traxon

USER MANUAL

LED ENGINE XB-SD

LED Engine XB-SD Models

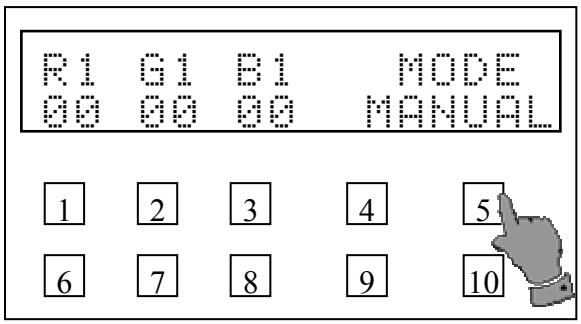
Model Number	Model Name	No. of Output Ports	For LED type	Mains Supply
PX.IC.5060100	LED Engine XB-SD RJ45 350mA-216 220V	6	350mA	220V
PX.IC.5060200	LED Engine XB-SD RJ45 350mA-216 110V	6	350mA	110V
PX.IC.5030100	LED Engine XB-SD RJ45 700mA 220V	3	700mA	220V
PX.IC.5030200	LED Engine XB-SD RJ45 700mA 110V	3	700mA	110V
PX.ID.5120100	LED Engine XB-SD Rackmount RJ45 350mA 220V	12	350mA	220V
PX.ID.5120200	LED Engine XB-SD Rackmount RJ45 350mA 110V	12	350mA	110V
PX.ID.5060100	LED Engine XB-SD Rackmount RJ45 700mA 220V	6	700mA	220V
PX.ID.5060200	LED Engine XB-SD Rackmount RJ45 700mA 110V	6	700mA	110V
PX.IC.5060101	LED Engine XB-SD Open Terminal 350mA-216 220V	6	350mA	220V
PX.IC.5060201	LED Engine XB-SD Open Terminal 350mA-216 110V	6	350mA	110V
PX.IC.5030101	LED Engine XB-SD Open Terminal 700mA 220V	3	700mA	220V
PX.IC.5030201	LED Engine XB-SD Open Terminal 700mA 110V	3	700mA	110V
PX.ID.5120101	LED Engine XB-SD Rackmount Open Terminal 350mA 220V	12	350mA	220V
PX.ID.5120201	LED Engine XB-SD Rackmount Open Terminal 350mA 110V	12	350mA	110V
PX.ID.5060101	LED Engine XB-SD Rackmount Open Terminal 700mA 220V	6	700mA	220V
PX.ID.5060201	LED Engine XB-SD Rackmount Open Terminal 700mA 110V	6	700mA	110V

System components

1. LCD display with Backlight timing option
2. 10 push buttons
3. DMX-512 input and output 3 pin XLR connectors
4. DMX-512 addressing
5. Operating voltage 115v / 230v
6. 5 modes of operation
    a. DMX-512 control:
        i. Control of up to 36 channels (12 RGB outputs).
    b. Chaser mode:
        i. Up to 9 chasers. Each chaser made of up to 32 steps with custom fade and delay timing options.
    c. Macro mode:
        i. Turns the LED Engine XB-SD panel into quick chaser selection keypad.
    d. FX Mode:
        i. Create astonishing wave effects.
    e. Master Transmitter mode:
        i. Transmits at the DMX line all current channels levels.
7. Extra Features
    a. Channels doubling:
        i. You can limit the maximum number of control channels from 1 to 36 .
    b. Master Dim:
        i. You can enable the **Master Dim** feature for DMX Mode if you wish to control the master level of all the outputs.

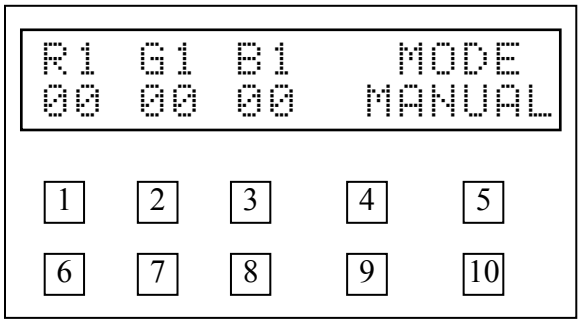
Getting started

Connect your LED system/s to LED Engine XB-SD. Connect LED Engine XB-SD to the mains; LED Engine XB-SD will start at the last state it was turned off at (only if the last state was **Chaser**, **Macro**, **FX**, **Manual**, or **DMX**).
Choose relevant MODE by pressing button #5.



