Portable Electroluminescence Measurement System

PELMS 2023.S1

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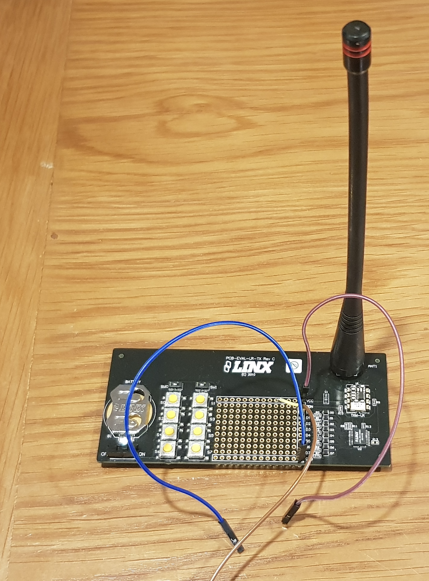
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# PELMS Setup

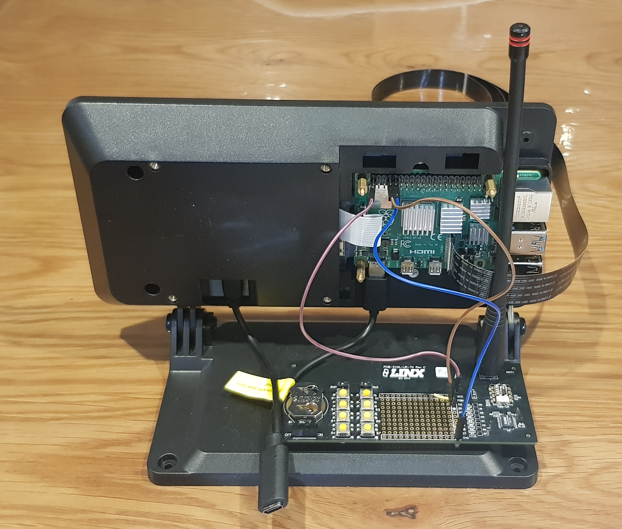
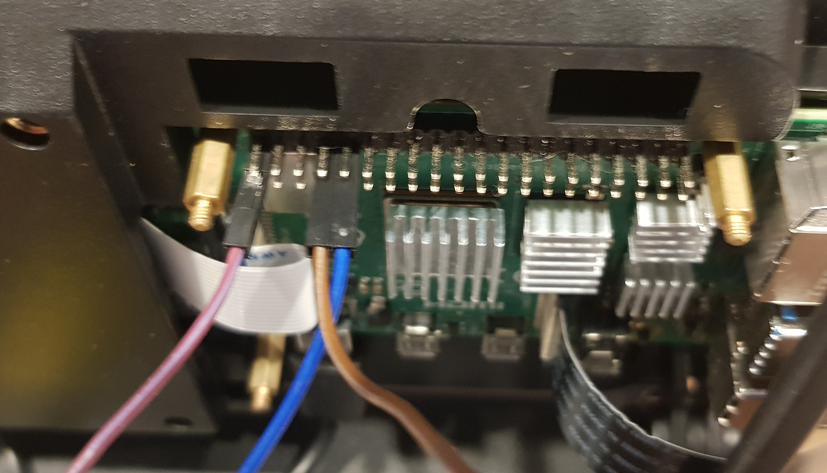
## PCCS (Portable Computing & Camera System) Setup

1. Connect antenna to the RF LINX TX module.



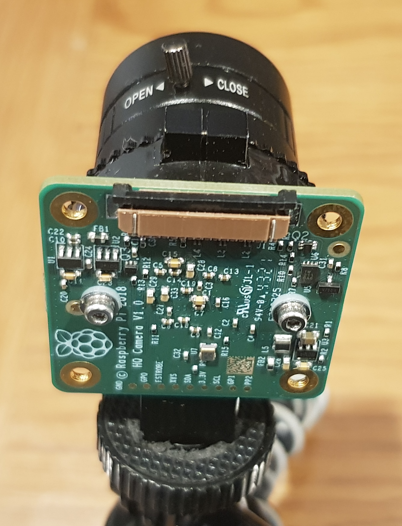
1. Connect RF LINX TX module to unpowered Raspberry Pi as follows:

* RF LINX TX (Vcc) – Purple Wire – Raspberry Pi (3v3) Pin 1
* RF LINK TX (Data D0) – Brown Wire – Raspberry Pi (GPIO4) Pin 4
* RF LINK TX (GND) – Blue Wire – Raspberry Pi (GND) Pin 5)

