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› XYGStudy RGB-Matrix-P4-64x32 LED Matrix Panel User Manual

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Model: RGB-Matrix-P4-64x32

1. INTRODUCTION

The XYGStudy RGB-Matrix-P4-64x32 is a full-color LED matrix panel designed for displaying text, colorful images, and animations. It features 2048 individual RGB LEDs arranged in a 64x32 pixel grid with a 4mm pitch. This panel offers adjustable brightness and is compatible with various microcontrollers, including Raspberry Pi and Arduino platforms.

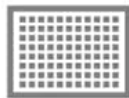
64×32 RGB LED Matrix Panel

2048 Individual RGB LEDs, 4mm Pitch

Supports Raspberry Pi And Arduino...



256×128 mm



64×32 pixels



FOV $\geq 160^\circ$

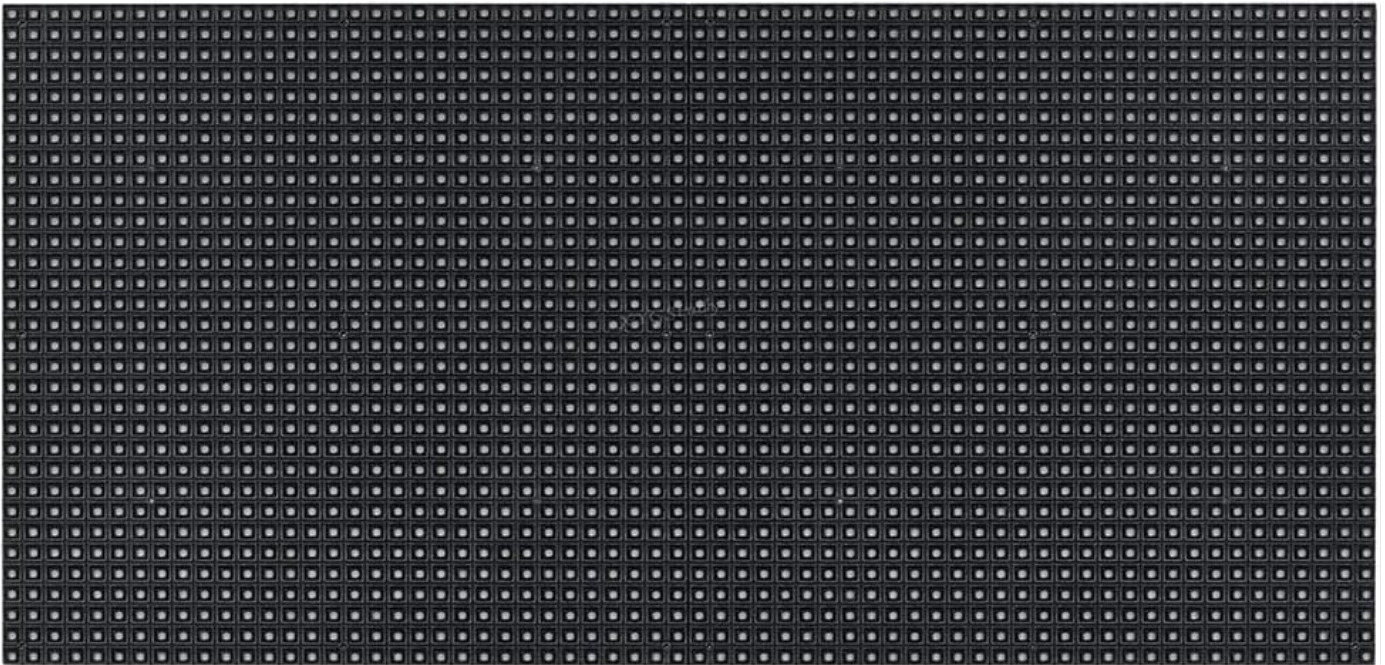


RGB full-color



2048 LEDs

The RGB-Matrix-P4-64x32 LED Matrix Panel, showcasing its display capabilities.



