BM2 Updating Script

# Purpose

This document provides information to guide the usage of the BM2 updating script. This script is still in development so care must be taken to remain within the parameters explained. Entering inappropriate information into boxes may have unpredictable results.

# Pulling from github

Pull the following repositories, if you already have them, pull again to ensure you have the most up to date information.

* <https://github.com/djwnz/process.git>
* <https://github.com/PumpkinSpace/BM.git>

# Acquiring dependencies

In order for this script to work as intended the following packages need to be installed:

* TotalPhase Aardvark drivers
* openpyxl Python package

# Setup

For this you will need:

* A BM2
* An Aardvark
* Additional hardware to allow the aardvark to talk over I2C to the BM2

You will need to ensure the following:

* The BM2’s SupMCU code is up to date
* The BM2 gas gauge is configured for the same cell count you wish to program it for.
* No SMB interface is connected to the BM2.
* The BM2 is un-inhibited
* A USB debug interface might be interesting to look at but it is by no means required.

# Running the script

In the root directory of the process repository there is a batch file named ‘run\_BM2\_script.bat’, execute that. Ensure that the terminal window remains visible during this process.

# Using the program

## Step 1: enter the I2C address

Enter the I2C address for the BM2 you want to talk to. This will be used for the remainder of the program.

## Step 2: Update the serial number

If you wish to update the serial number of the BM2, you can do that here by entering the new number in the box and pressing ‘Update’

## Step 3: Update the I2C Address

If you wish to update the I2C address of the BM2, you can do that here by entering the new number in the box and pressing ‘Update’

## Step 4: Update the Oscillator tuning parameter

If you wish to update the Oscillator tuning parameter of the BM2, you can do that here by entering the new number in the box and pressing ‘Update’

## Step 5: Updating the Gas Gauge Flash

This step allows you to modify the gas gauge data flash without wiping it entirely as you would have to do using the TI interface.

### Button Actions:

* Read Data Flash - Reads the current data flash from the BM2
* Load Data Flash - Loads a saved data flash file from a csv file
* Load Excel File - Adjusts the Data flash image in memory to match what is in  
   the Excel file provided
* Write Data Flash - Writes modified data flash entries to the Gas gauge
* Save Data Flash - Saves the Dada flash image in memory to a csv file

### Basic Updating Usage:

To update the data flash of a BM2 follow the follow procedure:

1. Read the Data flash from the gas gauge (this will take a couple of mins).
2. When reading is completed verify that the terminal contains no messages about Subclasses being empty. If there are empty subclasses then make sure everything is connected properly and re-read the data flash.
3. Select the checkboxes to indicate if you want to erase lifetime or calibration information.
4. Click on ‘Load Excel File’ and select the most recent data flash Excel document from the BM repository.
5. Using the dropdown box in the popup window select the configuration that you wish to load onto the BM2, this depends on the cell types used and the cell configuration.
6. Click the select button.
7. Check the terminal window for a list of everything that is being updated and everything that is staying the same. In general there should always be a combination of the two. Some should stay the same (with lengths > 1) and some should change. The ones that change should list a list of information that is longer than 1 item. If this doesn’t look right, copy the printout and send it to David. If in doubt start again from step 1.
8. Click ‘Write Data Flash’ to update the data flash. (this may take a minute or so)

## Step 6 and above.

These steps are untested, please don’t use them!