

PRODUCT GT-24 DIP+GT-24 MINI

Product Profile:

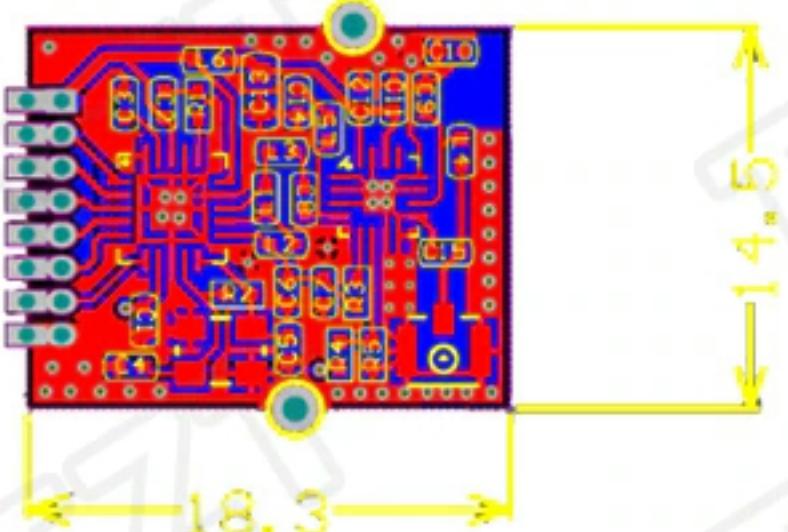
The GT-24 module is a 2.4GHz, 100mW, high speed (up to 2Mbpsairspeed), high stability, industrial-grade wireless transceiverintegrated data transmission module. The module comes with a high-performance PCB antenna, precise impedance matching, and thenRF24L01P RF chip, which has higher reliability, more power levels, and longer transmission distance and lower power than the NRF24L01. In addition, the RFX2401 power amplifier chip is built in, and the built-in LNA has a receiving sensitivity of 10dBm and operatesin the ISM band of 2.4GHz to 2.5GHz. The module transmission power is sufficient, the spectrum characteristics aregood, the harmonics are small, the channel crosstalk is small, thevolume is ultra-small, all the Murata original materials, the model ofthe industrial standard.

And it has a standard spacing of 2 . 54mm in-line interface and1 . 27mm patch interface , which is convenient for users to use withvarious circuits In addition . the GT-24 module also comes with abuilt-in PCB antenna and an external antenna for the ipx carrier ,which greatly exerts the free characteristics of the module and givesthe user the greatest freedom experience .

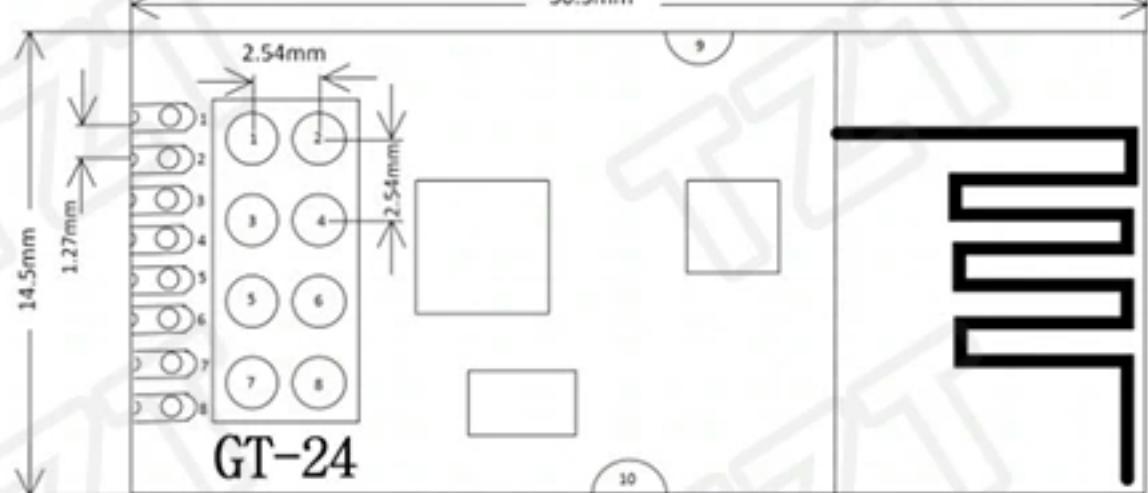
Product Parameters:

Number	Parameter Name	Parameter value
1	Model	GT-24
2	RF solution	nRF24L01P
3	Module size	30. 3×14. 5mm
4	Working frequency	2. 4GHz ~ 2. 525GHz
5	Production Process	Lead-free environmentally friendly process
6	Interface mode	1*8*1. 27mm/2*4*2. 54mm
7	Supply voltage	2. 0-3. 6VDC.
8	Communication level	0. 7VCC ~3. 3V
9	Measured distance	1000m
10	Transmit power	4 levels adjustable up to 20dBm
11	Air speed	250k ~ 2Mbps
12	Shutdown current	About 30uA
13	Emission current	About 90mA
14	Receiving current	About 20mA
15	Antenna form	PCB antenna / ipex carrier antenna
16	Communication Interface	SPI
17	Launch length	Single packet 1~32 bytes
18	Receiving length	Single packet 1~32 bytes
19	RSSI support	Not support
20	Receiving sensitivity	-94dBm@250kbps
21	Working temperature	-40 ~ +85°C
22	Working humidity	10% ~ 90%
23	Storage temperature	-40 ~ +125°C

