Information For Use

TypeNumber:L7177

Device Introduction

Device Interface Introduction

Serial No.	Name	Function
1	Light Strip Power Button	Used to turn on or off the light strip
2	Power Indicator Light	Lights up when DC power is plugged in
3	Signal Input Indicator	Lights up when an HDMI signal is input
4	TV (or Monitor) Connection Indicator	Lights up when an HDMI signal output device is connected
5	HDMI Signal Input Port	Used to input image from a source (e.g., Xbox)

Serial No.	Name	Function
6	DC Power Port	Used to provide power to the device and light strip

Serial No.	Name	Function
1	HDMI Signal Input	Outputs the input image to TV (or monitor)
2	Light Strip Connector	Used for connecting light strips to control lighting

Serial No.	Name	Function
1	Control APP QR Code	Scan the QR code to download the control APP
2\3\4\5	Interface Markings	Marks underneath correspond to the purpose of the interface
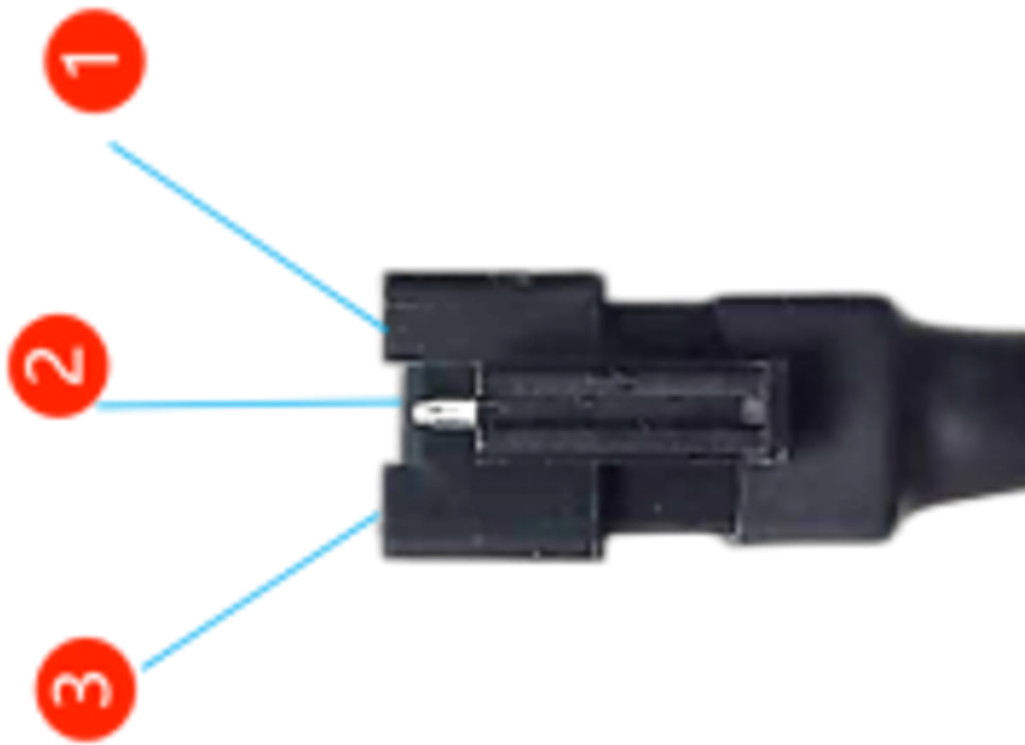
Serial No.	Name	Function
	Light Strip Connector (3-Pin Female)	Outputs the input image to TV (or monitor)

If you are using the light strip connector included in the kit as shown above, please refer to the table below for the definition of the pinout, which is:

Serial No.	Name	Notes
1	Light Strip Negative	
2	Light Strip Data Line	Supports chips like WS2812/WS2811/SM16703P
3	Light Strip Positive	Supports 5V/12V

Parameter Details

- **Product Dimensions**: Length x Width x Height = 87x52x22 (mm)
- **HDMI Version**: HDMI 1.4b, HDCP 1.4
- **Color Depth**: 8bit (does not support 10/12/16bit)
- **Color Format**: RGB/YCbCr444/422
- **HDR**: Not supported
- **HDMI-CEC**: Supported (pass-through)

- **Image Capture Frame Rate**: The number of image frames processed per second by the controller
  - At input 720P@120Hz, full frame rate capture is possible
  - At input resolutions higher than 720P and at 120Hz input, the frame rate can reach up to 100Hz
  - Under other frame rates, input can be captured at the same frequency rate
- **Number of Color Zones**:
  - *Horizontal*: 9 zones
  - *Vertical*: 8 zones
- **Synchronization Delay**: Time delay between picture change and LED strip response
  - less than 5ms
- **Audio Parameters**
  - Number of Channels: Stereo
  - Sampling Depth: 16bit
  - Audio Format: Linear PCM
  - Sampling Rates: 32KHz/44.1kHz/48KHz
  - Audio Capture Method: Dual-channel audio capture
- **Operating Conditions**
  - **Power Supply Voltage**: DC 5V~12V
  - **Limit Voltage**: DC 15V
- **Power Supply Current** (without LED strip connected)
  - At 5V power supply
    - 4K@30Hz single board current 404mA
    - 1080P@60Hz current 336mA
  - At 12V power supply without LED strip connected
    - 4K@30Hz current 175mA
    - 1080P@60Hz current 175mA
- **Bluetooth Parameters**
  - Device Name: L7178
  - Connection Distance: 10 meters (unobstructed)
- **Maximum Supported Number of LEDs**:
  - 299 lights(chips)

resulution and refresh rate supported

Support	Resolution	Refresh Rate (Hz)	Aspect Ratio	Tested
√	3840x2160	30/25/24	16:9	

Support	Resolution	Refresh Rate (Hz)	Aspect Ratio	Tested
√	2560x1440	60	16:9	
√	2560x1080	60	64:27	
√	1920x1200	60	16:10	
√	1920x1080	120/100/60/50/30	16:9	
√	1680x1050	60	16:10	
√	1600x1200	60	4:3	
√	1600x900	60	16:9	
√	1440x900	60	16:10	
√	1366x768	60	16:9	
√	1360x768	60	16:9	
√	1280x1024	60	5:4	
√	1280x800	60	16:10	
√	1280x720	120/100/60/50/30/25	16:9	
√	1024x768	60	4:3	
√	720x480P	60	3:2	
√	640x480P	60	4:3	

Feature Introduction

Automatic Light Control

1. If an HDMI signal is detected from the TV, the light automatically turns on:
   - The light strip can be manually turned off through the app, ignoring the HDMI signal status.
2. If the HDMI signal from the TV disappears, the light automatically turns off:
   - The light strip can be manually turned on through the app, ignoring the HDMI signal status.

