ColorMix
Lighting Solutions by Allanson

ACL-DMX/SPI-LC

DMX/SPI Master Lighting Controller Installation Manual

E324538

5 YEAR warranty

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DMX/SPI Master Lighting Controller

ACL-DMX/SPI-LC

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Introduction

Thank you for your purchase of our ACL-DMX/SPI-LC Master Lighting Controller. Prior to installing the system, we kindly request that you carefully review all the provided instructions. For any specific programming requirements tailored to your needs, please reach out to our LED department at led@allanson.com

This versatile controller combines DMX, TTL-SPI, and Boosted SPI functions in one unit, reducing hardware complexity. It is fully compatible with Allanson Pixel Mapping software for seamless programming, pixel mapping, and scheduling. Users can download pixel-mapped designs and scheduled files directly to the controller for easy content management and offline playback. Supporting up to 16 output channels, it works with DMX, TTL-SPI, and Boosted SPI signals and extends signal range up to 1000 feet with the Allanson SPI Range Extender. Capable of handling up to 2,048 RGBW or 2,730 RGB DMX modules, and 21,824 full-color SPI pixels, or a combination of both, it's perfect for large installations. The timing display allows scheduling by day or event, while adjustable speed controls fine-tune LED effects. The controller supports uploading and auto-scheduling files, manual execution, and editing of schedules. A 5" touchscreen provides easy navigation, with hard key arrows for reliable control in harsh environments. Security is ensured with a factory-set login password and the ability for customers to set their own password if they choose.

Inside the Package

- Master Controller Unit
- 12VDC 2.5A Class 2 Power Adapter

Controller Features

A. LCD Display
B. LEDs
  a. Power - Red when Power On
  b. Ack, Cloud, Status, GSM – Not available (available only for cloud-enabled versions)
C. Hard Arrow Keys
D. Base Cover
  a. USB-C Port
  b. GSM SIM Card Holder – Not available to use (available only for cloud-enabled versions)
E. Power Adapter Jack
F. Ethernet Port - Not available to use (available only for cloud-enabled versions)
G. DMX-IN
H. DMX-OUT
I. 16 ports for DMX/SPI/Boosted-SPI

DMX/SPI Master Lighting Controller

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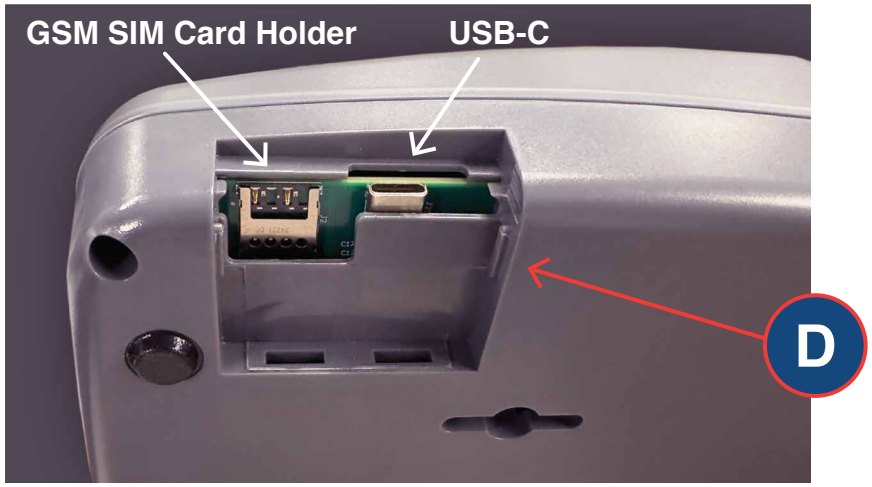
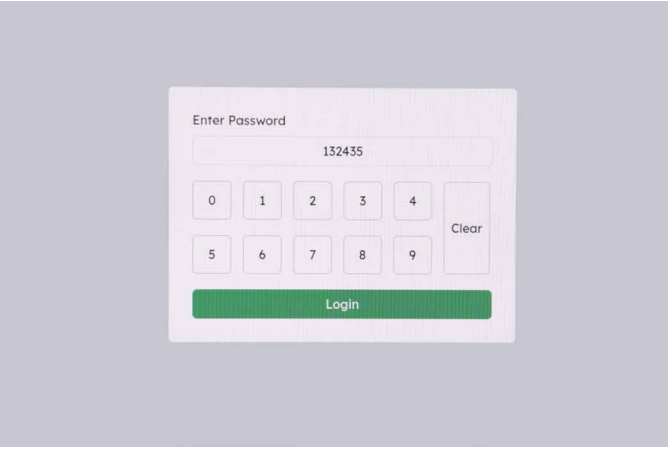


This unit is wall mountable

Operation

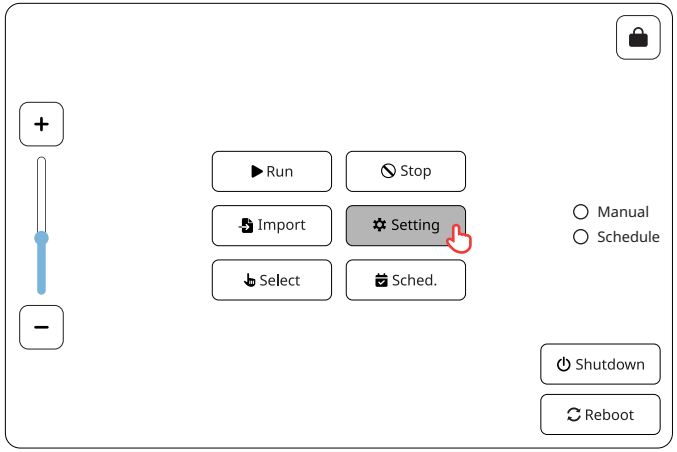
Enter Password to Unlock the LCD Screen

- To unlock the LCD screen, enter your user password or the factory default password (Secret Code) : 132435 and tap *"Login"*



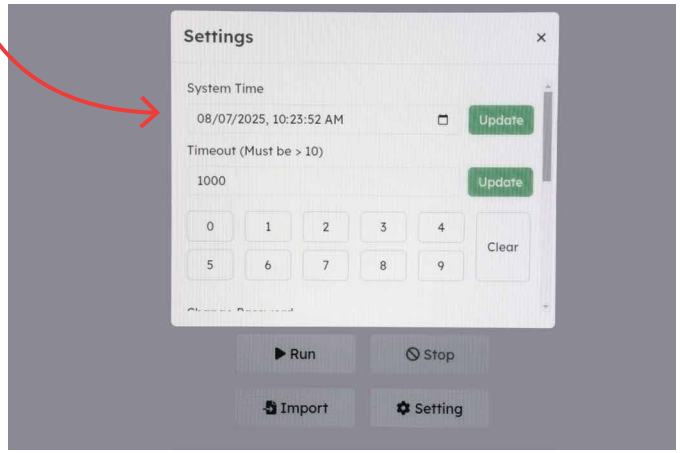
Accessing Settings

- Tap *"Settings"* on the display to open sub-menu

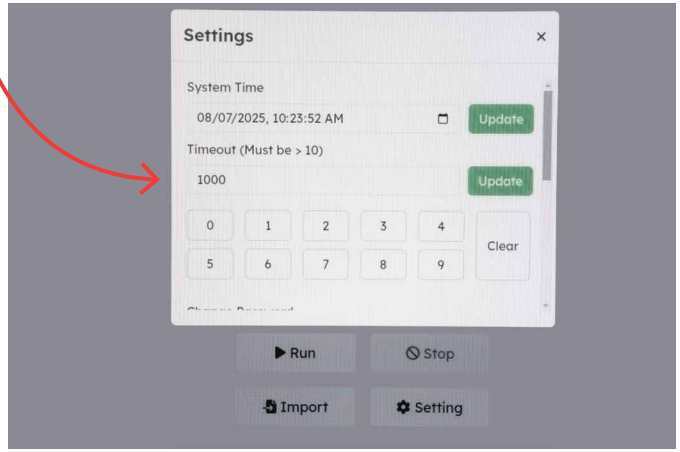


Updating System Date/Time and Timeout Settings

- Enter current Date and Time (or select from Calendar Icon) and tap the adjacent *"Update"* button

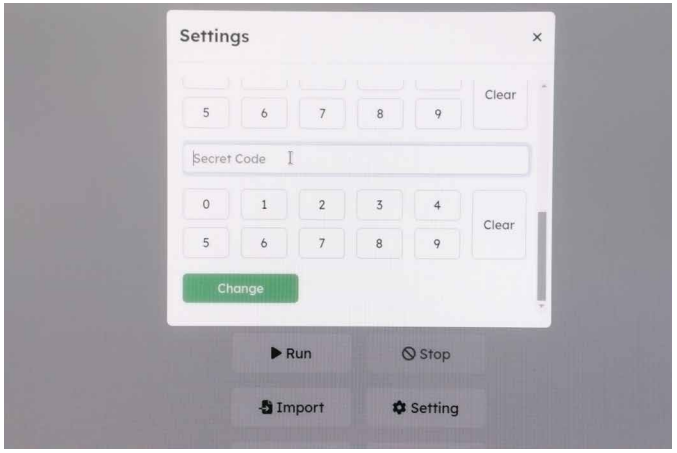


- Enter your desired Timeout (must be more than 10 seconds) to lock the display and tap the adjacent *"Update"* button

