group of adjacent faders that contain different focus (positional) scenes, another group of faders with colour scenes and then another group with beam (gobo) scenes. In other pages of memory you could have more focus scenes or chases. You organize your memories so that you can have instant hands on access to the scenes that you need.

Using these techniques it is very easy to ad-lib or busk a show.

See also “PRESET PLAYBACK P-mod” and “PALETTE PLAYBACK E-Mod” in the “ADVANCED FIXTURE PROGRAMMING” section.

### 13.5 COMBINING REHEARSED AND LIVE

If you intend to fully program a show, it is still useful to create your “building block” scenes prior to the first rehearsal. You can then use them to *quickly* create looks on stage and then RECORD each look as a complete scene to be played back on cue. When you are running a fully programmed show, you can still use your “building block” scenes for any “ad lib” moments that might arise.

To re-cap, the **maXim** with **PaTPad** provides two methods of programming scenes into memory.

- **[record scene]**, (on the main **maXim** control panel) saves the entire output of the **maXim** into a scene. What you see is what you get.
- **[store]**, (on the **PaTPad**) saves only selected (flashing) parameters of the Fixtures into a scene. You can select any parameters by using Filters. You can select any fixtures by using Hi-lights. Filters and Hi-lights are described in detail later in this manual.  
**[store + level]** also saves only selected parameters of the Fixtures but includes all intensity levels on the output PLUS all parameters of any fixtures not loaded on the **PaTPad** but with an intensity above zero on the output.

## 13.6 FIXTURE INTENSITY CONTROL

### 13.6.1 INDIVIDUAL FIXTURES

Each fixture that has been patched has its own intensity fader.

The fixtures patched to the faders on the yellow bank always have their intensity fader available under the total control of the yellow master.

The fixtures patched to the faders on the red bank only have their intensity fader available when the

maXim is in “wide” mode. They are also under the total control of the yellow master.

### 13.6.2 SCENE PLAYBACK

During playback, you have several choices for the control of fixture intensity:

- If the scene was saved with the **[record scene]** or **[store + level]** buttons, the scene will contain the intensity levels. The intensity will be under control of its playback.
- If the scene was saved with the **[store]** button, it will not contain any intensity levels. You can either use the individual fixture faders to control fixture intensity or you can use “Fixture Intensity Scenes” as described below.

### 13.6.3 FIXTURE INTENSITY SCENES

Instead of using the individual faders to control the intensity of each fixture, it is often more convenient to control the intensity of groups of fixtures by using a single fader for each group.

This is achieved by programming scenes that only contain intensity levels of selected fixtures (and no other parameters).

To store a scene containing **only fixture intensities**;

Fade up only the fixtures to be in the scene then load them onto the PatPad by pressing;

**[get]**, **[f/a]** (flash yellow master).

Clear all Hi-lights;

**[clear]**, **[fixture displayer]**.

With no fixtures Hi-lighted, none of their parameters will be included in the scene that you store.

To store the scene with only its intensity levels, press

**[store + level]**,

**[page]**, (optional red or blue page)

**[f/a]** (scene number).

You can use this method to store several scenes with different groups of fixtures in each scene.

***Hint; The blue masters (or the Grab on a MP model) are a convenient place to store intensity masters because they are always available.***

## 14 BASIC FIXTURE PROGRAMMING

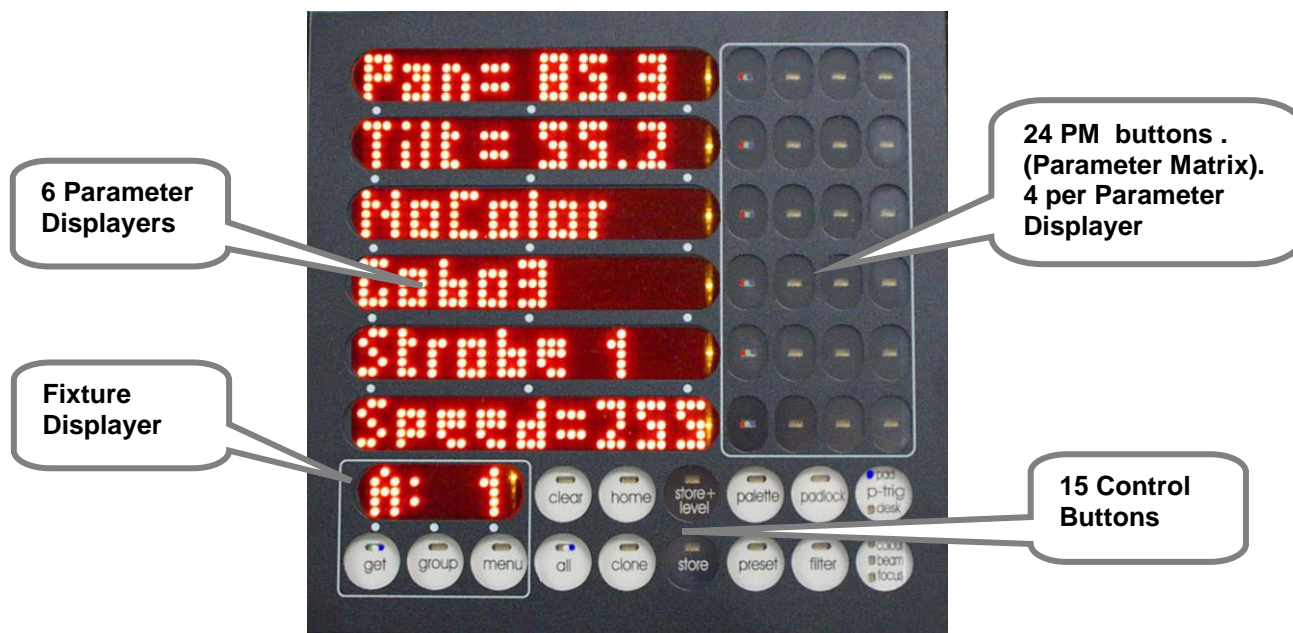
Programming fixtures with the **maXim** consists of the following basic steps;

- Fading up some Fixtures.
- Getting the Fixtures onto the **PaTPad**.
- Adjusting parameters to get the desired look.

Then either;

- “**Recording**” the entire output in a scene, or
- “**Storing**” only Filtering parameters of the Fixtures in a scene, or.
- “**Recording**” chases or stacks.

Advanced programming techniques using Groups, Filters, Hi-lights, Presets, Palettes etc are described in the “Advanced Fixture Programming” section.



### 14.1 FADING UP FIXTURES

To see a list of all patched Fixtures press [**get**].  
The “f/a” buttons of all patched fixtures will flash and a “FIXTURES” list pops up on the video screen.

- If fixtures are patched to any yellow faders, fade up the Yellow master and the individual yellow faders of the desired fixtures.
- If fixtures are patched to the red faders, ensure that the maXim is in “wide” mode. If not in wide mode, fade all red faders fully down and then tap [**mode red bank**] until the “preset” and “wide” LEDs are both lit. Fade up the Yellow master and the individual red faders of the desired fixtures.  
(In “wide” mode the yellow master has control of both the yellow and red banks).

### 14.2 GETTING FIXTURES ONTO THE PATPAD

To load all fixtures that are currently faded up onto the PaTPaD, press;  
[**get**], [**flash**] (yellow master).

**Note:** This method of loading fixtures clears any existing fixtures from the PatPad. Fixtures can also be loaded individually, in ranges, from groups, presets, palettes or filter memories as described in the “Advanced Programming” section.

### 14.3 ALL MODE

When multiple fixtures are loaded onto the PaTPaD in the one operation, “**ALL**” mode is automatically selected.

As soon as you touch a parameter displayer to alter its value, that same parameter on all other Hi-lighted Fixtures of the same type will immediately follow any changes on the selected Fixture.  
If you want to **only** control the currently selected fixture, turn off “ALL” mode by pressing [**all**] (toggle action).

#### 14.4 SELECTING A FIXTURE

To select any of the loaded fixtures, tap either end of the Fixture Displayer. Tap the left to select the next lower Fixture Number. Tap the right to select the next higher Fixture Number.

To change directly to a specific Fixture Number, **HOLD** the centre of the **Fixture Displayer**, then **tap [f/a]** (Fixture Number).

The Fixture Number of the currently *selected* Fixture is shown on the Fixture Displayer and also indicated on the video screen by a row of colons. :

The PaTPad can now control the parameters of this Fixture.

## 14.5 CONTROLLING THE SELECTED FIXTURE

When a fixture is selected on the **PaTPad**, its Fixture Number is shown on the Fixture Displayer and all of its *available* “PM” (Parameters Matrix) buttons are active. Each of the 6 parameter displayers can be used to control up to 4 parameters as selected by the 4 **[PM]** buttons beside it. This allows a maximum of 24 parameters to be controlled. The number of “PM” buttons that are available and the actual parameters that each of these PM buttons selects are defined each Fixture’s Template.

The colour of the PM buttons indicates their status or function:

- **Red + White + Blue.** This parameter is **active** on the parameter displayer to its left.
- **Red.** This is a **colour** parameter and it is *not currently active*. Pressing this PM button will select it on the parameter displayer to its left.
- **Blue.** This is a **beam** parameter and it is *not currently active*. Pressing this PM button will select it on the parameter displayer to its left.
- **Green.** This is a **focus** parameter and it is *not currently active*. Pressing this PM button will select it on the parameter displayer to its left.
- **Red + Blue.** This is a parameter that cannot be stored in a scene (**No Store**) and it is *not currently active*. Pressing this PM button will select it on the parameter displayer to its left.

When a parameter is selected (by pressing its PM button) its displayer will show the **Name** of the parameter and the PM button will light red + white + blue to show that it is active.

There are three display levels of information available on the displays for each parameter, **Name**, **Value** and **Time**.

Tapping an *active* [PM] button will toggle its parameter displayer between **Name** and **Value**.

Tapping a **parameter displayer** that is showing a **Name** will also change it to **Value**.

- **Name** – Displays the name of the current parameter. e.g. “PAN” or “Colour”.
- **Value** – Displays the current value of the parameter. e.g. “Pan= 35D” or “Green” and allows you to alter the value by touching and scrolling the displayer.

Pressing and **HOLDING** a **[PM]** button will change its displayer to:

- **Time** – Displays the timing information that will be recorded/stored for that parameter and allows you to alter the timing information (see the “Advanced Programming” section for details).

Tapping a **[PM]** button returns its displayer to **Name**.

There are three yellow LEDs located at the right end of each parameter displayer and they indicate which level of information is being displayed.

- Top yellow LED = **Name**
- Mid yellow LED = **Value**
- Low yellow LED = **Time.**

To quickly restore all parameter displayers to the  
Names of the parameters that they control press;  
**[clear]**, **[clear]**.

## 14.6 ADJUSTING PARAMETER VALUES

In **Value** and **Time** modes, each touch sensitive displayer can be used to adjust its parameter value by “mousing” the display. Use the edge of your finger to get the best response from the displayer.

For fine adjustment “roll” the edge of your finger. When you have touched a displayer, the Mid



(Name) or Low (Time) **yellow LEDs will flash**. Whilst they are flashing, the **EDIT wheel** can also be used to vary the value. Use the edit wheel for very fine adjustments. If the edit wheel is not moved for 30 seconds, the

yellow LED will stop flashing and the edit wheel will revert to scrolling the V1 or V2 video page. To manually revert to scrolling the V1 or V2 video page press **[ok]**.

To re-connect the edit wheel to a parameter displayer or connect it to a different displayer, touch the required displayer.

To connect the edit wheel to the next parameter, press **[>]**. To connect the edit wheel to the previous parameter, press **[<]**.

For example, whilst adjusting pan with the EDIT wheel, if you press **[>]**, the wheel will now adjust tilt. If you press **[>]** again, the edit wheel will connect to the next parameter such as colour. Pressing **[<]** connects it back to tilt.

The parameters that can be selected for the EDIT wheel with the < and > buttons can be restricted by the use of filters.

For example, if no filters are selected, the < and > buttons can be used to step through all

parameters of a fixture. If only pan and tilt have filters applied, then the < and > buttons are restricted to only selecting pan and tilt. See “Filters” below for details on how to apply filters. Different parameters can be adjusted in different ways. The way each parameter is adjusted is defined in its Fixture’s Template.

- The value of each parameter might be continuously variable (e.g. Pan).
- It might jump between pre-defined values called *wheel stops* (e.g. Gobo 1, Gobo 2 etc).
- There might be variable areas within wheel stops (e.g. gobo spin speed).

#### 14.7 TRACKBALL OR MOUSE PAN & TILT

The bottom USB connector can be used for connecting a **mouse** or **trackball** device which can then be used to control the pan and tilt of the selected fixture(s) on the PaTPaD.

##### 14.7.1 Fine Control

For fine control, **HOLD** down the **LEFT** button whilst moving the device.

Tapping the **RIGHT** button cycles through “Pan only”, “Tilt only” and “Pan and Tilt”.

#### 14.8 VARIABLE PARAMETERS

When a parameter is continuously variable, the display will show the name of the parameter and an “equals” sign (=) followed by its value.

e.g. Pan = 25D. (25 Degrees)

You can use your finger or a stylus to “mouse” the display and hence alter the value of the parameter. If you touch anywhere on a display, its yellow LED flashes and the EDIT wheel can also be used to vary the value.

#### 14.9 WHEEL STOPS

If wheel stops are available, the display will show the name of the current wheel stop, e.g. Gobo 1. Tapping on the left or right ends of the display will STEP the parameter through the wheel stops.

e.g. Gobo 1, Gobo 2, Gobo 3, etc.

You can also “mouse” the display to quickly step through the stops.

When the yellow LED flashes, the EDIT wheel can also be used to step through the wheel stops.

#### 14.10 VARIABLES WITHIN WHEEL STOPS

If the current wheel stop allows a variable range to be controlled, the display will show the name of the wheel stop followed by a “colon” (:) then its value. e.g. Strobe : 52.

You can use your finger to “mouse” within the *central area* of the display and hence alter the value of the parameter within the limits of that wheel stop.

If you touch the central area on a display, its yellow LED flashes and the EDIT wheel can also be used to vary the value.

Tapping either end of the display will step to the next wheel stop.

#### 14.11 PARAMETER TIMES

In Time mode (**HOLD** the **[PM]** button), there are 3 pages of settings available for every parameter. Tapping on the left or right ends of the display will step through the pages. When a page is displayed, you can alter its settings by mousing the central area of the display or if you touch the central area on a display, its yellow LED flashes and the EDIT wheel can also be used to vary the value.

See the “Advanced Programming” section for details on times.

#### 14.12 HOME

You can send a Fixture to its “home” position (parameter values as defined in its Template). Typically the home position will be an open white beam with pan and tilt in their mid positions. This can be useful if you cannot see a Fixture’s beam and you want to check or alter its parameters.

To send a Fixture to its home position, select the Fixture on the Fixture Display then press;

**[home]**, **[fixture display]**.

To send **ALL** Fixtures on the **PaTPaD** to their home positions, press;

**[home]**, **[all]**.

#### 14.13 FILTERS

You decide which **parameters** you want to “store” by selecting the appropriate Filters.

When a Fixture is loaded onto the **PaTPaD** it will not have any Filters so all of its parameters will be flashing on the PaTPaD and the “V4 PADVIEW” video screen.

When one or more parameters are filtered, only the filtered parameters will flash.

*Only flashing parameters will be “stored”.*

To filter a parameter(s); press;

**[filter]**, **[PM]**, **[PM]** etc (parameters to Filter), **[filter]**.

To deselect a filter, repeat the process (Toggle action).

See the “Advanced Programming” section for more details on filters.

#### 14.14 HI-LIGHTS

You decide which **fixtures** you want to exclude when you “store” by clearing their hi-lights.

When a Fixture is loaded onto the **PaTPaD** it will automatically be Hi-lighted so all of its parameters will be flashing on the PaTPaD and the “V4 PADVIEW” video screen.

If a fixture is not hi-lighted, none of its parameters will be flashing.

*Only flashing parameters will be “stored”.*

To clear the hi-light of a fixture, press;

**[clear]**, **[f/a]** (fixture number).

To hi-light a fixture, press;

**[get]**, **[f/a]** (fixture number).

**Note: Hi-lights can also be controlled by Groups as described in the “Advanced Fixture Programming” section.**

## 14.15 PAD VIEW

U4	Param Number→	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24
Fx	Name or Type																	
1	Mac250.4																	1
2	Mac250.4																	
3	Mac250.4																	3
4	iSpot 150	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	4
5	iSpot 150	a	a	F	a													5
6	iSpot 150	a	a	F	a													6

Video 4 (Pad View) shows a list of all Fixtures loaded on the **PaTPad** and shows exactly which (flashing) parameters are included when you use the **[store]** or **[store + level]** buttons as well as in other PaTPaD operations.

The Fixture numbers (**Fx**) are listed on the left of the screen. The 24 parameter matrix buttons (**Param Number**) are numbered across the top of the screen.

The Fixture that is currently selected on the **PaTPad** has a row of **:** symbols.

In the example above it is fixture 4.

Fixtures that are faded up have a *white name*.

If they have no intensity they have a *cyan name*.

Fixtures that are **Hi-lighted** have a grey background. If they are NOT Hi-lighted have a black background.

Parameters can be represented by the following symbols;

- (colon) the parameter exists and can be selected by its **[PM]** button on the **PaTPad**.

