OUTSTATION OS1

INTRODUCTION

OS1 - Outstation OS1 Control Desk

The **Outstation OS1** is a 60 Channel, 60 Scene (Pages 1-5), 12 Chase (Page 6) DMX programmable control desk that is ideal as an architectural controller and as a remote for our ChromaRange Products.

The Chase step times are user programmable between 0.1 seconds and 24 hours. With 30 steps available it is therefore possible to have 4 events per day over a week.

It is beautifully finished in stainless steel, fitted with chrome push buttons and a blue display, so it will fit into any decor.

The **OS1** is ideal for offices, bars, restaurants, foyers in fact anywhere an easy to use, and program, DMX controller is required.

The **OS1** is powered with a Low Voltage Supply (LVS) of +12…25Vdc @ 50…25mA connected to pin 5 of the provided 5 pin XLR or by hardwiring to the lever operated terminal block on the Printed Circuit Board (PCB) – see Connections.

CONNECTIONS

DIGITAL AND LOW VOLTAGE SUPPLY CONNECTIONS are made by using the 5 pin XLR plug provided or hardwiring to the lever operated terminal block on the PCB.

The connections are indicated on the PCB and are:

DMX SIGNAL AND LV SUPPLY	Cable Colours
Pin 1 = ⏚ Chassis Earth - Screen	Black Sleeve
Pin 2 = Signal -	Blue
Pin 3 = Signal +	White
Pin 4 = no connection	Green
Pin 5 = Low Voltage Supply In	Red
+12…25Vdc @ 50…25mA	

The LVS is available from most PULSAR products.
On the ChromaZone and ChromaBank, set DIL switch 12 up.
The blue LED will illuminate to show the LVS is connected to pin 5 of the male XLR socket
On products that contain a User Interface Module (UIM), such as the ChromaFlood, ChromaBatten and ChromaBankIP, the LVS may be switched on or off from the menu.

The DMX outputs are protected against accidental application of mains voltages and static.

DISPLAY

LED DISPLAY A blue, 4 digit LED display is used to indicate the status of the OS1 when keys are pressed.

At switch on, the software version number is displayed.

After a short delay, the current page and button numbers are displayed; these being the ones last pressed before switch off.

If a Chase is running, the decimal points in the display sequence to indicate this.

PRE-PROGRAMMED SCENES

Pages 1-5 have pre-defined Scenes, Page 6 has 12 Chases; please see the sheet *Outstation OS1 - Pre Programmed (Chroma) Scene Pages* for details.

Note: The pre-programmed Scenes are designed for use with a ChromaZone/Bank/Batten/Flood running in 9 (Page 1 only) or 46 channel mode. However you may re-program these as required (see Programming section below).

Pressing any single button reveals the name of the Scene or Chase on that button (as shown in the *Display* column of the tables).

Releasing the button activates that Scene or Chase and shows fade time in seconds in the left 2 digits and button number in the right 2 digits.

When the crossfade time has counted down, the display reverts to showing the current page number in the left digit and button number in the right 2 digits.

REMOTE CONTROL OF MASTERPIECE

The OS1 can switch between DMX operation and PMX/RS232 operation for Remote Control of a Masterpiece using Menu Option 8 (see Programming section below). A cable (Pulsar 21850) is available to power the OS1 and carry data.

All 6 Pages have alternative pre-defined Masterpiece functions; please see the sheet Outstation OS1 – Remote Control of Masterpiece by PMX/RS232 for details. However you may re-program these as required (see Programming section below).

Pressing any single button reveals the name of the Masterpiece function on that button (as shown in the *Default* column of the tables).

Releasing the button activates that function and shows page number in the left digit and button number in the right 2 digits.

QUICK ADJUST
WHILE PROGRAM KEYS 1 AND 5 ARE PRESSED

When pressing, and holding down, the PROG buttons (1 and 5) the display scrolls through:
3=Page Up **11**=Page Down **8**=Step Chase **4**=Dim Up **12**=Dim Down

PAGE CHANGE

Whilst still holding the PROG buttons down, the first press on buttons 3 or 11 will change the display to Current Page and Button.

Whilst still holding the PROG buttons down, further pressing of buttons 3 and 11 moves the display through the pages.

When the required page is shown in the display, release the PROG buttons (1 and 5).

Then press a button on that page for the Scene / Chase you require.

STEP CHASE

Whilst still holding the PROG buttons down, pressing button 8 will display "STEP" and on releasing button 8 the running Chase's current STEP number OR "No.Chase" will be displayed.

DIM UP AND DIM DN

Some products have a Master Dimmer channel. This function allows quick adjustment of this channel without affecting the programmed Scenes and Chases. Menu Option 10 (see below) is "10. Select Master Dimmer Channel", where the default channel is 10. At switch on the Master Dimmer is set to 100%

Whilst still holding the PROG buttons down, pressing button 4 or 12 will display the current Master Dimmer level. To decrease the level, press or hold down button 12. To increase the level, press or hold down button 4.