Note:* In case you get a **"Buttons Locked" message on LCD screen when you press one of the buttons, the LED Engine XB-SD is in Button Lock mode. To unlock the buttons press and hold the #1 and #5 keys simultaneously until you get a message: "Buttons Unlocked".
Remember: The buttons will lock up again as soon as LCD backlight goes off. You can disable the auto buttons locking in the **System Utilities** menu.

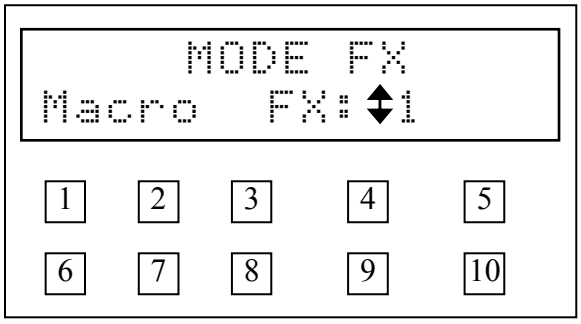
Manual MODE



Each output which consists of three channels (R-G-B by default) is represented by a color group. For example: output #1 (channels 1-3) is represented by color group #1, which is shown as R1 G1 B1 (see figure above). The letter represents a color (R for red, G for green, B for blue) and the digit next to the letter represents a number of a color group.

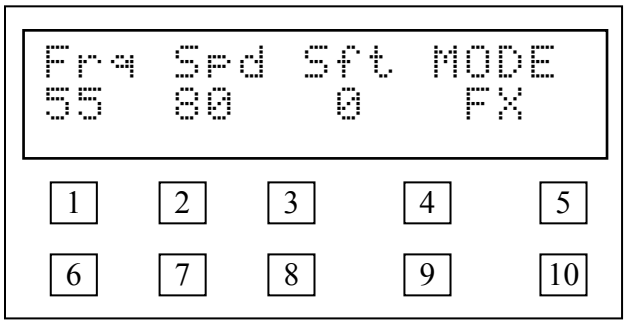
Button #1 / #6 – Value up / down
Button #2 / #3 – Scroll Between the colors (RGB) in current color group
Button #7 / #8 – Scroll Between the color groups RGB1 to RGB6
When you press two buttons - #1 & #6 simultaneously the level will change from zero to full and from full to zero at instance.
To copy previous color group over the current one instantly press button #10.

FX MODE

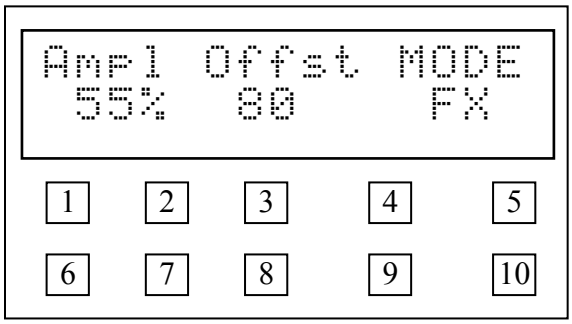


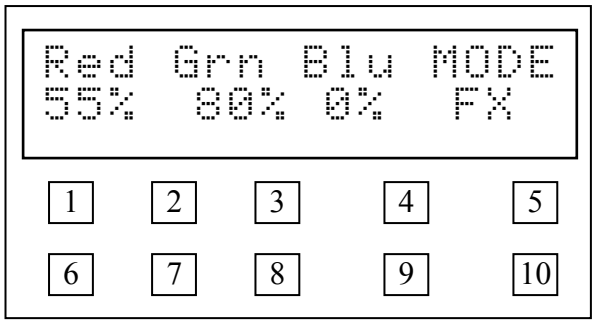
This mode allows you to create astonishing visual effects of running wave that will spread among the 18 (channels of the LED Engine XB-SD.

By changing its eight parameters you can create various wave effects.
You can choose between 9 different presets by pressing buttons #4 and #9.
To select a desired preset press button #10. You can now modify the preset's settings as follows:



To access other features of the **FX MODE** hold button #4 for the Amplitude and Offset Settings or hold button #9 for the RGB master level settings.



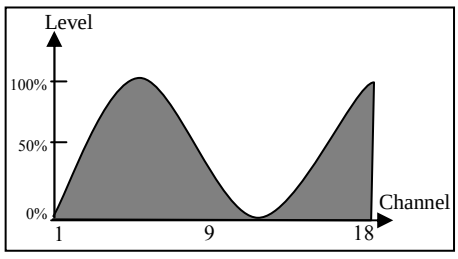


While holding those buttons press corresponding buttons to change desirable feature.
For example while holding button #4, press buttons #1 / #6 to change The Amplitude.

