



# TWLIT User Guide

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TWLIT, pronounced as “twilight”, is the PC software works with TWL-1S Heat Stress Detector manufactured by Scarlet Tech Co. Ltd. TWL-1S is a great device you can use for long-term monitoring and TWLIT is mainly used to setup logging parameters and download data out of the device and export the data in CSV format for your further analysis with Excel or so.

Two terms should be distinguished to avoid any confusion: (1) TWLIT, the PC software. (2) TWL-1S, the meter with black ball and wind cup. This document explains which operation applies to TWLIT and which is applicable to TWL-1S meter. If there is any ambiguity, please do not hesitate to let us know.

## History

- The latest version of TWLIT is v.0.8.8, released at 2013/Feb/21. Scarlet will release updates according to any bug fixes and user experience improvement.

## System Requirement

Operating system tested by Scarlet Tech

- Windows 7
- Windows XP SP3

Hardware requirements

- Recommended Minimum: Pentium 1 GHz or higher with 512 MB RAM or more
- Minimum disk space 20 MB

Prerequisites

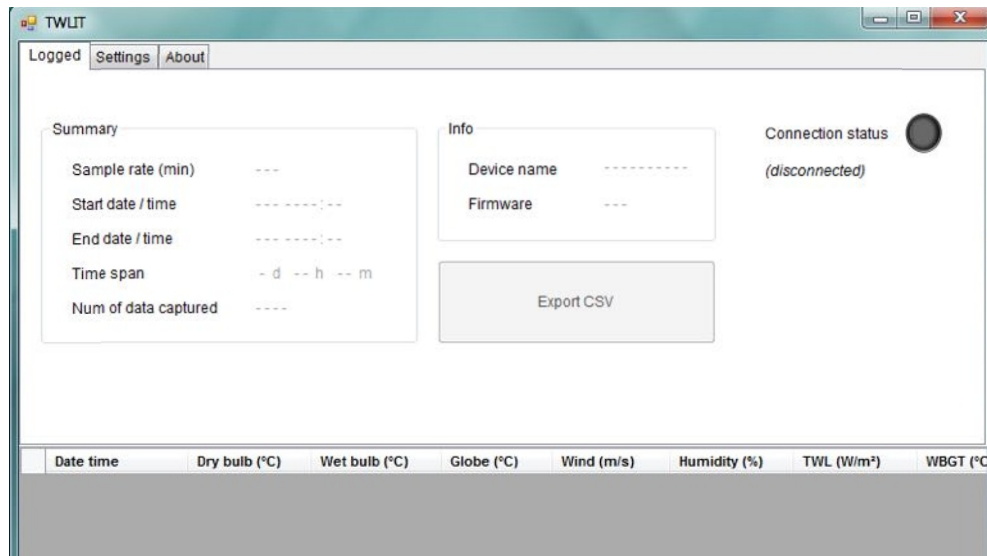
- Microsoft .NET framework 4.0 is mandatory which can be downloaded from the link <https://www.microsoft.com/en-us/download/details.aspx?id=17851>

## Installation

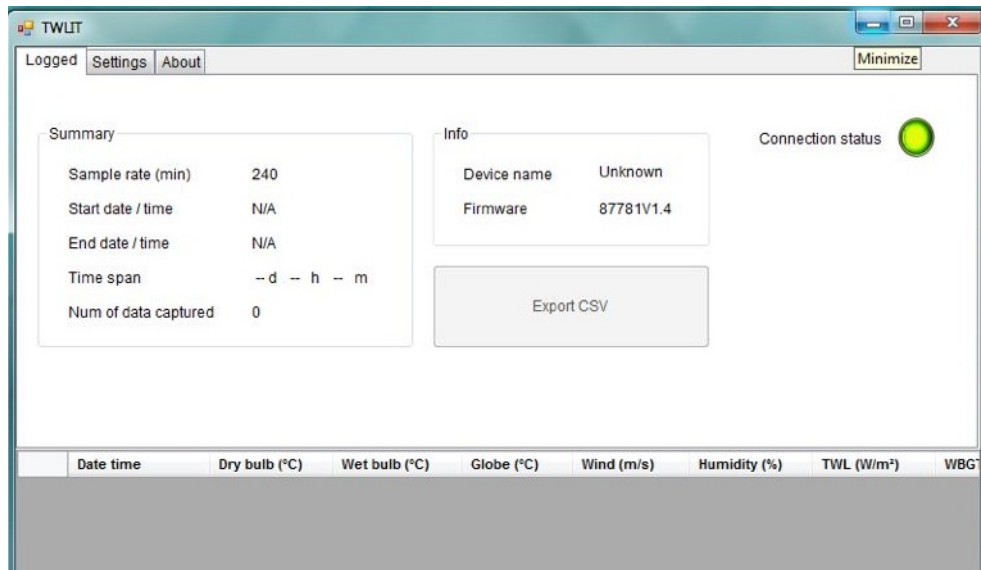
1. Download USB driver and TWLIT package from the Scarlet [www.scarlet.com.tw](http://www.scarlet.com.tw)
2. Install USB driver (CP210x\_VCP\_Win\_XP\_S2K3\_Vista\_7.exe) supplied by Silicon Laboratories, Inc. The driver was designed for Windows XP/Vista/7.
3. Install TWLIT.msi then TWL.exe can be found in Start > All programs > TWLIT > TWL.exe.

