Tools and Documents

- List of Tools and Configuration Documents
- User Guide for Modbus Configuration Tool
- How to use Excel file Modbus Memmap of Co-ordinator
- Instructions for Upgrading the Firmware for Daviteq Sigfox Sensor
- Support for Flashing The Firmware in Daviteq Lorawan Sensor

List of Tools and Configuration Documents

1. Configuration Tool on PC:

1.1 Modbus Configuration Tool:

- **Version 1.0:** https://filerun.daviteq.com/wl/?id=J9cdBHxOUFhRvywyyQBu1n6zJmLhnA6u
- **Version 1.2 (with Template):** https://filerun.daviteq.com/wl/?id=RtuE0i9N8KNJ8fTVdHv4DcJEHdaDcetp
- **Version 1.4:** https://filerun.daviteq.com/wl/?id=qK0PGNbY1g1fuxTqbFW9SXtEvCw7bpc6
- **Version 2.03:** https://filerun.daviteq.com/wl/?id=yDOjE5d6kqFlGNVVlMdFg19Aad6aw0Hs

1.2 iConnector Configuration Tool:

- **Version 2.1.4:** https://filerun.daviteq.com/wl/?id=SsNWQvqmyVk3iuyM8Nwrl8EY8pOpgxQT
- **Version 2.1.5:** https://filerun.daviteq.com/wl/?id=s5QApxosVNZLbATxi0TtKVoJX4ms1PxD

1.3 Sigfox Tool:

- **SigfoxFrame-2022.02.28:** https://filerun.daviteq.com/wl/?id=Pg9BS32fTS5QElxLMVchNDeR4vgLJtVh

2. Configuration Documents:

2.1 Sub-GHz WS433 Wireless Sensor:

2.1.1 Modbus memmap:

- **Template_WR433_V1.6:** https://filerun.daviteq.com/wl/?id=YJjjobfLllV01rP9t8JxFf12564tF99r
- **Template for WS433-AC:** https://filerun.daviteq.com/wl/?id=s5QApxosVNZLbATxi0TtKVoJX4ms1PxD
- **Modbus Memmap of WS433-CL-FW_V1.9 for WS433-FW_V5.xx_200314:** https://filerun.daviteq.com/wl/?id=fnepmO8uKmnp7P5R90Iu4osu8DcZlzjp
- **Modbus Memmap of WS433-CL-FW_V1.9 for WS433-FW_V5.xx_200717:** https://filerun.daviteq.com/wl/?id=AYGwq8IvJjvV6co0R1RIg4B8YrqHi6go
- **Modbus Memmap of WS433-CL-FW_V1.9 for WS433-FW_V5.xx_200825:** https://filerun.daviteq.com/wl/?id=c6GtCgBuFowZthBDM0KVsCxsPyZ83U68
- **Modbus Memmap of WS433-CL newest version:** https://filerun.daviteq.com/wl/?id=BKEaUzdArkoc0Hc7nfpRShdPVToVrqQZ

2.1.2 WS433 Wireless sensor:

- **WR433-AP-EN-12-Template_WR433_ULA_V1.0.csv:** https://filerun.daviteq.com/wl/?id=BOfpTe7woBFbNULuHqsLhlJI4GmZ33fi
- **WR433-AP-EN-08_Template_WR433_V2.0.csv:** https://filerun.daviteq.com/wl/?id=hgrjOg3wwvyrvAZ54p8iZiFpDyXTcnec
- **Excel file calculate a and b (calc_ab.xlsx):** https://filerun.daviteq.com/wl/?id=qTEXAavKl1dSbnkbUgSAQXdK2jEtr1qA
- **CONFIGURATION TEMPLATE FILE FOR RD26.csv:** https://filerun.daviteq.com/wl/?id=1ZNVkHMxCTj0fxWZXrwtWbrr2MYfSc3S
- **WR433-AP-EN-11-Template_WR433_V1A_V1.0.csv:** https://filerun.daviteq.com/wl/?id=ItFaeQgtCmXN98J7GaPdeZvKK5eS1Dd1

2.2 Sigfox sensor:

- **Configuration Template File For Sigfox WSSFC-AI FW1.9.3:** https://filerun.daviteq.com/wl/?id=nZTEYrkbpTqPNXnRZeUwkXpQnMFLmuAQ

- **WSSFC-AP-EN-01-Template_WSSFC_AG_V1.0.csv: https://filerun.daviteq.com/wl/?id=kQ8a6XqmkfOed2cmMT8y11ZITxxBz6Tu**
- **NH3 Sensor-2021.10.30-Template-V1.2.csv: https://filerun.daviteq.com/wl/?id=R0KxkPxLCDikuPEyu3uM8XhdX8kjcQXr**
- **CONFIGURATION TEMPLATE FILE FOR SIGFOX WSSFC-V1A.csv: https://filerun.daviteq.com/wl/?id=xjsWFgfbOwfKls3WKAyqLDUrzilbwgc4**
- **CONFIGURATION TEMPLATE FILE FOR SIGFOX WSSFCEX-EVC FW1.9.3.csv: https://filerun.daviteq.com/wl/?id=qznJW83Ie9vVhDdITcN1bCKTfeXCiXke**
- **CONFIGURATION TEMPLATE FILE FOR SIGFOX WSSFCEX-PPS FW1.9.3.csv: https://filerun.daviteq.com/wl/?id=fnyrJTMBkHZMaYmdkuhSUhvXtzqdbkHg**

2.4 LoRaWAN sensor:

- **CONFIGURATION TEMPLATE FILE FOR WSLRW-SMT-ULB-ULC FW1.0.csv: https://filerun.daviteq.com/wl/?id=y266zlX9PnjB46LZt5nupMQKZPc6j3dW**
- **CONFIGURATION TEMPLATE FILE FOR LORAWAN SENSOR FW1.0.csv : https://filerun.daviteq.com/wl/?id=OrusBxds6ZCYB64paNKp6XWTtNsi84Kh**

2.3 Modbus RTU sensor:

- **CONFIGURATION TEMPLATE FILE FOR MBRTU-PODO V1.0.csv: https://filerun.daviteq.com/wl/?id=ijcWTpXwzz0IiAsfO7rInrXQ1LeBdwJu**
- **CONFIGURATION TEMPLATE FILE FOR MBRTU-I2C.csv: https://filerun.daviteq.com/wl/?id=pTlOMMJNK1wF9JBszKybiupqoeWapD58**

User Guide for Modbus Configuration Tool

AUG-2020

Daviteq Modbus Configuration Tool

HW Ver.	Release Date
1.0	NOV-2019
1.4	OCT-2020
2.03	DEC-2021

1. Install Tool

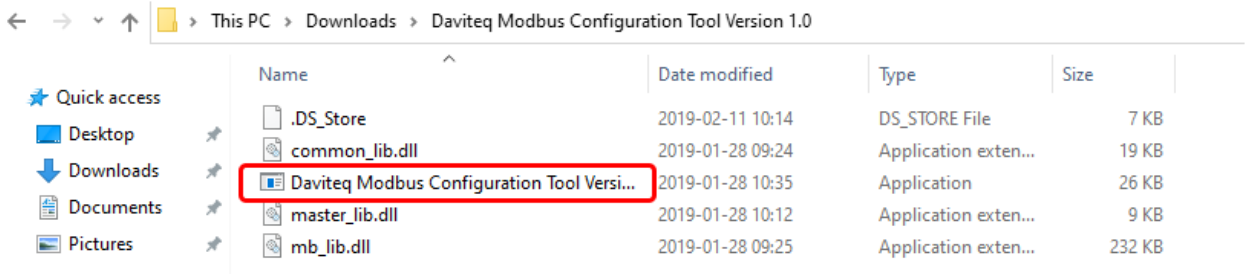
1.1 Download Tool

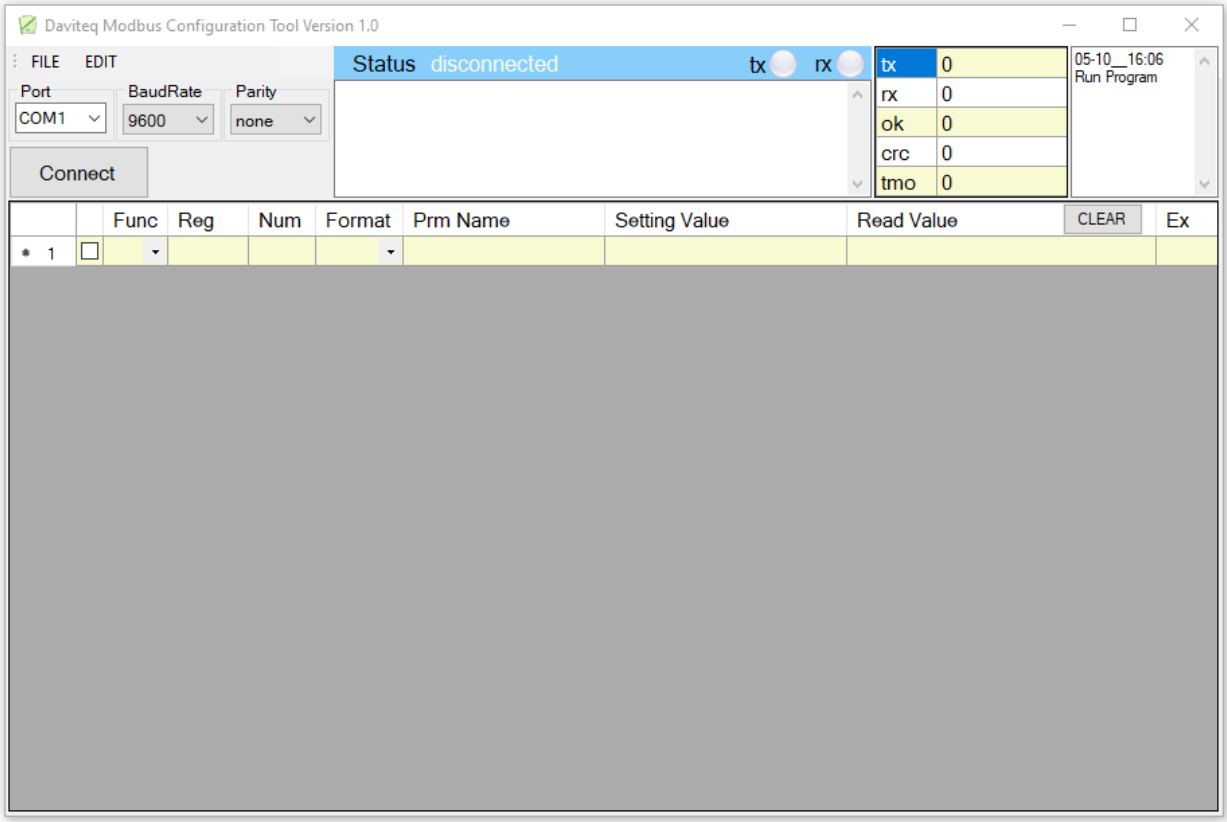
Install the Modbus Configuration Software in the link below

https://filerun.daviteq.com/wl/?id=yDOjE5d6kqFlGNVVlMdFg19Aad6aw0Hs

2.2 Running Tool

After unzip file, open the folder and run the application (**Daviteq Modbus Configuration Tool Version**).





2. Configuration

2.1 Connection

Step 1: Connect the configuration cable to the PC and Modbus device.

