



## SparkFun LoRa Gateway - 1-Channel (ESP32)

WRL-15006

The SparkFun 1-Channel LoRa Gateway is a powerful 3-network capable device thanks to an onboard ESP32 WROOM module and an RFM95W LoRa modem. The RFM95W handles the 915MHz band while the ESP32 takes care of Bluetooth and WiFi capabilities. One of the ideal uses is to convert LoRa (Long Range) radio messages into data packets that you can access via the web, but of course the flexibility it offers can be put to many more uses! It's a perfect, low-cost tool for monitoring a dozen-or-so LoRa devices and relaying their messages up to the cloud.

Complete with a Qwiic connector and a breadboard-compatible array of ESP32 pin-breakouts, the Gateway can also serve as a general-purpose ESP32/RFM95W development platform. The LoRa Gateway can act as either a gateway (hence the name) or a device, but not both at the same time. To really be sure that your setup works as expected you should have another LoRa device to listen to, and/or another LoRa gateway to transmit to. The good news is that the LoRa Gateway 1-Channel can act as both so if you have two then you're all set.

To use the 915 MHz radio on the gateway you will need an antenna - for which you have two choices. You may cut a length of solid-core wire to approximately three inches for a through-hole antenna connection with strain relief or you can use a 915MHz antenna with a U.FL connector for higher performance antennas.

## FEATURES

- ESP32-WROOM-32 module
  - WiFi, BT+BLE microcontroller
  - Integrated PCB antenna
- Hope RFM95W LoRa modem
  - Frequency range: 868/915 MHz
  - Spread factor: 6-12
  - SPI control interface
- U.FL antenna connector for LoRa radio
- Reset and ESP32 pin0 buttons
- 14 GPIO ESP32 pin-breakouts
- Power and user LEDs
- Qwiic connector
- CH340C USB-to-Serial interface
- Micro-B USB connector for power and programming
  - All current consumption tested at 5V
  - ~170 mA when formatting SPIFFS in Gateway mode
  - ~150 mA when searching for WiFi network in Gateway mode
  - 80 to 100 mA in steady operation of Gateway
  - ~70 mA when using the LoRa Device example

