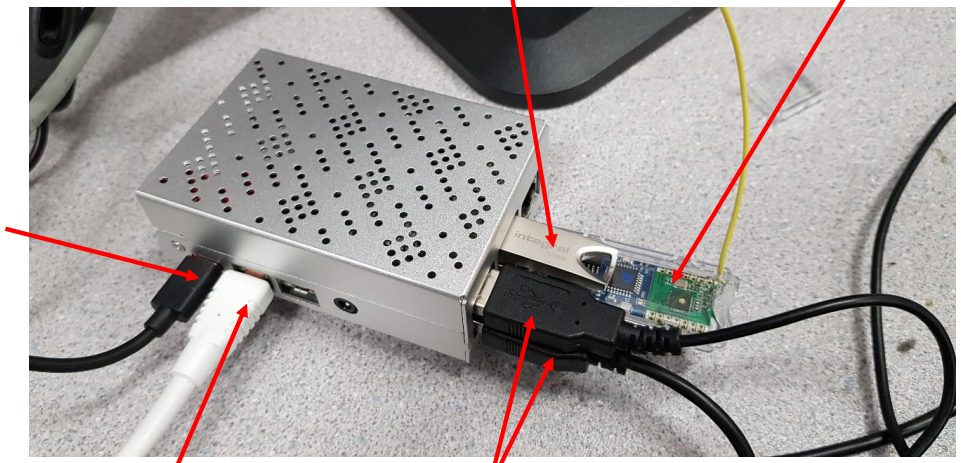
REMS basic kit

Assembly

You will need:

1. An internet connection for the Raspberry PI (Ethernet or wifi) – for automatic system time detection. Otherwise this is a manual operation.
2. A mouse & keyboard.
3. An HDMI monitor.

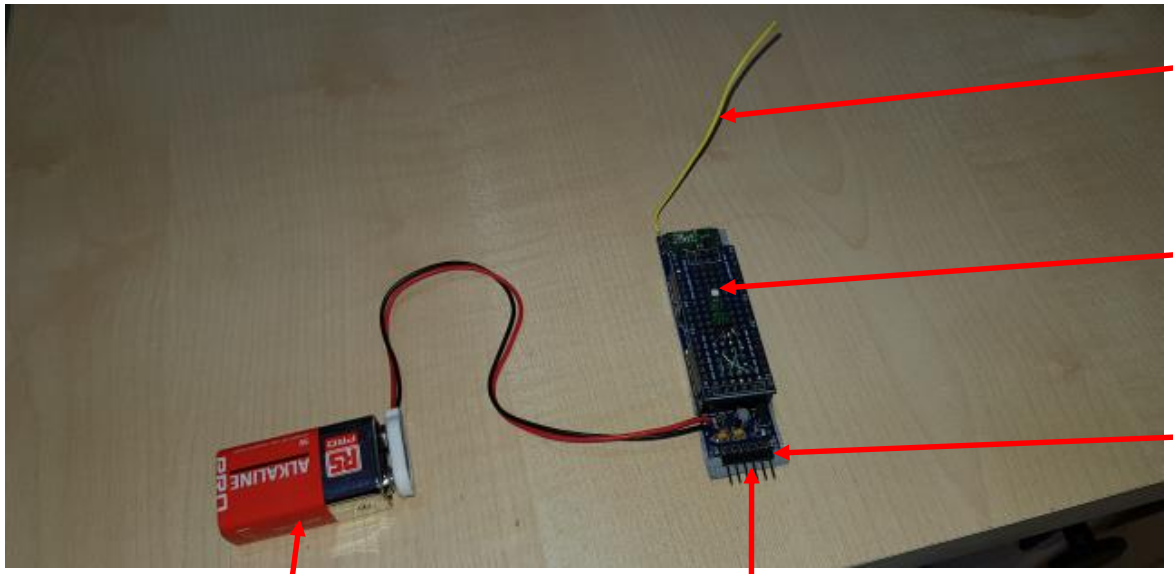


Micro SD card containing Ubuntu Desktop operating system

Sensor Nodes

The kit is supplied with two sensor nodes (ID 2 & ID 3).

