info@cousign.com +1(269)290-1222

cousign

MULTICOLOR LIGHTS CONTROLLER

OPERATING INSTRUCTIONS FOR THE MULTICOLOR LIGHTS CONTROLLER

Document Version 3.0 – 7/23/2026 – Firmware 2.x+

IMPORTANT

This document applies to devices with firmware 2.1 and higher deployed after July 2026. For older devices please see legacy documentation. To check if your device is version 2.1 or higher there is quick check.

Press the "**INFO**" button on the remote. The first light will start communicating current address, and firmware version by flashing various colors. If the device responds to the info button your device is 2.1+. If info causes nothing to display on the first light, you have an older firmware.

What is the Multicolor Lights Controller

The device controls a string of colored lights known as RGB lights because they use combinations of red, green, and blue LEDS to create any color in the visible light spectrum. This controller can drive up to 12 lights in standard mode or 30/31 lights when configured for safety cross mode. Lights are offered in various sizes from .8" to 4".

Contents

IR Remote Control

To control the multicolor lights controller, navigate to it using the **NEXT**/**PREV** buttons on the remote. When your controller is selected it will briefly flash all connected lights blue.

Number of Lights

To define the number of lights attached to the controller, press **ENTER**. The current setting will be displayed by lighting up the first X lights attached in blue. Press **UP/DOWN** to change the setting. You may also press a number button on the remote to choose a setting directly. When finished press **ENTER** to save the setting.

The maximum number of lights depends on the mode your board is operating in. Standard mode allows for 12 lights, and cross mode allows for 30-31 lights. The mode is chosen via hardware jumpers on your board and should not need to be adjusted. When adjusting the light count, if you attempt to set the count lower than 1 or higher than the maximum, all lights will flash red to signal an invalid value.

Configure a Light

Each attached light can be configured with a color, brightness, animation mode, and animation rate.

Select a Light to Program

Once the controller has been selected you must choose a light to configure. Press the **LEFT** and **RIGHT** arrow buttons to select a light to control. When selected the light will briefly flash and then continue displaying the color that was previously shown.

WARNING: Cross/Quality controllers are designed to show a calendar representation with a light per day and assume the current day is the one selected. Moving left will turn off the currently selected light and moving right will copy the current light to the newly selected light for a starting point. Standard mode makes no such assumption about the light and allows navigation without altering the light.

Direct Navigation: To navigate directly to a light. Press the **LIGHT** button (located in the upper left of the remote, "power" button) then choose the light number using the keypad. Example **LIGHT → 1 → 4** will select light **14**

> When selecting a two-digit number the light associated with the first digit will be temporarily selected. Upon pressing the second digit, the desired light will ultimately be selected.
> LIGHT → 2 (light 2 selected) →5 (light 25 selected)

Color

Select a color using the **UP**/**DOWN** buttons. Your choice will be automatically saved within five seconds.

Brightness

Adjust the brightness of all attached lights using the **1-9** buttons. **1** is the dimmest setting and **9** is the brightest. If you wish to adjust the brightness of only the selected light, press the **CONFIG** button to cycle through available brightnesses.

Animation Mode

Adjust the animation mode by pressing the **MODE** button to cycle through available animations.

SOLID → FLASHING → FADE → RAINBOW → SOLID

Speed/Rate

If you have chosen an animation mode other than **SOLID**, you can change the rate at which the animation plays by pressing the **RATE** button to cycle through the nine available speeds. When adjusting the speed of the animation, be patient, as it can take some time to see the true effect of the setting, especially when the mode is set to **FLASH** as a light can appear to be off when it is really just flashing very slowly.

