

6 Channel RF Remote Controller Using CC2500 RF Module & PIC16F1847

The 6 Channel RF Remote Controller designed using CC2500 RF Transceiver modules and PIC16F1847 micro-controller from microchip. Transmitter provided with 6 tact switch, 4 Address Jumpers to pair multiple unit so they don't interfere with each other. One Power LED, One Transmission indicator LED. Project works with 5 V DC, On board LM1117-3.3V regulator for CC2500 Module. PCB can be used as Transmitter & Receiver.

Receiver works with 5V DC. 4 Jumper to paring RX& TX units, valid signal LED, power LED, and 9 Pin connector for outputs. Same PCB is used as transmitter and receiver. All outputs are Latch Type and TTL 5V Signal for easy interface with other devices like Relay Boards, Solid State Relays.

CC2500 RF Module

The CC2500 is a low-cost 2.4 GHz transceiver designed for very low-power wireless applications. The circuit is intended for the 2400-2483.5 MHz ISM (Industrial, Scientific and Medical) and SRD (Short Range Device) frequency band. The RF transceiver is integrated with a highly configurable baseband modem. The modem supports various modulation formats and has a configurable data rate up to 500 baud. CC2500 provides extensive hardware support for packet handling, data buffering, burst transmissions, clear channel assessment, link quality indication and wake-on-radio.

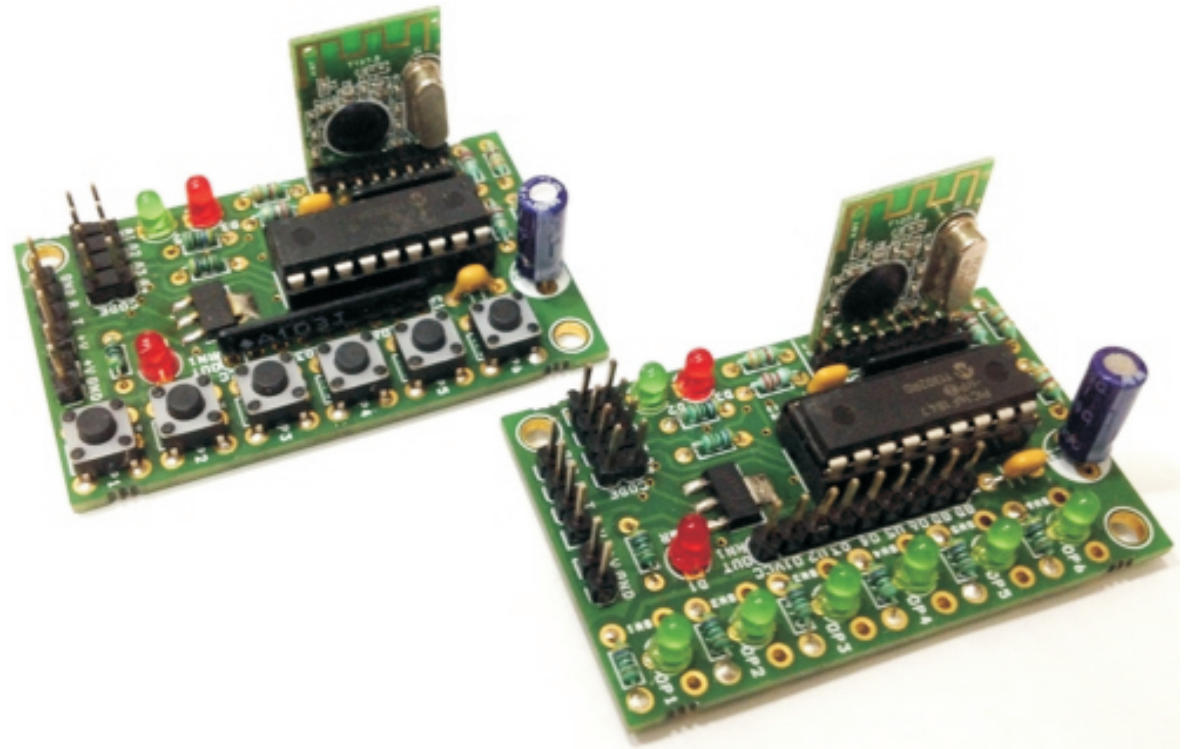
The main operating parameters and the 64-byte transmit/receive FIFOs of CC2500 can be controlled via an SPI interface. In a typical system, the CC2500 will be used together with a microcontroller and a few additional passive components.

