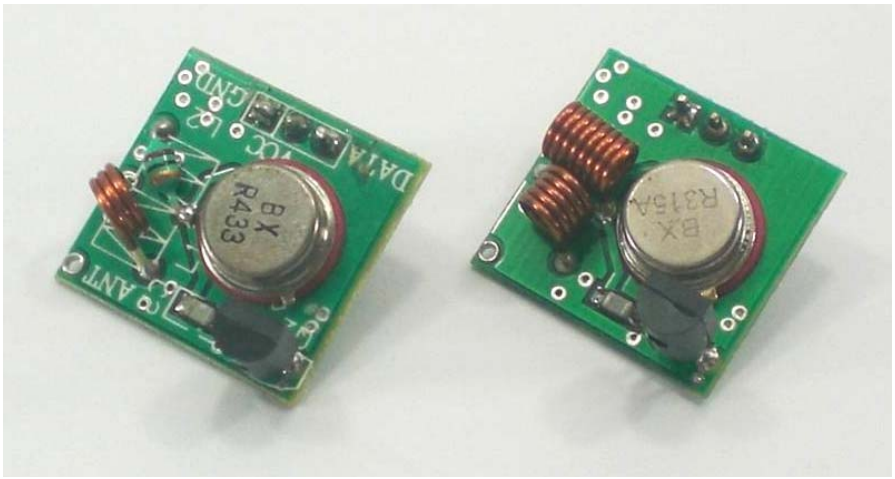
RF-TX-315
RF-TX-433
RF Transmitter Module



User's Manual

V1.1

Nov 2008

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1. INTRODUCTION AND OVERVIEW

These RF Transmitter Modules are very small in dimension and have a wide operating voltage range (3V-12V). The low cost RF Transmitter can be used to transmit signal up to 100 meters (the antenna design, working environment and supply voltage will seriously impact the effective distance). It is good for short distance, battery power device development. Cytron Technologies provides 2 types of RF Transmitter Modules at either 315MHz or 433MHz for user:

Product Code	Description
RF_TX_315	RF Transmitter 315MHz
RF_TX_433	RF Transmitter 433MHz

The application includes:

- Industrial remote control, telemetry and remote sensing.
- Alarm systems and wireless transmission for various types of low-rate digital signal.
- Remote control for various types of household appliances and electronics projects.

2. PRODUCT SPECIFICATION

2.1 The Specifications of RF Transmitter Module

Except for the frequency and antenna length, RF_TX_315 and RF_TX_433 share the same product specifications as shown in table below:

No.	Specifications	RF Transmitter Module
1.	Operating Voltage	3V to 12 V
2.	Operating Current	Max ≤ 40mA (12V), Min ≤ 9mA (3V)
3.	Oscillator	SAW (Surface Acoustic Wave) oscillator
4.	Frequency	315MHz～433.92MHz
5.	Frequency error	±150kHz(max)
6.	Modulation	ASK/OOK
7.	Transfer Rate	≤10Kbps
8.	Transmitting power	25mW (315MHz@12V)
9.	Antenna Length	24cm (315MHz), 18cm (433.92MHz)

2.2 Antenna

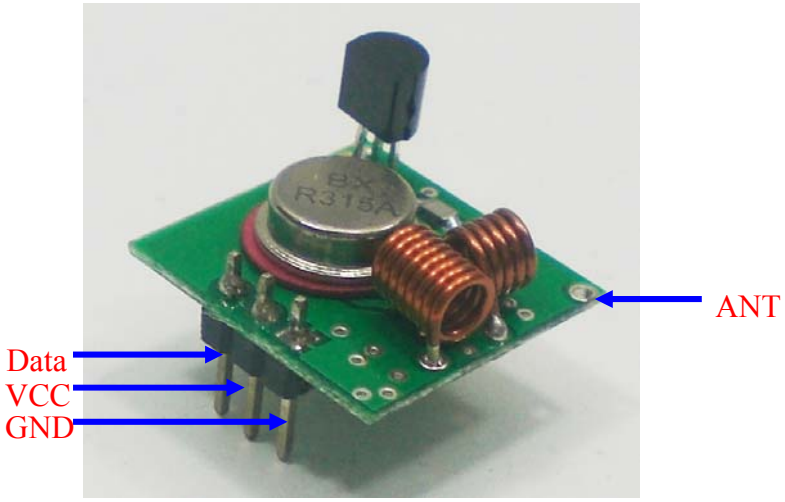
1. User may use any soft or hard wire (likes Drawbars antenna) as antenna. The frequency is determined by the length of antenna, **please select the correct length with refer to specification of RF Transmitter above** (Section 2.1, No. 9). If a soft wire is used, please make sure it is fully extended.

2. If the transmitter module is molded in a metal casing, please use an external antenna. For better result, use A 50 Ohm coaxial cable can be used as antenna to the module.

