


WAVESHARE RGB-Matrix-P4-64x32 Full Color LED Matrix Panel



WAVESHARE RGB-Matrix-P4-64×32 Full Color LED Matrix Panel Instruction Manual

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WAVESHARE RGB-Matrix-P4-64×32 Full Color LED Matrix Panel



Specifications:

- **Dimensions:** 64 x 32 pixels
- **Pitch:** 4mm
- **Pixel Form:** RGB LED
- **Viewing Angle:** Control Type
- **Driving Header:** VH4 header input
- **Power Supply:** 5V / 4A
- **Power:** 20W

Product Usage Instructions

Overview:

The RGB-Matrix-P4-64×32 is a bare screen that requires a main control board like Raspberry Pi, ESP32, or Arduino for display.

Features:

- RGB LED, 64 x 32=2048 DOTS with 4mm pitch
- Supports Raspberry Pi and Arduino
- Provides open-source demos and tutorials
- Suitable for makers or electronics enthusiasts for learning or DIY projects

Usage Scenarios:

Ideal for DIY Maker Desktop or Wall Mount Display, Signboard, Environment Monitor, etc.

- **Raspberry Pi Instructions:**

Refer to the GitHub information for Demo and wiring reference

User Guides for Arduino Mega:

- **Hardware Connection:**

Prepare materials: RGB-Matrix-P3-64×32, Arduino Mega (purchase separately)

Follow the hardware connection diagram

- **Software Settings:**

Download example and configure software settings for RGB text display

Working with ESP32:

- **Preparation:**

Materials needed: RGB-Matrix-P4-64×32, NodeMCU-32S (not included)

- **Hardware Connection:**

Follow hardware connection diagram and software settings after downloading demo

Working with Pico:

- **Preparation:**

Materials required: RGB-Matrix-P4-64×32, Raspberry Pi Pico (purchase separately)

- **Hardware Connection:**

Refer to the provided diagram and set up software environment after connecting wires

FAQ:

1. Q: Can I use a different power supply voltage for the display screen?

A: No, the power supply ports (VCC and GND) of the display screen are specifically for 5V power supply. Using other voltages may damage the screen.

RGB-Matrix-P4-64×32

This product is a bare screen and needs to be displayed with the main control board such as Raspberry Pi, ESP32, and Arduino. For details, please refer to the list.

RGB-Matrix-P4-64x32



RGB LED, 64 x 32=2048 DOTS

4mm Pitch

Overview

Introduction

- This product is a 64 x 32 RGB LED matrix panel, with 2048 RGB LEDs onboard, 4mm pitch, supports Raspberry Pi and Arduino, etc.
- It provides supporting open-source demos and tutorials, suitable for makers or electronics Enthusiasts to start learning, or DIY secondary development into other desktop or wall-mounted display applications

