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MWEZFP WS2812B, WS2811, WS2813, WS2815

MWEZFP Individually Addressable RGB LED Strip Light User Manual

Models: WS2811, WS2812B, WS2813, WS2815

1. Introduction

This manual provides essential information for the safe and effective use of your MWEZFP Individually Addressable RGB LED Strip Lights. These strips feature various IC types (WS2811, WS2812B, WS2813, WS2815) for dynamic lighting effects, offering individual pixel control for vibrant, customizable illumination. Please read these instructions thoroughly before installation and operation.

2. Product Overview

The MWEZFP LED strip lights are available in several configurations, each designed for specific applications and offering distinct features. All models utilize 5050 SMD RGB LEDs, providing full-color capabilities.

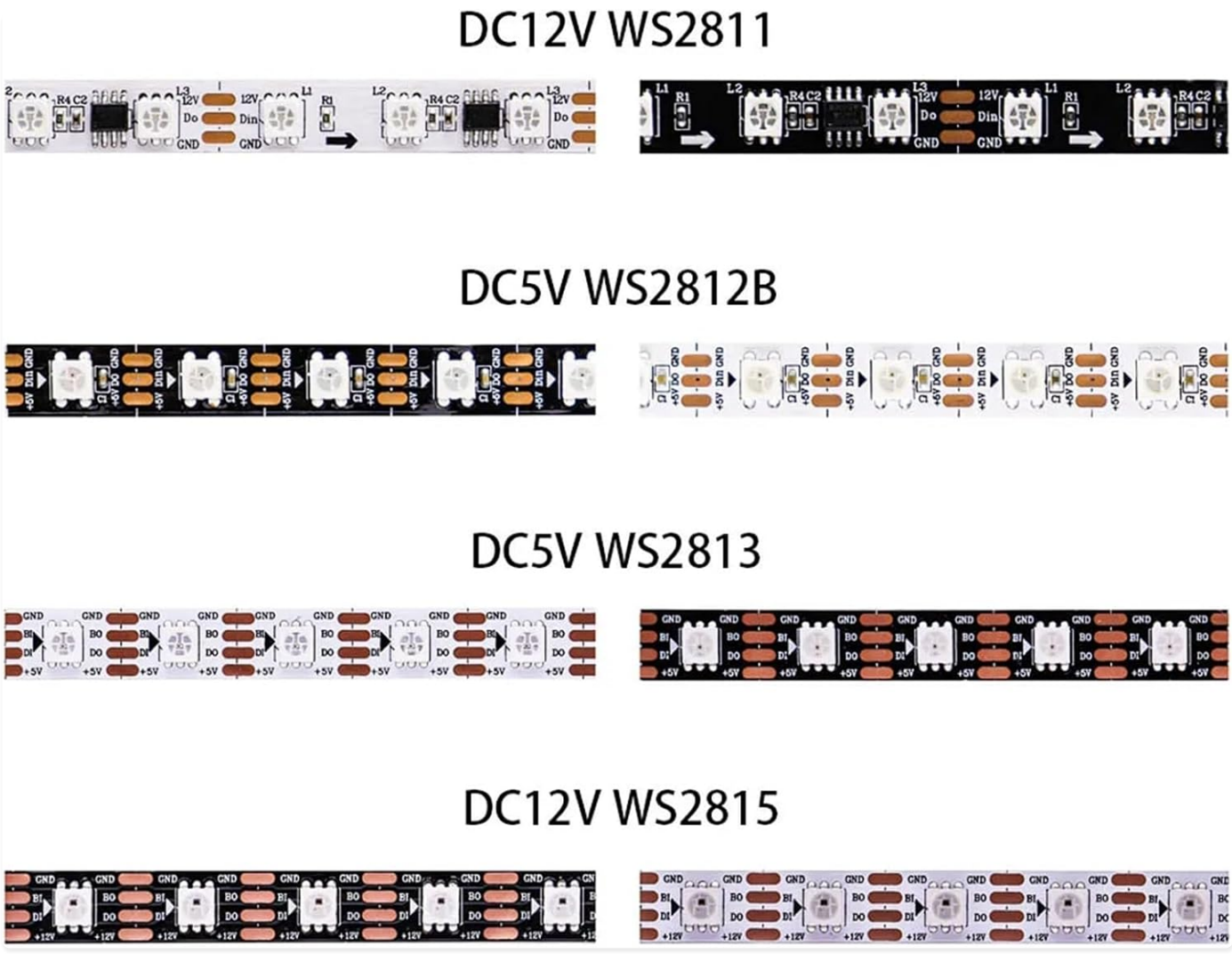


Image 2.1: Visual comparison of WS2811, WS2812B, WS2813, and WS2815 LED strip types.