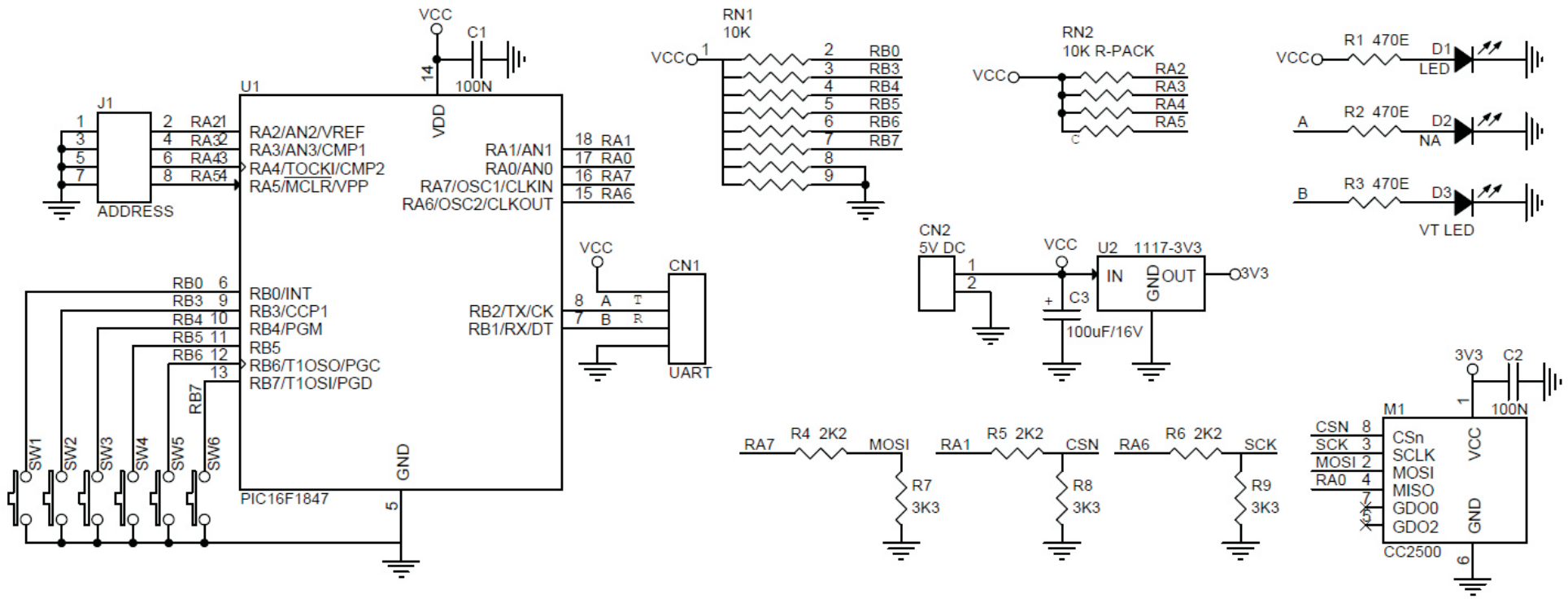
Features Transmitter

- Supply Transmitter 5V DC
- 4 Jumpers for Address Setting
- 16 Remote can be used as same time with 4 Jumpers
- 2 Pin Header Connector for Supply Input
- Power LED
- Transmission LED

