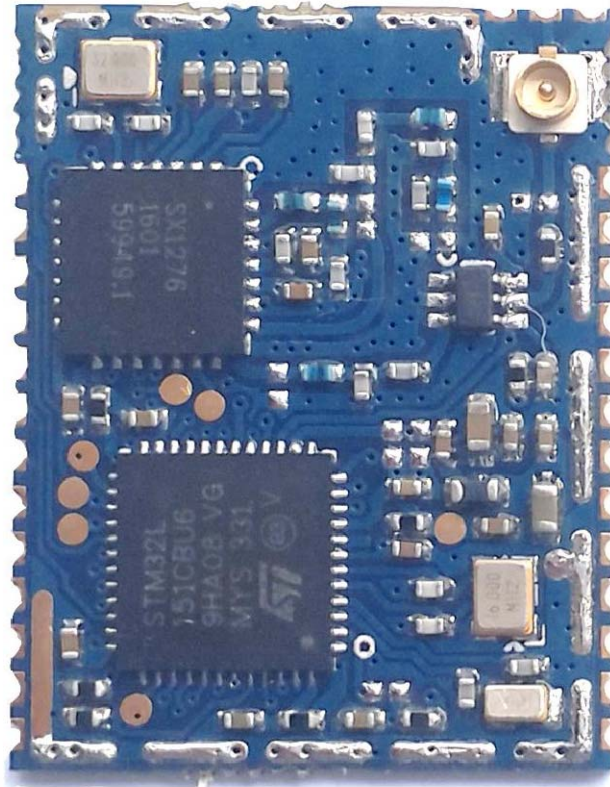




Shenzhen Winext Technology Co.,LTD

Specification Sheet



——LoRaWAN transceiver module specification sheet

Product name: LoRa transceiver module

Product model: M100B-H

Version: V1.0



1. Product introduction

LoRa node module M100B-H is a kind of high integrated LoRa communication module with Semtech's SX1276 chip, which adopts the LoRa spread-frequency modulation technology. It is compact, powerful and cost-effective and support of P2P or LoRaWAN communication protocols. With high immunity from interference and the Rx sensitivity up to -139dbm, the module supports LoRa and FSK modulation and with adjustable transmit power. It can be applied to the complex wireless data transmission application scenarios.

Product feature:

- ◇ Based on LoRa spread-spectrum modulation technology;
- ◇ Support LoRaWAN data communication protocol;
- ◇ Support transparent transmission of LoRa data;
- ◇ Working frequency: 865-868MHz(CE)/902.6-923.3MHz(FCC);
- ◇ Rx sensitivity up to -139dBm;
- ◇ Working temperature range: -30℃~+80℃。

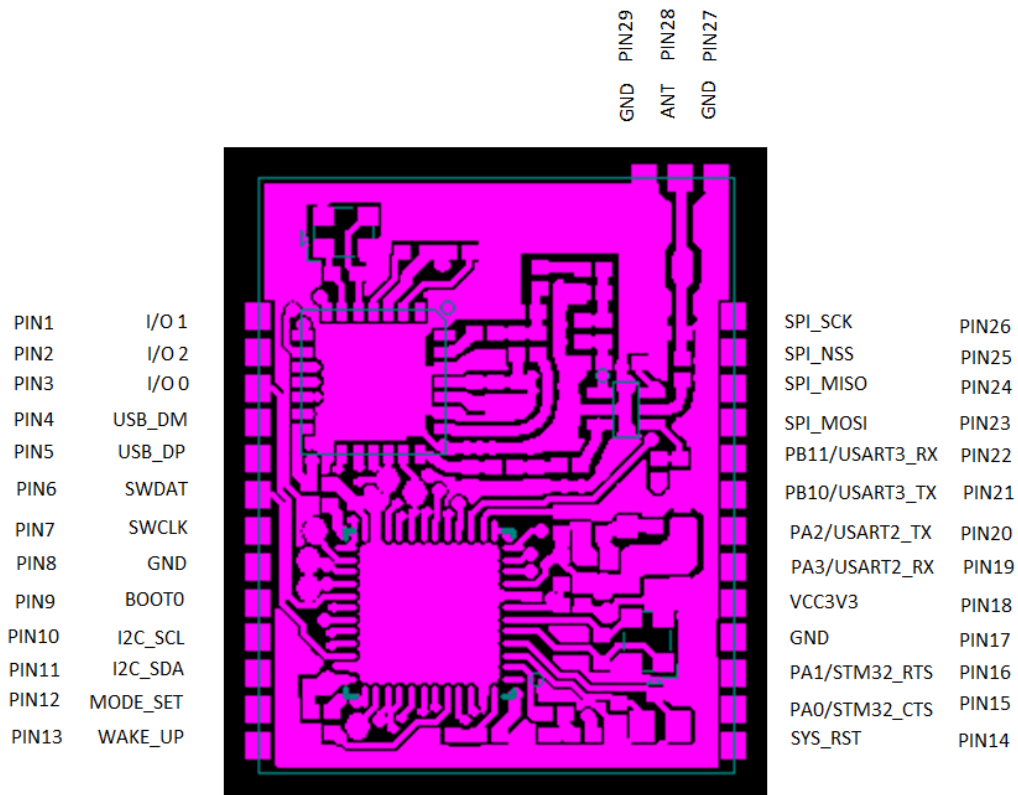
2. Application:

- ◇ Smart transportation;
- ◇ Remote smart metering;
- ◇ Smart street lamp management;

- ◇ Smart grid;
- ◇ Smart agriculture;
- ◇ Industry 4.0;



3. Introduction of pins and functions



(M100B-H hardware interface description diagram)

| Interface | Connector type | | Description |
|---------------|----------------|--------|--------------------------------|
| external-left | 1 IO | _1 | Digital IO0 |
| | 2 IO | _2 | Digital IO1 |
| | 3 IO | _0 | Digital IO2 |
| | 4 | USB_DM | USB communication interface D- |
| | 5 | USB_DP | USB communication interface D+ |
| | 6 | SWDAT | Download data interface |



| | | | |
|-----------------------------|----|----------------|---|
| | 7 | SWCLK | Download the clock interface |
| | 8 | GN | Ground connection |
| | 9 | BOOT0 | Set 0 as Flash Bootloader; Set 1 as MEM FlashLoader |
| | 10 | I2C_SCL | I2C communication interface |
| | 11 | I2C_SDA | I2C communication interface |
| | 12 | MODE_SET | Mode selection/reuse IO_PB9 |
| | 13 | WAKE_UP | Wake up pin/reuse IO_PC13 |
| External interface-right | 14 | SPI_SCK | SPI communication clock interface |
| | 15 | SPI_NSS | SPI select interface for communication |
| | 16 | SPI_MISO | SPI communication data interface |
| | 17 | SPI_MOSI | SPI communication data interface |
| | 18 | PB11/USART3_RX | Serial port USART3_RX/reuse PB11 |
| | 19 | PB10/USART3_TX | Serial port USART3_TX/reuse PB10 |
| | 20 | PA2/USART2_TX | Serial port USART2_TX/reuse PA2 |



| | | | |
|-----------------------|-------|---------------|--|
| | 21 | PA3/USART2_RX | Serial port USART2_RX/reuse PA3 |
| | 22 V | CC3V3 | 3.3V input pin |
| | 23 G | ND | Ground connection |
| | 24 PA | 1/STM32_RTS | Communication port STM32_RTS/reuse PA1 |
| | 25 PA | 0/STM32_CTS | Communication port STM32_CTS/reuse PA0 |
| | 26 | SYS_RST | Reset pin |
| External interface-up | 27 | GND Ground | connection |
| | 28 | ANT | Antenna input |
| | 29 | GND Ground | connection |

Note: M100B-H adopts STM installation.



4. Technical parameter

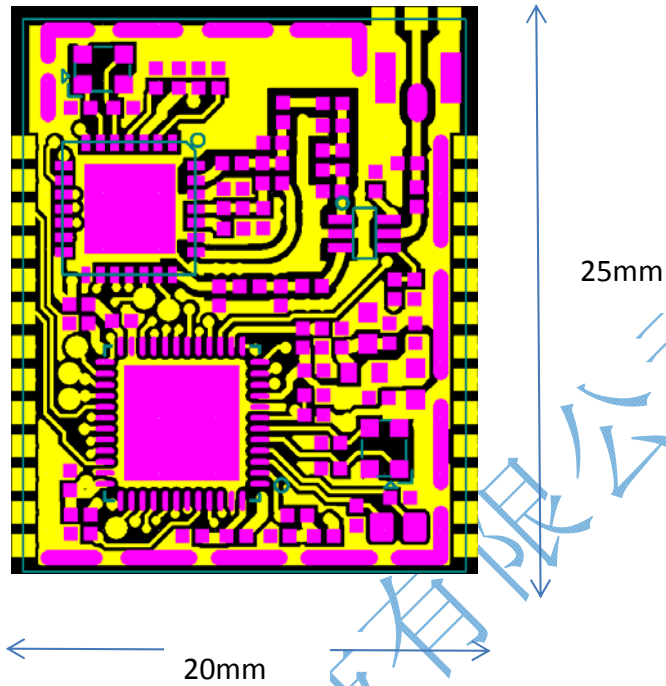
| | | |
|--------------------|---------------------|--|
| Module | Model M10 | 0B-H |
| | Main chip | STM32L151CB+SX1276 |
| Wireless parameter | Frequency range | 865-868MHz(CE) 902.6-923.3MHz (FCC) |
| | Transmit power | 7 levels adjustable |
| | Rx sensitivity | -139dBm (SF=12) |
| | Antenna | I-PEX connector/ half-stamp-hole antenna feeding point extraction |
| Hardware parameter | Hardware interface | UART, SPI, IIC, PWM, GPIO, ADC |
| | Working voltage | External power supply 3.0V~3.6V |
| | GPIO drive ability | Max: 15mA |
| | Working current | Average current: 10mA(120mA when LoRa transmitting) Standby: <2uA |
| | Working temperature | -30℃~80℃ |
| | Storage environment | Temperature: -40℃~85℃, Relative humidity : <90% R.H. |
| | Dimension 20 | *25*2.4mm |

| | | |
|--------------------|---------------------------|---|
| Communication mode | Serial communication mode | SERBAUD: 9600-921600bps |
| | LoRaWAN | Standard LoRaWAN communication protocol |
| | Support protocol | P2P or LoRaWAN (optional) |

