SwitchDoc Labs

GroveWeatherPi

Installing the Blynk App

November 2018

Version 1.1

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What is GroveWeatherPi?

GroveWeatherPi is a Solar Powered Raspberry Pi WiFi connected weather station designed for Makers by SwitchDoc Labs (www.switchdoc.com). This is a great system to build and tinker with. All of it is modifiable and all source code is included.

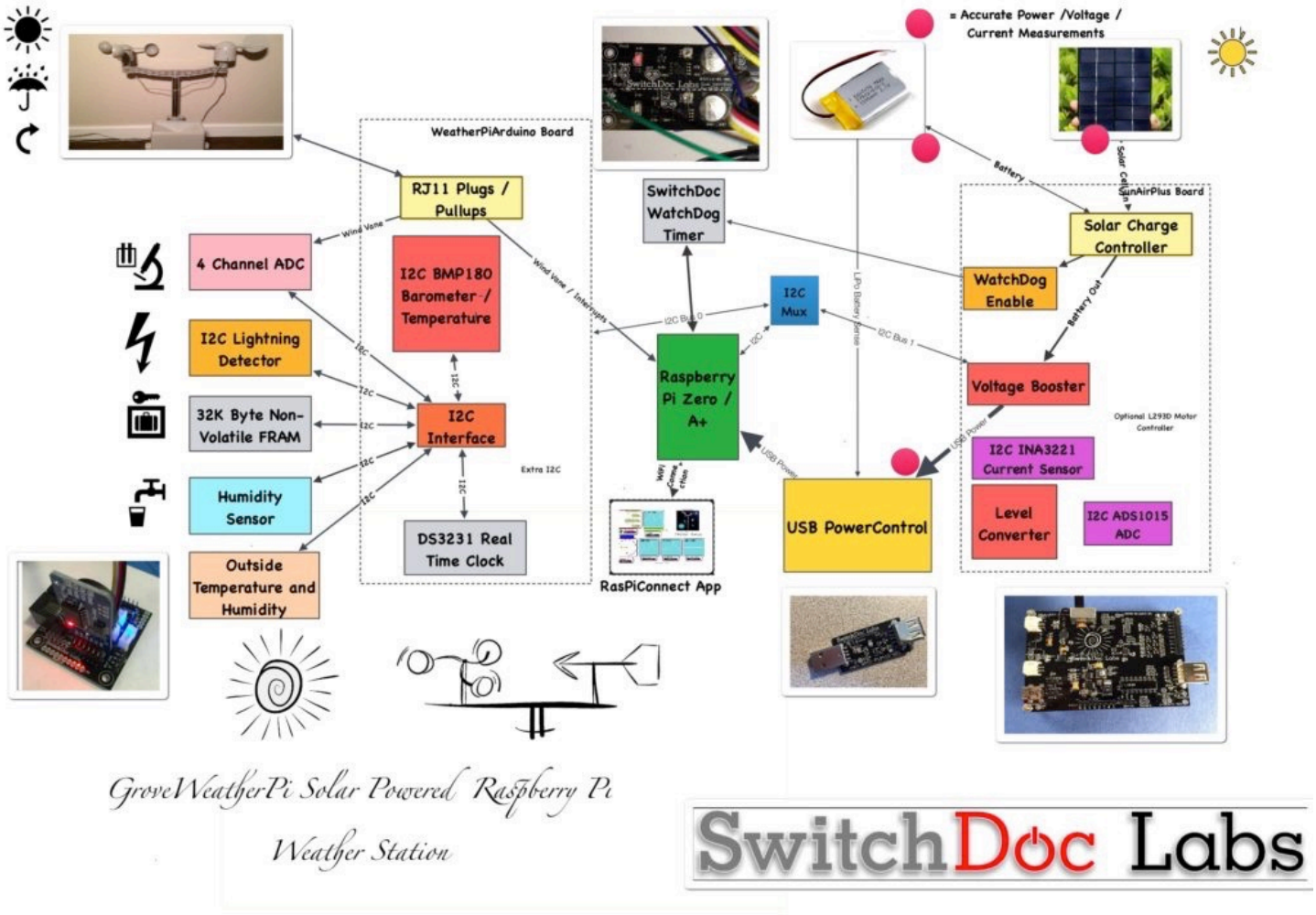
GroveWeatherPi helps you build your own Solar Powered Weather Station based on the Raspberry Pi