The base node connected to the Raspberry PI is ID 1.

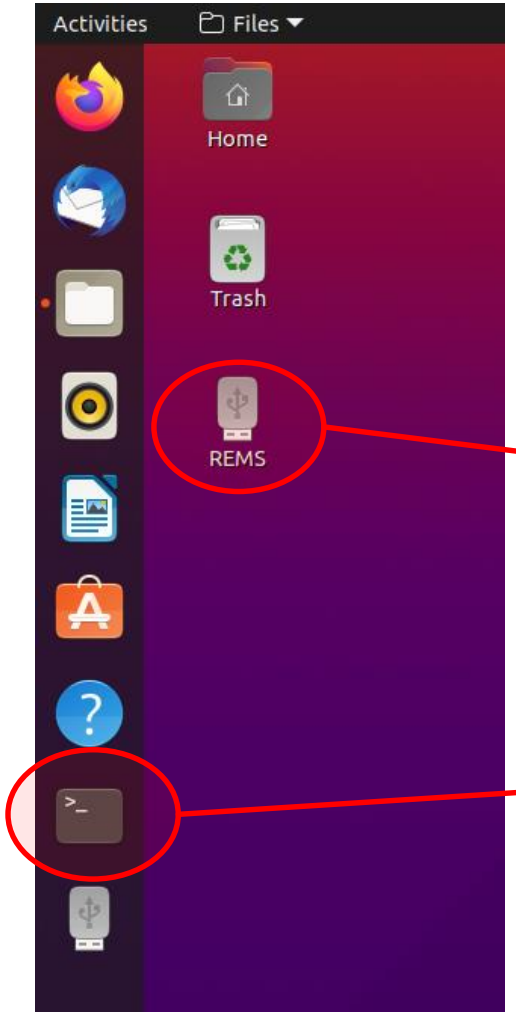


Booting-up

Once everything is connected to the Raspberry PI, power up and wait for Ubuntu to boot.

Username: rems
Password: rems

The top-left corner of the screen should look like this >>>>>



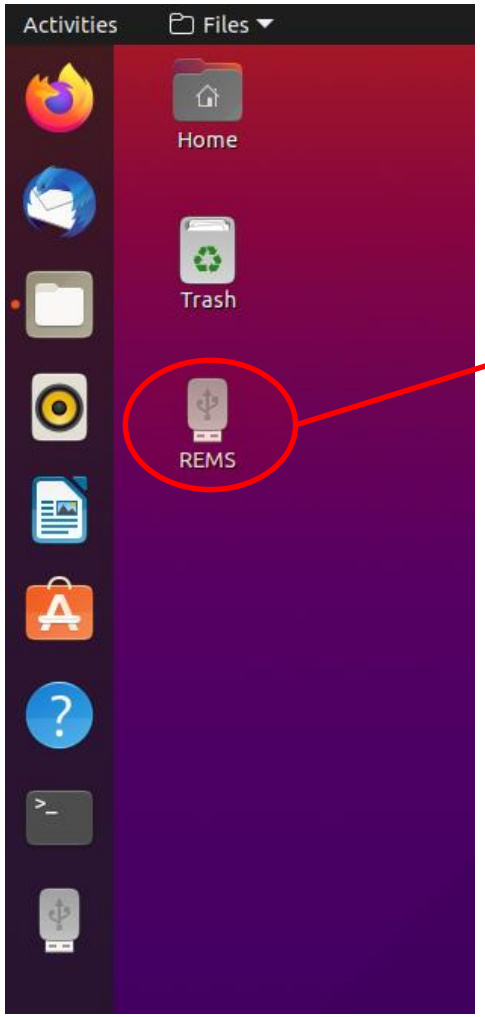
USB memory, volume label "REMS"

Terminal

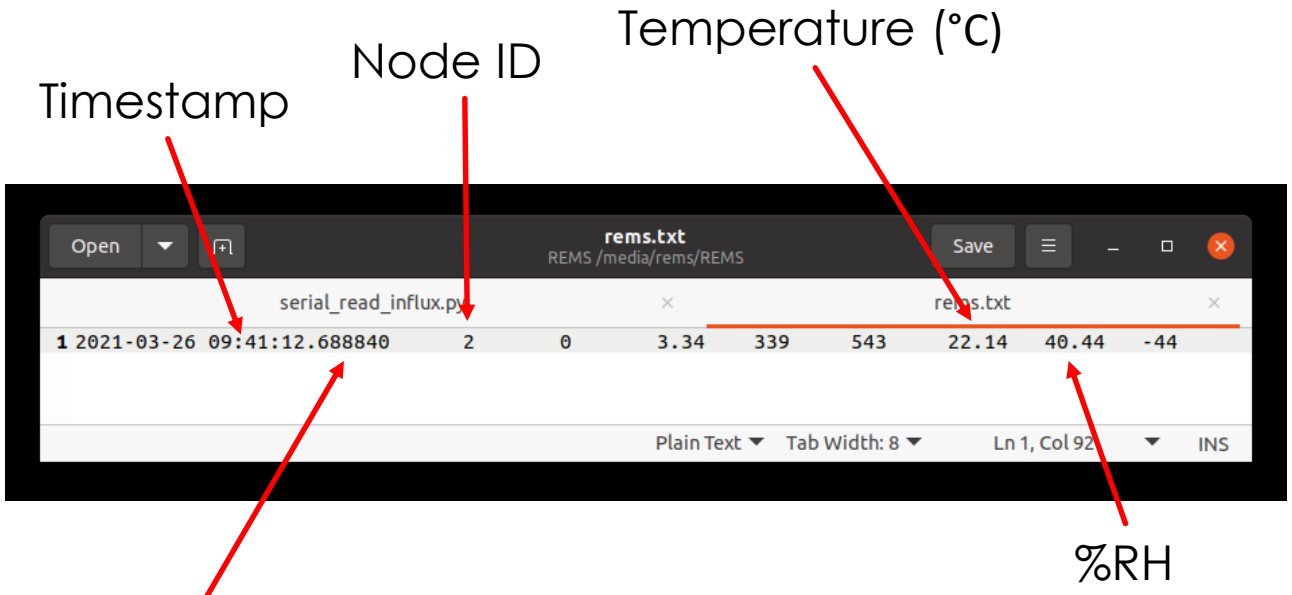
Running the logger

1. Open a terminal.
2. Change directory with "**cd serial**".
3. Run the python data logger with "**sudo python3 serial_read_influx.py**"
4. Enter the rems password if prompted.
5. Sensor "pings" will appear in the terminal (see below).
6. The program can be terminated with "ctrl-c".
7. Leave the program running for continuous logging.

Check the log file



Open the USB drive, and open the file "rems.txt". This is the log file. >>>>>>>



Data here means that the system is working. Congratulations!

Influxdb & Grafana

The data logging code is set up to be used with an external influxdb/grafana installation (on another PC on the same network).

Presently the influx/grafana stuff is disabled. In theory it should not be necessary to install any further components to the Rasp PI to get it all working eventually. All that will be required is an edit to "serial_read_influx.py".

Upgrading the PI image

These instructions apply to:

- **Sheffield**
- **Glasgow**
- **Cambridge**

You will need to re-image the SD card to be up-to-date. You will need an SD card reader and a WIN 10 machine.

1. Remove all partitions from the SD card (on WIN 10 serch "partitions" and open "Disk Management" utility.
2. Use Win32DiskImager to write the image "REMS_IMAGE_UBUNTU_PI_24-03-2021.img" to the SD card.
3. Put SD card back into the Raspberry PI and boot-up.

Link to REMS image download:

https://drive.google.com/file/d/1uWhXywP8F0KN8aVU4XpogkLjsDxa1Tv9/view?usp=sharing