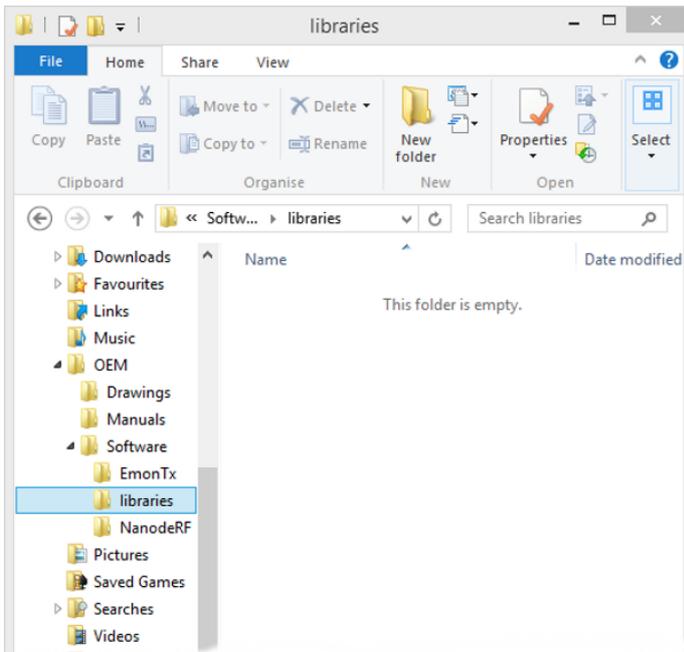# Installing the Arduino Libraries – Windows 8.1

Before you install the libraries, it would be a good idea to think about how you will organise your Emon data. One way that works for me is to have a folder that contains everything related to OpenEnergyMonitor. That folder, which I've called 'OEM' is at the top level in my personal area, i.e. ….\Documents and Settings\[user]\OEM. Beneath that I have folders for Drawings, Manuals & Leaflets, and importantly that which concerns us here, Software. The Software folder contains sub-folders that will eventually contain more sub-folders for sketches for the various modules, and a 'libraries' folder for the Arduino Libraries. This is the structure:

It is most important that the "libraries" folder is at the same level in the hierarchy as the folders, or some ancestor of the folders, that will eventually contain the sketches. The parent of 'libraries', in this example called "Software" is what the Arduino documentation and the IDE refers to as the "Sketchbook". You can choose whatever name you want for this folder.

[Important Note: This is **NOT** the same 'libraries' folder that is part of the Arduino IDE. If you put the OEM libraries in there, they will work but when you update the Arduino IDE, by default it installs in a completely new folder and you will have to move or copy these libraries. For that reason it is not recommended.]
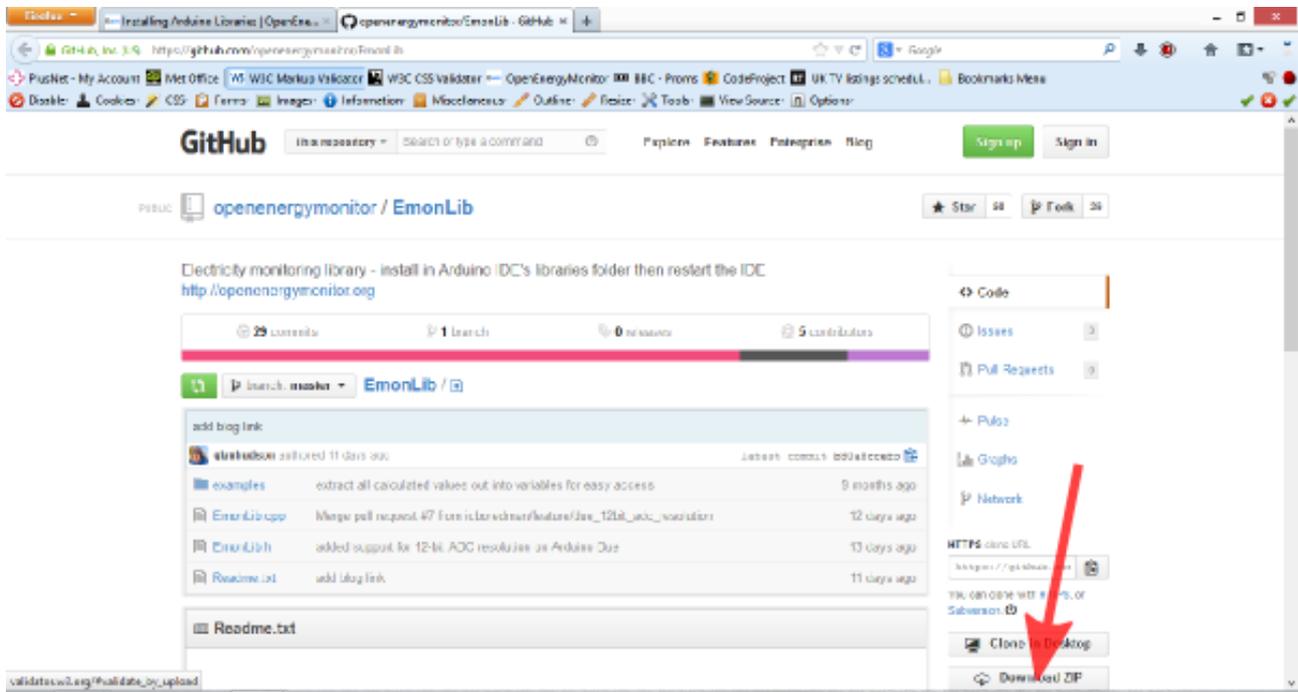
1) Downloading the Libraries

