

Superheterodyne wireless receiver module manual

433.92MHz (380-450MHz)

Outline

RCT01MRXB16 UHF wireless data transmission to receive a series of modules, set the carrier frequency of 433.92MHz, you can customize the range of 380 ~ 450MHz, receiver sensitivity of -115dBm, the internal phase-locked loop, using OOK / ASK modulation mode, the maximum receive data rate up to 10kpbs, easy to use, without additional any circuit can be realized wireless signal input to the data signal output. Good low temperature characteristics, low power consumption sleep state control, simple interface to connect the data output stability, strong anti-motor interference, the received signal strength indicator, ideal for RF debug instrument manufacturers directly used to shorten the development cycle. Widely used in garage doors, wireless control home intelligence, security, police, environmental monitoring, monitoring field. Performance, the price is very competitive, strong technical support, inventory spot.

Feature

- 200k Hz, receiver bandwidth, strong anti-jamming capability, mirror frequency suppression reach -40db.
- Sensitivity up to -115dbm, receiver distance.
- Stray radiation suppression, easy through a variety of testing standards.
- Good local oscillator radiation suppression of multiple modules can work together (single income), will not interfere with each other, with the use of the reception distance.
- High data rate of up to 10 kbps.
- Module internal voltage regulator, voltage input range: 3V to 5.5V.
- Low power consumption, operating current of about 9mA SHUT port can be controlled to enter standby hibernation, sleep current of microampere (0.5uA)
- 380 ~ 450MHz, the frequency settings simple.
- The data interface is simple, single-chip decoder chip can be directly connected.
- Using crystal local oscillator, stable performance.
- Sensitivity, operating current, and parameters such as consistency, small size.
- The analog RSSI received signal strength output, can detect environmental signal strength.
- Good low temperature properties, operating temperature range: -40-105 °C.
- Lead-free SMT soldering process, ROHS comply with standards.
- Transmitter power 10dBm, the module receives a distance greater than 350 m.

Application Notes

- Module data output pin of the drive current to directly drive the microcontroller, it is

recommended that the MCU I / O port pull-up or pull-down resistor, microcontroller's internal pull-up or pull-down resistor is located in the disabled state.

■ 433.92 Application can be equipped with 16.7cm length of thin wire as a simple antenna. 50 ohm, VSWR less than 1.5, the gain is greater than 2 monopole antenna to maximize the receiver sensitivity of the module.

■ Low data rate module can improve the receiver sensitivity, the recommended data rate of the module for 1.2Kbps

■ Recommended to receive data preamble time is not less than 7ms, data encoding format using Manchester encoding.

Electrical parameters

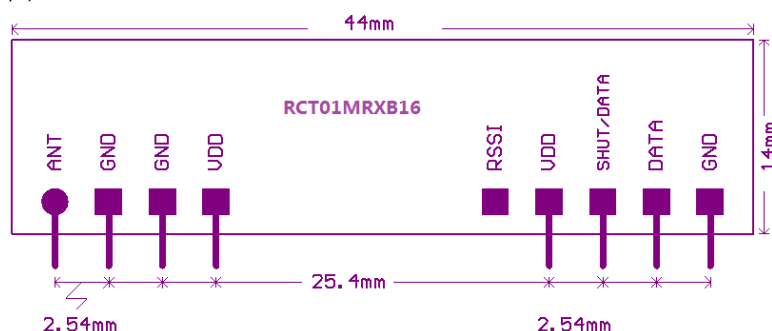
Parameters	Symbol	Test conditions	Reference value			Unit
			Least	Standard	Maximum	
Operating frequency	Fc		433.82	433.92	434.02	MHz
Modulation mode			ASK			
Receiver sensitivity		50 欧姆天线直接输入 BER3/1000, 1kbps		-115		dBm
Maximum input saturation power				-20		dB
Receiver bandwidth			200			KHz
Receiver turn-on time	Tom				9	ms
Power consumption	Is		8	9	10	mA
Sleep current	Ishut			0.5		uA
Operating voltage			3.0	5.0	5.5	V
Image rejection		431.52MHz		-40		dB
Decoding the output of high voltage		RL = 500K	2.8			V
Decoding the output low voltage					0.5	V
Operating Temperature	To		-40		105	°C

Limit rating table

Parameters	Symbol	Least	Maximum	Unit
DC supply voltage	VDD—GND	3	8	V
Operating Temperature	To	-40	105	°C
Storage Temperature Range	Ts	-65	150	°C

Pin Definitions

图 1



PIN DESCRIPTION

Pin Name	Description	Pin Name	Description
ANT	Antenna access port	SHUT	Dormancy control port, the internal pull-up, active low
GND	Power to port	RSSI	Received signal strength indicator
VDD	Positive power supply port.	SCLK	Clock signal port to retain the port ground.
DATA	Reserved for receiving data output port.		

RCT01MRXB16 module SHUT / DATA pin custom pin module default SHUT function, if users need to be changed to DATA function modules R9 position (shown in Figure 3) 0 ohm resistor disconnected, the R10 location connected to the 0 ohm resistor.

图 2:

