UX EvaluationPro User Manual

Standard Package

Please read this user manual before use UX EvaluationPro software.

UX EvaluationPro User Manual

Standard Package

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1 Introduction

1.1 Software Features

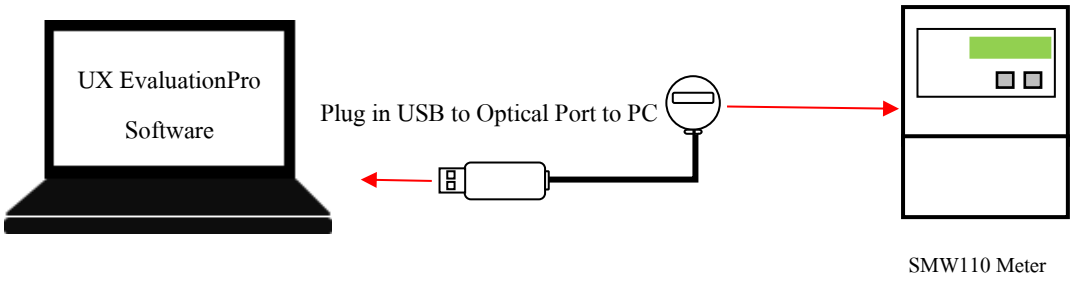
- Read billing data from meter such as kW-hour, kW demand, kvar-hour, kvar demand.
- Read data from meter such as load profile data, instantaneous data, and previous data.
- Issue TOU Billing for each billing type e.g. TOU Billing 2 rate/3 rate, TOU Demand Billing 2 rate/3 rate, Flat Rate
- Change meter date and time
- Set data to meter such as calendar, self-reading, display setting
- Export report file (*.csv, *.xlsx)
- Save template file (*.prg) for set data to meter.
- Save meter billing data to database.

1.2 Support Meter

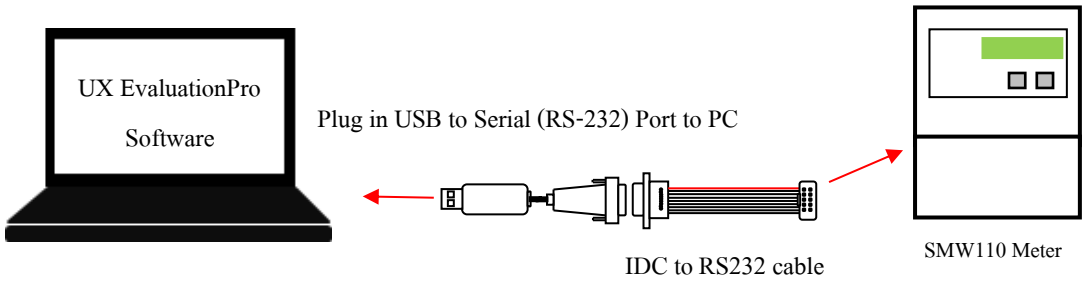
No.	Item	Meter Type	Meter Model	Category
1.	3P4W 2.5(10)A	SMW110	SMW110W4-N191C400	Smart
2.	3P4W 5(10)A	SMW110	SMW110W4-N141C400	Smart
3.	3P4W 5(10)A	SMW110-C47E	SMW110W4-N141C600	Advance
4.	3P4W 5(100)A	SMW110-C07E	SMW110W4-N131C600	Advance
5.	3P4W 5(10)A	SMW110-C47R	SMW110W4-N141C600	Smart

1.3 Startup Diagram

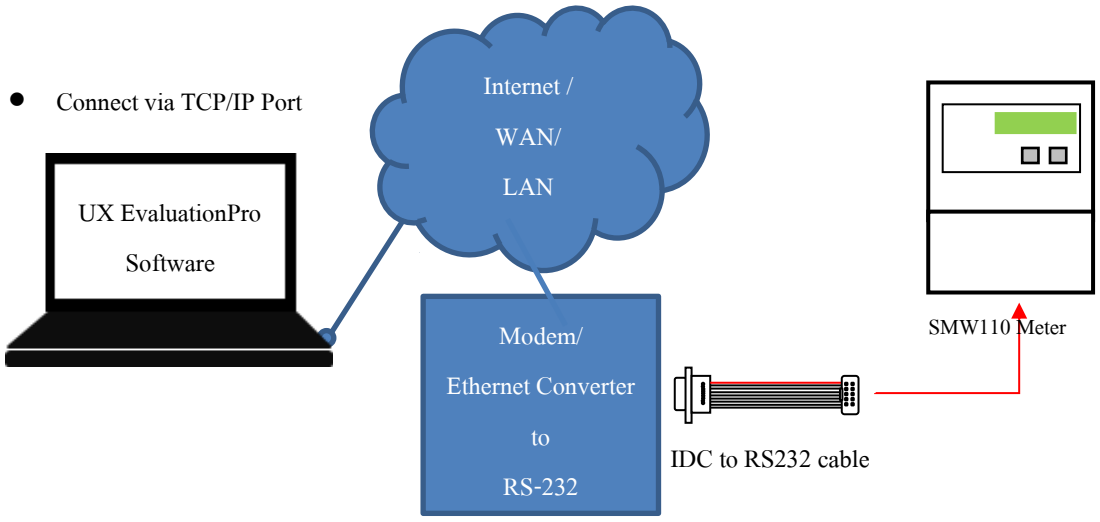
- Connect via Optical Port



- Connect via RS232 Port

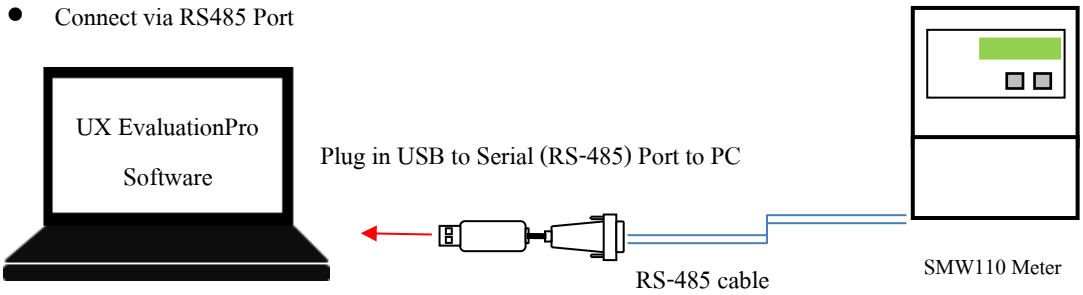


- Connect via TCP/IP Port

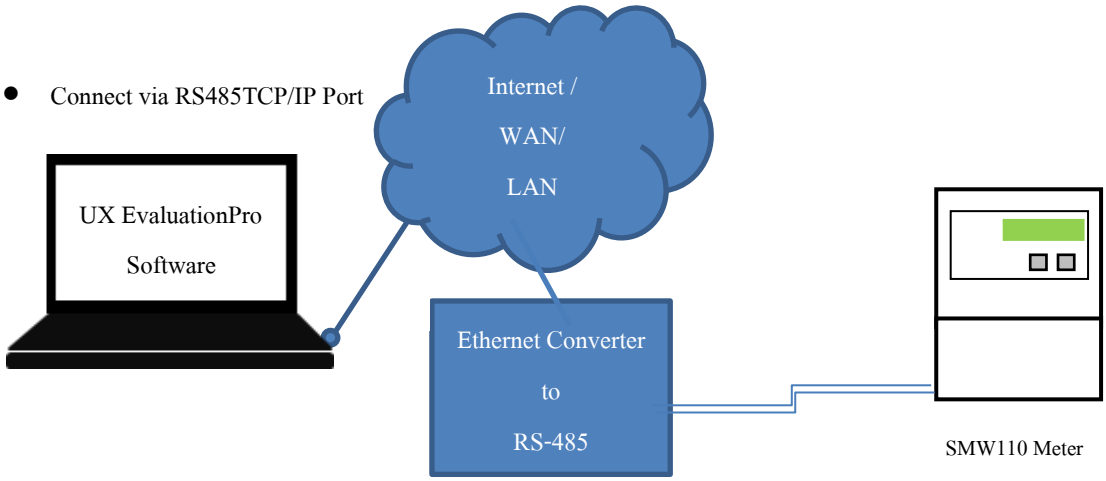


Picture 1: Startup diagram (SMW110)

- Connect via RS485 Port

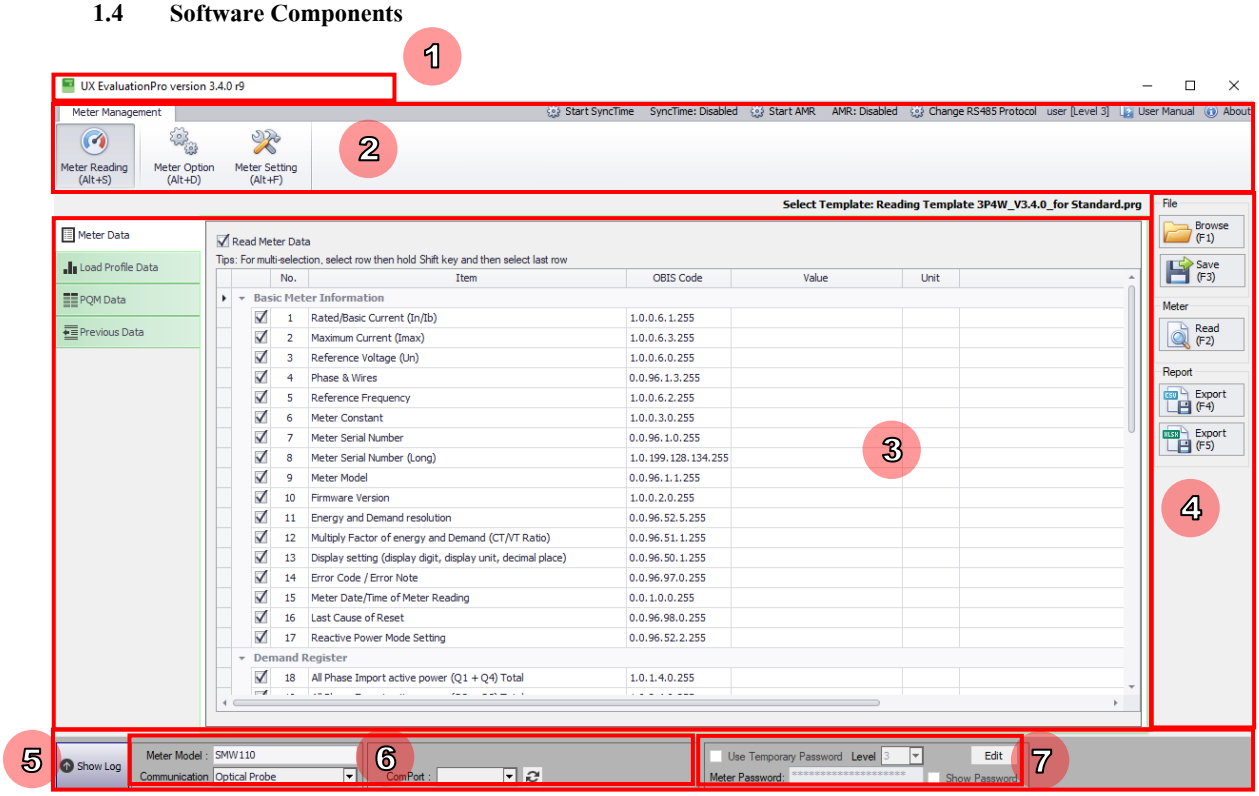


- Connect via RS485TCP/IP Port



Picture 2: Startup diagram (SMW110) Cont.

1.4 Software Components



Picture 3: Software components

1) **Software name:** Show software name.
2) **Menu bar:** Show all menus of UX EvaluationPro.
3) **Data area:** Show meter data such as reading data, setting data.
4) **Button area:** Show button of each menu.
5) **Log console:** Show communication information between software and meter.
6) **Group box for mode selection:** Show selection of communication mode that able to connect to meter.
7) **Temporary password:** Show temporary password detail to connect to meter.

Note**:** Date Time format in software is “dd/MM/yyyy HH:mm:ss” example 08/04/2021 19:30:45

Format	Description
dd	Represent to day of month.
MM	Represent to month.
yyyy	Represent to year. (Christian era)
HH	Represent to hour. (24-hour format)
mm	Represent to minute.
ss	Represent to second.

1.5 System Requirement

UX Evaluation Pro software has following minimum requirement

Content	Minimum Requirement
Operating System (OS):	Windows 10 Professional (64 bits)
	Windows 10 Home Single Language (64bits)
	Windows 11 Professional (64 bits)
	Windows 11 Home Single Language (64bits)
Processor (CPU):	Intel or AMD 1 GHz 64-bit processor or more. Don't specify.
Hard Disk:	40 GB hard drive with at least 15 GB of available space.
Memory (RAM):	8 GB or more
Monitor Resolution:	1366 x 768 or more
.Net Framework:	.Net Framework 4.5
Database:	SQL Server Compact Edition 4.0
	MariaDB 10.2
PDF Reader Software:	Adobe Reader 11 or more
Other:	Ethernet Port
	CD-ROM Drive
	USB Optical Probe
	Bluetooth adapter (Optional)

2 Installation

2.1 Prerequisite Software Installation

UX EvaluationPro Software requires prerequisite program as follow

2.1.1 Microsoft .NET Framework 4.5

2.1.2 Microsoft SQL Server Compact Edition 4.0

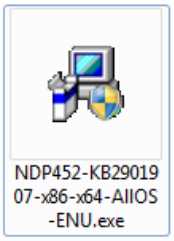
2.1.3 MariaDB 10.2*

*Note: 1.) MariaDB will install silently during UX EvaluationPro installation.

2.) In case of failure to install MariaDB. Please contact Meter Technical Support (Tel. 0-2540-6992 or Line ID @meterservice.meath, Mon – Fri 8:00 a.m. to 5:00 p.m.).

2.1.1 Microsoft .NET Framework 4.5 Installation

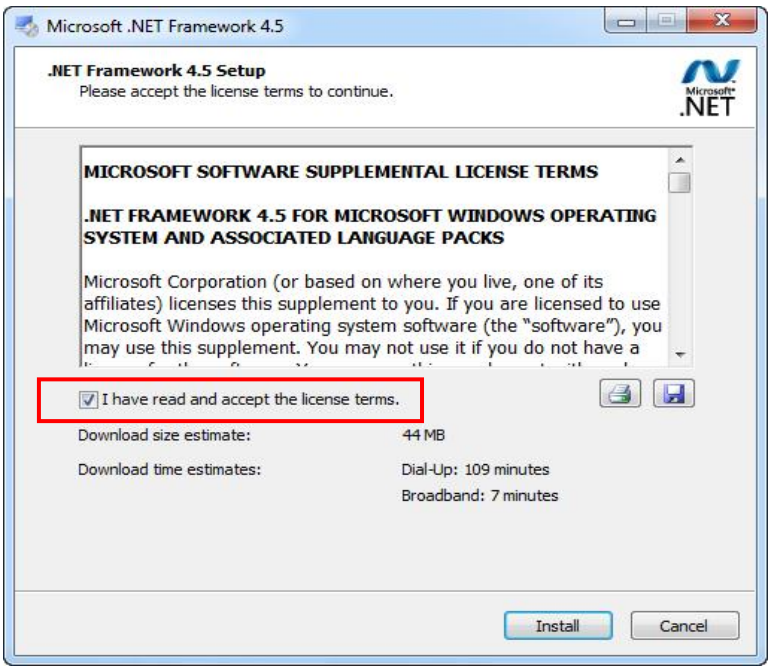
1) Double click .NET Framework 4.5 installation file.



Picture 4: .NET Framework 4.5 installation file

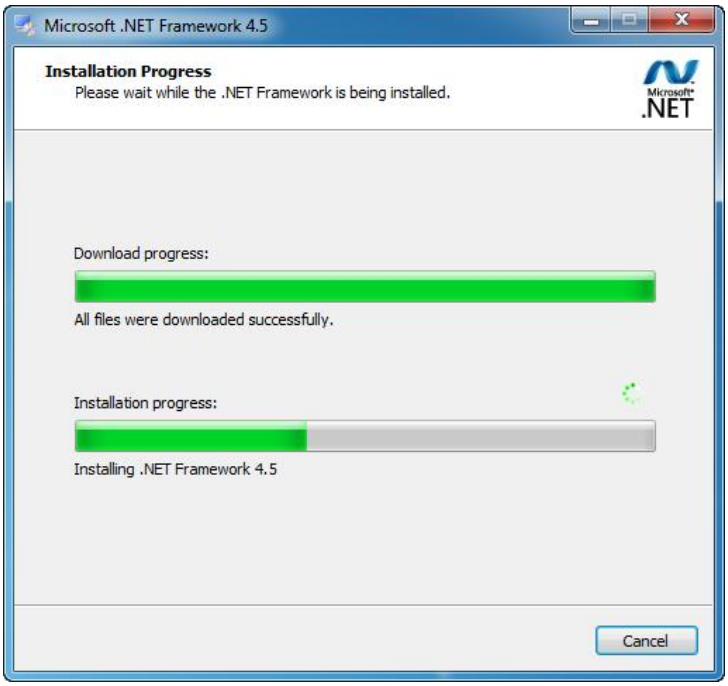
2) Select “I have read and accept the license terms.”

3) Click **Install** button.



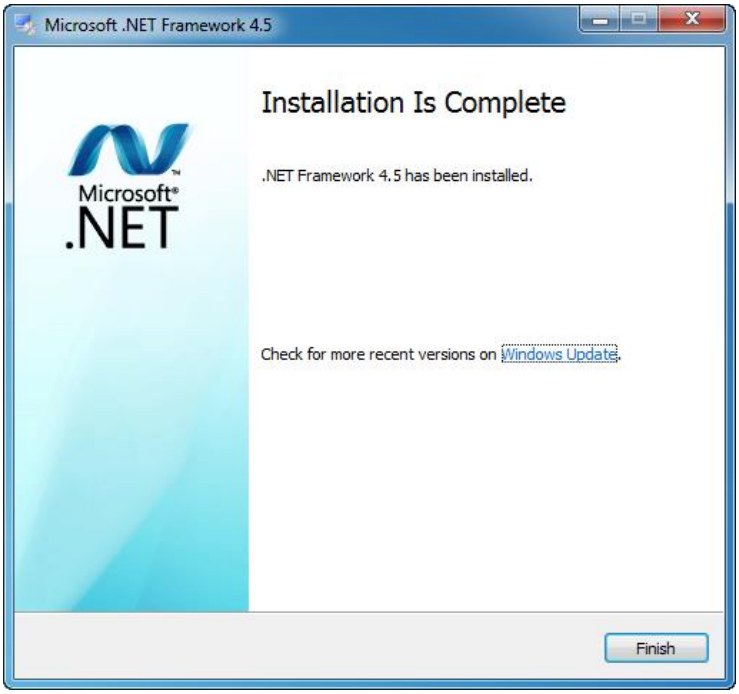
Picture 5: Install .NET Framework

4) Wait until installation finish.



Picture 6: .NET Framework installation progress

5) Click **Finish** button.

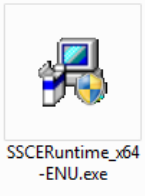


Picture 7: .NET Framework installation complete

2.1.2 Microsoft SQL Server Compact Edition 4.0 Installation

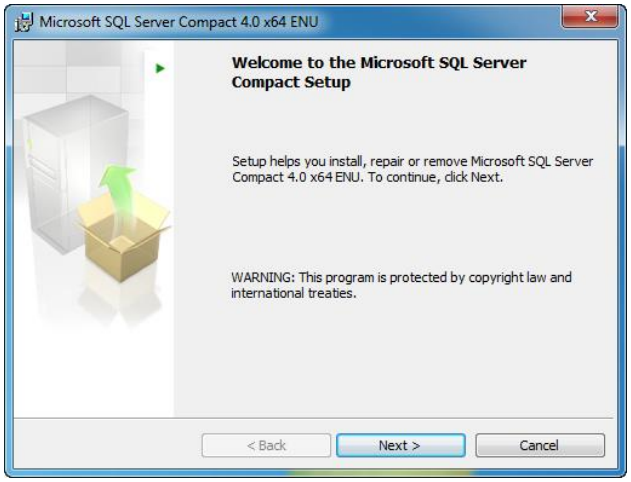
1) For window 10 64 bits, Double click SQL CE 4.0 installation file “SSCERuntime_x64-ENU.exe”

Window 10 64 bits



Picture 8: SQL CE 4.0 installation file

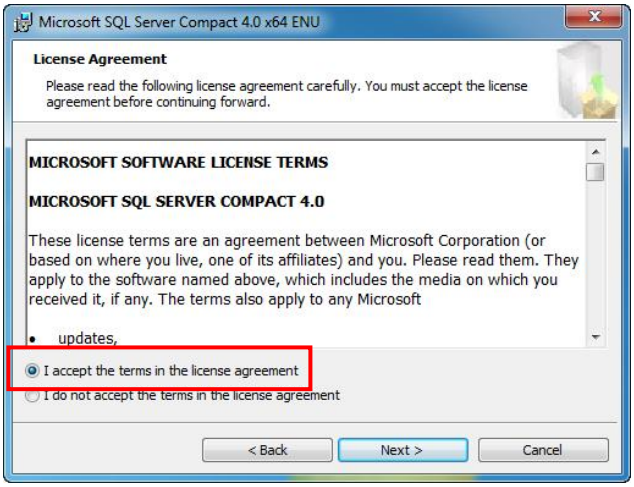
2) On welcome setup screen, click **Next** button.



Picture 9: SQL CE 4.0 welcome screen

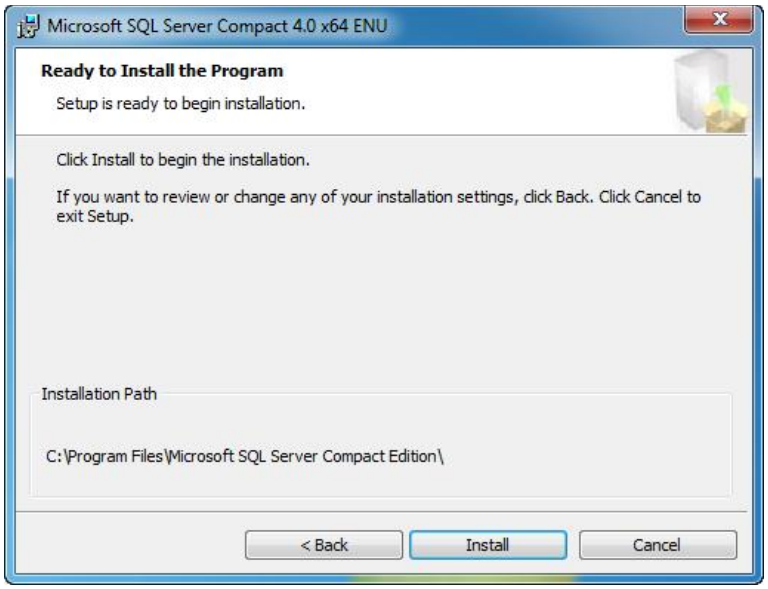
3) Select “I accept the terms in the license agreement”.

4) Click **Next** button.



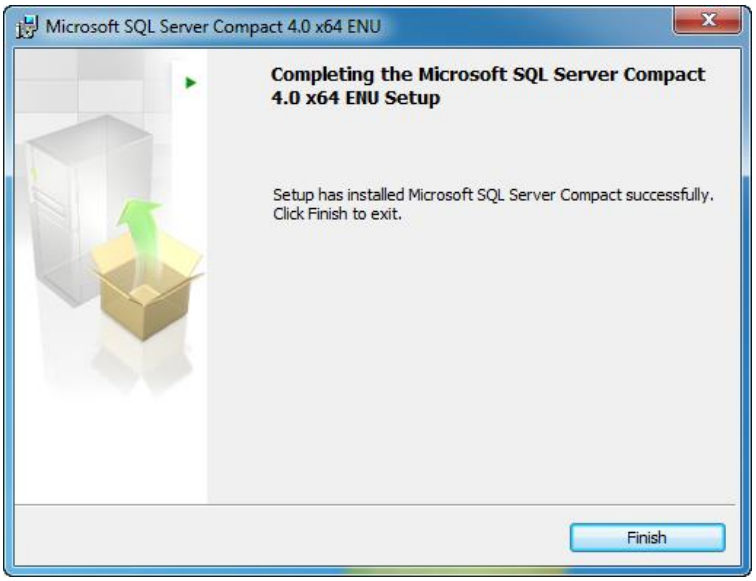
Picture 10: SQL CE 4.0 license agreement

5) Click **Install** button.



Picture 11: SQL CE 4.0 confirm installation

6) Wait until finish installation, click **Finish** button.



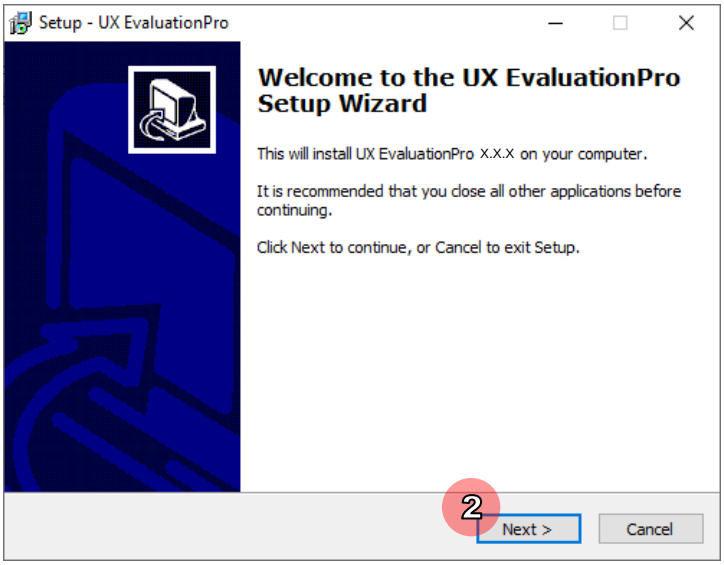
Picture 12: SQL CE 4.0 installation complete

2.2 UX EvaluationPro Installation

1) Double click installation file.

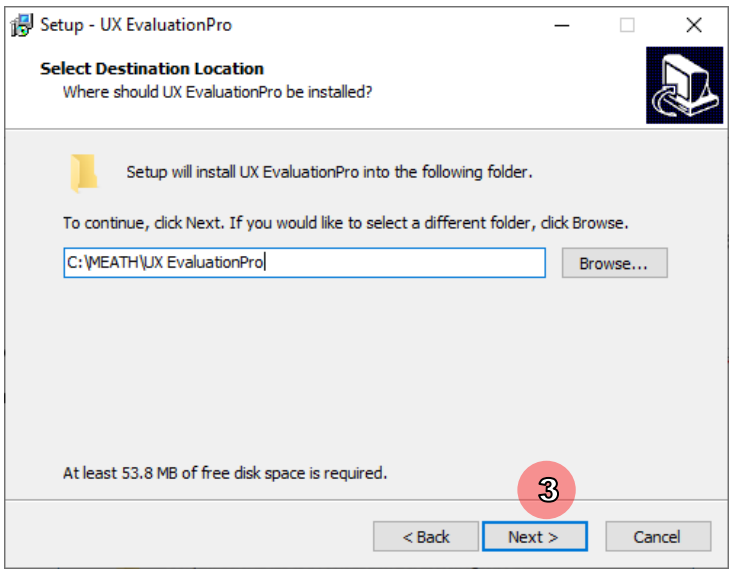
Picture 13: Installation file

2) In welcome screen click **Next** button.



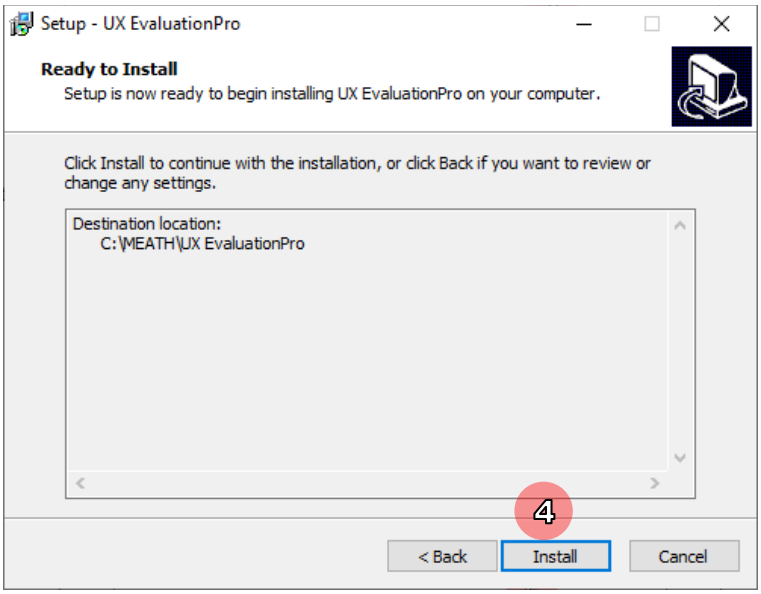
Picture 14: Welcome screen of installation

3) Select installation path and click **Next** button, for installation at default folder "C:\MEATH\UX EvaluationPro", to install a different folder, enter it or click Browse button.