3. PRODUCT LAYOUT

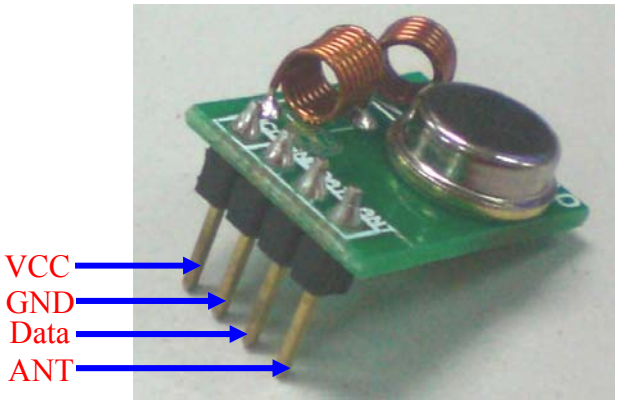
3.1 RF_TX_315MHz

3.1.1 RF_TX_315MHz Type1



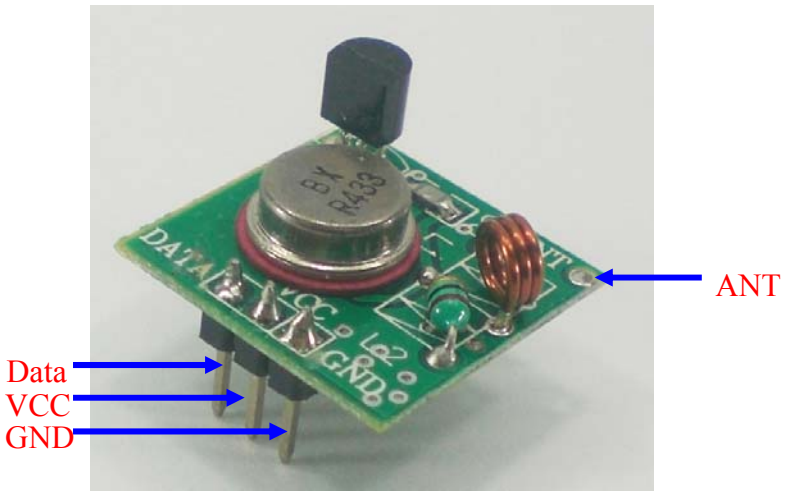
Label	Description
Data	The Data pin of the transmitter.
VCC	The power supply to the transmitter.
GND	The Ground of the transmitter.
ANT	The hole to solder and connect antenna. (Please select the correct antenna length, which is 24cm)

3.1.2 RF_TX_315MHz Type2



Label	Description
Data	The Data pin of the transmitter.
VCC	The power supply to the transmitter.
GND	The Ground of the transmitter.
ANT	The pin connect antenna. (Please select the correct antenna length, which is 24cm)

3.1 RF_TX_433MHz



Label	Description
Data	The Data pin of the transmitter.
VCC	The power supply to the transmitter.
GND	The Ground of the transmitter.
ANT	The hole to solder and connect antenna. (Please select the correct antenna length, which is 18cm)

4. GETTING STARTED

For RF Transmitter module **RF_TX_315MHz Type1 and RF_TX_433MHz,** solder the antenna to the RF Transmitter module; **please select the correct length with refer to specification of RF transmitter at Section 2.1, No. 9.** Connect the 3-pin header to your circuit so that the GND pin connects to ground of the circuit board, the VCC pin connects to VCC of the circuit board and the Data pin connects to your microcontroller's I/O pin.

While for **RF_TX_315MHz Type2,** connect the antenna to the RF Transmitter module. The example to connect the antenna is shown in Figure 4.1 using breadboard; **please select the correct length with refer to specification of RF transmitter at Section 2.1, No. 9.** Connect the other 3-pin header to your circuit so that the GND pin connects to ground of the circuit board, the VCC pin connects to VCC of the circuit board and the Data pin connects to your microcontroller's I/O pin.

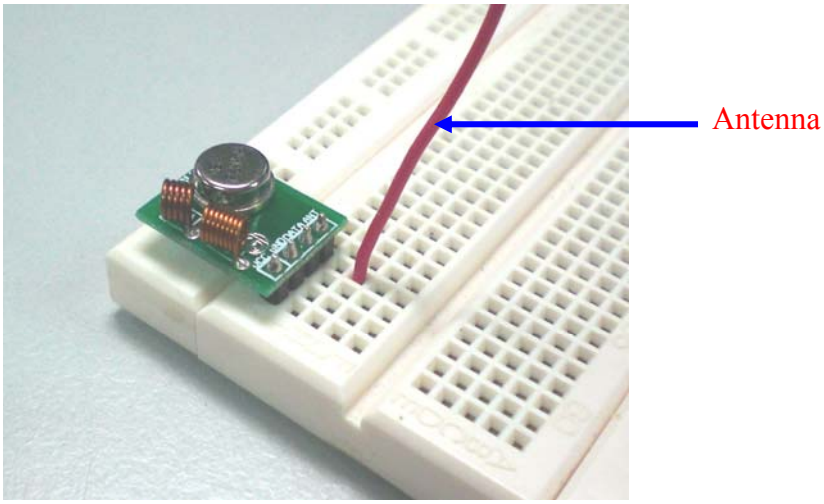


Figure 4.1

Please refer Cytron product, Sending Data using RF Module (Product code: PR16) for example application of RF transmitter module. The details description and schematics of PR16 can be downloaded from http://www.cytron.com.my/PR16.asp

5. WARRANTY

- Product warranty is valid for 6 months.
- Warranty only applies to manufacturing defect.
- Damage caused by mis-use is not covered under warranty.
- Warranty does not cover freight cost for both ways.

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