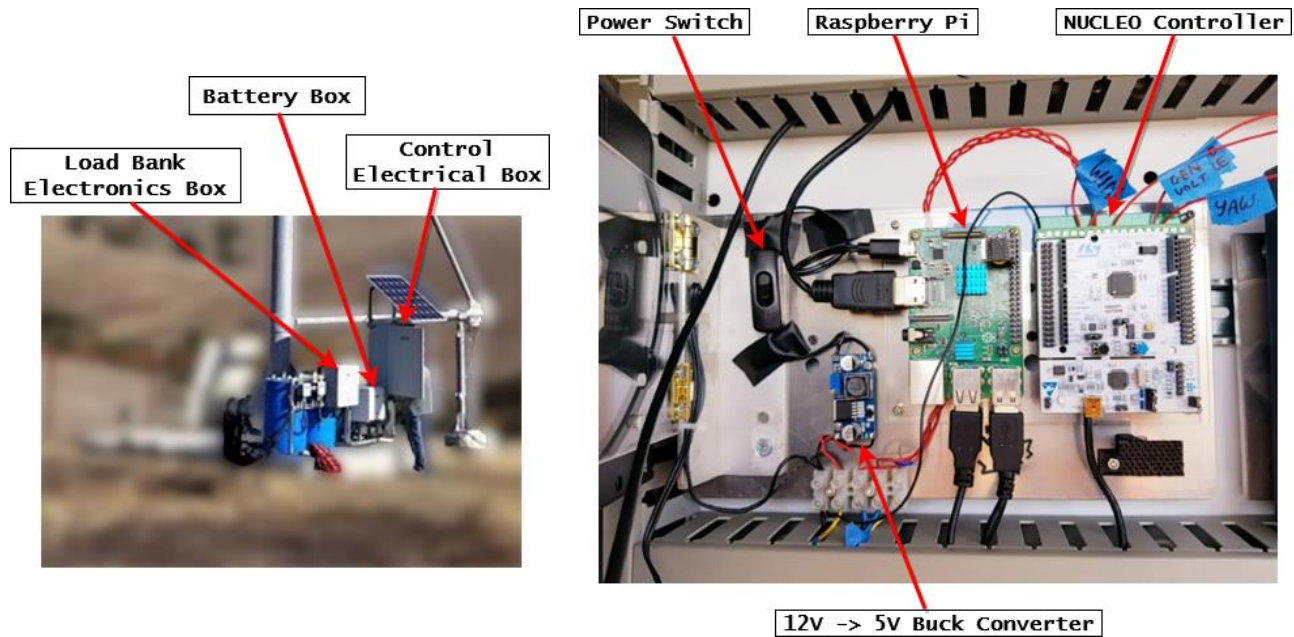


Cal Poly Wind Turbine: Control & Data-collection QuickStart Guide

Introduction:

This document is a short set of instructions on the use of the Cal Poly Wind Turbine's control and DAQ systems. Note that this document only includes instructions; for more information regarding the technical specifications of the electrical, mechanical, or software systems, other documentation will be necessary.



Turning Things On

1. **Make sure the emergency brake on the right side of the electrical box is turned on!**
2. Unlock the battery box
3. Turn the switch at the back of the box CCW to the ON position
4. Open the electrical box using the black key in the battery box
5. Inside the electrical box, detach the monitor from its Velcro backing
6. Behind the monitor, flip the Pi/Nucleo power switch to the ON position
7. Press the power button on the monitor's top left corner to turn it on

Using the Raspberry Pi

After the above steps, the Raspberry Pi should be turned on and outputting a video signal to the monitor. Once it boots, a prompt will open to set the current time. Set the time according to UTC time – this can be found at <https://www.timeanddate.com/worldclock/timezone/utc>. Once the time is set, the turbine controller should automatically open. If closed, you can open the controller program again by opening a terminal interface and inputting the following commands:

Program	Command
Turbine Controller and DAQ	<code>python3 turbine_control_v2.py</code>
LifeLine DAQ	<code>python3 lifeline_GUI_lowpower.py</code>
LifeLine DAQ and Condition Monitoring System	<code>python3 lifeline_FDC_lowpower.py</code>

Detailed usage of the turbine control and LifeLine software may be found in Ryan Zhan's thesis. Any data collected via these folders will be automatically sorted into folders within the /home/pi/data directory based on the current date.

Setting up Remote Desktop


A VNC Client allows you to use the Raspberry Pi remotely using any device capable of installing of such an application. The "VNC Viewer" application by RealVNC is free and highly recommended:

<https://www.realvnc.com/en/connect/download/viewer/>

Once installed on your device, power up the Raspberry Pi and connect to the "eggbeater" Wi-Fi network. The IP address and password should be entered as follows:

Address: 192.168.3.1

Password: calpolywtc

It is possible for this address or password has been updated (by the Raspberry Pi software, or another user, respectively) after the time of document writing. In this case, the VNC Server on the Raspberry Pi may be accessed by clicking the  logo in the top right corner of the screen. See Dr. Ridgely's "PiTheHeckUp.md" guide for a detailed setup of this tool.