

User manual for Universal / Industrial RS232/RS485 Modem®



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Document specifications

This documentation was made for presenting the installation and configuration steps of the **Universal / Industrial Modem®** modem.

| | |
|---|--------------------------------------|
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Chapter 1. Introduction

The external modem is easily mountable on a DIN-rail and operates from a 230V external power supply.

The case design and interfaces meet the industry standards and the strict requirements of the large meter manufacturers. This device allows us to connect all kinds of industrial measurement systems with a central server by creating a transparent data link between a local system and an IP address or HES.

The device offers remote access and configuration features.

Wireless communication

The modem supports the 2G, 3G, 4G, LTE Cat.M, LTE Cat.NB networks.

It supports the multi-operator SIM and the roaming feature, and it is compatible with SIM-Toolkit.

The modem has been designed to provide transparent data link from the meter to the server.

It can be used with push data transmission method, thus the modem can initiate the communication with the AMR centre periodically at a pre-programmed time interval or triggered by an alarm (power outage, cover removal, reverse run, etc.)

The modem can be configured to GSM-CSD connection also - e.g. when using a 2G module, receive the CSD calls.

The modem is independent of the mobile service provider and includes a removable SIM card. The device supports multi-operator SIM cards and roaming.

Design and installation

This modem can be installed and connected close to the measurement system - as an external modem – due to the DIN rail-adaptor which allows to fix/mount the device.

Data connection

It uses RS485 data connection, transparent link and RS232 serial port connection for configuration.

- RS232 port (DSUB connector)
- RS485 port (2- or 4-pin ferrule connector)

Operational characteristics

The device can be accessed remotely via the mobile network and is capable of sending data over the Internet using an APN.

The modem is thus suitable for transmitting the incoming data of the connected device transparently through the wireless network.

Power source and power outage

The device can be powered from the meter's mains connection (by general 100-240V AC voltage).

The modem can be connected through the following modes:

- a.) the meter is connected to the 57.7/100V AC power network: the modem must be connected to phase voltage (100V, L1..L2 or L2..L3 or L1..L3)
- b.) the meter is connected to the 230/400V AC power network: the modem must be connected to the line voltage (230V, L1..N or L2..N or L3..N)

In case of the need of using external DC power, the modem can be ordered in DC-voltage version.

Supercapacitor

The modem is also available with a power outage protection by an optional supercapacitor component, which allows to continue the modem operation in case of minor power outage(s).

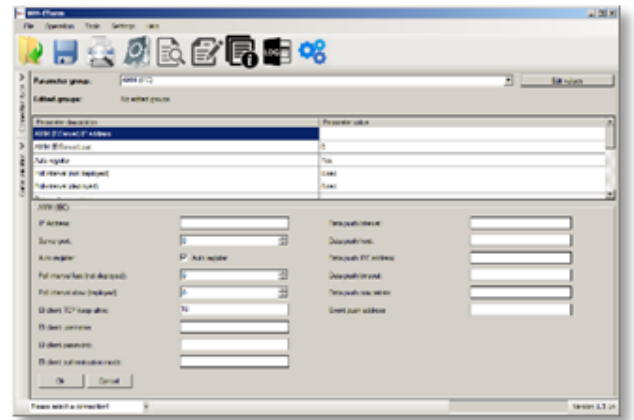
In case of a power outage, the supercapacitors will discharge by time, and the modem will shut down. When the power supply returns, the modem restarts and sends data over the cellular network, and the capacitor components will be charged).

Configuration and firmware refresh

The modem can be configured locally via RS232 port, remotely with a CSDATA call (only if you use a setting that also uses a 2G network!) Or via a mobile internet (TCP) connection, and its firmware can be updated. The modem is configurable via TCP port remotely (or via local serial connection) and operating on the wireless network by configuring the APN, username and password (APN information is provided by your local mobile operator).

All settings can be configured with our administration tool (the WM-E Term® software), but also API available so our partner can easily adapt their current administration environment.

The configuration is possible by one device or for a group of devices.



The WM-E Term® tool is password protected and user management is also possible. The configuration tool requires Windows® platform to run. It is available in English and some local languages as well (as French, German, Spanish, Czech, etc.).

Status and notification

The modem is continuously monitoring the mobile network and device communication health, and can send status information (signal strength, QoS).

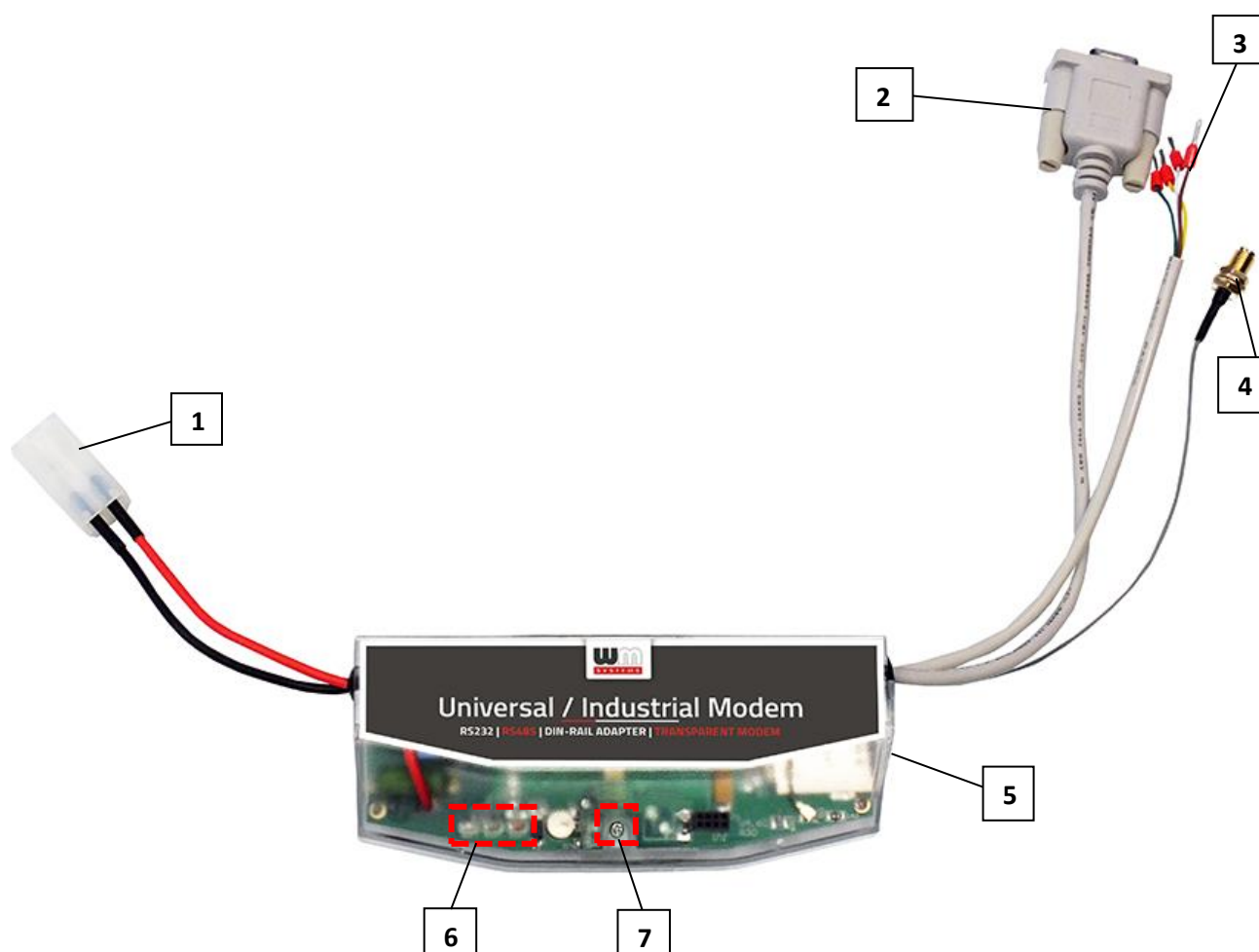
By the configured features, the device is able to send SMS alarm notification, Last Gasp notification – depending on the used cellular network and mobile operators (if the SMS notification is not disallowed on the network, then it can be used).

The LastGASP SMS notification feature is available by some models for case of reporting the occurred possible power outages.

Certification

The modem is accomplishing with CE standard (Radio Equipment Directive (2014/53/EU)) and safety directives (EN 60950-1) and RoHS declaration and has CE certification.

Chapter 2. Connectors, interfaces



1 – Mains connector (pigtail connector, for the AC power of the meter)

2 – RS232 connector (DSUB9 - optional)

3 – RS485 connector (2-pin or 4-pin - order option, wire with sleeve)

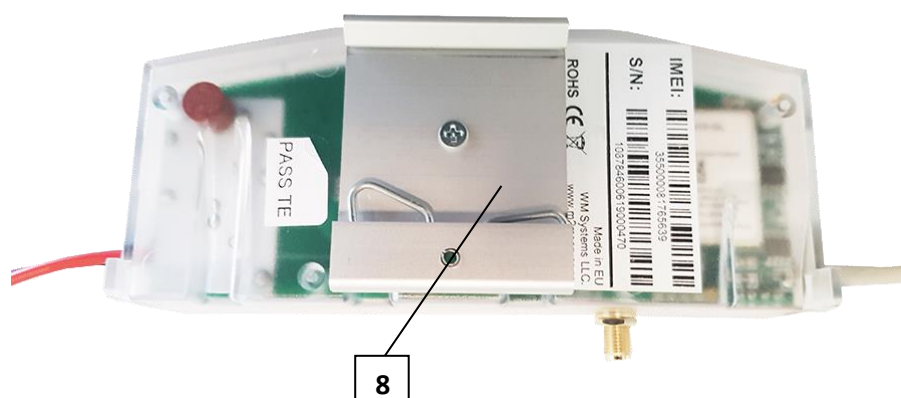
4 – Antenna connector (SMA-M, 50 Ohm)

5 – SIM card slot (push-insert)

6 – Status LEDs

7 – Fixation screw of top modem enclosure

8 – DIN-rail adapter to fixate/mount to wall



Chapter 3. Installation

3.1 Installation steps

Step #1: Remove the meter terminal cover by loosening the screws.

Step #2: Ensure that the device is not powered on, remove the AC connector (1) from the meter.



Attention!

NEVER remove the device cover when the modem is powered on!

Step #3: Insert a replaceable and active SIM card (with APN) into the SIM-holder (5) - the chip looks down, and the cutted edge of the SIM looks to the modem. Push the SIM until it will be fastened (you will hear a click sound).

(If it is necessary, the SIM card can be easily removed by pressing the card again, causing the card to be ejected from the tray.)

Step #4: Install the modem enclosure and fasten near to the meter – or mount to the wall in a fixed position or you can use the DIN-rail adapter (8) of the device to mount on a 35mm DIN-rail.

You can also insert the device into the internal mounting points of the meter - under the terminal cover of the meter - and attach it to the meter terminal cover according to the meter's user guide.

Step #5: Mount an external magnetic base or stick antenna to the antenna connector (4) corresponding to the communication – e.g. LTE antenna.

Step #6: Connect the modem to your computer with the RS232 cable (2) and an RS232/USB DONGLE converter.

Step #7: Connect the modem's AC power connector (1) - wire socket connection or "pigtail" connector depending on the version - to the meter power input (for 100-230V AC) or to an external 230V power supply.

Step #8: Configure the modem with the WM-E Term® software.

Note that the modem can be configured only through its RS232 port!

Step #9: After completing the configuration, remove the RS232 cable - labeled with „2” - from the USB adapter.

Step #10: Disconnect the modem AC power connector (1) from the meter (or power source). The modem will be shutting down.

Step #11: Make a data connection between the modem and the meter on the interface you want to use:

- RS232 data connection to the meter by the modem's RS232 cable (2)
- RS485 data connection using the data RS485 cable (3):
 - in case of presence of 2-wire data connector (**brown** and **white** wires)
 - in case of presence of 4-wire data connector (from left to right the wires are: **white**, **brown**, **yellow**, **green**) of the modem device to the meter's data connection.

Note that, some meters has DSUB-25 type RS232 connector which can be attached in the same way. You can order the modem with that kind of connector for the proper connection.

Step #12: Attach and mount a communication antenna to the SMA-M connector (4).

Step #13: Connect back the modem's AC power connector (1) - wire socket connection or "pigtail" connector depending on the version - to the meter's power input (for 100-

230V AC). The modem will be powered by the meter and the modem will start its operation and the LED signals are signaling the current activity.

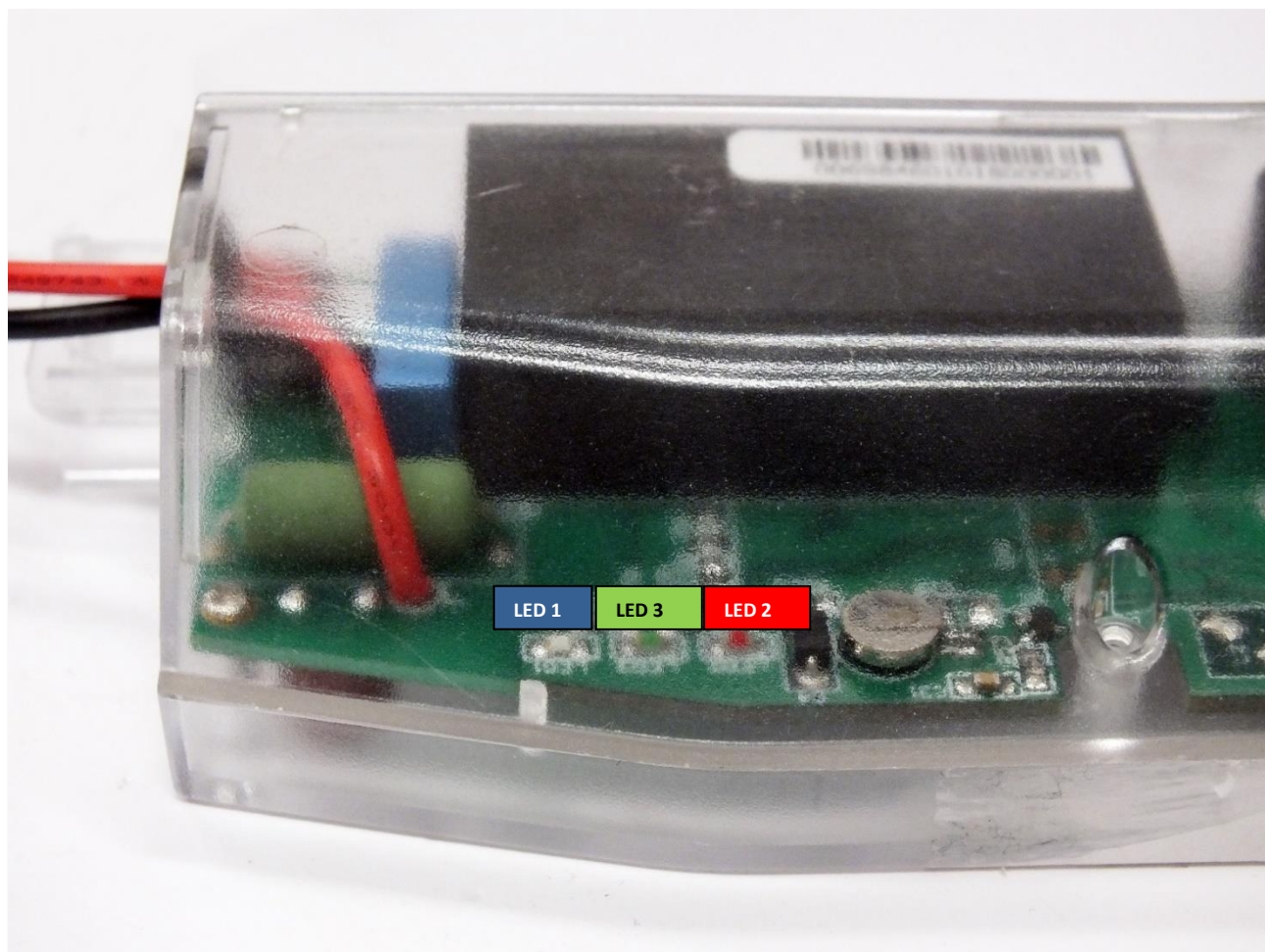
Step #14: Place back the terminal cover of the meter and secure with the screws.

3.2 Antenna connection

The modem requires enough signal strength of the cellular network and LTE or similar antenna for the proper operation and good communication. Where the signal strength of the cellular network is sufficiently, there an internal antenna may be enough to use. However, in places where the signal strength is low or poor, you should use an external antenna (50 Ohm, SMA connector), which can be mounted to the modem – you can place it even inside of the top cover of the meter.

3.3 Operation LEDs

*The LED numbering is the same as the LED labels on the modem panel: from left to right in order: LED1 (**blue**, left), LED3 (**green**, center), LED2 (**red**, right).*



Factory default LED signals:

| LED identifier | Events |
|--|---|
| LED 1 GSM / GPRS status | <ul style="list-style-type: none">• If there is a SIM and PIN code ok, the LED will turn on• If there is no SIM or the SIM PIN is incorrect, the LED flashes every 1 second.• If there is no SIM, the LED flashes every 1 second.• • RSSI flashes the LED according to the field strength value (1 flash lasts for 1 second, followed by a pause)<ul style="list-style-type: none">◦ RSSI ≤ -98 → 1 flashing◦ RSSI > -98 and ≤ -83 → 2 flashing◦ RSSI > -83 and ≤ -68 → 3 flashes◦ RSSI > -68 → 4 flashes |
| LED 3 SIM status / SIM failure or SIM PIN failure | <ul style="list-style-type: none">• During network registration: led is active• During network search: blinking once per second• When connected to the network and the IP connection is okay: blinking twice per second• When the mobile network access technology was changed: quick flashing will be relied:<ul style="list-style-type: none">◦ 2G → 2 flashing per second◦ 3G → 3 flashing per second◦ 4G → 4 flashing per second• If no network is detected: the led will be blank |
| LED 2 E-meter status (Communication status) | <ul style="list-style-type: none">• During the transparent meter communication: twice per second.• At finish of the transparent communication: led is blank. |

Over the factory defaults, the operation and the sequence of the LED signals can be changed by the **WM-E Term**[®] configuration tool, at the **Standard Meter Interface** parameter group, where you can define one of the following functions of the leds (LED1..LED3) according the next list:

| Selectable LED status (in WM-E Term) |
|---|
| Not used |
| GSM / GPRS status (see above) |
| SIM status (see above) |
| E-meter status (see above) |
| Firmware status |
| Network status and access technology – Network status and accessible technology information |

Further status LED signals (can be configured as well):

| LED identifier | Events |
|--------------------------------------|--|
| Firmware status | <ul style="list-style-type: none">• When the modem firmware starts, the LED turns on• When the connection between the meter ↔ modem is established, the LED flashes in every 2 seconds. |
| Network status and access technology | <ul style="list-style-type: none">• During network search: flashes once per second• When connected to the cellular network and the IP connection is OK: Blinks twice per second• If mobile network access has changed: flashes quickly:<ul style="list-style-type: none">◦ 2G → 2 flashes / sec◦ 3G → 3 flashes / sec◦ 4G → 4 flashes / sec• If no network is available: the LED is not active |

** The power supply of the e-meter can be controlled with the relay listed here. Cannot be used for tariff change!*

*** The EI client is a transparent TCP channel outgoing from the modem to the EI server.*

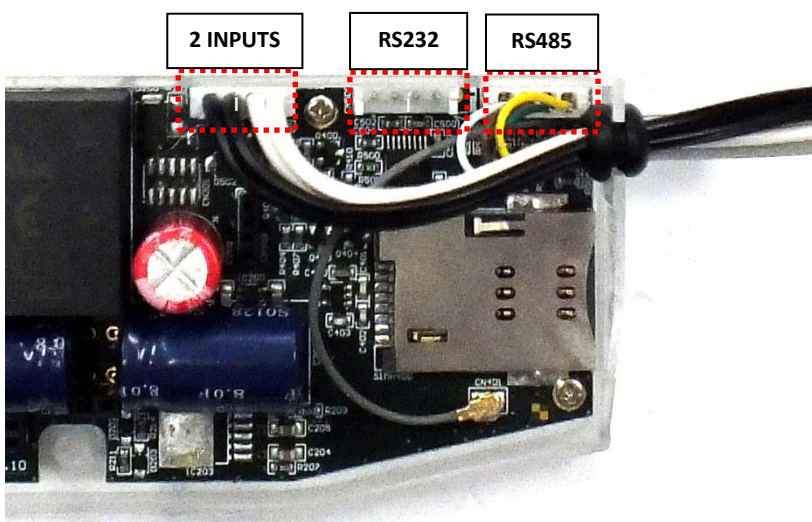
Important!

During firmware upload, the LEDs indicate normal operation - there is no distinct indication during the FW update. After installing the FW, the three LEDs light up for 5 seconds and then all three light up. The modem will then restart and use the new firmware. Then each LED will continue to flash according to the listed states.

3.4 Internal connectors

RS232 – 4-pin internal connector, connected to the CN500. Serial cable outfit to DSUB-9 type connector (by order, alternatively it can be ordered with an RJ12, RJ45 or DSUB-25 type connector outfit).

RS485 – 4-pin internal connector, connected to the CN501. The RS485 cable outfit leads to 2- or 4-wire connector (alternatively it can be ordered with RJ12 or RJ45 type connector outfit).

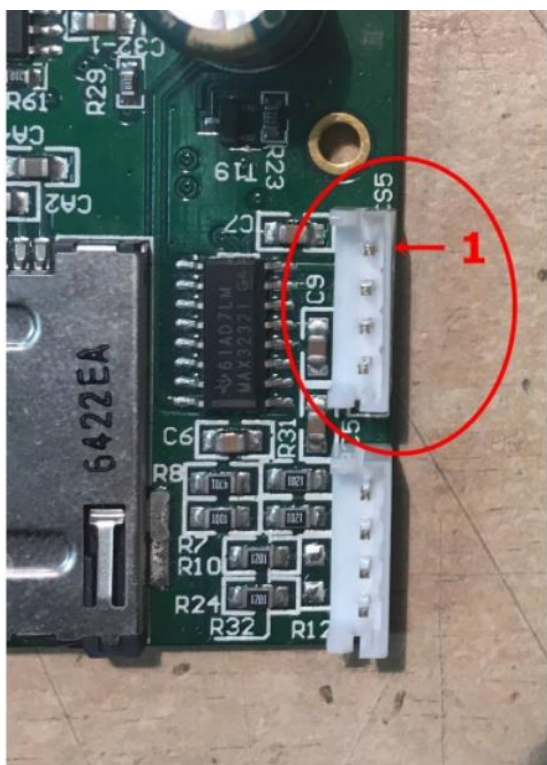


***2 INPUTS** – 4-pin connector, connected to the CN502. The cable outfit leads to a 4-wire connector to connect to the external devices. Pinout: **black** wires are related for input nr. #1, **white** wires are related for input nr. #2.

**Available only by order request.*

3.5 RS232 connector pinout (internal CS5 connector)

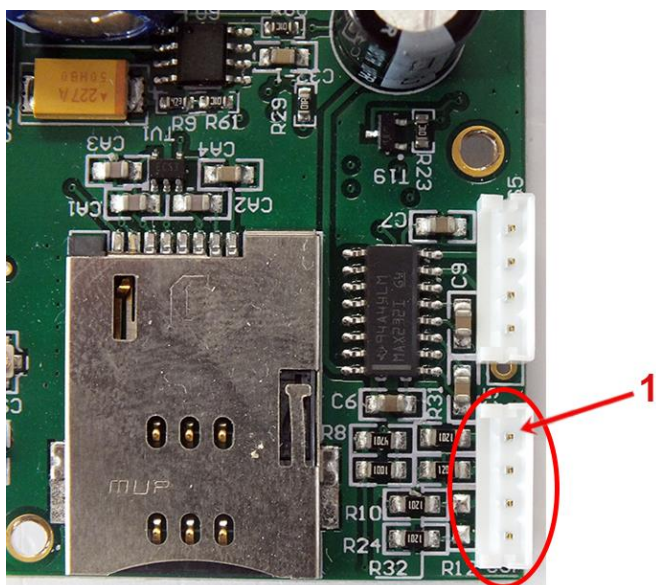
| Color | Alternative color | Mark | Meaning | Meter RS232 port connector side |
|---------------|-------------------|------|--------------------------------------|---------------------------------|
| White | Black | GND | Ground | Meter_GND |
| Brown | Red | RX | Receiving data | Meter_TX |
| Green | Green | TX | Sending data | Meter_RX |
| Yellow | Yellow | DCD | DCD (in case of compatible meter) | Meter_DCD |



On **CS5** connector - marked by **red circle** on the photo – the pin nr. “1” is the **GND** connector.

3.6 RS485 connector pinout (internal CS7 connector)

| Color | Alternative colour | Sign | Meaning | Meter RS485 port connector side |
|---------------|--------------------|------|----------------|---------------------------------|
| White | Black | RX+ | Receiving data | Meter_TX+ |
| Brown | Red | RX- | Receiving data | Meter_TX- |
| Yellow | Yellow | TX- | Sending data | Meter_RX- |
| Green | Green | TX+ | Sending data | Meter_RX+ |



On **CS7** connector - marked by **red circle** on the photo – the pin nr. “1” is the **RX+** connector.