**F** indicates that a **filter** has been applied to the parameter.

**a** indicates that the parameter has been altered by the **PaTPaD**

**E** indicates that a **paLEtte** has been applied to the parameter.

**P** indicates that a **Preset** has been applied to the parameter.

See the "Advanced Programming" section for details on Palettes and Presets.

**Hint: The most important information conveyed by the PADVIEW screen (and also on the PaTPaD) is that any Parameters that are included when you use the [store] or [store + level] buttons will be flashing.**

## 14.16 SAVING SCENES

When you have adjusted the parameters of your fixtures you can save the settings (including parameter times) in scene memory.

The **maXim** provides several ways of programming scenes into memory.

- **RECORD SCENE.** To record a scene of the entire output press;  
**[record scene]**,  
**[page]** (optional red or blue page),  
**[f/a]** (red or blue playback number).
- **STORE.** To store a scene of only flashing parameters press;  
**[store]**,  
**[page]** (optional red or blue page),  
**[f/a]** (red or blue playback number).
- **STORE + LEVEL.** To store a scene of only flashing parameters AND all intensity levels on the output press;  
**[store + level]**,  
**[page]** (optional red or blue page),  
**[f/a]** (red or blue playback number).

## 14.17 SAVING CHASES

To record a chase, press;

**[record chase]**,

Select a memory number for the chase, press;

**[page]** (optional red or blue page),

**[f/a]** (red or blue playback number).

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

- To select a **scene** as a **step**, press;  
**[page]** (optional red or blue page)  
**[f/a]** (scene number).
- To record a **snapshot** (of the current **maXim** output) as a **step**, press;  
**[record scene]**.
- To store the flashing **parameters** on the PaTPaD as a **step** press;  
**[store]**.
- To store the flashing **parameters** on the PaTPaD and all **intensity** levels as a **step** press;  
**[store+level]**.

Continue to record steps as above. You may mix snapshots, parameters or scenes in any order.

When all steps have been recorded, complete the chase by pressing;

**[record chase]**.

## 15 FIXTURE PLAYBACK

### 15.1 OVERVIEW

Scenes containing fixture information are played back differently to scenes that only contain dimmer intensity. Intensity information is played back on a HTP (Highest Takes Precedence) basis. Fixture parameter information is played back on a LTP (Latest Takes Precedence) basis.

### 15.2 SCENE PLAYBACK

In the previous section when you programmed your scenes, the fixture intensity was typically coming from the yellow fixture faders via the yellow master.

During playback, you have several choices for the control of fixture intensity.

- If a scene was saved with the [record scene] button, it will contain the intensity levels. You can fade down the yellow master and fade up the red or blue masters (depending upon where you recorded the scenes). Now fade up the playbacks containing the scenes. The intensity of each Fixture will be under direct control of its scene fader.
- If a scene was saved with the [store + level] button, it will also contain the intensity levels. Once again you can fade down the yellow master and fade up the red or blue masters (depending upon where you recorded the scenes). The intensity of each Fixture also will be under direct control of its scene fader.
- If a scene was saved with the [store] button, it will not contain any intensity levels. You can either use the fixture faders and yellow master to control fixture intensity or fade up a scene that contains only the fixture intensities. If you have stored several scenes with different groups of fixtures in each scene you can use the scenes as group intensity masters. See the "FIXTURE PROGRAMMING CONCEPTS" section for details on how to store "intensity only" scenes.

In all of the above cases, fixtures parameters are played back on a "Latest Takes Precedence" (LTP) basis. As soon as a scene fader is raised above zero, the levels of the parameters in that scene will be immediately played back (subject to their individual times). Any further movement of the scene fader will not affect the parameters. The scene fader only has control over any Fixture and or dimmer *intensity* that might be in the scene. If the scene was programmed with the store button it does not include intensity so any further movement will not have any effect.

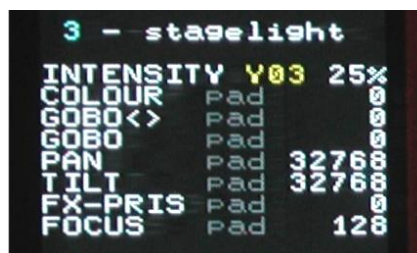
When a scene is faded down, any intensity levels in the scene will fade down but the parameters do not change. To get your fixtures to change to the parameter setting in a scene the scene must be faded up from zero (triggered).

This prevents unwanted and unexpected movement of Fixture parameters as faders are raised and lowered.

See LTP in the "TERMINOLOGY" section for more details.

The **PaTPad** can be used during playback to change Fixture parameters, but as soon a scene is triggered (fader raised above zero), that scene becomes the latest action and the scene takes control of its parameters. See "PAD TRIGGER" below for more details on how to restore the PaTPad values.

You can see exactly where the latest action came from for every parameter on video 1. Hold [function], tap [f/a](video1). The source of the latest value for each attribute is listed.



In this example all attributes were last controlled by the PaTPad.

### 15.3 PAD TRIGGER

Whenever a scene is played back, the current **PaTPad** parameter values and times are automatically saved (in a special "p-trig" memory). Pressing [p- trig] recalls the "p-trig" memory to restore the **PaTPad** parameter values to the fixtures.

This effectively makes the **PaTPad** an extra playback. See also the "ADVANCED FIXTURE PROGRAMMING" section for details.

### 15.4 SCENE FLASH

To momentarily and **instantly** playback a scene, press;

[f/a] (scene fader).

When you release the flash button the fixtures **instantly** return to their previous settings.

### 15.5 PADLOCK

You can prevent a parameter from moving when a scene is played back (triggered) by using the padlock function.

If [padlock] is pressed (its LED lights blue), the flashing parameters of any Fixture on the **PaTPad**

will not respond to any playback from scenes or chases.

You determine which parameters are flashing by using Filters and/or Hi-lights.

### 15.6 PALETTE PLAYBACK (E-MOD)

If **HOLD [palette]**, it will lock on.

"E-Mod" is shown on the maXim display

You can now use the yellow **[f/a]** buttons for live playback your palettes.

This effectively doubles the number of available playbacks.

Press **[palette]** again to de-select E-Mod mode.

See "ADVANCED FIXTURE PROGRAMMING" for more details on Palettes.

### 15.7 PRESET PLAYBACK (P-MOD)

If **HOLD [preset]**, it will lock on.

"P-Mod" is shown on the maXim display

You can now use the yellow **[f/a]** buttons for live playback your presets.

This effectively doubles the number of available playbacks.

Press **[preset]** again to de-select P-Mod mode.

See "ADVANCED FIXTURE PROGRAMMING" for more details on Presets.

## 15.8 CHASE PLAYBACK

Chases are recorded and played back in the normal way as described in the "CHASES" section.

As with scenes, if the chase steps were created using the **[store]** button, the chase will not contain any intensity information. To control the intensity use either the fixture faders and yellow master or fade up a scene that contains only the fixture intensities.

### 15.8.1 COMBINING AND VARYING CHASES

When you playback a chase that consists of steps only containing "filtered" parameters it is easy to vary the look of the chase whilst it is being played. For example;

Record a three step chase with different focus (pan and tilt) positions for each step using filters to store only focus parameters.

Record three scenes with a different colour (red, blue, yellow) in each scene using filters to store only colour parameters.

Playback the chase. The fixtures move.

Raise the fader of the red scene and the chase turns red.

Raise the fader of the yellow scene and the chase turns yellow.

Raise the fader of the blue scene and the chase turns blue.

The chase changes to the latest colour (LTP) to be faded up from zero.

Press the **[f/a]** buttons of the red, blue or yellow scenes and the chase **momentarily** changes to the selected colour.

The same techniques can be used to change other parameters in the chase such as gobo or shutter by storing scenes that are Filtered to only contain those parameters.

You can also use **P-MOD** or **E-MOD** (above) to vary the chase

### 15.8.2 Chase Times

The chase rate can be varied, which changes the time between steps.

The times taken for Fixture parameters to move when their step is triggered, is dependent upon the "As Chase" flags for each parameter. The default settings for these flags depends upon the type of parameter.

- Colour and beam parameters have their "As Chase" flag set to "No" by default. They therefore use the times that are in the scenes that make up the steps. They ignore the chase crossfade setting.
- Focus parameter have their "As Chase" flag set to "Yes" by default. Their times are therefore under the control of the chase crossfade setting. This allows the speed of Fixture movement (focus) to be easily controlled without the need to edit the times in every step. If the chase is snapping from step to step, the focus parameters also snap. If the chase has a crossfade setting, the focus parameters will slowly move from step to step as determined by the chase rate and percentage crossfade.

By default, only the focus parameters are affected by the chase crossfade. Therefore, parameters such as gobo or colour wheels will not make slow movements from step to step. Typically they will be set to zero time so that they snap change.

If your fixtures have colour mixing features, simply set the colour parameter "As-Chase" flag to "yes" and the colour mixing will be under control of the chase crossfade.

See the "CHASES" section for more details.

## 16 ADVANCED FIXTURE PROGRAMMING

Some of the following functions have already been mentioned earlier in this manual. This section gives additional descriptions of these functions plus many additional methods of operation.

### 16.1 LOADING FIXTURES

There are several ways to get fixtures onto the **PaTPad**.

To get a Fixture press;  
[get], [f/a] (Fixture Number).

To get *several* Fixtures, **HOLD** [get], then tap;  
[f/a] (Fixture Number), [f/a] (Fixture Number), etc.  
Release [get].

To get a *range* of fixtures, press and release [get].  
**HOLD** [f/a] (first fixture in range), then tap [f/a]  
(last fixture in range). Both selected fixtures and  
**all fixtures in between them** are loaded.

To get *all* patched fixtures press;  
[get], [all].

To get all fixtures in a **scene** including all filter  
selections and values in the scene, press;  
[get], [store], [page] (optional red or blue page),  
[f/a] (scene number).

All of the above operations **add** the selected  
fixtures to the fixtures already on the PaTPad.

To get only fixtures that have an intensity above  
zero (**and clear all other fixtures from the  
PaTPad**), fade up the required Fixtures then press;  
[get], [flash] (yellow master).

### 16.2 ALL MODE

When multiple fixtures are loaded on the PaTPad  
in a single operation, ALL mode is automatically  
selected. The letter "A" appears on the fixture  
displayer beside the selected fixture number and  
the "all" button lights. The video screen V4 "Pad  
View" reads; "The ALL MODE is active on the  
Pad."

To manually select "**ALL MODE**", press [all].

When "All Mode" is active, all Fixtures that are  
both Hi-lighted AND of the same type as the  
selected Fixture can be controlled simultaneously.  
As soon as you touch a displayer, that same  
parameter on all other Hi-lighted Fixtures of the  
same type will immediately follow.

To control **only** the currently selected fixture, turn  
off ALL mode by pressing [all] (toggle action).

**Hint: Use All mode to quickly select the same  
colour or gobo etc on all Fixtures of the same  
type. Use Hi-lights to select which fixtures are  
affected by ALL mode.**

### 16.3 CLEARING FIXTURES

To clear all fixtures from the PaTPad press;  
[clear], [all].

### 16.4 HOME

A Fixtures "home" position is a set of parameter  
values defined in its Template. Typically the home  
position will be an open white beam with pan and  
tilt in their mid positions. Homeing a fixture also  
resets all of its parameter times on the PaTPad to  
the default values.

To send a Fixture to its home position, select the  
Fixture on the Fixture Displayer then press;  
[home], [fixture displayer].

To *momentarily* send a Fixture to its home  
position, press;  
[home], [f/a] (Fixture Number).

When the [f/a] button is released, the Fixture  
returns to its previous settings.

Multiple [f/a] buttons can be pressed at the same  
time.

When finished, press [home] again to de-select it.

To send *filtered* (flashing) parameters to their  
home positions, press;  
[home], [filter].

To send ALL Fixtures on the **PaTPad** to their  
home positions, press;  
[home], [all].

To send ALL *patched* Fixtures to their home  
positions, clear the **PaTPad**  
[clear], [all],  
then press; [home], [all].

To send ALL Fixtures that have some *intensity*  
level on the output to their home positions, press;  
[home], [flash] (yellow master).

### 16.5 P-TRIG

The PaTPad has its own special memory known  
as the "p-trig" memory. The current PaTPad  
settings are automatically stored in "p-trig"  
memory whenever either;

Fixtures are loaded onto the PaTPad.

or

A scene is played back.

If parameter values are altered via the PaTPad or the  
playback of a scene, then pressing [p-trig] recalls the  
"p-trig" memory to restore the previous **PaTPad**  
parameter values.

**Hint; If you inadvertently adjust the wrong  
fixture on the PaTPad, you can quickly restore  
all loaded fixtures to their previous state by  
pressing; [p-trig].**

See also "Previewing Times with P-trig" below.

## 16.6 PARAMETER TIMES

In Time mode (**HOLD** the parameters PM button), there are 3 pages of settings available for every parameter. Tapping on the left or right ends of the displayer will step through the three pages. When a page is displayed, you can alter its settings by mousing the central area of the displayer or if you touch the central area on a displayer, its yellow LED flashes and the **EDIT** wheel can also be used to vary the value.

The 3 time pages are;

### 1. Mov = 2.0s.

This is the time taken for the parameter to “move” to the value that you store or record in a scene or chase step. When you playback (trigger) the scene or chase step, this parameter will take this time to move to its value in the scene or step. This is subject to the flag settings described below. The move time is adjustable from 0 seconds to more than 16 minutes. The default time is 2 seconds for pan and tilt and 0 seconds for all other parameters. You can either “mouse” the displayer, or if you touch the central area of the displayer, its yellow LED flashes and the **EDIT** wheel can also be used to vary the value.

See “LTP” in the “Terminology” section for more details on when this time is triggered.

### 2. Dly = 0.0s.

This is the “delay” time that must expire after a scene or step is triggered before the Move time (above) starts. This is subject to the flag settings described below. The delay time is adjustable from 0 seconds to more than 16 minutes with a default time of 0 seconds. You can either “mouse” the displayer, or if you touch the central area of the displayer, its yellow LED flashes and the **EDIT** wheel can also be used to vary the value.

### 3. Flags:- - -

When Flags:--- is displayed, tapping the centre of the displayer selects the FLAGS menu. When the FLAGS menu is selected, tapping either end of the displayer steps through the available flags. Tapping the centre of a displayer selects that flag. The following flags are available;

**As-Pan.** Tapping the centre of the displayer toggles between **N** (No) or **Y** (Yes). When set to **N**, the parameter will use its own Move and Delay settings. When set to **Y**, the parameter will move *when* and in the same *move time* as set for the PAN parameter of the fixture. This flag is not available for the Pan parameter.

**PanEnd.** Tapping the centre of the displayer toggles between **N** (No) or **Y** (Yes). When set to **Y**, the parameter will snap move (zero time) at the end of the Pan movement. This flag is not available for the Pan parameter.

**As-Tilt.** Tapping the centre of the displayer toggles between **N** (No) or **Y** (Yes). When set to **N**, the parameter will use its own Move and Delay settings. When set to **Y**, the parameter will move *when* and in the same *move time* as set for the TILT parameter of the fixture. This flag is not available for the Pan parameter.

**Tilt-End.** Tapping the centre of the displayer toggles between **N** (No) or **Y** (Yes). When set to **Y**, the parameter will snap move (zero time) at the end of the Tilt movement. This flag is not available for the Pan parameter.

**As-Chase.** Tapping the centre of the displayer toggles between **N** (No) or **Y** (Yes). When set to **Y**, this parameter, when played back as part of a CHASE, will use the crossfade setting of the chase.

The default setting for the “As-Chase” flag for Pan and Tilt parameters is **Y**.

This means that when you record a chase and then play it back, you can use the chase rate and crossfade controls to easily adjust the pan and tilt move times. If you want to create a complex chase where every step uses the individual parameter times, set the “As-Chase” flag to **N** and set each individual parameter time for every step.

The default setting for the “As-Chase” flag for all other parameters is **N**.

This means that parameters such as gobos and colours will not be influenced by the crossfade settings of the chase and use the individual parameter times. Typically you would set gobo and colour wheel parameter times to zero so that they snap change on each step and use slow times for colour *mixing* parameters so that colours blend from step to step.

The Flags page shows exactly which flags (if any) have been set to yes

<b>Flags: - - -</b>	<b>No Flags</b>
<b>Flags: - P -</b>	<b>As Pan</b>
<b>Flags: EP -</b>	<b>End Pan</b>
<b>Flags: - T -</b>	<b>As Tilt</b>
<b>Flags: - - C</b>	<b>As Chase</b>

*Hint: See “Previewing Times” later in this section for more information.*

### 16.6.1 DEFAULT PARAMETER TIMES

If you do not set any of the parameter times, the default values will be used. There are separate default times for Colour, Beam and Focus parameters.

To set your own default times, press;

[menu], [TIMES].

The following choices are offered;

[COLOUR]

[BEAM]

[FOCUS]

[CLEAR?]

Selecting colour, beam or focus will reveal 3 pages of settings for “move”, “delay” and “flags” which are the same as described above.

Selecting [clear] will restore the factory default times.

The factory default times are;

	Move	Delay	Flags
<b>Colour</b>	0	0	- - -
<b>Beam</b>	0	0	- - -
<b>Focus</b>	2	0	- - C

When finished press; [menu]

**Hint; When multiple fixtures are on the PaTPad it is far quicker to set the default times that will be used by all fixtures rather than set the individual parameter times of every fixture.**

**Note: Homing a fixture sets all of its parameters to their home values and sets the parameter times to the default values.**

The times and flags for every parameter of the selected fixture are shown on the “PaTPad MIMIC” video screen. If the default times are being used, \*\* appears below the parameter. The current values of the defaults are shown at the bottom of the MIMIC window.