Mini



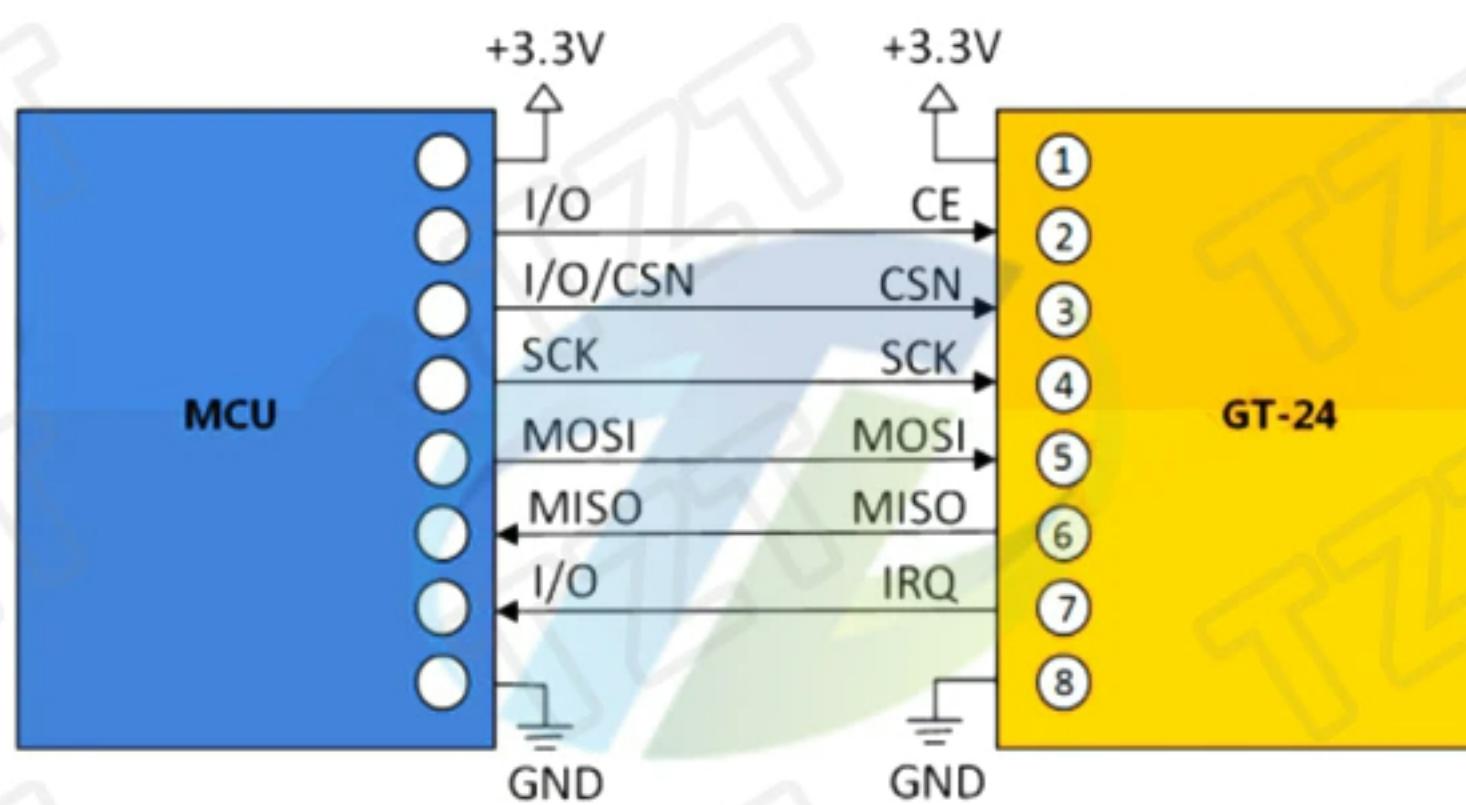
DIP



Pin number	Pin name	Pin direction	Pin usage
1	VCC	--	Power supply must be between 2.0-3.6V
2	CE	Input	Module control pin, see nRF24L01P Datasheet
3	SDN	Input	Module chip select pin, for SPI interface

3	CSN	Input	Module chip select pin for starting an SPI communication
4	SCK	Input	Module SPI bus clock
5	MOSI	Input	Module SPI Data Input Pin
6	MISO	Output	Module SPI Data Output Pin
7	IRQ	Output	Module interrupt signal output, active low
8	GND	--	Ground wire, connected to the power reference ground
9	GND	--	Ground wire for patch mounting
10	GND	--	Ground wire for patch mounting

