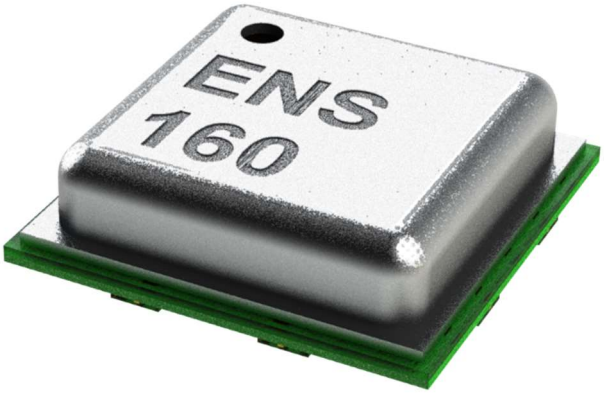


ENS160 Dashboard Quick Start Guide

ENS160 Evaluation Kit (EVK)

ENS160 Dashboard Quick Start Guide
Revision: 2
Release Date: 2021-07-30
Document Status: Production

Content Guide

Contents

1. Introduction

This ENS160 Dashboard Quick Start Guide is aimed at giving the customers an overview of how to use ENS160 Dashboard Software with the latest ENS160 evaluation kit released by ScioSense to evaluate sensor ENS160 performance.

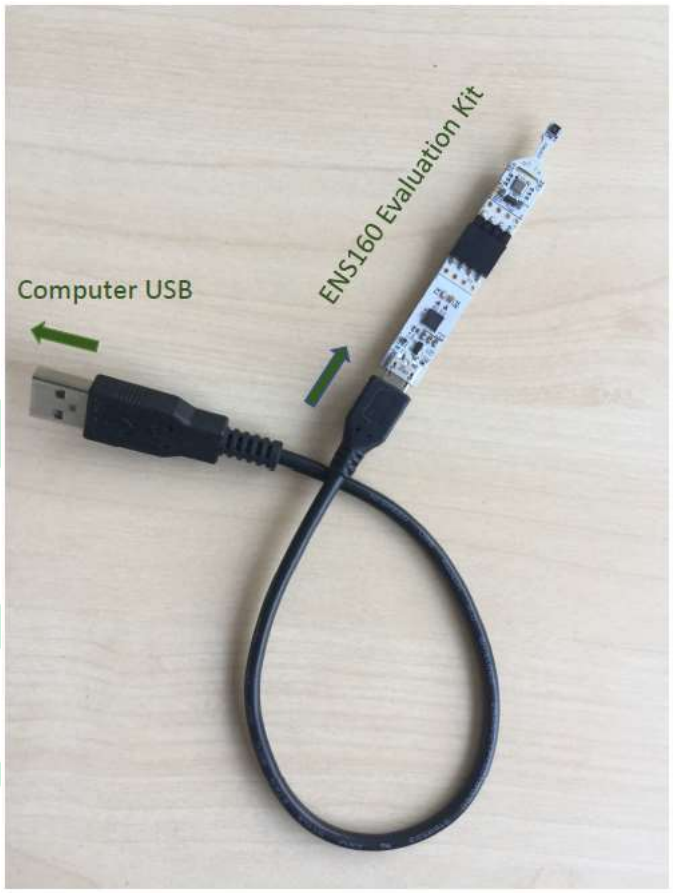
1.1 ENS160 Evaluation Kit Parts

Apart from micro-USB-to-I²C converter and ENS160 combined with ENS210 break-out board (both included within the ENS160 Evaluation Kit package), user need prepare a USB2.0 type A to USB mini type B cable to run the ENS160 Evaluation Kit:

	Description
1	USB 2.0 type A to USB mini type B cable
1	micro-USB-to-I²C converter
1	ENS160 combined with ENS210 break-out board

The following picture shows how the evaluation kit should look like and how the parts should be assembled and connected to the computer.

Note: Recommended PC platform Windows 10 or higher and USB interface



When assembling the evaluation kit, please follow the steps below:

1. Have USB 2.0 A- to mini-USB type B connector cable with enough length ready.
2. Attach Mini-USB cable connector to ENS160 Evaluation kit socket.
3. Attach USB-A connector to PC.

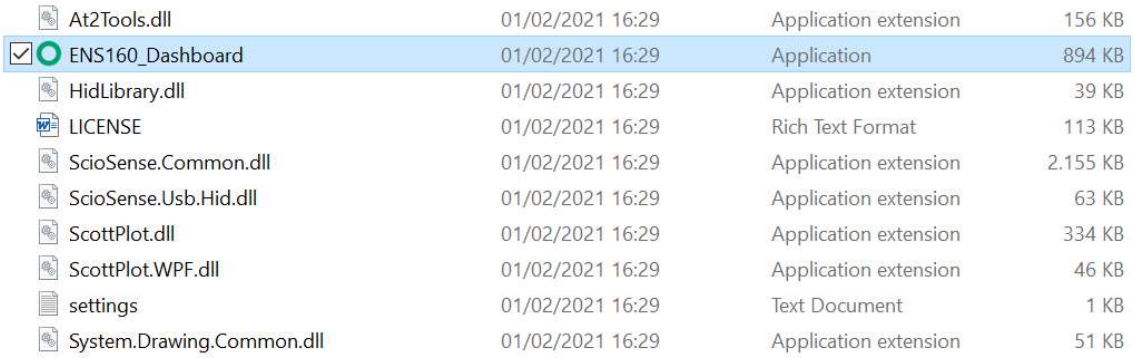
Note: Never touch sensors.

