ZIBA™ - Battery Entertainment Light – User Guide

The ZIBA Wireless Battery Light from Luxium™ is an easy-to-use, professional-grade, battery-powered, full-color portable lighting instrument. With convenient wireless control options, light weight, small size and long-lasting battery power, the ZIBA can be located almost anywhere. It can produce narrow to wide floodlighting beams that provide exquisite color washes and accents or high-fidelity CCT whites for high-lighting events or spot-lighting performances or enhancing landscapes and buildings. In addition to convenient mobile device control using the LuxiumApp™ (Bluetooth® control), the exclusive ShowCast system allows the ZMX® wireless DMX transmitter to control the lights using pre-programmed modes as well as traditional DMX512 operation.

ZIBA – ZB20

2.4 GHz DMX communication

2.4 GHz BLE communication

Luxium ZMX Transmitter

- Luxium designed stand-alone lightshow mode with pre-set colors and sequences.
- Traditional DMX broadcast mode with wireless DMX512 control from wired DMX console with XLR cable.

- Color adjustable or calibrated white CCT's.
- Control with LuxiumApp or ZMX transmitter.
- Outdoor operation.
- Runs >11 hrs at full-power.
- 3.5 pounds
- Save custom colors for start-up operation.

LuxiumApp

- Configure luminaire info, DMX addresses and light groupings.
- Pre-set colors and sequences.
- Control lighting colors during Bluetooth operation.
- Switch back and forth from Bluetooth to DMX operation.

OVERVIEW:

The ZIBA battery entertainment light can be operated in four different ways.

1. As a stand-alone battery light. The light will turn on in a preset (Saved) mode to show a desired color at start up. The LuxiumApp for iOS devices is required to choose and save settings for the light. Download the app from the App Store for FREE.
2. As a Bluetooth-controlled light with color and level selected by a mobile device. The LuxiumApp (for iOS and Android devices) is used to operate the light.
3. As a DMX-controlled fixture using the Luxium ZMX® wireless DMX transmitter. The Ziba is paired with the light, the unit is set to DMX mode (using Bluetooth app) and then operation is under DMX console control.
4. As a programmable light, using the ShowCast® lighting system that is managed by the ZMX® controller with powerful programmable sequences, built-in to the transmitter.

Getting ready for wireless system operation:

1. Download the user app from the app store. Search for 'Luxium' and choose the app for your mobile device. The app is designed for the iPhone but can also be used with tablet devices.

2. If a ZMX transmitter is included with your system please refer to the section later in this guide - **Luxium ZMX® Operation**.

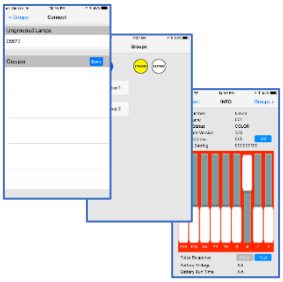
ZIBA OPERATION:

1. Be sure the battery is fully charged. It takes about 5 hours to do a complete recharge. The battery level indicator on the back of the ZIBA indicates charge level with a set of small LED indicator lights. When all lights are on, the battery is fully charged.
2. After the ZIBA wireless event light is charged the power button on the back of the unit can be used to turn the light on and off. No other control is provided on the light itself. The Ziba can be powered directly from the charger if desired. When the charger is plugged in and the light is on, the time to fully charge will be lengthened.
3. The light will turn on to whatever color setting was previously saved by the LuxiumApp. Note that when a light has been saved in DMX mode it will start up in a dark state, not emitting light even though the power has been turned on, unless a valid ZMX signal is being transmitted and received.
4. Once the light is paired via Bluetooth with the LuxiumApp the user can control the light from several different operation pages within the app. Noe that Bluetooth is a reliable form of wireless control only within about 30 feet.
5. It should be possible to control up to six different lights in a group with the LuxiumAp. Do not put more than 6 units in any group for best results.

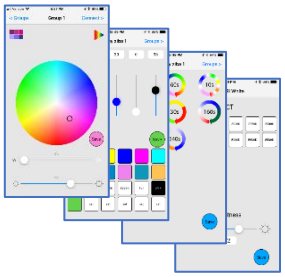
LuxiumApp OPERATION:

The LuxiumApp is used to the manage one or more Luxium lights with Bluetooth control. The pages of the app include information and controls for both set-up and operation of the lights.

