

## ORCONTROL - OPERATION MANUAL



- DMX Controller →
- DMX Controller

# USER MANUAL

This product manual contains important information about the safe installation and use of this controller. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

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### 1.1 What is included

- 1)ORCONTROL DMX Controller
- 2) DC 9-12V 500mA, 90V~240V Power Adapter
- 3) Manual with warranty card

### 1.2 Unpacking Instructions

Immediately upon receiving a fixture, carefully unpack the carton, check the contents to ensure that all parts are present, and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damaged from shipping or the carton itself shows signs of mishandling. Save the carton and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing materials if at all possible.

### 1.3 Safety Instructions



**Please read these instructions carefully– They include important information , usage and maintenance of your ORCONTROL.**

- Keep this Manual for future reference.
- Connect only to proper AC source, and confirm voltage.
- This product is intended for indoor use only!
- To prevent risk of fire or shock, do not expose fixture to rain or moisture. Make sure there are no flammable materials close to the unit while operating.
- Always disconnect from power source before servicing.
- Refer unit to professional service personnel only. Do not open unit, there are no user serviceable parts inside.

## 2. INTRODUCTION

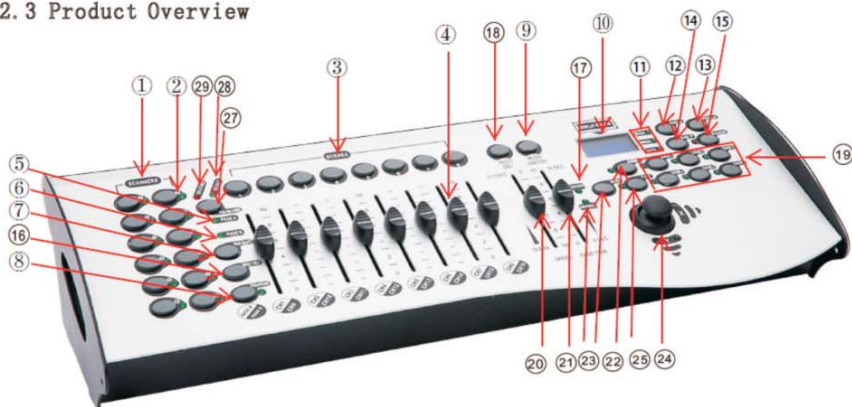
### 2.1 Features

- Universal DMX512 Controller
- Controls 12 Intelligent Lights up to 16 Channels
- 30 Banks of 8 Scenes (240 Scenes Total)
- Set up to 6 Chases containing 240 Scenes
- Executes Multiple Chases Simultaneously
- Channels are Re-assignable
- Assignable 16-bit Pan / Tilt Joystick Controller
- Beat Activation, Tap Sync, Auto Run Mode
- Selectable DMX Output Polarity

## 2.2 General Overview

The ORCONTROL is a universal intelligent lighting controller. It allows the control of 12 fixtures composed of 16 channels each and up to 240 programmable scenes. Six chase banks can contain up to 240 steps composed of the saved scenes and in any order. Programs can be triggered by music, midi, automatically or manually. All chases can be executed at the same time.

## 2.3 Product Overview

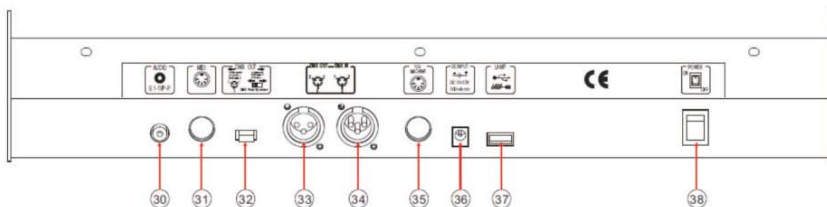


Item	Button or Fader	Function
1	Scanner select buttons	Fixture selection
2	Scanner indicator LEDs	Indicates the fixtures currently selected
3	Scene select buttons	Universal bump buttons representing scene location for storage and selection
4	Channel faders	For adjusting DMX values, Ch 1~8 can be adjusted immediately after pressing the respective scanner select button, Ch 9~16 after pressing the Page select button
5	Page A Indicator LED	Represents Ch 1~8 range selected, <i>Tip!</i> Tap A, B then B again to control both pages simultaneously.
6	Page B Indicator LED	Represents Ch 9~16 range selected

