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Tractivity Operational description

The AP (Tractivity USB) and POD (Tractivity Sensor) devices are a low power single frequency data collection system. Data is collected Via the POD and downloaded wirelessly to a computer using Low power System on a chip ICs (Texas instruments CC2510 F POD and CC2511F AP). The chip set can be programmed over the ISM band 2400 – 2483.5 GHZ but only a single frequency 2400.5GHz set in MSK mode is selected (see data sheet attached cc2511f32.pdf). The power level selected on both devices is 0dBm.

In the AP the CC2511F AP is the only IC in the circuit. It receives data from the POD and sends it to the PC via built in USB interface. The AP transmits continuously searching for the presence of a POD. When a POD is detected the AP sends an acknowledge at which point the POD downloads its data

The POD Collects motion data via MEMS digital output motion sensor (LIS3DH) saves it on a EEPROM (CAT25256YI-G)

The user wears the POD device for a period of time ranging from a few minutes to several days. When it is desired to review the latest activities the data from the POD is downloaded wirelessly to a PC Via the AP device.

Each device uses an integrated inverted F PCB antenna. The AP antenna gain is 1.8dBi and the POD is 0.6dBi.