DMX TERMINATION

The end of DMX lines longer than 50m must always be terminated with a 100Ω resistor connected between data+ and data-, this resistor can conveniently be mounted in a suitable XLR plug which should be inserted in the last unit on the DMX line(s).

5 pin DMX line terminating plugs are available from Pulsar, Product No. 21750.4

INSTALLATION

SURFACE MOUNTING Four holes are provided in the tray base to allow the tray to be fixed to a surface. See fixing detail drawing.
Remove the four M3.5 screws holding the front panel to the tray.
Carefully lift the front panel away and, if necessary, disconnect the provided control cable by pushing down on the levers of the terminal block. Carefully store the front panel.
Remove the required number of M4 blanking plugs located in the tray, offer the tray up to the surface and mark the positions of the fixings on the surface.
Once suitable holes have been drilled in the surface, screw the tray to the surface; if the cable had been disconnected, reconnect the cable to the lever operated terminal block and fix the front panel to the tray using the M3.5 screws.

FLUSH MOUNTING The **OS1** may be mounted in a wall by using the supplied tray (box) or a 4 way UK electrical box. The four M3.5 screws holding the front panel to the tray are in the standard position for fitting faceplates to such boxes. Please see fixing detail drawing.
Having fitted the box into the wall and run the appropriate insulated cable (4 core minimum) to the box; remove the four M3.5 screws on the front of the OS1.
Carefully lift the front panel away and disconnect the provided control cable by pushing down on the levers of the terminal block.
Connect your control cable to the lever operated terminal block (observing the functions of each terminal) and fix the **OS1** front panel to the electrical box using the M3.5 screws.

OTHER INFORMATION

STANDARDS - The **OS1** complies with the following International and National Standards:
Electrical Safety - IEC65, EN60065, BS415
EMC - EN50081-1, EN55022, EN50082-1
Index of Protection - IP20

CE **Marking Directive 93/68/EEC** - The **OS1** meets the EMC Directive 89/336/EEC.

This is a low voltage unit operating on +12...25VDC without a direct connection to the mains supply; it is therefore inherently safe as it operates on less than 75VDC as specified in the Low Voltage Directive 73/23/EEC.

GUARANTEE - three years from the date of original purchase. The guarantee covers defects in manufacturing workmanship and materials. It is limited to parts and labour. The guarantee becomes void if the product is: a) misused, b) not used in accordance with the instructions, c) the cable connections are not made according to our instructions if the unit is used in damp or wet environments, d) repairs are made by unauthorised persons, e) the serial number label has been removed or defaced. Pulsar's maximum liability shall not exceed the price paid for the product. In the unlikely event of a fault occurring, do not use without repair. Return the product, with a description of the fault, to your supplier or direct to Pulsar for immediate attention.

ACCESSORIES

The Pulsar **OS1** has been designed to work with and complement the following products. Please contact us to receive further details of these superb products!

ChromaRange

Product No.	Controller
24550NC	ChromaZone 6 Way Controller for ChromaRange
24500	ChromaZone 12 Way Controller for ChromaRange
24500RM	ChromaZone 12 Way 19" Controller for ChromaRange
24500RMX3	ChromaZone 12 Way 19" Controller for ChromaRange
CBANK2	ChromaBank Mk2
CBANKIP	ChromaBank IP65 100/200/300W Luminaires
CBAT	ChromaBatten IP65 17/50/100/200/300W Luminaires
CFLD	ChromaFlood IP65 100/200W Luminaires

Multi Control – DMX & PMX

Product No.	Controller
21850	OS1 to Masterpiece RS232 Remote Control Cable
24000	Masterpiece 108 Control Desk
20216	Masterpiece 216 Control Desk
27216	Masterpiece Replay Unit 216

Signal Processing

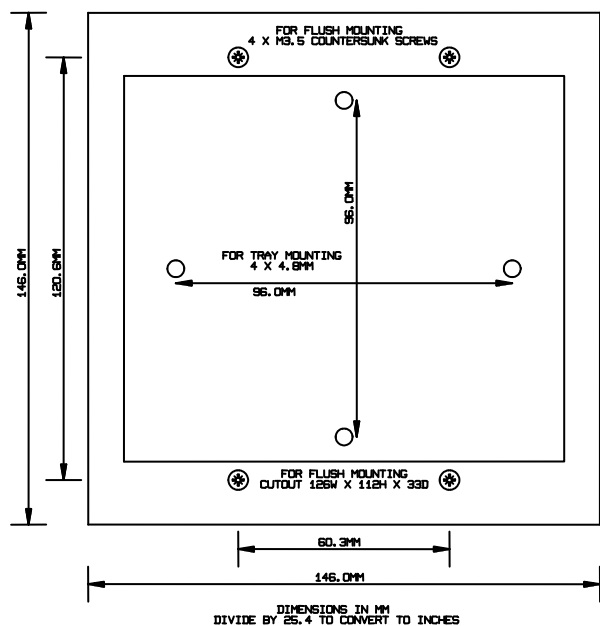| Product No.	Interface	
27770	6 Channel PMX/DMX – 0-10V Interface	
27350	18 Channel Universal Interface	DMX – 18x10V
27300	36 Channel Universal Interface	DMX – 36x10V
27400	18 Channel Switching Interface	DMX – 18x10V

Rackpaks and Datapaks
A large range of dimming, and switching, packs for control of up to 20A per channel. Wall, Rack Mounting and Free Standing versions.