Setup Pages



Operation Pages



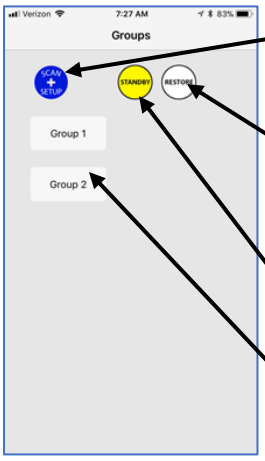
NOTE: The LuxiumApp is designed to connect with and operate all Luxium Lights that have been configured with Bluetooth capability. This system is an open access control method and there is no ability to prevent a different mobile device from pairing with lamps that are not already being controlled. When a mobile device is on and the app is open the system will be able to identify available lights in the range of the Bluetooth signal.

If a mobile device is on and the app is paired with a lamp it will not be possible for any other mobile device in the area to pair with or operate that lamp or group lamps. However, if a mobile device is turned off or leaves the area the lamp will become available for pairing with a different mobile device running the LuxiumApp.

Each mobile device can set up a unique lamp group and change the settings of the lamps. For convenient lamp management a unique lamp name can be assigned using the app and this name will be saved to the lamp using EEPROM so that other users will also find the same name.

The LuxiumApp Setup pages:

- **GROUPS**
  - Used to make initial connection with new lights by pushing the Scan+Setup button.
  - Provides access to established light groups.
  - Gives universal control for Standby and Restore operation.



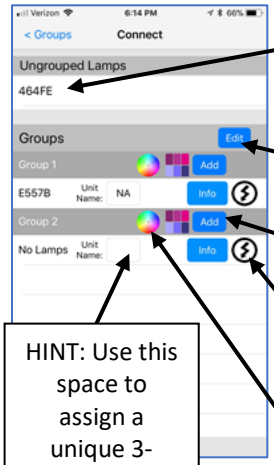
Press SCAN + SETUP to seek unpaired lights and jump to connect page for assignment of groups and info

Press RESTORE to turn light on after they have been set to standby. Lights will return to the most recent setting.

Press STANDBY to turn off all paired light groups at once. The light will go dark but remain ready.

Press the GROUP button to select a group of lights for adjustmentd (the group name can be edited)

- **CONNECT**
  - Used to identify ungrouped lights and add them to groups.
  - Provides edit function to add/delete lights and groups and change names.
  - Icons are provided to open a page for operation of a Group.
  - Provides access to info page for more details about lights.



Ungrouped lights appear here after pushing SCAN+SETUP on GROUPS page.

Use Edit to change Group names and delete LAMPS or Groups.

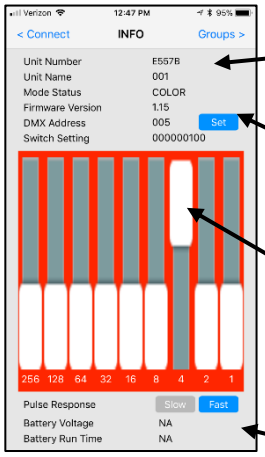
The Add button is used to assign an ungrouped LAMP to a Group. One or more LAMPS can add to a Group.

The FLASH button is used to make a LAMP strobe in white mode to aid with identification.

Use the Icon buttons to open an operation page to control the lamp group.

HINT: Use this space to assign a unique 3-character identifier to the lamp.

- **INFO**
  - Used to show status info about the LAMP
  - Used to SET the DMX address for the LAMP
  - Used to choose the length color change response time
  - Remaining run time estimate for battery operated lights.



Read info from the LAMP about the current settings and software version on the LAMP.

After moving DIP switches to desired state the SET button is used to store the address on the LAMP

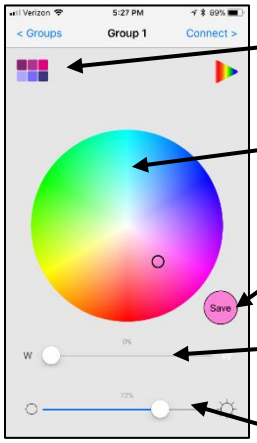
DIP switch indicators for creating a DMX address that will be assigned to the chosen LAMP.