### 16.6.2 SAVING TIMES

All fixtures that are loaded on the PaTPaD have their parameter times saved when scenes are saved by the “record scene”, “store” and “store + level” methods.

“PaTPad MIMIC” shows the times for every parameter of the fixture selected by the fixture displayer.



U4 PaTPad MIMIC		Selected Fixture	
1	-PAN-	7	-GOBOSH-
	<M=1.0 D=0.0 C>		**
2	-TILT-	8	-FOCUS-
	<M=1.0 D=0.0 C>		**
3	-COLOUR-	9	-SHUTTER-
	**		**
4	-GOBO-	10	
	<End Pan >		
5	-GB ID-	11	
	**		
6	-GB ROT-	12	
	**		
**Default Times = M= .0s D=0.0s M=			

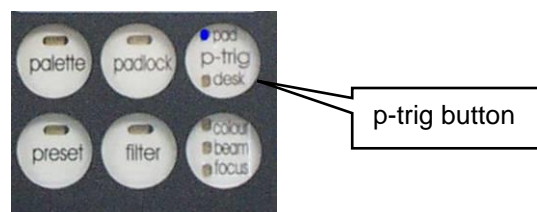
In this example, both PAN and TILT times are shown as <M=1.0 D=0.0 C> which means that they have a Move time of 1.0 second, a Delay time of 0 seconds and the C indicates that the “as Chase” flag is set. The GOBO parameter has the <End Pan> flag set and all other parameters are set to \*\* which indicates that the default times are being used. The current default times for Colour (red text), Beam (blue text) and Focus (green text) are shown at the bottom of the window.

### 16.6.3 PREVIEWING TIMES WITH

#### P-Trig

The times that you set on the PaTPaD are saved in any scene that you record or store.

When a scene is eventually played back, the parameters will use these times to move from their current settings (whatever they might be) to their settings in the played back scene. Therefore, the speed of the move is dependent on the parameter positions prior to this scene being played back. For example, if the previous position is very close to the new position, a 2 second move will be a very slow move. However, if the previous position was on the other side of the stage, the same 2 second move would result in a fast movement. Therefore, the only way to know exactly what the playback of a new scene will look like is to “make the move” from the previous scene to the new scene.



If you have already programmed the previous scene, “p-trig” (PaTPaD-trigger) allows you to preview the move to the new scene before you actually save it. This allows you to easily make adjustments to the PaTPaD parameter times before saving.

Whenever a scene is played back, the current PaTPad parameter values and times are automatically saved in the special “p-trig” memory, before the fixture parameters go to their settings in the played back scene (using the times in that scene).

Pressing [p-trig] recalls the PaTPaD settings (including times) from the special “p-trig” memory. You see the parameters go to their PaTPaD settings using the PaTPaD times.

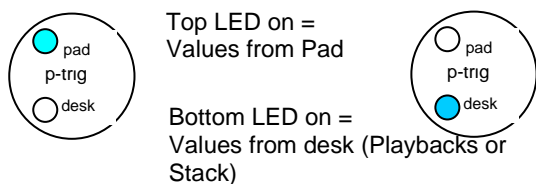
You can rehearse and adjust the move as many times as you like before committing it to memory.....

- Raise the (previous look) scene fader to playback the scene.
- Press [p-trig] to recall the PaTPaD settings.

If necessary, adjust the PaTPaD times, playback the scene again then preview your changes by pressing [p-trig].

When the times are satisfactory, store the new scene.

The LED's in the p-trig button show you which parameters values are currently in use and displayed on the PaTPad displays.



Therefore, if the bottom LED is on, pressing **[p-trig]** will restore the previous **PaTPad** values.

For example, if you have an existing scene that focuses your fixtures “down stage” and you want to program a new scene with the fixtures focused “up stage”. When you eventually playback this new scene, you want the fixtures to move slowly to their position. Use the **PaTPad** to focus the fixtures in the new “up stage” position and also to adjust the focus (pan and tilt) times.

Before recording this new scene, playback the existing “down stage” scene. This moves the fixtures “down stage” (and automatically saves the **PaTPad** settings in p-trig memory).

Press **[p-trig]** and the fixtures move to the **new** “up stage” settings using the **PaTPad** times. If the times are not as you wish, adjust them on the **PaTPad** then preview the move again by playing back the “down stage” scene then pressing **[p-trig]**. You see the same move with the new times. When the times are correct, save the new scene.

**Hint:** **[p-trig]** is very useful when setting “fanned” times and “fanned” delay settings.

## 16.7 GROUPS

Groups provide a rapid method of loading, Hi-lighting, or cloning many Fixtures in a single operation.

### 16.7.1 GROUP NUMBERING

Groups are stored by number. The yellow **[f/a]** buttons select the Group number. The **maXim** MP, L, XL and XXL can store 24, 36, 48 or 60 group memories respectively.

### 16.7.2 STORING GROUPS

To store a Group, load the required Fixtures onto the **PaTPad**. When loaded they will automatically be Hi-lighted. Only Hi-lighted fixtures will be stored in the Group.

To store a group, press;  
**[store]**, **[group]**, **[f/a]** (group number).

The order in which the fixtures were loaded onto the **PaTPad** is stored and recalled as part of a group. The order is displayed on the right of the Video 4 “Pad View” screen. This order is used by the “Fans” menu when automatically fanning fixtures. See the “FANS” section for details.

### 16.7.3 LOADING GROUPS

To load a group of fixtures onto the **PaTPad** press;  
**[get]**, **[group]**.

The **[group]** buttons lights orange and the **[f/a]** buttons of all yellow bank faders that have a group stored in them will flash. The “GROUP MEMORY” video window pops up displaying a list of all groups.

To load press;  
**[f/a]** (group number)

To load several groups, press;  
**[get]**,  
**HOLD [group]**, then tap; **[f/a]** (group number) **[f/a]** (group number) **[f/a]** (group number), etc.

To load a range of groups, press;  
**[get]**, **[group]**.  
**HOLD [f/a]** (first group in range), then tap **[f/a]** (last group in range). Both selected groups and all groups in between them are loaded.

### 16.7.4 Changing Hi-Lights Using Groups

Hi-lights are used to either include (Hi-light) or exclude (NO Hi-light) already loaded Fixtures from certain operations on the **PaTPad**.

See “FILTERS and HI-LIGHTS” for more details

To ONLY Hi-light the fixtures in a group (and clear the Hi-lights of all other fixtures), press;  
**[group]**, **[f/a]** (group number).

To ONLY Hi-light the fixtures in a range of groups (and clear the Hi-lights of all other fixtures), press;  
**[group]**. Press and **HOLD [f/a]** (first group in range), then tap **[f/a]** (last group in range). Both selected groups and all groups in between them are Hi-lighted.

**Hint:** **[group]** affects only those fixtures currently loaded on the **PaTPad**. Therefore, if you store a group of all odd fixture numbers and another group of all even fixture numbers you can use these groups to Hi-light any odd or any even fixtures that are currently loaded.

To clear the Hi-lights from a group press;  
**[clear]**, **[group]**, **[f/a]** group number).

To clear the Hi-lights from a range of groups, press;  
**[clear]**, **[group]**. Press and **HOLD [f/a]** (first group in range), then tap **[f/a]** (last group in range). Both selected groups and all groups in between them have their hi-lights cleared.

### 16.7.5 Naming Groups

Groups can be given a name to help identify them. For example, “Even Scans”.

To name a group;  
**HOLD [function]**, tap **[f/a]** (name).  
Press: **[group]**, **[f/a]** (group number).

Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to 10 (0) as

labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad. Press [**<**] or [**>**] to move the cursor and press [**remove**] or [**add**] to remove or add characters or spaces. When finished, press [**ok**].

#### 16.7.6 Copy Group

To copy a group, press;  
[**assign/copy**], [**group**], [**f/a**] (source group number), [**f/a**] (destination group number).

### 16.8 FILTERS

Filters are a powerful tool that you can use to select exactly which parameters of a Fixture are involved in **PaTPad** operations. When a Fixture is loaded onto the **PaTPad**, it has no Filters applied (and it is Hi-lighted, see below) so all of its parameters will be included in any **store**, **preset** or **palette** operation. Filters allow you to select which *parameters* of a Fixture will be stored or altered. Every parameter on every Fixture on the **PaTPad** can have a filter applied to it.

If no Filters are applied to a Fixture (and it is hi-lighted), then every parameter of that Fixture will be flashing and hence it will be included in any store operations or preset or palette recall.

If a filter is applied to any parameter(s), then **only** those Filtered parameters will be flashing and included in any store operations or preset or palette recall.

The one rule to remember is;

**Only FLASHING parameters will be INCLUDED.**

For example, if only the pan and the tilt parameters are Filtered (only their pan and tilt parameter buttons flash), then any "store" operation will only save the pan and tilt values. Filters can be individually selected or they can be quickly applied to parameters that you have "altered" or to all colour or beam or focus parameters. Filter selections can be stored and recalled in filter memories.

#### 16.8.1 APPLY FILTERS

To apply a filter to a parameter (to *all fixtures* on the **PaTPad** of the *same type* as the selected fixture) press;

[**filter**] (it lights orange)  
[**PM**] (parameter to filter).

Whilst the [**filter**] button is orange, other filters can be applied by pressing their parameter [**PM**] buttons.

To de-select a filter, press its [**PM**] button again (toggle action).

When finished selecting filters you can manually end the operation by pressing;  
[**filter**] (it lights blue) or automatically end the operation by performing any other function.

#### 16.8.2 FILTER INDICATORS

When a filter has been applied to a parameter, the parameter's PM button flashes and the letter "**F**" flashes for that parameter on the Pad View video.

When **any** filters have been applied, the [**filter**] button lights **blue**.

#### 16.8.3 AUTOMATIC FILTERS

When the PaTPad is used to alter a parameter, the letter "**a**" (altered) is displayed on the parameter on the "PAD VIEW" screen.

The [**colour/beam/focus**] button provides an automatic method of applying filters. Repeated presses will cycle through the following filter selections.

Press; [**colour/beam/focus**].

Only "**a**" **altered** parameters (see above) are filtered or if **no** parameters have been altered, **all** parameters are filtered.

Press; [**colour/beam/focus**].

Only **focus** parameters are filtered.

Press; [**colour/beam/focus**].

Only **beam** parameters are filtered.

Press; [**colour/beam/focus**].

Only **colour** parameters filtered.

Repeated presses of [**colour/beam/focus**] cycle through the 4 filter selections.

The "**a**" (altered) can be removed by either "homing" the fixture ([**home**], [**fixture displayer**] or [**home**], [**all**]) or playing back a scene that contains that fixtures parameter.

#### 16.8.4 STORING ALTERED PARAMETERS

To store a scene of only **altered** (a) **parameters**, press;

[**colour/beam/focus**], [**store**], [**page**] (optional red or blue page), [**f/a**] (scene number).

#### 16.8.5 CLEARING FILTERS

To remove a filter from a single parameter on all fixtures of the same type as the selected fixture press; [**filter**], [**PM**] (filter to clear) (toggle action).

#### 16.8.6 CLEARING ALL FILTERS

To clear all the filters from all fixtures press;  
[**clear**], [**filter**].

#### 16.8.7 FILTER MEMORY

Filter settings that you select can be saved in filter memory for easy recall. Filters are stored by number. The yellow [**f/a**] buttons select the number. The **maXim** MP, L, XL and XXL can store 24, 36, 48 or 60 filter memories respectively

To store your *current* filter settings, press;  
**[store]**, **[filter]**, **[f/a]** (filter memory number).  
This also stores a list of the *fixture numbers* that have filters applied. This can be recalled with the filters. See below.

To recall a filter memory, press;  
**[filter]**, **[f/a]** (filter memory number).

To *combine* multiple filter memories, press;  
**[filter]**, **[f/a]**, **[f/a]**, **[f/a]** etc (filter memory numbers).

To **load** the PaTPaD with all **fixtures** in a selected filter memory including all of the filter selections in the filter memory, press;  
**[get]**, **[filter]**, **[f/a]** (filter number).

#### 16.8.8 NAMING FILTER MEMORIES

To name a filter memory, **HOLD [function]**, tap **[f/a]** (name).

The display says "Pick Object to Name".

Press: **[filter]**, **[f/a]** (filter number).

Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to 10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad. Press **[<]** or **[>]** to move the cursor and press **[remove]** or **[add]** to remove or add characters or spaces.

When finished, press **[ok]**.

#### 16.8.9 COPY FILTER

To copy a Filter, press;  
**[assign/copy]**, **[filter]**, **[f/a]** (source filter number), **[f/a]** (Destination filter number).

### 16.9 HI-LIGHTS

Hi-lights are a powerful tool that you can use to select which *Fixtures* on the **PaTPad** will be involved in **PaTPad** operations. A Fixture must be Hi-lighted to be included in any store operations or preset or palette recall. Also, when **[all]** mode is active on the pad, all hi-lighted fixtures of the same type as the currently selected fixture will be controlled simultaneously.

When a fixture is loaded it is automatically Hi-lighted. To exclude a loaded Fixture, clear its Hi-light.

To CLEAR the Hi-light of a fixture press;  
**[clear]**, **[f/a]** (fixture number).

To clear the Hi-lights of all loaded Fixtures, press;  
**[clear]**, **[Fixture Displayer]** (Hilts).

To clear the Hi-lights from a range of fixtures, press;  
**[clear]**. **HOLD [f/a]** (first fixture in range), then tap **[f/a]** (last fixture in range). Both selected fixtures

and all fixtures in between them have their Hi-lights cleared.

To Hi-light a fixture again, press; **[get]**, **[f/a]** (fixture number).

#### 16.9.1 CONTROLLING HI-LIGHTS USING GROUPS

Groups provide a powerful method of controlling fixture Hi-lights. When you use the group button, all hi-lights are firstly cleared, then only the fixtures in the group or groups that you select are Hi-lighted.

To exclusively Hi-light a group press;  
**[group]**, **[f/a]** (group number).

To exclusively Hi-light several groups;  
**HOLD [group]**, then tap;  
**[f/a]**, **[f/a]**, **[f/a]**, etc.

To exclusively Hi-light a range of groups, press **[group]**.

**HOLD [f/a]** (first group in range), then tap **[f/a]** (last group in range). Both selected groups and all groups in between them are Hi-lighted.

***Hint: When you have stored some groups, get ALL of your patched fixtures onto the PatPad, [get] [all], then use the groups to quickly change the hi-lights of the fixtures that you want to control, to store, or to which you want to apply a preset or palette. Only hi-lighted fixtures will be included in your operations.***

### 16.10 PRESETS

A preset is a special type of scene that can be stored and recalled from the **PaTPad**. A preset contains specific **Fixture Numbers** and is usually stored with only specifically Filtered parameters (for example, only focus parameters). When a preset is applied to the **PaTPad**, all *fixture numbers* that are both stored in the preset and currently hi-lighted on the **PaTPad**, will move to the parameter settings stored in the preset if their parameters are flashing as set by the filters.

*The rule is, if a parameter is flashing, it can be changed by the loading of a preset.*

When a preset is applied, a P is displayed for each affected parameter on the Pad View video screen.

If a scene is now recorded or stored (without altering any "P" parameters), then a link to that preset is included in the scene.

Many different scenes can include a link to the same preset. Editing a single preset will automatically change all scenes that are linked to that preset.

For example.

Some Fixtures are focused onto the centre rostrum on stage and their focus (position) is Filtered and stored as the *centre rostrum preset*.

You now program the scenes for your show by creating each look on stage and recording each look as a scene. If a scene is to include the Fixtures focused on the centre rostrum, you apply the *centre rostrum preset* and then store or record the look as a scene. You might program 20 different scenes that include the *centre rostrum preset*. The centre rostrum is now moved down stage by 2 metres so it is no longer lit. You get the *centre rostrum preset*, adjust the position of Fixtures to the new position and re-store the preset. All of the 20 scenes that include the *centre rostrum preset* will now automatically recall the new position.

#### 16.10.1 PRESET NUMBERING

Presets are stored by page and number. When the **[preset]** button is pressed, the **[Colour, Beam, Focus]** button cycles through the 4 pages (User, Colour, Beam or Focus) and the yellow **[f/a]** buttons select the preset number.

The page names are simply an organisational tool. You can actually store any type of preset (colour, beam etc) in any page.

#### 16.10.2 STORING A PRESET

To store a preset, Hi-light all of the Fixtures to which the preset will apply then set the parameter(s) to the value(s) to be stored. Apply Filter(s) to the parameter(s) to be stored in the preset.

*Only FLASHING parameters will be INCLUDED.*

To store the preset, press;

**[store]**, **[preset]**, **[Colour/Beam/Focus]** (optional, repeated presses for the four pages), **[f/a]** (preset number).

The letter "P" is displayed on the Pad View screen for each parameter in the Preset.

#### 16.10.3 APPLYING A PRESET

If a preset is applied to the **PaTPad**, all Fixtures on the **PaTPad** that are also stored in the preset will move to those preset settings if there parameters are flashing (as determined by any Filters or Hi-lights that might be applied).

*Only FLASHING parameters will be affected.*

To apply a preset, press;

**[preset]**, **[Colour/Beam/Focus]** (4 optional pages), **[f/a]** (preset number).

All fixtures on the **PaTPad** (with their required parameters flashing) that also exist in the preset will change to their preset settings and a "P" will be shown on the Pad View screen for every parameter that was affected by the preset.