3.7 Power outage management

Some firmware versions of the modem support the LastGASP feature, which means that in case of power outage the modem’s supercapacitor allows to operating further the modem for a short time (a couple of minutes). In case of detecting the loss of mains/input power source, the modem generates a “POWER LOST” event and the message will be immediately transmitted as an SMS text to the configured phone number.

In case of recovering the mains/power source the modem generates the “POWER RETURN” message and sending by SMS text.

The LastGASP message settings can be enabled by the WM-E Term® application – in the **AMM (IEC)** parameter group part.

3.8 LED operation during the CSD call

The CSD call consists of two parts:

- a.) We want to read / configure a meter in transparent mode
- b.) We want to perform a modem configuration / firmware update

To read / configure a meter in transparent mode:

- The LED configured for GSM / GPRS status will be lit continuously during the CSD call.

- The LED that is configured for e-meter status will flash according to the CSD call status:

- It will flash every half second from the beginning of the connection to the end of the connection / If the measuring interface is not configured for a baud rate of 9600, the LED will be lit continuously from the beginning to the end of the connection

- After closing the connection, the LED will turn off

If you want a modem configuration / firmware update:

- The LED configured for GSM / GPRS status will be lit continuously during the CSD call.

- In this case, the other LEDs do not change due to the CSD mode.

3.9 Configuring from CSD connection

If the modem restarts due to an incorrect configuration, it is possible to access it with a CSD call. Its operation can be fine-tuned in the WM-E Term software with a value that can be specified in the **PDP connection delay** field in the **APN** parameter group. For more information, see Chapter 3.1 of the *WM-E Term User Manual*.

3.10 Automatic network reconnection

If the mobile network provider drops the modem from the cellular network due to the device's network inactivity, there are available parameters if these are set, then automatic and periodical connection connection rebuild can be caused. If the network provider sends a message to the modem that the data connection has been lost, the connection will be restored automatically. If you do not send a message, you can choose from these two workarounds to follow:

a.) Active mode - Use periodical ping, set the ping:

1. For setting this, set the **Watchdog** parameter group's ping parameters as **Ping IP-address, Number of ping retries, Ping wait-time (for reply)** and **Wait-time (for next)**.

2. If there is no ping response, it reconnects to the network after the time interval specified in the **Seconds, gprs connection closed and restored after this time** parameter.

Attention! *In case of frequent ping using, the data traffic will be higher, but the chances are higher that the device will remain on the cellular network.*

b.) Passive mode - If you don't use the ping - set the connection retry:

1. For setting this, use the **Watchdog** parameter group's **Seconds, gprs connection closed and restored after this time** parameter.
2. Here you can define that after the network drops out the modem, how long does the modem wait before trying to reconnect to the mobile network again. Ask your mobile provider about the offered settings.

Attention! *If there is less data traffic and there is no ping configured, the device may not stay on the network for a long time.*

If you set this parameter to a low value that can cause frequent network reconnections.

Therefore under no circumstances should you set this value lower than what your mobile service provider recommends. (e.g. there are mobile network providers that limit the number of times a modem can log on to the network in a given time).

Chapter 4. Modem Configuration

4.1 Configuration

The modem must be configured by the *WM-E Term*® software by configuring its parameters which must be performed before the normal operation and usage. Over the parameter settings of the modem and communication, etc. you can also test the modem communication by the configuration program.

Note that the modem can be configured through RS232 connection only!

During the configuration, you have to remove the meter-modem data connection (2/2a) and you have to connect the modem to your computer by the following hints.

The modem can be connected with the RS232 cable (2) and by using the RJ12-USB DONGLE adapter by directly to your computer.

Important!

Note that until the configuration the modem is not connected to the meter, therefore it cannot readout the parameter values through the RS232 interface. Another configuration port should be selected for that – e.g. Optical or TCP/IP port.

Attention!

During the configuration, the power supply of the modem must be assured by its AC plug from an external power source (from 100-230V AC or by the meter 57-100V AC).

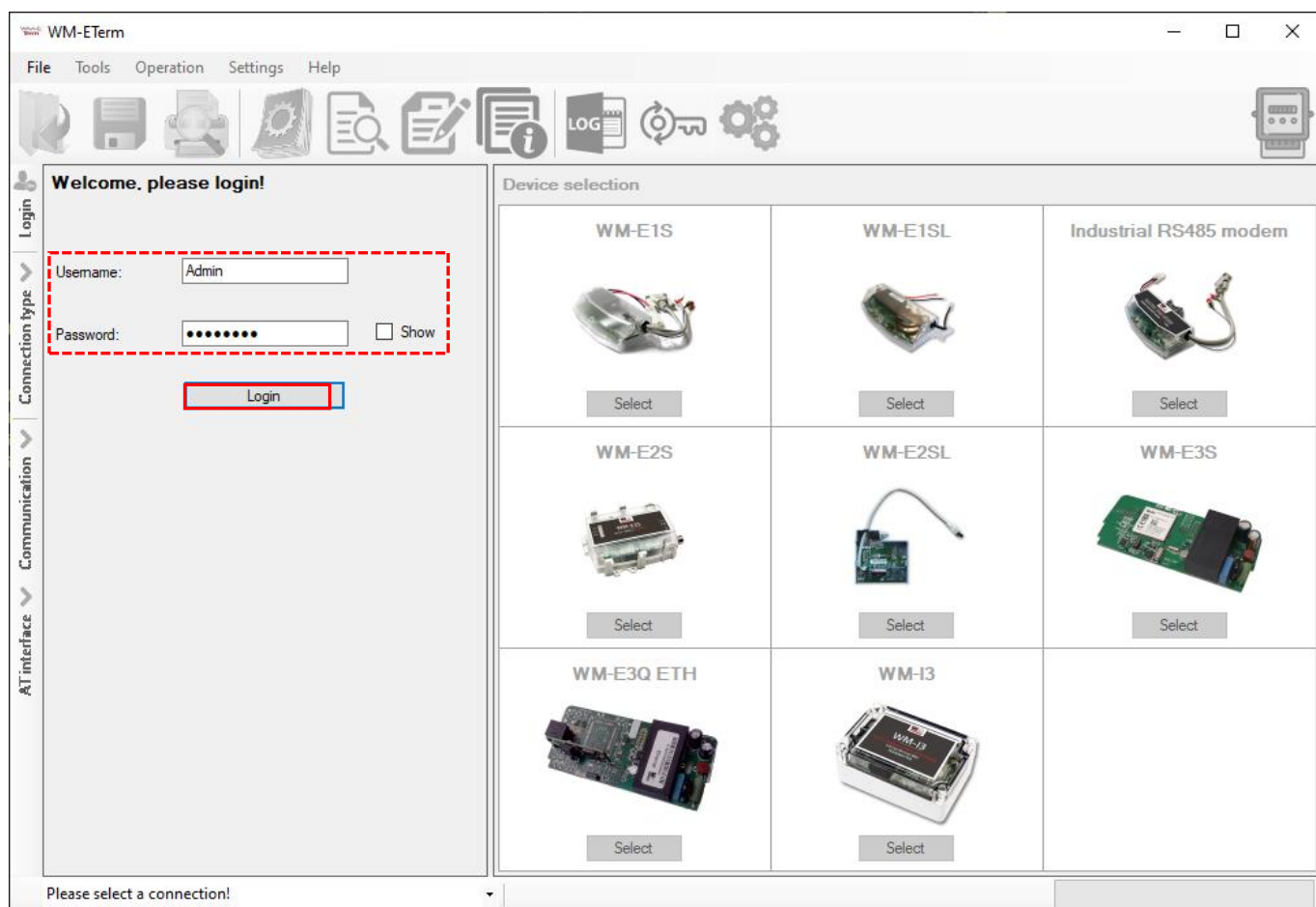
For the operation of the modem cellular network communication and SIM card settings (such as APN, password, and account) are required.

In addition, be sure to review the connection settings (RS232, RS485) also and save the settings in the *WM-E Term* software. In addition, you must send the configuration to the modem.

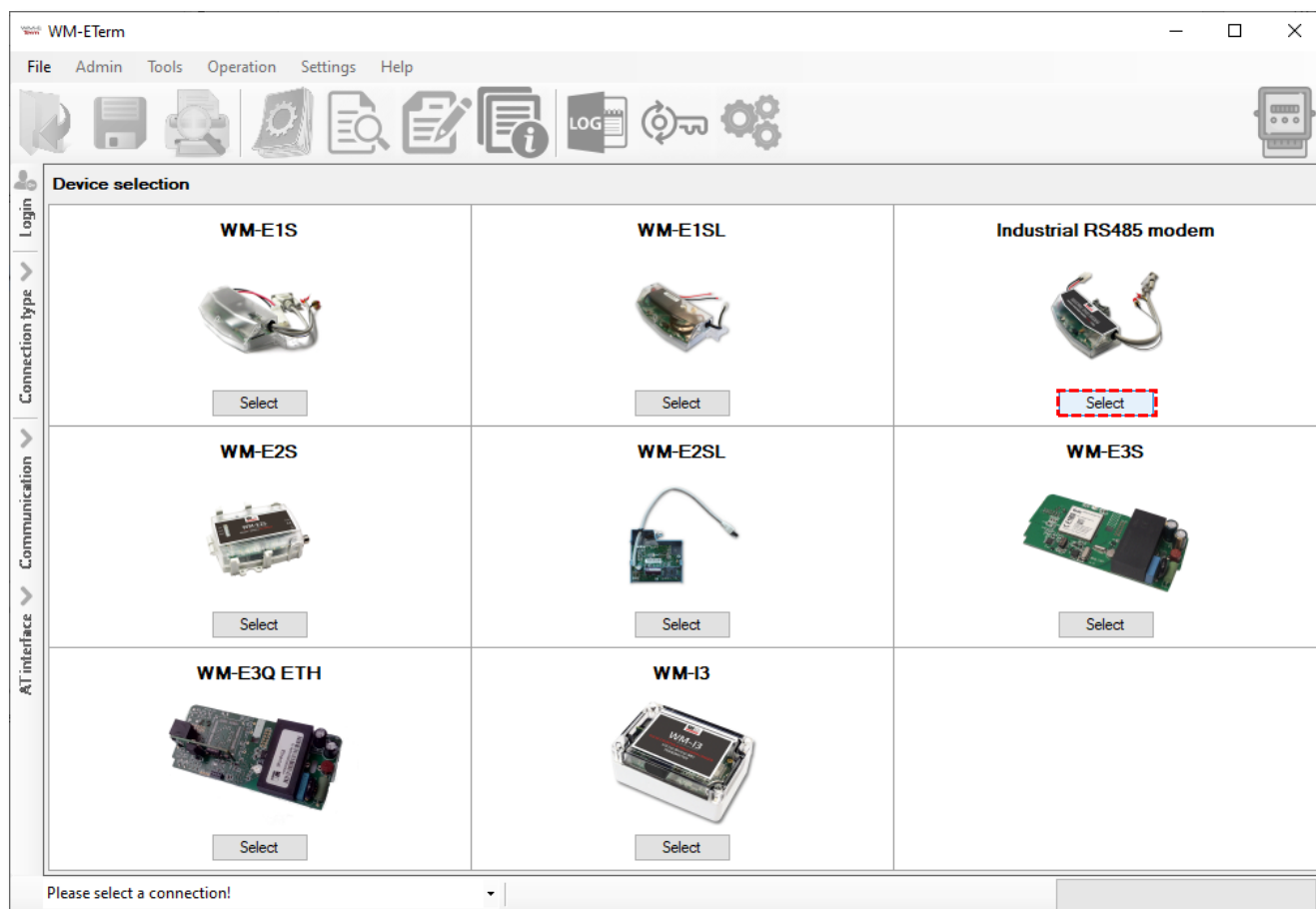
4.2 Configuring the modem by WM-E Term®

1. The configuration software can be used on Microsoft® Windows® 7 / 8 / 10 / 11 operating systems.
2. Download **WM-E Term®** to your computer from the following location using a browser: https://www.m2mserver.com/m2m-downloads/WM_ETerm_v1_3_80.zip
3. You can also use a sample template configuration file – if you want.
https://m2mserver.com/m2m-downloads/INDUSTRIAL_UNIVERSAL_RS485_MODEM.zip
4. Unpack the .zip file into a directory and execute the **WM-ETerm.exe** file and the following application screen appears. (You have to own administrator privileges for the directory, where running the program.)
5. Enter the login data to enter into the configuration software.

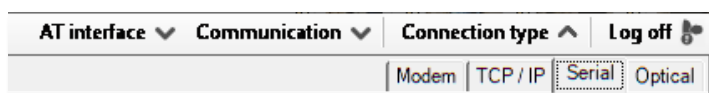
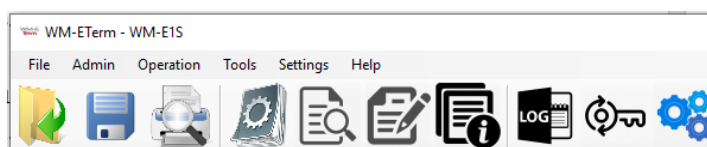
Default **Username**: Admin Default **Password**: 12345678



6. Select the **Industrial RS485 modem** modem type and push the **Select** button there.



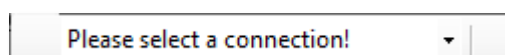
In the program window, you will find icons and menu items for performing settings, operation.



On the left side of the screen, the navigation buttons will help you to

connect and check the communication.

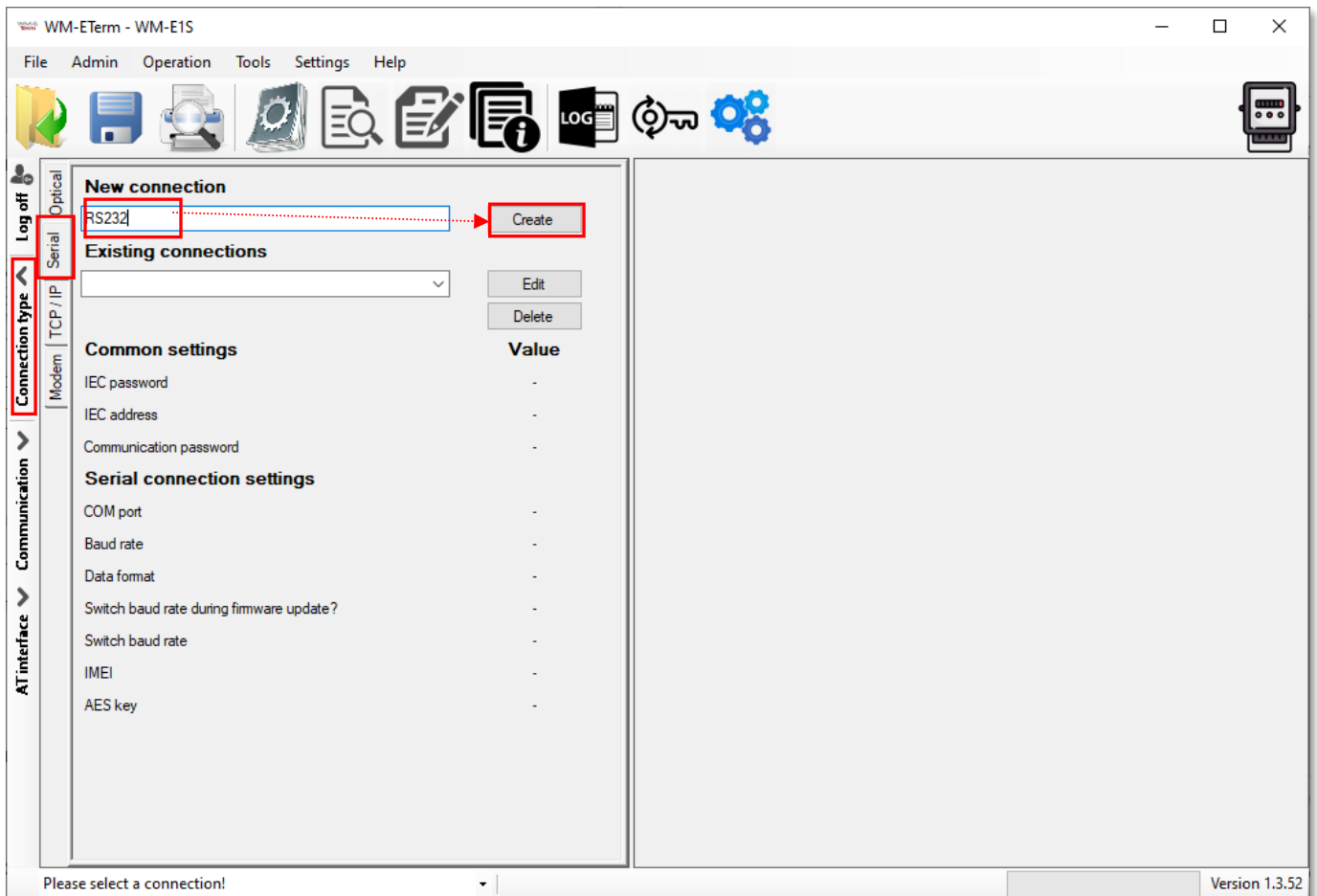
At the bottom of the screen, on the left hand side, you can connect with a pre-configured profile to the modem (by selection).



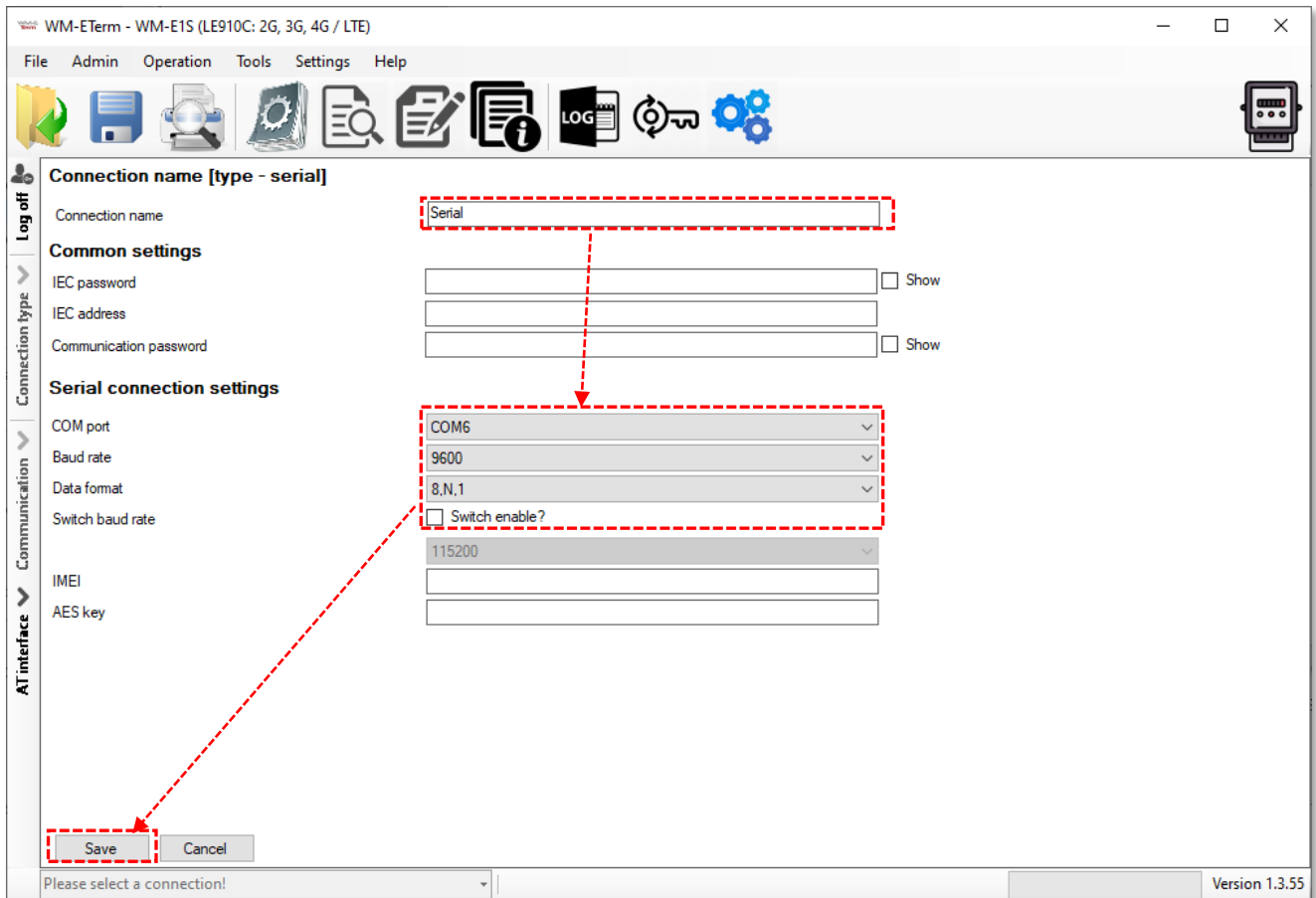
4.3 Setup the connection

1. Make serial RS232 connection between the modem and your computer (you should use RS485-RS232 adapter also).

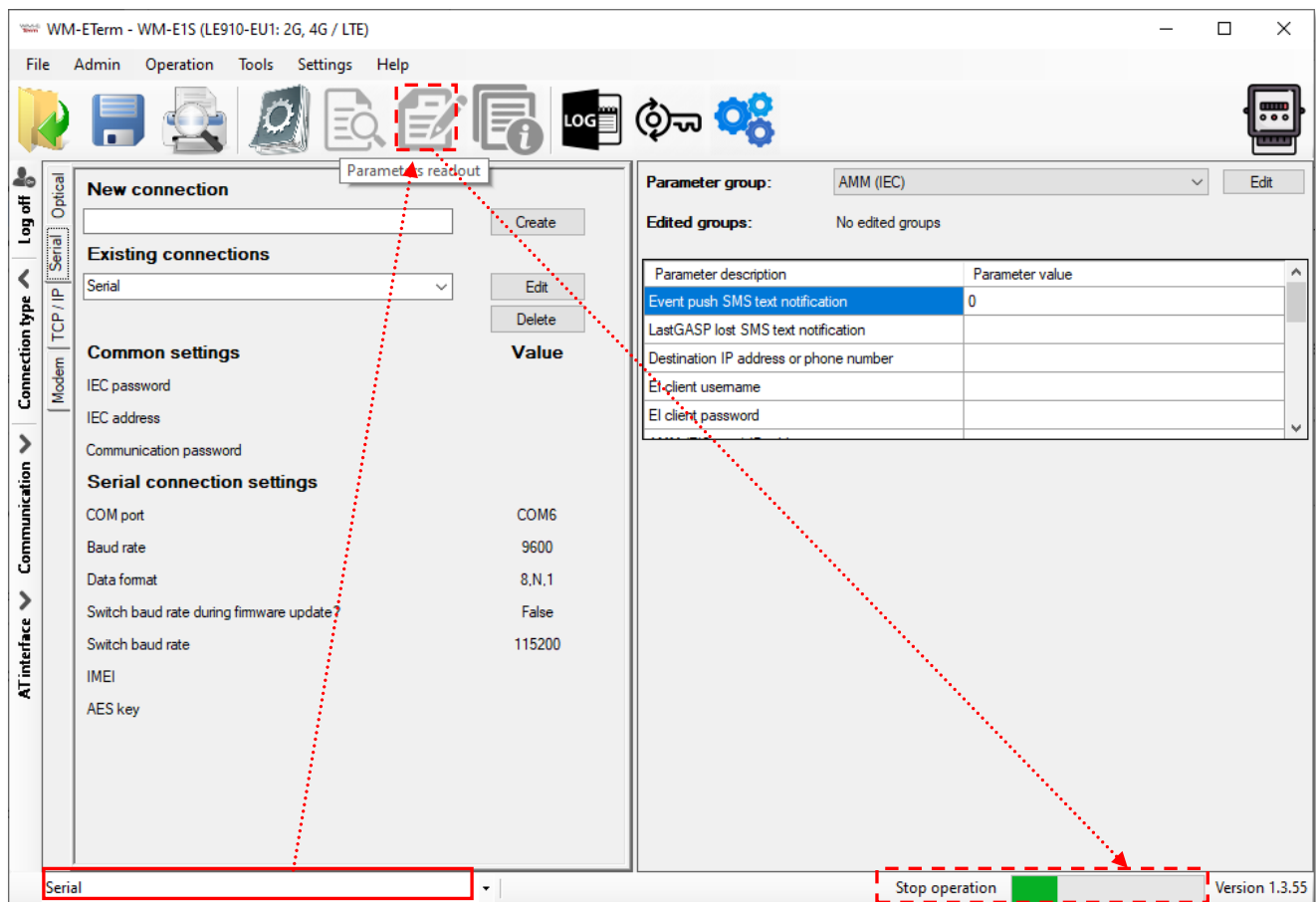
2. On the left-side of the screen click on the Connection type and choose the Serial interface.
3. Add a name for the profile at the **New connection** field.



4. Push the **Create** button and a new window will appear with connection parameters.
5. In the connection window you can define the connection profile parameters.
6. You can add the **Password**, the **IEC address** of the SIM card, and you can require the communication to be logged (**Communication log**).
7. It is mandatory to setup the connection parameters: as **COM port** according to the available serial/USB port, the dataspeed (Baud rate), and the Data format (e.g. 8,N,1).

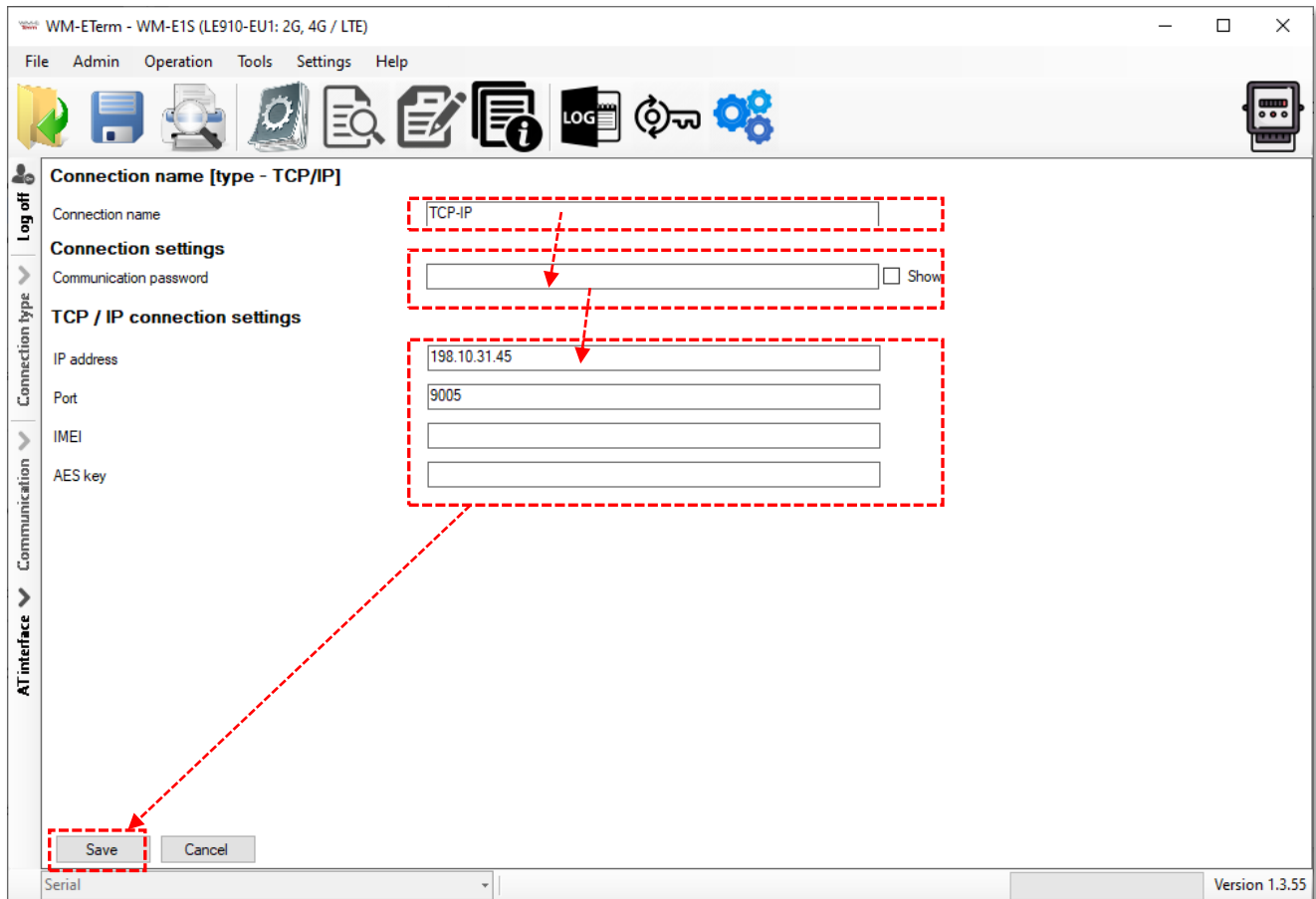


8. You can **Switch baud rate** during the firmware by enabling the **Switch enable** option and choosing a baud rate from the list. This will be valid for the firmware update period.
9. You can define an **AES key** for the connection if you want. You can also declare the IMEI number (metering modem's module identifier) to guarantee that the connection is valid only for the relevant hardware (the modem which has the IMEI).
10. Click on **Save** button to save the connection profile.
11. When connecting by choosing the **Parameters Read** icon, the modem will reads out the data from the meter after connecting.



TCP/IP profile:

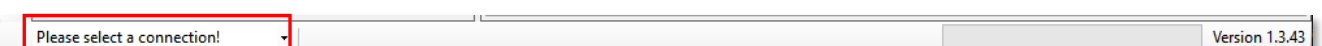
1. You need to know the IP address of the SIM card for connection and the pre-configured port number to setup the **TCP/IP settings**.
2. On the left-side of the screen click on the **Connection type** and choose the **TCP/IP** interface.
3. Add a name for the profile at the **New connection** field.
4. Push the **Create** button and in an another window the connection settings will appear – similar to what was described at the serial connection.
5. If it is necessary to use a secured the connection, you can use **Communication password**. (You can check the filled password by the *Show* option.)




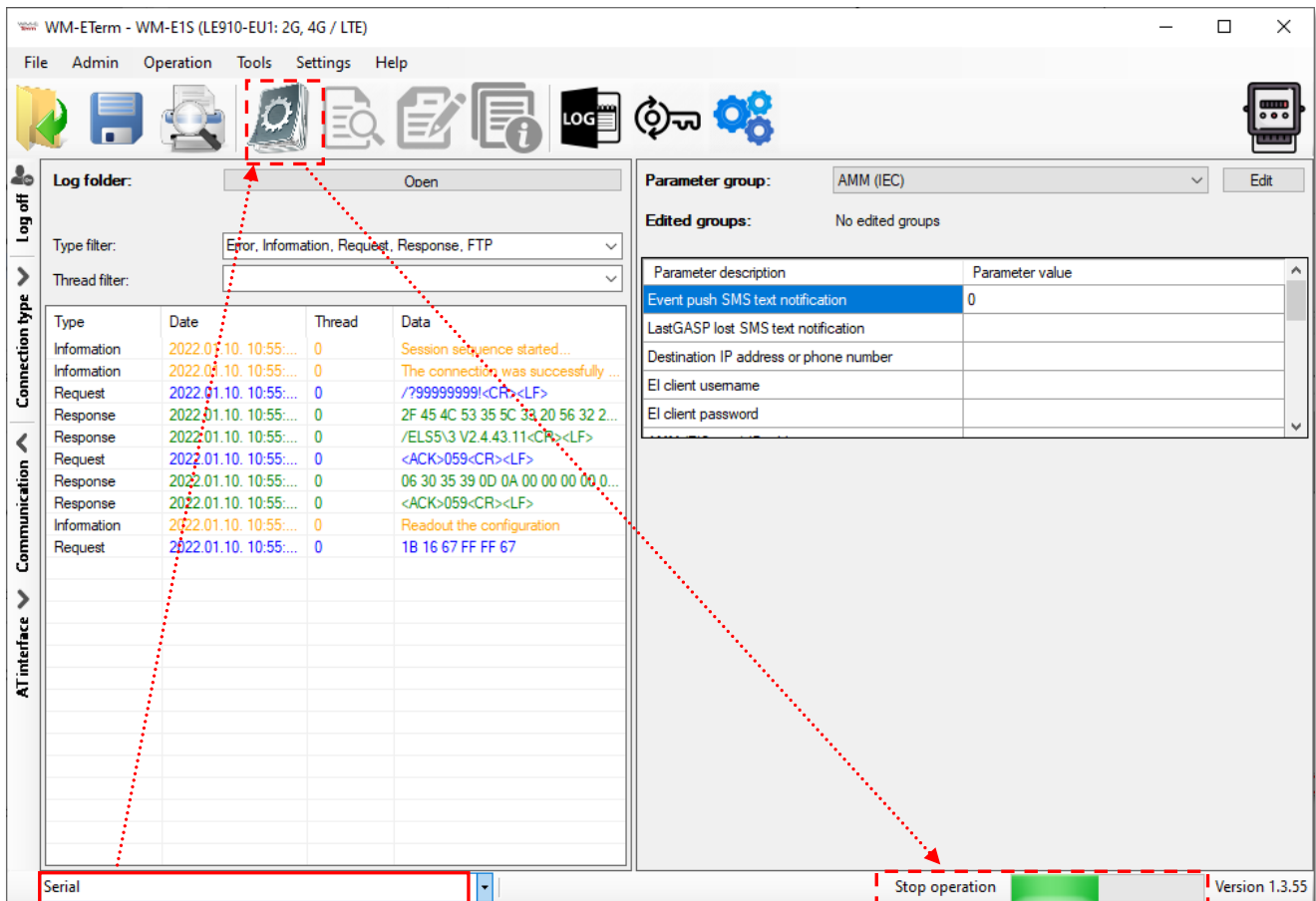
6. Define the **IP address** to the connected SIM card and the **Port** for the connection.
7. You can define an **AES key** for the connection if you want. You can also insert the **IMEI number** (metering modem's module identifier) to guarantee that the connection is valid only for the relevant hardware (the modem which has the IMEI).
8. Push then the **Save** button to save the profile settings.

4.4 Connect to the modem

Important! Previously you've created the connection profile. Note that the connection profile will NOT be automatically selected. Therefore, you have to choose a connection profile manually at the bottom of the screen to connect to the modem before readout or configure the settings!



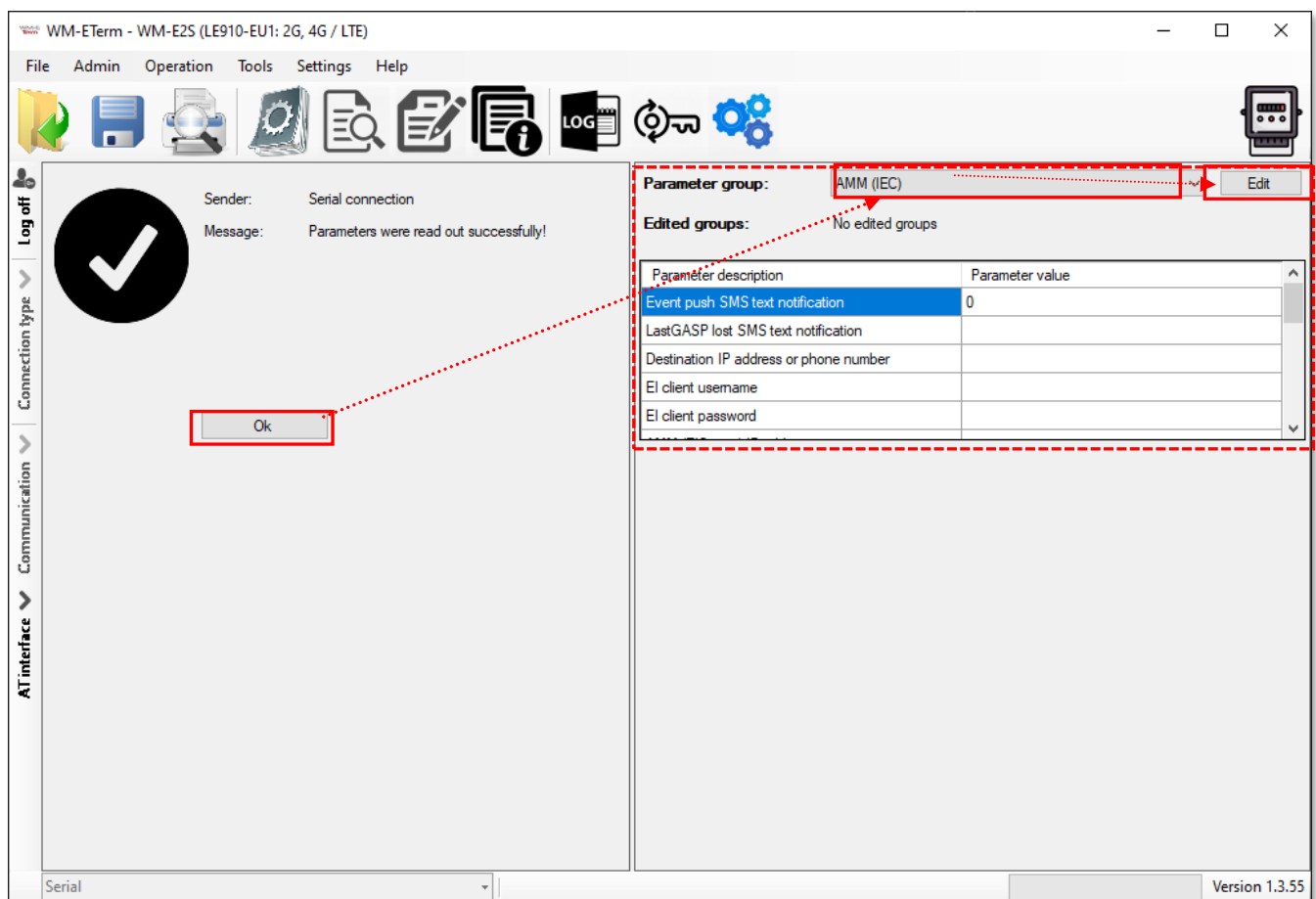
1. Once the connection profile has been chosen, then click on the **Parameters Read**  icon to readout the data from the meter.
2. All parameter values will then be read out from the meter and visible by selecting a parameter group. The progress will be signed by the indicator bar on the right-bottom side of the screen.



(If you want to cancel the readout and the connection you can Stop operation.)

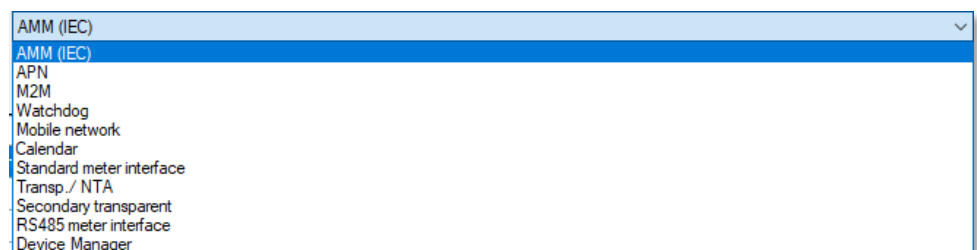
3. You can check the connection any time by the **Connection** button on the left-side. Then the current modem communication messages, commands and answers will be listed on the left side of the screen.
4. Then the *connection successful message* appears. (In case of a connection failure the error message will also appear here.)
5. The WM-E Term then loads the listed and read out parameter values.

6. Confirm the readout process by pushing the **OK** button – on the left.



7. At the top of the settings, the available parameter groups and its listed parameters can be seen. This is where you can choose another **Parameter group** by its button.


The available parameter groups depend on the currently used metering modem model and the used firmware.

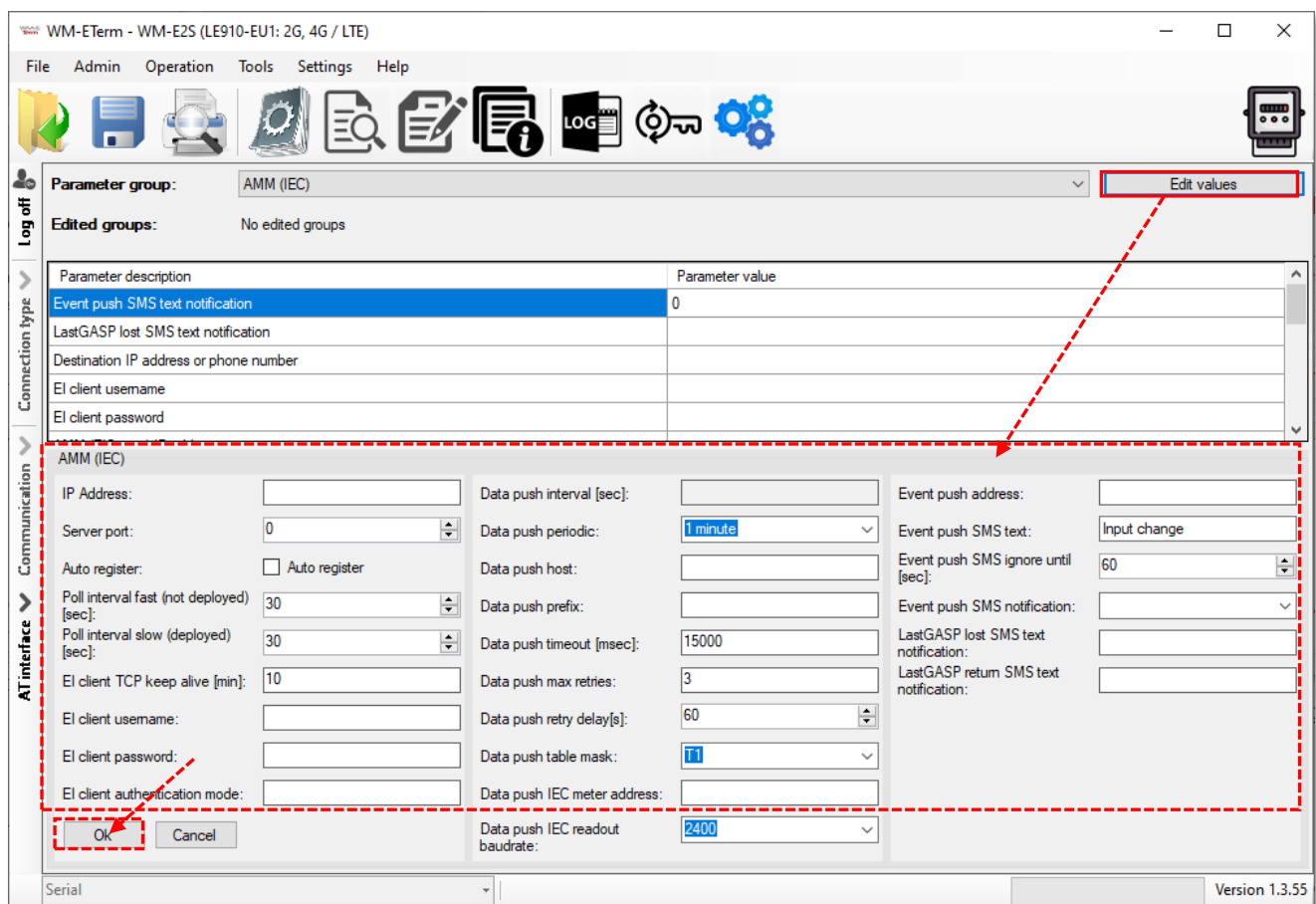


Choosable parameter groups:

- **AMM (IEC)** – *NOT AVAILABLE FOR THIS MODEM!*
- **APN** – APN zone settings (for the SIM card)
- **M2M** – GPRS connection settings

- **Watchdog** – GPRS Watchdog settings
- **Mobile Network** – Mobile network settings
- **Calendar** – *NOT AVAILABLE FOR THIS MODEM!*
- **Standard meter interface** – Date format, identifiers, LED operation settings
- **Transp./NTA** – *NOT AVAILABLE FOR THIS MODEM!*
- **Secondary transparent settings** – *NOT AVAILABLE FOR THIS MODEM!*
- **RS485 meter interface** – for RS485 meter connection settings
- **Device Manager** – optional: for configuring the *Device Manager*® server connection for monitoring and maintaining the modems remotely

By pushing the  **Parameter reads** icon (menu item) you can repeat the whole readout, anytime – when it is necessary or you want to test the modified settings (later).



WM-ETerm - WM-E2S (LE910-EU1: 2G, 4G / LTE)

File Admin Operation Tools Settings Help

Parameter group: AMM (IEC) Edit values

Edited groups: No edited groups

| Parameter description | Parameter value |
|--|-----------------|
| Event push SMS text notification | 0 |
| LastGASP lost SMS text notification | |
| Destination IP address or phone number | |
| EI client username | |
| EI client password | |

Communication

AT interface

IP Address: [] Data push interval [sec]: [] Event push address: []

Server port: 0 Data push periodic: 1 minute Event push SMS text: Input change

Auto register: ☐ Auto register Data push host: [] Event push SMS ignore until [sec]: 60

Poll interval fast (not deployed) [sec]: 30 Data push prefix: [] Event push SMS notification: []

Poll interval slow (deployed) [sec]: 30 Data push timeout [msec]: 15000 LastGASP lost SMS text notification: []

EI client TCP keep alive [min]: 10 Data push max retries: 3 LastGASP return SMS text notification: []

EI client username: [] Data push retry delay[s]: 60

EI client password: [] Data push table mask: 11

EI client authentication mode: [] Data push IEC meter address: []

OK Cancel Data push IEC readout baudrate: 2400

Serial [] Version 1.3.55

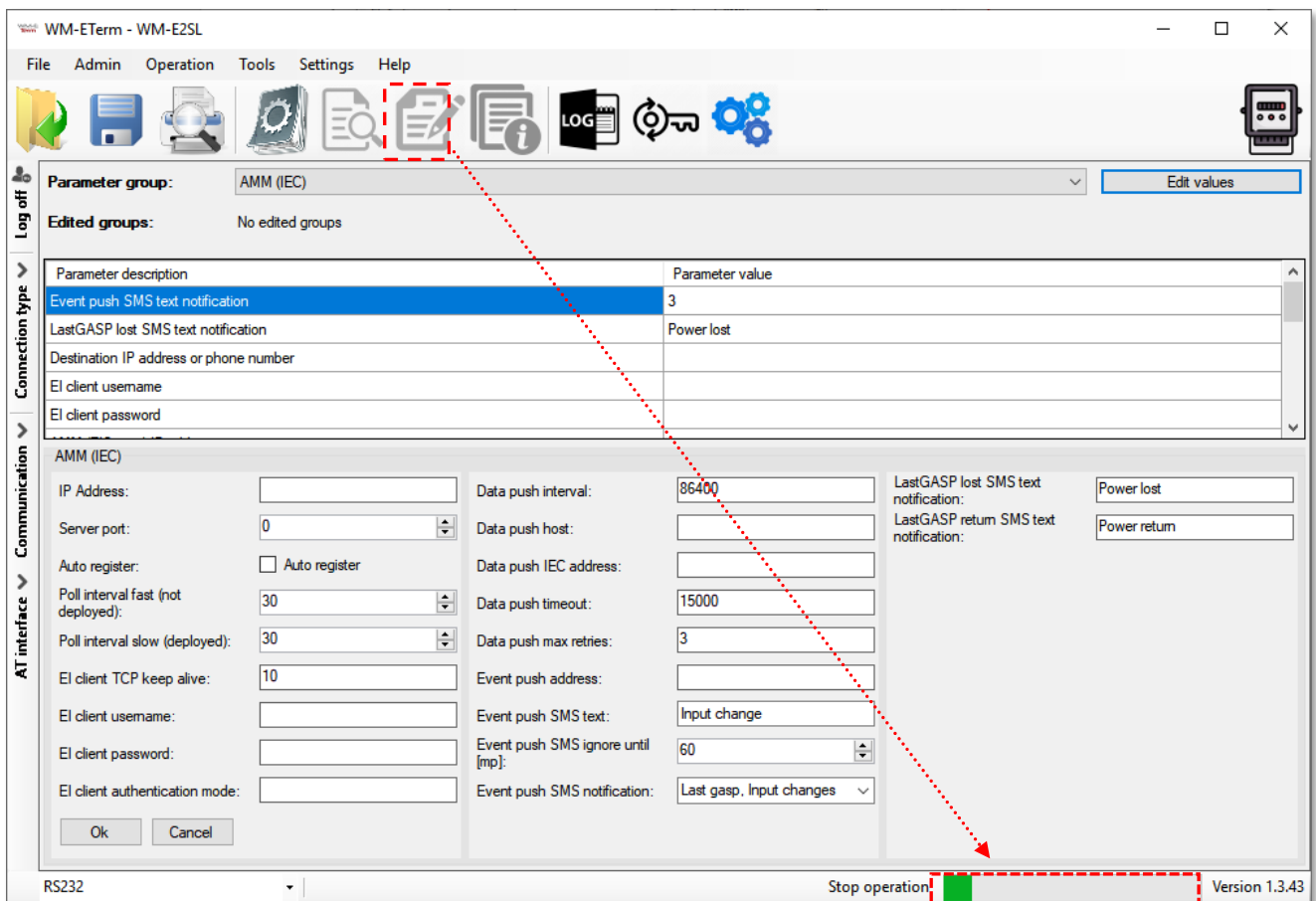
4.6 Modify the settings

1. To edit the parameters, push the **Edit values** button to the right from the **Parameter group**.
2. You will then see the parameter values listed, and you can modify them.
3. When you have modified the required parameters, push the OK button to record the settings.

4. Note, that settings will NOT be saved / send automatically to the modem!

To send/write parameters to the modem, push to Parameters write  icon!

