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## SparkFun WiFi IR Blaster

# SparkFun WiFi IR Blaster (ESP8266) Instruction Manual

## INTRODUCTION

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The SparkFun WiFi IR Blaster is a versatile device designed to integrate traditional infrared (IR) controlled electronics with modern WiFi networks and the Internet of Things (IoT). It combines an ESP8266 microcontroller with IR emitting and receiving capabilities, enabling control of legacy IR devices via web browsers, voice assistants like Alexa, or scheduled triggers. This manual provides essential information for setting up, operating, and maintaining your WiFi IR Blaster.

## SETUP

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The WiFi IR Blaster board comes with the IR emitter and detector components packaged separately, requiring soldering for installation. This design allows for flexible positioning of these components to suit your specific project needs.

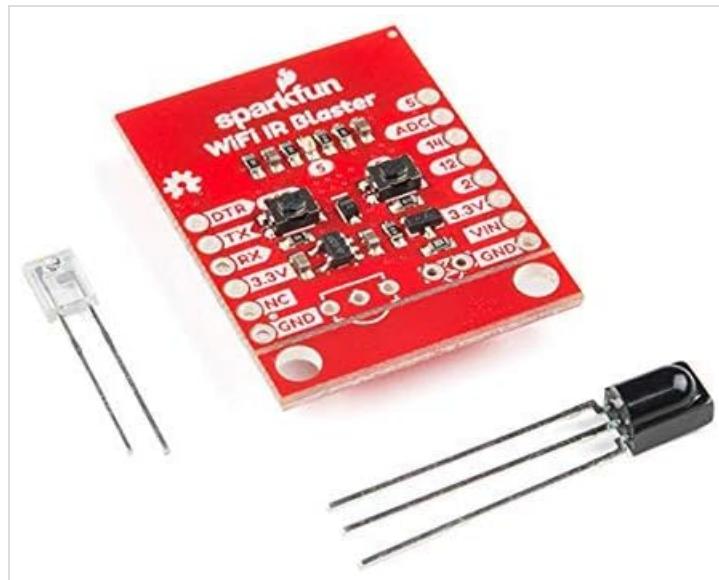
### Components Included:

- **SparkFun WiFi IR Blaster Board:** Features an ESP8266 SoC, crystal, 4MB flash memory, and a PCB antenna.
- **IR Emitter:** A two-pin component for sending infrared signals.
- **IR Detector:** A three-pin component for receiving infrared signals.

### Soldering Instructions:

1. Identify the designated solder pads on the WiFi IR Blaster board for the IR emitter and IR detector.
2. Carefully insert the leads of the IR emitter and detector into their respective holes. Ensure correct polarity if specified on the board or component datasheet.
3. Solder the leads securely to the board.

**Important Note:** The PCB antenna for WiFi signals is located under the SparkFun logo on the board. Avoid placing any materials that may interfere with WiFi signals near this area to ensure optimal performance.



This image displays the SparkFun WiFi IR Blaster circuit board, which is red and features an ESP8266 microcontroller. Alongside the board are the two components that require soldering: a clear, two-pin IR emitter and a black, three-pin IR detector.

## OPERATING THE WiFi IR BLASTER

Once the IR emitter and detector are soldered, the ESP8266 can be programmed to establish an interface between HTTP, MQTT, TCP, and your infrared-controlled devices. This allows for a wide range of applications:

- **Web-based Control:** Control your TV or other IR devices directly from a web browser on your computer or smartphone.
- **Voice Assistant Integration:** Integrate with smart home systems to control IR devices using voice commands (e.g., via Alexa).
- **Scheduled Automation:** Set up automated triggers for your IR-controlled LED strips or other appliances based on time or other conditions.
- **IoT Connectivity:** Leverage MQTT or TCP protocols for advanced IoT projects and home automation scenarios.

Programming the ESP8266 requires knowledge of microcontroller programming and network protocols. Refer to SparkFun's official documentation and community resources for programming guides and example code.

## MAINTENANCE

The SparkFun WiFi IR Blaster is a robust electronic component. Minimal maintenance is required:

- Keep the board clean and free from dust and debris.
- Avoid exposing the device to extreme temperatures or humidity.
- Ensure proper ventilation if enclosed in a case.
- Periodically check soldered connections for integrity, especially if the device is subject to vibration or movement.

## TROUBLESHOOTING

If you encounter issues with your WiFi IR Blaster, consider the following:

- **Power Issues:** Verify that the board is receiving adequate power (3.3V or VIN).

- **WiFi Connectivity:** Check your WiFi network status and ensure the antenna area is unobstructed. Re-flash the ESP8266 with your WiFi credentials if necessary.
- **IR Signal Transmission/Reception:** Ensure the IR emitter and detector are correctly soldered and oriented towards the target device. Test with known working IR codes.
- **Programming Errors:** Review your ESP8266 code for logical errors or incorrect pin assignments.
- **Soldering Issues:** Inspect all soldered joints for cold joints or bridges.

For more detailed troubleshooting, consult SparkFun's online resources and community forums.

## SPECIFICATIONS

Feature	Detail
Product Dimensions	2 x 2 x 1 inches
Item Weight	0.01 ounces
Manufacturer	SparkFun
Item Model Number	845156009077
Memory Storage Capacity	4 MB
RAM Memory Installed Size	4 MB
Operating System	Linux (typical for ESP8266 development)
Specific Uses For Product	Home Automation, IoT Projects, Smart Home Integration
Included Components	IR Detector, IR Emitter

## WARRANTY INFORMATION

Specific warranty details for the SparkFun WiFi IR Blaster (PID 15031) are not provided in the product information. For warranty inquiries, please refer to the official SparkFun website or contact SparkFun customer support directly.

## SUPPORT

For technical assistance, programming guides, project examples, and community support, please visit the official SparkFun website. SparkFun provides extensive documentation and a vibrant community forum for their products.

### Online Resources:

- SparkFun Product Page: <https://www.sparkfun.com/products/15031> (*Note: This is a placeholder link, please verify the actual product page on SparkFun's website.*)
- SparkFun Learn Tutorials: <https://learn.sparkfun.com/>

## OFFICIAL PRODUCT VIDEOS

No official product videos from the seller are available for embedding at this time.