OTA Upgrade Functionality

1. A reserved interface for upgrades allows compatibility issue fixes and the addition of more effects via the app.

Power-Off Memory

1. After changing settings and disconnecting from the app, the controller memorizes your preferences and will apply them when powered on again.

Installation

Installing the Light Strip

Where to Start?

1. It is recommended to start installing from the lower-left or lower-right corner of the TV's backside.
2. If your signal source device is located directly below the bottom center of the TV, you can also start from there(this way the signal lines and so on won't have to go long), and just need to calibrate later using the app.

Which Direction to Install?

1. The current installation method involves rotating around in one direction, either clockwise or counterclockwise, returning to the starting point, and then cutting off any remaining light strip.
2. Any direction of installation is acceptable; calibration can be done afterward in the app.

## Can I Continue Wrapping the Remaining Light Strip?

1. No, any excess part must be cut off to prevent issues with color distribution from the control box, leading to inconsistencies between the light strip colors and the displayed image.

How to handle with Corners?

1. If angle connectors are provided in the kit, they can be used directly.

2. If no angle connectors are included, it is recommended to make wide arcs at corners to avoid sharp bends that could damage the electrical connections of the light strip.
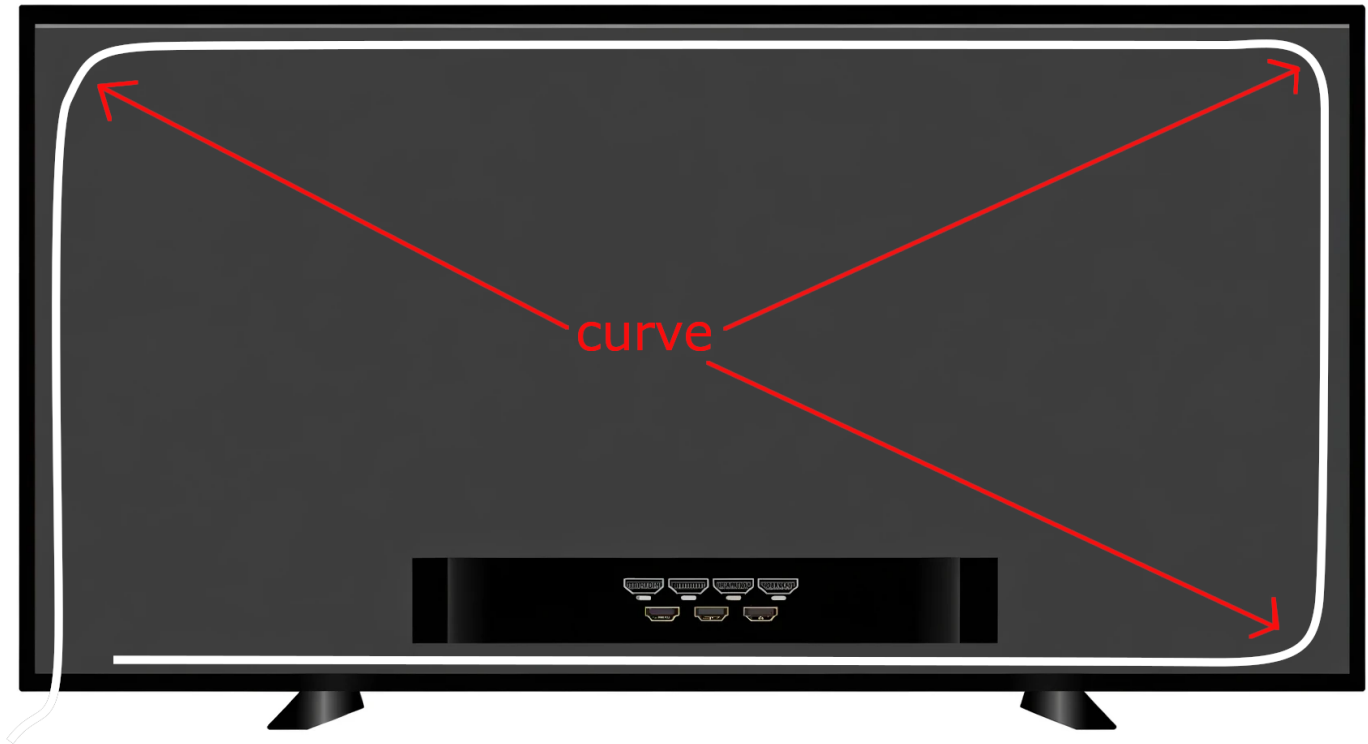
Connecting Devices

some basement knowledge that you should know

1. The sync box requires the image signal to pass through it to collect and analyze the signal and control the light strip to produce the correct colors. Hence, the box has HDMI input and output ports. The image signal enters the box through the HDMI input (BOX side), is processed, and then outputs to the TV or monitor through the output HDMI port.
2. The signal flow is unidirectional; signals can only be sent out from the sync box to the TV/monitor. Smart TVs cannot transmit their internal app video signals back to the box, which is why built-in apps on smart TVs cannot work with our product.
3. Devices that can send signals to the Box include:
   - Game consoles such as PS4/5, Xbox360, Nintendo Switch.
   - Streaming devices like Apple TV, FireStick, ChromeCast.
   - Computers and laptops.

Connecting the Signal Source

- Disconnect the HDMI cable between your desired HDMI signal source and the TV and connect it to the sync box's Box side.

Connecting to the TV/Monitor

- Use the HDMI cable included in the kit to connect one end to the TV's HDMI input port and the other end to the sync box's TV side HDMI port.

Connecting the Light Strip

- Connect the Light side's 3-pin female connector with the light strip's 3-pin male connector (as shown in the illustration). This connection is foolproof, so there's no need to worry about reversing it.

Supply Power to the sync box

- Plug the DC power supply included in the kit into an outlet and connect the round hole DC output side to the sync box's DC slot marked with DC. The box will automatically power on and enter pairing mode.