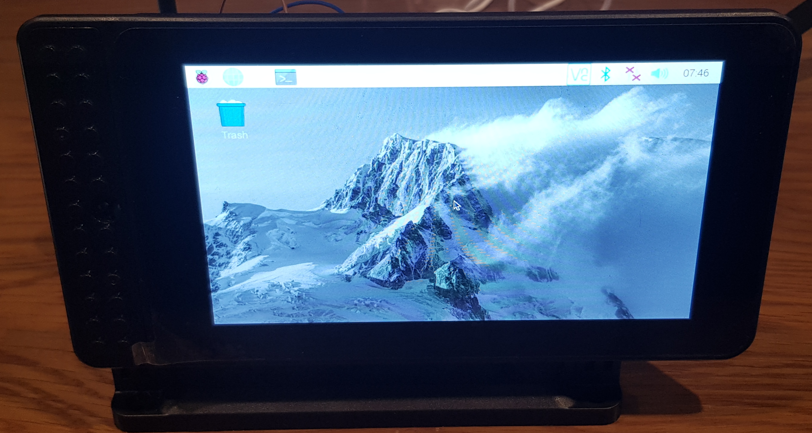
1. Switch RF LINX TX module to on.
2. Attach Camera as follows:

* Lift little thing
* Attach ribbon cable.
* Close little thing

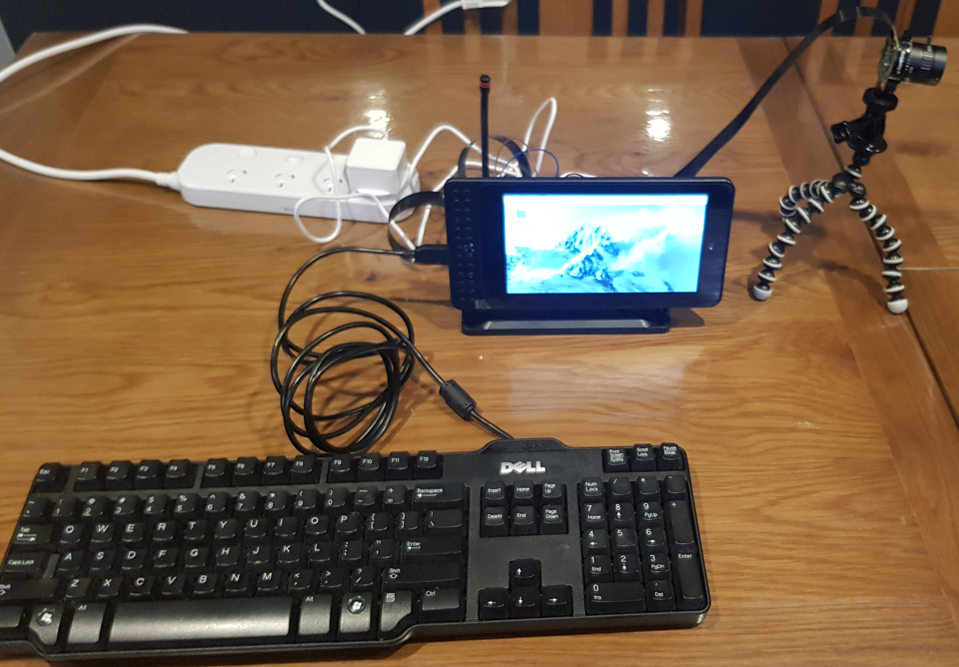
A camera lens with a flexible cable

Description automatically generated

1. Attach the Raspberry Pi Power Supply – when it boots displays will come on.

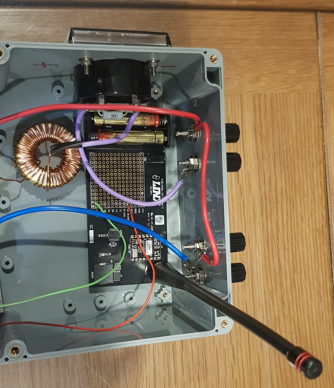
 

1. Attach keyboard.



## CRS (Current Regulator System) Setup

1. Attach the antenna.

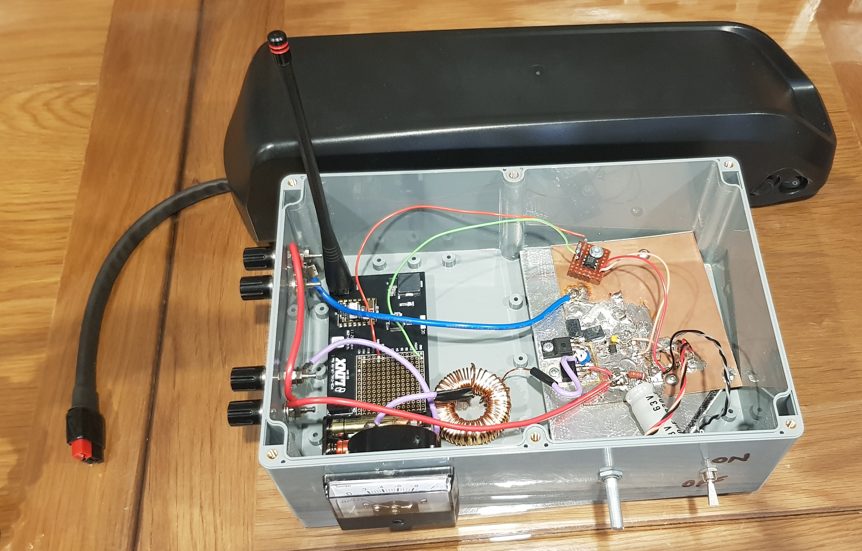


1. Switch the RF LINX TX to ON.

A machine with wires and wires

Description automatically generated

1. Make sure the system is off and attach the power source.



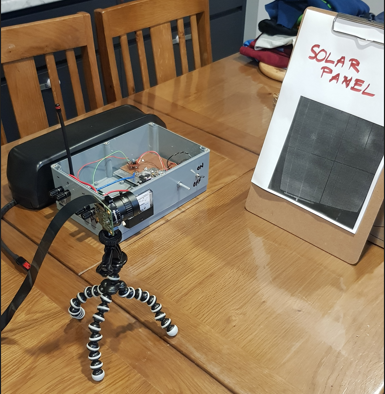
1. Connect to Solar Panel.



1. Turn on.

# PELMS Operation

1. Position the camera.



1. Turn the Current Regulator on.