Cables

Product No.	Cable
21850	OS1 to Masterpiece RS232 Remote Control Cable
21750.4	DMX Line Terminator Plug (XLR-5)
21755.1	2m DMX Ext. Lead - 5 core (1 XLR-5 Plug, 1 Skt)
21755.2	5m DMX Ext. Lead - 5 core (1 XLR-5 Plug, 1 Skt)
21755.3	10m DMX Ext. Lead - 5 core (1 XLR-5 Plug, 1 Skt)

OUTSTATION OS1 FIXING DETAILS


```
FOR FLUSH MOUNTING
4 X M3.5 COUNTERSUNK SCREWS

FOR TRAY MOUNTING
4 X 4.8MM
96.0MM
96.0MM

146.0MM
120.0MM

FOR FLUSH MOUNTING
CUTOUT 126W X 112H X 33D

60.3MM
146.0MM

DIMENSIONS IN MM
DIVIDE BY 25.4 TO CONVERT TO INCHES
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DIMENSIONS AND WEIGHTS

Code	Unit	Width mm	Height mm	Depth mm	Weight kg
OS1	Outstation OS1 Control Desk	146	146	38	2.1

OUTSTATION OS1

PROGRAMMING

To enter Program Mode, press buttons 1 and 5 together and release.

SECURITY CODE

To prevent unauthorised or accidental access the **OS1** requires a code to be entered when the **PROG** buttons (1 and 5) are simultaneously pressed and released.

The display will blink the word "CODE" indicating the code required for programming should now be entered. This code is **12**, **6**, **7**, **1**.
As the code is entered, the letters of the word CODE are replaced by the – character.

The word "PASS" is displayed to indicate the correct code was entered.

The word "FAIL" is displayed if the wrong code was entered.

If a button is not pressed within 5 seconds, the program mode is cancelled and the word "CNCL" is displayed.

The display now scrolls through the functions of the programming buttons:
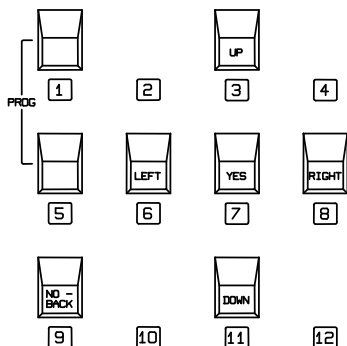
3 = UP, 11 = DOWN, 6 = LEFT, 8 = RIGHT, 7 = YES, 9 = NO – BAC

Pressing Up or Down cycles through the main menu programming options
1 = Set Channel Levels
2 = Save Scene
3 = Name Button
4 = Page Limit
5 = Crossfade Time Select
6 = Snap – Fade – Hold Table Set Up
7 = Chase Prog-View-Edit Steps and Times
8 = Masterpiece Outstation Mode
9 = Copy Button to Button
10 = Select Master Dimmer Channel
11 = Restore Factory Settings
12 = Clear Live Memory
13 = Backup Menu
To select one of these press YES, to go back press BAC

1. Set Channel Levels

1 = Set Channel Levels 1 by 1
2 = All Channel Levels to same level

Tip: Use Option 2 to set the majority of channels, and then use option 1 to set the exceptions.

Option 1: Use Left / Right to select channel, Up / Down to set level. Display alternates between channel number and level percentage.
Option 2: Use Up / Down to set level. Display shows level percentage
The Up / Down and Left / Right buttons repeat if held pressed.
To accept press YES, to restore and go back press BAC

2. Save Scene

Select the button you require using the Up / Down buttons. Pressing and holding an Up / Down button scrolls the display through the 5 Pages of 12 Scenes.
Display shows Page No. on the left and Button No. on the right.
Select the required destination Page and Button using the Up / Down buttons
To confirm press YES, to go back press BAC

3. Name Button

Select the button you require using the Up / Down buttons. Pressing and holding an Up / Down button scrolls the display through the 6 Pages of 12 Buttons.
To select press YES, to restore and go back press BAC
The active character flashes, press the Up / Down buttons to cycle through the available characters. The Up / Down buttons repeat if held pressed Move on to the next / previous character or decimal point using the Right / Left buttons.
To accept press YES, to restore and go back press BAC

4. Page Limit

Useful for restricting user access when not all Pages are required.
The display shows 1 to 4, with a decimal point flashing to the right of the currently selected Page. Pressing the Left / Right buttons moves the decimal point to the next Page.
Press the Up / Down buttons to enable or restrict a Page.
The Page number flashes when restricted and remains static when accessible.
