

868.35MHz Superheterodyne wireless receiver module

Outline

UHF wireless data in RCT01MRXB21 the UHF transmission receiver module, set the carrier frequency of 868MHz, you can customize the range of 850 ~ 950MHz, receiver sensitivity of -109dBm, the internal phase-locked loop, using OOK ASK modulation mode, the maximum receive data rates up to 10kdps, 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 and resistance to electrical interference, the received signal strength indication. Widely used in wireless control of garage doors, smart home, security, alarm, environmental monitoring, monitoring field.

Features:

- 200k Hz, receiver bandwidth, strong anti-jamming capability, mirror frequency suppression reach -40db.
- Sensitivity up to -109dbm, receiver distance.
- 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, 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).
- The data interface is simple, single-chip decoder chip can be directly connected.
- Good low temperature properties, operating temperature range: -40-105 °C.
- Transmitter power 10dBm, the visualization module to receive distance greater than 350 m.

Application Notes

- Module data output pin of the drive current to directly drive a microcontroller, it is recommended that the MCU I / O port pull-up or pull-down resistor, the

microcontroller's internal pull-up or pull-down resistor is located in a disabled state 。

■ 868MHz applications can be equipped with a 8.5cm 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 can be increased receiver sensitivity, and 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		868.25	868.35	868.45	MHz
Modulation mode			ASK			
Receiver sensitivity		50 ohm antenna input directly BER3/1000, 1kbps		-109		dBm
Maximum input saturation power				-20		dB
Receiver bandwidth			200			KHz
Preamble time	Tom		7	9		ms
SHUT hibernation wake-up time			1	2		ms
DATA pin rising falling edge Time				2		uSec
Power consumption	Is		9.0	9.5	9.8	mA
Sleep current	Ishut			0.5		uA
Operating voltage			3.0	5.0	5.5	V
Image rejection		431.52MHz		20		dB
Decoding the output of high voltage		RL=500K	2.8			V
Decoding the output low voltage					0.5	V
Operating emperature	To		-40		105	°C
Receiver demodulator duty cycle			20		80	%
DATA pin current		High output Time		260		uA

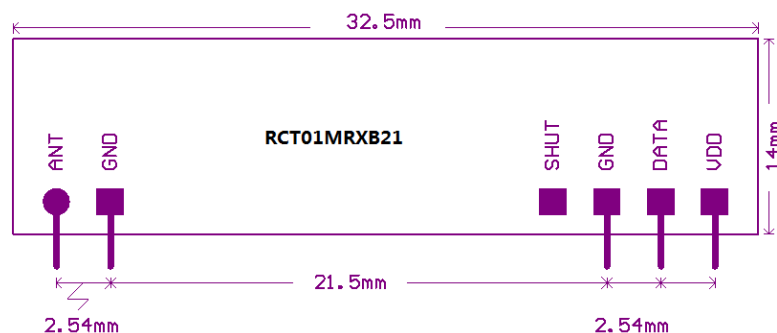
		Low-level output		600		
RSSI voltage range			0.4		2	V
RSSI corresponding range				25		mV/dB
RSSI output current				400		uA
RSSI output impedance				200		欧姆
RSSI response time				0.3		Sec

Limit rating table:

Parameter	Symbol	Minimum	Maximum	Unit
DC supply voltage	VDD—GND	3	8	V
Operating mperature Range	To	-40	105	°C
Storage emperature 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 the port.	DATA	Reserved for receiving data output port
VDD	Positive power supply port.		