

microLOGGER for raspberry pi

Installation of microLOGGER

Unzip the main microLogger folder into a directory (For example **/home/pi/Programs/microLOGGER**). Before running microLOGGER, the following packages need to be installed.

- **PyQT:**
sudo apt-get install python3-pyqt5
- **pyqtgraph:**
pip3 install pyqtgraph
- **ImageTk:**
sudo apt-get install python3-pil python3-pil.imagetk
- **Distro:**
pip3 install distro

Create a desktop shortcut

In a terminal window

#change to the application directory

```
cd /usr/share/applications
```

#create your .desktop file

```
sudo nano microLOGGER.desktop
```

#write the following:

```
[Desktop Entry]
```

```
Name=microLogger_NEW
```

```
Comment=Data Logger for Raspberry Pi
```

```
Exec=python3 /home/pi/Programs/microLOGGER/microLogger.py
```

```
Icon=/home/pi/Programs/microLOGGER/Assets/micro symbol.png
```

```
Type=Application
```

```
Encoding=UTF-8
```

```
Terminal=false
```

```
Categories=None;
```

```
Path=/home/pi/Programs/microLOGGER
```

```
GenericName=Data Logger for Raspberry Pi
```

Save the file

MicroLogger uses the concept of an Experiment.

1. You create a new Experiment (as an example for this writeup: 'TestCase') and it will then create the following subfolders assuming the default Experiments path is **/home/pi/Documents**. (Note that the default Experiments path can be changed under **File | Preferences | Experiments**)
/home/pi/Documents/Experiments/TestCase
/home/pi/Documents/Experiments/TestCase/DataLogs
/home/pi/Documents/Experiments/TestCase/LabNotebook
/home/pi/Documents/Experiments/TestCase/Screenshots
/home/pi/Documents/Experiments/TestCase/SetupFiles
2. The default LabNotebook is created with the same name as the Experiment and stored under
/home/pi/Documents/Experiments/TestCase/LabNotebook as **<Experiment Name>.html** (in this example **TestCase**). You can access the Lab Notebook at any time by pressing Shift+L or using the menu **View | Lab Notebook**. Since this document is HTML, you could later open it with any standard word processor including LibreOffice Writer.
3. When you capture screenshots of the plots, they are saved under **/home/pi/Documents/Experiments/TestCase/Screenshots/** as **<Experiment Name>_<Timestamp>.ext** where:
 1. **<Experiment Name>** is the name of the Experiment (in this example **TestCase**)
 2. **<Timestamp>** is the current time. The format can be changed under **File | Preferences | Directories/Filenames | Time stamp format**
 3. **ext** is the image format as specified under **File | Preferences | Directories/Filenames**. PNG, BMP, and JPG formats are allowed.
4. When you start data logging to a file, the results are saved under **/home/pi/Documents/Experiments/TestCase/DataLogs/** as **<Experiment Name>_<Timestamp>.csv** where:
 1. **<Experiment Name>** is as defined above.
 2. **<Timestamp>** is the current time as defined above.
 3. **csv** since the file is in csv format.
5. You can open, save and save as the current microLOGGER setups using the File menu. Files are of the form **<Name>.msf** where Name is a name you supply when you first save a setup. The files are saved under **/home/pi/Documents/Experiments/TestCase/SetupFiles**.

Note that you don't have to create or open an Experiment in order to use microLOGGERr. If you don't open or create an Experiment, then the DataLogs, ScreenShots, and Setup files are saved under the default directories using the default filenames as specified under **File | Preferences | Directories/Filenames**. However, no LabNotebook is created.

microLogger

File Edit View Capture Plot Help

Channels Display Timed logging

Acquisition rate in samples per second: 50

Select Channels to Log and Plot

Channel	From	To	Plot title	Gain
1	IN0	GND	Temperature	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
2	IN1	GND	Barometric pressure	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
3	IN2	GND	Puls	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
4	None	GND	CHANNEL 4	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
5	None	GND	CHANNEL 5	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
6	None	GND	CHANNEL 6	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
7	None	GND	CHANNEL 7	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				
8	None	GND	CHANNEL 8	1
Full scale voltage is +/- 5.0000 Volts (IN A minus IN B).				

Confirm Changes

Volts (mV)

Volts (V)

Volts (V)

00:56 00:56:40.00 00:56:50.00 00:57:00.00

00:56 00:56:40.00 00:56:50.00 00:57:00.00

00:56 00:56:40.00 00:56:50.00 00:57:00.00

Stop capture Pause plots Clear Start new log Pause Log

X: 00:56:50.73 Y: -18.988 mV (Right-click for plot options) Queue: 0 Log OFF AUTOSCALE

[microLogger] [TRANSCEND] [Take screenshots on ...] [ip]

09:38

Under file start a New Experiment to get full functionality

This start capture but not saving

This starts saving data to file