

Create ZumoPi Environment:

- 1) With Pimager, download and create image of UBUNTU DESKTOP 22.04 LTS (64-BIT)
[Raspberry Pi OS – Raspberry Pi](#)

- 2) Set credentials for ubuntu:

Your name: zumo

Computer name: zumo-lab

Username: pi

Pass: zumo

- 3) Run **zumopi_script.sh**:

Note: when installing driver for Wi-Fi EW-7822ULC, when the following prompted, answer accordingly:

For the prompt "Do you want to edit the driver options file now? [y/N], enter **n**

For the prompt "Do you want to reboot now? {recommended} [y/N] enter **y**

- 4) Run **ros2_script.sh**.

- 5) Manual stuff to do:

- a) Connect the WIFI dongle to local network (same as the control station).

- b) Install ZUMO libraries according to:

Zumo libraries:

Follow these steps:

<https://www.pololu.com/docs/0J63/5.2>

Zumo32U4 library

Follow these steps:

[Pololu - 6. Zumo 32U4 Arduino library](#)

(port will probably be /dev/ttyACM0)

- c) Configure camera:

`$v4l2-ctl --list-devices`

Search in the list of devices the location of "mmal service 16.1" (should be /dev/videoX)

`$ffplay /dev/video<number>`

If mmal service 16.1 doesn't appear, enable through raspi-config:

`$sudo apt install raspi-config`

`$sudo raspi-config`

Interface Options -> Legacy Camera -> Enable

Reboot

Telemetry Project: Renato Fainshten and Michael Barkovsky

Add user to video group:

```
$sudo usermod -a -G video $LOGNAME
```

Logout and log back in

- d) Enable remote desktop:

Settings → Sharing → Remote Desktop → Enable **Remote Desktop** and **Remote Control**

Set user name: **pi** Password: **zumo**

- e) Copy **ros2_ws** and **arduino_serial_interface** directories to your home directory

from: https://github.com/renatof25/zumopi_telemetry_system/tree/main

Build ROS2 again: (may take some time)

```
$cd ~/ros2_ws
```

```
$colcon build
```

Create Remote Control Station Environment:

- 1) Run **ros2_script.sh**.

- 2) Copy **ros2_ws** directory to your home directory from:

https://github.com/renatof25/zumopi_telemetry_system/tree/main

Build ROS2 again: (may take some time)

```
$cd ~/ros2_ws
```

```
$colcon build
```

Reference sites:

EW-7822ULC driver installation:

[Install EW-7822ULC/UTC/UAD in Ubuntu 22.04 \(or Mint 21\) kernel 5.15 : EDiMAX \(freshdesk.com\)](#)

Arduino CLI:

<https://siytek.com/arduino-cli-raspberry-pi/>

UPS:

[X728-Software - Geekworm Wiki](#)