Safety Cross

The safety cross is a special mode of the multicolor controller that allows up to 31 lights to be controlled in a cross or other pattern. Lights on the cross are controlled in much same way but with slightly different behavior for the LEFT/RIGHT buttons

	STANDARD	CROSS
LEFT	Moves cursor back.	Turns off the current light and then moves back
RIGHT	Moves cursor forward.	Move cursor forward and copy the previous light settings onto the new light
RESET	Move cursor to light 1.	Turn all lights off, set light 1 to green

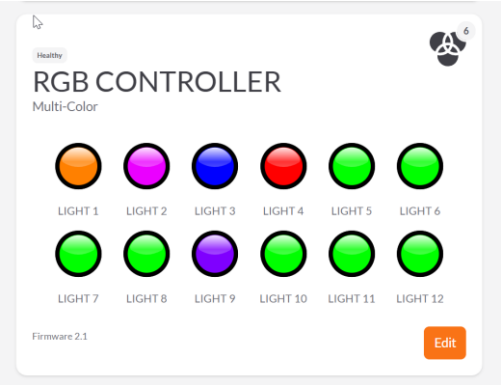
*other functions are controlled as previously documented.

Network Control

If your sign is outfitted with a network controller you can make all of these changes more efficiently via the network controller webpage. Your multicolor controller will be shown in the device list. **Click** on the light to adjust it.

