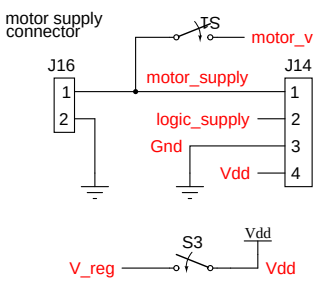
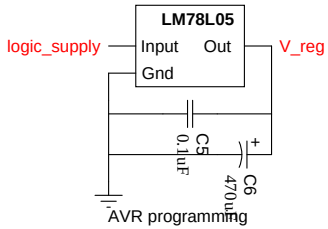
Mobile robot schematic
Bryce Denney
February 2002

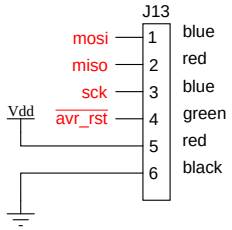
Note: Use script called "combine-quad-nand" to fix up the netlist before sending to PCB.

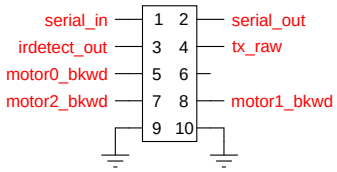


Put jumper on J14 pins 1&2 to use motor supply for logic too. Or apply 7V+ across pins 2&3 for separate logic supply. Or apply regulated 5V across pins 3&4 with separate motor supply.

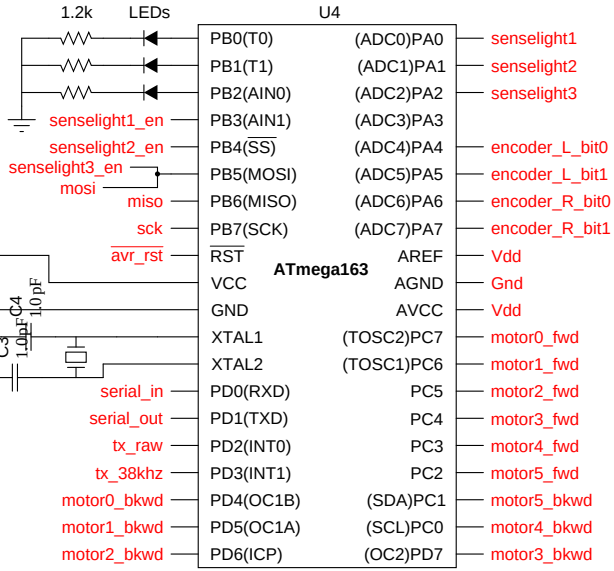


AVR programming header 1x6

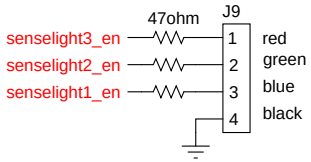




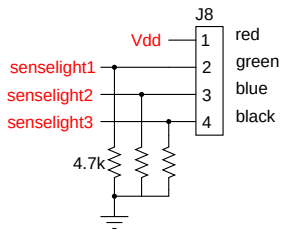
Normally, jumper across 1-3 and 2-4



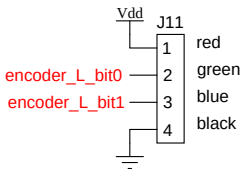
3 light sensor enables. Sensor draws power from uC when enable is high



