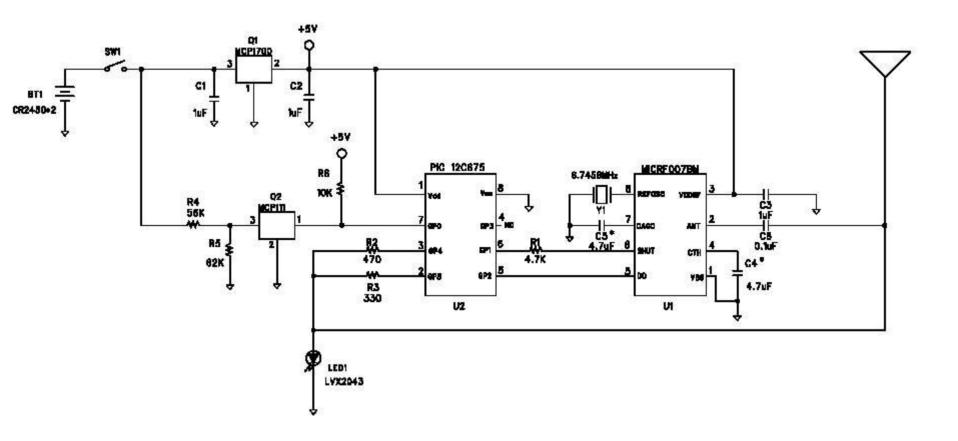
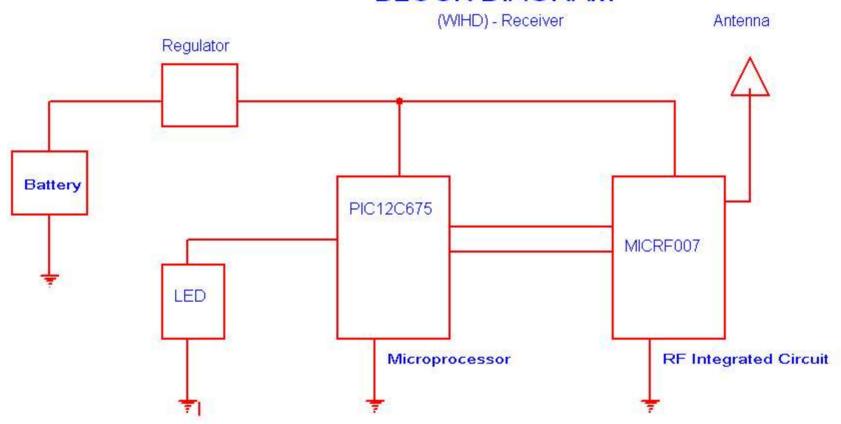
Cruisader Receiver Schematic



BLOCK DIAGRAM



Description/Operation

- The MICRF007 is a single chip ASK/OOK (ON-OFF Keyed) Receiver IC for remote wireless applications, employing Micrel's latest QwikRadiotm technology. This device is a true "antenna-in to data-out" monolithic device. All RF and IF tuning is accomplished automatically within the IC which eliminates manual tuning, and reduces production costs. The result is a highly reliable yet extremely low cost solution. The MICRF007 is an enhanced version of the MICRF002 and MICRF011. The MICRF007 is a conventional superhetrodyne receiver, with an (internal) Local oscillator fixed at a single frequency based on an external reference crystal or clock. As with any conventional superhetrodyne reciever, the transmit frequency must be accurately controlled, generally with a crystal or SAW (Surface Acoustic Wave) resonator.
- 2-Byte communication data is received by the microprocessor consisting of: First byte is an intelligent header and second byte is data.
- The header information controls whether the LED blinks in Bright Mode or Dim Mode.
- The Data information controls the rate of blinking and duration of blinking.
- Once blinking, if no additional control signal is received from the transmitter, the LED will cease blinking after approximately 8 seconds.

Header

- 0xA5 Blink Command DIM Mode
- 0x5A Blink Command Bright Mode

• 1010 0101 = 5A

Command/Data

- 0000 1000 = Button Press "Blink Once"
- 0000 0100 = Button Press "Blink Twice"
- 0000 1010 = Blink 2 seconds
- 0000 0010 = Stop Blinking
- 0000 1100 = Signal Strength "Zero"
- 1000 1100 = Signal Strength "One"
- 0100 1100 = Signal Strength "Two"
- 1110 1100 = Signal Strength "Seven"
- 1001 1100 = Signal Strength "Nine"

Bill of Materials

| • | Item | Quantity | Reference Designator | Part |
|---|------|----------|----------------------|------------------------|
| • | 1 | 2 | BT1 | Battery, CR2450 |
| • | 2 | 1 | SW1 | Slide Switch, PC mount |
| • | 3 | 1 | R1 | Resistor, 4.7K |
| • | 4 | 1 | R2 | Resistor, 470 |
| • | 5 | 1 | Y1 | Crystal, 6.7458 MHz |
| • | 6 | 3 | C1, C2, C3 | Cap, 1uF |
| • | 7 | 1 | C4 | Cap, 4.7 uF |
| • | 8 | 1 | U1 | IC, MICRF007 |
| • | 9 | 1 | Q1 | Regulator, MCP1700 |
| • | 10 | 1 | U2 | IC, PIC12C675 |
| • | 11 | 1 | Q2 | IC, Reset, MCP111 |
| • | 12 | 1 | R5 | Resistor, 62K |
| • | 13 | 1 | R6 | Resistor, 10K |
| • | 14 | 1 | R3 | Resistor, 330 |
| • | 15 | 1 | R4 | Resistor, 56K |
| • | 16 | 1 | C5 | Cap, 4.7uF |
| • | 17 | 1 | C6 | Cap, 0.1uF |
| • | 18 | 1 | LED1 | LED, Red, 3mm |