

GENERATION 2 (GEN2) LED CONTROLLERS

Wiring & Operating Information

BOOGEY LIGHTS® Gen2 LED controllers are offered in four versions: Plus (RGB only), Super (RGBxx), HD Single Zone (RGBxx) and HD Dual Zone (RGBxx). The model number appears on the back of the controller module. Overview of features, capabilities and limitations of each are in this chart.

MODEL	SKU	DESCRIPTION / KEY FEATURES	RGB LED Capacity (3 channels)	xx LED Capacity (2 channels)	Trigger Wire Controls	Output Color Wires (Black = ground. All others are 12vdc +)	Input Color Wires
BLRC-G2P-KF	PGU-RC-G2-PLUS-KF	RGB, Bluetooth, RF wireless Key Fob, Brake Flash	300 6A max, 2A*3	0	Red output wire	Black, Red, Green, Blue	12VDC+ (Red) w/blade fuse, 12VDC- (Black), Yellow Brake Flash Trigger wire
BLRC-G2S	PGU-RC-G2-SUPER	RGBxx, Bluetooth, RF wireless M7, Quick Switch	900 9A max, 3A *3	600 3A max per X channel	GREY output wire	Black, Red, Green, Blue, White, Grey	12VDC+ (Red) w/blade fuse, 12VDC- (Black), Yellow Quick Switch Trigger wire
BLRC-G2HD	PGU-RC-G2-HD	RGBxx, Bluetooth, RF wireless M7, Quick Switch, Stubby + Long Range External Antenna, Single Zone	1800 18A max, 6A*3	1200 5A max per X channel	GREY output wire	Black, Red, Green, Blue, White, Grey	12VDC+ (Red) w/blade fuse, 12VDC- (Black), Yellow Quick Switch Trigger wire
BLRC-G2DZ	PGU-RC-G2-DZ	RGBxx, Bluetooth, RF wireless M7, Quick Switch, Stubby + Long Range External Antenna, Dual Zone	3000 (1500 / zone) 15A max, 5A*3	2400 (1200 / zone) 4A max per X channel (per zone)	GREY output wire	Black, Red, Green, Blue, White, Grey (per zone)	PER ZONE: 12VDC+ (Red) w/blade fuse, 12VDC- (Black) One Yellow Quick Switch trigger input wire that triggers both zones.

All GEN2 LED Controllers offer BOTH Bluetooth + RF wireless control. The PLUS version is offered in RGB only (3 channels output). The remaining three versions are RGBxx capable with up to 5 channels of output. The 'xx' refers to the ability to power up to 2 additional color channels or diodes ('xx' is in lower case to indicate it's a variable). Example: RGBA = RGB + Amber. RGBW = RGB + White (2400k). RGBWW = RGB + White(2400k) + White(4500k). You do not have to use all color output channels. Just make sure you cap off any of the color channels you aren't using. Also, the LED controller doesn't care which colors you assign to which channels as long as you don't exceed the maximum capacity for the channel. If however you want the Bluetooth APP colors to match the LED colors, we suggest using the color designations shown in this document.

RF WIRELESS CONTROL

The PLUS RGB only version LED Controller comes with two 4 button hand-held KEYFOBS to operate the LED Controller wirelessly. The remaining three LED Controllers come with a single larger 15 button (or 18 button if dual zone) M7 tv style hand-held wireless remote.

POWER INPUT

All amperage rating measurements for our GEN2 LED controllers assume an operating range of 12 to 13.5 vdc input. While they'll accept up to 14.5 vdc, be aware that increasing voltage input to the LED controller will increase the amperage draw of the LEDs the controller is powering (the LEDs will glow brighter with more input voltage which means they'll draw more amperage). Be careful not to exceed

the amperage ratings for each LED output channel as listed on each controller. Doing so may damage the controller.