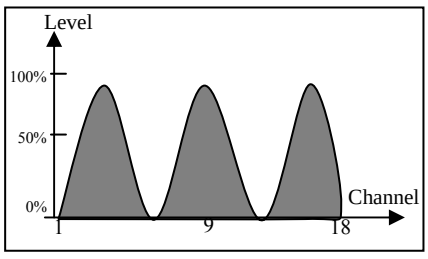
Explanation of abbreviations:

- *Frq*: - (changed by the #1 / #6 buttons).
  The frequency of the wave i.e. number of wave cycles within the range of the channels. Values range 1-127 – the wave runs in direction from first to 18's channel, 128-255 – the wave runs in direction from 18's to first channel [(2)].

Examples:



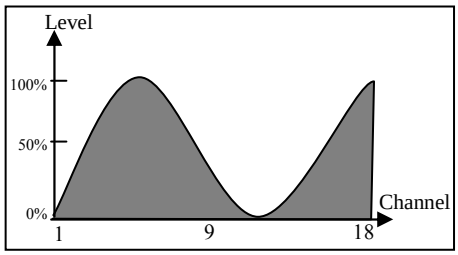
Frequency value of 25



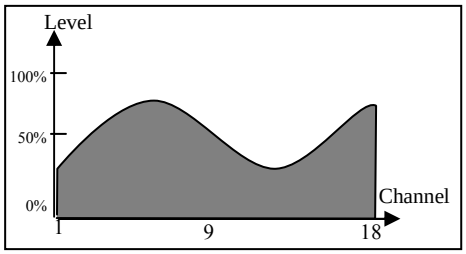
Frequency value of 45

- *Spd*: - (changed by the #2 / #7 buttons).
  The speed of the running wave. The higher the value – the faster wave runs.
- *Sft*: - (changed by the #3 / #8 buttons).
  The color shift of the wave. You can create an offset between the color inside the wave – thus splitting the wave into 3 different waves – wave of Red color, Green and Blue colors. The higher the number the bigger shift between the waves. Value of 0 – no shift.
- *Ampl*: - (changed by the #1 / #6 buttons while holding button #4).
  The amplitude (magnitude) of the wave i.e. the height of a waveform above or below its zero baseline. You can change the magnitude of the wave from 0% - zero fluctuation, to 200% - twice the normal fluctuation.

Examples:



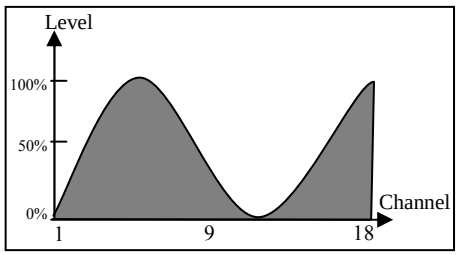
Amplitude value of 100%



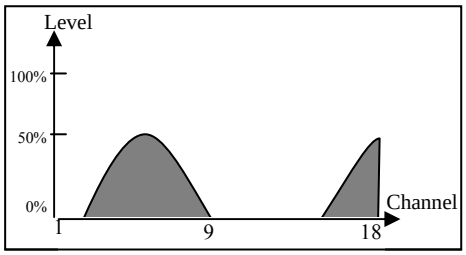
Amplitude value of 50%

- *Offst*: - (changed by the #2 / #7 buttons while holding button #4).
  The output level offset of the wave i.e. the value of the wave baseline.
  When set to 0 – the baseline is on 50% of the output level. You can change the offset from -100 to +100.

Examples:



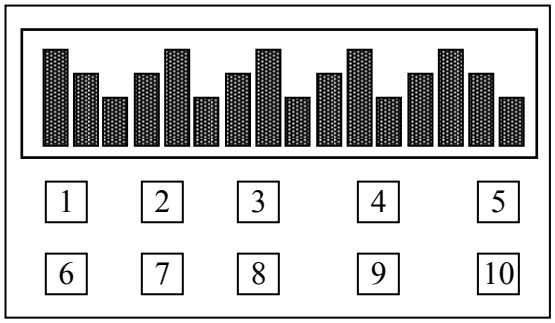
Offset value of 0



Offset value of -30

- *Red/Grn/Blu*: - (changed by the #1 / #6, #2 / #7, #3 / #8 buttons respectively while holding button #9).
  The RGB master level settings. You can control the master volume of each color of the wave with this feature.

