

## BTF-LIGHTING FCOB-24V-784L-W-IP30-SPI

# BTF-LIGHTING FCOB WS2814 IC RGBW LED Strip User Manual

Model: FCOB-24V-784L-W-IP30-SPI

## 1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of your BTF-LIGHTING FCOB WS2814 IC RGBW LED Strip. This flexible, high-density LED strip features addressable RGBW (Red, Green, Blue, Natural White 4000K) lighting with individual IC control for dynamic chasing effects and uniform illumination. Please read this manual thoroughly before use.

## 2. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- 1x FCOB WS2814 IC RGBW LED Strip (16.4FT / 5 meters, DC24V)
- 1x 3PIN Male Connector
- 3x Fixed Clips
- 2x Wire to Strip Connectors



Image 2.1: Contents of the BTF-LIGHTING FCOB WS2814 IC RGBW LED Strip package, including the LED strip, connectors, and mounting clips.

### 3. PRODUCT FEATURES

- **Addressable IC Control:** Features WS2814 IC chips, with one IC controlling 56 LEDs, allowing for dynamic chasing effects.
- **RGBW Lighting:** Offers a full spectrum of RGB colors plus a dedicated 4000K Natural White for versatile illumination.
- **FCOB Technology:** Flip Chip On Board (FCOB) design provides high density (784 LEDs/meter) for uniform, dot-free light output.
- **Flexible and Cuttable:** The strip is flexible for various installations and can be cut at designated marks (every 2.8 inches / 71mm).
- **High Brightness:** Utilizes high-brightness LEDs for strong illumination while maintaining color consistency.
- **Energy Efficient:** Pure white light chasing effect is more energy-efficient compared to mixed white light.
- **Double-Layer Copper PCB:** Ensures better electronic conductivity and heat dissipation for extended lifespan.

## SMD WS2814 IC VS FCOB WS2814 IC

FCOB-WS2814 IC Light is brighter and more uniform



Image 3.1: FCOB technology provides uniform light compared to traditional SMD LEDs, which can show individual light spots.



Image 3.2: The RGB+W design allows for pure white light, which is more energy-efficient than mixed white light from RGB-only strips.

## 4. SAFETY INFORMATION

- This LED strip operates on DC24V. Ensure your power supply matches this voltage. Using an incorrect voltage will damage the strip.
- This product is rated IP30 for indoor use only. Do not expose to water or high humidity.
- Always disconnect power before installation, cutting, or making any connections.
- Do not bend the LED strip sharply or apply excessive force, as this may damage the internal circuitry.
- Ensure proper heat dissipation. Do not install the strip in enclosed spaces without adequate airflow.
- Keep out of reach of children.

## 5. SETUP AND INSTALLATION

### 5.1 Surface Preparation

Before installation, thoroughly clean and dry the desired mounting surface. The surface should be smooth, free of dust, oil, and moisture to ensure proper adhesion of the strip's self-adhesive backing.



## 5.2 Cutting and Linking

The LED strip can be cut to your desired length at the designated cut marks, which are located approximately every 2.8 inches (71mm). Use sharp scissors to ensure a clean cut. After cutting, you can use the included wire-to-strip connectors or solder wires directly to the copper pads for linking sections or connecting to a controller.