USB-RS485 CONFIGURATION CABLE



STHC-ISG02DB-WS433-CL-04-H8.PNG

CONNECT RS485 - CONFIGURATION
TO COMPUTER via USB

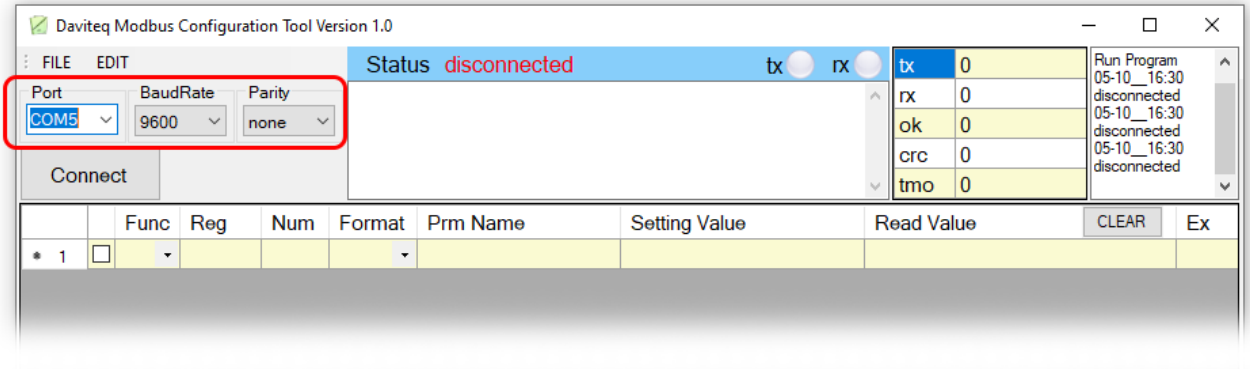


STHC-ISG02DB-WS433-CL-04-H13.PNG





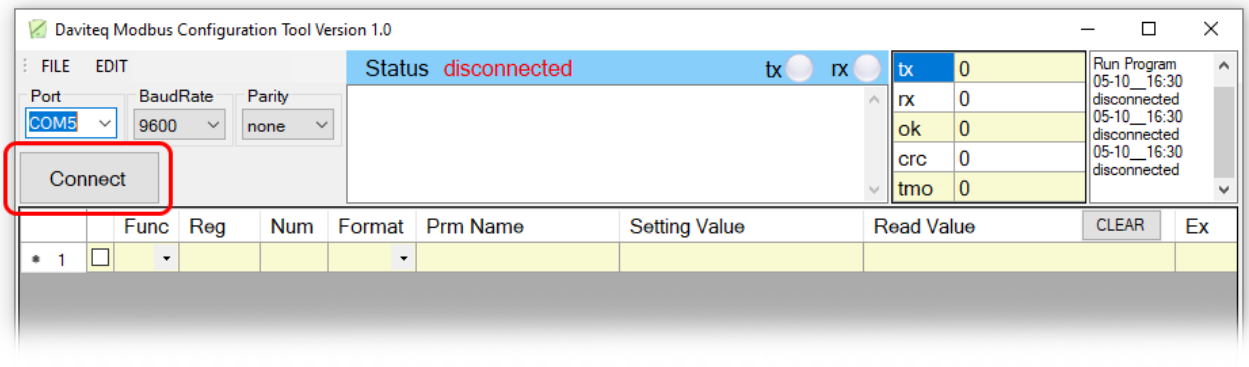
Step 2: Choose **COM Port** (the Port which is USB cable plugged in). Set the**BaudRate: 9600, Parity: none**

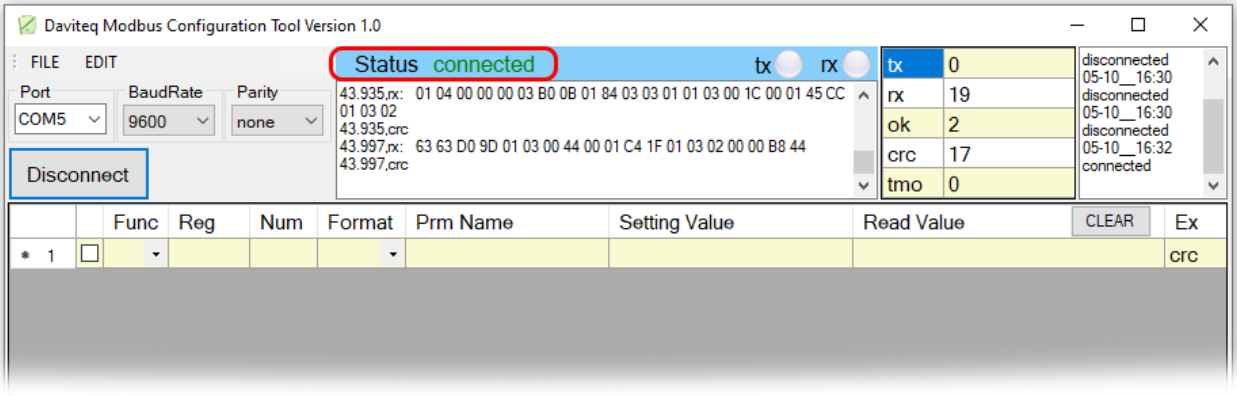


If you don't see any COM port in the list, please download the following driver and install

Modbus Configuration Cable COM port driver for PC
How to install driver

Step 3: Click " **Connect** " untill the Status displays "**disconnected**" to "**connected**". It means the Modbus device is being connected with computer;

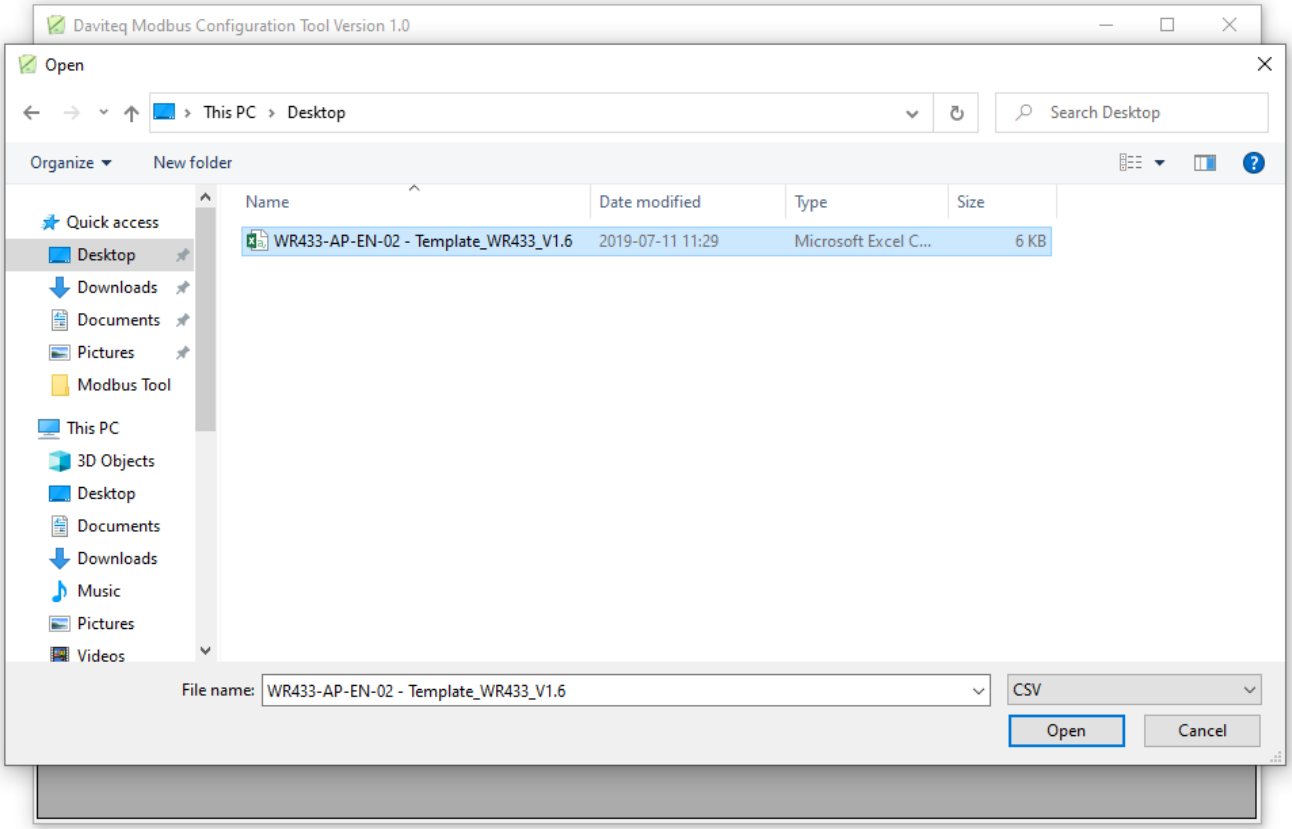


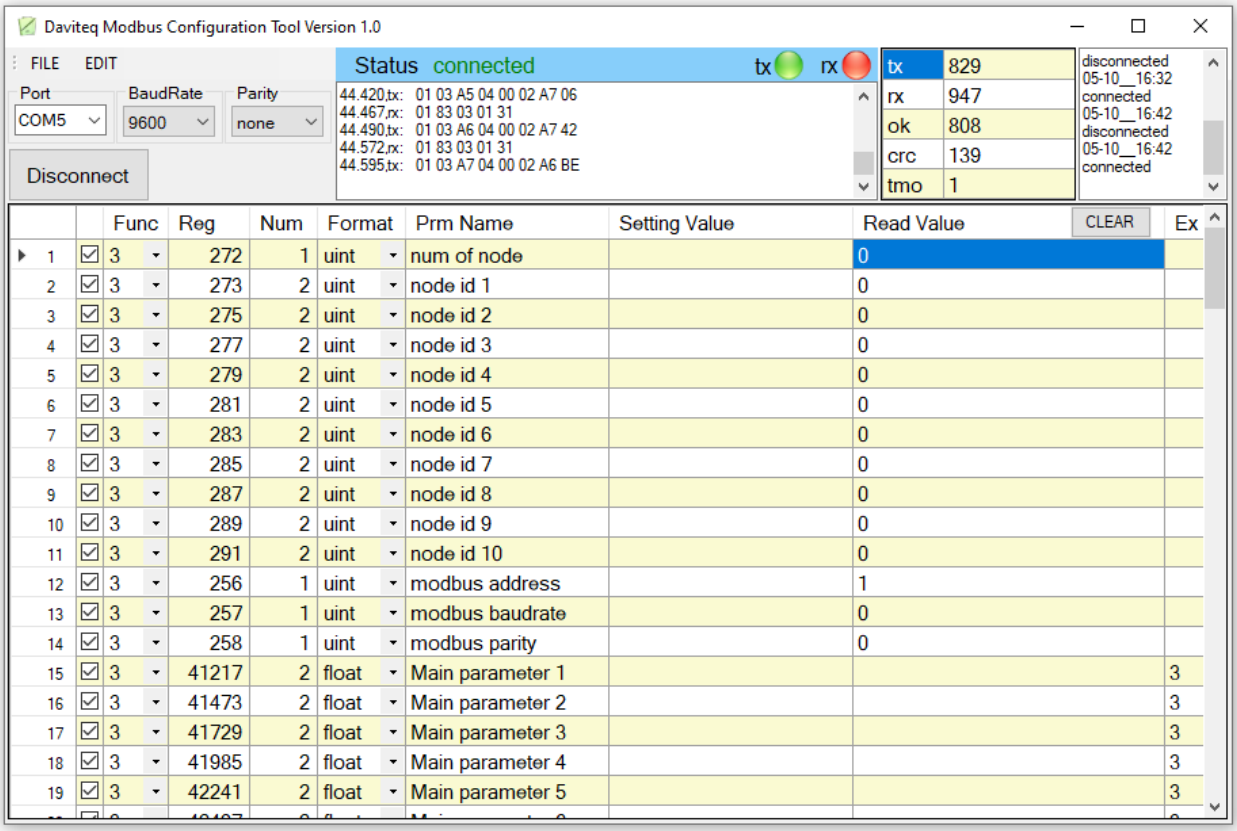


Step 4: Import the configuration file for Modbus Device by importing the csv file: Go to MENU: FILE / Import New /

Then select the template file.

Example: We import template file of Wireless Co-ordinator WR433-AP-EN-02 - Template_WR433_V1.6.csv





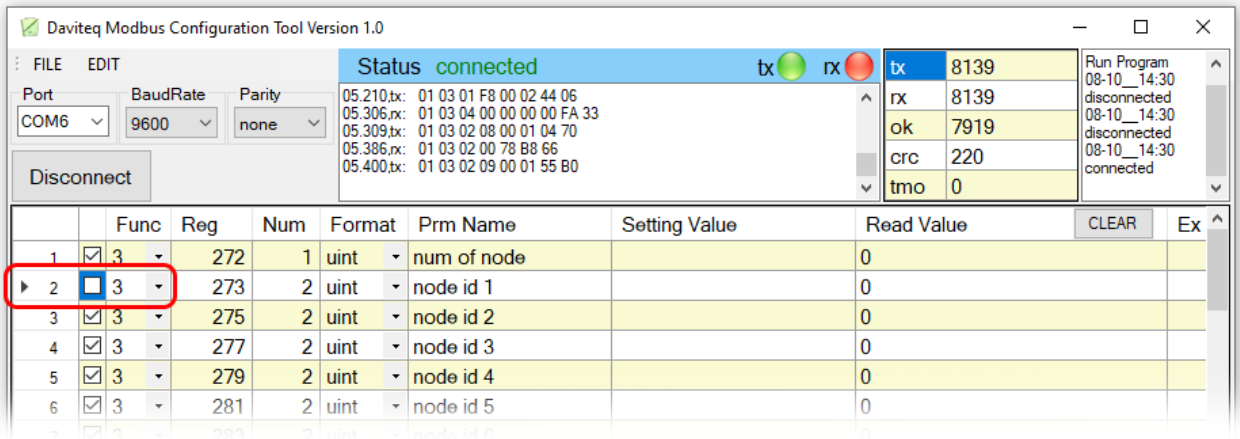
There are 3 Function:

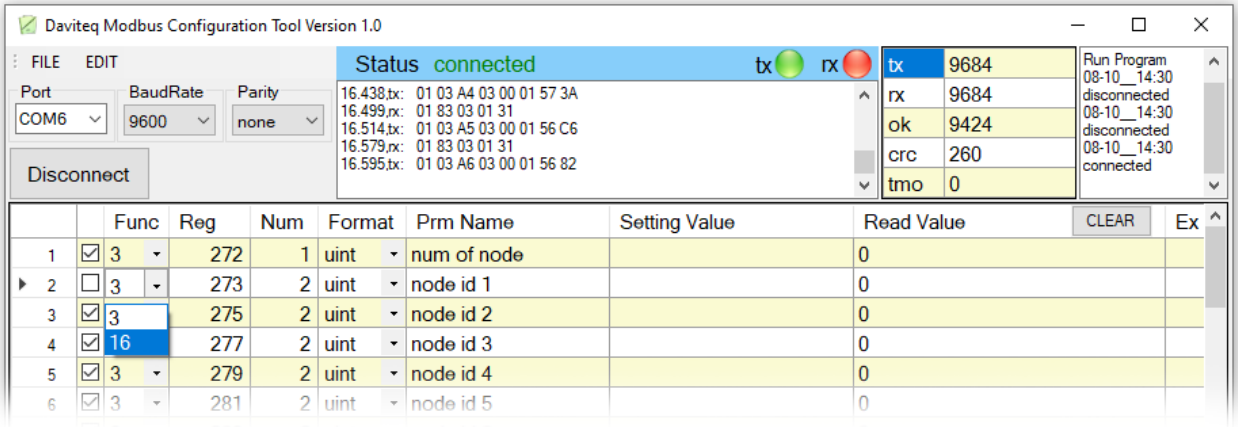
- Function **3**: Read holding registers
- Function **4**: Read input registers
- Function **16**: Preset Multiple registers

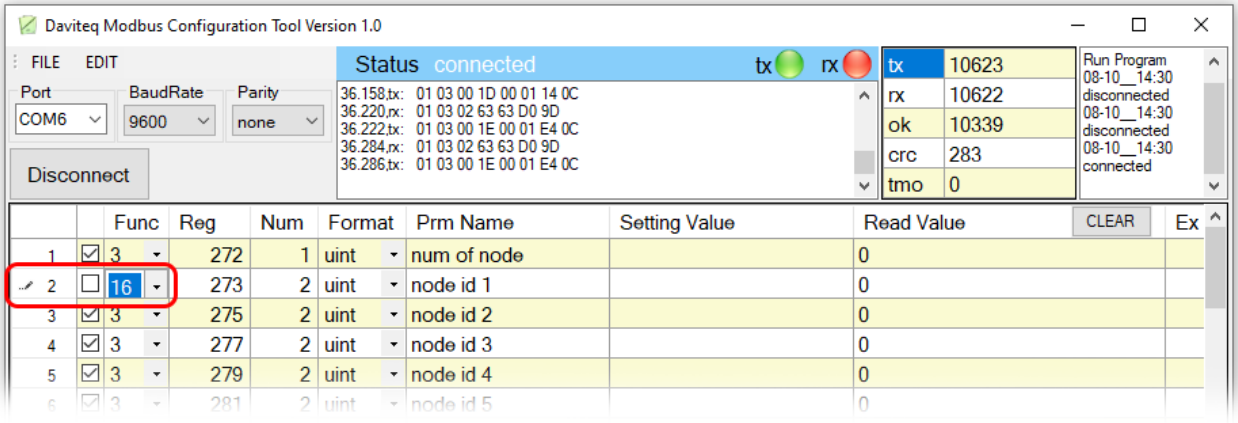
2.1 Write Value into Modbus Device with Function 16

Example: We change the value **Node id 1** from **0** to **12345678** using Func 16.

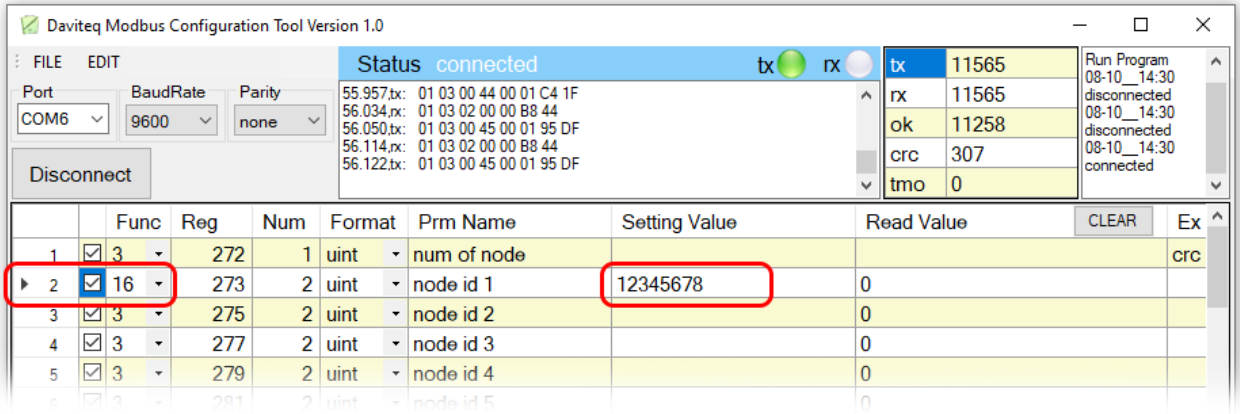
Step 1: Uncheck Func 3, then Click on the arrow and change Func from **3** to **16;**



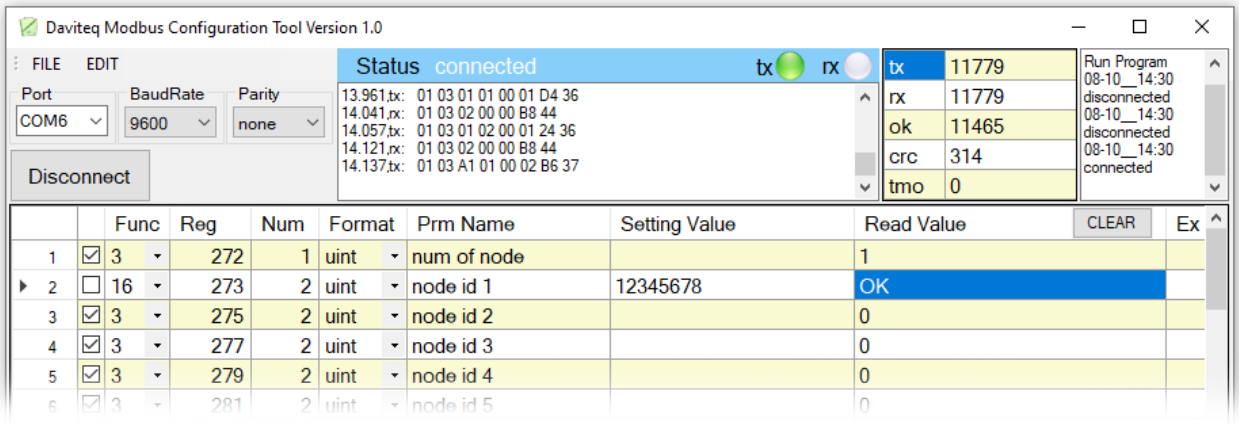




Step 2: Type in **Setting Value** the **Node id 1**, then check the Func 16 box.



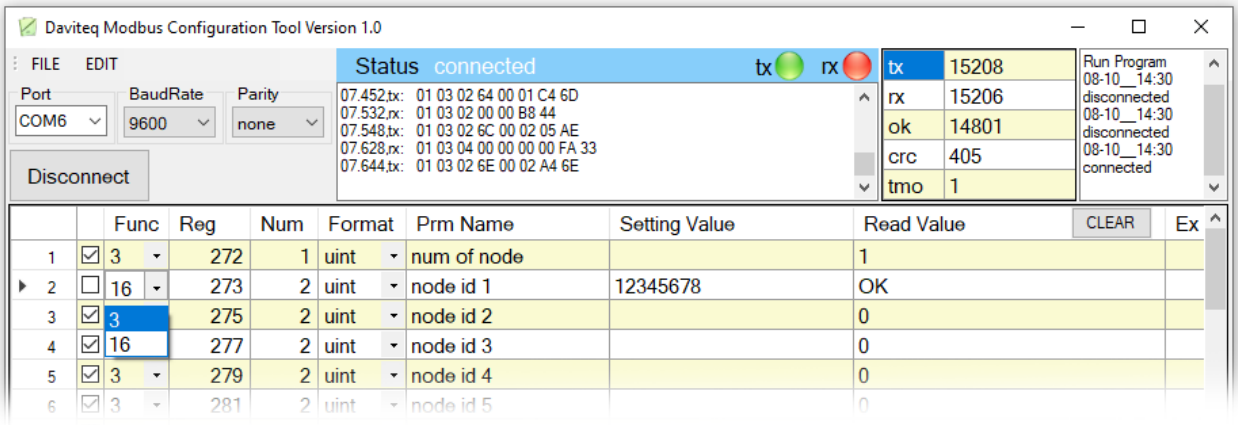
if **Read Value** show **OK** which mean it's wrote successful.



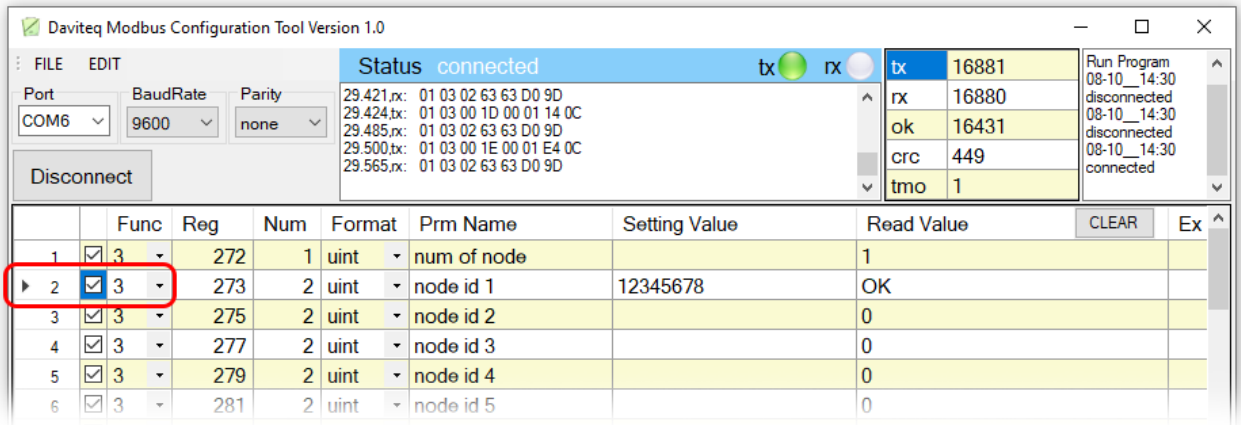
2.1 Read Value from Modbus Device with Function 3

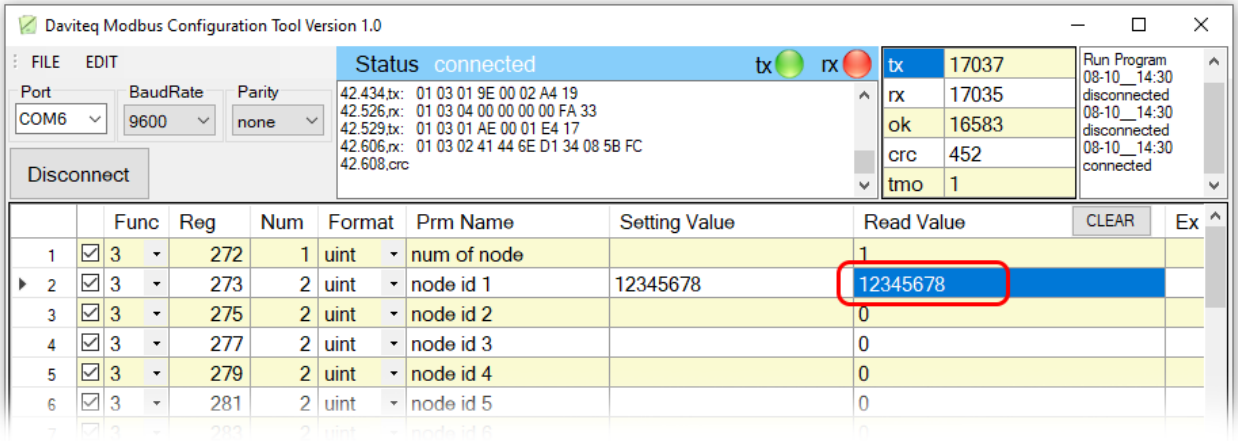
After writing the value, we will check the value entered with Func 3.**Func 3** is used to read holding registers.

Step 1: Click on the arrow and change Func from**16** to **3.**



Step 2: Check the box of Func 3. If it shows that the value in**Read Value** is the same as the value entered, it means that the data entered was successful.





3. Troubleshooting

No.	Phenomena	Reason	Solutions
1	Cannot connect to software	• The COM port selected is incorrect. • Modbus cannot be connected to the device.	• Check Modbus connection • Select the correct COM port to which the configuration cable connects to the computer
2	COM port does not appear in the select list	• Have not updated window to the latest version • Driver not installed	• Update to the latest version for window • Install driver for PC
3	Cannot see any register on software	The template file has not been imported	Go to File/Import New to import the template file
4	See registers that do not match the memmap table of the device rs485 or sensor is configuring	The template file imported incorrectly	Go to the correct manual page of the product configuring and download the template file, then import the template file into the software

4. Support contacts

Manufacturer

Daviteq Technologies Inc
No.11 Street 2G, Nam Hung Vuong Res., An Lac Ward,
Binh Tan Dist., Ho Chi Minh City, Vietnam.
Tel: +84-28-6268.2523/4 (ext.122)
Email: info@daviteq.com | www.daviteq.com

Distributor in **Australia** and **New Zealand**

Templogger Pty Ltd
Tel: 1800 LOGGER
Email: contact@templogger.net

How to use Excel file Modbus Memmap of Co-ordinator

FEB-2022

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1. Introduce

When we add a sensor to the Co-ordinator WS433-CL or iConnector integrated Co-ordinator, the added sensor will be in the corresponding Modbus area in the Co-ordinator. The sensor's Modbus area can be monitored with our excel file. You can then read the data from the respective Modbus addresses using the PLC,HMI,... or use our Modbus Configuration Tool to view the values from the sensor.

