

CMPE242  
Homework Stepper Motor Drive Testing Part I  
HL

Homework (Due A week from Today)  
Feb 23rd. Preparation for the  
target, e.g. NANO to drive a stepper  
motor.

Pre-require:

1. NEMA17 OR NEMA14 motor;
2. motor drive
3. Signal generator to provide  
square waves. (0 ~ 1 KHz)

(Note: if you do not have signal  
generator, then you can use  
timed gpio output signal

100 ms  $\rightarrow$  10 Hz  
10 ms  $\rightarrow$  100 Hz )

1. Have both stepper motor drive and stepper motor (NEMA14 or NEMA17) ready;
2. Obtain the stepper motor data sheet and/or instruction sheet for the pin connections  
(2.1) to the stepper motor, and  
(2.2) from the microprocessor to the stepper motor drive;
3. Draw schematics of this connection;
4. Connect your signal generator output pin (if you prefer or you do not have access to a signal generator, you can use microprocessor GPIO output pin) to the motor the proper drive input pin per the data sheet/instruction sheet of your drive, connect the enable pins to GND if active low or to 5 VDC if active high of your motor drive per data sheet spec, and connect direction pin or configuration pin of your motor drive per the data sheet spec.
4. Take a photo of your set-up (as a work-in-progress checking).
5. Start the signal generator to drive the stepper motor motion, record 5 seconds video as an option.
6. Combine the above 1 to 4 into one PDF file, then zip it. Use the following file naming convention:  
firstName\_lastName\_SID(last-4-digits)\_hw\_motor\_drive1.pdf.  
Submit it to the class canvas.

(END)