## Configure TWL-1S

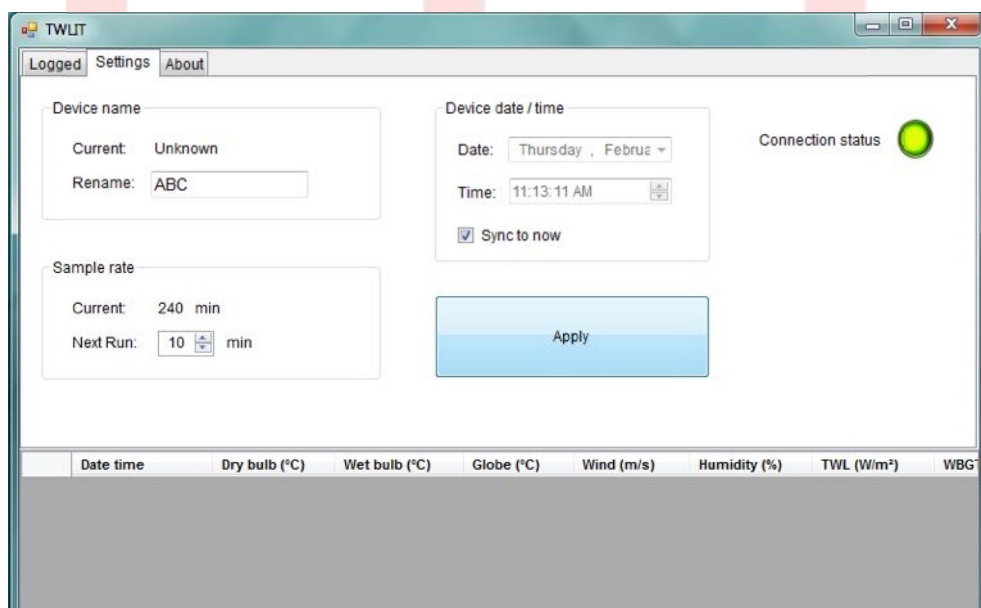
1. Turn on TWL-1S device by long press Power key for 2 seconds.  
(If you see TWL icon blinking, please wait for 60 seconds until the blinking stops).
2. Use the USB cable provided in the TWL-1S Set to connect TWL-1S device to the laptop or PC on which TWLIT program has been installed.
3. Launch the TWL.exe from Start menu > TWLIT > TWL.exe. Click “yes” if you see the warning screen asks for authority to run the program. Then, the TWLIT main screen shows.



