

SwitchDoc Labs



WeatherUnderground Configuration

May 2019
Version 1.1



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Errata

What is SkyWeather?

This is a perfect project kit for kids with some help from the adults and for adults trying to learn some new things. We have done this before with our successful OurWeather KickStarter so we know what we are talking about. People all over the world have built the OurWeather weather station with great success. This project has **no soldering** involved and uses Grove connectors to wire everything up! You can't reverse them and blow things up. [Here is our tutorial on the Grove system.](#)

SkyWeather Features

- Barometric Pressure
- LIGHTNING!
- Outside Temperature
- Outside Humidity
- Altitude
- Inside Temperature (in box)
- Inside Humidity (in box)
- Air Quality - AQI (your own local Air Quality Sensor)
- Sunlight
- Wind Speed
- Wind Direction
- Rain
- All your weather information on the Cloud including history

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

What is WeatherUnderground?

Weather Underground is a commercial weather service providing real-time weather information via the Internet. Weather Underground provides weather reports for most major cities across the world on its website, as well as local weather reports for newspapers and websites. Most of its United States information comes from the National Weather Service (NWS), as federal law specifies that information from that agency falls within the public domain.

Weather Underground also uses observations from members with automated personal weather stations (PWS). Weather Underground currently uses observations from over 100,000 personal weather stations.

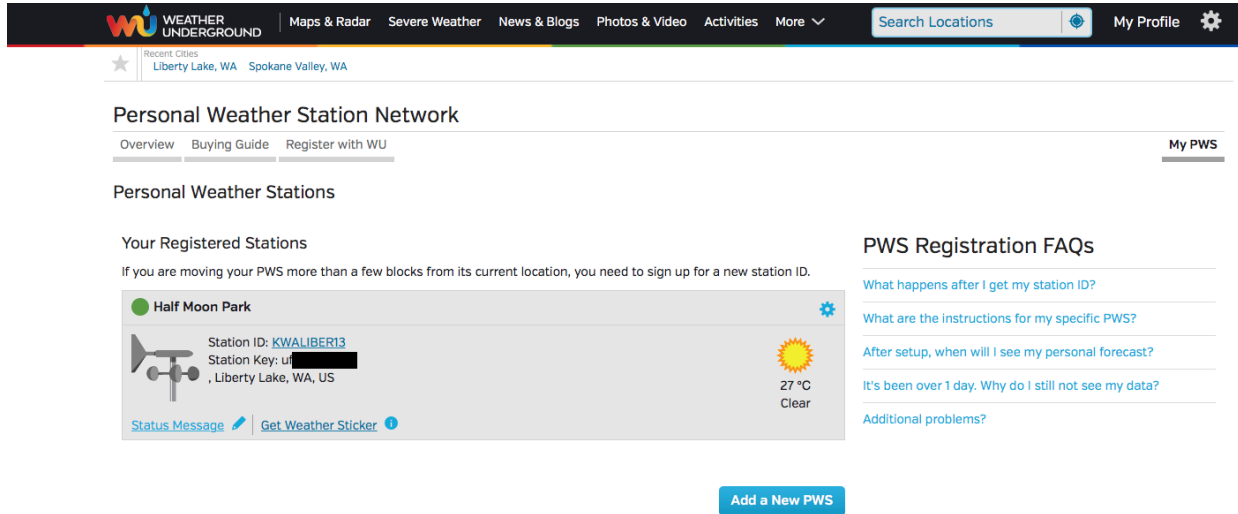
And now, with version 036 of the SkyWeather software, you can join these 100,000 stations with your SkyWeather system.

Note: As of May 2019, WeatherUnderground is no longer planning to give out free api keys and also free weather stations IDs at some point. Note that all the functionality of WeatherUnderground is

supported by WeatherSTEM.com and WeatherSTEM also will support sending your information to WeatherUnderground directly in the future.

Step by Step Instructions

Step 1): Join the WeatherUnderground and register your PWS (Personal Weather Station)



Go to weatherunderground.com and register your PWS (Personal Weather Station) on the site. You will need to sign up to be a user. Make note of your Station Key and your Station ID.

Step 2) using a terminal window, go to the SDL_Pi_SkyWeather directory

```
cd ~/SDL_Pi_SkyWeather
```

Step 3) Tell SkyWeather about your WeatherUnderground PWS Note: You should have already completed the configuration of the SkyWeather system and should have a conflocal.py file. If you haven't done this, go back to the configuration file and complete the configuration tasks. Copy the config.py file to conflocal.py, if you haven't already. (this keeps you from copying over your changes when you update SkyWeather)

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

Step 4) Open the conflocal.py file with your favorite editor

Step 4) Change the following lines:

```
# WeatherUnderground Station  
  
WeatherUnderground_Present = False  
WeatherUnderground_StationID = "KWXXXXXX"  
WeatherUnderground_StationKey = "YYYYYYYY"  
Change False to True
```

