# Introduction

The TBS Dashboard for Windows software environment, offers data logging capabilities for each connected TBS equipment type. Depending on the TBS product type, a large number of different parameters like battery voltage, charge current, output power etc. can be recorded. The recorded data can be stored in a separate text file which can be configured using the New Recording Wizard. An often used method for writing multiple parameters into a file, is to use commas or TABs to separate the individual parameters. Such files can be easily imported in a spreadsheet application like Microsoft Excel for further processing. One of the options in Excel is to create nice graphs from your recorded data. This document gives you a quick explanation on how to import a Dashboard recording file into Excel and how to create a graph from this. This document does not explain how to setup a Dashboard recording using the New Recording Wizard. For this we would like to refer to the help file supplied with Dashboard.

# Importing Dashboard data into Excel

Start Excel and open a clean sheet. To start importing a Dashboard recording file, choose File → Open and select the recording file from the location where it was saved by Dashboard. Excel will automatically start the Text Import Wizard, showing the following window :
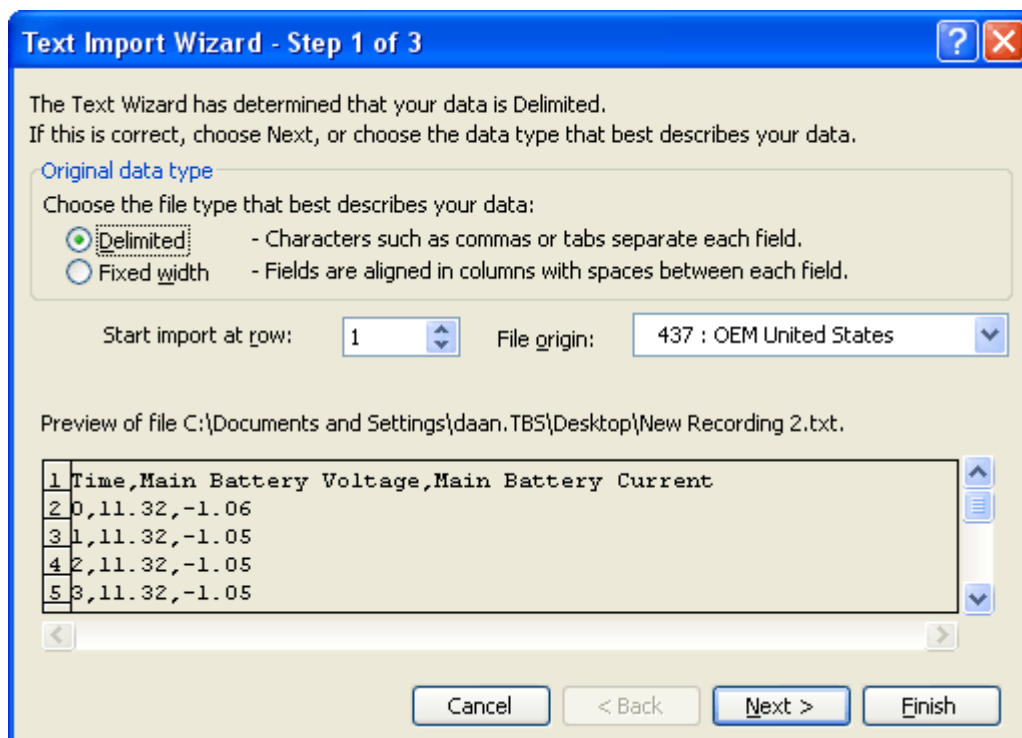