The RED power input has a blade fuse and connects to the 12vdc POSITIVE pole on the battery source. It is important to insert a fuse in the blade fuse holder that matches the amperage draw of your system. The PLUS version uses a 5A but you can go up to 10A fuse if your system is pushing the 5A limit (max amperage for the PLUS version is 6A). The SUPER VERSION uses a 10A. The HD SINGLE ZONE version uses a 20A. The HD DUAL ZONE version uses two 20A fuses (one for each zone). The BLACK power input connects to the 12vdc NEGATIVE pole on the battery source. It's important to use appropriately sized wire gauge cable for making these battery connections. For the PLUS version controller, you can use 12 or 14AWG. We recommend 10AWG or 8AWG depending on the installation for all others. On the Dual Zone HD Controller when we know the number of LEDs attached to the system may be nearing or pushing the limit, we will use two 10AWG wires (one for each zone) each with their own fuse. It's important to take your own amperage measurements when installing your system to make sure you're within the operating limits.

MOUNTING

All GEN2 LED Controllers are water resistant; they are not waterproof. Mount the LED controller in a location that is not exposed to water. Yes, they can get wet. No, they should not be submerged. Also, as with anything that uses electricity, heat build-up should not be over-looked. The more LEDs you connect to the controller, the more heat will build up. Mount the controller in a location that has air flow. If the controller overheats, it will shut itself down.

BRAKE FLASH & QUICK SWITCH FEATURE

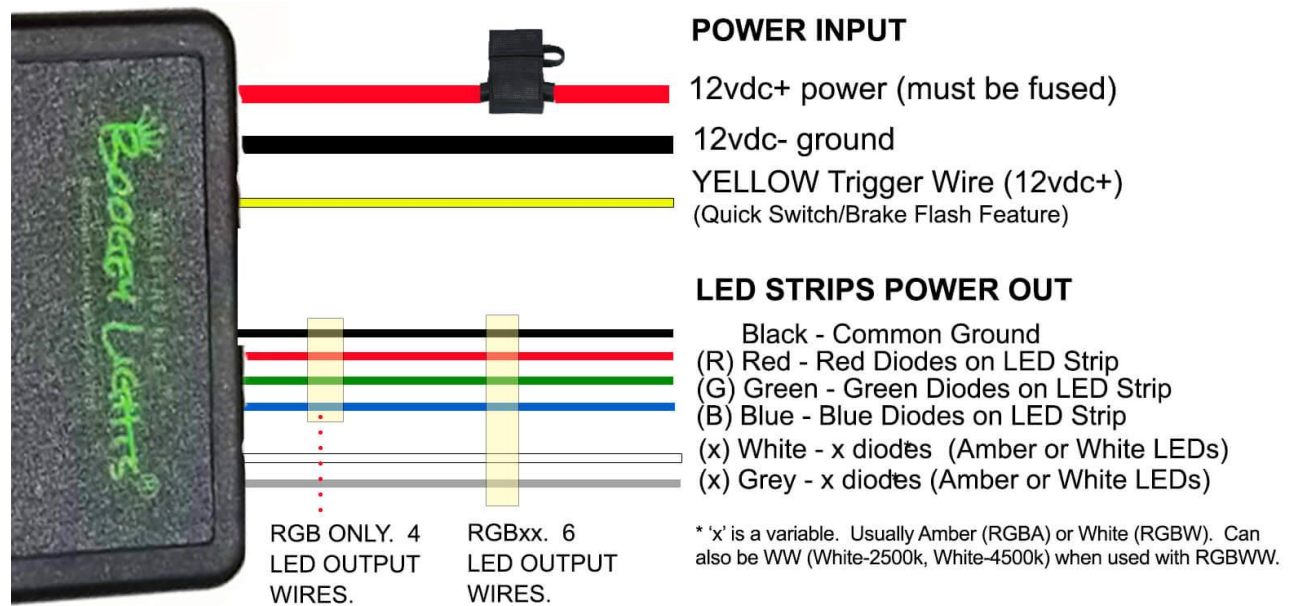
All GEN2 LED controllers have a Brake Flash or Quick Switch feature which can be triggered by applying 12vdc + to the YELLOW input wire to the LED Controller.

