SparkFun Pro RF - LoRa, 915MHz (SAMD21)

**DESCRIPTION**

- **SAMD21G18A**
  - Cortex M0+
  - 256KB Flash Memory
  - 32MHz External Oscillator
  - 4 Digital and 5 Analog IO Pins with exclusive GND pins
- **Hope RFM95W LoRa modem**
  - Point to Point Radio capabilities
  - LoRa Enabled
  - Frequency range: 915 MHz
  - Spread factor: 6-12
  - Range up to 1 mile line of sight
  - U.FL Antenna
- **LiPo Battery Charger**
  - 500mA Charge Rate
- **Qwiic Enabled**

**Features**

**Tags**

- 915MHZ
- Arduino
- Development
- I2C
- IoT
- LoRa
- Pro RF
- Qwiic
- RFM95W
- SAMD21
- SPI
- Wireless

**SparkFun Pro RF - LoRa, 915MHz (SAMD21) Product Help and Resources**

**TUTORIALS**

- **LoRaWAN with ProRF and The Things Network**
  - July 3, 2018
  - Learn how to make a LoRaWAN node for your next long range IoT project and connect it to the internet with The Things Network!

- **SparkFun SAMD21 Pro RF Hookup Guide**
  - October 4, 2018
  - Using the super blazing, nay blinding, fast SAMD21 whipping clock cycles at 48MHz and the RFM96 module to connect to the Things Network (and other Radio woodles).

- **Adding More SERCOM Ports for SAMD Boards**
  - February 4, 2019
  - How to setup extra SPI, UART, and I2C serial ports on a SAMD-based boards.

- **Three Quick Tips About Using U.FL**
  - December 28, 2018
  - Quick tips regarding how to connect, protect, and disconnect U.FL connectors.
Customer Reviews

3.8 out of 5
Based on 4 ratings:

1 of 1 found this helpful:

Great chip combo, but another layout would be better for me.
about 2 months ago by Member #505206

Despite their drawbacks, my projects are usually breadboarded, as my lack of design expertise generates a lot of experimentation and modification. The width of the board with the ground rails uses all the width for connections on the usual breadboard, so your competitor’s format works better most of the time. I seem to end up usually needing a power bus, so all those ground connectors only solve half that problem.

A great use of your skills would be better radio software support. The third party libraries usually used are short on explanation and perhaps a little long on attitude for a packet radio beginner, and contain inconsistencies like setting the power one way on the server and then adding a boolean on the client, or setting the frequency in a not if statement. I finally ended up figuring most of it out from Nate’s kill switch article.

1 of 1 found this helpful:

Good Intro to LoRa WAN Device
about 2 months ago by xsk8rat

I like the clear labels and QWIIC connector make for a quick start. It works and seems to be fairly robust. It has adequate mounting holes to include in a real project! I understand the other review’s concern about the layout for prototyping. But for me the QWIIC allows minimal the soldering to get where i want to go.

It did not work well out of the box, but the support team was able to patch an issue in the library and get things working promptly. Thank you! (Note: use 1.5.3 SparkFun SAMD board defs for the working version.)

The Hookup Guide is a little short on details (for example: it explains that connecting the two LoRa jumpers on the back of the board puts the board in LoRa mode. But it does not explain what mode is enabled by leaving the jumpers disconnected). The “SWITCH” pin through holes are not explained, but can be “sort-of” inferred from the schematic.

Also, there are many fiddly configuration changes in the libraries. But if you are careful, you can make them all correctly.

1 of 1 found this helpful:

Fine but not exactly PRO-oriented.
about a month ago by mxgxw

We recently bought this board to use as a SAMD LoRa node on our deployment for TTN here in San Salvador. Everything seems perfect but there is a couple of issues with this design:

1st: Documentation is a little bit of a mess and the instructions about the libraries to use are confusing. There are several Libraries recommended on the tutorial but some of them simple don’t work directly on the SAMD. Also there is an error in the tutorial for The Things Network were SPI pins for the radio are wrong.

2st: Why there is no JTAG port? I mean… This is a “PRO” board. Pros tend to like to have tools to debug the boards. LoRa is a complex protocol and trying to debug only using UART is a PITA. With the instructions wrong on the tutorial we literally had to solder a couple of wires directly on the chip to extract the SWD lines to be able to connect a JTAG debugger and find the errors because the board didn’t even boot.

In general the other features are fine and the quality is the one that one expects from Sparkfun. But for a PRO board and for LoRa this one didn’t convinced us.

1 of 1 found this helpful:

Doesn’t work!!
about 4 months ago by Member #873804

I had high hopes this would supply a wireless link for an ongoing project, but its a complete dud.
CF replied on November 5, 2018:

I'm sorry to hear you're having trouble! Please contact our technical assistance team for help with this.