**Hint: Include all of your fixtures in every preset that you store. Then, when loading a preset, use groups to hi-light only the fixtures to be affected by the preset. This allows you to combine groups with presets to create large numbers of combinations.**

#### 16.10.4 LINKING A PRESET TO A

##### SCENE

To link a preset to a scene, apply the preset (above) then (without altering any "P" parameters), record or store a scene.

**Note: If a new lighting "look" has been created by playing back several scenes that already contain links to presets and a new scene is now stored or recorded, then any links to presets in any of the scenes contributing to the look will be retained in the new scene.**

#### 16.10.5 CLEARING PARAMETER LINKS TO A PRESET

If a parameter has a link to a Preset, the letter "P" will be displayed on video 4 "Pad View".

To clear a parameters link to a Preset so that it will not be included in any saved scenes, press; **[clear]**, **[preset]**.

*Only flashing parameters will have their links to Presets cleared.*

#### 16.10.6 REMOVING A LINK TO A PRESET FROM A SCENE

To remove a link to a preset from a scene,

Clear the **PaTPad**, press,

**[clear]**, **[all]**.

Get the scene onto the **PaTPad**, press;

**[get]**, **[store]**, **[page]** (optional red or blue page), **[f/a]** (scene number).

This loads the scene and selects all filtering as originally stored in the scene.

Clear the link to the preset, press;

**[clear]**, **[preset]**.

Use either **[record]** (all current output) or **[store]** (only flashing parameters) to save the scene back into the same memory location.

#### 16.10.7 NAMING PRESETS

To name a preset, **HOLD [function]**, tap **[f/a]** (name).

Press; **[preset]**, **[Colour, Beam, Focus]** (4 optional pages), **[f/a]** (preset number).

Either rotate the **EDIT wheel** or press the yellow bank **[f/a]** buttons for the desired characters or the red bank **[f/a]** buttons for numbers 1 to 10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad. Press **[<]** or **[>]** to move the cursor and press **[remove]** or **[add]** to remove or add characters or spaces.

When finished, press **[ok]**.

#### 16.10.8 COPY PRESET

To copy a preset, press;

**[copy]**, **[preset]**, **[Colour/Beam/Focus]**

(4 optional pages), **[f/a]** (source preset number),

**[Colour/Beam/Focus]** (4 optional pages),

**[f/a]** (destination preset number).

### 16.10.9 LOADING THE PaTPad WITH THE FIXTURES IN A PRESET

To load the PaTPad with all fixtures in a preset including all filter selections and values in the preset, press;

[get], [preset], [Colour/Beam/Focus] (optional), [f/a] (preset number).

#### 16.10.10 EDIT A PRESET

To edit a Preset, clear the PaTPad, press;

[clear], [all],

then load the Preset to be edited. Press;

[get], [preset], [Colour/Beam/Focus] (optional), [f/a] (preset number).

The PaTPad is loaded with the Preset's fixtures, parameter values and filter selections.

Use the PaTPad to make the changes to the Preset then store the Preset back in the original location by pressing;

[store], [preset], [Colour/Beam/Focus] (optional, repeated presses for the 4 pages), [f/a] (preset number).

#### 16.10.11 PRESET PLAYBACK (P-Mod)

Presets can be randomly played back. This feature is extremely useful during an "ad-lib" show.

**HOLD** [preset] until "P-Mod" is shown on the maXim display.

You can now use the yellow [f/a] buttons for live random playback of stored presets.

Press [preset] again to de-select P-Mod mode.

### 16.11 PALETTES

A palette is a special type of scene that can be stored or recalled from the PaTPad. A palette refers to specific **Fixtures Types** (Templates) and is usually stored with only specifically Filtered parameters (for example, only colour). A palette can include more than one type of Fixture.

When a palette is applied to the PaTPad, all fixture types that are both stored in the palette and currently loaded on the PaTPad will move to the parameter settings stored in the palette if their parameters are flashing as set by the filters.

*The rule is, if a parameter is flashing, it can be changed by the loading of a palette.*

When a Palette is applied, an "E" is displayed for each affected parameter on the Pad View video screen.

Once a Palette is loaded, if a scene is then recorded or stored (without altering any "E" parameters), then a link to that palette is included in the scene.

Many different scenes can include a link to the same palette. Editing a single palette will automatically change all scenes that include that palette.

For example.

One Trackspot is loaded onto the PaTPad and its colour parameter is set to yellow and the colour parameter is Filtered.

One MAC2000 is loaded onto the PaTPad and has its Cyan, Magenta and Yellow parameters are adjusted to match the yellow of the Trackspot. All Colour parameters are Filtered.

A palette is now stored and named "yellow".

Each time that you apply this palette on the PaTPad, all highlighted Trackspots and MAC2000's on the PaTPad go to this yellow (if their colour parameters are flashing as set by the filters).

If a scene is saved, a link to this palette is included. Editing a single palette will automatically change all scenes that are linked to that palette.

#### 16.11.1 PALETTE NUMBERING

Palettes are stored by page and number. When the [palette] button is pressed, the [Colour, Beam, Focus] button cycles through the 4 pages (User, Colour, Beam or Focus) and the yellow [f/a] buttons select the palette numbers.

The page names are simply an organisational tool. You can actually store any type of palette (colour, beam etc) in any page.

#### 16.11.2 STORING A PALETTE

To store a palette, clear the PaTPad ([clear], [all]) then get any ONE of the type of Fixture to which the palette will apply. Adjust the parameter(s) to the value(s) to be stored then apply Filters to those parameters so that they flash. If the palette is to apply to more than one type of Fixture, get the next fixture type, adjust its parameters and set its Filters as above. You only need one of each type of fixture when you store a palette.

*Only FLASHING parameters will be INCLUDED.*

To store the palette, press;

[store], [palette], [Colour/Beam/Focus] (optional, repeated presses for the four pages), [f/a] (palette number).

The letter "E" is displayed on the Pad View screen for each parameter in the Palette.

#### 16.11.3 APPLYING A PALETTE

If a palette is applied to the PaTPad, all Fixtures on the PaTPad that are of the same type as the Fixture(s) in the palette will move to those palette settings if their parameters are flashing (as determined by any Filters or Hi-lights that might be applied).

*Only FLASHING parameters will be affected.*

To apply a palette, press;

[palette], [Colour/Beam/Focus] (4 optional pages), [f/a] (palette number).

All Fixtures on the PaTPad of the same type as the palette (with their required parameters flashing) will change to their palette settings and an "E" will be shown on the Pad View video for every parameter that was affected by the palette.

**Hint: Include one of every type of your fixtures in every palette that you store. Then, when applying a palette, use groups to hi-light only the fixtures to be affected by the palette.**

#### 16.11.4 LINKING A PALETTE TO A SCENE

To link a palette to a scene, apply the palette (above) then (without altering any “E” parameters), record or store a scene.

**Note:** *If a new lighting “look” has been established by fading up several scenes that already contain links to palettes and a new scene is now stored or recorded, then any links to palettes that exist in any of the scenes contributing to the look will be retained in the new scene.*

#### 16.11.5 CLEARING PARAMETER LINKS TO PALETTES

If a parameter has a link to a Palette, the letter “P” will be displayed on video 4 “Pad View”.

To clear a parameters link to a Palette so that it will not be included in any saved scenes, press;

[clear], [palette].

*Only flashing parameters will have their links to Palettes cleared.*

#### 16.11.6 REMOVING A LINK TO A PALETTE FROM A SCENE

To remove a link to a palette from a scene; Clear the **PaTPad**, press,

[clear], [all].

Load the scene onto the **PaTPad**, press;

[get], [store], [page] (optional), [f/a] (scene number).

This loads the scene and selects all filtering as originally stored in the scene.

Clear the link to the palette, press;

[clear], [palette].

Use either [record] (all current output) or [store] (only flashing parameters) to save the scene back into the same memory location.

#### 16.11.7 NAMING PALETTES

To name a palette, **HOLD** [function], tap [f/a] (name).

Press; [palette], [Colour, Beam, Focus] (4 optional pages), [f/a] (palette number).

Either rotate the **EDIT wheel** or press the yellow bank [f/a] buttons for the desired characters or the red bank [f/a] buttons for numbers 1 to 10 (0) as labelled below the buttons. Where several characters are printed below each button, multiple presses select the next character in a similar fashion to a mobile telephone keypad. Press [←] or [→] to move the cursor and press [remove] or [add] to remove or add characters or spaces.

When finished, press [ok].

#### 16.11.8 COPY PALETTE

To copy a palette, press;

[copy], [palette], [Colour/Beam/Focus] (4 optional pages), [f/a] (source palette number), [Colour/Beam/Focus] (4 optional pages), [f/a] (destination palette number).

#### 16.11.9 LOADING THE PaTPaD WITH THE FIXTURES IN A PALETTE

To load the PaTPaD with all fixture types in a selected palette including all filter selections and values in the palette, press;

[get], [palette], [Colour/Beam/Focus] (optional), [f/a] (palette number).

#### 16.12 EDITING PALETTES

When a Palette is edited, all scenes that are linked to that Palette are automatically updated.

To edit a palette, clear the **PaTPad**, press;

[clear], [all],

then load the palette onto the **PaTPad**, press;

[get], [palette], [colour/beam/focus] (optional), [f/a] (palette number).

The PaTPaD is loaded with the Palette’s fixtures, parameter values and filter selections. Use the **PaTPad** to make the changes, ensuring that the desired Filters and Hi-lights are applied.

Store the palette back to the same palette number, press;

[store], [palette], [colour/beam/focus] (optional), [f/a] (same palette number).

#### 16.13 PALETTE PLAYBACK (E-MOD)

Palettes can be randomly played back. This feature is extremely useful during an “ad-lib” show.

**HOLD** [palette], until “E-Mod” is shown on the **maXim** display.

You can now use the [f/a] buttons for live random playback of stored palettes.

Press [palette] again to de-select E-Mod mode.

#### 16.13.1 SAVING / LOADING PALETTES

To save ALL palettes to disk,

**HOLD** [function], tap [f/a] (disk).

Press [yes], [PM] (palettes) [yes].

When saved, press [ok].

To load ALL palettes from disk,

**HOLD** [function], tap [f/a] (disk).

Press [no], [yes], [PM] (palettes), [yes]. Existing palettes will be replaced. Continue?

Press [yes], [yes].

#### 16.14 COMBINING PATPAD FUNCTIONS

Once you have stored some **groups**, **presets** and **palettes** you can quickly create different looks by selectively applying presets or palettes to different groups. Here is an example using some generic fixtures. There are 10 “Scans” and 10 “Wash” fixtures. **Groups of odds and evens** of each type of fixture have been stored. Several **presets** of different **focus** positions have been stored. Each preset includes **all 20 fixtures**. Several palettes of different colours have also been stored. Each palette includes **both types of fixtures**. We will load **ALL** fixtures then use groups to selectively apply presets and palettes to create a look on stage.

- Get all patched fixtures onto the PatPad.  
**[get]**, **[all]**

All scans and washes are loaded and hi-lighted

- Hi-light only “odd scans”.  
**[group]**, **[f/a]** (odd scans).
- Apply “red” palette.  
**[palette]** **[f/a]** (red)

*Odd scans turn red.*

- Hi-light only “even scans”.  
**[group]**, **[f/a]** (even scans)
- Apply “blue” palette.  
**[palette]**, **[f/a]** (blue)

*Even scans turn blue.*

- Hi-light only “odd scans” and “even scans” groups.  
**Hold [group]**, tap **[f/a]** (odd scans), **[f/a]** (even scans).
- Apply “drums” preset.  
**[preset]**, **[f/a]** (drums)

*Odd and even scans move to drums, retaining their colours.*

- Hi-light only “even wash” group.  
**[group]**, **[f/a]** (even wash)
- Apply “floor” preset.  
**[preset]**, **[f/a]** (floor)

*Even wash move to floor.*

- Apply “blue” palette  
**[palette]**, **[f/a]** (blue)

*Even wash turns blue.*

- Hi-light only “odd wash” group.  
**[group]**, **[f/a]** (odd wash)
- Apply “stage” preset.  
**[preset]** **[f/a]** (stage)

*Odd wash move to stage.*

- Apply “pink” palette.  
**[palette]**, **[f/a]** (pink)

*Odd wash turn pink.*

The complete look has been created.

- Record the scene.  
**[record scene]**, **[f/a]** (scene number).

Using the above methods, it is easy to create *hundreds* of combinations from just a few groups, presets and palettes.

### 16.15 CLONE

Cloning copies selected parameters of the currently selected Fixture to another Fixture or group of Fixtures. This permits fast duplication of looks onto multiple Fixtures.

To clone a Fixture, select the **source** Fixture on the **PaTPad** and set its parameters. If a filter is

applied then only those parameters that are Filtered are cloned.

*Only FLASHING parameters will be INCLUDED.*

To clone the selected Fixture on the PaTPad to a single Fixture press;  
**[clone]**, **[f/a]** (Fixture Number).

To clone the Fixture to a group press;  
**[clone]**, **[group]**, **[f/a]** (destination group number).

### 16.16 SAVING SCENES

The **maXim** provides several ways of programming scenes into memory.

- **RECORD SCENE**, saves the entire output of the **maXim**. What you see is what you get! The method used by the **maXim** is as follows: Each fixture is checked to see if it has any intensity on the output. If so, its intensity and all of its parameters are recorded including intensity fade times. In addition, if a fixture is currently on the **PaTPad**, any parameter time settings or effects are also recorded. To record a scene of the entire output press;  
**[record scene]**, **[page]** (optional red or blue page), **[f/a]** (scene number).

**Note; The maXim will not “RECORD” a scene if all dimmers/fixtures are at zero intensity level.**

- **STORE**, saves only selected (flashing) parameters including time settings or effects of the Fixtures on the **PaTPad**. You can select any parameters by using Filters. You can select any Fixtures by using Hi-lights. To store a scene of the flashing parameters press;  
**[store]**, **[page]** (optional red or blue page), **[f/a]** (scene number).
- **STORE + LEVEL** saves fixture parameters, times and effects on the **PaTPad** as if the **STORE** button was pressed but also includes all intensity levels on the output. In addition, fixtures that are not loaded on the **PaTPad** but have an intensity above zero have **all** of their parameters stored. To store a scene of the flashing parameters including levels press;  
**[store + level]**, **[page]** (optional red or blue page), **[f/a]** (scene number).

**Record** is best used for the fully programmed show. What you see on stage when the scene is recorded will be reproduced when the scene is played back.

**Store** is best used to create building blocks for the “Ad Lib” show.

When you use the *store* method, the parameter settings of all of the Fixtures on the **PaTPad** will be saved subject to one simple rule.

**Only FLASHING parameters will be Stored.**

When a Fixture is loaded onto the **PaTPad** it will automatically be Hi-lighted and it will not have any Filters so all of its parameters will be flashing. You decide which parameters on which Fixtures you want to store by selecting the appropriate Filters and/or Hi-lights.

- Filters apply to parameters.
- Hi-lights apply to entire fixtures.

If one or more Filters are applied, only the Filtered parameter will flash.

If a Fixture is not Hi-lighted, none of its parameters will flash.

Be sure to always check the “Pad View” screen before completing the store operation to see exactly which parameters will be included.

#### 16.17 NO STORE PARAMETERS

Any parameters defined in a fixture’s template as “no store” will never be saved. This prevents parameters such as “reset” or “lamp off” from being recalled by a scene. These parameters can only be manually controlled directly from the PaTPad.

See the LSC document on “How to write fixture templates” for more details.

It is available on the LSC forum at;

<http://forums.lscighting.com.au>

Go to “maXim Control Desks”, “Templates”.

#### 16.18 CLEARING PARAMETERS

Selected parameters can be cleared (removed) from a scene, leaving the other stored parameters unaltered. This action does not set the parameter to zero, but totally removes it from the scene.

To clear a parameter(s) from a scene, select the Fixture(s) on the **PaTPad** and ensure that only Fixtures to be included are Hi-lighted. Filter the parameter(s) to be cleared so that they are the only parameters flashing then press;

[**store**], [**clear**], [**page**] (optional), [**f/a**] (scene number)

*Only FLASHING parameters will be CLEARED.*

#### 16.19 STORING INTENSITY ONLY SCENES

When scenes are saved using the “store” button, they do not include intensity. When you playback these scenes you can fade up each fixture using its individual fader but it can be cumbersome to control a large number of fixtures and if fixtures are patched to the red faders the maXim must be in wide mode. It is easier to create a scene that

only controls intensity and use it as an “intensity master”.

To store a scene containing **only fixture intensities** and no parameters;

Get the fixtures onto the PaTPad.

The quickest method is to fade up the fixtures, then press;

[**get**], [**flash**] (yellow master).

Clear all Hi-lights;

[**clear**], [**fixture displayer**].

With no fixtures Hi-lighted, none of their parameters will be included.

To store the scene with its intensity levels, press [**store + level**], [**page**] (optional), [**f/a**] (scene number).

#### 16.19.1 STORING ONLY ALTERED PARAMETERS

To store a scene of only **altered** (a) **parameters**, press;

[**colour/beam/focus**],

[**store**],

[**page**] (optional red or blue page),

[**f/a**] (scene number).

#### 16.20 DIRECT ATTRIBUTE CONTROL

The **maXim** also provides an alternative to the **PaTPad** that allows you direct access to the *attribute* values of a Fixture allowing you to adjust them via the edit wheel with their values displayed on “video 1” (Channel View) screen.

