RoKiX Sensor Node

Integrates multiple sensors with Bluetooth® 5 SoC

ROHM and Kionix's RoKiX Sensor Node is a key component in the new RoKiX IoT Platform. The sensor node utilizes the latest Bluetooth 5 SoC (nRF52840) provided by Nordic Semiconductor, with better throughput and wider range compared to the Bluetooth 4.2. It also has better coexistence with other wireless devices, and an increased broadcast capacity improving beacon functionality.

The Bluetooth 5 SoC is based on an ARM Cortex-M4F processor with Floating Point Unit (FPU) running at 64 MHz, allowing quick and efficient computation of demanding applications. Also included on the SoC is 1MB/256kB of flash/RAM memory. The combination of Cortex-M4F and memory availability offers better capabilities in a single chip solution.

Software packages supporting the RoKiX Sensor Node include a Windows® GUI with visualization and datalogging capability, a Python-based Command Line Interface (CLI), and an Android Data Logger App. The sensor node can be used with the nRF52 SDK provided by Nordic Semiconductor, ARM® Mbed, and can use the DFU tool from Nordic Semiconductor for wireless firmware loading.

RoKiX Sensor Node comes with a mounting accessory to attach it to surfaces with screws or to connect a watch band for wearing it on one's wrist.

Features

- Bluetooth® 5 with an integrated crystal antenna and a connector for an external antenna
- Multiple sensors for measuring 3D-acceleration, 3D-magnetism, 3D-rotation, atmospheric pressure, and temperature
- Low power consumption and long battery life
- Can be powered by a rechargeable Li-Polymer battery, replaceable coin cell batteries, or via Micro USB
- Two expansion buses for extended connectivity of additional sensors and functions
- Compact housing (42x67x22mm)
- Programmable RGY LED
- 64Mb of flash memory

Sensors in the standard sensor node

- 3-axis accelerometer
- Combination
  3-axis accelerometer + 3-axis magnetometer
- Combination
  3-axis accelerometer + 3-axis gyroscope
- 3-axis magnetometer
- Barometer

Applications

- Prototyping IoT applications ranging from Consumer IoT (eg. wearables, health and wellness, games and toys, and smart home devices) to Industrial IoT applications (eg. smart city sensor networks, asset management and logistics monitoring, factory automation)
- Connecting to various cloud services for data analysis, machine learning, remote monitoring, etc.
- IoT development education