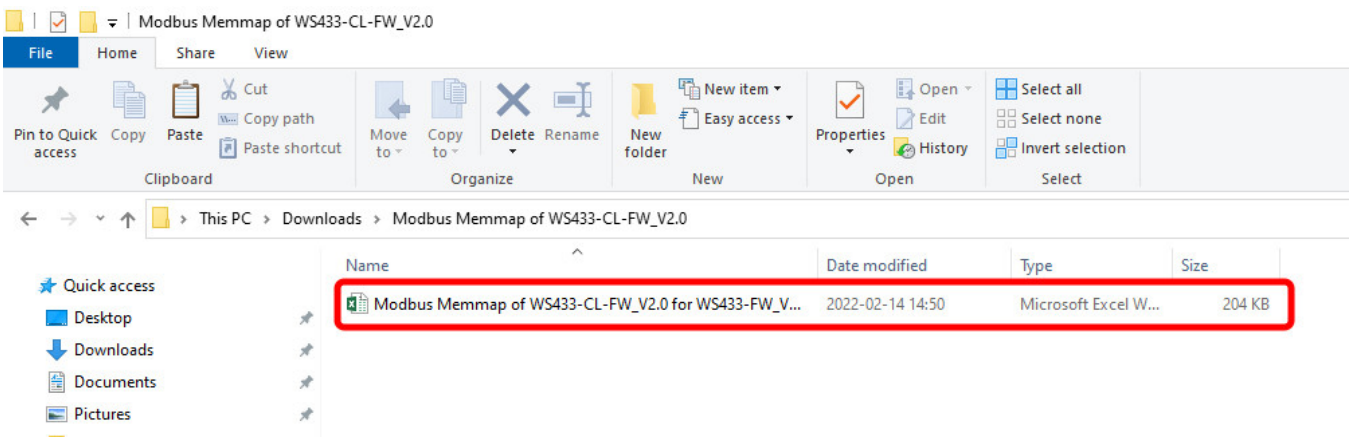
1.1 Download Excel file

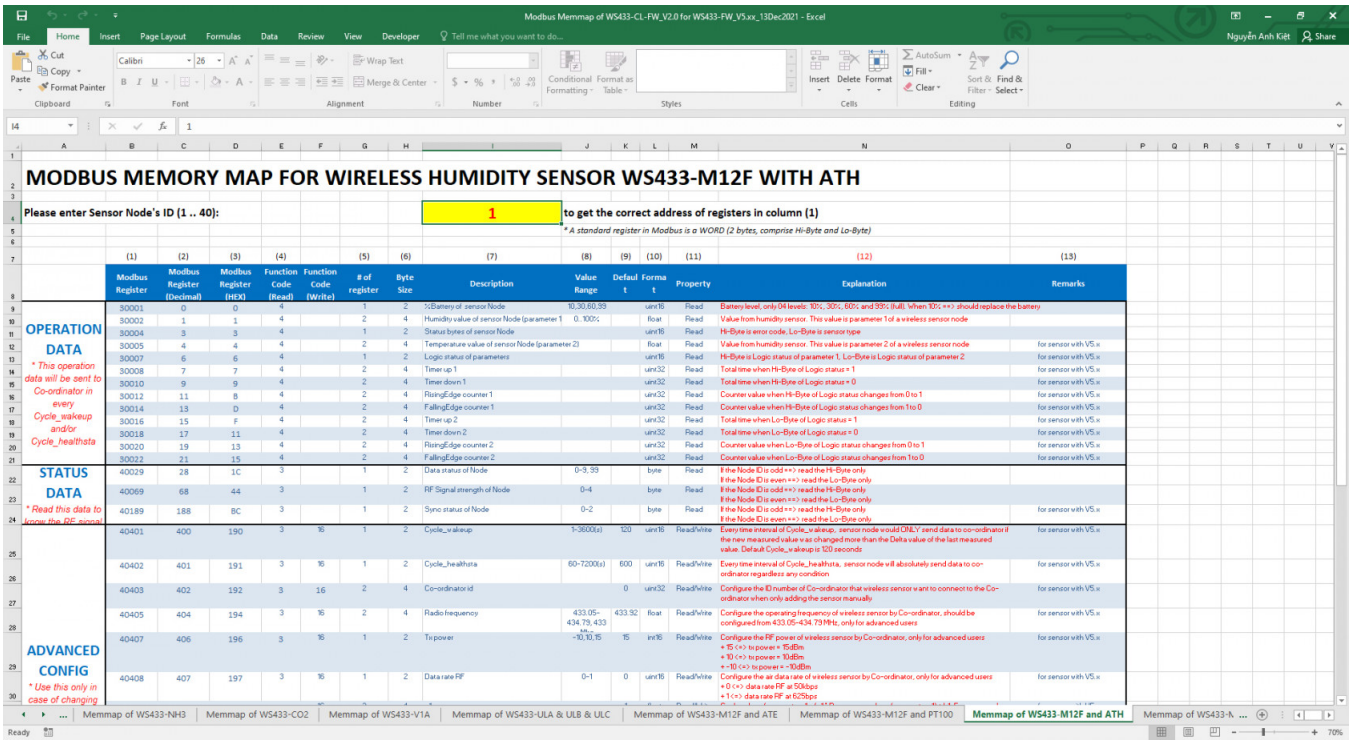
Download the Modbus Memmap Excel file in the link below:

https://filerun.daviteq.com/wl/?id=BKEaUzdArkoc0Hc7nfpRShdPVToVrqQZ

1.2 Excel file

After **unzip** file, open the excel file (**Modbus Memmap of WS433-CL-FW_V**xx)





MODBUS MEMORY MAP FOR WIRELESS HUMIDITY SENSOR WS433-M12F WITH ATH

Please enter Sensor Node's ID (1 .. 40): 1 to get the correct address of registers in column (1)

* A standard register in Modbus is a WORD (2 bytes, comprise Hi-Byte and Lo-Byte)

	(1) Modbus Register	(2) Modbus Register (Decimal)	(3) Modbus Register (HEX)	(4) Function Code (Read)	Function Code (Write)	(5) # of register	(6) Byte Size	(7) Description	(8) Value Range	(9) Default	(10) Format	(11) Property	(12) Explanation	(13) Remarks
OPERATION DATA * This operation data will be sent to Co-ordinator in every Cycle_wakeup and/or Cycle_healthsta	30001	0	0	4		1	2	%Battery of sensor Node	10,30,60,99		uint16	Read	Battery level, only 04 levels: 10%, 30%, 60% and 99% (full). When 10% => should replace the battery	
	30002	1	1	4		2	4	Humidity value of sensor Node (parameter 1	0..100%		float	Read	Value from humidity sensor. This value is parameter 1of a wireless sensor node	
	30004	3	3	4		1	2	Status bytes of sensor Node			uint16	Read	Hi-Byte is error code, Lo-Byte is sensor type	
	30005	4	4	4		2	4	Temperature value of sensor Node (parameter 2)			float	Read	Value from humidity sensor. This value is parameter 2 of a wireless sensor node	for sensor with V5.x
	30007	6	6	4		1	2	Logic status of parameters			uint16	Read	Hi-Byte is Logic status of parameter 1, Lo-Byte is Logic status of parameter 2	for sensor with V5.x
	30008	7	7	4		2	4	Timer up 1			uint32	Read	Total time when Hi-Byte of Logic status = 1	for sensor with V5.x
	30010	9	9	4		2	4	Timer down 1			uint32	Read	Total time when Hi-Byte of Logic status = 0	for sensor with V5.x
	30012	11	B	4		2	4	RisingEdge counter 1			uint32	Read	Counter value when Hi-Byte of Logic status changes from 0 to 1	for sensor with V5.x
	30014	13	D	4		2	4	FallingEdge counter 1			uint32	Read	Counter value when Hi-Byte of Logic status changes from 1to 0	for sensor with V5.x
	30016	15	F	4		2	4	Timer up 2			uint32	Read	Total time when Lo-Byte of Logic status = 1	for sensor with V5.x
	30018	17	11	4		2	4	Timer down 2			uint32	Read	Total time when Lo-Byte of Logic status = 0	for sensor with V5.x
	30020	19	13	4		2	4	RisingEdge counter 2			uint32	Read	Counter value when Lo-Byte of Logic status changes from 0 to 1	for sensor with V5.x
	30022	21	15	4		2	4	FallingEdge counter 2			uint32	Read	Counter value when Lo-Byte of Logic status changes from 1to 0	for sensor with V5.x
STATUS DATA * Read this data to know the RF signal	40029	28	1C	3		1	2	Data status of Node	0-9, 99		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	
	40069	68	44	3		1	2	RF Signal strength of Node	0-4		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	
	40189	188	BC	3		1	2	Sync status of Node	0-2		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	for sensor with V5.x
ADVANCED CONFIG * Use this only in case of changing	40401	400	190	3	16	1	2	Cycle_wakeup	1-3600(s)	120	uint16	Read/Write	Every time interval of Cycle_wakeup, sensor node would ONLY send data to co-ordinator if the new measured value was changed more than the Delta value of the last measured value. Default Cycle_wakeup is 120 seconds	for sensor with V5.x
	40402	401	191	3	16	1	2	Cycle_healthsta	60-7200(s)	600	uint16	Read/Write	Every time interval of Cycle_healthsta, sensor node will absolutely send data to co-ordinator regardless any condition	for sensor with V5.x
	40403	402	192	3	16	2	4	Co-ordinator id		0	uint32	Read/Write	Configure the ID number of Co-ordinator that wireless sensor want to connect to the Co-ordinator when only adding the sensor manually	for sensor with V5.x
	40405	404	194	3	16	2	4	Radio frequency	433.05-434.79, 433	433.92	float	Read/Write	Configure the operating frequency of wireless sensor by Co-ordinator, should be configured from 433.05-434.79 MHz, only for advanced users	for sensor with V5.x
	40407	406	196	3	16	1	2	Tx power	-10,10,15	15	int16	Read/Write	Configure the RF power of wireless sensor by Co-ordinator, only for advanced users + 15 (=) tx power = 15dBm + 10 (=) tx power = 10dBm + -10 (=) tx power = -10dBm	for sensor with V5.x
	40408	407	197	3	16	1	2	Data rate RF	0-1	0	uint16	Read/Write	Configure the air data rate of wireless sensor by Co-ordinator, only for advanced users + 0 (=) data rate RF at 50kbps + 1 (=) data rate RF at 625bps	for sensor with V5.x

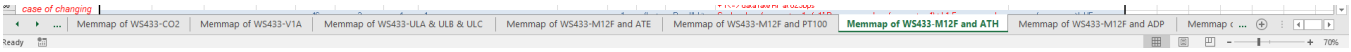
Memmap of WS433-NH3 | Memmap of WS433-CO2 | Memmap of WS433-V1A | Memmap of WS433-ULA & ULB & ULC | Memmap of WS433-M12F and ATE | Memmap of WS433-M12F and PT100 | Memmap of WS433-M12F and ATH | Memmap of WS433-N ...

Ready 70%

2. How to use

- We will choose the sheet that matches the sensor in use

Example: Choosing **WS433-M12F and ATH** sheet for **WS433-M12F-ATH** or **WS433-ATH**



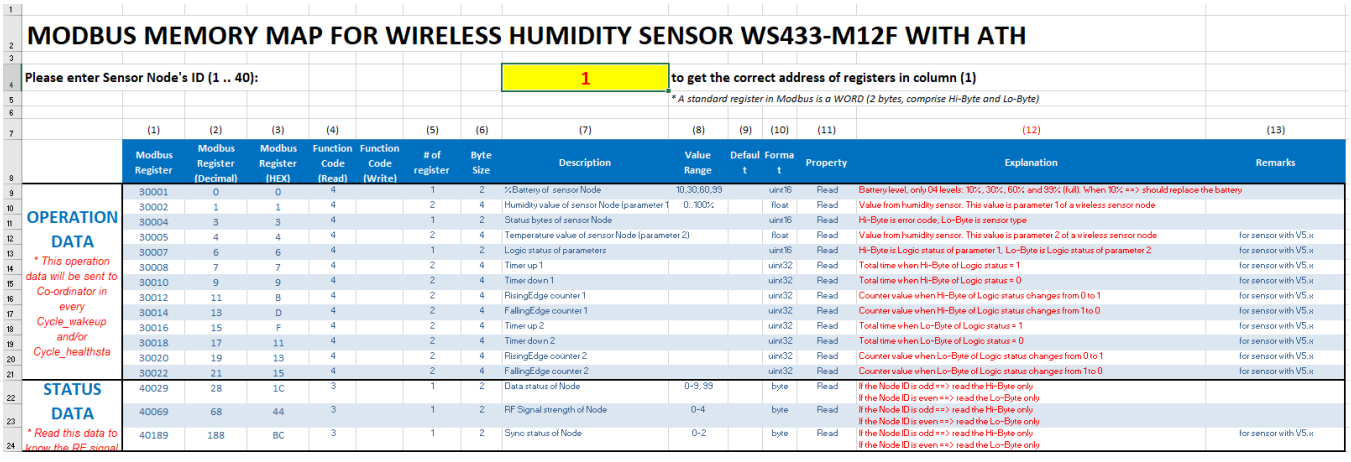
case of changing

Memmap of WS433-CO2 | Memmap of WS433-V1A | Memmap of WS433-ULA & ULB & ULC | Memmap of WS433-M12F and ATE | Memmap of WS433-M12F and PT100 | Memmap of WS433-M12F and ATH | Memmap of WS433-M12F and ADP | Memmap (...

