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 (<u>www.switchdoc.com</u>). 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.



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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.

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	Lightning	Detected	8km away.	
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Step by Step Install (for iPhones – Android is very similar)

Step 1) Install the Blynk app on your mobile phone

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Blynk - IoT for Arduino, ES...

ESP8266, Raspberry Pi, Node... ***** 45





Step 2) Open the Blynk app and create an account

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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.

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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).

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OVERVIEW	STA	TUS	SOLAR LOG

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.

•11 AT&T Wi-Fi 🗢 11:34		📲 AT&T Wi-Fi 🤝	> 11::	37	50% 50%
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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 11 Page Version 1.1 November 2018 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:

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):

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

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(←)	SDL W	/eather	
→ OUT TEMP 71.5 4 70.5 3 70.5 2 70 80.2 4 69.5 10 15 69.5 10 15 70.5 10 15 70 10 10 15 70 10 10 10 10 10 70 10 10 10 10 10 10 70 10 10 10 10 10 10 70 10 10 10 10 10 10 10 70 10 10 10 10 10 10 10 10 70 10 10 10 10 10 10 10 10 10 10 10 10 10	BARO PRESSURE	A WIND SPEED	
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30.29in	0	0	
INSIDE TEMP	INSIDE HUMID	LGHTN SOLAR	BATTERY
73.0 F	42.4%	68 🔴	.3%
Lightning	Detected	8km away	/.
OVERVIEW	ST4	ATUS	SOLAR LOG

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.

(F) SDL Weather	
OLED FLASH STRIP RAINBOW UNITS	
ON OFF OFF Eng	glish
LAST SAMPLE 2018-11-24 16:35:29 STATUS LOG	
minute=0.00mm 2018-11-24 16:24:06: GWP Startup Version 3.10 2018-11-24 16:25:09: OLED Turned Off	
2018-11-24 16:26:09: 0120 Turned On 2018-11-24 16:29:09: Rain in past 60 minute=0.00mm	
2018-11-24 16:33:24: GWP Startup Version 3.10 2018-11-24 16:34:28: Set to Metric Units	
2018-11-24 16:35:28: Set to English Unit:	s
OVERVIEW STATUS SOLAR L	.0G

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

Solar Data Solar Volt Solar CUR A BATTERY VOLT BAT Solar Volt -20 -30 Live 1h 6h 1d 1w 1M 3M Solar CURRENT BATTERY CHARGE 4 60 15 6	
Solar Data Solar Volt Solar CUR A BATTERY Volt BAT 50 6 0 40 0 2 20 2 10 -20 -30 -20 -30 -20 Live 1h 6h 1d 1w 1M 3M ··· Solar Voltage Solar CURRENT BATTERY CHARGE	
4.0015.0battery voltagebattery current4.173.298.4%	HTERY CUR
LOAD VOLTAGE LOAD CURRENT 4.98 10.8 0 10 BATTERY POWER SOLAR POWER LOAD POWER 0.0W 0.1W 0.1W OVERVIEW STATUS SOL	AR

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 <u>www.switchdoc.com</u> and send your issues through our Contact page on the top menu.

Disclaimer

SwitchDoc Labs, LLC takes no responsibility for any physical injuries and possession loss caused by those reasons which are not related to product quality, such as operating without following the operating manual and cautions, natural disasters or force majeure.

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.