



# Automated VHF Telemetry

A SensorGnome equipped with a [FUNcube Dongle](#) radio receiver can detect pulses from [Lotek](#) coded transmitters. If the output pattern from each tag has been [registered](#) with [sensorgnome.org](#), the recorded pulses can later be decoded into tag IDs. Tag registration and deployment information is uploaded to the [sensorgnome.org](#) server, where users can also upload their data files for processing. Users receive full data on each detection of their tags, even if the detection came from a receiver deployed by someone else.

[SensorGnome 1.JPG](#)

## **Features of SensorGnome for Automated VHF Telemetry:**

- Affordable
- Simultaneous scanning of multiple antennas (currently, up to 3 antennas with the more recent FuncubeDongle Pro Plus, but up to 5 antennas with the original FuncubeDongle Pro)
- Dual power source: 9-36 V DC or AC as input (from the box)
- Built-in GPS, optionally with ~20 microsecond synchronization to UTC time
- Storage is effectively unlimited (you could put a 3TB USB drive on the hub, and run it for a few years without it filling up)
- Detects and records frequency offset (offset of tag frequency from nominal frequency) which allows for additional information for tag-detection (and another parameter to distinguish between two tags with the same id)

- Stores a complete record of all 'detections' for later processing; this allows for multiple checks of valid/invalid hits, and an archive of the actual 'data' received (e.g. a pre-processed data stream)
- Stores information on running 'noise' and signal strength
- Allows for multiple/alternate tag-detection algorithms
- Communicates with a simple web-server; if connected to the internet, you can simply go to its web page and see what's up

**Known 'non-features':**

- System in development
- Power consumption is greater than some commercial receivers (i.e. it is not optimized for power consumption), but can still be run off solar power.

**Get started:**

1. [Tags, Tags, Tags](#)
2. [SensorGnome - Building, Powering, Connecting, Configuring...](#)
3. [Antennas, Cables, & Connectors](#)
4. [Receiver Station Set-up](#)