Ready 70%

- We write in the number where the sensor has been added to the Co-ordinator in the yellow frame to get the register address.

Example 1: WS433-ATH is the first sensor to be added, so it has a position of **1**



MODBUS MEMORY MAP FOR WIRELESS HUMIDITY SENSOR WS433-M12F WITH ATH

Please enter Sensor Node's ID (1 .. 40): 1 to get the correct address of registers in column (1)

* A standard register in Modbus is a WORD (2 bytes, comprise Hi-Byte and Lo-Byte)

	(1) Modbus Register	(2) Modbus Register (Decimal)	(3) Modbus Register (HEX)	(4) Function Code (Read)	Function Code (Write)	(5) # of register	(6) Byte Size	(7) Description	(8) Value Range	(9) Default	(10) Format	(11) Property	(12) Explanation	(13) Remarks
OPERATION DATA * This operation data will be sent to Co-ordinator in every Cycle_wakeup and/or Cycle_healthsta	30001	0	0	4		1	2	%Battery of sensor Node	10,30,60,99		uint16	Read	Battery level, only 04 levels: 10%, 30%, 60% and 99% (full). When 10% => should replace the battery	
	30002	1	1	4		2	4	Humidity value of sensor Node (parameter 1	0..100%		float	Read	Value from humidity sensor. This value is parameter 1of a wireless sensor node	
	30004	3	3	4		1	2	Status bytes of sensor Node			uint16	Read	Hi-Byte is error code, Lo-Byte is sensor type	
	30005	4	4	4		2	4	Temperature value of sensor Node (parameter 2)			float	Read	Value from humidity sensor. This value is parameter 2 of a wireless sensor node	for sensor with V5.x
	30007	6	6	4		1	2	Logic status of parameters			uint16	Read	Hi-Byte is Logic status of parameter 1, Lo-Byte is Logic status of parameter 2	for sensor with V5.x
	30008	7	7	4		2	4	Timer up 1			uint32	Read	Total time when Hi-Byte of Logic status = 1	for sensor with V5.x
	30010	9	9	4		2	4	Timer down 1			uint32	Read	Total time when Hi-Byte of Logic status = 0	for sensor with V5.x
	30012	11	B	4		2	4	RisingEdge counter 1			uint32	Read	Counter value when Hi-Byte of Logic status changes from 0 to 1	for sensor with V5.x
	30014	13	D	4		2	4	FallingEdge counter 1			uint32	Read	Counter value when Hi-Byte of Logic status changes from 1to 0	for sensor with V5.x
	30016	15	F	4		2	4	Timer up 2			uint32	Read	Total time when Lo-Byte of Logic status = 1	for sensor with V5.x
	30018	17	11	4		2	4	Timer down 2			uint32	Read	Total time when Lo-Byte of Logic status = 0	for sensor with V5.x
	30020	19	13	4		2	4	RisingEdge counter 2			uint32	Read	Counter value when Lo-Byte of Logic status changes from 0 to 1	for sensor with V5.x
	30022	21	15	4		2	4	FallingEdge counter 2			uint32	Read	Counter value when Lo-Byte of Logic status changes from 1to 0	for sensor with V5.x
STATUS DATA * Read this data to know the RF signal	40029	28	1C	3		1	2	Data status of Node	0-9, 99		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	
	40069	68	44	3		1	2	RF Signal strength of Node	0-4		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	
	40189	188	BC	3		1	2	Sync status of Node	0-2		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	for sensor with V5.x

Example 2: WS433-ATH is the third sensor to be added, so it has a position of **3**

MODBUS MEMORY MAP FOR WIRELESS HUMIDITY SENSOR WS433-M12F WITH ATH

Please enter Sensor Node's ID (1 .. 40): **3** **to get the correct address of registers in column (1)**

** A standard register in Modbus is a WORD (2 bytes, comprise Hi-Byte and Lo-Byte)*

	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Modbus Register	Modbus Register (Decimal)	Modbus Register (HEX)	Function Code (Read)	Function Code (Write)	# of register	Byte Size	Description	Value Range	Default	Format	Property	Explanation	Remarks
OPERATION DATA * This operation data will be sent to Co-ordinator in every Cycle_wakeup and/or Cycle_healthsta	30065	64	40	4		1	2	%Battery of sensor Node	10,30,60,99		uint16	Read	Battery level, only 04 levels: 10%, 30%, 60% and 99% (full). When 10% ==> should replace the battery	
	30066	65	41	4		2	4	Humidity value of sensor Node (parameter 1	0..100%		float	Read	Value from humidity sensor. This value is parameter 1 of a wireless sensor node	
	30068	67	43	4		1	2	Status bytes of sensor Node			uint16	Read	Hi-Byte is error code, Lo-Byte is sensor type	
	30069	68	44	4		2	4	Temperature value of sensor Node (parameter 2)			float	Read	Value from humidity sensor. This value is parameter 2 of a wireless sensor node	for sensor with V5.x
	30071	70	46	4		1	2	Logic status of parameters			uint16	Read	Hi-Byte is Logic status of parameter 1, Lo-Byte is Logic status of parameter 2	for sensor with V5.x
	30072	71	47	4		2	4	Timer up 1			uint32	Read	Total time when Hi-Byte of Logic status = 1	for sensor with V5.x
	30074	73	49	4		2	4	Timer down 1			uint32	Read	Total time when Hi-Byte of Logic status = 0	for sensor with V5.x
	30076	75	4B	4		2	4	RisingEdge counter 1			uint32	Read	Counter value when Hi-Byte of Logic status changes from 0 to 1	for sensor with V5.x
	30078	77	4D	4		2	4	FallingEdge counter 1			uint32	Read	Counter value when Hi-Byte of Logic status changes from 1 to 0	for sensor with V5.x
	30080	79	4F	4		2	4	Timer up 2			uint32	Read	Total time when Lo-Byte of Logic status = 1	for sensor with V5.x
	30082	81	51	4		2	4	Timer down 2			uint32	Read	Total time when Lo-Byte of Logic status = 0	for sensor with V5.x
	30084	83	53	4		2	4	RisingEdge counter 2			uint32	Read	Counter value when Lo-Byte of Logic status changes from 0 to 1	for sensor with V5.x
	30086	85	55	4		2	4	FallingEdge counter 2			uint32	Read	Counter value when Lo-Byte of Logic status changes from 1 to 0	for sensor with V5.x
STATUS DATA	40030	29	1D	3		1	2	Data status of Node	0-9, 99		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	
	40070	69	45	3		1	2	RF Signal strength of Node	0-4		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	
* Read this data to know the RF signal	40190	189	BD	3		1	2	Sync status of Node	0-2		byte	Read	If the Node ID is odd ==> read the Hi-Byte only If the Node ID is even ==> read the Lo-Byte only	for sensor with V5.x

- We will see the parameters in the address column will change

Please enter Sensor Node's ID (1 .. 40): **3**

	(1)	(2)	(3)	(4)		(5)	(6)	(7)
	Modbus Register	Modbus Register (Decimal)	Modbus Register (HEX)	Function Code (Read)	Function Code (Write)	# of register	Byte Size	Description
OPERATION DATA * This operation data will be sent to Co-ordinator in every Cycle_wakeup and/or Cycle_healthsta	30065	64	40	4		1	2	%Battery of sensor Node
	30066	65	41	4		2	4	Humidity value of sensor Node (parameter 1
	30068	67	43	4		1	2	Status bytes of sensor Node
	30069	68	44	4		2	4	Temperature value of sensor Node (paramet
	30071	70	46	4		1	2	Logic status of parameters
	30072	71	47	4		2	4	Timer up 1
	30074	73	49	4		2	4	Timer down 1
	30076	75	4B	4		2	4	RisingEdge counter 1
	30078	77	4D	4		2	4	FallingEdge counter 1
	30080	79	4F	4		2	4	Timer up 2
	30082	81	51	4		2	4	Timer down 2
	30084	83	53	4		2	4	RisingEdge counter 2
	30086	85	55	4		2	4	FallingEdge counter 2
STATUS DATA	40030	29	1D	3		1	2	Data status of Node
	40070	69	45	3		1	2	RF Signal strength of Node
* Read this data to know the RF signal	40190	189	BD	3		1	2	Sync status of Node

MODBUS MEMORY MAP FOR WIRELESS HUMIDITY SEI

Please enter Sensor Node's ID (1 .. 40): 6

	(1)	(2)	(3)	(4)		(5)	(6)	(7)
	Modbus Register	Modbus Register (Decimal)	Modbus Register (HEX)	Function Code (Read)	Function Code (Write)	# of register	Byte Size	Description
OPERATION DATA ** This operation data will be sent to Co-ordinator in every Cycle_wakeup and/or Cycle_healthsta*	30161	160	A0	4		1	2	%Battery of sensor Node
	30162	161	A1	4		2	4	Humidity value of sensor Node (parameter 1
	30164	163	A3	4		1	2	Status bytes of sensor Node
	30165	164	A4	4		2	4	Temperature value of sensor Node (paramet
	30167	166	A6	4		1	2	Logic status of parameters
	30168	167	A7	4		2	4	Timer up 1
	30170	169	A9	4		2	4	Timer down 1
	30172	171	AB	4		2	4	RisingEdge counter 1
	30174	173	AD	4		2	4	FallingEdge counter 1
	30176	175	AF	4		2	4	Timer up 2
	30178	177	B1	4		2	4	Timer down 2
	30180	179	B3	4		2	4	RisingEdge counter 2
	30182	181	B5	4		2	4	FallingEdge counter 2
STATUS DATA ** Read this data to know the RF signal*	40031	30	1E	3		1	2	Data status of Node
	40071	70	46	3		1	2	RF Signal strength of Node
	40191	190	BE	3		1	2	Sync status of Node

3. Troubleshooting

No.	Phenomena	Reason	Solutions
1	Cannot type into yellow frame of excel file	Edit mode is not open yet	Click Enable Editing to edit the number in yellow frame
2	No suitable sensor found	Old memmap or other modified sensor name	• Check **HERE** the latest memmap file • Contact us for support

4. Support contacts

Manufacturer

Daviteq Technologies Inc
No.11 Street 2G, Nam Hung Vuong Res., An Lac Ward, Binh Tan Dist., Ho Chi Minh City, Vietnam.
Tel: +84-28-6268.2523/4 (ext.122)
Email: info@daviteq.com | www.daviteq.com

Instructions for Upgrading the Firmware for Daviteq Sigfox Sensor

1. Preparation

1.1 Prepare a ST-LINK V2 cable that connect between PC and the sensor.

1.2 Save the updated firmware file (.hex) to the PC for flashing to the sensor.

1.3 Save the ID & PAC file (.bin) to the PC for configuring the sensors.

2. Download and install the software "STM32 ST-LINK Utility".

The software can be downloaded from internet via the link:https://www.st.com/en/development-tools/stsw-link004.html

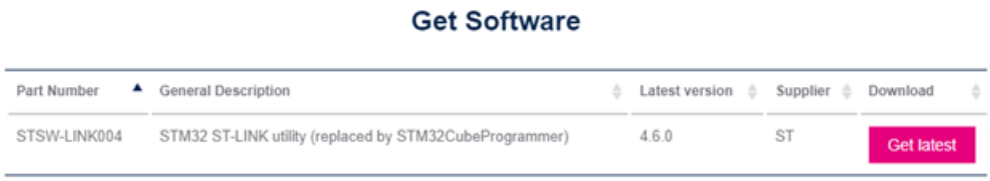


Figure 1. Getting the software from the website.

3. Set up the hardware

> Connect the USB port of the ST-LINK V2 to the PC. The other end should be plugged into the PRG port of the sensor.