Many libraries are required, this is the full list:

JeeLib	https://github.com/jcw/jeelib
RFu_JeeLib	https://github.com/openenergymonitor/RFu_jeelib RFu JeeLib is used for emonTx V3 and emonTH using the RFu328 module

EmonLib	https://github.com/openenergymonitor/EmonLib
OneWire	http://www.pjrc.com/teensy/td_libs_OneWire.html
DallasTemperature	https://github.com/milesburton/Arduino-Temperature-Control-Library
RTClib	https://github.com/jcw/rtclib
GLCD_ST7565	https://github.com/jcw/glcdlib
EtherCard	https://github.com/jcw/ethercard/

Go to each of the websites in turn. The OneWire library is not on GitHub, all the rest are. Download the zip file for each to your usual place – on GitHub the button is on the right-hand side and you may need to scroll down the page to see it:
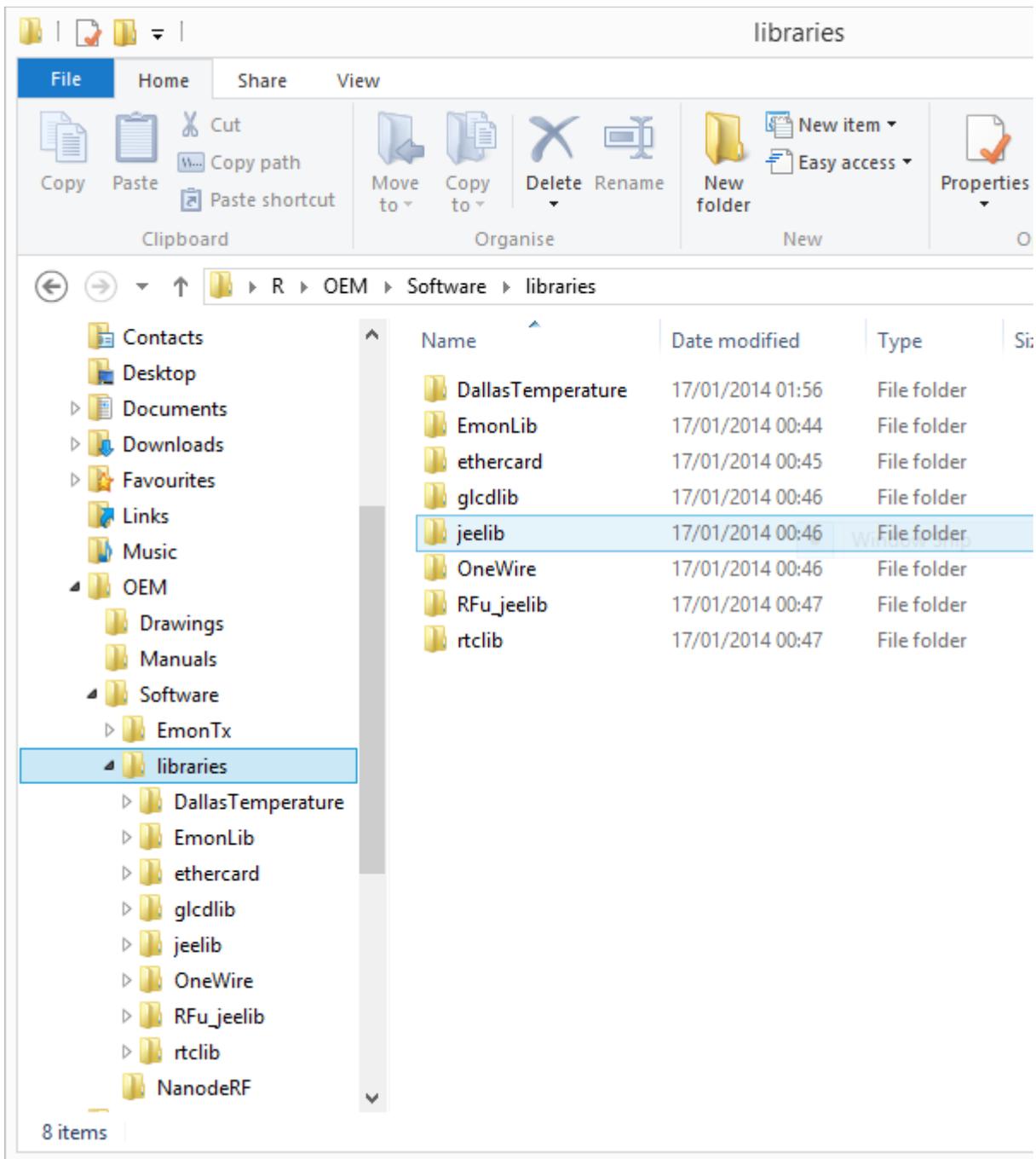

2) Installing the Libraries

When you have downloaded all the files, go to your download location and from there you need to extract the contents of each Zip file in turn: Double-click on the zip file, a window will open showing the contents. Drag that folder into the "libraries" folder.

3) Renaming the Libraries

The Arduino IDE does not allow hyphens '-' in the library folder names. Therefore you must rename the folders to the names below. You should end up with this:

[If you wish, you can now delete the zip files that you downloaded.]

4) Check the Libraries

If your Arduino IDE is running, close all open windows and shut it down completely. Start (or restart) the IDE. First you must tell the IDE where your 'Sketchbook' is located. Click on File > Preferences and at the top for "Sketchbook location" browse to and select your "Software" folder, then dismiss the Preferences window with OK. Click on File > Sketchbook > libraries and you should see the list of libraries. [Note: The IDE only checks the libraries at start-up. Each time you change or add a library, you must completely shut down and restart the IDE.]