Typical circuit connected to single chip microcomputer

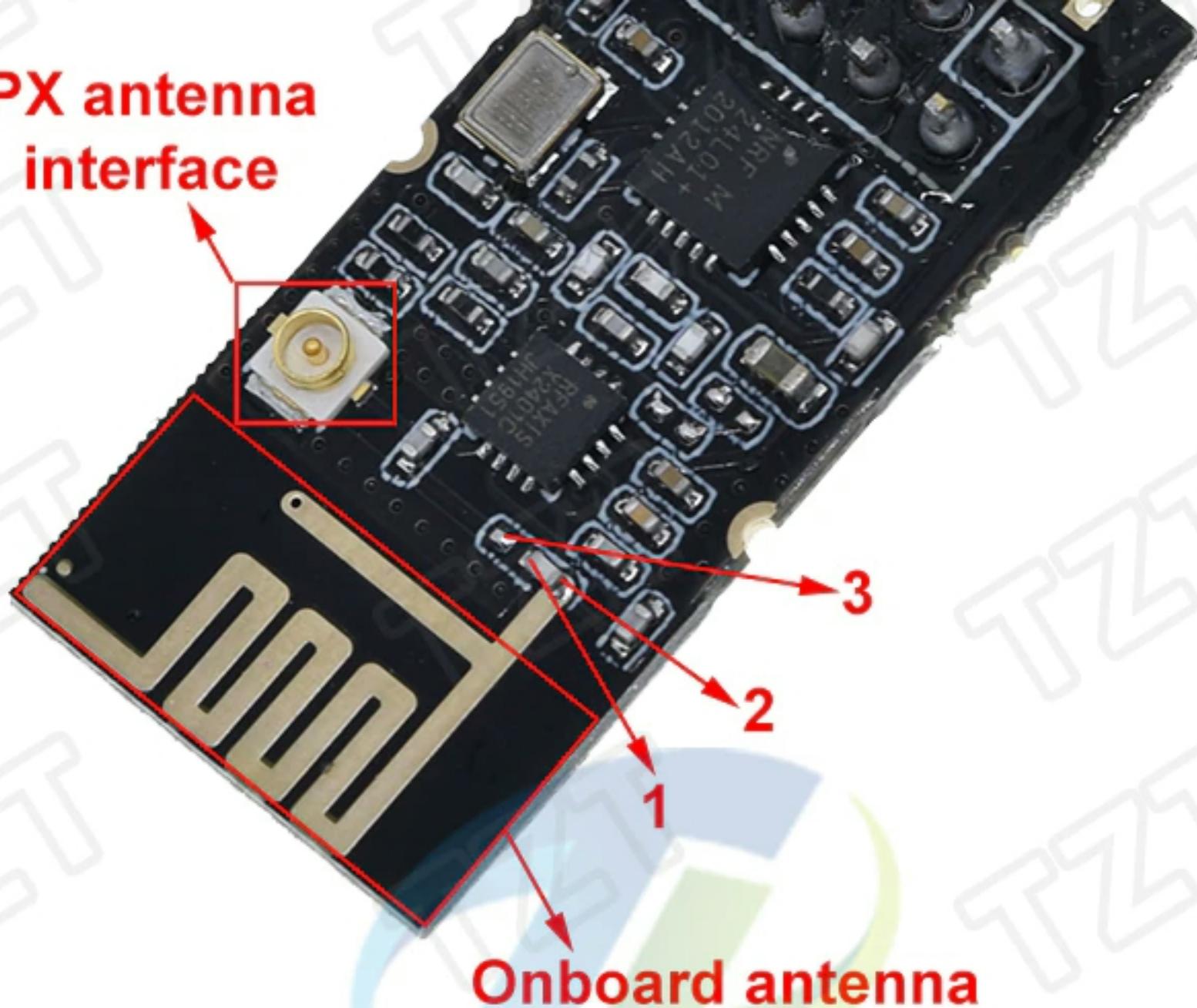


Product application:

This module is NRF24L01P- + PA + LNA , and its driving method is exactly the same as NRF24L01P . Users can operate according to the NRF24L01P chip manual . See the NRF24L01P manual for details.

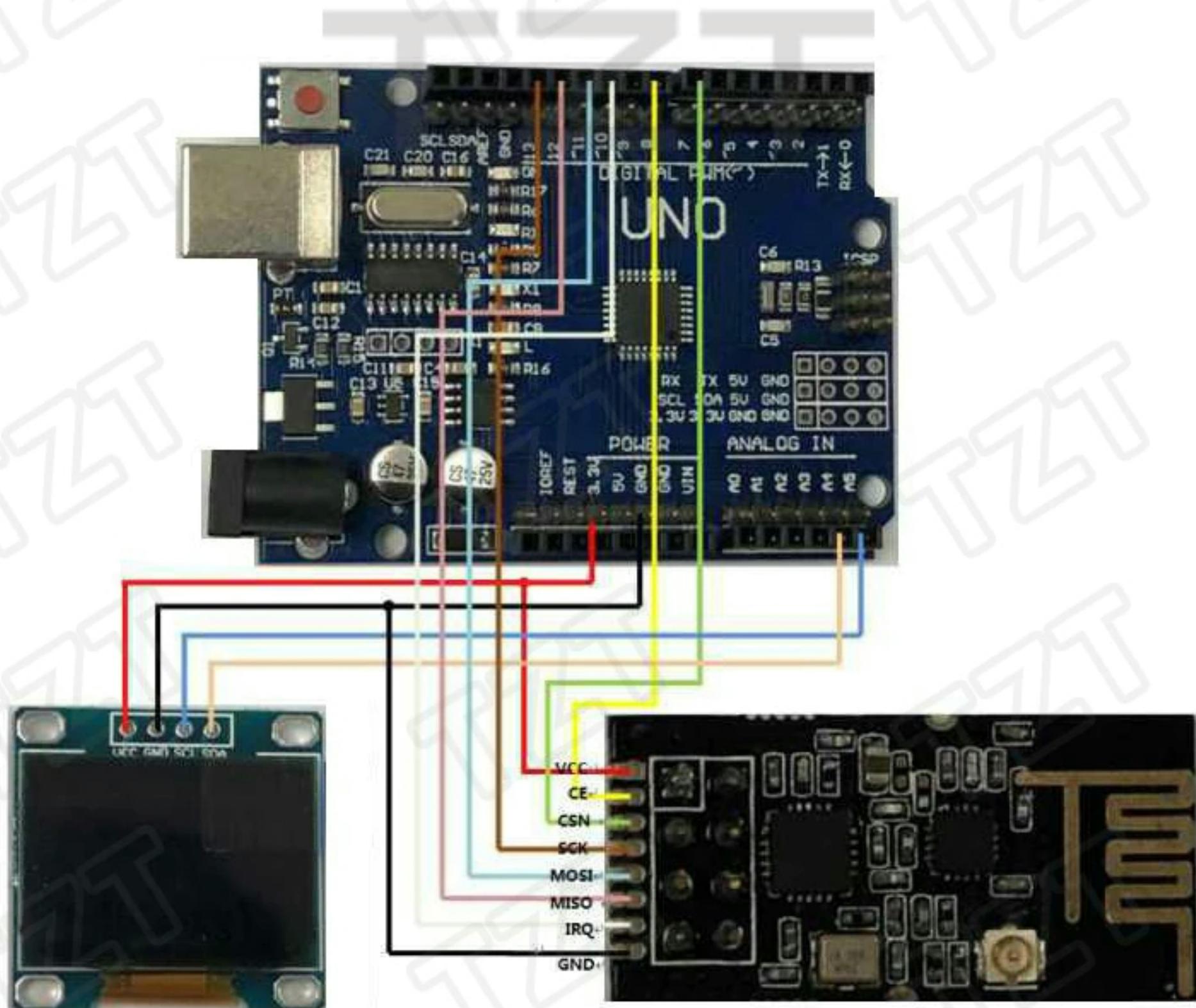
- The CE pin is connected to the LNA enable pin . When $CE = 1$, the LNA is turned on . When $CE = 0$, the LNA is turned off . The transmission and reception mode of this operation NRF24L01 is completely consistent . In other words , users don't have to care about LNA operations at all.
- CE can be connected to high level for a long time , but the module must first set to POWER DOWN power-down mode when writing the register . It is recommended to connect CE to the IO port of the MCU.
- IRQ can be disconnected , and the SPI query mode can be used to obtain the interrupt status . However , it is recommended to use an external interrupt from the microcontroller .
- The CE pin timing operation of the module can be used in the NRF24L01P technical manual . The high time is greater than 10us , but we recommend to change it to : SPI operation front high CE , until the transmission interrupt is completed , then maintain 1ms high powerLower the CE after the flat time . The purpose of this is to immediately switch to the receiving mode after the GT24 is sent . If $CE = 0$, the LNA is turned off , which will be detrimental to the receiving sensitivity.
- Pay attention to good grounding , a large area of paving , power supply ripple is small , should increase the filter capacitor and try to be close to the module VCC and GND pins.
- See the package for details