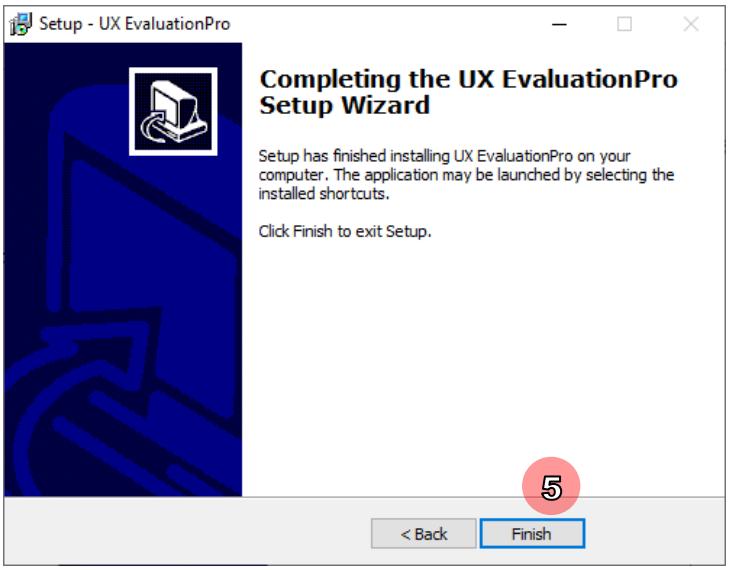
Picture 15: Select install location

4) Click **Install** button.



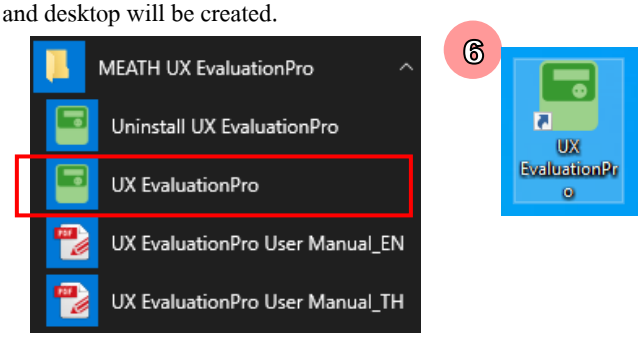
Picture 16: Ready to install

5) Click **Finish** button.



Picture 17: Finished installation

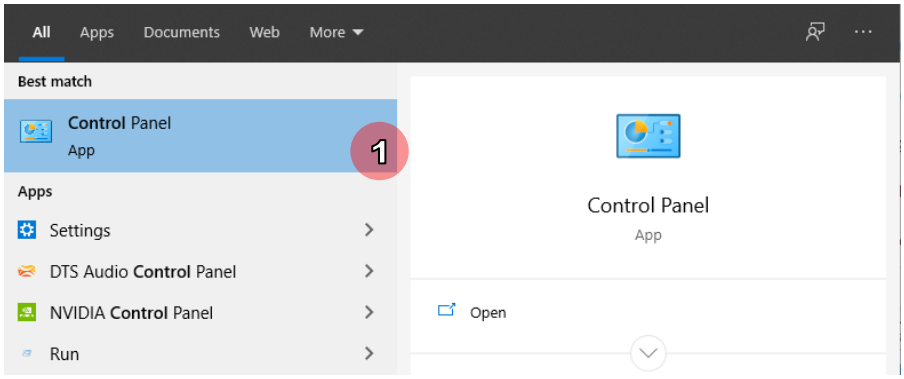
6) UX EvaluationPro icon on start menu and desktop will be created.



Picture 18: UX EvaluationPro icon

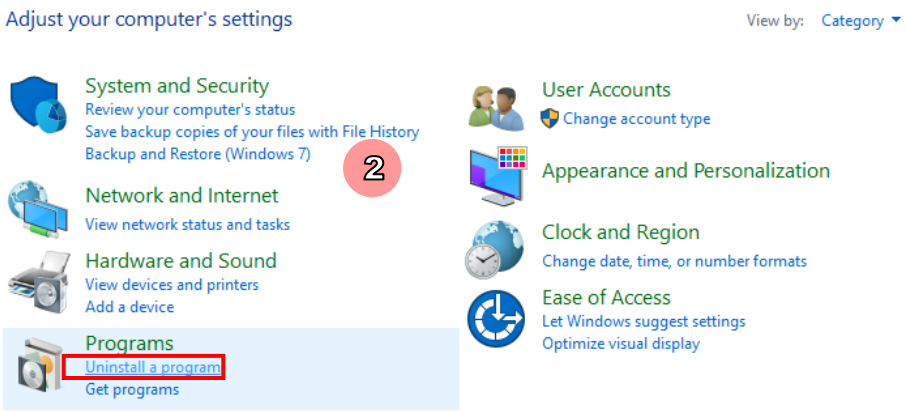
2.3 Software Uninstall

1) Start **Control Panel**



Picture 19: Control Panel button

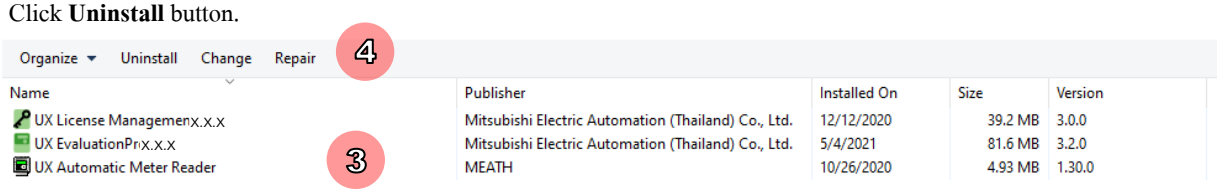
2) Click **Uninstall a program**



Picture 20: Programs and features

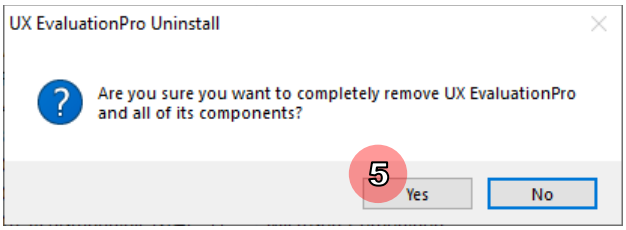
3) Select UX EvaluationPro

4) Click **Uninstall** button.



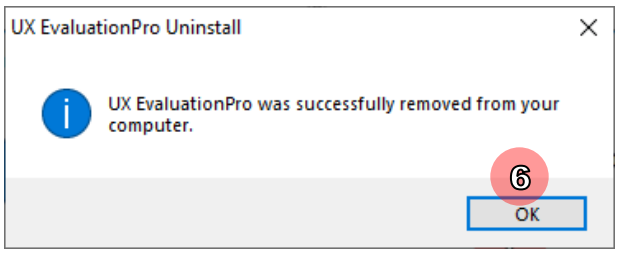
Picture 21: Uninstall UX EvaluationPro

5) Click **Yes** button to confirm.



Picture 22: Confirm uninstall

6) After finish click **OK**

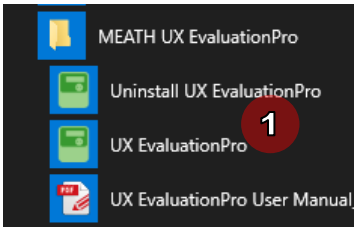


Picture 23: Finished uninstall

3 Getting Started with UX EvaluationPro

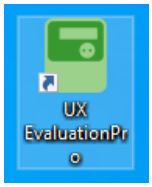
3.1 Start Software

1) Click **Start** => **MEATH UX EvaluationPro** => **UX EvaluationPro**



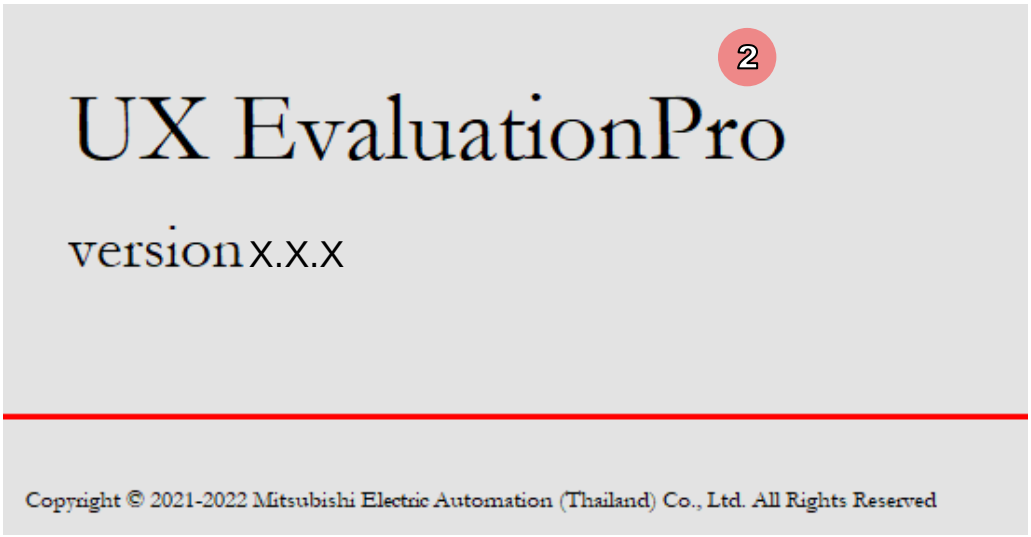
Picture 24: UX EvaluationPro start software

Or double click desktop shortcut.



Picture 25: UX EvaluationPro shortcut

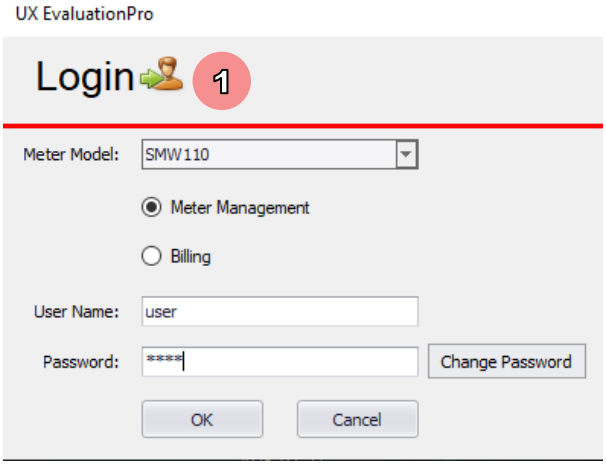
2) Software will show splash screen 3 seconds and then show login screen.



Picture 26: Splash screen

3.2 Login

1) After open UX EvaluationPro software login screen will be shown.



Picture 27: Login screen

2) Select meter model.

3) Select User for login:

Select **Meter Management** have 2 users as:

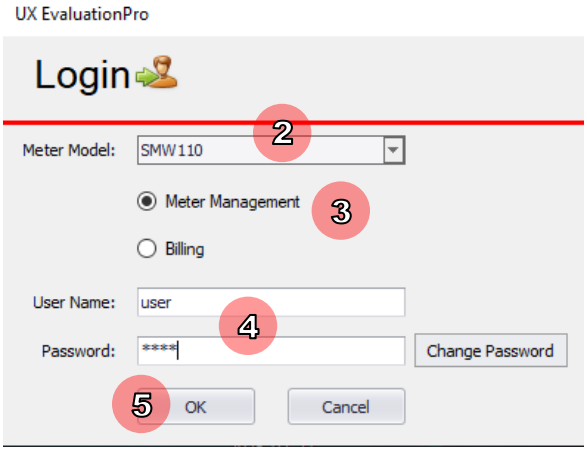
No.	User name	Password	Support Meter	Access Menu
1.	user	user	Smart*	Meter Management
2.	advance	advance	Advance	Meter Management

Select **Billing** have 1 user as:

No.	User name	Password	Support Meter	Access Menu
1.	billing	billing	Advance, Smart*	Multiple Meter Data

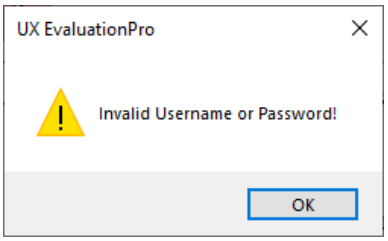
* Note: Smart are both SMW110W4-N141C400 and SMW110W4-N141C600

4) Input user name and password then Click OK button.



Picture 28: Input user name and password

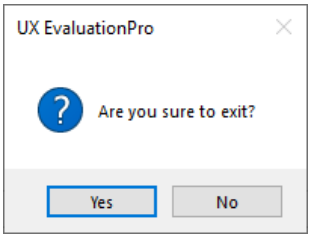
- If user name or password is not correct, software will show message “Invalid Username or Password!”



Picture 29: Warning invalid username or password

If want to close login screen and exit software please follow these steps.

1) Click **Cancel** button on login screen.
2) Software will show message “Are you sure to exit?”



Picture 30: Confirm exit software

3) Click **Yes** button. Software will close screen and exit.

Access Menu for each user name

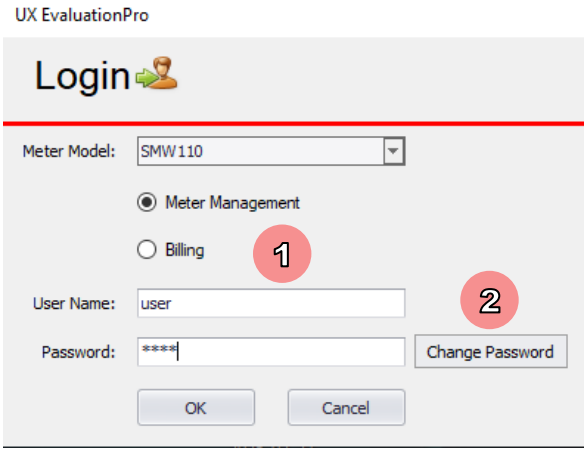
Screen			user name		
Tab Menu	Main Screen	Sub Screen	user	advance	billing
Meter Management	Billing data	Meter Data			
	Meter Reading	Meter Data	O	O	
		Load Profile Data	O	O	
		PQM Data	O	O	
		Previous Data	O	O	
		Program Information			
	Meter Option	Change Meter Date and Time	O	O	
		Manual Demand Reset			
		Meter Calibration			
		Firmware Upgrade			
		Clear Data			
		Load Connect/Disconnect			
		Meter Constant			
		Auto Synchronize Meter Time	O	O	
	Meter Setting	Calendar	O	O	
		Self-Reading	O	O	
		Display Setting	O	O*	
Multiple Meter Data	Multiple Meter Reading				O
	Customer Info	Company Info			O
	TOU Billing (Auto Billing)				O
	Load Profile Compare				O
Change RS485 Protocol			O	O	

* The user “advance” can set only Energy and Demand Resolution, and Multiply Factor (CT/VT Ratio)

Note: see more detail in 4 Meter Management

3.3 Change Password

1) On login screen input correct user name and password.
2) Click **Change password** button.

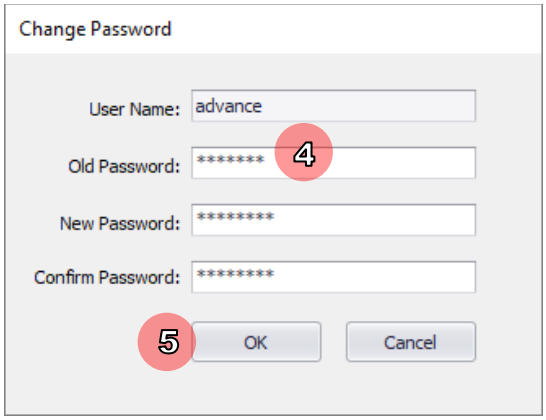


Picture 31: Change password

3) Software will show change password screen.

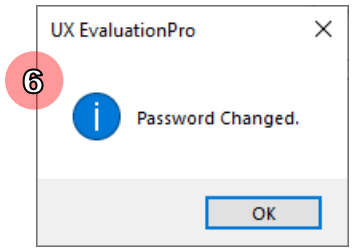
Picture 32: Change password screen

4) Input old password, new password and confirm password.
5) Click **OK** button.



Picture 33: Input change password information

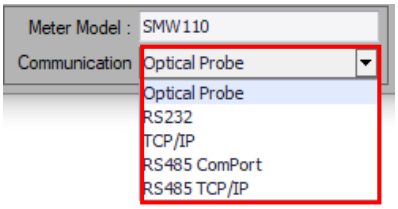
6) If change password complete software will show message “Password Changed.”



Picture 34: Change password complete

3.4 Communication Selection

To communicate with meter for reading or setting data to meter, we have to select a communication method

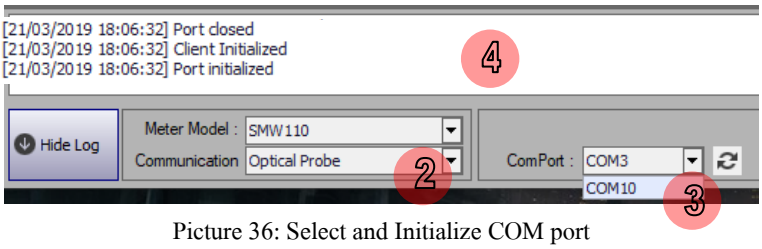


Picture 35: Select communication method

- **Optical Probe** and **RS232**

To check COM ort, see **How to Check COM Port**

1) Connect USB optical probe/RS232 with computer
2) Open UX EvaluationPro software and select communication method: optical probe or RS232
3) Select COM port of USB
4) If select correct COM port, software will show message “Port initialized” on communication log

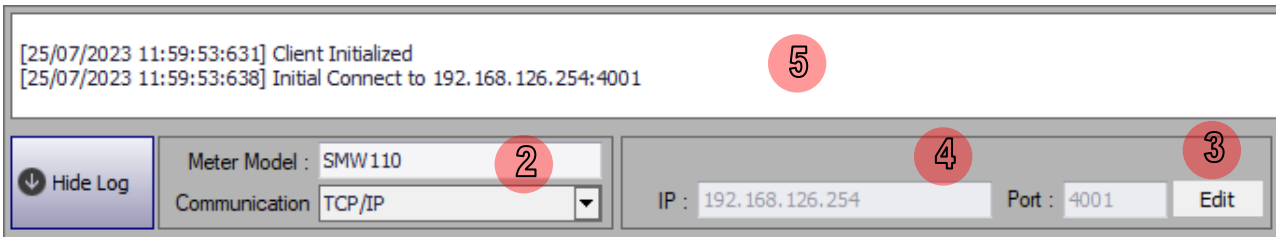


Picture 36: Select and Initialize COM port

User can click (Refresh) button for refresh comport

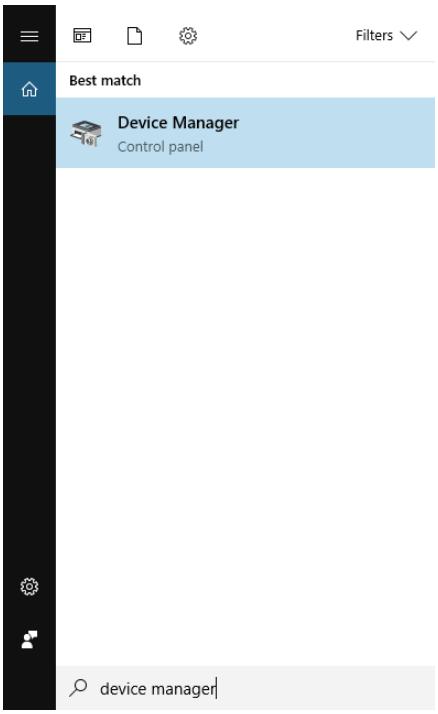
- **TCP/IP**

1) Connect network (RS232 TCP/IP) with computer
2) Open UX EvaluationPro software and select communication method: TCP/IP
3) Click edit
4) Input IP and Port of RS232 TCP/IP
5) If set correct, software will show message “Connected to ..…IP : port…...” on communication log



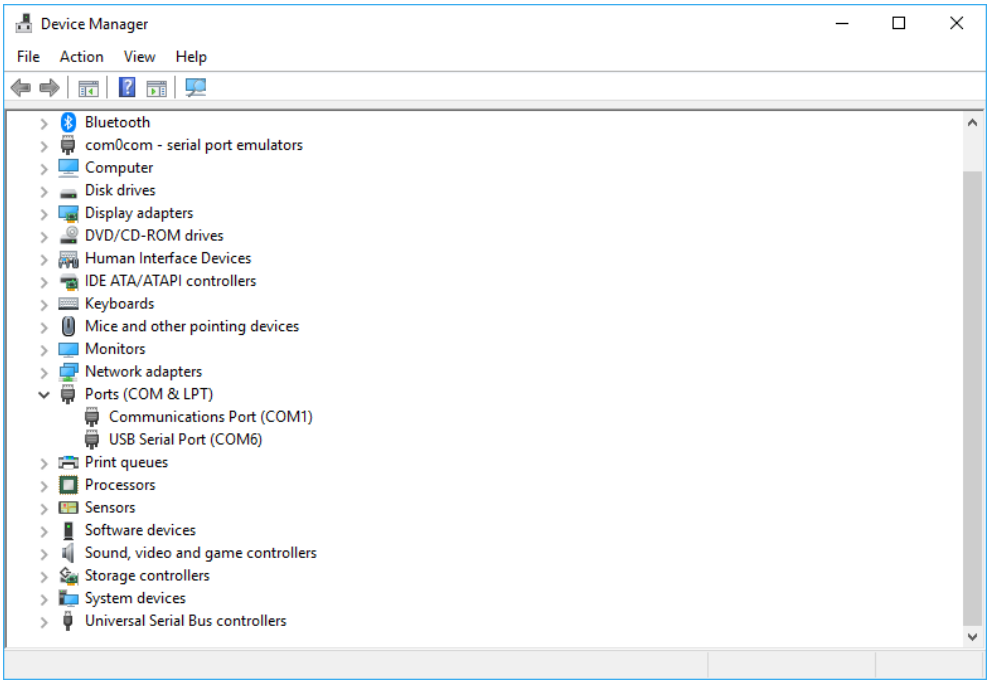
How to Check COM Port

1) Click **Start**, search the word “Device Manager”
2) Click **Device Manager**.



Picture 37: Open device manager

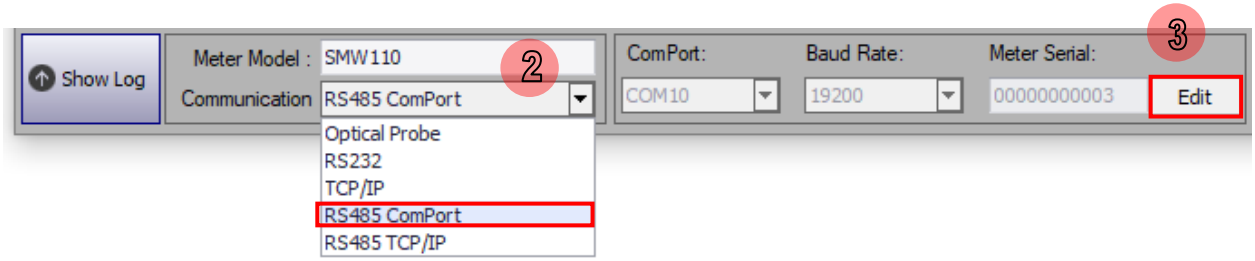
3) On Device Manager screen click **Port**.
4) Find “USB Serial Port” and check comport that use for optical probe.



Picture 38: Device manager screen

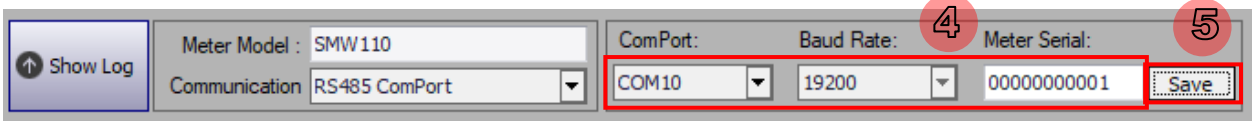
- **RS485 ComPort**

1) Connect network with computer
2) Open UX EvaluationPro software and select communication method: RS485 ComPort
3) Click Edit to set ComPort, Baud Rate and Meter Serial to connect a meter



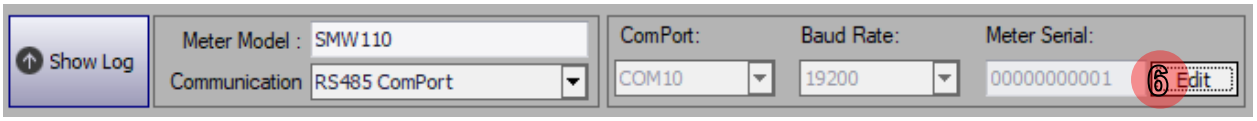
Picture 39: Select RS485 ComPort method to connect a meter

4) Set ComPort, Baud Rate and Meter Serial to connect a meter
5) Click Save



Picture 40: Set ComPort, Baud Rate, and Meter Serial

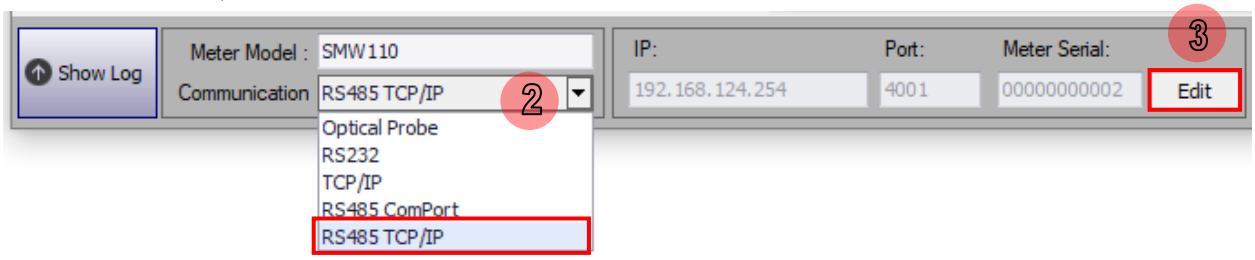
6) If set correct, software will show message “Connected to ...” on communication log



Picture 41: Connected to a meter with RS485 ComPort

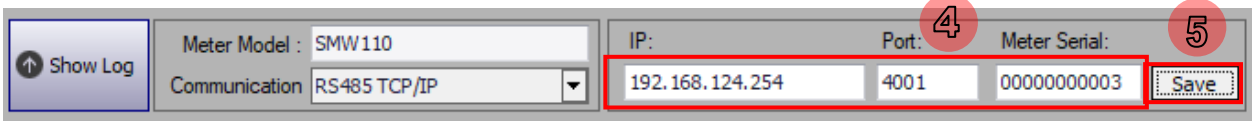
- **RS485 TCP/IP**

1) Connect network with computer
2) Open UX EvaluationPro software and select communication method: RS485 TCP/IP
3) Click Edit to set an IP, Port and Meter Serial to connect a meter



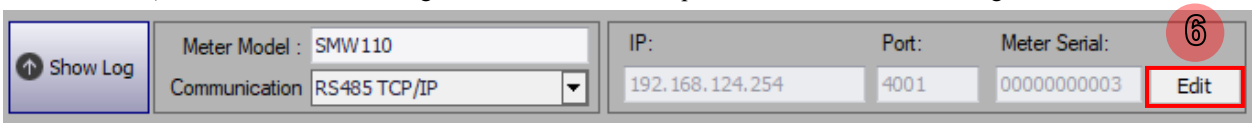
Picture 42: Select RS485 TCP/IP method to connect a meter

4) Set ComPort, Baud Rate and Meter Serial to connect a meter
5) Click Save



Picture 43: Set an IP, Port, and Meter Serial

6) If set correct, software will show message "Connected to .....IP : port….." on communication log

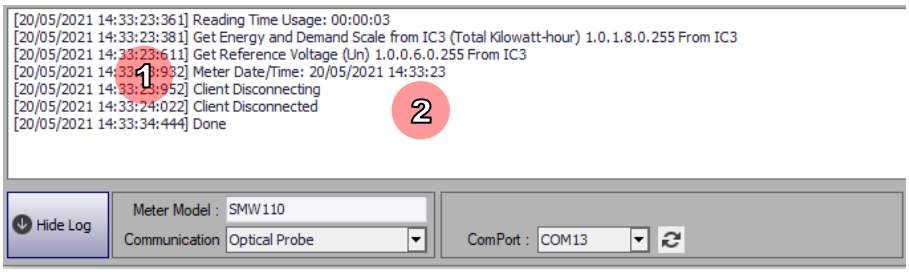


Picture 44: Connected to a meter with RS485 TCP/IP

3.5 Communication Log

Communication log of UX EvaluationPro is used for detect and show status during the software is communicating with a meter.