Item	Button or Fader	Function
7	Page select button	In manual mode, press to toggle between pages of control or to select both pages simultaneously. Both LEDs on will allow control of both lower and upper range channel.
8	Program button	Used to enter programming mode
9	Music/Bank Copy button	Used to activate Music mode and as the copy command during programming
10	LCD display window	Status window displays pertinent operational data
11	Mode Indicator LEDs	Provides operating mode status, (manual, music or auto)
12	Bank Up button	Function button to traverse Scene/Steps in banks or chases Incremental DMX values while <i>FINE</i> button is active.
13	Bank Down button	Function button to traverse Scene/Steps in banks or chases Decremental DMX values while <i>FINE</i> button is active.
14	Tap Display button	This is a Tap-Sync during playback and during programming changes the DMX value displayed in the LCD panel to percentages
15	Blackout button	Sets the shutter or dimmer value of all fixtures to "0" causing all light output to cease
16	Midi/Rec button	Activates MIDI external control and also used to confirm the record/save process
17	Assign LED	Indicated the controller is in Channel assign mode during the initial setup of the controller
18	Auto/Del button	Used to activate Auto mode and as the delete function key during programming
19	Chaser buttons	Chase memory 1 ~ 6
20	Speed fader	This will adjust the hold time of a scene or a step within a chase
21	Fade-Time fader	Also considered a cross-fade, sets the interval time between two scenes in a chase
22	Fine button	Activates 16 bit control of the wheel, movement will be in extremely small increments. Note: While FINE is active Bank UP/DOWN buttons will increase and decrease DMX values by one for either the wheel or the slider in focus or currently moved.
23	Reverse LED	
24	PAN/TILT Wheel (Joystick)	Generally used to control the pan and tilt movement of a fixture
25	Mode button	
26	Override button	
27	Fog machine button	To activate the fog machine
28	Fog machine ready indicator	
29	Fog machine heating indicator	



## 2.4 Product Overview (rear panel)



Item	Button or Fader	Function
30	Audio input jack	Direct audio feed for use in sound-active mode
31	MIDI input port	For external triggering of Banks and Chases using a MIDI device
32	DMX polarity switch	May be used to correct signal polarity
33	DMX output connector	DMX control signal
34	DMX input connector	Used to transfer programmed data between 2 controllers
35	Fog machine socket	
36	DC Input jack	Main power feed
37	USB Lamp socket	
38	ON/OFF power switch	Turns the controller on and off

## 2.5 Common Terms

The following are common terms used in intelligent light programming.

**Blackout** is a state by where all lighting fixtures light output are set to 0 or off, usually on a temporary basis.

**DMX-512** is an industry standard digital communication protocol used in entertainment lighting equipment. For more information read Sections DMX Primer and DMX Control Mode in the Appendix.

**Fixture** refers to your lighting instrument or other device such as a fogger or dimmer of which you can control.

**Programs** are a bunch of scenes stacked one after another. It can be programmed as either a single scene or multiple scenes in sequence.

**Scenes** are static lighting states.

**Sliders** also known as faders.

**Chases** can also be called programs. A chase consists of a bunch of scenes stacked one after another.

**Scanner** refers to a lighting instrument with a pan and tilt mirror; however, in the ILS-CON controller it can be used to control any DMX-512 compatible device as a generic fixture.

**MIDI** is a standard for representing musical information in a digital format. A MIDI input would provide external triggering of scenes using midi device such as a midi keyboard.

**Stand Alone** refers to a fixture's ability to function independently of an external controller and usually in sync to music, due to a built in microphone.

**Fade slider** is used to adjust the time between scenes within a chase.

**Speed slider** affects the amount of time a scene will hold its state. It is also considered a wait time.

**Shutter** is a mechanical device in the lighting fixture that allows you to block the lights path. It is often used to lessen the intensity of the light output and to strobe.

**Patching** refers to the process of assigning fixtures a DMX channel or..

## 3. OPERATING INSTRUCTIONS

### 3.1 Setup

#### 3.1.1 SETTING UP THE SYSTEM

- 1) Plug the included power supply to the system back panel and then to the mains outlet
- 2) Plug in your DMX cable(s) to your intelligent lighting as described in the fixtures respective manual.
- 3) Use only the power supply provided.  
For a quick Primer on DMX see the "DMX Primer" section in the Appendix of this manual.

#### 3.1.2 FIXTURE ADDRESSING

The ORCONTROL is programmed to control 16 channels of DMX per fixture, therefore the fixtures you wish to control with the corresponding SCANNER buttons on the unit, must be spaced 16 channels apart.

FIXTURE OR SCANNER #	DEFAULT DMX STARTING ADDRESS	BINARY DIPSWITCH SETTINGS SWITCH TO THE " ON POSITION"
1	1	1
2	17	1, 5
3	33	1, 6
4	49	1, 5, 6
5	65	1, 7
6	81	1, 5, 7
7	97	1, 6, 7
8	113	1, 5, 6, 7
9	129	1, 8
10	145	1, 5, 8
11	161	1, 6, 8
12	177	1, 5, 6, 8

Please refer to your individual fixture's manual for DMX addressing instructions. The table above refers to a standard 9 dipswitch binary configurable device.

### 3.1.3 JOYSTICK ASSIGNMENT

Because not all intelligent lighting fixtures are alike or share the same control attributes, the ORCONTROL Allows the user to assign the Joystick the correct pan and tilt channel for every individual fixture including 16 bit channel assignments. It also allows the user to re-assign physical faders to fixture DMX channels so that the user can combine or unify control of similar or the same attributes across different types of fixtures.

#### Action :

- 1) press and hold the **PROGRAM** button until the led blinks
- 2) Press and hold **FINE & MODE** buttons together (2) times to access the channel assignment mode. the assign led will light. The Joystick can be reassigned to output on a different DMX channel.
- 3) press a **SCANNER** button that represents the fixture you would like to set the pan&tilt
- 4) Use the **BANKUP/DOWN** buttons to select pan/tilt

#### Action :

- 5) Press the **TAP/DISPLAY** button to switch pages
- 6) press and hold **MODE** button, then press the **SCENES** buttons to select the DMXchannel. All LEDs will blink.
- 7) Press and hold **FINE & MODE** buttons to exit

#### Notes :

The Joystick can be reassigned to output on a different DMX channel.

### 3.1.4 Review wheel assignment or reverse

#### Reverse Joystick Assignment

- 1) Press and hold **FINE & MODE** buttons together to access the wheel assignment mode
- 2) press a **SCANNER** button to select a scanner
- 3) Press and hold **FINE & MODE** buttons to exit

#### Review Joystick Assignment

- 1) Press and hold **FINE & mode** buttons together(2) times to access the channel reverse mode
- 2) press a **SCANNER** button to select a scanner
- 3) Press and hold **FINE & MODE** buttons to exit

### 3.1.5 COPY SCANNER

Example: Copying Scanner 1 into Scanner 2

- 1) Press and hold **SCANNER** button # 1.
- 2) While holding button # 1 press **SCANNER** button # 2.
- 3) Release **SCANNER** button # 1 first before releasing **SCANNER** button # 2.
- 4) All **SCANNER** LED indicators will flash to confirm successful copy