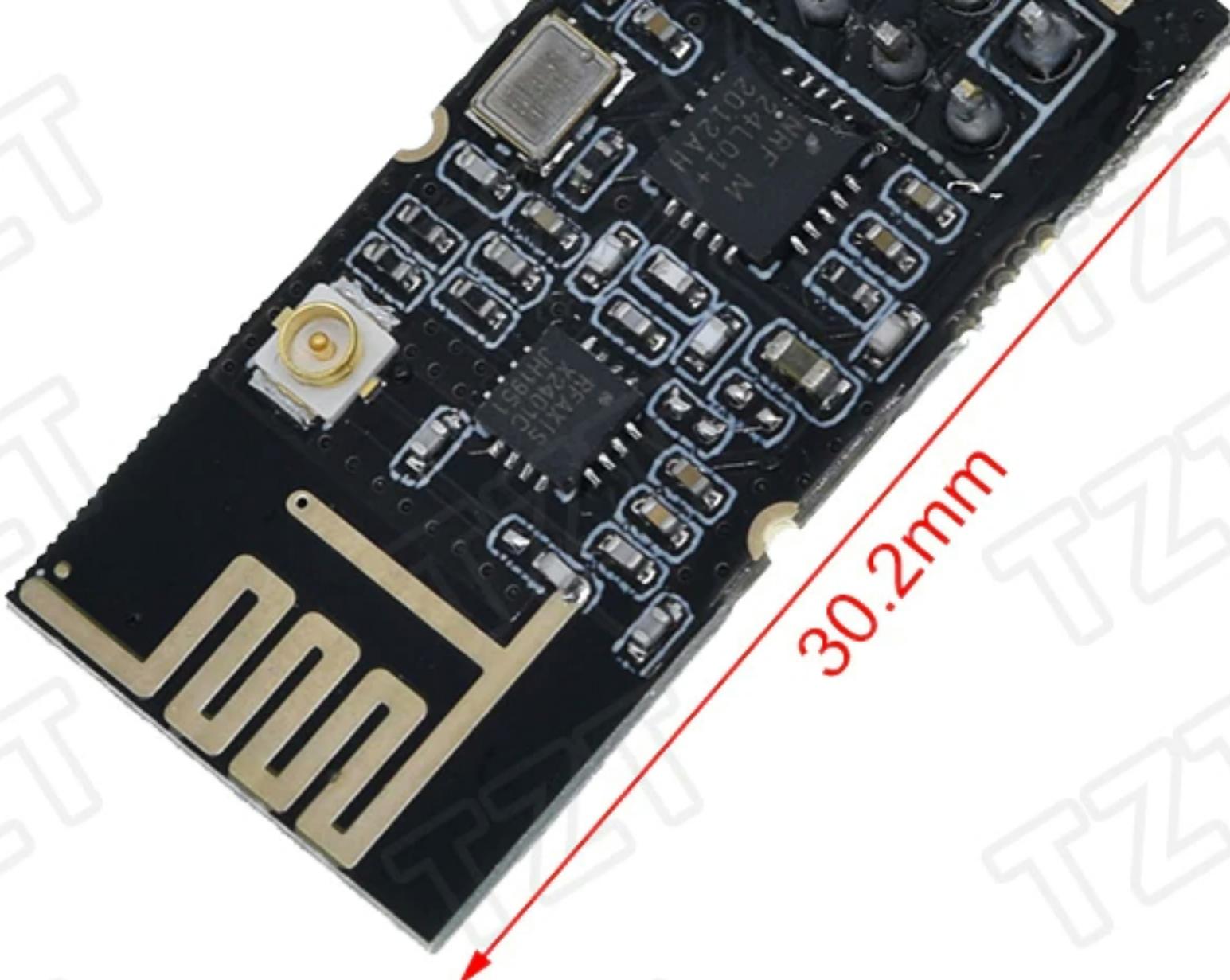
Onboard antenna

The module uses the onboard PCB antenna by default . The chipinductors are soldered to 1 , 2 as shown in the figure . If you need to use the ipx carrier to pull out the external antenna , you can place thechip inductors to 1 , 3 as shown