Starting Configuration

- if all the above steps are correctly performed, the light strip will automatically enter configuration mode. The lighting behind the TV is showing a rotationg effect using white light,this means controller is ready for configuration.
- the controller will count the number of light each time it power on, if the number of light is different from the last time, the controller will enter configuration mode automatically.it's assumed that you has altered the light strip and needs to remap it to the TV screen. If this mechanism does not work or you encounter errors during configuration, don't worry, you can reconfigure from the entrance in the App later.
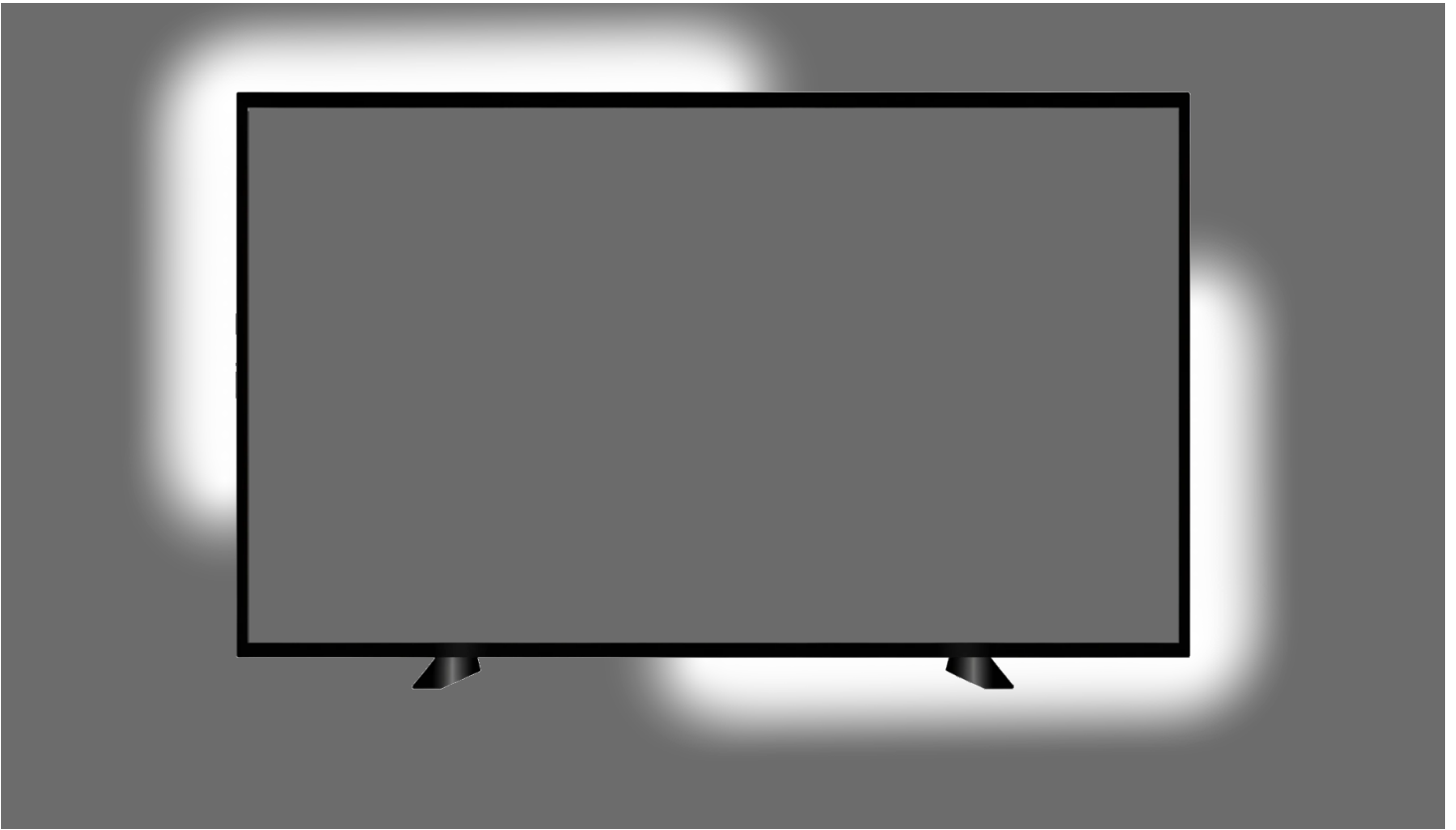
Configuration

Download and Install the "HiLighting" App

- You can search the name "HiLighting" in the AppStore (iOS) or Google Play (Android),then download and install it.No permissions are required during installation.

Turning on Bluetooth on Your Phone

- Enable Bluetooth device in system settings of your phone. For Android, due to the requirement of location information for Bluetooth access (as perofficial Android documentation).
- select "while using the app".
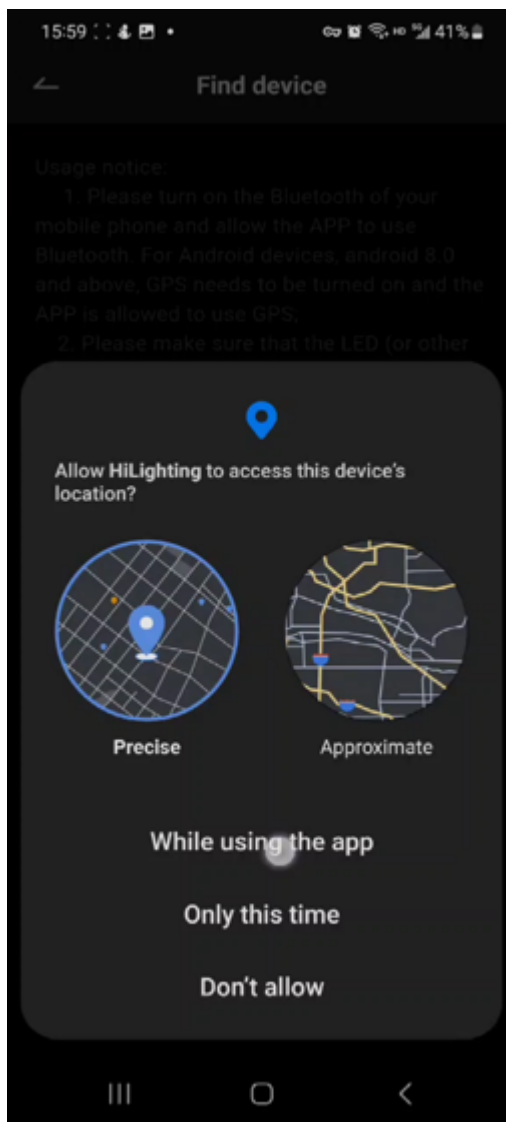
- select "Allow" to allow app to connect controller.