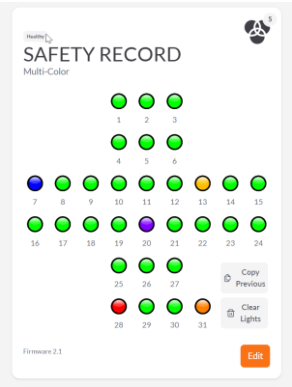
LIGHT THEME **DARK THEME**

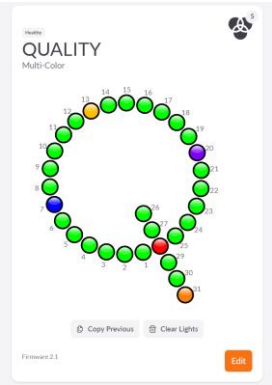
STANDARD

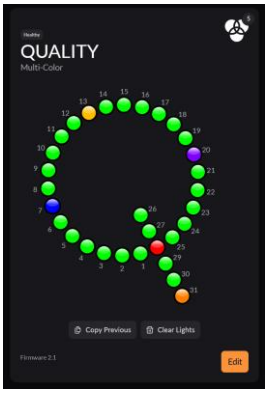


CROSS

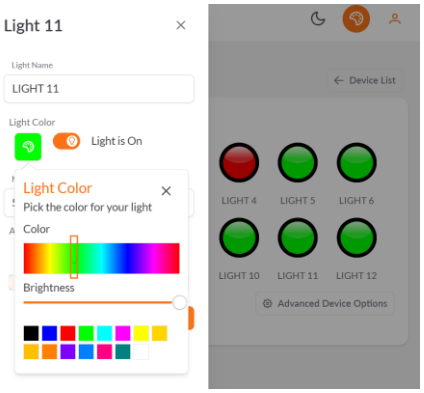
PRESENTS AS CROSS OR QUALITY

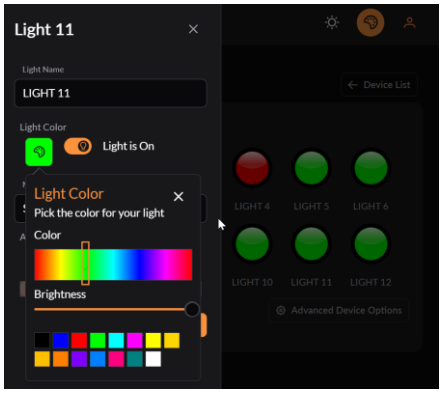






Light Configuration





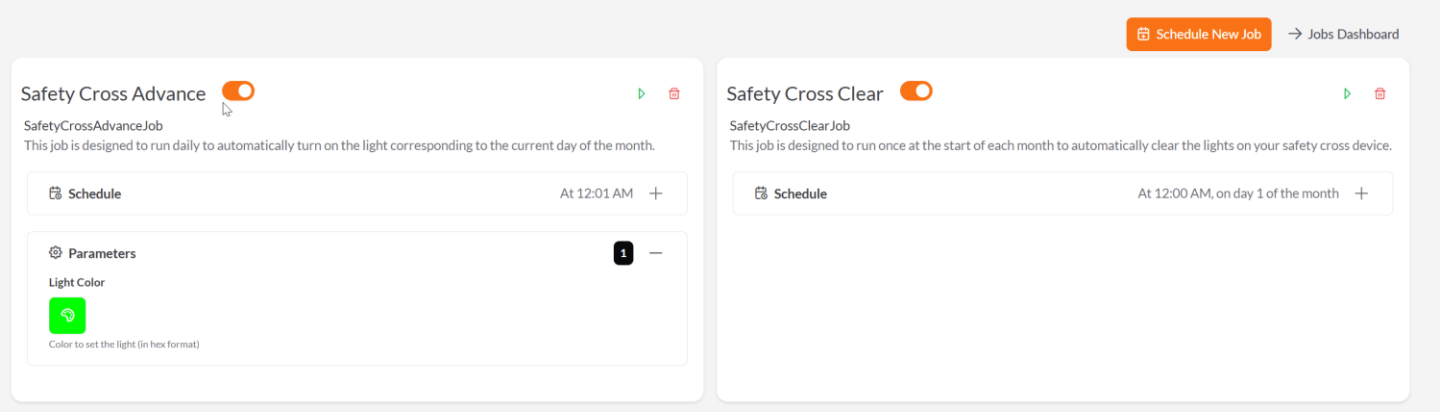
Controller Settings

The number of lights and controller name can be configured on the advanced settings page. The controller name is for your reference only and will be displayed on the device list. The number of lights setting should be set to accurately reflect the number of lights attached to the controller. Make your selections, close the advanced settings dialog and then click **Update Device**.

For cross devices you can also select a “presentation” value of CROSS or QUALITY which will render the lights accordingly.

Scheduled Jobs

The network controller offers some extra functionality to help automate your safety cross via scheduled jobs. With these jobs enabled your cross will light up each day without any manual action on your part. You will only need to interact with the sign on days when the default color is incorrect (accident occurred, near miss, etc)



Safety Cross Advance: Run daily to set the light for the current day to a specified color.

Safety Cross Clear: Reset the cross at midnight on the first of every month.

For more details see the network controller documentation.

Remote Control – Quick Reference

Button	*Function*	*Details*
NEXT/PREV	Choose Device	Navigate the displays on your sign to select the multicolor lights for control by the remote
◄ ►	Navigate to a Light	Light flashes amber when selected, then shows previously displayed color
▲ ▼	Adjust Color	off→ red→ green→ yellow→ gold→ orange→ cyan→ blue→ magenta→ white →off
MODE	Select Light Mode	solid→ flash→ fade→ rainbow→ solid
RATE	Animation Rate	9 steps, only when mode is not solid
CONFIG	Brightness	Change brightness of selected light only (9 levels)
NUMBER *1 to 9*	Global Brightness	Change brightness of all lights (9 levels)
LIGHT *Top left "power"*	Navigate Directly (to a light)	Press the light button followed by the light number. 14 = LIGHT→1→4 2 = LIGHT → 2