1.2 ENS160 Dashboard Software

ENS160 Dashboard Software can be downloaded from the link below:

https://downloads.sciosense.com/ens160/

Copy ENS160 Dashboard zip-file from USB stick or other source to target directory and unzip in a folder of choice.

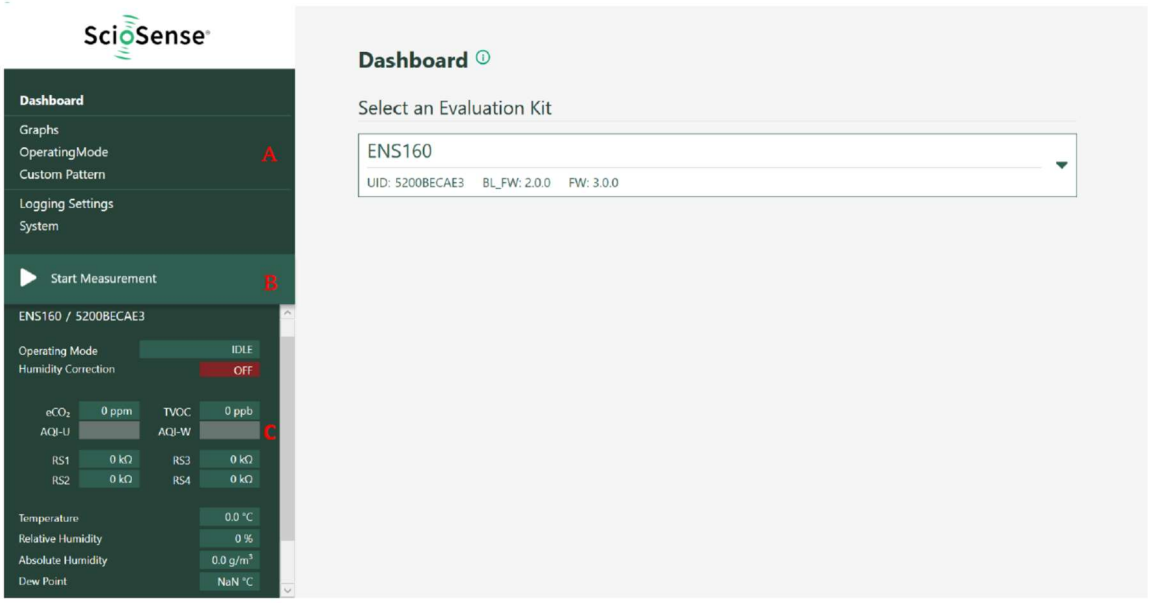


At2Tools.dll	01/02/2021 16:29	Application extension	156 KB
ENS160_Dashboard	01/02/2021 16:29	Application	894 KB
HidLibrary.dll	01/02/2021 16:29	Application extension	39 KB
LICENSE	01/02/2021 16:29	Rich Text Format	113 KB
ScioSense.Common.dll	01/02/2021 16:29	Application extension	2.155 KB
ScioSense.Usb.Hid.dll	01/02/2021 16:29	Application extension	63 KB
ScottPlot.dll	01/02/2021 16:29	Application extension	334 KB
ScottPlot.WPF.dll	01/02/2021 16:29	Application extension	46 KB
settings	01/02/2021 16:29	Text Document	1 KB
System.Drawing.Common.dll	01/02/2021 16:29	Application extension	51 KB

2. Launch and Operation

Launch the application by double-clicking ENS160_Dashboard, see the graph in Section 1.2.

The Main Window will pop up showing initial ENS160 Dashboard GUI as below:



As shown in above graph, there are three main areas in the GUI left side, which have been marked accordingly with three red letters A, B and C. These three areas A, B and C have been defined as below:

A. Parameters Setting

B. Start/Stop measurement

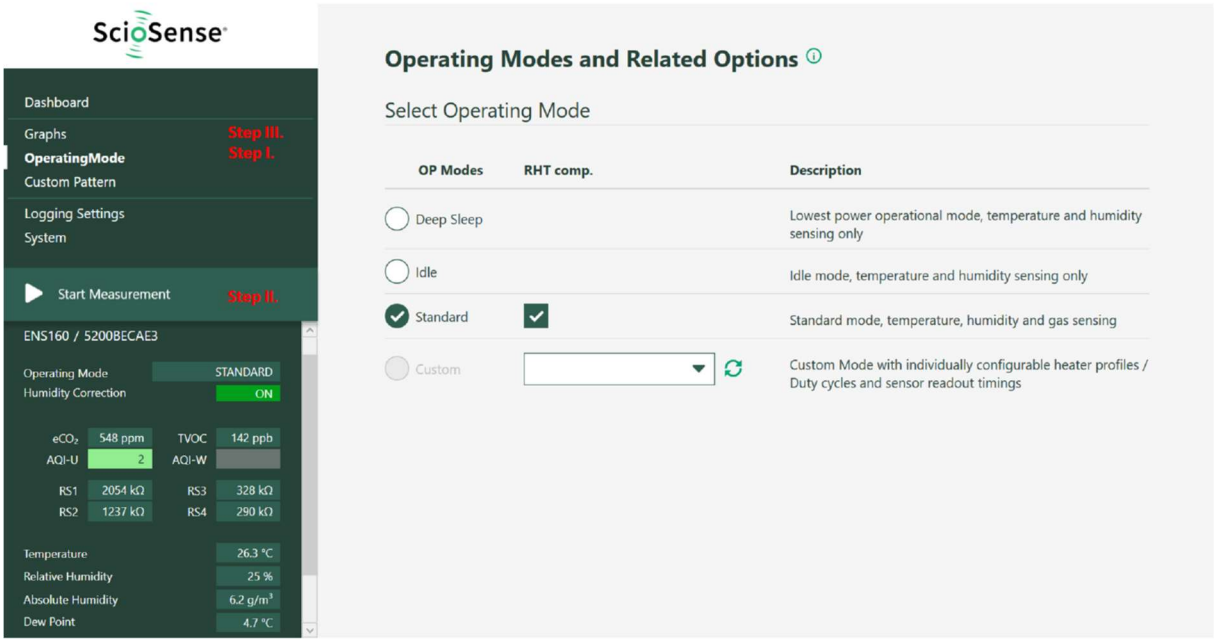
C. Current Measurement Real Data Display.

To start a measurement, follow the following three steps:

I. Click "Operating Mode" to choose the operation mode to **Standard (ENS160: On)**.

II. Click "**Start Measurement**"

III. Click "**Graphs**" to see and evaluate sensor performance, while the ENS160 starts capturing, incoming data is displayed in graphs as well as the data display area.



For detailed information, see Section 3.

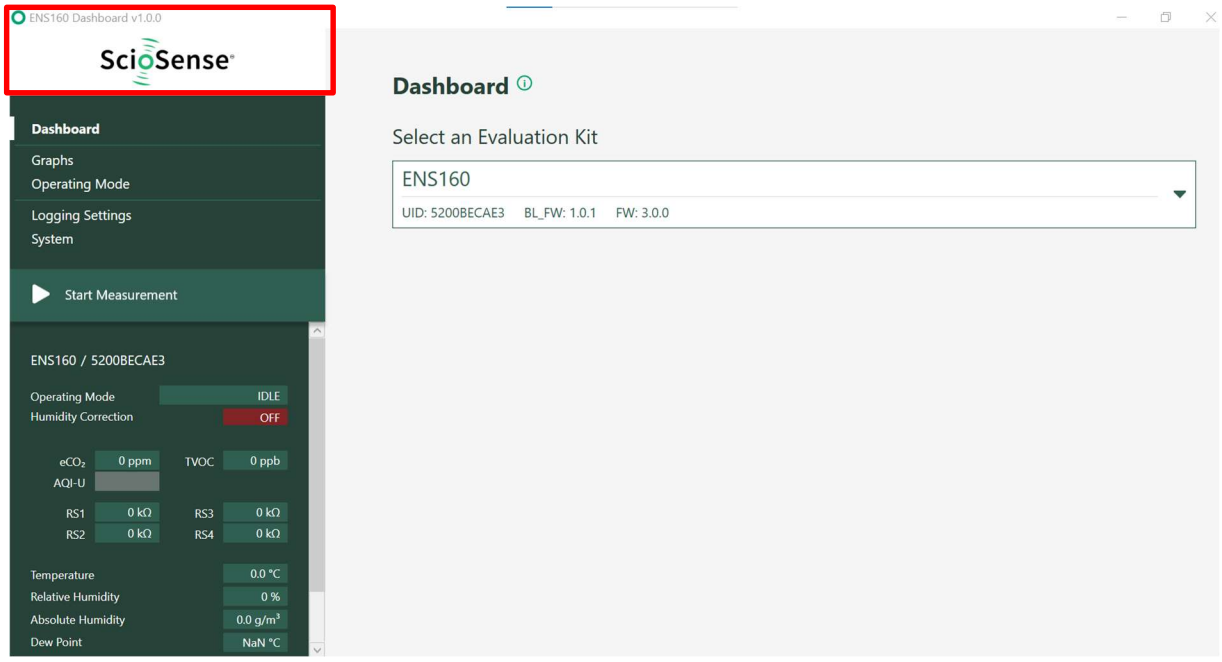
Notes:

- The ENS160 dashboard launches one result window for one attached ENS160 evaluation kit
- After initial start-up allow min. 60 minutes of operation for adequate readings
- After each re-start allow min. 5 minutes of operation for adequate readings

3 Using the Graphical User Interface

3.1 Graphical Views

Whenever the Dashboard application software is running, the following kinds of windows are presented. You can see the ENS160 Dashboard version above the ScioSense logo on the left-upper corner.
On the left side of the window, users can switch from different options before or during measurement.