A detailed view of the LED matrix surface, highlighting the 4mm pixel pitch.

2. PACKAGE CONTENTS

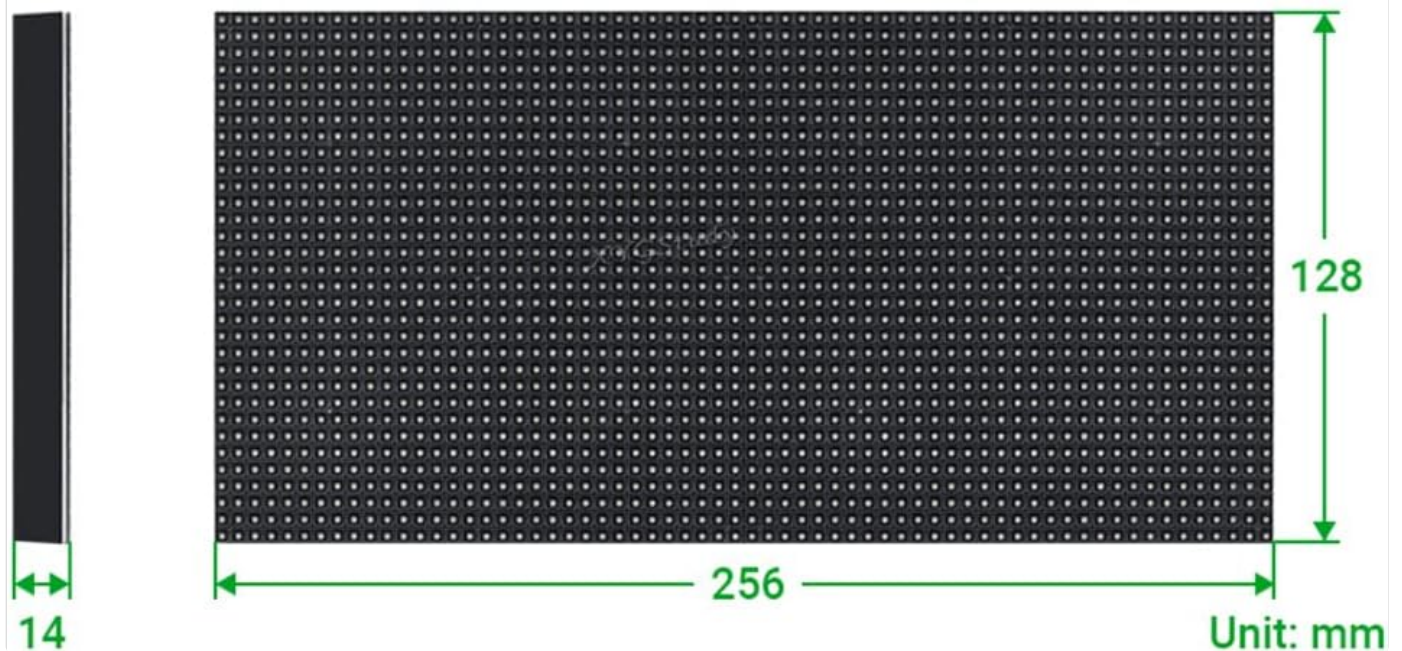
Please verify that all items listed below are included in your package:

- RGB-Matrix-P4-64x32 LED matrix panel and accessories (x1)
- Power supply terminal adapter (x1) - *Note: A 5V 4A power supply is recommended (not included).*
- 16P wire, approximately 30cm in length (x1)
- Pico Accessories (x1)

3. SPECIFICATIONS

Feature	Specification
Part Number	RGB-Matrix-P4-64x32
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 Consumption	≤20W
Connectivity Technology	HUB75, 16-pin parallel interface
Operating System Compatibility	Linux

Dimensions



Physical dimensions of the RGB-Matrix-P4-64x32 panel.

