**Ving P2.5 64x64 RGB LED Matrix Panel**

# Ving P2.5 64x64 RGB LED Matrix Panel Instruction Manual

Model: P2.5 64x64 RGB LED Matrix Panel

## 1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your Ving P2.5 64x64 RGB LED Matrix Panel. Please read this manual thoroughly before using the product to ensure optimal performance and longevity. This LED module is designed for high-definition indoor display applications.

## 2. Product Features

- **High Brightness and Contrast:** Utilizes super bright LEDs and high-quality plastic for excellent visual performance.
- **Easy Installation and Maintenance:** Lightweight design facilitates installation and removal. Features single-point, single-light maintenance for reduced costs.
- **Constant Current Drive:** Employs a constant current mode to drive LEDs, ensuring even light distribution and low power consumption.
- **Enhanced Visual Consistency:** Beads glue dispersing agent (DP) and surface spray convert point light sources into surface light sources, improving visual consistency, richness, and softness.
- **Durable Construction:** Made with 100% new material support rubber shell (PPA) and sealed for protection.

## 3. Specifications

The following table details the technical specifications of the Ving P2.5 64x64 RGB LED Matrix Panel:

| Specification | Value |
|---|---|
| Type | P2.5 |
| Pixel Pitch | 2.5 mm |
| Pixel Density | 160000 dots/m² |
| Pixel Structure | 3 IN 1 (RGB) |

| Specification | Value |
| --- | --- |
| LED Package | SMD2121 |
| Module Size | 160 × 160 mm (6.29" x 6.29") |
| Module Resolution | 64 × 64 dots |
| Minimum Viewing Distance | ≥ 2.5 m |
| Brightness | ≥ 1200 cd/m² |
| Angle of View | ≤ 120° |
| Scanning Mode | 1/32 Scan constant current drive |
| Module Interface | HUB75 |
| Input Voltage (DC) | 4.8 - 5.5 V |
| Maximum Power | 1500 W/m² |
| Average Power | 450 - 750 W/m² |
| Maximum Current | 7.68 A |
| Module Weight | 209 g |
| Gray Level | Recommended 16384 levels |
| Control Mode | Computer control, video synchronization, real-time display |
| Effective Communication Distance | 100 meters (non-shielded twisted pair), max 130 meters |
| Frame Changing Frequency | ≥ 60 frames/second |
| Pixel Out of Control Rate | < 0.0001 (Industry standard: < 3/10000) |
| Display Color Number | 64G colors (4096 gray levels) |
| Module Brightness Uniformity | > 95% |
| Color Temperature | RGB color brightness 100 adjustable via software |
| Contrast Ratio | Software 100 adjustable |
| MTBF MTDLF | ≥ 10000 Hours |
| Service Life | ≥ 50000 Hours |
| Protection Performance | Over temperature, overload, drop, image compensation, various correction techniques, over current, over voltage, lightning protection |

| Specification | Value |
| --- | --- |
| Ambient Temperature | Indoor, -20 to 50°C |
| Manufacturer Part Number | SIC-20797 |

## 4. Setup

Proper setup is crucial for the performance and safety of your LED matrix panel. Follow these general guidelines:

1. **Unpacking:** Carefully remove the LED panels from their packaging. Inspect for any physical damage during transit.
2. **Mounting:** Securely mount the LED panels to a stable structure. Ensure the mounting surface can support the weight of the panels. For multi-panel installations, ensure proper alignment.
3. **Power Connection:** Connect the power supply to the panel's input. Ensure the power supply provides the correct DC voltage (4.8-5.5V) and sufficient current for the number of panels being used. Refer to the specifications for maximum current draw.
4. **Data Connection:** Connect the data cable (typically HUB75 interface) from your control card to the panel's input. For multiple panels, daisy-chain them using the output port of one panel to the input port of the next.
5. **Control System:** Connect your control card to a computer via an appropriate interface (e.g., Ethernet). Install the necessary control software on your computer.