The display scrolls to Pages 5 and 6 after Page 4.
To accept press YES, to restore and go back press BAC

5. Crossfade Time Select

Press Yes to view the existing time (in seconds).
Select the crossfade time you require using the Up / Down buttons, available times are 0.0, 0.5, 1, 2, 3, 5, 10, 20, 30 and 60 seconds
To accept press YES, to restore and go back press BAC

6. Snap-Fade-Hold Table Set Up

Pressing Up/Down will cycle through the sub-menu options
1 = Set Snap – Fade – Hold 1 by 1
2 = Snap all Channels
3 = Fade all Channels
4 = Hold all Channels

Tip: Use 2 to 4 to set the majority of channels, and then use option 1 to set the exceptions.
Option 1: Press Left / Right to select the Channel to be modified, then press Up / Down to select the required Snap, Fade or Hold function. The Left / Right buttons repeat if held pressed.
To accept press YES, to restore and go back press BAC

7. Chase Prog-View-Edit Steps and Times

Up to 12 Chases of Scenes can be created from any of the 60 Scenes, 1.1 to 5.12 (5 Pages of 12). You may have up to 30 Steps per Chase, with each Step having its own Time duration.
Press the Up / Down buttons to select one of the 12 Chases on Page 6
To accept press YES, to go back press BAC
1 = Set Times1 by 1
2 = Set all Times the same

Tip: Use 2 to set the majority of Times, and then use option 1 to set the exceptions.
To accept press YES, to restore and go back press BAC
The display shows the Scene Page (1-5) in the left digit and the Scene number in the right digit(s) for Step 1 or the two other (Step) functions STOP and LOOP.
Pressing and holding down the Right/Left button displays St. in the left two digits and the Step number in the right digit(s)
Releasing the Right/Left button displays the Page number in the left digit and the Scene number in the right digit(s).
Another press and hold of the Right/Left button displays Ti (Time). in the left two digits and the Time number in the right digit(s)
Releasing the Right/Left button displays the step's duration.
To Program/View/Modify a Chase Step, toggle the Right/Left buttons until St. n (where n=STEP number) appears with the button held down. Releasing the button displays the current Page and Scene number associated with that Step. To change the Page and Scene number, press the Up / Down buttons until the required Page and Scene number are shown in the display.
The functions STOP and LOOP are available following Scene 5.12 (upwards) or 1.1 (downwards).
STOP is for a "one shot" chase, the chase runs once and stops on the scene preceeding the "STOP" step.

LOOP returns to step one. For example, a 6 Step LOOPing chase would have LOOP in Step 7

To Program/View/Modify a Chase step TIME, toggle the Left/Right buttons until TI. n (where n=TIME number) appears with the button held down. Releasing the button displays the duration associated with that STEP. To change the TIME, press the Up / Down buttons until the required TIME is shown in the display.

The TIME display takes the format:

0.00.1 - 0.00.9		0.1 to 0.9 seconds
0.01.0 - 0.09.0		1 to 9 seconds
00.10 - 00.50		10 to 50 seconds
1.00 - 50.00		1 to 50 minutes
1.00H - 9.00H		1 to 9 hours
10Hr - 24Hr		10 to 24 hours

Fine TIME adjustment may be achieved by programming more STEPS with the same PAGE and SCENE number using TIME values to add up to the TIME you require.

Repeat the Program/View/Modify Chase Step and Chase Step TIME instructions above until your Chase is complete, then put a STOP or LOOP in the next Step

To accept press YES, to restore and go back press BAC

8. Masterpiece Outstation Mode

Pressing Up/Down will cycle through the programming options
1 = OFF
2 = ON
3 = Set Button Functions

Option 1: The OS1 will transmit DMX512 in normal mode

Option 2: The OS1 will transmit PMX (RS232) to the Remote Control socket on the Masterpiece.