Click on the Next button to go the second step (see next page) :
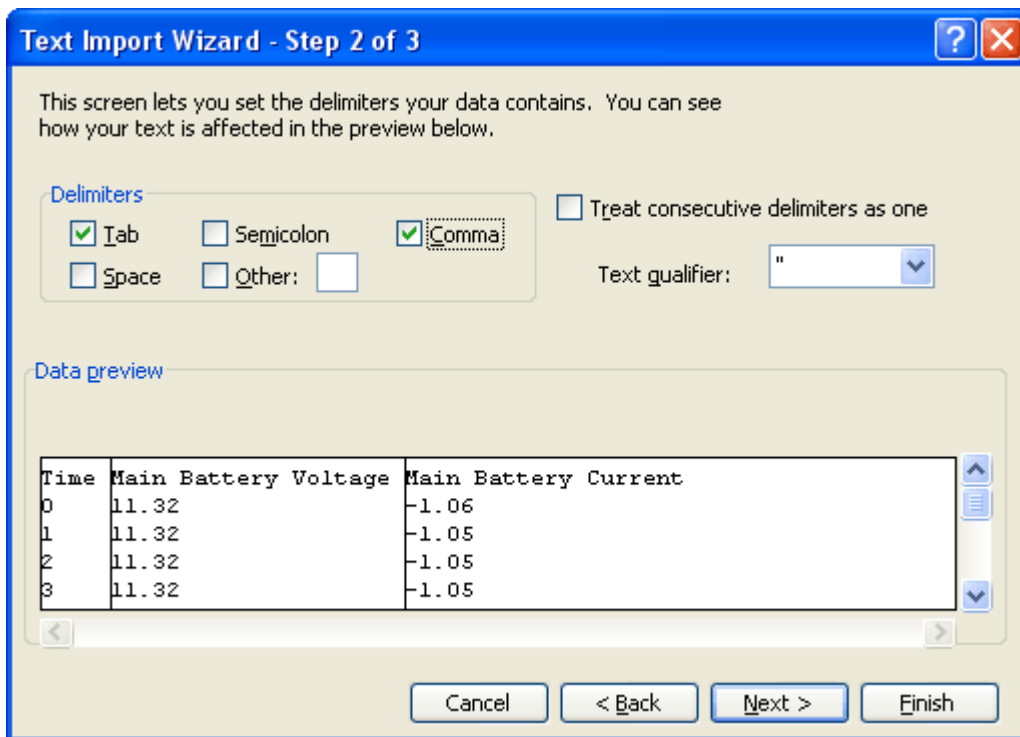
Since the recording file in this example is comma separated, check Comma as Delimiter. The Wizard will automatically divide all three recorded parameters in individual columns as can be seen in the Data preview area. After this, click the Finish button to import all data in the Excel sheet. See the screen shot below for the result :
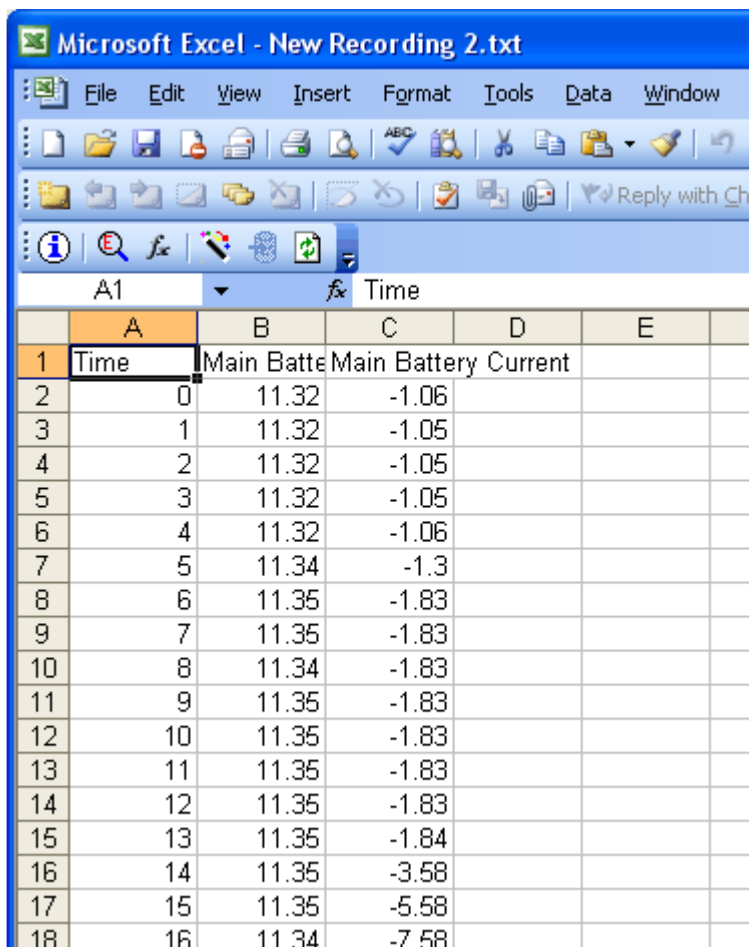


In this stage you can further process this data, like formatting certain parameter values or removing a range of unwanted successive recordings.