Features At A Glance

By nightfall, the dazzling neon lights of the streets and alleys illuminate the whole city making it more dynamic. Obviously, the Full-Color LED Matrix Panel is playing an important role. Maybe be on the doors of shops, maybe be on the bus or the taxi, you can always see animations or advertisement videos. Does it look cool? Why not have a try?

- 2048 individual RGB LEDs, full-color display, adjustable brightness
- 64×32 pixels, 4mm pitch, allows displaying text, colorful image, or animation
- 256×128mm dimensions, moderate size, suitable for DIY desktop display or wall mount display
- Onboard two HUB75 header, one for controller data input, one for output, 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

Overview of key features and technical specifications.

4. SETUP

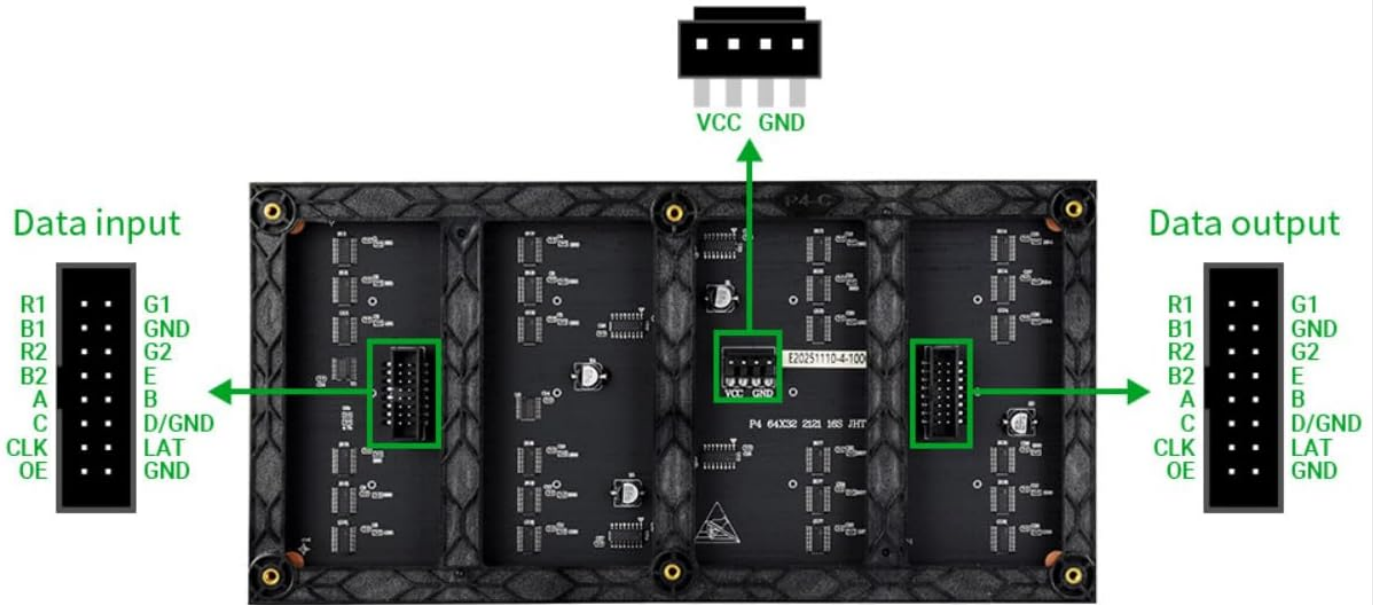
4.1 Power Connection

The LED matrix panel requires a 5V DC power supply. Connect the provided power supply terminal adapter to the panel's power input. A 5V 4A power supply is recommended for optimal performance. Ensure correct polarity when connecting the power supply.

4.2 Data Connection (HUB75 Interface)

The panel uses a HUB75 interface for data input. Use the included 16P wire to connect the panel to your control board (e.g., Raspberry Pi, Arduino with appropriate adapter). Refer to the 'Header Definition' diagram for correct pin assignments.