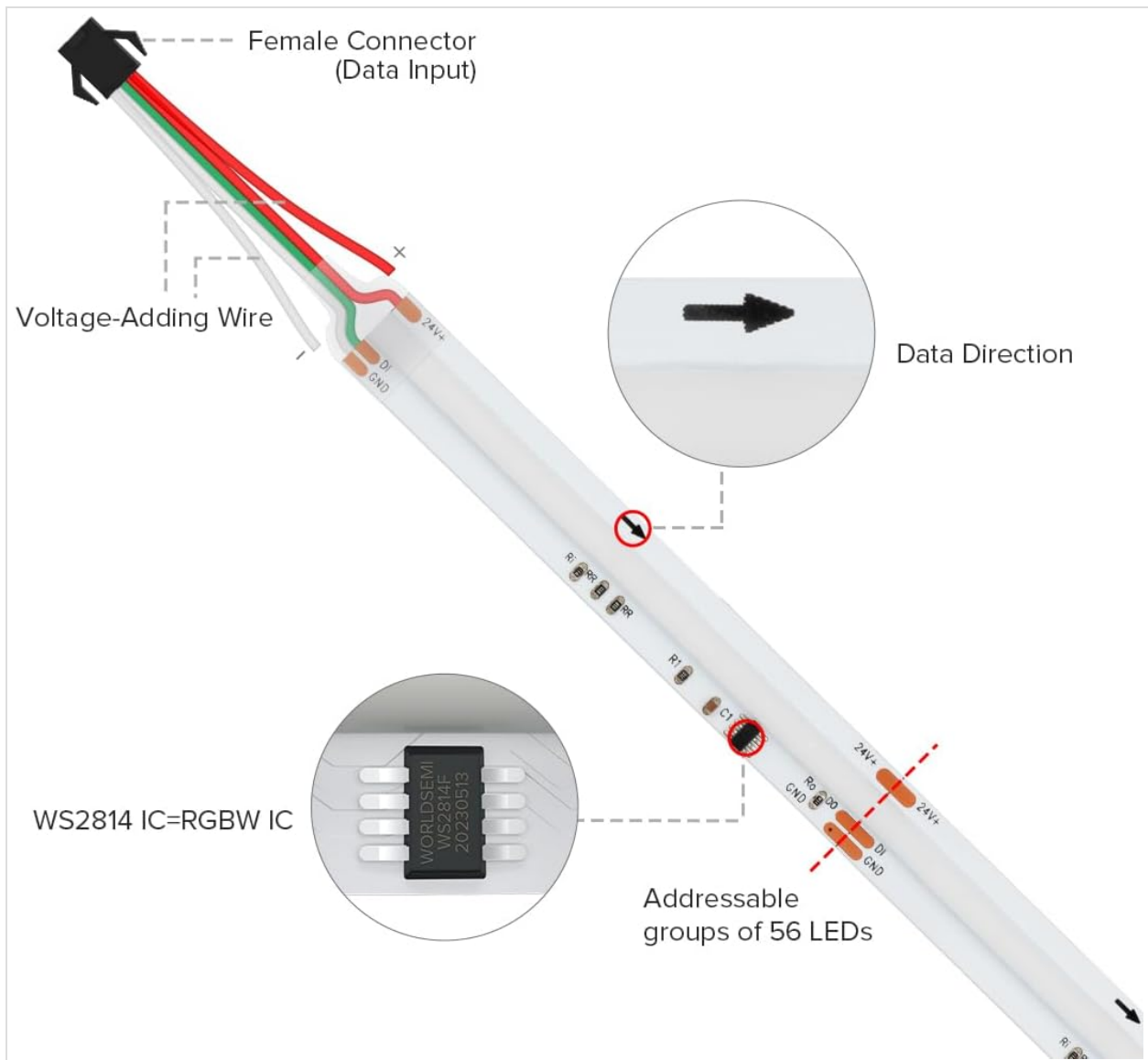


Image 5.1: Details of the WS2814 IC, addressable LED groups, and precise cut marks on the strip. Note the data direction arrow.

