



## User Guide

CN-000116-UG

# UFM-01 EVK Application Note V1.1

V1-00 • 2023-Aug-21

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# Content Guide

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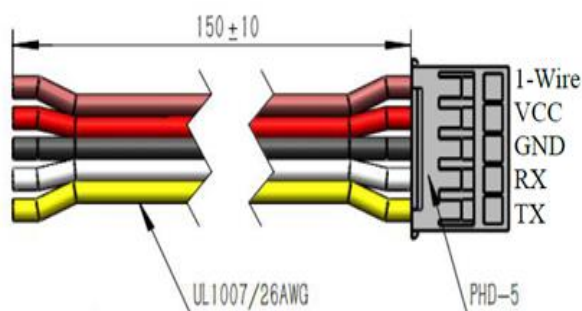
# 1 UFM-01 Hardware

The UFM-01 module is a flow sensing module based on ultrasonic flow sensing technology which mainly targets at the home appliance market, to replace current, traditional Hall sensor flow solution. USB cable can be connected to the UFM-01 hardware interface receive the water flow information and control the UFM-01 module.

Figure 1: UFM-01



Figure 2: UFM-01 Hardware Interface



## 2 UFM-01 Software

This section describes how to quickly set up the UFM-01 Evaluation Kit, establish basic operation and make measurements.

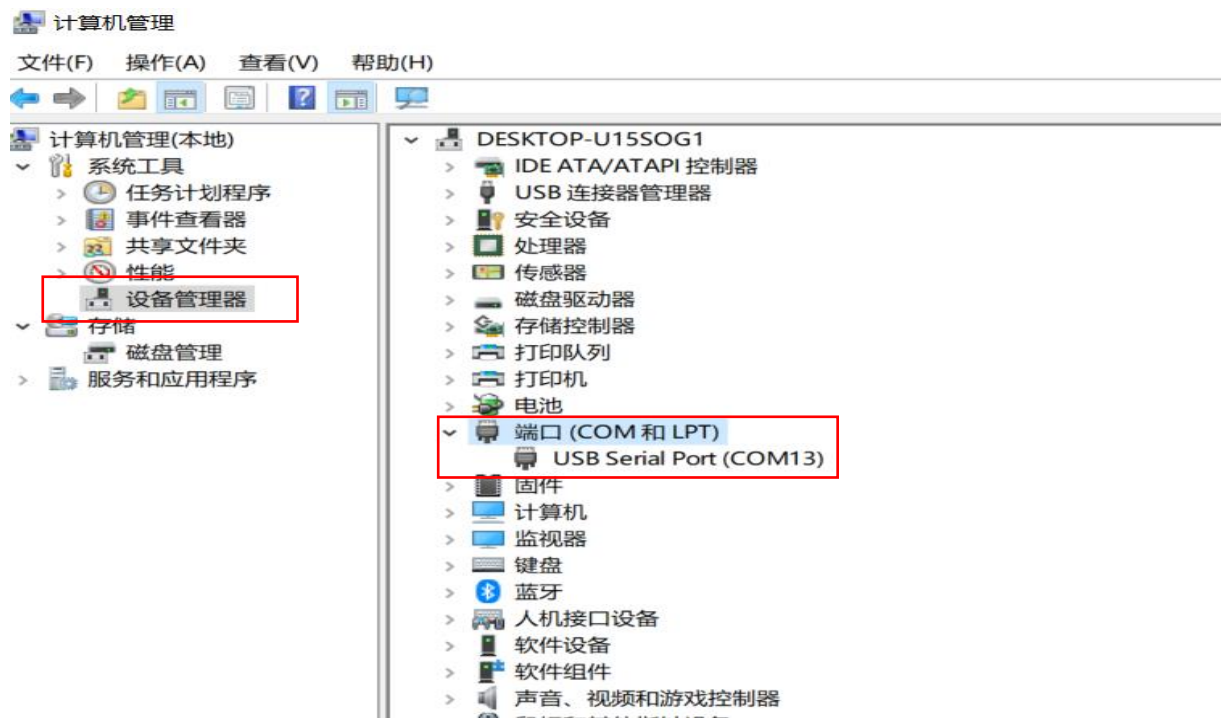
- Connect the UFM-01 to the computer using the USB cable.
- Directly open the GUI software. If encounter some issue when opening, please install Microsoft .NET Framework.