Option 3: Press Left / Right to scroll through buttons 1-12 for each of the 6 pages. Display shows Page No. on left and Button No. on right. Once the required Page and destination Button is shown in the display, select the Function you require (as listed in the *Pulsar Masterpiece - Appendix 2 - Remote Control by PMX (RS232))* by pressing the Up / Down buttons

The Left / Right and Up / Down buttons repeat if held pressed.
To accept press YES, to go back press BAC

9. Copy Button to Button

The Up / Down buttons repeat if held pressed.
Press the Up / Down buttons to select the button to copy "From"
To accept press YES, to go back press BAC

Press the Up / Down buttons to select the button to copy "To"
To accept press YES, to go back press BAC

If you wish to Copy the same "From" information to another button, press the Up / Down buttons to select the next button to copy "To"
To accept press YES, to go back press BAC

Either select another button to copy "From" or press BAC

10. Select Master Dimmer Channel

The Left / Right buttons repeat if held pressed.
The current Master Dimmer Channel is displayed, the default is Channel 10
Press the Left / Right buttons to change the Master Dimmer Channel
To accept press YES, to go back press BAC

11. Restore Factory Defaults

⚠ **WARNING** – this will override ALL user programming.

The Factory Default Settings are shown on the page entitled *Pre-Programmed (Chroma) Scene Pages*.
This function loads the default settings to the LIVE memory area and clears the BACKUP memory area.
Selecting this function will display "Are you sure"
To accept press YES, to go back press BAC

12. Clear Live Memory

⚠ **WARNING** – this will clear user programming.

The Live memory area may be cleared out ready for a new set of Scenes and Chases rather than modifying the existing set.
Scenes and Chases are cleared independently.
Press the Up / Down buttons to select Scenes or Chases
1 = Scenes – Clear Scenes
2 = Chases – Clear Chases
To accept press YES, to go back press BAC

Selecting this function will display "Are you sure"
To accept press YES, to go back press BAC

13. Backup Menu

⚠ **WARNING** – this could override user programming.

This function provides a means of storing your programmed Scenes and Chases to a Backup area of memory, swapping Scenes and Chases between the backup and Live memory areas, and retrieving your stored Scenes and Chases from the Backup memory area.
Press the Up / Down buttons to select the backup function
1. = Copy Live to Backup
2. = Swap Live and Backup
3. = Copy Backup to Live
To accept press YES, to go back press BAC

Selecting this function will display "Are you sure"
To accept press YES, to go back press BAC

Modifying Scenes

Press the Button to select the Scene to be modified.
Follow the **Programming Sections** – *Set Channel Levels and Save Scene*, to save the modified Scene to the same Page and destination Button, or a new one.

Outstation OS1 - Default (Chroma) Channel Assignments and Snap/Fade/Hold Table

Channel No.	Function	Crossfade Type Snap/Fade/Hold	Channel No.	Function	Crossfade Type Snap/Fade/Hold
1	All Red	Snap	31	Output 7 Blue	Fade
2	All Green	Snap	32	Output 8 Red	Fade
3	All Blue	Snap	33	Output 8 Green	Fade
4	Chase 1 Select	Snap	34	Output 8 Blue	Fade
5	Chase 1 Speed	Snap	35	Output 9 Red	Fade
6	Chase 1 Level	Fade	36	Output 9 Green	Fade
7	Chase 2 Select	Snap	37	Output 9 Blue	Fade
8	Chase 2 Speed	Snap	38	Output 10 Red	Fade
9	Chase 2 Level	Fade	39	Output 10 Green	Fade
10	Grand Master for 11-46	Fade	40	Output 10 Blue	Fade
11	Output 1 Red	Fade	41	Output 11 Red	Fade
12	Output 1 Green	Fade	42	Output 11 Green	Fade
13	Output 1 Blue	Fade	43	Output 11 Blue	Fade
14	Output 2 Red	Fade	44	Output 12 Red	Fade
15	Output 2 Green	Fade	45	Output 12 Green	Fade
16	Output 2 Blue	Fade	46	Output 12 Blue	Fade
17	Output 3 Red	Fade	47		Fade
18	Output 3 Green	Fade	48		Fade
19	Output 3 Blue	Fade	49		Fade
20	Output 4 Red	Fade	50		Fade
21	Output 4 Green	Fade	51		Fade