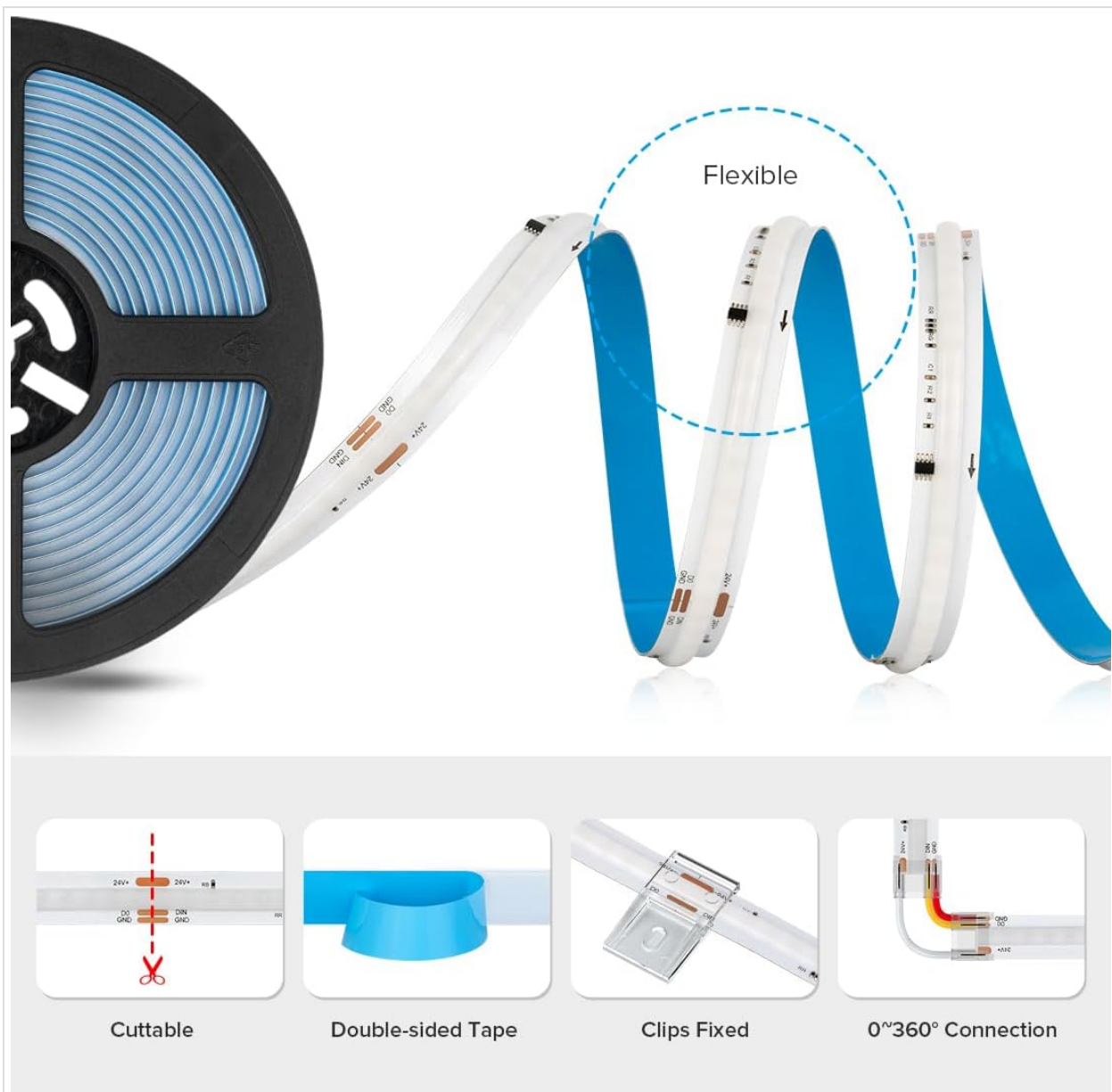


Image 5.2: The LED strip is flexible, cuttable, features double-sided adhesive, and can be secured with clips for various installation needs.

### 5.3 Mounting the LED Strip

Peel off the protective backing from the double-sided adhesive tape on the back of the LED strip. Carefully press the strip onto the prepared surface, ensuring firm contact along its entire length. For added security, especially on vertical or uneven surfaces, use the provided fixed clips.

### 5.4 Electrical Connection

This LED strip requires an external DC24V power supply and a compatible addressable LED controller (not included). The strip has 3PIN connectors (Data Input, 24V+, GND). Connect the strip to your controller according to the controller's instructions, ensuring correct polarity and data direction. The data direction is indicated by an arrow on the strip.

For longer runs or multiple strips, parallel wiring or the use of signal amplifiers may be necessary to prevent voltage drop and ensure consistent brightness and color. Refer to the connection diagrams below for guidance.



Image 5.3: Example parallel connection diagram for multiple LED strips to a single power supply and controller.



Image 5.4: Detailed power supply connection options for LED strips, illustrating how voltage depends on the strip configuration.