Brake Flash: Available on our GEN2 PLUS LED Controller (the RGB only controller). If hooked up, this feature instantly turns off whatever color is being displayed by the LED controller and only displays the color RED. It's commonly used for motorcycle lighting applications as a safety feature. To make it work on a motorcycle (or other motor vehicle), the yellow trigger wire is connected to the 12vdc brake light circuit on the vehicle. Whenever the brakes are applied 12vdc power is sent to the controller via the yellow trigger wire and the RED leds attached to that controller turn on (and any other color – if on at the time – will be off). When that 12vdc power to the yellow trigger wire is turned off, the LED controller goes back to the state it was in. If not using, be sure to cap this yellow trigger wire.

Quick Switch: The Quick Switch feature is available on our SUPER, HD SINGLE ZONE and HD DUAL ZONE LED Controllers (all RGBxx controllers). It operates just like the Brake Flash feature except that instead of using the red led output wire, it uses the GREY output wire. Whatever color LED you have connected to the GREY power output wire is the color that will display when the Quick Switch is triggered with 12vdc +. The most common use for this configuration is with commercial vehicles who want to be able to instantly turn off whatever color they're running and turn on a DOT compliant AMBER which is on our RGBA LED strips. For these installations, the yellow trigger wire is connected to a toggle switch or other wireless switch that activates the AMBER leds. You can also do the same thing with the RGBW product. When the Quick Switch trigger wire is not energized, the LED controller operates the RGBxx diodes normally. If not using, be sure to cap this yellow trigger wire.

This wiring diagram covers all possible wiring scenarios. You'll find RGB, RGBA/RGBW, RGBWW and Single Color wiring diagrams further along in this guide.

GEN2 LED CONTROLLER WIRING DIAGRAM - ALL



Important to cap (seal) the yellow trigger wire if not using the brake flash or quick switch feature.

RGB: If you're wiring RGB, connect the Red, Green and Blue power output wires to each of the Red, Green and Blue LED strip diodes. Important to cap (seal) the remaining White and Grey power output wires (if available).

RGBx (RGBA, RGBW): If you're wiring RGBA or RGBW, connect both the WHITE and GREY power output wires to the Amber or White diodes on the RGBx LED strip (which will also be a white wire). This is important to avoid dead spots when operating the controller.

RGBxx (RGBWW): If you're wiring RGBWW, connect the WHITE and GREY power output wires to the White and Grey diodes on the RGBWW led strip (the LED strip wires will be white and grey too.)

BRAKE FLASH: Only available on model BLRC-G2P-KF (the RGB only model). When 12vdc power is applied to the YELLOW trigger wire, the LEDs attached to the RED LED output wire are turned on. All others are off.

QUICK SWITCH: Available on all RGBxx models. When 12vdc power is applied to the YELLOW trigger wire, the LEDs attached to the GREY LED output wire are turned on. All others are off.

For DUAL ZONE LED Controllers, you'll have the exact same wiring as you see above except there will be two sets of these wires; one set for each zone. Important to connect both 12vdc+ power inputs to your power source. Note: There will only be one yellow trigger wire which will trigger the GREY power output wires on both zones if that feature is used.

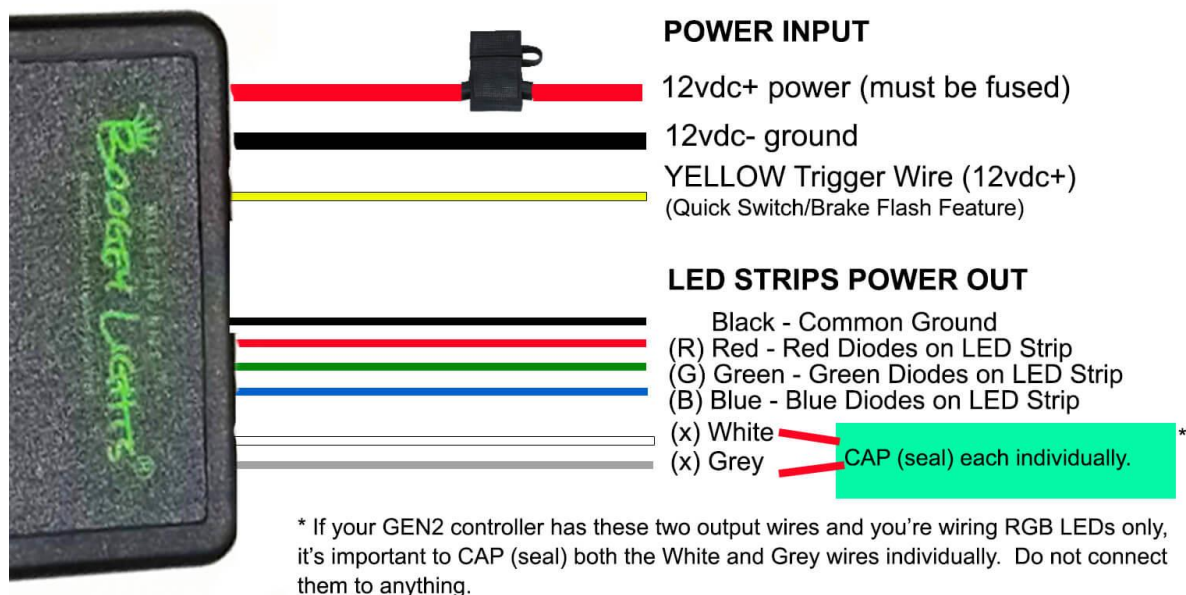
DO NOT OPERATE RGB and XX channels at the same time.