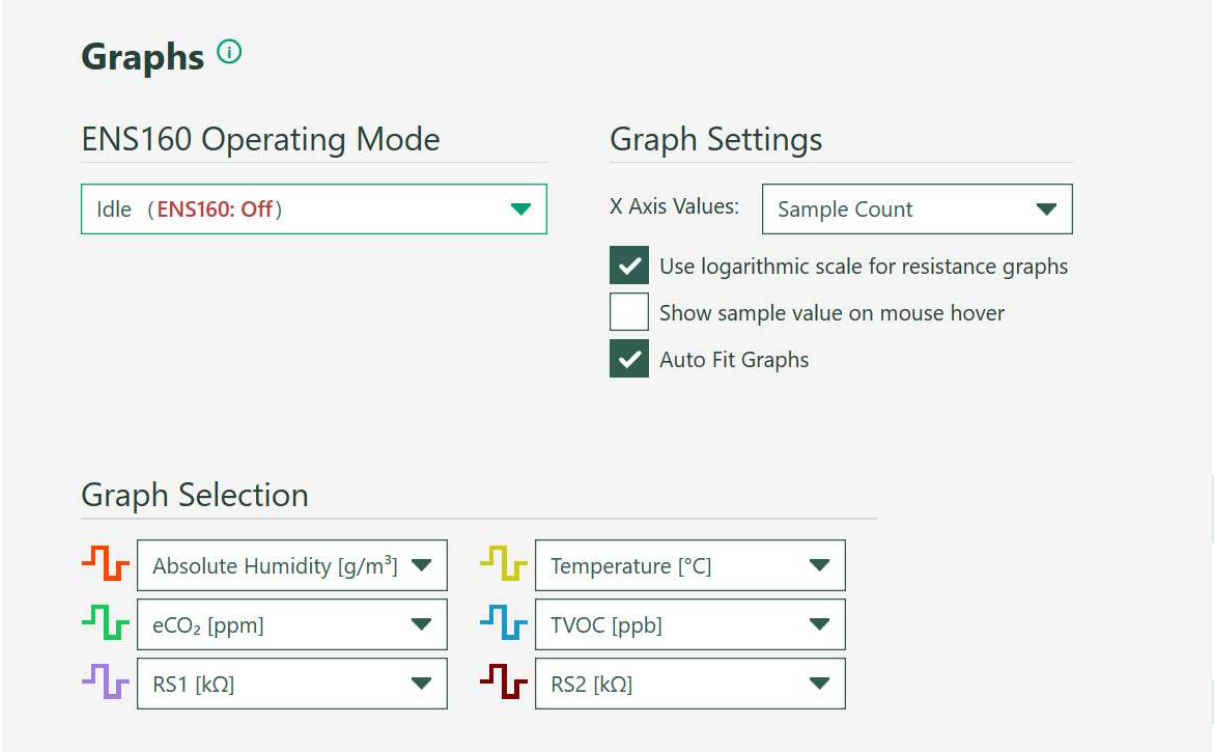


3.1.1 Dashboard

Clicking on **Dashboard** on the left side of the window, user can find the UID number and Firmware version of the device ENS160 on the right side of the window.

3.1.2 Graphs

Selecting **Graphs** on the left side of the window, user will see three sections of drop-down menus i.e., **ENS160 Operating Mode, Graph Settings** and **Graph Selection**.



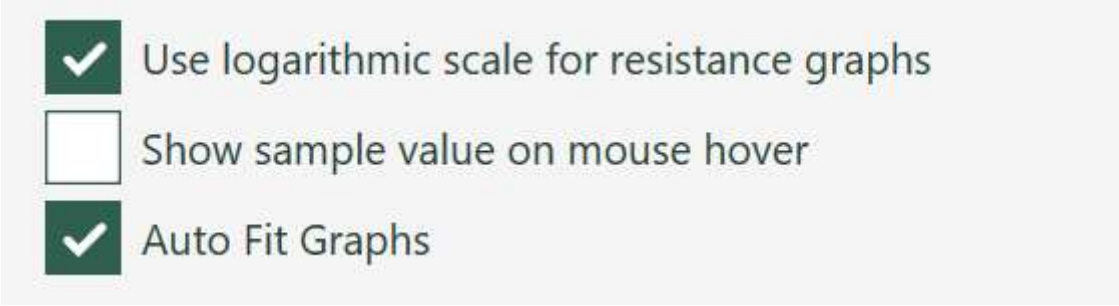
- **ENS160 Operating Mode**: From this drop-down menu, user could also switch among different operating modes, i.e.:
    - Deep Sleep (ENS160: Off)
    - Idle (ENS160: Off)
    - Standard (ENS160: On)

- **Graph Settings:** With one drop-down menu and three checkboxes to choose the user ‘s preferred way of data visualization.

