

4-in-1 LED Wi-Fi Controller

Part number: 4-in-1-led-wifi



The 4-in-1 LED Wi-Fi master controller allows you to control single color, tunable white, RGB and RGBW LED strip lights from your mobile device. This is a simple and easy way to customize and control various types of LED lighting. The versatility of this product makes it the perfect choice for a wide range of applications. This 4-in-1 controller outputs its own Wi-Fi network, so it can be used anywhere and is not dependent on the availability of external Wi-Fi networks. Furthermore, the device can connect to an existing Wi-Fi network so that the LEDs can be controlled without having to switch Wi-Fi networks.

The iPhone and Android app makes controlling all zones of LED lights fully customizable with endless options that allow you to create and store your favorite color sequences and modes. Choose whether to fade or step through the color cycle, and adjust the speed and brightness to your liking. Custom colors can also be displayed in real time by simply touching and selecting a color on the screen.

The controller is rated at 4 amps per channel which is 192 watts per controller at 12 volts or 384 watts per controller at 24 volts.

Features

- 4 signal outputs can be used for RGBW (red, green, blue, white), RGB (red, green, blue), tunable white (cool white, warm white) or dimming (single color) LED strip. The common anode takes 12 or 24 VDC.
- 4 billion color options at the touch of a finger when using the RGBW function. 16 million color options when using the RGB function, 65,000 levels for white adjustable LED strip light when color tuning, and 256 dimming levels for monochrome.
- 12 pre-programmed RGBW and RGB modes (7 monochrome, 5 dynamic)
- 12 customizable RGBW and RGB modes each with customizable colors, 8 speeds, 100 brightness levels and 4 change styles.
- Free app allows your mobile device to control all controllers from up to 100 m (325 feet) away, through walls.
- Link the controller to an existing Wi-Fi network or the controller can output an independent Wi-Fi network.
- Create and store up to 4 custom scenes each for the dimming, white adjustable, RGB and RGBW functions. Saved scenes can be accessed on the controller when in stand-alone mode.
- Power off memory function.
- -4 to 122°F operating temperature range.
- 1 year manufacturer warranty.

Applications

Enables wireless control of LED lighting through your smartphone. Control multiple light systems through one simple interface.

- Home theaters
- Accent coves
- Businesses
- Restaurants
- Hotels
- Bars
- Clubs
- Lounges

Safety Precautions

Please take the following precautions:

1. This equipment, like all electrical equipment, should be installed by a qualified person.
2. Do not expose these LEDs, dimmers or power supplies to intense electro-magnetic fields, including lightning.
3. The controllers and power supplies are not waterproof. Keep them dry.
4. Install in a well-ventilated area to prevent over-heating.
5. Always observe proper polarity.

When installing LED lighting, it is a good idea to follow this “dry-run” procedure:

1. Be sure you have everything you need before you start.
2. Lay out your lights and power supply on the floor or table.
3. There is some resistance in the LED lighting. If you see any color fading or dimming at the end of a long run, you may have too many LEDs for your power supply and you might need a bigger supply or shorter runs. Use a bus structure as described in [rgb_manual.pdf](#). Call if you need assistance with larger projects.
4. Connect everything and test it to be sure it works and you have it connected properly. It is unlikely, but possible, that some part of your system is defective or was damaged during shipment. If that is the case, it will be very helpful to you to know that before you do all the work involved in installing custom LED lighting systems. You will also know if you damage anything during installation, which is really helpful in trouble-shooting because manufacturing defects and installation damage typically have very different solutions.

Once you have tested the system successfully, you are ready to install it. We recommend you install LEDs, electronic controls and dimmers in such a way that you have access to them in case they fail. All electrical components can fail.

Specifications

Mobile Device App

Platform Requirements	Android 2.1 or above, iOS4.3 or above																								
LED Types	Single Color, White Adjustable, RGB, RGBW																								
Number of Modes for RGBW/RGB	12 Default modes and 12 Custom modes. Within each customizable mode, 8 custom colors can be played. Default modes: <table border="1" data-bbox="665 577 1286 808"> <tr><td>1</td><td>Red</td><td>7</td><td>White</td></tr> <tr><td>2</td><td>Green</td><td>8</td><td>Red/Green Jump</td></tr> <tr><td>3</td><td>Blue</td><td>9</td><td>Green/Blue Jump</td></tr> <tr><td>4</td><td>Yellow</td><td>10</td><td>Blue/Red Jump</td></tr> <tr><td>5</td><td>Magenta</td><td>11</td><td>RGB Jump</td></tr> <tr><td>6</td><td>Cyan</td><td>12</td><td>RGBYMCW Jump</td></tr> </table>	1	Red	7	White	2	Green	8	Red/Green Jump	3	Blue	9	Green/Blue Jump	4	Yellow	10	Blue/Red Jump	5	Magenta	11	RGB Jump	6	Cyan	12	RGBYMCW Jump
1	Red	7	White																						
2	Green	8	Red/Green Jump																						
3	Blue	9	Green/Blue Jump																						
4	Yellow	10	Blue/Red Jump																						
5	Magenta	11	RGB Jump																						
6	Cyan	12	RGBYMCW Jump																						
Color Options	0-255 for each (R, G, B, W, WW, NW)																								
Mode Speeds	8																								
Mode Styles	4 (Gradual, Jump, Strobe, Fade in dimming)																								
Brightness	0% - 100%																								
White Brightness	0% - 100%																								
Number of Scenes	4																								
Number of Groups	3																								
Wi-Fi Control Distance	325 feet / 100 meters																								
Wi-Fi Pairing Capability	Connect to existing Wi-Fi or output independent Wi-Fi																								
Maximum Wi-Fi controllers per app	2 master controllers (24 controllers total) can be used per smartphone when using the app. Since each master controller can link to 12 slave controllers, the app can control up to 24 controllers at a time (including the 2 master controllers).																								

