

LSC[®]

LIGHT STREAM CONTROLS



LIGHT STATION

User Instructions



Light Stream Controls

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Rev. 11/03

Light Station™

Introduction

Introduction: Thank you for purchasing the Light Station™ DMX controller from LSC®. To optimize the performance of this product, please read these operating instructions carefully to familiarize yourself with the basic operations of this unit. The LSC® Light Station™ is a unique, 16 channel programmable DMX controller with MIDI capabilities. This unit features 60 programs, 30 built in programs and 30 that you can create yourself. This unit also comes with a memory back up battery to save and retain your data. This unit has been tested at the factory before being shipped to you, there is no assembly required.

Customer Support: LSC® provides a toll free customer support line, to provide set up help and to answer any question should you encounter problems during your set up or initial operation. You may also visit us on the web at www.lightstreamcontrols.com for any comments or suggestions.

Service Hours are Monday through Friday 10:00 a.m. to 5:00 p.m. Pacific Time.

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E-mail: support@lightstreamcontrols.com

Warning! To prevent or reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture. Clearing memory often may cause damage to the memory chip, be careful not to re-initialize your unit frequency often to avoid this risk. Only use the recommended AC/DC power adaptor.

Caution! There are no user serviceable parts inside this unit. Do not attempt any repairs yourself, doing so will void your manufacturer's warranty. In the unlikely event your unit may require service, please contact your nearest LSC dealer.

Conformity: This product complies to EN 50081-1/EN 55022 pr EN 55103-1 (EMC emission) and EN 50082-1/EN 61000-4-2 pr EN 55103-2 (EMC immunity).

Power Supply: Before plugging your unit in be sure the source voltage in your area matches the required voltage for your LSC® Light Station.™ The Light Station™ is available in a 115v and 230v version. Because line voltage may vary from venue to venue, you should be sure to plug your power supply into a matching wall outlet before attempting to operate you controller.

Data Cable (DMX Cable) Requirements:

Your fixture and your controller require a standard 3-pin XLR connector for data input and data output (Figure 1). If you are making your own cables be sure to use standard two conductor shielded cable (This cable may be purchased at almost all pro sound and lighting stores). Your cables should be made with a male and female XLR connector on either end of the cable. Also, remember that DMX cable must be daisy chained and can not be “Y”ed or split.



Figure 1

Notice: Do not use the ground lug on the XLR connector. Do not connect the cable’s shield conductor to the ground lug or allow the shield conductor to come in contact with the XLR’s outer casing. Grounding the shield could cause a short circuit and erratic behavior.

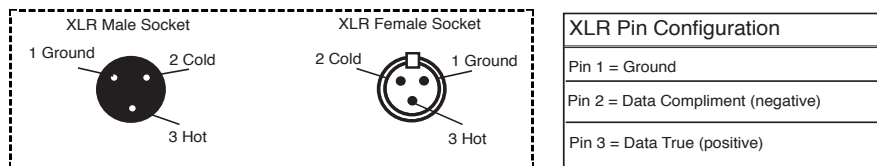
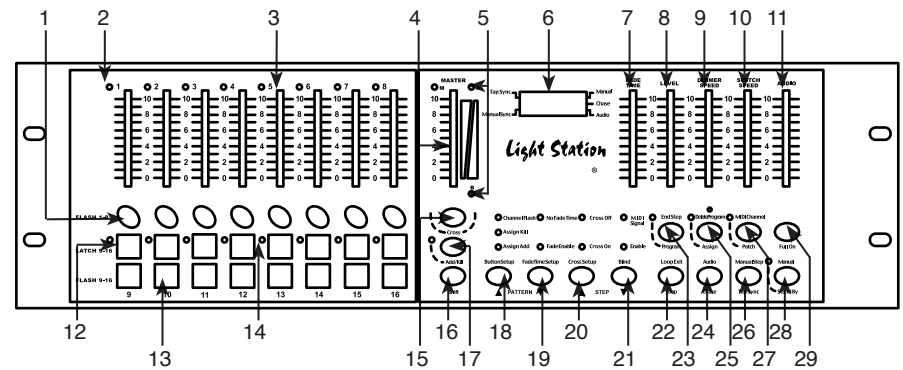