Communication Log Structure



Picture 45: Communication log

1) **Communication Date Time:** Show communication date and time.
2) **Description message**: Show communication description such as port initialized, connect to meter, disconnect.

Log Message Description

No.	Log Message	Description
1	Client Initialized	Inner process to initial client, this will process when starting application.
2	Port Initialized	Initialize comport. If has default comport in configuration file, will initialize default comport. If no default comport, will initialize first comport in dropdown list. (status bar in main screen)
3	Port Close	Close comport, occur when change comport from dropdown list. (close for initialize selected new comport)
4	Connected to Meter S/N: {S/N}	Connect to meter successful. By {S/N} is meter serial number.
5	Disconnected	Disconnect from meter successful.
6	SNRM Fail	Cannot connect to meter. (check communication port)
7	AARQ Fail	Cannot connect to meter. (check association level and password)
8	Read Billing Data	Start reading process for billing data.
9	Read Meter Data	Start reading process for meter data.
10	Read Meter Date and Time	Start reading process for meter date and time. (meter option)
11	Set Meter Date and Time by Synchronize with PC Date and Time	Start writing process for meter date and time by synchronize with pc date and time. (meter option)
12	Set Meter Date and Time by Manual	Start writing process for meter date and time by manual setting.
13	Manual Demand Reset	Start process to execute manual demand reset script.
14	Read Energy Compensation Value	Start reading process for energy compensation value. (energy error offset)
15	Set Energy Compensation Value	Start writing process for energy compensation value. (energy error offset)
16	Read Current Firmware	Start reading process to read current firmware version.
17	Upgrade Firmware	Start process to upgrade new firmware. (browsed firmware)
18	Start Image Transfer	Start process to transfer new image from file to meter. (take a several minute)
19	Image Transfer Fail. Return Error {E}	Occur when process of transfer new image is failure. {E} is error code.

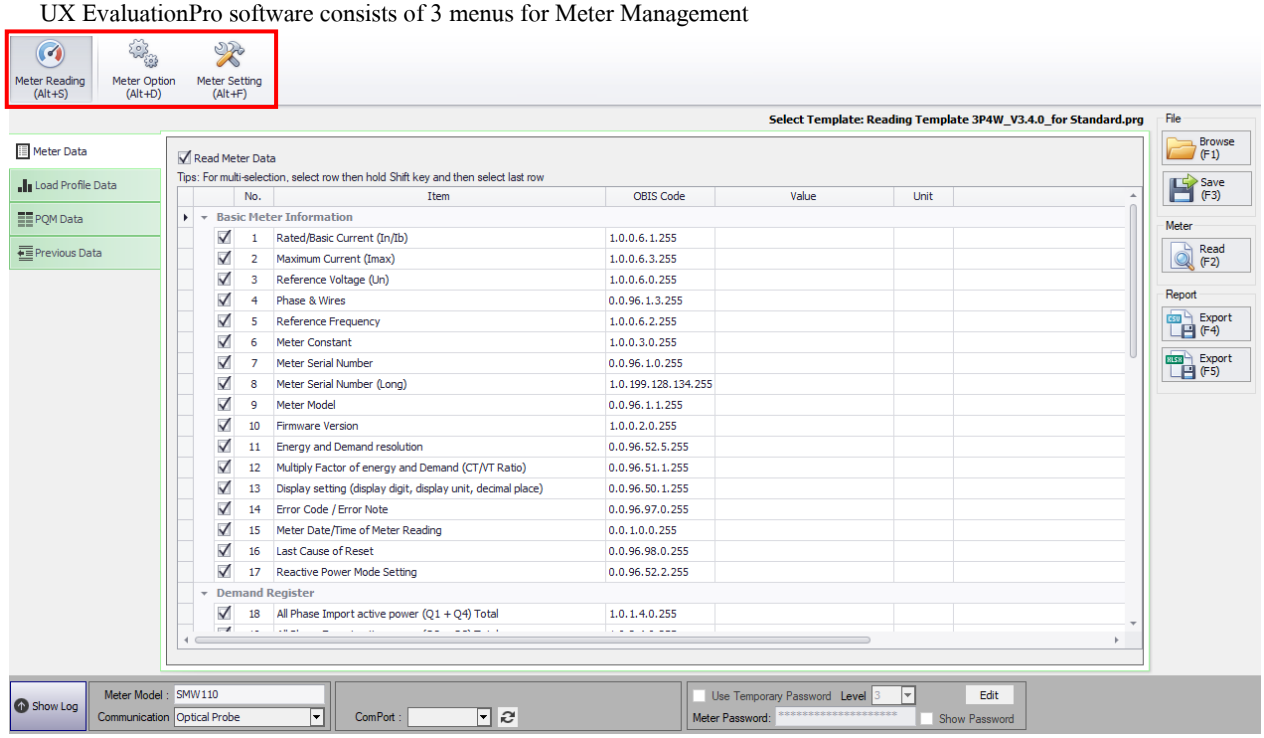
No.	Log Message	Description
		(see error description from Kalkitech DLMS Client OCL document)
20	Image Transfer Usage Time: {Time}	Image transfer complete, display usage transfer time. {Time} is usage time of image transfer process.
21	Verifying Transferred Image	Start process to verify new image (wait for 1 minute), will return status of verification follow - Image Verification Successful (status: 3), continue to activate new image process. - Image Verification Failed (status: 4), stop process, upgrade new firmware failure.
22	Activating Transferred Image	Start process to activate new image (wait for 5 seconds), will return status of activation follow - Image Activation Successful (status: 6), upgrade new firmware successful. - Image Activation Failed (status: 7), stop process, upgrade new firmware failure.
23	Activating Default Image	Start process to activate default image in meter (wait for 5 seconds), will return status of activation follow - Image Activation Successful (status: 6), restore default firmware successful. - Image Activation Failed (status: 7), stop process, restore default firmware failure.
24	Clear Event Log and Counter	Start process to clear event log and counter.
25	Clear Metering Data	Start process to clear metering data.
26	Clear Alarm Register	Start process to clear alarm register.
27	Read Meter Setting	Start reading process for meter setting data.
28	Program Meter Setting	Start programming process for meter setting data.
29	Get [{N}] {Item Name} From IC{ID}	Process to get data from meter where - {N} is number of item in template. - {Item Name} is name of item in template. - {ID} is interface class of item in template.
30	No Read Permission for Attribute {I}	Displays when association has no read permission in attribute. {I} is attribute index.
31	Set [{N}] {Item Name} From IC{ID}	Process to set data to meter where - {N} is number of item in template. - {Item Name} is name of item in template. - {ID} is interface class of item in template.
32	No Write Permission for Attribute {I}	Displays when association has no write permission to attribute. {I} is attribute index.
33	Execute [{N}] {Item Name} From IC{ID}	Process to execute action to meter where - {N} is number of item in template. - {Item Name} is name of item in template. - {ID} is interface class of item in template.
34	No Action Permission for Method {I}	Display when association has no action permission to method. {I} is method index.
35	Skip Attribute/Method {I}	Display when skip to read item attribute, write item attribute or execute item method. {I} is attribute index or method index.
36	Meter Date/Time: {DateTime}	Display after finish read process or program process. {DateTime} is date and time read from meter.
37	Done	Display when process complete. (successful)
38	Project Name OK	Display when software connect to meter successfully with correct license file
39	License has No Access Right. Meter Project Name is {Project Name}, Please contact Administrator.	Display when software connect to meter unsuccessfully with incorrect license file {Project Name} is name of project name in meter.

Note:

1. Software will clear communication log after closed software.
2. Software will record all communication logs in text file. File will be saved in C:\MEATH\UX EvaluationPro\Log

4 Meter Management

UX EvaluationPro software consists of 3 menus for Meter Management



Picture 46: UX EvaluationPro main screen for Meter Management

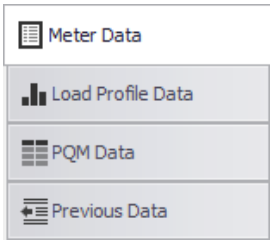
Picture 47: Meter Management menu

1) **Meter Reading:** Use for reading meter data, load profile data, PQM data, previous data. This menu able to read data from meter and export data to .csv file, .xlsx file
2) **Meter Option:** Use for reading, set change meter date and time
3) **Meter Setting:** Use for reading and setting data to meter as calendar setting, self-reading, and display setting and CT Ratio. This menu also able to save data to template file (.prg file) and export data to .csv file, .xlsx file

4.1 Meter Reading

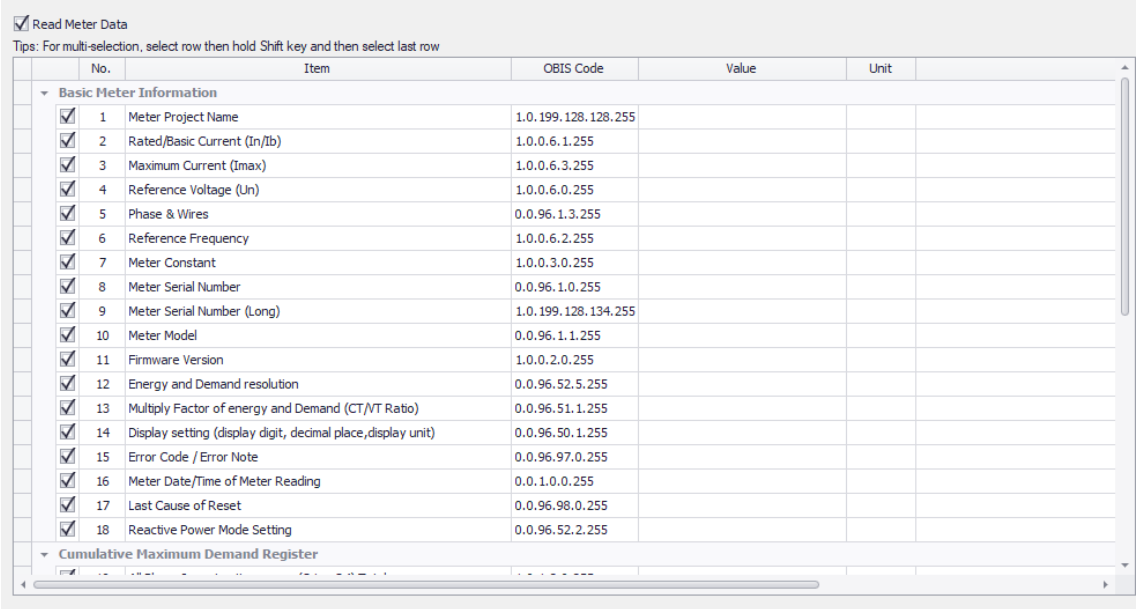
4.1.1 Meter Reading Tab Menu

Meter reading menu consist of 4-tab menus: Meter Data, Load Profile, PQM Data, and Previous Data



Picture 48: Meter Reading menu tabs

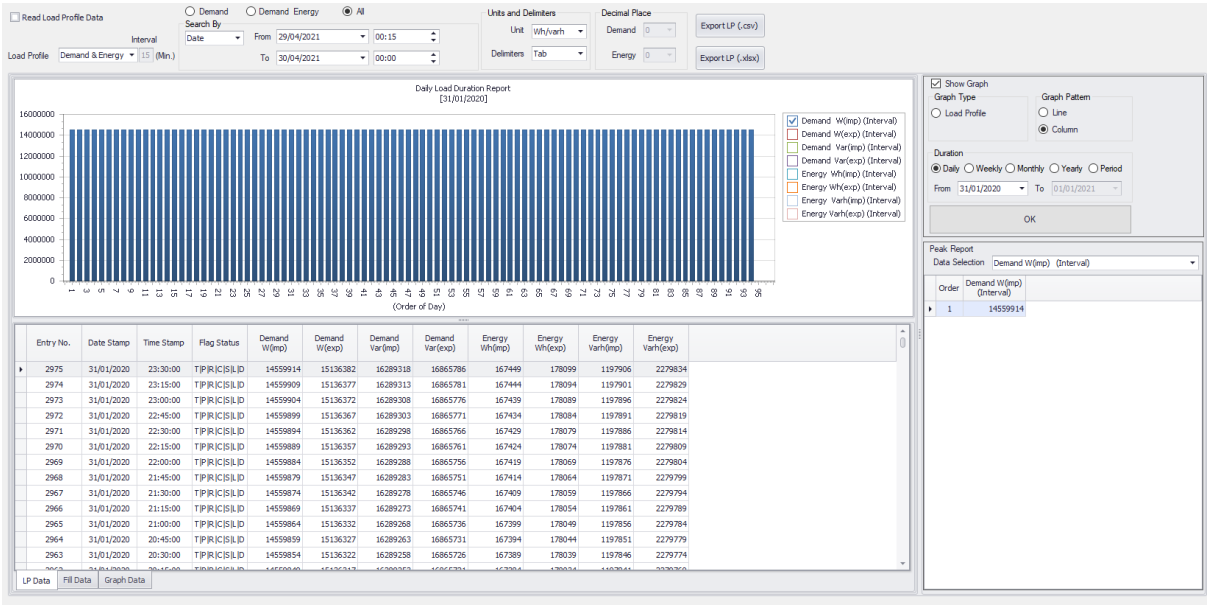
1) **Meter Data Tab:** For read basic meter information, cumulative maximum demand register, demand register, maximum demand register and present total energy register.



	No.	Item	OBIS Code	Value	Unit
Basic Meter Information					
☑	1	Meter Project Name	1.0.199.128.128.255		
☑	2	Rated/Basic Current (In/Ib)	1.0.0.6.1.255		
☑	3	Maximum Current (Imax)	1.0.0.6.3.255		
☑	4	Reference Voltage (Un)	1.0.0.6.0.255		
☑	5	Phase & Wires	0.0.96.1.3.255		
☑	6	Reference Frequency	1.0.0.6.2.255		
☑	7	Meter Constant	1.0.0.3.0.255		
☑	8	Meter Serial Number	0.0.96.1.0.255		
☑	9	Meter Serial Number (Long)	1.0.199.128.134.255		
☑	10	Meter Model	0.0.96.1.1.255		
☑	11	Firmware Version	1.0.0.2.0.255		
☑	12	Energy and Demand resolution	0.0.96.52.5.255		
☑	13	Multiply Factor of energy and Demand (CT/VT Ratio)	0.0.96.51.1.255		
☑	14	Display setting (display digit, decimal place,display unit)	0.0.96.50.1.255		
☑	15	Error Code / Error Note	0.0.96.97.0.255		
☑	16	Meter Date/Time of Meter Reading	0.0.1.0.0.255		
☑	17	Last Cause of Reset	0.0.96.98.0.255		
☑	18	Reactive Power Mode Setting	0.0.96.52.2.255		
Cumulative Maximum Demand Register					

Picture 49: Meter Data tab

2) **Load Profile Tab:** For read load profile data consist of Demand & Energy profile load profile and PQM load profile**.**



Picture 50: Load Profile tab

Demand and Energy load profile

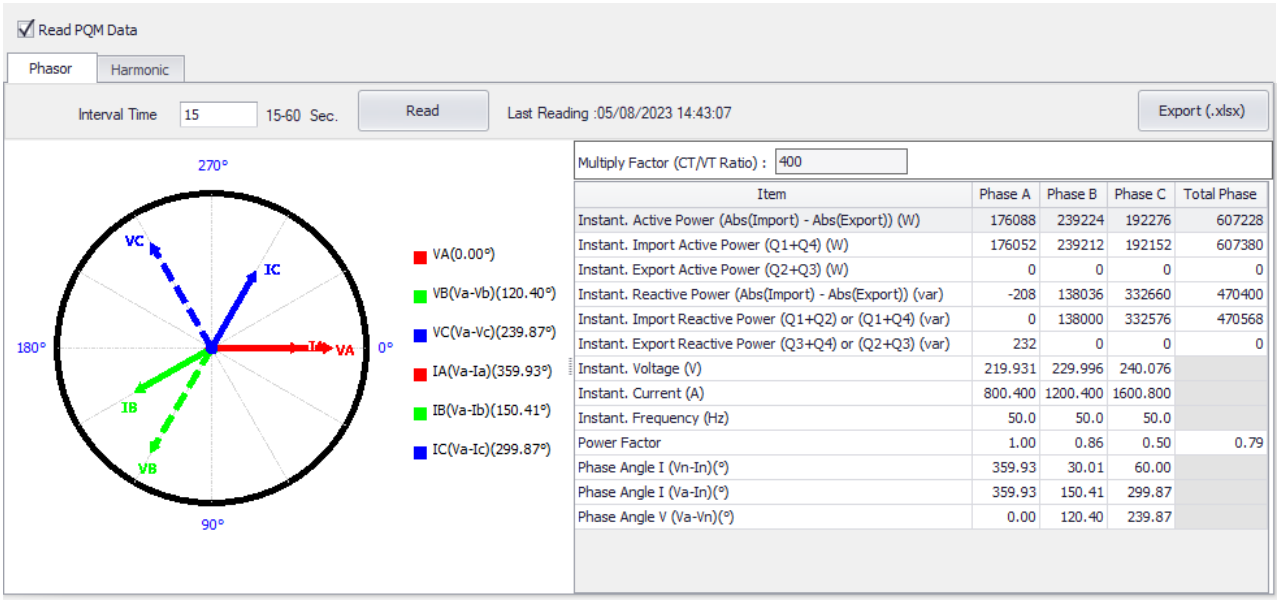
No.	Column Name	Description	3P4W	3P3W
1	Record No	For show record number	o	o
2	Date Stamp	For show date stamp	o	o
3	Time Stamp	For show time stamp	o	o
4	Flag Status	For show flag status (separate by "|" (pipe))	o	o
5	Demand W(imp)	Show demand W(imp) value	o	o
6	Demand W(exp)	Show demand W(exp) value	o	o
7	Demand W Net (imp-exp)	Show demand W Net (imp-exp) value	o	o
8	Demand Var(imp)	Show demand Var(imp) value	o	o
9	Demand Var(exp)	Show demand Var(exp) value	o	o
10	Demand Var Net (imp-exp)	Show demand Var Net (imp-exp)value	o	o
11	Energy Wh(imp)	Show energy Wh(imp) value	o	o
12	Energy Wh(exp)	Show energy Wh(exp) value	o	o
13	Energy Wh Net (imp-exp)	Show energy Wh Net (imp-exp) value	o	o
14	Energy Varh(imp)	Show energy Varh(imp) value	o	o
15	Energy Varh(exp)	Show energy Varh(exp) value	o	o
16	Energy Varh Net (imp-exp)	Show energy Varh Net (imp-exp) value	o	o

PQM load profile.

No.	Column Name	Description	3P4W	3P3W
1	Record No	For show record number	o	o
2	Date Stamp	For show date stamp	o	o
3	Time Stamp	For show time stamp	o	o
4	Flag Status	For show flag status (separate by "|"(pipe))	o	o
5	Voltage	Show voltage	-	-
6	Voltage A	Show voltage phase A	o	o
7	Voltage B	Show voltage phase B	o	-
8	Voltage C	Show voltage phase C	o	o
9	Current	Show current	-	-
10	Current A	Show current phase A	o	o
11	Current B	Show current phase B	o	o
12	Current C	Show current phase C	o	o
13	Current N (Virtual)	Show current phase N	o	o
14	THD_V	Show THD_V	-	-
15	THD_V A	Show THD_V phase A	o	o
16	THD_V B	Show THD_V phase B	o	-
17	THD_V C	Show THD_V phase C	o	o
18	THD_I	Show THD_I	-	-
19	THD_I A	Show THD_I phase A	o	o

No.	Column Name	Description	3P4W	3P3W
20	THD_I B	Show THD_I phase B	o	o
21	THD_I C	Show THD_I phase C	o	o
22	PF All Phase	Show PF All phase	o	o
23	PF A	Show PF phase A	o	o
24	PF B	Show PF phase B	o	o
25	PF C	Show PF phase C	o	o
26	Angle Ia	Phase 1 phase angle (V1-I1)	o	o
27	Angle Ib	Phase 2 phase angle (V2-I2)	o	o
28	Angle Ic	Phase 3 phase angle (V3-I3)	o	o
29	Angle Vb	Phase angle (V1-V2)	o	o
30	Angle Vc	Phase angle (V3-V1)	o	o
31	Instant Voltage	Show Any Phase Instant voltage	-	-
32	Instant Voltage A	Show Instant Voltage A	o	o
33	Instant Voltage B	Show Instant Voltage B	o	-
34	Instant Voltage C	Show Instant Voltage C	o	o
35	Instant Current	Show Any Phase Instant current	-	-
36	Instant Current A	Show Instant Current A	o	o
37	Instant Current B	Show Instant Current B	o	o
38	Instant Current C	Show Instant Current C	o	o
39	Instant Current N	Show Instant Current N	o	o
40	Instant THD_V	Show Any Phase Instant THD voltage	-	-
41	Instant THD_V A	Show Instant THD_V A	o	o
42	Instant THD_V B	Show Instant THD_V B	o	-
43	Instant THD_V C	Show Instant THD_V C	o	o
44	Instant THD_I	Show Any Phase Instant THD current	-	-
45	Instant THD_I A	Show Instant THD_I A	o	o
46	Instant THD_I B	Show Instant THD_I B	o	o
47	Instant THD_I C	Show Instant THD_I C	o	o
48	Instant PF All Phase	Show Instant PF All phase	o	o
49	Instant PF A	Show Instant PF A	o	o
50	Instant PF B	Show Instant PF B	o	o
51	Instant PF C	Show Instant PF C	o	o
52	Instant Angle Ia	Show Instant Phase 1 phase angle (V1-I1)	o	o
53	Instant Angle Ib	Show Instant Phase 2 phase angle (V2-I2)	o	o
54	Instant Angle Ic	Show Instant Phase 3 phase angle (V3-I3)	o	o
55	Instant Angle Vb	Show Instant Phase angle (V1-V2)	o	o
56	Instant Angle Vc	Show Instant Phase angle (V3-V1)	o	o

3) PQM Data Tab: For read phasor, harmonics.

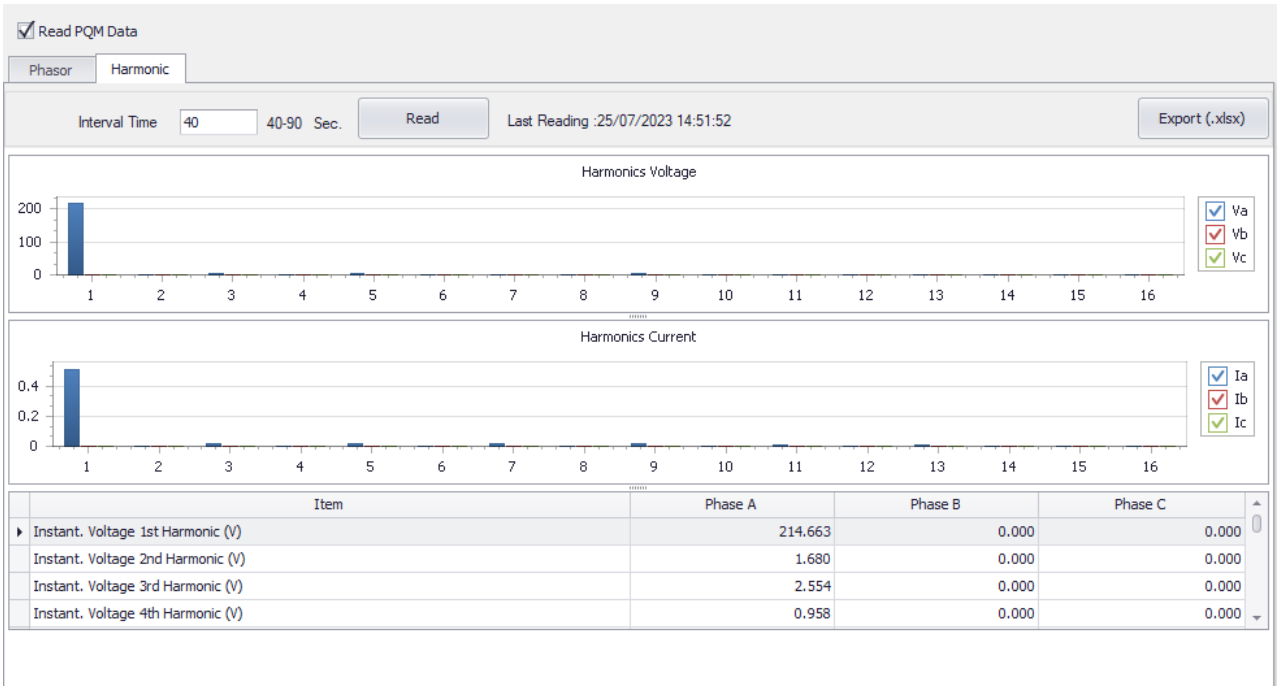


Item	Phase A	Phase B	Phase C	Total Phase
Instant. Active Power (Abs(Import) - Abs(Export)) (W)	176088	239224	192276	607228
Instant. Import Active Power (Q1+Q4) (W)	176052	239212	192152	607380
Instant. Export Active Power (Q2+Q3) (W)	0	0	0	0
Instant. Reactive Power (Abs(Import) - Abs(Export)) (var)	-208	138036	332660	470400
Instant. Import Reactive Power (Q1+Q2) or (Q1+Q4) (var)	0	138000	332576	470568
Instant. Export Reactive Power (Q3+Q4) or (Q2+Q3) (var)	232	0	0	0
Instant. Voltage (V)	219.931	229.996	240.076	
Instant. Current (A)	800.400	1200.400	1600.800	
Instant. Frequency (Hz)	50.0	50.0	50.0	
Power Factor	1.00	0.86	0.50	0.79
Phase Angle I (Vn-In)(°)	359.93	30.01	60.00	
Phase Angle I (Va-In)(°)	359.93	150.41	299.87	
Phase Angle V (Va-Vn)(°)	0.00	120.40	239.87	

Picture 51: PQM Data tab (Phasor)

Phasor data

No.	Column Name	Description
1	Item	For show item
2	Phase A	For show data of Phase A
3	Phase B	For show data of Phase B
4	Phase C	For show data of Phase C
5	Total Phase	For show data of Total phase

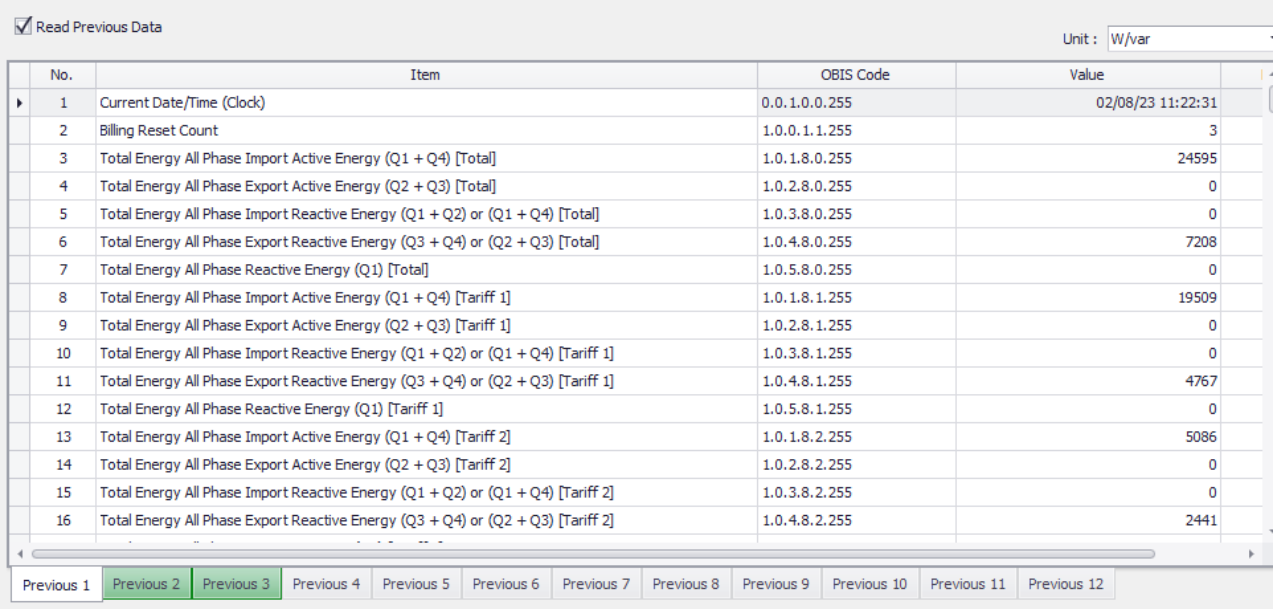


Picture 52: PQM Data tab (Harmonic)

Harmonics Voltage data, Harmonics Current data

No.	Column Name	Description
1	Item	For show item
2	Phase A	For show Harmonics data of Phase A
3	Phase B	For show Harmonics data of Phase B
4	Phase C	For show Harmonics data of Phase C

4) Previous Data Tab: For read previous data up to 12 previous



No.	Item	OBIS Code	Value
1	Current Date/Time (Clock)	0.0.1.0.0.255	02/08/23 11:22:31
2	Billing Reset Count	1.0.0.1.1.255	3
3	Total Energy All Phase Import Active Energy (Q1 + Q4) [Total]	1.0.1.8.0.255	24595
4	Total Energy All Phase Export Active Energy (Q2 + Q3) [Total]	1.0.2.8.0.255	0
5	Total Energy All Phase Import Reactive Energy (Q1 + Q2) or (Q1 + Q4) [Total]	1.0.3.8.0.255	0
6	Total Energy All Phase Export Reactive Energy (Q3 + Q4) or (Q2 + Q3) [Total]	1.0.4.8.0.255	7208
7	Total Energy All Phase Reactive Energy (Q1) [Total]	1.0.5.8.0.255	0
8	Total Energy All Phase Import Active Energy (Q1 + Q4) [Tariff 1]	1.0.1.8.1.255	19509
9	Total Energy All Phase Export Active Energy (Q2 + Q3) [Tariff 1]	1.0.2.8.1.255	0
10	Total Energy All Phase Import Reactive Energy (Q1 + Q2) or (Q1 + Q4) [Tariff 1]	1.0.3.8.1.255	0
11	Total Energy All Phase Export Reactive Energy (Q3 + Q4) or (Q2 + Q3) [Tariff 1]	1.0.4.8.1.255	4767
12	Total Energy All Phase Reactive Energy (Q1) [Tariff 1]	1.0.5.8.1.255	0
13	Total Energy All Phase Import Active Energy (Q1 + Q4) [Tariff 2]	1.0.1.8.2.255	5086
14	Total Energy All Phase Export Active Energy (Q2 + Q3) [Tariff 2]	1.0.2.8.2.255	0
15	Total Energy All Phase Import Reactive Energy (Q1 + Q2) or (Q1 + Q4) [Tariff 2]	1.0.3.8.2.255	0
16	Total Energy All Phase Export Reactive Energy (Q3 + Q4) or (Q2 + Q3) [Tariff 2]	1.0.4.8.2.255	2441

Picture 53: Previous Data Tab

Previous Data

No.	Column Name	Description
1	No.	Show running no.
2	Item	Show item name
3	OBIS Code	Show OBIS Code of each item
4	Value	Show value
5	Remark	Show remark

Software support for viewing previous data with unit selected as

1) kW/kvar => to show data as kW/kvar

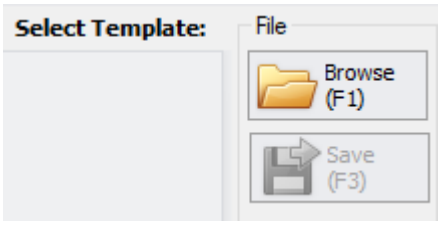
2) W/var => to show data as W/var

Default: kW/kvar

4.1.2 Browse File

Before read data from meter we have to browse template file for use in reading operation.