Features

The most important functions are:

- Detects Lightning!
- Senses 20 different environmental values
- Optionally Solar Powered
- Has a full database containing history of the environment (MySQL)
- Monitors and reports lots of data on the solar powered system - great for education!
- Self-contained and monitored for brownouts and power issues
- Can be modified remotely
- Download your data to crunch it on your PC or Mac
- Can be modified to do CWOP, SMS (Text) messaging, Twitters, web pages and more
- Supports the Blynk app on Android and iPhones
- Easy to connect to Twitter, WeatherUnderground, etc

Easy to build. Easy to learn about the IOT (Internet Of Things) and the Raspberry Pi.

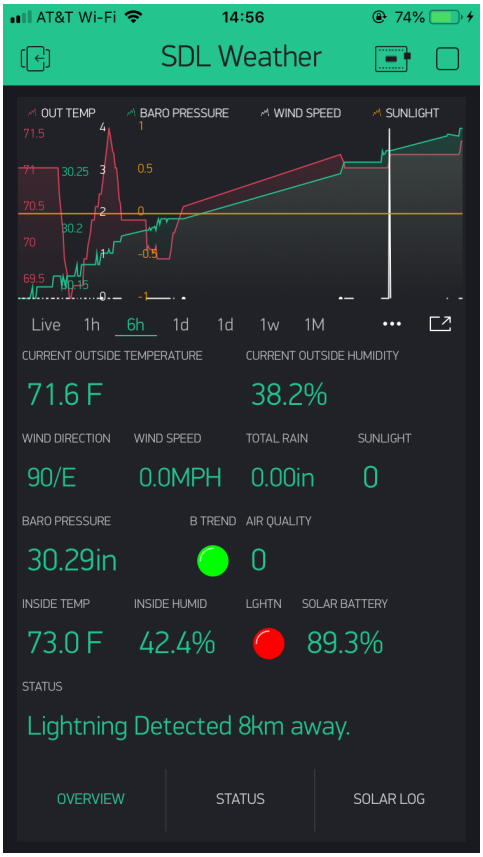

= Accurate Power /Voltage / Current Measurements
WeatherPiArduino Board
RJ11 Plugs / Pullups
SwitchDoc WatchDog Timer
SunAirPlus Board
Solar Charge Controller
WatchDog Enable
4 Channel ADC
I2C BMP180 Barometer / Temperature
I2C Mux
I2C Lightning Detector
Raspberry Pi Zero / A+
Voltage Booster
32K Byte Non-Volatile FRAM
I2C Interface
I2C INA3221 Current Sensor
Humidity Sensor
DS3231 Real Time Clock
USB PowerControl
Level Converter
I2C ADS1015 ADC
Outside Temperature and Humidity
RasPiConnect App
GroveWeatherPi Solar Powered Raspberry Pi Weather Station
SwitchDoc Labs

