Bill of Material for CMPE242

Harry Li, Spring 2016

Items	Description	Note
Sensor: Electric Compass and accelerometer LSM303 (I2C interface)	Use for sensor interface project	I2C (LSM303, HMC5883L, HMC6352) interface, see Appendix A
OpAMP: LM324 Quad Amp	OpAmp for preprocessing circuit	Use for analog sensor interface design circuit
POT	Resistive potential meter 4.7K ohm	Use for ADC interface testing
Red LED	8-10 mA	For ExINT testing
Wall mount DC adaptor	7.5VDC 500 mA or above	For prototype board power
RJ45 connector		For prototype board use
Wire wrapping board	2x2 size or bigger	
HS65SB or HS-645MG Servo	Ultra torque servo	For HS-645MG Current Drain (6.0V): 9.1mA/idle and 450mA no load operating $18.99; or Micro servo from Adafruit, $5.95
Or Stepper motor and stepper motor driver board	Small stepper motor with current not exceeding 200 mA	
Glue logic, resistors, capacitors, wires, switches, etc.		

Appendix A. Reference Parts

1. Electric Compass and Accelerometer: LSM303DLHC, from Adafruit, IIC interface, $14.95, https://www.adafruit.com/products/1120 This board/chip uses I2C 7-bit addresses 0x19 & 0x1E. Software reference (for Arduino) https://github.com/adafruit/Adafruit_LSM303

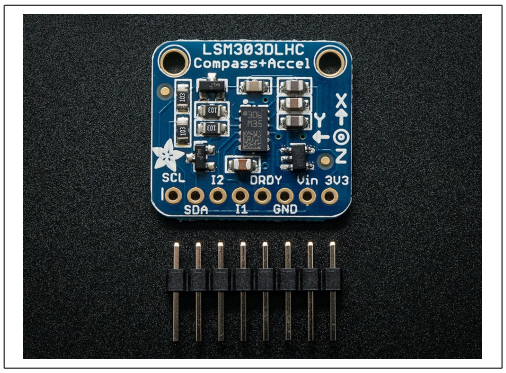
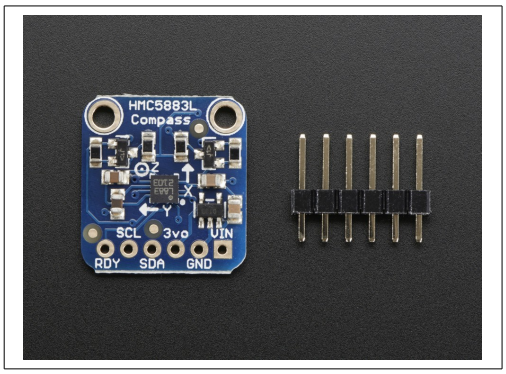


Figure 1. Electric Compass and Accelerometer, from Adafruit, $14.99, IIC interface.

2. Electric Compass: https://www.adafruit.com/products/1746 from Adafruit, IIC interface.



3. Electric Compass: https://www.sparkfun.com/products/retired/7915, from Spark Fun, IIC interface, $149.

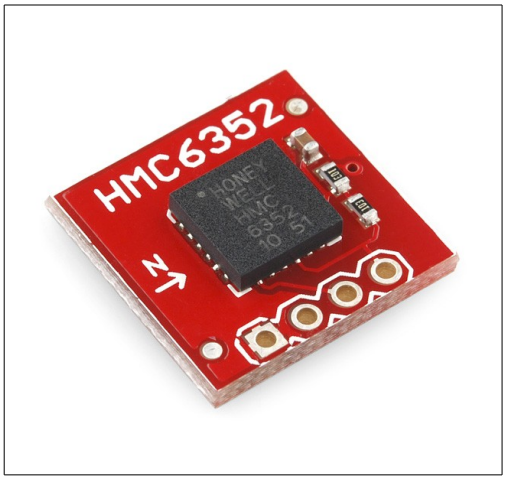


Figure 3. The sensor from Spark Fun.

4. Electric servo

Figure 4. Servo http://www.motionrc.com/hitec-hs-65hb-very-high-torque-9g-micro-servo/?gclid=COvy8L7V3MoCFc1ffgoda7UPkw

Or from adafruit

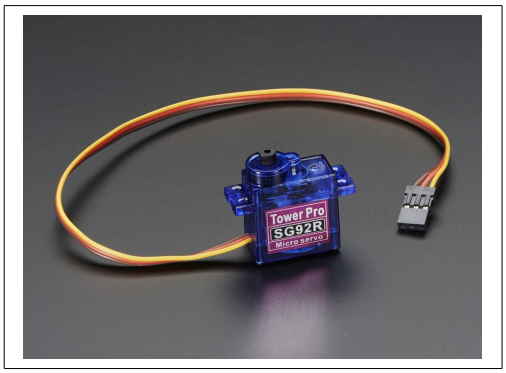


Figure 5. https://www.adafruit.com/products/169?gclid=CIbAm4PX3MoCFYVbfgod6OcAog $5.95 from Adafruit.

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