Master Controller

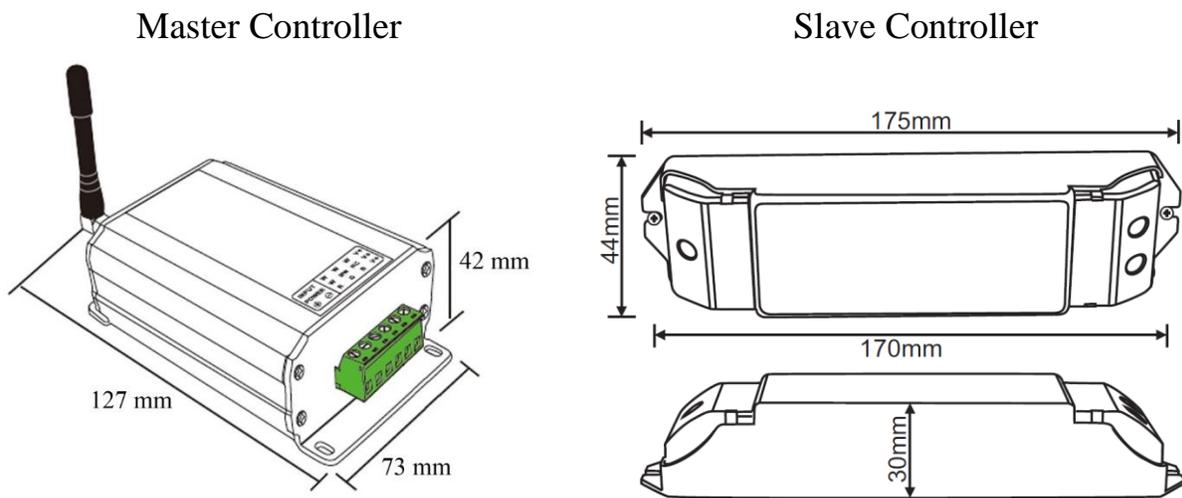
Part Number	4-in-1-led-wifi
Dimensions	5.0" x 2.9" x 1.7" [127 mm x 73 mm x 42 mm]
Weight	382g
Communication Standard	2.4GHz Wi-Fi, 802.11b/g/n protocol
LED Type Compatibility	Single Color, White Adjustable, RGB, RGBW
Channels	4
Input Voltage	12VDC - 24VDC
Maximum Current Load	4A x 4 channels; Max 16A
Maximum Output Power	192W/384W (12V/24V)
PWM Frequency	488 Hz

Maximum Distance to Router/Mobile device	100 meters
Maximum Distance to Slave Controllers	50 meters
Maximum Distance to Remote Control	30 meters
Maximum Linked Slave Controllers	12 controllers to make up 12 zones
Memory	Plays last set mode/scene
Temperature Conditions	-4°F to 122°F
Certifications	CE, RoHS
Warranty	1 year