  There are two options in **X Axis Values** setting of drop-down menus:

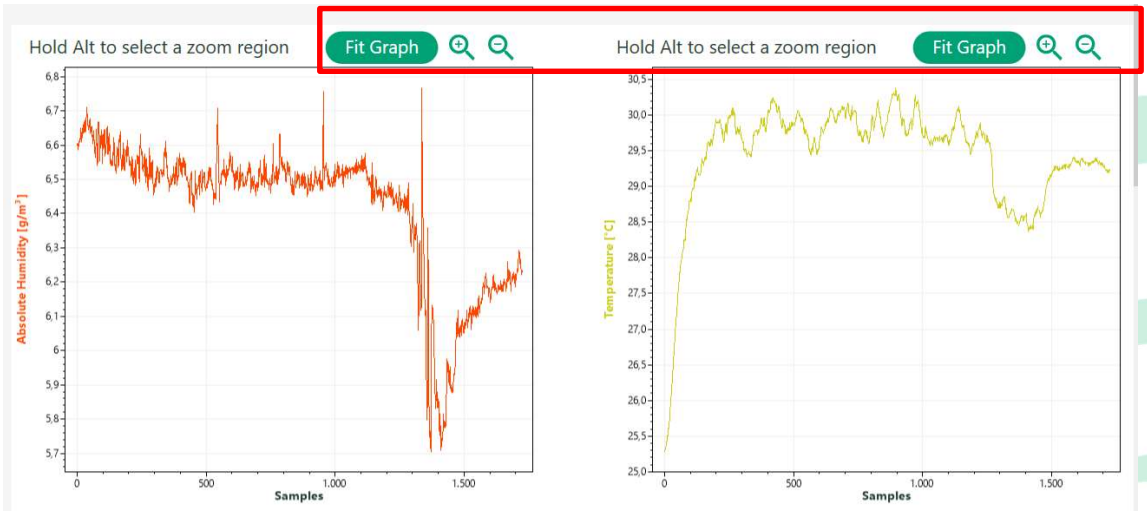
  - **Sample value**: X Axis Values shows the counting number of the sampling points.
  - **Date and Time**: X Axis Values shows the corresponding date and time of measurement sampling points.

  There are three checkboxes as shown below and two of them are activated by default:

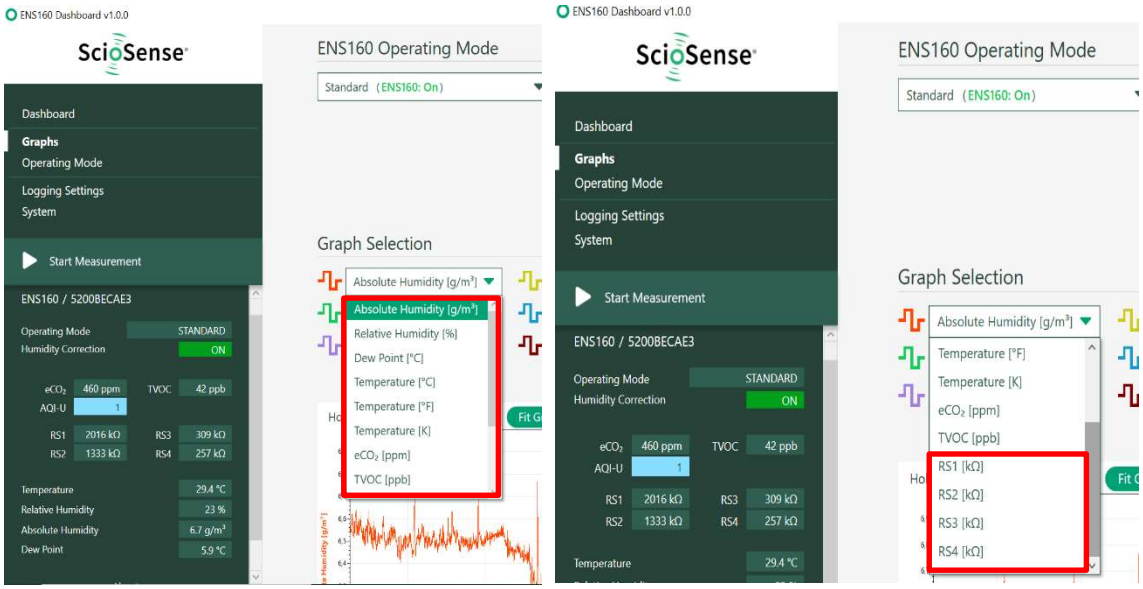


  - By activating /deactivating **Use logarithmic scale for resistance graphs** check box, Y-axis scale could be switched from logarithmic scale to linear scale.
  - When **Show sample value on mouse hover** checkbox is activated, cursor with dotted cross lines appears which could be pointed to the interested position of the data curve, and the corresponding values are shown at the bottom of the graph.

- By default, the **Auto Fit Graphs** checkbox is activated. If it is deactivated, then **Fit Graph**, **zoom in** and **zoom out** functions will become activated with icons color changing from grey to green as shown below. Move the cursor to the graphs and then pressing left mouse button, the arrow cursor will change to hand cursor  .Then user can move hand cursor around to observe not only actual measurement data, but also measurement data in the past. Hold Alt to select a zoom region to zoom in and check sensor performance in detail. To zoom out click **Fit Graph** icon.



- **Graph Selection**: There are six graphs being presented simultaneously. User can use the drop-down menus with twelve options to choose six graphs which should be displayed in the open window. These twelve graph options are listed below:



3.1.3 Operating Mode

When choosing **Operating Mode**, three different operating modes i.e. (**Deep Sleep**, **Idle**, **Standard**) can be selected. By default, ENS160 is set with **IDLE** mode and RH&T compensation are activated. By choosing **Standard**, user can do standard gas sensing measurements.

