RX306P Wireless Receiver Module

1, Description

RX306P is a high performance receiver module for ISM band, at either 315MHz or 433.92MHz. With the use of SRX306A RF IC, it has an advantage at wide working voltage range, high sensitivity, strong anti-EMI (electromagnetic interference) ability, and strong resistance to power ripple. Based on the excellent overall design, it has consistent characteristics, high reliability and high stability. The module will suit for one-to-one and multi-node wireless applications such as remote control, smart home systems, alarm and security systems, remote fan and light control and etc. Because of their small size and low power requirements RX306P is also ideal for use in portable, battery-powered applications such as hand-held terminals.

2, Features

- Frequency: 315/433.92MHz
- Sensitivity: -115dBm @315MHz, -116dBm @433.92MHz
- Supply Voltage: 2.2 – 5.5V
- Power Consumption: 6.5mA @3V, 7.5mA @5V
- Data Rate: 1 – 40 kb/s
- Modulation Type: OOK/ASK
- Operating Temperature: -40℃ ～ +85℃
- Module Size: 38.2mm * 13.9mm
- Interface: pin type interface

3, Applications

- Garage door and gate openers
- Remote Controls
- Smart Home Systems
- Alarm and Security Systems

- Remote Fan and Light Control
- Sensor Reporting
- Data Capture
- TV Set Top Box
- Wireless Remote Temperature & Humidity Monitor
- Robot Control

4, Technical Specification

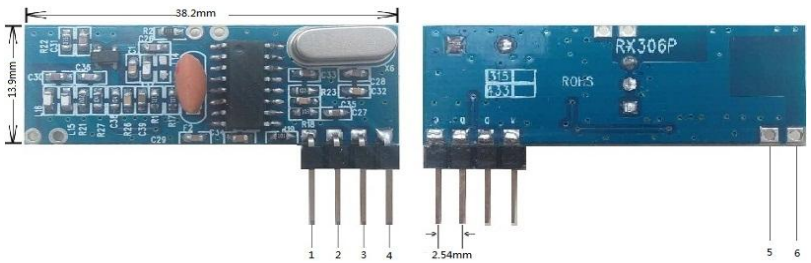
Electrical Characteristics	Symbol	Frequency	Min	Typ	Max	Dimension
Supply Voltage	V_{CC}	300 - 500MHz	2.2	3.0	5.5	V
Supply Current	I_{CC}	Fin=315MHz		6.5		mA
		Fin=433.92MHz		7.5		
Working Freq.	F_{rf}		300		500	MHz
Sensitivity	Vfin	Fin=315MHz		-115		dBm
		Fin=433.92MHz		-116		dBm
Crystal Freq.	FOSC		8		16	MHz
Crystal Input Senstivity	VOSCI		-10	0	5	dBm
Data Rate	Data Rate		1	2.5	4	Kbps
Working Temp.	Ta		-40	27	85	℃

Note: 1, Sensitivity is measure with BER=0.1%, PN=15.

2, Date rate can be changed up to 40kb/s by adjusting the external capacitance.

5, Module Size

Size: 38.2mm X 13.9mm



6, Pin Description

Pin	Name	Description
1	VCC	Supply Voltage
2、3	DATA	Data Input
4、5	GND	Ground
6	ANT	External Antenna

7, Antenna Design

- Using coil antenna at Frequency 315MHz:

  Inside Diameter: 6mm

  Antenna Width: 1mm

  Length: 37cm

- Using straight antenna at frequency 315MHz:

  Length: 25cm

  Antenna Width: 1mm

- Using coil antenna at frequency 433.92MHz

  Inside Diameter: 6mm

  Antenna Width: 1mm

  Length: 25cm

- Using straight antenna at frequency 433.92MHz:

  Length: 17cm

  Antenna Width: 1mm

8, Hints

- It is essential when building any Low Power Radio System that you have a ‘clean’ DC power source. Typically the ripple voltage should be less than 10mV Peak to Peak. Normally a 470uF decoupling capacitor is sufficient de-coupling for an AC derived DC power source. Small capacitors of 10-100nF can also be used across the power supply to filter high frequency noise.

- Manchester coding is used in data transmission. In order to reduce delay of data transmission, data interval is set smaller than 10ms.
- The module is best installed vertically on the edge of the main board, leaving the surrounding device 5mm above to avoid the influence of the distribution parameters.
- The transmission range is affected by the frequency and amplitude of the modulated signal, the voltage, the capacity of the battery, the orientation of the antenna, and the receiving and transmitting environment.
- Please wear antistatic garments or antistatic wrist strap when testing or producing modules although the receiver is rated for ±2KV ESD.