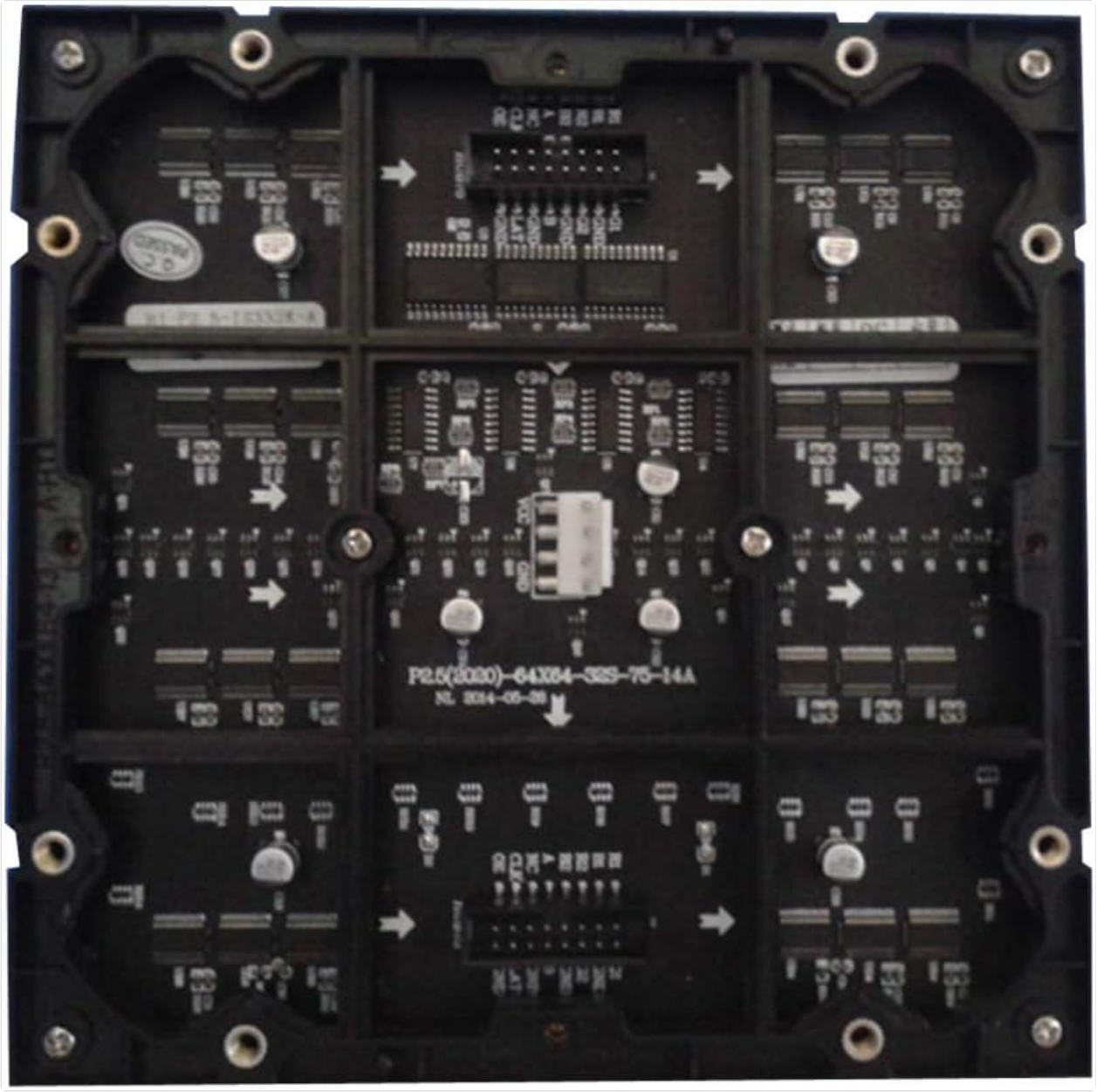


*Image 1: Rear view of the LED matrix panel, illustrating the HUB75 data interface and power input connections. This shows the circuitry and mounting points.*