3.1.4 Logging Setting

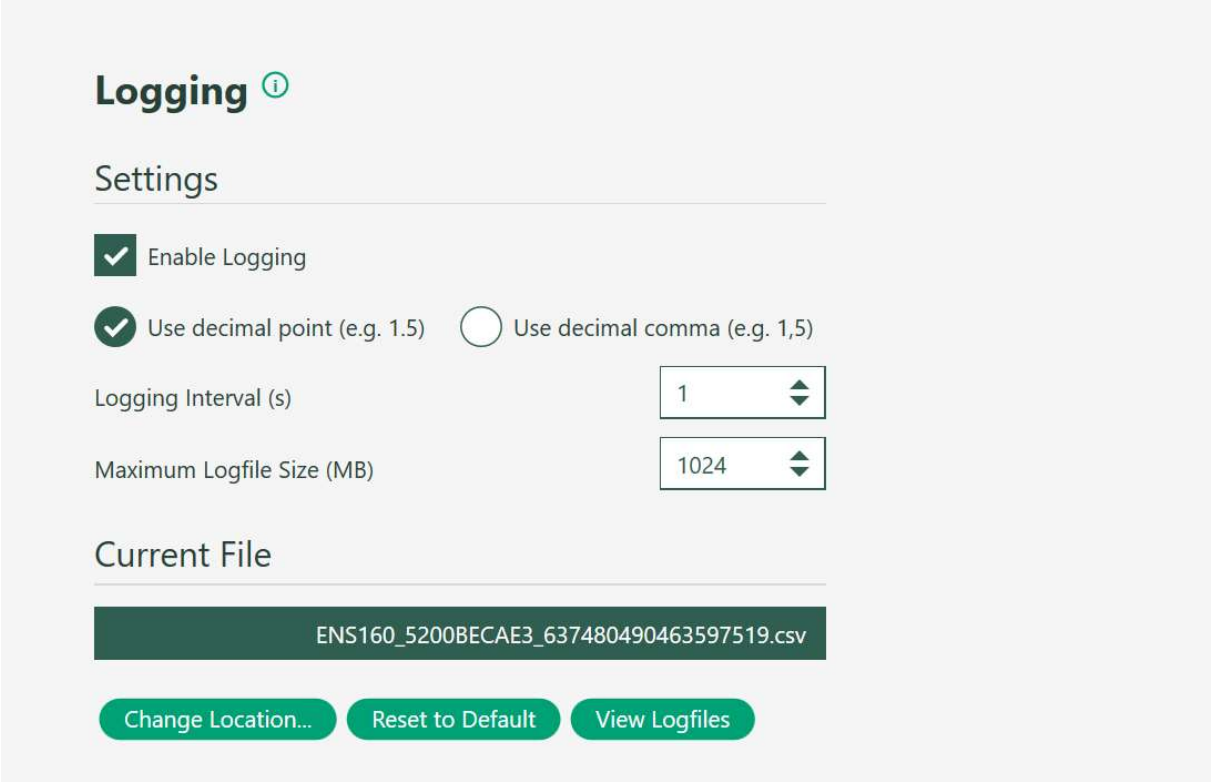
Clicking on **Logging Setting** on the left side of the window, user can see on the right side of the window as below:

Per default all data will be logged automatically with timestamps. By activating to choose using decimal points or decimal comma data formats.

The default logging interval is 1s in Standard mode and could be set by the drop-down menu to different values.

Maximum Logfile Size could also be set in advance by using drop-down menu, the default size is 1024MB.

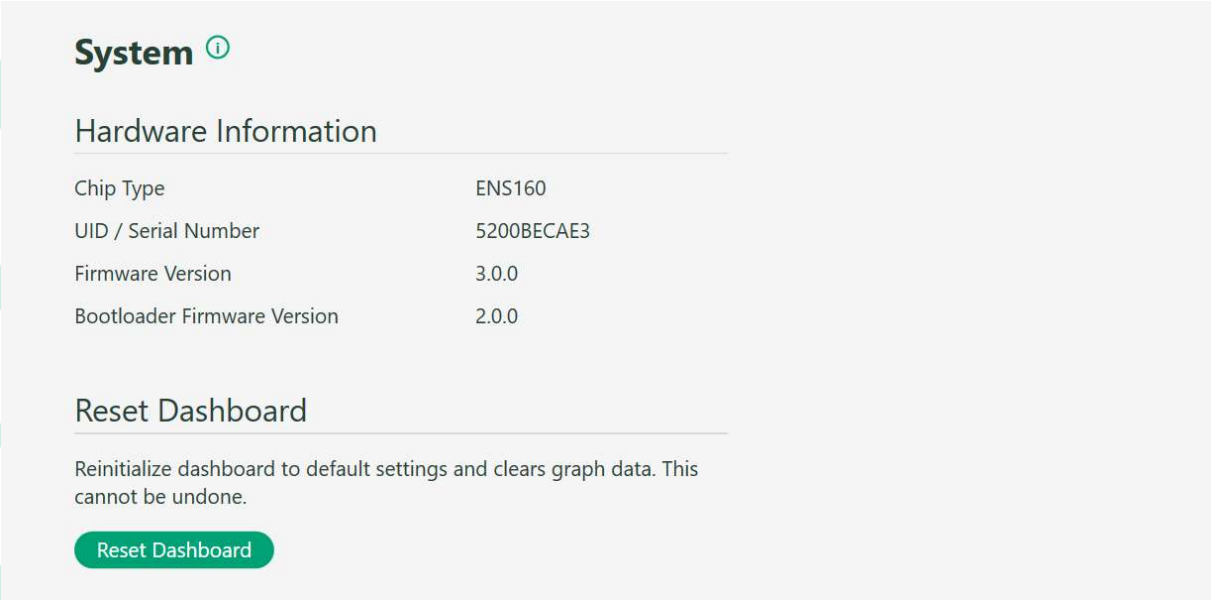
Current file will be saved with a default logging file name as stated in the window i.e., ENS160_UID ID_xxxx.csv