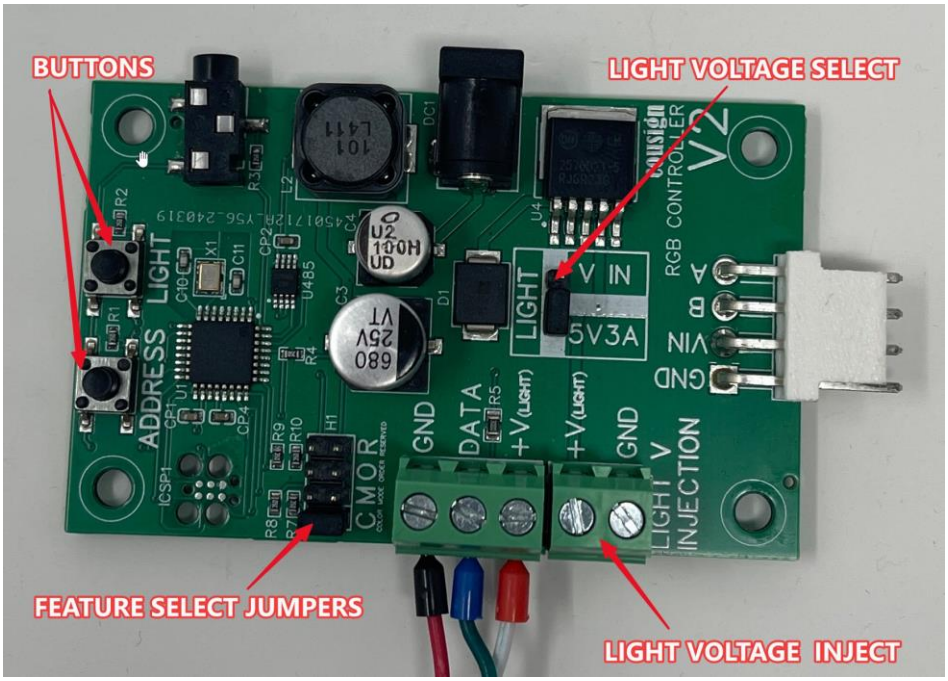
Advanced Functionality

FUNC	Function Button	Flash all lights green (use to check color jumper setting)
ENTER	Set Light Count	▲▼ to adjust number of lights. Enter to save.
INFO	Information (Count Flashes)	Address **(Blue)** Firmware Major **(Purple)** Firmware Minor **(White)**
RESET/OK	Reset Lights	**Standard** – Set selected to first light **Cross** – Clear all lights, select and set light one to green

Technical Reference

The following is technical reference material related to the circuit board.

The controller will ship configured appropriately. This information is included for completeness and potential trouble shooting assistance.



QUICK PRESS – Push the button and release quickly.
LONG PRESS – Push the button and keep it depressed for at least **THREE** seconds, then release.

Address Button

To adjust the address, **QUICK PRESS** the **ADDRESS** button. The address will be increased, and the first light will flash X times to signal the currently set address. Continue to **QUICK PRESS** the **ADDRESS** button until your desired address is displayed. To apply the setting, **LONG PRESS** the **ADDRESS** button. The new address will be displayed one more time followed by the round robin animation to confirm the setting was saved. After setting the address, normal operation will resume.

NOTE: The address setting will increase by one with each button push, looping back to 1 after 10 is reached. Changing this setting can interfere with the proper operation of your sign.

Light Button

To set the number of lights, **QUICK PRESS** the **LIGHT** button. Continue to **QUICK PRESS** the **LIGHT** button until only the first light is lit. Continue to **QUICK PRESS** the **LIGHT** button as each attached light is lit in sequence. When all of the lights are lit, **LONG PRESS** the **LIGHTS** button to save. When released your setting is saved and the round robin animation will play.

NOTE: Setting the current number of lights attached to the controller is important to make programming other options easier. If the setting is too low, not all of your lights will light up; if it's too high, you may have issues when configuring lights as button presses will appear to be doing nothing, when they are adjusting a light you can't see.

Light Voltage Select

The light voltage selection jumper allows you to power attached lights with either the input voltage to the controller, or 5V 3A stepped down from input voltage onboard the controller.

Choosing an improper voltage can **permanently** damage any attached lights. The default (no jumper attached) will not provide any voltage to the lights. .8" lights often require 5V and larger lights require 24V, but check the labeling on the lights to confirm.

Light Voltage Injection

Long strings of lights often need additional voltage injection for optimal operation. Use these terminals to tap light voltage for additional power injection needs.

Feature Select Jumpers

The feature jumpers strap various functionalities of the controller. These features are set at the factory and should not need to be adjusted.

Board Marking	**OPEN** 	**CLOSED** 
C – COLOR The order color bytes are shifted into the lights.	GREEN RED BLUE (BYTE ORDER)	RED GREEN BLUE (BYTE ORDER)
M – MODE Which mode the controller will operate in	REGULAR / STANDARD OPERATION	CROSS / QUALITY OPERATION
O – ORDER The order in which light bytes are shifted	STRAIGHT THROUGH (shift in light order X to 0)	CROSS LAYOUT (shift according to cross wiring)
R – RESERVED **LIGHT COUNT** (MODE = **CROSS**) NO FUNCTION (MODE = **REG**)	30 DAYS	31 DAYS

Cross Wiring Illustration

The following is a wiring diagram illustrating how the cross is wired for optimal physical signal path.