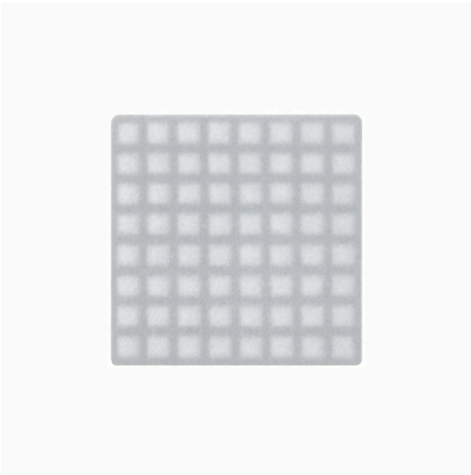


Chain RGB

SKU:U218





Description

The Chain RGB is a **full-color LED dot matrix display node** in the M5Stack Chain series. It features an 8×8 pixel RGB LED dot matrix unit, supporting **individual pixel control**, batch pixel writing, and high-speed full-screen buffer refresh, enabling smooth and detailed dynamic lighting effects and pixel animations. For character display, the Chain RGB comes with a built-in ASCII character rendering and font engine, supporting scrolling string display with freely specifiable colors or built-in color gradient effects, catering to diverse visual expression needs. The device also offers multi-level brightness adjustment and multi-angle screen rotation (0°/90°/180°/270°), adapting to various installation and viewing angles. It is suitable for applications such as **color pixel light art, desktop ambiance lighting, creative signage, and smart device status indicators**.

On the hardware side, the Chain RGB is powered by an **STM32G031G8U6** microcontroller, utilizes a UART serial daisy-chain communication protocol, and features two HY2.0-4P expansion ports for flexible connection of additional Chain series modules, helping to build rich, interactive lighting systems.

LED Brightness

Prolonged high-brightness driving may damage the LEDs. It is recommended to use 50% brightness to reduce heat and power consumption.

Features

- M5Stack Chain series
- Full-color LED dot matrix display node
- STM32G031G8U6 core MCU
- 8 x 8 RGB LED dot matrix display unit
- Built-in ASCII character font engine for character rendering
- Supports RGB565 individual pixel control and batch writing
- 64-pixel RGB565 frame buffer for full-screen refresh
- Custom patterns, scrolling text display (maximum 32 characters per node)
- Scrolling text supports fixed color and color gradient effects
- Supports screen rotation: 0°/90°/180°/270°
- UART serial daisy-chain communication protocol
- 2 x HY2.0-4P expansion ports for connecting Chain series devices

Includes

- 1 x Chain RGB
- 1 x Chain Bridge

Applications

- Pixel light art

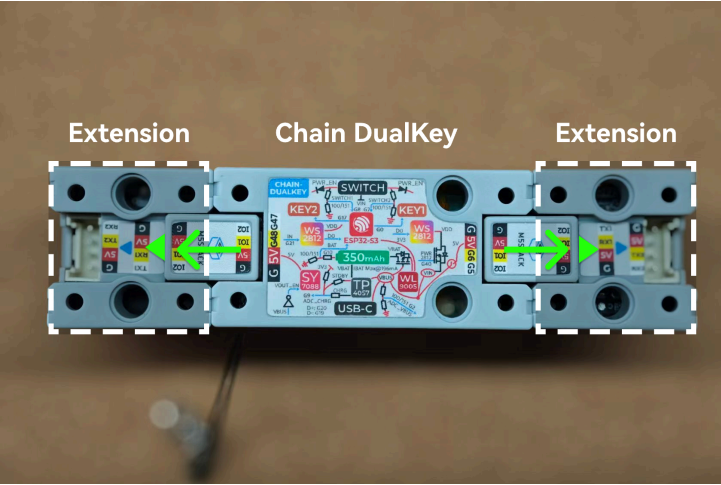
- Desktop ambient lighting
- Creative signage
- Smart device status indicators

