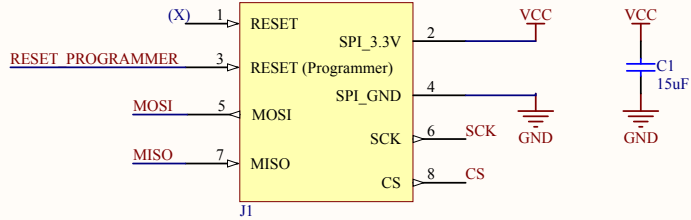
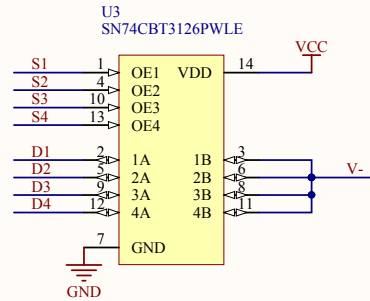


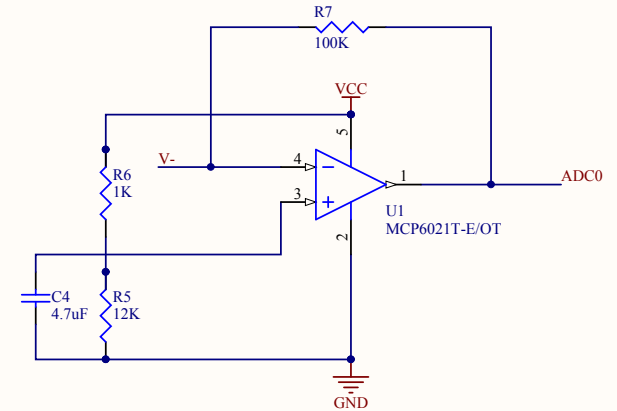
ISP Programming/SPI Connector



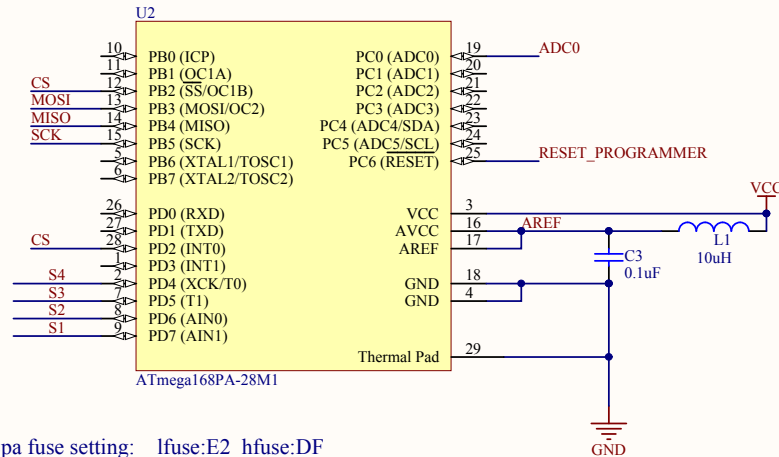
Switch



IR Receiver



Microcontroller

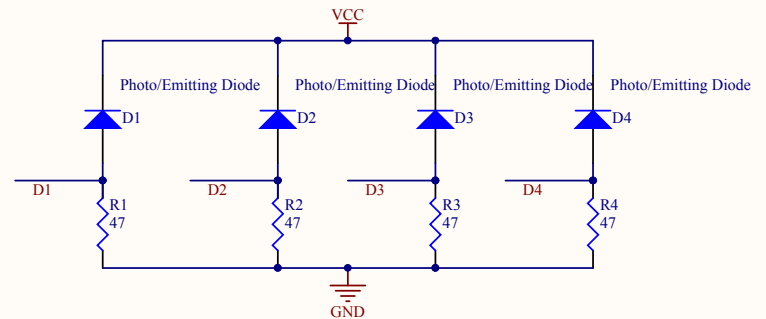


ATmega168pa fuse setting: lfuse:E2 hfuse:DF
CKDIV8=1, CKSEL=0010, SUT=10
Clock source: 8MHz Internal Oscillator