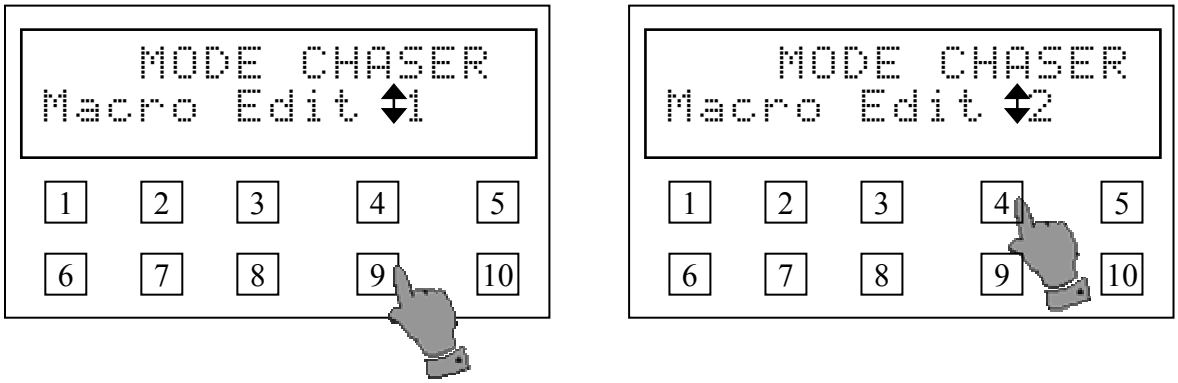
**Note:* When LCD backlight turns off, a visual representation of the first 16 channels will appear on the screen:



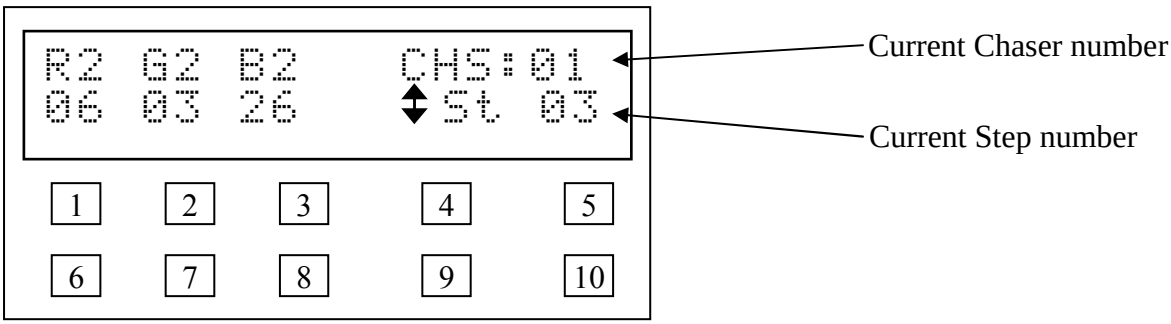
This screen also will appear if you hold the button #10. You can also change all of the parameters described above while holding button #10 so you'll see a visual representation of how the changes affect the wave.
For example by pressing buttons #1 / #6 while holding button #10 you can literally see the frequency changes of the wave, by pressing buttons #1 / #6 while holding buttons #10 and #4 you can see the changes in the amplitude of the wave.

Chaser / Macro MODE

The display will show: **MODE CHASER:** #
By pressing buttons #4 & #9 you may choose the relevant **CHASER**
(Total 9 Chasers).



Editing a Chaser:
Once in **CHASER** mode, press button 3, the display will show the **CHASER** editing interface:



Changing the channel values is done the same way as in **MANUAL** mode:
Button #1 / #6 – Value up / down
Button #2 / #3 – Scroll Between the colors (RGB) in current color group
Button #7 / #8 – Scroll Between the color groups RGB1 to RGB6
Button #4 / #9 – Scroll Between steps

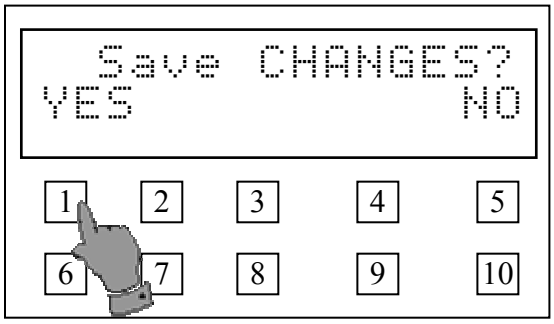
To reset all color groups in current step, instantly press both buttons #6 & #10, simultaneously.

To reset a **CHASER**, press and hold buttons #6 & #10, simultaneously, for about 3 seconds until “Chaser Cleared!” is displayed.

When you press two buttons - #1 & #6 simultaneously the level will change from zero to full and from full to zero at instance.