### 3.1.6 REVERSE CHANNEL OUTPUT

#### Action :

- 1) press and hold the **PROGRAM** button until the led blinks
- 2) Press and hold **FINE & MODE** buttons together to access the channel assignment mode ,then press the **SCANNER** button
- 3) Use the **Bankup/Down** buttons to select pan/tilt You can permanently reverse the output of any given channel on the controller
- 4) Press the **TAP/DISPLAY** button to switch between pages
- 5) press and hold **MODE** button, then press the **SCENES** buttons to select the DMXchannel. All LEDs will blink.
- 6) Press and hold **FINE & MODE** buttons(2)times to exit

#### Notes :

You can permanently reverse the output of any given channel on the controller.

### 3.1.7 FADE TIME ASSIGN

You can choose whether the board' s fade time during scene execution is implemented broadly to all output channels or only to the Pan & Tilt movement channels. This is relevant because often you will want gobos and colors to change quickly while not affecting the movement of the light.

#### Action :

- 1) Turn OFF the controller.
- 2) Hold the **MODE** and **TAPDISPLAY** buttons simultaneously.
- 3) Turn ON the controller.
- 4) Press the **TAP DISPLAY** button to toggle between the two modes. Either ALL CH (all channels) or ONLY X/Y (Pan & Tilt only)
- 5) Press **MODE** and **TAP DISPLAY** to save settings. All LEDs will blink to confirm.

#### Notes :

ALL CH: All channels ONLY X/Y: Only Pan & Tilt

## 3.2 Operation

### 3.2.1 MANUAL MODE

The manual mode allows direct control of all scanners. You are able to move them and change attributes by using the channel faders and Joystick.

#### Action :

- 1) Press the **AUTO DEL** button repeatedly until the **MANUAL LED** is lit.
- 2) Select a **SCANNER** button.
- 3) Move Joystick and faders to change fixture attributes.
  - PAGE/SELECT A/B** button: Use to switch between fader control of (A: Ch 1~8), (B: Ch 9~16)
  - TAP DISPLAY** button: Press to toggle the output indicator on the LCD display between DMX values (0-255) and percentage (0-100)

#### Notes :

All changes made while in Manual Mode are temporary and will not be recorded.

### 3.2.2 REVIEW SCENE OR CHASE

This instruction assumes that you have already recorded scenes and chases on the controller. IF no scenes are recorded, skip section and go to programming.



**SCENE Review:**

- 1) Select any one of the 30 banks by pressing the **BANK UP/DOWN** buttons.
- 2) Select a **SCENE** button (1~8) to review.
- 3) Move joystick and faders to change fixture attributes.

**Chase Review:**

- 1) Press any one of the 6 **CHASE** buttons.
- 2) Press the **TAP DISPLAY** button to view the step number on the display.
- 3) Press the **BANK UP/DOWN** buttons review all scenes in the chase.

**3.3 Programming**

A program (bank) is a sequence of different scenes (or steps) that will be called up one after another. In the ORCONTROL 30 programs can be created of 8 scenes in each.

**3.3.1 ENTERING PROGRAM MODE**

- 1) Press the **Program** button until the LED blinks.

**3.3.2 CREATE A SCENE :**

A scene is a static lighting state. Scenes are stored in banks. There are 30 bank memories on the controller and each bank can hold 8 scene memories. The ORCONTROL can save 240 scenes total.

**Action :**

- 1) Press the **PROGRAM** button until the LED blinks.
- 2) Position **SPEED** and **FADE TIME** sliders all the way down.
- 3) Select the **SCANNERS** you wish to include in your scene.
- 4) Compose a look by moving the *sliders* and wheel.
- 5) Tap **MIDI/REC** button.
- 6) Choose a **BANK** (01~30) to change if necessary.
- 7) Select a **SCENES** button to store.
- 8) Repeat steps 3 through 7 as necessary. 8 scenes can be recorded in a Program.
- 9) To exit program mode, hold the **PROGRAM** button.