深圳市唯传科技有限公司



5. Dimension



SIZE: 20*25*2.4mm ;

Antenna interface: I-PEX connector or half-stamp-hole antenna feeding point extraction;

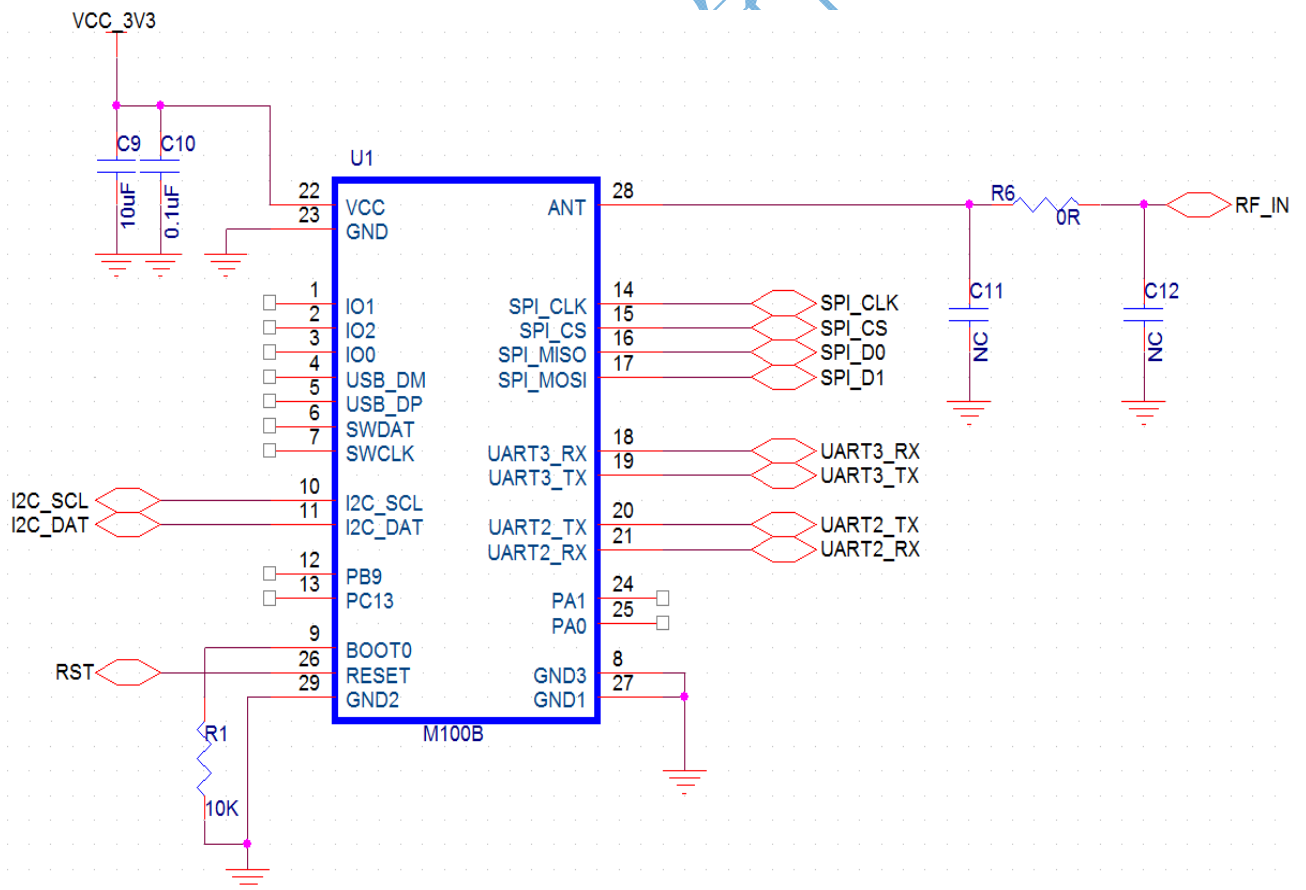
6. Module receiving performance indicators:

| Signal bandwidth (KHz) | SF | Sensitivity (dBm) |
|------------------------|----|-------------------|
| 125 7 | | -125 |
| 125 10 | | -133 |
| 125 12 | | -139 |
| 250 7 | | -122 |
| 250 10 | | -130 |
| 250 12 | | -135 |



| | | |
|--------|--|------|
| 500 7 | | -118 |
| 500 10 | | -125 |
| 500 12 | | -130 |

7. Reference circuit design drawings





8. Attention

- 1) Shall wear anti-static bracelet to avoid the electrostatic conduction of human body from electronic components;
- 2) It is recommended that you use the LoRa signal cable which is customized by our company

9. FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: — Contains FCC ID: 2AFI2M100B-H.



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