LED POWER OUTPUT

LED Controller Output Color Wire	LED Light Strip Power Lead Cable Color	Function	Typical Use
Black	Black	Ground (12v -)	common ground
Red (R)	Red	12v+ / Controls the RED diodes	RGB LED Strips. Can also be used for single color LED strips by twisting these 3 wires together and connecting them to the RED (+) input of the single color led strip.
Green (G)	Green	12v+ / Controls the GREEN diodes	
Blue (B)	Blue	12v+ / Controls the BLUE diodes	
White (x)	White or Yellow depending on the led strip type (1)	12v+ / Controls the 'x' diodes	RGBA, RGBW, RGBWW
Grey (x)	Grey	12v+ / Controls the 'x' diodes	RGBA, RGBW, RGBWW

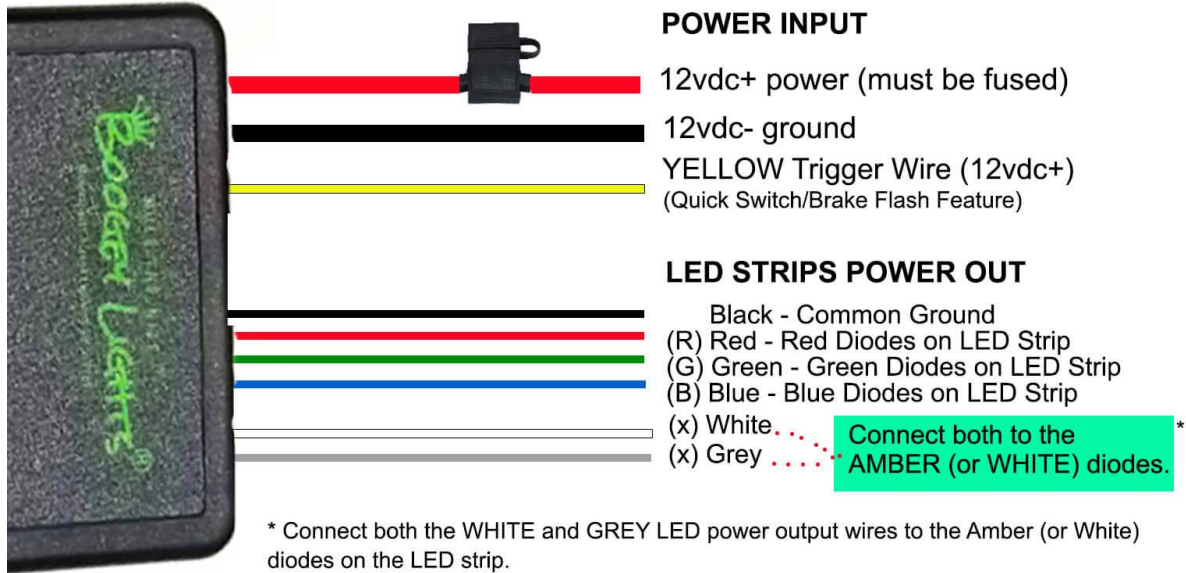
(1) On our LOW PROFILE LED strips, this wire will be WHITE. On our Heavy Duty LED strips, this wire will be YELLOW. In both cases, it represents the 'x' diode in an RGBx LED strip.