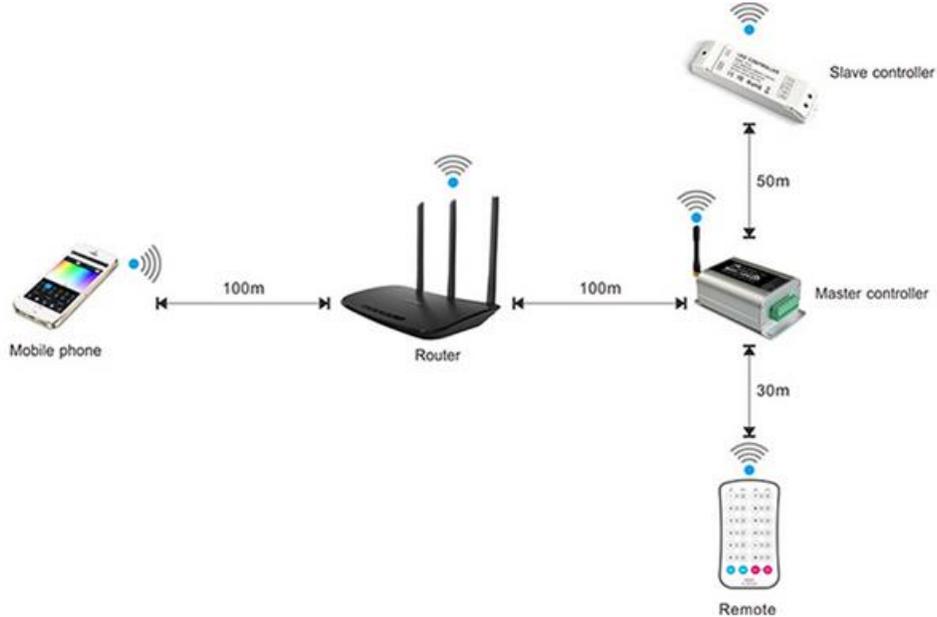
Slave Controller/Receiver

Part Number	4-in-1-Receiver
Dimensions	[175 mm x 44 mm x 30 mm]
Weight	150g
Working Frequency	2.4GHz
LED Type Compatibility	Single Color, White Adjustable, RGB, RGB ColorPlus
Channels	4
Input Voltage	5 VDC - 24 VDC
Maximum Current Load	5A x 4 channels; Max 20A
Maximum Output Power	100W/240W/480W (5/12V/24V)
PWM Frequency	488 Hz
Maximum Distance to Master Controller	50 meters
Temperature Conditions	-22°F to 131°F

Dimensional Diagram



Operating Distances



Operation



There are three indicator lights, two buttons and one dial on the back of the 4-in-1 LED Wi-Fi Controller, as shown.

RUN

“RUN” gives the status of the controller. If this light is flashing rapidly it indicates that the controller is initializing. This usually occurs after power has been supplied to the controller or the SSID code has been changed. During normal function the RUN light will flash each second.

LINK

“LINK” stays lit up when a mobile device is connected to the controller. When this light is off it indicates that there is no connection to a mobile device.

RX/TX

“RX/TX” indicates that the controller is either receiving or transmitting data. When not transmitting, it is turned off.

SSID

The “SSID” dial allows you to select a value from 0 to F. When you connect to the Wi-Fi network you will connect to WIFI-101-SSID-X, where X is the value you chose. By setting multiple 4-in-1 LED Wi-Fi Controllers to different SSID settings you can create multiple zones that are independently controlled by changing the Wi-Fi network your phone or device is

connected to. Note: You can only control one 4-in-1 LED Wi-Fi Controller at a time. Do not set multiple 4-in-1 LED Wi-Fi Controllers to the same SSID – this will result in communication errors.

MATCH

The “MATCH” button allows the controller to pair with the app.

SCENE

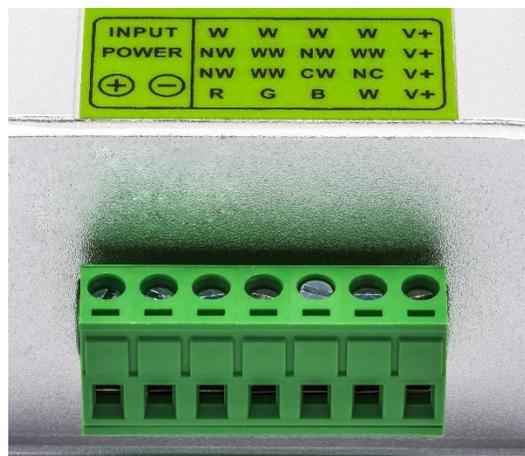
The “SCENE” button allows you to cycle through the scenes you have saved, without using the app on the mobile device. It will automatically use the scenes of the function last accessed using the app. Therefore, if the last remote control function used was RGB, the SCENE button will remember the RGB scenes you have saved. The saving of scenes allows you to use your 4-in-1 LED Wi-Fi Controller as a stand-alone device.

Note: that the RJ45 port (labeled EXT KEY) is not used.

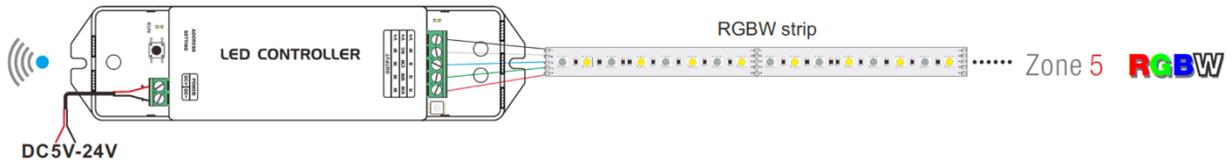
Instructions

Wiring Instructions

1. Begin by installing the antenna to the 4-in-1 LED Wi-Fi Controller. Simply turn it clockwise until it is securely in place and pointing upwards.
2. With the power supply turned off, connect the Input Power wires from the power supply to the master controller and any applicable slave controller(s) by using the Input Power screw terminals. This input should either be 12 or 24 VDC, depending on the requirements of the LED strip being used.
3. Connect the wires from the LEDs to the controller(s) based on the label above the screw terminal block. The wiring will depend on which LED product type is being connected to the controller. Follow the label and use the wiring diagrams on the next page to put the correct wire into each screw terminal.



For RGBW control, connect red to R, green to G, blue to B, and white to W screw terminals. The live wire connects to the V+ terminal.