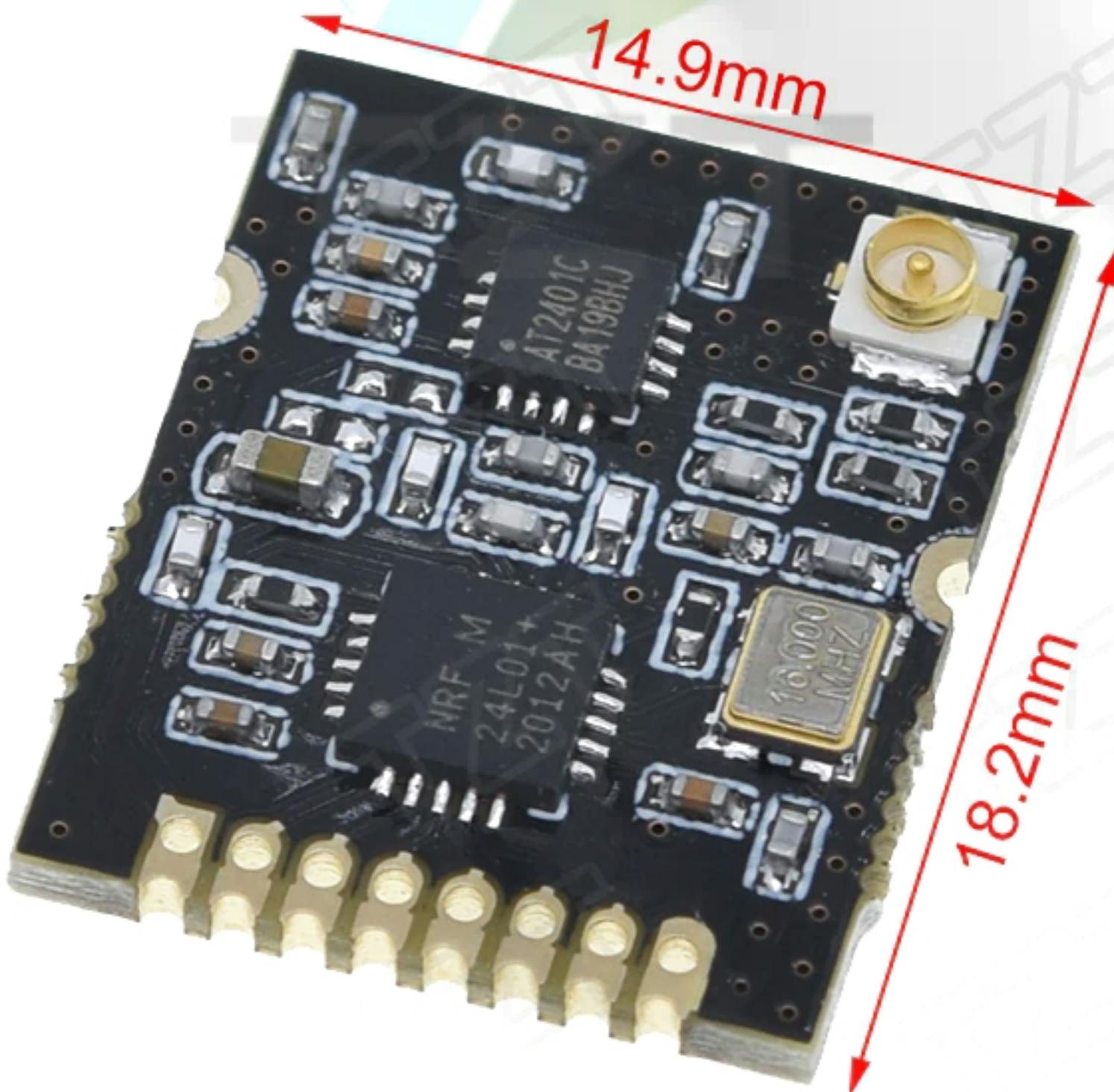
Weight: 2.2g





GT-24 DIP

Weight: 0.75g



GT-24 MINI

PRODUCT NRF24L01 DIP

Introduction:

NRF24L01 is a single chip working in the 2.4-2.5GHz general-purpose ISM bandchip, wireless transceiver includes: frequency generator enhanced Shock BurstTm modecontroller power amplifier crystal amplifier modulator demodulator output power channelselection the selection of the protocol can be set through the SPI interface. Low currentconsumption, when working in the transmit mode, the transmit power is 6 dBm and thecurrent consumption is 9.0 mA. The receive mode is 12.3mA lower current consumptionmode in power down mode and standby mode

Open IS M band, limited to 0dBm transmit power, license-free. Supports six channels of data reception.

Features:

1. **Low working voltage:** 1.9 ~ 3.6V low voltage operation
2. **High speed:** 2Mbps, because the air transmission time is very short, it is greatly reduced.collision in wireless transmission(software setting 1Mbps 920Mbps air transmission rate)
3. **Multi-frequency point:** 125 frequency points, meeting the needs of multi-pointcommunication and frequency hopping communication
4. **Small:** Built-in 2.4GHz + antenna, compact size, 15 x 29m (including antenna)
5. **Low power consumption:** when working in response mode communication, fast airtransmission and startup in the meantime, the current consumption is greatly reduced.
6. **Low application cost:** NRF24L01 integrates all high-speed signals related to RF protocolprocessing part, such as: automatic retransmission of lost data packets and automaticgeneration of response signals, etc. NRF24L01's SPI interface can be connected using amicrocontroller's hardware SPI port or a single chip machine I / O port for simulation,internal FIFO can interface with various high and low speed microprocessors,easy to uselow cost microcontroller.

7. **Easy to develop :** Because the link layer is fully integrated on the module , it is very easyto develop automatic resend function , automatically detect and resend lost data packetsresend time and number of resends can be software control automatically stores dataPackets that have not received a response sianal.

When the valid data is reached , the module automatically sends a response signal , withoutthe need to program the carrier detection separately fixed frequency detection Built-inhardware CRC error detection and point-to-multipoint communication address controldata packet transmission error counter and carrier detection function can be used forfrequency hopping setting . Six channels can be set at the same time receive channeladdress , can selectively open the receive channel standard pin Dip2.54MM pitch interface for embedded applications.

Characteristic:

- GFSK single transceiver chip
- Built-in link layer
- Enhanced Shock BursT M
- Automatic response and automatic retransmission
- Data transmission rate: 1 or 2Mbps
- SPI interface data rate 0-8Mbps
- 125 selectable working channels
- -Short channel switching time can be used for frequency hopping
- Fully compatible with nRF24xx series
- Accepts 5V level input
- 20-pin QFN4X4mm package
- Low crystal requirement of 60ppm
- Low cost inductor and double-sided PCB
- Working voltage: 1.9-3.6V

Parameter:

Low supply voltage limit: 1.9V

Peak transmit power: 0 dBm

Peak data transfer rate: 2000 kbps

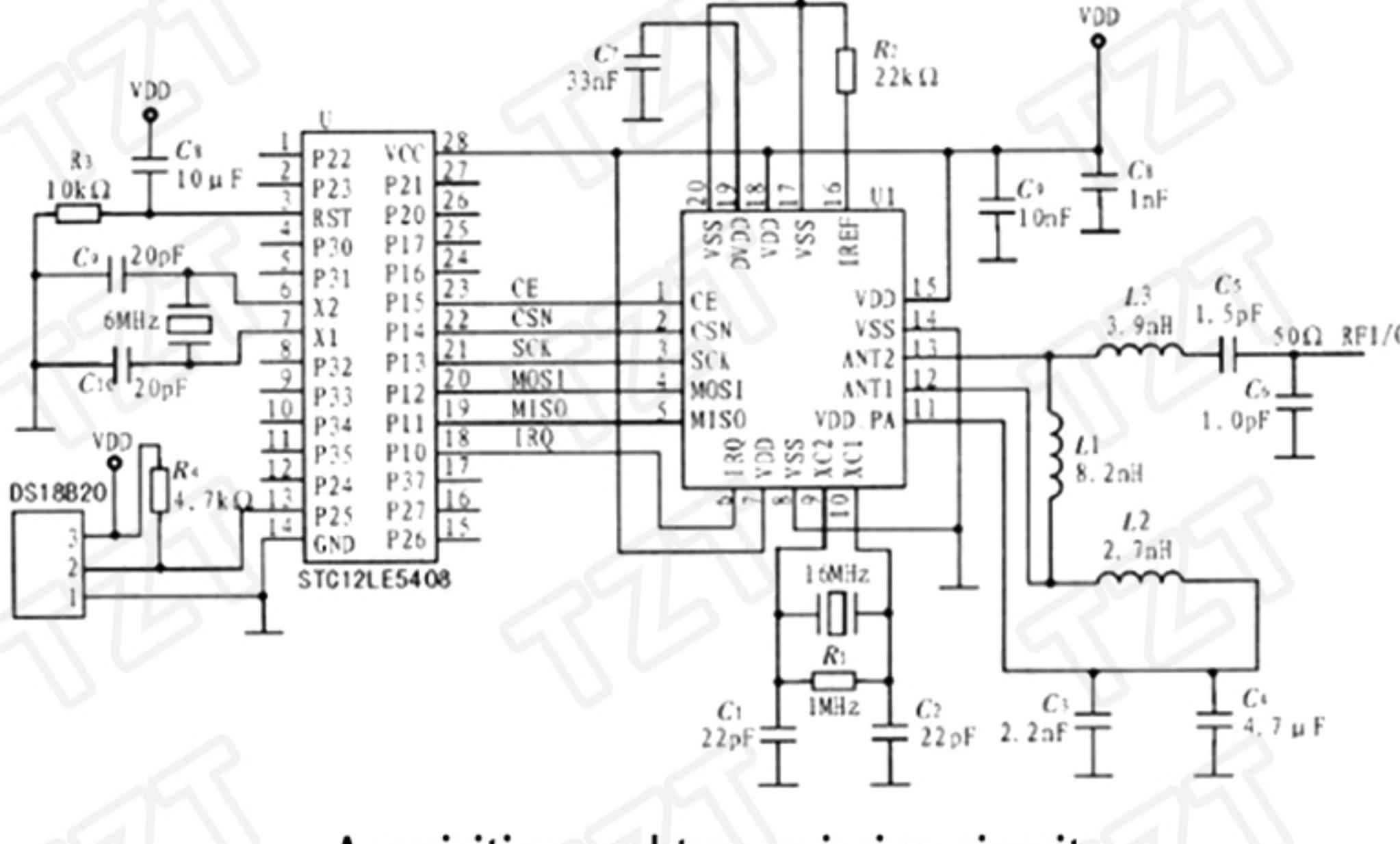
Current consumption under transmitting module OdBm: 11.3 mA

Current consumption in receiving mode: 2000kps: 12.3 mA

Temperature range:-40~+85 °C

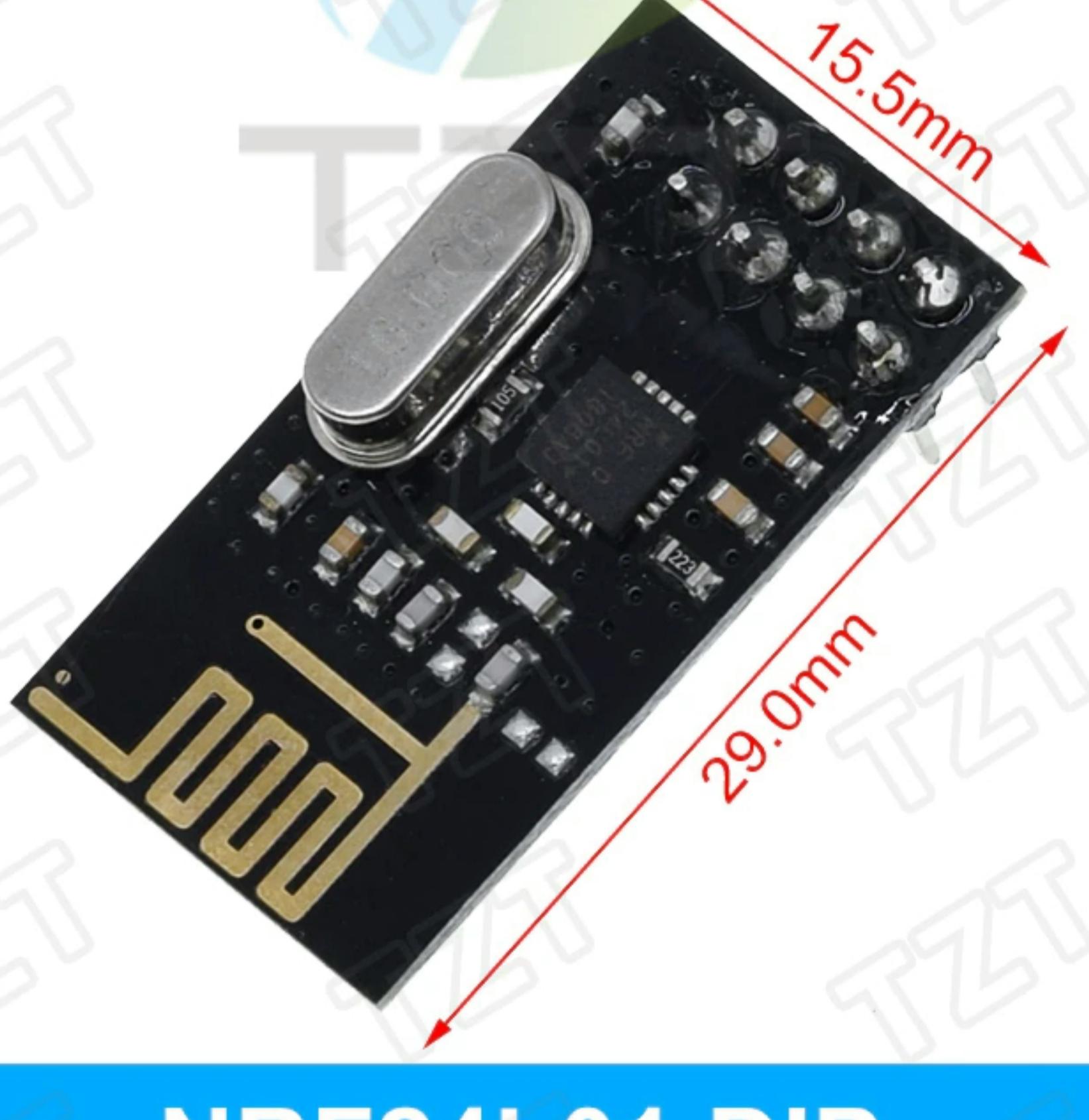
Data transmission sensitivity at 1000kpbs:-58 dBm