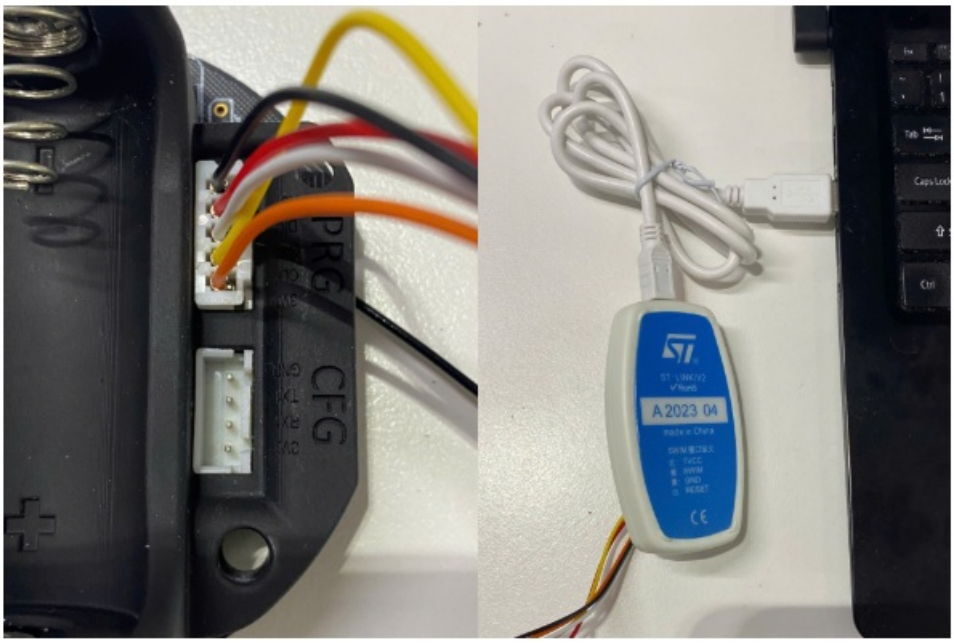


Figure 2. Hardware setup

4. Software configuration

4.1. Open the **STM32 ST-LINK Utility** software.

4.2 **Target** => **Setting**s. Then, select "**Connect Under Reset**" and check "**Enable debug in Low power mode**" in **Mode** section =>**OK**

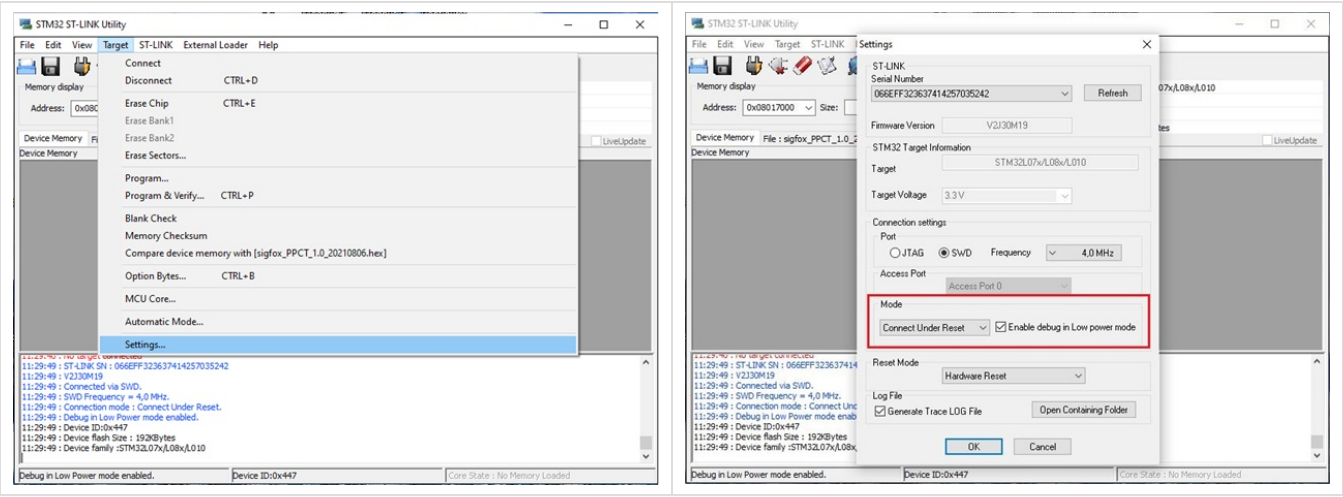


Figure 3. Software configuration

Make sure that the PC has a connection to the devices with the cable provided.

5. Loading firmwares.

5.1 **Target** -> **Program & Verify...**

5.2 **File path** => **Browse** => Choose firmware file (.hex)

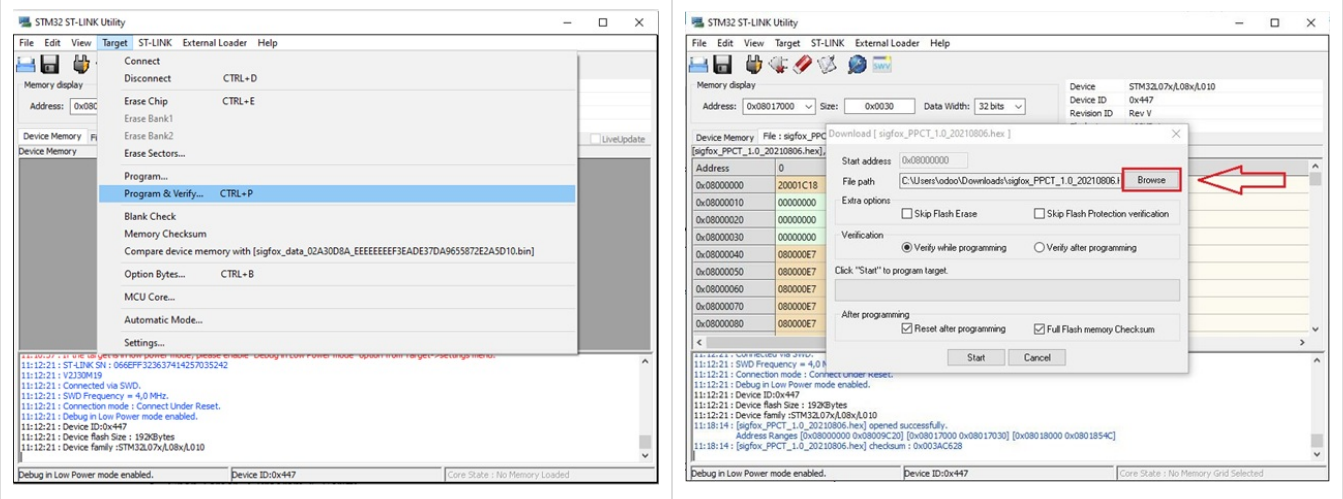


Figure 4. Import firmware file

5.3 Press **Start** to load the firmware to the sensor

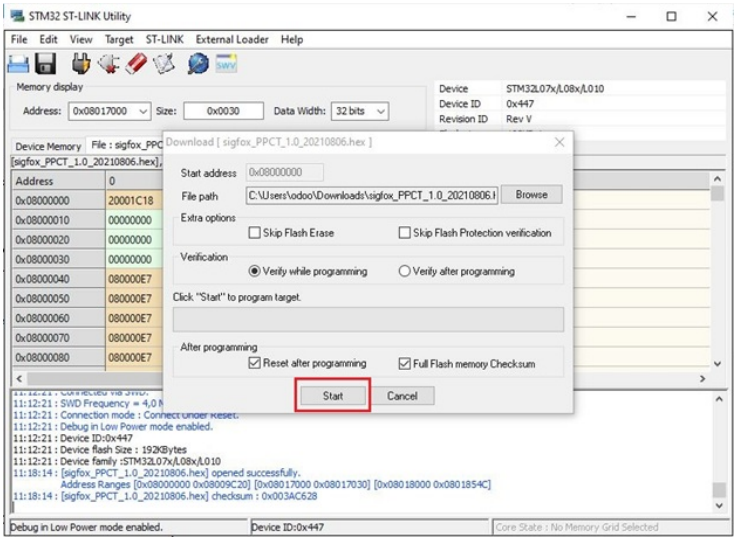


Figure 5. Loading firmware

When the firmware is successfully loaded, the software will display information with figure 6

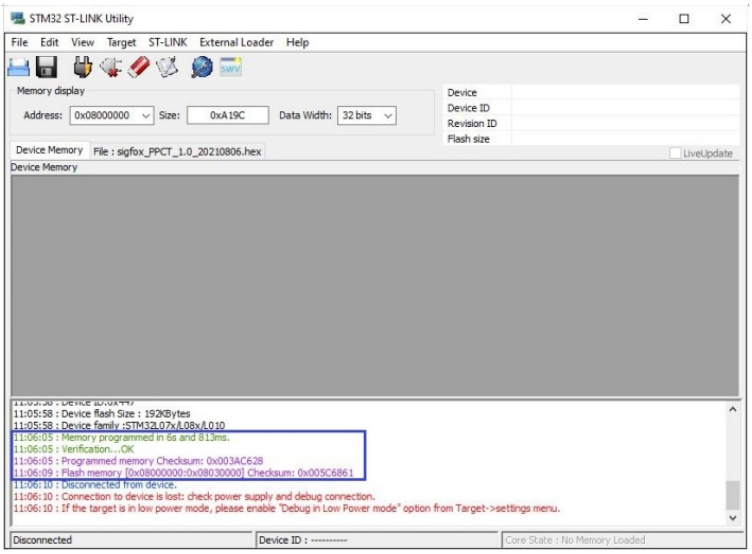


Figure 6. Successfully loading firmware

6. Loading ID and PAC.

After successfully loading the firmware in Step 5, you need to reload the ID&PAC for the sensor. Follow the steps below:

6.1 **Target** => **Program & Verify...**

6.2 **File path** => **Browse**

6.3 **Open** ID&PAC file (.bin)

Each sensor has a unique ID&PAC file. Therefore, you need to carefully check to ensure that the file being loaded corresponds to the correct ID and PAC on the sensor's label. (The .bin file name contains the corresponding ID information.)

6.4 Change the **Start Address**: **0x08017000** => **Start**

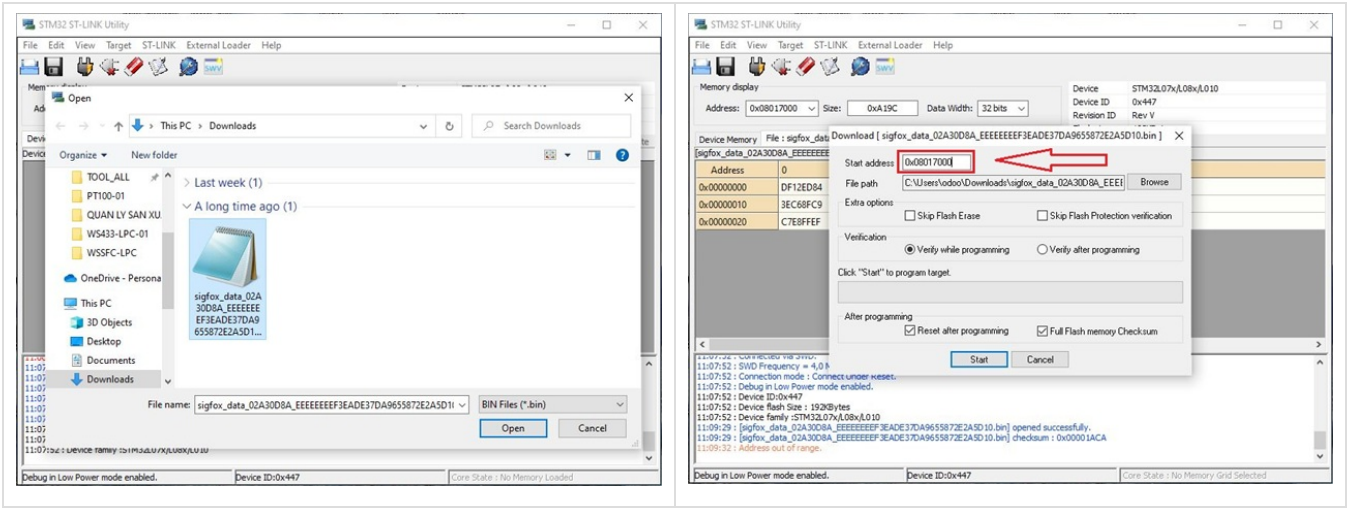


Figure 7. Loading ID&PAC

When the firmware is successfully loaded, the software will display information with image 4.