<https://www.microsoft.com/en-US/download/details.aspx?id=25150>

UFM-01 EVK should be firstly plug into PC and select the Com Port.

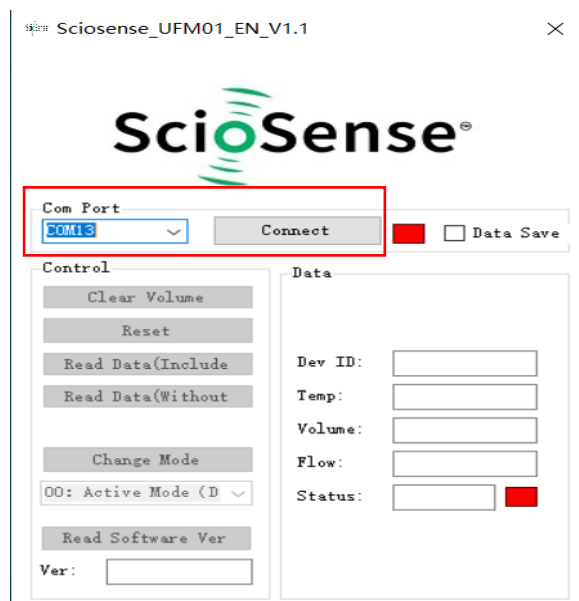
From “My Computer”, go to “Management” and then to the “Device Management”.

Figure 3: Com Port in Device Management



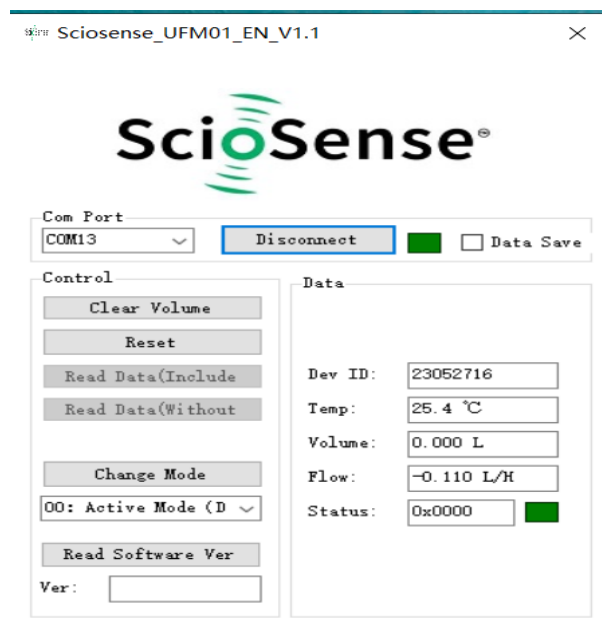
Select the Com Port and click the “**Connect**” button and then serial port data will be received.

Figure 4: Open GUI



The UFM-01 will automatically report the water flow information in default which include the water temperature, water volume ,instantaneous flow rate, module’s status and the Device ID number.

