Dragino LoRaST IoT Module Featuring LoRa® technology - Support 868MHz Frequency

PRODUCT DETAILS

Key Features

- STM32L072CZT6 MCU
- SX1276/78 LoRa Wireless Modem
- Pre-load with ISP bootloader
- I2S,I2C,LPUSART1,SPI2,USB
- 22 x Digital I/Os
- 3 x 12bit ADC; 1 x 12bit DAC
- MCU wakes up by UART or Interrupt
- LoRa™ Modem
- Preamble detection
- Baud rate configurable
- LoRaWAN 1.0.2 Specification
- Software base on STM32Cube HAL drivers
- Open-source hardware/software
- Available Band:868MHz
- External Antenna via I-Pex 4 connector
- Ultra-Low Power consumption
- AT Commands to setup parameters

- Industrial standard M.2 (NGFF) interface

Description

Dragion LoRaST IoT module featuring LoRa® technology is a small wireless transceiver module that offers a very compelling mix of long-range, low 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.

LoRaST's wireless part is based on SX1276/SX1278 which 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 minimizing current consumption. It targets professional wireless sensor network applications such as irrigation systems, smart metering, smart cities, smartphone detection, building automation, and so on.

LoRaST's MCU part use STM32l0x chip from ST, STML0x 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 EEPa0 Kbytes of RAM) plus an extensive range of enhanced I/Os and peripherals via industrial **standard M.2 (NGFF)** pin interface.

Dragion LoRaST featuring LoRa® technology is an open-source product, it is based on the STM32Cube HAL drivers, with customer application examples, user can program the IoT module via USART1, USART2 or STLINK. The factory firmware supports **LoRaWAN 1.0.2** specification and the user can use AT Command to set up it and use for their project directly.

Specification

LoRa Specification

- 168 dB maximum link budget.
- +20 dBm - 100 mW 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.
- Excellent blocking immunity.
- Low RX current of 10.3 mA, 200 nA register retention.
- Fully integrated synthesizer with a resolution of 61 Hz.
- FSK, GFSK, MSK, GMSK, LoRaTM and OOK modulation.

- Built-in bit synchronizer for clock recovery.
- Preamble detection.
- 127 dB Dynamic Range RSSI.
- Automatic RF Sense and CAD with ultra-fast AFC.
- Packet engine up to 256 bytes with CRC.
- Built-in temperature sensor and low battery indicator.

MCU Specification

- MCU: STM32L072CZT6
- Flash:192KB
- SRAM:20KB
- EEPROM:6KB
- Clock Speed: 32Mhz

Absolute Maximum Ratings

- VCC: 0.5v ~ 3.9v
- Operating Tempature: -40 ~ 85ºC
- I/O pins: 0.5v ~ VCC+0.5V

Common DC Characteristics

- Supply Voltage: 1.8v ~ 3.6v
- Operating Tempature: -40 ~ 85ºC
- I/O pins: Refer STM32L072CZT6 datasheet

Power Consumption

- STOP Mode: 2.7µA @ 3.3v
- RX Mode: 7.2mA
- TX Mode: 125mA@ 20dbm

Dimensions and Weight

- Weight: 4g
- Dimension: 22 x 42 x 3.6 mm

Part List

- 1 x LoRaST module
- 1 x LoRa Antenna (unsolder)

ECCN/HTS

HSCODE	8543709990

USHSCODE   8517620090

UPC

ROHS   1