Key Differences:

- **WS2811:** Typically 12V, 1 IC controls 3 LEDs.
- **WS2812B:** 5V, 1 IC controls 1 LED. Single data line.
- **WS2813:** 5V, 1 IC controls 1 LED. Features dual signal wires for continuous transmission even if one LED chip fails.
- **WS2815:** 12V, 1 IC controls 1 LED. Features dual signal wires for continuous transmission even if one LED chip fails.



Image 2.2: Signal break-point continuous transmission comparison between WS2813/WS2815 (dual signal wire) and WS2812B (single data wire).

The WS2813 and WS2815 models offer enhanced reliability with their dual signal wire design, ensuring that the strip continues to function even if a single LED chip fails. This is a significant advantage over single data line strips like the WS2812B.

3. Setup and Installation

Proper setup is crucial for optimal performance and longevity of your LED strip lights. Please follow these steps carefully.

3.1 Components Required (Not Included)

- **Power Supply:** A compatible DC power supply (5V for WS2812B/WS2813, 12V for WS2811/WS2815) with sufficient wattage for your strip length.
- **LED Controller:** A dedicated LED controller compatible with WS2811/WS2812B/WS2813/WS2815 protocols (e.g.,

T-1000s, T-8000A, T-100K, T-200K, T-300K).

3.2 Wiring Connections

Each LED strip requires specific connections for power and data. Refer to the diagram below for correct wiring.