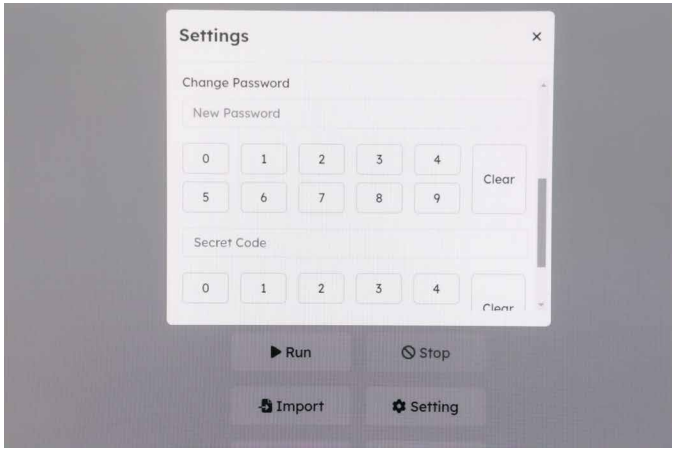


Changing Your Password

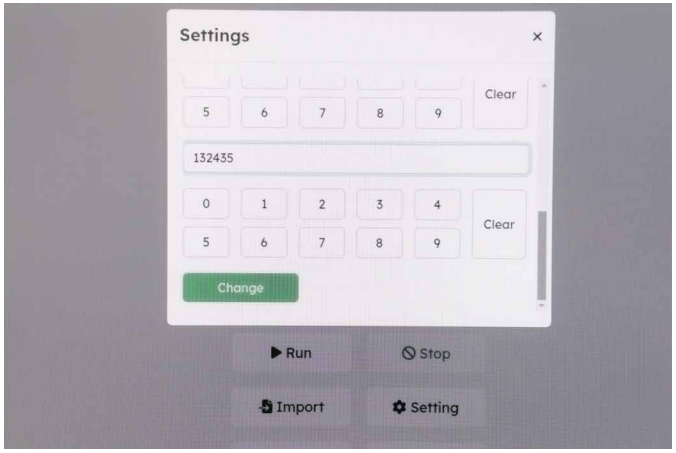
- Enter the factory default password (Secret Code) : **132435**



- Input a new 6-digit numeric password of your choice

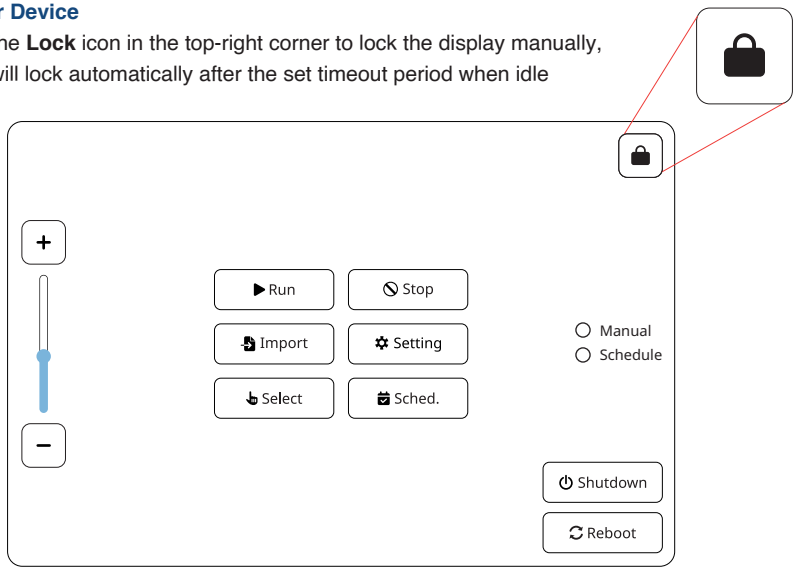


- Once comeplete, tap *"Change"* to update with the new password



Lock Your Device

- Tap the **Lock** icon in the top-right corner to lock the display manually, or it will lock automatically after the set timeout period when idle



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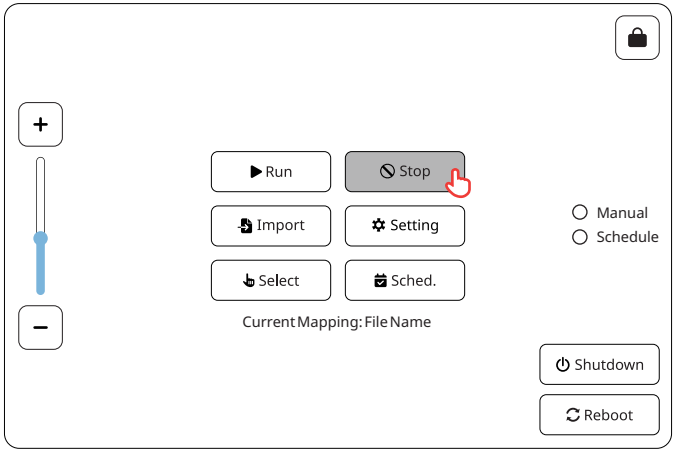
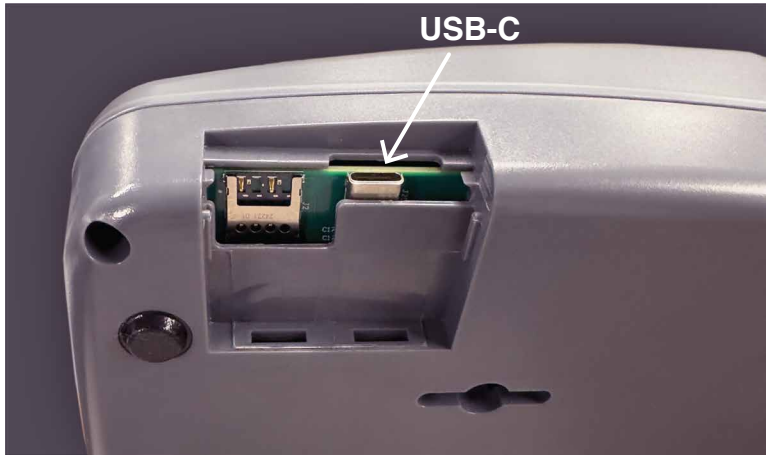
Uploading Pixel Mapped Files

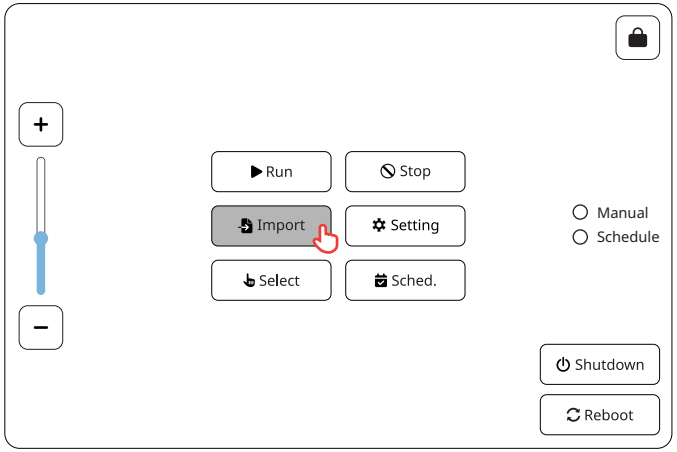
- Tap the *"Stop"* button first if running a file



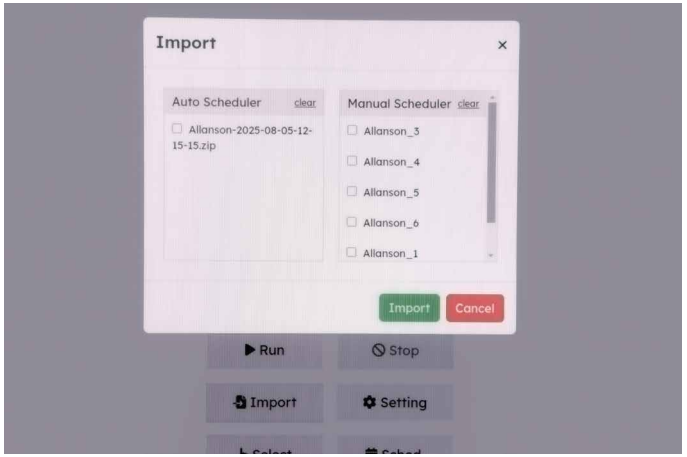
- Connect a USB flash drive containing pixel-mapped files (created using Allanson Pixel Mapping Software) to the USB-C port located at the bottom-right side of the device.



