Installing Python Power Electronics
Web Application

The newest version of Python Power Electronics can now be run out of a web browser. The advantages are:

1. An interactive interface for adding circuits and editing parameters.
2. Easy plotting facilities – no need to type commands in a terminal, just click a button!

To be able to use these, the following software are necessary:

1. Python 2.7.x.
2. Django 1.7.x or greater.
3. MatPlotLib

This document will describe how to set up the server.

The software is available as a directory called simulator_interface. The structure of the directory and the important files are as follows:

```
simulator_interface

                          manage.py

                          simulations              models.py, views.py
                                                   templates/
                                                   circuit_solver.py, circuit_elements.py,
                                                   matrix.py, solver.py, circuit_exceptions.py,
                                                   network_reader.py
                                                   LICENSE.txt

                       simulator_interface         settings.py, urls.py
```

The two most important files are manage.py and settings.py. After unpacking the simulator and viewing the file list as above, make the following change to the file settings.py in the directory simulator_interface within the main directory simulator_interface. In line 23 of settings.py, there will be a line:

SECRET_KEY = '37sjg_#oo^&mf=sw&g2&1qyh)$)&j+6^#=fagb_u@=grirmnq3'

Change any number of characters of this secret key to some pass phrase. Don't use any important password. This will never be used in the simulator. For example, you will not be asked to login or provide any information. This is just a feature of server security and how it sets cookies etc. Do not delete characters of change the length of the SECRET_KEY. Only change a set number of characters to something you prefer. **You need to do this only once. Do not do this every time you run the**

simulator.

After making this change, the next is to use the file manage.py inside the directory simulations which is inside the main directory simulator_interface. As before, this needs to be done only once.

You need to set up the database for the simulator. For that run the command:

```
python manage.py makemigrations simulations
```

This should be done from either Bash if using Unix or from Command Line if using Windows.
The command will create the layout for the database simulations.

Next, run the command:

```
python manage.py migrate
```

This will create the database from the previously created layout.

Now you are ready to run the server. The above two commands need only be run once or every time you want to start all over again.

To run the server you need to run the commnad:

```
python manage.py runserver
```

Now the server is running and can be accessed from a web browser at the link:

http://127.0.0.1:8000

Basically http://127.0.0.1 is the local host link and 8000 is the port.

If you want to terminate the server, type Ctrl-C at the command prompt when the server is running.

To restart the server, only need to type the command:

```
python manage.py runserver
```

The other commands were only to intial set up.