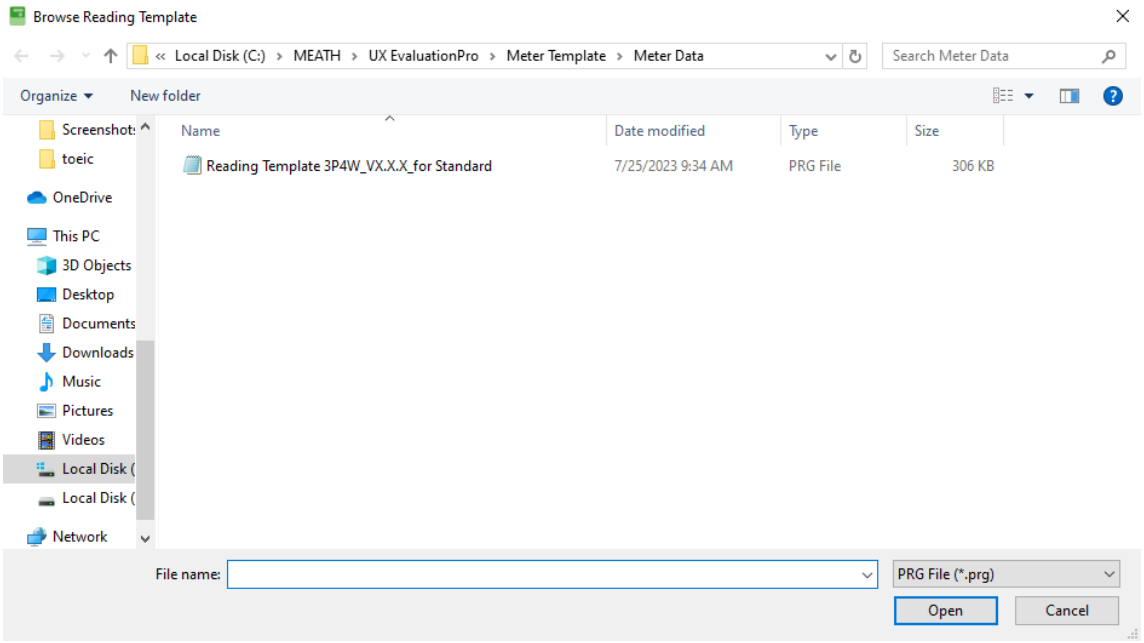
1) Click **Browse** button or Press **F1** key.



Picture 54: Browse reading template button

2) Select template file (.prg file).

3) Click **Open** button.



Picture 55: Select reading template

4) After browse file software will show template name and item list.

Read Meter Data

Tips: For multi-selection, select row then hold Shift key and then select last row

No.	Item	OBIS Code	Value	Unit	Remark
Basic Meter Information					
1	Rated/Basic Current (In/Ib)	1.0.0.6.1.255	5.0	A	
2	Maximum Current (Imax)	1.0.0.6.3.255	100	A	
3	Reference Voltage (Un)	1.0.0.6.0.255	230.0	V	
4	Phase & Wires	0.0.96.1.3.255	3P4W		
5	Reference Frequency	1.0.0.6.2.255	50	Hz	
6	Meter Constant	1.0.0.3.0.255	5.000	1/(Wh)	
7	Meter Serial Number	0.0.96.1.0.255	00389765432		
8	Multiply Factor of energy and Demand (CT/VT Ratio)	0.0.96.51.1.255	1		
9	Error Code / Error Note	0.0.96.97.0.255	Er0000000		
10	Meter Date/Time of Meter Reading	0.0.1.0.0.255	01/02/2020 00:35:48		
Demand Register					
11	All Phase Import active power (Q1 + Q4) Total	1.0.1.4.0.255	14545029 | 14545129	W	current average value | last average ...
12	All Phase Export active power (Q2 + Q3) Total	1.0.2.4.0.255	15121497 | 15121597	W	current average value | last average ...
13	All Phase Import reactive power (Q1 + Q2) or (Q1 + Q4) Total	1.0.3.4.0.255	16274433 | 16274533	var	current average value | last average ...
14	All Phase Export reactive power (Q3 + Q4) or (Q2 + Q3) Total	1.0.4.4.0.255	16850901 | 16851001	var	current average value | last average ...
15	All Phase reactive power (Q1) Total	1.0.5.4.0.255	17427369 | 17427469	var	current average value | last average ...
16	All Phase reactive power (Q2) Total	1.0.6.4.0.255	854633 | 854733	var	current average value | last average ...
17	All Phase reactive power (Q3) Total	1.0.7.4.0.255	1667573 | 1667673	var	current average value | last average ...
18	All Phase reactive power (Q4) Total	1.0.8.4.0.255	2480513 | 2480613	var	current average value | last average ...

Picture 56: After browse reading template

4.1.3 Read Data

Note: Please browse template file before read data (See **4.3.2 Browse File**)

Software will read all data which check box mark for reading consist of Meter Data, Load Profile data, PQM, and Previous Data respectively

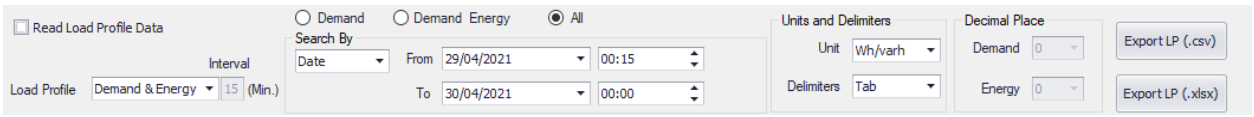
- For Meter Data tab, PQM data tab software support multiple check by

  "Hold Ctrl button + checkbox select" for separate selection

  "Hold Shift button + "start" checkbox to "end" check box for continued selection

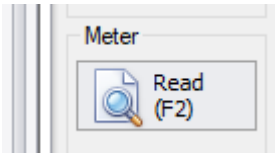
- For Load Profile data, Event data reading has reading condition, User can change reading condition by follow step as

1) Click Load Profile Data tab.
2) Select load profile reading condition, read all, read by record number or read by date. Default record number is from 4701 to 4800, this range can be changed.
3) If select Record No. input record range that want to read.



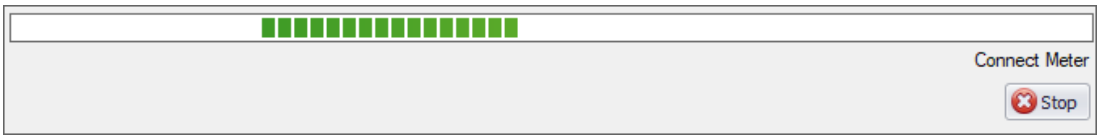
Picture 57: Read load profile condition

4) Click **Read** button or Press **F2** key.



Picture 58: Read button

5) During read meter software will show progress bar, please wait until finish.



Picture 59: Software is reading data

6) After

Read Meter Data

Tips: For multi-selection, select row then hold Shift key and then select last row

No.	Item	OBIS Code	Value	Unit	Remark
	Basic Meter Information				
1	Rated/Basic Current (In/Ib)	1.0.0.6.1.255	5.0	A	
2	Maximum Current (Imax)	1.0.0.6.3.255	100	A	
3	Reference Voltage (Un)	1.0.0.6.0.255	230.0	V	
4	Phase & Wires	0.0.96.1.3.255	3P4W		
5	Reference Frequency	1.0.0.6.2.255	50	Hz	
6	Meter Constant	1.0.0.3.0.255	5.000	1/(Wh)	
7	Meter Serial Number	0.0.96.1.0.255	00389765432		
8	Multiply Factor of energy and Demand (CT/VT Ratio)	0.0.96.51.1.255	1		
9	Error Code / Error Note	0.0.96.97.0.255	Er0000000		
10	Meter Date/Time of Meter Reading	0.0.1.0.0.255	01/02/2020 00:35:48		
	Demand Register				
11	All Phase Import active power (Q1 + Q4) Total	1.0.1.4.0.255	14545029 | 14545129	W	current average value | last average ...
12	All Phase Export active power (Q2 + Q3) Total	1.0.2.4.0.255	15121497 | 15121597	W	current average value | last average ...
13	All Phase Import reactive power (Q1 + Q2) or (Q1 + Q4) Total	1.0.3.4.0.255	16274433 | 16274533	var	current average value | last average ...
14	All Phase Export reactive power (Q3 + Q4) or (Q2 + Q3) Total	1.0.4.4.0.255	16850901 | 16851001	var	current average value | last average ...
15	All Phase reactive power (Q1) Total	1.0.5.4.0.255	17427369 | 17427469	var	current average value | last average ...
16	All Phase reactive power (Q2) Total	1.0.6.4.0.255	854633 | 854733	var	current average value | last average ...
17	All Phase reactive power (Q3) Total	1.0.7.4.0.255	1667573 | 1667673	var	current average value | last average ...
18	All Phase reactive power (Q4) Total	1.0.8.4.0.255	2480513 | 2480613	var	current average value | last average ...

Picture 60: Reading data finished

Meter Data Item for each user

No.	Item	OBIS Code	Login by	
			User	Advance
	Basic Meter Information			
1	Rated/Basic Current (In/Ib)	1.0.0.6.1.255	O	O
2	Maximum Current (Imax)	1.0.0.6.3.255	O	O
3	Reference Voltage (Un)	1.0.0.6.0.255	O	O
4	Phase & Wires	0.0.96.1.3.255	O	O
5	Reference Frequency	1.0.0.6.2.255	O	O
6	Meter Constant	1.0.0.3.0.255	O	O
7	Meter Serial Number	0.0.96.1.0.255	O	O
8	Meter Serial Number (Long)	1.0.199.128.134.255	O	O
9	Meter Model	0.0.96.1.1.255	O	O
10	Firmware Version	1.0.0.2.0.255	O	O
11	Energy and Demand resolution	0.0.96.52.5.255	O	O
12	Multiply Factor of energy and Demand (CT/VT Ratio)	0.0.96.51.1.255	O	O
13	Display setting (display digit, decimal place, display unit)	0.0.96.50.1.255	O	O
14	Error Code / Error Note	0.0.96.97.0.255	O	O
15	Meter Date/Time of Meter Reading	0.0.1.0.0.255	O	O
16	Last Cause of Reset	0.0.96.98.0.255	O	O
17	Reactive Power Mode Setting	0.0.96.52.2.255	O	O
	Demand Register			
18	All Phase Import active power (Q1 + Q4) Total	1.0.1.4.0.255	O	
19	All Phase Export active power (Q2 + Q3) Total	1.0.2.4.0.255	O	
20	All Phase Import reactive power (Q1 + Q2) or (Q1 + Q4)	1.0.3.4.0.255	O	
21	All Phase Export reactive power (Q3 + Q4) or (Q2 + Q3)	1.0.4.4.0.255	O	
22	All Phase reactive power (Q1) Total	1.0.5.4.0.255	O	
23	All Phase reactive power (Q2) Total	1.0.6.4.0.255	O	
24	All Phase reactive power (Q3) Total	1.0.7.4.0.255	O	
25	All Phase reactive power (Q4) Total	1.0.8.4.0.255	O	
	Maximum Demand Register			
26	All Phase Import active power (Q1 + Q4) Total	1.0.1.6.0.255	O	
27	All Phase Export active power (Q2 + Q3) Total	1.0.2.6.0.255	O	
28	All Phase Import reactive power (Q1 + Q2) or (Q1 + Q4)	1.0.3.6.0.255	O	
29	All Phase Export reactive power (Q3 + Q4) or (Q2 + Q3)	1.0.4.6.0.255	O	
30	All Phase reactive power (Q1) Total	1.0.5.6.0.255	O	
31	All Phase reactive power (Q2) Total	1.0.6.6.0.255	O	
32	All Phase reactive power (Q3) Total	1.0.7.6.0.255	O	
33	All Phase reactive power (Q4) Total	1.0.8.6.0.255	O	
	Present Energy Register			
34	All Phase active energy (Abs(Import)+Abs(Export)) Total	1.0.15.8.0.255	O	O
35	All Phase Import active energy (Q1 + Q4) Total	1.0.1.8.0.255	O	O

No.	Item	OBIS Code	Login by	
			User	Advance
36	All Phase Import active energy (Q1 + Q4) Tariff 1	1.0.1.8.1.255	O	O
37	All Phase Import active energy (Q1 + Q4) Tariff 2	1.0.1.8.2.255	O	O
38	All Phase Import active energy (Q1 + Q4) Tariff 3	1.0.1.8.3.255	O	O
39	All Phase Export active energy (Q2 + Q3) Total	1.0.2.8.0.255	O	
40	All Phase reactive energy (Q1) Total	1.0.5.8.0.255	O	
41	All Phase reactive energy (Q2) Total	1.0.6.8.0.255	O	
42	All Phase reactive energy (Q3) Total	1.0.7.8.0.255	O	
43	All Phase reactive energy (Q4) Total	1.0.8.8.0.255	O	
44	Phase 1 Import active energy (Q1 + Q4) Total	1.0.21.8.0.255	O	O
45	Phase 1 Import reactive energy (Q1 + Q2) or (Q1+ Q4)	1.0.23.8.0.255	O	
46	Phase 1 Export reactive energy (Q3 + Q4) or (Q2 + Q3)	1.0.24.8.0.255	O	
47	Phase 2 Import active energy (Q1 + Q4) Total	1.0.41.8.0.255	O	O
48	Phase 3 Import active energy (Q1 + Q4) Total	1.0.61.8.0.255	O	O

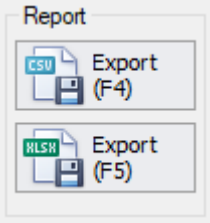
Note: In case login user is mismatched with meter supported, software will show “N/A” on item that meter has not support reading

4.1.4 Export Data

Software support exporting meter reading data file 2 format as *.csv files and *.xlsx files

- You can export meter reading report to CSV file by

1) After read data click **Export** button or Press **F4** key.



Picture 61: Export reading data button (CSV)

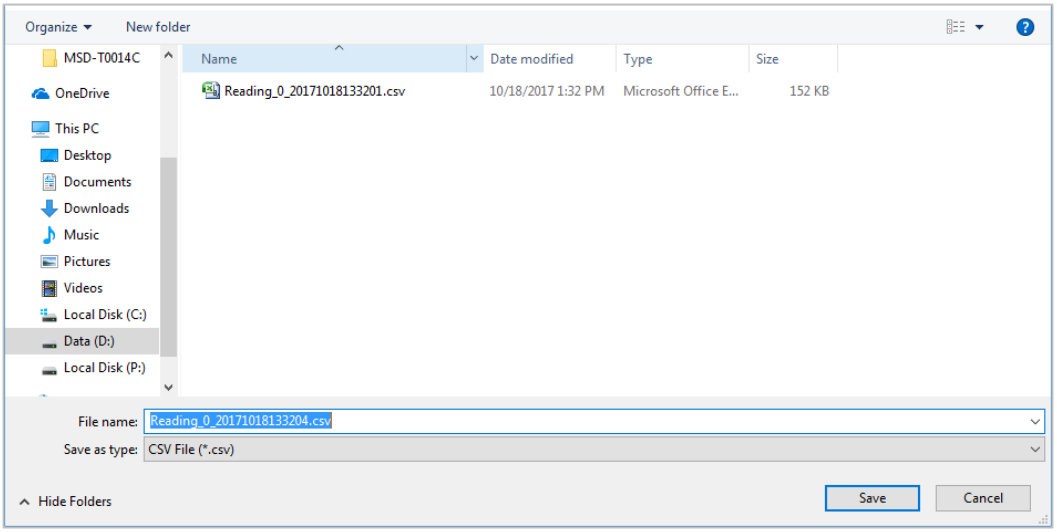
2) Software will generate file name automatically. Default file name is

   Reading_[Meter Serial No.]_yyyyMMddHHmmss.csv

   yyyyMMddHHmmss is date time example: 20171018133204

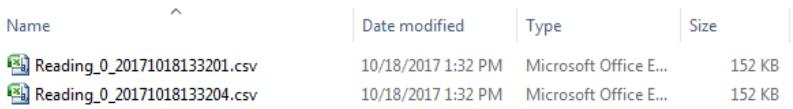
3) Select path to save file. Default save path is C:\MEATH\UX EvaluationPro\Meter Report\Meter Data

4) Click **Save** button.



Picture 62: Save reading report file (CSV)

5) The report file will be exported.

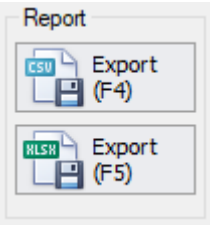


Picture 63: Export reading report finished (CSV)

Note: If reading data was unsuccessful, data in report file will be blank.

- You can export meter reading report to XLSX file by

1) After read data click **Export** button or Press **F5** key.



Picture 64: Export reading data button (XLSX)

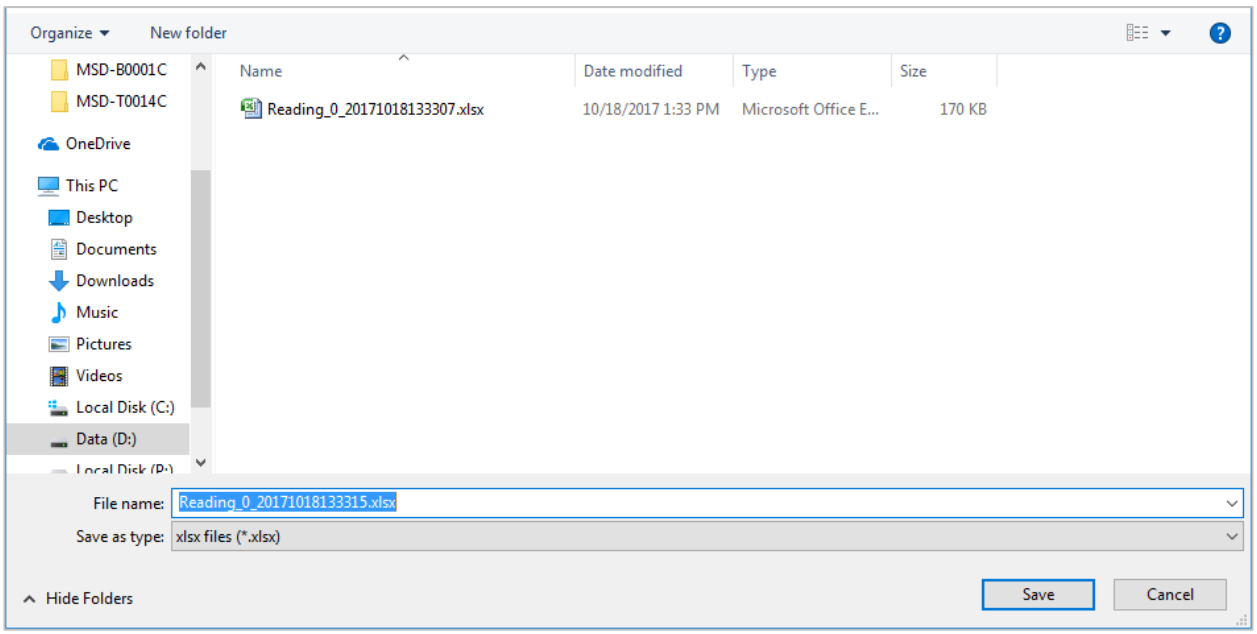
2) Software will generate file name automatically. Default file name is

   Reading_[Meter Serial No.]_yyyyMMddHHmmss.xlsx

   yyyyMMddHHmmss is date time example: 20171018133315

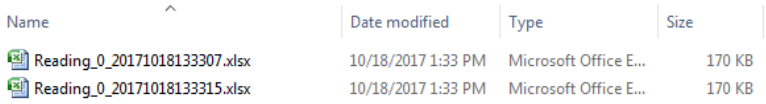
3) Select path to save file. Default save path is C:\MEATH\UX EvaluationPro\Meter Report\Meter Data

4) Click **Save** button.



Picture 65: Save reading report file (XLSX)

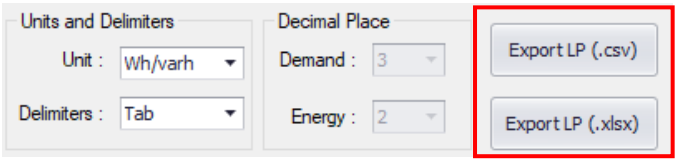
5) The report file will be exported.



Picture 66: Export reading report finished (XLSX)

Note: If reading data was unsuccessful, data in report file will be blank.

In Load Profile data screen, user can export only load profile data both CSV and XLSX file with unit and delimiters selected



Picture 67: Export load profile report

Note: Unit as follow

1) kWh/kvarh => display load profile data in kWh/kvarh unit

2) Wh/varh => display load profile data in Wh/varh unit

Default : kWh/kvarh

Delimiters as follow

1) Comma => in which the comma character (,) usually separates each field of text.

2) Tab => in which the TAB character usually separates each field of text.

3) Space => in which the Space character usually separates each field of text.

Default : Comma

1) After read data, open Load Profile Tab, Select Unit, Delimiters, select Load Profile (Demand & Energy/ PQM)

If Click **Export LP (.csv)** button.

Software will generate file name automatically. Default file name is

If select “Demand & Energy” => LP_[Meter Serial No.]_DemandEnergy_yyyyMMddHHmmss.csv

If select “PQM” => LP_[Meter Serial No.]_PQM_yyyyMMddHHmmss.csv

yyyyMMddHHmmss is date time example: 20171018134903

If Click **Export LP (.xlsx)** button.

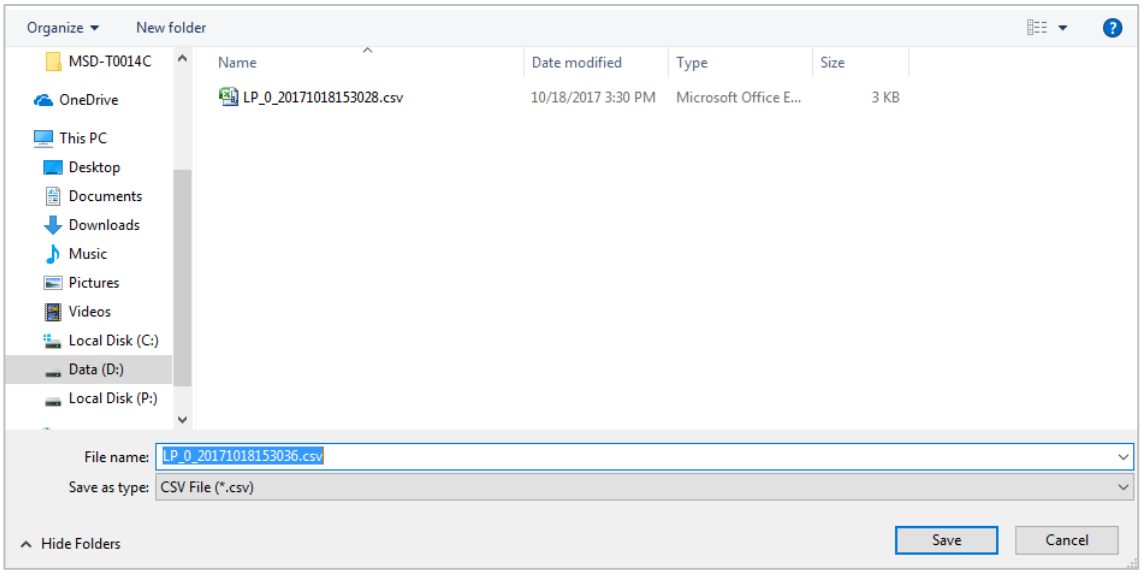
Software will generate file name automatically. Default file name is

If select “Demand & Energy” => LP_[Meter Serial No.]_DemandEnergy_yyyyMMddHHmmss.xlsx

If select “PQM” => LP_[Meter Serial No.]_PQM_yyyyMMddHHmmss.xlsx

yyyyMMddHHmmss is date time example: 20171018134903

2) Select path to save file. Default save path is C:\MEATH\UX EvaluationPro\Meter Report\Meter Data\Load Profile Data



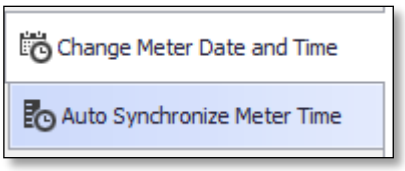
Picture 68: Save load profile report file

3) Click **Save** button.

4) The report file will be exported.

4.2 Meter Option

Meter option menu consist of 2-tab menus: Change Meter Date and Time, and Auto Synchronize Meter Time

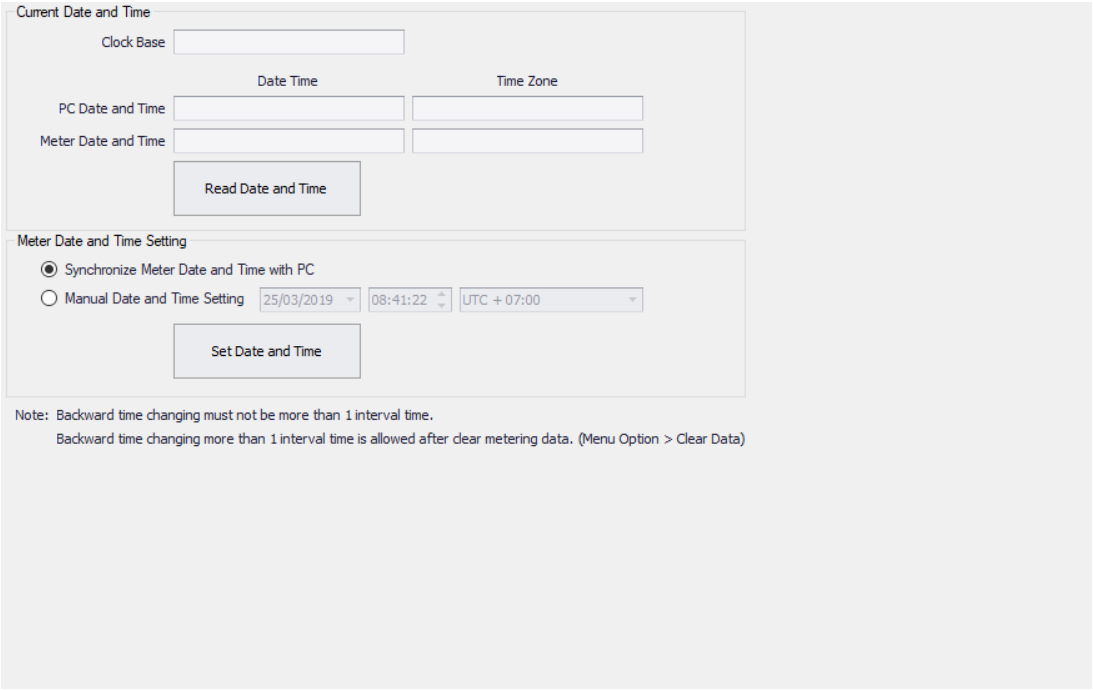


Picture 69: Meter Option menu tabs

4.2.1 Change Meter Date and Time

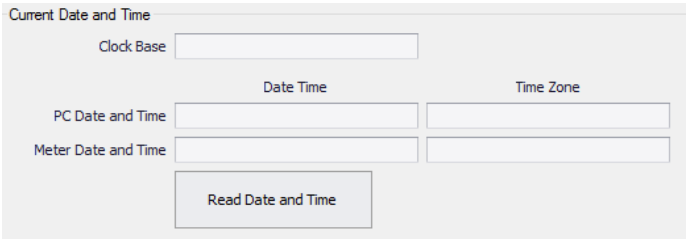
Read Current Date Time

1) Click **Meter Option => Change Meter Date and Time**



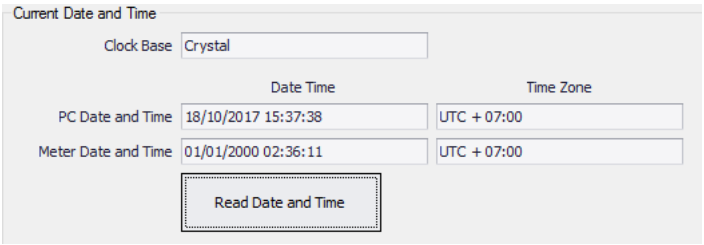
Picture 70: Change meter data and time option

2) Click **Read Date and Time** button to check date time of PC and meter.