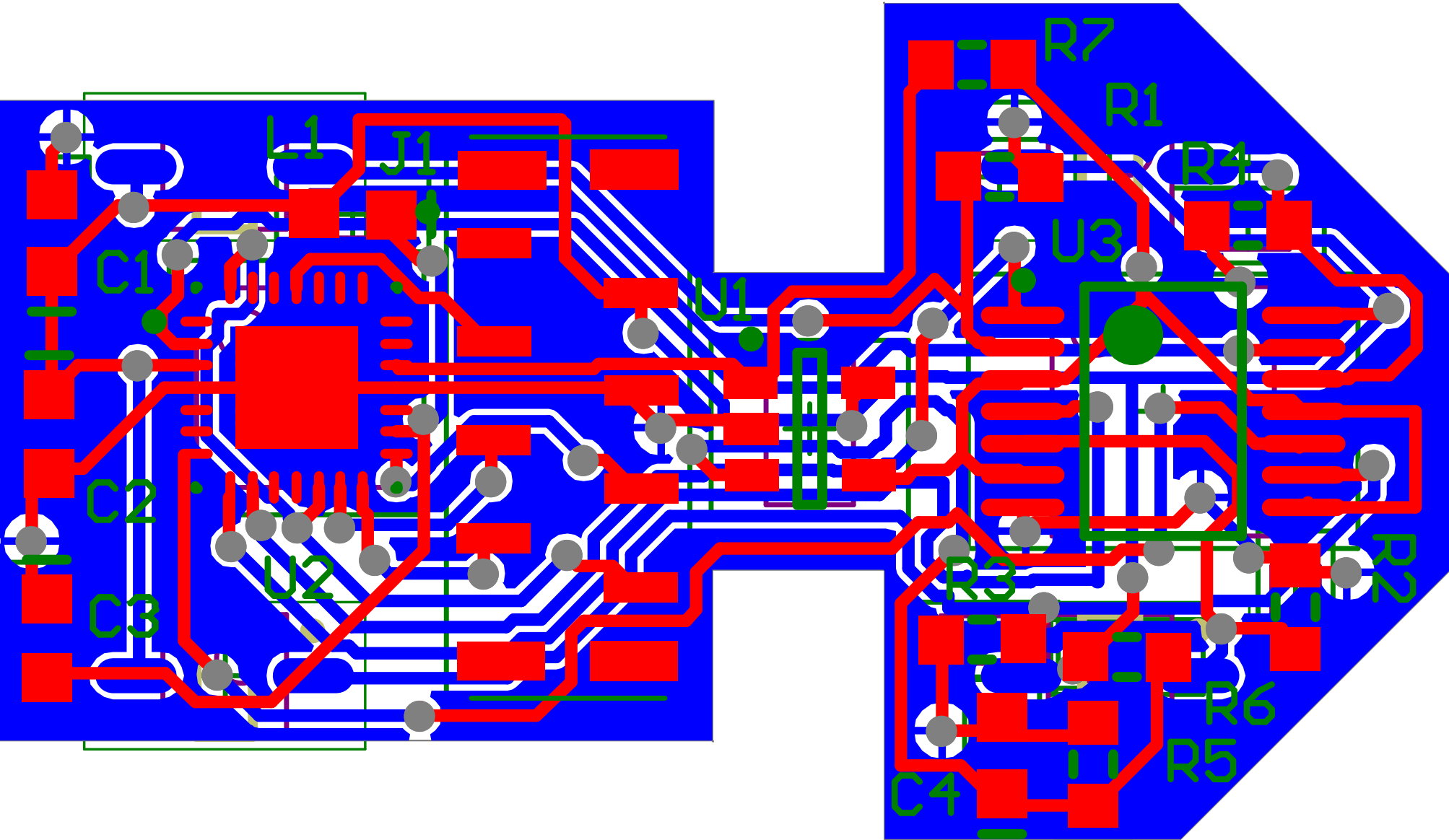
Emitter / Receiver Switch

Open R1 R2 R3 R4 on the Receiver Board

Reverse the polarity of D1,D2,D3,D4 on the Emitter Board



| | | |
|---------------------------------------|--|----------------------------|
| Title | | |
| UW PR2 Optical Finger Pretouch Sensor | | |
| Size | Number | Revision |
| A4 | UW Sensor Systems Lab - jianglt@uw.edu | 1.1 |
| Date: | 4/3/2014 | Sheet of |
| File: | C:\Users\...\optical.SchDoc | Drawn By: Liang-Ting Jiang |



| Comment | Description | Designator | Footprint | LibRef | Quantity |
|------------------------------|---|----------------|-------------------------------|----------------------------|----------|
| 15uF | 0603 SMD Capacitor | C1 | CAPC1608N | Cap Semi | 1 |
| 4.7uF | 0603 SMD Capacitor | C2, C4 | CAPC1608N | Cap Semi | 2 |
| 0.1uF | 0603 SMD Capacitor | C3 | CAPC1608N | Cap Semi | 1 |
| Photo/Emitting Diode | Emitting/Photo Diode 940nm Gullwing | D1, D2, D3, D4 | Vishay VEMD/VSMB footprint | Diode | 4 |
| FFC 8-PIN Connector (1mm) | FFC 8-PIN Connector (1mm) (SMT) | J1 | Hirose FFC connector 8-Pin | FFC Connector-8Pin-SMT-1mm | 1 |
| 10uH | 0603 SMD Inductor | L1 | INDC1608N | Inductor | 1 |
| 47 | 0603 SMD Resistor | R1, R2, R3, R4 | RESC1608N | Res3 | 4 |
| 12K | 0603 SMD Resistor | R5 | RESC1608N | Res3 | 1 |
| 1K | 0603 SMD Resistor | R6 | RESC1608N | Res3 | 1 |
| 100K | 0603 SMD Resistor | R7 | RESC1608N | Res3 | 1 |
| MCP6021T-E/OT | Rail-to-Rail Input/Output, 10 MHz Operational Amplifier, 5-Pin SOT-23, Extended Temperature, Tape and Reel | U1 | SOT-23-OT5_N | MCP6021T-E/OT | 1 |
| ATmega168PA-28M1 | 8-Bit AVR Microcontroller with 8K Bytes of In-System Programmable Flash Memory | U2 | | ATmega168-28M1 | 1 |
| SN74CBT3126PWLE | Quadruple FET Bus Swit | U3 | PW014_N | SN74CBT3126PWLE | 1 |
| | | | | | |