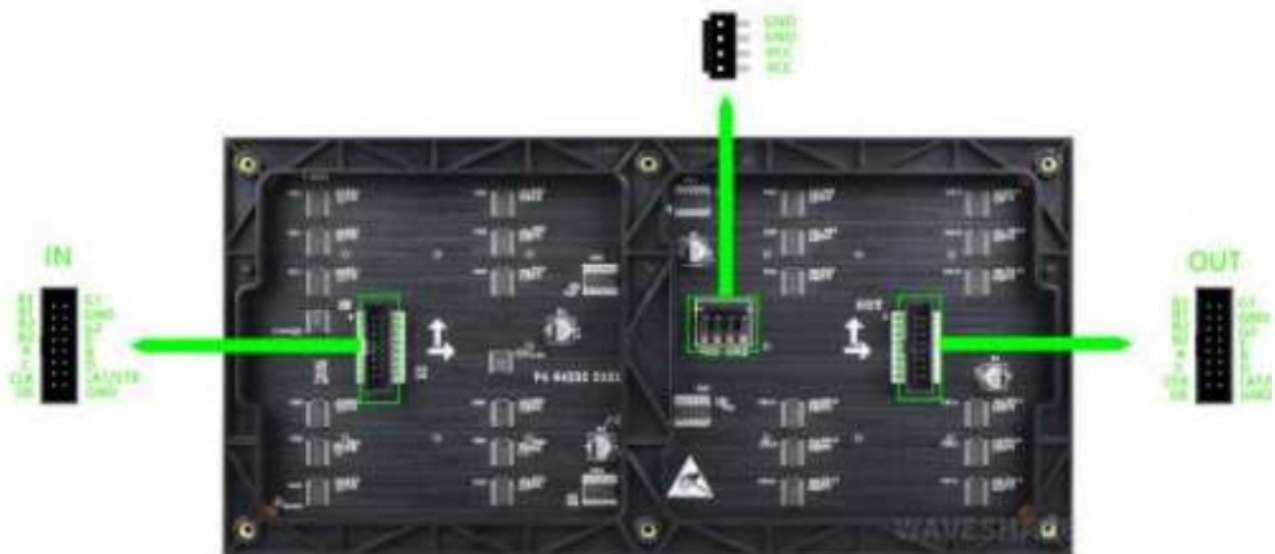
Features

- 2048 individual RGB LEDs, full-color display, adjustable brightness.
- 64 × 32 pixels, 4mm pitch, allows displaying text, colorful images, or animation.
- The dimension is 256 x 128mm, which is moderate and suitable for DIY desktop display or wall mount display.
- Onboard two HUB75 headers, one for controller data input, one for output, and chain support.
- Provides open-source development resources and tutorials, for use with Raspberry Pi, Arduino, and so on.

Specifications

DIMENSIONS	256mm × 128mm
PIXELS	64 × 32=2048 DOTS
PITCH	4mm
PIXEL FORM	1R1G1B
VIEWING ANGLE	≥160°
CONTROL TYPE	synchronization
DRIVING	1/16 scan
HEADER	HUB75
POWER SUPPLY	5V / 4A (VH4 header input)
POWER	≤20W

Header Definition

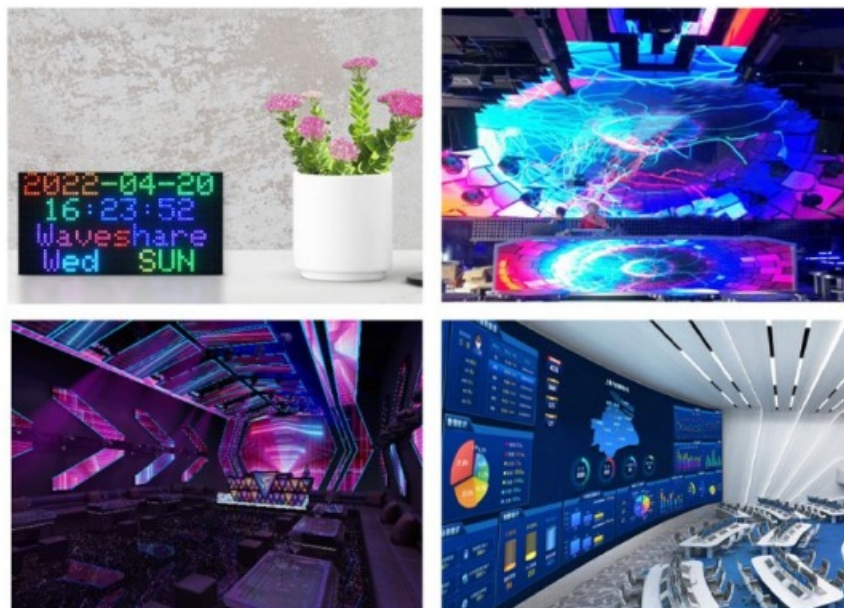


PIN	DESCRIPTION		PIN	DESCRIPTION
VCC	5V power input		GND	Ground
R1	R higher bit data		R2	R lower bit data
G1	G higher bit data		G2	G lower bit data
B1	B higher bit data		B2	B lower bit data
A	A line selection		B	B line selection
C	C line selection		D	D line selection
E	E line selection		CLK	clock input
LAT/STB	latch pin		OE	output enable

Note: The power supply ports (VCC and GND) of the display screen are 5V power supply, do not connect to other power supply voltages, so as not to burn the display screen.

Usage Scenarios

DIY Maker Desktop Or Wall Mount Display, Signboard, Environment Monitor...