5. Then the whole parameter list and the values will then be sent to the modem. The right bottom progress indicator will show the percentage of the writing.



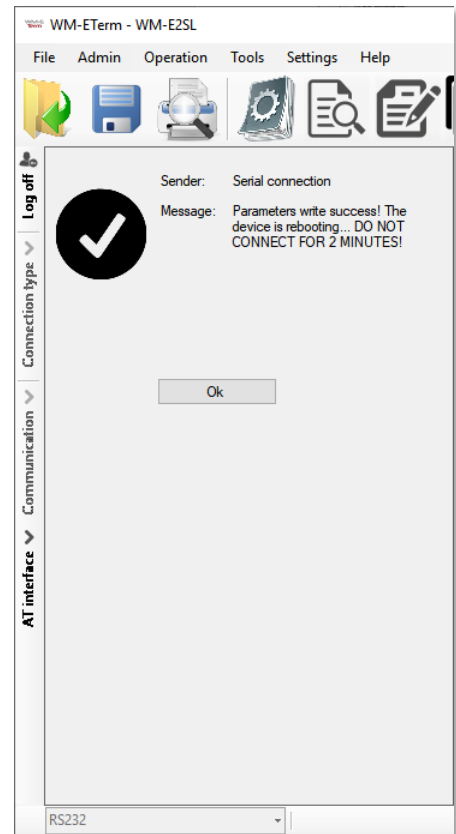
6. A success message will then appear. Push the **OK** button to continue.

Important!

After the parameter writing/sending, the modem will be disconnected and it will be rebooting, then operating according to the new settings.

Until the end of the restart process and the proper operation status, it takes about 2-3 minutes.

Please wait, while the modem will be available again!



Chapter 5. Parameter settings

Here you will find the minimal and recommended settings of the meter device for the proper data connection, mobile network communication and operation.

5.1 APN settings

1. Choose the **APN** group.
2. Push the **Edit values** button, and the relevant parameters and their values will be listed.

WM-ETerm - WM-E2S (LE910C: 2G, 3G, 4G / LTE)

File Admin Operation Tools Settings Help

Parameter group: APN Edit values

Edited groups: No edited groups

| Parameter description | Parameter value |
|-----------------------------------|-----------------|
| APN | |
| APN username | |
| APN password | |
| Create APN username automatically | No |
| Create APN password automatically | No |

APN

APN Name: internet

APN Username:

APN Password:

Create APN username automatically: ☐ Create automatically

Create APN password automatically: ☐ Create automatically

PDP connection establishment delay (min): 3

Ok Cancel

Serial Version 1.3.55

3. At the bottom side of the screen fill in the following fields:
 - **APN Name** – here you have to add the APN zone name according to the modem SIM card (ask your Mobile Operator).
4. If the SIM requires a **APN username**, add the APN Username according the mobile operator hints of the SIM card.

(If the SIM does not use an APN Username or APN Password, then leave these fields blank).

5. Then fill the **APN Password** if the SIM card uses a password for the APN access.

Important! Note, that APN Username or APN Password fields' content – if they are used – these are replaced by substitute xxxxxxxx characters by security reasons.

*If you change one of these fields, always rewrite /refresh the field content, never leave the characters on xxxxxxxx when you are modify the **APN settings** parameter group!*

*The PIN settings of the SIM can be configured in the **Cellular network** parameter. Check the setting if your SIM uses a PIN code for authentication.*

6. If the modem restarts due to an incorrect configuration, it may be possible to access it due to a CSD call. This operation can be fine-tuned by setting the PDP connection establishment delay value, where you can add a delay time (in minutes) which will be used before the PDP activation. The PDP parameter can be set between 1 and 255 (minutes) and by value 0 the delay feature can be disabled).

You may need this function because it is possible that the modem did not receive an IP address the first time - in some cases not even several times, and in this case it waits for the specified time - to have a chance to connect, so it can give the CSD connection more time than usual for modem.

Operation of PDP delay in case of v2.x firmware versions:

- The firmware tries to perform PDP activation three times - if it could not connect to the network and did not receive an IP address.
- Waits a short time between attempts, then continues with the next attempt.
- If the 3x PDP activation fails, it waits the specified number of minutes until the next attempt, based on the value specified in the PDP connection setup delay field.
- After the PDP connection establishment delay value expires, it returns to the first point.

Operation of PDP delay in case of v5.x firmware versions:

- The firmware tries to perform PDP activation three times - if it could not connect to the network and did not receive an IP address.
- Take a 1-minute break between each attempt, then continue with the next attempt.
- If the PDP activation fails, the PDP waits for the specified number of minutes until the next attempt, based on the value specified in the PDP connection setup delay field.
- After the PDP connection establishment delay value expires, it returns to the first point.

7. Push the **OK** button and continue with the next part.

5.2 Wireless settings

1. Choose the **M2M** group for the cellular communication settings (2G, 3G, 4G, etc).

WM-ETerm - WM-E2S (LE910C: 2G, 3G, 4G / LTE)

File Admin Operation Tools Settings Help

Parameter group: M2M Edit values

Edited groups: No edited groups

| Parameter description | Parameter value |
|---|-----------------|
| GPRS is always ON | Yes |
| Connection timer | No |
| Start of GPRS connection [YYYYMMDDWWHHmmSS] | 00:00:00 |
| Additional delay time [sec] | 0 sec |
| Hold-time of GPRS connection [sec] | 0 sec |

M2M

Encryption password via MD5 algorithm: ☐

GPRS is always ON: ☒

Connection timer: ☐

Start GPRS connection [HH:MM:SS]: 00:00:00

Additional delay time [sec]: 0

Hold time of GPRS connection [sec]: 0

Port for transparent (IEC) meter readout: 9000

Port for downloading the config and firmware: 9001

AES-256 key for downloading the config and firmware:

Use AES-256 CBC encryption: ☐

Number of GPRS connection attempts until module reset: 15

Time between GPRS connection attempts [sec]: 15,15,300,15,15,300,15,15,3600

Waiting time until next try [sec]: 1

Ok Cancel

Serial Version 1.3.55

2. Push the **Edit values** button, and the relevant parameters and their values will be listed.
3. At the bottom side of the screen, fill in the following fields:
 - **GPRS always ON** – check in the field if it was empty (it will always be online) – when enabling, it will connect to PDP only if it's in „push” mode, in any other case the GPRS part will be inactive (for FTP push or UDP/TCP push)
 - You can enable the **Connection timer** – only if you are not using the GPRS always ON option (when it is disabled)
4. In case of enable the **Connection timer**, the **Start GPRS connection** can be defined for the modem's GPRS connection / to push data (in HH:MM:SS format / syntax) via cellular network. Note that it is usable only if the GPRS Always ON parameter was disabled!
5. **Encryption password** via MD5 algorithm – You can ask for encryption of the password via MD5 algorithm. Values: 0 = false, 1 = true
6. Additional delay time interval (in seconds) - in case of using "push" to give some delay before build-up the connection.
7. **Hold time of GPRS connection** - When there is no available GPRS connection, after the defined time (in seconds) will try to reconnect the GPRS connection. After alarm push, the PDP context will be deactivated and disconnected after this defined interval. Will be valid only if the GPRS Always ON parameter was set to „disable”.

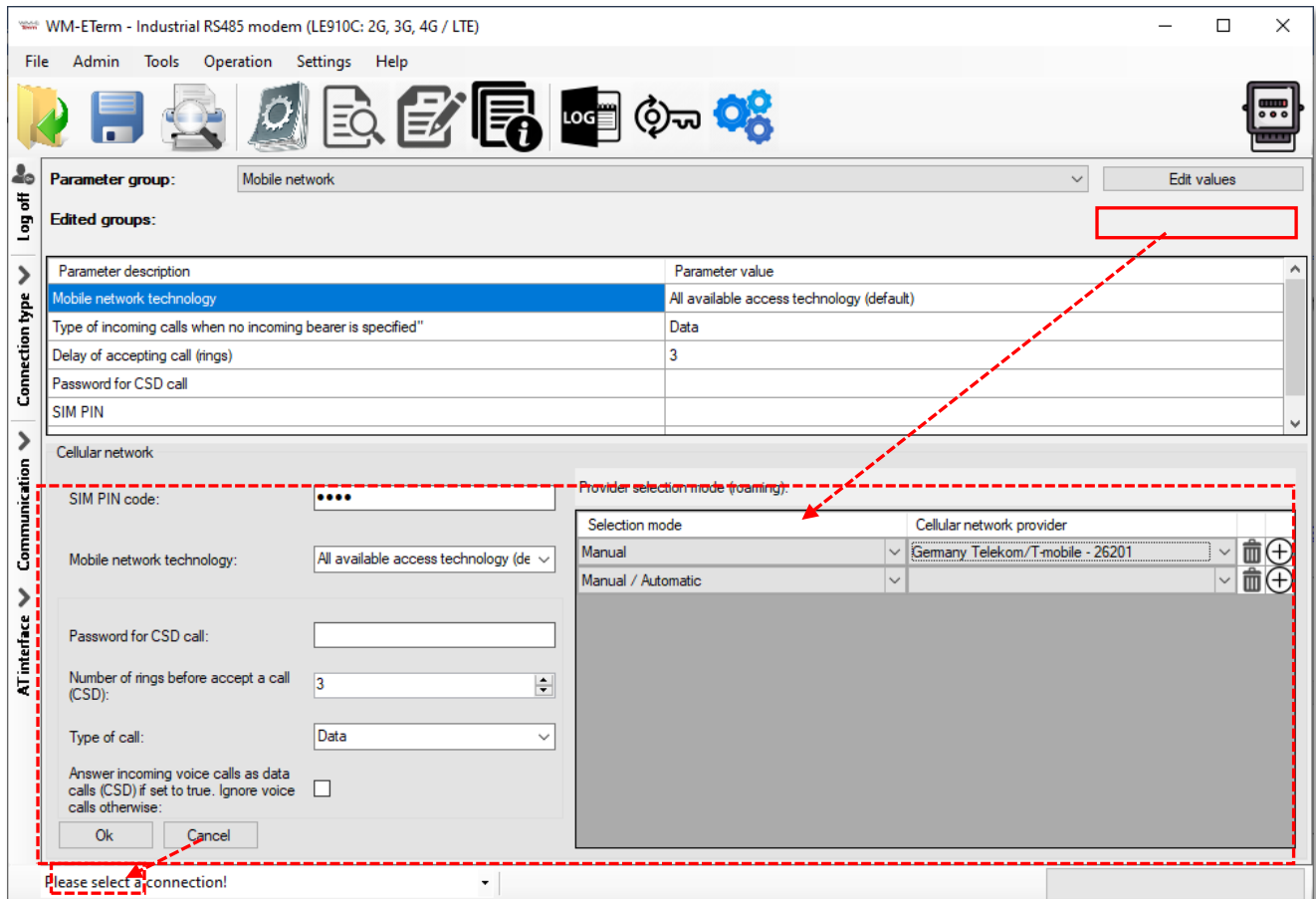
Note, that the modem uses the default nr. 9000 port for communication and the port nr. 9001 for configuration and firmware refresh.

8. Here you can define the **Port for the transparent (IEC) meter readout**.
9. To define a different **Port for downloading** the config and firmware refresh.

10. Select the **AES-256 CBC encryption** if you want and the AES-256 key for download config and firmware option.
11. You can also configure the **Number of GPRS connection attempts until module- reset** – means the number of maximum GPRS (PDP) connection attempts 'till module-restart.
12. There are presetend some refine settings to define as **Time between GPRS connection attempts (in seconds)** - if the PDP context activation was not successful, it will delay the reconnection according by the following:
From the value list e.g. „15, 15, 300, 15, 15, 300, 15, 15, 3600” the last position – the value „3600” (seconds)- will be the first valid delay value. When that time has elapsed, the three earlier position will be valid – the value in our example is „300” (seconds) – after this time has elapsed, the the three earlier posititon will be active – the value „300”.
13. The **Waiting time until next try** field – waiting time between connection attempts. If the PDP context activation was not succesful, then it will wait until for the defined interval to the re-activation. If that reached the end of the time [secs] between GPRS connection attempts parameter value timeout, it goes back to the list, otherwise it is not used. (The parameter is not implemented yet.)
14. Push the **OK** button and continue with the next part.

5.3 Cellular network settings

1. Choose the **Mobile network** group for editing the cellular connection parameters.
2. Push the **Edit values** button, and the relevant parameters and their values will be listed. Configure the parameters.



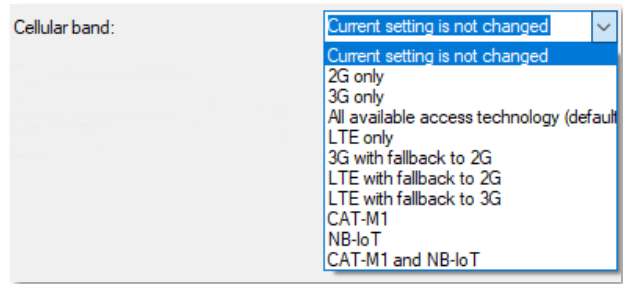
- SIM PIN code** – check in the field if the SIM card that you are using needs a PIN code and fill in the code here
- Mobile network technology** – here you can define the mobile access technology algorithm for network use (for 2G, 3G, LTE, Cat.M networks and for fallback* feature).

The useable network technology options of the current internet module are listed on the top of the screen as it is marked on the next figure.



Options:

Current settings is not changed – the modem will try to use the default factory settings for connection. By using this option, the modem will try to register to the last successfully used technology.



Note, that if you change the SIM card in the modem, we do not recommend to use this option.

All available access technology – usable only for the modules, which are supporting the 4G and 3G and 2G networks!

LTE with fallback to 2G / LTE with fallback to 3G – usable only for modules, which are supporting fallback channels (etc. LTE module with 3G/2G fallback). Fallback means, that in case of outage of the primary selected network (e.g. LTE), the module will switch to the fallback network (e.g. 2G or 3G) and will be operating further on that channel. When the primary band will be available again, the modem will switch back to the primary technology (to the LTE). It's a fail-safe setting.

2G only, 3G only, Cat.M1, NB-IoT – the modem will be operating only on the selected network type, if the internet module supports the selected cellular network technology. If the technology cannot be accessed temporary, the module won't be operating. It's not a fail safe setting.

LTE only – in case of LTE and Cat.M modems, we suggest to choose this option.

Cat-M1 and NB-IoT – usable only for Cat.M/NB modules. The available network will be used automatically.

Further parameters here are for configuring the CSD:

- Add a Password for CSD call – login pass for call and SMS

- Number of rings before accept a call (CSD) – Waits for the defined number of rings before accepting the data call (CSD)

- Type of call – here you can define *Data*, *Fax* or *Voice* mode for the barrier type of incoming calls (CSD). We suggest you to use the *Data* option here.

- Answer incoming voice calls as data calls (CSD) if set to true. Ignore voice calls otherwise. Here you can enable the CSD transformation of voice calls.

5. On the right side of the screen you can define the **Provider selection mode (roaming)** – the cellular network provider change parameter. Fill, only if you attempt to define a dedicated mobile network to use. The selection list is provided by the international mobile operators.

The connection method can be *Manual* or *Automatic*.

Here you can also ***add, modify or delete*** the selection mode in the list.

6. Push the **OK** button and continue with the next part.

5.4 Watchdog settings (monitoring the modem operation and availability)

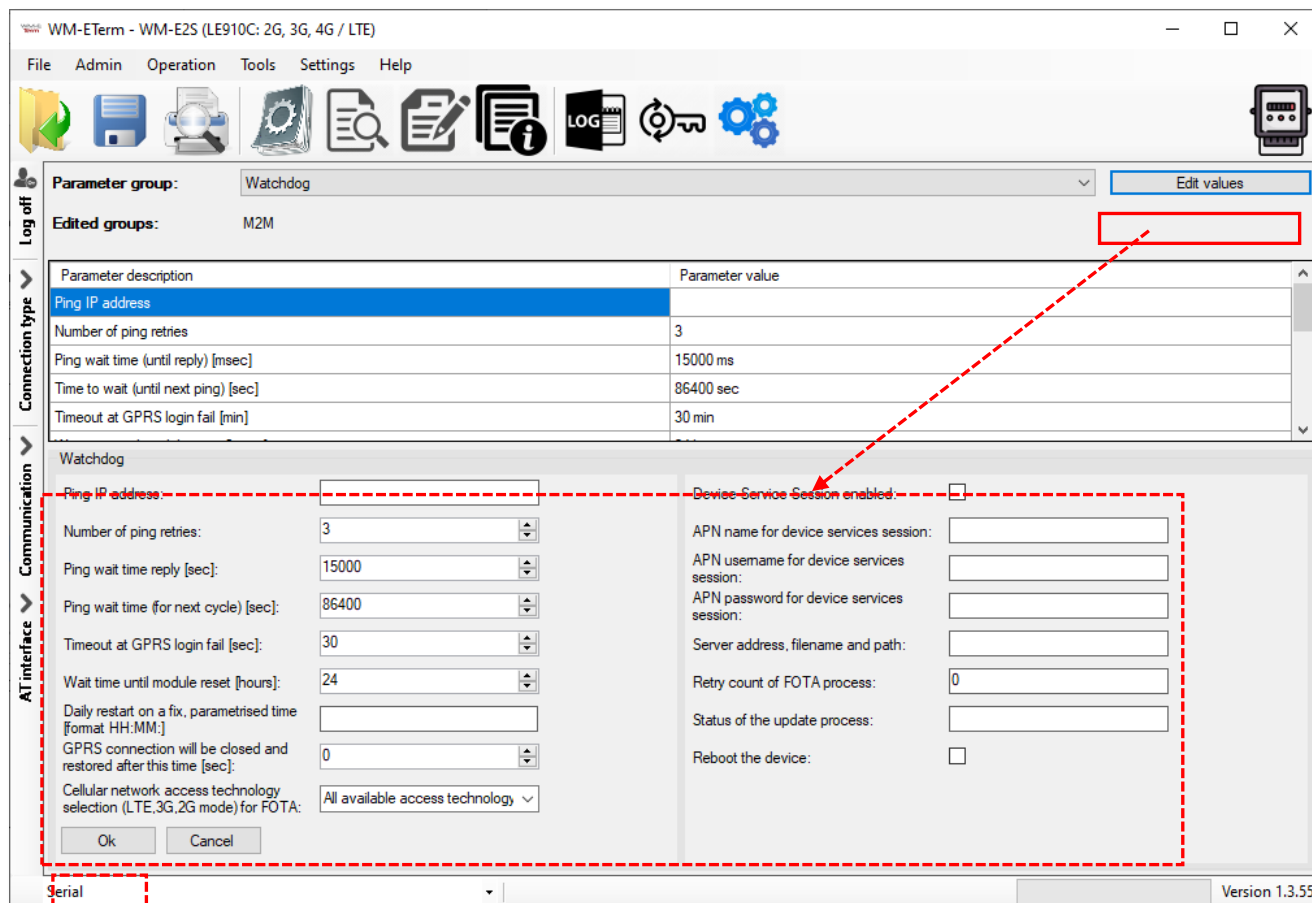
The device is able to perform manual/auto reboot with the following options configurable from both the configuration program (WM-E Term) and SNMP.

You can configure here the following reboot options:

- Auto reboot to be disabled (configurable)
- Manual reboot (caused by any configuration modification)
- Auto reboot will run periodically based on a configurable timer which can be set up to 24 hours (configurable and can be scheduled)

The auto reboot via watchdog timer will monitor 'keep alive' message coming from the CPU at predetermined intervals. If the watchdog timer stops receiving the 'keep

alive' message from the CPU, the watchdog timer will initiate a reboot. The watchdog feature is running independently from the CPU.



If the mobile network provider drops the modem from the cellular network due to the device's network inactivity, there are available parameters if these are set, then automatic and periodical connection connection rebuild can be caused.

If the network provider sends a message to the modem that the data connection has been lost, the connection will be restored automatically. If you do not send a message, you should make the following setting in the Watchdog parameter group.

You can configure the ping parameters as these are listed below:

- **Ping IP address** – add an IP address which can be accessed from the IP zone of the SIM card. This will be used for continuous checking of the network availability.
- **Number of ping retries (connection attempts).**
- **Ping wait-time (for reply)** – is a timeout of ping interval (for checking the cellular network availability) – value in milliseconds.

- **Timeout at GPRS login fail** – is timeout when GPRS (PDP) login fail occurs - tolerance interval of PDP connection establishment error
- **Wait-time (for next) is an interval (wait time)** between ping cycles, time interval until the next ping sequence occurring (for checking the cellular network availability). If there is no ping response, it reconnects to the network after the specified time interval (in seconds), where the GPRS connection will be closed and restored after spending the defined interval.

If there is no response to the ping request, the device is reconnected to the network after the time interval specified in the GPRS login error timeout [sec] and the device reconnecting to the cellular network.

Attention! In case of frequent ping using, the data traffic will be higher, but the chances are higher that the device will remain on the cellular network.

Further settings:

- **GPRS login error timeout [sec]:** if login is unsuccessful during the time specified herein, the modem will not translate it as an error, and login will only fail after the set time elapsed (value in seconds).
- **Wait time until module reset** – it can also be expressed in hours.
- **Daily restart on a fix, parameterised time** – if you attempt to define a daily restart interval for the device - add the HHMM value of the time of the device restart. Leave it empty if you do not allow the device to restart every day.
- **GPRS connection closed and restored after this time** - Waiting interval between PDP connection establishment, the value is also used for ping.
 - If the ping is configured (Ping wait-time (for reply) parameter), then the defined interval / repeat time will be used for automatic reconnection after the given delay has elapsed.

Here you can define an interval (in seconds) where, after the network drops out the modem, how long does the modem wait before trying to reconnect to the mobile network again. Ask your mobile provider about the offered settings.

Attention! *If there is less data traffic and there is no ping configured, the device may not stay on the network for a long time.*

If you set this parameter to a low value that can cause frequent network reconnections.

Therefore, according to the circumstances, should you set this value lower as your mobile service provider recommends. (because there are some mobile network providers that limit the number of the modem network connection and registering attempts during the time (e.g. limit to four times per hour – or similar used to configured by MOs).

- **Cellular Network Access Technology** selection (LTE, 3G, 2G mode) for FOTA - the device has the ability to manually force to refresh the firmware remotely (FOTA – FTP OTA) by selecting a network technology. E.g. LTE only, etc. See page nr. 35 for the selectable options.

Device Service Session settings (right side of the screen):

- **Device Service Session enabled** checkbox – here you can enable the remote firmware refresh (FOTA) service.
- You can define **APN name** and **APN username**, **APN password** and **Server address, path and filename** for the session.
- **Retry count of FOTA process** means the number of remote firmware upgrade retries – in case of FOTA progress.

- **FTP OTA parameter** (Server address, filename, path) is used for Telit module FTP OTA support – an FTP server address and connection parameters (protocol, IP address as user and password) to refresh the module's firmware. Leave it empty if it is not used.

Syntax:

FTP OTA parameters (FTP host, user/pass, path, filename)

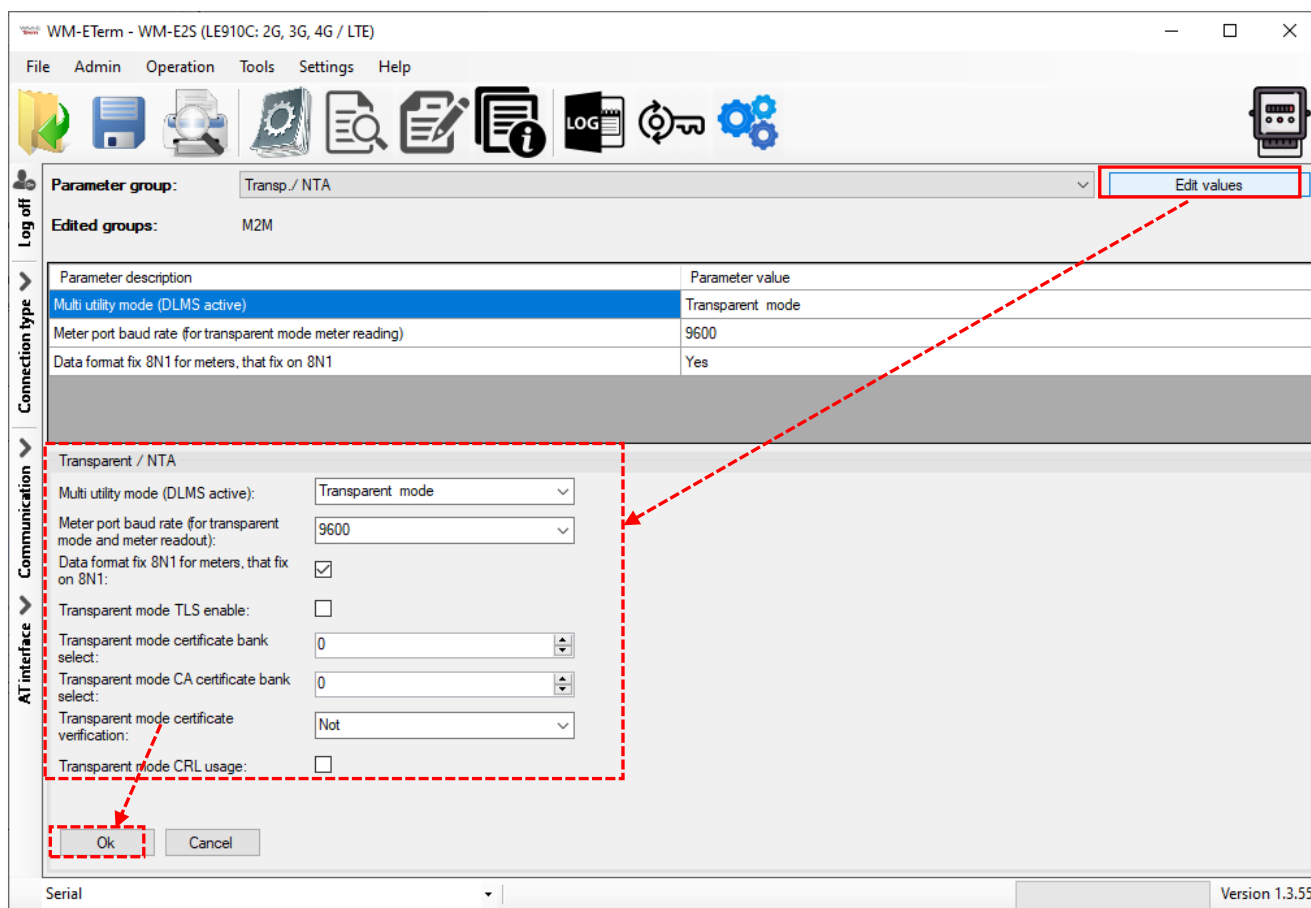
<protocol>://<user>:<password>@<ip_address>/<directory>

Example: ftp://user:password@11.22.33.44/fw-upload/

- **Status of the update process** – here you can get a message for the device's current FOTA status.
- If you want to reboot the device enable the **Reboot** checkbox – only implemented in some special firmware versions – *ask us!*
- Push the **OK** button and continue with the next part.