- On the display, tap the *"Import"* buttom to open sub-menu.



- Select desired files under *"Auto Scheduler"* or *"Manual Scheduler"*
- Tap *"Import"* to upload files



Important Notes:

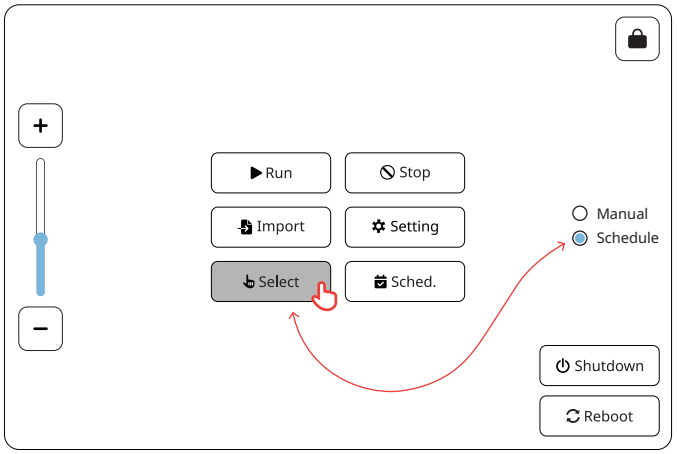
- After inserting the flash drive, wait 30 seconds, then tap *"Import"*
- If, after tapping "*Import*", the screen displays "Error retrieving import files. Contact Support", it means the waiting time was insufficient for the flash drive and controller to complete communication, there is a flash drive file error, or no file is available to import.
- Wait another 30 seconds and press *"Import"* again. If the issue persists, please contact Allanson Customer Service.
- If a file with the same name already exists on the device, it will not be downloaded. You need to either delete the existing file or rename the new file before importing. To delete an existing file, see Delete Auto / Manual Scheduler files on **page 9**.
- Once a file is imported from the USB flash drive, it will be deleted from the drive automatically.

Recommendation:

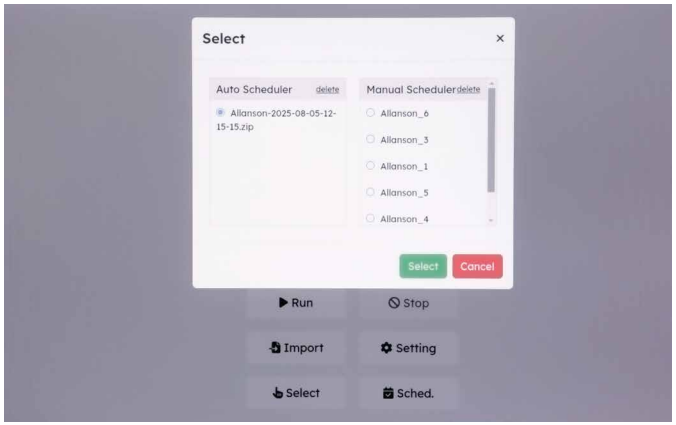
- We recommend keeping a backup of the files on your flash drive, including the folder hierarchy, before importing.

Auto Scheduler

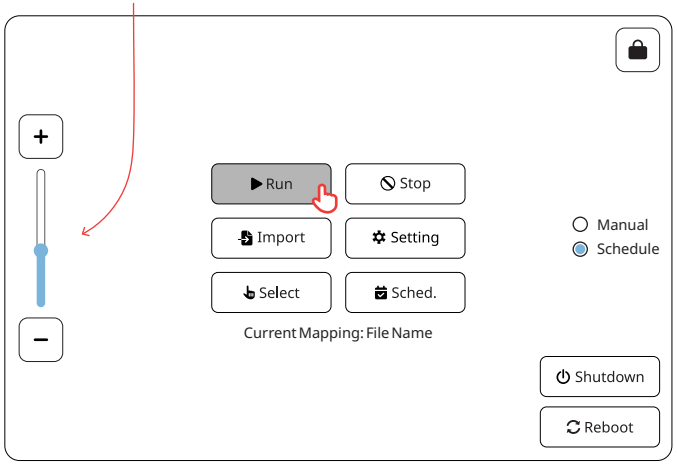
- Select *"Schedule"* radio button and then tap the *"Select"* button



- Choose the Auto Scheduler file you wish to run and tap *"Select"*

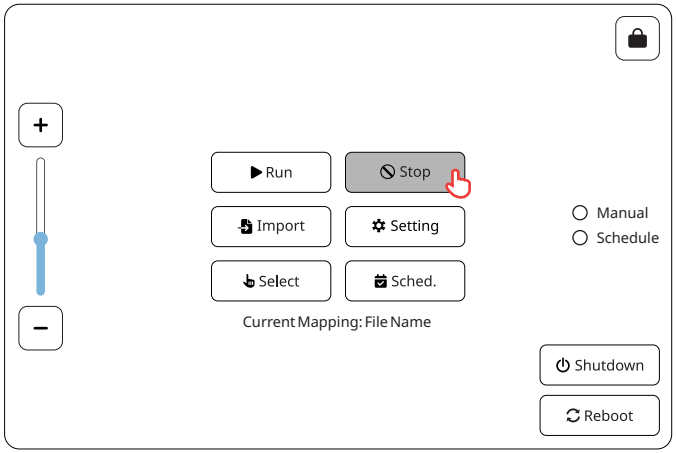


- Tap *"Run"* (selected file name will appear on the main page).
- Use the **Speed Bar** to adjust playback speed as needed.

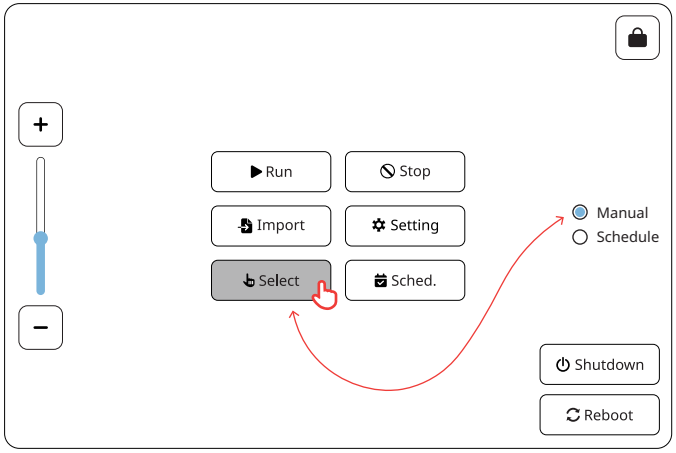


Manual Scheduler

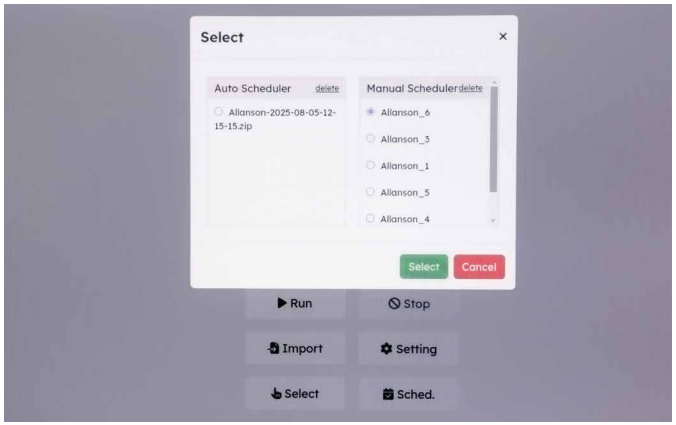
- Tap the *"Stop"* button first if running a file



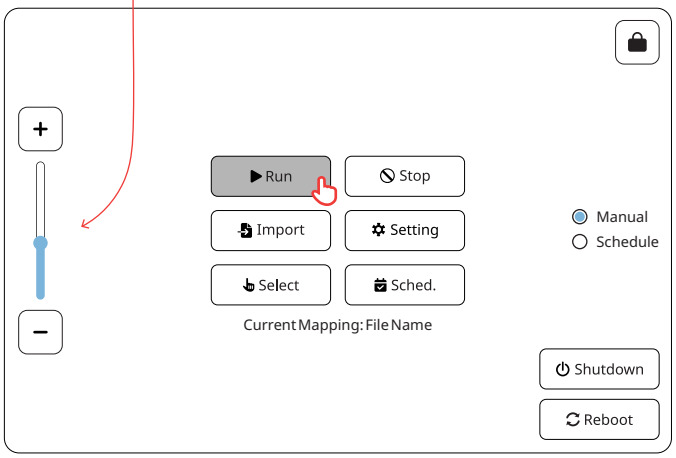
- Select *"Manual"* radio button and the tap the *"Select"* button