Raspberry Pi Instructions

Please refer to the information: Demo [🔗](#), wiring reference [🔗](#)

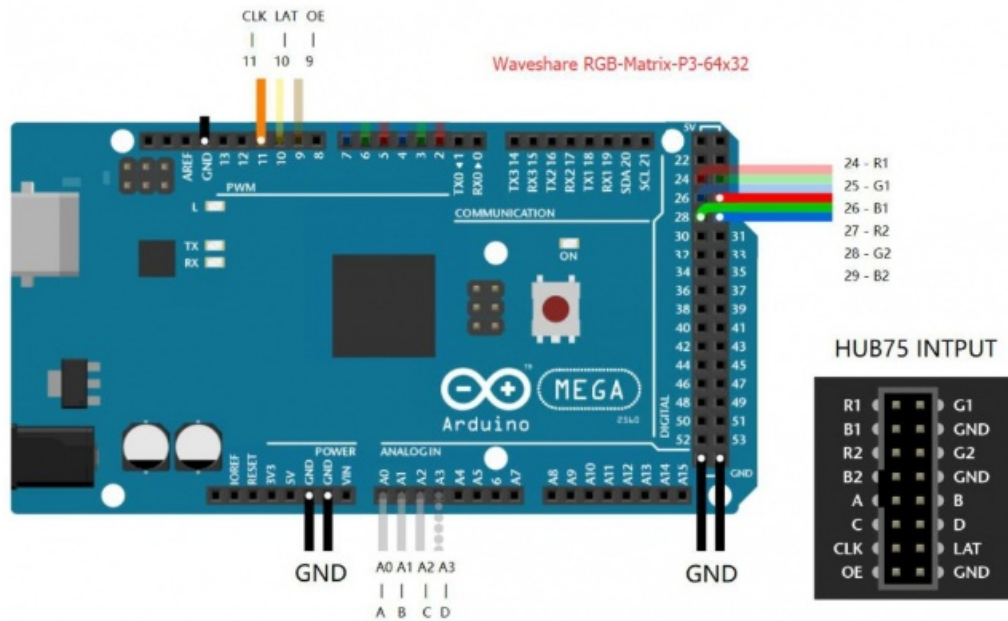
User Guides for Arduino Mega

Hardware Connection Prepare materials

- RGB-Matrix-P3-64×32

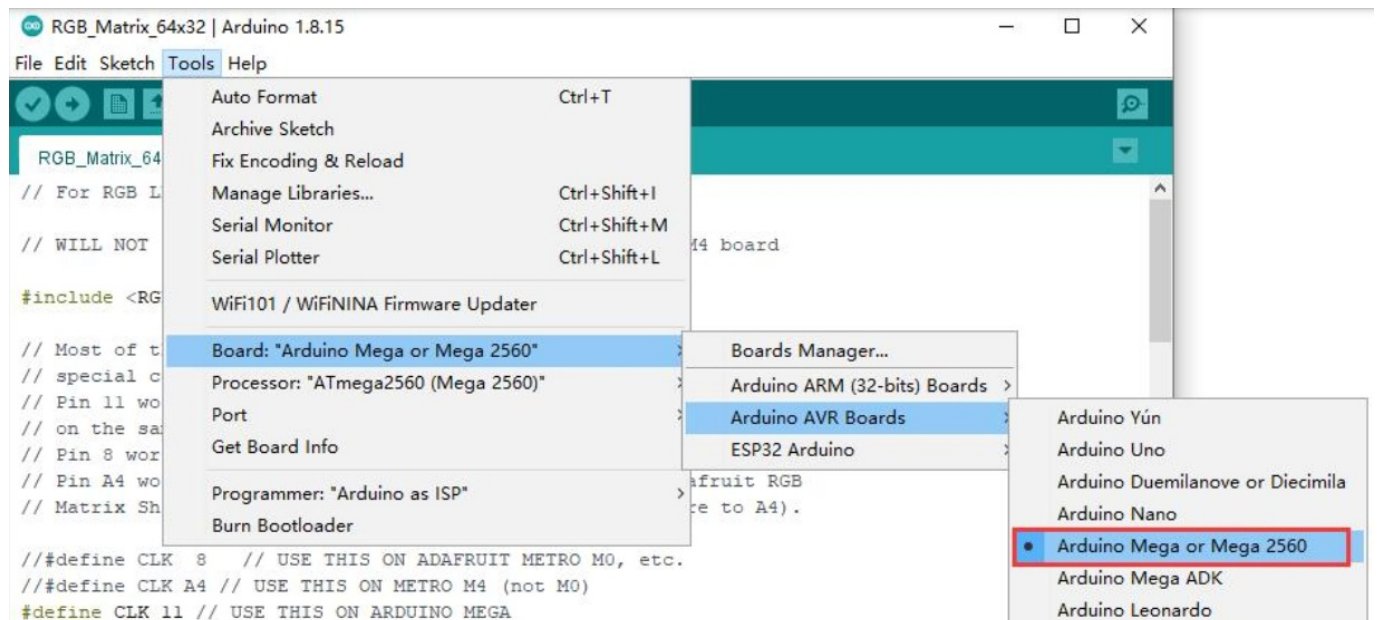
- Arduino Mega (please purchase it separately)