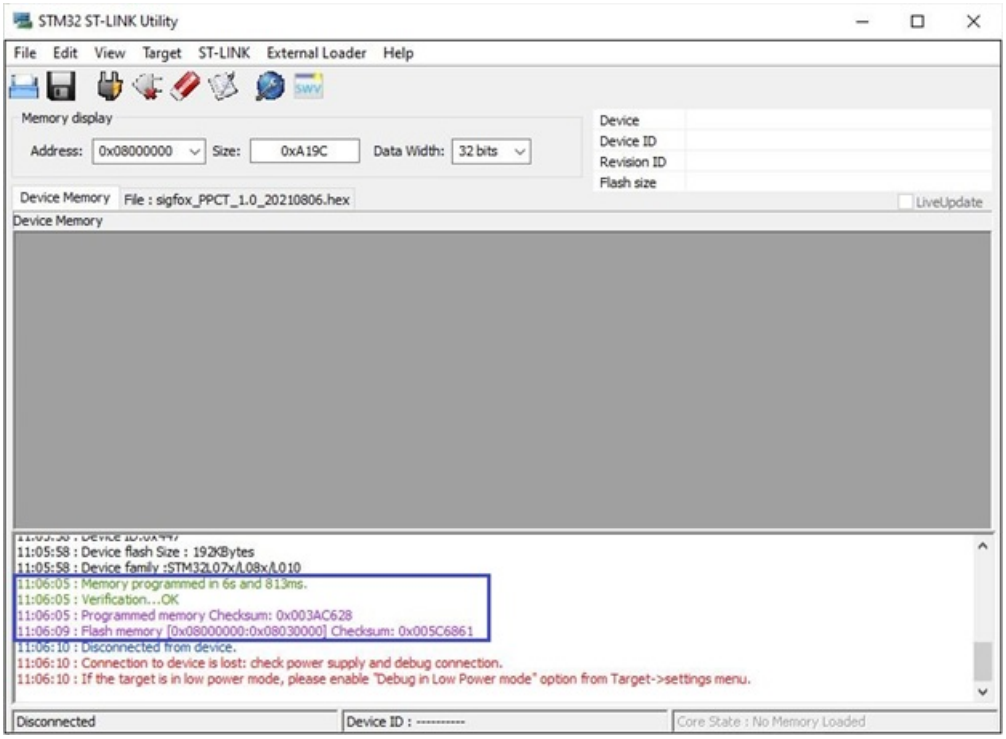


Figure 8. Successfully loading ID& PAC

Support for Flashing The Firmware in Daviteq Lorawan Sensor

1. Preparation

1.1 Prepare a ST-LINK V2 cable that connect between PC and the sensor. Details information of the cable at link:

https://www.st.com/en/development-tools/st-link-v2.html

ST-LINK V2 cable could be bought from local ST distributor at your country.

1.2 Save the updated firmware to the PC for flashing to the sensor.

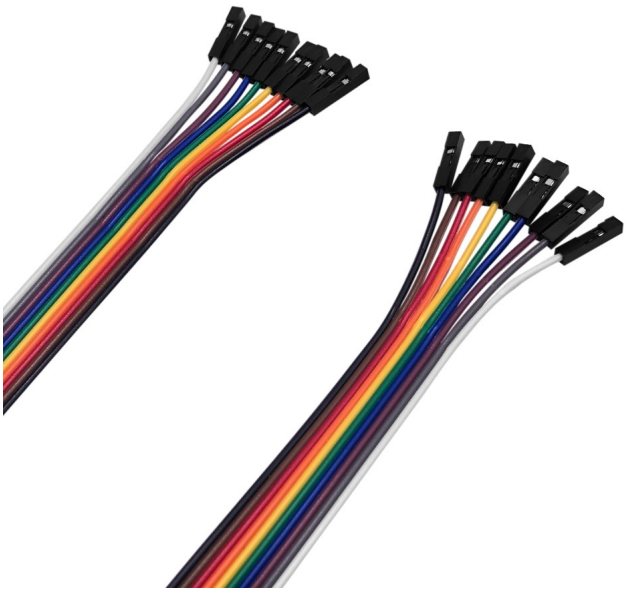
1.3 Note out checksum information of the update firmware. This information will be provided by sensor manufacturer.

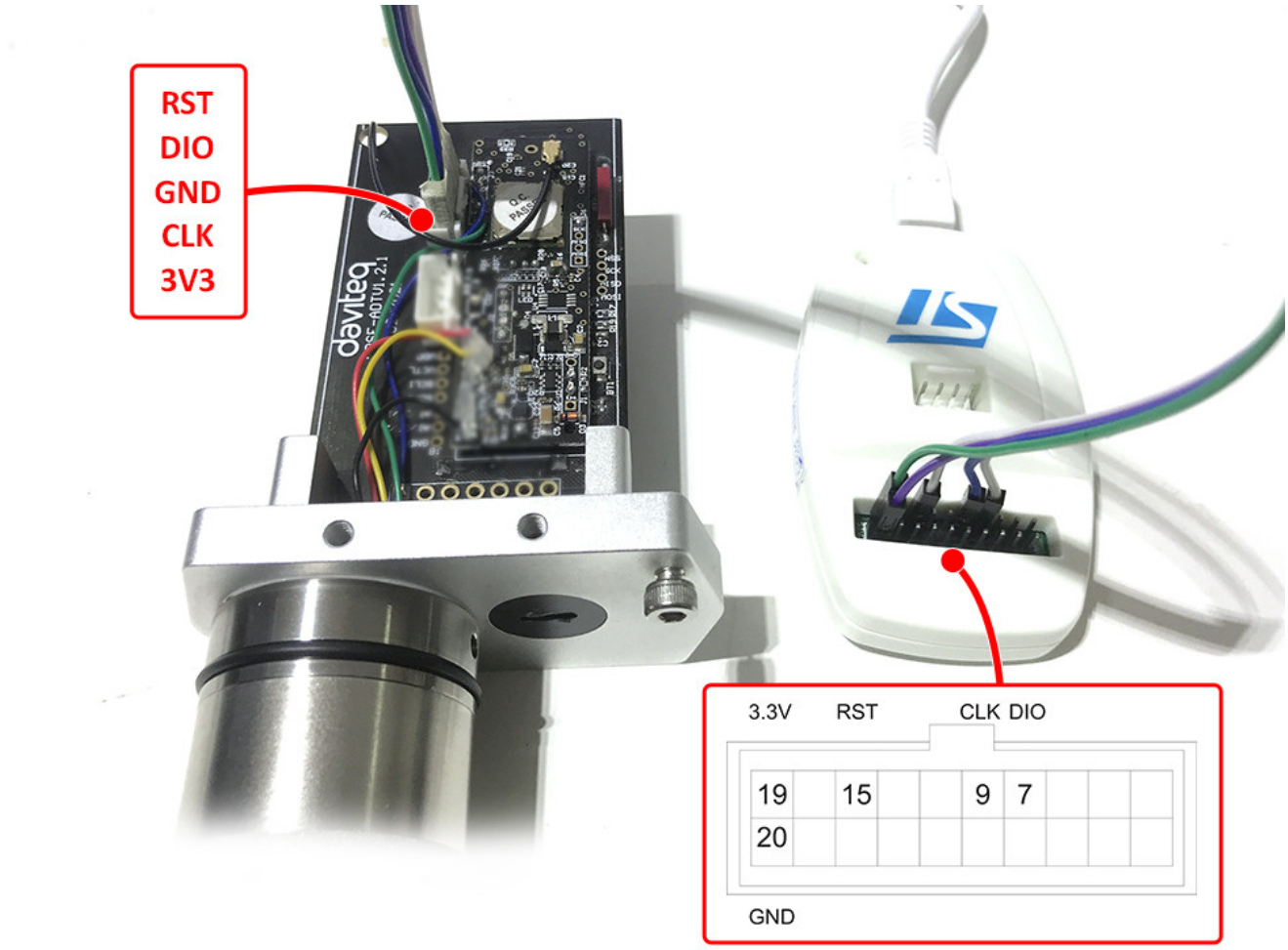
2. Download and install the software "STM32 ST-LINK Utility".

Computer run on Windows 7 or higher.
The software can be downloaded from the link :https://filerun.daviteq.com/wl/?id=3OVxFN7qe3R7lU9iayCSIHxH45yCM6yE

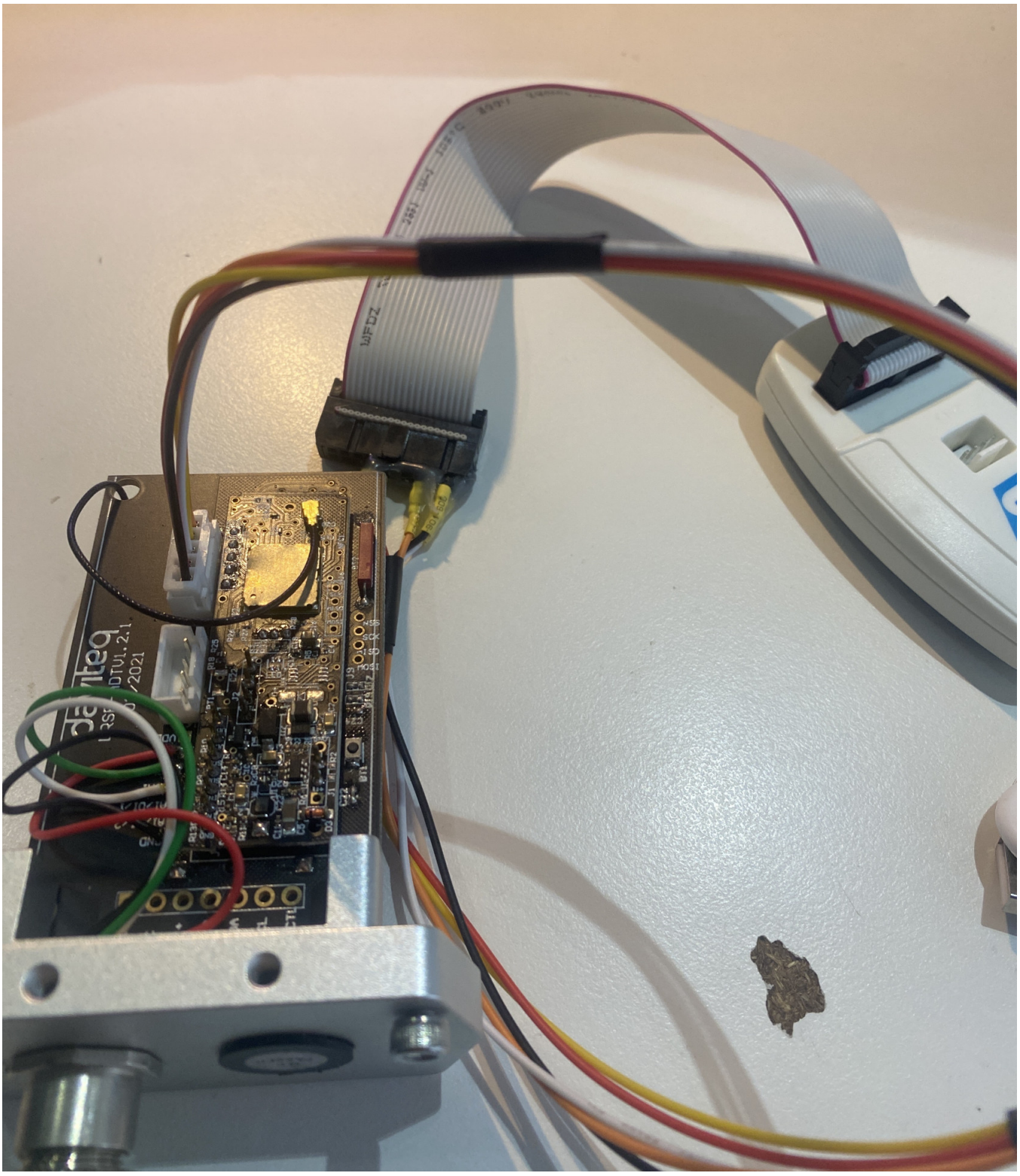
3. Plug cable from ST-LINK V2 to sensor.

With the female to female wire

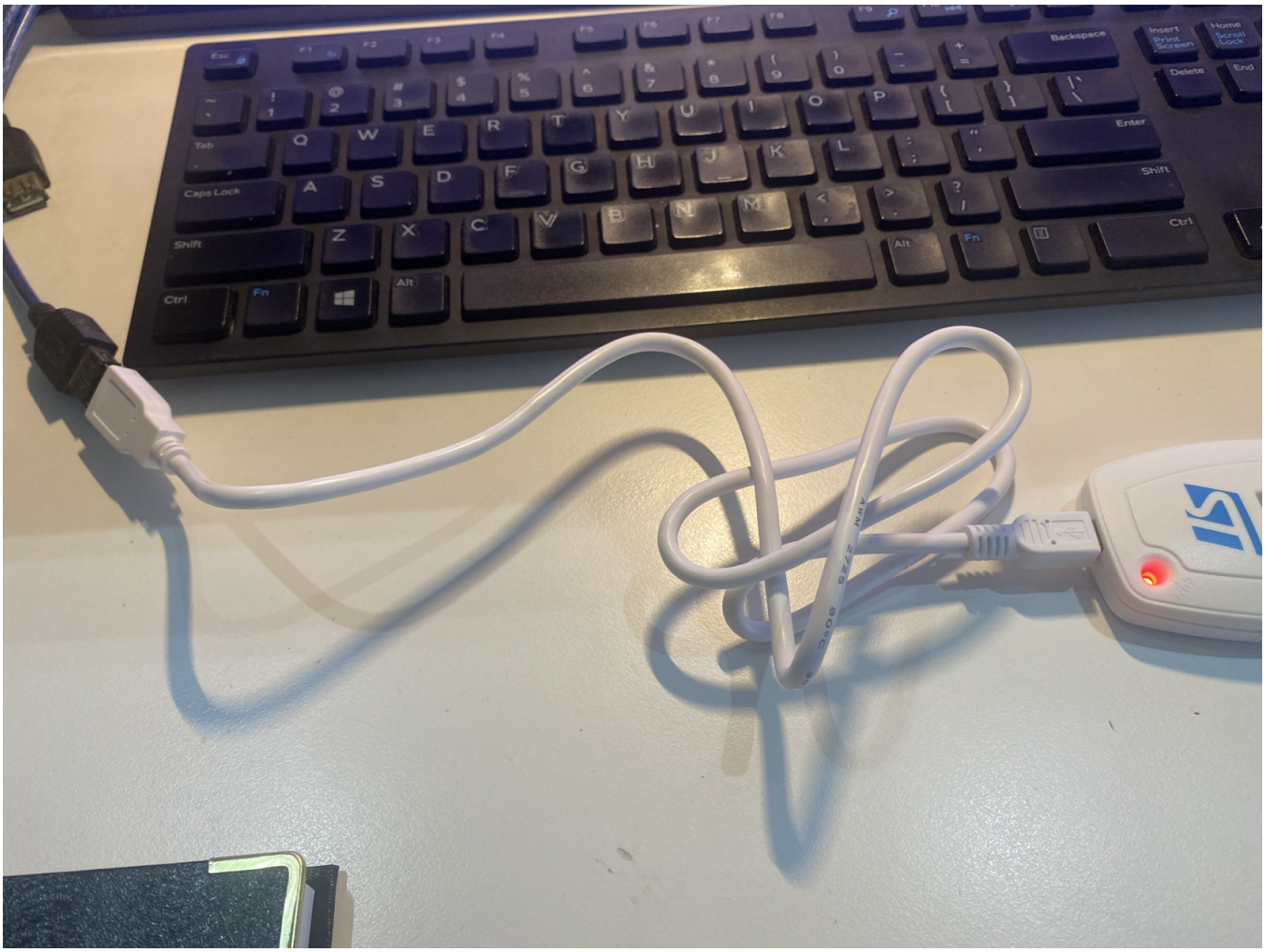




or with the provided cable by Daviteq



Then plug the ST-Link V2 into the computer by the USB A to Mini B cable.