**Notes :**

Make sure you are still in MANUAL Mode.

**Notes :**

Deselect Blackout if LED is lit.

You can select more than one fixture.

You can access channels 9~16 by pressing the Page Select button. This is necessary for fixtures that use more than 8 channels of control.

There are 8 scenes available in every bank.

All LEDs will flash to confirm. The LED display will now indicate the Scene number and Bank number used.

Tip! Press the FINE button, activate joystick or slider by moving it then use the Bank Up/Down buttons to change values in increments of "1"

**Shortcut:** Press [PROGRAM] then [SCANNERS] Adjust [Faders & joystick] Then press [BANK] then [SCENE]- press [PROGRAM] to store.

**3.3.3 RUNNING A PROGRAM****Action :**

- 1) Use **BANK UP/DOWN** buttons to change *Program* banks if necessary.
- 2) Press the **AUTO DEL** button repeatedly until the **AUTO LED** turns on.
- 3) Adjust the **PROGRAM** speed via the **SPEED** fader and the loop rate via the **FADE TIME** fader.
- 4) Alternatively you can tap the **TAP DISPLAY** button twice. The time between two taps sets the time between **SCENES** (up to 10 minutes).

**Notes :**

Deselect Blackout if LED is lit.

Also called a Tap-Sync.

**3.3.4 CHECK PROGRAM****Action :**

- 1) Press and hold the **PROGRAM** button until the LED blinks.
- 2) Use the **BANK UP/DOWN** buttons to select the **PROGRAM** bank to review.
- 3) Press the **SCENES** buttons to review each scene individually.

**3.3.5 EDITING A PROGRAM**

scenes will need to be modified manually.

**Action :**

- 1) Press and hold the **PROGRAM** button until the LED blinks.
- 2) Use **BANK UP/DOWN** buttons to change *Program* banks if necessary.
- 3) Select the desired fixture via the **SCANNERS** button.
- 4) Adjust and change fixture attributes using the channel faders and joystick.
- 5) Press the **MIDI/REC** button to prepare the save.
- 6) Select the desired **SCENES** button to save.

**3.3.6 COPY A PROGRAM****Action :**

- 1) Press and hold the **PROGRAM** button until the LED blinks.
- 2) Use **BANK UP/DOWN** buttons to select the **PROGRAM** bank you will copy.
- 3) Press the **MIDI/REC** button to prepare the copy.
- 4) Use **BANK UP/DOWN** buttons to select the destination **PROGRAM** bank.
- 5) Press the **MUSIC BANK COPY** button to execute the copy. All LEDs on the controller will blink.

**Notes :**

All 8 scenes in a Program bank will be copied.

**3.4 Chase Programming**

A chase is created by using previously created scenes. Scenes become steps in a chase and can be arranged in any order you choose. It is highly recommended that prior to programming chases for the first time; you delete all chases from memory. See "Delete All Chases" for instructions.

**3.4.1 CREATE A CHASE**

A Chase can contain 240 scenes as steps. The term steps and scenes are used interchangeably.

**Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the **CHASE** (1~6) button you wish to program.
- 3) Change **BANK** if necessary to locate a scene.
- 4) Select the **SCENE** to insert.
- 5) Tap the **MIDI/REC** button to store.
- 6) Repeat steps 3 ~ 5 to add additional steps in the chase. Up to 240 steps can be recorded.
- 7) Press and hold the **PROGRAM** button to save the chase.

**3.4.2 RUNNING A CHASE****Action :**

- 1) Press a **CHASE** button then press the **AUTO DEL** button.
- 2) Adjust the Chase speed by tapping the **TAP DISPLAY** button twice at a rate of your choosing.

