

Technical Description

The brief circuit description is listed as below:

- 1) U1 acts as a MCU (N588H060).**
- 2) U2 acts as a 2.4GHz module (TNT24-RC1).**
- 2) Y1 acts as a Crystal for U2.**

Antenna Type: Internal antenna

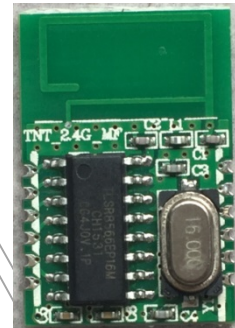
Antenna Gain: 0dBi

Nominal rated field strength: 93.2 dB μ V/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

DESCRIPTION

The TNT24-RC1 module is a low cost, high performance 2.4GHz Remote Controlled module. The TNT24-RC1 module designed for the worldwide ISM band at 2400-2483.5 MHz. The TNT24-RC1 have ultra-low receiver sensitivity lower to -98dBm @250Kbps, the highest modulation rates up to 2Mbps. TNT24-RC1 have 6 functions for RC car. The TNT24-RC1 can be widely applied in various wireless connections. It compliant with the specifications regulated and required by FCC and CE.



FEATURES

- Operating frequency 2400-2483 MHz ISM band
- GFSK modulation
- High sensitivity (-89dBm @2Mbps; -98dBm @250kbps)
- Frequency hopping
- Low sleep current
- Easy to use

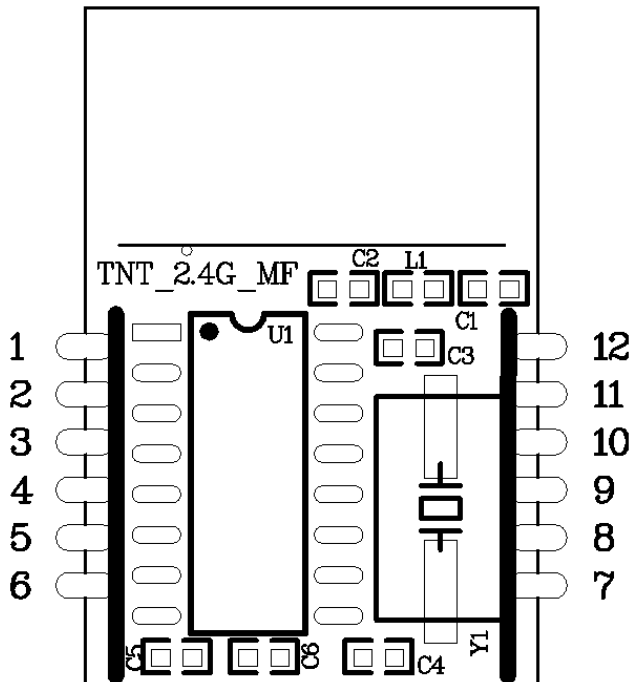
APPLICATIONS

- Wireless Toy and Gaming

TECHNICAL SPECIFICATIONS

Electrical Characteristics		Min	Typ	Max	Unit
Supply Voltage		2.0	3.3	3.6	V
Current Consumption					
Sleep Current			1	5	uA
RX MODE		24	30	36	mA
TX MODE (duty cycle 100%)		22	28	34	mA
Transmitting RF Parameters					
Frequency Range	ISM Band	2.4	N/A	2.5	GHz
Modulation			GFSK		
Output Power	Maximum Power Setting	-1	1	3	dBm
Data Rate		250k		2M	Hz
Frequency Deviation			500		KHz
Receiving RF Parameters					
Receiving Sensitivity @BER=0.1%	Data rate 250Kb/s	-99	-98	-96	dBm
	Data rate 2Mb/s	-91	-89	-88	dBm
IF Center Frequency			2		M Hz
Other Parameter					
Crystal Frequency	16MHz		+/- 20		ppm

TOP SILKSCREEN



PIN DESCRIPTION

TX PIN

PIN	PIN NAME	PIN TYPE	DESCRIPTION
1	F	I	Forward function selected by active low
2	B	I	Backward function selected by active low
3	L	I	Left function selected by active low
4	R	I	Right function selected by active low
5	Pairing	I	Pairing function
6	VDD	PWR	Positive Power supply
7	F1	I	F1 function selected by active low
8	F2	I	F2 function selected by active low
9	VPP	PWR	power supply for OTP program
10	LED	O	LED for indicate Power on or pairing status.
11	GND	PWR	Ground
12	GND	PWR	Ground