# How to create the graphs

Now that all data is imported, the Excel Chart Wizard can be started to process the graphs. From the Insert menu, select Chart…, which will activate the following window :
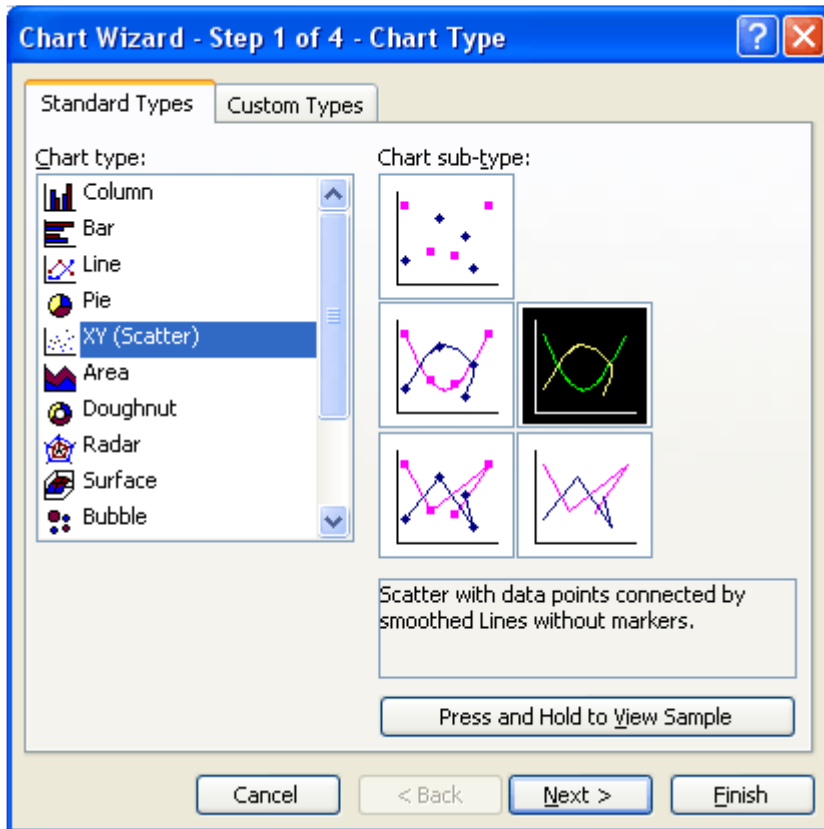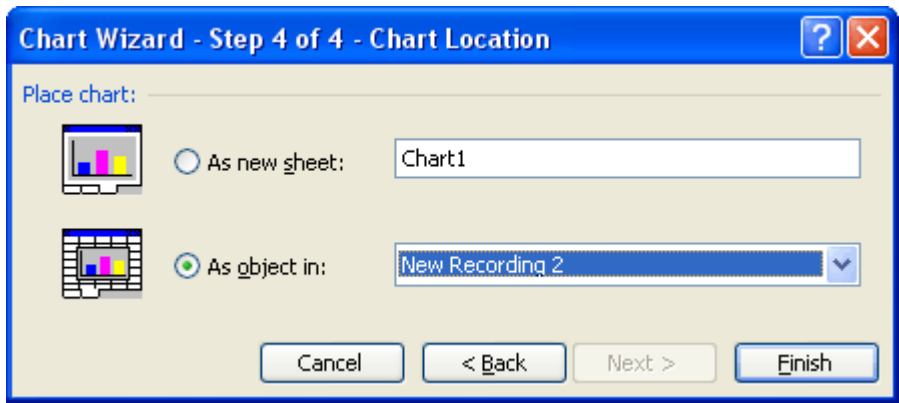