Hardware Connection Diagram



Software Settings

- Download example [📄](#)
- After connecting the wires according to the hardware connection diagram, the software settings are as follows:



```

#define OE 9
#define LAT 10
#define A A0
#define B A1
#define C A2
#define D A3

RGBmatrixPanel matrix(A, B, C, D, CLK, LAT, OE, false, 64);

void setup() {
  matrix.begin();
}

```

Arduino Leonardo ETH
 Arduino Micro
 Arduino Esplora
 Arduino Mini
 Arduino Ethernet
 Arduino Fio
 Arduino BT
 LilyPad Arduino USB
 LilyPad Arduino
 Arduino Pro or Pro Mini
 Arduino NG or older
 Arduino Robot Control
 Arduino Robot Motor
 Arduino Gemma
 Adafruit Circuit Playground
 Arduino Yún Mini
 Arduino Industrial 101
 Linino One
 Arduino Uno WiFi

RGB text display



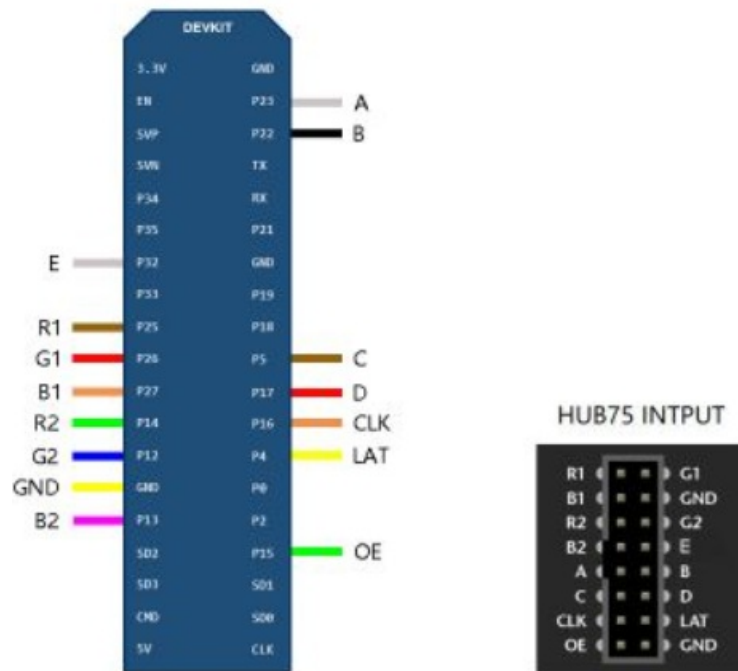
The effect of running the instance is shown in the following figure: [Function Description]