Replace KWXXXXXX with your Station ID from above and YYYYYYY your Station Key. Don't get them backwards. Then it should look like this (but use YOUR station token – this one won't work):


WeatherUnderground Station

```
WeatherUnderground_Present = True  
WeatherUnderground_StationID = "KWXXXXXX"  
WeatherUnderground_StationKey = "YYYYYYYY"
```

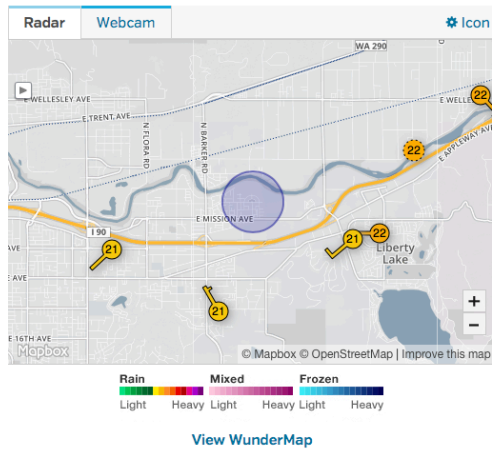
Step 3): Restart SkyWeather

What Happens Next?

Every five minutes your SkyWeather Station sends data to the WeatherUnderground. If your data does not show up on your WeatherUnderground page after five minutes, then go back and check your Station ID and Station Key. Case is important.

 **Status:** GroveWeatherPi Solar Raspberry Pi Based Software under development

PWS viewed 121 times since September 1, 2016



Current Conditions Station reported 17 seconds ago

22.5 °C

Feels Like **22.5 °C**



Dew Point: --
Humidity: **21%**
Precip Rate: **0.0 mm/hr**
Precip Accum: --
Pressure: **1013 hPa**

UV: **4** ●●●●●
Solar: --
Soil Moisture: --
Soil Temp: --
Leaf Wetness: --

6:21 AM 7:07 PM
Waxing Gibbous | 73% Illuminated

Weather History for Liberty Lake, WA [KWALIBER13]

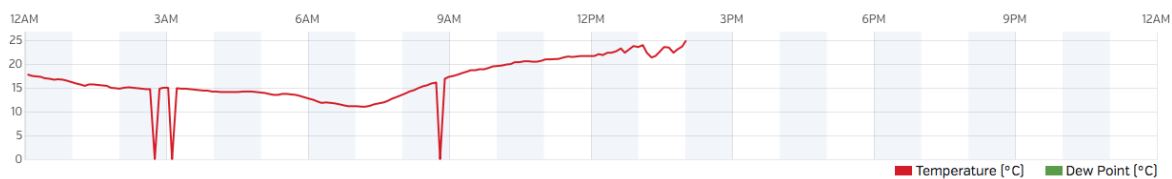
Previous Daily Mode September 11 2016 View Next