Picture 71: Read data time

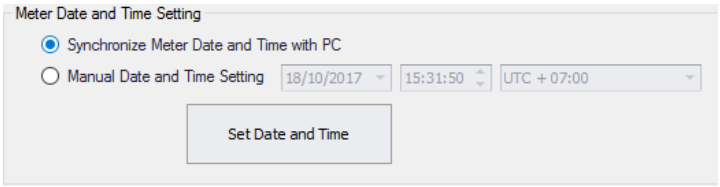
3) Software will show PC and meter date time.



Picture 72: Show date time

Set Date Time

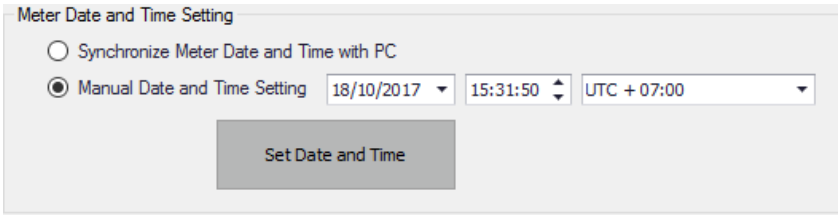
1) To setting date and time to meter, please select setting option by synchronize with PC or manual.



Picture 73: Synchronize data time with PC

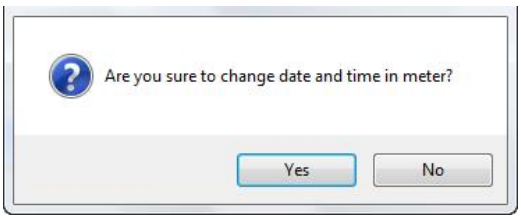
2) If select Manual Date and Time Setting, please select date and time that want to set to meter.

3) Click **Set Date and Time** button.



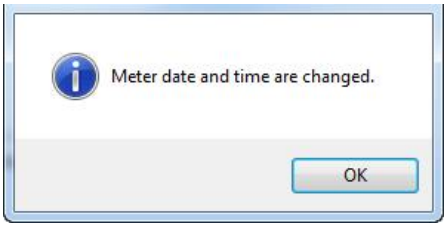
Picture 74: Manual set date time

4) Click **Yes**.



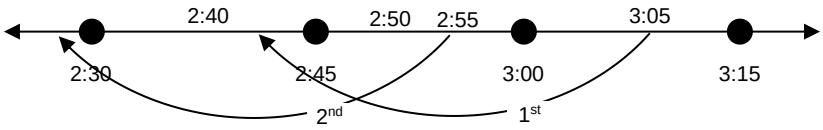
Picture 75: Confirm set date time

5) If set date time complete software will show message “Meter date and time are changed”.



Picture 76: Set date time complete

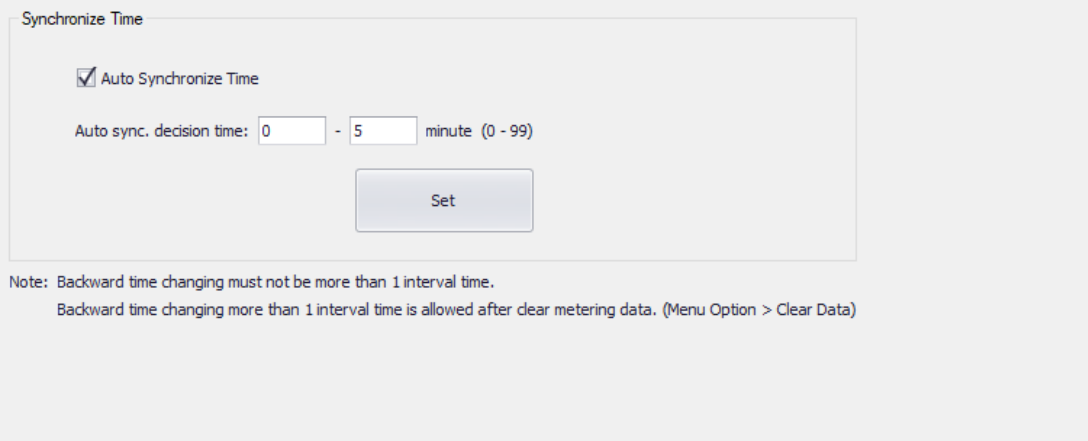
Note: Backward time changing must not be more than the Demand Interval Time



From the figure, the 2nd effort of System Time Changing must be blocked.

4.2.2 Auto Synchronize Meter Time

1) Click **Auto Synchronize Meter Time** tab.



Picture 77: Auto Synchronize Meter Time option

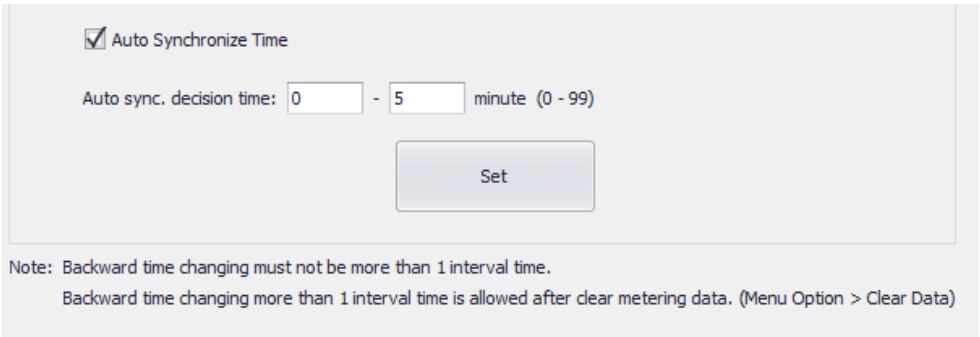
2) To **enable** auto synchronize meter time function: check **Auto Synchronize Time** checkbox

   To **disable** auto synchronize meter time function: uncheck **Auto Synchronize Time** checkbox

3) If **enable** auto synchronize meter time function, input decision time (0-99 minutes)

   Note: Auto synchronizes meter time will work, if different time of PC time and meter time in range of decision time.

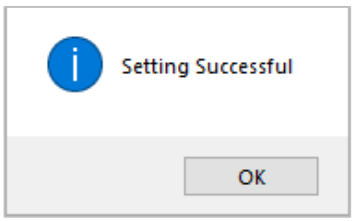
4) To set condition of auto synchronize meter time function click **Set** button



Picture 78: Read current meter constant

   Note: If auto synchronize meter time function is enable, it will work every time as connect meter.

5) If Auto synchronize meter time setting complete, software will show message “Setting successful”

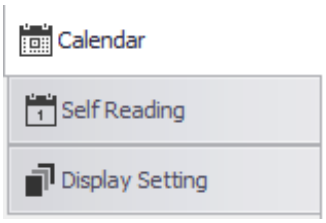


Picture 79: Auto synchronize meter time setting complete

4.3 Meter Setting

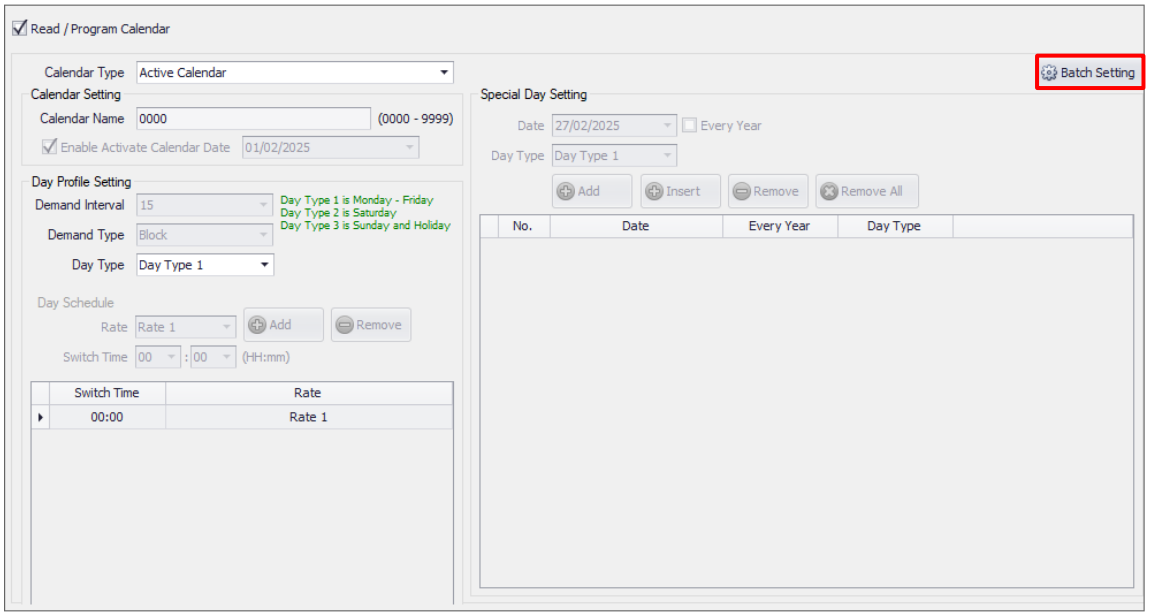
4.3.1 Meter Setting Tab Menu

Meter setting menu consist of 3-tab menu as Calendar Setting, Self-Reading, and Display Setting



Picture 80: Meter Setting menu tabs

1) **Calendar Tab:** For read active calendar and passive calendar, set day profile and special day of passive calendar.



Picture 81: Calendar tab

Note: Software has 3-day type as

Day Type 1 is Monday – Friday,

Day Type 2 is Saturday

Day Type 3 is Sunday and Holiday

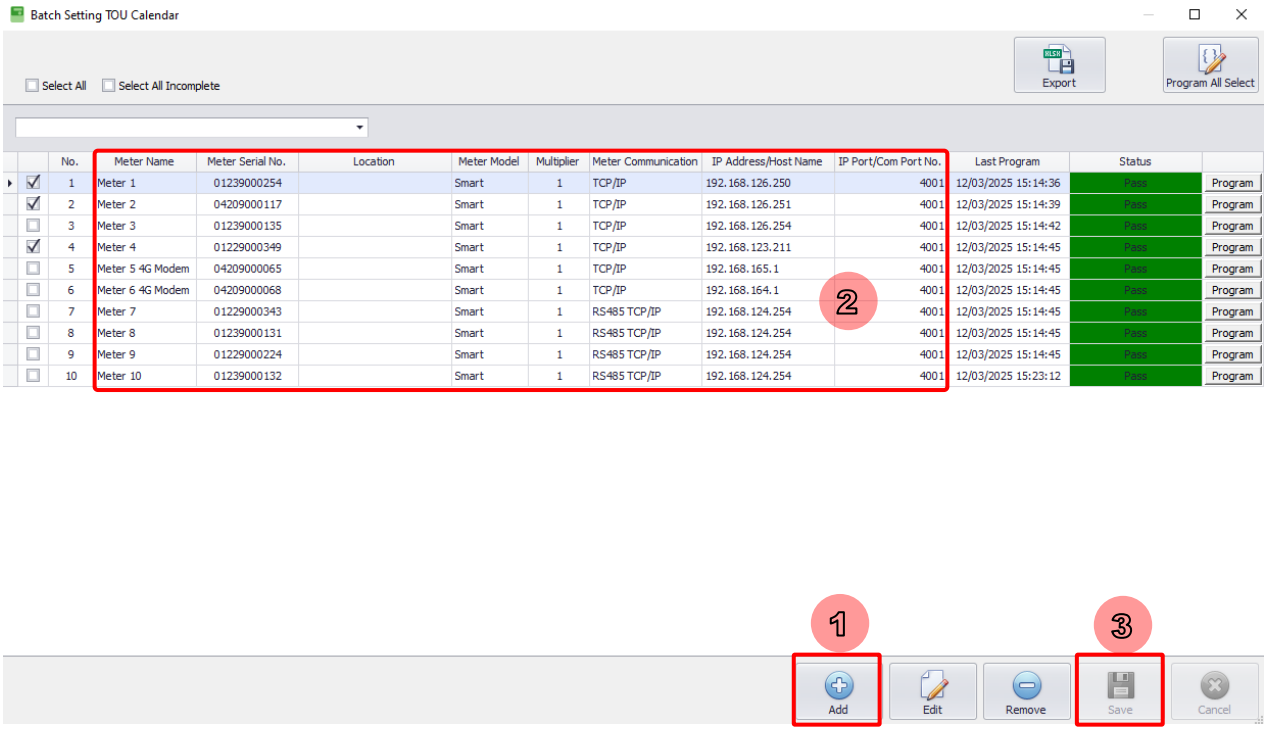
Maximum Switch Time /Day Schedule is 5 set

Maximum Special Day setting is 100 set

1.1) Batch Setting button: For Batch TOU Calendar Setting

1) Click **Add** button to add new meter in list.

2) To input required meter information data in data grid.

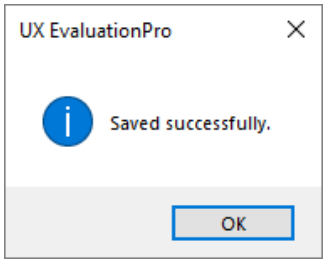


Picture 82: Batch Setting TOU Calendar screen

Note: Software has 3 communications for meter connection as

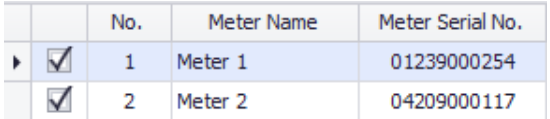
- **TCP/IP**: IP Address/Host Name, and IP Port/Com Port No. are required
- **RS485 TCP/IP**: IP Address/Host Name, and IP Port/Com Port No. are required
- **RS485 Comport**: IP Port/Com Port No. is required

3) Click **Save** button. If save data complete, software will show message “Saved successfully”.



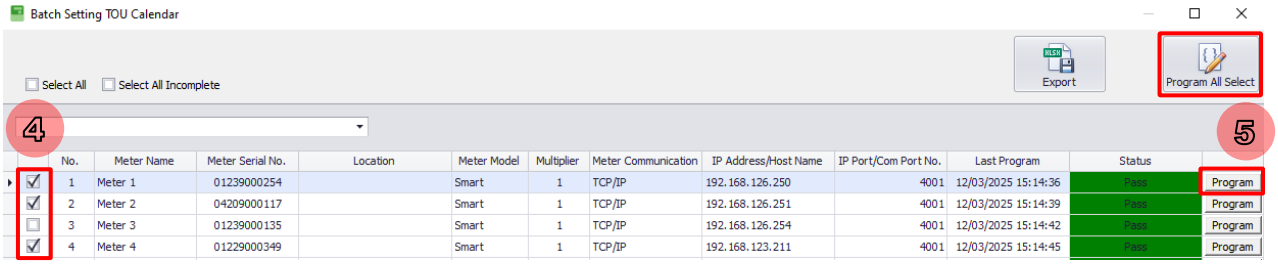
Picture 83: Add meter complete

4) Select checkbox row that want Program Batch TOU Calendar.



Picture 84: Checkbox selection

5) Click **Program** button or click **Program All Select** button for program batch TOU calendar.

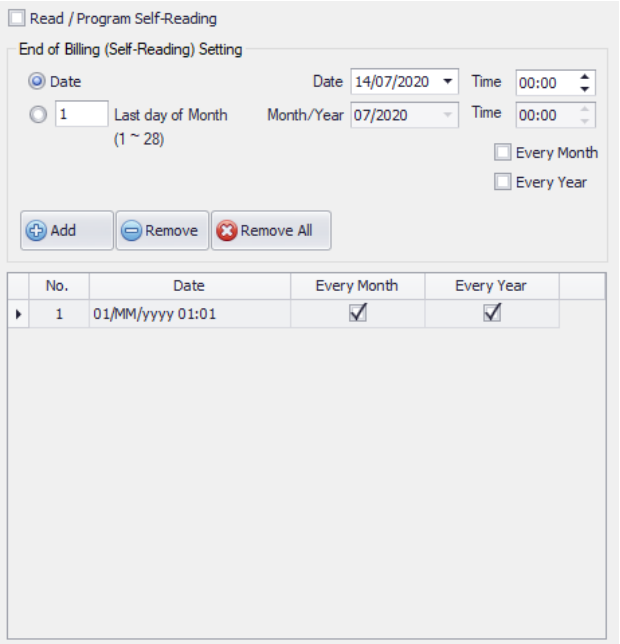


Picture 85:Program meter complete

After Programing, available status as table below

Status	Cause	BG Color
Blank	Default	White
Fail open port	Cannot open communication port	Red
Meter not response	Meter is disconnect	Red
Fail Connect	Password wrong	Red
Fail Project Name	Project name not support	Red
Meter not support	Meter model not support	Red
User Stop	User stop programing	Red
Fail	Some item fail while programing	Red
Pass	Pass programing	Green

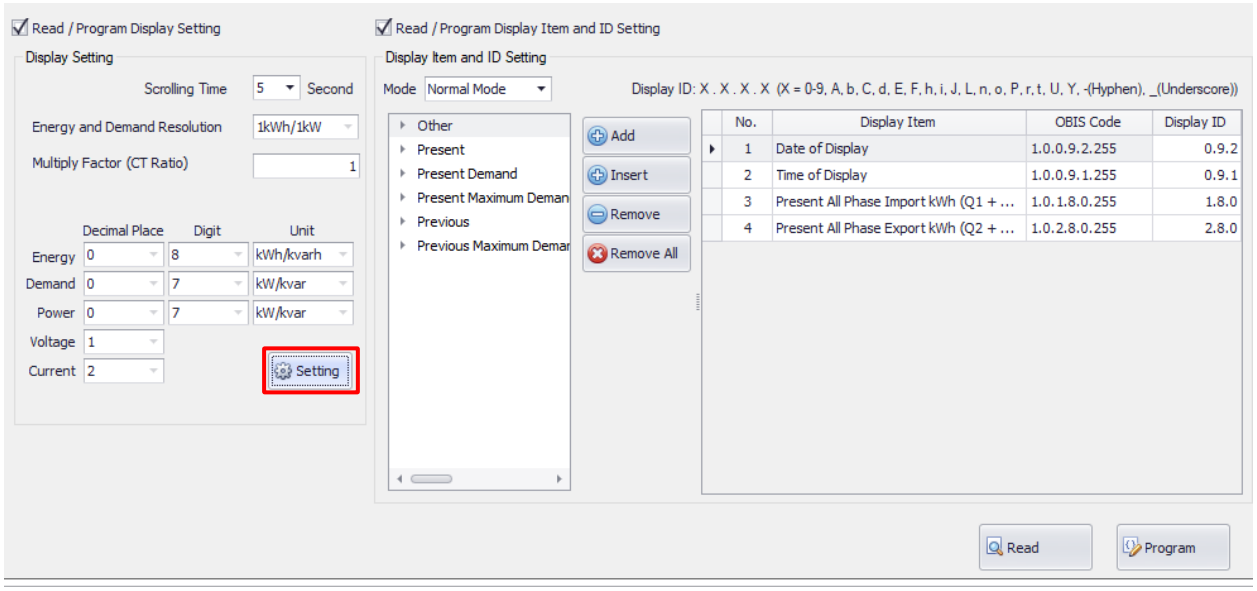
2) **Self-Reading Tab:** For read and set end of billing data.



Picture 86: Self-Reading tab

Note: Maximum End of Billing (Self-Reading) setting is 12 set

3) Display Setting Tab: For read and set display setting of meter.



Picture 87: Display Setting tab

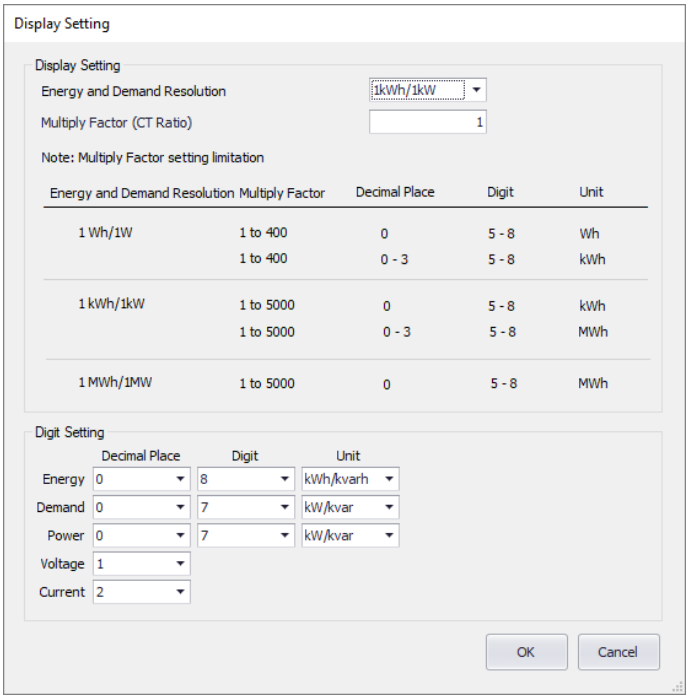
Note: Software has 3 modes for display item and id setting as Normal mode, Alternate mode and Backup mode

Maximum Display Item Setting for Normal mode is 40 set

Maximum Display Item Setting for Alternate mode is 40 set

Maximum Display Item Setting for Backup mode is 3 set

4.1) Display Setting button: For setting display group



Picture 88: Display Setting screen

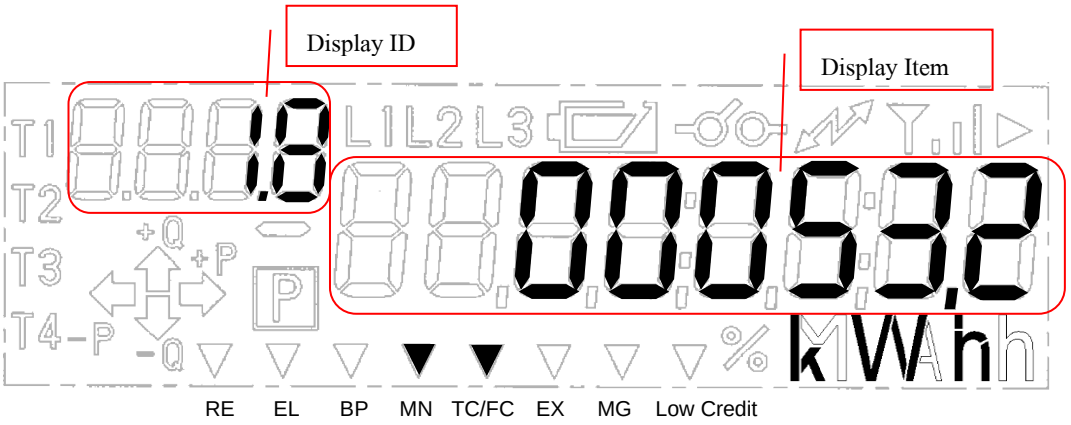
Example of LCD display is as the following

Display Item Setting is Total Rate All phase energy kWh (import)

Display ID Setting is 1.8

Terminal cover open tamper, Front cover open tamper and Missing Neutral tamper

Energy Digit Setting is 6



Picture 89: Meter Display

4.3.2 Browse File

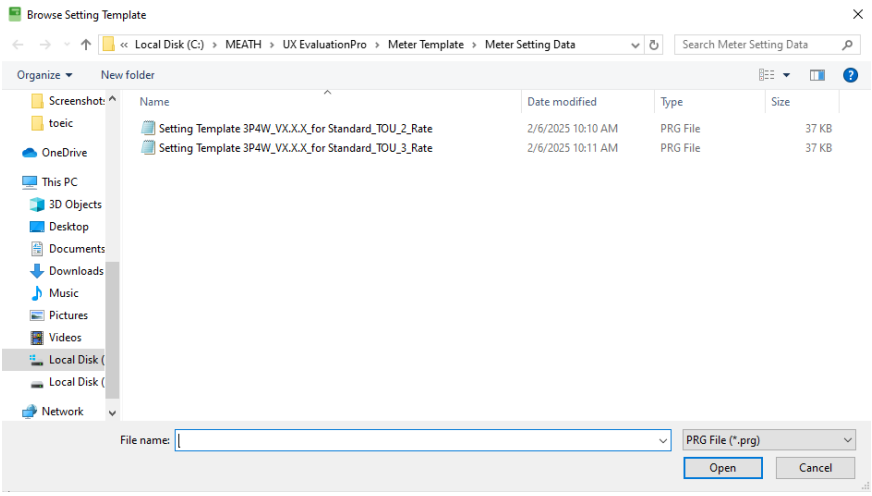
Before read data from meter or set data to meter we have to browse template file for use in reading and setting operation.

1) Click **Browse** button or Press **F1** key.

Picture 90: Browse setting template file button

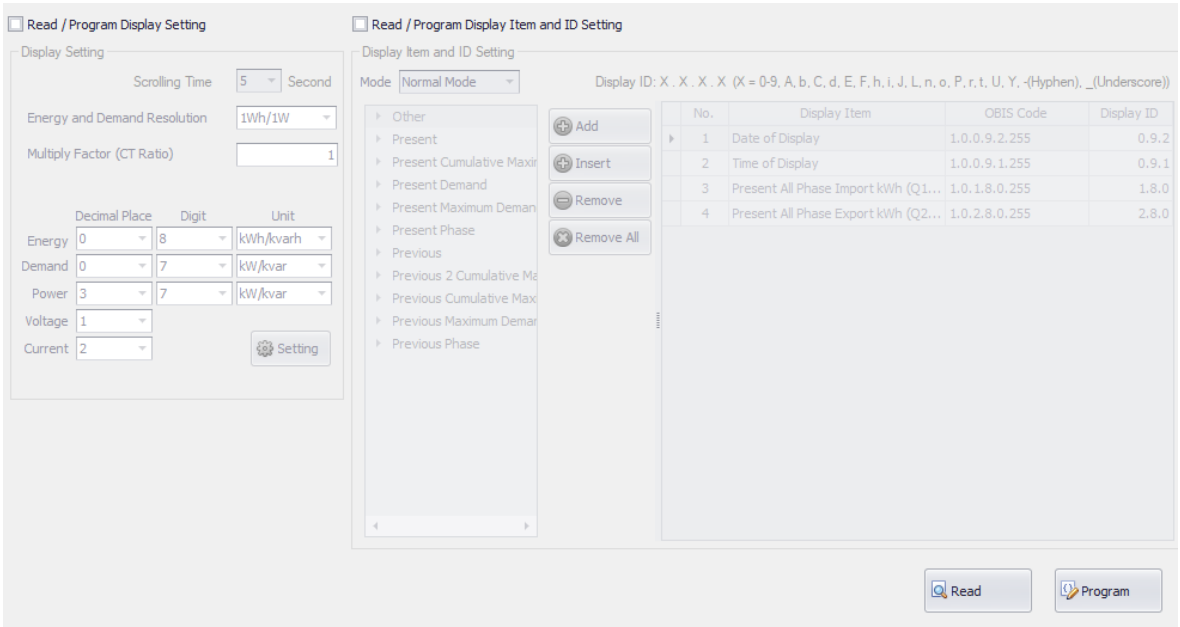
2) Select template file (.prg file).