Usage notice:
1. Please turn on the Bluetooth of your mobile phone and allow the APP to use Bluetooth. For Android devices, android 8.0 and above, GPS needs to be turned on and the APP is allowed to use GPS;
2. Please make sure that the LED (or other products, collectively referred to as LED here) has been powered on and is in a connectable state. Due to the limited distance of Bluetooth communication, the signal will weaken with the increase of distance and the increase of obstacles, so please connect near the LED;

Allow **HiLighting** to find, connect to, and determine the relative position of nearby devices?

Allow

Don't allow

Adding Devices

- **Finding Devices**: In the Device tab, click the "+" icon in the single control interface to add devices. The app will begin scanning for nearby devices and display them in a list. If your device "L7178" doesn't appear, try moving closer to the sync box or restarting the box by unplugging it.
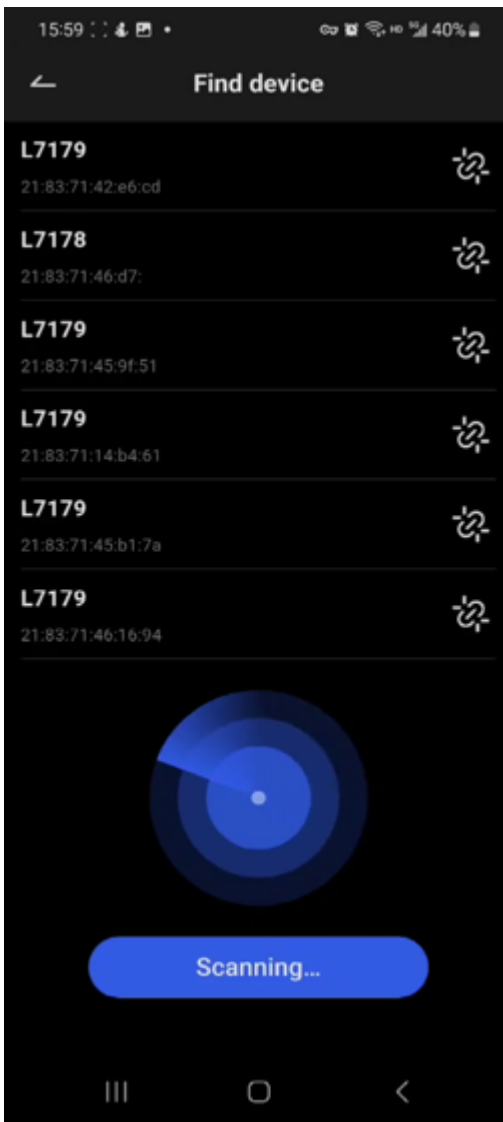
- **Connecting Devices**: Click on the device's bar area or the chain icon to connect. Once connected, the chain icon will become complete,
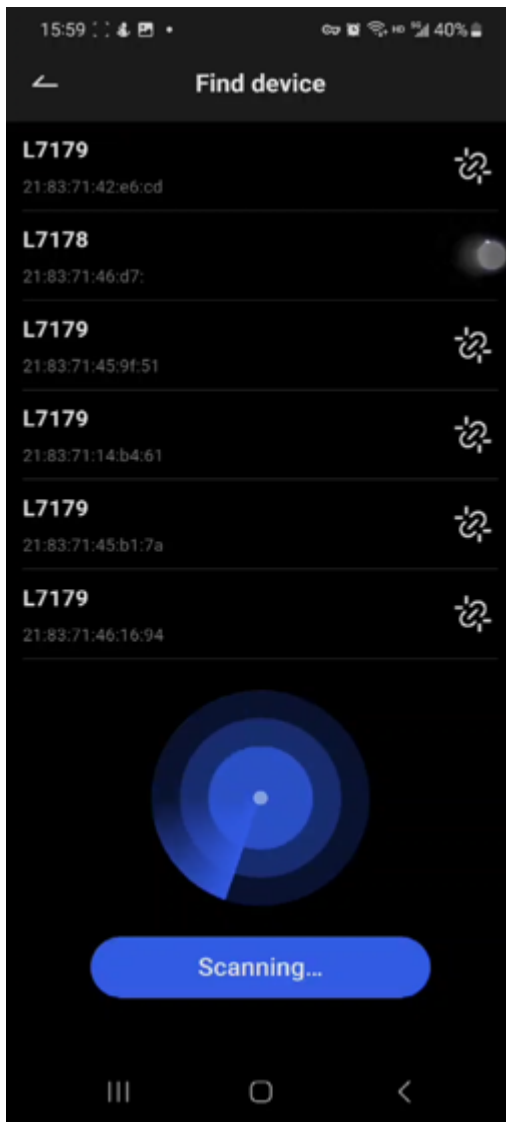
and you can return to the device interface
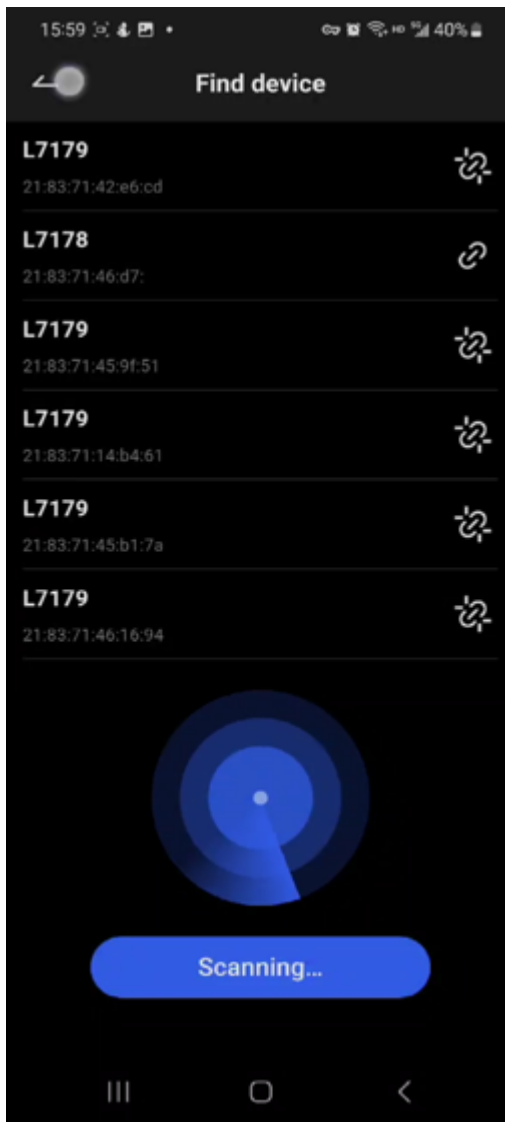
where your device will be listed as connected.Then click the device tap to enter the control interface.
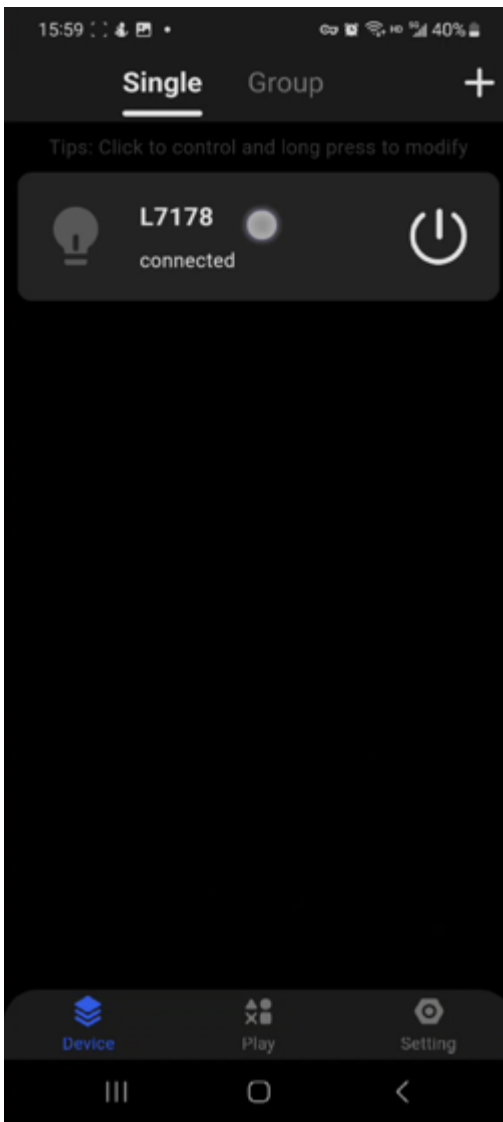
Configuring the Device