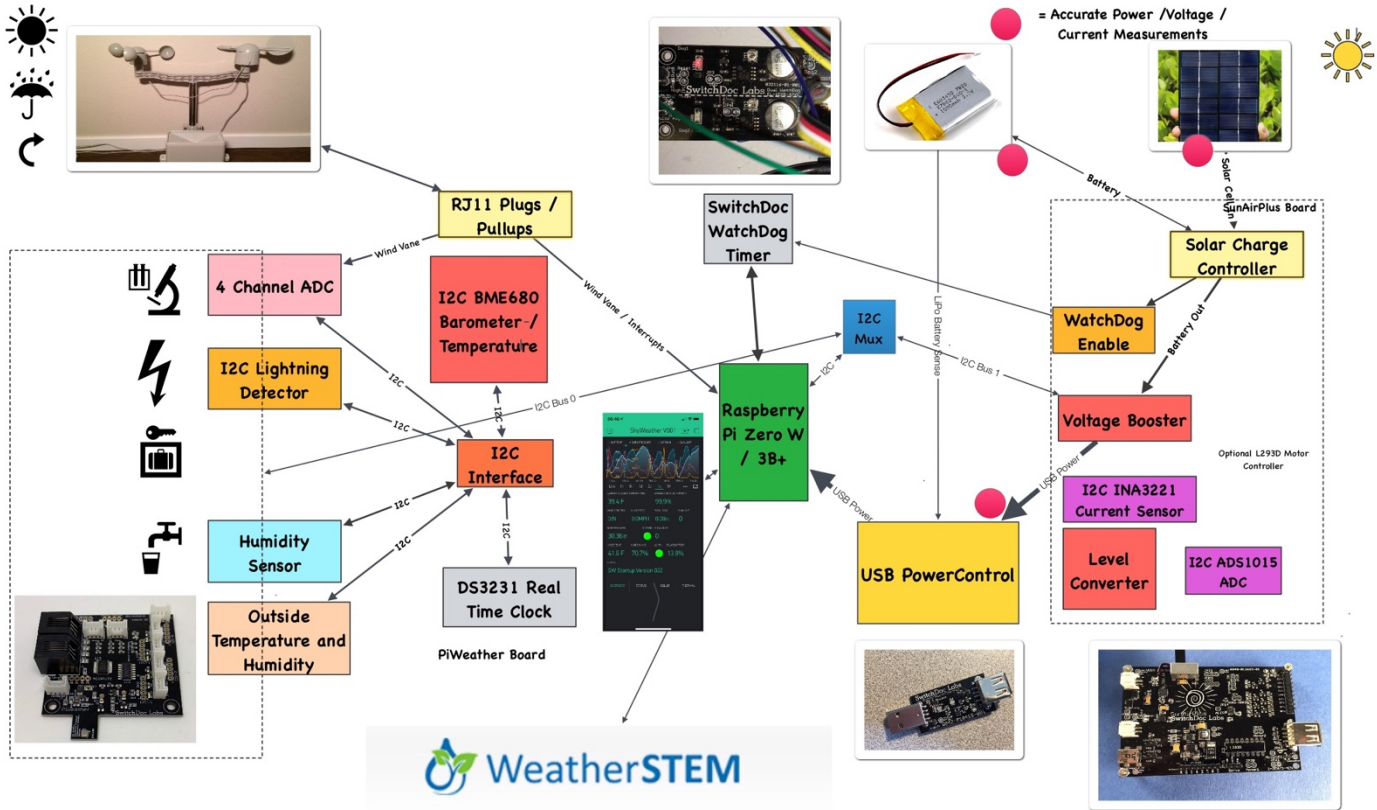
Summary September 11, 2016

	High	Low	Average		High	Low	Average
Temperature	25.1 °C	0 °C	12.6 °C	Wind Speed	23 km/h	--	3 km/h
Dew Point	°C	°C	-573.3 °C	Wind Gust	0 km/h	--	--
Humidity	54%	19%	35%	Wind Direction	--	--	SW
Precipitation	0 mm	--	--	Pressure	944 hPa	940 hPa	--

Graphs Table

Weather History Graph September 11, 2016





Versions of SkyWeather

SkyWeather

The full SkyWeather kit including the Lightning and Wind Direction, Speed and Rain sensors. Includes: Rain, Wind Speed / Direction, Lightning Detection, Outside Temperature and Humidity, Barometric Pressure, Internal Temperature/Humidity, Sunlight Strength, and Outside Air Quality.

SkyWeather Lite

SkyWeather Lite does not contain the Lightning Detector and the WeatherRack wind and rain sensors. Because of that, do not drill the holes for the Lightning Detector Pylon and you do not need to have the RJ11 box connectors for the WeatherRack

SkyWeather Solar

SkyWeather Solar adds a set of solar panels on the top of the SkyWeather Box. We have a special assembly manual for that add on to the SkyWeather kit. Note that you have to think about where and how to orient your solar panels versus the orientation you want for your Sky Camera. Solar Panels should generally point south (in the northern hemisphere) and north (in the southern hemisphere – right Tophier?).

SkyWeather Plus Solar WXLink Remote

This SkyWeather package places the WeatherRack wind / rain sensors and the outside temperature and humidity sensor, along with a solar system in an external box connected by wireless LoRa. See the weatherproofing manual for the WXLink Box. Basically, you place the WeatherRack and the outside temperature / humidity sensors outside and the rest of SkyWeather can either be inside or outside. There are no wires between the WXLink remote box and the SkyWeather system. You may still want to place the Sky Camera and SkyWeather system outside and in that case you do not need to have the RJ11 box connectors for the WeatherRack or the hole AM2315 Outside Temperature and Humidity Sensor.

This manual is for the base SkyWeather kit.

The Science and Education Goals Behind SkyWeather

Everything we build for the Maker market is designed for education and learning. Making is education. Making is learning. Building your own projects allows you to innovate around a framework and do wonderful things that of which we have never even thought.

The educational goals for SkyWeather are:

- Learn about the Raspberry Pi and installing software on the Pi
- Connecting up sensors to the Raspberry Pi
- Learning about Feedback loops
- Understand your indoor environment and what affects it
- Learn about the new technology called the Internet of Things

SkyWeather designed to be the hub to which you connect everything to turn your Raspberry Pi into a complete Weather Station that talks to the Cloud. Just ready to be customized to your project and usage. It is designed to be a great way of learning to hook up hardware to the Raspberry Pi. And you have all the source code to modify to work the way you want it to do.

EDUCATORS: WeatherSTEM.com has a tremendous amount of curriculum material available about using WeatherSTEM (and SkyWeather) in your classroom.

Our partnership with WeatherSTEM brings this kickstarter into the realm of cloud based data mining, great graphics displays and even time lapse photography. SkyWeather and WeatherSTEM together rock. This is a great kit in which to learn about weather sensing, data sharing in the cloud and the Raspberry Pi.

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

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.