RGB WIRING DIAGRAM

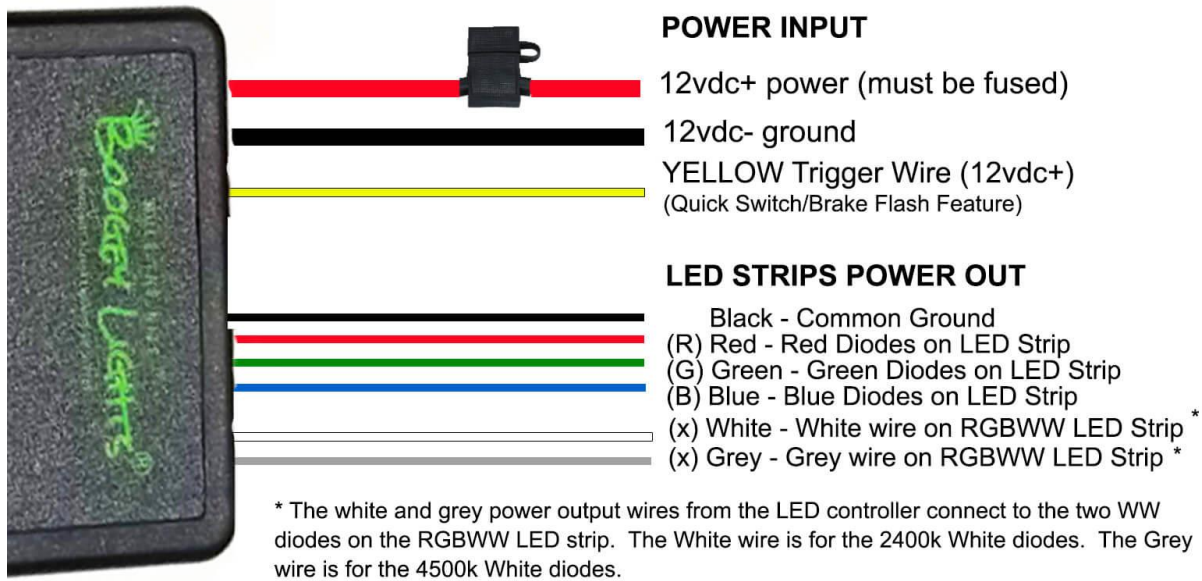


NOTE: If you have the PLUS version of our GEN2 LED controller, it is an RGB only controller and as such you won't have the white or grey output wires shown in the above diagram.

RGBx WIRING DIAGRAM (RGBW or RGBA)



