

# ***Finch RF***

Ground unit for Sparrow / Raven onboard telemetry.



Manual version: 1.0

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## Introduction

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The Finch RF unit is designed as ground unit for Sparrow / Raven onboard module. It represents a bridge between RF link and USB data transfer to an Android tablet or phone running Albatross App to display data.

### *Key features*

- External SD for updates
- Plug & play
- **FHSS** - Frequency Hopping Spread System on 433MHz telemetry channel.

### *Specifications*

Unit Dimensions	42 mm x 22 mm x 11 mm
Weight	11 grams
Temperature Range <sup>1</sup>	-10°C ~ +60°C
Input Voltage Range	5.0 volts DC USB
Input Current	84 milliamps

<sup>1</sup> Specifications are taken from component ratings and system limits and may not have been tested to the full extent of the specified ranges.

## Physical overview

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Figure 1 shows the Finch RF module.

Main connectors are:

- SMA connector for RF antenna.

- Onboard multi-color LED shows different status of operation:

At power on all LEDs are toggled (red, green, blue and white) to confirm its operation, during operation LED status are:

red – module is waiting for RF signal

green – module is ready for flight

blue – not yet implemented.

white – not yet implemented.

- External SD card connector is used for firmware updates or to set Finch to listen mode via Settings.ini file. **SD card is not included in the package!**

- Micro USB is used to connect the Finch to an Android tablet or phone to display the flight data thru Albatross app. Finch will get power from Android device via USB connection so Android device must support OTG mode to supply power to the unit.

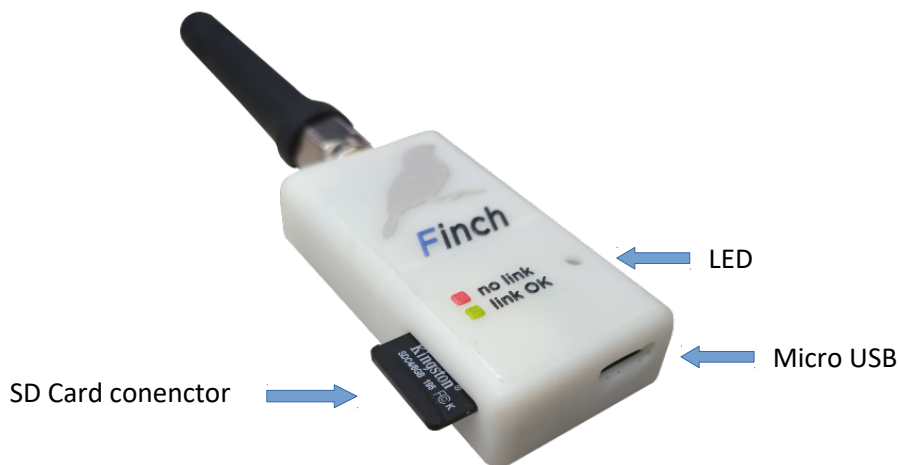


Figure 1: The Finch RF module.

## Using the Finch RF module

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### *Powering the module*

To power the Finch RF module connect it to a tablet or phone via Finch USB cable. Connect onboard unit and green LED must turn on. Run the Albatross application and you are ready to use it.

## Update and configuration via SD card

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To set Finch RF to Listen mode user must save Settings.ini file (found in Update zip file) to the root of SD card. In this settings.ini file Listen pair key must be set to serial device which wishes to be simulated as RF device. When Listen pair key is set to 0 then listen mode is disabled.

### **Settings.ini example:**

```
//Listening mode: When listen pair key is different than 0
//Finch will be in listen mode, simulating different Finch / Snipe (serial nr)
//but will not transfer any WAN data to Raven/Sparrow
Listen pair key: 0
```

To make an update make following:

1. Download latest firmware for Finch from our web site. Firmware should have name Finch.rcu
2. Copy Finch.rcu to root of SD card
3. Insert SD card to Finch module and power it up.
4. Wait for 5-8s until all LED lights will toggle shown
5. Remove SD card and check "Finch info.txt" file that new version is installed.

### **Finch info.txt example:**

Device: Finch	- device name
Serial No: 190001	- device serial no.
HW: 1.1	- HW version of device
Produced: 20.12.2019	- date of production
FW v: r.0.9.B110	- FW version installed
Listen pair key: 0	- if different than 0 then Finch can simulate another Snipe / Finch so user can receive RF data on 2 separate devices from one source (Raven or Sparrow)

## Revision history

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20.12.2019	v1.0	- initial release
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