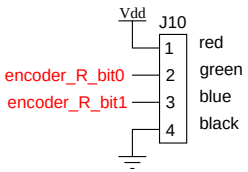
Analog light sensor readings

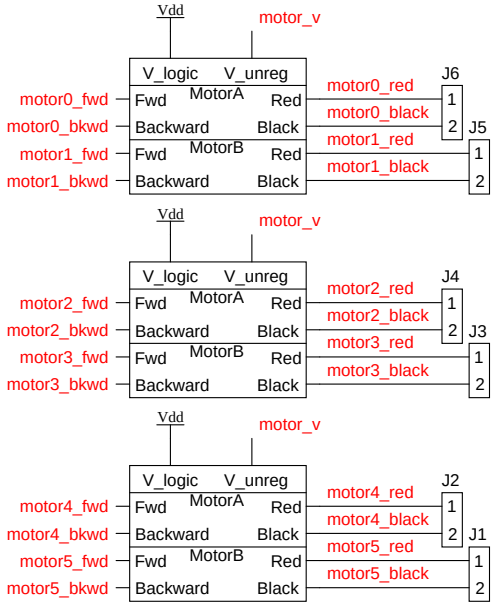


Left wheel encoder

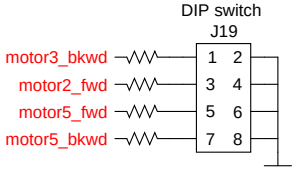


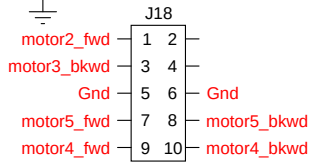
Right wheel encoder



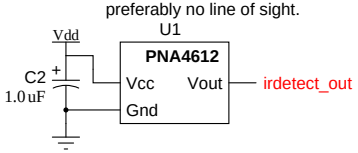


DIP switch

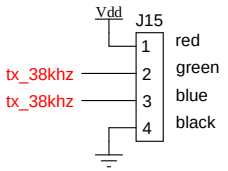


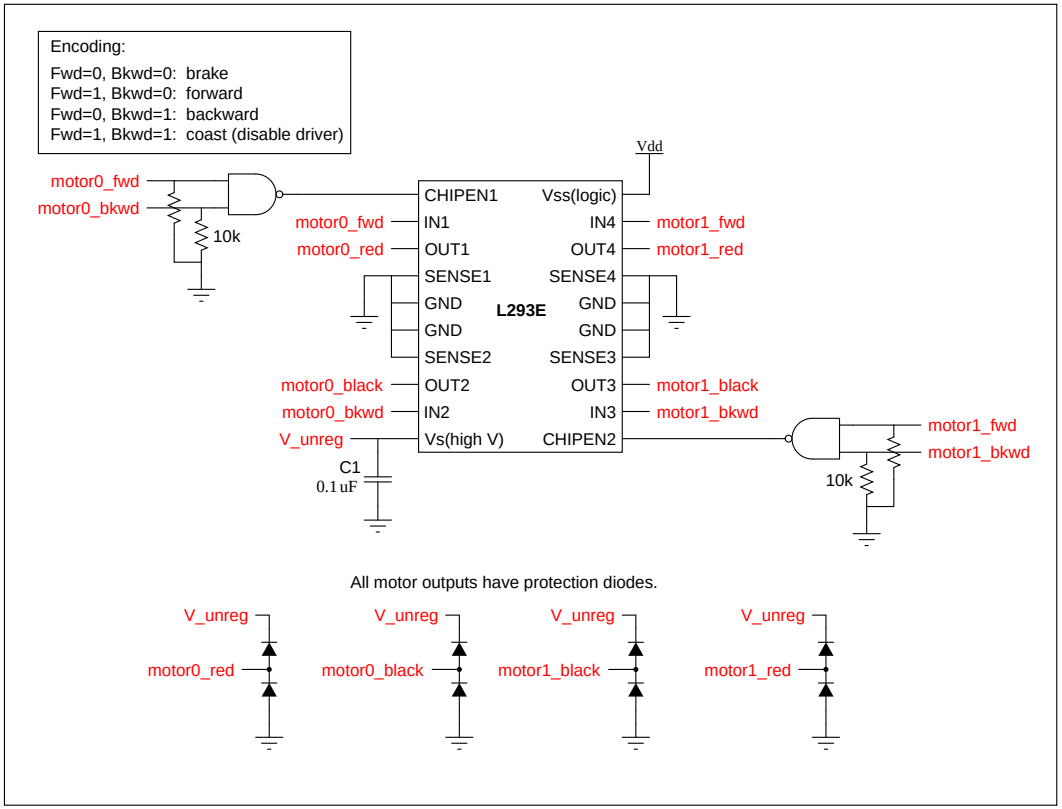


38khz IR detector. Avoid putting it close to the robot's IR transmitter(s); preferably no line of sight.



IR transmitter header




Encoding:
Fwd=0, Bkwd=0: brake
Fwd=1, Bkwd=0: forward
Fwd=0, Bkwd=1: backward
Fwd=1, Bkwd=1: coast (disable driver)
Vdd
motor0_fwd
motor0_bkwd
10k
CHIPEN1
Vss(logic)
motor0_fwd
IN1
IN4
motor1_fwd
motor0_red
OUT1
OUT4
motor1_red
SENSE1
SENSE4
GND
L293E
GND
GND
GND
SENSE2
SENSE3
motor0_black
OUT2
OUT3
motor1_black
motor0_bkwd
IN2
IN3
motor1_bkwd
V_unreg
Vs(high V)
CHIPEN2
C1
0.1 uF
10k
motor1_fwd
motor1_bkwd
All motor outputs have protection diodes.
V_unreg
motor0_red
V_unreg
motor0_black
V_unreg
motor1_black
V_unreg
motor1_red