4. Select the mode setting on the software.

Open STM32 ST-LINK Utility.

> 4.1 Target -> Settings...
> 4.2 Mode: select "Connect Under Reset" and check "Enable debug in Low power mode" -> OK

The order of steps 3.1 and step 3.2 indicate through the image from left to right in Table 1.

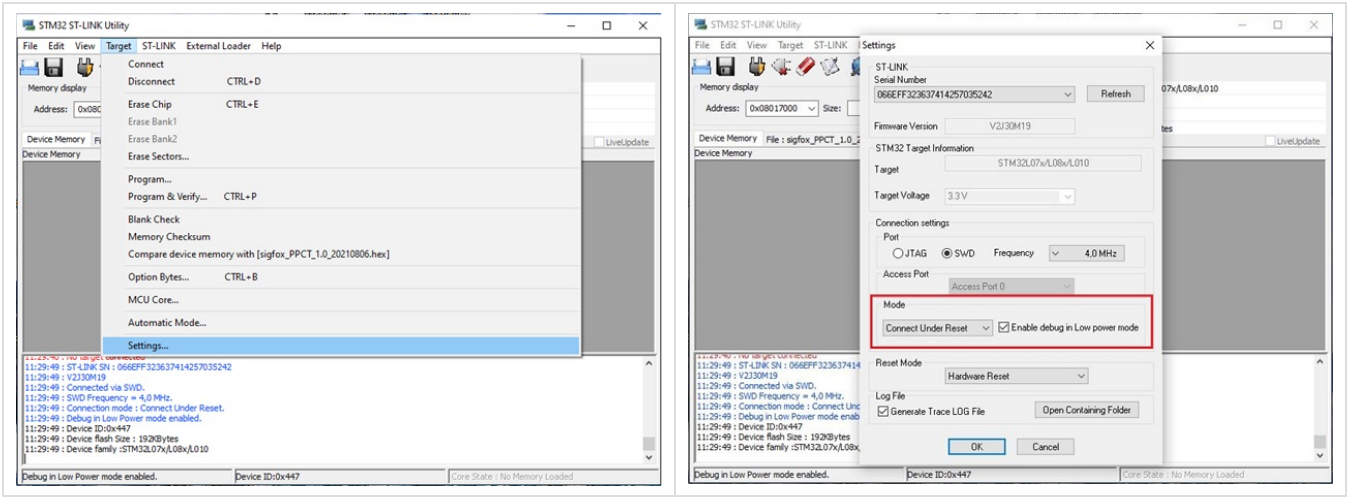


Table 1. Settings... - Mode.

5. Target the hex file for upgrading any firmware.

> 5.1 Target -> Program & Verify...

5.2 File path -> Browse

Basically, the firmware update specifies the sensor. In this case, please contact the instructor for more information.

Step 5.1 and step 5.2 indicate in the image from left to right in Table 2.

You must browse to select the correct file, the hex file can be used to apply for the same device type.

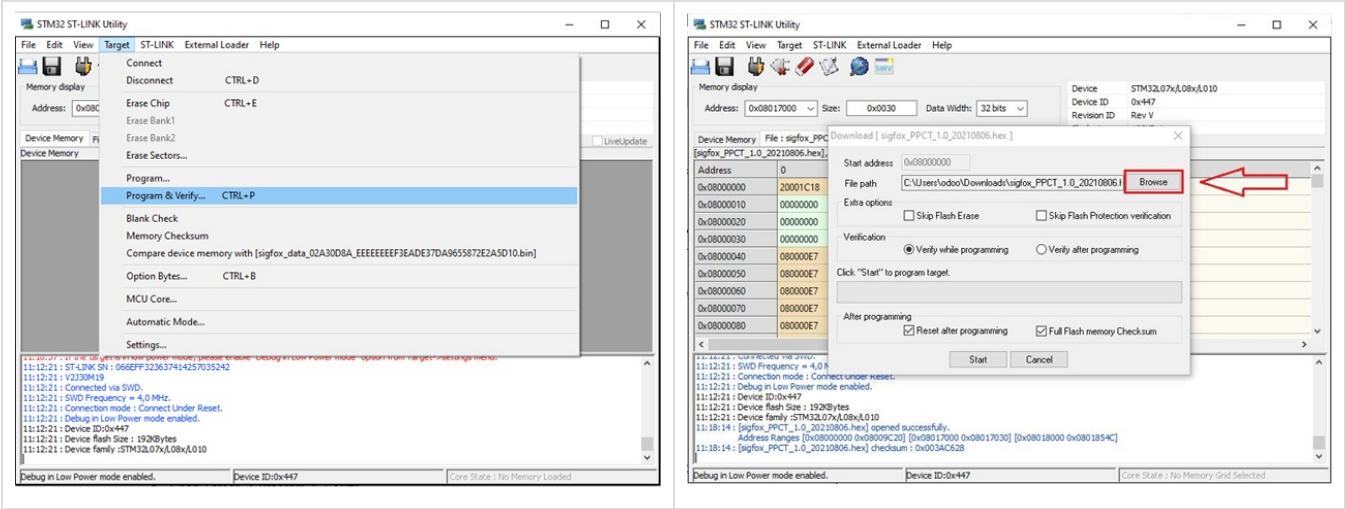


Table 2. Program & Verify... - Browse.

5.3 Open ".hex" file -> Start

In step 5.3, you need to select the hex file and load it into the device.

For example within each image of Table 3, the target is a sensor WSSFC-LPC and is used in this guide. Note the checksum then "Start"

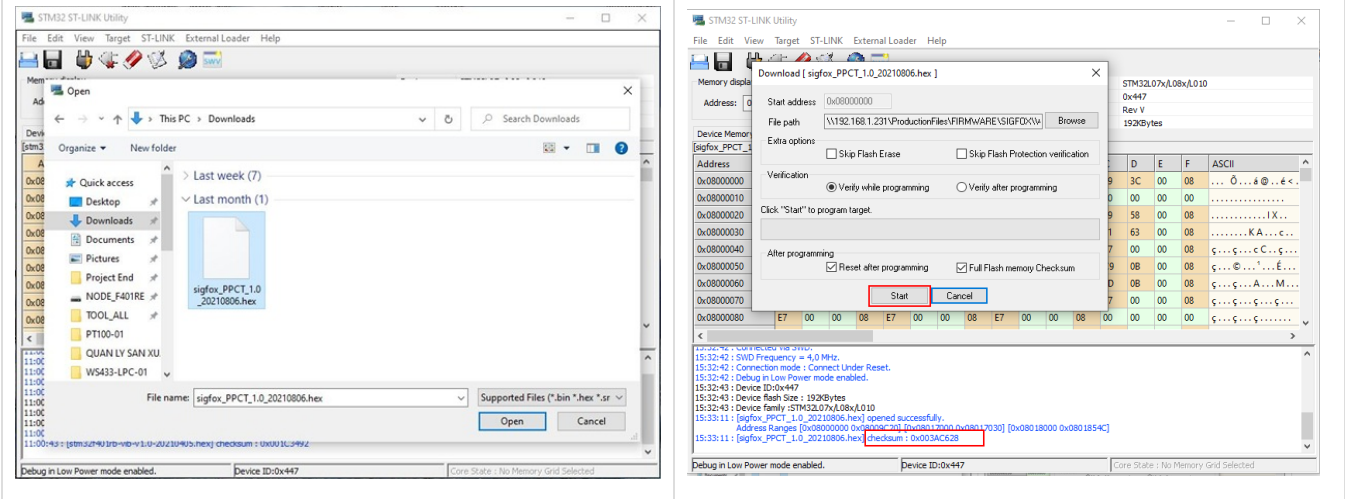
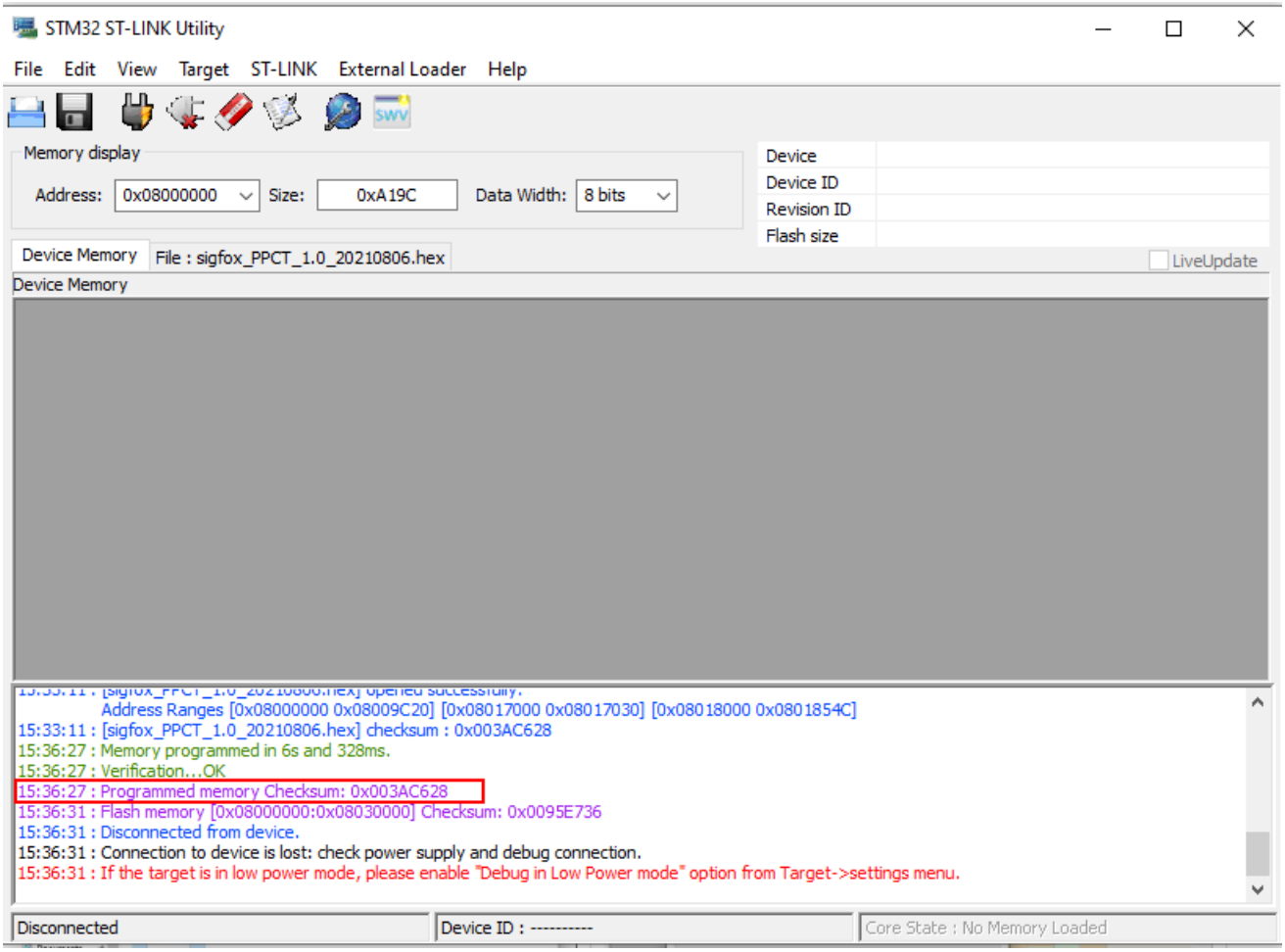


Table 3. Starting a program file to the sensor, Open - Start.



If Programmed memory Checksum equal with the .hex file checksum => Succeed

If Programmed memory Checksum not equal with the .hex file checksum => Failed