22	Output 4 Blue	Fade	52		Fade
23	Output 5 Red	Fade	53		Fade
24	Output 5 Green	Fade	54		Fade
25	Output 5 Blue	Fade	55		Fade
26	Output 6 Red	Fade	56		Fade
27	Output 6 Green	Fade	57		Fade
28	Output 6 Blue	Fade	58		Fade
29	Output 7 Red	Fade	59		Fade
30	Output 7 Green	Fade	60		Fade

Outstation OS1 - User Programmed Channel Assignments and Snap/Fade/Hold Table

Channel No.	Function	Crossfade Type Snap/Fade/Hold	Channel No.	Function	Crossfade Type Snap/Fade/Hold
1			31		
2			32		
3			33		
4			34		
5			35		
6			36		
7			37		
8			38		
9			39		
10			40		
11			41		
12			42		
13			43		
14			44		
15			45		
16			46		
17			47		
18			48		
19			49		
20			50		
21			51		
22			52		
23			53		
24			54		
25			55		
26			56		
27			57		
28			58		
29			59		
30			60		

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Outstation OS1
Pre-Programmed (Chroma) Scene and Chase Pages

Pressing any button reveals the name of the scene on that button (as shown in the *Display* column of the tables).
Releasing the button activates that scene and shows fade time in seconds in the left 2 digits and button number in the right 2 digits.
When the crossfade time has counted down, the display reverts to showing the current page number in the left digit and button number in the right 2 digits.
Pages 1 and 2 are pre-programmed with dynamic effects, Pages 3-5 are pre-programmed with static effects.

PAGE 1   Uses the built in effects on Channels 1-9 of a ChromaZone/Bank.
The ChromaZone/Bank may therefore be in 9 or 46 Channel Mode

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1	OFF	Off	2	6.COL	6 Crossfading Colours	3	bL.nr	Blue Nightrider	4	18.nr	18 xfading col Nightrider
5	G-M	Green - Magenta Wave	6	18.CO	18 Crossfading Colours	7	WIPE	Colour Wipes	8	CASC	Cascade + auto colour
9	FOL3	18 Contrasting Colours	10	rAIn	Rainbow Crossfade	11	rAnd	Random Colours	12	AUtO	Auto Chase

PAGE 2   Uses the built in effects on Channels 1-9 of a ChromaZone/Bank.
The ChromaZone/Bank may therefore be in 9 or 46 Channel Mode
This is a slower, gentler version of Page 1 with some direction and colour variations.

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1	OFF	Off	2	6.COL	6 Crossfading Colours	3	bL.nr	Blue Nightrider	4	18.nr	18 xfading col Nightrider
5	rd.Cn	Red - Cyan Wave	6	18.CO	18 Crossfading Colours	7	WIPE	Colour Wipes	8	CASC	Cascade + auto colour
9	FOL3	18 Contrasting Colours	10	rAIn	Rainbow Crossfade	11	rAnd	Random Colours	12	AUtO	Auto Chase

PAGE 3   These scenes drive the individual RGBs on Channels 10 to 46
The ChromaZone/Bank must therefore be in 46 Channel Mode

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1	rd.Cn	Red - Cyan	2	Cn.rd	Cyan - Red	3	Or.PC	Orange - Peacock	4	PC.Or	Peacock - Orange
5	YE.bL	Yellow - Blue	6	bL.YE	Blue - Yellow	7	LI.PU	Lime - Purple	8	PU.LI	Purple - Lime
9	Gr.m	Green - Magenta	10	M.Gr	Magenta - Green	11	SE.ro	Sea - Rose	12	rO.SE	Rose - Sea

PAGE 4   These scenes drive the individual RGBs on Channels 10 to 46
The ChromaZone/Bank must therefore be in 46 Channel Mode

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1	rEd	Red	2	OrnG	Orange	3	yELO	Yellow	4	LIm	Lime
5	GrEn	Green	6	SEA	Sea	7	cyAn	Cyan	8	PCOC	Peacock
9	bLUE	Blue	10	PUrP	Purple	11	mAG	Magenta	12	rOSE	Rose

PAGE 5   These scenes drive the individual RGBs, on Channels 10 to 46
The ChromaZone/Bank must therefore be in 46 Channel Mode

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1	L.rEd	Light Red	2	L.yEL	Light Orange	3	L.Grn	Light Green	4	L.cyn	Light Cyan
5	L.bLU	Light Blue	6	L.mG	Light Magenta	7	Lr.LC	Light Red - Light Cyan	8	Ly.Lb	Light Yellow - Light Blue
9	rAIn	Rainbow - forward	10	nIAr	Rainbow - reverse	11	Rb.bR	2 Rnbw-C1&2-Opp.Dir.	12	Rb.Rb	2 Rainbow-Chase1 & 2

PAGE 6   Various demonstration chases using the Scenes in Pages 1 – 5 are programmed onto these buttons

	Display	Chase		Display	Chase		Display	Chase		Display	Chase
1	C. 1		2	C. 2		3	C. 3		4	C. 4	
