Chroma-Q™
Color Block™ PSU

User Manual

Chroma-Q™
BRILLIANT SOLUTIONS

Version 1.1 September 2012

PN: 602-0501

Warranty Statement

Chroma-Q warrants to the original purchaser, with proof of purchase, that its delivered products shall be free from defects in material and workmanship under normal use for a period of 12 months from date of shipment.

Chroma-Q will repair, or at its option, provide an equivalent item or replace, the defective product during the stated warranty period. This warranty applies only to the repair or replacement of the product and only when the product is properly handled, installed and maintained according to Chroma-Q instructions. This warranty excludes defects resulting from improper handling, storage, installation, acts of God, fire, vandalism or civil disturbances. Purchaser must notify Chroma-Q in writing within 14 days of noticing the defect. This warranty excludes field labour or service charges related to the repair or replacement of the product.

The warranty contained herein shall not extend to any finished goods or spare parts from which any serial number has been removed or which have been damaged or rendered defective (a) as a result of normal wear and tear, willful or accidental damage, negligence, misuse or abuse; (b) due to water or moisture, lightning, windstorm, abnormal voltage, harmonic distortion, dust, dirt, corrosion or other external causes; (c) by operation outside the specifications contained in the user documentation; (d) by the use of spare parts not manufactured or sold by Chroma-Q or by the connection or integration of other equipment or software not approved by Chroma-Q unless the Customer provides acceptable proof to Chroma-Q that the defect or damage was not caused by the above; (e) by modification, repair or service by anyone other than Chroma-Q, who has not applied for and been approved by Chroma-Q to do such modification, repair or service unless the Customer provides acceptable proof to Chroma-Q that the defect or damage was not caused by the above; (f) due to procedures, deviating from procedures specified by Chroma-Q or (g) due to failure to store, install, test, commission, maintain, operate or use finished goods and spare parts in a safe and reasonable manner and in accordance with Chroma-Q's instructions (h) by repair or replacement of engines without factory training.

The warranty contained herein shall not apply to finished goods or spare parts which are sold "as is", as "second-hand", as used", as "demo" or under similar qualifications or to Consumables ("Consumables" is defined as any part(s) of goods or part(s) for use with goods, which part(s) of goods or part(s) for use with goods are consumed during the operation of the goods and which part(s) of goods or part(s) for use with goods require replacement from time to time by a user such as, but not limited to, light bulbs).

The warranty contained herein shall not apply, unless the total purchase price for the defective finished goods or spare parts has been paid by the due date for payment.

The warranty contained herein applies only to the original purchaser and are not assignable or transferable to any subsequent purchaser or end-user.

This warranty is subject to the shipment of the goods, within the warranty period, to the ChromaQ warranty returns department, by the purchaser, at the purchasers expense. If no fault is found, ChromaQ will charge the purchaser for the subsequent return of the goods.

Chroma-Q reserves the right to change the warranty period without prior notice and without incurring obligation and expressly disclaims all warranties not stated in this limited warranty.

Disclaimer

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Chroma-Q products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent. Chroma-Q sole warranty is that the product will meet the sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

Chroma-Q reserves the right to change or make alteration to devices and their functionality without notice due to our on going research and development.

The Color Block PSU-05 has been designed specifically for the professional entertainment lighting industry. Regular maintenance should be performed to ensure that the products perform well in the entertainment environment.

If you experience any difficulties with any Chroma-Q products please contact your selling dealer. If your selling dealer is unable to help please contact support@chroma-q.com. If the selling dealer is unable to satisfy your servicing needs, please contact the following, for full factory service:

Outside North America:
Tel: +44 (0)1494 446000
Fax: +44 (0)1494 461024
support@chroma-q.com

North America:
Tel: 416-255-9494
Fax: 416-255-3514
support@chroma-q.com

For further information please visit the Chroma-Q website at www.chroma-q.com.

Table of Contents

1. Product overview

The Color Block PSU-05 is a power supply suitable for up to 5 Color Block DB4 LED fixtures. It can be controlled remotely via ANSI E1.11 USITT DMX 512-A in a variety of modes to accommodate most applications or can operate independently as a standalone system.

The Color Block PSU-05 delivers power and data via 2 XLR4 outputs. A maximum of five daisy-chained Color Block DB4 fixtures can be connected the PSU-05. Return lines are not required. The total cable length of each chain must not exceed 60m/200ft.

Color Block

For the purpose of clarification, the Color Block DB4 unit below is known as a Fixture. Each Fixture contains 4 Cells, with each Cell comprising of 3 LEDs.

