NB-IoT Sensor Node

SN50v3-NB

OVERVIEW:

SN50v3-NB is a Long Range NB-IoT Sensor Node. It is open source project. It is designed to facilitate developers to quickly deploy industrial level NB-IoT solutions. It helps users to turn the idea into a practical application and make the Internet of Things a reality. It is easy to program, create and connect your things everywhere.

SN50v3-NB wireless part is based on NB model allows the user to send data and reach extremely long ranges at low data-rates.It provides ultra-long range spread spectrum communication and high interference immunity whilst minimising current consumption.It targets professional wireless sensor network applications such as irrigation systems, smart metering, smart cities, building automation, and so on.

SN50v3-NB uses STM32I0x chip from ST, STML0x is the ultra-low-power STM32L072xxxx microcontrollers incorporate the connectivity power of the universal serial bus (USB 2.0 crystal-less) with the high-performance ARM® Cortex®-M0+ 32-bit RISC core operating at a 32 MHz frequency, a memory protection unit (MPU), high-speed embedded memories (192 Kbytes of Flash program memory, 6 Kbytes of data EEPROM and 20 Kbytes of RAM) plus an extensive range of enhanced I/Os and peripherals.

SN50v3-NB is an open source product, it is based on the STM32Cube HAL drivers and lots of libraries can be found in ST site for rapid development.

SN50v3-NB supports different uplink methods including MQTT, MQTTs, UDP & TCP for different application requirement, and support uplinks to various IoT Servers.

SN50v3-NB supports BLE configure and OTA update which make user easy to use.

SN50v3-NB is powered by 8500mAh Li-SOCI2 battery, it is designed for long-term use up to several years.

SN50v3-NB has optional built-in SIM card and default IoT server connection version. Which makes it works with simple configuration.

Features:

- NB-IoT Sensor Node,B1/B2/B3/B4/B5/B8/B12/B13/ B17/B18/B19/B20/B25/B28/B66/B70/B85 @H-FDD
- Ultra-low power consumption
- Open-source hardware / software
- Multiply Sampling and one uplink
- Support BLE remote configure and update firmware

- 8500mAh Battery for long term use
- Uplink on periodically
- Downlink to change configure
- Uplink via MQTT, MQTTs, TCP, or UDP
- Nano SIM card slot for NB-IoT SIM

Specification:

Common DC Characteristics:
- Supply Voltage: 2.5v ~ 3.6v
- Operating Temperature: -40 ~ 85°C

NB-IoT Bands :
- B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/ B19/B20/B25/B28/B66/B70/B85 @H-FDD

I/O Interface:
- Battery output (2.6~3.6v depends on battery)
- +5v controllable output
- 3 x Interrupt or Digital IN/OUT pins
- 3 x one-wire interfaces
- 1 x UART Interface
- 1 x I2C Interface

Battery:
- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self-Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

Order Info: SN50v3-NB-XX-YY

XX:
- GE: General version (Exclude SIM card)
- 1D: with 1NCE* 10 years 500MB SIM card and Pre-configure to DataCake server

YY: The grand connector hole size
- M12: M12 hole
- M16: M16 hole
- M20: M20 hole