5	C. 4		6	C. 6		7	C. 7		8	C. 8	
9	C. 9		10	C. 10		11	C. 11		12	C. 12	

Outstation OS1
User Programmed Scene Pages

PAGE 1

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1			2			3			4		
5			6			7			8		
9			10			11			12		

Notes:

PAGE 2

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1			2			3			4		
5			6			7			8		
9			10			11			12		

Notes:

PAGE 3

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1			2			3			4		
5			6			7			8		
9			10			11			12		

Notes:

PAGE 4

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1			2			3			4		
5			6			7			8		
9			10			11			12		

Notes:

PAGE 5

	Display	Scene		Display	Scene		Display	Scene		Display	Scene
1			2			3			4		
5			6			7			8		
9			10			11			12		

Notes:

PAGE 6

	Display	Chase		Display	Chase		Display	Chase		Display	Chase
1			2			3			4		
5			6			7			8		
9			10			11			12		

Notes:

Please copy this page for future programming

PULSAR MASTERPIECE - APPENDIX TWO - REMOTE CONTROL BY PMX (RS232)

A three pin XLR plug and socket are provided on the back panel for RS232 "IN" and "THRU". This input allows you to press a number of front panel keys remotely from a Pulsar OS1 OutStation, computer serial port, etc.. Thus you can do anything from putting on a single lighting channel to triggering a complete lightshow remotely. The system is implemented from software version N.1.82. It is similar to Remote Control by MIDI - see Appendix Three.

Press	No.	Function	Press	No.	Function	Press	No.	Function	Press	No.	Function
0	00H	S10.–1	36	24H	E1.-1	72	48H	EC.-1	99	63H	C3.-1
1	01H	S10.–2	37	25H	E1.-2	73	49H	EC.-2	100	64H	C3.-2
2	02H	S10.–3	38	26H	E1.-3	74	4AH	EC.-3	101	65H	C3.-3
3	03H	S10.–4	39	27H	E1.-4	75	4BH	EC.-4	102	66H	C3.-4
4	04H	S10.–5	40	28H	E1.-5	76	4CH	EC.-5	103	67H	C3.-5
5	05H	S10.–6	41	29H	E1.-6	77	4DH	EC.-6	104	68H	C3.-6
6	06H	S10.–7	42	2AH	E1.-7	78	4EH	E3.-7	105	69H	C3.-7
7	07H	S10.–8	43	2BH	E1.-8	79	4FH	E3.-8	106	6AH	C3.-8
8	08H	S10.–9	44	2CH	E1.-9	80	50H	E3.-9	107	6BH	C3.-9
9	09H	S10.10	45	2DH	E1.10	81	51H	E3.10	108	6CH	C3.10
10	0AH	S10.11	46	2EH	E1.11	82	52H	E3.11	109	6DH	C3.11
11	0BH	S10.12	47	2FH	E1.12	83	53H	E3.12	110	6EH	C3.12
12	0CH	S10.13	48	30H	E1.13	84	54H	E3.13	111	6FH	C3.13
13	0DH	S10.14	49	31H	E1.14	85	55H	E3.14	112	70H	C3.14
14	0EH	S10.15	50	32H	E1.15	86	56H	E3.15	113	71H	C3.15
15	0FH	S10.16	51	33H	E1.16	87	57H	E3.16	114	72H	C3.16
16	10H	S10.17	52	34H	E1.17	88	58H	E3.17	115	73H	C3.17
17	11H	S10.18	53	35H	E1.18	89	59H	E3.18	116	74H	C3.18
18	12H	S11.–1	54	36H	E2.-1	90	5AH	Fwd Man Step	117	75H	Sho.1
19	13H	S11.–2	55	37H	E2.-2	91	5BH	Rev Man Step	118	76H	Sho.2
20	14H	S11.–3	56	38H	E2.-3	92	5CH		119	77H	Sho.3
21	15H	S11.–4	57	39H	E2.-4	93	5DH		120	78H	Sho.4
22	16H	S11.–5	58	3AH	E2.-5	94	5EH		121	79H	Sho.5
23	17H	S11.–6	59	3BH	E2.-6	95	5FH		122	7AH	Sho.6
24	18H	S11.–7	60	3CH	E2.-7	96	60H	Swap Card-Mem	123	7BH	Sho.7
25	19H	S11.–8	61	3DH	E2.-8	97	61H	Card to Mem	124	7CH	Sho.8
26	1AH	S11.–9	62	3EH	E2.-9	98	62H	Remote Blackout	125	7DH	
27	1BH	S11.10	63	3FH	E2.10				126	7EH	
28	1CH	S11.11	64	40H	E2.11				127	7FH	All Off
29	1DH	S11.12	65	41H	E2.12			Swap Card-Mem and			
30	1EH	S11.13	66	42H	E2.13			Card to Mem are			
31	1FH	S11.14	67	43H	E2.14			not available in		Sho.1 – Sho.8 are	
32	20H	S11.15	68	44H	E2.15			MP216 or RU216		Show Change for	
33	21H	S11.16	69	45H	E2.16					MP216 and RU216 only	
34	22H	S11.17	70	46H	E2.17						
35	23H	S11.18	71	47H	E2.18						

Notes:
E.G. E.2.-7 = Environment Keyboard No.2, Keyboard Key No.7.
The Keyboards driven by the PMX signal may be in Flash, Swap or Solo, but Latch, which toggles with each press, should be used with caution as it is possible to lose track of whether a key is off or on.

The PMX (PulsarMultipleX) RS232 TRANSMISSION PROTOCOL required is:

SERIAL FORMAT - 9600 baud, 1 start bit, 8 data bits, 1 stop bit, no parity.

HANDSHAKING - not required - so RTS (Pin 4 on a 25 pin 'D' connector) and CTS (Pin 5) need to be cross linked at the computer to allow it to transmit.

