

Setting up an Acurite 5 in 1 and Raspberry Pi using WeeWx

1. Install Raspbian on a sdcard and configure it to work on your network.
 - a. Information on doing this is available on-line and I will not list those steps here.
 - b. Throughout this document you will be instructed to use a terminal session on the Raspberry Pi.
 - i. Directions are available on-line on how to access and use terminal sessions and are not listed here. Common methods of getting a terminal session are to use:
 1. SSH session using PUTTY
 2. Or accessing a terminal session from the desktop by connecting to the Raspberry Pi using a VNC session.
 - c. Throughout this document you will be instructed to use “nano”. “nano” is a text editor available on the Raspberry Pi. It is more useful than some other text editors but, it is not a full featured text editor and will be a step backward for some of you.
2. Configure APT to get WeeWx - in a terminal window enter the following commands (APT = Advanced Packaging Tool)
 - a. `wget -qO - http://weewx.com/keys.html | sudo apt-key add -`
 - b. `wget -qO - http://weewx.com/apt/weewx.list | sudo tee etc/apt/sources.list.d/weewx.list`
 - i. This allows APT to get the required packages
 - c. **sudo apt-get update**
 - d. **sudo apt-get upgrade**
 - e. **sudo apt-get install weewx**
 - i. Use copy and paste to save a lot of typing time
 1. To paste in a terminal session on the Raspberry Pi but the cursor in the terminal window and right click your mouse.
 2. The text to be pasted will be pasted on the command line.
3. Follow the configuration Dialog that should automatically start once WeeWx is installed.
 - a. If you do not know your lat/long you can find that out from your address [here](#).
 - b. You can find the model number of your Weather station on the back of it.

4. Edit the WeeWx configuration file to meet your local information.
 - a. Before performing this step be certain that you have the requested information that is listed in my document “**Things to do before you install and setup WeeWx on your Raspberry pi.pdf**”
 - b. In a terminal session use
 - i. `sudo nano /etc/weewx/weewx.conf`
 - c. Scroll down and look for the following text and make corrections/changes as necessary (use the up, down, left, and right arrows to scroll around in nano).
 - i. **Set to 1 for extra debug info, otherwise comment it out or set to zero**
 1. In the line below this change the zero to a 1 (debug = 1)
 2. If you have problems with your WeeWx software this will help others troubleshoot the problem with you
 - d. scroll down and look for the following text and make corrections/changes as necessary in the “**Station**” section
 - i. Look for “**# Description of the station location**”
 1. Enter a text description of your weather station; i.e.
 - a. For our weather station/web page we use “Bridge Road Chicken Ranch, Hermiston, Oregon”
 - ii. Look for “**# Latitude and longitude in decimal degrees**”
 1. Enter the Lat/Long of your weather station; i.e.
 - a. For our weather station/web page we use
 - i. latitude = 45.836
 - ii. longitude = -119.337
 - b. Note that West Longitude and South Latitude are negative values
 - c. Note that the format for lat is xx.xxx do not violate this format or your software will have error conditions and not execute.
 - d. Note that the format for long is xxx.xxx do not violate this format or your software will have error conditions and not execute.
 - iii. Look for “**Altitude of the station, with unit it is in. This is downloaded from**”
 1. Enter the altitude of your weather station in feet , “foot”
 - a. Note the unit of measure is foot not feet.
 - iv. Look for “**# Set to type of station hardware. There must be a corresponding stanza**”
 1. Make corrections if needed or enter “Acurite”
 - v. Look for “**# The start of the rain year (1=January; 10=October, etc.). This is**”
 1. Enter your choice of the start of the rain year for your weather station.
 - a. For our weather station we use:
 - i. `rain_year_start = 1`

- vi. Look for “# **Start of week (0=Monday, 6=Sunday)**”
 - 1. Enter your choice of the start of your weather week.
 - a. For our weather station we use:
 - i. week_start = 6
- vii. Look for “# **If you have a website, you may specify an URL**”
 - 1. Enter the URL for you website where the weather data may be accessed if any.
 - a. For our weather station/web site we use a no.ip.com address to point to the webserver.
 - i. We list “station_url = <http://nb7o.ddns.net:83>” here
- e. In the “**AcuRite**” section look for the following text and make corrections/changes as necessary
 - i. Look for “# **The station model, e.g., 'AcuRite 01025' or 'AcuRite 02032C'**”
 - 1. Enter the model weather station you are putting into service.
 - a. For our weather station we use:
 - i. model = AcuRite 01036 - A1
 - ii. Look for “# **The driver to use:**”
 - 1. Make certain the entry for this element is:
 - a. driver = weewx.drivers.acurite
- f. In the section labeled “# **This section is for uploading data to Internet sites**”
 - i. Look for “# **To register this weather station with weewx, set this to true**”
 - 1. Change the setting to register the station to true
 - a. After this change your configuration file should read:
 - i. register_this_station = true

- 5. Make no further changes in the configuration file at this time.
 - a. Use CTRL X to end the editing session in nano
 - b. Type Y to tell nano to save your changes
 - c. “Press Enter” to save the changes in weewx.conf

- 6. Make certain that the date and time on the Acurite is correct. If the time is not correct WeeWx may reject the data if it conflicts with the date and time

- 7. Follow the manual to set up your Acurite inside display at this time. There are some personal choice options that can be set.