Figure 2

Special Note: Line Termination. When longer runs of cable are used, you may need to use a terminator on the last unit to avoid erratic behavior. A terminator is a 90 - 120 ohm 1/4 watt resistor which is connected between pins 2 and 3 of a male XLR connector (DATA + and DATA -). This unit is inserted in the female XLR connector of the last unit in your daisy chain to terminate the line. Using a cable terminator will decrease the possibilities of erratic behavior.



- Flash Buttons (Channels 1-8): These button will serve three (3) functions:
 - In manual mode these buttons will momentarily activate any fixtures assigned to those channels. These fixtures will remain on as long as you hold down the button. Releasing the button will switch the fixtures off.
 - When used in conjunction with the ADD/KILL (17) feature, these buttons are used to activate stored channel assignments. You may group a number of channels to be activated at once, then store this group in one of 16 FLASH BUTTONS (1 & 13).
 - When the BLIND feature is enabled in chase mode, pressing the SHIFT BUTTON (16) along with a channel FLASH BUTTON will BLIND (black out) that channel.
- Channel Indicators (1-8): These green LEDs will glow indicating channel activity for channels 1-8. The intensity of the LED’s will also vary according to the channels output. Low intensity is low channel output, while high intensity is brighter channel output.
- Channel Faders (1-8): These faders serve two functions:
 - In manual mode, these faders will control channel output.
 - In Program mode, these faders will act as a ON/OFF switch for a program that has been assigned to it.
- Master Fader: This fader will serve two functions.
 - This fader will act as a master output control for the Channel Sliders 1-8 (3) when in Manual, Chase, or Cross Function Modes.

2. When in CROSS MODE this slider is used to manually fade a chase patterns steps, from one to the next. This CROSS FUNCTION will only operate with the fader channel (1-8).
5. A & B Indicators: These LED's are used to indicate two steps cross fading into each other during Cross Mode.
6. LCD Display: This high quality seven (7) segment LCD display is used to display the present operating mode and parameters of the running function.
7. Fade Time Fader: This slider is used to fade steps in Chase Mode. Fade time may be adjusted from 0.1 seconds to 5 minutes. Fade Time is the amount of time it take the chase program to fade from one step to the next. A fade time of 1/10 of a second would be almost instantaneous. A fade time of 30 seconds would take 30 seconds for one step to slowly fade out and advance to the next.
8. Level Fader: This slider acts as a master output level for the patterns when running in Chase Mode.
9. Dimmer Speed Fader: This slider controls the chase speed for Channel Sliders 1-8. Chase speed can be adjusted from eight (8) steps per second to one step per minute.
10. Switch Speed Fader: This slider controls the chase speed for switched channels 9-16. Chase speed can be adjusted from one step every 30 seconds to one step every 10 minutes.
11. Audio Fader: This unit can be set to run the chase programs to sound. This slider adjusts the sensitivity of the internal microphone.
12. Latch Buttons (Channels 9-16): These button serve two functions. The Latch Buttons levels are independent from Fade Time. When operating in Assign Mode, these button will control any channels linked by the Assign Function.
 1. In Manual Mode, they are used as ON/Off buttons for any fixtures connect to channels 9-16.
 2. In program mode, these buttons are used to trigger the various programs that may have be assigned to these channels.

