EPEVER®

EPEVER TCP RJ45 A

Operation Guide

EN

Contents

1 Overview

1.1 Features

- Equipped with a standard network cable port
- High compatibility without any drivers
- Unlimited communication distance
- Flexible power supply for the communication interface
- Adjustable 10M/100M Ethernet port
- Designed with low power consumption, and high running speed

1.2 Applicable products

<table>
<tr><th rowspan="2">TCP module</th><th colspan="5">Applicable products</th><th rowspan="2">Others</th></tr>
<tr><th>Product type</th><th>Series Name</th><th>Connection port</th><th>Communication cable</th><th>Communication method</th></tr>
<tr><td rowspan="15">EPEVER TCP RJ45 A
  </td><td rowspan="13">Controllers</td><td>LS-B</td><td rowspan="9">RJ45</td><td rowspan="9"> 
CC-RS485-RS485-200U</td><td rowspan="15">RS485
to TCP/IP</td><td rowspan="15">PC communication cable
 
CC-RS485-RS485-200U</td></tr>
<tr><td>GM-N</td></tr>
<tr><td>VS-BN</td></tr>
<tr><td>XTRA-N</td></tr>
<tr><td>TRIRON</td></tr>
<tr><td>Tracer-AN</td></tr>
<tr><td>Tracer-BN</td></tr>
<tr><td>MSC-N</td></tr>
<tr><td>EPIPDB-COM</td></tr>
<tr><td>iTracer-ND</td><td rowspan="3">3.81-4P
(in-line)</td><td rowspan="3"> 
CC-RJ45-3.81-150U</td></tr>
<tr><td>iTracer-AD</td></tr>
<tr><td>DuoRacer</td></tr>
<tr><td>LS-BP</td><td rowspan="3">3.81-4P
(4 round holes)</td><td rowspan="3"> 
CC-RS485-RS485-150U-4LLT</td></tr>
<tr><td>Tracer-BP</td></tr>
<tr><td>Tracer-BPL</td></tr>
<tr><td>Inverters</td><td>NP</td><td rowspan="3">RJ45</td><td rowspan="3"> 
CC-RS485-RS485-200U</td></tr>
<tr><td>IP-Plus</td></tr>
<tr><td>IPT</td></tr>
</table>

		IP				
		IM4230				
	Inverter/charger	UP-Hi	RJ45	 CC-RS485-RS485-200U		
		UP				
	Note: Other EPEVER products, which conform to the "Standard Modbus Communication Protocol" and have communication interfaces, are suitable for the TCP module.					