Push SLOW or FAST to choose the speed of response when the LAMP changes color in sequence modes.

NOTE: DMX addresses start at 1 and go through 512. For Luxium units it is generally required that you have 4 consecutive addresses for each unit, e.g. channels 1,2,3,4 would be assigned to Red, Green, Blue, White (RGBW). The DIP switch, encoded as a binary value, starts at '0' which is equal to DMX address 1.

<u>The LuxiumApp Operation pages:</u>

- **COLOR WHEEL**
  - Choose any RGB additive color desired
  - Add white to change color saturation
  - Adjust overall level of light output from the lamps in the group.
  - Save a setting to the LAMP memory for startup



Use ICONS to open other Operation pages.

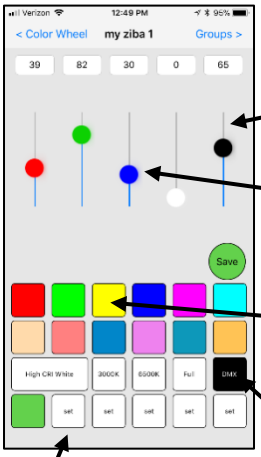
Color wheel for easy choice of any mixture of RGB colors.

Press the SAVE button to make the Group of lamps use the current setting when power is restored.

Add white light to the mix for pastel tones.

Use this MASTER FADE slider to adjust brightness from 100% down to 0.1%.

- **DIRECT**
  - Master fader for all LAMPs in a group
  - Use RGBW sliders to blend a desired color setting
  - Use preset buttons to show memorized color mixes.
  - Save a unique color setting for startup
  - Switch the group into DMX control mode



The MASTER FADE Slider controls the dimming level of the group from 100% to 0%.

Each slider controls the level of one color in a four-channel control method.

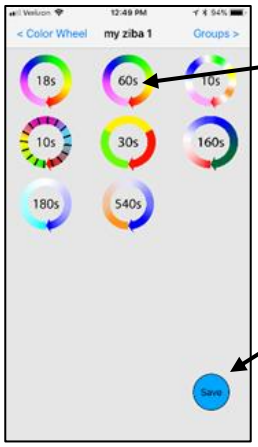
Preset buttons are used to recall pre-programmed and user defined color settings.

DMX button will switch the group of LAMPS into wireless DMX operation if lamps are DMX capable.

If units are not DMX capable, this is a convenient dark setting.

User-defined colors can be saved as presets using Set buttons. Press and hold to clear a Set color.

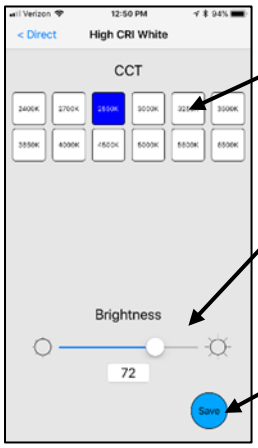
- **SEQUENCE**
  - Choose a pre-programed color sequence for the current Group of LAMPS.
  - A chosen sequence will repeat continuously until another mode is chose.
  - Any sequence can be saved for startup.



Each icon shows the colors and duration in seconds to complete one sequence.

Press the SAVE button to make the Group of lamps use the current setting when power is restored.

- **SELECTABLE CCT WHITE**
  - The CCT page is chosen from the Direct Page.
  - Each selection will control the CCT of the lamps in the group.
  - Brightness of these calibrated white CCTs is controlled with the slider bar.



Select the desired Color Temperature (K) from these pre-programmed white settings.

Brightness control for full range dimming of the lamp group all at once.

Press the SAVE button to make the Group of lamps use the current setting when power is restored.