- Select desired files under *""Manual Scheduler"*
- Tap *"Import"* to upload files



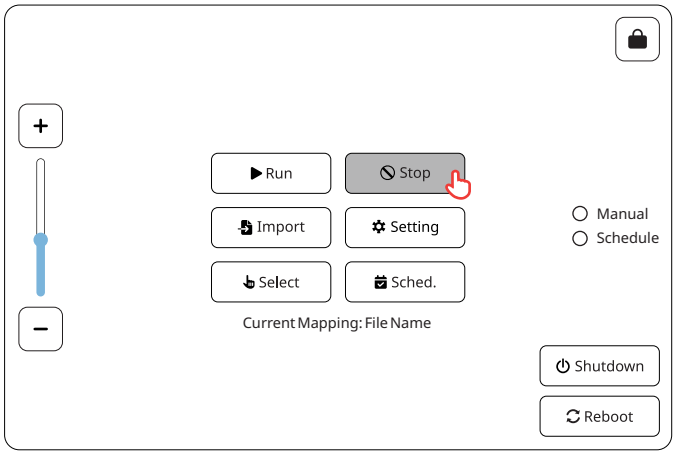
- Tap *"Run"* (selected file name will appear on the main page).
- Use the **Speed Bar** to adjust playback speed as needed.



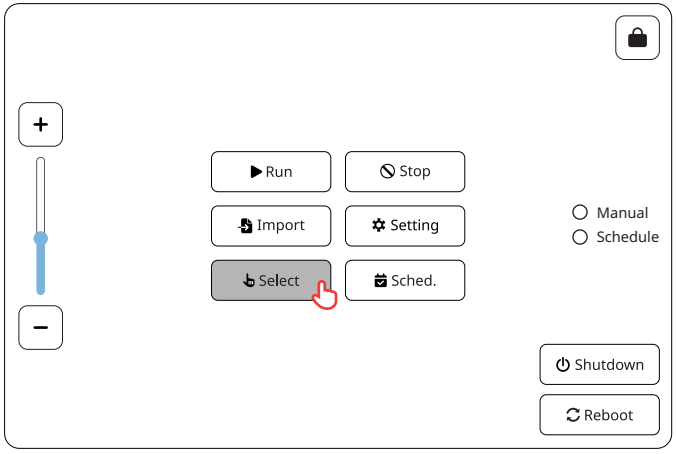
Note: Manual scheduler running files will not appear on the main page. Only the file name of Scheduled running file will be displayed on the main page.

Delete Auto/Manual Scheduler files

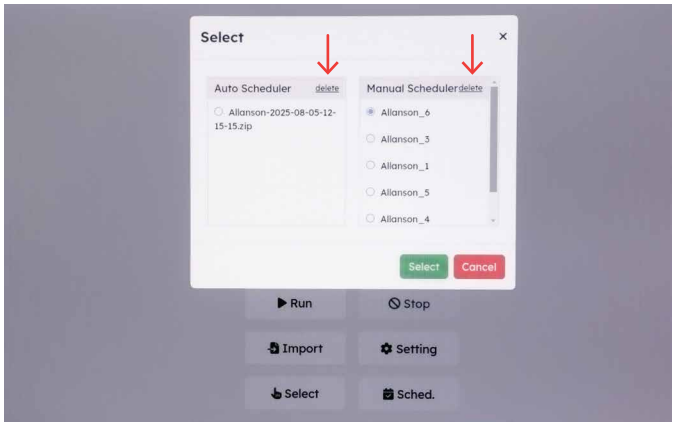
- Tap the *"Stop"* button first if running a file



- Tap the *"Select"* button



- Select Auto Scheduler or Manual Scheduler files need to be deleted
- Tap *"Delete"*



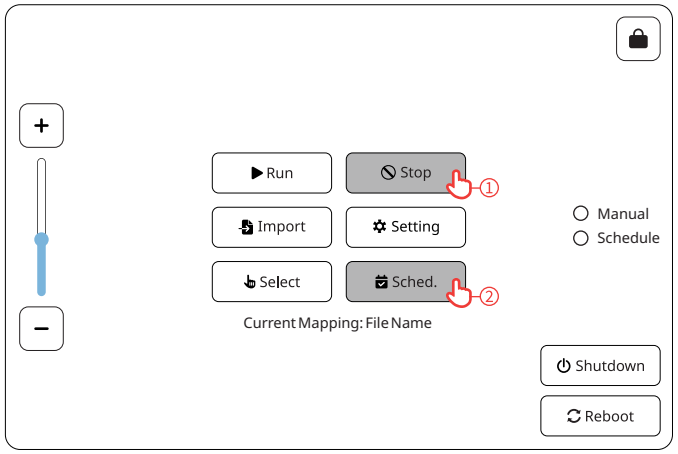
Changing Schedule – Temporarily

- This feature allows you to modify the schedule of the selected file without changing the file's original schedule.

Important Notes:

- If you need to change the schedule permanently, you will require a new schedule file. Please contact Allanson Customer Service to obtain the updated file.

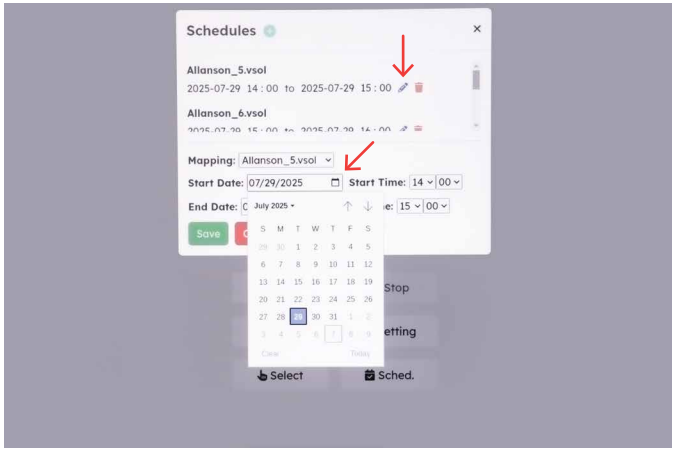
① Tap *"Stop"* to stop the current program
② Tap *"Sched."* to open the schedules panel



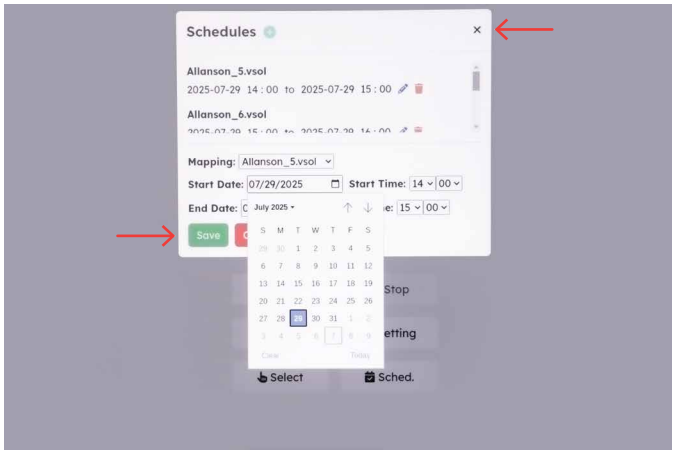
- Select the required file and choose

Tap the **Edit** icon to modify your existing schedules

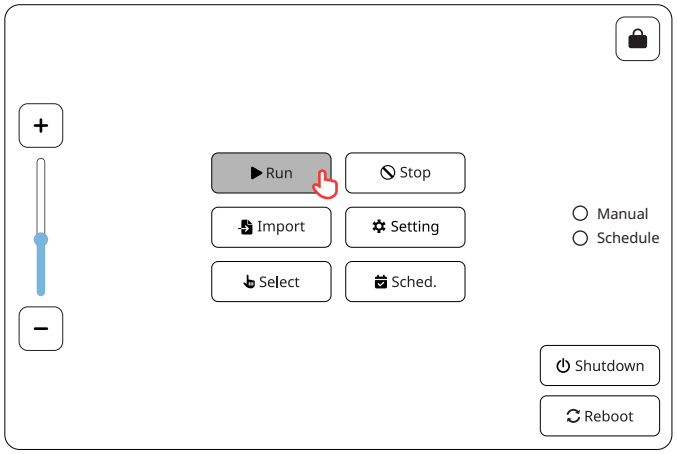
Tap the **Calendar** icon to change the dates and time as required



- Once set to desired schedule tap *"Save"*
- To return to the main page tap *"X"* on the top right corner