- UI:
- Can display icons
- Can display text content such as text and numbers

Working with ESP32

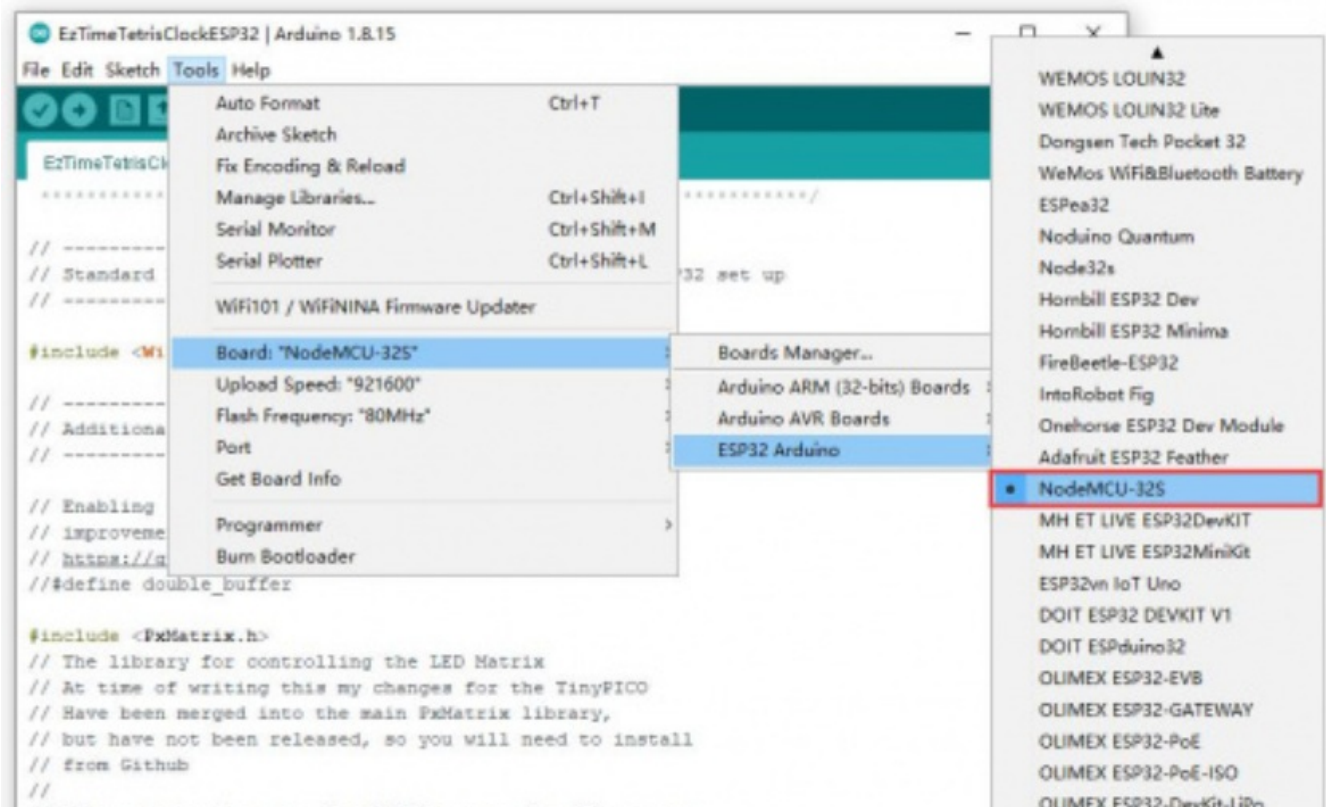
- **Preparation**
 - RGB-Matrix-P4-64x32
- NodeMCU-32S (not included)

Hardware Connection



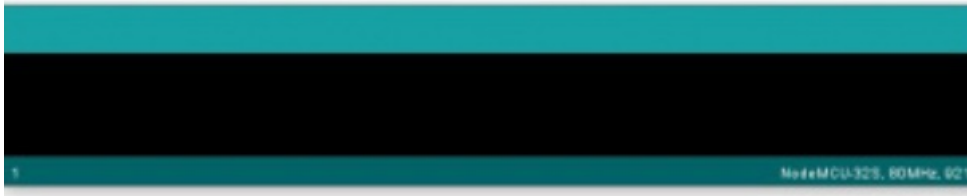
Software Setting

- Download the demo [\[Link\]](#).
- Copy the folder under libraries in AuroraDemo to the libraries in the installation directory of the Arduino IDE
- After connecting the wires according to the hardware connection diagram, the software cotija are ac follows.



```
#include <PxMatrix.h>
// The library for controlling the LED Matrix
// At time of writing this my changes for the TinyPICO
// Have been merged into the main PxMatrix library,
// but have not been released, so you will need to install
// from Github
//
// If you are using a regular ESP32 you may be able to use
// the library manager version
// https://github.com/2dom/PxMatrix

// Adafruit GFX library is a dependency for the PxMatrix Library
// Can be installed from the library manager
// https://github.com/adafruit/Adafruit-GFX-Library
```