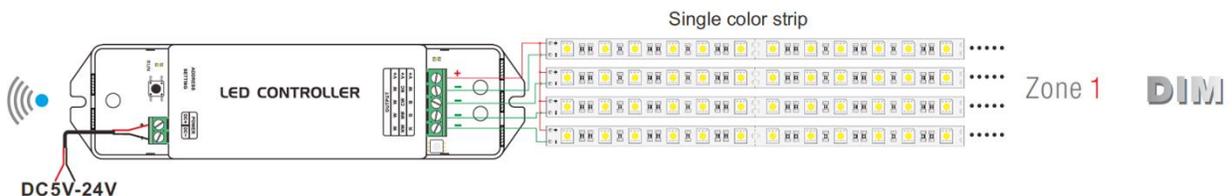
For RGB control, connect red to R, green to G, and blue to B terminals. The live wire connects to the V+ terminal.



For white adjustable control, connect the Cool (C) wire to the screw terminal labeled CW. Connect the Warm (W) wire to the screw terminal labeled WW. No wire connects to NW or NC. The live wire connects to V+ terminal.



For single color/dimming control, you can connect up to four monochrome strips (that have the same input voltage) to be controlled together. For each, the negative wire should connect to a channel marked W. All live wires should connect to the V+ terminal.

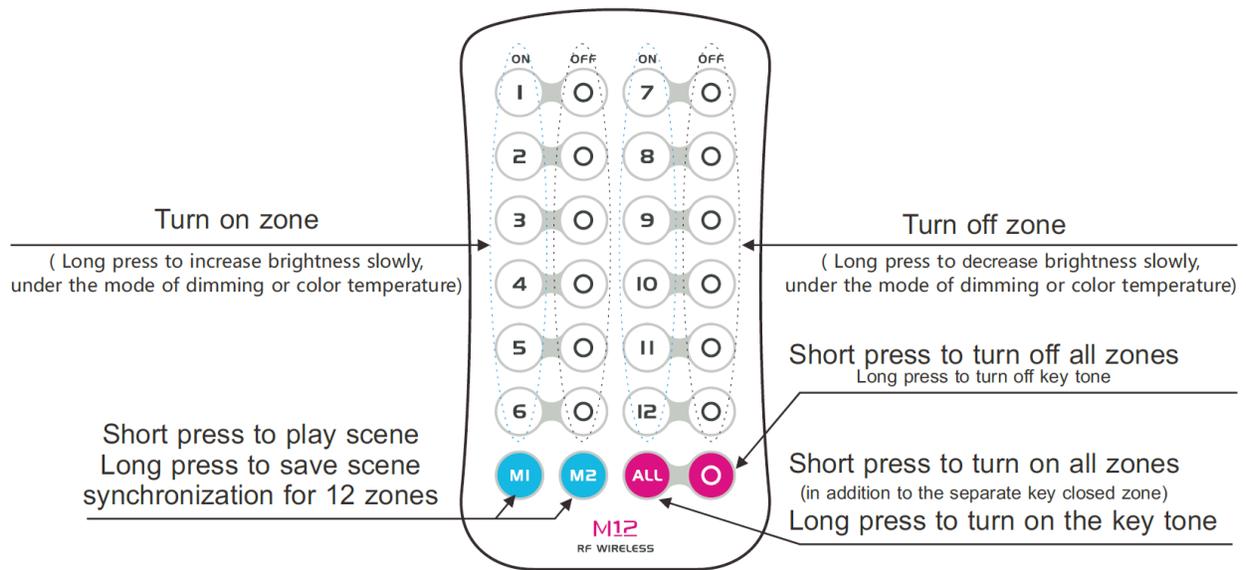


Pairing with the Remote Control

Press the MATCH button on the Wifi-104 controller, then immediately press any key on the M12 remote. A long beep confirms the pairing.

Unpairing from the Wifi-104

Hold the MATCH button (about 6 seconds) on the Wifi-104 controller, a long beep confirms that all paired remotes are no longer synced.



Wi-Fi App Installation

This product can be linked to an existing Wi-Fi network or it can output its own Wi-Fi network that creates a link between a mobile device and the master controller, 4-in-1-wifi-controller. Pair your mobile device using the instructions below.

4. Download the app on your mobile device.

- a. Apple Device

The “WiFi-104” app is available for download on iTunes at:
<https://itunes.apple.com/us/app/wifi-104/id799310850?mt=8>.



- b. Android Device

The “WiFi-104” app is available for download on Google Play at:
<https://play.google.com/store/apps/details?id=com.lxit.wifi104>

5. Supply power to all controllers. Power being supplied to each controller will vary and should either be 12VDC or 24VDC depending on the LED product that the controller is supplying power to.

6. On your mobile device, open the Wi-Fi Settings.



7. Connect to the network “WIFI-104-SSID-X”, where X is the SSID value selected on the back of the master controller. Note: When using 2 master controllers, make sure that the SSID is not the same value. Connect to the network with SSID of master controller 1.
8. Open the app, WiFi104.