Luxium ZMX OPERATION:

The Luxium ZMX transmitter is a lighting control device for managing the operation of lighting groups using wireless DMX signals. The ZMX has the ability to run pre-programmed lighting effects and also functions as a DMX transmitter using the input XLR connector to input an external DMX512 signal. In either mode the ZMX will broadcast to all paired lights that are equipped to receive the wireless DMX transmission. Through a user interface screen and control knob the ZMX can be set up to communicate with lights equipped with ZMX receivers.

ZMX® Technical Characteristics

Frequency Range	2.4 GHz ~ 2.483 GHz (ISM band)
Number of Channels	16 - user selectable
Transmitter Range	500 meters / 1500 feet (open air)
DC power in	5V at 200mA
Dimensions (W x H x D), Weight	88 x 100 x 40mm, 150g (0.3 pounds)
DMX in and thru	XLR 5-pin connectors
Built in Sequences	6-Color, 2-Color, Fixed Color

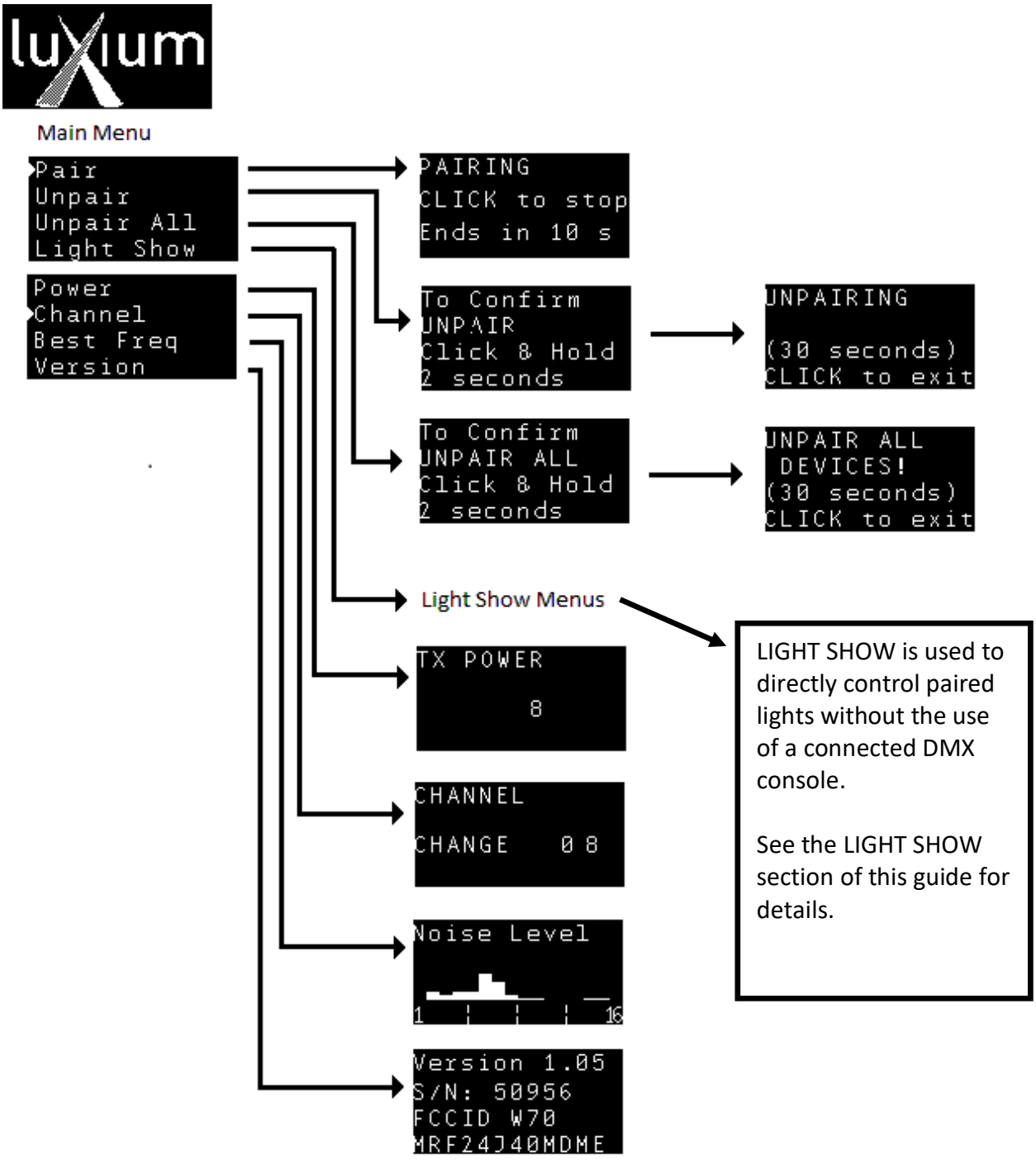
CONNECTIONS:

The back of the ZMX has connections for 5V DC power input and wired DMX with female and male 5-PIN XLR sockets. An external antenna is provided to transmit signals to lights.

The DMX512 signal that is input to the ZMX will be passed THRU to the output XLR connector.

USER INTERFACE:

The user interface is an OLED display with menu screens that allow various configurations of the ZMX. From the main menu a selection can be made to perform a desired function such as pairing with lights or to run a stand-alone routine using Light Show. Below is an overview of the menu structure.



FUNCTIONS:

Main Menu

Turn the selector knob to the desired function and press it to select it. The main menu has 8 functions.

Pair

Selecting pair causes the ZMX transmitter to send out an invite signal. Any unpaired lights that receive the invite signal will pair themselves to the transmitter sending the signal on the transmitter's channel and will not respond to other transmitters. The pairing process can take up to 10 seconds.

Un-Pair

Selecting unpair puts any lights paired to the transmitter back into the unpaired state, allowing it to be paired to a new transmitter. Unpair will work even if the light is on a different channel

Unpair All

Unpair All works the same as Unpair, however this will unpair all lights even when they are paired to other transmitters. Lights must be powered on for successful pairing and unpairing.

Light Show

Light show is able to send DMX data to the lights without the need for a separate DMX controller. It can show solid colors, 2 color fades, 6 color fades, and more. See the separate section on Light Show for more details.

Power

The power menu allows the user to control the output power of the transmitter. There are 20 levels of power ranging from 0dBm to 20dBm. Increasing the power level will increase the range of the transmitter. This can be useful in venues where there are obstacles or large distances between the transmitter and the lights.
CAUTION: Extended close-up bodily exposure (e.g. within 20 inches) for power levels over 15dBm should be avoided.

Channel

There are 16 different channels available. Changing the transmitter's channel makes it use a different frequency to transmit the DMX data. Any lights that are turned on will get notified of the change and use the new frequency. Any lights that are off when the channel is changed will miss the change notification and will not receive DMX data when they are turned on.

Best Freq

Best Freq tries to indicate which channels may be best to use. It displays a bar graph with 16 vertical bars, with channel 1 on the left, up to channel 16 on the right. Short bars indicate less power on a channel which means better signal quality may be possible if you choose that channel, rather than a channel that has a lot of traffic and a high bar indicator.

Version

Selecting Version displays the transmitter version number, the transmitter version number, and the FCC ID of the radio module.

Note: To change the DMX address use the LuxiumApp – connect with the light and use the INFO page on the LuxiumApp to verify or set the address. Note that DMX = 1 is the first possible address, and 5 is the second possible address, since each light needs 4 DMX channels to control the RGBW colors. Conduct the pairing with the ZMX® wireless transmitter. Unit 1 should be set to address 1, unit 2 to address 5, unit 3 set to address 9 and so on, if individual unique behavior is needed under DMX control

SETTING UP THE ZMX:

Use these instructions to pair the ZMX transmitter with ZR, ZG or TR series lights that are configured with Luxium wireless ZMX receivers.

Preparation

- Turn power on to the light and plug the power adapter on to the transmitter
- In case of a unit with DIP switch:
  - Set DIP switch to desired DMX unit # (all switches off = DMX channels 1-4 = RGBW)
- In case of unit without a DIP switch:
  - Use the LuxiumApp to set the DMX address.
- Make sure that the DMX console settings match the lighting unit address
- Units are often paired at the factory, so you may be able to start using ZMX immediately.