5.5 Serial data transmission meter ← → modem settings (Transp. / NTA)

1. Choose the **Transp./NTA** group and push the Edit values button, and the relevant parameters and their values will be listed.
2. You can choose the **Multi utility mode (DLMS active)** – here you can define the *Transparent mode* (of data transmitting) or the *Multi-utility mode* (not implemented yet). It activates the E-Meter LED
3. Then the **Meter port baud rate** (for transparent mode and meter reading) E-meter serial port speed (during readout) can be also configured – define the serial data baud rate (baud) for the connection. The default and recommended value is 9600 baud.



4. **Data format fix 8N1 for meters**, that fix on 8N1 – Data mode for emeter serial port. You can select 8N1 or 7E1.
5. The **TLS protocol encryption** is not supported for the modem, the **Transparent mode certificate bank number**, **Transparent CA certificate bank number** and **Transparent mode certificate verify mode** fields are also not supported.
6. Push the **OK** button and continue with the next part.

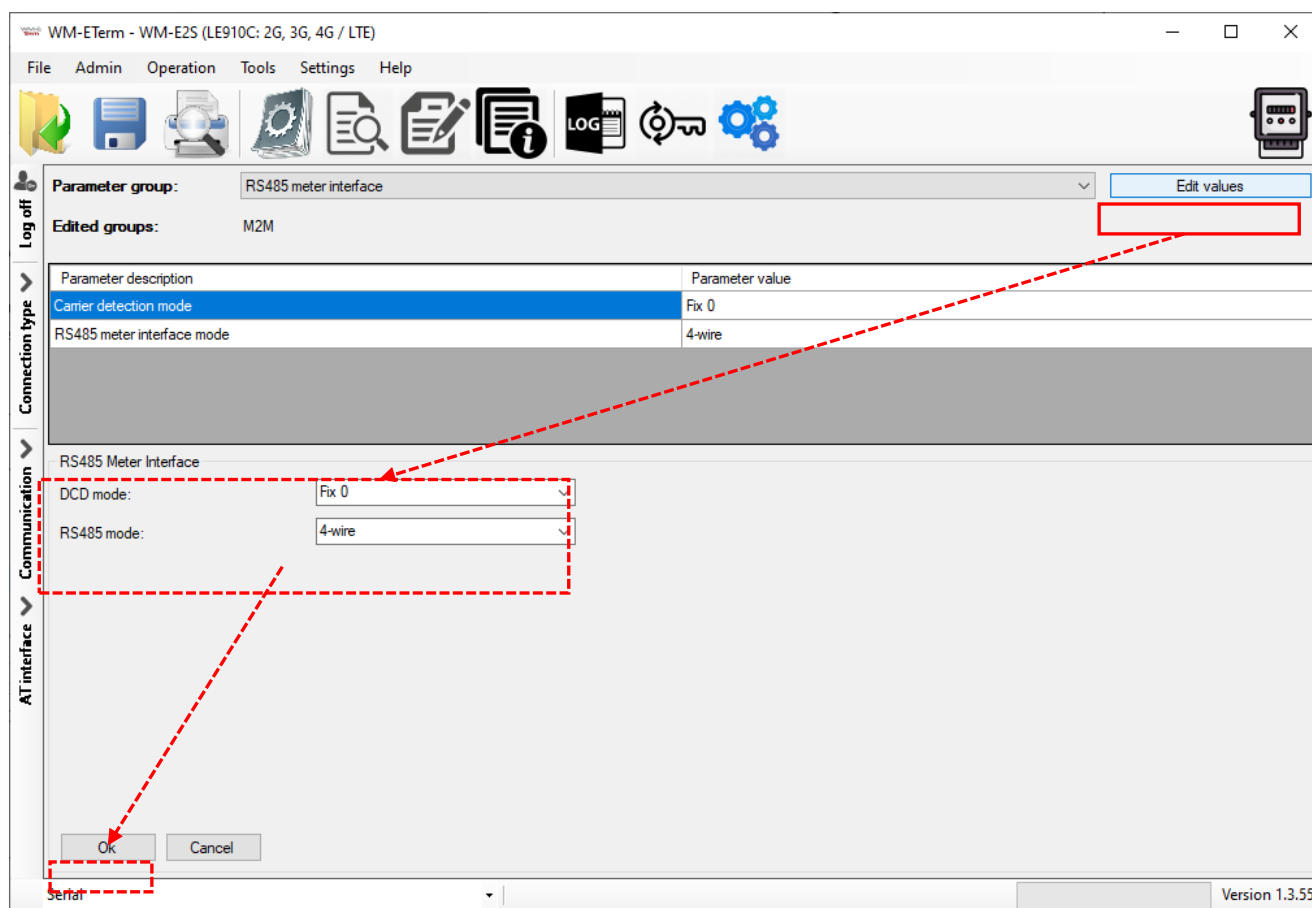
5.6 RS485 meter interface settings

The RS485 meter interface parameter group is useful for configuring the RS485 meter connection settings.

Important! The DCD (Data Carrier Detect) feature can be set up on the meter based on its' user manual. This parameter can be used for defining the connection type, i.e.

which mode is used for the modem during communication: the modem attempts to communicate online (transparent) or offline (not transparent) mode with the connected meter.

Some meters are using the DCD value 1 as transparent, some others are using the value 0.



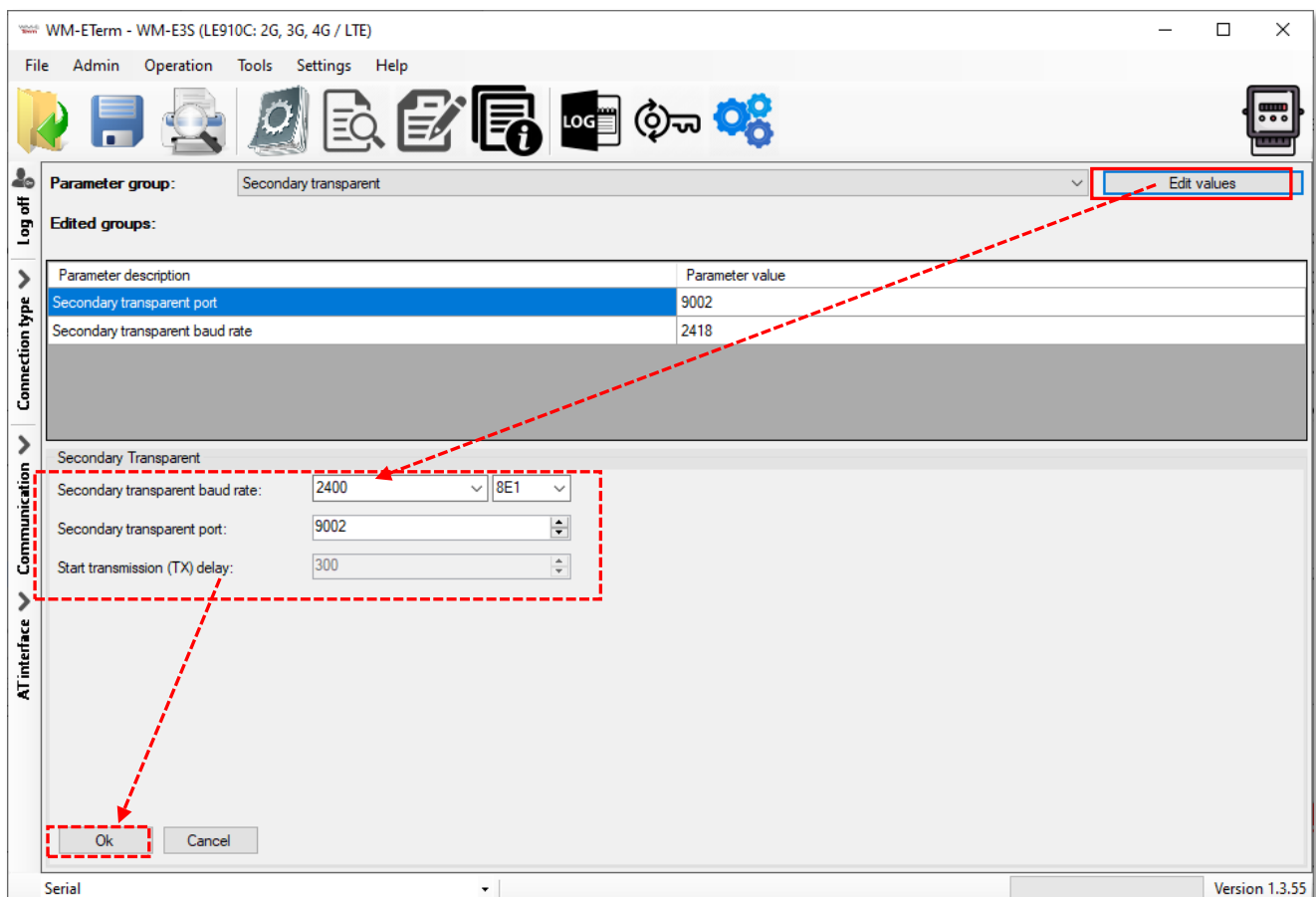
1. To configure it, choose the **RS485 meter interface** parameter group.
2. Push the **Edit values** button, and the relevant parameters and their values will be listed.
3. Note, that **DCD mode** settings cannot be used in case of this modem type.
4. **RS485 mode** – select a wire mode to configure the RS485 operation.
 - o 2-wire pinout
 - o 4-wire pinout

- *Disable – RS485 not used (for RS232 only versions it is recommended to configure).*

5. Push the **OK** button and continue with the next part.

5.7 Secondary transparent settings

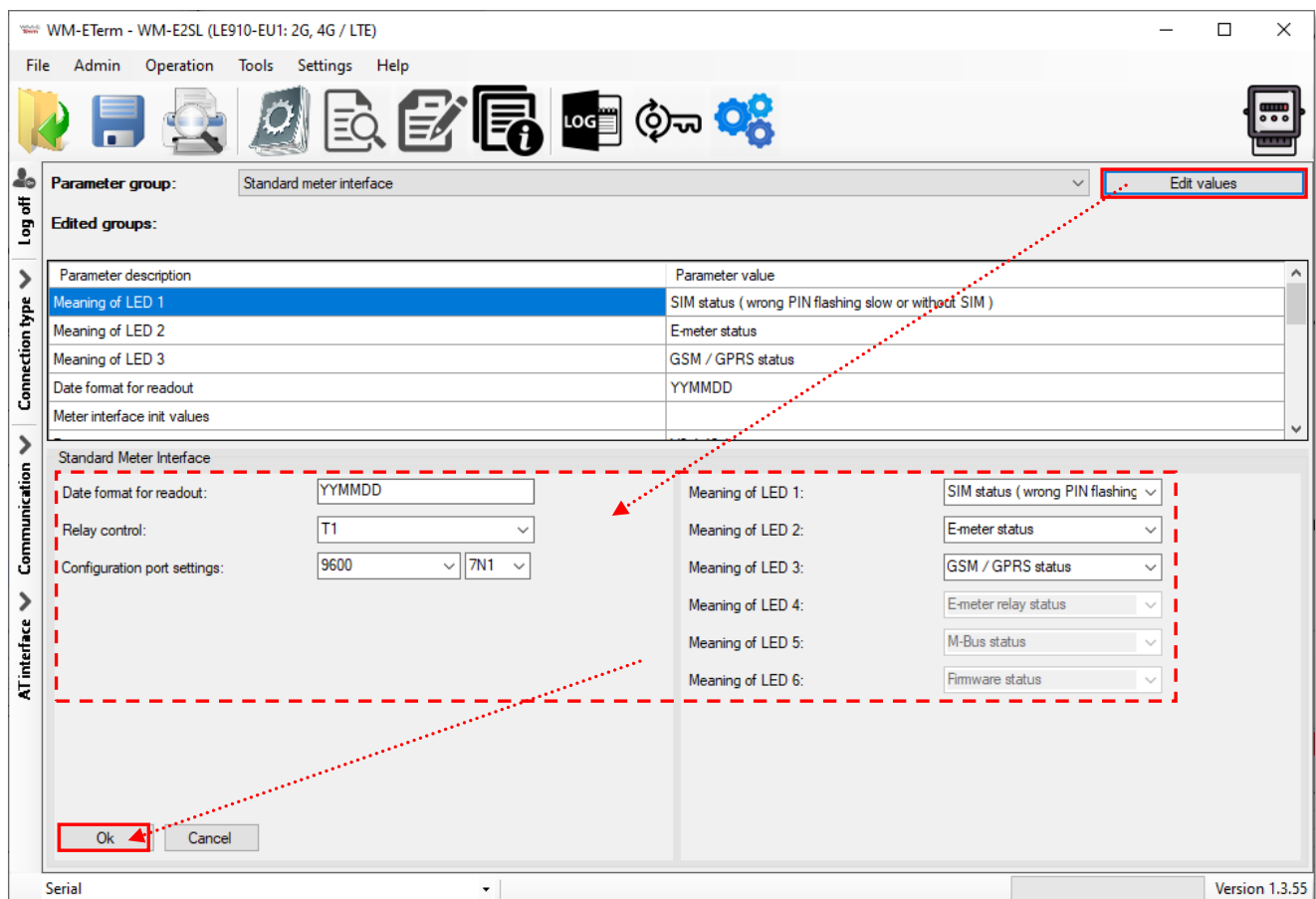
1. Choose the **Secondary Transparent** parameter group. Here you can configure a secondary channel for communication.
2. Push **Edit values** button, and the relevant parameters and their values will be listed.
3. The **Secondary Transparent baud rate** is 2400 bps by default – we recommend to use this standard MBUS speed rate – but, if you want, you can use different settings. The data flow operates at 8E1 only.



- The default value of the **Secondary Transparent port number** is 9002. You can use a different port, but please note that the port nr. 9000 is used by the modem's transparent channel, and the port nr. 9001 is used for the configuration.
- Push the **OK** button and continue with the next part.

5.8 Standard meter interface settings

- Choose the **Parameter readout** icon, and select the **Standard meter interface** parameter group, then push to the Edit Values button.
- IEC **Date format for readout** (Syntax: YYMMDD).
- Relay control** and **Configuration port settings** parameters are not usable for the modem.



4. Meaning of **LED 1...LED3** fields*, where you can change the LED operation for each available LED. The LED operations are pre-programmed, but can be changed if you want here.
5. Push the **OK** button and continue with the next part.

5.9 Device Manager settings

The Device Manager® is an optional remote management software (order option) which can be used to maintain and to monitor the modems via cellular network (TCP/IP connection).

The settings can be achieved by selection of the **Device Manager** parameter group.

1. **Device Manager TLS enable** – TLS protocol is currently not supported for the modem.

WM-ETerm - WM-E3Q ETH (LE910-EU1: 2G, 4G / LTE)

File Admin Operation Tools Settings Help

Parameter group: Device Manager Edit values

Edited groups:

| Parameter description | Parameter value |
|-------------------------------|-----------------|
| Device Manager TLS enable | No |
| Device Manager server address | |
| Device Manager server port | 0 |
| Device Manager push enable | No |
| Device manager push interval | 120 |

Log off

Connection type

Communication

AT interface

Device Manager

Device Manager TLS enable: ☐

Device Manager push enable: ☐

Device Manager server IP address:

Device Manager server port:

Device Manager push interval [sec]:

Device Manager certificate bank select:

Device Manager CA certificate bank select:

Device Manager certificate verification:

Device Manager CRL usage: ☐

Ok Cancel

Serial Version 1.3.55


2. **Device Manager push enable** – it allows the option for the modem to send status messages (by configurable cycles/intervals) to the Device Manager® software.
3. **Device Manager server IP address** required to build the connection.
4. **Device manager server port** (nr. 443 by default) must be added for the connection.
5. **Device Manager push interval** is used to define the status message sending cycle (in seconds).

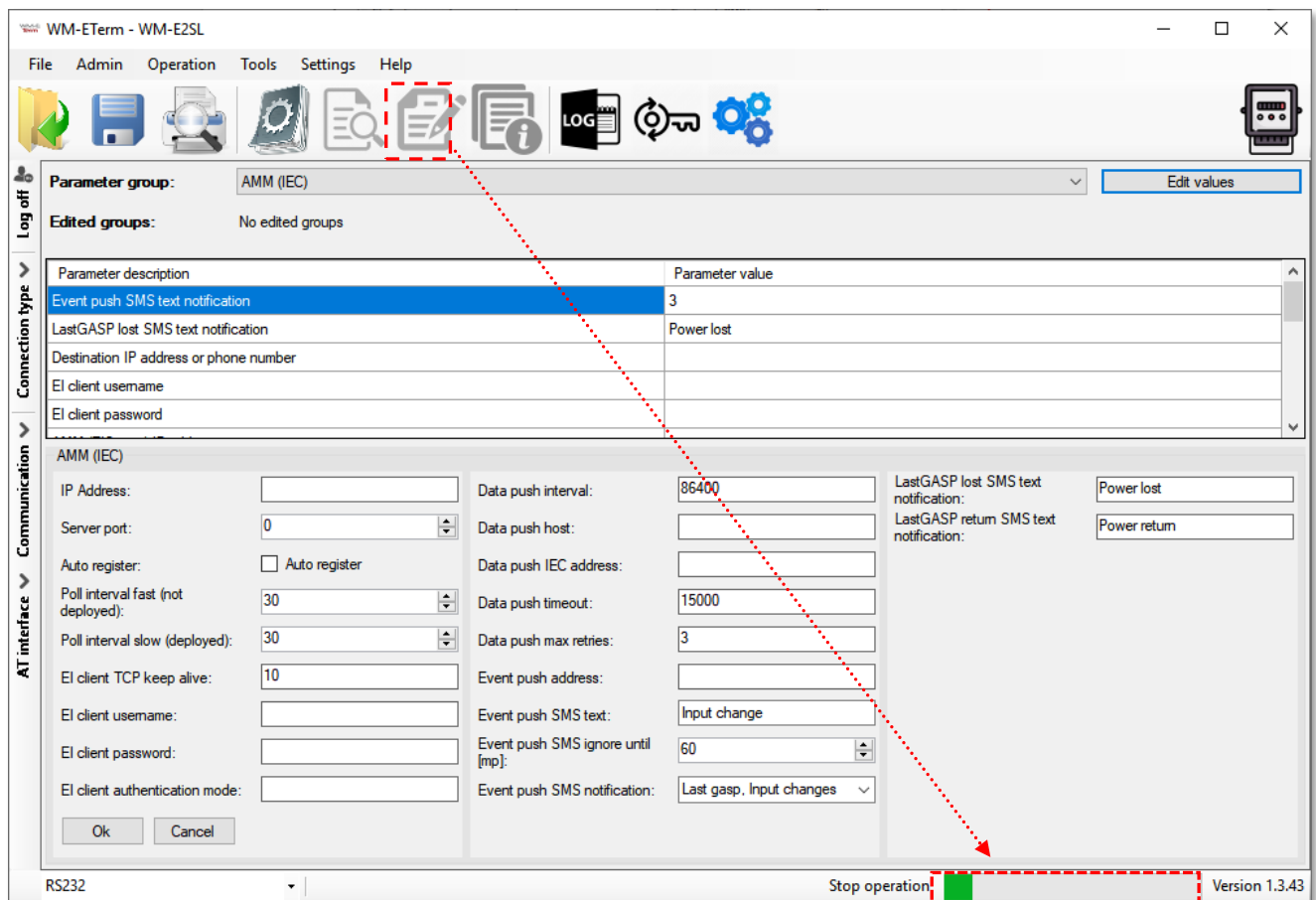
***Important!** When you have set all this, the DM connection will not automatically be useable, you still need to configure the Device Manager® side of the settings. You will find more information about the exact sequence of the settings in the Device Manager® manual – ask our sales department.*

6. **Device Manager certificate bank select, Device Manager CA certificate bank select, Device Manager certificate verification, Device Manager CRL usage** fields are not available for the modem.
7. Push the **OK** button and continue with the next part.

5.10 Send the configuration to the modem

Note that the configured settings will NOT be saved automatically or sent to the modem!

To send/write parameters to the modem, you have to push the  **Parameters write** icon. Then the parameter values will then be sent to the device.




The right bottom progress indicator bar will show the percentage of the writing.

At the finish of the process, the modem will be restarted by the new settings. After all you can use the modem with the connected external measurement device and the transparent data transmission via the cellular network.

Chapter 6. Further features

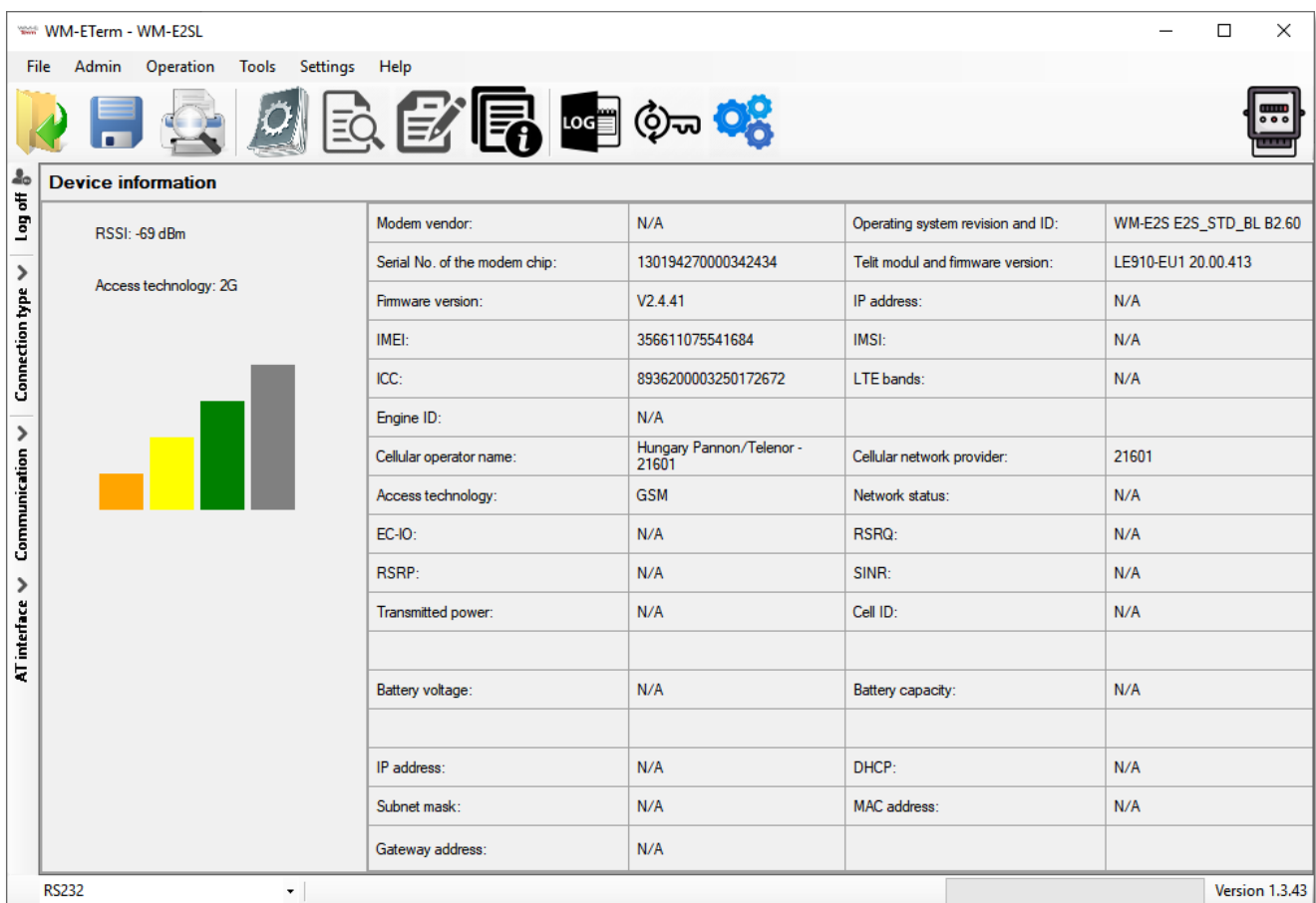
6.1 Device Information

After connecting to the modem, you can check the device current status by the  icon (or choose the **Operation / Device Information** view menu item).