Features Receiver

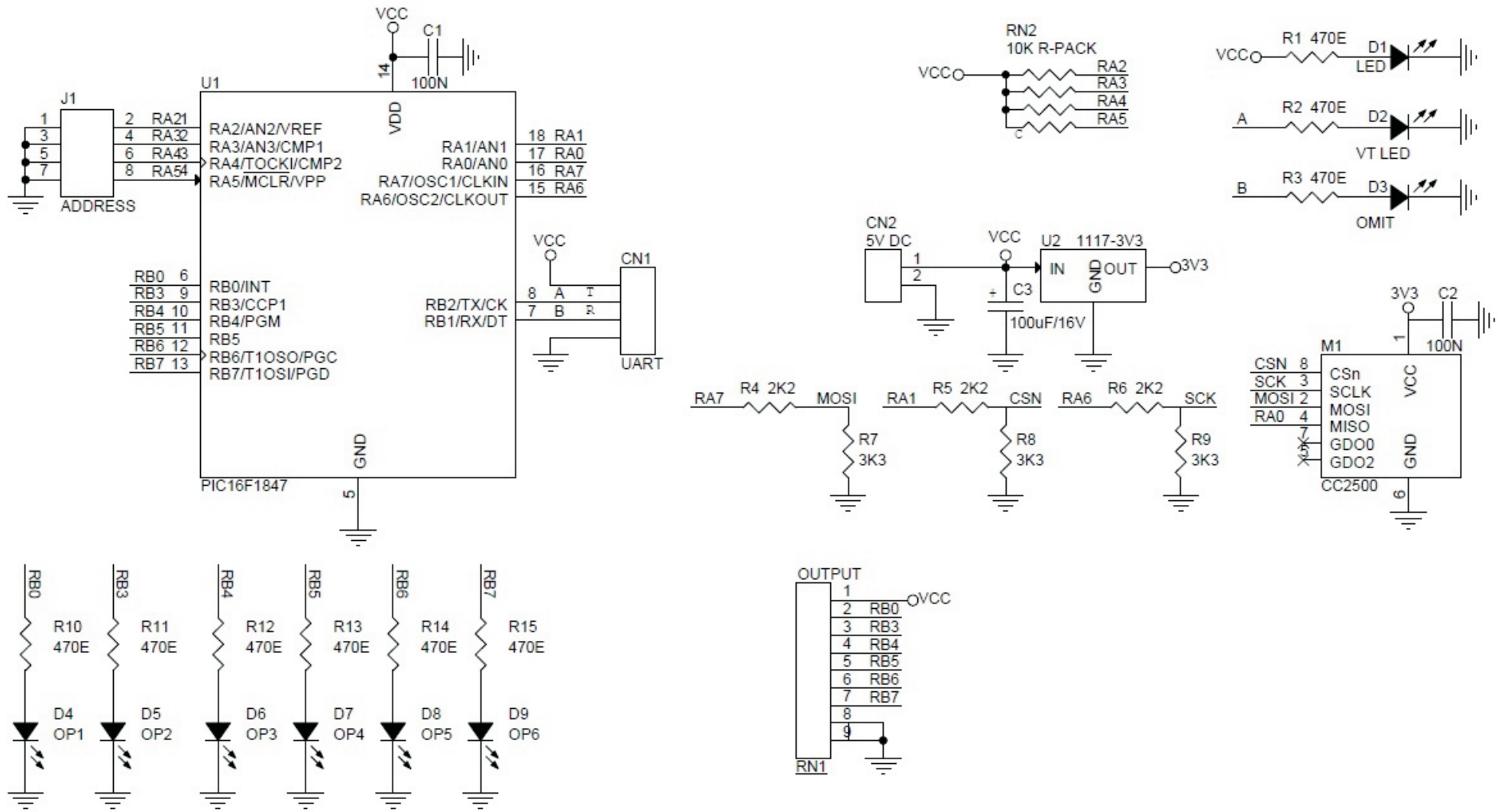
- Supply Transmitter 5V DC
- 4 Jumpers for Address Setting
- 16 Remote can be used as same time with 4 Jumpers
- 2 Pin Header Connector for Supply Input
- Power LED
- Valid Signal Receive LED
- 9 Pin Header Connector for Outputs
- 5V TTL Outputs for Easy interface with outside world