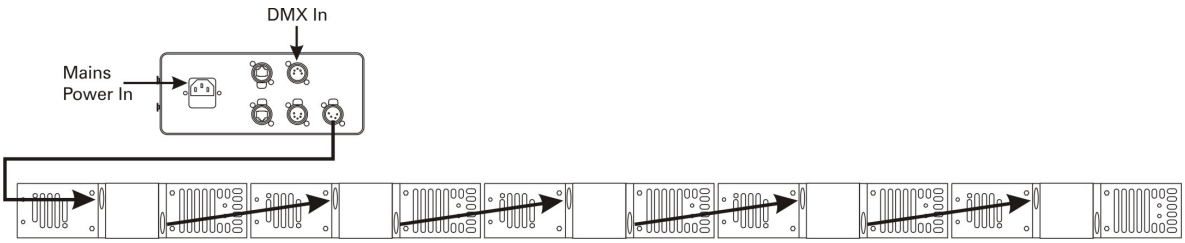
2. Operation

2.1 Cabling

The Color Block utilises an XLR 4-pin cable system. This is used to supply power and control data. Pin 1 = 0VDC, pin 2 = control minus, pin 3 = control plus, pin 4 = +48VDC. The chassis should be ground bonded.

Only genuine Tourflex Datasafe cable is recommended for use with the Color Block system. Damage will occur if power connections short-circuit to data or ground shield connections. When assembling XLR4-pin cables, heat shrink should be used on each individual data pin and the drain wire to prevent short circuits.

The Color Block PSU-05 delivers power and data via 2 XLR4 outputs. A maximum of five daisy-chained Color Block DB4 fixtures can be connected the PSU-05. Return lines are not required. The total cable length of each chain must not exceed 60m/200ft.



Note: Maximum of 5 Color Block fixtures per PSU-05. No return cables required.

2.2 Control

The Color Block PSU-05 access' menu items via the red LED display and the following controls:

- Right hand button (red) = Enter (hold for 2 seconds to save)
- Left hand button (blue) = Exit without saving
- Wheel = Adjusts values or scrolls through menu items

If left unadjusted at a main menu position for 5 second the LCD screen will revert to the Home position.

The software version number is displayed on power-up.

a. Control menu

Use the wheel to scroll through the control menu positions:

→ DMX Address (Adr###)
To set the DMX start address of the PSU-05, press Enter, turn wheel to adjust DMX start address, press Enter for 2 seconds to save.

→ Control Mode (contrl)
The PSU-05 can be set to operate in various DMX controlled modes. We offer 3 grouping options (individual, block, all) with 3 control options on each (FX, HSI & RGB) see below for details. Press Enter, turn wheel to select control mode, press Enter for 2 seconds to save.
Mode 1 (67ch) - Individually grouped, 20 x HSI + FX
Mode 2 (60ch) - Individually grouped, 20 x HSI
Mode 3 (60ch) - Individually grouped, 20 x RGB
Mode 4 (15ch) - Block grouped, 5 x HSI + FX

Mode 5 (15ch) - Block grouped, 5 x HSI
Mode 6 (21ch) - Block grouped, 5 x RGB
Mode 7 (10ch) - All grouped, 1 x HSI + FX
Mode 8 (3) - All grouped, 1 x HSI
Mode 9 (3) - All grouped, 1 x RGB

→ Output 2 Address (Out2)

The Color Block fixtures are self addressing in order of connection. However if the XLR4 OUT2 is used, a fixture number offset can be selected. Press Enter, turn wheel to select offset 1-5, press Enter for 2 seconds to save.

→ Look Store (Looc)

The PSU-05 has 9 internal preset FX Looks for standalone operation. To replay a Look, press Enter and scroll through the Looks.
Note: DMX has priority over internal Looks.

Looks can be recorded to the internal flash memory by users and will be preserved on power down. However, looks will be returned to default setting if menu 7 Reset is performed. There are two ways to record a look:

Simple, with DMX console.
Set the PSU-05 to Control Mode 1. Use a DMX console to adjust the internal FX engine to create the desired effect. Scroll to Looc and press Enter, scroll to desired Look and press Enter. Press Enter again for 2 seconds to save Look.

Advanced, standalone.
Set the PSU-05 to Control Mode 1. Scroll to Looc and press Enter, scroll to desired Look and press Enter to access the memory data. The data is presented as two numbers separated by a letter “c”. The number to the left of the c is the channel number and to the right is the channel level. Scrolling the wheel will select the channel number. To edit the channel level, press Enter to toggle to the alternate number and use the scroll wheel to adjust the level (shown as 0-255). Press Enter to toggle back to the channel number. When the desired effect is created press Enter for 2 seconds to save Look.

→ When DMX is Lost (LoSt)

If DMX is not detected various output options can be selected: Press Enter, turn wheel to selection, press Enter for 2 seconds to save.
Off - will snap to off
Hold - will hold the last valid DMX state
Look 1-9 - will snap to the Look of your choice

→ Display (diSp)

The LED display can be set to go off after 5 seconds of no activity. Press Enter, scroll wheel to On (permanently) or Off (after 5 seconds) and press Enter for 2 seconds to save setting.

→ Reset to Default (reset)

Press Enter for 2 seconds to reset all menu items to factory defaults:
DMX address = 001, Control Mode = 1 (67 channels HSI+FX), DMX Lost = Hold, Looks = default, Display = On.

b. DMX personality mode 1-3

	In modes 1-3 each cell is a group		
PSU-05 (v1.31)	Mode 1 (67ch) 20 x HSI = FX	Mode 2 (60ch) 20 x HSI	Mode 3 (60ch) 20 x RGB
Channel 1	Grouping 0-100 Variable grouping range between	Hue for group 1	Red for group 1

	1-20 cells with FX running within the group. 102-206 variable grouping range between 1-20 cells with FX running between the groups. 209-255 Variable grouping range for every 2nd to every 20th cells in a group.		
Channel 2	Colour Speed 0-255 Variable speed of colour scrolling. From static at 0 to maximum at 255.	Saturation for group 1	Green for group 1
Channel 3	Colour Fan 0-255 Variable fan of colour between / within groups. All units are the same colour at 0.	Intensity for group 1	Blue for group 1
Channel 4	Colour Range 0 Full spectrum 1-255 Variable limit of spectrum for colour scrolling. Single colour at 1, full spectrum at 255.	Hue for group 2	Red for group 2
Channel 5	Colour Step 0-255 Variable control of smoothness of colour scrolling. Smoothest is at 0. Most coarse is at 250. Rate will vary with scrolling speed. 255 will override effects and switch to RGB.	Saturation for group 2	Green for group 2
Channel 6	Intensity Effects 0 Static 1-63 Fade on, fade off. Variable range, 63 the fastest 64-127 Fade on, snap off. Variable range, 127 the fastest 128-191 Snap on, fade off. Variable range, 191 the fastest. 192-255 Snap on, snap off (strobe). Variable range, 255 the fastest.	Intensity for group 2	Blue for group 2
Channel 7	Intensity Fan 0-255 Variable fan of intensity effect between / within groups. All units at the same intensity at 0. Alternating units on and off at 255.	Hue for group 3	Red for group 3
Channel 8	Hue for group 1	Saturation for group 3	Green for group 3
Channel 9	Saturation for group 1	Intensity for group 3	Blue for group 3
Channel 10	Intensity for group 1	Hue for group 4	Red for group 4
Channel 11	Hue for group 2	Saturation for group 4	Green for group 4
Channel 12	Saturation for group 2	Intensity for group 4	Blue for group 4
Channel 13	Intensity for group 2	Hue for group 5	Red for group 5
	...and so on up to group 20		
Total DMX channels	67 DMX channels	60 DMX channels	60 DMX channels

c. DMX personality mode 4-6

	In modes 4-6 each Color Block DB4 fixture (4 cells) is a group		
PSU-05 (v1.31)	Mode 4 (21ch) 5 x HSI + FX	Mode 5 (15ch) 5 x HSI	Mode 6 (15ch) 5 x RGB
Channel 1	Colour Speed 0-255 Variable speed of colour scrolling. From static at 0 to maximum at 255.	Hue for group 1	Red for group 1
Channel 2	Colour Fan 0-255 Variable fan of colour between groups. All units are the same colour at 0.	Saturation for group 1	Green for group 1
Channel 3	Colour Range 0 Full spectrum 1-255 Variable limit of spectrum for colour scrolling. Single colour at 1, full spectrum at 255.	Intensity for group 1	Blue for group 1
Channel 4	Colour Step 0-255 Variable control of smoothness of colour scrolling. Smoothest is at 0. Most coarse is at 250. Rate will vary with scrolling speed. 255 will override effects and switch to RGB.	Hue for group 2	Red for group 2
Channel 5	Intensity Effects 0 Static 1-63 Fade on, fade off . Variable range, 63 the fastest 64-127 Fade on, snap off. Variable range, 127 the fastest 128-191 Snap on, fade off. Variable range, 191 the fastest. 192-255 Snap on, snap off (Strobe). Variable range, 255 the fastest.	Saturation for group 2	Green for group 2
Channel 6	Intensity Fan 0-255 Variable fan of intensity effect between groups. All units at the same intensity at 0. Alternating units on and off at 255.	Intensity for group 2	Blue for group 2
Channel 7	Hue for group 1	Hue for group 3	Red for group 3
Channel 8	Saturation for group 1	Saturation for group 3	Green for group 3
Channel 9	Intensity for group 1	Intensity for group 3	Blue for group 3
Channel 10	Hue for group 2	Hue for group 4	Red for group 4
Channel 11	Saturation for group 2	Saturation for group 4	Green for group 4
Channel 12	Intensity for group 2	Intensity for group 4	Blue for group 4
Channel 13	Hue for group 3	Hue for group 5	Red for group 5
	...and so on up to group 5		
Total DMX Channels	21 DMX channels	15 DMX channels	15 DMX channels

d. DMX personality mode 7-9

	In modes 7-9 all PSU-05 output is grouped as one		
PSU-05 (v1.31)	Mode 7 (9ch) HSI + FX	Mode 8 (3ch) HSI	Mode 9 (3ch) RGB
Channel 1	Colour Speed 0-255 Variable speed of colour scrolling. From static at 0 to maximum at 255.	Hue for group 1	Red for group 1
Channel 2	Colour Fan 0-255 Variable fan of colour within group. All units are the same colour at 0.	Saturation for group 1	Green for group 1
Channel 3	Colour Range 0 Full spectrum 1-255 Variable limit of spectrum for colour scrolling. Single colour at 1, full spectrum at 255.	Intensity for group 1	Blue for group 1
Channel 4	Colour Step 0-255 Variable control of smoothness of colour scrolling. Smoothest is at 0. Most coarse is at 250. Rate will vary with scrolling speed. 255 will override effects and switch to RGB.		
Channel 5	Intensity Effects 0 Static 1-63 Fade on, fade off . Variable range, 63 the fastest 64-127 Fade on, snap off. Variable range, 127 the fastest 128-191 Snap on, fade off. Variable range, 191 the fastest. 192-255 Snap on, snap off (Strobe). Variable range, 255 the fastest.		
Channel 6	Intensity Fan 0-255 Variable fan of intensity effect within group. All units at the same intensity at 0. Alternating units on and off at 255.		
Channel 7	Hue for group 1		
Channel 8	Saturation for group 1		
Channel 9	Intensity for group 1		
Total DMX Channels	9 DMX channels	3 DMX channels	3 DMX channels

2.3 Technical information

a. Specifications

Product code:	CHCBPSU (max 5 DB4s)
Dimensions:	360mm × 185mm × 65mm
	14.1" × 7.3" × 2.6"
Weight:	2.25kg / 5lbs
Working Voltage:	100-240VAC 50/60Hz
Power consumption:	4A @ 120VAC; 2A @ 240VAC
Output connector in/out:	XLR4
Power connector:	IEC male chassis
Control:	ANSI E1.11 USITT DMX 512-A
Body color:	Black powder coated paint
IP Rating:	IP20
Fuses:	6A 20mm spare included
Cooling:	5 x rear mounted fans, ventilation required front and rear
Operating temperature:	0º C to + 40º C
Approvals:	EN55103-1, 55103-2, IEC60950

b. Maintenance

With care the Color Block PSU-05 will require little maintenance. However, as the unit is likely to be used in a stage environment we recommend periodical internal inspection and cleaning of any resulting dust and cracked oil residue. In addition the internal battery will need to be replaced on a regular basis (see following section).

Do not spray liquids on the front or rear panel. If the front enclosure requires cleaning, wipe with a mild detergent on a damp soft cloth.

c. Battery replacement

The CR20/32 Lithium battery should last approximately 5 years from the date the battery was made – note that a 4 year life from date of product sale would not be unexpected when delivery and manufacturing times are allowed for.

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the battery manufacturer's instructions and local regulations.

d. Installation

The Color Block PSU-05 is designed to be screwed to set or hung from truss. The L shaped bracket has multiple fixing slots to accept stand hook clamps or half couplers. Ensure adequate ventilation around the holes in the enclosure. Failure to allow adequate ventilation may result in premature failure of the unit.