**3.4.3 CHECKING A CHASE****Action :**

- 1) Press the **PROGRAM** button until the LED blinks.
- 2) Select the desired **CHASE** button.
- 3) Press the **TAP DISPLAY** button to switch the LCD display to steps.
- 4) Review each scene/step individually by using the **BANK UP/DOWN** buttons.

**3.4.4 EDIT CHASE (COPY BANK INTO CHASE)****Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the desired **CHASE** button.
- 3) Select the **BANK** that contains the scene to be copied using the **BANK UP/DOWN** buttons.
- 4) Press **MUSIC/BANK COPY** button to prepare copy.
- 5) Press **MIDI/REC** button to copy the bank. All LEDs will blink.

**3.4.5 EDIT CHASE (COPY SCENE INTO CHASE)****Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the desired **CHASE** button.
- 3) Select the **BANK** to be using the **BANKDOWN UP/D** buttons.
- 4) Press the **SCENE** button that corresponds to the scene to be copied.
- 5) Press **MIDI/REC** button to copy the scene. All LEDs will blink.

**3.4.6 EDIT CHASE (INSERT SCENE INTO A CHASE)****Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the desired **CHASE** button.
- 3) Press the **TAP DISPLAY** buttons to switch the LCD display to steps view.
- 4) Use the **BANK UP/DOWN** buttons to navigate steps and locate the insert point of the new scene. The display will read the step number.
- 5) Press **MIDI/REC** button to prepare the insert.

**Notes :**

The time between 2 taps will set the chase speed (up to 10 minutes)

- 6) Use the **BANK UP/DOWN** button to locate the **SCENE**.
- 7) Press the **SCENE** button that corresponds to the scene to be inserted.
- 8) Press **MIDI/REC** button to insert the scene. All LEDs will blink.

**3.4.7 DELETE A SCENE IN A CHASE****Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the desired **CHASE** button that contains the scene to be deleted.
- 3) Press the **TAP DISPLAY** button to switch the LCD display to steps.
- 4) Select the scene/step to be deleted using the **BANK UP/DOWN** buttons.
- 5) Press **AUTO DEL** button to delete the step/scene. All LEDs will blink.

**3.4.8 DELETE A CHASE****Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the **CHASE** button (1~6) to be deleted.
- 3) Press and hold **AUTO DEL** button and the respective **CHASE** button to delete the chase. All LEDs will blink.

**3.4.9 DELETE ALL CHASE PROGRAMS**

**CAUTION!** This procedure will result in irrevocable loss of chase step memory. The individual scenes and program banks will be preserved.

**Action :**

- 1) Turn OFF controller.
- 2) Press and hold the **BANK DOWN** button and the **AUTO DEL** button while turning ON the controller.
- 3) All LEDs will blink.

**3.5 Scene Programming (Steps)****3.5.1 INSERT A SCENE****Action :**

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Press the desired **CHASE** button.



- 3) Press the **TAP DISPLAY** to switch the LCD display to steps view.
- 4) Use the **BANK UP/DOWN** buttons to navigate steps and locate the insert point of the new scene. The display will read the step number.
- 5) Press **MIDI/REC** button to prepare the insert.
- 6) Use the **BANK UP/DOWN** button to locate the **SCENE**.
- 7) Press the **SCENE** button that corresponds to the scene to be inserted.
- 8) Press **MIDI/REC** button to insert the scene. All LEDs will blink.

### 3.5.2 COPY ASCENE

#### Action :

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Select the **BANK** that contains the scene to be copied using the **BANK UP/DOWN** buttons.
- 3) Press the **SCENE** button that corresponds to the scene to be copied.
- 4) Press **MIDI/REC** button to copy the scene.
- 5) Select the destination **BANK** that contains the scene memory to record onto using the **BANK UP/DOWN** buttons.
- 6) Press the desired **SCENE** button to complete copy. All LEDs will blink.