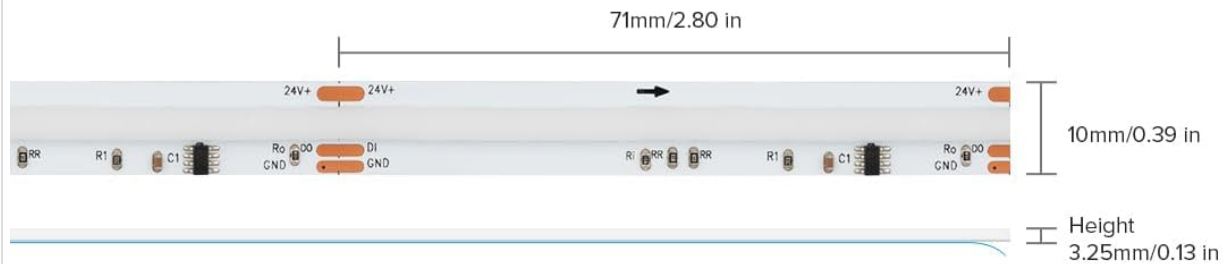
## 6. OPERATING INSTRUCTIONS

The BTF-LIGHTING FCOB WS2814 IC RGBW LED Strip requires a compatible addressable LED controller for operation. This strip is compatible with various controllers such as K1000C, SP630E, SP639E, SP617E, SP530E WiFi Alexa controller, and other DIY controllers (e.g., based on ESP8266/ESP32 with WLED firmware, Raspberry Pi, Arduino UNO R3).

- **Dynamic Modes:** With a compatible controller, you can achieve various chasing effects, including RGB color chasing and pure white light chasing (3000K Warm White, 4000K Natural White, 6000K Cool White).
- **Static Modes:** Display static colors from a palette of 16 million colors, including various shades of white.
- **Brightness Control:** Adjust the brightness level via your controller.

Refer to the specific instruction manual of your chosen LED controller for detailed operating procedures, app usage, and programming options.

## DC24V FCOB 784LEDs/m



### Controller sold separately



Image 6.1: Examples of compatible controllers for the LED strip, including K1000C, SP630E, SP639E, SP617E, SP530E, Raspberry Pi, and Arduino UNO R3.

Your browser does not support the video tag.

Video 6.1: Demonstration of the FCOB WS2814 IC RGBW LED strip's dynamic RGB chasing effects and pure white light chasing in various color temperatures (3000K, 4000K, 6000K), as well as static color modes.

## 7. MAINTENANCE

- **Cleaning:** Gently wipe the LED strip with a dry, soft cloth to remove dust. Do not use liquid cleaners or abrasive materials.
- **Inspection:** Periodically check connections for any signs of wear or damage. Ensure the strip remains securely attached to its surface.
- **Storage:** If removing the strip for storage, ensure it is clean and dry. Roll it loosely to prevent damage to the internal components.

## 8. TROUBLESHOOTING

If you encounter issues with your LED strip, refer to the following common problems and solutions:



Problem	Possible Cause	Solution
LED strip does not light up.	No power, incorrect voltage, faulty connection, controller issue.	Check power supply connection and voltage (DC24V). Verify all wiring connections are secure and correct. Ensure the controller is powered on and functioning.
Incorrect colors or flickering.	Incorrect data connection, controller settings, voltage drop.	Ensure data line is connected correctly and follows the data direction arrow. Check controller settings for the correct IC type (WS2814) and pixel count. For long runs, consider parallel wiring or signal amplifiers to mitigate voltage drop.
Only a section of the strip lights up.	Damage to the strip, faulty connection between sections.	Inspect the non-working section for physical damage. Check connections between strip segments. If a section is damaged, it may need to be replaced or bypassed.
Adhesive not holding.	Improper surface preparation, heavy strip.	Ensure surface is clean, dry, and smooth. Use the included fixed clips or additional mounting hardware for better security.

For more specific troubleshooting related to controller functions, please consult the manual provided with your LED controller.

