
Application Note

Description of RGB Lighting Control

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Key Words:

RGB Lighting Control

Brief:

This document provides the description for RGB lighting control.



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Revision History

Version 1.0.0 (2019-12-10)

This is the initial release.

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1. Overview

RGB lighting control consists of a remote and a LED controller, the remote advertises information, the LED controller executes commands after receiving information from the remote.

The remote has 10 keys, including power on, luminance increase, luminance decrease, chroma increase, chroma decrease, nightlight for color temperature (CT) LEDs, breath mode, pairing, memory clearance for RGB LEDs, and power off.

Within 6s after the LED controller is powered on, the system is in pairing state. When the system receives pairing flag, it will record pairing commands, and exist the pairing state, CT LEDs will flash three times; when the system receives memory clearance commands, it will clear all pairing information, and exist the pairing state, CT LEDs will flash five times; if the system receives RF packets from the paired remote, it will exist the pairing state. If no information is received within 6s after the LED control end is powered on, the system will exist the pairing state and enter normal state.

The system will check every packet received to see if the packet is a RGB lighting control packet, if the remote ID matches, and if the packet is identical to a previous packet. The system will execute commands after all the checks pass.

2. Description of Functions

1. Pairing

Within 6s after a LED is powered on, if the pairing on the remote is pressed one time, the remote will be paired with the LED. If the pairing succeeds, the LED will flash three times. After the pairing is completed, the system will enter the normal state.

2. Memory clearance

Within 6s after a LED is powered on, if the memory clearance on the remote is pressed one time, the system will clear saved pairing information, the LED will flash five times. The LED can be controlled until next power on and pairing.

3. CT LED power on

If the system is in power off, CT LED(s) will be powered on; if CT LED(s) are powered on, the power on will be kept; if the system is in RGB control mode, RGB LED(s) will be powered off and CT LED(s) will be powered on.

4. Power Off

Power off all LEDs, including CT LEDs and RGB LEDs.

5. CT LED luminance adjustment

When the luminance reaches the maximum value, it's invalid to press luminance increase; when the luminance reaches the minimum value, it's invalid to press luminance decrease.

6. CT LED chroma adjustment

When the chroma reaches the maximum value, it's invalid to press chroma increase; when the chroma reaches the minimum value, it's invalid to press chroma decrease.

7. Nightlight mode

Power off RGB LEDs, the luminance of CT LEDs is 2%.

8. RGB breath mode

Breathing gradient of RGB LEDs of each color.