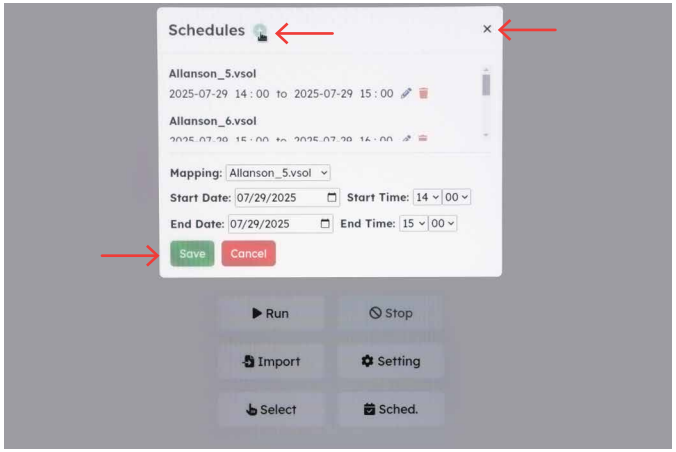


- Return to the main page and tap the *"Run"* button

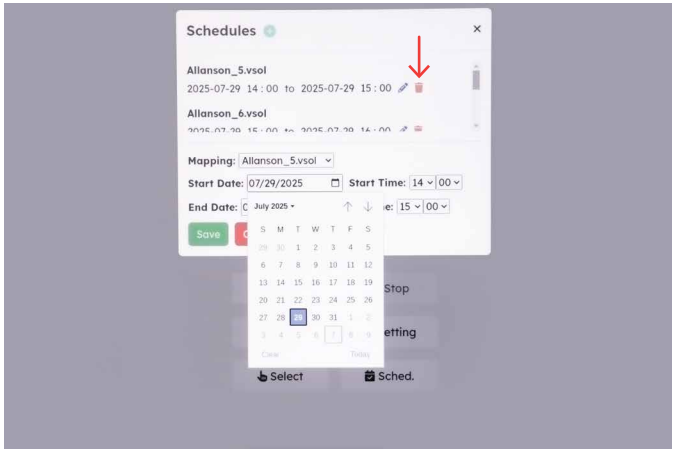


Tap the **Plus** icon to add a new schedule temporarily

- Insert dates and times as desired
- Once set to desired schedule tap *"Save"*
- To return to the main page tap *"X"* on the top right corner

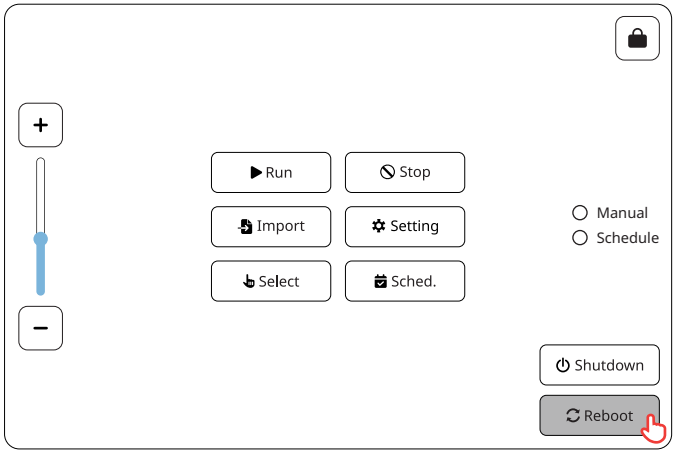


Tap **Delete** icon to remove a schedule

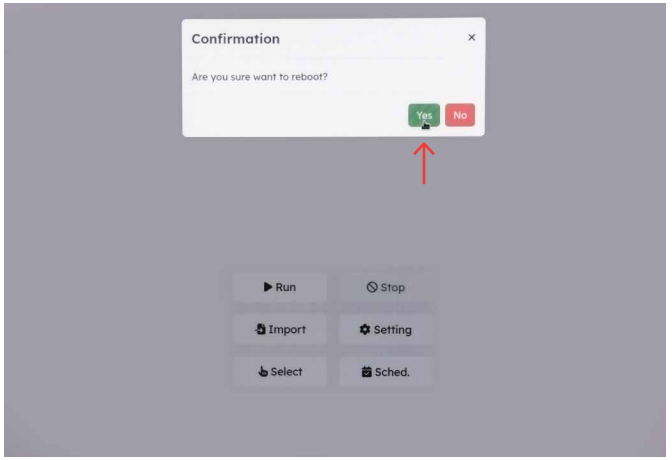


Resetting the System

- If the system behaves abnormally, tap the *"Reboot"* button (on the bottom right) to restart it.

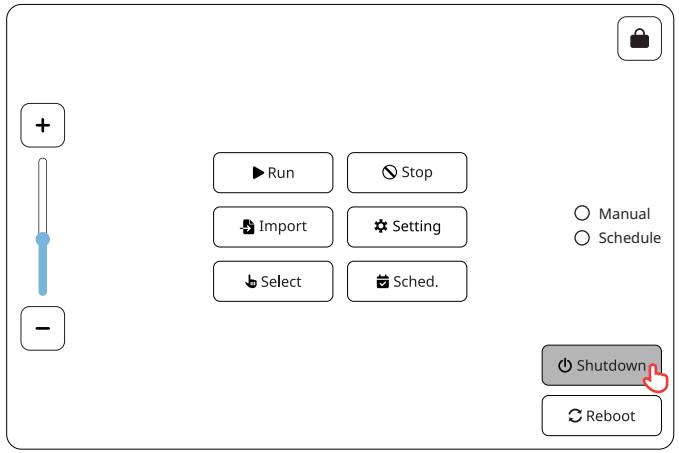


- Tap the popup **Confirmation** *"Yes"* button.

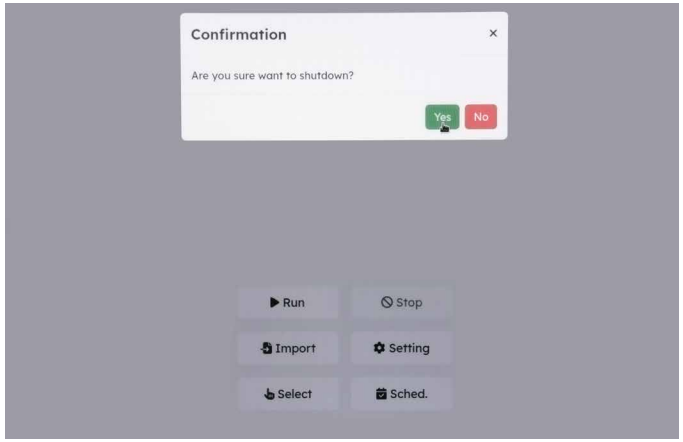


System Shutdown

- Always use the Shutdown option to properly shut down the system before turning off the power.
- Tap the *"Shutdown"* button on the bottom-right



- Tap the popup **Confirmation** *"Yes"* button.



Using Arrow Keys

- Use the arrow keys to navigate menus and press the center key to select.

DMX/SPI Port Allocations

- DMX Ports - all 16 ports (D1 – D16) can be assigned
- TTL-SPI - 10 ports (S1 – S10) can be assigned
- Boosted Differential SPI - 6 ports (SB1 – SB6) can be assigned

Port Allocation:

- Must be configured during the creation of the pixel mapping file using Allanson Pixel Mapping Software.

Making Changes:

- For any changes—such as pixel mapping adjustments, permanent schedule updates, or port reallocation—please contact Allanson Customer Service to generate a new file for you.

DMX/SPI Master Lighting Controller
ACL-DMX/SPI-LC

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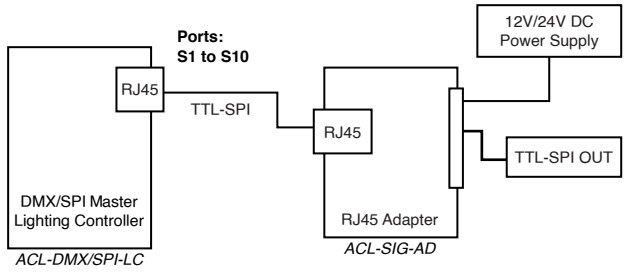
TTL-SPI

Fixture Connections

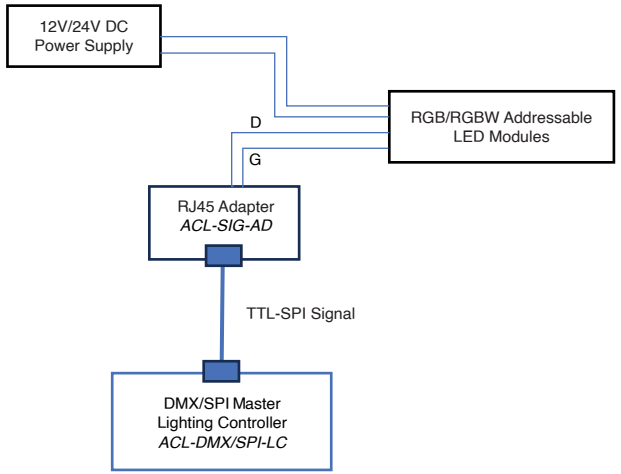
It's vital to carefully understand how to connect an ACL-DMX/SPI-LC Master Lighting Controller to TTL-SPI fixtures, as it involves navigating different control protocols. Here's a simplified guide:

- Understanding the Control Protocol: TTL-SPI fixtures typically operate using a serial protocol such as SPI (Serial Peripheral Interface), distinct from DMX. Ensure compatibility between your ACL-DMX/SPI-LC fixture and the TTL-SPI fixtures you intend to connect. Compatible fixture ICs are WS2812, WS2818, and TM1804.
- Confirm Compatibility: Verify whether your ACL-DMX/SPI-LC fixture supports the SPI protocol or can interface with TTL-SPI fixtures. Review the fixture's specifications and user manual for details on SPI-based control compatibility.
- Identify SPI Interface: If your ACL-DMX/SPI-LC fixture supports SPI, it should feature an SPI interface, possibly comprising pins or connectors designed for SPI communication. Refer to the fixture's user manual to locate the SPI interface and understand its pinout.
- Wiring Setup: Connect the SPI interface of your ACL-DMX/SPI-LC fixture to the SPI interface of the TTL-SPI fixtures using suitable cables or connectors. Ensure accurate pin-to-pin connections to establish effective communication.
- Power Supply: Provide power to both the ACL-DMX/SPI-LC fixture and the TTL-SPI fixtures, adhering to their respective power requirements. Ensure all fixtures receive adequate power for optimal functionality.
- Testing and Adjustment: Test the connection between the ACL-DMX/SPI-LC fixture and the TTL-SPI fixtures to verify seamless communication. Utilize the lighting control program to transmit commands and confirm proper responses from the TTL-SPI fixtures. Adjust settings and configurations as required to achieve desired lighting effects.
- Perform Testing and Programming: Once all connections are established, conduct thorough testing to confirm that each fixture appropriately responds to control signals from the controller.
- Prioritize reviewing the user manuals and technical specifications of your ACL-DMX/SPI-LC fixture and TTL-SPI fixtures to ensure correct installation and operation. Additionally, consult any provided documentation or support resources for further guidance.

Connection Diagram



Wiring Diagram



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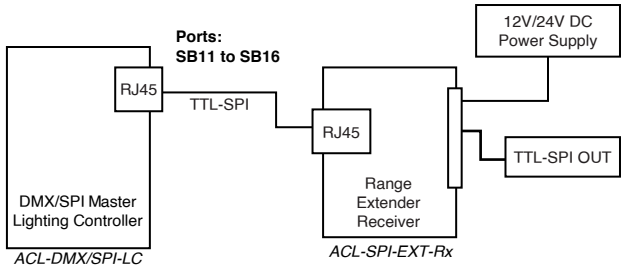
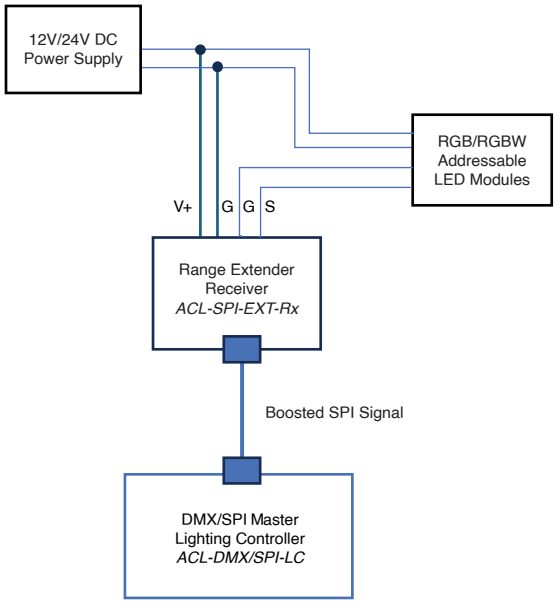
BOOSTED SPI

Connection Diagram

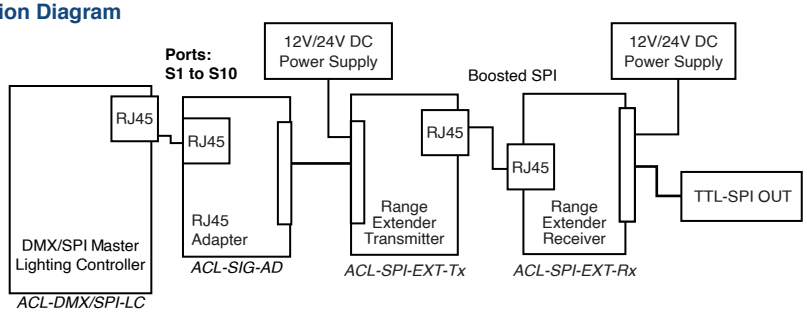


Wiring Diagram

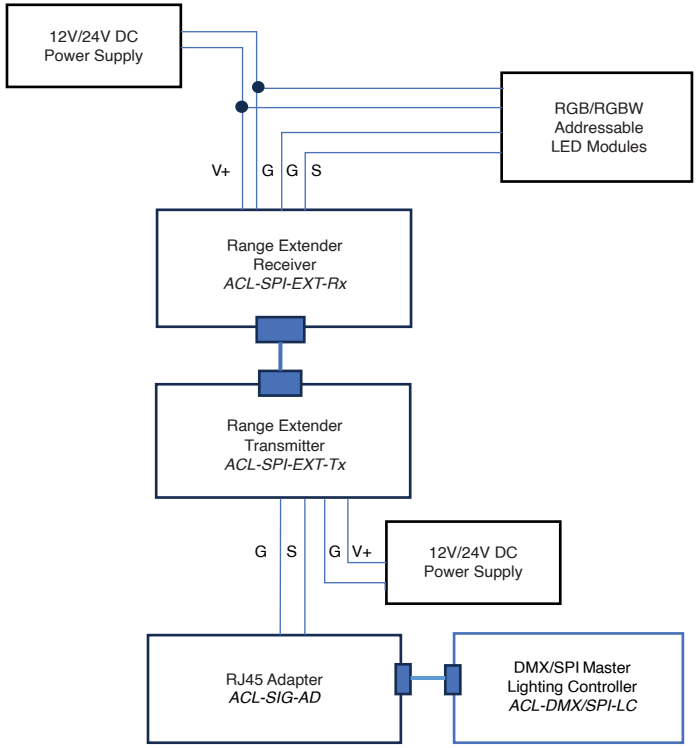


TTL-SPI WITH RANGE EXTENDERS (TX/RX)