Here, the modem type and identifiers, modem firmware and device firmware version as identifiers are listed.

The current connection settings are listed here, as modem and firmware identifiers, cellular network provider code and operator name, available network and access technology. The main important part can be seen on the left at the RSSI value and the Access technology – as it is displayed with colour columns, too.

(If the IP address is filled, that means that the device is currently communicating properly on the cellular network.)



WM-ETerm - WM-E2SL

File Admin Operation Tools Settings Help

Log off
Connection type
Communication
AT interface

Device information

RSSI: -69 dBm

Access technology: 2G

| | | | |
|-------------------------------|--------------------------------|-----------------------------------|-------------------------|
| Modem vendor: | N/A | Operating system revision and ID: | WM-E2S E2S_STD_BL B2.60 |
| Serial No. of the modem chip: | 13019427000342434 | Telit modul and firmware version: | LE910-EU1 20.00.413 |
| Firmware version: | V2.4.41 | IP address: | N/A |
| IMEI: | 356611075541684 | IMSI: | N/A |
| ICC: | 8936200003250172672 | LTE bands: | N/A |
| Engine ID: | N/A | | |
| Cellular operator name: | Hungary Pannon/Telenor - 21601 | Cellular network provider: | 21601 |
| Access technology: | GSM | Network status: | N/A |
| EC-IO: | N/A | RSRQ: | N/A |
| RSRP: | N/A | SINR: | N/A |
| Transmitted power: | N/A | Cell ID: | N/A |
| | | | |
| Battery voltage: | N/A | Battery capacity: | N/A |
| | | | |
| IP address: | N/A | DHCP: | N/A |
| Subnet mask: | N/A | MAC address: | N/A |
| Gateway address: | N/A | | |

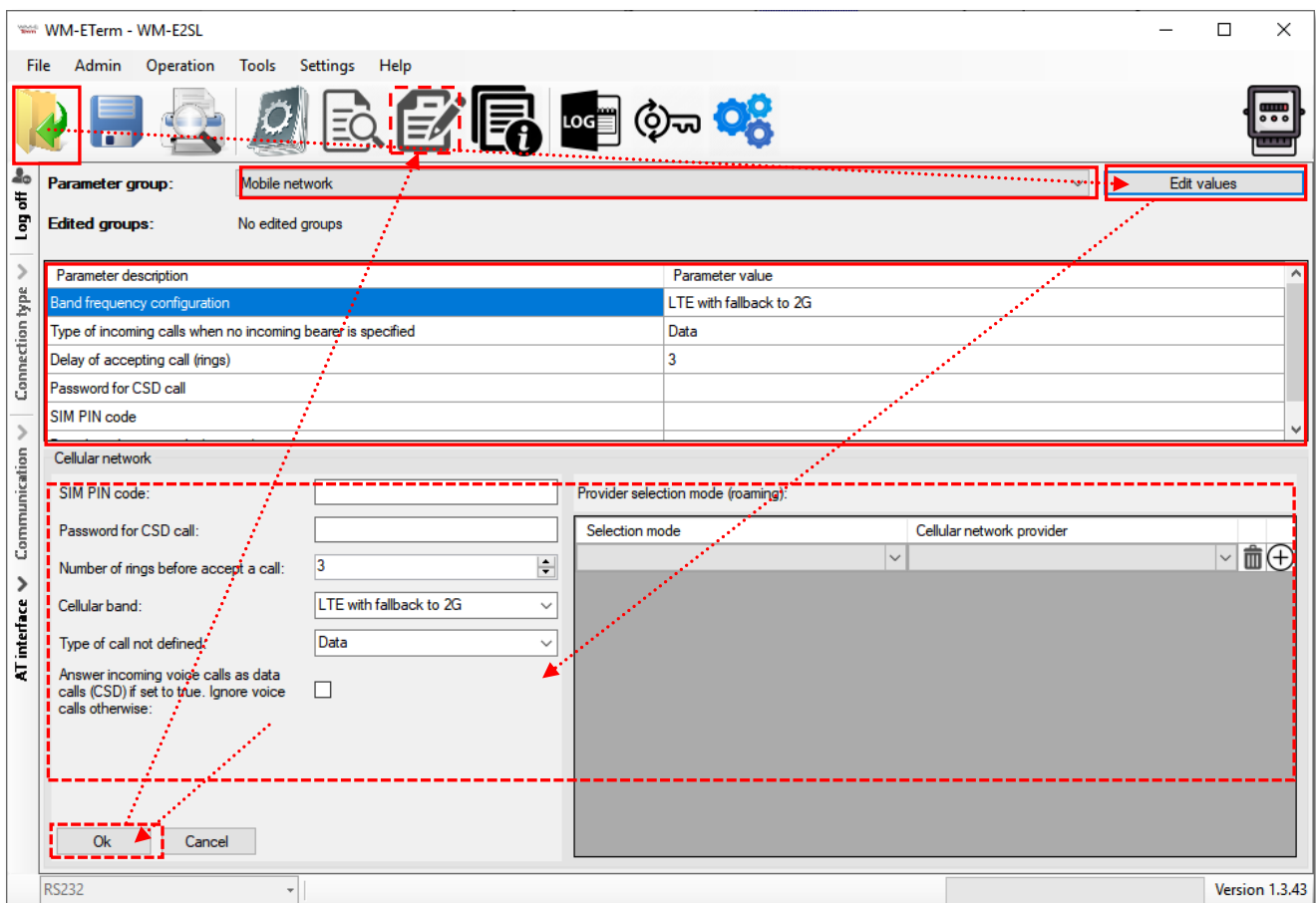
RS232 Version 1.3.43

6.2 Saving the parameters

Open the **File** menu **Save** item to save the currently modified configuration (into a .CFG extension file).

6.3 Loading the saved parameters

1. When you already have a previously saved and prepared configuration, you can open it from the **File** menu by the **Open** item.
2. **Browse** the required configuration file (with .CFG extension) and push the **Open** button.



3. The program will then load the parameters, and you can write the parameters to the modem/meter as it was described before.
4. For the editing, choose a **Parameter Group** from the drop-down sub menu, the stored parameters will be listed.

5. By the **Edit values** button you can edit or change the stored parameters.
6. Push the **OK** button after the modification.
7. You can also save these settings to an another configuration file (.CFG).

Important! By this saving, the modified parameters will not be automatically sent/written to the modem. You have to send the parameters to the modem directly - choose the Parameters write button for the sending of the parameters!

6.4 Mass configuration (for multiple devices)

You can use this feature for the quick parameter configuration of multiple modems.

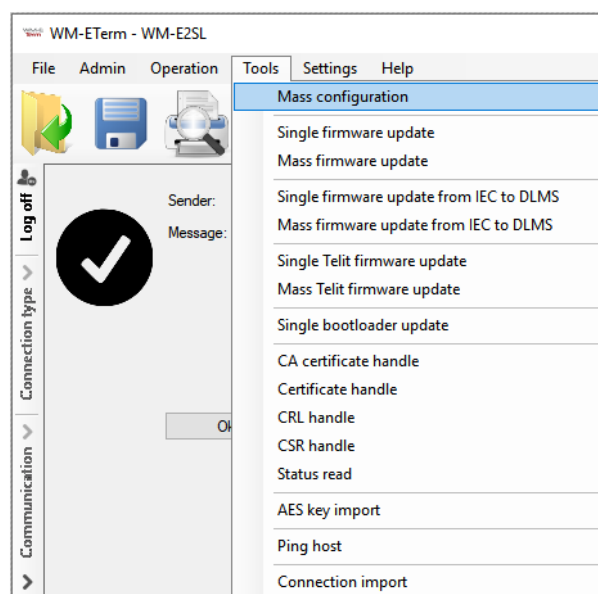
1. Choose the **Tools / Mass Configuration** item from the menu.

2. Push the **Browse** button to select a mass configuration file (*.CSV extension)

**The mass configuration CSV file must be created by the Customer.*

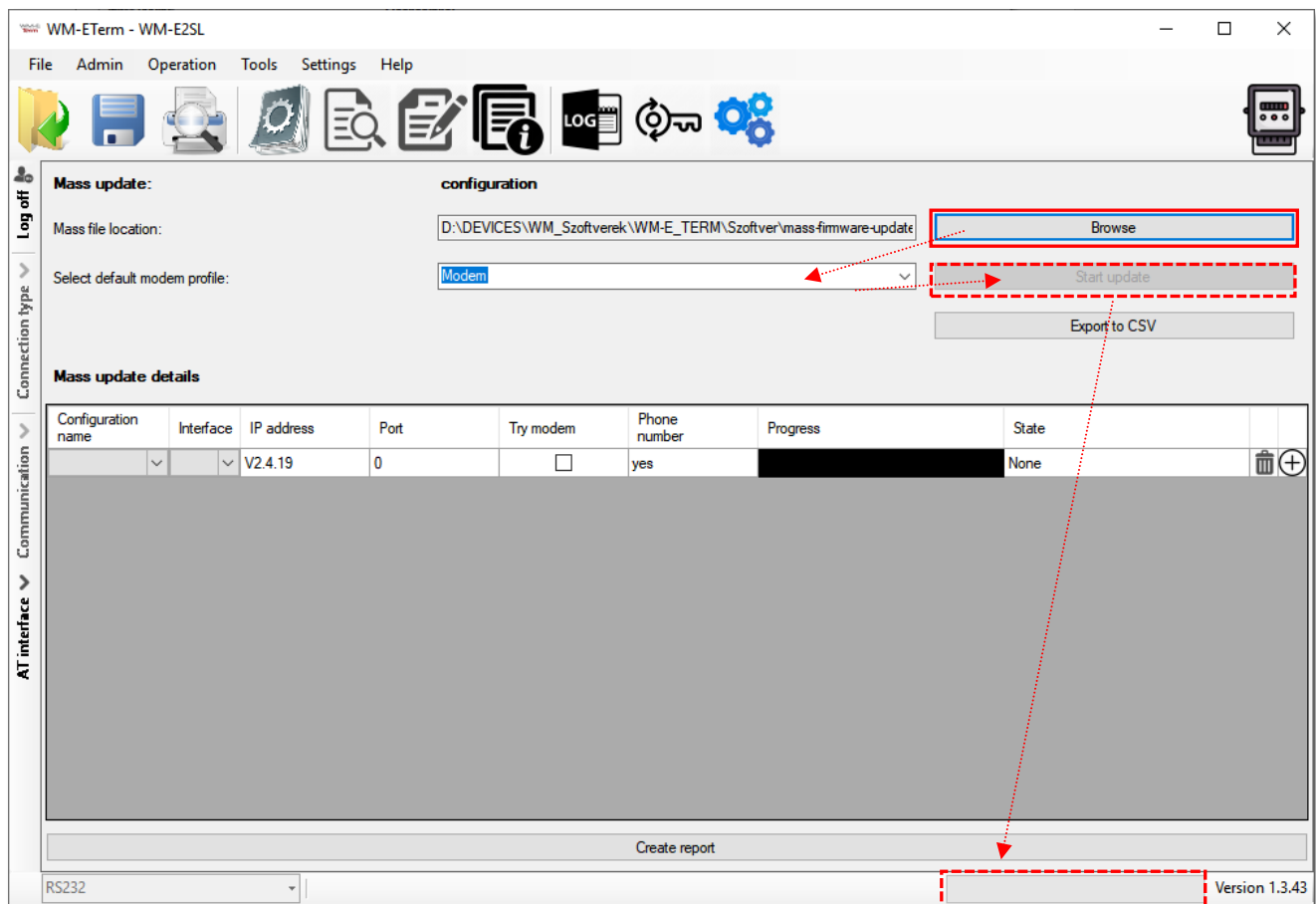
3. The requested list is loaded. You can Select a default modem type.

You can add items or modify the settings.



4. The program will then connect through the modem profile when choosing the mass update – according to the modem profile settings.

Attention! Note that the new configuration will be available only after the mass configuration file upload process is finished.



5. Push the **Start update button** to begin the multiple modem configuration. The update will be valid for the listed modems.

The configuration process will be performed one by one (entry to entry) in sequence order.

6. The current status of the configuration refresh method will be shown at the progress bar.

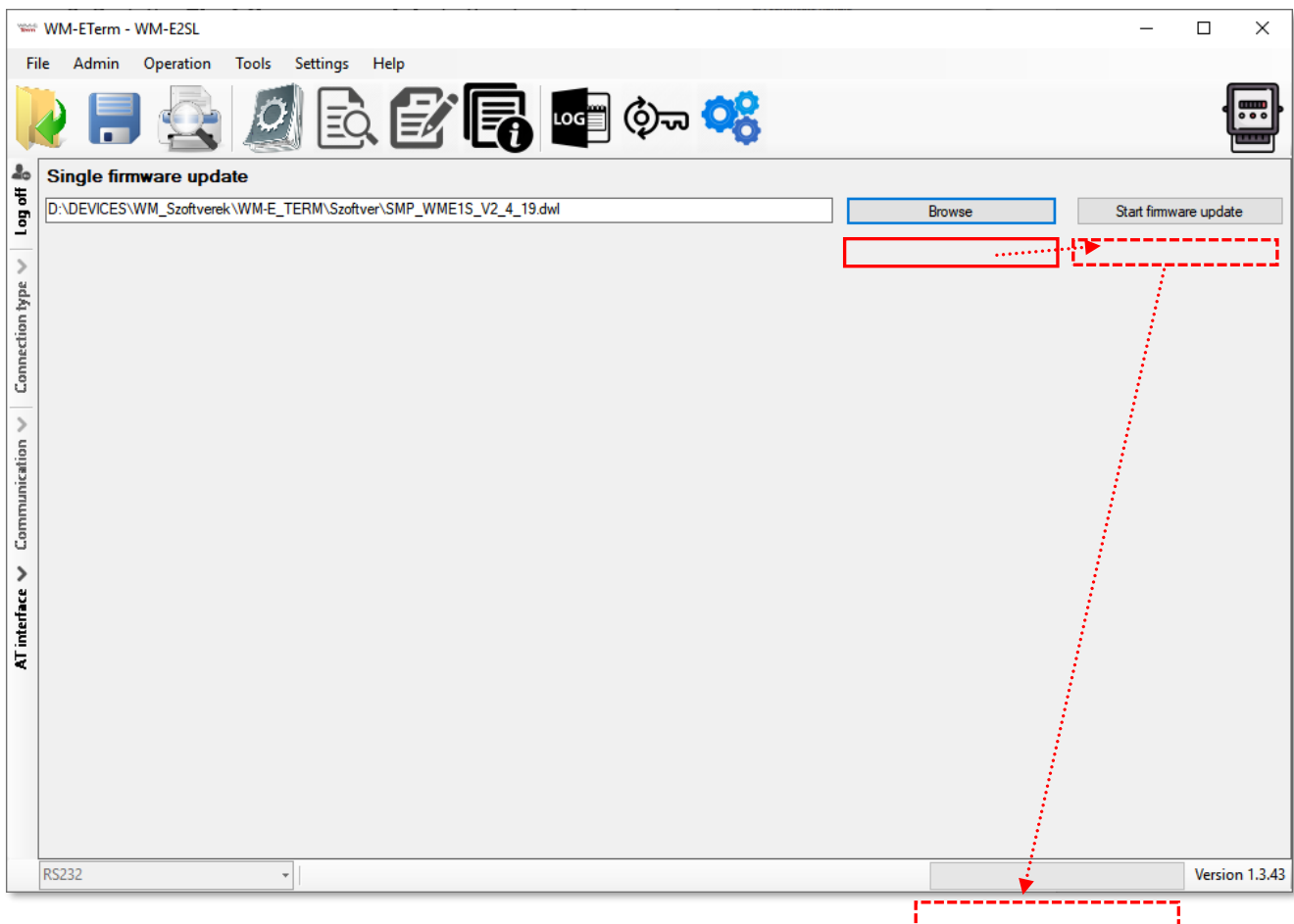
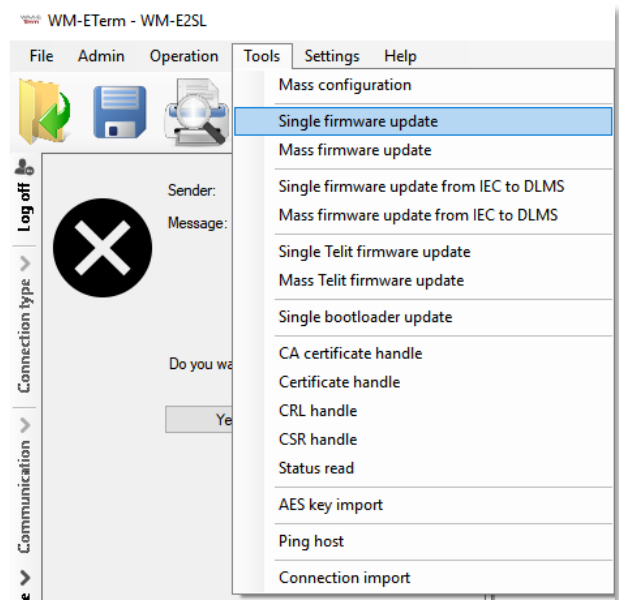
Attention! Please, be careful! The modem has several firmware types. Therefore, always ask our sales team about the proper firmware version.

Please note, when updating the modem by a firmware, the current modem configuration settings will be overridden – if they existed before the mass configuration process.

7. At the end of the parameter configuration upload process, the modems will restart and will be using the new parameter settings.

6.5 Single firmware update

1. Choose the **Tools / Single Firmware** update item from the menu.
2. Push then the **Browse** button to select the .DWL extension firmware file.
3. Push the **Start firmware update** button for performing the singular firmware upload.



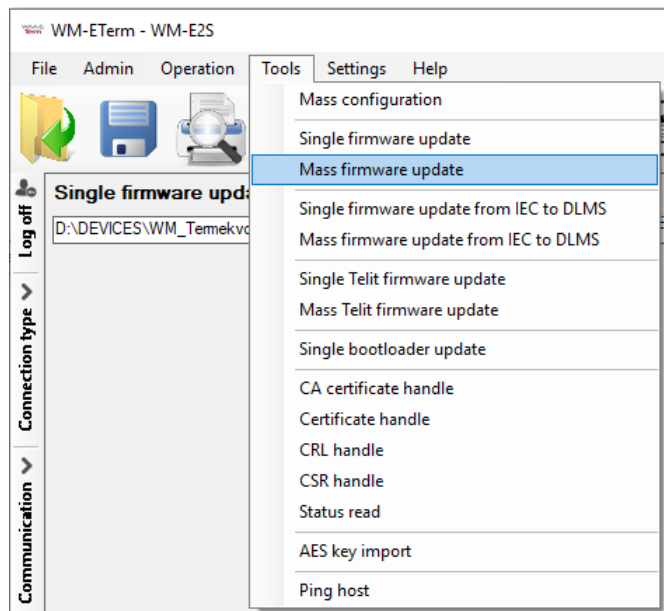
4. The progress of upload will be shown at the right-bottom progress indicator bar.
5. At the end of the refresh process, the modem will restart and it will use thereafter the updated firmware version.

6.6 Mass firmware update (multiple uploads)

You can use this feature for the firmware refresh of multiple modems.

1. Choose the **Tools / Mass Firmware** update item from the menu.

2. You have to add the **Mass File location for the path (directory)** of the firmware file(s) by pushing the **Browse** button to select the location of the mass update file(s) – choose a .CSV file (with the list of the devices) to continue.



**The CSV file must be created by the Customer!*

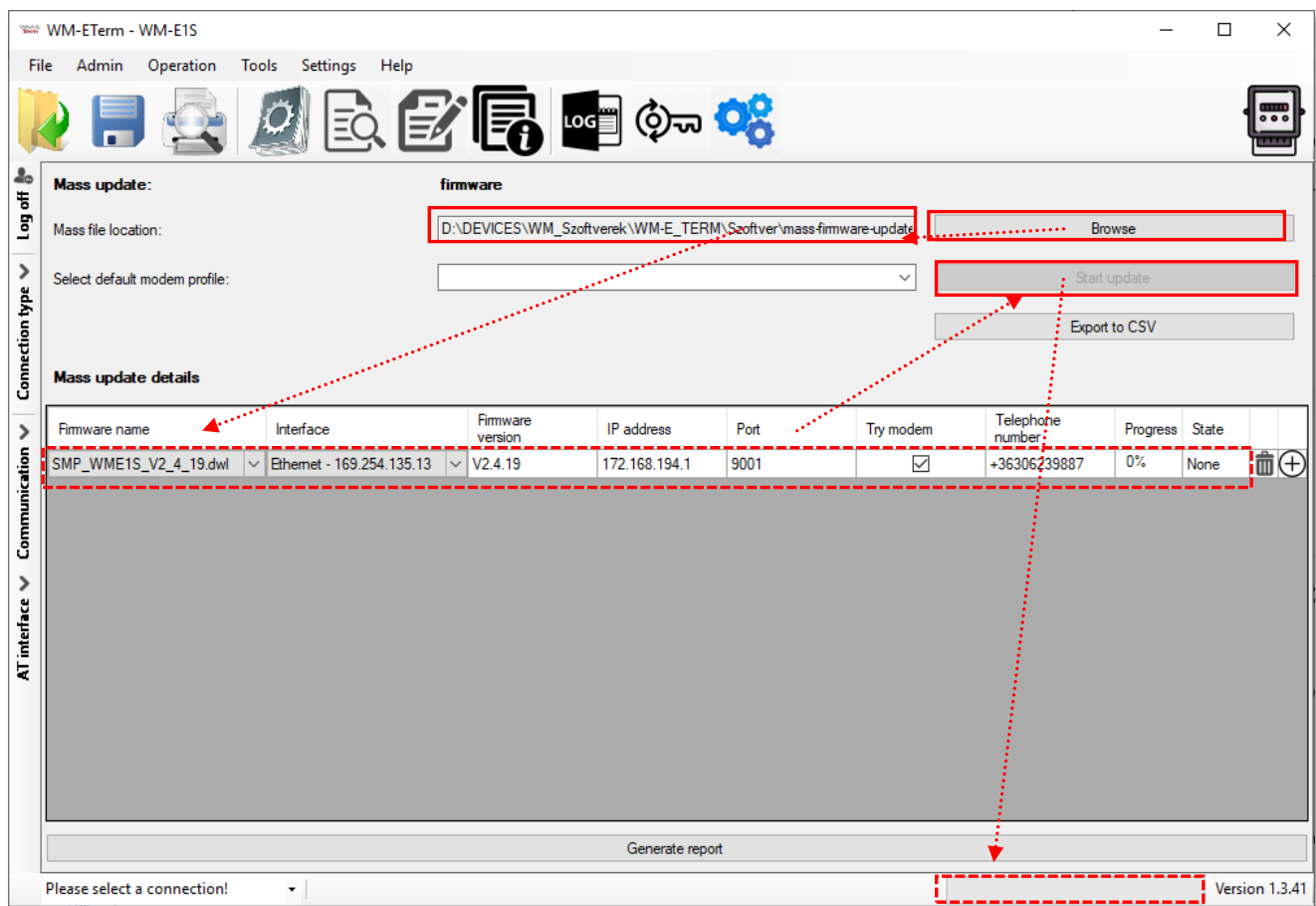
Note, that the .dwl extension firmware file(s) must be in the configured firmware directory (check Edit / Edit settings / Firmware directory settings before)!

3. Then the requested mass fw update list is loaded and the WM-E Term will searching for the .dwl extension files in the declared directory (based on the CSV file of the list of the devices).

If the **Firmware name** field at left is empty, than the .dwl file could not be found in the directory you were given. If there can be found firmware file(s), then it will be automatically selected.

7. At the **Interface** field you should choose the interface where you can access the IP address range of the modem(s) you are attempting to refresh. The interface(s) must be the current interface(s) on your computer (check the CSV file).

8. In the **Firmware version** field you have to define the exact version number by „V” and the version (without space).



9. At the **IP address** field you have to add the IPv4 address of the module. For the **Port** field add the firmware download port number, which is already configured for the remote client (*port for download config and firmware*).