*Image 2: Side-rear perspective of the LED matrix panel, providing a clearer view of the module's depth and the arrangement of its electronic components and connectors.*

## 5. Operating Instructions

Once the panel is set up, follow these steps for operation:

1. **Power On:** Ensure all connections are secure, then apply power to the LED panels.
2. **Software Configuration:** Launch the control software on your computer. Configure the display parameters, including resolution (64x64 per module), scanning mode (1/32 scan), and module arrangement, to match your physical setup.
3. **Content Upload:** Use the software to upload images, videos, or text content to the display. The panel supports real-time display and video synchronization.
4. **Brightness and Color Adjustment:** Adjust brightness and color temperature settings via the software to

achieve desired visual effects. The software allows for 100-level adjustment of RGB color brightness and contrast.

5. **Power Off:** Before disconnecting power, it is recommended to shut down the display via the control software first, if possible, to prevent data corruption or unexpected behavior.

*Image 3: Front view of the Ving P2.5 LED Matrix Panel, displaying its dense grid of individual RGB LEDs. This is the primary display surface.*

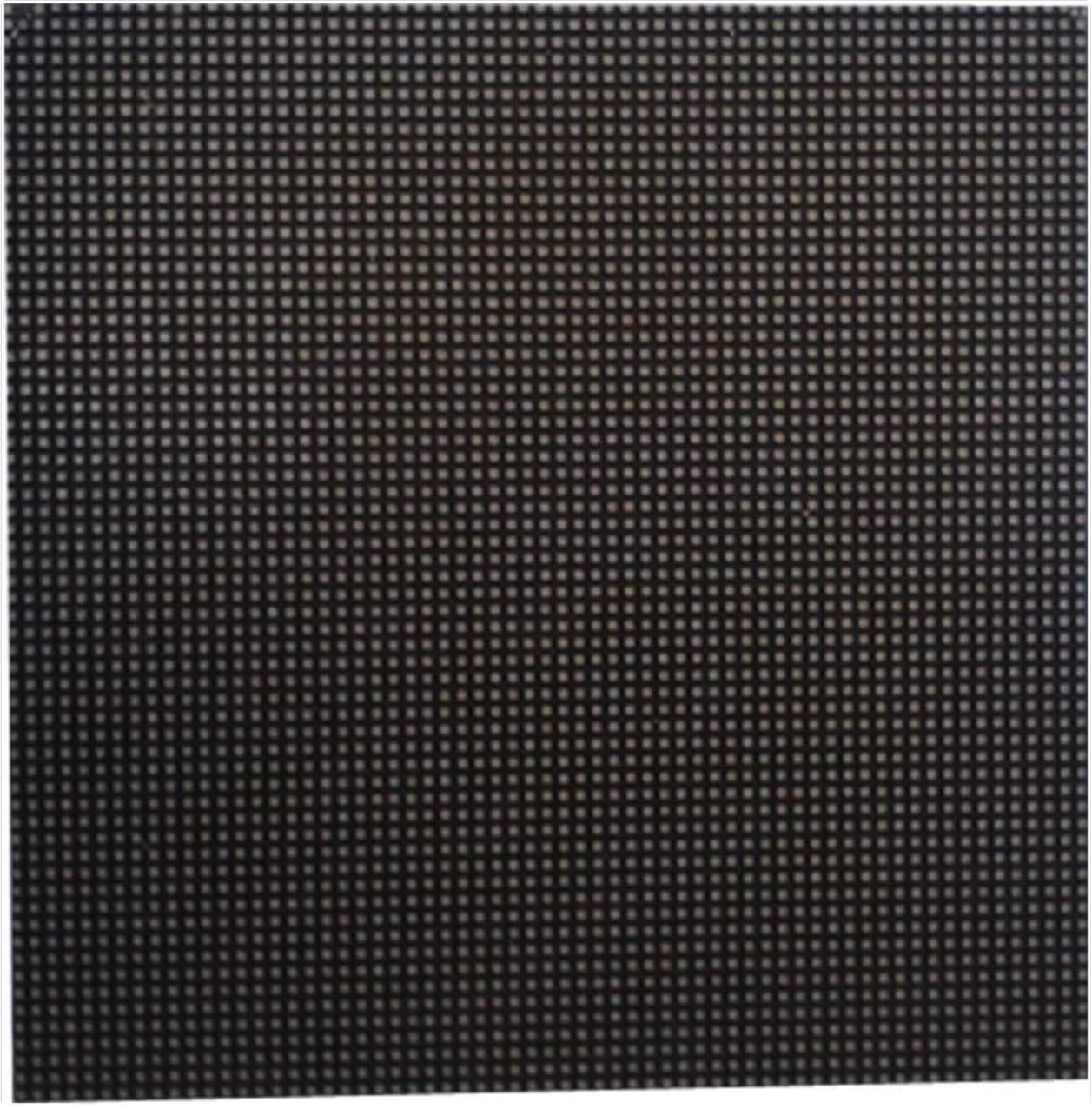

*Image 4: A detailed close-up of the LED matrix panel's surface, highlighting the fine pixel pitch of 2.5mm and the arrangement of the SMD2121 RGB LEDs.*

## 6. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your LED display:

- **Cleaning:** Gently clean the surface of the LED panel with a soft, lint-free cloth. For stubborn dirt, slightly dampen the cloth with a non-abrasive, anti-static cleaning solution specifically designed for electronics. Do not spray liquid directly onto the panel.
- **Dust Removal:** Use compressed air to remove dust from connectors and ventilation areas. Ensure the panel is powered off before cleaning.
- **Connection Check:** Periodically inspect all power and data connections to ensure they are secure and free from corrosion or damage.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature range (-20 to 50°C) and humidity levels. Avoid direct exposure to moisture.
- **Software Updates:** Keep your control software updated to the latest version provided by the manufacturer for improved performance and bug fixes.

## 7. Troubleshooting

If you encounter issues with your LED matrix panel, refer to the following common troubleshooting steps:

- **No Display/Blank Screen:**
  - Check power supply connections and ensure the panel is receiving power.
  - Verify data cable (HUB75) connections between the control card and the panel.
  - Ensure the control software is running and configured correctly for the panel's resolution and scanning mode.
- **Partial Display/Incorrect Colors:**
  - Check data cable integrity and connections, especially in daisy-chained setups.
  - Re-verify software configuration for module arrangement and color settings.
  - Inspect for any visible damage to individual LEDs or components on the panel.
- **Flickering/Unstable Display:**
  - Ensure the power supply is stable and provides sufficient current.
  - Check for electromagnetic interference (EMI) from nearby equipment.
  - Verify the frame changing frequency setting in the software.
- **Communication Errors:**
  - Check the length of your data cables; ensure they are within the effective communication distance (100-130 meters).
  - Verify network settings if using an Ethernet-based control system.

If problems persist after following these steps, contact customer support for further assistance.

## 8. Application Examples

The Ving P2.5 LED Matrix Panel is versatile and suitable for various indoor high-definition display applications, including:

- Retail store displays
- Conference rooms and corporate lobbies
- Control rooms and monitoring centers
- Exhibition booths and trade shows
- Entertainment venues and stages
- Digital signage and information boards


*Image 5: Examples of the LED matrix panel in use, showcasing its application in a fashion show backdrop and as a large display for a corporate conference.*


*Image 6: Further application examples, demonstrating the LED panel's use in large-scale outdoor advertising and as a dynamic display for an indoor car exhibition.*

## 9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the purchase documentation or contact your vendor. You can also visit the official Ving Store on Amazon for product information and support resources:

**Visit the Ving Store**

Please have your product model number (SIC-20797) and purchase details ready when contacting support.

## Related Documents

| | |
|---|---|
|  | VING Flybro FB-100 Multi-Effects Processor User Manual and Specifications<br>This document provides detailed specifications, features, and operational information for the VING Flybro FB-100 Multi-Effects Processor. It includes technical data, connection diagrams, FCC compliance information, and usage instructions. |