Pairing

Pairing the ZMX transmitter with a lamp:

- Turn on the power to an unpaired lamp that needs to be paired with the transmitter.
- Rotate the selector knob on the ZMX transmitter, one step clockwise, and the '>' should point to PAIR.
  - At this point push the knob to get a positive switch click.
  - The ZMX display will read "Pairing" and will finish the pairing operation in 10 seconds.
- The ZMX transmitter is now paired with the lamp.
  - Note: multiple lamps can be paired simultaneously.
- For situations where radio interference may interrupt the signal a channel change feature is available.
  - See the section on "Advice for Transmitter use"

Un-Pairing

Unpairing several lamps (with any ZMX transmitter)

- Turn on the power to lamps, they can be paired or unpaired together
- Rotate the selector knob on the ZMX transmitter to find the UNPAIR setting
- Click the knob and wait for the lamps to unpair
  - If it is desired to globally unpair all lamps, use the UNPAIR ALL setting
  - If it is desired to unpair only from a specific transmitter, use the UNPAIR setting
- The lamps will be unpaired within 10 to 30 seconds

Unpairing a Lamp (using DIP Switch)

- Start with power off to the lamp
- Set DIP SW to 1011 1100
- Turn power on to the light
  - Lamp will flash Lime-Green-Dark in sequence.
- Lift the rightmost switch, so that it reads 1011 1101
  - Lamp will flash red

  The unit is now unpaired

Un-Pairing a Lamp (using Luxium mobile app on iphone, ipad or android phone)

- Start with lamp powered on
- Identify the lamp to be un-paired and using INFO button, navigate to DMX address page
- Touch UNPAIR button, check status LED to confirm unit is unpaired

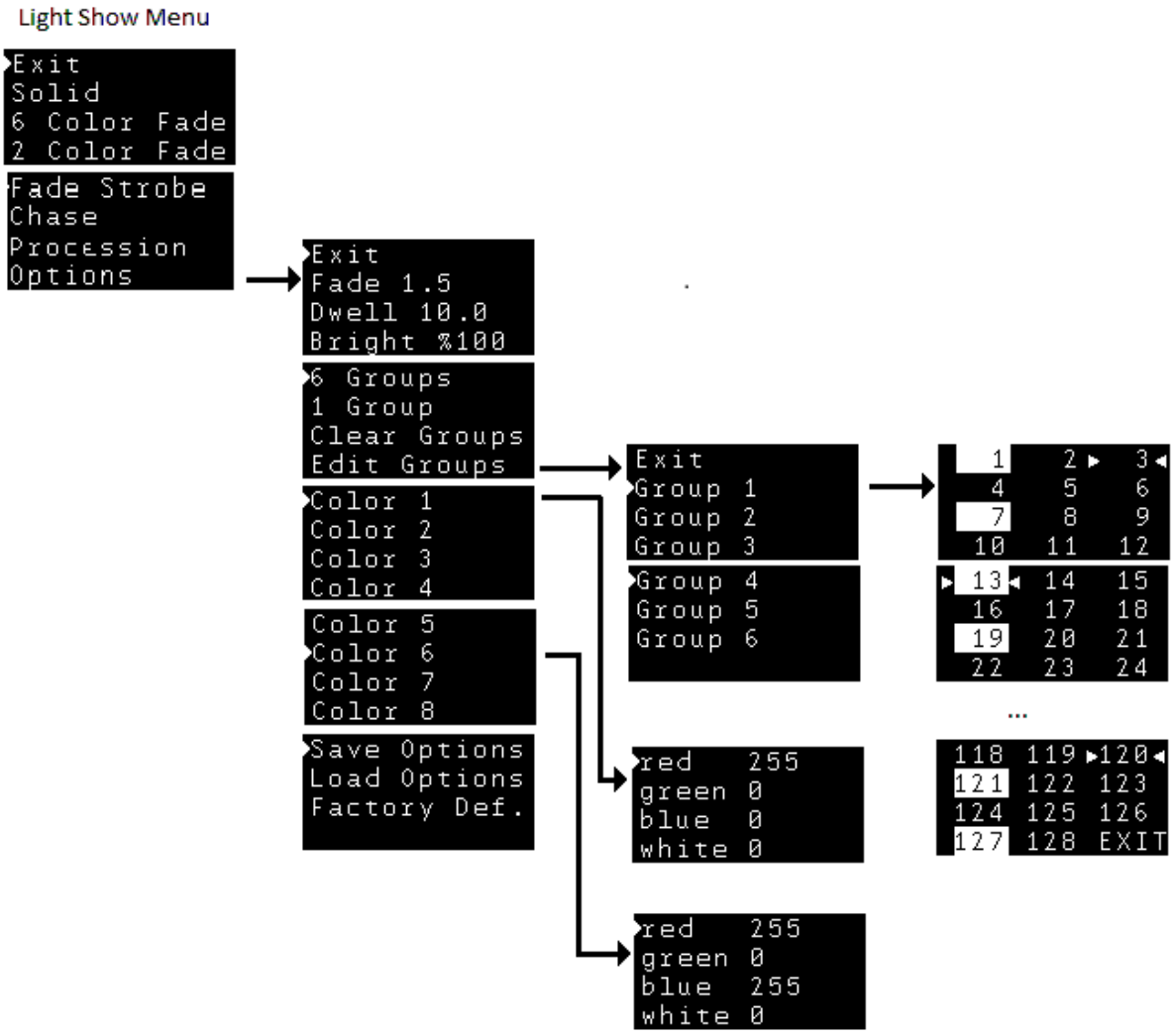
NOTE: To avoid unpairing a unit (e.g. one that is desired to remain paired with a different transmitter), turn off power to that unit so it will not be unpaired.