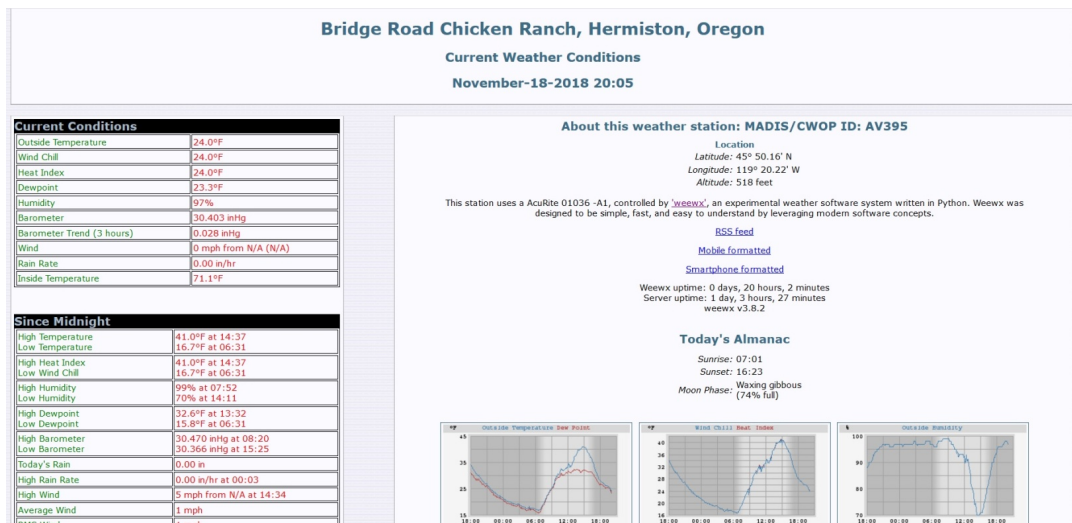
8. Connect your AcuRite 5 in 1 to your Raspberry Pi via a USB port.
 - a. I suggest using a powered USB Hub to connect the weather station to the Raspberry Pi.
 - b. The power available through the Pi's USB ports may not be enough to support the Accurite USB.
 - c. Some AcuRite consoles have a setting called "USB Mode" that controls how data is saved and communicated:

AcuRite USB mode			
Mode	Show data in display	Store data in logger	Send data over USB
1	yes	yes	
2	yes		
3	yes	yes	yes
4	yes		yes

- d. If the AcuRite console has multiple USB modes, **it must be set to USB mode 3 or 4** in order to work with the weeWX driver.
 - e. Communication via USB is disabled in modes 1 and 2. Mode 4 is more reliable than mode 3; mode 3 enables logging of data, mode 4 does not.
 - f. When the console is logging it frequently causes USB communication problems.
 - g. The default mode is 2, so after a power failure you may have to use the console controls to change the mode before WeeWX can resume data collection.
 - h. The 01025, 01035, 01036, 01525, and 02032 consoles have a USB mode setting.
 - i. The 02064 and 01536 consoles do not have a mode setting; these consoles are always in USB mode 4.
9. In the terminal session on the Raspberry Pi execute:
 - a. **sudo service weewx stop**
 - b. **sudo service weewx start**
 - i. This will cause WeeWx to restart and use the changes in the configuration.

10. Check to see if the Acurite 5 in 1, Raspberry Pi, and WeeWx are working together:
 - a. Using VNC Viewer connect to the Raspberry Pi
 - i. Open an internet browser on the Raspberry Pi
 - ii. enter the following command
 1. <file:///var/www/html/weewx/index.html>
 2. You might want to give it a few minutes to get data from the weather station
 - a. I usually wait an hour to let enough data to be created to get a good graph on the website.
 - b. Or using an internet browser on your computer you are using to access the Raspberry Pi
 1. Enter the IP address of the Raspberry Pi and the path to the weather station data; i.e.
 - a. <http://xxx.xxx.xxx.xxx/weewx>
 - b. Our station is accessed as:
 - i. <http://10.10.2.138/weewx/>

If all is well you will see a page that looks similar to:



If not then it is time to do some troubleshooting. You can find help by contacting me or sign into the Google user group for weewx.

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