Figure 5: UFM-01 Connected



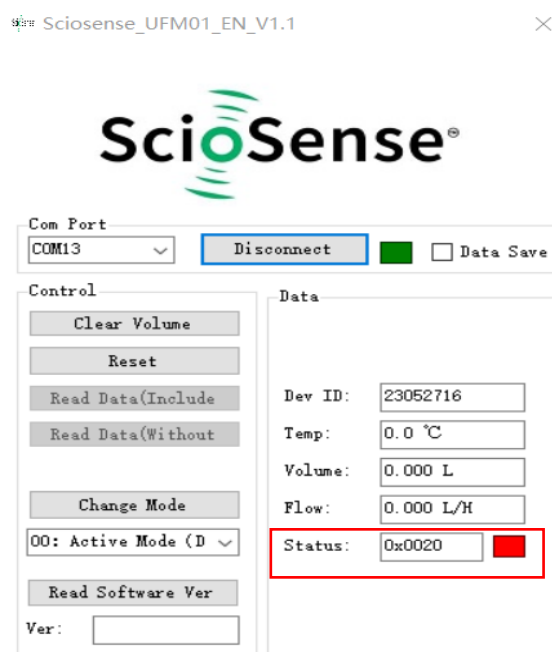
Check on the “**Data Save**” will save the water flow information in an csv file under the current file directory.

**Figure 6: Data Log**

| A             | B        | C     | D        | E        | F        | G          |
|---------------|----------|-------|----------|----------|----------|------------|
| Time          | DevID    | VerID | Volume L | Flow L/H | Temperat | Status     |
| 10:15:25:6345 | 23041207 | 1     | 0        | 0.88     | 23.7     | 0x00000000 |
| 10:15:26:6453 | 23041207 | 1     | 0        | 0.84     | 23.7     | 0x00000000 |
| 10:15:27:6429 | 23041207 | 1     | 0        | 0.82     | 23.7     | 0x00000000 |
| 10:15:28:6426 | 23041207 | 1     | 0        | 0.8      | 23.7     | 0x00000000 |
| 10:15:29:6428 | 23041207 | 1     | 0        | 0.81     | 23.7     | 0x00000000 |
| 10:15:30:6435 | 23041207 | 1     | 0        | 0.83     | 23.6     | 0x00000000 |
| 10:15:31:6337 | 23041207 | 1     | 0        | 0.87     | 23.6     | 0x00000000 |
| 10:15:32:6441 | 23041207 | 1     | 0        | 0.91     | 23.6     | 0x00000000 |
| 10:15:33:6445 | 23041207 | 1     | 0        | 0.96     | 23.6     | 0x00000000 |
| 10:15:34:6348 | 23041207 | 1     | 0        | 1.02     | 23.6     | 0x00000000 |
| 10:15:35:6344 | 23041207 | 1     | 0        | 1.06     | 23.6     | 0x00000000 |
| 10:15:36:6353 | 23041207 | 1     | 0        | 1.1      | 23.6     | 0x00000000 |
| 10:15:37:6353 | 23041207 | 1     | 0        | 1.12     | 23.6     | 0x00000000 |
| 10:15:38:6461 | 23041207 | 1     | 0        | 1.14     | 23.6     | 0x00000000 |
| 10:15:39:6373 | 23041207 | 1     | 0        | 1.11     | 23.6     | 0x00000000 |
| 10:15:40:6304 | 23041207 | 1     | 0        | 1.09     | 23.6     | 0x00000000 |
| 10:15:41:6313 | 23041207 | 1     | 0        | 1.05     | 23.6     | 0x00000000 |
| 10:15:42:6336 | 23041207 | 1     | 0        | 1        | 23.5     | 0x00000000 |
| 10:15:43:6440 | 23041207 | 1     | 0        | 0.93     | 23.5     | 0x00000000 |
| 10:15:44:6440 | 23041207 | 1     | 0        | 0.88     | 23.5     | 0x00000000 |
| 10:15:45:6436 | 23041207 | 1     | 0        | 0.82     | 23.5     | 0x00000000 |