Installing the Blynk GroveWeatherPi App

What is Blynk

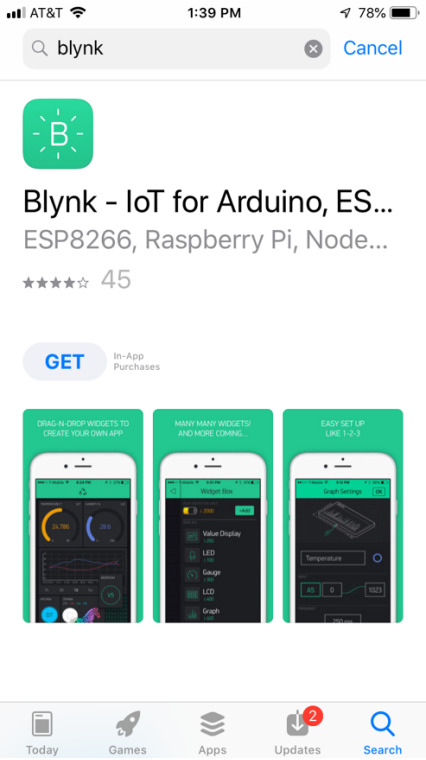
Blynk is a digital dashboard for your iOS or Android device that allows you to easily build graphical interfaces by dragging and dropping widgets. Blynk runs on iOS and Android apps to control Arduino, Raspberry Pi and the likes over the Internet.

It's a digital dashboard where you can build a graphic interface for your project by simply dragging and dropping widgets.

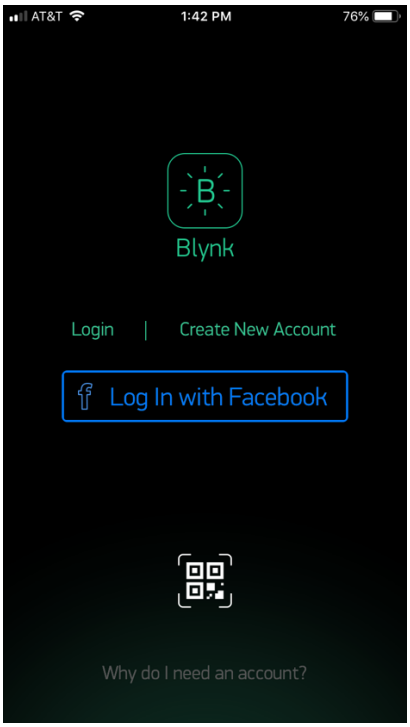


Step by Step Install (for iPhones – Android is very similar)

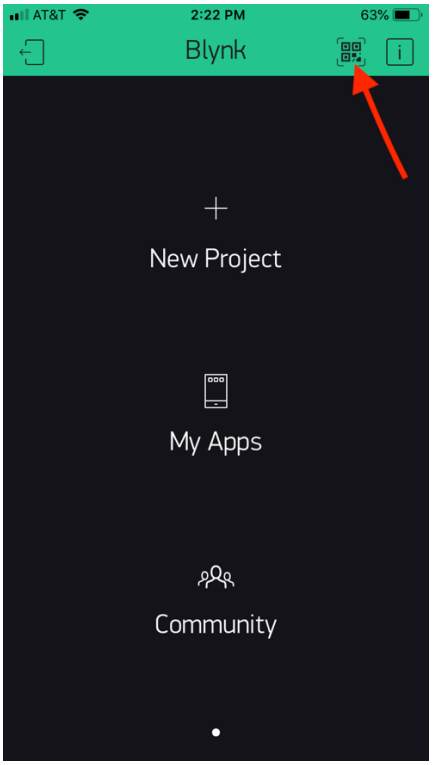
Step 1) Install the Blynk app on your mobile phone