Header Definition

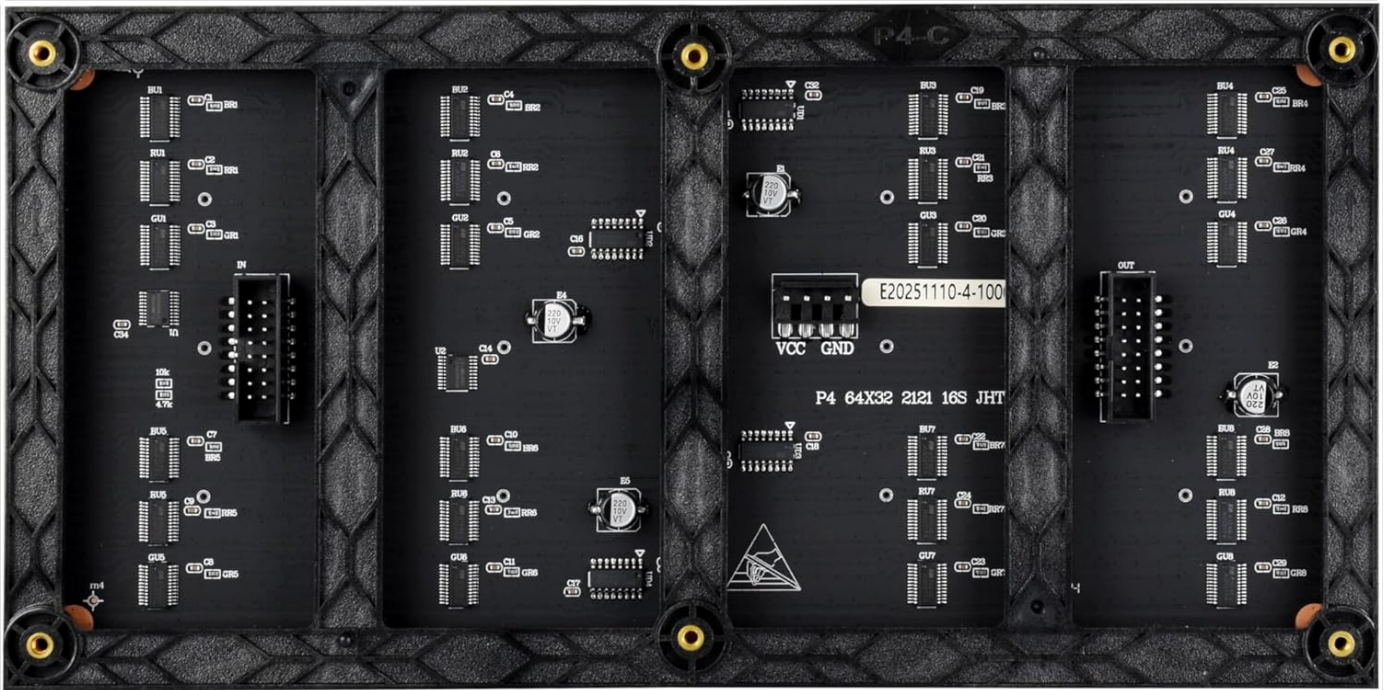


* this back view is for reference only

PCB silkscreen and layout may have small differences from batch to batch, but the hardware interface and software are compatible.

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

Header Definition: Pin assignments for data input and output. Note that PCB silkscreen and layout may vary slightly between batches, but hardware interface and software compatibility remain.



Rear view of the LED matrix panel, illustrating the connection points.

4.3 Chainable Design

Multiple LED matrix panels can be chained together to create a larger display. This is achieved via the HUB75 input/output headers. When chaining panels, each RGB LED matrix panel requires a standalone 5V/4A or above power supply to ensure stable operation and display quality.