Connection Diagram

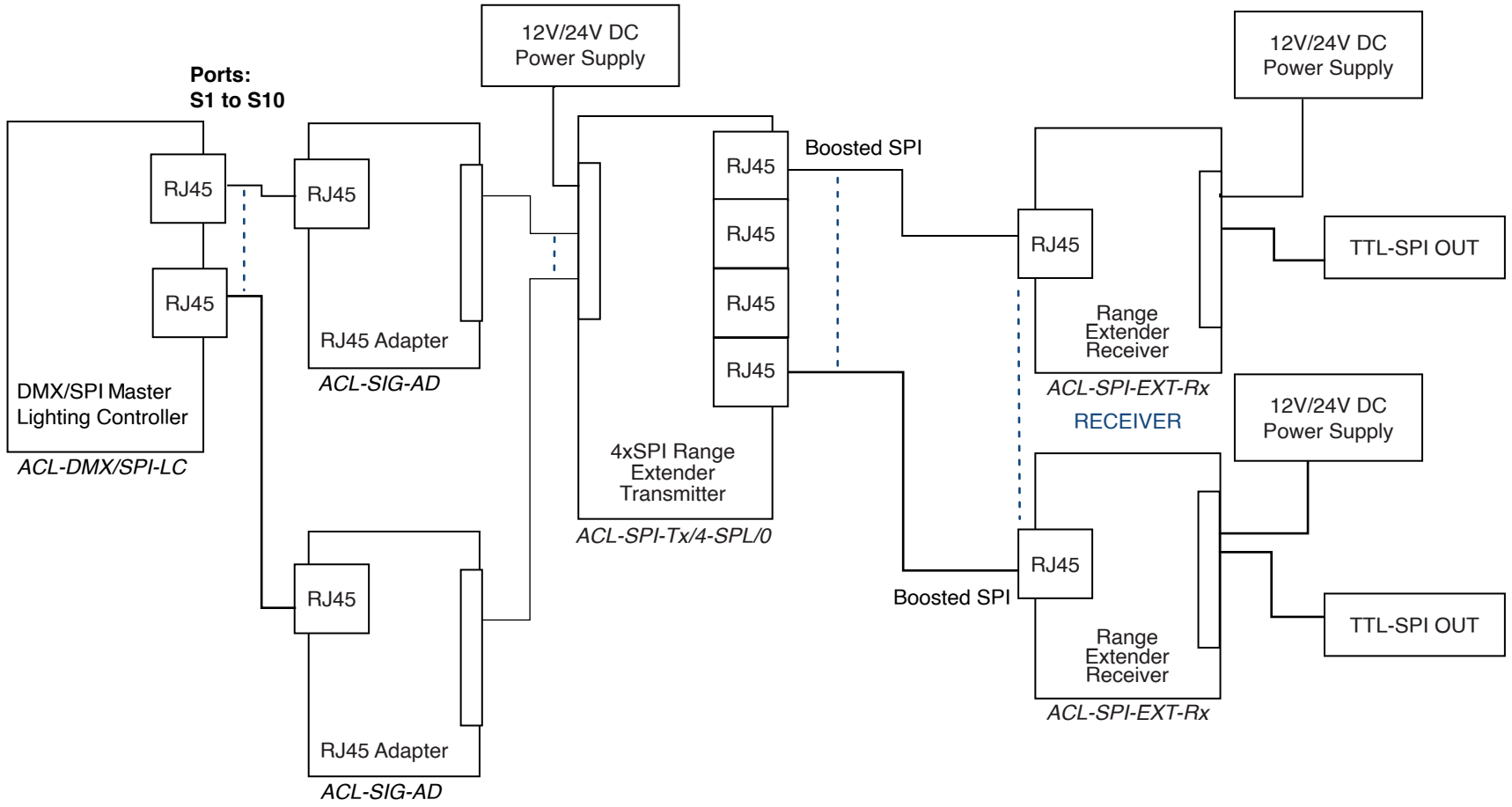


Wiring Diagram



TTL-SPI WITH 4XSPI RANGE EXTENDER / RX

Connection Diagram



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ACL-DMX/SPI-LC

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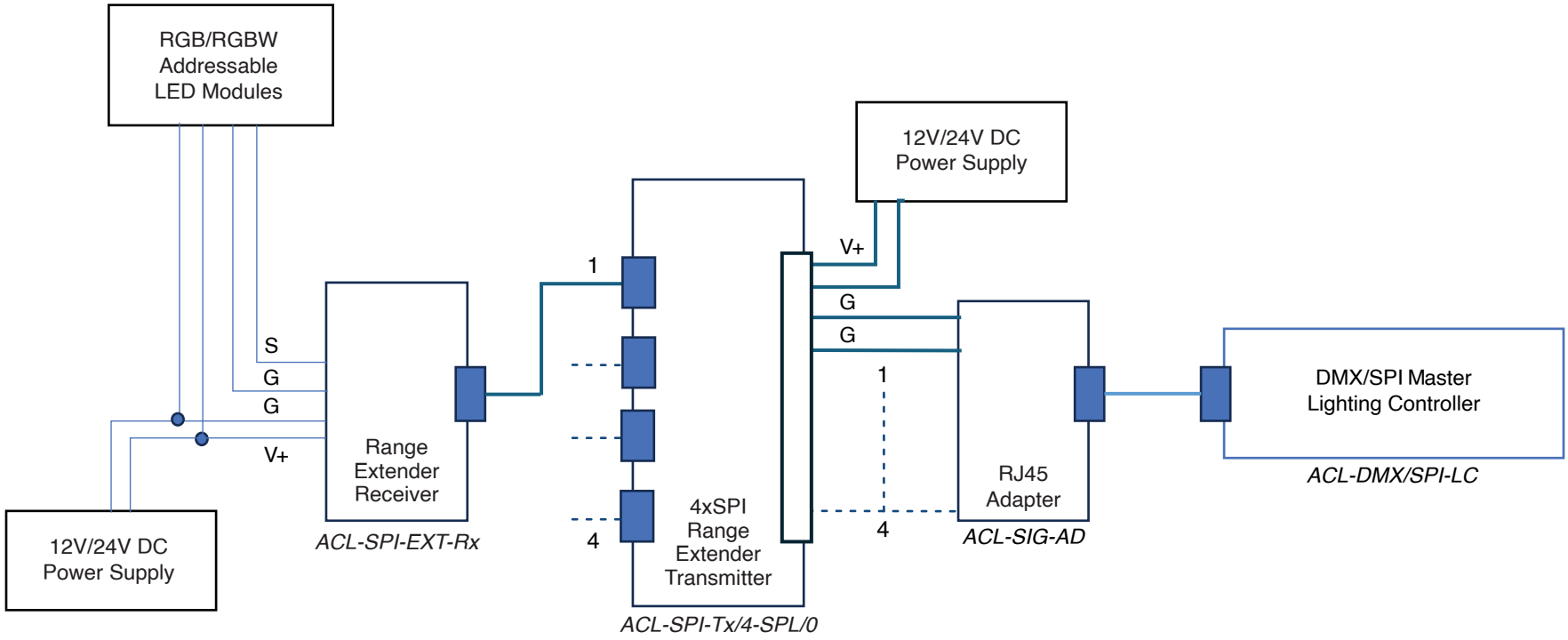
Wiring Diagram



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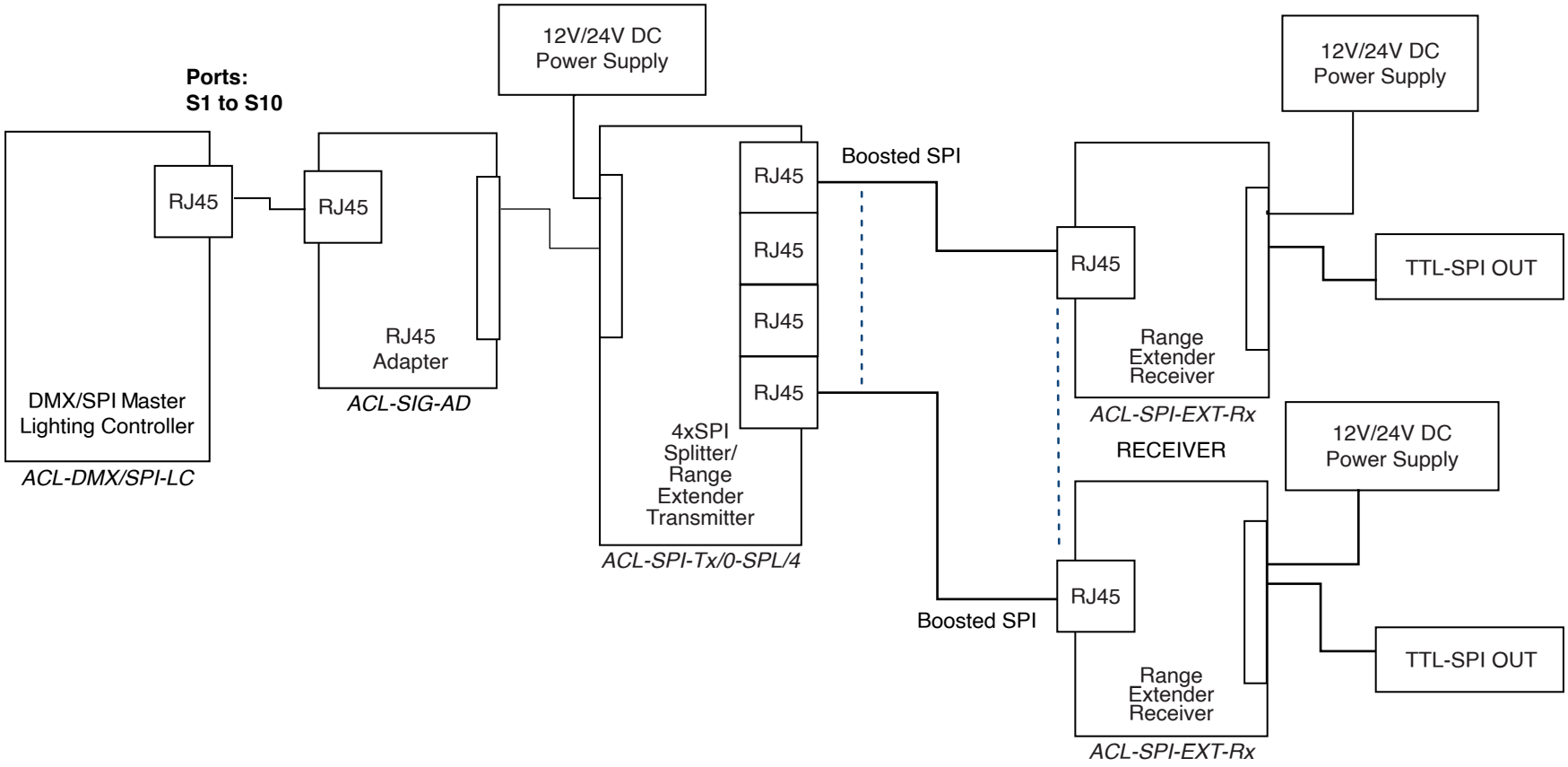
TTL-SPI WITH 4XSPI SPLITTER & RANGE EXTENDER / RX