3) Click **Open** button.



Picture 91: Select setting template file

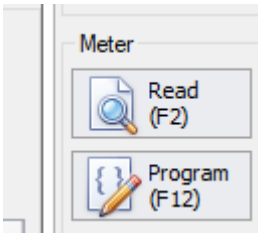
4) Software will show selected template name and show item list on table.



Picture 92: After browse setting template

4.3.3 Read Data

1) After browsed template file click **Read** button. Software will read item that checked on each checkbox of Display setting.

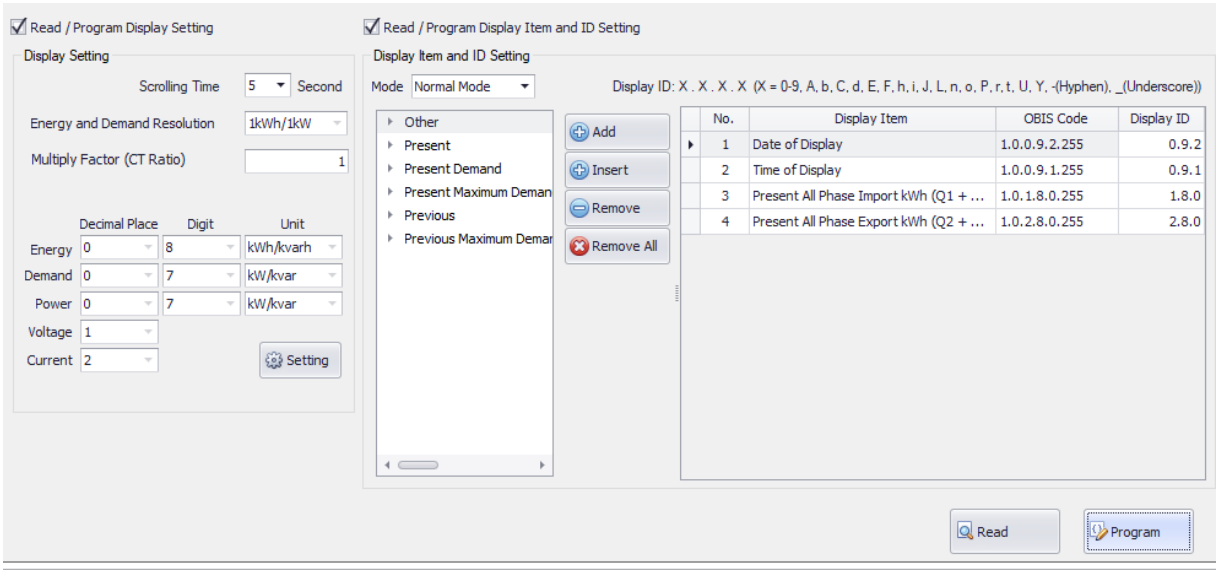


Picture 93: Read setting data button

2) Software will show progress bar during reading value from meter. Please wait until finish.

Picture 94: Reading progress bar

3) When finished reading software will show data in Display setting tabs.



Picture 95: Show setting data after read

For Calendar, and Self Reading, click **Read(F2)** button to read data from meter

For Display Setting, click **Read** button to read data from meter

4.3.4 Save File

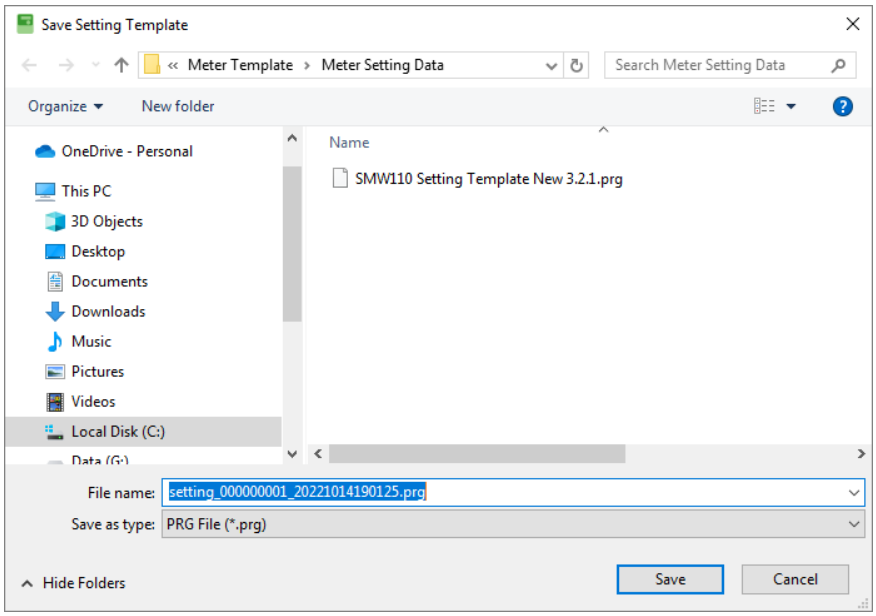
1) To save template file (.prg) click **Save** button or Press **F3** key.

Picture 96: Save setting template button

2) Select save file path.

3) If want to change file name, please input new file name.

4) Click **Save** button.



Picture 97: Save setting template

5) Software will save template file.

4.3.5 Program (Setting Data to Meter)

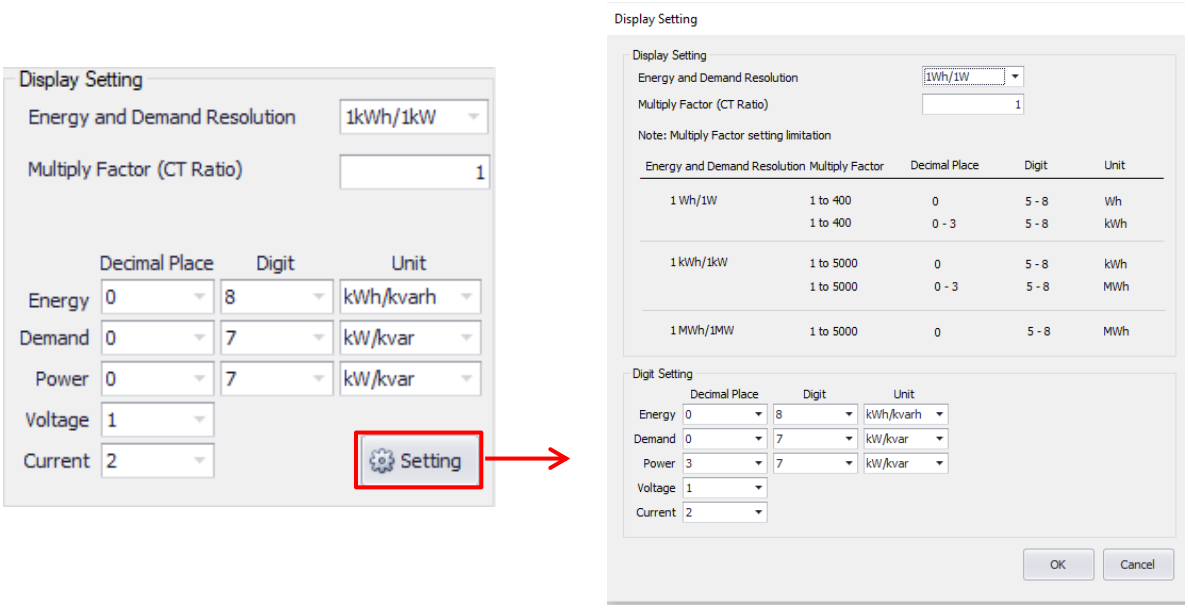
Note: Software will set items that be checked on checkbox Display setting tab.

Recommend: User should read data from meter then modify data that want to set new value after that program to meter

1) **On Display Setting tab**, select scrolling time.

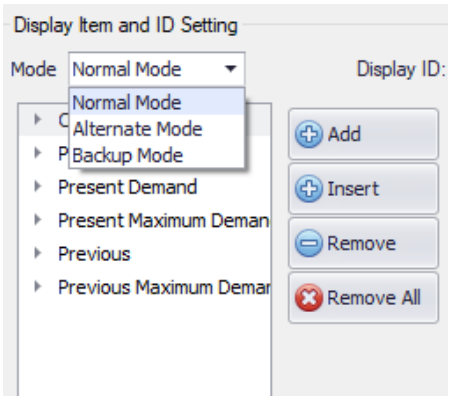
Picture 98: Scrolling time setting

2) Set display setting of energy, demand, power, Voltage, and Current.



Picture 99: Display setting

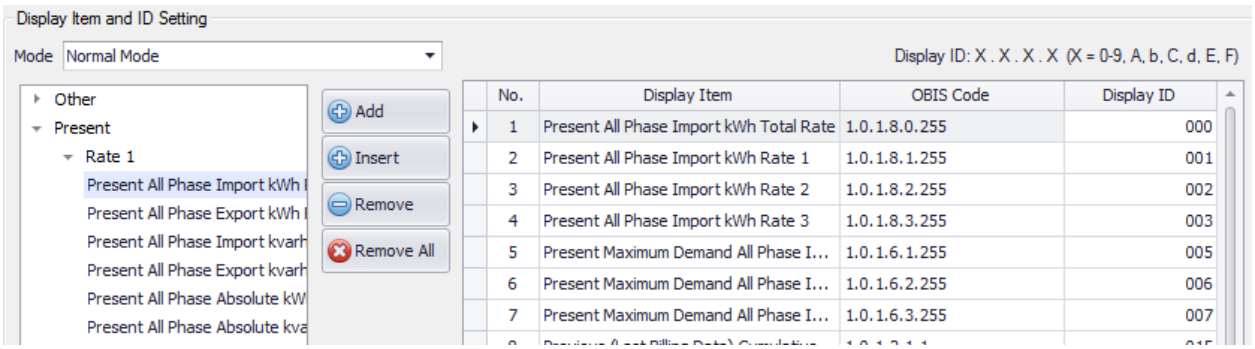
3) Select mode.



Picture 100: Display mode setting

4) Select item and click **Add** button. Display Item will be added to bottom of display item list, Input Display ID which display item selected

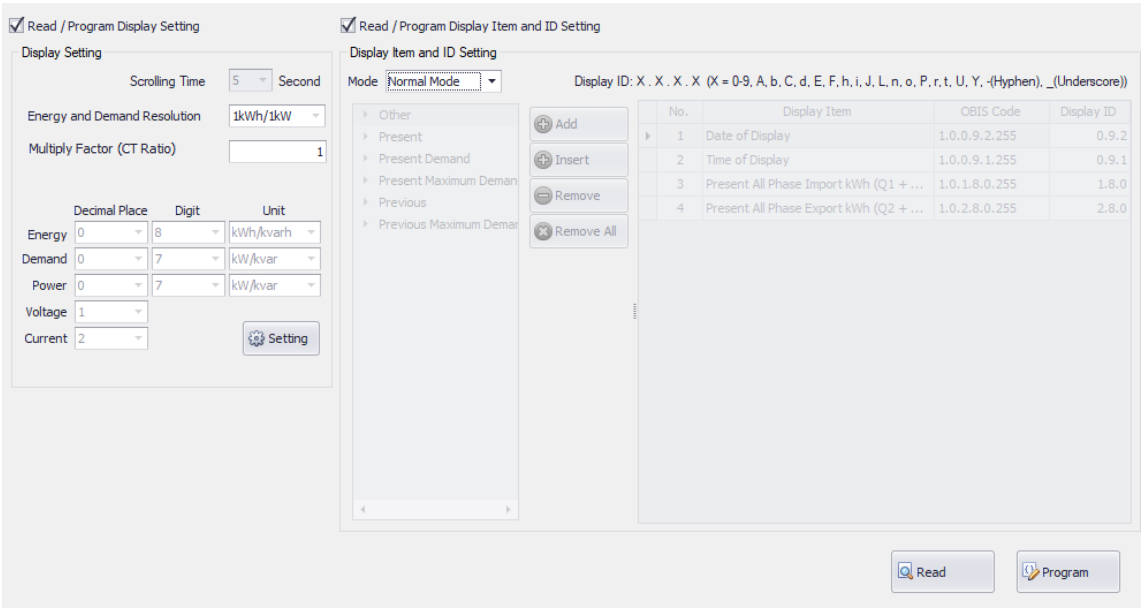
5) Select item, select list of display item and click **Insert** button. Display Item will insert to above of selected display item list.



Picture 101: Add display item

If want to remove click **Remove** button or **Remove All** button.

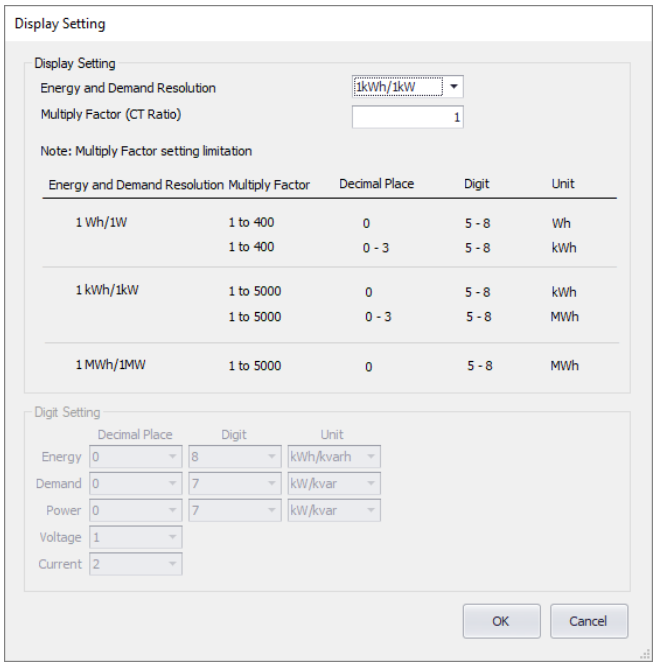
Note: for user login as “advance”, user can be set display setting only Energy and Demand Resolution and Multi Factor of Energy and Demand (CT/VT Ratio) only



Picture 102: Display setting main screen for user login as “advance”

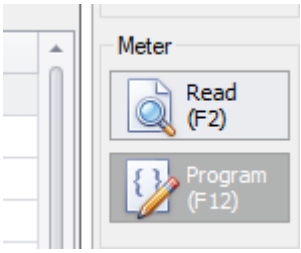
For Calendar, and Self Reading, click **Program (F12)** button to set data into meter

For Display Setting, click **Program** button to set data into meter



Picture 103: Display setting detail screen for user login as “advance”

6) Click **Program** button or Press **F12** key.

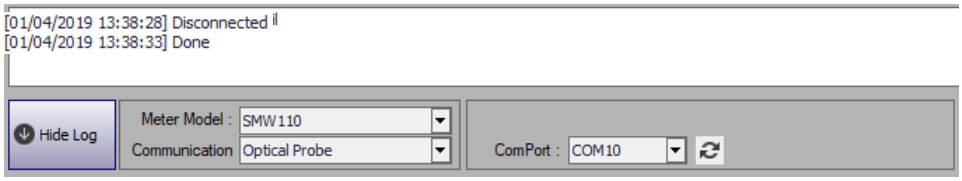


Picture 104: Program button

7) Software will show progress bar during program data to meter, please wait until finish.

Picture 105: Programming progress bar

8) After program data finished software will show message “Done” on communication log.



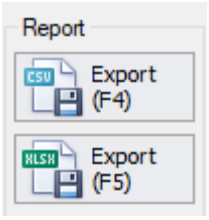
Picture 106: Program data to meter finished

4.3.6 Export Data

Software support exporting meter setting data file 2 format as *.csv files and *.xlsx files

- You can export meter setting report to CSV file by

1) To export setting report file (.csv) click **Export** button or Press **F4** key.



Picture 107: Export setting report button (CSV)

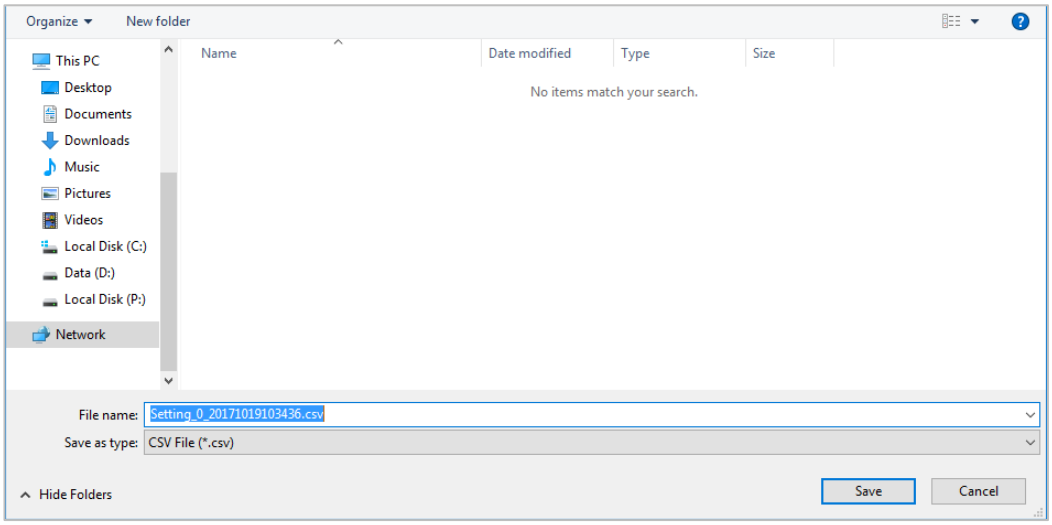
2) Software will generate file name automatically. Default file name is

   Setting_[Meter Serial No.]_yyyyMMddHHmmss.csv

   yyyyMMddHHmmss is date time example: 20171019103436

3) Select path to save file. Default save path is C:\MEATH\UX EvaluationPro\Meter Report\Meter Setting Data

4) Click **Save** button.

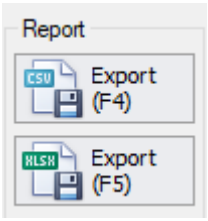


Picture 108: Save setting report (CSV)

5) Report file will be exported.

- You can export meter setting report to XLSX file by

  1) To export setting report file (.xlsx) click **Export** button or Press **F5** key.



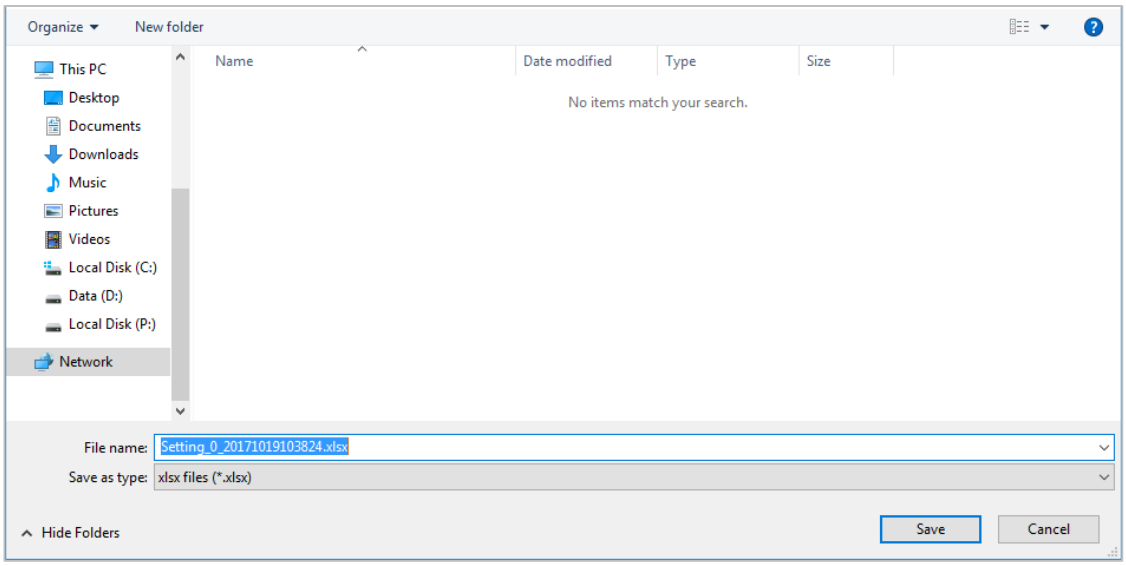
Picture 109: Export reading data button (XLSX)

2) Software will generate file name automatically. Default file name is Setting_[Meter Serial No.]_yyyyMMddHHmmss.xlsx

yyyyMMddHHmmss is date time example: 20171019103824

3) Select path to save file. Default save path is C:\MEATH\UX EvaluationPro\Meter Report\Meter Data

4) Click **Save** button.

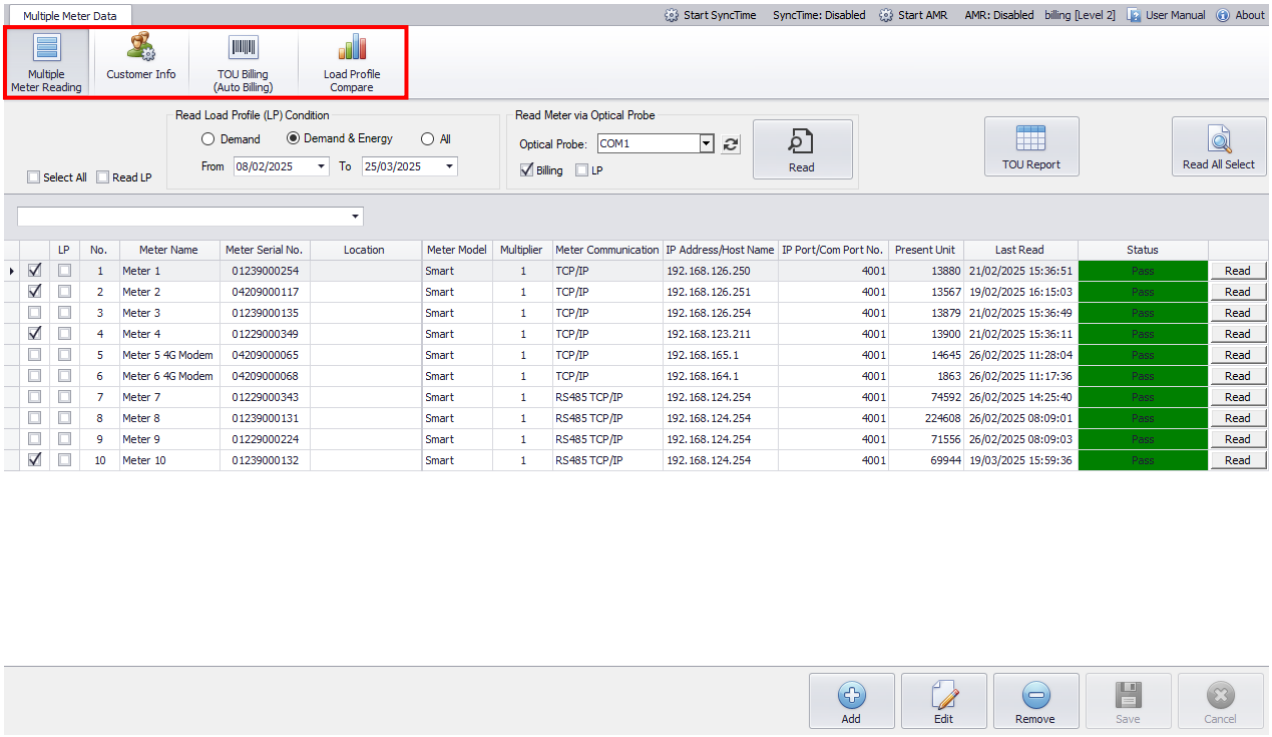


Picture 110: Save reading report file (XLSX)

5) The report file will be exported.

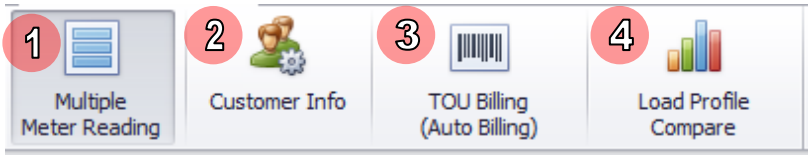
5 Multiple Meter Data

UX EvaluationPro software consist of 4 menus for Multiple Meter Data



	LP	No.	Meter Name	Meter Serial No.	Location	Meter Model	Multiplier	Meter Communication	IP Address/Host Name	IP Port/Com Port No.	Present Unit	Last Read	Status	
☑	☐	1	Meter 1	01239000254		Smart	1	TCP/IP	192.168.126.250	4001	13880	21/02/2025 15:36:51	Pass	Read
☑	☐	2	Meter 2	04209000117		Smart	1	TCP/IP	192.168.126.251	4001	13567	19/02/2025 16:15:03	Pass	Read
☐	☐	3	Meter 3	01239000135		Smart	1	TCP/IP	192.168.126.254	4001	13879	21/02/2025 15:36:49	Pass	Read
☑	☐	4	Meter 4	01229000349		Smart	1	TCP/IP	192.168.123.211	4001	13900	21/02/2025 15:36:11	Pass	Read
☐	☐	5	Meter 5 4G Modem	04209000065		Smart	1	TCP/IP	192.168.165.1	4001	14645	26/02/2025 11:28:04	Pass	Read
☐	☐	6	Meter 6 4G Modem	04209000068		Smart	1	TCP/IP	192.168.164.1	4001	1863	26/02/2025 11:17:36	Pass	Read
☐	☐	7	Meter 7	01229000343		Smart	1	RS485 TCP/IP	192.168.124.254	4001	74592	26/02/2025 14:25:40	Pass	Read
☐	☐	8	Meter 8	01239000131		Smart	1	RS485 TCP/IP	192.168.124.254	4001	224608	26/02/2025 08:09:01	Pass	Read
☐	☐	9	Meter 9	01229000224		Smart	1	RS485 TCP/IP	192.168.124.254	4001	71556	26/02/2025 08:09:03	Pass	Read
☑	☐	10	Meter 10	01239000132		Smart	1	RS485 TCP/IP	192.168.124.254	4001	69944	19/03/2025 15:59:36	Pass	Read

Picture 111: UX EvaluationPro main screen for Multiple Meter Data



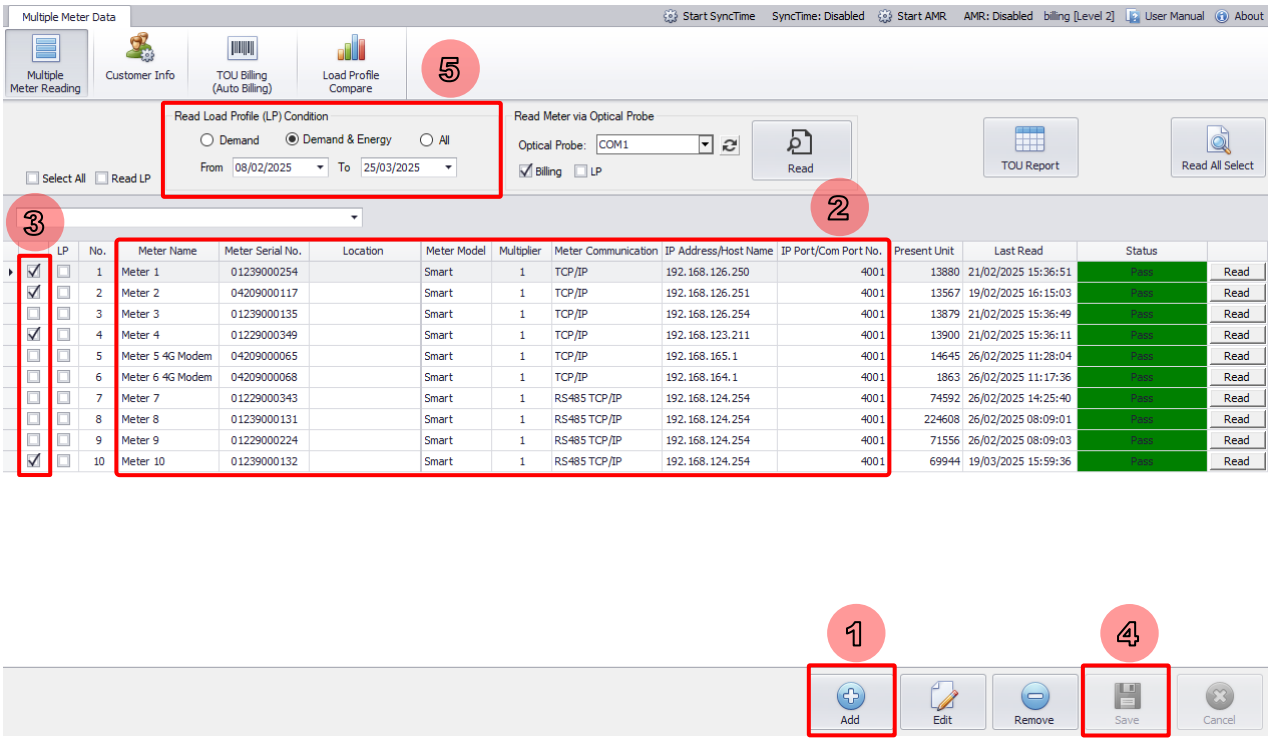
Picture 112: UX EvaluationPro menu

1) **Multiple Meter Reading:** Use for add/setup or edit meter information e.g., meter name, meter serial number, location, meter communication, IP address, IP Port for reading Multiple Meter Data.
2) **Customer Info:** Use for defining customer and price information with meter serial number e.g., customer name, address, location, customer number, billing type, peak price, off-peak price, holiday price for issue billing.
3) **TOU Billing (Auto Billing):** Use for issue billing and exporting billing data as billing type mapping. This menu also able to export data to export data to *.xlsx file
4) **Load Profile Compare:** Use for Compare between load profiles.