Choose the Chart type "XY (Scatter)" followed by your preferred Chart sub-type and click on the Next button. The following window will appear (see next page) :
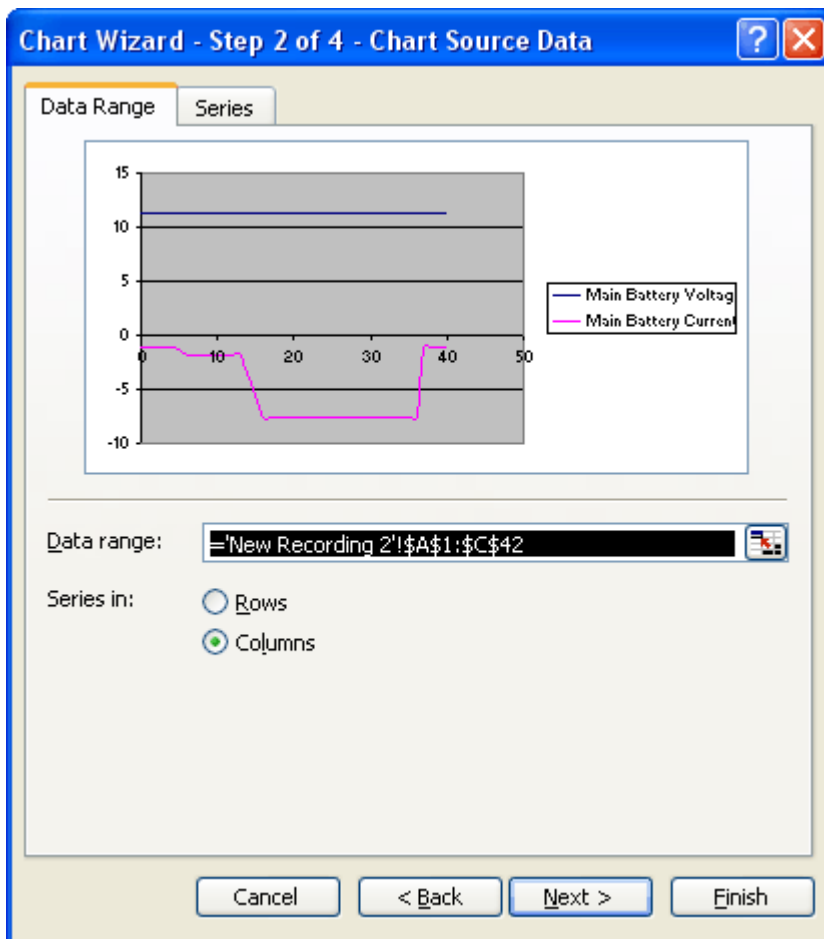
As you can see, the Wizard automatically selects all available data your sheet and it shows a preview example on how the graph would look like. If you wish to change the selected data, press the small button behind the Data range. This will allow you to manually select the desired colums and rows to show in the final graph. Click on the Next button when your are satisfied with the preview graph. The following window will appear :
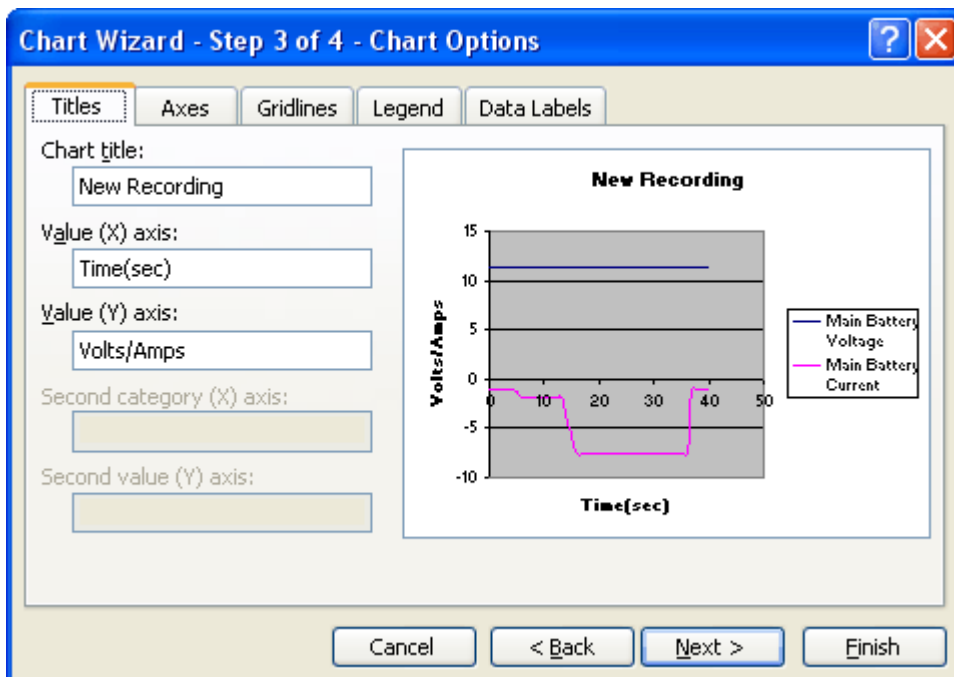