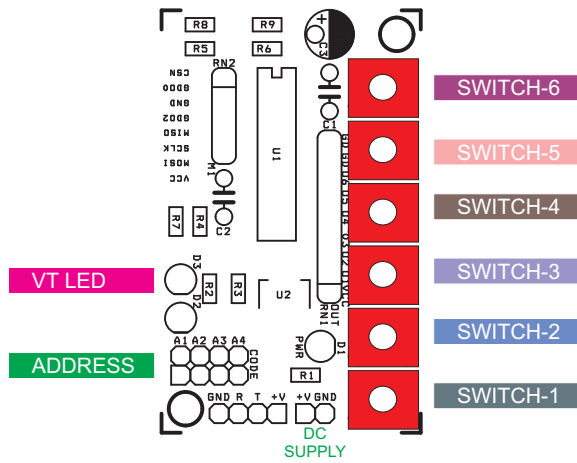
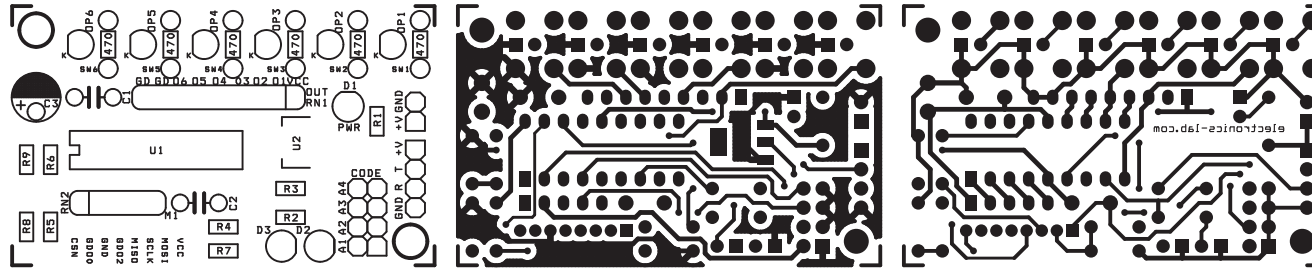


Transmitter Schematic

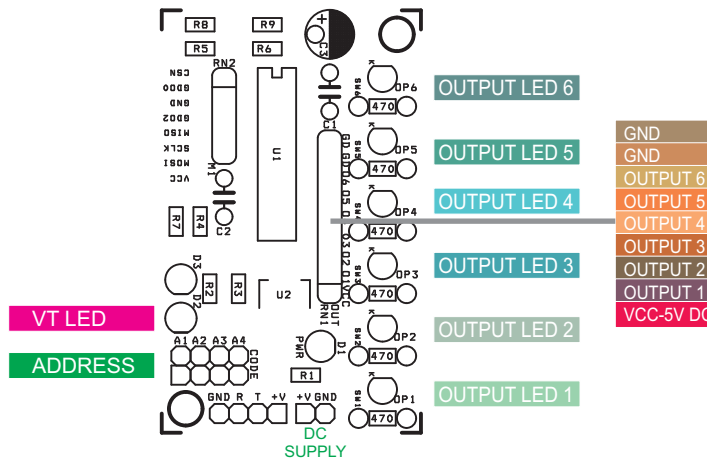




Receiver Schematic



TRANSMITTER



RECEIVER



TX-BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN1	OMIT
2	1	CN2	2 PIN HEADER Connector
3	2	C1,C2	0.1uF (100N)
4	1	C3	100uF/16V
5	1	D1	LED 3MM
6	1	D2	OMIT
7	1	D3	VT LED 3MM RED
8	1	J1	4X2 HEADER CONNECTOR JUMPPER
9	1	M1	CC2500 RF MODULE
10	1	RN1	9PIN 10K R-PACK
11	1	RN2	5 PIN 10K R-PACK
12	3	R1,R2,R3	470E 1/8W
13	3	R4,R5,R6	2K2 1/8W
14	3	R7,R8,R9	3K3 1/8W
15	6	SW1,SW2,SW3,SW4,SW5,SW6	4 PIN TACT SWITCH
16	1	U1	PIC16F1847
17	1	U2	LM1117-3V3 SMD

RX-BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN1	OMIT
2	1	CN2	2 PIN HEADER CONNECTOR
3	2	C1,C2	100N (0.1uF)
4	1	C3	100uF/16V
5	1	D1	LED
6	1	D2	VT LED
7	1	D3	OMIT
8	1	D4	3 MM LED
9	1	D5	3MM LED
10	1	D6	3MM LED
11	1	D7	3MM LED
12	1	D8	3MM LED
13	1	D9	3MM LED
14	1	J1	4X2 HEADER
15	1	M1	CC2500 RF MODULE
16	1	RN1	9 PIN HEADER CONNECTOR
17	1	RN2	5 PIN 10K R-PACK
18	9	R1,R2,R3,R10,R11,R12,R13,R14,R15	470E 1/8W
19	3	R4,R5,R6	2K2 1/8W
20	3	R7,R8,R9	3K3 1/8W
21	1	U1	PIC16F1847
22	1	U2	1117-3V3