5.1 Multiple Meter Reading

1) Click **Add** button to add new meter in list.

2) To input required meter information data in data grid.

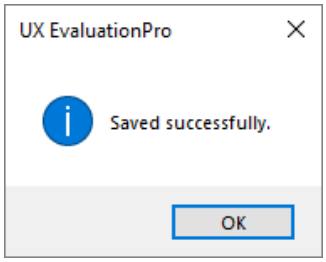


Picture 113: Multiple Meter Reading screen

Note: Software has 3 communications for meter connection as

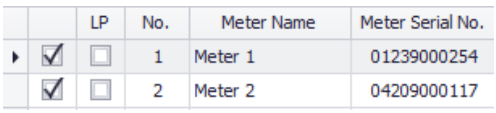
- **RS485 TCP/IP**: IP Address/Host Name, and IP Port/Com Port No. are required
- **RS485 Comport**: IP Port/Com Port No. is required
- **TCP/IP**: IP Address/Host Name, and IP Port/Com Port No. are required

3) Click **Save** button. If save data complete software will show message “Saved successfully”.



Picture 114: Add meter complete

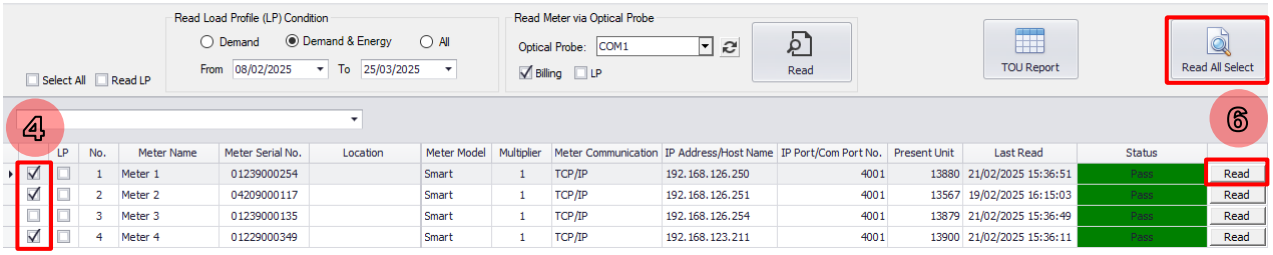
4) Select checkbox row that want to read meter data



Picture 115: Checkbox selection

5) Click select Load profile type and date to read, after read file save Load profile at folder name is “**MultipleTamplate**”

6) Click **Read** button, or select checkbox for read all select.



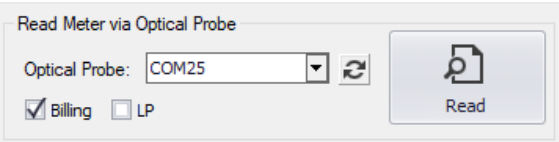
Picture 116: Read meter complete

After Reading, available status as table below

Status	Cause	BG Color
Blank	Default	White
Fail open port	Cannot open communication port	Red
Meter not response	Meter is disconnect	Red
Fail Connect	Password wrong	Red
Fail Project Name	Project name not support	Red
Meter not support	Meter model not support	Red
Meter not support TOU Demand Billing	Select Billing type mismatched	Red
No Billing	Meter no billing	Red
User Stop	User stop reading	Red
Fail	Some item fail while reading	Red
Pass	Pass reading	Green

Software support to read meter via Optical probe

This function, use for reading meter one by one that connect meter via Optical probe and can select to read both Billing and LP

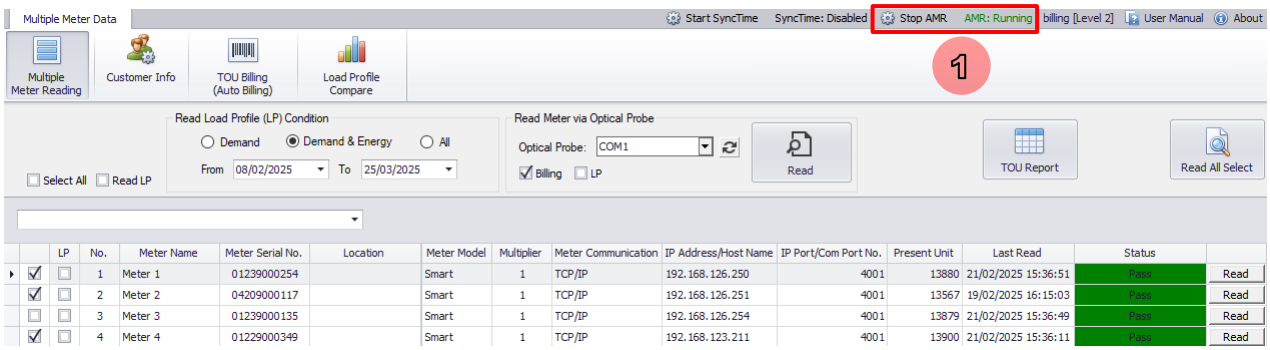


Picture 117: Read Meter via Optical Probe group

5.1.1 AMR Reading

*AMR reading will only function if meters are added to the list, checkbox are selected, and the checkbox selections are saved.

1) Click **Start AMR** button, AMR status show 'Running'



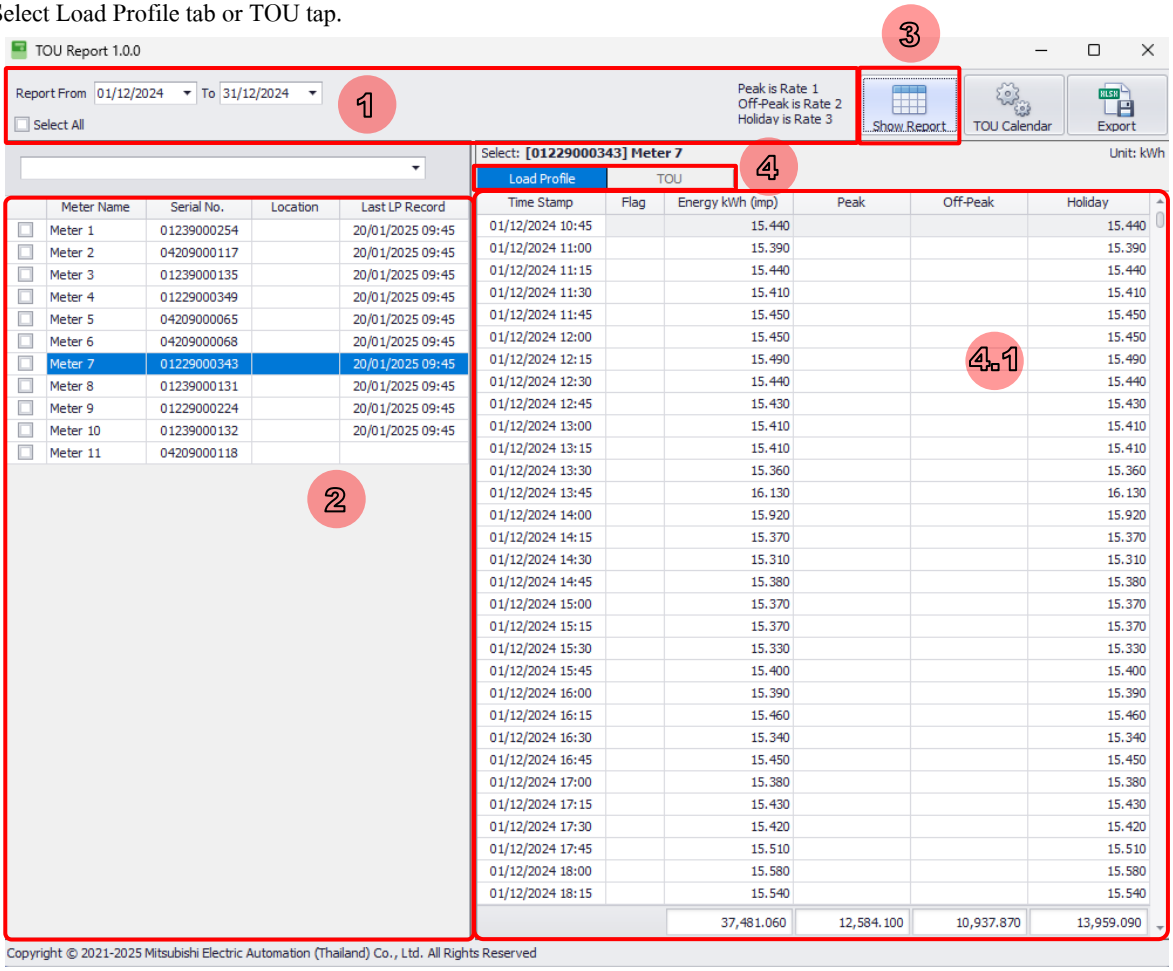
Picture 118: AMR Status show 'Running'

Note: AMR function does not support RS485 ComPort communication.

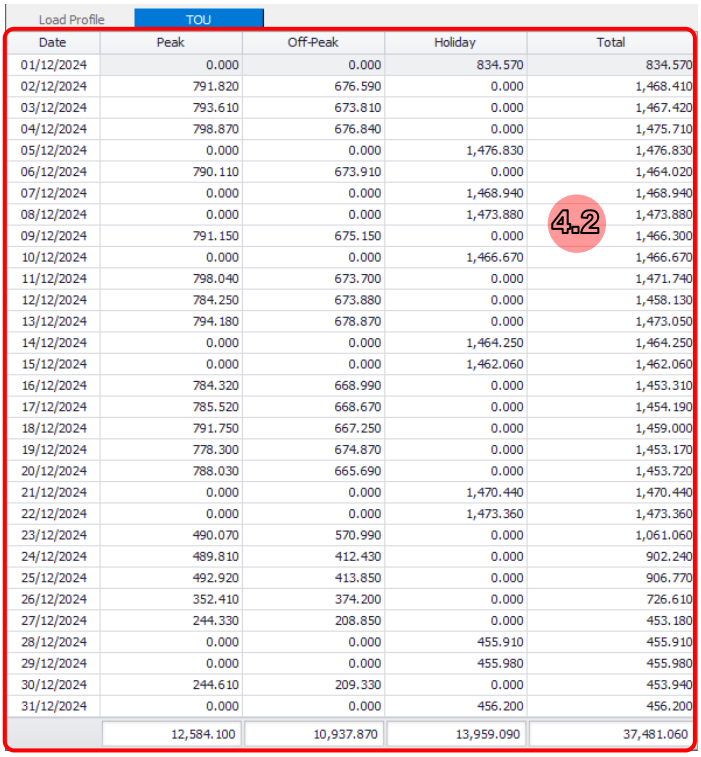
5.1.2 TOU Report

*TOU Report relies on the AMR Reading operational

1) Select **Report From** date duration picker.
2) Highlight in row for selection meter.
3) Click Show Report button or double click in row for show information in data grid.
4) Select Load Profile tab or TOU tap.



Picture 119: Show TOU Report screen and Load Profile tab screen



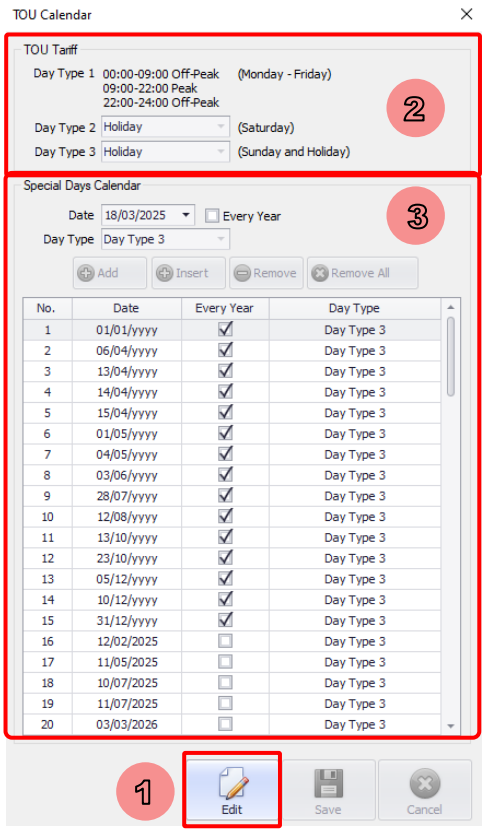
Load Profile | TOU

Date	Peak	Off-Peak	Holiday	Total
01/12/2024	0.000	0.000	834.570	834.570
02/12/2024	791.820	676.590	0.000	1,468.410
03/12/2024	793.610	673.810	0.000	1,467.420
04/12/2024	798.870	676.840	0.000	1,475.710
05/12/2024	0.000	0.000	1,476.830	1,476.830
06/12/2024	790.110	673.910	0.000	1,464.020
07/12/2024	0.000	0.000	1,468.940	1,468.940
08/12/2024	0.000	0.000	1,473.880	1,473.880
09/12/2024	791.150	675.150	0.000	1,466.300
10/12/2024	0.000	0.000	1,466.670	1,466.670
11/12/2024	798.040	673.700	0.000	1,471.740
12/12/2024	784.250	673.880	0.000	1,458.130
13/12/2024	794.180	678.870	0.000	1,473.050
14/12/2024	0.000	0.000	1,464.250	1,464.250
15/12/2024	0.000	0.000	1,462.060	1,462.060
16/12/2024	784.320	668.990	0.000	1,453.310
17/12/2024	785.520	668.670	0.000	1,454.190
18/12/2024	791.750	667.250	0.000	1,459.000
19/12/2024	778.300	674.870	0.000	1,453.170
20/12/2024	788.030	665.690	0.000	1,453.720
21/12/2024	0.000	0.000	1,470.440	1,470.440
22/12/2024	0.000	0.000	1,473.360	1,473.360
23/12/2024	490.070	570.990	0.000	1,061.060
24/12/2024	489.810	412.430	0.000	902.240
25/12/2024	492.920	413.850	0.000	906.770
26/12/2024	352.410	374.200	0.000	726.610
27/12/2024	244.330	208.850	0.000	453.180
28/12/2024	0.000	0.000	455.910	455.910
29/12/2024	0.000	0.000	455.980	455.980
30/12/2024	244.610	209.330	0.000	453.940
31/12/2024	0.000	0.000	456.200	456.200
	12,584.100	10,937.870	13,959.090	37,481.060

Picture 120: Show TOU tab screen

5.1.2.1 TOU Calendar

1) Click **Edit** button.



Picture 121: Show TOU Calendar screen

2) To set component in TOU tariff group:

Group to display and select TOU tariff for each day type which are:

No.	Name	Description
1.	Day Type 1	Day type 1 is Monday to Friday, the rate will be: 00:00 – 09:00 is Off-Peak rate. 09:00 – 22:00 is Peak rate. 22:00 – 24:00 is Off-Peak rate.
2.	Day Type 2	Day type 2 is Saturday, the rate will be: Off-Peak or Holiday rate. (Default: Holiday)
3.	Day Type 3	Day type 3 is Sunday and Holiday, the rate will be: Off-Peak or Holiday rate. (Default: Holiday)

3) To set component in special day group:

Group to display special day that will be use rate by day type selection. The configuration consists of:

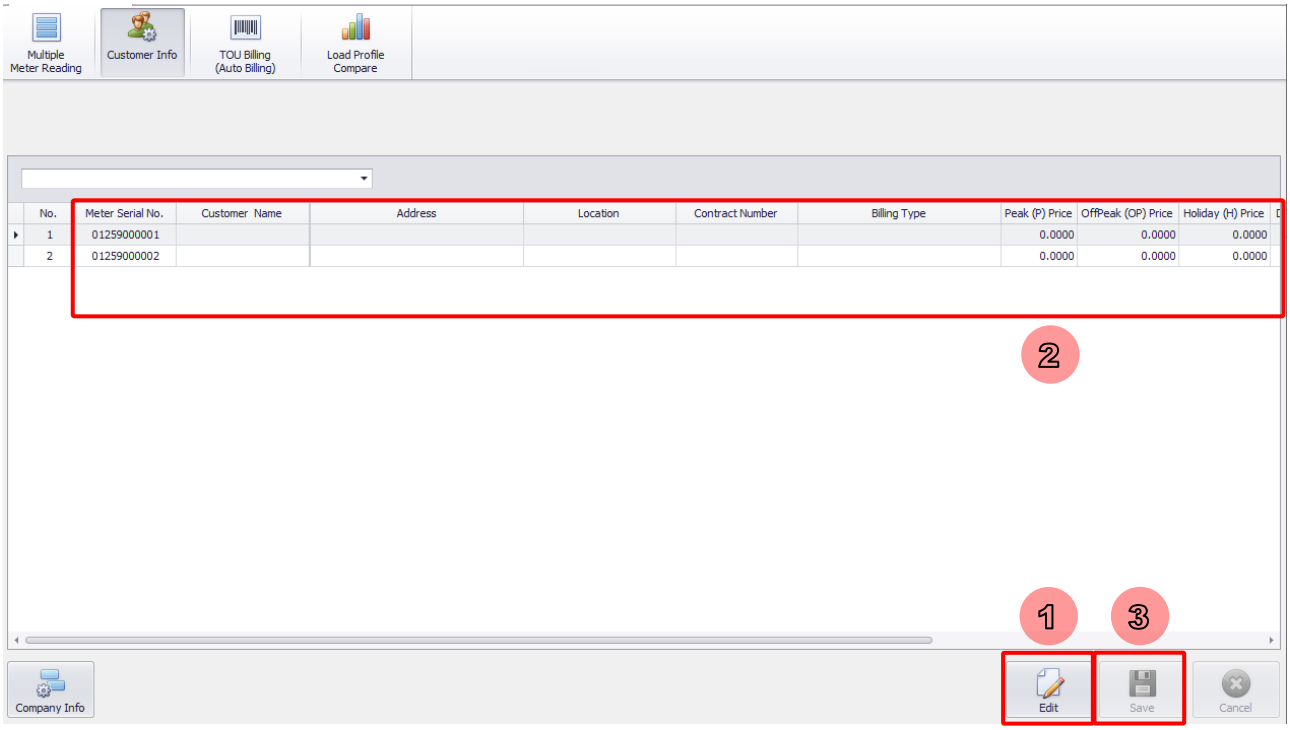
<table>
<tr><th>No.</th><th>Name</th><th>Description</th></tr>
<tr><td>1.</td><td>Date picker</td><td>A date picker to select special day for adding to special day list grid view. (Default: Today)</td></tr>
<tr><td>2.</td><td>Every year checkbox</td><td>A checkbox to make adding special day will be used in the TOU calendar every year. (Default: Uncheck)</td></tr>
<tr><td>3.</td><td>Day type combo box</td><td>A combo box to select day type for adding special day, consists of:
Day Type 2 and Day Type 3.
(Default: Day Type 3)</td></tr>
<tr><td>4.</td><td>Add button</td><td>A button to add selected special day to special day list grid view.</td></tr>
<tr><td>5.</td><td>Insert button</td><td>A button to insert the selected special day above select item in the special day list grid view.</td></tr>
<tr><td>6.</td><td>Remove button</td><td>A button to remove the selected special day in special day list grid view.</td></tr>
<tr><td>7.</td><td>Remove all button</td><td>A button to remove all special days in special day list grid view.</td></tr>
<tr><td>8.</td><td>Special day list grid view</td><td>A grid view to display special day list, columns are:
<table>
<tr><th>No.</th><th>Column Name</th><th>Description</th></tr>
<tr><td>8.1</td><td>No.</td><td>Number of special days.</td></tr>
<tr><td>8.2</td><td>Date</td><td>Date of special day.</td></tr>
<tr><td>8.3</td><td>Every Year</td><td>Flag to use special day every day.
(If every year is checked the year of the date will be shown as yyyy)</td></tr>
<tr><td>8.4</td><td>Day Type</td><td>Day type of special day.</td></tr>
</table>
Note: Special day list is the same as UX EvaluationPro’s special day in calendar setting.
Note 2: Special day list has 100 maximum added items.</td></tr>
</table>

Note: The settings on TOU Calendar screen only affect the data on the TOU Report screen.

5.2 Customer Info

1) Click **Edit** button.

2) To edit customer information data in data grid, click **Save** button.

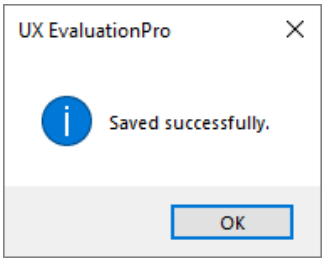


Picture 122: Customer Info screen

Note: Software has 5 billing type as below

- TOU Billing (2 Rate) (Default)
- TOU Demand Billing (2 Rate)
- TOU Billing (3 Rate)
- TOU Demand Billing (3 Rate)
- Flat Rate

3) Click **Save** button. If save data complete software will show message “Saved successfully”.



Picture 123: Save customer info complete

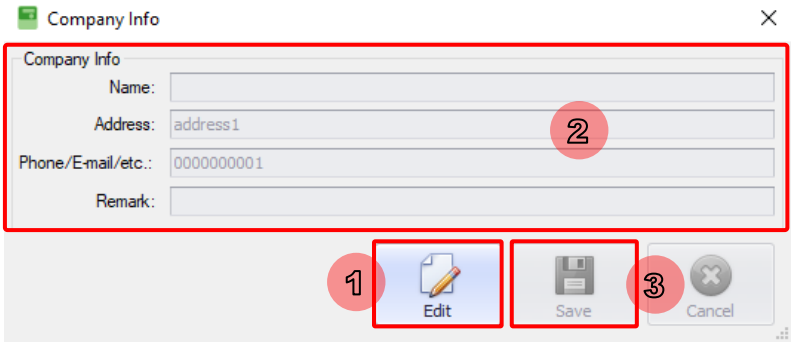
5.2.1 Company Info

Note: Click **Company** button for input company information.

1) Click **Edit** button.

2) Input company data.

3) Click **Save** button, software will be saved data of Company Info.



Picture 124: Company Info screen

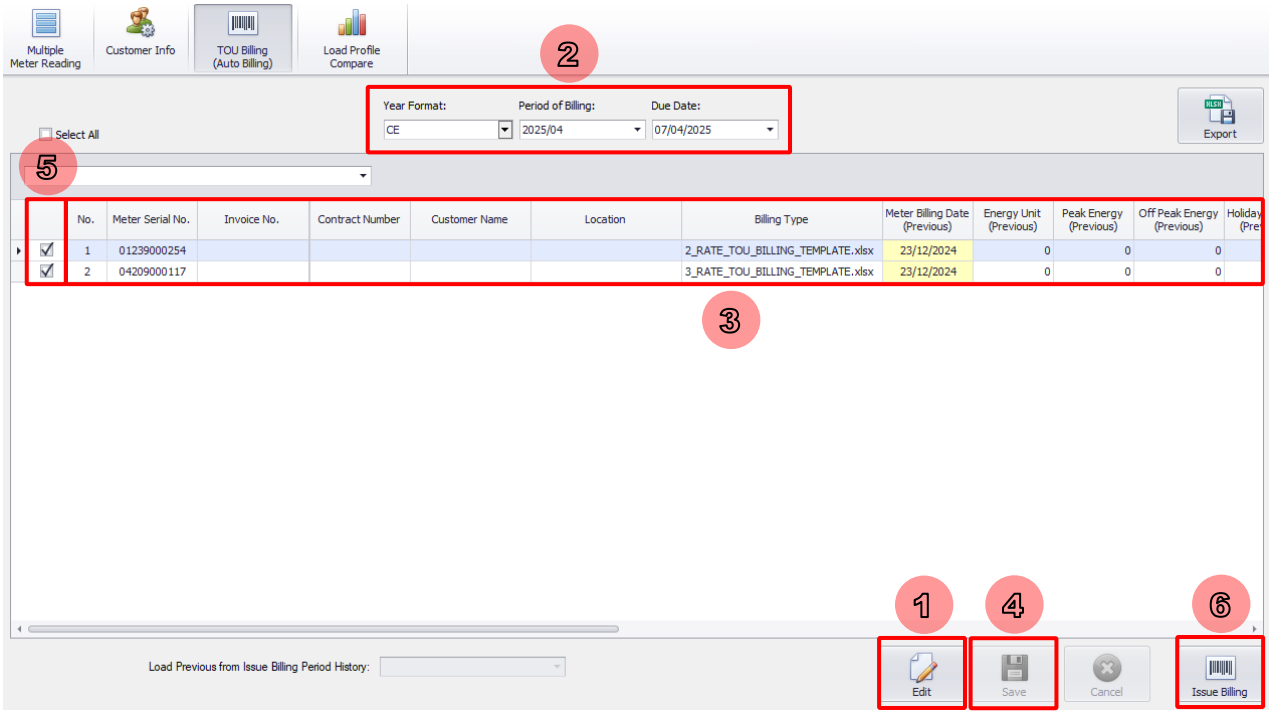
5.3 TOU Billing (Auto Billing)

Note: Before Issue Billing, let's user set Price and Information for each billing type by **Customer Info** menu

1) Click **Edit** button.

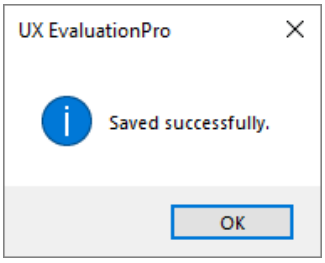
2) Select Period of Billing, Year Format, and Due Date.

3) Validate Data for issue TOU billing.



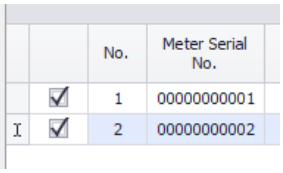
Picture 125: TOU Billing (Auto Billing) screen

4) Click **Save** button. If save data complete software will show message "Saved successfully".



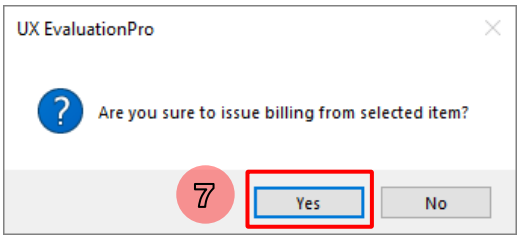
Picture 126: Save customer info complete

5) Select checkbox row that want to issue billing then click **Issue Billing** button.



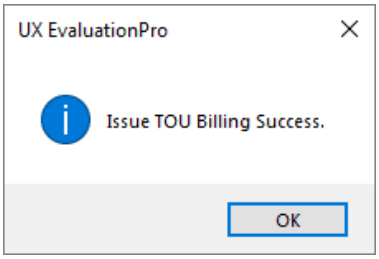
Picture 127: Checkbox selection

6) click **Issue Billing** button, software will show question message box to confirm issue billing.



Picture 128: Issue billing confirmation message box

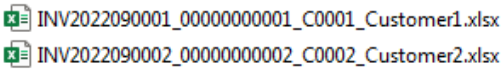
7) Click Software will be created invoice of billing data as selected.



Picture 129: Issue TOU Billing complete

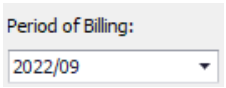
Software will generate file name automatically. Default file name is

[Invoice No.]_[Meter Serial No.]_[Contract No]_[Customer Name].xlsx



Picture 130: Save customer info complete

Invoice No. was created as Prefix “INV” + Period of Billing + Running No.