Step 2) Open the Blynk app and create an account

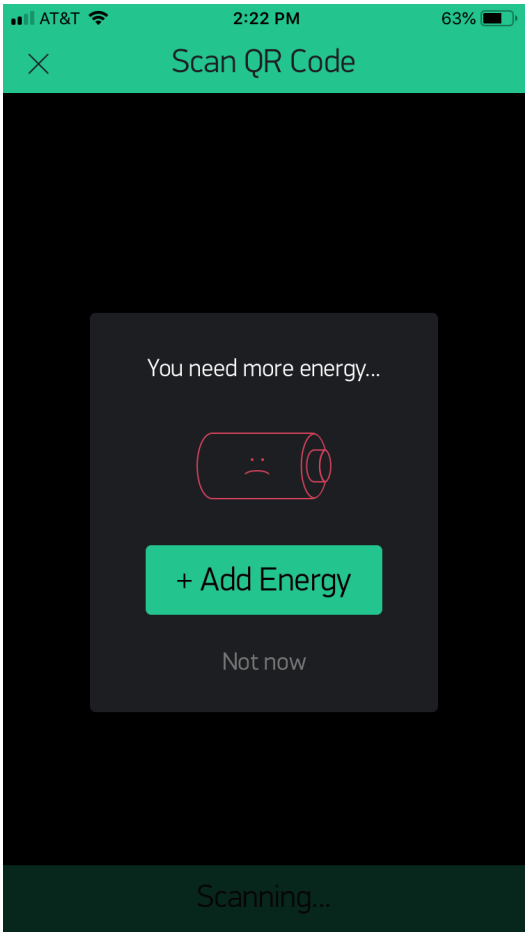


Step 3) Now click the button to scan a QR (see arrow)

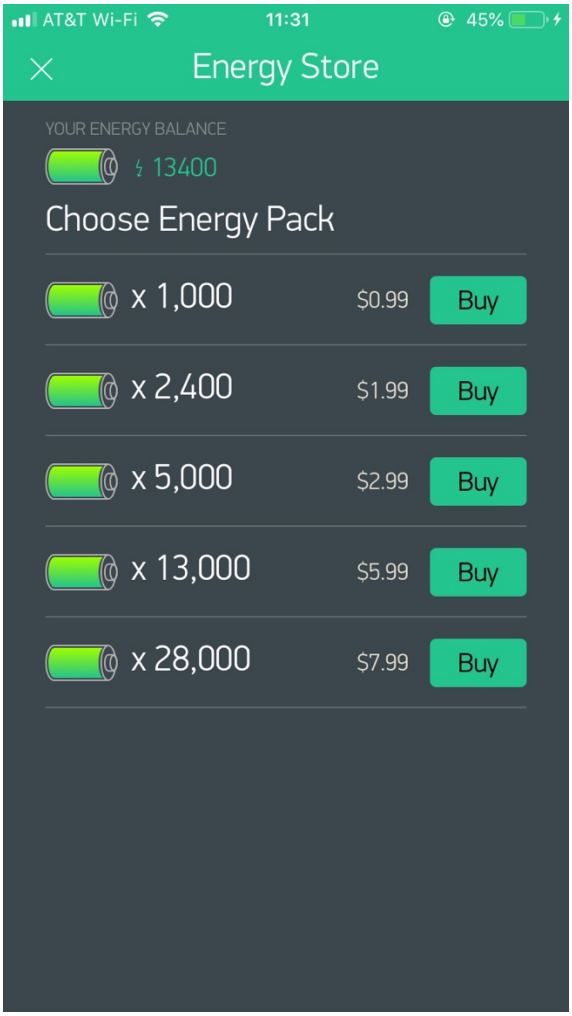


4) Scan the QR Below (this is SDL Weather V003), you will then see the screen below the QR code