PS. (F: Forward; B: Backward; L: Left ; R: Right; ANT: Antenna; I: Input; O:Output)

RX PIN

PIN	PIN NAME	PIN TYPE	DESCRIPTION
1	F	O	Decoder Forward output
2	B	O	Decoder Backward output
3	L	O	Decoder Left output
4	R	O	Decoder Right output
5	N/A		
6	VDD	PWR	Positive power supply
7	F1	O	Decoder F1 output
8	F2	O	Decoder F2 output
9	VPP	PWR	OTP power supply
10	N/A		
11	GND	PWR	Ground
12	GND	PWR	Ground

PS. (F: Forward; B: Backward; L: Left ; R: Right; ANT: Antenna; I: Input; O:Output)

FUNCTION DESCRIPTION

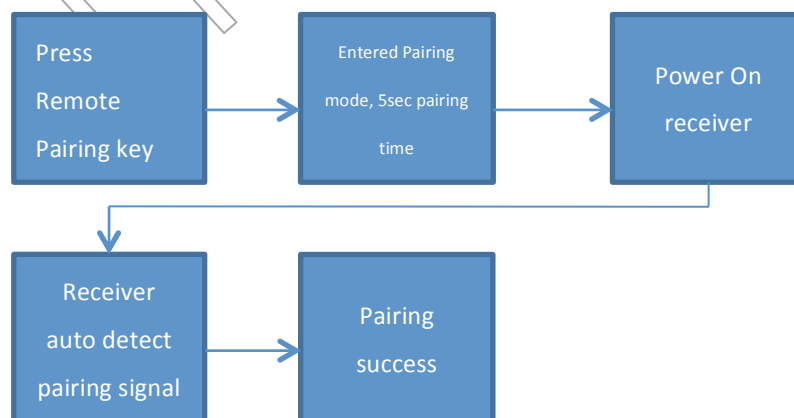
PIN	Tx (Encoder)	Rx(Decoder)	Remark
1	F2 = 1 (default)	F2=0	
	F2 = 0	F2=1	
2	F1 = 1(default)	F1=0	
	F2=0	F1=1	
3	F = 1 (default)	F=0	
	F = 0	F=1	
4	B = 1 (default)	B=0	
	B = 0	B=1	
5	L = 1 (default)	L=0	
	L = 0	L=1	
6	R = 1 (default)	R=0	
	R = 0	R=1	

(0 = logic Low; 1 = logic high)

PS. Forward and Backward selected at same time, decoder decode as Forward, and Left and Right selected at same time, decoder decode as Left