Advice for Transmitter Use

- Always use the provided power supply.
- In the event of a radio communication issue, follow the instructions for Unpairing, then Pair the lighting units again.
- Radio frequency radiation is considered unhealthy if the power is very high. The ZMX power output setting can be adjusted, up to +20 dBm, the limit set by FCC for transmitters using the 2.4GHz ISM band. It is recommended to set the transmit power lower if reliable operation is achieved.
- If units are showing unreliable or slow response, increase the transmit power setting.

LIGHT SHOW:

Light Show is able to control the lights without the need for an external DMX controller. The colors of light groups can be set by the user along with different sequences and modes. From the ZMX user interface it is easy to reassign a light to a different group using the options menu.



Shows

The show commands work on groups of lights. Groups are collections of Light Unit numbers. By default, Unit #1 (DMX address 1) is in Group 1, Unit #2 (DMX address 5) in is Group 2, continuing up to Unit #6 (DMX address 21) which is in Group 6.

The default colors used in the shows are:

Color 1	Color 2	Color 3	Color 4	Color 5	Color 6
Red	Yellow	Green	Cyan	Blue	Magenta

These defaults can be changed and overwritten using the "options" menu function.

Solid

Displays a fixed color, initially one of the default colors. All lights in Group 1 show Color 1 which is Red by default.
Group 2 shows color 2 (Yellow), continuing up to Group 6 which shows Color 6 (Magenta).

6-Color Fade

Each light in the six groups fades through each of the default colors. The beginning color for the fade depends on which group the light is in. Lights in Group 1 begin their fade at Color 1 (Red) and fade through Color 2, 3, 4, 5, and 6 in order (yellow, green, cyan, blue, magenta). Group 2 begins its fade at Color 2 and fades through colors 3, 4, 5, 6 and 1 in order.

Similarly, for Groups 3, 4, 5 and 6. If six lights, set to unit 1 through 6, are placed in a row, running the 6 Color fade show will create an effect where the colors appear to chase along the row of lights.

2-Color Fade

Each light in a group fades between two colors shown in the following table:

Group	1	2	3	4	5	6
1st Color	1 (red)	2 (yellow)	3 (green)	4 (cyan)	5 (blue)	6 (magenta)
2nd Color	2 (yellow)	1 (red)	4 (cyan)	3 (green)	6 (magenta)	5 (blue)

Fade Strobe

Each light fades through the six colors, then does a rapid color change creating a strobe effect.

Chase

One by one, the units light up, in a series of 6 lights at a time, creating the effect of a light traveling down a row of lights. Lights may be arranged in DMX address order or as desired.