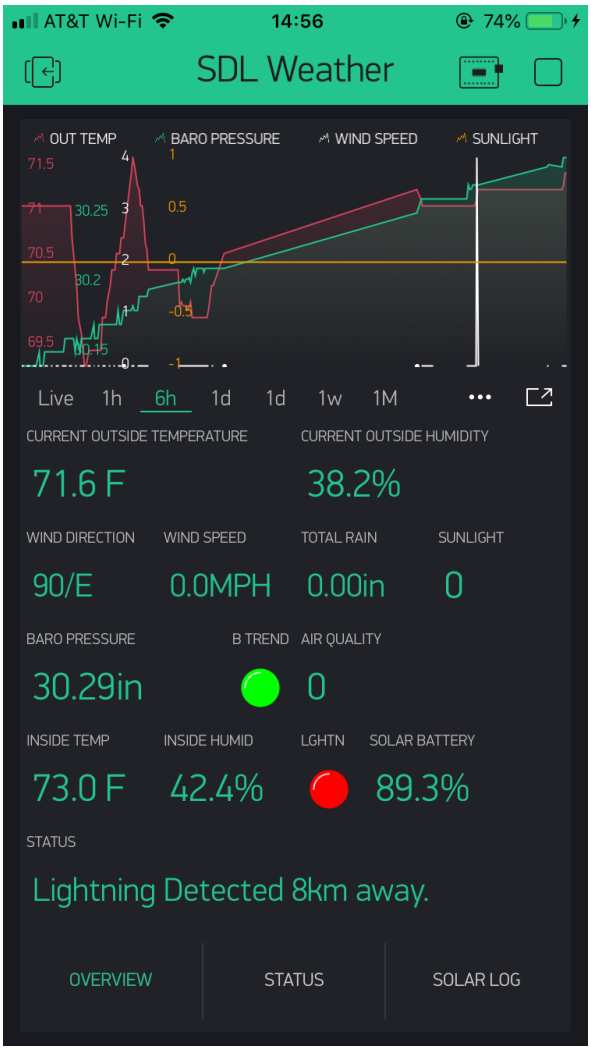
SDL Weather V003



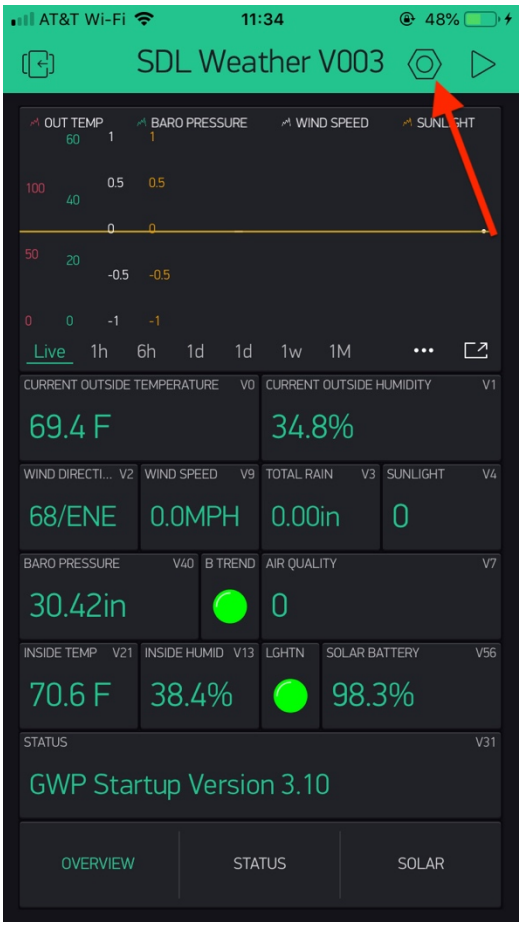
Step 5) Add Energy. SDLW V003 requires a total of 8700 Blynk energy. You start your account with 2000, so you need to purchase 5700 Blynk Energy. As of this writing, it will cost $5.99. It varies.

