

General Wireless End Node

OVERVIEW:

SN50v3 is a **Long Range Wireless IoT End Node** designed for **outdoor use**. It targets professional wireless sensor network applications such as irrigation systems, smart metering, smart cities, building automation, and so on.

SN50v3 is designed to facilitate developers to quickly deploy industrial-level **LoRaWAN, NB-IoT** or **CAT-M1** solutions. It has different interfaces such as **Digital Input/Output, One-Wire, UART, I2C, 3.3v & 5v output**. Users can connect various sensors to SN50v3, it will convert the sensors' signal to wireless signal and uplink the data to IoT server.

SN50v3 is an **Open-Source product**. The offshore software already supports rich features & sensors and keeps updating. User can also customize the software for their IoT application.

SN50v3 has a **built-in BLE module**, user can configure the sensor remotely via Mobile Phone. It also supports **wireless OTA upgrade** for easy maintenance.

SN50v3 is powered by **8500mA Li/SOCI2 battery** or **solar panel with Li-ion battery** for long term use.



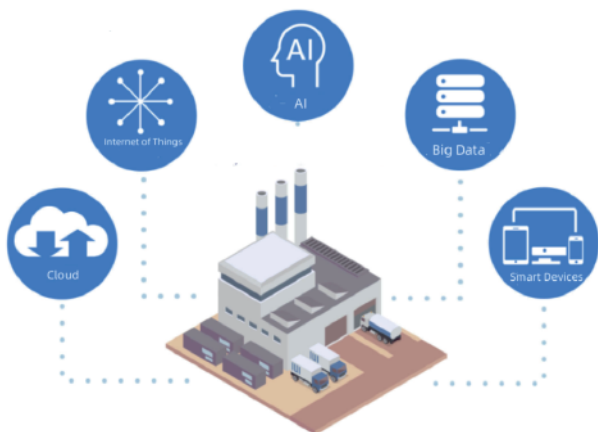
Application:



Smart City



Smart Farm



Smart Factory




Smart Building

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Model Variants

Variants	SN50v3-LB	SN50v3-LS	SN50v3-NB	SN50v3-NS	SN50v3-CB	SN50v3-CS
Connectivity						
Configure Method	TTL, BLE, LoRaWAN	TTL, BLE, LoRaWAN	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT, LTE-M	TTL, BLE, NB-IoT, LTE-M
Upgrade Method	TTL, BLE, LoRa	TTL, BLE, LoRa	TTL, BLE	TTL, BLE	TTL, BLE	TTL, BLE
Hardware	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB
Features	General Features: * +5v controllable output * 3 x Interrupt or Digital IN/OUT pins * 3 x one-wire interfaces * 1 x UART Interface * 1 x I2C Interface * Ultra-low power consumption * Support Bluetooth v5.1 remote configure and OTA update firmware * Uplink on periodically * GNSS for Location Report (for -CB & -CS models only) * Downlink to change configure					
Battery & Power	 * 8500 mAh Li/SOCI2 Battery	 * Solar + 3000 mAh Li-ion Battery	 * 8500 mAh Li/SOCI2 Battery	 * Solar + 3000 mAh Li-ion Battery	 * 8500 mAh Li/SOCI2 Battery	 * Solar + 3000 mAh Li-ion Battery
Power Consumption	* Sleep Mode: 5uA @ 3.3v * LoRa Transmit Mode: 125mA @ 20dBm, 82mA @ 14dBm	* Sleep mode: 74uA@3.8V * LoRa Transmit Mode: 206mA@14dBm, 236mA@20dBm	* Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V	* Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V	* Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V	* Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V
Supply Voltage	2.5v ~ 3.6v	3.7v ~ 4.2v	2.5v ~ 3.6v	3.7v ~ 4.2v	2.6v ~ 3.6v	3.7v ~ 4.2v
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C

Battery & Enclosure Option:



Li-SOCI2 Battery & Enclosure:

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



Solar Version & Enclosure:

- 3000mAh Re-chargeable battery
- 0.9W on board solar pannel Suitable to used in the place where sun is sufficient



- This icon means support location feature by: GPS/ GLONASS/BDS/Galileo/ QZSS

Wireless Option:



- LoRaWAN 1.0.3 Class A
- Bands: CN470/EU433/KR920/US915/ EU868/AS923/AU915/IN865
- OTAA or ABP Mode.
- World Wide Unique LoRaWAN Key
- RX sensitivity: down to -139 dBm.
- Max +22 dBm - 100 mW RF output



- CAT NB2 Bands:
- For -NB & -NS: B1/B2/B3/B4/B5/B8/B12/B13/ B17/B18/B19/B20/B25/B28/B66/B70/B85
- For -CB & -CS: B1/B2/B3/B4/B5/B8/B12/B13/ /B18/B19/B20/B25/B28/B66/B71/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink



- CAT-M1 / LTE-M Bands: B1/B2/B3/B4/B5/ B8/B12/B13/B18/B19/B20/B25/B26/B27/ B28/B66/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink

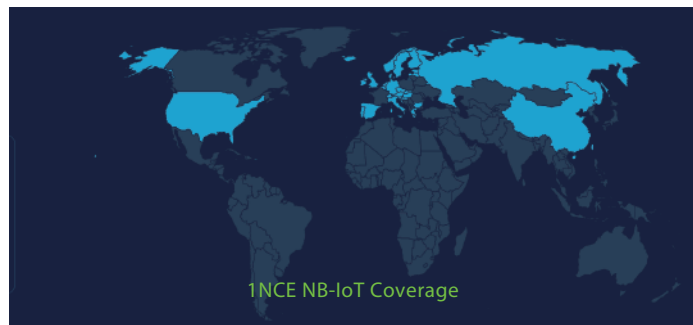
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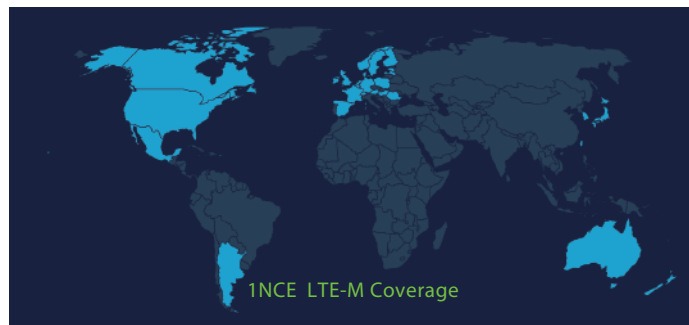
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What is 1T version for NB-IoT version?

The 1T version of NB-IoT General Wireless End Node is with 1) 1NCE SIM Card & 2) ThingsEye Pre-configured.
1NCE SIM Card (10 Years Cellular service with 500MB Data Traffic, Enough for devices to uplink 10 years at 1hour interval).



NB-IoT Network : Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Portugal, Puerto Rico, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.



LTE-M Network : Argentina, Austria, Australia, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Japan, Jersey, Korea, Republic of, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Puerto Rico, Romania, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.

ThingsEye.io platform:

1T version with ThingsEye IoT service pre-installed. This save a lot of work from user side to configure IoT server.

Below is Dash Board is the demo in ThingsEye.io.



Order Info:



Part Number: SN50v3-LB-XX-YY

XX: The default frequency band

- XX: Frequency Bands, options: EU433,CN470, EU868,IN865,KR920,AS923,AU915,US915

YY: The grand connector hole size

- YY: Hole size, options: M12, M16, M20

Part Number: SN50v3-LS-XX-YY

XX: The default frequency band

- XX: Frequency Bands, options: EU433,CN470, EU868,IN865,KR920,AS923,AU915,US915

YY: The grand connector hole size

- YY: Hole size, options: M12, M16, M20



Part Number: SN50v3-NB-XX-YY

XX:

- **GE**: General version (Exclude SIM card)
- **1T**: with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

YY: The grand connector hole size

- YY: Hole size, options: M12, M16, M20

Part Number: SN50v3-NS-XX-YY

XX:

- **GE**: General version (Exclude SIM card)
- **1T**: with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

YY: The grand connector hole size

- YY: Hole size, options: M12, M16, M20



Part Number: SN50v3-CB-XX-YY

XX:

- **GE**: General version (Exclude SIM card)
- **1T**: with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

YY: The grand connector hole size

- YY: Hole size, options: M12, M16, M20

Part Number: SN50v3-CS-XX-YY

XX:

- **GE**: General version (Exclude SIM card)
- **1T**: with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

YY: The grand connector hole size

- YY: Hole size, options: M12, M16, M20

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