WiFi 104 App

Select a Device



The first page of the app shows a list of all master controllers. On this screen, you can:

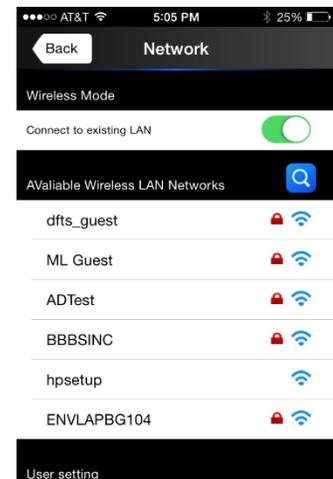
- Search for devices.
- Delete a device.
- Select and edit the Wi-Fi network settings.
- Select and edit zones to control (slave controllers).
- Assign a photo to a master controller.

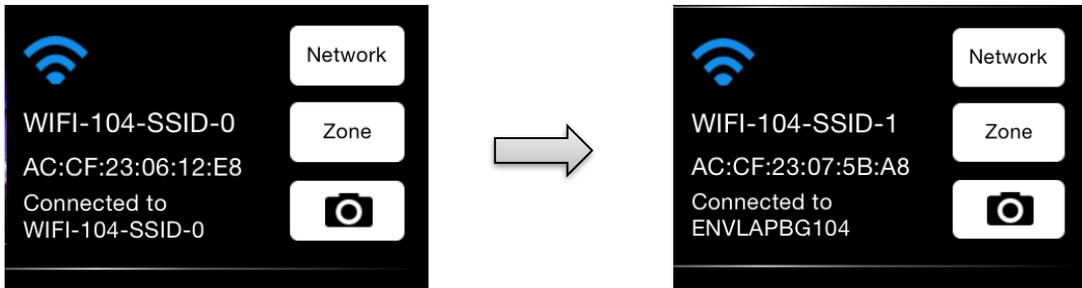
9. Search for a device using the blue search icon until the Network and Zone buttons are enabled. Double-tap if connection times out.
Note: To change SSID name and password, Click on “Network” and select “Change SSID and password” under User Setting.

Connect to an Existing Wi-Fi network

To connect to an existing LAN, perform the following procedure:

10. Click on “Network”.
11. Switch the toggle to the right and click the search icon so that the available wireless LAN Networks are listed.
12. Select the desired Wi-Fi network, Z.
13. Type in the password if necessary.
14. Go back to the Wi-Fi Settings on your mobile device, and connect to Z.
15. Open the WiFi104 app again. Click the search button, double-click if it times out. The controller should now connect to Z instead of “WiFi-104-SSID-X” and Network and Zone should be enabled.

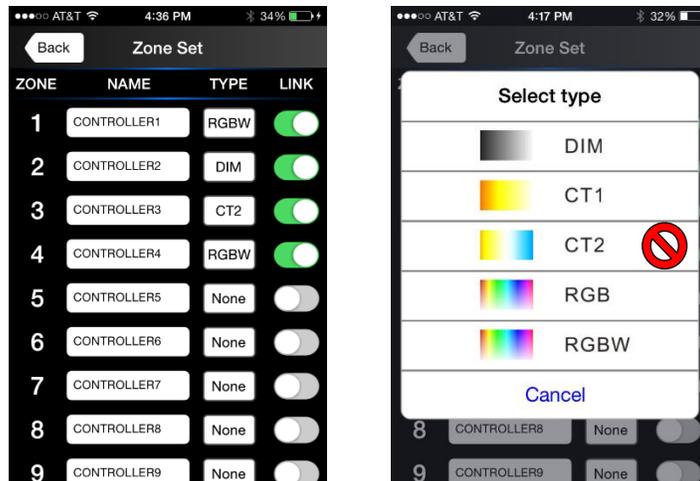




Assign Zones

ZONE allows the user to name each zone (up to 12, Zone 1 being the master controller and Zones 2-12 would be slave controllers), assign LED TYPE to each zone and turn zones on/off by linking/unlinking to the Wi-Fi controller.

16. Click on “Zone”. Zone 1 must be linked to the master controller.
17. Rename the controller if desired.
18. For Zone 1, determine the type of LEDs connected to the master controller in Step 3 and select the correct “TYPE” by choosing RGBW, RGB, CT1, or DIM. Note: In order for white adjustable LEDs to work properly, do not use CT2. Instead, use CT1 only.



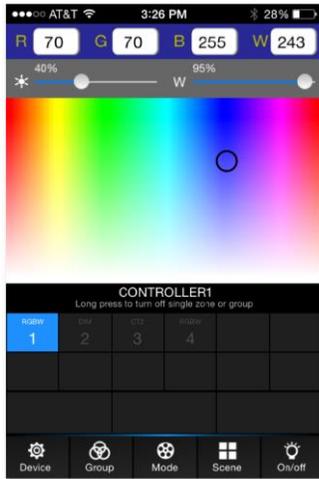
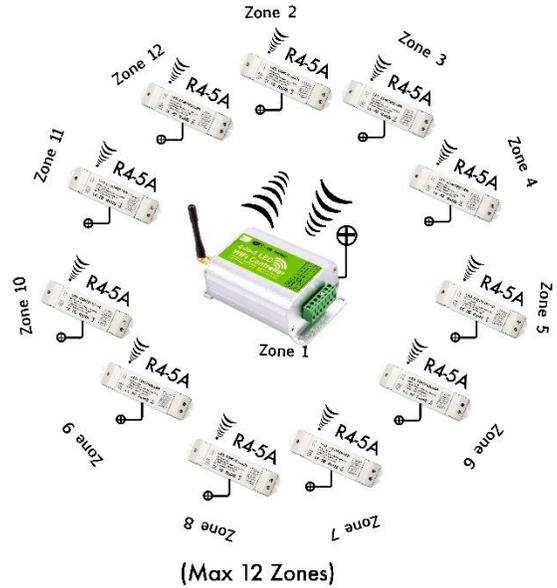
19. Assign zones and the appropriate TYPE of LEDs to Zone 2-12 (slave controllers).
20. LINK the controllers that will be connected to this master controller. When the toggle is switched to the right and green this means is/will be linked, left and grey means the zone is/will not be linked.