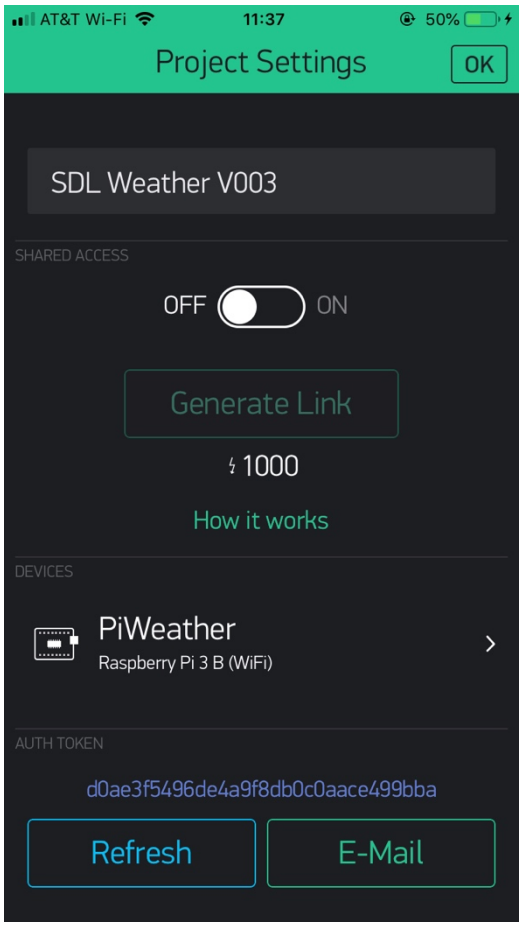


Step 6) Scan the QR code above again. You will now see the SGS App on your screen. You can always check the version by at the title (as of V003, the version is included after “SDL Weather” in the header below).



Step 7) Click in middle of the project to select the project. Then click the indicated button to go to project settings. Note: You can always see the App Version number of the project setting (V003). Now copy and paste or email yourself the authentication token (AUTH TOKEN) as we will be putting this in the GroveWeatherPi configuration file in the next section. The one below WILL NOT WORK. You need your own.





You have completed the Blynk GWP App installation.

Installing the Blynk Authentication Codes into GroveWeatherPi

The final step to connecting the GroveWeatherPi to the GWP App is to copy your Authentication Token (AUTH TOKEN above) to the GroveWeatherPi.

Step 1) using a terminal window, go to the SDL_Pi_GroveWeatherPi directory

```
cd ~/SDL_Pi_GroveWeatherPi
```

Step 2) Copy the config.py file to conflocal.py, if you haven't already. (this keeps you from copying over your changes when you update GroveWeatherPi)

```
cp config.py conflocal.py
```

Step 3) Open the conflocal.py file with your favorite editor

Step 4) Change the following lines:

```
############
# Blynk configuration
############

USEBLYNK = False
BLYNK_AUTH = 'xxxxx'
BLYNK_URL = 'http://blynk-cloud.com/'
```

Change False to True

Replace xxxxx with your authentication token from above. Then it should look like this (but use YOUR authentication token – this one won't work):

```
############
# Blynk configuration
############

USEBLYNK = True
BLYNK_AUTH = 'daff75da224b447b69ce2e5b0abe5312'
BLYNK_URL = 'http://blynk-cloud.com/'
```

Step 5) You are now complete. Start up yourGroveWeatherPi software again. Look at the App on your phone and after about 30 seconds, things should start propagating and you will start seeing cool data.

Using the Blynk GroveWeatherPi App

We will now go through a screen by screen discussion of the GWP App. This discussion is for SDL Weather V003. Once you have started the app in Blynk (by hitting the start button in the top right most corner of the app), you will start to see data after about 30 seconds.

