RAK8211-NB iTracker NB-IoT Tracker Module (BC95 and nRF52832 based) with NBIoT, BLE 5, GPS and Sensors - supports global cellular bands

iTracker RAK8211-NB is versatile developer board aimed at aiding in quick prototypes using NB-IoT. The board includes a vast array of connectivity options (NB-IoT, BLE5.0 and GPS) and sensors like an accelerometer, a light sensor and a barometric sensor. At the heart of the module is the venerable Nordic NRF52832 BLE processor. The NB-IoT connectivity is provided by the Quectel BC95 module. The iTracker module is Arduino friendly and can be programmed using the IDE.

The board also provides SWD interface for programming the NRF52832 core. The combination of BLE and NB-IoT provides flexible low power consumption development along with myriad of application option ranging from telemetry to live tracking and environment sensing.

- NB-IoT+GPS+Bluetooth 5+Sensor

- Bluetooth to NBiot gateway / Nbiot Sensor Node / NBioT Tracker

- LiPo battery charger and USB charger

- User can customize key definitions in the module

- USB port with serial access

Specifications

- Module Name: RAK8211-NB

- Dimensions: 43mm x 38mm x 18 mm

- Interface: Digital I/O,Analog input

- Band: B1/B3/B8/B5/B20/B28

- Antenna Type: External antenna

- Operating temperature: -40°C to +85°C

- Storage temperature: -40°C to +85°C

- Power Supply: 3.5V~18V
  Applications

- Vehicle Tracking / Fleet transport management

- Safety monitoring of old / young children

- Animal protection and animal husbandry management

- Loss of assets / personal positioning

- Home Security

- Street Light Control

- Factory Automation

Integrated Multiple Sensors

- Acceleration LIS3DH

- Compass LIS2MDL

- Bosch BME280 Temperature/Humidity/Barometer

- Ambient Light OPT3001

- Tilt Sensor

GPRS Specification

- L1 Band Receiver: Channel:22(Tracking) / 66(Acquisition)C/A Code

- Horizontal Position Accuracy: Autonomous: <2.5m

- Velocity Accuracy: Without Aid: <0.1m/s

- Acceleration Accuracy: Without Aid: <0.1m/s2

- Timing Accuracy: 1PPS Out: 10ns

- Reacquisition Time: <1s

- TTFF@-130dBm with EASyTM:

  o Cold Start: <1s

  o Warm Start: <5s

  o Hot Start: <1s
- Sensitivity

  o Acquisition: -148dBm

  o Tracking: -165dBm

  o Reacquisition: -160dBm
- Dynamic Performance

  o Maximum Altitude: Max. 18000m

  o Maximum Velocity: Max. 515m/s

  o Maximum Acceleration: 4G
- Protocols

  o NMEA 0183

  o PMTK

Nordic NRF52832 MCU Quectel L70-R GNSS

- QUECTEL BC95-G NB-IoT

- 4.9mA peak current in TX (0 dBm)

- 4.8mA peak current in RX