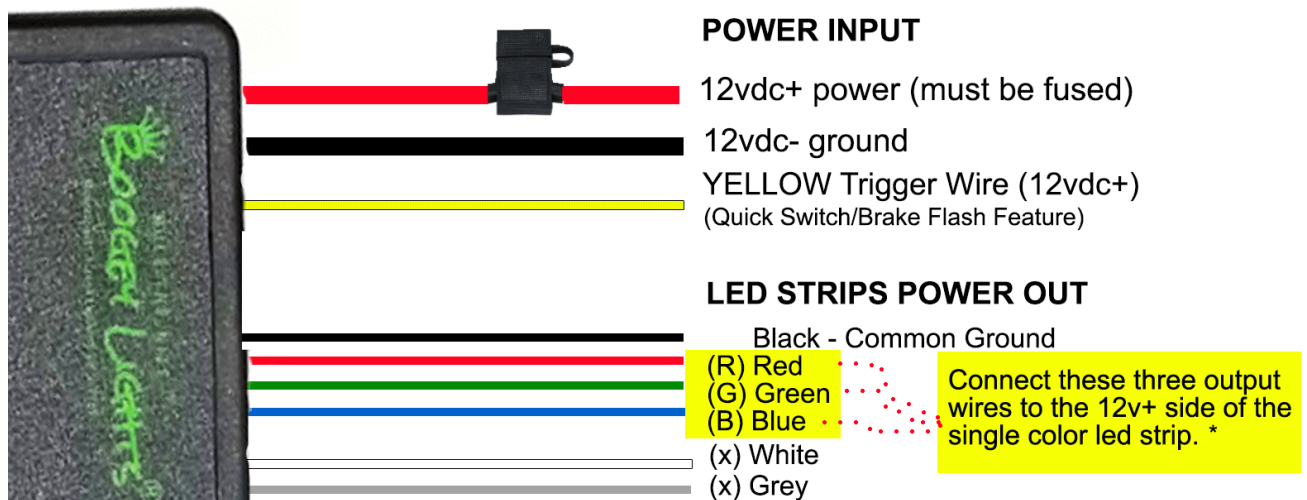
RGBWW WIRING DIAGRAM



WIRING TO SINGLE COLOR LEDS

While you don't need an LED controller to operate single color LEDs, some will use one to operate single color LEDs because the controller offers the ability to dim the LEDs (along with other features). For single color LEDs, simply twist the **red + green + blue** output wires together and connect all of them to the 12vdc + wire (usually red) for the single color LED strip. Connect the ground wire on the strip to the ground on the controller.

SINGLE COLOR WIRING DIAGRAM



*Connect the red, green and blue LED output wires to the 12v+ wire of your single color led strip (usually a red wire). The ground wire (black) on the led strip connects to the common ground wire on the led controller. Be sure to cap the yellow trigger wire. This will work on the RGB or RGBxx controller. If using the RGBxx controller, cap the white and grey wires.

DO NOT operate the RGB and XX diodes at the same time. Why? Because the LED strip is designed to use either or – but not both. If you were to light up all 5 diodes at one time you run the risk of pushing too many amps through the LED strip and/or the LED controller. Doing so could damage the controller, the LED strip or both (not to mention the risk of fire). This is especially true if attempting to operate all 5 diodes at one time on the brightest setting for white which will draw the most power.

BASIC OPERATING INFORMATION

Powering Up

When the LED controller is first connected to 12vdc power, all LEDs attached to the controller will quickly flash. You'll notice too the green light on the face of the controller will be lit. This green light stays on all the time. It's your indication the LED controller is energized; has 12vdc power connected to it. That single tiny LED draws very little power; milliamps. If you're not going to be using the lighting system for an extended period of time we suggest removing the fuse from the controller and powering it down. This is particularly true for vehicles that are often stored for months at a time. No reason to leave the controller energized in that scenario. NOTE: Merely connecting 12vdc power to the controller does nothing more than energize the controller. To turn the lights on, you need to use the RF wireless remote or Bluetooth APP.

Turning On and Using

With the green light on, your LED controller is ready to be used (assumes you have wired your LEDs to the controller). The GEN2 LED Controllers can be operated using either the RF wireless remote that comes with the controller or your Bluetooth capable smartphone and our free GEN2 Smartphone APP. When the controller is first turned on, the LEDs will display in whichever mode/color they were last used. This feature is particularly useful for those who want the lights to work the exact same way every time the controller is turned on. It does not matter how the controller was last used either; the RF wireless remote or Bluetooth APP. One word of caution though: If the last setting used on the controller had the brightness all the way down, when you turn on the controller the next time, it might appear as if the controller isn't working when in fact it's merely coming up with the last used setting (which is why you can't see the light). If this happens, be sure to cycle through the MODE and/or BRIGHTNESS buttons until the lights are visible. Details about using the RF handheld remote or the GEN2 Bluetooth APP are in separate documents.

Antennas: RF Wireless + Bluetooth

All GEN2 LED controllers have an RF antenna and a Bluetooth antenna. For all models, the Bluetooth antenna is internal; it cannot be seen or extended. For the PLUS and SUPER controller versions, the RF wireless antenna is internal as well. For the HEAVY DUTY SINGLE and DUAL ZONE LED controllers, the RF wireless antenna is external and we include two versions: a 'stubby' screw-on antenna and a magnetic mount extended range antenna with 15' extension cable.