DOIT ESPduino32
 OLIMEX ESP32-EVB
 OLIMEX ESP32-GATEWAY
 OLIMEX ESP32-PoE
 OLIMEX ESP32-PoE-ISO
 OLIMEX ESP32-DevKit-LiPo
 ThaiEasyElec's ESPino32
 M5Stack-Core-ESP32
 M5Stack-FIRE
 M5Stick-C
 M5Stack-ATOM
 M5Stack-Core2
 M5Stack-Timer-CAM
 M5Stack-CoreInk
 ODROID ESP32
 Heltec WiFi Kit 32
 Heltec WiFi LoRa 32
 Heltec WiFi LoRa 32(V2)

Note: if you don't have the corresponding board, you can operate as below:

Click on file →> add board manager address -> enter: https://raw.githubusercontent.com/espressif/arduino-esp32/gh-pages/package_esp32_index.json ->

Perform

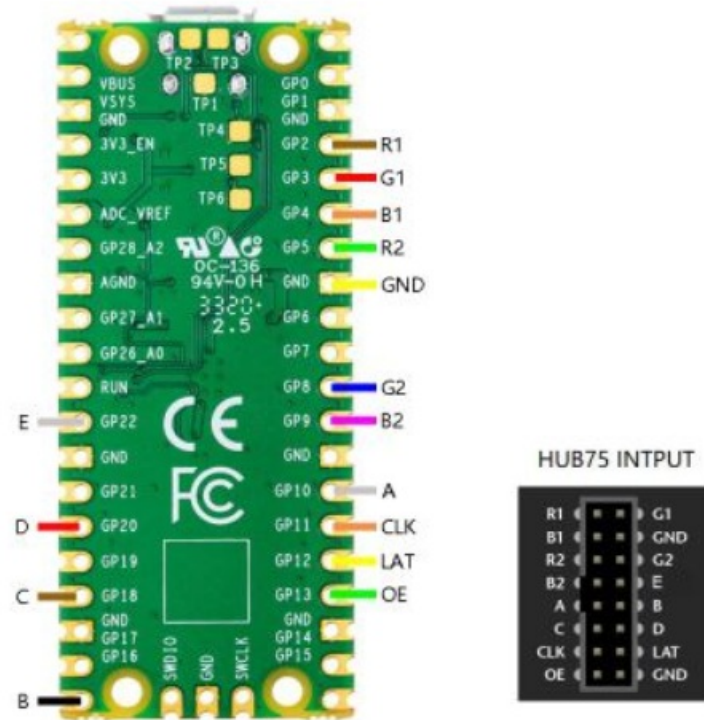
SimpleTestShapes: Display basic shapes PatternPlasma: Displays cool plasma patterns BouncingSquares: Show bouncing squares AuroraDemo: Simple example showing various animation effects #There is an open source project on GitHub: ESP32-HUB75-MatrixPanel- I2S-DM A, which has a more detailed introduction.

Working with Pico

Hardware Connection Preparation

- RGB-Matrix-P4-64×32
- Raspberry Pi Pico (It must be purchased separately. If not, it is recommended to buy one with soldered pin headers, which is convenient for wiring.)