To view the location where the current logging data is saved, place mouse cursor over the logging file name or directly click “View Logfiles” button directly navigating to the default folder with saved data log file. Click “Change Location” to freely change the location where the log data file should be saved.

3.1.5 System

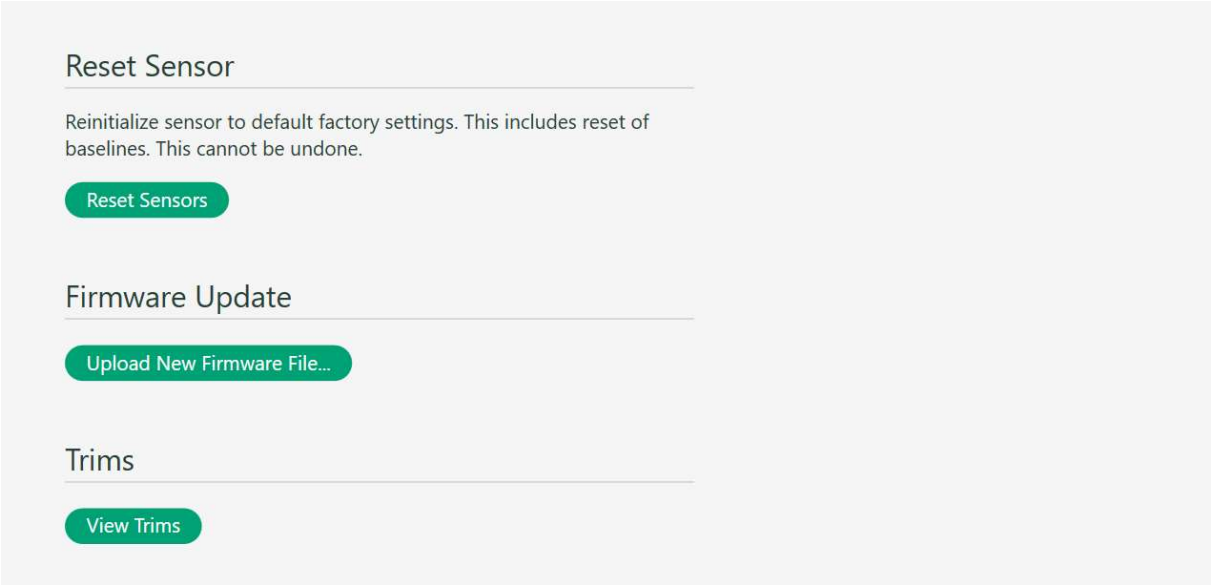
Clicking on **System** on the left side of the window, user can see on the right side the Hardware Information and do **Reset Dashboard** to factory settings.



apart from that, below:

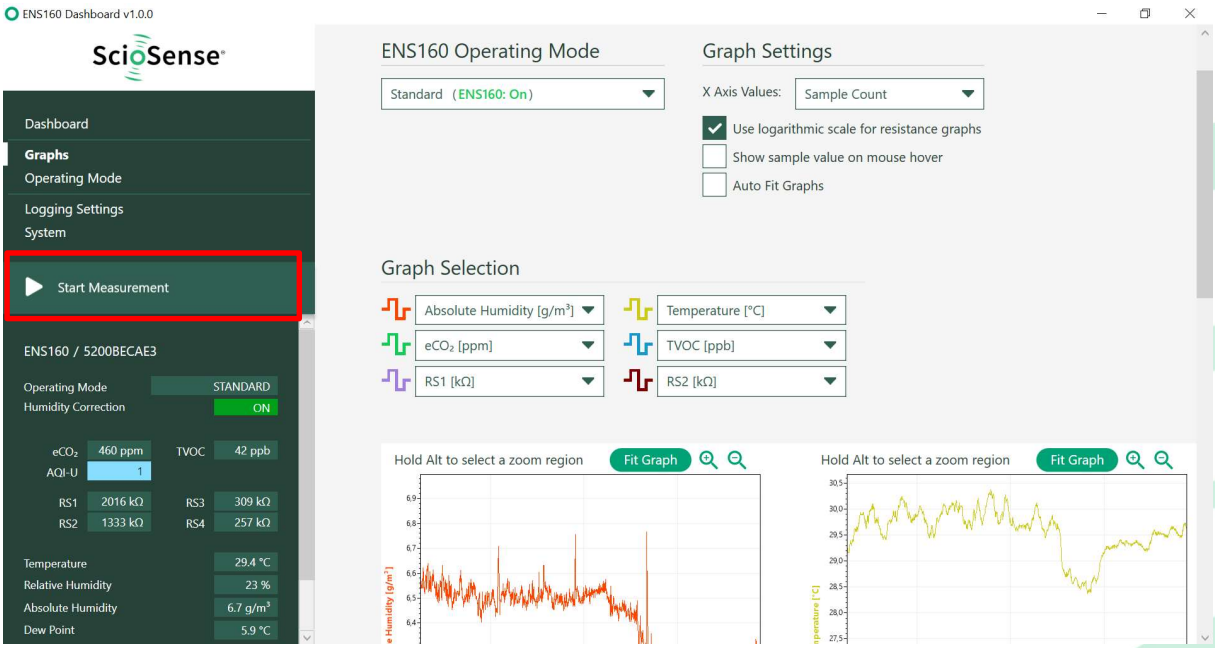
- Reset Sensors
- Upload New Firmware File
- View Trims

