

Setting up Deltronics Control Interfaces on Raspberry Pi

The Deltronics Control and Data Capture Interface and Control IT Extra can be used on the Raspberry Pi through a simple Python interface based on the PyUSB library. This document outlines how to install PyUSB and the ControlIT Python library, and set up user permissions to allow the devices to be programmed from the pi account (without needing superuser privileges).

You should have the following files already downloaded onto the Raspberry Pi from the Deltronics website:

- `setup.pdf` – this document
- `documentation.pdf` – document describing the functions available in the library
- `controlit.py` – the Control IT python library
- `30-deltronics.rules` – udev rules files for setting device permissions.
- `sample.py` – a simple sample program

Installing PyUSB and the Deltronics Python library

PyUSB is easiest to install using the Python pip package manager. This is not part of the Raspbian image, so you should install this first. In a terminal, type

```
sudo apt-get install python-pip
```

Next install the PyUSB package. At the time of writing, the latest version of PyUSB (1.0.0b2) has a bug which causes the library code to fail when trying to claim the USB device from the kernel driver, so you will need to install the previous version (1.0.0b1). From the command line, type

```
sudo pip install pyusb==1.0.0b1
```

Finally, locate the file `controlit.py`, and copy it (as superuser) to the local python library folder

```
sudo cp controlit.py /usr/local/lib/python2.7/dist-packages/.
```

Setting permissions

In order for the default user (pi) to control the usb device, you will need to set some permissions. Note that this will need to be done for any other accounts you wish to use. First add the user to the “plugdev” group as follows

```
sudo usermod -aG plugdev pi
```

The udev system is used to grant permission to control the devices.

Locate the file `30-deltronics.rules` and copy it (as superuser) to `/etc/udev/rules.d`

```
sudo cp 30-deltronics.rules /etc/udev/rules.d/.
```

The Python library should now be ready for use – try running the sample program using

```
python sample.py
```