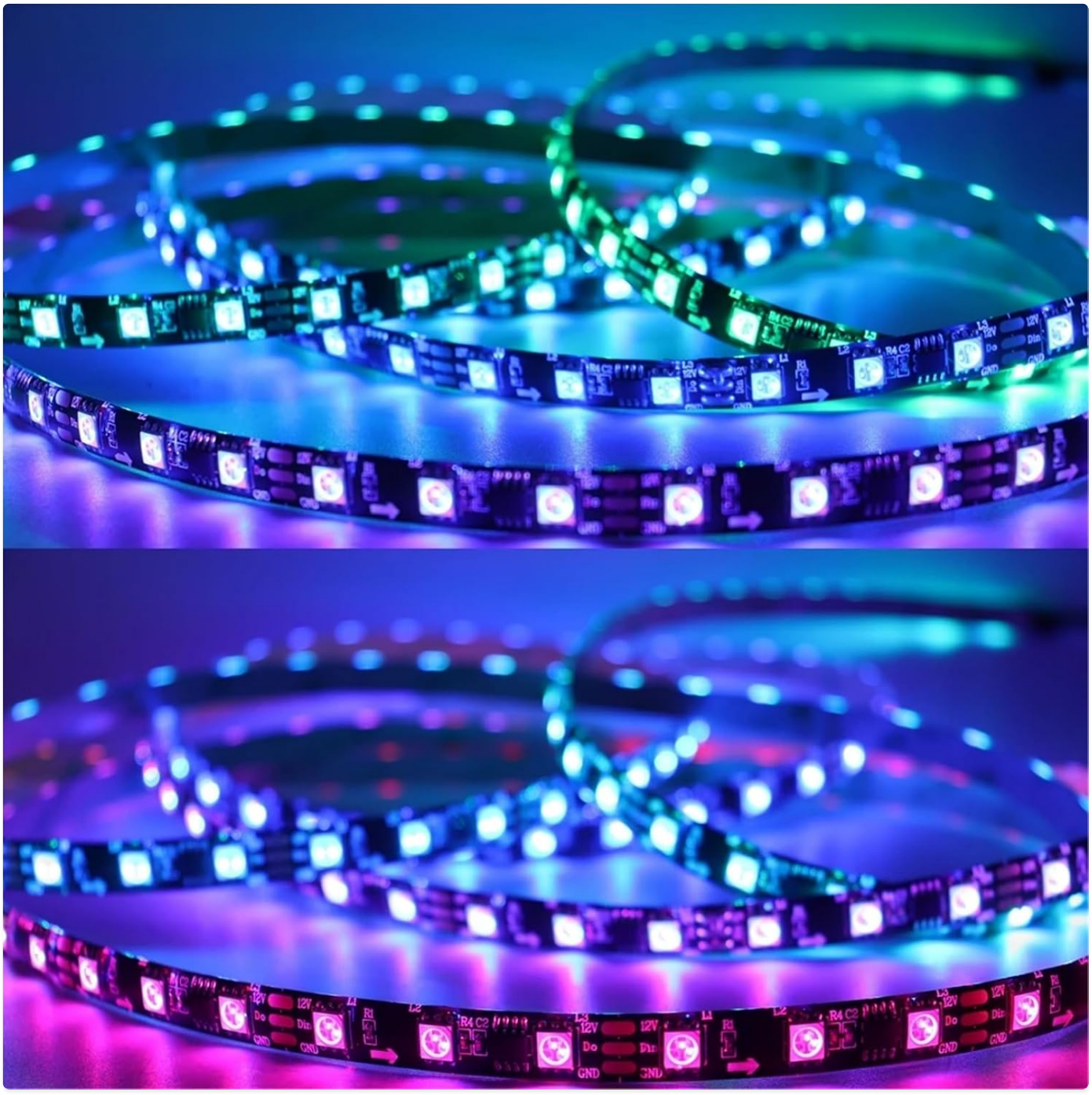


Image 3.1: Wiring diagrams for different LED strip models.

- **WS2811 (12V):** Connect V+, GND, and Data (DI) to your controller.
- **WS2812B (5V):** Connect V+, GND, and Data (DI) to your controller.
- **WS2813 (5V):** Connect V+, GND, Data (DI), and Backup Data (BI) to your controller. The BI line provides redundancy.
- **WS2815 (12V):** Connect V+, GND, Data (DI), and Backup Data (BI) to your controller. The BI line provides redundancy.

Ensure all connections are secure and correctly polarized to prevent damage to the strip or controller.

3.3 Mounting the LED Strip

- **Adhesive Backing:** IP30 and IP65 rated strips come with 3M adhesive tape on the back for easy installation. Clean the mounting surface thoroughly before peeling off the protective layer and pressing the strip firmly into place.
- **IP67 Strips:** IP67 rated strips (silicon tube) do not include adhesive tape and typically require mounting clips or other fasteners (not included).
- **Cutting:** The LED strips are cuttable at designated marks, usually indicated by a copper pad. For WS2811, cut every 3 LEDs. For WS2812B, WS2813, and WS2815, every LED is cuttable. Always cut only at the marked lines to avoid damaging the circuit.

4. Operating Instructions

Once properly installed and connected to a compatible controller, your LED strip lights are ready for operation.

- **Controller Operation:** Refer to your specific LED controller's manual for detailed instructions on selecting patterns, adjusting brightness, changing colors, and setting speeds.
- **Dream Color Changing:** These strips support a wide range of dynamic 'dream color' effects, allowing for complex and animated lighting sequences.
- **Individual Addressability:** Each LED (or group of 3 for WS2811) can be controlled independently, enabling highly customized lighting designs.

5. Maintenance

These LED strips are designed for durability and require minimal maintenance.

- **Cleaning:** Gently wipe the strip with a dry, soft cloth if dust accumulates. Avoid using harsh chemicals or abrasive materials. For waterproof versions, a damp cloth can be used, ensuring no water enters exposed connections.
- **Storage:** If storing the strip, keep it in an anti-static bag in a cool, dry place. Recommended storage temperature is -50°C to 80°C (-58°F to 176°F).
- **Life Expectancy:** The average life of the LEDs is rated at more than 50,000 hours under normal operating conditions.

6. Troubleshooting

If you encounter issues with your LED strip, consult the following common problems and solutions.