**Note: Direct edit wheel control sets the level of an attribute, not a parameter. See the “Terminology” section for more details.**

To directly control an attribute of a fixture, press; [**select**], [**f/a**] (fixture number).

Video 1, (Channel View), is automatically displayed with the **selected Fixture** highlighted by a **dark red background**.

The attribute to be controlled is selected with the [**<**] and [**>**] buttons below the EDIT wheel and is indicated by a dark grey background.

To alter the selected attribute, rotate the **EDIT wheel**.

When finished press; [**select**].

## 17 EFFECTS

### 17.1 OVERVIEW

PatPad “effects” allow you to program complex pan and tilt movements of fixtures with just a few simple keystrokes. Shapes include circles, triangles, rectangles, flicks and bounces plus 4 user custom shapes. You can set the overall size, phase, spread, rate, direction, and number of cycles in an effect. You can also alter the shapes by independently altering pan and tilt sizes, start points and rates.

When a fixture is stationary, its pan and tilt have static values. Effects are achieved by adding continuously varying values to both (or either) pan and tilt. These varying values are created by waveforms. Different waveforms (such as a sine wave, a ramp or a square wave etc) cause different movements. When you select a shape from the menu (e.g. circle) the appropriate waveforms are automatically applied to the pan and tilt parameters. You can independently set the size and rate for pan and for tilt allowing you to create variations of the basic shapes.

For example, with a circle, setting the tilt size to be larger than the pan size will make an oval or setting the pan rate to be twice the tilt rate will create a “figure 8” shape.

Effects can be saved for instant recall to the current look or they can be included as part of a scene.

When a conventional scene (one without an effect) is played back, the fixture parameters are recalled and the fixture moves to those scene settings subject to any delay and/or move times in the scene. The fixture then remains stationary in that position until another scene is played back or the fixture is controlled from the PatPad.

When a scene containing an effect is played back, the fixture parameters are recalled and the fixture moves to those scene settings subject to any delay and/or move times in the scene. The fixture then moves in the shape that was programmed in the effect. It continues to move until either another scene is played back or if a set number of cycles have been programmed in the effect, it will stop when that number of cycles has been completed. Effects consume much less memory (and programming time) than using conventional programming techniques.

### 17.2 BASIC EFFECT OPERATIONS

To include a fixture when programming an effect, the fixture must be on the PatPad and Hi-lighted and it also must have some intensity on the output.

Position the beam (or beams) to the position on stage where the effect is to occur.

Press; **[menu]**, **[EFFECTs]**, **[shape]**.

Press either end of the “shape” displayer to select the required shape.

Press the centre of the “size” displayer then mouse the displayer or use the **EDIT** wheel to set the size.

Press the centre of the “rate” displayer then mouse the displayer or use the **EDIT** wheel to set the rate.

More variations can be made (described below), but if you have finished adjusting the effect you now have several choices;

1. To remove the effect and exit from the effects menu without saving press **[menu]**.
2. To exit from the effects menu but keep the effect running press **[OK]** on the fixture displayer. You can now use the PatPad to reposition the effect if necessary. If you store or record a scene, the effect will be included. The effect will stop (and be lost) if any scene containing the focus parameters of the fixture(s) is played back.
3. Whilst still in the EFFECTS menu, you can either;
  - Press **[record scene]**, **[f/a]** (scene number) to record the entire output including the effect.
  - Press **[store]**. Two options are offered on the PatPad;

#### **Effect ++.**

Stores the effect and the current parameter values (subject to filters and Hi-lights) in a scene number.

#### **Effect.**

Stores ONLY the effect in a scene number

To make your selection, press the **[PM]** button beside either “Effect++” or “Effect”. The selected button flashes, then press **[page]** (optional), **[f/a]** (scene number).

Storing using “**Effect++**” saves the effect and the absolute parameter positions. When the scene is played back, the effect will be reproduced with the fixtures focuses exactly where they were when the scene was stored.

Storing using “**Effect**” does not save the current position. When the scene is played back, it is applied to the fixtures in their current position on stage.

Pressing the **[f/a]** button of an effect scene (flashing it) *momentarily* applies the effect.

### 17.3 STOPPING EFFECTS

There are several methods of stopping an effect. To stop a running effect;

- If in the effects menu, press **[control]**, **[stop?]**.
- If not in the effects menu, either; Get the fixtures onto the PatPad then press; **[home]**, **[all]** or
- Playback a static scene that contains the fixture parameters that are in the effect.

### 17.4 EFFECT MENUS

Effects are programmed from the "Effects" menu. The Effects menu is only available when one or more fixtures are loaded on the PatPad. Only Highlighted fixtures will be influenced by an effect. Press; **[menu]**, **[EFFECTs]**.

The following menu choices are available.....

**SHAPE**  
**SIZE**  
**PHASEs**  
**RATE**  
**CYCLES**  
**CONTRL**

To select one of the menus press either the centre of its displayer or the **[PM]** button beside it. When a menu is selected, you can step through its sub-menus by pressing either end of that menu's displayer. If a colon is displayed after a name, then you can mouse the displayer to vary the value. If you touch the centre of a displayer its yellow LED flashes and you can also use the **EDIT wheel** to vary the value. If a question mark is displayed after a word, pressing the centre of the displayer answers yes to the question. For example, the displayer reads "Start?" Pressing the displayer will start the effect.

### 17.5 SUB MENUS

The following sub-menus are available under each displayer menu;

#### SHAPE

None  
Circle  
Triangle  
Rectangle  
Flick  
P-Flick (Pan Flick)  
T-Flick (Tilt Flick)  
Bounce  
P-Bounce (Pan Bounce)  
T-Bounce (Tilt Bounce)  
Shaper 1 (User defined shape)  
Shaper 2 (User defined shape)  
Shaper 3 (User defined shape)  
Shaper 4 (User defined shape)

#### SIZE

Size: (overall Size)  
PSize: (Pan Size)  
TSize: (Tilt Size)

#### PHASEs

**Phase:** (the point in the waveform where the Pan and Tilt will start)

**PPhase:** (the point in the waveform where the Pan will start)

**TPhase:** (the point in the waveform where the Tilt will start)

**Spread:** (the distance between each fixture in the effect)

#### RATE

**Rate:** (Pan and Tilt Rate)

**PRate:** (Pan Rate)

**TRate:** (Tilt Rate)

#### CYCLES

**Last:** (how many cycles until the effect stops)

**First:** (how many cycles before the effect starts)

#### CONTRL

**Start?** (or Stop? if effect is running)

**Reverse?** (or Forward? if effect is reversed)

**Edge?** (or Centre?. The position around which the effect occurs)

**Reset** (Resets all effect settings to defaults)

**EditShp1?** (Edit User Shape 1)

(or CloseShp1? when finished)

**EditShp2?** (Edit User Shape 2)

(or CloseShp2? when finished)

**EditShp3?** (Edit User Shape 3)

(or CloseShp3? when finished)

**EditShp4?** (Edit User Shape 4)

(or CloseShp4? when finished)

### 17.6 DETAILED MENU DESCRIPTIONS

#### 17.6.1 SHAPE

None

No effect is applied.

Circle

The beam moves in a circle. Adjusting the PSize or TSize (below) will make an oval.

Triangle

The beam moves in a triangle. You can change the angles of the triangle by independently adjusting PSize or TSize (below).

Rectangle

The beam moves in a rectangle. You can change the aspect ratio of the rectangle or make it a square by independently adjusting PSize or TSize (below).

Flick

The beam moves out at the set rate then snaps back. This effects both pan and tilt.

P-Flick

The beam pans at the set rate then snaps back.

T-Flick

The beam tilts at the set rate then snaps back.

Bounce

The beam moves out and back at the set rate. This effects both pan and tilt.

P-Bounce

The beam pans left then right at the set rate.

### T-Bounce

The beam tilts up then down at the set rate.

### Shaper 1

The beam moves in a shape defined by you. See below for how to create a shape.

### Shaper 2, 3 and 4

As per shaper 1.

### 17.6.2 SIZE

#### Size:#

Overall Size. This effects both pan and tilt equally. If pan or tilt is independently set to different values, no value is shown for overall size.

#### PSize: #

Pan Size. The range is from 0 to 100.

#### TSize:#

Tilt Size. The range is from 0 to 100.

Use different PSize or TSize settings to change the aspect ratio of a shape.

### 17.6.3 PHASE

#### Phase:#

The Phase point in the waveform where the Pan & Tilt will start.

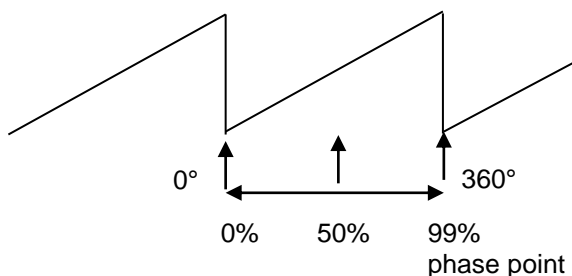
#### PPhase:#

The Phase point in the waveform where the Pan will start.

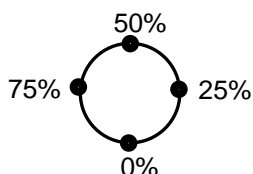
#### TPhase:#

The Phase point in the waveform where the Tilt will start.

Effects are created by using waveforms to vary the pan and tilt values. The waveform continuously varies through 360 degrees. You can set the phase of the starting point of an effect to be at any point through the 360 degrees of the waveform. This is displayed as 0 to 99% on the displayer.



For example, a circle is chosen and set to "edge".



Phase points around the shape are shown.

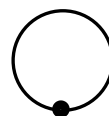
- If "Phase" is set to 0%, the circle begins at the 0% point in the cycle and hence the circle moves upstage from the pan and tilt position.
- If "Phase" is set to 25%, the circle begins at the 25% point in the cycle. Hence the circle is to the left.
- If "Phase" is set to 50%, the circle begins at the 50% point in the cycle. Hence the circle is downstage.
- If "Phase" is set to 75%, the circle begins at the 75% point in the cycle. Hence the circle is to the right.

You can skew these effects by independently starting pan and tilt at different phase angles of the waveform by using different PPhase and TPhase settings.

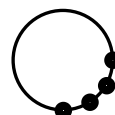
### 17.6.4 SPREAD

If multiple fixtures are in the effect, by default they all move together. Spread allows you to spread the fixtures around the effect.

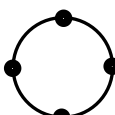
For example; there are four fixtures moving in a circle.



When spread is set to 0, the moving beams are all focused on the same point as they move around the circle.



With spread set to 25%, the moving beams are spread around one quarter of the circle.



With spread set to 99%, the moving beams are evenly spread around entire circle.

### 17.6.5 RATE

#### Rate:#

The overall Pan and Tilt Rate of an effect can be varied from 0.1 seconds per cycle down to 59 seconds per cycle.

#### PRate:#

Pan Rate

#### TRate:#

Tilt Rate

Use different PRate or TRate settings to change the shape of an effect. For example, selecting bounce and setting TRate to 0.5sec and PRate to 3sec will make the beam follow a sine wave pattern across the stage.

### 17.6.6 CYCLES

Last:#

This sets how many cycles of the effect oscillator will run until the effect stops. The count starts when a scene containing an effect is played back. The default is FL (FULL) meaning that the effect is continuous.

First:#

This sets the delay count of how many cycles the effect oscillator will run before the effect starts. The count starts when a scene containing an effect is played back. The default is 1 meaning the effect starts immediately.

### 17.6.7 CONTRL

Start? (or Stop?)

Used to start or stop an effect.

Tap the centre of the displayer to select. If the effect is running, the displayer will read "Stop?". If the effect is Stopped, the displayer will read "Start?"

Reverse? (or Forward?)

Used to change the direction of an effect.

Tap the centre of the displayer to select. If the effect is running forward, the displayer will read "Reverse?"

If the effect is running reverse, the displayer will read "Forward?"

Edge? (or centre?)

Tap the centre of the displayer to select.

"Edge". The effect passes through the current pan and tilt position. If "Edge" is active, the displayer will read "Centre?"

"Centre". The effect is centred around the current pan and tilt position. If "Centre" is active, the displayer will read "Edge?"

For example, if a circle shape is running;

If "centre" is selected, the beam scribes a circle whose centre is the current pan and tilt position.

If "edge" is selected, the beam leaves the current pan and tilt position, scribes a circle and returns to the same position.

When "edge" is selected you can set the position of the effect (left, right, front, back) relative to the current beam position. See "Phase" above for details.

Reset

Resets all effect settings to default home values.

### 17.6.8 CUSTOM SHAPES

Effects use waveforms to create the shapes that you see on stage. You can create 4 different custom shapes that can then be selected from the "Shape" menu.

To create a custom shape, firstly reset to defaults to ensure that the effect is running continuously.

Press **[menu]**, **[effects]**, **[control]** then tap the end of the displayer to show **[reset?]**. Press **[reset?]**.

Select one of the 4 shaper waveforms as the current shape. Selecting a shape as the current effect lets you see the shape running live as you edit it. Press; **[shape]**, then tap the ends of the displayer to select **[shaper1]**.

To edit this shape, press; **[control]**, then tap the ends of the displayer to show **[editShp1?]**. Press; **[editShp1?]**.

**Yellow** faders 1 through 24 are used to form the shape of the **pan** waveform.

**Red** faders 1 through 24 are used to form the shape of the **tilt** waveform.

When a fader is in its mid position it has no effect. When it is set above or below its mid position it affects the parameter by a corresponding amount. Set Yellow faders 1 to 24 to mid position. The pan parameters will now be stationary.

Set red faders 1 to 24 to mid position. The tilt parameters will now be stationary.

Adjust the faders into any shape of your choice. The fixtures respond in real time to the shapes that you create on the faders. You can make smooth changes by only having small variations between adjacent faders or you can make sudden movements by having large variations.

To save the shape that you have created press; **[closeShp1]**.

This shape is now available whenever you select **[shaper1]** from the shape menu.

Create other shapes in shapers 2, 3 and 4 in a similar manner.

As with any other shape, you can store many variations of a custom shape by using different settings of size, rate, phase etc. However, if you edit a custom shape, any stored effect that uses that shape will also be affected.

### 17.7 COPYING EFFECTS

You can copy an effect that is running on a fixture to other fixtures of the same type.

- Hi-light the *source* fixture then select an effect from the effects menu and press **[OK]**.
- Hi-light the *source* and *destination* fixtures.
- Use the fixture displayer on the PatPad to select the *source* fixture.
- Press **[menu]**, **[effects]**.

The effect on the selected fixture is copied to all of the other hi-lighted fixtures of the same type.

## 18 FANS

### 18.1 OVERVIEW

When you are controlling multiple fixtures on the PatPad you have the ability to manually make a fan (or spread) of settings across fixtures so that you get a symmetrical look. Typically you might individually adjust the pan parameters so that each fixture is focused on a common point or you might spread the fixtures out in a diverging pattern. Every fixture has to be individually adjusted which can be very time consuming.

PatPad FANS automate this process by evenly spreading the parameter values to give you symmetrical looks at a touch of the PatPad. You typically position all of your fixtures at a starting point, usually via the **[home]**, **[all]** command, but it could be by playing back a scene that sends the fixtures to a known position.

Press **[menu]**, **[fans]** and instantly start to create stunning looks.

You can individually fan the positions of pan and tilt. Fans can be symmetrical from the middle outwards or can start from either end.

The order in which the fixtures are loaded onto the PatPad is used for the fanning order. You can save the fanning order as a group for later use.

The fanning value can be adjusted in the positive or negative direction to give diverging or converging results.

When you achieve the desired look, save the look as either a scene or a preset.

FANS can also be used to quickly spread the move and delay times of fixtures. Scenes recorded with fanned times can give you stunning movement effects when they are played back especially when fanned delay times are used.

Fans can be combined with effects to quickly create amazing visual effects that would take hours to program manually.

### 18.2 FAN FUNCTIONS

To create a fan, get the fixtures to be fanned onto the PatPad. If the fixtures exist in a group you can get the group.

**Hint; To avoid confusion when fanning, clear the PatPad ([clear], [all]) before loading the fixtures to be fanned.**

To select fans, press **[menu]**, **[FANS]**.

Fans can only be selected when there are 2 or more high-lighted fixtures of the same type on the PatPad. If you try to fan a single fixture then the message "ERR" (error) is shown on the fixture display. Press **[menu]** to cancel the "ERR" message.

The following functions are available;

F-Pan Position	(Fan Pan Position)
F-Tilt Position	(Fan Tilt Position)
F-Pan Mov	(Fan Pan Move Time)
F-Tilt Mov	(Fan Tilt Move Time)
F-Pan Dly	(Fan Pan Delay Time)
F-Tilt Dly	(Fan Tilt Delay Time)

To select a function press its display or the **[PM]** button beside it.

There are three options for each of the above functions. Press either end of each display to step through the options;

mid	(fan from middle)
lo2hi	(fan from low number to high number)
hi2lo	(fan from high number to low number)

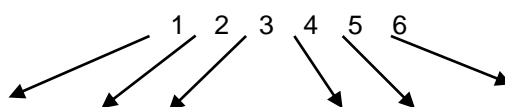
The low and high numbers refer to the order in which the fixtures are loaded as shown on the right side of the V4 "PAD VIEW" video screen.

To create a fan, touch the centre of the required display and "mouse" the value. After you have touched a display, its yellow LED will flash and you can also use the **EDIT** wheel to change the value.