Connection Diagram



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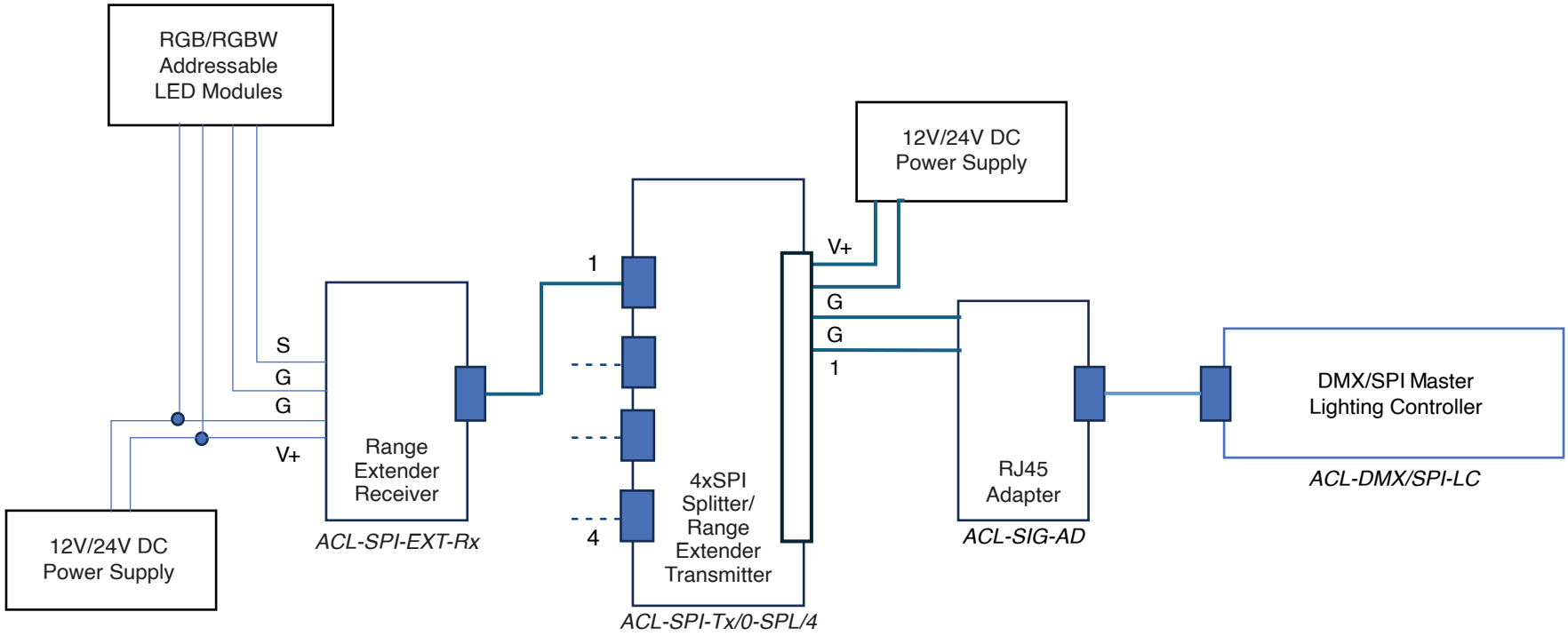
ACL-DMX/SPI-LC

ColorMix Lighting Solutions by Allanson

Wiring Diagram



DMX/SPI Master Lighting Controller
ACL-DMX/SPI-LC

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DMX Signal Transmission

DMX **Fixture Connections**

DMX Output – D1 to D16 RJ45 connectors

To establish a connection between an ACL-DMX/SPI-LC lighting controller and other DMX fixtures, follow these steps:

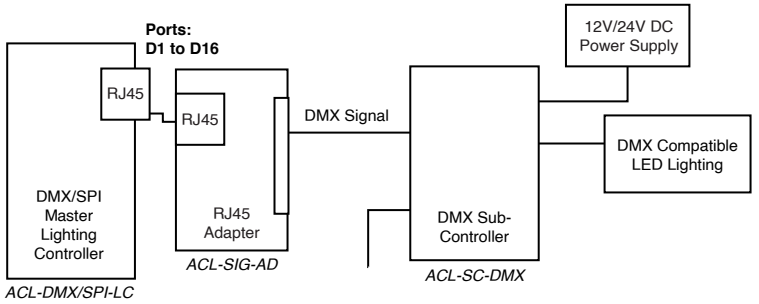
- Verify DMX Controller Compatibility: Confirm that your DMX controller is capable of managing multiple fixtures. Suitable options include Allanson Sub-Controller ACL-SC-DMX, lighting consoles and signage controllers.
- Assign Unique DMX Addresses: Ensure that each lighting fixture within your setup has its own distinct DMX address. These addresses dictate which DMX channel each fixture listens to for control signals. Consult the Pixel mapping user manuals of both the ACL-DMX/SPI-LC fixture and the other DMX fixtures for guidance on setting their respective DMX addresses.
- Utilize Ethernet Cables: Use Ethernet cables to establish connections between the fixtures.
- Implement Daisy Chaining: Begin by linking the output of your DMX controller to the input of the first fixture in the chain. Subsequently, connect the output of each preceding fixture to the input of the subsequent fixture until all fixtures are interconnected in a daisy chain configuration.
- Power Up: Ensure that both the ACL-DMX/SPI-LC fixture and all other DMX fixtures in the chain are powered on.
- Perform Testing and Programming: Once all connections are established, conduct thorough testing to confirm that each fixture appropriately responds to control signals from the DMX controller. If required, program your DMX controller to generate custom lighting sequences, chases, or effects involving both the ACL-DMX/SPI-LC fixture and the other DMX fixtures.
- By following these guidelines, you can effectively link the ACL-DMX/SPI-LC lighting controller with other DMX fixtures, facilitating the creation of dynamic lighting displays or effects. Be sure to consult the user manuals of your specific fixtures for detailed instructions and compatibility information.

Address setup – DMX Sub-controller

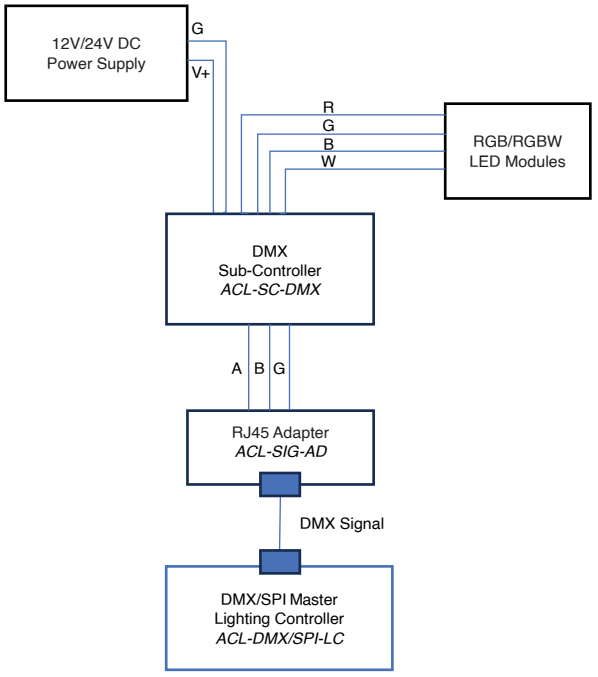
Factory default setup: RGBW - starting Channel 1 for CH-1 or Channel 5 for CH-5

The factory-set channel is indicated on the label. If you wish to set the unit on a different channel, you can order the ALLANSON Address Writer for self-programming or contact Allanson Customer Service for a pre-programmed unit.

Connection Diagram



Wiring Diagram



Note:

- Allanson Power supply CV12 or CV24 series should be used to match the 12VDC or 24VDC LED module/fixture rated operating voltage.
- Minimum 18 Gauge wires are recommended for long run wires connecting RGB modules.

Attention:

- The product shall be installed and serviced by a qualified person.
- This unit is intended to be mounted out of direct sunlight and in a dry location. Please ensure good ventilation.
- Please check if the output voltage of the LED power supply used complies with the working voltage of the product.
- Please ensure that proper wire gauge is used from the controller to the LED power supply and RGBW products to carry the current.
- Ensure all wire connections and polarities are correct before applying power to avoid any damage to the LED and RGB products.
- If a fault occurs, please return the product to your supplier. Do not attempt to fix this product by yourself as this will void the warranty.
- This manual only applies to this model. Allanson reserves the right to make changes without prior notice.

Dimensions for Wall Mounting Screw Positions:

Please note: Dimensions are in inches.