DATA STRUCTURE - Three bytes are required per key Press/Unpress:
1) A Header Byte with the value 252 (FCH) to show that key press information follows,
2) A Press Number byte with a value 0-127 (00-7FH) to select a key - see table above,
3) And finally a data byte, which, with a value in the range 64-127 (40-7FH) = Key Pressed, or with a value in the range 0-63 (00-3FH) = Key Unpressed. A Keyboard in Latch mode toggles for each Press, Unpress information having no effect. A Keyboard in Flash mode is turned On by a Press and Off by an Unpress.

ChromaZone™ Software Version 3.1

Pulsar ChromaZone / ChromaBank Software Version No. 3.1 (MAIN micro 3.1 29-11-04 + DMX micro 3.0 26-02-04) has many exciting new features. The additions since version 1.2 are: • Two built in Chases – allowing superimposition of effects and crossfading between chases. Chase 1 and 2 use the same table of 31 chases but there are differences to give you more choice - Chase 1 uses the Master Red, Green and Blue Channels 1, 2 & 3 to change the colour of some chases (see table) while Chase 2 stays white and uses them to give a background colour. • There are chase enhancements - shown in **_Bold Italic_** below. • The chases now have smoother waveforms. • There are 4 new operating modes: 9 Channel, 10 Channel (from 3.1), 36 Channel and 46 Channel Modes, in addition to the original 6 and 42 Channel Modes. • There's a Master Dimmer Channel (Ch.10) for the 36 individual RGB channels and, with option 7 up, this becomes a **_Global Grand Master_** for the All R/G/B and Chases Levels too (from 3.1). • A new Dimmer Law doubles the bottom end resolution for smoother dimming and increases the top end action. • Input Smoothing Disable Switch for fast display of video graphics, **_and video frame rate capability_** (from 3.0). • Plus a new, more useful choice of Stand Alone Chase Speeds. • Please see the lid printing pages for details of the Operating Modes and how to select them, Channel Listings, and further information. • Version 3.1 is suitable for both the ChromaZone 12 and the ChromaZone 6.

DIL Switch 4 5 6 7	Chase No.	Ch.4&7 Input	Bit No.	Chase Description	Notes
	15	100%	255	Auto Chase	
		95%	242	Green Yellow Red Bar Graph Rev	Use Ch.1
		92%	235	Green Yellow Red Bar Graph Fwd	Use Ch.1
	14	90%	230	Rainbow Strobe	
	13	85%	217	White / Any Colour Strobe	Chs.1, 2, & 3 set colour
		82%	209	White / **_Any Colour_** Crossover	**_New: Chs. 1, 2 & 3 set colour_**
	12	80%	204	Blue-Yellow Wave Rev	
		77%	196	Blue-Yellow Wave Fwd	
		73%	186	Green-Magenta Wave Rev	
	11	70%	179	Green-Magenta Wave Fwd	
		67%	171	Red-Cyan / **_AnyCol/Op.Col_** Wave Fwd	**_New: Chs. 1, 2 & 3 set colour_**
	10	65%	166	Red-Cyan / **_AnyCol/Op.Col_** Wave Rev	All 3 at 0% = Red-Cyan
	9	60%	153	Black-White/**_AnyColour_** Wave Fwd	**_New: Chs. 1, 2 & 3 set colour_**
		57%	145	Black-White/**_AnyColour_** Wave Rev	All 3 at 0% = White.
	8	55%	140	Random Cols **_Chs1 Xfade, Chs2 Snap_**	**_New in 3.1: Chase1 Xfades_**
		52%	133	Rainbow 2 Crossfade Fwd	Wider primary colours to compensate for extra diffusion
		48%	122	Rainbow 2 Crossfade Rev	
	7	45%	115	Rainbow Crossfade Fwd	Equal width primary & secondary colours
	6	41%	105	Rainbow Crossfade Rev	
		38%	97	"Follow 3" 18 Contrasting Cols Rev	
	5	35%	89	"Follow 3" 18 Contrasting Cols Fwd	
		32%	82	18 Crossfading Colours Rev	
	4	30%	77	18 Crossfading Colours Fwd	
		27%	69	White/AnyColour/**_AutoColour_** Cascade Rev	Chs. 1, 2 & 3 set colour. All 3 at 0% = White. **_New: All 3 at 100% = Auto Colour Change_**
		23%	59	White/AnyColour/**_AutoColour_** Cascade Fwd	
	3	20%	51	6 Crossfading Pastel Colours	
		17%	43	Colour Wipes	
	2	15%	38	6 Crossfading Colours	
	1	10%	26	6 Separate Colours	
		7%	18	Red Green Blue Bar Graphs Rev	Use Chs. 1, 2 & 3
		5%	13	Red Green Blue Bar Graphs Fwd	Use Chs. 1, 2 & 3
	0	0%	0	No Chase	