21. Click “Back” to get to the Device List screen.

Pair Master Controller to Slave Controllers

In order to link up to 12 slave controllers to its master controller, please follow the instructions below:

22. On the Device List screen in the app, the master controller should already be connected to a network. Select/click on the device. The main screen will appear, which will show all linked controllers.
23. To pair each of the controllers, begin by pairing the master controller:
 - a. Select “1” so that the box is highlighted blue like image below.
 - b. Press MATCH on the master controller and immediately touch the color screen on your mobile device to change the color. Zone 1 is now paired.
24. Do the same for the rest of the zones on the slave controllers:
 - a. Select the controller on the mobile device “2” so that the box is highlighted blue.
 - b. Press the black button on the slave controller (image below) and immediately touch the color screen on the mobile device to change the LED color. The slave controller will beep to confirm the pairing.
 - c. Repeat for all other linked zones/slave controllers.



This main screen also provides the following capabilities:

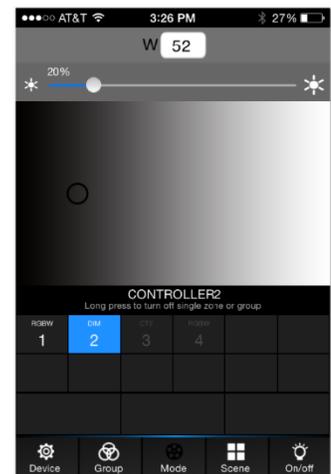
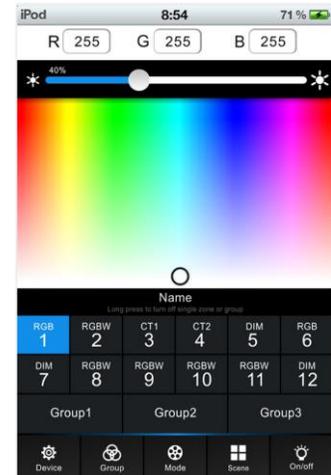
- Control RGBW LEDs:
 - Customize the color (by either tapping the color on the screen or typing in the red, green, blue and white levels at the top of the screen).
 - Adjust the brightness of the RGB LEDs (0-100%).
 - Adjust the brightness of the white LEDs (0-100%).

- Control RGB LEDs:
 - Customize the color (by either tapping the color on the screen or typing in the R, G, B values at the top of the screen).
 - Adjust the brightness of the LEDs (0-100%).

- Control White Adjustable (CT1) LEDs:
 - Customize the color of white (by either tapping the color on the screen or typing in the WW and NW values at the top of the screen).
 - Adjust the brightness of the LEDs (0-100%).

- Control Monochrome LEDs:
 - Dim the LEDs.

- Easily unlink individual zone(s) or group(s) by holding down the zone number or the group number. That zone/group will have white text if it is linked and grey text if it is unlinked.
 - Note: When the zone is unlinked, the On/Off button on the bottom right corner will not affect that zone. Press the zone/group again to re-link the zone/group.

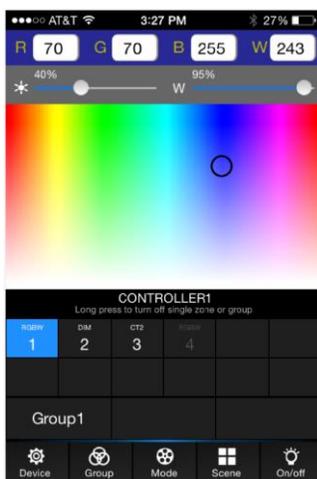
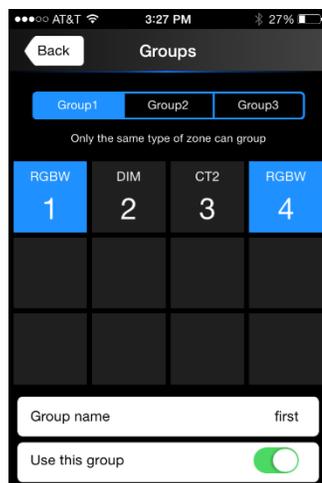


Group



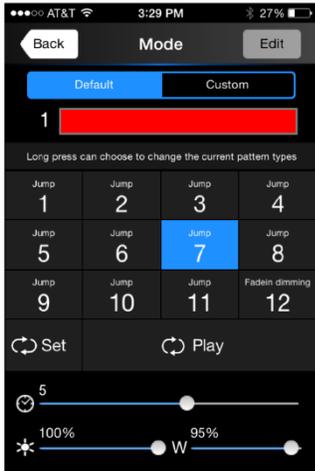
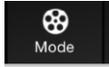
The GROUP screen allows multiple zones that are the same type of LEDs to be controlled at the same time.

- Only RGBW zones can be grouped together.
- Only RGB zones can be grouped together.
- Only CT1 zones can be grouped together.
- Only DIM zones can be grouped together.
- Up to three groups can be created.
- Each group can be named.
- Each group can be turned on and off.



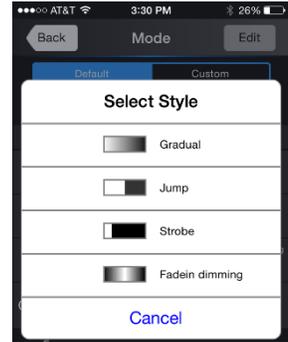
When a group is turned on, the group will appear on the main screen. Below the controller zone numbers, Group 1, Group 2 and/or Group 3 can also be selected and controlled. Depending on the group's LED type, the appropriate screen will appear when the group is selected to be controlled. When the color/brightness is adjusted for the group, all LEDs within the group will change at the same time.

Mode

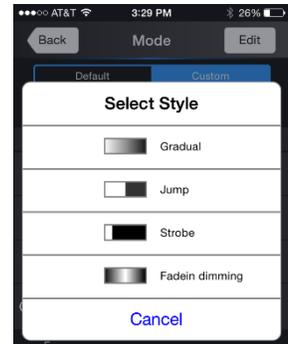


The mode screen can only be accessed when customizing RGB or RGBW zones. The Mode screen provides the option to choose any of the 12 default modes or 12 fully customizable modes and select which set of modes to play. Options when in the Mode screen include:

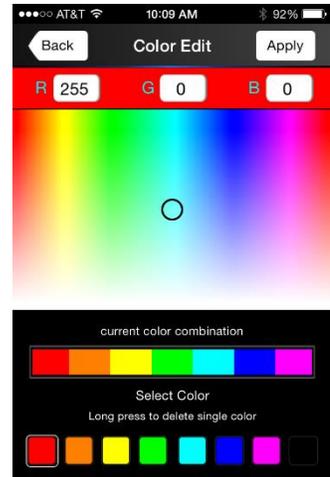
- Default table of 12 pre-set modes.
 - Hold down any of the modes to select the mode style.
 - Gradual
 - Jump
 - Strobe
 - Fade in dimming



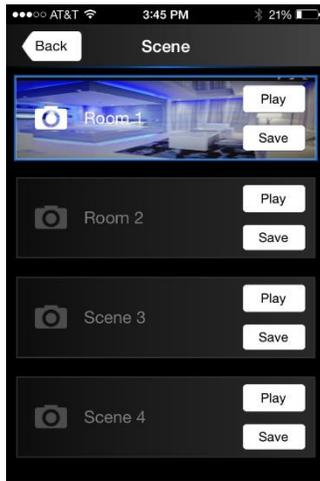
- Custom table of 12 customizable modes.
 - Hold down any of the modes to select the mode style.
 - Gradual
 - Jump
 - Strobe
 - Fade in dimming
 - Click Edit at the top right corner to customize the selected mode. This will show the Color Edit screen where up to 8 colors can be selected in the desired order by either tapping the color on the screen or typing in the red, green, and blue levels at the top of the screen. Note the 7 colors chosen below are now assigned to mode 12 (in the image to the left).



- Select which modes to cycle through by pressing “Set”.
- Repeat play of selected modes to cycle through by pressing “Play”.
- Slider bar to adjust speed (8 levels).
- Slider bar to adjust the brightness of the RGB LEDs (and the white LEDs for RGBW products).



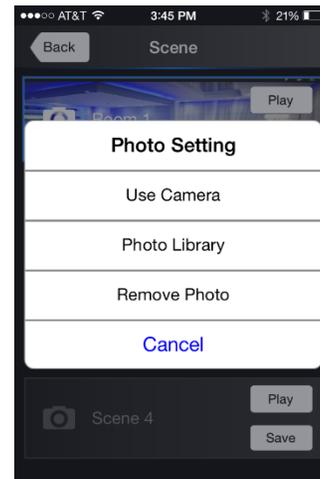
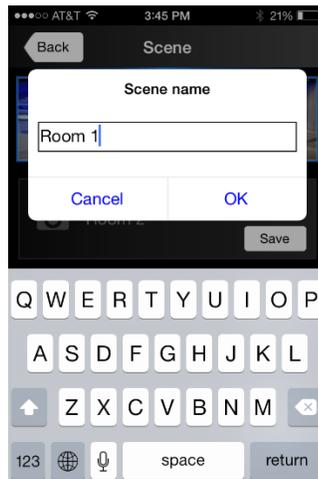
Scene



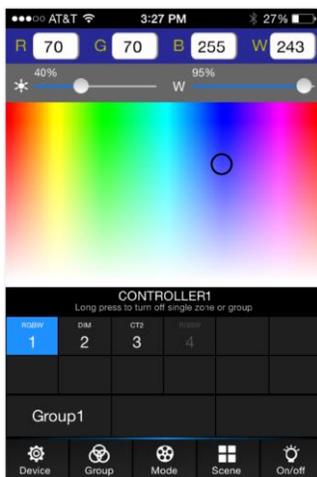
The Scene menu allows you to play and save modes to a room/environment by assigning the selected set of modes to a scene. In the same manner as saving solid colors in the Custom Modes screen, you can also save a specific set of modes to a specific scene.

1. While the LEDs on each controller are playing the desired mode sets, press “Save” on a Scene (1-4).
2. Save a different set of modes to Scene 2, 3, and 4.
3. Customize each of your scenes by:
 - a. Renaming the scene
 - b. Press the camera icon to assign a photo to the scene

Now that your favorite settings are stored you access these scenes easily by pressing the SCENE button on the master controller or by pressing “Play” on the Scene menu in the Wi-Fi app.



On/Off



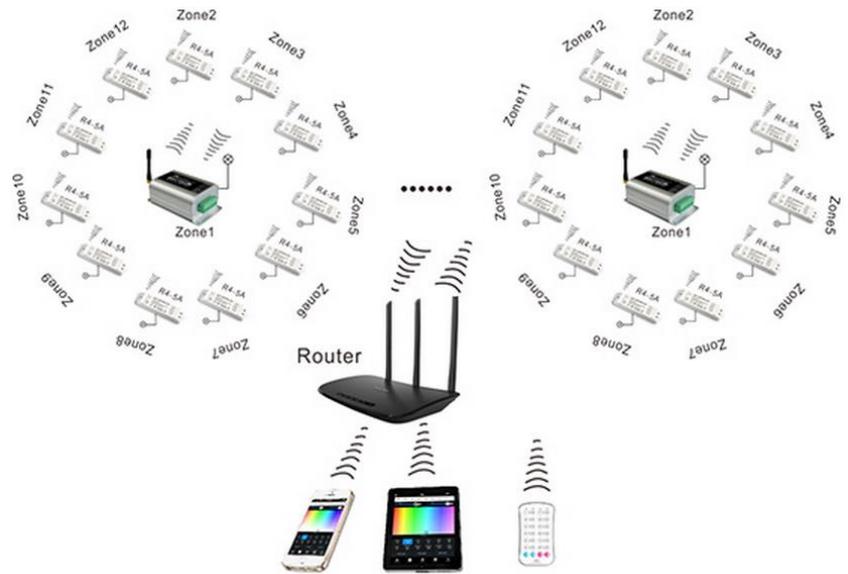
When on the controller screen, turn all the LEDs on all linked zones/groups on and off by pressing On/off at the bottom right corner of the screen. Note: When the zone/group is unlinked, the On/Off button will not affect that zone. Press the zone/group again to re-link the zone/group. This button will have white text if it is linked and grey text if it is unlinked.

The LEDs on any of the 12 zones can also be turned on and off by using the remote control included with the master controller. To turn all zones on/off, press the pink buttons “All” for on and “O” for off.



Using Two Master Controllers

When using two master controllers, the SSID on the back of each controller must be different, creating two different device names (or two different Wi-Fi networks if you are not connecting to existing Wi-Fi). One master controller can be linked to a maximum of 12 zones. Any additional slave controllers (up to 12 more) added to the system must be linked to the second master controller. Both master controllers can use the same existing Wi-Fi network (router) and therefore, all 24 zones can be on at the same time.



1. Set one controller to have one SSID value (i.e. 0) and change the second controller's SSID value to be different from the first (i.e. SSID 1).
2. Supply power to both master controllers depending on what type of LED will be connected to it.

3. On your mobile device, open the Wi-Fi Settings.



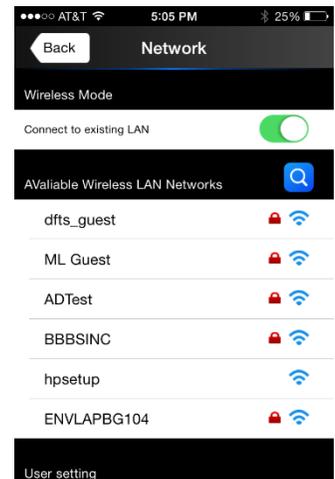
Both Wi-Fi networks should show up on your mobile device (i.e. network A: WIFI-104-SSID-0 and network B: WIFI-104-SSID-1 should both be visible).

4. Connect to network A.
5. Open the app, WiFi104.



6. Search for the master controller with SSID for network A using the blue search icon until the Network and Zone buttons are enabled. Double-tap the Search button if connection times out.

7. Click on "Network".
8. Switch the toggle to the right and click the search icon so that the available wireless LAN Networks are listed.



9. Select the desired Wi-Fi network, Z.
10. Type in the password if necessary.
11. Go back to the Wi-Fi Settings on your mobile device, and connect to the desired Wi-Fi network, Z.

12. Open the WiFi104 app again. Click the search button until it recognizes the existing network. The controller should now connect to Z instead of "WiFi-104-SSID-X".

13. Repeat Step 3-12 for network B.