Current consumption in power-down mode: 900 nA



Acquisition and transmission circuit

Weight: 2.05g



NRF24L01 DIP

PRODUCT NRF24L01 SMD

Introduction:

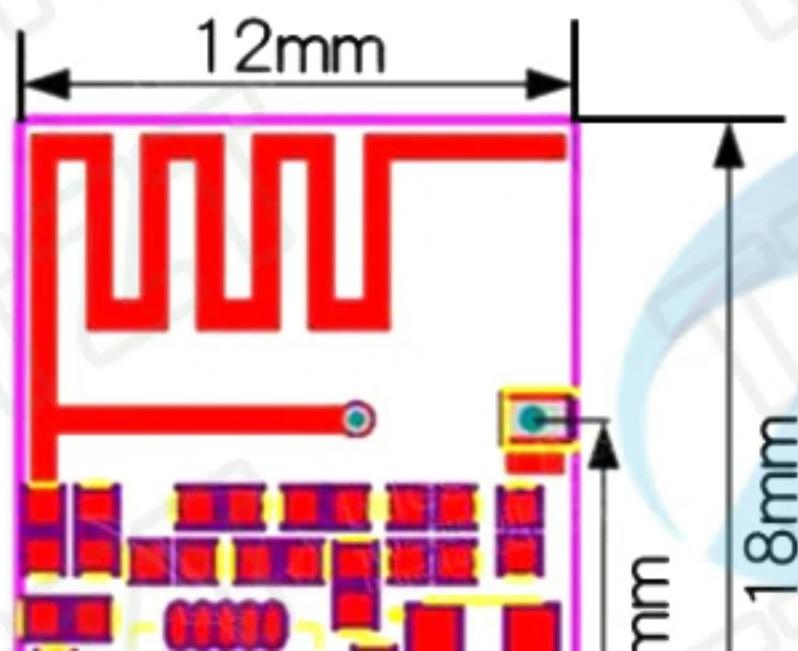
NRF24L01 is a single chip working in the 2.4-2.5GHz general-purpose ISM bandchip, wireless transceiver includes: frequency generator enhanced Shock Burst™ modecontroller power amplifier crystal amplifier modulator demodulator output power channelselection the selection of the protocol can be set through the SPI interface. Low currentconsumption, when working in the transmit mode, the transmit power is 6 dBm and thecurrent consumption is 9.0 mA. The receive mode is 12.3mA lower current consumptionmode in power down mode and standby mode

Open IS M band, limited to 0dBm transmit power, license-free. Supports six channels of data reception.

Features:

1. **Low working voltage:** 1.9 ~ 3.6V low voltage operation
2. **High speed:** 2Mbps, because the air transmission time is very short, it is greatly reduced.collision in wireless transmission(software setting 1Mbps 920Mbps air transmission rate)
3. **Multi-frequency point:** 125 frequency points, meeting the needs of multi-pointcommunication and frequency hopping communication
4. **Small:** Built-in 2.4GHz + antenna, compact size, 15 x 29m (including antenna)
5. **Low power consumption:** when working in response mode communication, fast airtransmission and startup in the meantime, the current consumption is greatly reduced.
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7. **Easy to develop :** Because the link layer is fully integrated on the module , it is very easyto develop automatic resend function , automatically detect and resend lost data packetsresend time and number of resends can be software control automatically stores dataPackets that have not received a response sianal.
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Parameter :