8. If you would like to define to use the secondary channel for CSD to the modem, then click the **Try modem** option and define the **Telephone number** of the module.

About the CSV file, you can see an example here:

SMP_WME1S_V5_1_30dwl;V5.1.30;172.31.154.44;9001;no;;0x00;0;Ethernet - 192.168.6.108

9. Push the **Start Update** button to start the multiple firmware upload. The update will be valid for the listed modems in sequence.

10. The current status of the upload/refresh method can be seen at the progress bar.

Upload/refresh sequence order:

- The configuration readout of all devices and that of current firmware version will be detected.
- Checking of the necessary steps of the item to be updated based on the existing records (the same or lower version of the firmware cannot be upgraded to the modem).
- Firmware refresh will be performed one by one (entry to entry) in sequence.
- In case of failure, the process jumps to the next entry without modifying the current -failed to refresh - firmware version.

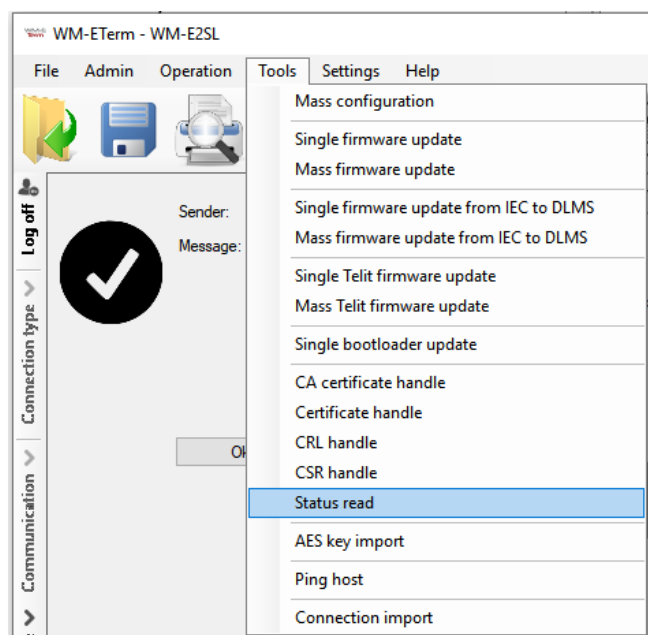
11. At the end of the refresh process, the modems will restart and will use the updated firmware version.

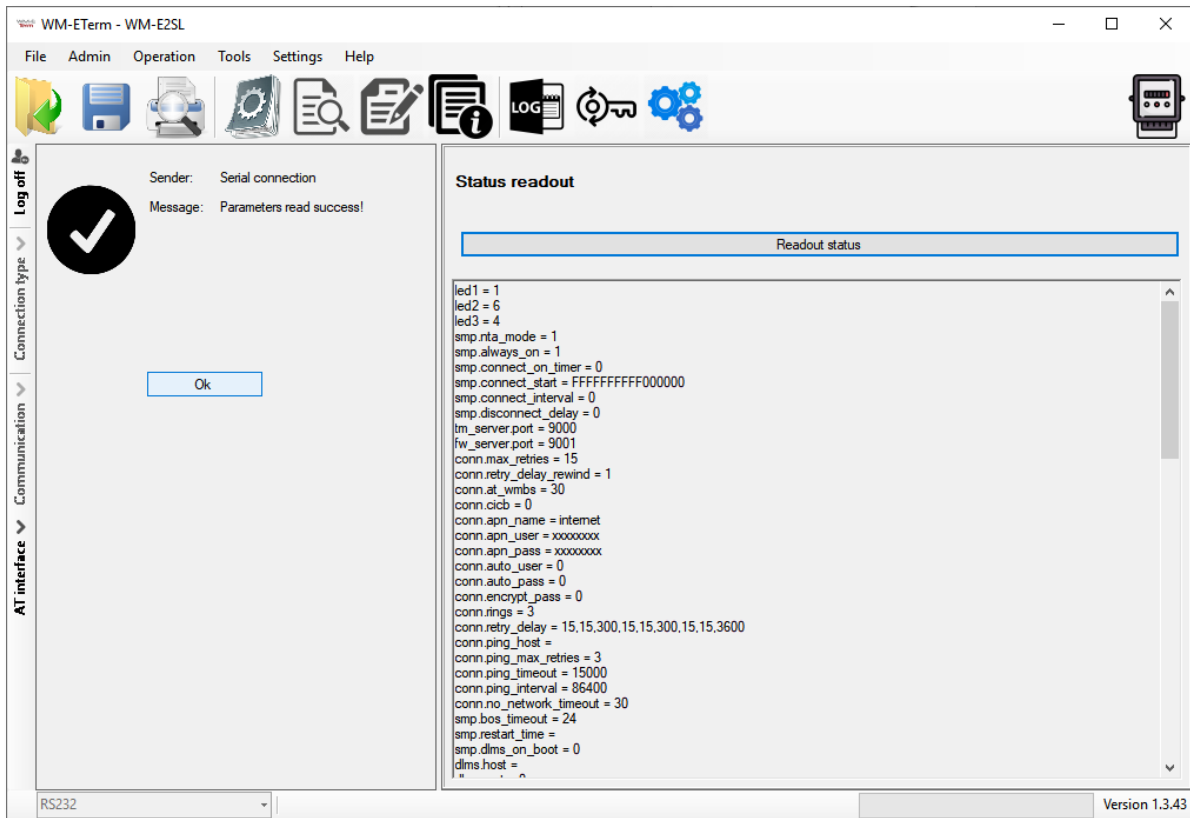
Attention! *The new firmware will be available only after the firmware upload process, whe it will be finished!*

6.7 Status read

In the **Tools / Status Read** menu you should push the **Read status** button to get the current status of the modem - as current firmware version, OS version (modem model release and the current signal strength of the cellular network (RSSI), used APN settings, IP address), the serial number / IMEI of the modem, ICC of the SIM card.

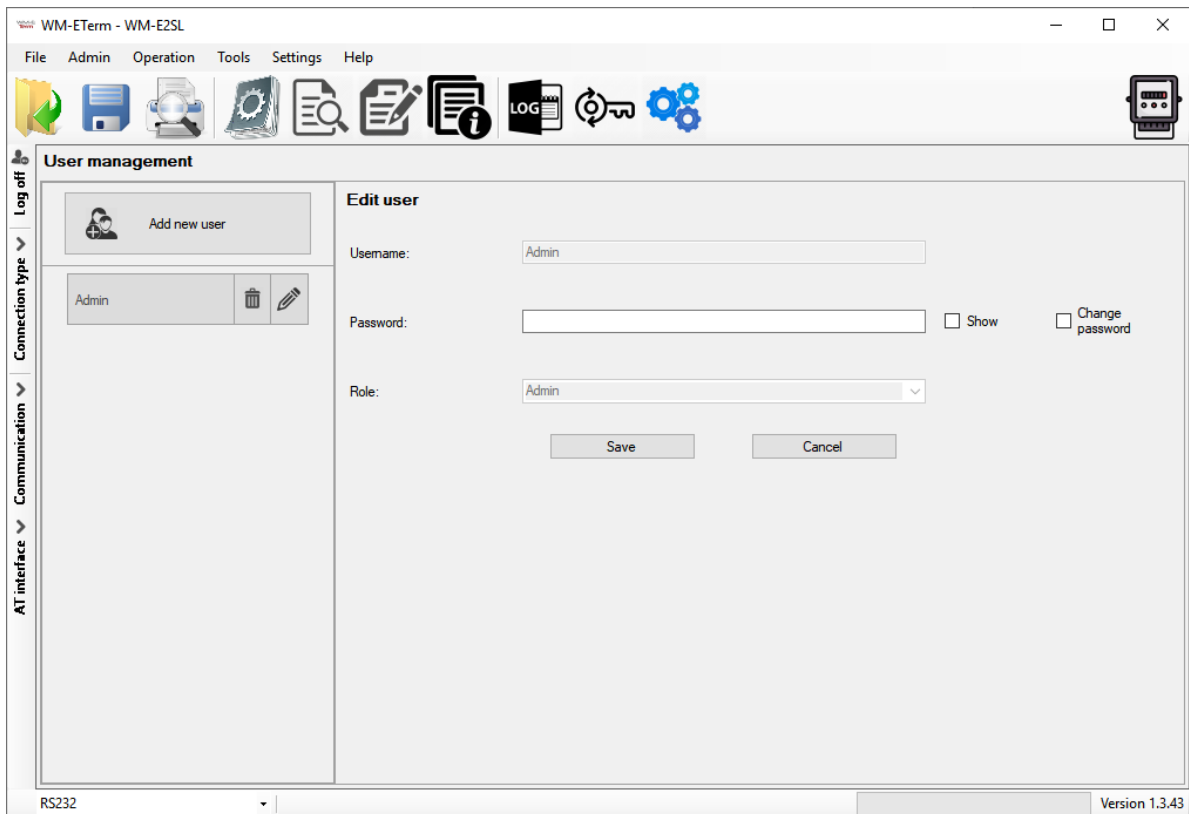
This infomation is really useful for checking the modem status and for the configuration settings (as IP address, SIM / APN settings).





6.8 User Management


1. Choose the **Admin** menu, **Manage users** menu item.

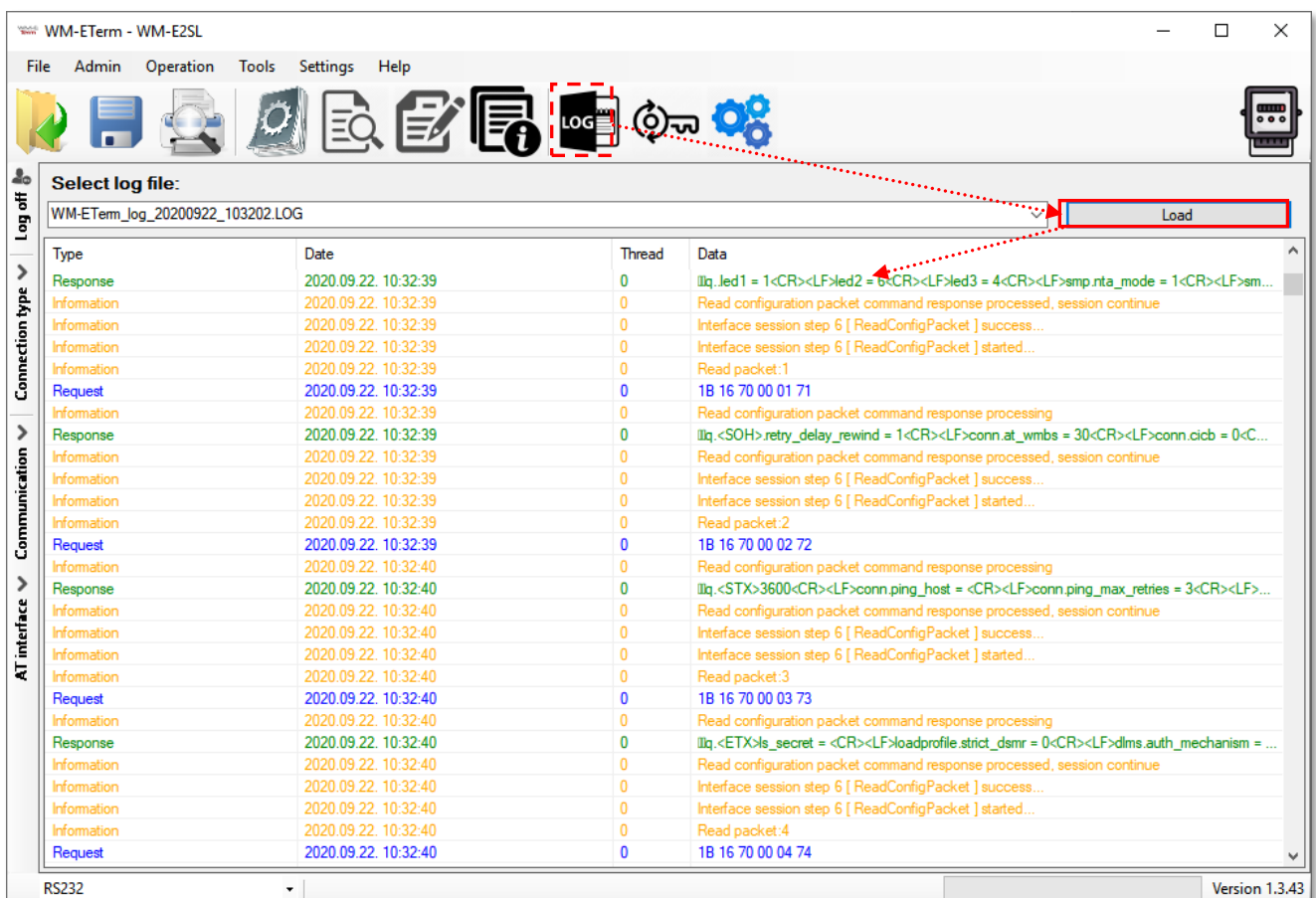


2. There you can **Add** a new user or **modify, delete** an existing one.
3. To change the currently used / existing password, push the **Edit** (pencil icon) and add the new **Password** and **Save** it. The new password will be valid from the next WM-E Term® start when you will attempt to login.

6.9 Event log

You can check the events of operation and modem interaction, communication by the **Event log** item.

1. Open the  icon for listing the previously recorded log entries (or choose the Operation / Log view menu item).
2. Choose a saved log file from the list and push the **Load** button.
3. The program will list all recorded entries of the log file (as communication messages, failures and system messages).



WM-ETerm - WM-E2SL

File Admin Operation Tools Settings Help

Log off

Select log file:

WM-ETerm_log_20200922_103202.LOG

Load

| Type | Date | Thread | Data |
|-------------|----------------------|--------|---|
| Response | 2020.09.22. 10:32:39 | 0 | llq_led1 = 1<CR><LF>led2 = 6<CR><LF>led3 = 4<CR><LF>smp.nta_mode = 1<CR><LF>sm... |
| Information | 2020.09.22. 10:32:39 | 0 | Read configuration packet command response processed, session continue |
| Information | 2020.09.22. 10:32:39 | 0 | Interface session step 6 [ReadConfigPacket] success... |
| Information | 2020.09.22. 10:32:39 | 0 | Interface session step 6 [ReadConfigPacket] started... |
| Information | 2020.09.22. 10:32:39 | 0 | Read packet:1 |
| Request | 2020.09.22. 10:32:39 | 0 | 1B 16 70 00 01 71 |
| Information | 2020.09.22. 10:32:39 | 0 | Read configuration packet command response processing |
| Response | 2020.09.22. 10:32:39 | 0 | llq <SOH>.retry_delay_rewind = 1<CR><LF>conn.at_wmbms = 30<CR><LF>conn.cicb = 0<C... |
| Information | 2020.09.22. 10:32:39 | 0 | Read configuration packet command response processed, session continue |
| Information | 2020.09.22. 10:32:39 | 0 | Interface session step 6 [ReadConfigPacket] success... |
| Information | 2020.09.22. 10:32:39 | 0 | Interface session step 6 [ReadConfigPacket] started... |
| Information | 2020.09.22. 10:32:39 | 0 | Read packet:2 |
| Request | 2020.09.22. 10:32:39 | 0 | 1B 16 70 00 02 72 |
| Information | 2020.09.22. 10:32:40 | 0 | Read configuration packet command response processing |
| Response | 2020.09.22. 10:32:40 | 0 | llq <STX>3600<CR><LF>conn.ping_host = <CR><LF>conn.ping_max_retries = 3<CR><LF>... |
| Information | 2020.09.22. 10:32:40 | 0 | Read configuration packet command response processed, session continue |
| Information | 2020.09.22. 10:32:40 | 0 | Interface session step 6 [ReadConfigPacket] success... |
| Information | 2020.09.22. 10:32:40 | 0 | Interface session step 6 [ReadConfigPacket] started... |
| Information | 2020.09.22. 10:32:40 | 0 | Read packet:3 |
| Request | 2020.09.22. 10:32:40 | 0 | 1B 16 70 00 03 73 |
| Information | 2020.09.22. 10:32:40 | 0 | Read configuration packet command response processing |
| Response | 2020.09.22. 10:32:40 | 0 | llq <ETX>.s_secret = <CR><LF>loadprofile.strict_dsmr = 0<CR><LF>dlms.auth_mechanism = ... |
| Information | 2020.09.22. 10:32:40 | 0 | Read configuration packet command response processed, session continue |
| Information | 2020.09.22. 10:32:40 | 0 | Interface session step 6 [ReadConfigPacket] success... |
| Information | 2020.09.22. 10:32:40 | 0 | Interface session step 6 [ReadConfigPacket] started... |
| Information | 2020.09.22. 10:32:40 | 0 | Read packet:4 |
| Request | 2020.09.22. 10:32:40 | 0 | 1B 16 70 00 04 74 |

RS232

Version 1.3.43

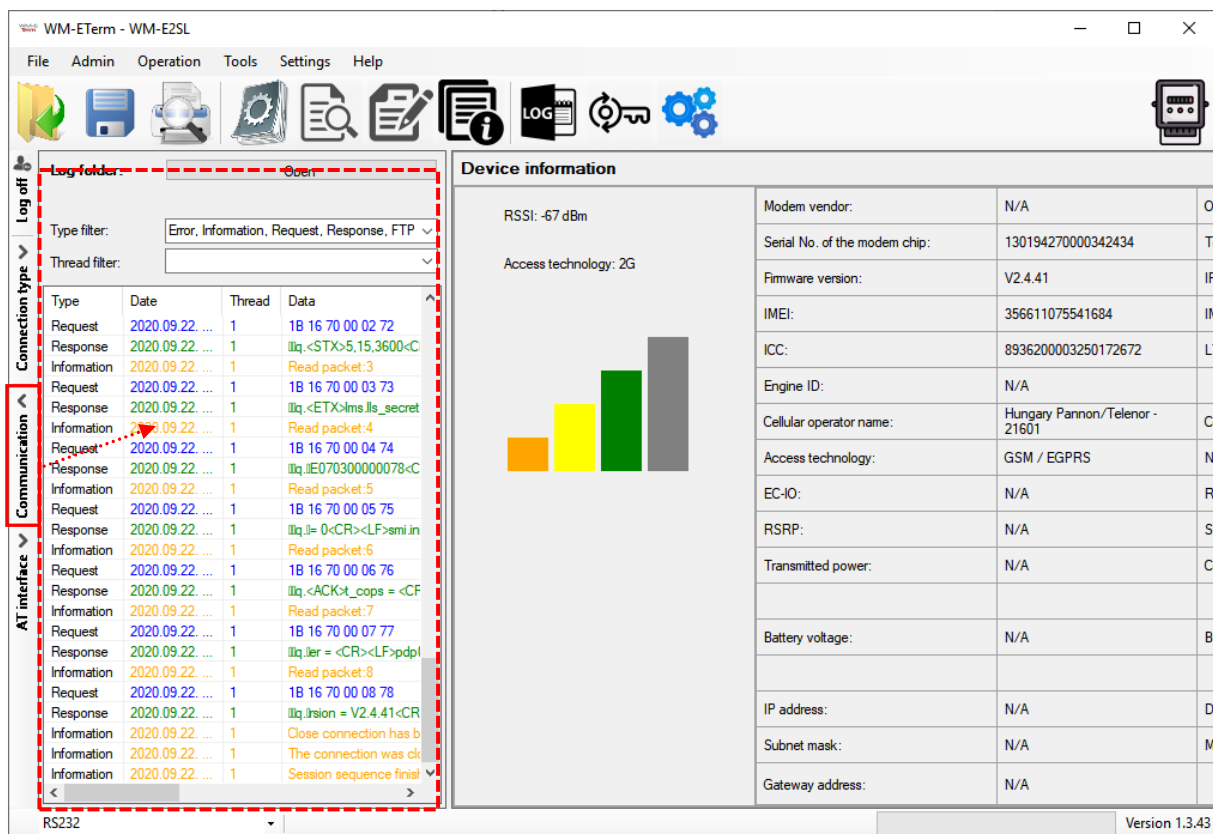
6.10 Check modem communication

You can check the current activity of the modem by choosing the **Communication** button (on the left side of the screen), where the incoming messages will be listed.

There you can filter the message types by the **Type filter** and **Thread filter** field options by selecting the required items.

The **Log Folder** and **Open** buttons help you open the stored, previous log files to analyze.

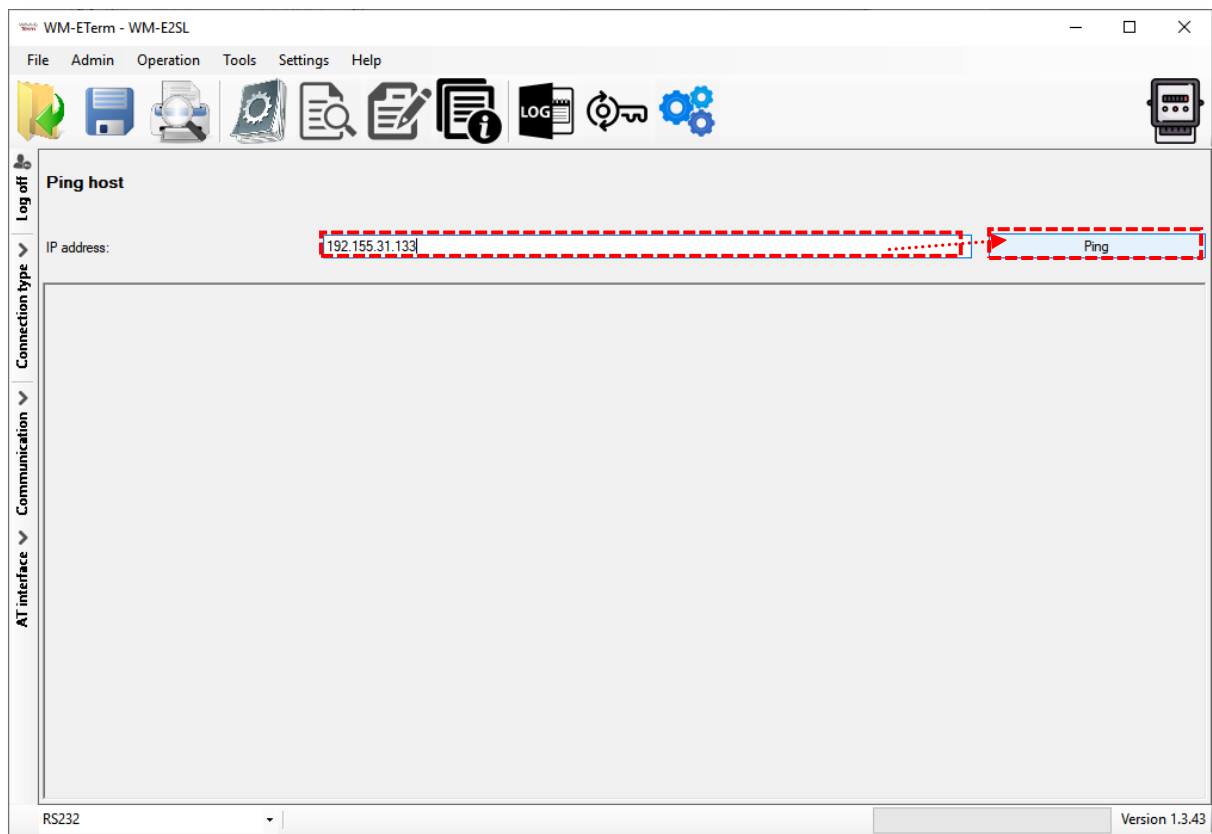
By choosing the **Communication** button again, the logging part will disappear.