13. Flash Buttons (channels 9-16): These button will serve three functions:
 1. In manual mode these buttons will momentarily activate any fixtures assigned to those channels. These fixtures will remain on as long you hold down the button. Releasing the button will switch the fixtures off.
 2. When used in conjunction with the ADD/KILL (17) feature, these buttons are used to activate stored channel assignments. You may group a number of channels to be activated at once, then store this group in one of 16 FLASH BUTTONS (1 & 13).
 3. When the BLIND feature is enabled in chase mode, pressing the SHIFT BUTTON (16) along with a channel FLASH BUTTON will BLIND (black out) that channel.
14. Channel Indicators (9-16): These green LEDs will glow indicating channel activity for channels 9-16.
15. Cross Button: This button is used to activate and deactivate Cross Mode. Cross Mode's activity is indicated by the Cross On and Cross off LED indicators.
16. Shift Button: This button is used in conjunction various other button to access different functions.
17. Add/Kill Button: This button is used to toggle through the ADD and KILL functions. When in KILL mode, the yellow LED will glow.
18. Pattern Up/Button Setup Button: This button will serve two functions:
 1. In chase or program mode, this button is used to select the next pattern or chase. The current pattern will be displayed in the LCD display (6). Holding down this button will quickly advance through the patterns. Tapping this button will increase the pattern by one.
 2. When used with the SHIFT BUTTON (16), this button will select between Channel Flash and Assign Add/Kill modes.
19. Pattern Down/Fade Time Setup Button: This button will serve two (2) functions:
 1. In chase or program mode this button is used to decrease the

selected pattern or chase. The current pattern is displayed in the LCD display (6). Holding down this button will quickly decrease the patterns, tapping this button will decrease the pattern by one.

- When used with the SHIFT BUTTON (16) this button will enable or disable the Fade Time function. The current Fade Time function is noted by LED indicators above the this button.

20. Step Up/Cross Setup Button: This has two functions:

- In manual chase or program modes, this button is used to select the next step, (scene) in the pattern. The current step will be displayed by the right two digits in the LCD display (6). Holding down this button will quickly advance through the steps (scenes). Tapping this button will increase the pattern by one.
- When used with the SHIFT BUTTON (16) this button is used to activate or disengage the CROSS FUNCTION.

21. Step Down/Blind Button: This has two functions:

- In manual chase or program modes this button is used to select the previous step (scene) in the pattern. The current step will be displayed by the right two digits in the LCD display (6). Holding down this button will quickly scroll backward through the selected chase steps (scenes). Tapping this button will decrease the pattern by one.
- When used with the SHIFT BUTTON (16) during CHASE MODE, this button will engage or disengage the BLIND FUNCTION.

22. Loop/Loop Exit Button: This button serves two functions:

- This button is used to activate and set chase programs into LOOP MODE.
- Used with the SHIFT BUTTON (16), this operation will disengage and clear LOOP MODE.

23. Program/End Step Button: This button has three functions:

- This button is used to engage PROGRAM MODE.
- When in PROGRAM MODE, this button is used to load a scene into a chase pattern.
- When used with the SHIFT BUTTON (16), this button is used to finalize a program.

24. Chase/Audio Button: This button has two (2) functions:

- This button is used to enter CHASE MODE.
- Used with the SHIFT BUTTON (16), this button will activate AUDIO MODE.

25. Assign/Delete Program Button: This button serves two functions:

- This button activates the ASSIGN function. This functions allows you to ASSIGN a group of channels to a single FLASH BUTTON (1 & 13).
- In PROGRAM MODE, this button, when used with the SHIFT BUTTON (16), is used to delete a program (CHASE) pattern.

26. Tap Sync/Manual Step Button: This button has two functions:

- In CHASE MODE, this button is used to set a momentary speed. Channels 1-8 will then chase to this beat.
- When used with the SHIFT BUTTON (16), this button is used to activate the MANUAL STEP MODE. This mode allows you to manually select chases and control steps for channels 1-8.

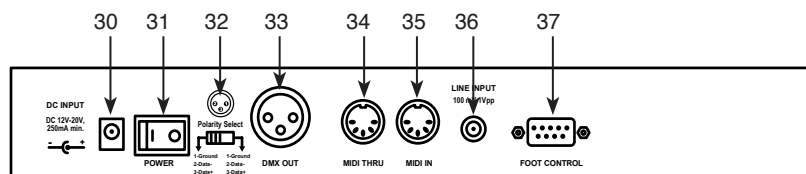
27. Patch/Midi Channel Button: This button is used to activate the PATCH FUNCTION or to set the MIDI channel:

- To activate the PATCH function, hold down this button for two seconds. The red PATCH LED will glow indicating PATCH is ready to be set or changed.
- To activate the MIDI channel adjustment settings, press and hold down the PATCH/MIDI CHANNEL BUTTON for two seconds while holding down the SHIFT BUTTON (16).

28. Stand By/Manual Button: This button is used to select Stand By and Manual functions:

- When the unit is powered on, it will always default to Stand By mode (no output). Pressing this button will take you in and out of Stand By mode.
- Hold down the SHIFT BUTTON (16) while pressing this button to enter MANUAL OPERATION MODE.

29. Full On Button: Pressing this button will bring FADER CHANNELS 1-8 (3) to full output.



30. Power Input: Connect the included external power supply to this connection. Be sure to only a recommended power supply DC 12v-20v, 250mA min.
31. Power Switch: This switch connects and disconnects main power.
32. DMX Polarity Switch: This switch changes the DMX line polarity to accommodate the use of some older European fixtures.
33. DMX XLR Output: A maximum of 96 DMX channel output. This is the DMX signal output. This is a 3 pin XLR connector. If connecting to a 5 pin XLR input connector you must use a 3-5 pin adaptor.
34. Midi Thru: This connection is used to connect the incoming MIDI signal to another MIDI device.
35. Midi In: This connection is used to connect a MIDI triggering device, such as a keyboard or drum machine.
36. Audio Line Input: Signal input range from 100mV to 1Vpp. This is an audio line input. Connect a mixer or other audio device to trigger this unit to sound. When an audio signal is connected it will automatically disconnect the unit's internal microphone.
37. Foot Control Input: This connection is for the optional external Foot Controller.

Foot Controller Pin Configuration:

1. Step Up
2. Pattern Up
3. Stand By
4. Full On
5. Common

Programming Scenes (Steps) into Chase Patterns:

This function allows you to turn on specific channels (1-16) at one time to be programmed into a Chase. This controller stores 60 CHASE PATTERNS, 1-30 are user programmable and 31-60 are preset and cannot be changed. You may program SCENES into CHASE PATTERNS 1-30 only. To program a scene:

1. Press and hold down the PROGRAM BUTTON (23) for two seconds. The green program LED will turn on indicating you are in program mode.
2. At this point the display should read **01:01**. The first two digits is to play the CHASE bank and the second pair of digits displays the SCENE bank.
3. Use these PATTERN BUTTONS (18 & 19) to select a CHASE bank to store the scenes you are about to create.
4. Once you have selected a CHASE bank, you may begin to adjust the channels (1-16) to your liking.
5. Once you have adjusted the channels to your desired settings press the PROGRAM BUTTON (23) once to record your scene into memory. When you press the PROGRAM BUTTON (23), all the channel LED's will flash indicating the scene has been stored into memory. The right two digits in the LCD DISPLAY (6) will advance to the next available step.
6. You may continue this pattern up to 99 times per each CHASE PATTERN. You may mix and match the top and bottom channel buttons together in a CHASE PATTERN, however, remember that the upper and lower channels chase speeds are controlled separately.
7. When you have completed programming all your steps you must record an "End Step" to finalize your CHASE PATTERN. To program the "End Step," press and hold down the SHIFT BUTTON (16). While holding down the SHIFT BUTTON (16), press and release the PROGRAM BUTTON (23). You will see all the LEDs flash indicating the "End Step" was successfully programmed.
8. To exit the program mode, press and hold the PROGRAM BUTTON for two (2) seconds.

Running Chase Patterns: This function allows you to automatically run one of the 60 CHASE PATTERNS. The speed of these chase's

can be controlled by the DIMMER SPEED (9) and SWITCH SPEED (10) faders. The DIMMER SPEED (9) will control channels 1-8 and SWITCH SPEED will control channels 9-16. To run a chase pattern:

1. Press the CHASE BUTTON (24). The chase LED in the LCD Display (6) will light indicating you are in CHASE MODE.
2. Use the PATTERN BUTTONS (18 & 19) to select the CHASE PATTERN you wish to run.
3. Use the SPEED CONTROLS (9 & 10) to adjust your chase speed and the LEVEL CONTROL (8) to set your output intensity.

Using the Built In Programs: This controller comes with 30 preset programs. These programs are designed to get you up and running in minutes. Programs 31-40 control channels 1-8, 41-50 control channels 9-16, and programs 51-60 combine channels 1-16. Chase Pattern 40 is a combination of 31-39. Chase Pattern 50 is a combination of 41-49. Chase Pattern 60 is a combination of 51-59. These chases can not be changed or edited.

Cross Mode: Cross mode is a manual adjustment that fades from one step to the next. You may use this function in any CHASE PATTERN. This function will not effect channels 9-16. To use this function:

1. Be sure you are in CHASE MODE.
2. Turn CROSS MODE on by holding down the SHIFT BUTTON (16), and pressing the CROSS SETUP BUTTON (20) until the yellow CROSS ON LED glows.
3. Press the CROSS BUTTON (15) to activate the cross function. Channels 1-8 will stop chasing and the MASTER FADER (4) LED will turn off. Either the "A" or "B" LED on the MASTER FADER (4) will begin to glow depending on the position of the fader.
4. You may now use the MASTER FADER (4) to manually cross fade through a CHASE PATTERN's steps. Sliding the MASTER FADER (4) up and down will change the steps from one to the next. The slower you move the fader the slower the scenes will fade from one to the next.
5. In this operation, the FADE TIME (7) level will function.
6. You may use the CHASE PATTERN BUTTONS (18 & 19) to select a different chase at any time.

Loop Mode: This function allows you to group several CHASES together and run them in a sequential repeating pattern.

1. Be sure you are in CHASE MODE.
2. Go to the first pattern you wish to program into the loop and press the LOOP BUTTON (22). After you press the LOOP BUTTON (22), the channel green LEDs will flash and "LP" will be displayed in the right two (2) digits in the LCD DISPLAY (6).
3. Repeat step two until you have enter all your desired CHASE PATTERNS. If the LOOP BUTTON (22) is not pressed within 10 seconds, the loop will automatically start to cycle. You may add the same CHASE PATTERN more than once.
4. When you have finished entering all you chases, wait 10 seconds and "CL" will appear in the right two digits of the LCD DISPLAY (6). When this happens the chases will automatically begin to run and loop in the same pattern you programmed them in.
5. To cancel or exit this mode, press the LOOP EXIT BUTTON (22) while holding down the SHIFT BUTTON (16).

Show Mode: This function gives you manual control over channels 1-8 when running in normal chase mode. This function will not effect channels 9-16 in any way. To operate in show mode:

1. Run a chase in a normal fashion.
2. Bring the DIMMER SPEED SLIDER (9) down until "SHO" appears in the LCD DISPLAY (6).
3. When "SHO" appears you may use the STEP UP and DOWN BUTTONS (20 & 21) to manually step through a CHASE PATTERNS.
4. In this function you may change your selected CHASE PATTERN at any time.

Deleting Chases: This function allows you to delete an unwanted CHASE PATTERN. Please note that only CHASE PATTERNS 1-30 can be deleted, 31-60 are built in programs and can not be deleted or changed in any way. Also note that a program is never completely erased unless you initialize the controller. The program will simply not be able to be executed. It can always be recalled later. To delete a CHASE PATTERN:

1. Enter PROGRAM MODE as described in "Programming Scenes" on page 9.
2. Use the PATTERN BUTTONS (18&19) to select the pattern you wish to delete.
3. When you reach the program you wish to delete, press the DELETE PROGRAM BUTTON (25) while holding down the SHIFT BUTTON

(16). All the channel LED's will flash indicating the command registered.

4. To exit this function press the CHASE BUTTON (24).

Assign Add/Kill: This function allows you to override a chase and turn a single or a group of channels on. Channels are assigned to the FLASH BUTTON (1 & 13), allowing to have a total of 16 programmed overrides. You may use your overrides at different times and may use more than one at a time. You can set this function to blackout ("KILL") the chase, so only your override channels come on. You may also, set this function to "ADD" to the chase. When you "ADD," your override channels will come on as your chase is running. This function will operate in any chase. This will be a momentarily function and your chase return to normal as soon as release the FLASH BUTTON (1 & 13).

To program in an override:

1. Hold down the ASSIGN BUTTON (25) for two seconds until the red assign LED come on and "AS" is displayed in the LCD Display (6).
2. While holding down the SHIFT BUTTON (16), use the PATTERN UP BUTTON (18) to selected "ASSIGN ADD." ASSIGN ADD will be indicated by a red LED above the PATTERN UP BUTTON (18).
3. Turn on any channels you wish to assign to a FLASH BANK.
4. After you have turned on your desired channels, press on of the FLASH BUTTONS (1 & 13) while holding down the ASSIGN BUTTON (25). ALL the channel LED will flash indicating that your program was placed into that FLASH BUTTON's memory.

Recalling an ASSIGN PATTERN:

1. You may recall your assign pattern in any chase function.
2. To add to the chase be sure the yellow LED next to the ADD/KILL (17) is off and the red ASSIGN ADD LED is on. Simply press the FLASH BUTTON (1 & 13) that stores the scene you wish to recall. You'll notice that the chase remains running and your scene turns on. You may recall (ADD) several scenes at once, by pressing as many FLASH BUTTON (1 & 13) as you like at one time.
3. To blackout (KILL) the chase and just turn on your programmed scene, press the ADD/KILL BUTTON (17) to turn on the yellow LED. Be sure you are in ASSIGN KILL mode. Press the FLASH BUTTON

(1 & 13) that store the scene you wish to recall. You'll notice that the chase stops and your scene comes on.

4. For both "ADD" and "KILL" the scene will remain on as long as hold the FLASH BUTTON (1 & 13) down. Also you may turn several ASSIGNS on at once.

Blind Function: This functions allow you to blackout (BLIND) specific channels from your chase programs. To BLIND a channel be sure you are in chase mode and:

1. While holding down the SHIFT BUTTON (16) press and release the BLIND BUTTON (21) to activate the blind function.
2. While holding down the SHIFT BUTTON (16) press and release the FLASH BUTTON (1 & 13) that corresponds to channel you wish to remove from the chase.
3. You may repeat this process to blind as may channels as you like.
4. To remove a channel simply reverse the process, hold down the SHIFT BUTTON (16) and press and release the FLASH BUTTON (1 & 13) that correspond to channel you wish to return to the chase.
5. To cancel the BLIND FUNCTION hold down the SHIFT BUTTON (16), press and release the BLIND BUTTON (21). This will disable the blind function.

Patch Settings: This function allows you to overlap DMX channels together, giving you up to 96 DMX channels to work with. This function is useful if you would like several channels on one DMX pack to turn at once. For example, say you have a 4 channel DMX pack with 5 amps maximum load per a channel and you want to turn on four 500 watt lamps on DMX channel one. Your DMX pack is automatically going to assign one 4 DMX channels to your pack one for one. To reduce the risk of constantly blowing your pack you can plug each lamp into all four (4) of your packs channels. Then you can patch these channels to be triggered all at once. Since each of the 16 channels of the Light Station™ represent a DMX channel you would only have 16 to work with. However, if you patch your DMX channels, you could have a maximum of six DMX channels triggered per a channel on the controller. So, you could tell your controller to trigger DMX channels 1-4 by slider 1 on the board. This would then activate all four channels on your DMX pack, allowing all four lamps to be turned on at once, therefore eliminating the possibility of blowing you pack channels due to excessive load per a channel,

because now your lamps are spread out through your pack. To patch channels:

1. Press and hold down the PATCH BUTTON (27) until the red indicator LED turns on.
2. The LCD DISPLAY (6) will read "01:01." The left two digits represent the controllers 16 channels (1-8 faders and 9-16 Latch Buttons). The right two digits represent the 96 available DMX channels.
3. Use the STEP up and DOWN BUTTONS (20 & 21) to adjust the DMX channels you wish to patch.
4. Use the PATTERN UP and DOWN BUTTONS (18 & 19) to select the controller channel (1-16) you wish to patch the DMX channel too.
5. Be sure to select your DMX channel before you select your controller channel to complete this function properly.
6. After you have completed your adjustments, hold down the PATCH BUTTON (27) until the red indicator LED shuts off, to exit this function.

Manual Mode: This function shuts off all other functions and allow you to use the controller as a basic on/off dimmer. To activate this mode press and release the MANUAL BUTTON (28) while holding down the SHIFT BUTTON (16).

Manual Step Mode: This mode allows you to manually control channels 1-8 when in chase mode. This function will only effect channels 1-8, channels 9-16 will continue to chase normally. In this function you can also change chase patterns normally. To activate this function press and release the MANUAL STEP (26) while holding down the SHIFT BUTTON (16). The LCD DISPLAY (6) MANUAL STEP LED will light, indicating this function has been activated. To exit this function press the CHASE BUTTON (24) at any time.

Fade Time Function: This function can be operated in any normal chase function. This function allows you to control the amount of time it takes for one scene to switch off and the next to turn on. Basically one scene fades to the next. The amount of fade time varies from instant to 10 minutes. This function is controlled by the FADE TIME SLIDER (7) and only effects the dimmer channels (1-8). When the FADE SLIDER is

set to zero the amount of time it takes for one scene to fade to the next will be instant, when the fader is set to 10, it will take about 10 minutes to fade from one scene to the next. To activate this function move the FADE TIME SLIDER (7) up and down during any normal chase function.

Midi Settings: This controller can be triggered by any type of MIDI device. To use the MIDI function, plug in a standard MIDI controller to the MIDI input jack (35) on the rear of the Light Station.™ When your unit is receiving a MIDI signal the yellow MIDI SIGNAL LED will begin to flash rapidly. To operate properly the MIDI input channel must match that of the controller MIDI receiving channel. The controller's default MIDI input signal is one, you may find it necessary to change this setting if you are running several MIDI devices. To adjust the controllers input MIDI signal hold down the MIDI CHANNEL BUTTON (27) for two seconds while holding down the SHIFT BUTTON (16). "CH:01" will appear in the LCD DISPLAY (6). Use the STEP UP and DOWN BUTTONS (20 & 21) to change the input if necessary. Below you will find the MIDI NOTE DATA:

Note Number	Velocity	Function
22-81	Master Pattern Level	Turns Patterns 1-60 On & Off
82-97	Channel Dimmer	Identical to the Flash Channels 1-16
99		Full ON
101		Execute the patterns step by step
102		Engages and disengages STAND BY mode

Please note when use a MIDI controller the LEVEL SLIDER (8) will not function.

Controller Reset and Memory Dump: This board may be reset to factory settings at any time. You may use this function to erase all your programs. This function may also be used to eliminate any system FREEZE.

Caution: This operation may be harmful to the controllers internal Flash Memory, please use this operation infrequently.

Press and hold the SHIFT button first, then in sequence press LATCH 9, LATCH 13, LATCH 10, LATCH 14, LATCH 11, LATCH 15, LATCH 12, and LATCH 16. Now release the SHIFT button. Several seconds later, it will return to manual mode.

Options:

An optional foot controller may be purchased separately. This controller will allow you to control some of the function by remote. With the foot controller you may control pattern step up, pattern up, stand by mode, full on. Please contact you LSC dealer for pricing.