In this window and corresponding tabs, you can further customize your graph. In this example, we have only filled in the Chart title, Value (X) axis and Value (Y) axis fields. Press the Next button again to jump to the final step of the Chart Wizard. The following Window will appear (see next page) :

Chart Wizard - Step 4 of 4 - Chart Location

Place chart:

○ As new sheet: Chart1

◉ As object in: New Recording 2

Cancel  | < Back  | Next >  | Finish

In this stage you can either choose to place the graph on a new sheet (a better option for printing the graph) or to place it as an object in the current sheet. In this example we will choose the last option. Press the Finish button to place the graph on the sheet as shown below :



New Recording

Volts/Amps

— Main Battery Voltage
— Main Battery Current

Time(sec)
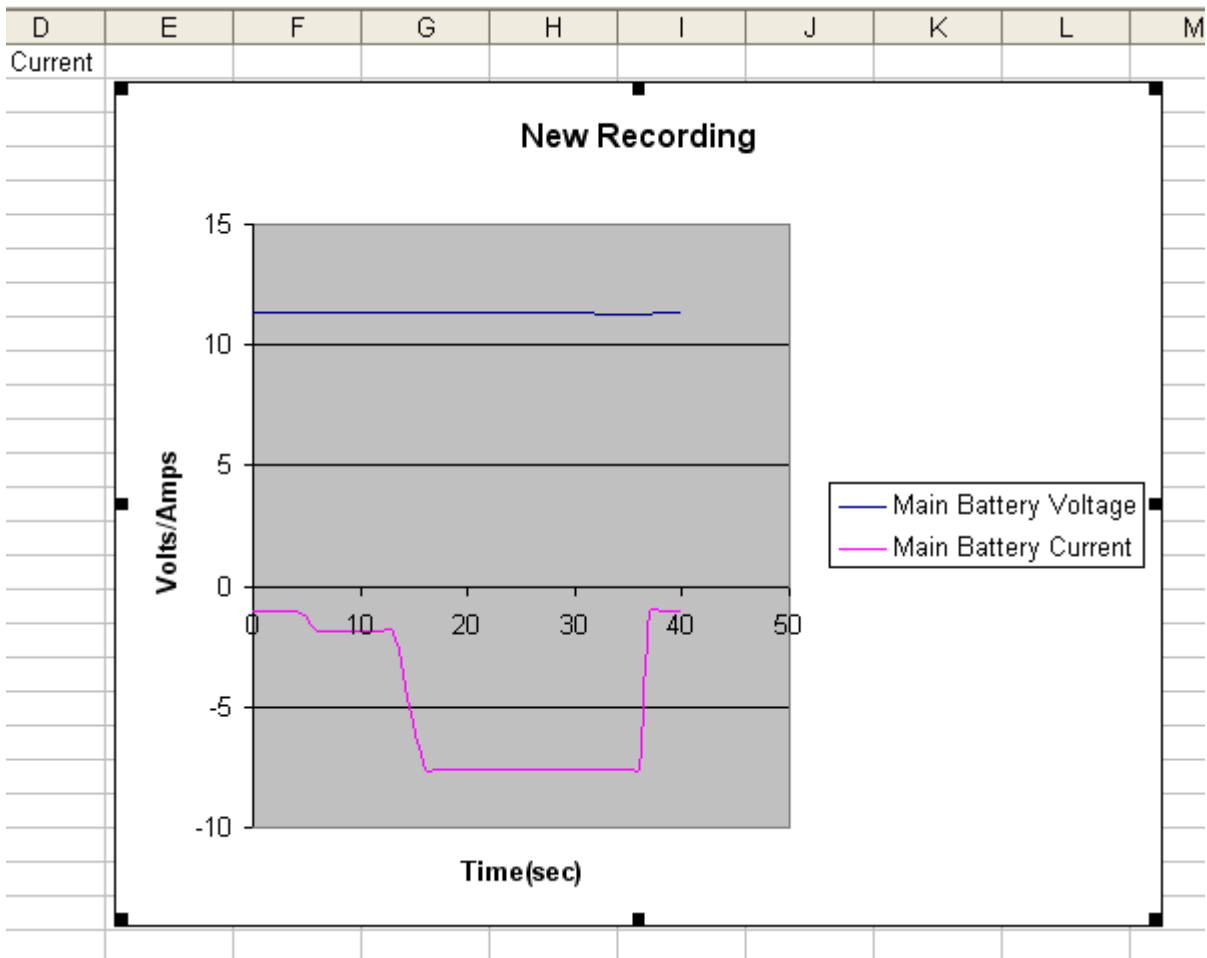
By selecting the graph itself (like shown above) and clicking the right mouse button, several options will appear to customize the graph afterwards. As you have seen in the processed graph, the Main Battery Voltage and Main Battery Current are both using the same Y-axis value range. If you wish to have a separate Y-axis for each plotted parameter, please follow the next steps. First, the desired parameter plot needs to be selected (see next page) :
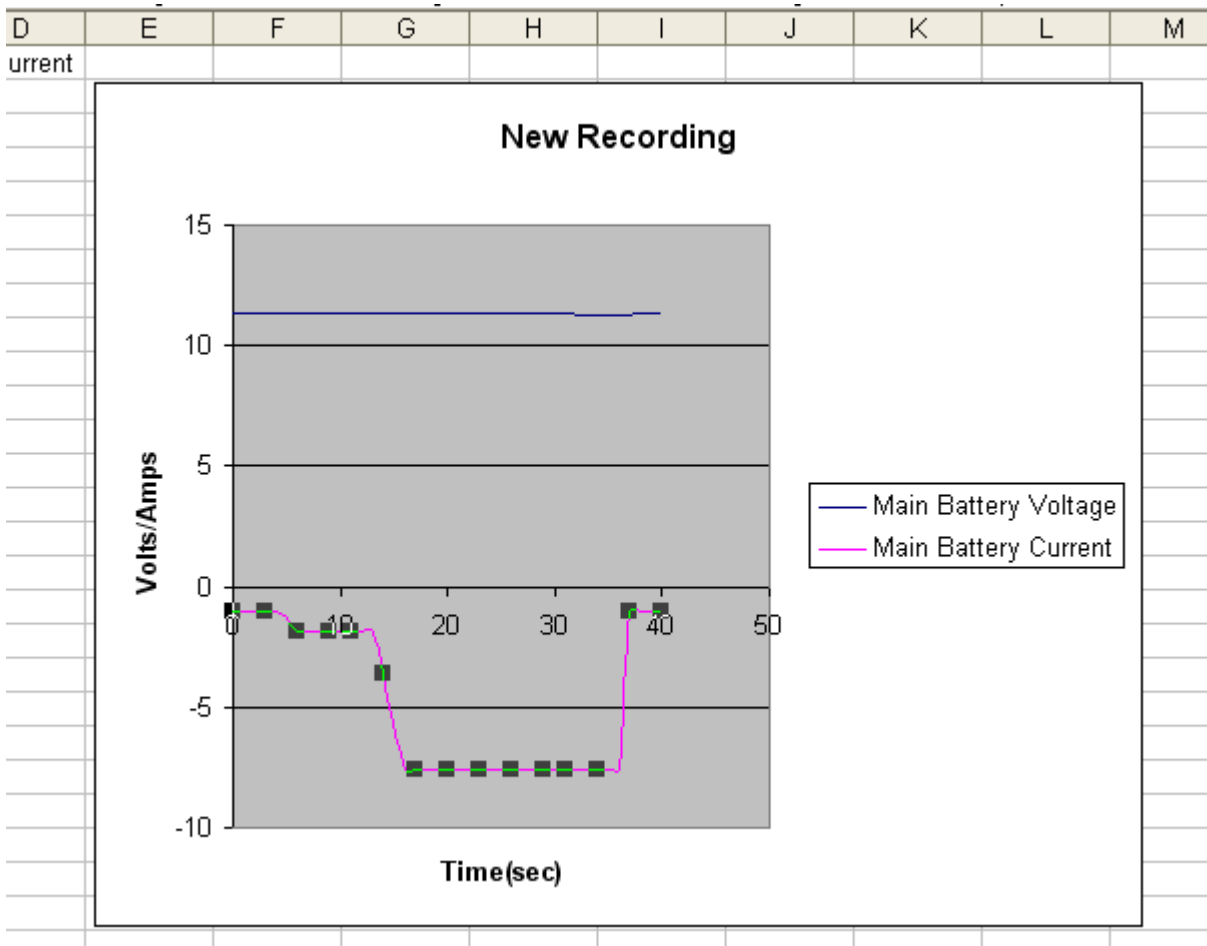
At the same time, click on the right mouse button and choose option Format Data Series. The following window will appear :