OPTIONS:

The options item in the Light Show menu allows more advanced control of the different shows.

Dwell

Dwell time in a show cause the state of the lights to stay for the dwell time. The default dwell time is ½ second.

Fade

Each show is composed of series of fade commands. A fade command causes a group of lights to transition from its current color to a new color over a certain amount of time. The default fade time is 1.5 seconds. To change the default fade time, Click Fade in the options menu, turn the selector knob to the desired time, and Click again.

Groups

Groups provide a way for fade commands to control multiple units at a time. Any unit # can be assigned to any of the groups from 1 to 6. By default, the groups have the following units:

Group	Unit #	Switch settings	DMX address	Additional Unit # assigned to the group
1	1	0000000	1	7,13,19,25,31,37,43,49,55,61,67,73,79,85, 91,97,103,109,115,121,127
2	2	0000001	5	8,14,20,26,32,38,44,50,56,62,68,74,80,86, 92,98,104,110,116,122,128
3	3	0000010	9	9,15,21,27,33,39,45,51,57,63,69,75,81,87, 93,99,105,111,117,123
4	4	0000011	13	10,16,22,28,34,40,46,52,58,64,70,76,82,88, 94,100,106,112,118,124
5	5	0000100	17	11,17,23,29,35,41,47,53,59,65,71,77,83,89, 95,101,107,113,119,125
6	6	0000101	21	12,18,24,30,36,42,48,54,60,66,72,78,84,90, 96, 102,108,114, 120,126

Color 1 - Color 6

Most of the shows use the variable colors Color1 through Color6.
The default values for these colors are:

- Color1 - Red
- Color2 - Yellow
- Color3 - Green
- Color4 - Cyan
- Color5 - Blue
- Color6 - Magenta

Each of these colors can be changed by modifying the color's RGBW components. To change any of the default colors for a show, select the color: Color1 to Color6, turn the selector knob to change the amount of red, click to accept then repeat the adjustments for the green, blue, and white components.

FCC STATEMENT:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

FREQUENTLY ASKED QUESTIONS:

Q. What is the maximum distance between transmitter and receiver?

A. In free air, the receivers can reach up to 1800 feet away when transmitter is set to the maximum power, 20dBm. Inside a building there are reflections and losses which make it hard to predict the range. Usually the lights remain connected and in communication within a theater, church or gymnasium without any issue. If possible, locate the transmitter strategically, away from metal enclosures and other RF obstructions.

Q. How does radio frequency RF interference affect the performance of ZMX?

A. There can be a momentary loss of communication, but because DMX is a streaming protocol that repeats frequently, usually the loss of single packet is not noticeable.

Q. What kind of communication does ZMX use?

A. Digital spread spectrum DSSS, according to the IEEE 802.15.4 standard

Q. What is the radio frequency band of ZMX?

A. 2.4 to 2.5GHz range.

Q. What are the channels for?

A. Up to 16 different channels are available and can easily be changed on the transmitter. When the channel is changed at the transmitter, all lighting units will automatically follow.

Q. Can I use both wireless and wired DMX with the same light fixture?

A. Yes, but not at the same time. In order to use a direct wired connection, either the lighting unit must be unpaired, or the transmitter turned off, or the mode changed.

Q. How might ZMX interfere with other wireless equipment?

A. In some rare situations there can be interference with ham radios, but this is not expected.

Q. Is ZMX compatible with other wireless DMX systems?

A. Usually not, ZMX is a proprietary Luxium system.

Q. Can the ZMX system be used on a wi-fi system?

A. No, although there are ways to bridge a DMX signal to a WiFi network.

Q. How can I increase the performance of my ZMX system?

A. There is a signal strength adjustment in the menu of the ZMX transmitter. It will be factory set to +10dBm, but can be increased to +20dBm, the highest power output allowed by FCC for the ISM band. Place the transmitter where it can be near the lighting units and avoid placing it near large metal objects or surfaces. Rotate all external antennas so that they are parallel for best results.

Q. The ZMX does not pair with my lights: what is happening?

A. It is possible the lights were previously paired with another transmitter. Please follow the Unpair ALL instructions to reset the lights so they can be paired with the new transmitter.