Testing Hardware

This file contains instructions for testing hardware and preparing a video for submission. Follow these steps to test hardware.

1. Configure your XBee modules as explained in *"Configuring and Testing XBee Modules with XCTU.pdf"*.

2. Make sure that all connections are done as explained in *"Assembling Hardware for Testing.pdf"* and battery is connected to the DC Jack Socket in the Power Supply Distribution Circuit. Switch on the Power Supply Distribution circuit and ATmega328P Development Board.

3. Program ATmega328P microcontroller with *"SB-Hardware-Testing.hex"* present in **Test file** folder.

4. Now connect one XBee module to a PC/Laptop using the XBee Adapter.

5. To start the serial monitor first open PuTTY, select serial and then enter the appropriate COM port (*instructions below*).
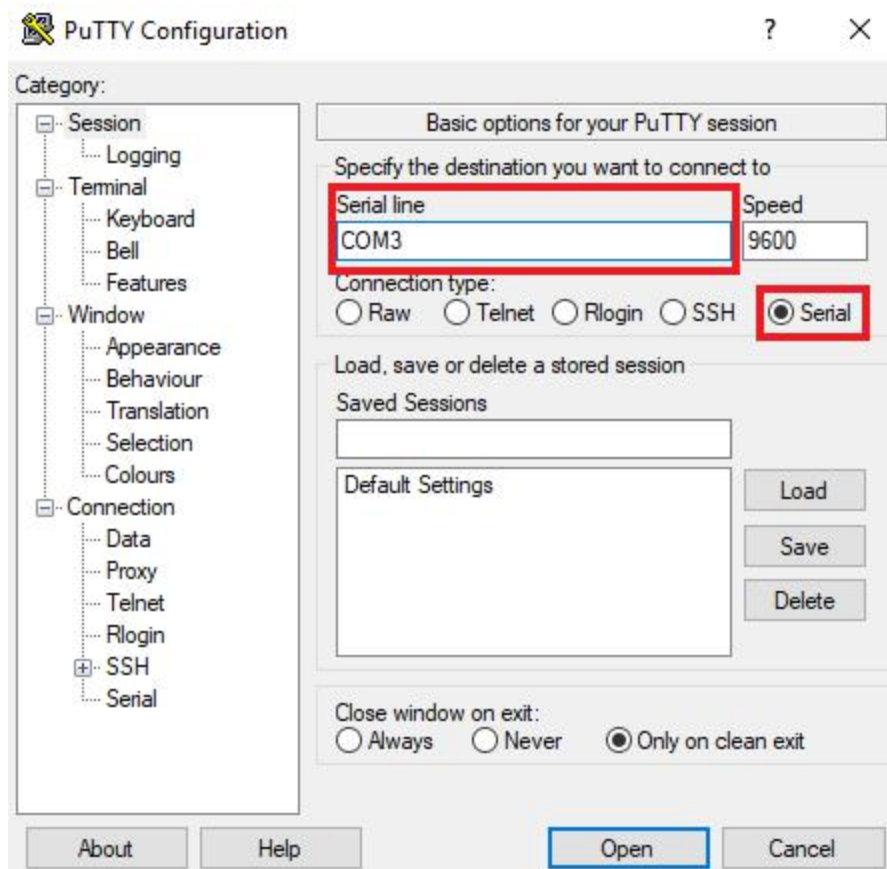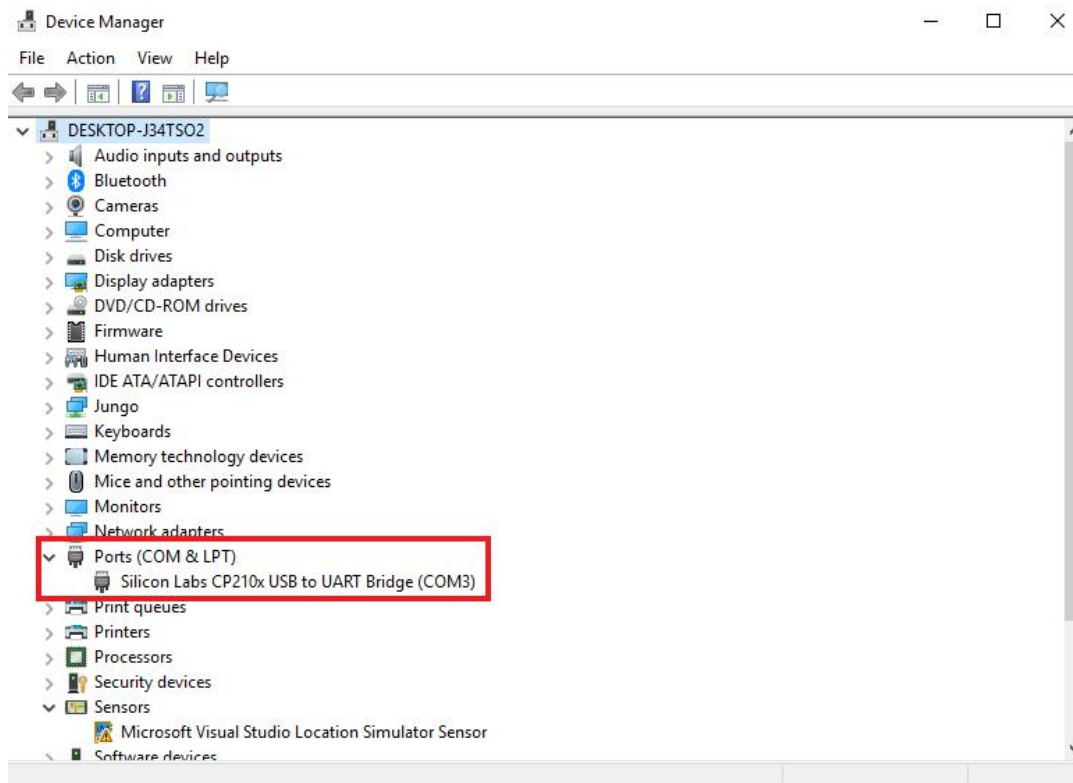

Figure 1: PuTTY

Note: *To identify which COM port your XBee module is connected to, check **Device Manager** in your computer.*

Figure 2: Device Manager

6. This should open a serial monitor as shown in figure 3.

Figure 3: Serial Monitor

7. Typing a character sends the command from the PC to the ATmega328P microcontroller via XBee modules. On receiving specific characters, hardware connected to the microcontroller respond. Following are the characters to which the corresponding components respond.

Key	Component	Action
1	Buzzer	On
0	Buzzer	Off
w	White-Line Sensor Reading	See reading on PuTTY console
a	Motor 1 & 2	Rotates Forward
s	Motor 1 & 2	Rotates Backward
f	Servo	90 degree Rotation
d	Servo	Original Position

Refer this video on how to do the hardware testing and recording a video.

Submission Instructions

Make a single video having the following:

- Hardware testing video. This should be recorded as the video we have provided you.
- Please note the following while recording the video:
  - Video should show the terminal while burning hex file to the microcontroller.
  - While testing a component make sure that the corresponding component is in the video.

Instructions for uploading the video are provided in the Shipment tab of the portal.