2. On the touch screen, do the following:

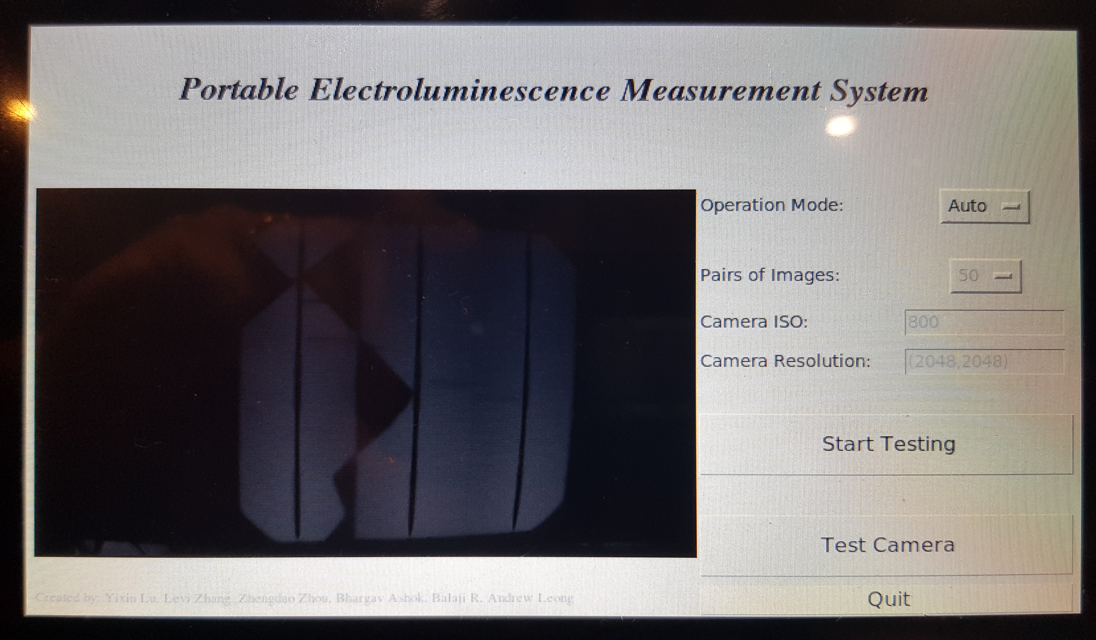
* Select Terminal
* In the terminal type the following:

cd ~Portable EL

/bin/python “/home/portabeel/Portable EL/GUI\_v2.0.py”

A computer screen with a black screen

Description automatically generated



1. Click on the Test Camera and adjust the camera position.
2. Click on the Start Testing.

# PELMS System Description

The Portable Electroluminescence Measuemernt system is composed of 2 systems. The Portable Camera and Computing system and the Current Regulation system. The major components interaction of each system is shown in Figure 1 below.

## PCCS Components

|  |  |
| --- | --- |
| Raspberry Pi |  |
| Touch Screen |  |
| RF TX module |  |
| Camera |  |

## CRS Components

|  |  |
| --- | --- |
| Power Source |  |
| RF RX module |  |
| Current Regulator Control Circuit |  |
| PV Panel |  |