Model : 24L01

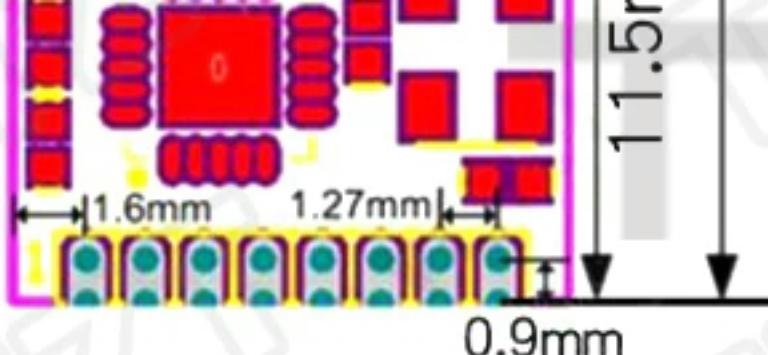
Power supply voltage : 1.9-3.6 V

Receiving sensitivity : 2mbps--83db

1mbps--87db ; 250kbps--96db

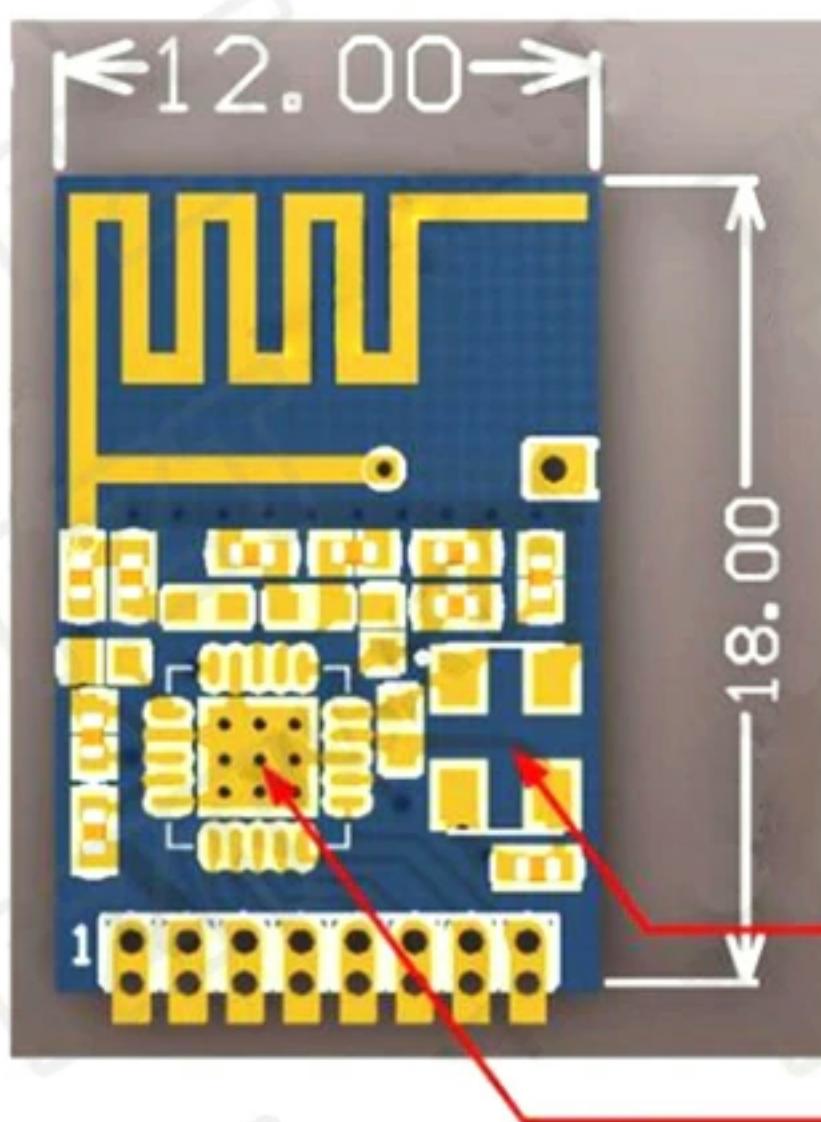
Receive current : 2mbps--15ma

1mbps--14.5ma ;250kbps--14ma



Standby current : 15UA
Power-down current : 700NA
Working temperature : -20°C- + 55°C
Storage temperature : -40°C - + 125°C

+3.3V GND CE CSN SCK MOSI MISO I_QO

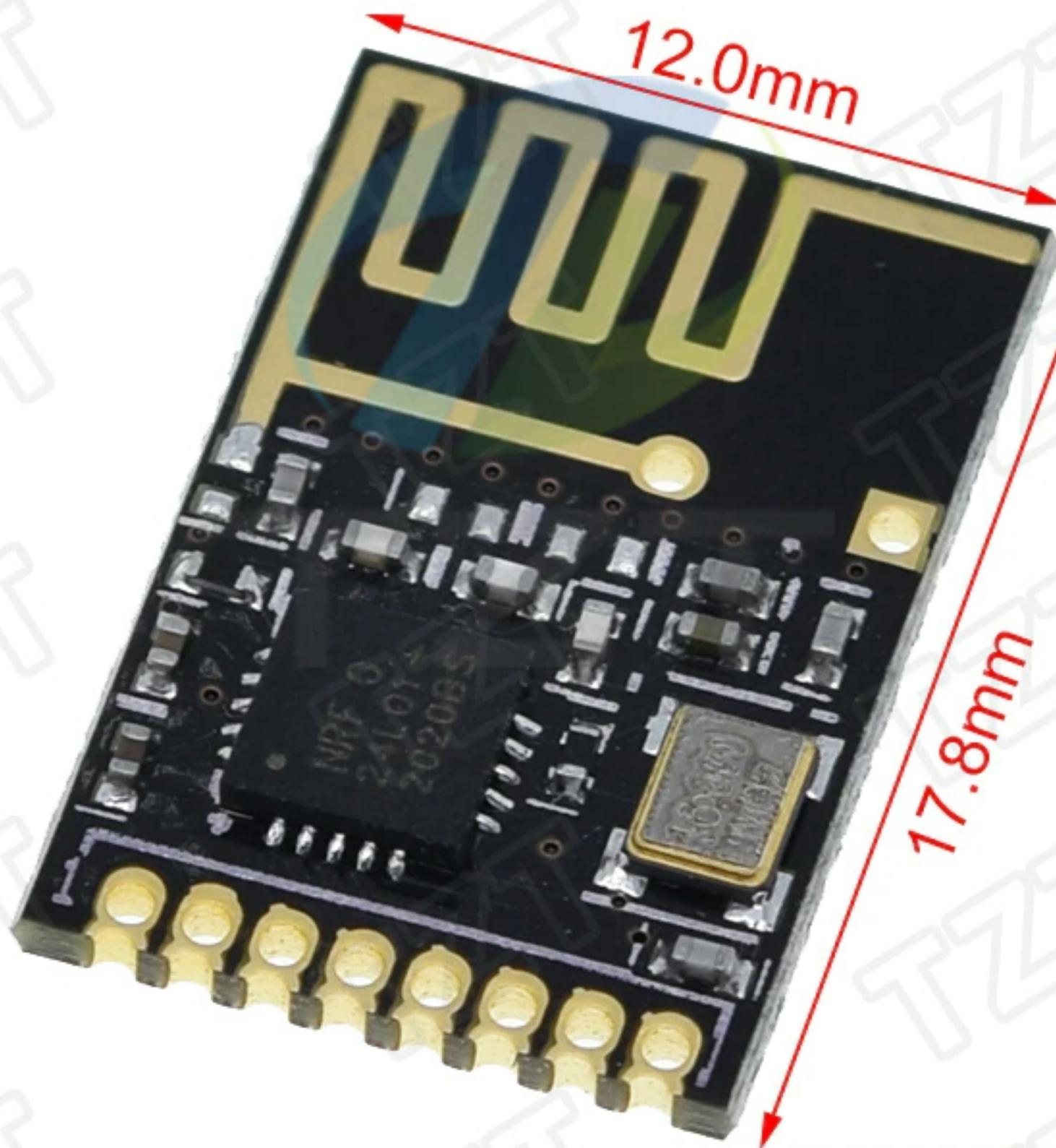


PCB thickness 0.8mm
Module thickness up to 1.7mm
Resistor and capacitor in 0402 package
Crystal oscillator in 3225 package

1.5mm thickness

1.7mm thickness

Weight: 0.4g



NRF24L01 SMD

PRODUCT NRF24L01 Adapter

Introduction:

The working voltage of the wireless module is generally 3.3V, while the ordinary 5V microcontroller is 5V. This module is convenient for the use of our wireless module and the 51 single-chip microcomputer system board.

This module is suitable for NRF24L01 wireless module plug-in of SPI interface, and leads to SPI interface convenient to experiment with MCU wiring.

Circuit diagram:

