

## **Mini LED Pixel Controller**

Part number: **PS-SPI-mini-V2**



The Mini LED Pixel Controller provides a wide array of color changing and chasing effects for both PixelPro and PixelControl products. The 16 different effects are pre-programmed to individual buttons on the RF remote and can be modified for speed, brightness, direction and color order. Multiple effects can be linked to cycle through in a specified order and you can save favorite scenes into two memory slots. This controller supports addressing for 8-1020 pixels and can be configured for any number in between. It can handle up to 10A of current at 5, 12 or 24V DC. The 10A limit can be bypassed for higher current applications by directly powering the LEDs and only using the control signal from the receiver.

### **Features**

- 16 pre-programmed effects give flexibility without any programming needed.
- Controls up to 1020 pixels, which is more than two DMX universes.
- Effects can easily be adjusted for speed, brightness, direction and color change order.
- Loop multiple effects in any desired sequence.
- Save two scenes for instant recall at any time.
- Power-Off memory, it will return to the last setting when powered back on.
- Supports up to 10A current through the receiver at 5, 12 or 24V DC
- No power limit if directly powering the LEDs, just use the control signal from the receiver.
- Multiple remotes and receivers can be paired together for larger installations.
- Long range RF remote works up to 50m (160ft) away from the receiver.
- Compact receiver size allows it to fit in tight spaces and be mounted out of sight.
- Includes a wall mounted holder for the remote.

### **Applications**

- Small to medium sized LED pixel installations in homes, hotels, restaurants and other businesses.

# Specifications

Part Number	<b>PS-SPI-mini-V2 (Receiver)</b>
Dimensions	5.31" x 1.18" x 0.78"
	135 mm x 30 mm x 20mm
Channels	1
Output	SPI
Input Voltage	5/12/24 VDC
Max. Current Load	1x10A
Max. Output Power	50W/120W/240W (5V/12V/24V)
Remote Range	50m (160ft) max.



Part Number	<b>PS-SPI-mini-V2 (Remote)</b>
Dimensions	4.09" x 2.28" x 0.35"
	104 mm x 58 mm x 9mm
Zones	1
Output	RF
Power Supply	CR2032 battery (included)
Remote Range	50m (160ft) max.





## Wiring (Over 10A):

1. Connect Data and Clock (CLK) wires from the LEDs to the respective terminals on the receiver. Note: PixelControl LEDs do not have a CLK wire so that terminal is left open.
2. **IMPORTANT:** Make sure that your power supply voltage matches the required voltage of your LEDs.
3. Make sure the power supply is turned off. Connect the V+ and GND wires from the LEDs to the positive and negative terminals on the power supply respectively.
4. Connect the positive and negative terminals of the power supply to the V+ and V- terminals on the receiver.
5. Turn the power supply on.

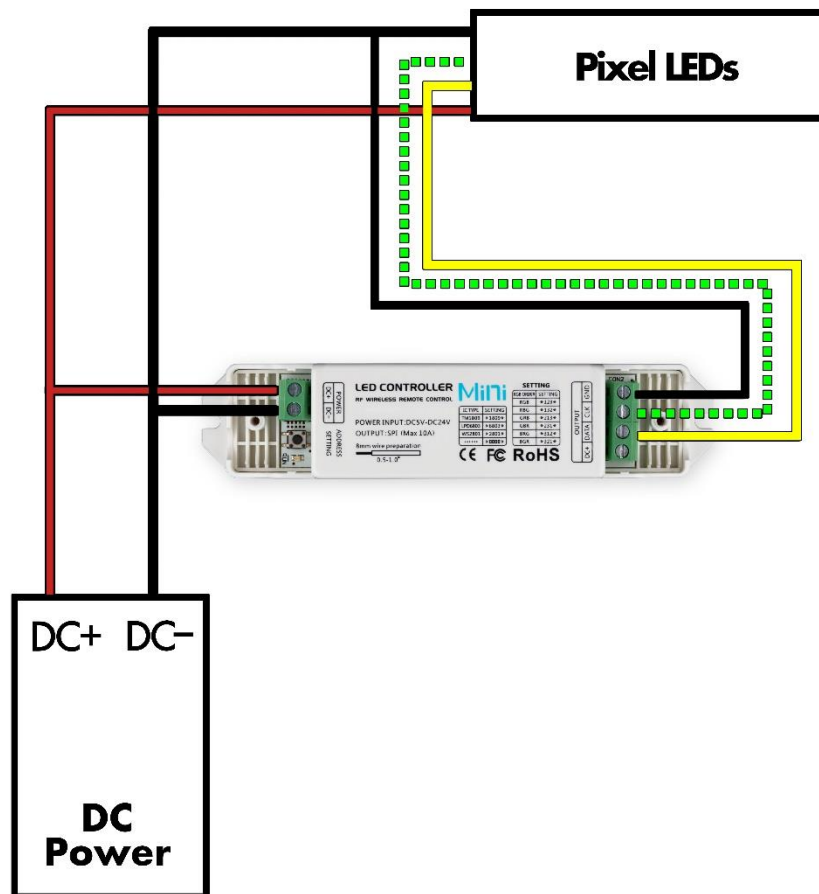


Figure 2. Wiring Diagram for Over 10A.

### Changing Remote and Receiver Pairings:

- To pair a remote to a receiver, press the learning button on the receiver and then quickly press any button on the remote. The running light will flash quickly to acknowledge a successful pairing. This can be done multiple times to pair multiple remotes to the same receiver.
- To erase all pairings on a receiver, hold down the learning button until the running light flashes quickly.

### Changing Control Type:

- To control PixelControl LEDs – This is the factory default setting. To return to this setting, press the star key (\*) then 1809 then star (\*) again. The running light will flash quickly to acknowledge.
- To control PixelPro LEDs – Press the star key (\*) then 2801 and star (\*) again. The running light will flash quickly to acknowledge.

### Changing Color Change Order:

Change the order with which red, green and blue are cycled using the below table. The running light will flash quickly to acknowledge the change. The default setting is R-G-B.

RGB Order	Setting Code
RGB	*123*
RBG	*132*
GRB	*213*
GBR	*231*
BRG	*312*
BGR	*321*

Figure 3. RGB Order Settings.

### Setting the Number of Pixels

Programming the exact number of pixels you are using makes sure that the effects are properly scaled. The number of pixels can be set from 8 to 360. Refer to the table below for guidelines. The running light will flash quickly to acknowledge the change.

Pixel Count	Setting Code
8	**008
16	**016
100	**100
160	**160
1020	**1020
XYZ	**XYZ

Figure 4. Pixel Address Settings.

## Operation

- Remove the plastic tab from the battery tray on the remote before using it. The remote uses a CR2032 battery (included).
- Refer to Figure 5 below for the locations of On/Off, pause/resume, speed, brightness and direction buttons on the remote control.
- Scene Keys - Use the scene keys to save the current settings. A long press of either will save the current scene to that button and a short press will recall the saved setting.
- (\*) - The star key is used in changing receiver settings. Refer to the Figures 3-4 for setting codes.
- Loop - The loop button can be used to continuously cycle through multiple modes. Press the star key (\*), then any modes 0-15 and then press the loop button.
- 0-15 – Mode keys each have a pre-programmed function. Refer to Figure 6 below for modes and a brief description.

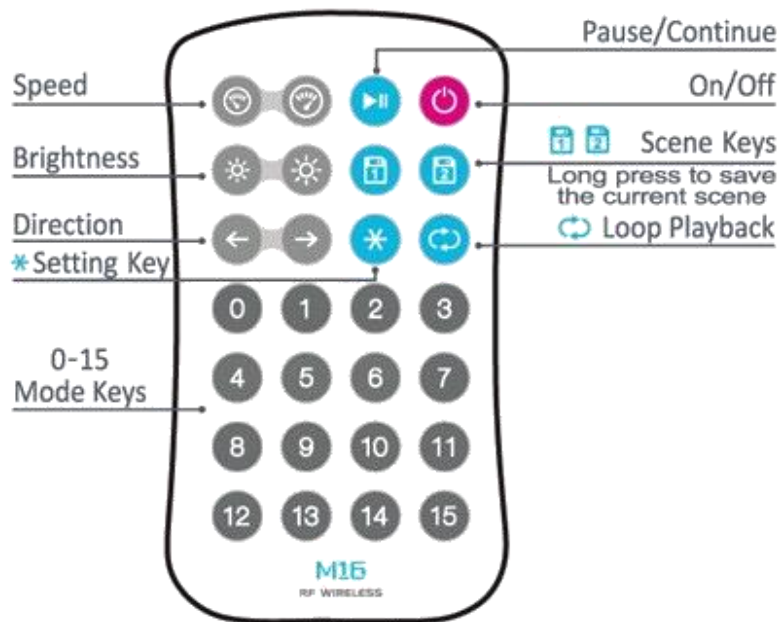


Figure 5. RF Remote Buttons.

Key	Mode	Description
0	7 Color Jump	Instant changing between white, primary and secondary colors
1	7 Color Flash	Short flashes of white, primary and secondary colors
2	7 Color Fade	Fades between white, primary and secondary colors
3	7 Color Smooth	Mixes RGB for gradually fading colors
4	7 Color Race	Primary, secondary and white segments chase along the lights
5	7 Color Circle Race	Primary, secondary and white segments chase along the lights (one color at a time)
6	7 Color Flow	Color jump that propagates one pixel at a time
7	7 Color Gradient Flow	RGB color fade that propagates down the lights
8	6 Color Trail	Meteors of primary and secondary colors chase along the lights
9	6 Color Circle Trail	Meteors of primary and secondary colors chase along the lights (one color at a time)
10	Gradient Trail	Meteors of primary and secondary colors fading to white
11	White Meteor	White meteors chasing
12	6 Color Float	Rainbow of colors moving down the lights
13	6 Color Double Trail	Segments of primary and secondary colors chasing
14	Color White Float	Primary and secondary color segments moving across a white background
15	Bi-Color Float	Colored segments moving across a colored background, both colors change

*Figure 6. Modes and Descriptions.*

## **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. 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.