## 9. SPECIFICATIONS

Feature	Specification
Model Number	FCOB-24V-784L-W-IP30-SPI
Brand	BTF-LIGHTING
LED Type	FCOB WS2814 IC RGBW
Color Temperature (White)	4000K (Natural White)
Voltage	DC24V
Length	16.4FT (5 meters)
LEDs per Meter	784 LEDs/m
IC Chips per Meter	14 ICs/m (1 IC controls 56 LEDs)
Strip Width	10mm (0.39 inches)
Cut Mark Interval	2.8 inches (71mm)
Power Source	DC

Feature	Specification
Wattage	76.8 watts (for 16.4FT)
Indoor/Outdoor Usage	Indoor (IP30)
Average Life	65,000 hours
Color Rendering Index (CRI)	90.00

## 10. WARRANTY AND CUSTOMER SUPPORT

BTF-LIGHTING provides a **12-month worry-free warranty** for this product. We are committed to ensuring your satisfaction. If you encounter any issues with your LED strip, require troubleshooting assistance, or have questions regarding purchase or installation, please do not hesitate to contact our 24/7 customer service. Our team is available to provide support and facilitate replacements if necessary.

For support, please visit the BTF-LIGHTING store on Amazon or contact us directly through the platform.

### Related Documents - FCOB-24V-784L-W-IP30-SPI

<p><b>Multilingual Index</b></p> <p>English..... P.01 Deutsch ..... P.11 Español ..... P.21 Français ..... P.31 Italiano ..... P.41 Nederlands..... P.51</p>	<p><a href="#">BTF-LIGHTING FCOB SPI RGBW LED Strip User Manual</a></p> <p>User manual for the BTF-LIGHTING FCOB SPI RGBW LED Strip, detailing product parameters, installation, precautions, and recommended accessories for optimal use.</p>
<p><b>Multilingual Index</b></p> <p>English..... P.1 Deutsch ..... P.10 Español ..... P.19 Français ..... P.28 Italiano ..... P.37 Nederlands..... P.46</p>	<p><a href="#">BTF-LIGHTING FCOB SPI RGBCCT LED Strip User Manual</a></p> <p>User manual for the BTF-LIGHTING FCOB SPI RGBCCT LED Strip, detailing product specifications, installation, precautions, and recommended accessories.</p>
<p><b>Multilingual Index</b></p> <p>English..... P.01 Deutsch ..... P.14 Español ..... P.26 Français ..... P.38 Italiano ..... P.50 日本語 ..... P.62 Nederlands..... P.74</p>	<p><a href="#">BTF-LIGHTING FCOB PWM RGBW LED Strip User's Manual</a></p> <p>User's manual for the BTF-LIGHTING FCOB PWM RGBW LED Strip, detailing product parameters, precautions, controller compatibility, and installation instructions for versatile lighting applications.</p>

<div>Multilingual Index</div> <div>English----- P.1</div> <div>Deutsch----- P.13</div> <div>Español----- P.24</div> <div>Français----- P.35</div> <div>Italiano----- P.46</div> <div>Nederlands----- P.57</div>	<div><a href="#">BTF-LIGHTING FCOB SPI CCT LED Strip User Manual</a></div> <div>User manual for the BTF-LIGHTING FCOB SPI CCT LED Strip, detailing product specifications, installation guides, connection diagrams, and troubleshooting tips for WS2811 IC addressable LED strips.</div>
<div>Multilingual Index</div> <div>English----- P.01</div> <div>Deutsch----- P.12</div> <div>Español----- P.22</div> <div>Français----- P.32</div> <div>Italiano----- P.42</div> <div>Nederlands----- P.52</div>	<div><a href="#">BTF-LIGHTING SPI Single Color LED Strip User Manual (SMD-FCOB-DIMIC-01-EN)</a></div> <div>Comprehensive user manual for the BTF-LIGHTING SPI Single Color LED Strip (SMD-FCOB-DIMIC-01-EN). Covers product specifications, installation, precautions, connection diagrams, controller/power supply compatibility, and thermal management. Available in multiple languages.</div>
<div>Multilingual Index</div> <div>English----- P.01</div> <div>Deutsch----- P.14</div> <div>Español----- P.25</div> <div>Français----- P.36</div> <div>Italiano----- P.47</div> <div>Nederlands----- P.58</div>	<div><a href="#">BTF-LIGHTING WS2814 IC RGBW Addressable LED Strip User Manual</a></div> <div>This user manual provides comprehensive details on the BTF-LIGHTING WS2814 IC RGBW Addressable LED Strip, including product specifications, installation guides, precautions, and recommended accessories for optimal use.</div>