To copy previous color group over the current one instantly press button 10.
To copy values of all channels from previous step over the current one press and hold button 10 for about 3 seconds.

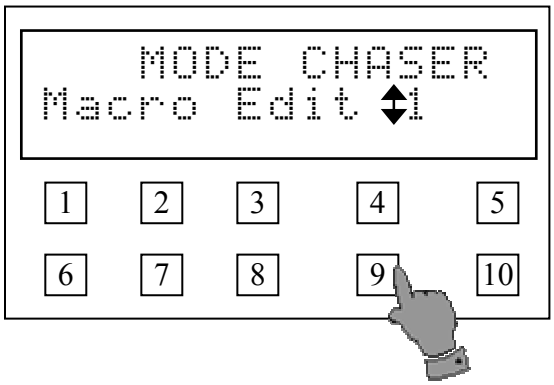
In order to return to chaser main menu press button 5. If changes were made to the chaser, the following screen will appear:

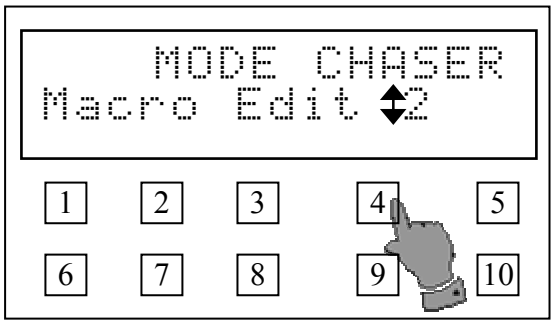


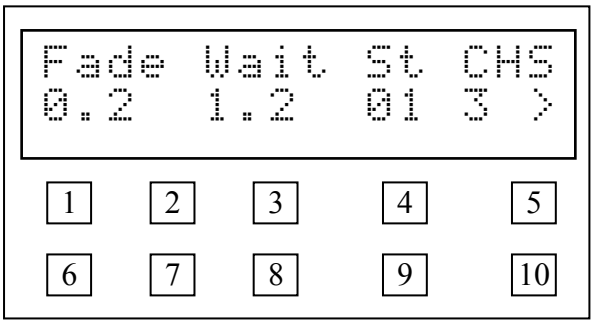
Press button #1 if you want to save the changes or button #5 do discard the changes you made to the current chaser.

Running Chaser

Select the relevant **CHASER** by pressing buttons #4 & #9 and press button 10 to run the selected **CHASER**







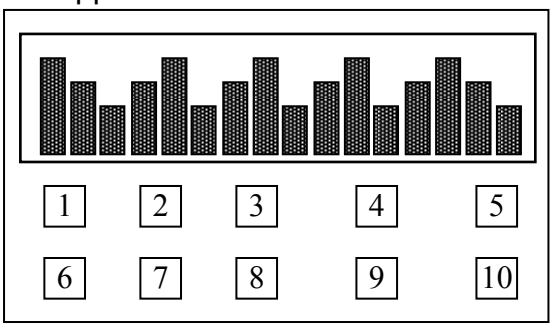
Explanation of abbreviations:

- *Fade:* - (changed by the #1 / #6 buttons).
  The fade time for each step. You can change the fade time in steps of 0.2s
- *Wait:* - (changed by the #2 / #7 buttons).
  The delay time after each step before fading to a new one. You can change wait time in steps of 0.2 second.

- *ST:* - (changed by the #4 / #9 buttons).
  The step number in currently running chaser.
  The ">" sign in the lower right corner means that the chase is "Running". If you press buttons #4 / #9 during chase run, it will enter "pause" mode
  (the **"** sign will show instead of ">") later you can select desirable step with #4 / #9 buttons. To resume running the chaser press button #10
- *CHS*: - is a current chaser number.

.
To return to previous mode, press button #5.

**Note:* When LCD backlight turns off, a visual representation of the first 16 channels will appear on the screen:

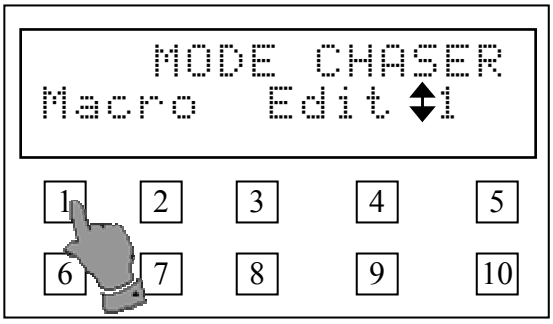


Press any button to get back.