Specifications

Specification	Parameter
MCU	STM32G031G8U6
Input Power	DC 5V
Communication	UART 115200bps @ 8N1
Interface	2 x HY2.0-4P
RGB LED	64 x WS2812E
Color Format	RGB565
Standby Power	DC 5V@13.46mA
Working Power	DC 5V@127.51mA (max brightness white)
Working Temp	0 ~ 40°C
Product Size	24.0 x 24.0 x 16.0mm
Product Weight	6.5g
Package Size	138.0 x 93.0 x 11.0mm
Gross Weight	13.5g

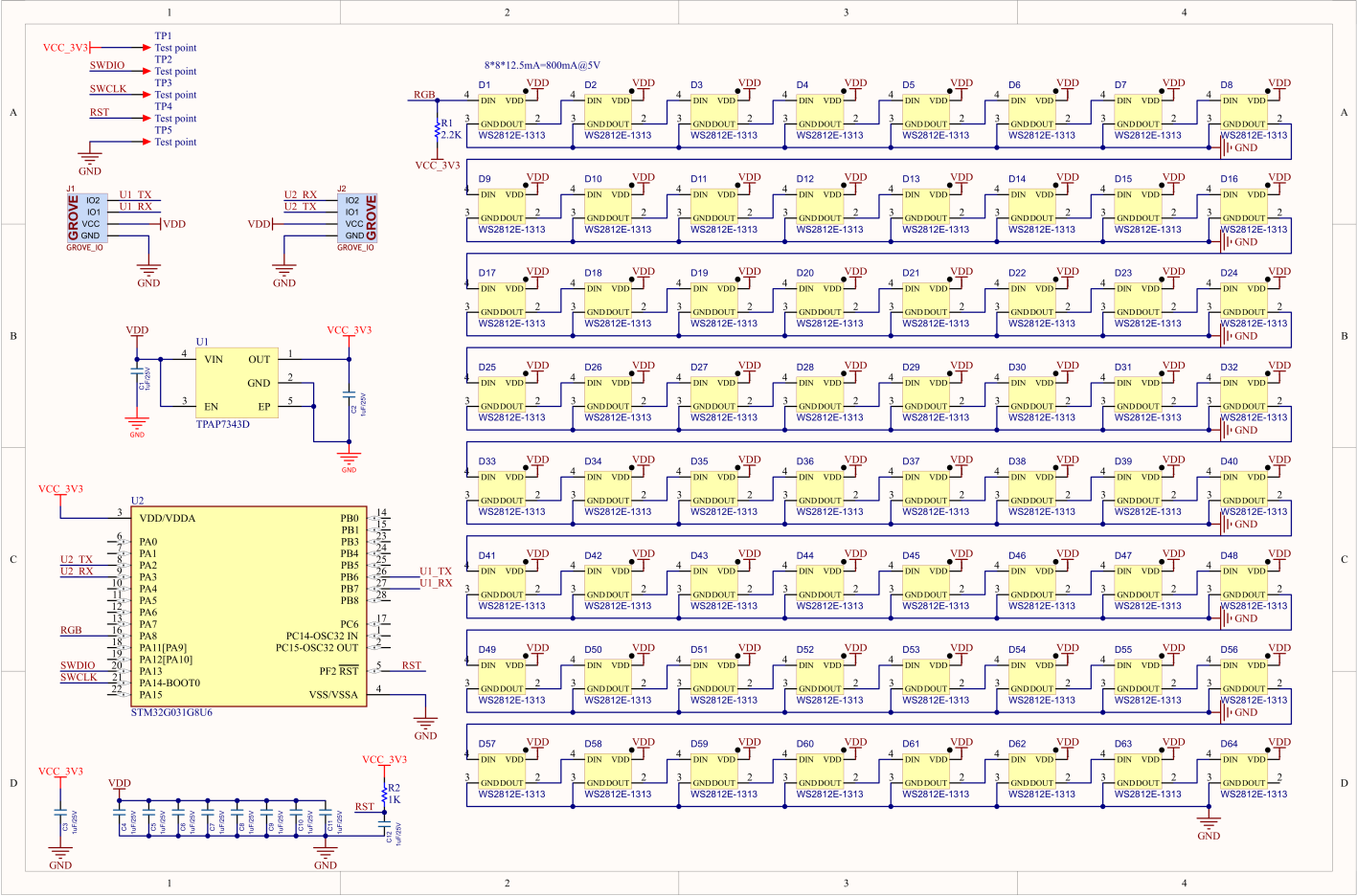
Learn

Use a Chain Bridge connector to connect the main controller Chain DualKey and each Chain series input device. Pay attention to the direction: the triangle arrow should point outward from the main controller Chain DualKey, as shown in the figure:



Schematics

- [Chain RGB Schematics PDF](#)



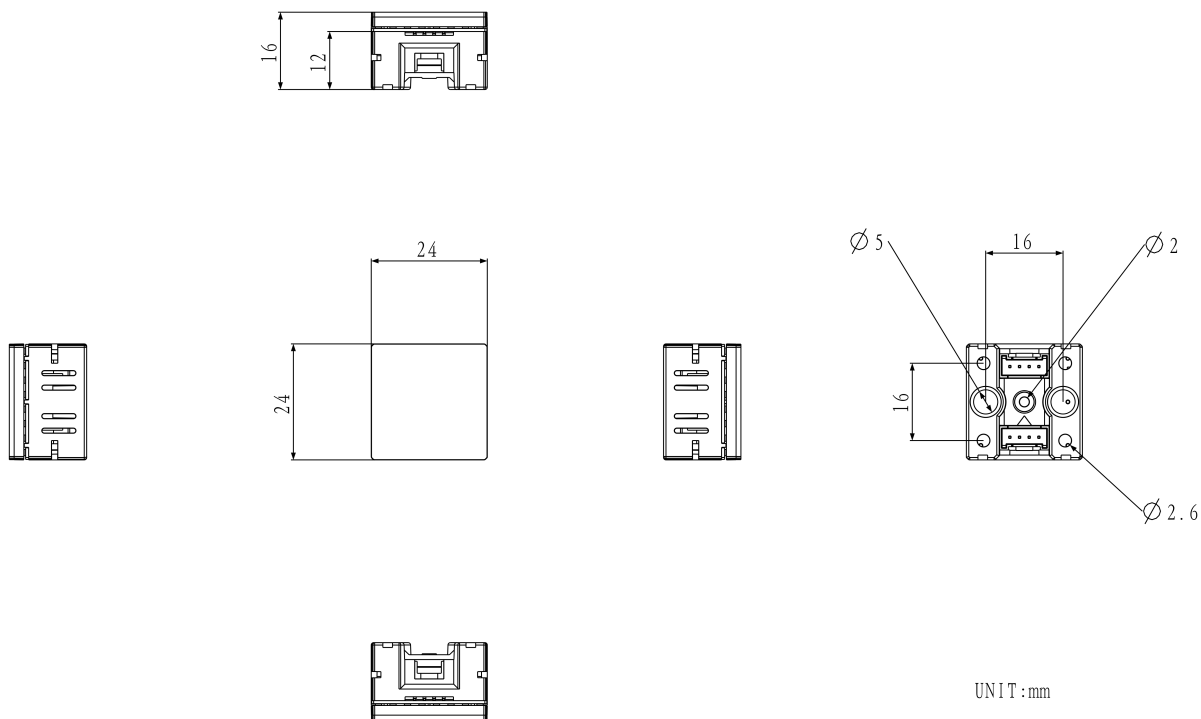
PinMap

UART

STM32G031	PB6	PB7	PA2	PA3
UART1	TXD1	RXD1		
UART2			TXD2	RXD2

Model Size

- Chain RGB Model Size PDF



Softwares

Arduino

- [Chain RGB Arduino Guide](#)
- [Chain RGB Arduino Library](#)

Internal Firmware

- [Chain RGB Internal Firmware](#)

Protocol

[View Protocol](#)

- [Chain RGB Communication Protocol PDF](#)

Video

- [Chain RGB Product Introduction and Feature Demonstration](#)

[U218_Chain_RGB_video_EN.mp4](#)