Main Screen

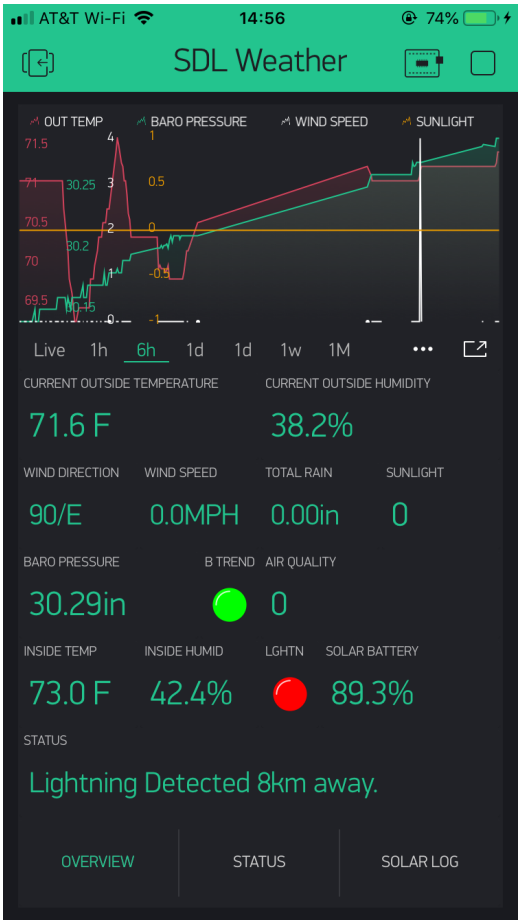


Chart – Displays Outside Temperature, Outside Humidity, Wind Speed and Visible Sunlight. As you get more data you will be able to see more and more data on the screen. The button on the right bottom of the chart switches to landscape mode to see even more data.

If you don't have the Sunlight Sensor, it will read zero. If you don't have the ThunderBoard Lightning Detector, the LGHTN LED will stay Green and you won't see any events from the ThunderBoard

Status Screen

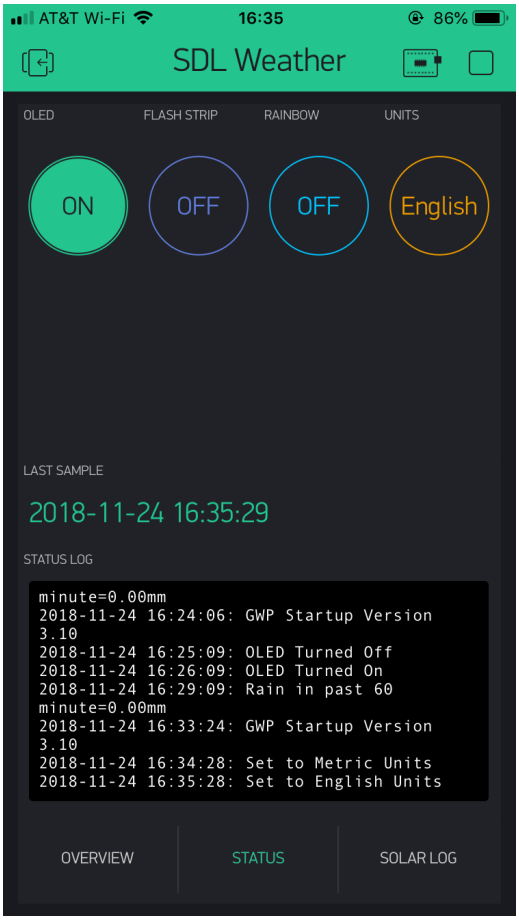
This screen shows the various controls for the GroveWeatherPi system. These are:

OLED – Turns the OLED display on and off. Note: It will take up to a minute before the OLED actually turns on or off.

FLASH STRIP – Not currently Implemented on GWP. It will flash an 8 Pixel RGBW Strip in the future

RAINBOW – Not currently Implemented on GWP. It will turn the 8 Pixel RGBW Strip into a cycling rainbow display

UNITS – Changes from English to Metric units. Takes up to a minute to take effect. Note: Your graph chart on the Overview page will have to be cleared (use the … at the bottom of the chart) to clear the chart for the new units.



LAST SAMPLE – Shows the time of the last weather data sample (in whatever timezone you have set your Raspberry Pi)

The terminal window at the bottom shows a running report of what the GWP system is currently up to.

Solar Screen

This screen shows you the current status of the optional solar power system connected to GroveWeatherPi.

Voltage displays are in Volts, while all the current screens are in milliamps (mA).

The Battery Gauge is an estimate of the total available charge (not the total charge of the LiPo battery), but the charge available to the GroveWeatherPi system.

Support

As with all SwitchDoc Labs products, technical support is given through the forums on forum.switchdoc.com

If you have issues that can be solved by our fabulous customer service department, please go to www.switchdoc.com and send your issues through our Contact page on the top menu.

Disclaimer

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SwitchDoc Labs, LLC has compiled and published this manual which covers the latest product description and specification. The contents of this manual are subject to change without notice.