Chainable Design

Multi LED Matrix Panel Can Be Chained Together To Build A Larger Panel
Via HUB75 Input/output Header



Each RGB LED matrix panel requires a standalone 5V/4A or above power supply, when they're chained to display.

Example of a single panel, demonstrating the potential for larger displays through chaining.

5. OPERATING

Once properly connected to a compatible microcontroller (e.g., Raspberry Pi, Arduino), the LED matrix panel can be programmed to display various content. Software libraries and example code are typically available from the manufacturer or community resources for controlling HUB75 panels.

- **Brightness Adjustment:** The panel supports adjustable brightness, which can typically be controlled through software commands from your microcontroller.

- **Content Display:** Display text, static images, or dynamic animations by sending appropriate data to the panel via the HUB75 interface.

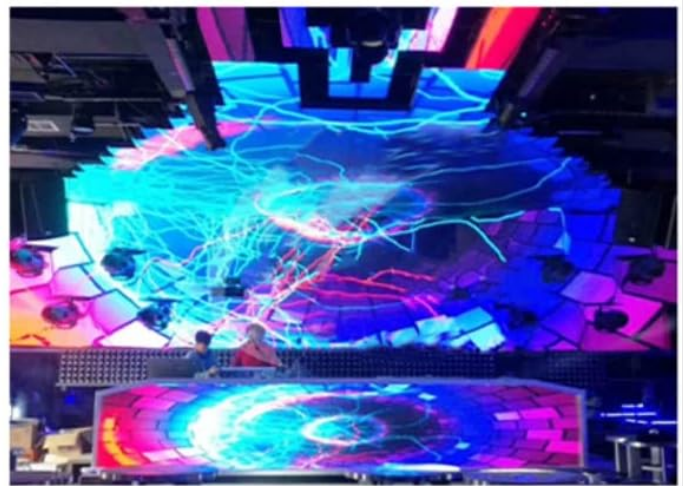
5.1 Usage Scenarios

The RGB LED matrix panel is versatile and can be used in various applications:

- DIY desktop or wall-mount displays
- Digital signboards
- Environmental monitors
- Art installations

Usage Scenarios

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



Examples of how the LED matrix panel can be utilized in different settings.

6. MAINTENANCE

To ensure the longevity and optimal performance of your LED matrix panel, follow these maintenance guidelines:

- **Cleaning:** Gently wipe the surface of the LED panel with a soft, dry, lint-free cloth. Avoid using liquid cleaners or abrasive materials.

- **Environment:** Operate the panel in a dry environment, away from excessive moisture, dust, and extreme temperatures.
- **Handling:** Handle the panel by its edges to avoid touching the LED surface directly. Avoid applying excessive pressure or bending the panel.
- **Power:** Always disconnect the power supply before performing any maintenance or making connections.

7. TROUBLESHOOTING

If you encounter issues with your LED matrix panel, consider the following troubleshooting steps:

- **No Display/Partial Display:**
 - Check all power connections to ensure they are secure and the power supply meets the 5V 4A requirement.
 - Verify that the data cable (16P wire) is correctly connected to both the panel and the microcontroller, following the pinout diagram.
 - Ensure your microcontroller is running the correct code and sending data to the panel.
 - If chaining panels, confirm each panel has adequate power.
- **Incorrect Colors/Flickering:**
 - Review your software code for correct color mapping and refresh rates.
 - Check for loose data connections.
 - Ensure your power supply is stable and providing sufficient current.
- **Panel Not Responding:**
 - Restart your microcontroller and the LED panel.
 - Confirm that the correct libraries and drivers are installed and configured for your microcontroller.

If these steps do not resolve the issue, please refer to the support section for further assistance.

8. WARRANTY AND SUPPORT

For further assistance, detailed user guides, or to inquire about warranty information, please contact XYGStudy customer support directly via Amazon. Provide your product model number (RGB-Matrix-P4-64x32) and a clear description of your issue for efficient support.