

e-Yantra Robotics Competition (eYRC 2019-20)

Hardware Testing

Hardware required:

1. Assembled Pluto Drone
2. USB Camera
3. LED strip and wires
4. Arduino Nano
5. 5V DC adapter

This file contains instructions to test all the given hardware.

- Attach the USB camera to your system and test the camera by following the instructions in the [Camera](#) folder.
- Test the drone by following the instructions in the [Drone](#) folder.
- Test and make the LED modules by following the instructions in the [LED module](#) folder.

Testing Instructions:

1. Install and configure the ROS package for the drone by following the instructions given in [Testing Drone.pdf](#).
2. Connect the drone through Wi-Fi and launch the required file.
3. Attach the USB camera provided in the kit to a PC/Laptop and start the camera node by following the [Testing Camera.pdf](#).
4. Calibrate the camera by following the instructions in the [Camera Calibration.pdf](#)
5. Test the LED strip given to you by following the instructions given in the [LED Testing.pdf](#)
6. After testing the LED strip, make the LED modules by following the instructions given in the [Making LED modules.pdf](#).

Submission Instructions:

1. Prepare the entire arena as shown in Figure 1 where you have to place the flex in the camera frame and place the led modules as per the configuration provided in Table1. Connect the LED modules to Arduino Nano in which the hex file is already burnt, and the LED's should light in the same order as Figure 1 and place the drone on the Base Station.
2. Start screen recording on your system and then launch the usb_cam_SR launch file, the image view of your camera should show the image same as Figure 1.

```
>> roslaunch survey_and_rescue usb_cam_SR.launch
```

3. Then connect the drone via Wi-Fi and run the drone service by executing the following command.

```
>> roslaunch edrone_server drone_comb.launch
```

Arm the drone by pressing 'a' on the terminal and zoom in towards drone, showing the propellers rotating and then disarm the drone by pressing 'd'. **Follow the steps for recording video of hardware testing [here](#).**

LED module number	Location
1	B6
2	A4
3	C2
4	E3
5	F2
6	E5
7	D6
8	C5
Base Station	B2

Table1: Sample configuration table

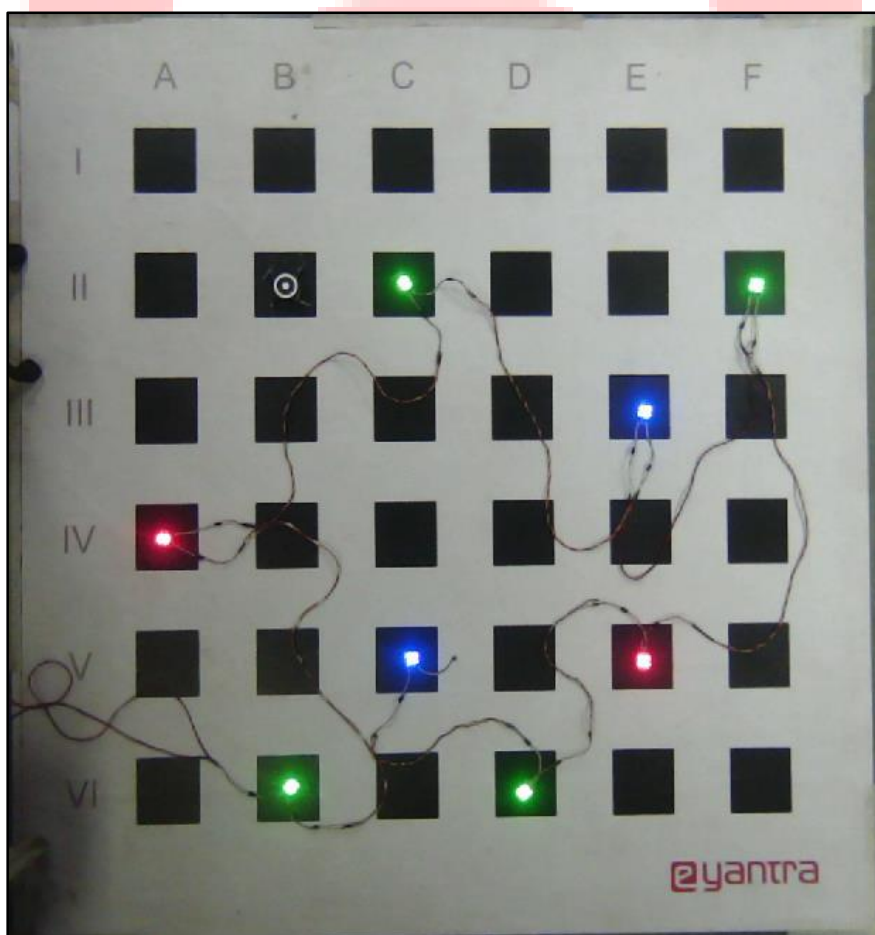


Figure 1: Arena setup

Note: Maximum length of the video must be 2 minutes only.

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