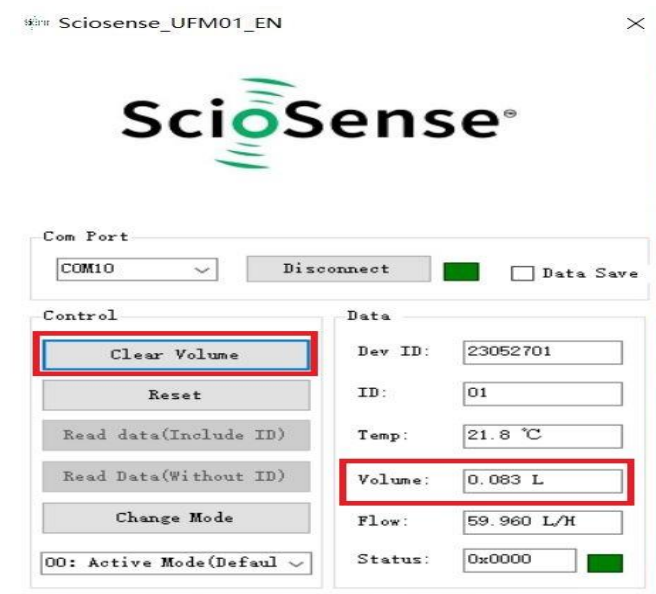
The module status will not be Zero If it encounters some issue, these errors are defined in the UFM-01 Spec, for example the following status is the empty water.

**Figure 7: Status Error**



Click the “**Clear Volume**” button will clear the module’s accumulated flow volume and the value will drop to be zero.

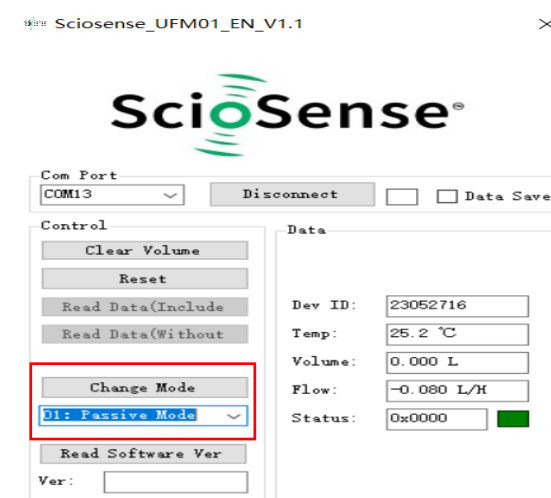
Figure 8: Clear Volume



Click the “**Reset**” button will reset the whole module and the Volume value will be kept.

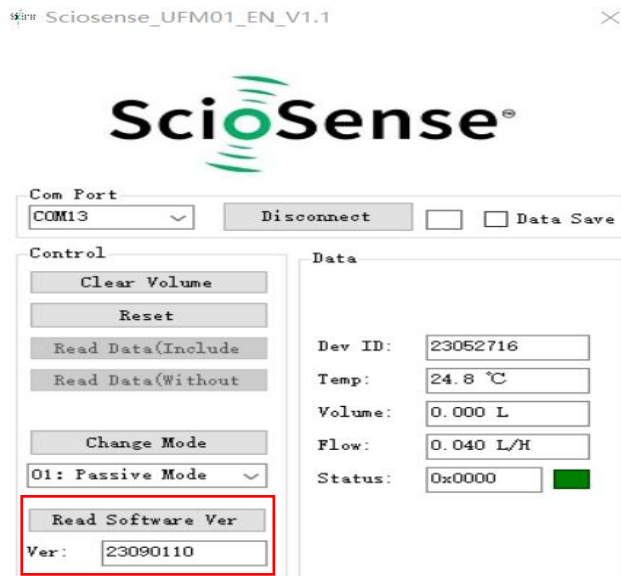
Select the “**01 Passive Mode**” and click the “**Change Mode**” button, the module will work in the Passive mode and In this mode the module will only report water flow information when it received a command after clicking the “**Read data(Include ID)**” or “**Read Data(Without ID)**” button.

Figure 9: Passive Mode



Click the “Read Software Ver” button will get the module's software version number.

**Figure 10: Read Software Version**



All the command in the “Control” and output data format are defined in the UFM-01 Spc. User can select the corresponding work mode and command according to their solutions.

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