A window pops up on top of Video 4, "PAD VIEW" showing you the parameter number that is being fanned and the parameter value, move time or delay time for every fixture that is being fanned.

The fan can be either positive or negative. Negative values reverse the effect.

For example, a positive pan fan spreads the beams like this;



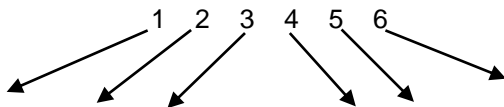
A negative pan fan looks converges the beams like this;



### 18.3 FANNING ORDER

The actual order of the fixtures that is used when fanning via each of these three options is determined by the order in which the fixtures are loaded onto the PatPad. The fanning order is shown on the right hand side of the "PAD VIEW" video screen.

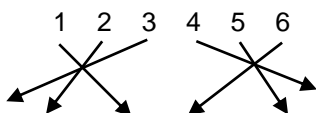
Therefore if you have 6 fixtures and get them in the order 1, 2, 3, 4, 5, 6 and then fan the pan from the middle you get a symmetrical look.



However, if you get them in order 6, 4, 5, 2, 3, 1 and again fan the pan from the middle you get a different look.



Or if you get them in order 3, 6, 2, 5, 1, 4 and fan the pan from the middle you get another look.



**Hint:** To rapidly get a range of fixtures onto the PaTPad, press and release **[get]**. **HOLD [f/a]** (first fixture in range), then tap **[f/a]** (last fixture in range). Both selected fixtures and all fixtures in between them are loaded. If you **HOLD [f/a]** (last fixture in range), then tap **[f/a]** (first fixture in range), the fixtures are loaded in reverse order.

### 18.3.1 STORING FAN ORDERS

The order in which you get the fixtures can be saved as group.

**[store]**, **[group]**, **[f/a]** (group number).

When the group is loaded on the PatPad, the stored order is recalled.

To load the order you can use either;

**[get]**, **[group]**, **[f/a]** (group number), (loads and highlights the group) or

**[group]**, **[f/a]** (group number) (highlights the already loaded fixtures in the group).

### 18.3.2 FANNING TIMES

When you fan pan and tilt you see the results on stage.

When you fan move and delay times, you must move the fixtures from a different (starting) focus position to the current focus position to see the fanned times executed.

To do this, playback a scene that sends the fixtures to their starting position (a scene that you have already programmed) then press the **[p-trig]** button. This moves the fixtures to their PatPad positions using the fanned PatPad times.

For example, if you have an existing scene that focuses your fixtures “down stage” and you want to program a new scene with the fixtures focused “upstage” but with fanned Tilt delay times.

Use the **PaTPad** to focus the fixtures upstage and then use the fan menu to fan the tilt delay times. Before recording this new “upstage scene”, playback the existing “down stage” scene. This automatically saves the **PaTPad** settings including the fanned tilt times.

Playback the PatPad settings by pressing **[p-trig]** and the fixtures move upstage using the fanned tilt delay times.

Make any time adjustments that you might need to the fanned times. Playback the “down stage” scene again (the adjusted times are saved). Press **[p-trig]** to see the same move with the new times.

When the times are correct, save the new scene.

When fanning times, the number shown in the displayer is only an indication of the amount of fan that has been applied. You can see the actual time values on the video screen (Video 4 PAD VIEW) as you adjust the fan.

### 18.3.3 SAVING FANS

When you have made your fan, the fixture displayer reads “OK” and the **[store]** button flashes.

You now have three choices;

- To remove the fan and exit from the fan menu press **[menu]**.
- To retain the fanned values and exit from the fan menu press **[OK]** on the fixture displayer. The fanned values are entered into their fixtures parameters and you have created a look but it has not been saved as a scene. You can now use the PatPad to make other adjustments if necessary. If you select the fan menu again, you start to fan the current look (which is already fanned). Therefore all fan values (on the **PaTPad**) will be back to zero as you are yet to begin fanning this look. The fan will be lost if any scene containing the parameters of the fixtures is played back.
- To keep the fanned values, save it in a scene or a preset. The usual methods of saving are available.
  - To record the entire output press; **[record scene]**, **[page]** (optional), **[f/a]** (scene number).
  - To store only flashing parameters as a scene, press; **[store]**, **[page]** (optional), **[f/a]** (scene number).
  - To store only flashing parameters as a preset, press; **[store]**, **[preset]**, **[colour/beam/focus]** (optional), **[f/a]** (preset number).

## 19 STL (SOUND TO LIGHT) and SyncoBEAT

### 19.1 OVERVIEW

The **maXim** has two identical STL (Sound To Light) processors called “stl 1” and “stl 2”.

Each STL produces output pulses that can be “connected” to any Playbacks containing a chase. When a STL is connected to a chase, it will trigger a chase step whenever there is a pulse on the STL output.

Each STL has two modes of operation;

- **Sound to Light** mode. The STL pulses are generated by the beat of the music connected to the audio input of the **maXim**.
- **SyncoBEAT** mode. The STL pulses are generated from a beat pattern that you *teach* the **maXim**.

Each STL may be connected to any number of chases.

Both STL's may be connected to the same chase to give dual stepping control.

The “*Beat*” indicator on the video display always shows the stepping of the STL output pulses.

### 19.2 CONNECT STL TO CHASE

An STL must be “connected” to a chase to enable it to control the chase stepping. There are 2 ways to connect the output of a STL to a chase:

#### 19.2.1 Connect to Playback

This method temporarily connects the STL to the selected playback. The recorded memory is not changed, only the way that it is *currently being played back*.

**HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2).  
**HOLD [function]** until the display reads “Pick”.  
Whilst still **holding [function]**, tap **[f/a]** of the playback(s) to be connected.

- Playbacks already **connected** to STL's **flash** continuously.
- Playbacks **NOT** connected to STL's flash, then **pause**, then flash again etc.

If a playback is already connected, tapping its **[f/a]** disconnects it.

Press **[edit]** to finish.

The Playback remains connected to the STL until the chase is replaced on that Playback by either changing pages or changing the red mode.

#### 19.2.2 Connect to Chase.

To permanently connect a STL to a chase memory, whilst recording or editing a chase, repeated presses of the **[function]** button will

toggle the display between the STEP number, the SPEED and the CROSSFADE.

When the STEP number is displayed;

**HOLD [function]**,

tap either **[stl 1]** or **[stl 2]** (which are flashing).

To connect the STL press **[yes]**.

If the STL is already connected, pressing **[yes]** disconnects it.

Finish recording or editing the chase as described in the “CHASES” section.

The chase remains connected to the STL unless it is “edited” to remove the connection.

### 19.2.3 CONNECTED STL INDICATORS

To see **all** Playbacks that are connected to an STL;

**HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2).

**HOLD [function]**.

Playback **connected** to the selected STL **flash** continuously.

To see if an **individual** playback is connected to any STL press;

**[select]**, **[f/a]** (chase number).

The video screen shows a pinned display of the selected chase showing any connected STL's.

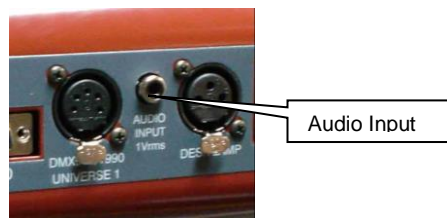
Press **[select]** to exit.

### 19.3 STL (SOUND TO LIGHT) MODE

When a chase is connected to an STL that is in **STL** mode, the chases own internal speed generator continues to step the chase in addition to the STL stepping from the audio signal. To give the STL total control, set the chase speed to zero.

**Hint; Set the chase speed to be slower than the beat of the music. If the music stops, the chase will continue to run.**

Connect a music source to the RCA audio input connector on the rear of the **maXim**. The best source of audio from your device is the headphone socket as it provides a high level signal (1-2.5V).



To select STL mode;

**HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2).

The display scrolls a message showing the current mode of the STL.

Tapping **[yes]**, toggles the STL between either **Sound To Light** mode or **SyncoBEAT** mode.

To select STL mode, turn SyncoBEAT **OFF**.

The current mode of each STL is also shown at the bottom of the main video screen. The "Volume Control" bargraph indicates STL mode as shown for STL1 in the example below.

The audio level and frequency can now be adjusted to make the chase step to the beat of the music.

To adjust the **audio level** press; **[function]**.

The display shows "L: ##" where ## (0-100) is the audio level.

Rotate the **EDIT wheel** to adjust the level.

The volume control bargraph on the video also shows the current level. With the music connected, the Level Bargraph will pulse up and down in time with the music.

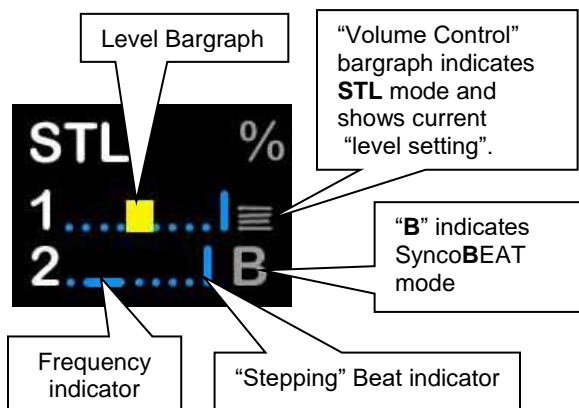
Set the level so that the bargraph turns **Yellow**. **Green** is too low and **Red** is too high.

To adjust the **audio frequency** press; **[function]**.

The display shows "hz ##" where ## (10-600) is the audio frequency.

Rotate the **EDIT wheel** to select the required frequency.

The Frequency indicator on the video also shows the current setting (low to high frequency).



**STL section of Video Screen Display**

Select the audio frequency of the dominant beat in the music. Try a low frequency to pick up a bass guitar or set it higher to select a drum or cymbal.

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

When finished press;  
**[edit]**.

To step a chase with the STL you have created, the chase must be connected to the STL as described above.

#### 19.4 SYNCOBEAT MODE

**SyncoBEAT** allows you to teach the **maXim** a beat pattern that it will then repeat indefinitely.

When a chase is connected to an STL that is in **SyncoBEAT** mode, the chases own internal speed generator is disconnected and the STL's SyncoBEAT has total control of stepping.

SyncoBEAT allows for a **syncopated** (non regular) pattern to be learned. You tap out a beat pattern and the maXim learns the pattern then repeats it indefinitely. A syncopated pattern allows you to have, for example some rapid steps followed by maybe a long pause and then steps getting faster or possibly slowing down.

Any quantity from 1 to 20 beats can be entered in the beat pattern.

To create a SyncoBEAT;

**HOLD [function]**, tap **[f/a]** (stl 1) or (stl 2).

The display scrolls a message showing the current mode of the STL.

Tapping **[yes]**, toggles the STL between either **Sound To Light** mode or **SyncoBEAT** mode.

Turn SyncoBEAT **ON**.

The current mode of each STL is shown at the bottom of the video screen. The letter **"B"** indicates SyncoBEAT mode.

To learn a beat pattern;

**HOLD [add]** until the word **"Learn"** appears on the display.

Whilst **holding [add]**, enter your beat pattern by **tapping [ok]**.

The beat pattern starts from the first tap of the **[ok]** button and ends when the **[add]** button is released.

Remember that when the maXim **repeats** your beat pattern, the time between the last tap and the first tap is determined by the time between your **last** tap and when your **release** the **[add]** button.

The "stepping beat indicator" on the video screen now moves to the beat that you have created.

If the beat pattern is not correct, create a new SyncoBEAT pattern by **holding [add]** and repeating the procedure. The new pattern will replace the old pattern as soon as the **[add]** button is released.

When the beat pattern is correct press;  
**[edit]** to exit.

To step a chase with the SyncoBEAT you have created, the chase must be connected to the STL as described above.

If a chase has been set to "Single Shot Mode", triggering the single shot will run the chase once using the SyncoBEAT stepping.

See the "CHASES" section for more details on chases.

## 20 MIDI

### 20.1 OVERVIEW

MIDI (**M**usical **I**nstrument **D**igital **I**nterface) is an international standard for data communication between musical instruments, computers and other equipment such as lighting desks.

The possibility exists to either control the lighting channels from a MIDI keyboard or a computer with a MIDI output and suitable sequencing software or to control a MIDI device from the maXim.

Three MIDI connectors are provided on the rear of the maXim.



- The MIDI IN connector receives signals from other MIDI devices such as a keyboard or sequencer. These signals can be used to perform certain actions on the maXim as listed below.
- The MIDI THRU connector transmits a duplicate of the signal received at the MIDI in connector.
- The MIDI OUT connector transmits the MIDI signals that may be generated by certain buttons that you press on the maXim as listed below.

### 20.2 MIDI ON/OFF

To utilise the MIDI functions, you must not only connect the maXim to a MIDI device, but you must also turn ON the MIDI function.

**HOLD [function]**, tap **[f/a]** (setup).

The display asks "Lock Console?"

Press **[no]**.

The display asks "Set MIDI on?"

Press **[yes]**.

The MIDI function should only be turned on when you want the maXim to respond to the MIDI signals.

### 20.3 MIDI TRANSMIT ON/OFF

When the MIDI function is turned ON, you can also elect to "Transmit" MIDI from the maXim.

**HOLD [function]**, tap **[f/a]** (setup).

The display asks "Lock Console?"

Press **[no]**.

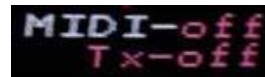
The display asks "Set MIDI off?"

Press **[no]**.

The display asks "Set MIDI transmit?"

Press **[yes]**.

The current state of the MIDI receive and MIDI Tx (Transmit) is shown on the bottom of the video screen.



### 20.4 MAXIM MIDI MAPPING

The MIDI protocol uses many different types of messages. One type of message that MIDI sends is the note ON / OFF message. Each note on the MIDI keyboard has a number assigned to it. The range of MIDI note numbers is 0 to 127. For example, the 88 keys on a grand piano correspond to MIDI note numbers 21 to 108. Many maXim buttons are mapped to MIDI note numbers (see table below) so that pressing a particular maXim button is the same as pressing the MIDI keyboard note to which the button is mapped.

- A MIDI note ON message is equivalent to pressing the maXim button to which it is mapped.
- A MIDI note OFF message is equivalent to releasing the maXim button to which it is mapped.

MIDI signals are sent and received on 16 separate channels on the one cable.

The maXim only uses channels 1, 2, 3 and 4.

- MIDI channel 1 is used for the various control buttons as listed below and for EDIT wheel movements.
- MIDI channel 2 is used for the yellow f/a buttons as listed below.
- MIDI channel 3 is used for the red f/a buttons as listed below.
- MIDI channel 4 is used for the blue f/a buttons (not on maXim MP) as listed below.

### 20.5 CONTROLLING THE MAXIM FROM A MIDI DEVICE

MIDI can be used to control many functions on the maXim by emulating maXim button presses. The table below shows the maXim buttons that are controlled by relevant MIDI messages. Here are a few examples of controlling a maXim by MIDI .....

Flashing a channel or scene. For example, if the maXim receives the MIDI "note 48 On" command on MIDI channel 2, it will flash Yellow channel 1 to the level set on the flash master. A MIDI "note 48 Off" command on MIDI channel 2 will turn off Yellow channel 1.

Stepping a stack. If the maXim has a stack on the stack master and it receives the MIDI "note 53 On" message then the "note 53 Off" message

on MIDI channel 1, it will step the stack to the next step.

Stepping a chase. If the maXim has a chase on a red 9 master and the chase is set to "single step" then if the maXim receives the MIDI "note 56 On" then "note 56 OFF" message on MIDI channel 3, it will step the chase to the next step.

Complex and intricate chases with *varying* rates may easily be created by recording the sequence of notes together with the timing and duration of each note on a MIDI sequencer.

## **20.6 CONTROLLING A MIDI DEVICE FROM THE MAXIM**

The maXim can send MIDI commands to a MIDI device allowing it to play sounds or trigger other MIDI controlled events when certain maXim buttons are pressed.

When a maXim button is pressed, a MIDI note ON is transmitted for the MIDI note and channel to which the button is mapped (see table below).

When a maXim button is released, a MIDI note OFF is transmitted for the MIDI note and channel to which the button is mapped.

When the EDIT wheel is rotated, a "Pitch Bender" message is transmitted on MIDI channel 1.

- Clockwise EDIT wheel movements = Pitch UP message
- Anticlockwise EDIT wheel movements = Pitch DOWN message.

The following table shows maXim buttons and their corresponding MIDI note numbers and MIDI channels for both MIDI transmit and receive.

- The table shows the buttons of a maXim XXL.
- The maXim XL only has 48 red f/a buttons, 48 yellow f/a buttons and 18 blue f/a buttons.
- The maXim L only has 36 red f/a buttons, 36 yellow f/a buttons and 9 blue f/a buttons.
- The maXim MP only has 24 red f/a buttons, 24 yellow f/a buttons and no blue f/a buttons.