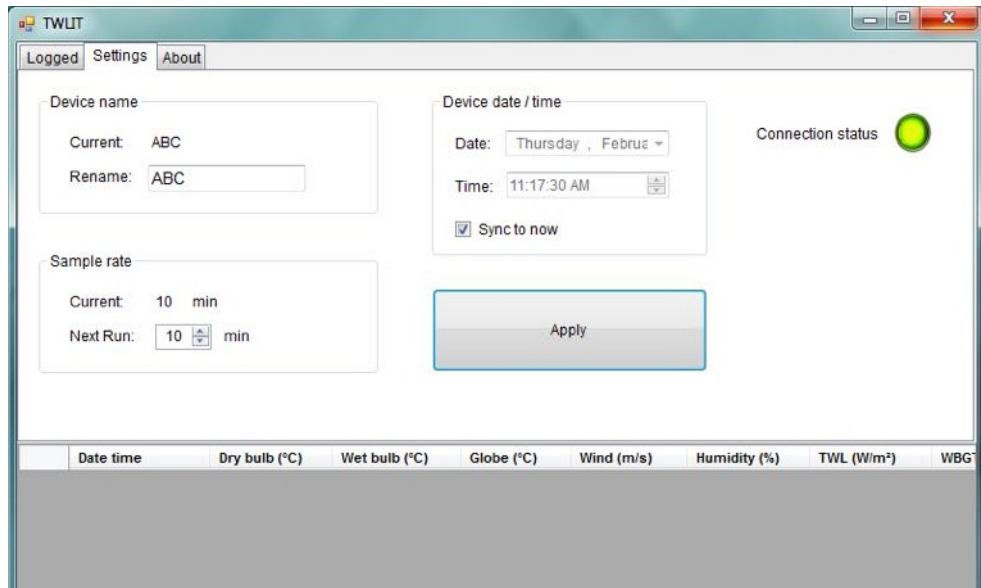
4. Now the connected device is communicating with TWLIT. Wait until the connection sign turns green, and the logging information and data will show up. The case showed below is from a brand new device: no data was captured ever.



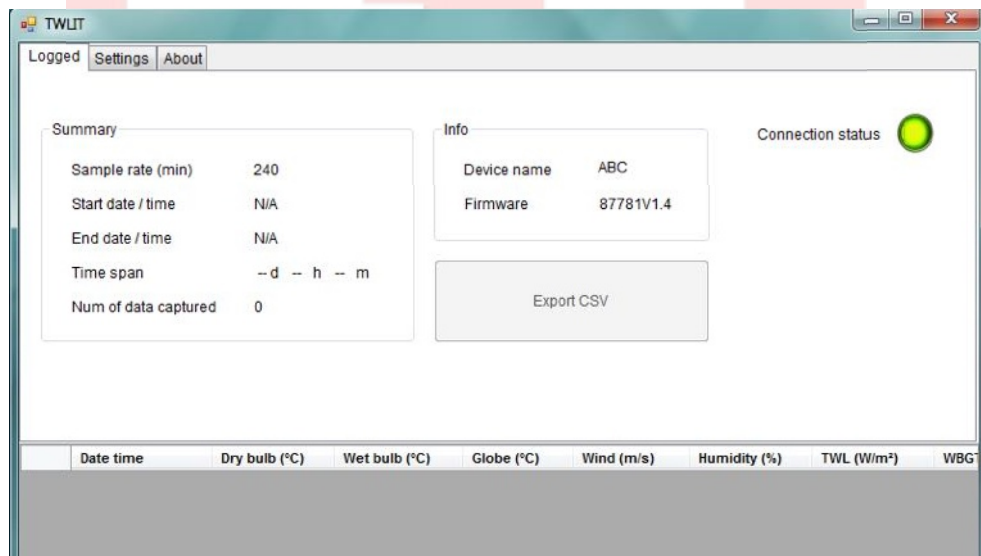
5. Go to the “Settings” tab to change “Sample rate”, “Device name”, “Device date/ time”. Click “Apply” to confirm the new settings.



6. After clicking “Apply”, new sampling rate and device name for next round of data logging will show on the screen. Now, the configuration is done.



7. Switching back to tab “Logged”. The screen still shows the previous logging information stored in the device. Because the new round of logging has not been conducted yet.



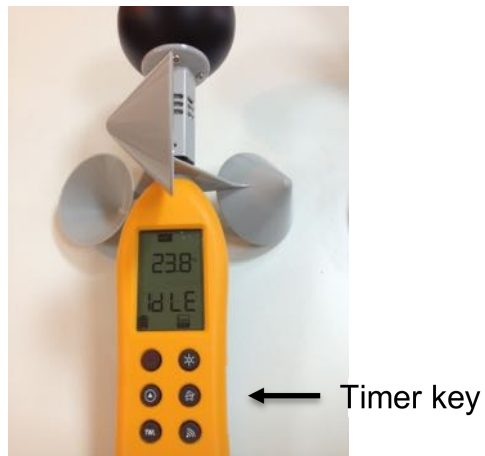
## Logging

NOTE: Before entering next data logging mode, please download the stored data first. Otherwise the old data will be overwritten. This is why the device asks you “SuRE” when you long press Mode key. Please refer to the next section for data logging, download and export.