- **Immediate Configuration**:
- When you enter the static color page.The app will prompt you to configure immediately. Click the "Configure Now" button to start configuration.
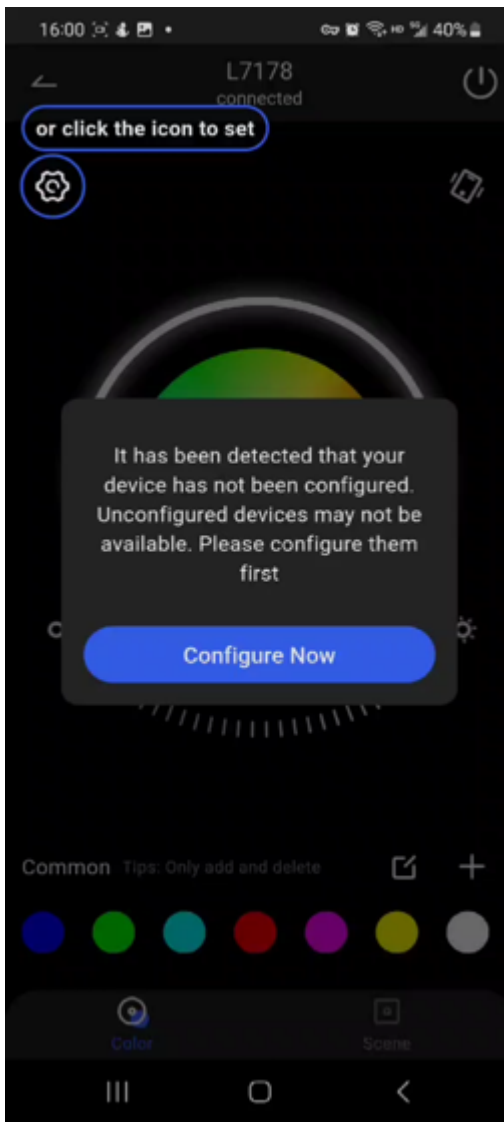
If the pop-up window not showing up,you can manually click the gear icon for two configuration options: Position & Direction Settings and Color Channel Correction.

calibrate Light Strip Direction

- First of all,the controller needs to know the direction of the light strip installation,so it just shows a rotating white animation behind your TV,and let you select according what you see in the app.

Please face the screen and observe the flow direction of the light behind you, please select the icon with the same direction as the light flow below

Flow in a clockwise direction

Flow counterclockwise

exit   next
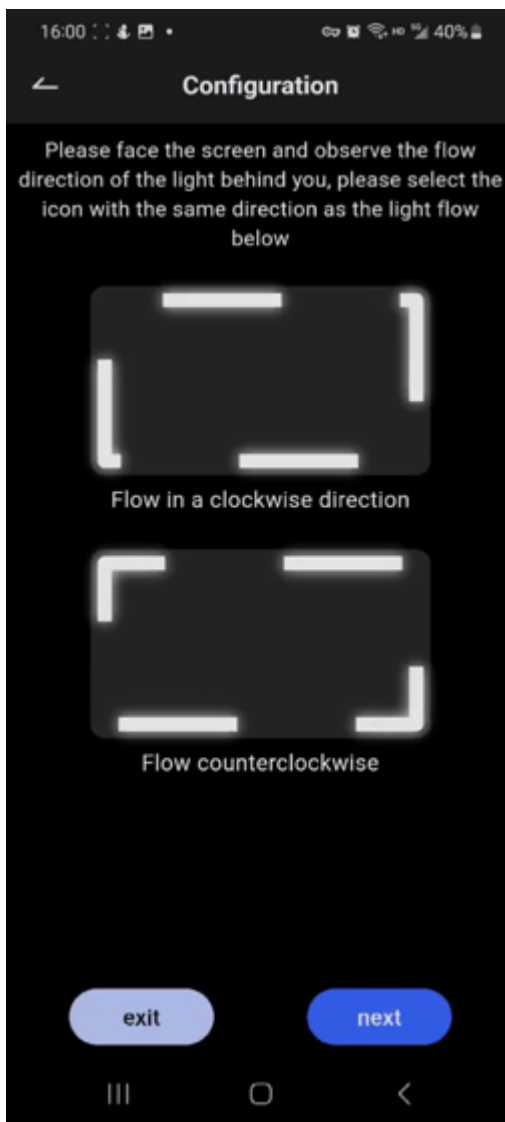
- Observe the rotating animation from in front of your TV,that is where you usualy watch your TV(such as a couch), then you choose "what you see" in the app,from the two choices.

