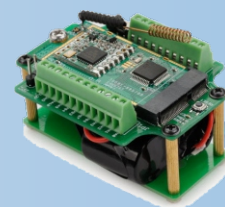


Waterproof Long Range Wireless LoRa Sensor Node

LSN50



OVERVIEW:

LSN50 is a Long Range LoRa Sensor Node. It is designed for outdoor use and powered by Li/SOCI2 battery for long term use with power consumption and secure data transmission. It is designed to facilitate developers to quickly deploy industrial level LoRa and 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.

It is based on SX1276/SX1278, allowing 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, smartphone detection, building automation, and so on.

LSN50 uses STM32L0x chip from ST. STM32L0x is the ultra-low-power STM32L072xx 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.

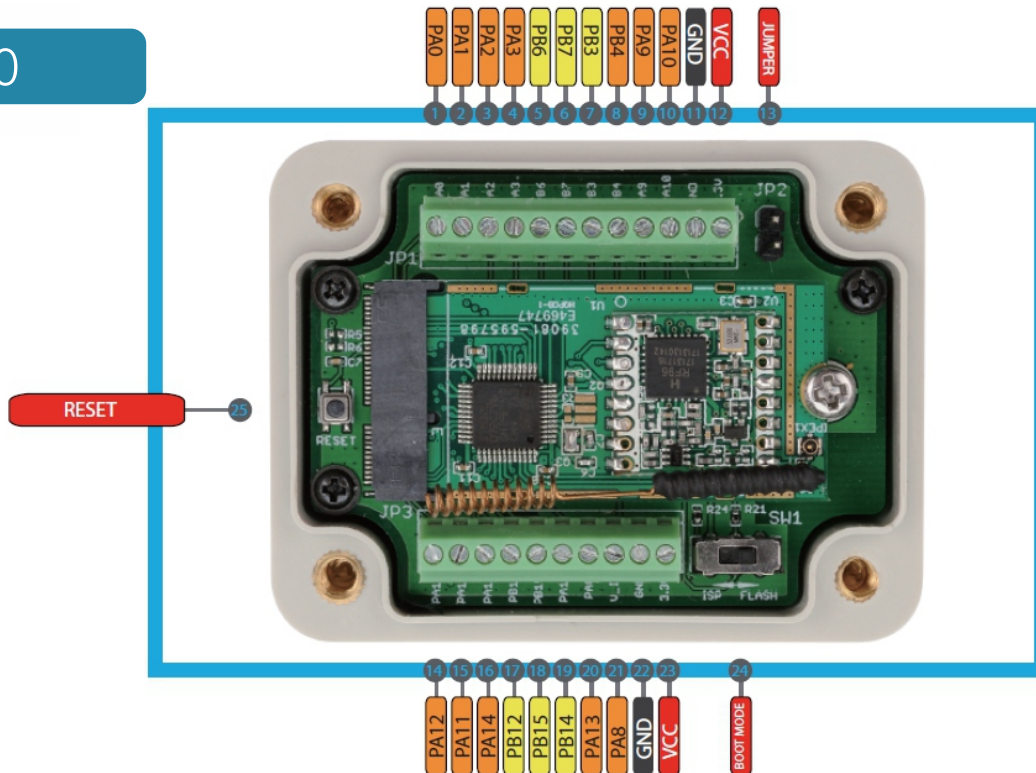
LSN50 is an open source product, it is based on the STM32Cube HAL drivers and lots of libraries can be found in ST site for rapid development.

Features:

- STM32L072CZT6 MCU
- SX1276/78 Wireless Chip
- Pre-load bootloader on USART1 / USART2
- IDE MDK-ARM Version 5.24a
- I2C, LPUSART1, USB
- 2x12 bit ADC, 1x12 bit DAC
- 18 x digital I/O
- LoRa™ Modem
- Baud rate configurable
- CN470/EU433/KR920/US915
- EU868/AS923/AU915
- Open source hardware / software
- Available bands 433/868/915/920 Mhz
- IP66 Waterproof Enclosure
- Ultra Low Power Consumption
- AT Commands to change parameters
- 4000 mAh Battery for long term use

Pin Definition

LSN50



Specifications:

MCU Side:

- MCU: STM32L072CZT6
- Flash: 192 KB
- RAM: 20KB
- EEPROM: 6 KB
- Clock Speed: 32MHz

LoRa Side:

- LoRa Chip: SX1276/SX1278
- 68 dB maximum link budget.
- +20 dBm - 100mW constant RF output vs.
- +14 dBm high efficiency PA.
- Programmable bit rate up to 300 kbps.
- High sensitivity: down to -148 dBm.
- Bullet-proof front end: IIP3 = -12.5 dBm
- 127 dB Dynamic Range RSSI.
- LoRaWAN 1.0.2 Specification

Absolute Maximum Ratings:

- I/O pins: 0.5v ~ VCC+0.5V

Common DC Characteristics:

- Supply Voltage: 2.1v ~ 3.6v
- Operating Temperature: -40 ~ 85°C
- I/O pins: Refer to STM32L072 datasheet

Power Consumption:

- STOP Mode: 2.7uA @ 3.3v
- LoRa Transmit Mode:
125mA @ 20dBm
44mA @ 14dBm

Battery:

- Li/SOCI2 unchargeable battery
- Capacity: 4000mAh
- Self Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

Applications:

- Wireless Alarm and Security Systems
- Home and Building Automation
- Automated Meter Reading
- Industrial Monitoring and Control
- Long range Irrigation Systems, etc..

Dimensions:

- Size: 65 x 50 x 50 mm
- Net weight: 140 g

Order Info- LSN50-XX-YY

XX:

- 433: Best tuned at 433 MHz
- 868: Best tuned at 868 MHz
- 915: Best tuned at 915 MHz

YY:

- 12: With M12 waterproof cable hole
- 16: With M16 waterproof cable hole
- 20: With M20 waterproof cable hole