=> Invoice No. is INV2022090001

- **Billing and Roll back Calculation example**

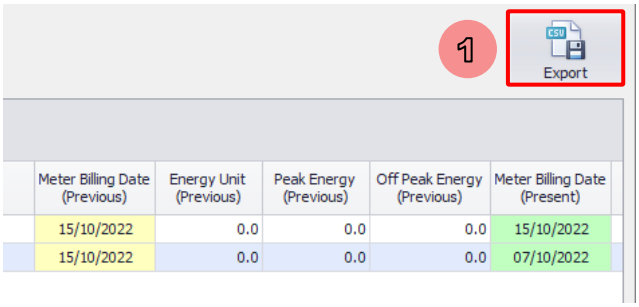
Energy Unit (Total) = Energy Unit (Present) – Energy (Previous)

Result Energy Unit

No.	Input Energy Unit (Previous)	Input Energy Unit (Present)	CT	R	Result Column Energy Unit (Total)	Background color Energy Unit (Total)
1.	0	100	1		100	No color
2.	0.0	100.0	1		100.0	No color
3.	0.00	100.00	1		100.00	No color
4.	0.000	100.000	1		100.000	No color
5.	50	100	1		50	No color
6.	50.0	100.0	1		50.0	No color
7.	50.00	100.00	1		50.00	No color
8.	50.000	100.000	1		50.000	No color
9.	99990	100	1		-99890	Red
10.	99990	100	1	☑	110	No color
11.	99990.0	100.0	1		-99890.0	Red
12.	99990.0	100.0	1	☑	110.0	No color
13.	99990.00	100.00	1		-99890.00	Red
14.	99990.00	100.00	1	☑	110.00	No color
15.	99990.000	100.000	1		-99890.000	Red
16.	99990.000	100.000	1	☑	110.000	No color
17.	0	100	20		200	No color
18.	0.0	100.0	20		200.0	No color
19.	0.00	100.00	20		200.00	No color
20.	0.000	100.000	20		200.000	No color
21.	50	100	20		1000	No color
22.	50.0	100.0	20		1000.0	No color
23.	50.00	100.00	20		1000.00	No color
24.	50.000	100.000	20		1000.000	No color
25.	99990	100	20		-1997800	Red
26.	99990	100	20	☑	2200	No color
27.	99990.0	100.0	20		-1997800.0	Red
28.	99990.0	100.0	20	☑	2200.0	No color
29.	99990.00	100.00	20		-1997800.00	Red
30.	99990.00	100.00	20	☑	2200.00	No color
31.	99990.000	100.000	20		-1997800.000	Red
32.	99990.00	100.00	20	☑	2200.000	No color

- **Export Meter Data for TOU Billing**

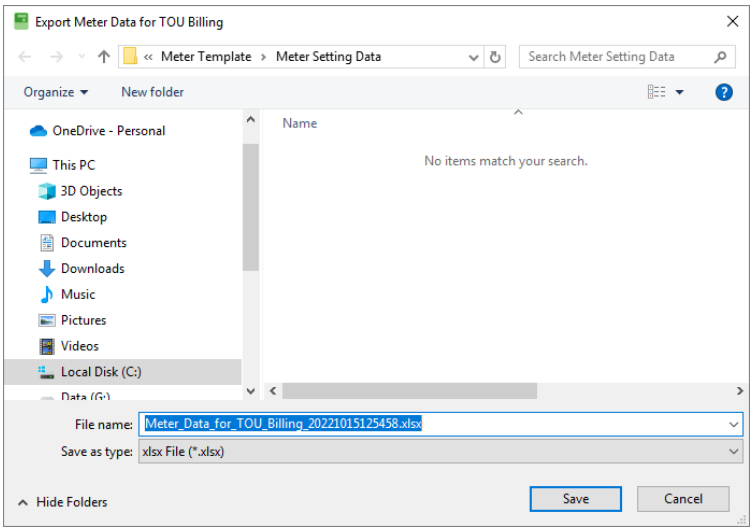
1) To export meter data for TOU billing report file (.xlsx), click **Export** button.



Picture 131: Export Meter Date for TOU Billing

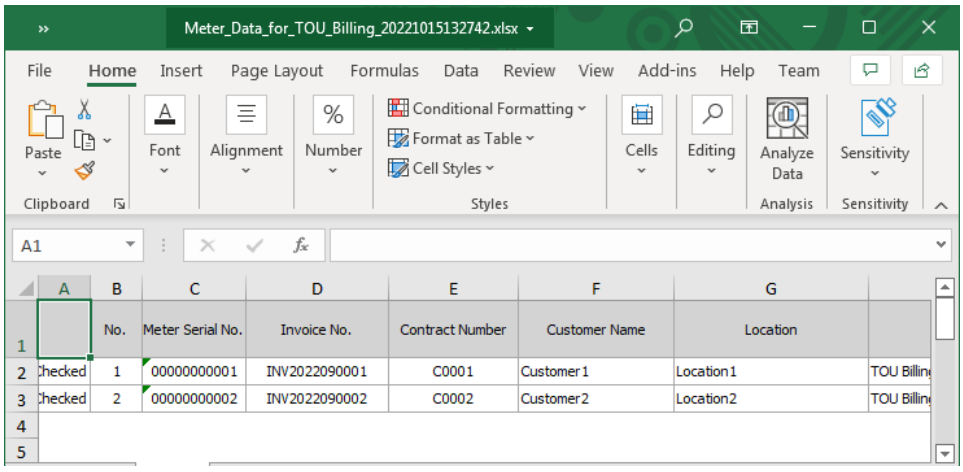
2) Select path for exporting, software will generate file name automatically.

Default file name is “Meter_Data_for_TOU_Billing_YYYYMMDDHHmmss.xlsx”



Picture 132: Export Meter Date for TOU Billing report file

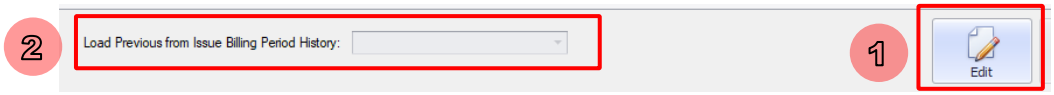
3) The report file will be exported.



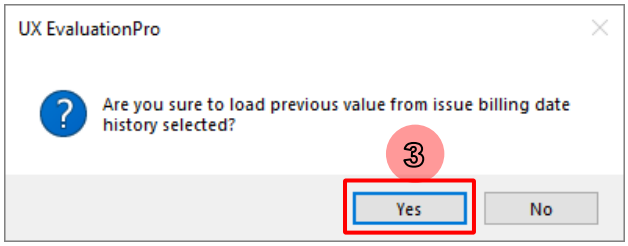
Picture 133: Meter Date for TOU Billing report file

- **Load Previous from Issue Billing Period History**

1) Click **Edit** button for enable Load Previous from Issue Billing Period History list.
2) Select **Load Previous from Issue Billing Period history**, software will show confirmation message box.
3) Click Yes on message box, software will load previous value of Meter billing Date (Previous), Energy Unit (Previous), Peak Energy (Previous), Off Peak Energy (Previous), and Holiday Energy (Previous) from issue billing as selected.



Picture 134: Load Previous from issue billing period history



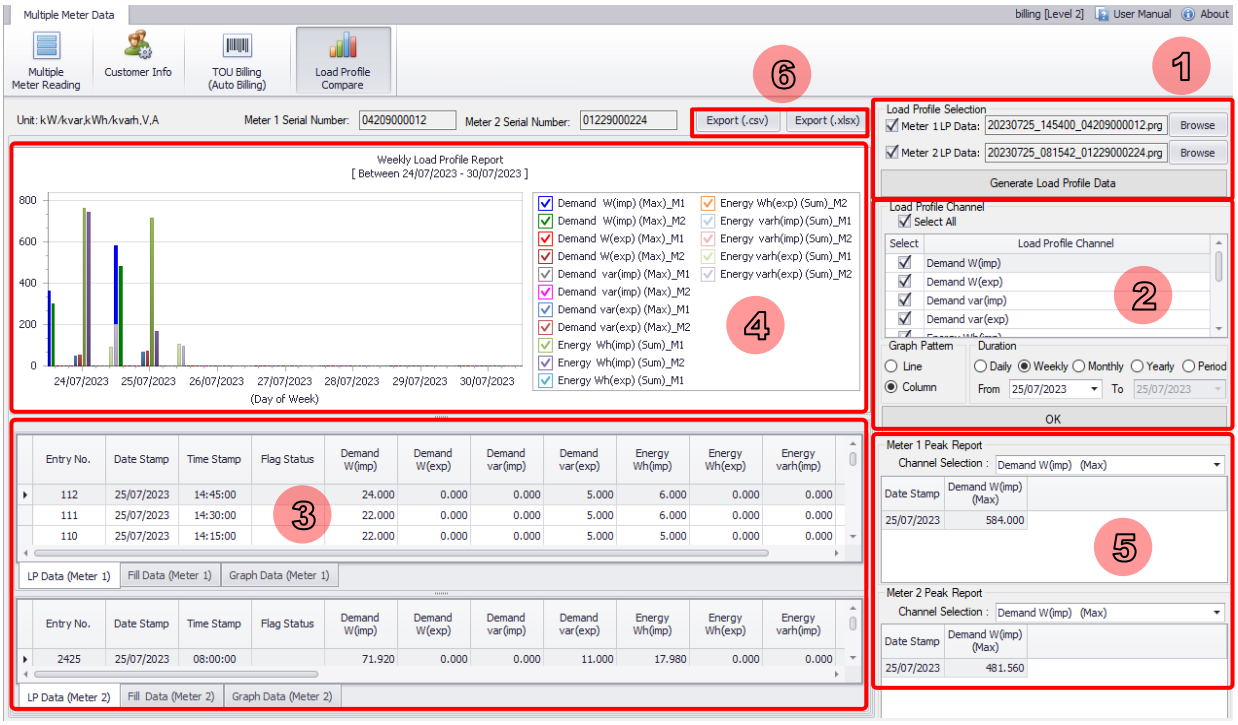
Picture 135: Load Previous value from issue billing period confirmation message box

5.4 Load Profile Compare

Software used for compare between Load Profile from Meter. Can view Demand (Import or Export), Energy (Import or Export), Voltage, Current and PF

1) Click "**Browse**" to input LP Data of Meter 1 and Meter 2 then click "Generate Load Profile Data"

   Note: Directory for browse of LP Data: …/UX EvaluationPro/MultipleTemplate



Picture 136: Load Profile Compare Screen

2) Select items to view LP data Meter 1 and Meter 2 by clicking the select item box from "**Load Profile Channel**" , You can click "**Graph Pattern**" to select a graph plot between "Line" and "Column" and click "**Duration**" to view the period of information in which you are interested, which has 5 items.

   2.1. Daily is selected date

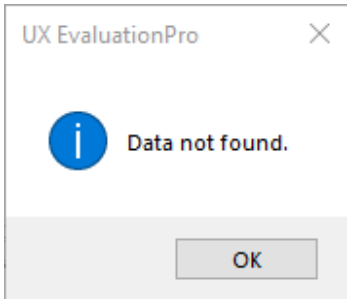
   2.2. Weekly is Monday to Sunday of the selected date

   2.3. Monthly is select Month

   2.4. Yearly is select year

   2.5. Period is every interval of the selected date (select for looking period have maximum is 7 day only)

   After already select "Load Profile Channel", "Graph Pattern" and "Duration", Click on "**OK**" to show Load Profile Data and plot "**Load Profile Report**" and if you selected duration has no Load profile data, the message box below will be shown.



Picture 137: Don't have data on Load profile data

3) Load Profile Data (Meter 1 & Meter 2) is show data from file browse, which has 3 items

    3.1. "**LP Data**" is All Load profile data of each Meter

    3.2. "**Fill Data**" is Load profile data by fill zero to value and fill date and time record was missing of each Meter

    3.3. "**Graph Data**" is Data for plot "**Load Profile Report**"

4) Load Profile Report is Load profile data of Meter 1 and Meter 2 plotted as graphs.

5) The Peak Report (Meter 1 and Meter 2) shows the peak value for the selected duration by Click the drop-down "**Channel Selection**" to select item data to view peak value

6) Export is export Load profile compare to .csv file or .xlxs file by example is

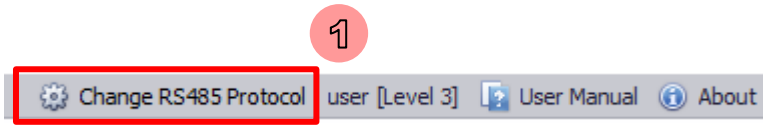
    Compare Data_01229000224_LP Data_04209000012_LP Data_20230725140632.csv or

    Compare Data_01229000224_LP Data_04209000012_LP Data_20230725141442.xlsx

6 Broadcast Change RS485 Protocol

Software used for broadcast changes protocol between DLMS and Modbus RTU

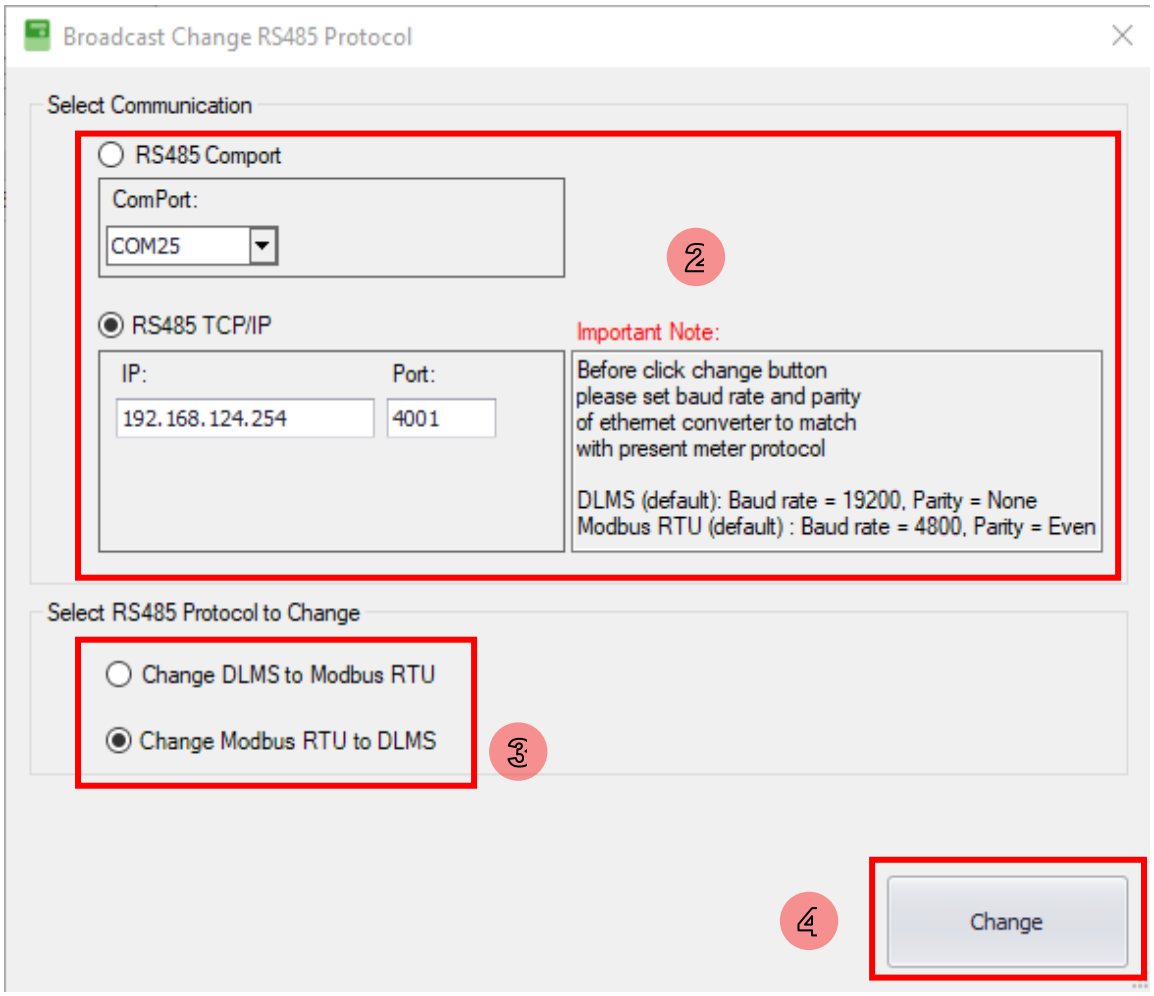
1) UX EvolutionPro software have function for broadcast change protocol by click on "**Change RS485 Protocol**".



Picture 138: Change RS485 Protocol button

2) Click select Communication to connect to a converter between "**RS485 Comport**" and "**RS485 TCP/IP**".

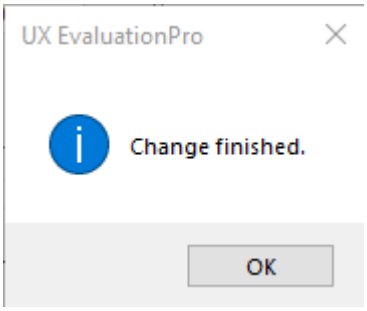
Can view detailed Communication changing protocol on "Important Note"



Picture 139: Broadcast Change RS485 protocol

3) Click select protocol to change by to have 2 radio buttons is "**Change DLMS to Modbus RTU"** and **"Change Modbus RTU to DLMS".**

4) Click "**Change**" button to change protocol and show message box below.

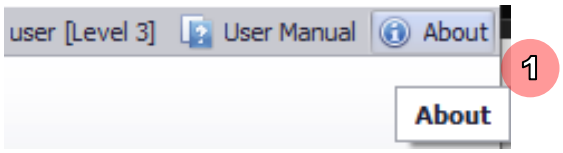


Picture 140: Broadcast Change RS485 protocol successfully

Recommend: After a protocol has been set, you need to check protocol displayed on the LCD of the Meters

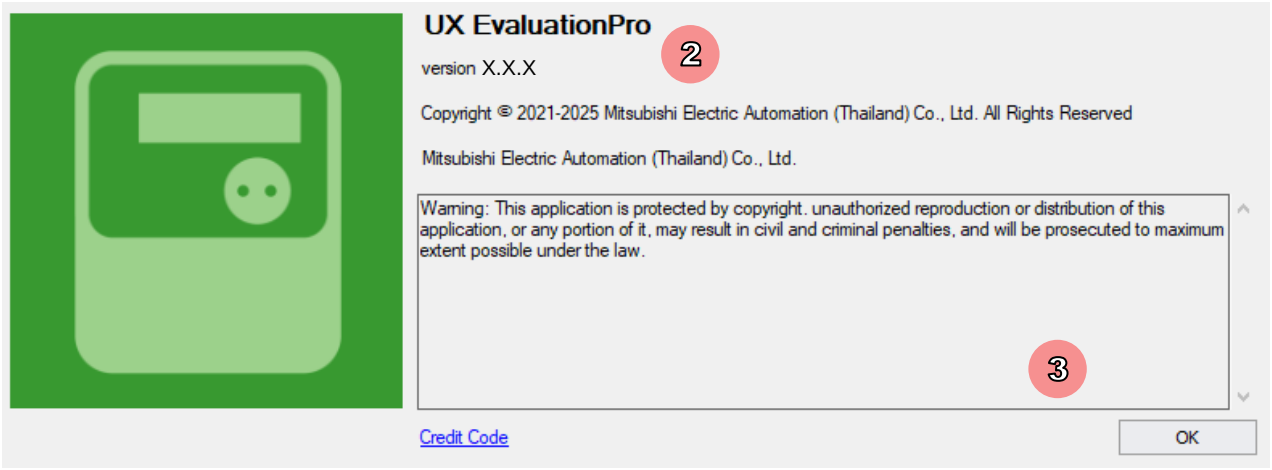
7 About Software

1) To show software information click **About** button.



Picture 141: About button

2) Software will show About screen.

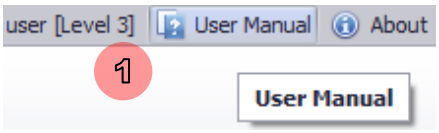


Picture 142: About screen

3) Click **OK** button to close this screen.

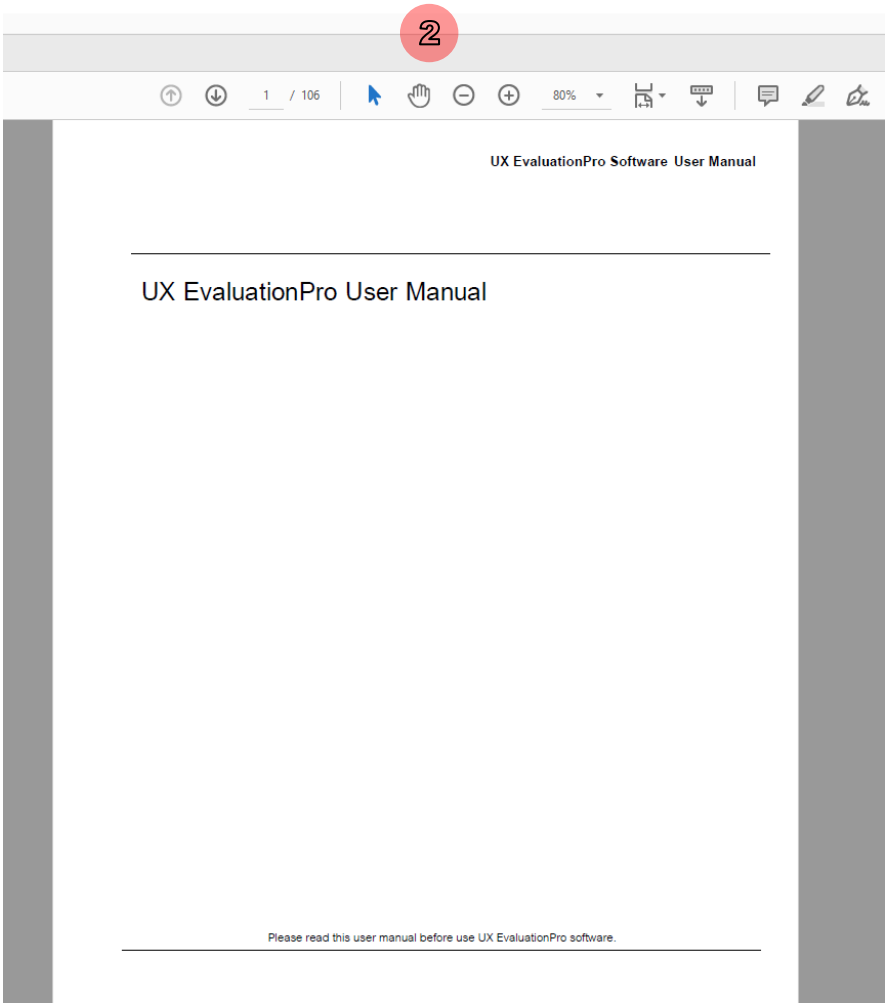
8 User Manual

1) To UX EvaluationPro user manual click **User Manual** button.



Picture 143: User Manual button

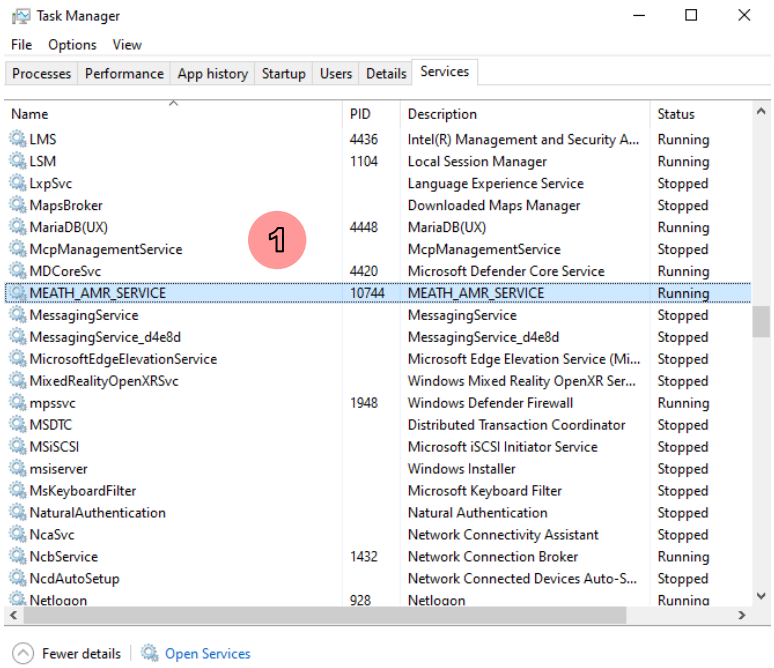
2) Software will show user manual.



Picture 144: Show user manual

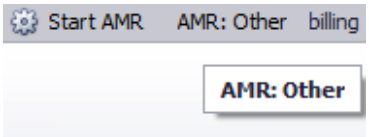
9.1 AMR Service

1) After installing UX EvaluationPro Software, the MEATH_AMR_SERVICE will be installed on your PC.



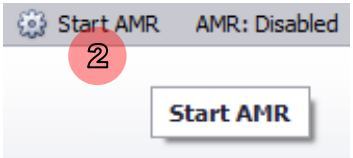
Picture 145: Show AMR Service on Task Manager menu

Note: If you stop **MEATH_AMR_SERVICE** via Task Manager while the AMR is running, the AMR service will fail and upon click on stop AMR, the AMR status will show 'Other'



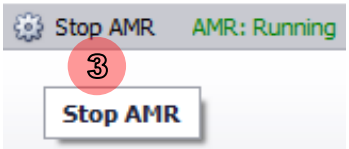
Picture 146: AMR Status show 'Other'

2) To Start AMR Service click **Start AMR** button.



Picture 147: Show Start AMR button

3) To Stop AMR Service click **Stop AMR** button.



Picture 148: Show Stop AMR button

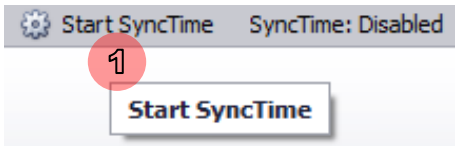
*Note 2: AMR reading will only function if meters are added to the list, checkbox are selected, and the checkbox selections are saved

9.2 SyncTime

*Note: Ensure that your computer's time is accurate with the current time before you start sync time.

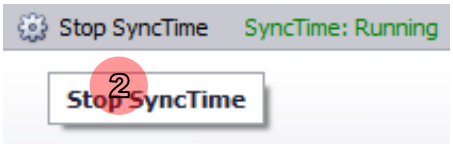
*Note 2: If AMR Service not running, SyncTime is not synchronize

1) To Start SyncTime Service click **Start SyncTime** button.



Picture 149: Show Start SyncTime button

2) To Stop SyncTime Service click **Stop SyncTime** button.

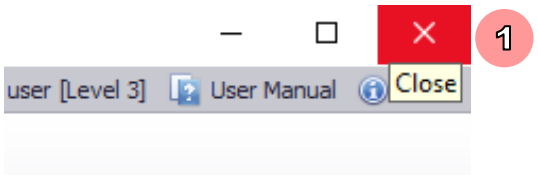


Picture 150: Show Stop SyncTime button

Note 3: The SyncTime function automatically sets the date and time for the checked meters, according to PC time, during every AMR reading when the meter time and PC time differ by more than 10 seconds.

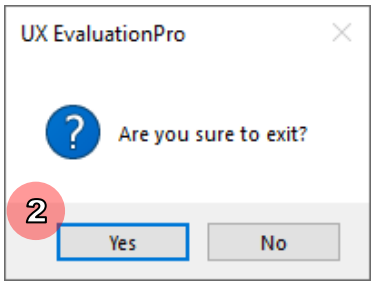
10 Exit Software

1) To exit software, click **Close** button.



Picture 151: Close button

2) Software will show question message “Are you sure to exit?” click **Yes** button.



Picture 152: Confirm to exit software

3) Software will close screen and exit.

Note: During communicating with meter (reading, setting, executing) should wait until finish operation and exit software.

11 Troubleshooting

Problem	Cause	Solution
1. Connection fails.	● Wrong connection of optical probe. ● Select wrong COM port. ● Wrong connection of RS232 ● Wrong connection of TCP/IP ● Bluetooth signal is out of range.	● Optical Probe 1. Check Optical probe connect with meter in correct position. 2. Check USB port of optical probe has already connected with PC, or try to change connection to new USB port of PC. 3. Try to initialize COM port again by selecting Comport in software. 4. Read meter again. ● RS232 1. Check USB port of RS232 has already connected with PC, or try to change connection to new USB port of PC 2. Try to initialize COM port again by selecting Comport in software. 3. Read meter again. ● TCP/IP 1. Check connection of Ethernet converter and PC, or try to change configuration of Ethernet converter. 2. Try to edit IP address and port of Ethernet converter. 3. Read meter again. ● Bluetooth 1. Check distance and obstacle between PC and meter. 2. Try to move PC and meter to closer and less obstacle in area. 3. Pair and read meter again.
2. SNRM fails.	● Wrong connection of optical probe. ● Cannot disconnect from last communication. ● Wrong connection of RS232 ● Wrong connection of TCP/IP ● Bluetooth signal is out of range.	
3. Temporary fails.	● Meter cannot answer at the moment.	1. Wait a few minutes and read meter again. 2. Close software, wait a few minutes, open software and read meter again.

Problem	Cause	Solution
4. Cannot login software.	● Username or password is incorrect. ● License file miss or broken.	1. Check license file “License.lic” exist, default path “C:\MEATH\UX EvaluationPro” 2. Update new license file.
5. Cannot connect meter.	● Meter password is incorrect.	1. Modify meter password in license file and update license file to use correct meter password.
6. Cannot connect database, database error.	● Not install SQL CE. ● SQL CE has a problem. ● MariaDB has a problem	1. In the case not install SQL CE yet, please install SQL CE. 2. For case SQL CE has a problem, please uninstall and reinstall SQL CE. 3. For case MariaDB has a problem, please contact Meter Technical Support (Tel. 0-2540-6992 or Line ID support.025406992, Mon – Fri 8:00 a.m. to 5:00 p.m.).