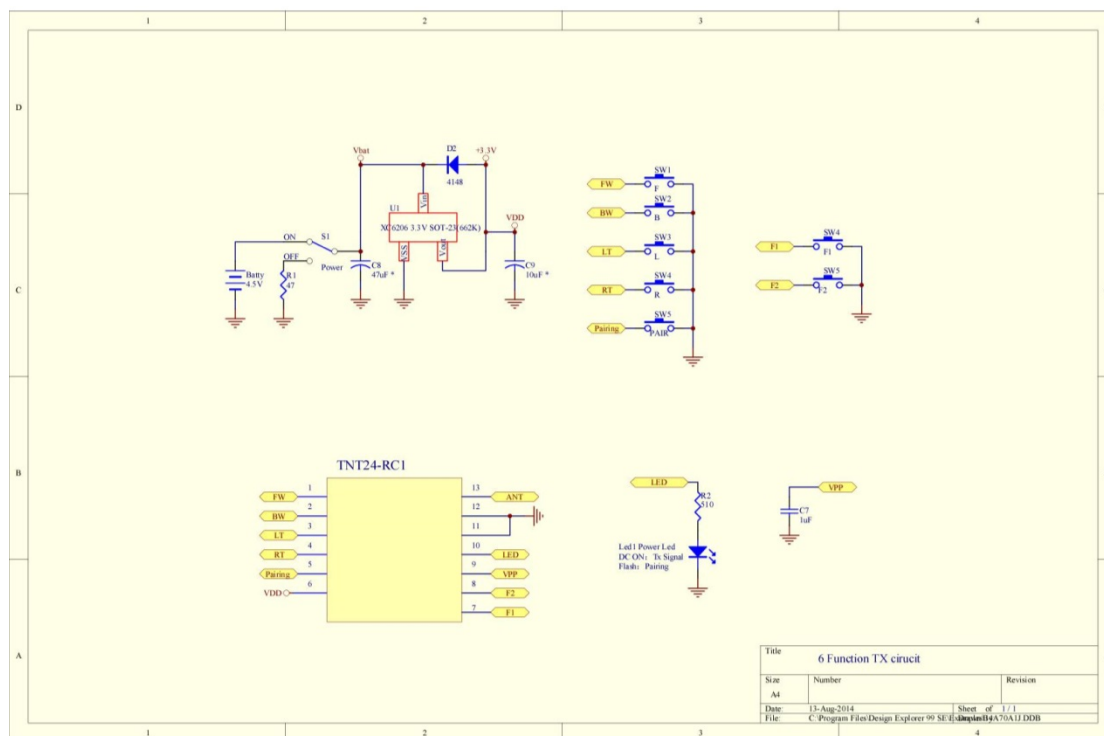
PAIRING METHOD

Power on pairing

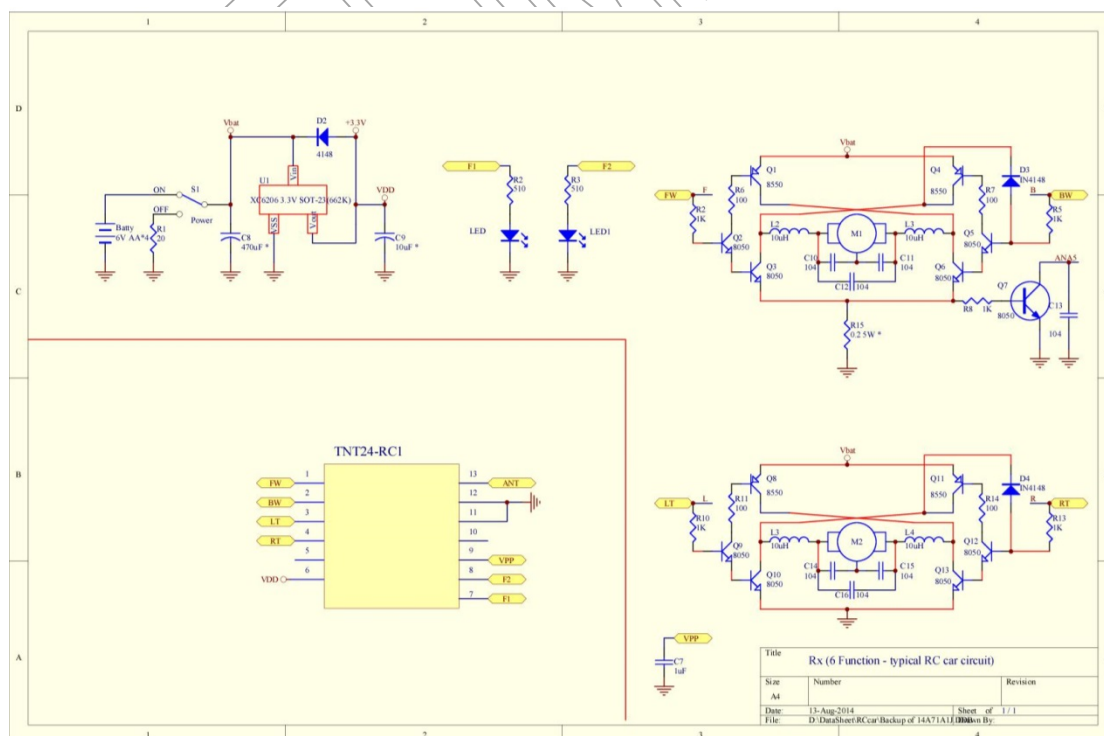


TYPICAL APPLICATION CIRCUIT

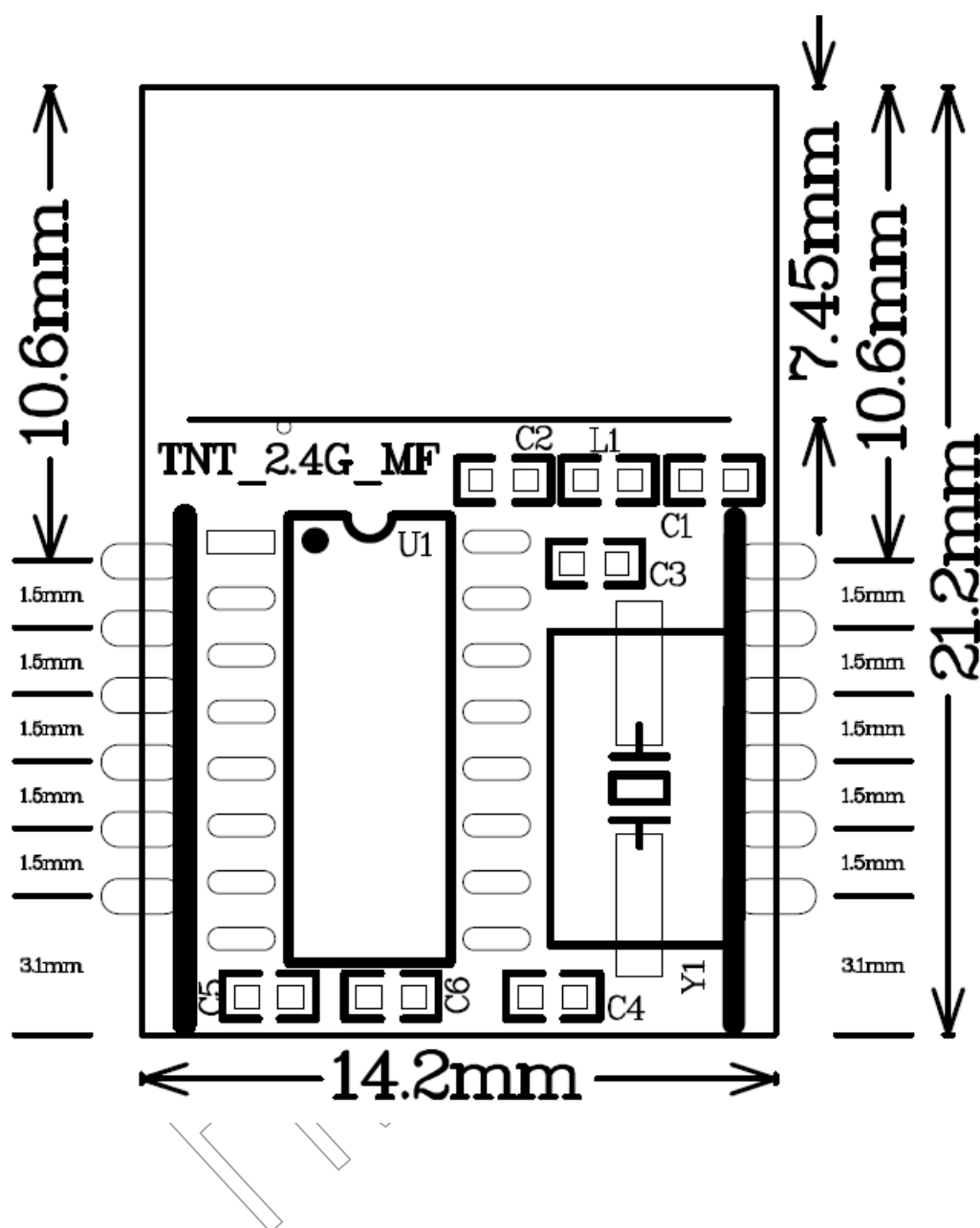
Remote (6 Function typical circuit)



Receiver (6 Function typical circuit)



PIN DIMENSION



VERSION HISTORY

DATE	VERSION	DESCRIPTION
2013/12/1	V0	Perliminary version release
2014/05/12	V1	Update the PIN NAME

CONTACT INFORMATION

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