This screen also will appear if you hold the button #10. You can also change all of the parameters described above while holding button #10 so you'll see a visual representation of how the changes affect the steps.
For example by pressing buttons #1 / #6 while holding button #10 you can literally see how the changes in Fade affect the fade time for each step.

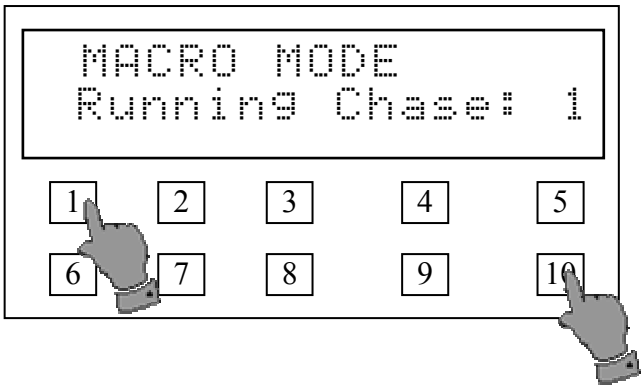
Macro MODE

Macro MODE is a mode that turns your LED Engine XB-SD keypad into a Macro keypad where each button represents corresponding chaser from 1 to 9.
To enter **Macro MODE** press button #1 from the **Chaser MODE**:



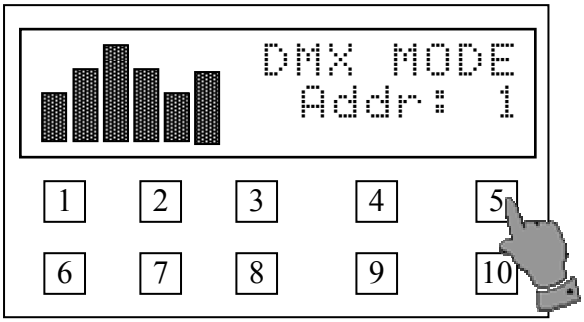
LED Engine XB-SD will run the first chaser. If you wish to select a different chaser, just press its corresponding button - button #1 for chaser 1, button #2 for chaser 2 and so on…

If you want to get back to **Chaser MODE** press buttons #1 and #10 together:



DMX-512 MODE

Press button #5, until the display shows as below



The **DMX Address** of LED Engine XB-SD is changeable in the **System Utilities** Menu.

In order LED Engine XB-SD controller to be able to receive DMX-512, the **COMM MODE** should be set to **Slave**.

**Note: if the DMX signal is lost, LED Engine XB-SD will retain the last values received.*

If you want to control the master level of all outputs via external DMX-512 console then the **Master Dim** setting should be set to ON on all the LED Engine XB-SD units in the chain.

Note: if the master level is set to 0 value while **Master Dim is ON then the values of all the outputs will be 0.*

The number of channels (**No. Channels**) setting that is set on the LED Engine XB-SD also affects the way that channels are controlled. For example:
If **No. Channels** setting is set to 3, then the unit will occupy only 3 DMX channels.

Note: if the **Master Dim is ON then LED Engine XB-SD will* also occupate *an additional channel for the master fader.*

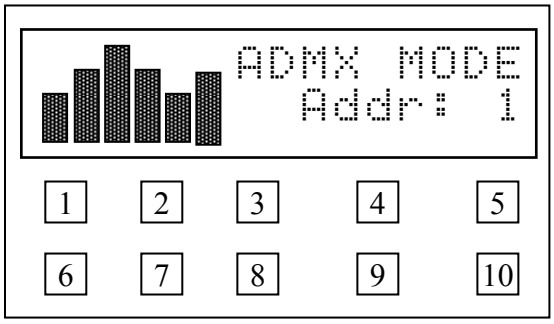
If there is no need for using external DMX-512 input and you want a number of LED Engine XB-SD controllers to operate in synchronization with another LED Engine XB-SD (we shall call it MASTER LED Engine XB-SD), then the **COMM MODE** of MASTER LED Engine XB-SD in the chain should be set to **Master**.

Note: in this case **Master Dim should be disabled and the **No. Channels** should be the set to the same value on all of the units including the MASTER LED Engine XB-SD.*

DMX-512 Auto-addressing MODE

The **DMX-512 Auto-addressing MODE** allows easy chaining of LED Engine XB-SD controllers without manually assigning each controller its own DMX address.
In this mode each LED Engine XB-SD in the chain occupies a number of channels as set in **No. Channels** setting , and each LED Engine XB-SD that is connected next in chain will be automatically assigned a DMX address that comes next in order.

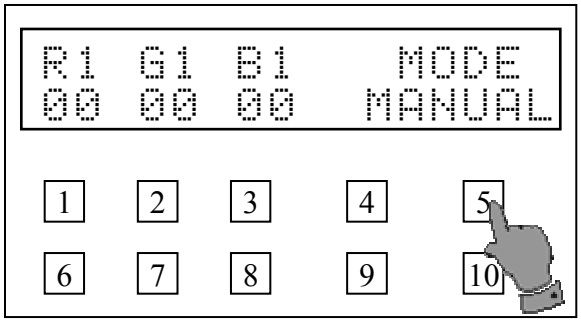
To enter the **DMX-512 Auto-addressing MODE** you must first set the **Autoaddressing** setting to ON in the **System Utilities** Menu, then press button #5 until the display shows as below



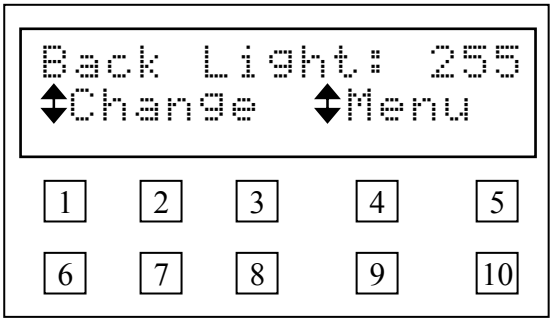
Note: when the **Autoaddressing setting is ON the **DMX MODE** will be replaced with **ADMX MODE**.*

LED Engine XB-SD System Utilities

To enter **System Utilities** Menu:
Press button #5 until LED Engine XB-SD is in **MANUAL MODE**



Press and hold button #10 for about 3 seconds, until the display is presented as below:



Press button #4 or #9 to scroll between the options
Press button #1 or #6 to change the value.

The available options are:

1. **Back Light** – set the backlight time out in seconds
2. **DMX Address** – set DMX starting address for a DMX mode
3. **COMM MODE: Master/Slave** – If set to Master: LED Engine XB-SD switches its DMX port to Output and operates as a DMX transmitter of its own Channels at starting address – 1(Very useful when there is need for a synchronous operation of LED Engine XB-SD Devices).
   **Note:* In DMX mode LED Engine XB-SD operates as usual
   -If set to Slave: LED Engine XB-SD never operates as transmitter.
4. **Reset All Memory**
   -If you want to clear all the settings and chasers to defaults, press and hold button #6 for about 5 seconds until unit reboots.
5. **Buttons Lock: ON/OFF**
   – If set to ON the buttons will automatically lock up whenever the LCD backlight goes off.
   To unlock the buttons press and hold the 1 and 5 keys simultaneously until you get a message: "Buttons Unlocked".
   **Note:* If LED Engine XB-SD was turned off while its buttons were locked – they will be initially locked upon powering up next time.
   -If set to OFF: Buttons will never lock up.
6. **Master Dim**
   -You can enable the **Master Dim** feature for DMX Mode if you wish to control the master level of all the outputs.
7. **No. Channels**
   - You can limit the maximum number of control channels from 1 to 18 . For example if number of working channels set to 9 channel mode - outputs 10-18 will be a copy of 1-9. If number of working channels set to 3 - outputs 4-6, 7-9, 10-12, 13-15, 16-18 will be a copy of 1-3.
8. **Autoaddressing: ON/OFF**
   -Enables / disables the Auto-addressing function.

To save the changes, just go back to **MANUAL MODE** by pressing button #5

LED Engine XB-SD – Express users guide

Buttons Unlocking

1■&5■ –3 sec press

Mode Manual

5■–Mode Manual

1▲– 6▼– Change Value
2◄– 3►– Scroll between colors in the RGB group
7◄– 8►– Scroll between RGB groups (1-6)
10■ – Copy values from previous group to current color group
10■ – 3 sec press – enter system utilities

System utilities

4▲– 9▼– Scroll between options
1▲– 6▼– Change current option's value
5■ – Go back to Manual Mode

Mode FX

No button hold

1▲– 6▼– Change wave frequency
2▲– 7▼– Change wave speed
3▲– 8▼– Change Shift between colors

4■ – Hold to enable:

1▲– 6▼– Change wave Amplitude
2▲– 7▼– Change wave offset

9■ – Hold to enable:

1▲– 6▼– Change master RED
2▲– 7▼– Change master GREEN
3▲– 8▼– Change master BLUE

10■ – Hold to preview the outputs on the LCD display

Mode Chaser

4▲– 9▼– Select Chaser
3■ – Edit Chaser

1▲– 6▼– Change Value
2◄– 3►– Scroll between colors in the RGB group
7◄– 8►– Scroll between RGB groups (1-6)
4▲– 9▼– Scroll between Steps
10■ – Copy values from previous group to current color group
10■ – (3 sec press) - copy all the values from previous step
6■&10■ – (3 sec press) - Erase Chaser
5■ – Return to Select Chaser Mode

1■ – Enter Macro Mode

1▲ to 9▼– Run chaser that corresponds to button number
1■&10■ – Return to Select Chaser Mode

10■ – Run Chaser

1▲– 6▼– Fade Time
3▲– 8▼– Wait Time
4▲– 9▼– Stop
4▲– 9▼– Select Step
10■ – Run Chaser
5■ – Return to Select Chaser Mode

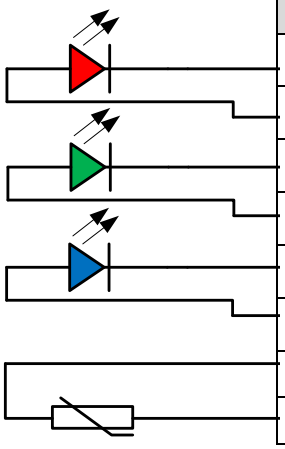
Mode DMX

■–Receive DMX

Open Terminal Connection Scheme

Typical LED fixture connection:

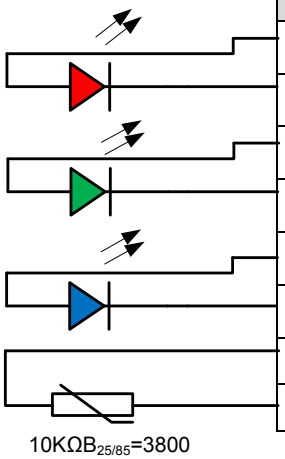
For 350mA LEDs



Pin	Polarity	Description
1	–	CH1
2	+	
3	–	CH2
4	+	
5	–	CH3
6	+	
7	Thermal Feedback	NTC
8		

$10K\Omega B_{25/85}=3800$

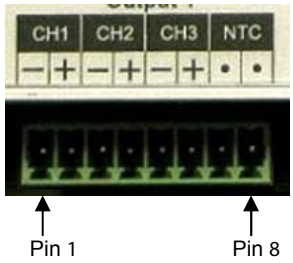
For 700mA LEDs



Pin	Polarity	Description
1	+	CH1
2	–	
3	+	CH2
4	–	
5	+	CH3
6	–	
7	Thermal Feedback	NTC
8		

$10K\Omega B_{25/85}=3800$

LED Output Pinout:



LED Engine XB-SD - Technical Data

Specification	LED Engine XB-SD 1W-216	LED Engine XB-SD 3W-216
Power supply	Internal	Internal
Power input	88 ~ 264VAC , 47 ~ 63 Hz	88 ~ 264VAC , 47 ~ 63 Hz
Current consumption	Max. 5A (115VAC) or 2.5A (230VA)	Max. 10A (115VAC) or 5A (230VAC)
Power consumption	Up to 320W	Up to 640W
Driving current	Max. 350mA per channel	Max. 700mA per channel
Output voltage	Max. 48VDC	Max. 48VDC
Output channels	18 channels	18 channels
Fixture output	6 outputs (1-12 x 350mA LEDs per channel, up to 216 x 350mA LEDs total)	6 outputs (1-12 x 700mA LEDs per channel, up to 216 x 700mA LEDs total)
DMX working mode	Adjustable (1-18 channels)	Adjustable (1-18 channels)
DMX signal input	RJ-45	RJ-45
DMX signal output	RJ-45	RJ-45
Color grades	256 level (each color) total 16,770,000 colors	256 level (each color) total 16,770,000 colors
Heat dissipation	15% of power output	15% of power output
Environment	IP40	IP40
Operating temperature	range -18°C ~ +40°C (0°F ~ +104°F)	range -18°C ~ +30°C (0°F ~ +86°F)
Storage Temperature	range -18°C ~ +40°C (0°F ~ +104°F)	range -18°C ~ +40°C (0°F ~ +104°F)
Humidity	20% to 70%	20% to 70%
Fixture Protection	Open line, short line and wrong interconnection protection	Open line, short line and wrong interconnection protection
Output Protection	PTC - Auto recovery after fault condition is removed	PTC - Auto recovery after fault condition is removed
Thermal Protection	Reduces light output to eliminate overheating	Reduces light output to eliminate overheating
DMX Protection	Over voltage protection	Over voltage protection

Please check for the latest updates and changes on the TRAXON website.

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