MIDI Note	MIDI Channel 1	MIDI Channel 2	MIDI Channel 3	MIDI Channel 4
48 (C below middle C)	"blue master" flash	yellow f/a 1	red f/a 1	blue f/a 1
49	"red master" flash	yellow f/a 2	red f/a 2	blue f/a 2
50	"yellow master" flash	yellow f/a 3	red f/a 3	blue f/a 3
51	stack flash	yellow f/a 4	red f/a 4	blue f/a 4
52	"stack" stop/step	yellow f/a 5	red f/a 5	blue f/a 5
53	"stack" >	yellow f/a 6	red f/a 6	blue f/a 6
54	"stack" <	yellow f/a 7	red f/a 7	blue f/a 7
55	Add/solo	yellow f/a 8	red f/a 8	blue f/a 8
56	Record scene	yellow f/a 9	red f/a 9	blue f/a 9
57	Record chase	yellow f/a 10	red f/a 10	blue f/a 10
58	Record stack	yellow f/a 11	red f/a 11	blue f/a 11
59	Assign/copy	yellow f/a 12	red f/a 12	blue f/a 12
60 (Middle C)	mode red bank	yellow f/a 13	red f/a 13	blue f/a 13
61	select	yellow f/a 14	red f/a 14	blue f/a 14
62	edit	yellow f/a 15	red f/a 15	blue f/a 15
63	remove	yellow f/a 16	red f/a 16	blue f/a 16
64	add	yellow f/a 17	red f/a 17	blue f/a 17
65	function	yellow f/a 18	red f/a 18	blue f/a 18
66	no <	Yellow f/a 19	red f/a 19	blue f/a 19
67	OK step/stop	yellow f/a 20	red f/a 20	blue f/a 20
68	yes >	yellow f/a 21	red f/a 21	blue f/a 21
69	page red bank	yellow f/a 22	red f/a 22	blue f/a 22
70	page blue bank	yellow f/a 23	red f/a 23	blue f/a 23
71		yellow f/a 24	red f/a 24	blue f/a 24
72		yellow f/a 25	red f/a 25	blue f/a 25
73		Yellow f/a 26	red f/a 26	blue f/a 26
74		yellow f/a 27	red f/a 27	blue f/a 27
75		yellow f/a 28	red f/a 28	blue f/a 28
76		yellow f/a 29	red f/a 29	blue f/a 29
77		yellow f/a 30	red f/a 30	blue f/a 30
78		yellow f/a 31	red f/a 31	
79		yellow f/a 32	red f/a 32	
80		Yellow f/a 33	red f/a 33	
81		yellow f/a 34	red f/a 34	
82		yellow f/a 35	red f/a 35	
83		yellow f/a 36	red f/a 36	
84		yellow f/a 37	red f/a 37	
85		yellow f/a 38	red f/a 38	
86		yellow f/a 39	red f/a 39	
87		Yellow f/a 40	red f/a 40	
88		yellow f/a 41	red f/a 41	
89		yellow f/a 42	red f/a 42	
90		yellow f/a 43	red f/a 43	
91		yellow f/a 44	red f/a 44	
92		yellow f/a 45	red f/a 45	
93		yellow f/a 46	red f/a 46	
94		yellow f/a 47	red f/a 47	
95		yellow f/a 48	red f/a 48	
96		yellow f/a 49	red f/a 49	
97		yellow f/a 50	red f/a 50	
98		yellow f/a 51	red f/a 51	
99		Yellow f/a 52	red f/a 52	
100		yellow f/a 53	red f/a 53	
101		yellow f/a 54	red f/a 54	
102		yellow f/a 55	red f/a 55	
103		yellow f/a 56	red f/a 56	
104		yellow f/a 57	red f/a 57	
105		yellow f/a 58	red f/a 58	
106		yellow f/a 59	red f/a 59	
107		yellow f/a 60	red f/a 60	
Pitch Bender	Edit wheel movements Raising pitch = Edit wheel UP Lowering pitch = Edit wheel down			

## 21 CAPTURE

### 21.1 OVERVIEW

“Capture” is a lighting design and visualization computer program for Windows that allows you to see a virtual stage and lighting fixtures on your computer.

When you connect your maXim to the computer (via the “Capture” connector on the maXim and the USB A connector on your computer) you can use the maXim to control the fixtures on your computer screen.

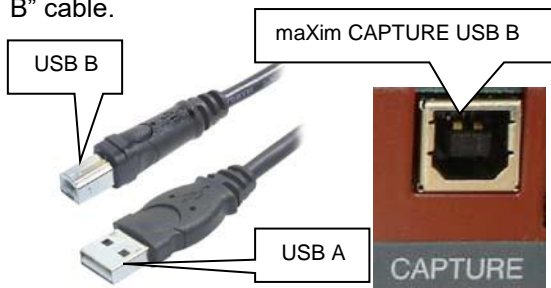
There are three levels of functionality available for maXim Capture operation:

- Capture maXim Training
- Capture Demo.
- Capture Full.

Capture Full also requires the (optional) “Capture Dongle” to be fitted inside your maXim.

### 21.2 CONNECTING THE CAPTURE PORT

Your computer's USB port has a “USB type A” connector. The maXim's Capture port has a “USB type B” connector. To connect the maXim to your computer you require a “USB A to USB B” cable.



Most modern computers will automatically recognise the maXim's Capture port when you connect the maXim, however if your computer does not recognise it you will need to download and install the driver for the maXim's USB port. The driver is available from;

[www.lscighting.com.au](http://www.lscighting.com.au)

Look in the “Software downloads” section.

### 21.3 CAPTURE DEMO SHOWS

A “Capture Demo Show” is a computer file that you can download from the LSC website,

[www.lscighting.com.au](http://www.lscighting.com.au)

Each “Capture Demo Show” has been specially prepared for the maXim. You do not need to download the Capture program because when you run the capture demo show file on your computer it contains the Capture program **and** the special demo show. You also need to download the matching maXim “show” that you must load into your maXim. It contains the patch, presets, palettes, scenes etc for you maXim that match the capture demo show.

When you connect your maXim to your computer you will be able to control all of the fixtures on your computer using the maXim panel.

The advantage of the training shows is that you don't have to learn how to create shows on the Capture software because the show has already been created for you. You can concentrate on improving your maXim operating skills.

### 21.4 CAPTURE DEMO MODE

Capture demo mode uses the full capture programme but with the save and print functions disabled. The Capture program can be downloaded from either;

[www.lscighting.com.au](http://www.lscighting.com.au)

or

[www.capturesweden.com](http://www.capturesweden.com).

Install the program on your computer then use it to create a show with the fixtures that you want to control.

On your maXim you will need to “patch” all of the fixtures that you have created on “Capture” and then when you connect your maXim to your computer you will be able to control all of the fixtures in your show using the maXim panel.

You cannot save the “Capture” show but it is great for training and familiarisation on your maXim.

### 21.5 CAPTURE FULL

When you purchase Capture Full for your maXim, you receive the Capture software and the capture dongle which is fitted inside your maXim either in the factory at time of manufacturing or it can be retro-fitted by your LSC agent.



Internal Dongle

When your computer is connected to your maXim, it recognises the dongle and enables the “save” and “print” functions of Capture.

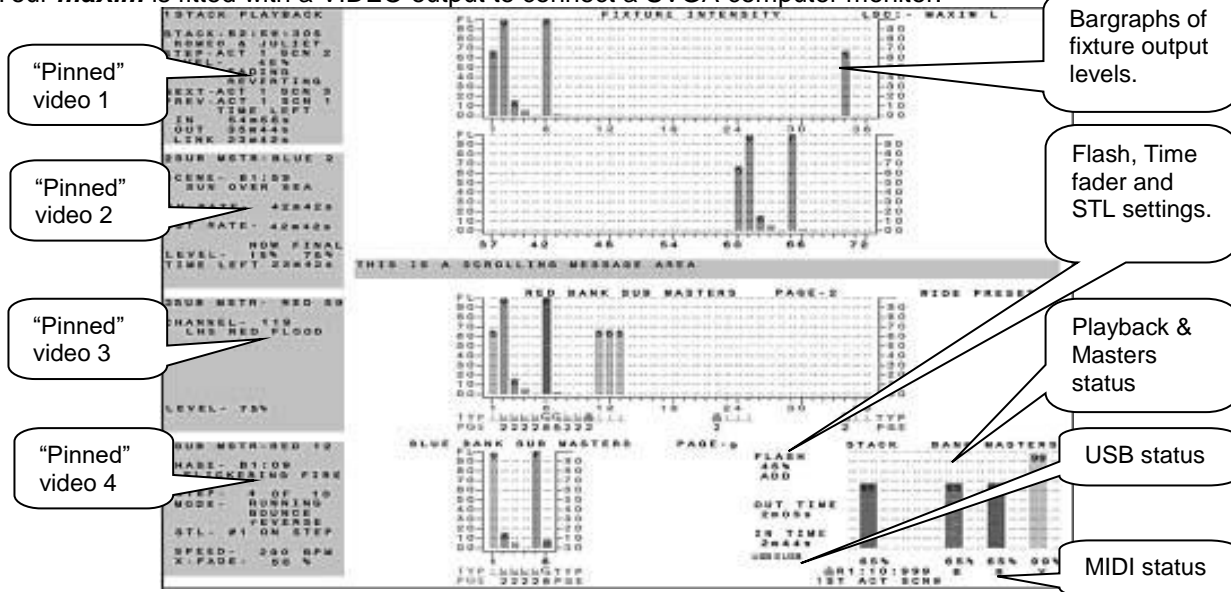
Capture Full lets you design and **save** your shows then open them again to rehearse and enhance them at any time.

**Hint: Capture Full is great for showing clients what their show will look like during the pre-production stage. You could even show them optional looks with additional fixtures that they could have in their production if they increased the lighting budget.**

## 22 VIDEO

### 22.1 VIDEO OVERVIEW

Your **maXim** is fitted with a VIDEO output to connect a SVGA computer monitor.



Typical video screen.

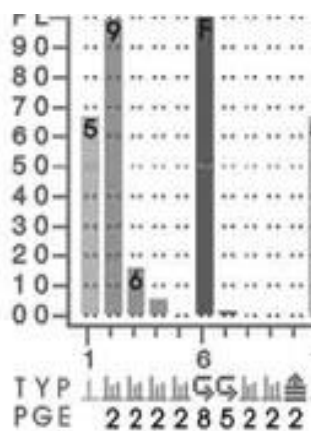
The video screen is divided into the **main display** (the white area on this simulation) and the **selectable areas** (dark areas on the left).

### 22.2 MAIN DISPLAY

The main part of the screen shows the fixture intensities (cyan bargraphs) at the top, a message area in the middle and the status of the playbacks, flash settings, time masters, STL settings, USB devices, stack and masters at the bottom.

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" (TYPE) row by a **symbol** and colour. The colour is repeated in the bargraph.



In this example;

- Playbacks 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" (PAGE) row. This may be different to the current page due to a "page freeze". In this example, playbacks 6 and 7 contain chases from pages 8 and 5 respectively.

### 22.3 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 above).

#### 22.3.1 PINNED VIDEO

When a playback or the stack is "selected", a video display is automatically pinned. Press; **[select]**, **[f/a]** (playback or stack to pin).

To select a specific position for the pinned display; **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) to finish.



Scene



Stack



Chase

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#### 22.4.4.1 PAD VIEW

Video 4 (Pad View) shows a list of all Fixtures loaded on the **PaTPad** and shows exactly which parameters are included in your **PaTPad** operations because they flash.

U4	Param Number->	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24
Fx	Name or Type																	
1	Mac250.4																	1
2	Mac250.4																	
3	Mac250.4																	3
4	iSpot 150	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	4
5	iSpot 150																	5
6	iSpot 150																	6

- The Fixture numbers (Fx) are listed on the left of the screen.
- The 24 parameter matrix buttons are numbered across the top.
- The Fixture that is currently selected on the **PaTPad** is indicated by a row of :::: symbols. In the example above it is Fixture 4.
- Fixtures that have intensity on the output have a white name. If they have no intensity they have a cyan name.
- Fixtures that are Hi-lighted have a grey background.
- Fixtures that are NOT Hi-lighted have a black background
- The column of numbers on the right shows the order in which the fixtures were loaded onto the PaTPaD. This order will be used when applying Fans. In this example, it is 1,3,4,5, 6 but it could be any order that you select. (See the "FANS" section for details).

Parameters can be represented by the following symbols;

- The parameter exists.
- F A filter has been applied to the parameter.
- a The parameter has been altered by the PaTPaD.
- E The parameter is linked to a palEtte (not shown above).
- P The parameter is linked to a Preset (not shown above).

The symbols are also colour coded.

- RED = Colour parameter.
- BLUE = Beam parameter.
- GREEN= Focus parameter.

Any Parameters that are included in your operations (as set by hi-lights and filters) will *flash*.

#### 22.4.4.2 PATPAD MIMIC WINDOW

**PaTPad** Mimic shows the currently selected Fixture and gives an *expanded* view of the [PM] (Parameter) buttons on the **PaTPad**. Each display on the **PaTPad** can control up to 4 parameters as selected by the 4 [PM] buttons beside it.

U4	PatPad MIMIC	SelectedFixture= Fx 4 iSpot 150
1	-PAN- **	7 -GOBOSHK- 13
2	-TILT- **	8 -FOCUS- 14
3	-COLOUR- **	9 -SHUTTER- 15
4	-GOBO- **	10 16
5	-GB IDX- **	11 17
6	-GB ROT- **	12 18
		23 -MOUSPD- **
		24 -CNTRL- **

\*\*Default Times= M=0.0s D=0.0s M=0.0s D=0.0s M=0.0s D=0.0s +C

To see the name of each available parameter on a **PaTPad** displayer you have to press the appropriate [PM] button. **PaTPad** Mimic is laid out in the same geographical format as the [PM] buttons so you can always see the names of every available parameter for the selected fixture. It therefore makes parameter selection quick and easy. The parameter(s) that are currently selected on the **PaTPad** are indicated by a red background. Below each parameter, its times are shown. If the default times are being used, \*\* is shown. The current default times for colour, beam and focus are displayed at the bottom of the **PaTPad** Mimic window.

### **22.5 FIXTURE POP-UP WINDOW**

To see a list of all available (patched) Fixtures, press;

**[get]**.

If you then select a Fixture by pressing its **[f/a]** (Fixture Number), the pop-up window automatically closes.

To manually close the window; press; **[get]** again.

### **22.6 GROUP POP-UP WINDOW**

To see a list of stored groups, press;

**[group]**.

If you then select a group by pressing its **[f/a]** (group number), the pop-up window automatically closes.

To manually close the window; press; **[group]** again.

### **22.7 PALETTE POP-UP WINDOW**

To see a list of stored palettes, press;

**[palette]**.

To step through the 4 palette pages repeatedly press; **[colour/beam/focus]**.

If you select a palette by pressing its **[f/a]** (palette number), the pop-up window automatically closes.

To manually close the window; press; **[palette]** again.

### **22.8 PRESET POP-UP WINDOW**

To see a list of stored presets, press;

**[preset]**.

To step through the 4 preset pages repeatedly press **[colour/beam/focus]**.

If you select a preset by pressing its **[f/a]** (preset number), the pop-up window automatically closes.

To manually close the window; press; **[preset]** again.

### **22.9 FILTER POP-UP WINDOW**

To see a list of all filter memories, press;

**[filter]**.

If you select a filter by pressing its **[f/a]** (filter number), the pop-up window automatically closes.

To manually close the window; press; **[filter]** again.

### **22.10 PLAYBACK BANK MEMORIES**

To see a list of playback memories,

**HOLD** either **[page]** button.

## 23 UTILITIES

### 23.1 USB DISK OPERATIONS

The **maXim** has a USB connector that accepts a USB “flash disk” allowing you to save or load a “show”. A “show” contains the entire contents of the **maXim's** memory. This includes all Scenes, Chases, Stacks, SyncoBEATs and the Patch. If you are using a computer to manage the files on your USB flash disk, ensure that all files for the **maXim** reside in the root directory of the flash disk.

**HINT: LSC recommends that you use a dedicated USB flash disk for the storage of your maXim “show” files and that you do not use the same device for general purpose use.**

The status of the USB port is displayed on the video output in the lower right corner. The colour of “USB” changes to show the current status.



- GREY= No USB device connected.
- GREEN = Ready
- RED = Busy

#### 23.1.1 SAVE SHOW TO USB DISK

To save a show to USB disk place a flash disk in the **TOP** USB connector then;

**HOLD [function]**, tap **[f/a]** (disk), **[yes]**.

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]**, **[yes]**.

When the save operation is complete press **[ok]**.

**NOTE: You can change the word “SHOW” to a name of your choice. See “Default File Name” below.**

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

#### 23.1.2 LOAD SHOW FROM USB DISK

When you load a show from USB flash disk, you replace the entire contents of the **maXim's** memory with the show data from the USB flash disk.

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

To load a show from USB flash disk;

**HOLD [function]**, tap **[f/a]** (disk), **[no]**, **[yes]**.

Rotate the **EDIT wheel** to select the show number. To load the show, press **[ok]**, **[yes]**.

When the load is complete press **[ok]**.

**NOTE: Normal operation is not possible whilst a show is loading.**

### 23.2 RESET

The **maXim** provides two types of reset function. SYSTEM reset and TOTAL reset.

#### 23.2.1 SYSTEM RESET

In the unlikely event that the **maXim** fails to respond, the operating system may be reset so that the software may recommence normal operation. See also “POWER ON RESET” below. Performing a system reset selects “preset” mode but will **not** affect any of the recorded memory.

To perform a SYSTEM RESET;

**HOLD [function]**, tap **[f/a]** (reset), **[yes]**, **[yes]**.

#### 23.2.2 TOTAL RESET

Total Reset will **ERASE** all the recorded memory from the **maXim** and reset the operating system.

See also “POWER ON RESET” below.