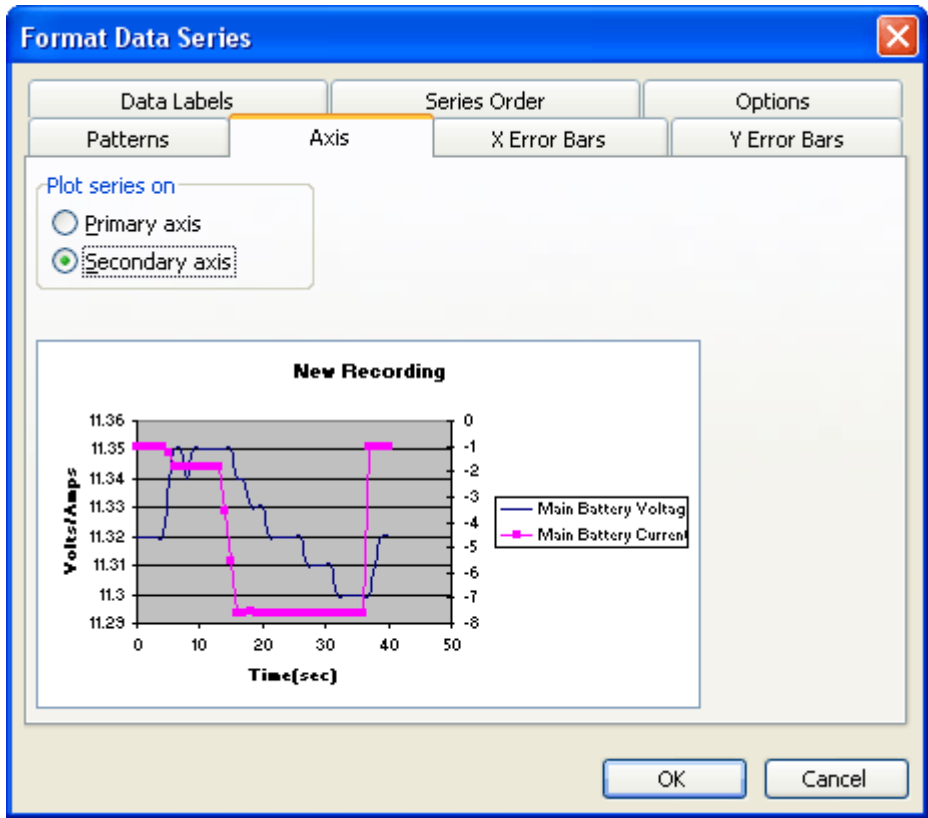


Choose the Axis tab and select Secondary axis. As you can see in the preview area, the Main Battery Current

now has an individual Y-axis and corresponding range. Press the OK button to update the graph on your worksheet as well.

## Summary

As you have seen, importing Dashboard recording data into a spreadsheet application like Excel and to process a graph, is fairly easy. The Chart functionality of Excel is quite powerful and it is recommended to experiment further with all available options, to optimize the graph's appearance exactly to your requirements. This document is just a guideline to explain the basics of graph processing in Excel.