1. Disconnect the TWL-1S device from the PC, and place the TWL-1S device on a tripod, preferably 1 meter above the ground for proper placement.
2. Long press TWL-1S Mode key to enter logging mode. Press Mode key again when the display shows SuRE. Then, rEC sign at the bottom blinks, indicating the collection of environmental data.



3. The frequency of data recording is based on the sample rate configured by TWLIT. For example, a sampling rate of 10 min means that every 10 min, the device records data once, i.e., 6 readings in an hour. *Please note that every rEC lasts for 120 sec and the data recorded are the average of the 120 sec. When IdLE shows, that means the device is not recording.*

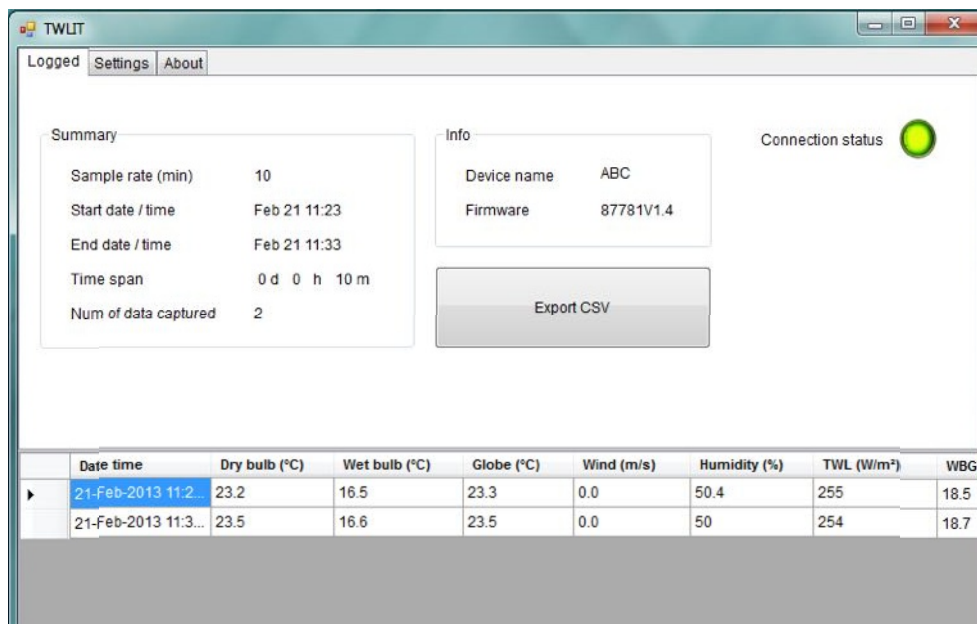


4. To quit data logging mode, long press Timer key to terminate data logging.

Do not turn off the device without quitting the data logging mode; otherwise, some data might be lost.

## Download Data

1. Turn on TWL-1S device. Make sure you are NOT in the logging mode, i.e., neither rEC nor IdLE is flashing.
2. Connect TWL-1S to the laptop or PC with the USB cable.
3. Launch TWLIT program (if it is not already on), and wait till the connection sign turns green. Then, the screen shows the logging information and the data recorded.



4. You can now export the data as CSV format by pressing “Export CSV” button, and save it for further analysis in Excel.
5. Disconnect the TWL-1S from your PC, and the screen turns grey.



The screenshot shows the TWLIT software interface. It has a menu bar with 'Logged', 'Settings', and 'About'. The main area is divided into three sections: 'Summary', 'Info', and 'Connection status'. The 'Summary' section lists: Sample rate (min) 10, Start date / time Feb 21 11:23, End date / time Feb 21 11:33, Time span 0 d 0 h 10 m, and Num of data captured 2. The 'Info' section lists: Device name ABC and Firmware 87781V1.4. The 'Connection status' section shows a disconnected status with a black circle icon and the text '(disconnected)'. Below these sections is an 'Export CSV' button. At the bottom is a table with the following data:

	Date time	Dry bulb (°C)	Wet bulb (°C)	Globe (°C)	Wind (m/s)	Humidity (%)	TWL (W/m <sup>2</sup> )	WBG
▶	21-Feb-2013 11:2...	23.2	16.5	23.3	0.0	50.4	255	18.5
	21-Feb-2013 11:3...	23.5	16.6	23.5	0.0	50	254	18.7

## More Information

Please contact Scarlet Tech for any question and technical support.  
[info@scarlet.com.tw](mailto:info@scarlet.com.tw).