- select the direction according the two images below

- The white rotation animation on the strip light will start over again after you choose,but it won't change the direction of animation(cause it would be confusing).Just make sure the rotating animation of App match the real lighting animation behind your TV,then click "Next" to continue.
- At this point, the controller can know the direction in which you installed the light strip, thus avoiding the situation where the color displayed by the light strip is reversed with the actual picture. If you encounter a situation like this, please come back and change the selection in this step.

calibrate the starting Point of Light Strip Installation

- In the installation steps,we said you can start installation from the left bottom or right bottom of your TV,or from the center of the bottom of your TV,so how does the controller know where you start?Well,that's what we are going to do in this step.If the start point is incorrect,the result color will shift away from the Image.
- The logic is just the same as last step,you control the two buttons in the bottom of the app to make the white dot lighting behind your TV to the position we showed to you in the App.No matter which direction you move your white dot, just make sure the dot is at the bottom right corner at last.

if your white dot is right here,you need to move the dot to the right corner using the too buttons above "previous" and "next".
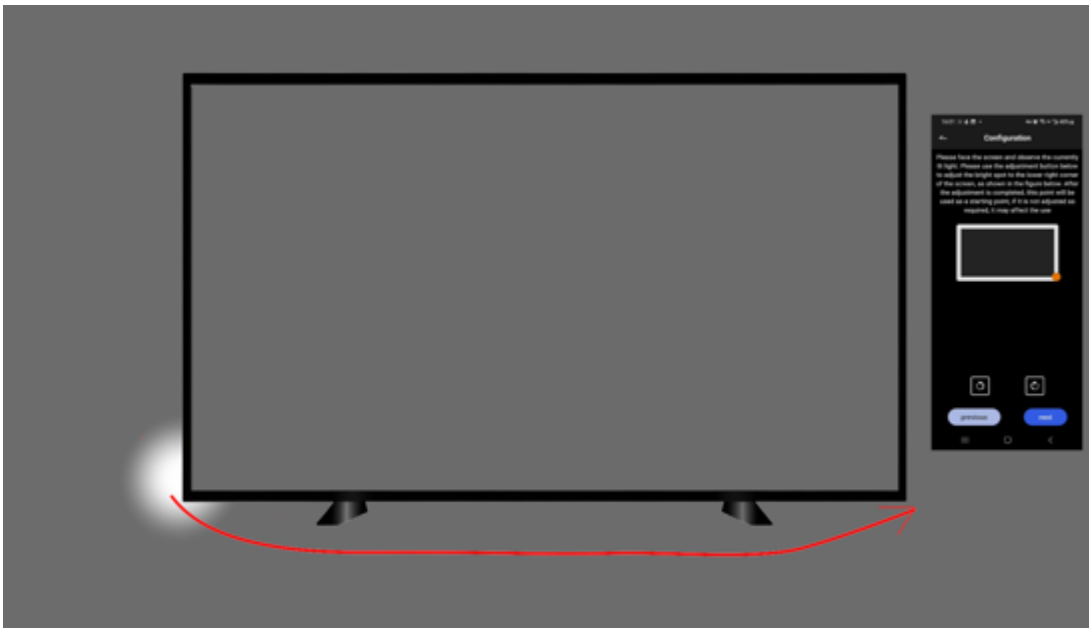
if your white dot is right here as show in the image below,just hit the next button to continue.


- Although the white dot is said to be the "bottom right",you should keep the white dot at the right side instead of the bottom side.
- The controller now knows where you start pasting the light strip.

Fine-Tuning the Lengths of the Light Strip Sides

- Since we use a whole strip of lights to display the colors of up, down, left, and right, we need to know how many lights to allocate for each side is. Although we have automatically allocated the length for you by reading the aspect ratio of your TV(you must power on the TV first), to ensure the most accurate effect, we still provide the following steps for you to fine-tune the length of each side.