- **No Light:**
  - Check power supply connection and ensure it matches the strip's voltage (5V or 12V).
  - Verify controller connection and ensure it is powered on and configured correctly.
  - Inspect for any visible damage or short circuits on the strip.
- **Incorrect Colors/Patterns:**
  - Ensure your controller is set to the correct IC type (e.g., WS2811, WS2812B, WS2813, WS2815).
  - Check data line connections for looseness or incorrect polarity.
- **Partial Strip Failure (WS2812B):** If a single LED chip fails on a WS2812B strip, the subsequent LEDs may stop working due to its single data line design.
- **Partial Strip Failure (WS2813/WS2815):** Due to their dual signal wires, if one LED chip fails, the remaining LEDs on WS2813 and WS2815 strips should continue to function normally. This is a key advantage for these models.

7. Specifications

Detailed specifications for the various MWEZFP individually addressable LED strip light models.

Common Specifications:

- **LED Type:** 5050 SMD RGB
- **Grey Scale:** 256
- **Bits/Color:** 8-Bits/Color
- **Colors:** Full Color RGB, Dream Color Changing
- **Working Temperature:** -40°C to 70°C (-40°F to 158°F)
- **Average Life:** More than 50,000 Hours

WS2811 LED Strip (DC 12V):

- **Working Voltage:** DC 12V
- **LED QTY:** 30/60 LED/M
- **IC QTY:** 10/20 IC/M (1 IC controls 3 LEDs)
- **Power:** 9/18W/M
- **Cutability:** Every 3 LEDs
- **IP Grade Options:** IP30 (Non-Waterproof), IP67 (Waterproof in Silicon Tube)
- **Dimension:** 5000 x 10 x 2.4mm (for 5m roll)

WS2812B LED Strip (DC 5V):

- **Input Voltage:** DC 5V
- **Power:** 30Leds/m - 9W/m, 60Leds/m - 18W/m, 144Leds/m - 43.2W/m
- **LED Resource:** WS2812B Led (5050 SMD RGB LED with Built-in Improved Version Of WS2811 IC)
- **IC Type:** Improved Version WS2812 IC (Built Inside The 5050SMD RGB LED)
- **IC to LED Ratio:** 1 IC Drives 1 Led Chip
- **Pixels:** 30/60/144/Meters
- **FPC Width:** 30Leds/m - 10mm, 60Leds/m - 10mm, 144Leds/m - 12mm
- **Protection Rate Options:** IP30, IP65, IP67
- **Cuttable:** Every LED is Cuttable

WS2813 LED Strip (DC 5V):

- **Input Voltage:** DC 5V
- **Power:** 30Leds/M - 9W/M, 60Leds/M - 18W/M, 144Leds/M - 43.2W/M
- **LED Resource:** WS2813 led (5050 SMD RGB LED with built-in improved version of ws2811 ic)
- **IC Type:** Improved version ws2813 IC (built inside the 5050 smd rgb led)
- **IC to LED Ratio:** 1 IC Drives 1 led chip
- **Pixels:** 30/60/144/meter
- **FPC Width:** 30Leds/M - 10 MM, 60Leds/M - 10 MM, 144Leds/M - 12 MM
- **Protection Rate Options:** IP30 (Non-Waterproof), IP65 (Waterproof in Silicon Coating), IP67 (Waterproof in Silicon Tube)
- **Cuttable:** Every LED is cuttable

- **Connector:** 4PIN connector terminal pair (Red: 5V power, Green: Date line, Blue: standby date line, Black: GND)

WS2815 LED Strip (DC 12V):

- **Input Voltage:** DC 12V
- **LED Resource:** WS2815 led (5050 SMD RGB LED with built-in IC)
- **IC Type:** WS2815 IC
- **IC to LED Ratio:** 1 IC Drives 1 led chip
- **Features:** Dual signal wires for break-point continuous transmission.

8. Warranty and Support

This product is manufactured by MWEZFP.

- **Manufacturer Warranty:** The manufacturer warranty description states "None." Please refer to your point of purchase for any return or exchange policies.
- **Customer Support:** For technical assistance or inquiries, please contact MWEZFP customer support through the retailer where the product was purchased.

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