### 3.5.3 DELETE ASCENE

#### Action :

- 1) Press and hold the **PROGRAM** button to enter programming mode.
- 2) Select the **BANK** that contains the scene to be deleted by using the **BANK UP/DOWN** buttons.
- 3) Press and hold the **AUTO DEL** button.
- 4) Press the **SCENE** button that corresponds to the scene you want to delete. All LEDs will blink.

#### Notes :

When deleting a scene the physical location is not removed, however, all 192 DMX channels available to the scene will be set to value 0.

### 3.5.4 DELETE ALL SCENES

#### Action :

- 1) Press and hold the **PROGRAM** button and the **BANK DOWN** button while turning off power to the controller.
- 2) Turn the controller back on.

#### Notes :

**CAUTION!**  
This process is irreversible. All scenes with data will be set to 0.

## 3.6 Playback

### 3.6.1 RUNNING IN SOUND-MODE

#### Action :

- 1) Press the **MUSIC BANK COPY** button until the **MUSIC LED** turns on.
- 2) Select the program **BANK** to run in soundactive mode using the **BANK UP/DOWN** buttons.
- 3) Alternatively you can press a single **CHASE** button (1~6) or several **CHASE** buttons in sequence and all selected chases will loop in the order selected.
- 4) You can adjust the duration time using the **FADE TIME** fader.

#### Notes :

In the Sound mode, programs will be triggered by the sound using its built-in microphone.

Multiple chases selected will loop and run in the order originally selected.

### 3.6.2 RUNNING IN AUTO-MODE

#### Action :

- 1) Press the **AUTO DEL** button until the **AUTO LED** turns on.
- 2) If a **CHASE** button is not pressed the controller will automatically run a **BANK** program.
- 3) Change **BANK** programs by using **BANK UP/DOWN** buttons.
- 4) Alternatively you can press a single **CHASE** button (1~6) or several **CHASE** buttons in sequence and all selected chases will loop in the order selected.
- 5) You can adjust the time between steps by moving the **SPEED** fader and the duration of the step by moving the **FADE TIME** fader.

#### Notes :

In the Auto mode, programs will be triggered by controllers fade and speed time as set on the faders.

Multiple chases selected will loop and run in the order originally selected.

### 3.6.3 RUN MULTIPLE CHASES SIMULTANEOUSLY

#### Action :

- 1) Press and hold **AUTO DEL** button.
- 2) While holding down **AUTO DEL**, in succession press and release each **CHASE** you would like to run simultaneously.

#### Notes :

**IMPORTANT!** To avoid conflict between scenes running simultaneously that control the same fixture attributes consider creating individual color and gobo chases.

### 3.6.4 BLACKOUT

The **Blackout** button brings all lighting output to 0 or off.

## 3.7 Midi Operation

The controller will only respond to **MIDI** commands on the **MIDI** channel which it is set to full stop. All **MIDI** control is performed using Note on commands. All other **MIDI** instructions are ignored. To stop a chase, send the blackout on note.

#### Action :

- 1) Press and hold the **MIDI/REC** button for about 3 seconds.
- 2) Select the **MIDI** control channel (1~16) via the **BANK UP/DOWN** buttons to set.
- 3) Press and hold the **MIDI/REC** button for 3 seconds to save settings.
- 4) To release **MIDI** control, press any other button except the **BANK** buttons during step 2.

#### Notes :

This is the Channel that the controller will receive **MIDI** note commands.



MIDI NOTE	FUNCTION (TURN ON/OFF)	MIDI NOTE	FUNCTION (TURN ON/OFF)
00 to 07	Scenes 1-8 in BANK 1	88 to 95	Scenes 1-8 in BANK 12
08 to 15	Scenes 1-8 in BANK 2	96 to 103	Scenes 1-8 in BANK 13
16 to 23	Scenes 1-8 in BANK 3	104 to 111	Scenes 1-8 in BANK 14
24 to 31	Scenes 1-8 in BANK 4	112 to 119	Scenes 1-8 in BANK 15
32 to 39	Scenes 1-8 in BANK 5	120	Chase 1
40 to 47	Scenes 1-8 in BANK 6	121	Chase 2
48 to 55	Scenes 1-8 in BANK 7	122	Chase 3
56 to 63	Scenes 1-8 in BANK 8	123	Chase 4
64 to 71	Scenes 1-8 in BANK 9	124	Chase 5
72 to 79	Scenes 1-8 in BANK 10	125	Chase 6
80 to 87	Scenes 1-8 in BANK 11	126	BLACKOUT