RF Wireless Range: RF wireless range will vary based on the operating environment but it's not unusual to get 100'+ range with any of the controllers. If you have either of our HEAVY DUTY LED Controllers, we recommend using the extended range magnetic mount antenna if you're mounting the LED controller inside a metal enclosure of any type. You'll get better RF reception by mounting that RF antenna on the outside of the vehicle somewhere (usually on the bottom where it can't be seen.)

Bluetooth Range: The GEN2 LED Controller is based on the Bluetooth 5 series chip which has significantly improved range, data set payload and speed over all prior versions. For indoor use, you can expect distances of 50 to 500'. A lot of it depends on the operating environment and the strength of your smartphone.

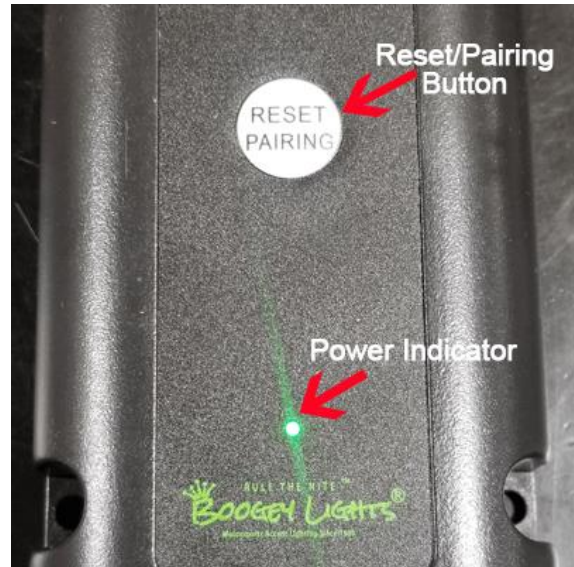
If you're concerned about range, we suggest dry mounting your LED controller and/or antenna if applicable and testing reception before making a decision on where to permanently locate. It's simple enough to do.

RESET PAIRING BUTTON

All GEN2 LED controllers have a 'RESET PAIRING' button on the face. To work, the controller must have power with the green power indicator light lit as shown in this photo.

Reset: The reset functionality erases the Bluetooth nicknames saved for the Bluetooth app. It also erases the password (if any) assigned using the Bluetooth APP. To reset, simply press and hold the button down for about 5 seconds until the green power indicator light flashes quickly and stops, then release. Note too that performing this reset will also erase the pairing with any RF hand held remotes.

Pairing: This pairing functionality is used most often. The pairing functionality 'pairs' or links the RF handheld remote with the LED controller. When the controller and remote are shipped, they are already paired. Typically they will stay paired. If however the RF remote and controller becomes un-paired, you need to re-pair them. Common causes for unpairing include accidental pressing of the 'Reset Pairing' button, the battery in the remote dying or buying a new remote to replace one that was lost or damaged.



The pairing process is quick and easy. To pair the RF wireless handheld remote with the LED controller, quickly press and release the pairing button on the face of the LED controller (do not hold it down). As soon as you do, the green power indicator light will start flashing. You have 30 seconds at that point to press any button on the RF wireless remote to 'pair' the RF remote to the LED controller. If the pairing is successful, the green power indicator light will stop flashing. If you wish to pair a second RF remote, repeat the process. You can pair up to 3 RF remotes to a single led controller.

Note: The Key Fob RF and M7 RF wireless remotes are not interchangeable. The KEY FOB 4 button RF remote will only pair with the PLUS (model BLRC-G2P-KF) RGB only LED Controller. The larger format 15 button (or 18 button if dual zone) M7 tv style RF wireless remote will pair with any of the other three GEN2 RGBxx LED Controllers.

OTHER RESOURCES

GEN2 LED Controller Product: <https://www.boogeylights.com/gen2-bluetooth-rf-combo-led-controller/>

Installation Resources: <https://www.boogeylights.com/installation-resources/>

Trouble Shooting: <https://www.boogeylights.com/trouble-shooting-guide/>

Warranty: <https://www.boogeylights.com/warranty/>

How-To Videos: <https://www.boogeylights.com/how-to-videos/>

Open a Support Ticket: <https://www.boogeylights.com/contact-us/>

Technical Support. 1.800.847.1359 M-F, 9-5 eastern. Text Only Support: 1.859.955.8155