- The logic of adjusting the length is very simple. We will light up the lengths we have allocated in the order of right, up, left, and down with different colors. If you find that the length does not exactly cover the corresponding side of the TV, you can use the two buttons provided at the bottom of the app to increase or decrease the length of the corresponding side. We can only adjust the length of one side at a time. If you are not satisfied with the previous results, you need to go back to the previous step to adjust.
- Adjust the number of lit LEDs on each side of the light strip to align perfectly with the corners of the TV. Deviations within three LEDs are acceptable due to overlapping colors at the corners.
- If you find that the calculated position of the light strip is already accurate and does not need to be adjusted, you can directly click "Next" multiple times to skip these four steps, and finally click "Finish" to end the calibration. Here, only the first step (adjusting the number of red LEDs on the right side of the TV) is used as an example.
- When you are on each of the following interfaces, the light strip behind the TV will display the same color as shown on your APP. If you find that the color is different with the color showing by App, don't worry,the purpose of showing different colors for each side is just to facilitate your observation of whether the lit LEDs align with the corners of the TV. You can calibrate it on the color calibration page later, which will not affect the configuration of these steps.
- if you find that the actual color position displayed on the light strip exceeds the corner of the TV (see pictures below), or the actual light from the light strip is far from the top right corner of the TV (see pictures below), you need to try clicking the "Rotate Left" or "Rotate Right" button until the red light on the light strip just alian with the top right corner of the TV (see pictures below).
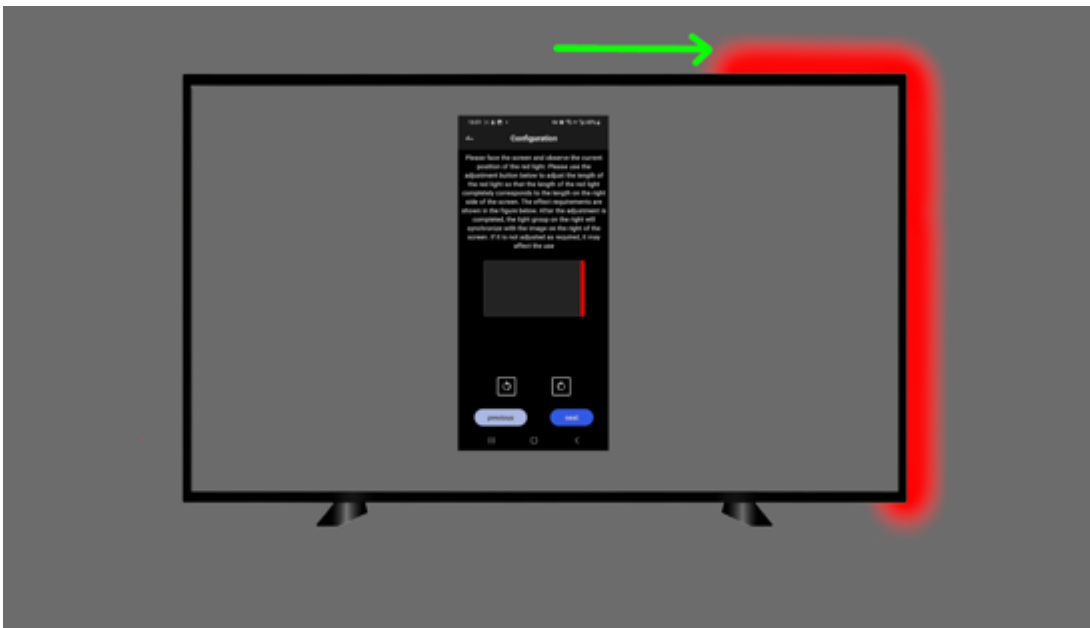
the allocated leds of right side is too much,we need to decrease it.
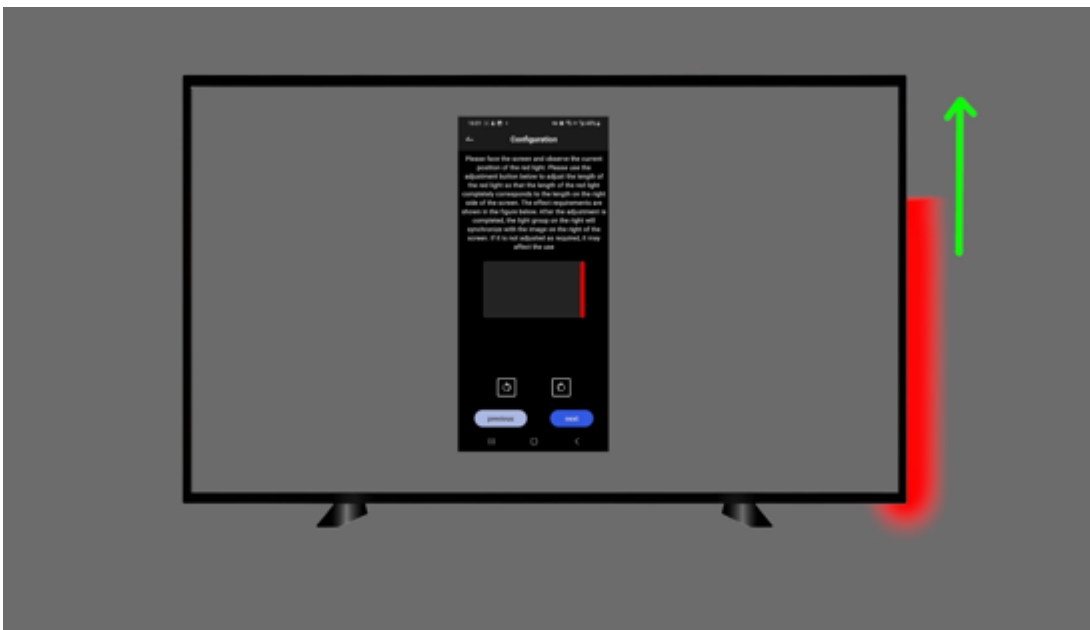
the allocated leds of right side is too less,we need to increase it.
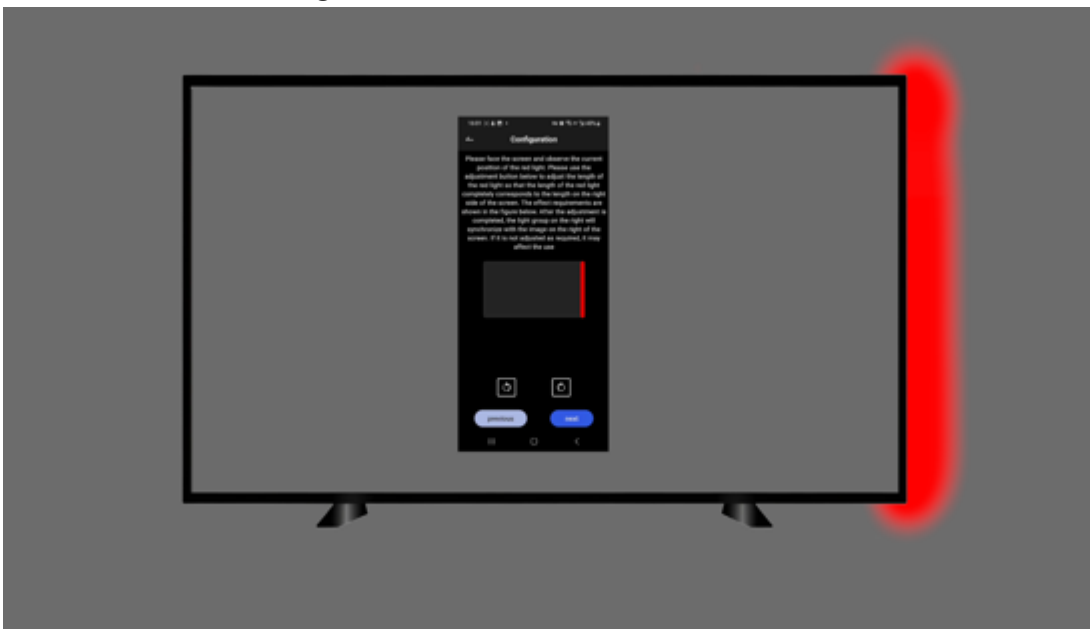
the allocated leds of right side is just right.

- repeat this steps for the other three sides of the TV.
- Tips:If you find it difficult to observe from the front of the TV whether the lights on the back light strip align with the corners of the TV, you can get close to the TV and directly observe the LEDs on the light strip to determine.
- Since our light strip may light up three lights together at once, if you cannot adjust it to align exactly with the corner of the TV, you don't need to worry, a deviation within three lights is acceptable. This is because the colors at the corners overlap for each other(such as right&top\top&left).