To perform a TOTAL RESET;

**HOLD [function]**, tap **[f/a]** (reset), **[no]**, **[yes]**, **[yes]**.

#### 23.2.3 POWER ON RESETS

If the **maXim** is not responding 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” at switch on; **HOLD [function]**, switch on, release **[function]**.
- To perform a “TOTAL reset” at switch on (also known as a COLD START); **HOLD [no] + [yes]**, switch on the power and when the scrolling message finishes, release **[no] + [yes]**.

### 23.3 SETUP MENU

The “setup” menu allows you to set the following functions.....

- Lock/Unlock Console
- MIDI on/off.....MIDI Transmit on/off
- Preferences.....
  - Set times and speeds
  - Set language
  - Set File Name
  - Set Yellow master direction

To access the “setup” menu;

**HOLD [function]**, tap **[f/a]** (set-up).

### 23.4 LOCK

The **maXim** can be locked to prevent unauthorised changes. Three levels of lock are available.

**Hint: Always save your show to disc before locking the maXim.**

**HOLD [function]**, tap **[f/a]** (set-up).

The display asks “Lock Console?” and the PaTPaD shows three options:

-LOCK-	
PATCH	●
SAVE	⚙
ALL	●

- Lock **PATCH**. The patch cannot be edited and the fixture library is closed.
- Lock **SAVE**. Memories cannot be saved or edited.
- Lock **All**. The current *maXim* output continues but all controls are locked except for the [function] button which is used to unlock the *maXim*.

You can select any of the three options by pressing its [PM] button. The selected option flashes. To accept the flashing option press; [yes].

The display scrolls “Enter Code”. Two levels of security are available:

- For low level security *without a code* press [ok], [ok].
- For high level security use the red bank [f/a] buttons 1 to 9 (use 10 as 0) to enter a 1 to 4 digit lock code then press [ok].

Repeat the same digits then press [ok].

The console is now locked.

#### 23.4.1 UNLOCK

To unlock the *maXim*;

**HOLD** [function], tap [f/a] (setup).

The display asks “Unlock Console?”.

Press [yes].

The display scrolls “Enter Code”.

- If the console was locked with low level security simply press [ok].
- If the console was locked with high level security use red bank [f/a] buttons 1 to 9 (use 10 as 0) to enter the same digits used to lock the console then press [ok].

The console is now unlocked.

#### 23.4.2 LOST LOCK CODE

If you lock the *maXim* and forget the code you have two choices:

1. email [techsupport@lsc.com.au](mailto:techsupport@lsc.com.au) or contact your local LSC agent including the serial number of your *maXim* (located on the rear panel). An unlock code will be emailed to you (or your agent).
2. Perform a “Cold Start” which does a total reset and **destroys ALL memories and show information**. To perform a cold start, switch OFF the *maXim* and wait for 30 seconds. **HOLD** down the [yes] + [no] buttons and switch **ON** the *maXim*. **Wait** until the scrolling message finishes then release the two buttons.

## 23.5 PREFERENCES

### 23.5.1 DEFAULT FADE AND SPEED TIMES

**HOLD** [function], tap [f/a] (setup), Lock? [no], MIDI? [no], Set Preferences? [yes], Fade and Speed times? [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 – Speed, 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 “in time” or “out time” buttons.

To accept the setting, press [ok].

### 23.5.2 DEFAULT PARAMETER TIMES

Default parameter times are set from the PaTPaD [menu]. See “ADVANCED FIXTURE PROGRAMMING” for details.

### 23.5.3 LANGUAGE

To set the help language shown on the video display:

**HOLD** [function], tap [f/a] (setup), Lock? [no], MIDI? [no], Set Preferences? [yes], Fade and Speed times? [no], Language? [yes].

Press [yes] or [no] to cycle through the available “Help Screen” languages as shown on the display. Current choices are English, Spanish, German or Czech. When your selected language is displayed press [yes].

### 23.5.4 DEFAULT FILE NAME

To set the default name for saving shows to disk;

**HOLD** [function], tap [f/a] (setup), Lock? [no], MIDI? [no], Set Preferences? [yes], Fade and Speed times? [no], Language? [no], File name? [yes].

Move the cursor with [<] or [>] and select characters the **EDIT** wheel .

To save, press [ok].

### 23.5.5 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 Red and Yellow fader knobs always side by side.

To set the Yellow master inversion;

**HOLD** [function], tap [f/a] (setup), Lock? [no], MIDI? [no], Set Preferences? [yes], Fade and Speed times? [no], Language? [no], File name? [no]. If the Yellow master is not inverted, the display asks “Yellow Master is not inverted – Invert?”

To invert it press [yes].

If the Yellow master is inverted, the display asks "Yellow Master is inverted – Set Normal?"  
To set normal press **[yes]**.

### 23.6 SOFTWARE UPGRADE

**Before any software upgrade, save any shows that you want to keep to USB disk.**

The **maXim** operating system can be upgraded via the USB connector and also by a special program and cable called "Codelink".

Notification of new versions of the **maXim** software are posted on the LSC discussion forum at: <http://forums.lscighting.com.au>

Registered users can download from the forum or you can also obtain the software by emailing: [techsupport@lscighting.com.au](mailto:techsupport@lscighting.com.au).

To see the current software version of your maXim software;

**HOLD [function]**, tap **[f/a]** (help).

If the version of software in your maXim is 0.89 or lower you cannot upgrade by disk. If this is the case, contact LSC or your LSC agent for information on the alternative "Codelink" upgrade procedure.

Each **maXim** model has its own version of the software. The model type of your maXim (**MP**, **L**, **XL** or **XXL**) is printed on the rear panel. Note which model of console you are upgrading and select the correct file from the web site.

- Files for upgrading by **USB** use the file extension **".prg"**.
- Files for upgrading by **Codelink** use the file extension **".s19"**.

Un-zip the downloaded file and read the "read me" file for the latest instructions.

Place the USB flash disk containing **only the correct software upgrade file for your model** of desk in the disk drive.

The files are named as follows;

Model	File Name
<b>maXim MP.</b>	mxMPv??? PRG
<b>maXim L.</b>	mx36v??? PRG
<b>maXim XL.</b>	mx48v??? PRG
<b>maXim XXL.</b>	mx60v??? PRG
	(??? Will be the version number).

To upgrade;

**HOLD [function]**, tap **[f/a]** (disk).

Press **[no]**, **[no]**, **[yes]**, **[yes]**.

The **maXim** will now test the file and displays the message: "Checking Upgrade File..."

If the upgrade file passes the test press **[yes]** to continue the upgrade or **[no]** to abort.

If you start the upgrade process, the desk and the display on the video will go blank. This is normal.

**DO NOT REMOVE THE FLASH DISK OR TURN THE POWER OFF DURING THE UPGRADE. If the power fails during an upgrade, the maXim will be disabled. Normal operation can then only be restored by performing a CODELINK upgrade. See below.**

During the upgrade, progress of the upgrade can be seen on the yellow bank LEDs as they progressively light.

When the upgrade is complete **you must perform a "power on total reset"**.

Turn the desk off.

**HOLD [yes]** and **[no]** together.

Turn on the desk.

When the sign-on message has **completed release [yes]** and **[no]**.

The desk is now ready to use.

#### 23.6.1 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 connector) to enable new software to be loaded into the **maXim**.

Codelink is free and can be downloaded from;

[www.lscighting.com.au](http://www.lscighting.com.au)

Install and run the codelink program on your computer. Open the Codelink HELP menu for instructions on how to make the special cable to connect your computer to the maXim and how to upgrade your maXim.

The files for maXim upgrade by codelink are named as follows;

Model	File Name
<b>maXim MP.</b>	mxMPv??? s19
<b>maXim L.</b>	mx36v??? s19
<b>maXim XL.</b>	mx48v??? s19
<b>maXim XXL.</b>	mx60v??? s19
	(??? Will be the version number).

### 23.7 DIAGNOSTICS

The **maXim** provides diagnostics which allow you to;

- Test the operation of all buttons, LEDS, faders, USB ports and the EDIT wheel.
- Check battery voltage and charge condition.
- Check memory capacity and usage.
- Report error messages.

#### 23.7.1 DIAGNOSTICS MODE

To select diagnostics mode;

**HOLD [function]** tap **[ok]**, release **[function]**.

Several *unlabelled* red bank **[f/a]** buttons flash to show they are active.

#### 23.7.2 LED AND BUTTON TEST

Enter diagnostics mode (above) then press red bank **[f/a]** (1).

All LEDs should be lit. If a LED is not lit, then there is a possible problem with the LED.

To test a button, press the button 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;

**HOLD [function]**, tap **[ok]**.

### **23.7.3 FADER TEST**

Enter diagnostics mode (above) then press red bank **[f/a]** (2).

To test a fader, press the **[f/a]** button for that fader then move the fader. The display reads from 0 to 255 as the fader is moved through its range. To select the IN fader, or OUT fader, use the **[<]** and **[>]** buttons (respectively) above the Stack master.

To exit; **HOLD [function]**, tap **[ok]**.

### **23.7.4 EDIT WHEEL TEST**

Enter diagnostics mode (above) then 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; **HOLD [function]**, tap **[ok]**.

### **23.7.5 USB TEST**

Using a USB A to USB B cable, connect the cable from the Capture connector (USB B).to the top USB A connector.

Enter diagnostics mode (above) then press red bank **[f/a]** (6).

The **maXim** will test both directions of communication between the connectors and report the condition.

Remove the plug from the top USB connector and place it in the bottom USB connector then press red bank **[f/a]** (7).

The **maXim** will test both directions of communication between the connectors and report the condition.

To finish press; **[ok]**

### **23.7.6 BATTERY TEST**

Enter diagnostics mode (above) then press red bank **[f/a]** (5).

The display will show the battery voltage.

It should be between *approximately* 5.8 and 6.4 volts. Press **[ok]**.

The display will show the state of the battery as either, charging or charged.

To exit, press **[ok]**.

### **23.7.7 SYSTEM ERROR**

#### **INFORMATION**

Enter diagnostics mode (above) then press red bank **[f/a]** (10).

The window pops up on the video screen show showing any system error information. In the event of any problems, this information can be conveyed to LSC to assist in fixing problems.

To exit, press **[ok]**.

### **23.7.8 MEMORY TEST**

Enter diagnostics mode (above) then press red bank **[f/a]** (12).

The display shows the percentage of memory used. Press **[ok]**.

The display will show the percentage of heap used. (Technical 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]**.

## 24 TERMINOLOGY

The following Terms are commonly used in this **maXim** Operator Manual. These Terms have been adopted by LSC as the best descriptions for functions and operations performed on the **maXim** and may not be terms universally adopted on similar equipment.

### 24.1 FIXTURE.

A moving light, colour scroller, dimmer or any other DMX controlled device is known as a fixture. As you patch each Fixture you give it a unique *Fixture Number*. The fixture fader controls its intensity and the PaTPaD controls its parameters.

### 24.2 DMX SLOT.

Every Fixture has a selectable DMX starting slot and this is patched to that same DMX SLOT number on the **maXim**. The **maXim** will then automatically patch all of the remaining DMX slots for that Fixture according to the information in that particular Fixtures Template.

### 24.3 TEMPLATE.

A *Fixture Template* is a file that tells the **maXim** the function of each DMX slot for that fixture and it defines the PaTPaD controls and labels for that Fixture. Every different *type* of Fixture that you control requires a Template.

### 24.4 LIBRARY.

The **maXim** stores its Templates in a permanent library. The templates are organised in the library by brand (manufacturer) and model. When you want to use a particular model of Fixture, you select its Template from the library and load it into the patch. The **maXim** can have up to 10 different *types* of Fixture Templates (from the library) in use in the patch at the same time.

### 24.5 ATTRIBUTE.

Each brand and model of Fixture has a specified number and order of control channels. An *ATTRIBUTE* is one or two DMX control channels (two channels used for higher resolution) that uniquely controls one of the physical motions of the Fixture. The manufacturer's specification of a Fixture lists each attribute and its control channel number(s).

### 24.6 PARAMETER.

A parameter is one or more attributes that are grouped together in the **maXim** to control a logical aspect of the Fixture. The **PaTPad** controls *parameters* and these in turn set the attributes of the Fixture. In many cases a parameter directly controls the attribute of the same name. However, a single parameter can also be used to control multiple attributes of a Fixture. This allows a single parameter on the **PaTPad** to very easily perform a complex task on the Fixture.

### 24.7 WHEEL STOPS.

Parameters on the **PaTPad** can be continuously variable or they can jump between pre-defined values called *wheel stops*. Each wheel stop can be given a name that will appear on the **PaTPad** when that wheel stop is selected. A wheel stop can also have a limited variable area within the stop.

### 24.8 GROUP.

A group is a list of 2 or more Fixture numbers. Groups provide a rapid method of loading, Hi-lighting, or cloning many Fixtures in a single operation.

### 24.9 FILTER.

Filters are a powerful tool that you can use to select exactly which **parameters** of a fixture are involved in most **PaTPad** operations.

If **no filters** are applied, **all parameters** are included (subject to Hi-lights) in any store, preset, palette or padlock operation. If **any** parameter is **filtered**, then **only filtered parameters** are included (subject to Hi-lights). One simple rule is applied;

*Only FLASHING parameters are INCLUDED.*

### 24.10 HI-LIGHT.

Hi-lights are a tool that you can use to select exactly which **fixtures** on the **PaTPad** are involved in most **PaTPad** operations. When a fixture is loaded onto the **PaTPad** it is automatically Hi-lighted.

If a fixture is **Hi-lighted**, it is **included** (subject to the filters) in any store, preset, palette or padlock operation.

If a fixture is **not Hi-lighted**, it is **not included** in any store, preset, palette or padlock operation. The same simple rule is applied;

*Only FLASHING parameters are INCLUDED.*

### 24.11 PRESET.

A preset is a special type of scene that can be stored or recalled from the **PaTPad**. It is stored with specific **Fixtures Numbers** and usually with only specifically filtered parameters (for example, only focus). When a preset is recalled, **the specific Fixtures** in that preset will respond to their parameter settings (if the parameter is flashing). A link to a preset can be included in any normal scene allowing that scene to automatically recall the preset. Multiple scenes can include a link to the same preset. Editing a single preset will automatically change the look of all scenes that include a link to that preset.

### 24.12 PALETTE.

A palette is a special type of scene that can be stored or recalled from the **PaTPad**. A palette refers to specific **Fixtures types** (Templates) and is usually stored with only specifically filtered

parameters (for example, colour). A palette can include more than one *type* of Fixture. If a palette is recalled onto the PaTPad, **all Fixtures** on the PaTPad **of the same type(s) recorded in the palette** will move to those palette settings (if the parameter is flashing). A link to a palette can be included in any normal scene allowing that scene to automatically recall the palette. Multiple scenes can include a link to the same palette. Palettes work in a similar way to presets in that if you need to make changes, editing a single palette will automatically change the look of all scenes that include a link to that palette.

#### **24.13 HTP. (HIGHEST TAKES PRECEDENCE).**

All DMX slots that control intensity are treated by the **maXim** as HTP (Highest Takes Precedence). If the level for a HTP slot is emanating from several places within the **maXim** at the same time then the **highest** of all those levels will be the level at the output.

#### **24.14 LTP. (LATEST TAKES PRECEDENCE).**

All DMX slots that control fixture attributes except intensity are treated by the **maXim** as LTP (Latest Takes Precedence). The level for a LTP channel on the output of the **maXim** will always be the level from the place where the **latest** action took place (subject to any times).

A **latest** action is **triggered** when;

1. A parameter is altered on the **PaTPad**.
2. A PLAYBACK is faded up from zero.
3. A step of a stack or chase is EXECUTED (effectively the same as 2).
4. A **[f/a]** button is pressed. This will only **momentarily** override the current LTP level whilst the button is held down.
5. The **[p-trig]** button is pressed.

LTP levels are not influenced by the level settings of the playbacks, masters or the flash level control. This means that when a scene is played back, the parameters (LTP) of any fixtures in that scene will go to their recorded/stored settings in their recorded/stored times as soon as they are triggered. If a scene is faded down, the parameters do not change. To move a parameter you must trigger it via another scene or alter it via the **PaTPad**.

#### **24.15 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 fixtures or a single scene (see below) or a combination of several scenes. It may even be a single fixture.

#### **24.16 SCENE**

A Scene is a *memorised* look of fixtures (at their respective levels) plus "IN" and "OUT" fade times and a name. It can be played back on playback or as a step in a stack or chase.

#### **24.17 CHASE**

A Chase 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.

#### **24.18 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.

#### **24.19 DIPLESS CROSSFADE**

When a dipless crossfade is performed, the intensity level of any fixture 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

#### **24.20 PLAYBACK**

A Playback provides a means of playing back and controlling the overall level of a scene or a chase.

#### **24.21 DMX512A**

DMX512A 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.

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.

The end of the DMX line is terminated (120  $\Omega$ ) to prevent the signal reflecting back up the line and causing possible errors.

#### **24.22 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.

## 25 COMPLIANCE STATEMENTS

### **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.

### **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).

### **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.

## 26 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 in the future.

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.



**EKO** Installation dimmer in 6, 12 and 24 channel versions with DMX and LSCnet wallplate control.



**e-Series** – featuring the **ePAK**, **ePRO** and **e1220** rackmount 6 and 12 channel digital dimmers



**TEKO** – Touring dimmer featuring 3Kw per channel and touch screen control.



**i-Series** – featuring the **iPAK** and **iPRO** range of professional installation dimmers.



**Redback** – Cost effective entry level professional dimmer range.



**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 6 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.