User Guide

1. Connect the USB BDM pod to the microcontroller (Esduino) ensuring the red wire lines up with the square dot on the Esduino and also remove the jumper on the pod, refer to fig. (1) and fig. (2). **
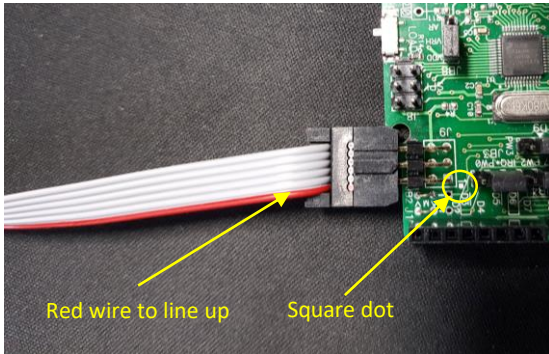

Red wire to line up   Square dot

Fig. (1)

Remove jumper

Fig. (2)

2. Connect the Esduino to your computer through the micro-USB port after verifying that the jumper was removed from the BDM pod (failure to do so will damage the Esduino). The Esduino's power LED (green) should now turn on.

3. Launch the FinalProject.mcp in the CodeWarrior IDE and click on the green debug arrow on the left sidebar (refer to fig. (3)), then click on OK for any pop-ups. Finally click on the green arrow in the true time simulator window (refer to fig.(4)). **
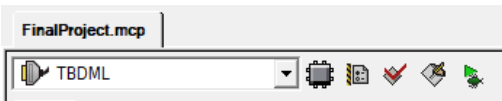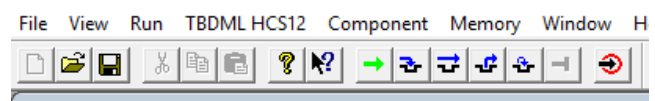

Fig. (3)

Fig. (4)

4. Right click the windows icon in the taskbar and open the Device Manager. Under the Ports tab note the COM port number of the serial port, refer to figure (5).
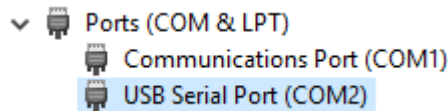

Fig. (5)

5. Open the DP4Project.m file in MATALB and change the COM port number on line 14 with the one obtained from the previous step, refer to figure(6) .


```
14 -    s=serial('COM2','BaudRate',38400,'Terminator','CR'); %Serial object configuration
```

Fig. (6)

6. In MATLAB, under the editor tab click on run, your command window should now show "open", this confirms that the serial object has initialized correctly.

7. Now on the circuit, press button 1 to start/stop the program (you will see the LEDs display the angle in BCD format). Pressing button 2 switches to bar display mode (you will see the bar progress as you tilt the sensor from 0 to 90 degrees

8. Over on MATLAB, you will see a real time graph of the inclination angle measured by the sensor.

** Steps 1 and 3 need to be performed only once, the user may simply plug in the micro-USB cable to the Esduino and use the device as intended after initial setup. If the Esduino is reprogrammed then steps 1 and 3 have to be performed again.