Completing the Configuration

- If you are not satisfied with the length adjusted in the previous step, you can click the "Previous" button to go back and continue adjusting. After you have configured the lengths of all four sides, you can click the "Finish" button to complete the configuration process.
- Once all four lengths are adjusted, click "Finish" to complete the process.
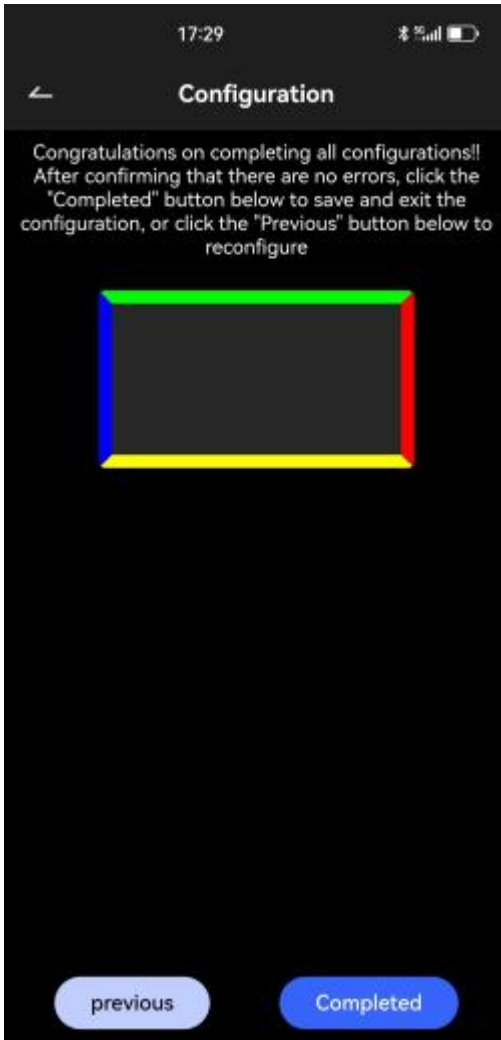
Calibrating Light Strip Colors

- After you complete the configuration, you will return to the static color interface. At this time, you can click on the "Color Wheel" or directly click on the "Red, Green, Blue" pure colors in "Common" colors to check whether the color displayed by the light strip is the same as the color you selected.
- if your lighting color mismatches the color you selected, you can enter the color calibration interface to calibrate the color by click:Gear button->Color channel correction.
- "Choose what you see".This is the same as all other steps.When you choose ,the light will not change.

- When you enter the color calibration interface, three color buttons will be displayed. You can choose according to the color you see on the light strip.After you select a color button, the button on the APP will automatically turn gray, indicating that you have selected this color.
- For example,if the current light strip displays green, you need to select green button on the APP interface,then hit "next" to continue.

- The light will change to next channel for you to deside,just repeat what we do in the last step.
- Only two selections are needed, as the app will infer the third color.
- If you choose incorrectly, you can click the correct color again. As shown in the picture below, if you see red on the light strip and select red on the APP, red will turn gray to indicate it has been selected.
- You can click the "Finish" button to end the calibration.

After Calibration

- Once calibration is complete, choose a mode optimized for various scenes under the "Scenes" page, or manually select a favorite color in the "Colors" interface. Note that the TV sync feature only activates when a scene is selected.

APP Mode Descriptions

Scenes

Scene Modes Table

Scene Modes Table

Sequence Number	Category	English Name	Scene Code	Description
1	Screen Sync	Auto	0x11	Automatically adjusts hue, saturation, and brightness to match the screen
2	-	HighSaturation	0x13	Enhances saturation on top of normal changes for a more vivid picture
3	-	LowSaturation	0x14	Reduces saturation on top of normal changes for less vividness
4	-	HueReverse	0x15	Reverses hue on top of normal changes to enhance contrast with the background
5	-	ColdHueOnly	0x22	Selects only from cool hues, with normal changes in brightness and contrast
6	-	WarmHueOnly	0x21	Selects only from warm hues, with normal changes in brightness and contrast
7	-	FixedLightness	0x12	Hue and contrast follow the screen while brightness is fixed, reducing flicker effect and being more eye-friendly

Sequence Number	Category	English Name	Scene Code	Description
8	-	SlowlyChange	0x32	Changes colors more gently compared to normal, suitable for scenic settings
9	-	RapidlyChange	0x31	Changes colors very quickly compared to normal, suitable for action-packed scenes like gunfights and car chases
10	Audio & Image Sync	MusicSync(Softly)	0x41	Hue follows the screen while brightness changes based on beats of music, suitable for soft concerts
11	-	MusicSync(Normal)	0x42	The light will map the spectrum of the music
12	-	MusicSync(Rapidly)	0x43	Same as the MusicSync(Softly) just add more density
13	Fixed Colors	ColdWhite	0x0F	Brightness varies with the screen, but the color is fixed as cold white, which is eye-friendly
14	-	NormalWhite	0x0E	Same as above, but the fixed color is normal white
15	-	WarmWhite	0x0D	Same as above, but the fixed color is warm white
16	-	RED	0X01	Color is fixed, brightness follows the screen
17	-	ORANGE	0X02	Same as above, color fixed as orange
18	-	YELLOW	0X03	Same as above, color fixed as yellow
19	-	SPRING_GREEN	0X04	Same as above, color fixed as

Sequence Number	Category	English Name	Scene Code	Description
				spring green
20	-	GREEN	0X05	Same as above, color fixed as green
21	-	TURQUOISE	0X06	Same as above, color fixed as turquoise
22	-	CYAN	0X07	Same as above, color fixed as cyan
23	-	OCEAN	0X08	Same as above, color fixed as ocean blue
24	-	BLUE	0X09	Same as above, color fixed as blue
25	-	WIOLET	0X0A	Same as above, color fixed as violet
26	-	MAGENTA	0X0B	Same as above, color fixed as magenta
27	-	RASPBERRY	0X0C	Same as above, color fixed as raspberry

Adjusting Music Sensitivity

- When selecting modes under "Audio&Image," adjust the music feedback sensitivity using the slider at the bottom of the APP. Increase sensitivity by sliding to the right or decrease it by sliding to the left.

Contant us

if you have more question about the product,please contact us by the following ways:

support@jianjiaweidu.com

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.