

EE 459L Embedded Systems Design Lab

Stepper Motor Driver Interface Wiring

The following is a specification for the interface wiring that should be used by all EE 459L project teams when building projects to connect to the stepper motor driver boards.

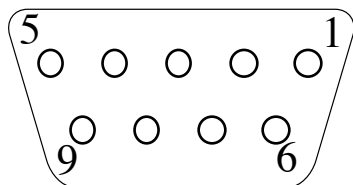
1. Logic Board Interface

The logic board and the stepper motor driver board should be connected together using male and female DB-9 connectors, each on the end of a length (1-3 feet) of multi-conductor cable. The cable attached to the driver board uses a male connector. The cable to the logic board uses a female connector.

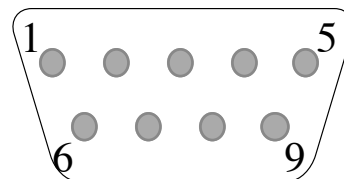
The interface between the logic board and the driver board should require five wires. There is a clock and direction bit for each of the two motors, plus a ground line. The following wiring pattern for the DB-9 connectors should be followed. Pins marked “N/C” should be left open and may be used in the future.

1	Pan clock	6	Pan direction
2	N/C	7	N/C
3	Ground	8	N/C
4	N/C	9	Tilt direction
5	Tilt clock		

Female connector,
looking at socket side



Male connector,
looking at pin side



2. Pan-and-Tilt Unit Interface

The following is a specification for the interface wiring to the pan-and-tilt units in the EE 459 lab. This information should be used when building a stepper motor driver board so that it will properly interface to the pan-and-tilt units.

The driver board and the pan-and-tilt units should be connected together using male and female DB-15 connectors, each on the ends of a length (1-3 feet) of multi-conductor cable. The cable attached to the driver board should have the female connector since this will protect the pins that may have power on them. The pan-and-tilt units have a male DB-15 on them.

The pan-and-tilt units require eight wires to operate the two stepper motors. Each motor has two coils with two wires for each. The following wiring pattern for the DB-15 connectors should be followed. Pins marked "N/C" should be left open and may be used in the future. The wire colors shown below are for the SM4203 stepper motors available in the lab.

1	Pan motor - A (brown)	9	Pan motor - \bar{A} (red)
2	N/C	10	N/C
3	Pan motor - B (green)	11	Pan motor - \bar{B} (white)
4	N/C	12	N/C
5	N/C	13	Tilt motor - \bar{A} (red)
6	Tilt motor - A (brown)	14	N/C
7	N/C	15	Tilt motor - \bar{B} (white)
8	Tilt motor - B (green)		