## 4 APPENDIX

### 4.1 DMX Primer

There are 512 channels in a DMX-512 connection. Channels may be assigned in any manner. A fixture capable of receiving DMX 512 will require one or a number of sequential channels. The user must assign a starting address on the fixture that indicates the first channel reserved in the controller. There are many different types of DMX controllable fixtures and they all may vary in the total number of channels required. Choosing a start address should be planned in advance. Channels should never overlap. If they do, this will result in erratic operation of the fixtures whose starting address is set incorrectly. You can however, control multiple fixtures of the same type using the same starting address as long as the intended result is that of unison movement or operation. In other words, the fixtures will be slaved together and all respond exactly the same.

DMX fixtures are designed to receive data through a serial Daisy Chain. A Daisy Chain connection is where the DATA OUT of one fixture connects to the DATA IN of the next fixture. The order in which the fixtures are connected is not important and has no effect on how a controller communicates to each fixture. Use an order that provides for the easiest and most direct cabling. Connect fixtures using shielded two conductor twisted pair cable with three pin XLR male to female connectors. The shield connection is pin 1, while pin 2 is Data Negative (S-) and pin 3 is Data positive (S+).

### 4.2 FIXTURE LINKING

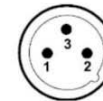
Occupation of the XLR-connection:

DMX-OUTPUT  
XLR mounting-socket:



- 1- Ground
- 2 - Signal (-)
- 3 - Signal (+)

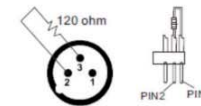
DMX-OUTPUT  
XLR mounting-plug:



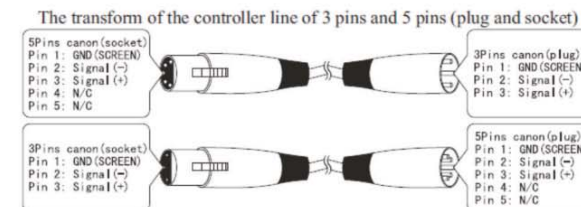
- 1- Ground
- 2 - Signal (-)
- 3 - Signal (+)

**Caution:** At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120Ω resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

In the Controller mode, at the last fixture in the chain, the DMX output has to be connected with a DMX terminator. This prevents electrical noise from disturbing and corrupting the DMX control signals. The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below.



If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.



4.3 DMX Dipswitch Quick Reference Chart

DMX Address Quick Reference Chart																				
Dip Switch Position																				
DMX DIP SWITCH SET 0=OFF 1=ON X=OFF or ON	#9	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1				
#8	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1				
#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1				
#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1				
#1	#2	#3	#4	#5																
0	0	0	0	0	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480	
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

Dip Switch Position

DMX Address

4.4 Technical Specifications



DMX Protocol  
DMX Connections:  
Additional Connections:

Power Supply:

Dimensions L xWxH (in):  
Dimensions L xWxH (mm):  
Weight:

DMX-512 USITT  
DMX XLR 3-Pin Input & Output  
Audio Input (Sound Active Mode)  
MIDI Input (Bank/Scene Select)  
5-Pin DIN plug (Fog Machine Control)  
USB Lamp Socket / Power Port  
DC 9-12v 500mA  
(Use Supplied Power Supply Only)  
19 x 7.5 x 3.5  
482 x 190 x 90  
7.7 lbs / 3.5kg