Swarm Eval Kit - Satellite Communications Platform

Overview

The Swarm Eval Kit transmits and receives data to and from Swarm's space network to provide connectivity anywhere on Earth. The Eval Kit is designed to provide the developer with an easy to use platform, with the included FeatherS2 - ESP32 board + OLED, a USB-C port, and I2C port for sensors. FeatherWing add-on modules can provide a suite of additional capabilities.

Key Features

- ❏ Turn-key hardware platform for 2-way satellite data connectivity anywhere on Earth
- ❏ Flip the ON switch and start beaconing your GPS location, battery voltage, and CPU temperature
- ❏ WiFi (AP or STA mode), USB, and serial interfaces
- ❏ 1 kbps bit rate to space, AES256 GCM encryption
- ❏ Live readout of RF background noise for link quality
- ❏ Compact package with tripod, solar panel, and batteries
- ❏ Integrated VHF and GPS antenna
- ❏ SMA (external) or U.FL (internal) antenna interfaces
- ❏ FCC (Part 25) & EU-RED/ISED/AUS/NZ/ANATEL Certified
- ❏ Send messages with 1-click using the Swarm messaging app, and receive data by email or the in Swarm user web UI
- ❏ Swarm Cloud Data delivery and management via REST API

Satellite Interface	Transmit/receive messages in less than 5 minutes (Q1-2022)
Frequency	137-138 MHz (downlink) 148-150 MHz (uplink)
Bit Rate	1 kbps (Max packet size 192 bytes)
Interface	Power: Solar + battery Data: WiFi, USB-serial, Feather-serial, I2C Antennas: Sat + GPS (U.FL or SMA)
Dimensions	32x26x8 cm (not including tripod or antenna)
Mass	2.6 kg

Power Consumption	9 W solar panel, USB-C charger 30 Whr battery (3x 18650 cells) Unregulated 4.2V battery output for external sensors or devices I2C with optional 3V3 pull-ups and a 3V3 regulated output 24 hr lifetime on batteries only (wifi on)
Environment	Operational -40 C to +60 C Waterproof enclosure, IP68 rating
Commanding	Two-letter NMEA formatted
Sensors	Onboard GPS (lat/lon/alt), 1 Hz CPU Temperature

CONTACT   www.swarm.space   Email: info@swarm.space