Diagram

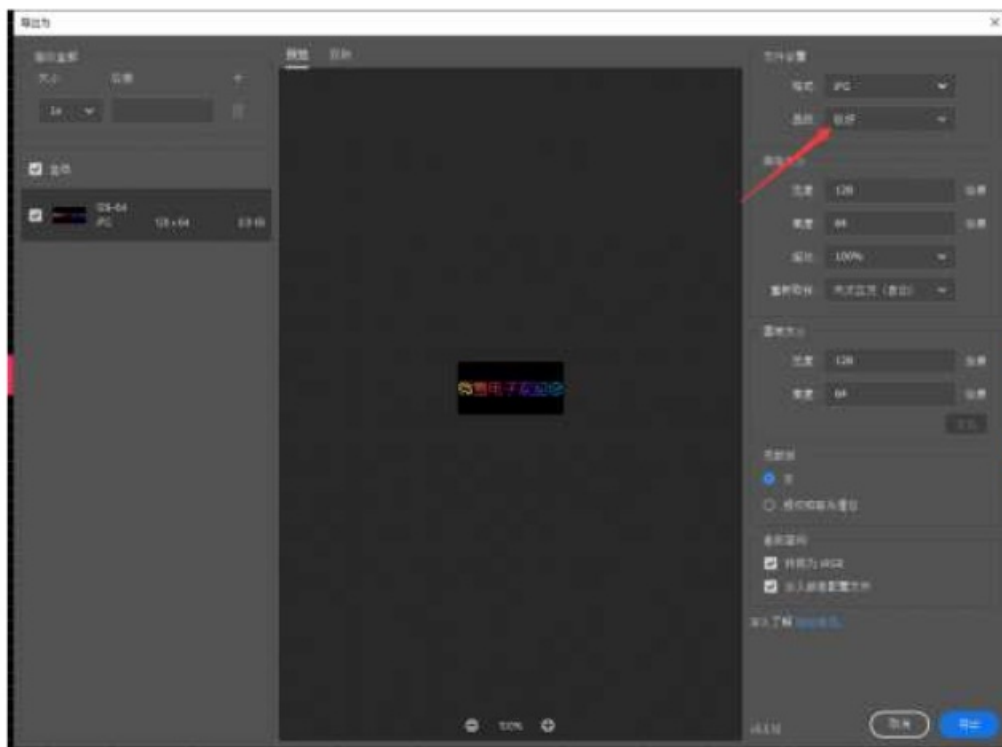


Software Setting

- Download the demo [\[link\]](#)
- After connecting the wire according to the diagram, you can set the software: environment building [\[link\]](#)

Performance

- After setting up the CircuitPython environment, you can copy all the contents of the CircuitPython directory in the downloaded Pico example to the recognized USB flash driver, and you can run the example (there are 16 demos in this code).
- The PSD folder is a file in “.psd” format, which can be used to modify the text image that needs to be moved. The modified image needs to be saved as “Excellent” and the format needs to be converted to “BMP” format.



【Function】

- Display text
- Set scrolling effect










Resources

- Demo Samples [🔗](#)
- 2D Drawing [🔗](#)
- windows-arduino-1.8.15 g Support [🔗](#)

Support If you require technical support, please go to the page and open a ticket.

Documents / Resources

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-  [rpi-rgb-led-matrix/wiring.md at master · hzeller/rpi-rgb-led-matrix · GitHub](#)
-  [File:Arduino-Mega-hw-connect-RGB-Matrix.jpg - Waveshare Wiki](#)
-  [File:Arduino-Mega-RGB-Matrix-EN.jpg - Waveshare Wiki](#)
-  [File:RGB-Matrix-P3-64x32-details-03.png - Waveshare Wiki](#)
-  [File:RGB-Matrix-P3-64x32-details-07.jpg - Waveshare Wiki](#)
-  [File:RGB-Matrix-P3-64x32-p.png - Waveshare Wiki](#)
-  [File:RGB-Matrix-P3-64x322.png - Waveshare Wiki](#)
-  [File:RGB-Matrix-P4-64x32 ESP32.jpg - Waveshare Wiki](#)
-  [File:RGB-Matrix-P4-64x32 ESP3202.jpg - Waveshare Wiki](#)
-  [File:RGB-Matrix-P4-64x32 Pico.jpg - Waveshare Wiki](#)
-  [File:RGB-Matrix-P4-64x32 Pico02.png - Waveshare Wiki](#)
-  [Waveshare Wiki](#)
-  [Pico-CircuitPython-Manual - Waveshare Wiki](#)
- [User Manual](#)

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