These are mainly for maintenance purposes with support from ScioSense.



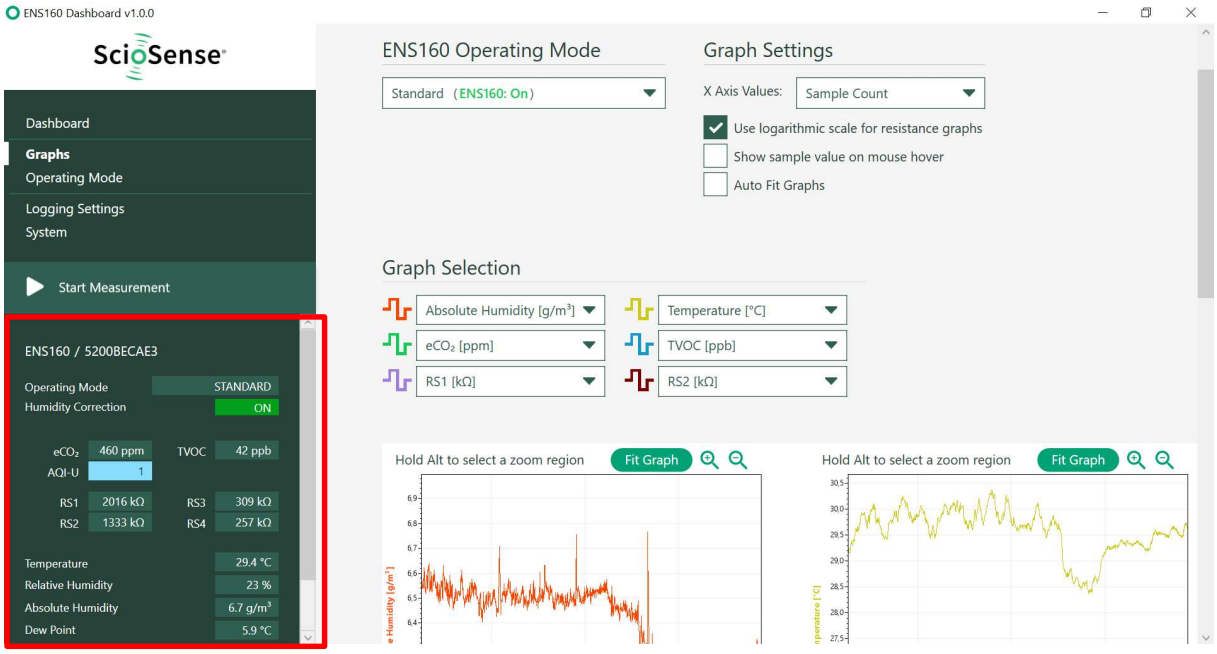
3.2 Start and Termination of Measurement

To start or terminate the standard mode of operation, just simply click Start/Stop Measurement button.



3.3 Current Measurement Real Data Display

When a measurement is running, the field marked within red frame of below picture is for current measurement real data display.



Items displayed are descripted in detail in the table below:

Label	Description
ENS160.DATA_ECO2 [PPM]	Equivalent CO_2 concentration[1]
ENS160.DATA_TVOC [PPB]	Concentration of total volatile organic compounds (TVOC)[1]
Relative humidity [%RH]	Ambient Relative humidity
Temperature [°C]	Ambient temperature
AQI-U	Air Quality Index according to UBA (Umweltbundesamt)
Absolute Humidity[g/m^3]	Grams are used to measure the water vapor, and the air is measured in cubic meters
Dew Point[°C]	The temperature at which water vapor turns into a liquid and creates condensation
Rs1, Rs2, Rs3, Rs4[kOhm]	Raw data of sensing material on four hotplates

[1] See ENS160 datasheet for a detailed description of the signals.

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5 Revision Information

Revision	Date	Comment	Page
1	2021-04-06	Initial version	All
2	2021-07-30	Update Section1.1 first paragraph	3
	2021-07-30	Update Section1.2 by adding Dashboard Software download link	4

Note(s) and/or Footnote(s):

1. Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.
2. Correction of typographical errors is not explicitly mentioned.