6.11 Ping host

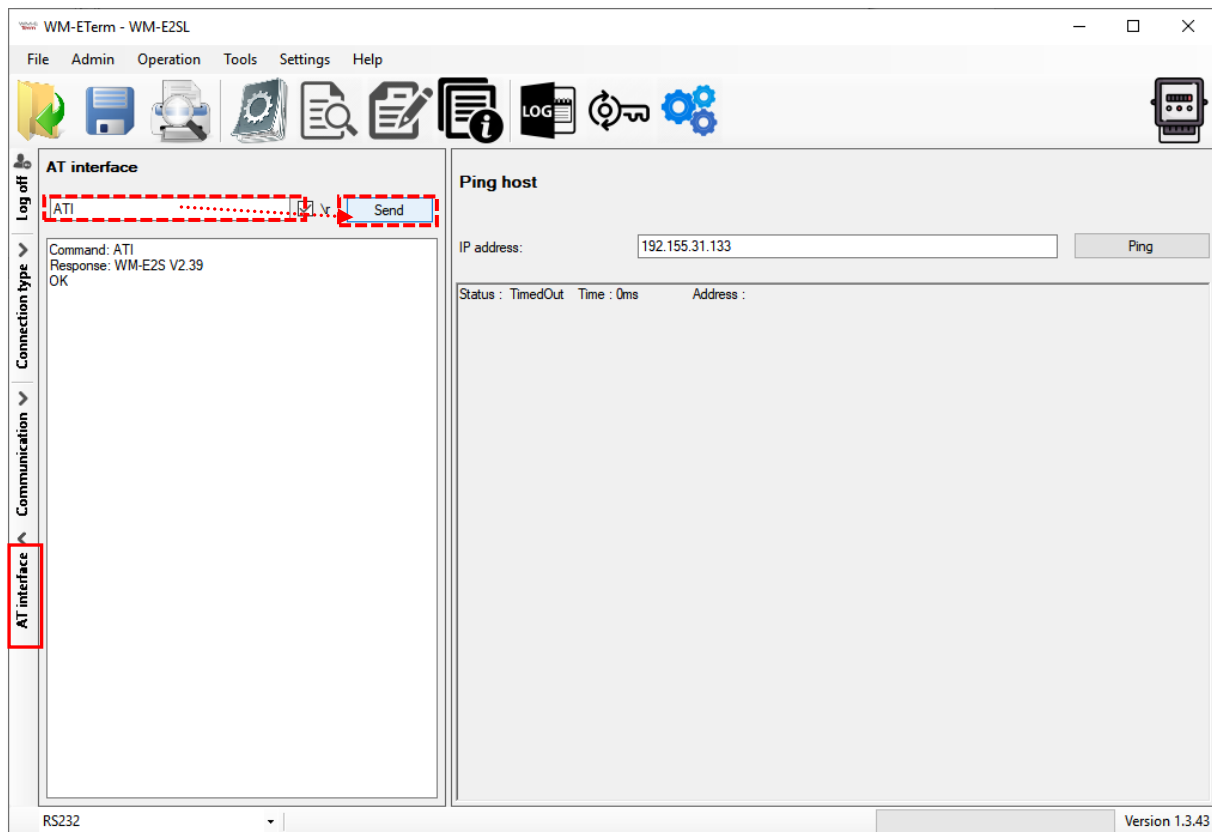
You can ping a remote host IP address by the **Tools** menu, **Ping host** item.

Enter the IP address you want to check to ping and push to the **Ping** button.



6.12 AT commands


Select the **AT interface** tab on the left side of the screen.



Here you can use the AT commands on the modem's wireless module, by filling the command at the **AT interface** and by pushing the **Send** button.
You can check the „/r” option for the carrier handling if you want.

6.13 Print


You can print the current parameter settings of the modem.

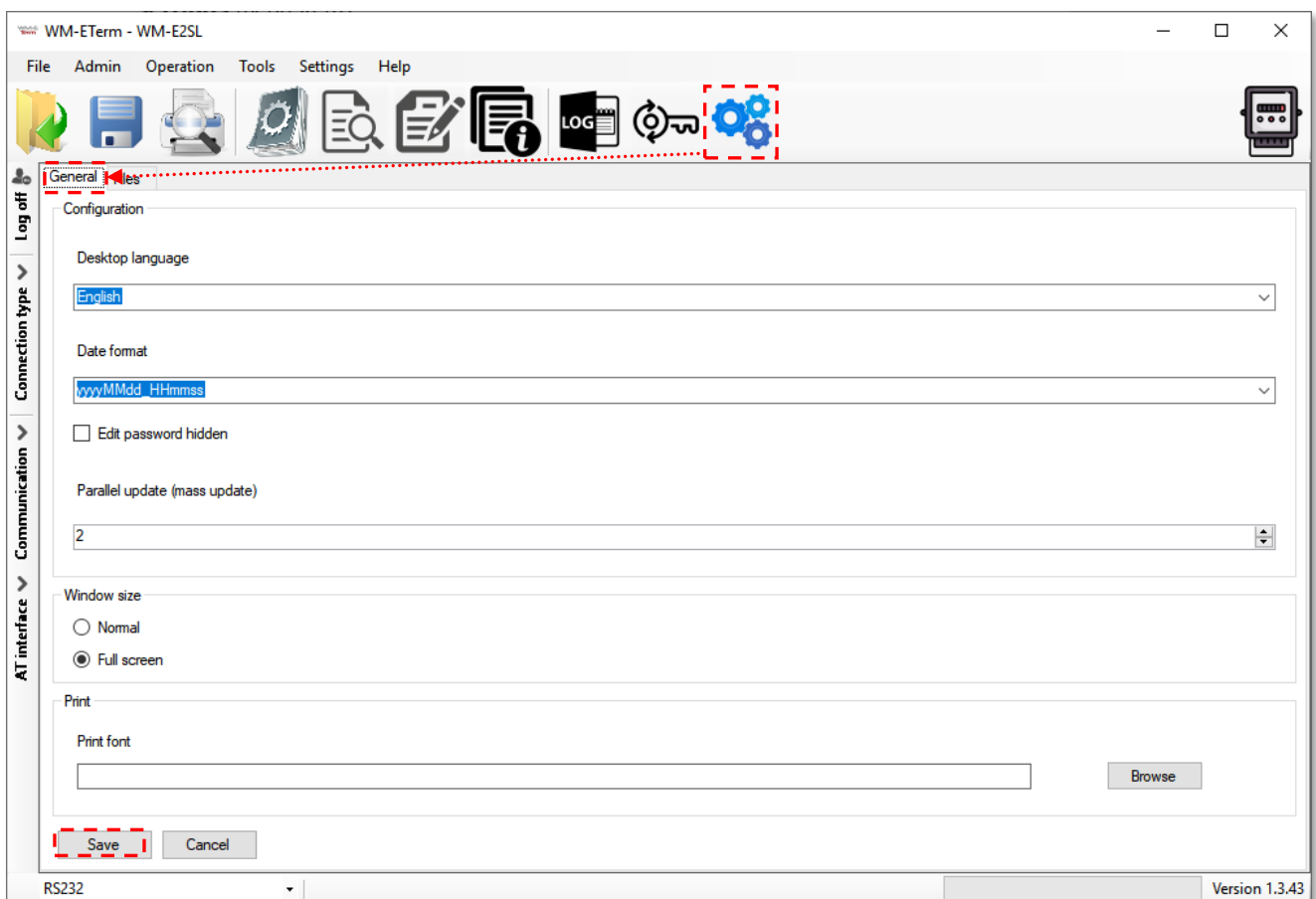
After choosing the log period (by selecting the Log icon and a logged interval), push the  icon from the menu (or choose **File / Print** item from the menu).

The print view of the parameter configuration will then appear. Now you can print the current configuration.

6.14 General settings

The general program settings can be done by this menu item.

1. Choose  **Settings** icon from the menu (or choose **Settings / Edit settings** menu).



2. If needed, you can change the **General tab** settings (as language, Date format, Window size, Print font type or hide the password).


3. Save your settings when you have modified the configuration.

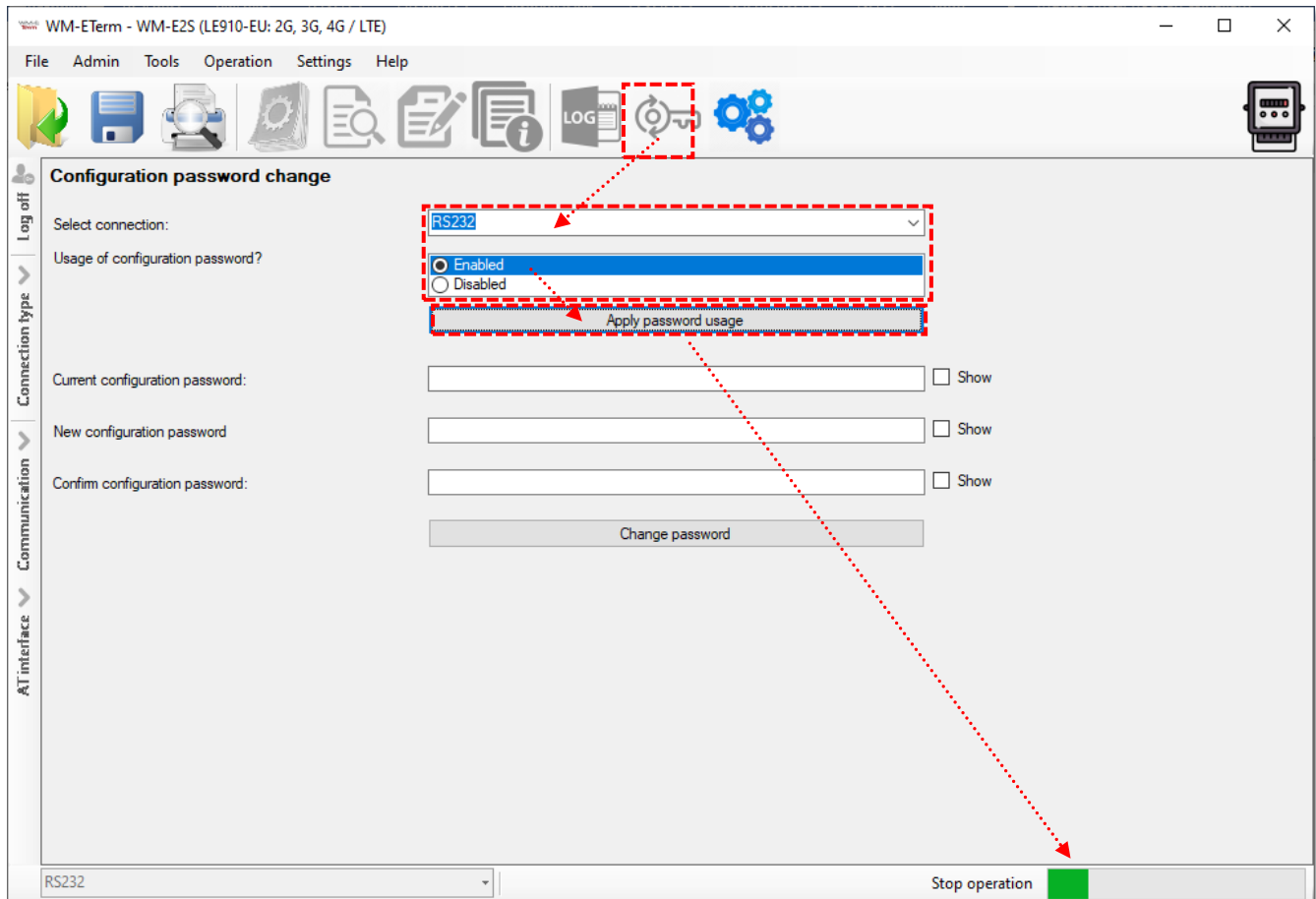
On the **Files** tab you can define the path/directory for the configuration files, firmware, log. Save your settings when you have modified the configuration.

Important!

The program will store the changed settings and when you start the WM-E Term[®] tool next time, they will automatically be loaded.

6.15 Apply Password usage

1. Choose the **Communication Password Settings**  icon from the menu.
Note, that the Communication password field should be empty!
2. At Select connection choose the configuration profile name, which you want to change its password.
3. Ensure that *Enabled* option was selected at **Usage of configuration password?** field.
4. Then push to the **Apply password usage** button. The modem will setup the password usage, which can be seen on the progress bar indicator at right bottom side of the screen.



6.16 Password change

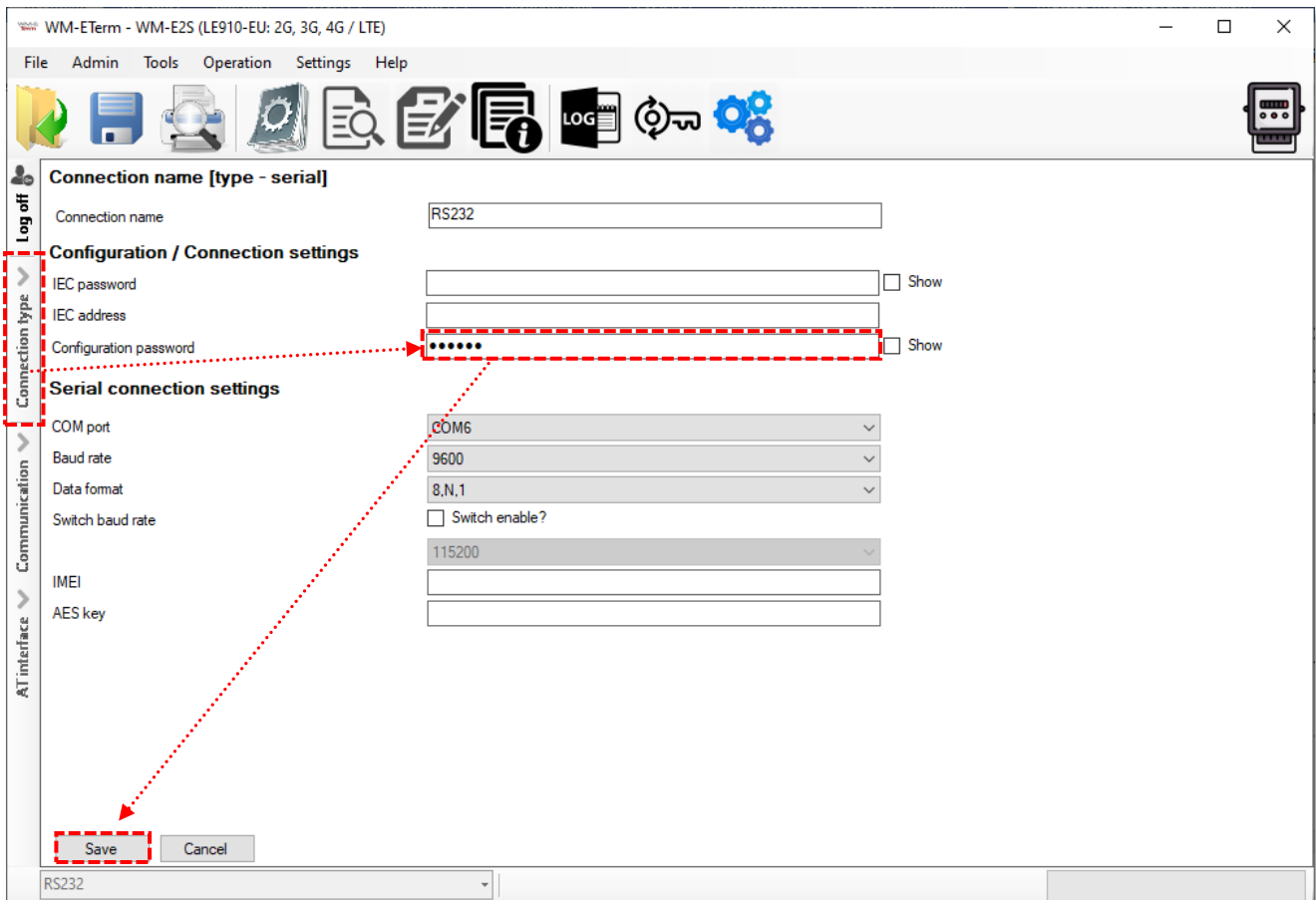
For modem firmware v5.x or newer versions it is possible to use the Communication password for the modem configuration – for each connection type (optical, serial, TCP, etc).


Important! Only modem firmware v5 and newer versions can use a password. Note, that v5 versions has a default password, Ask your sales about the default password of your modem type!

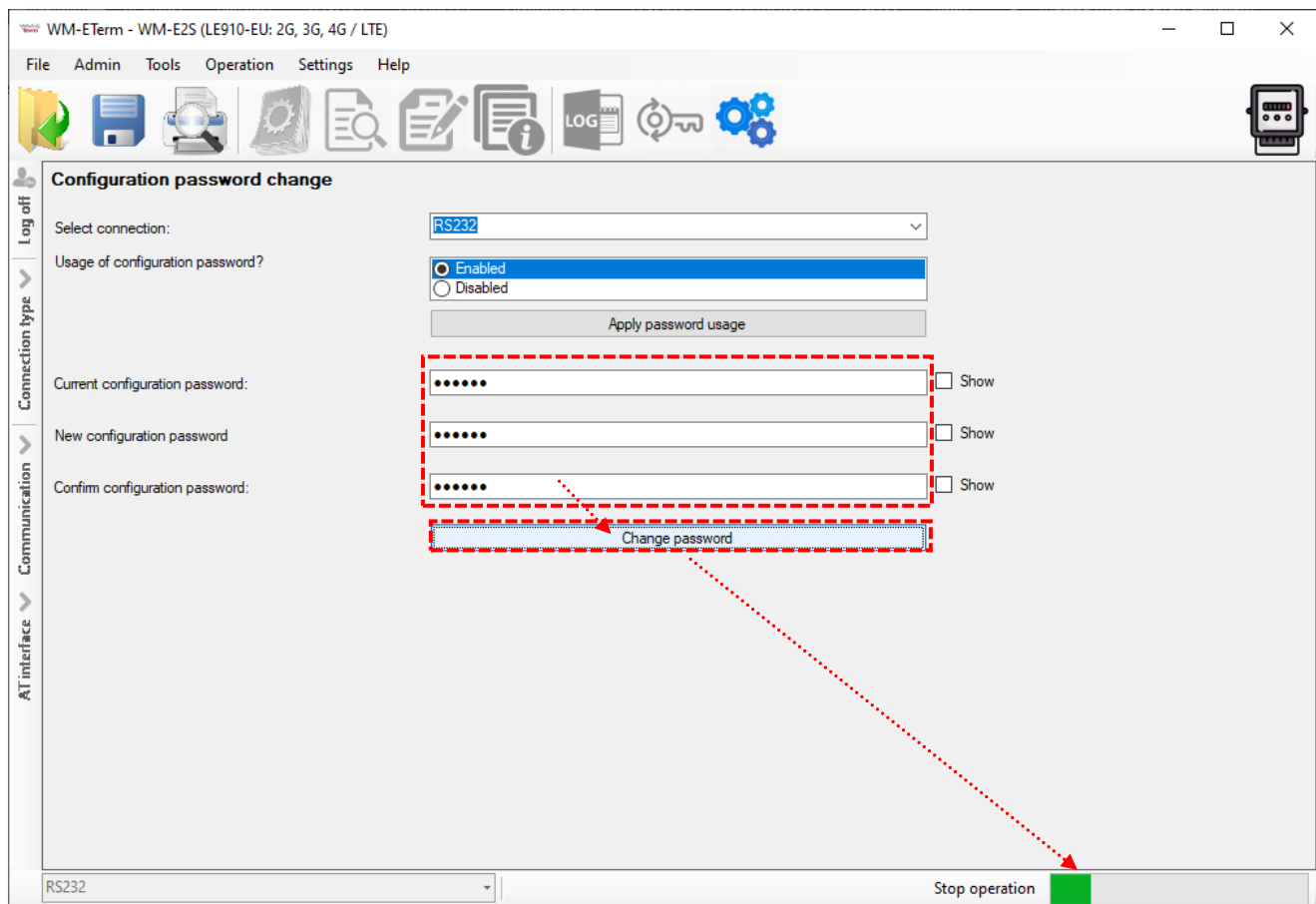
This password can be changed, but before doing this, you have to connect with the default password to the configuration profile – by following the steps of Chapter 5.8 (**Allow Password usage**).

1. Open the left-side **Connection** type tab, choose the currently used configuration profile and **Edit** the settings.

2. Fill the default password (or the last known password to the **Configuration password** field.



3. Push to the **Save** button.
4. Choose the Communication **Password Settings**  icon from the menu.
5. At the Select connection field, choose the configuration profile, which you want to choose the password belonging to the profile.
6. Fill the current **Current configuration password** – where you can check it by enabling the **Show** option.
7. Then define a New configuration password, then **Confirm configuration password** also.



Important!

The password length can be between 1 and 16 characters. Only alphanumerical characters (lower case and upper case letters and numbers) and the „!“ sign (exclamation mark) can be set here.

Note, that the password characters are substituted by asterix characters during the password fill in – by security reasons.

8. Then push to the **Change password** button to perform a password change.

Important!

After configuring this, you have to disconnect the connection with the WM-E Term software and you have to login again. Then you have to reconfigure the Configuration password at the connection profile – to the newly configured password – do it at the same place as it was showed in step nr. 1. Afterall, you should connect with the profile again to the modem (with the new password).

6.17 Modem restart

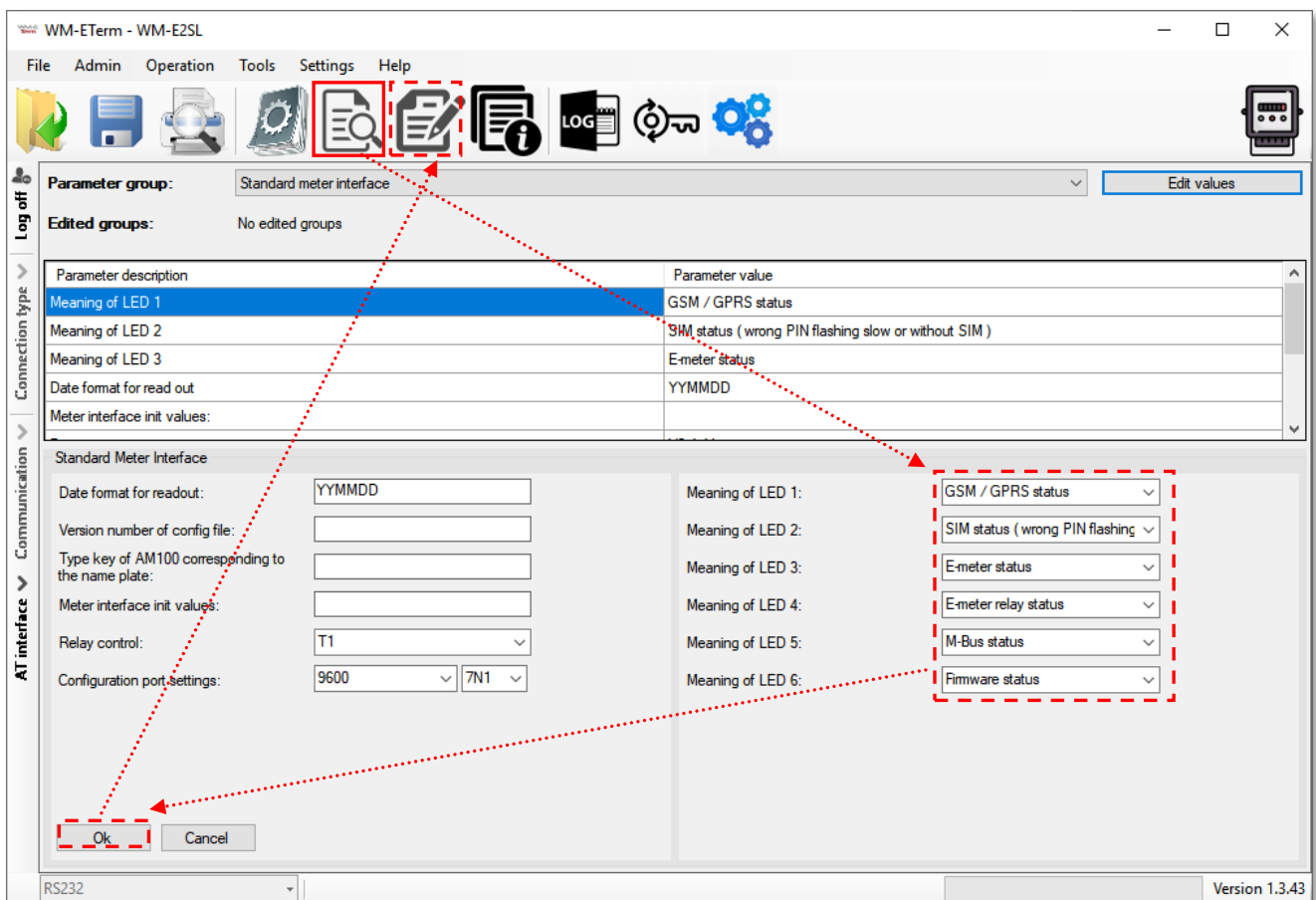
There cannot be found a direct option for modem restart in WM-E Term. But it is very easy to push the modem to be restarted.

1. Choose any parameter from the read out values.
2. Change a parameter value
3. Push to the **Save** button.
4. Send the settings by **Parameters Write** icon to the modem.
5. At the end of the writing process, the modem will be restarted.
6. The restart of the device is signed by its LED signals.

6.18 Configuration of LED settings

The LEDs are pre-programmed, but can be changed if you want.

1. Choose the **Parameter readout** icon, and select the **Standard meter interface** parameter group, then push to the **Edit Values** button.



2. The LED settings can be found at the **Meaning of LED 1...6** part, where you can change the current settings.
3. Save your settings by pushing the **OK** button. You will need to push then the **Parameter write** icon to send it to the modem.

6.19 Sending an SMS from the meter

Depending on the meter configuration, by using the modem, the meter can send SMS message corresponding to standard AT commands to the phone number which was configured at the meter side.

It is worth configuring this primarily for alarms and special events, according to the capabilities of the meter.

No other settings are required in WM-E Term®.

Chapter 7. Support

If you have a technical question regarding the usage You can find us on the following contact possibilities:

Email: support@m2mserver.com

Phone: +36 20 333-1111

The product has identification void which has important product related information for the support line.

Warning! *Damaging or removing the void sticker means the loss of product guarantee.*

Online product support available here:

<https://www.m2mserver.com/en/support/>

The documents and information related on the product are available here.

<https://m2mserver.com/en/product/industrial-rs485-modem/>

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Warning

Any fault or upcoming error during the software upload/refresh can lead to the device breakdown. When this situation happens call our specialists.