1.3 Prerequisite software

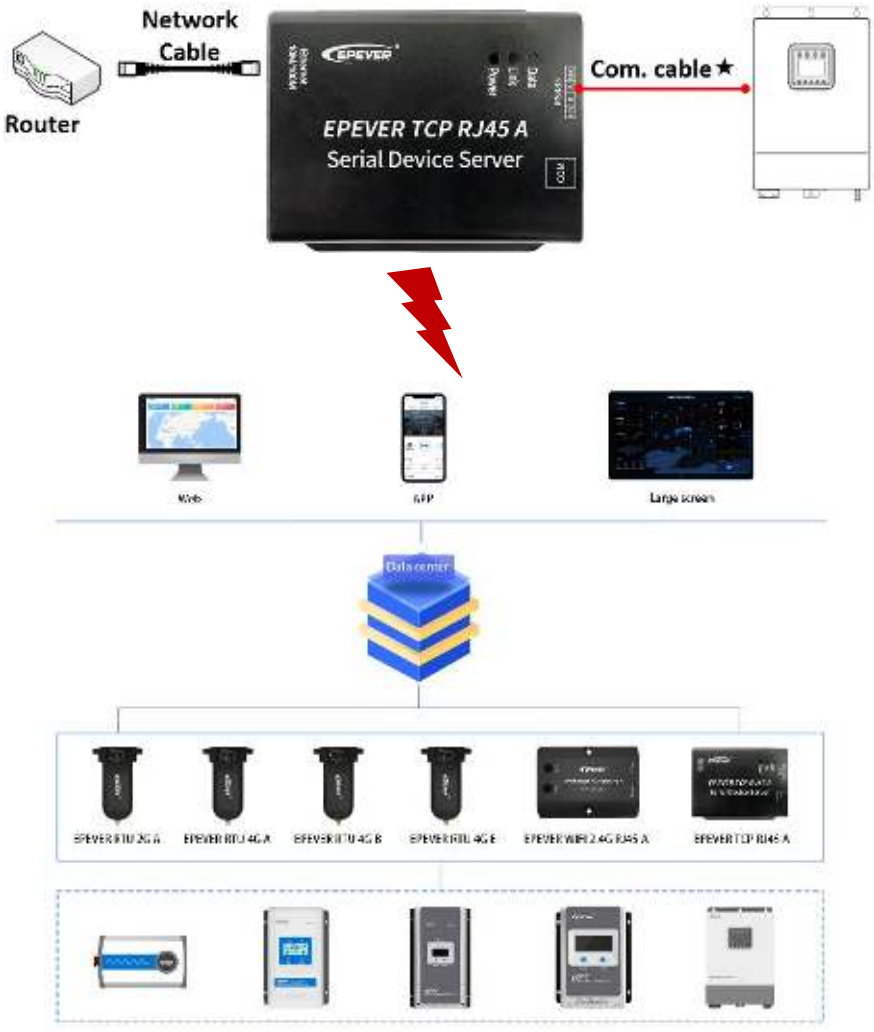
Component	**Prerequisite software**					
	Type	**Name**	**Installer**	**Figure**	**Function**	**Source**
TCP Serial Device Server	EPEVER TCP configuration tool	CeBoxDtu 05Tools	CeBoxDtu05 Tools.exe		Check or modify the EPEVER TCP module's parameters (work mode, protocol, local IP, DHCP, slave address, subnet, gateway, and server information).	EPEVER
	Virtual com software	USR-VCOM	USR-VCOM.exe		Virtualize the IP address of the TCP module to a COM port	
	PC monitor software	Solar Station Monitor	Solar Station Monitor.exe		Monitor devices working status or modify related parameters.	
Applicable PC system	WindowsXP, windows7, windows8, windows10					

2 Connection

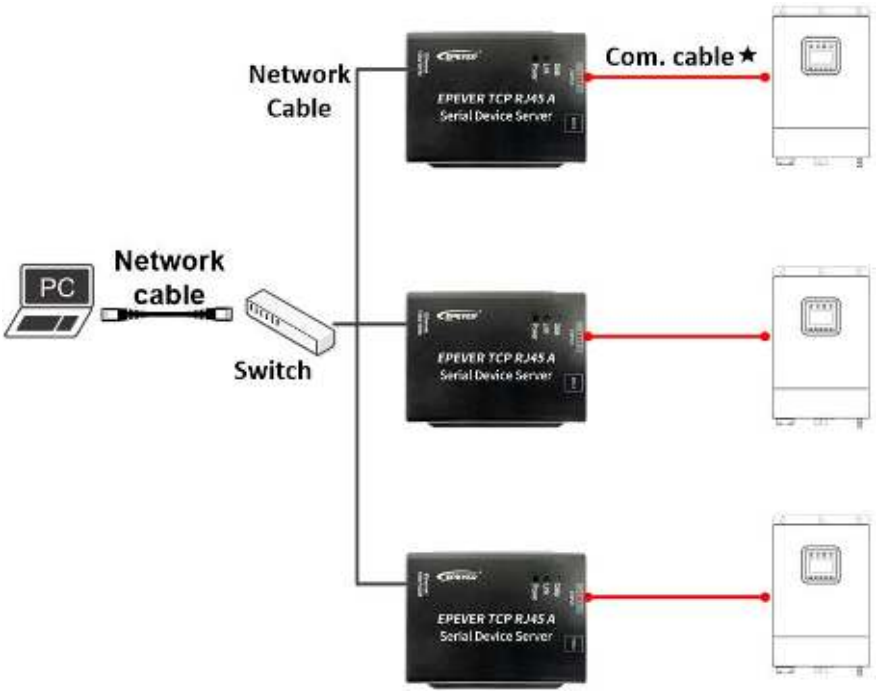
Notes:

- **Select an appropriate communication cable per the communication interface of the controller, inverter, or inverter/charger. Detailed communication cables refer to chapter 1.2 Applicable products.**
- **After successfully connecting to the PC through the TCP module's COM port, users can modify the TCP module's parameters or monitor the connected devices by the PC software.**

2.1 EPEVER cloud connection



2.2 LAN connection



★Select an appropriate communication cable per the communication interface of the controller, inverter, or inverter/charger.

3 Configure and monitor

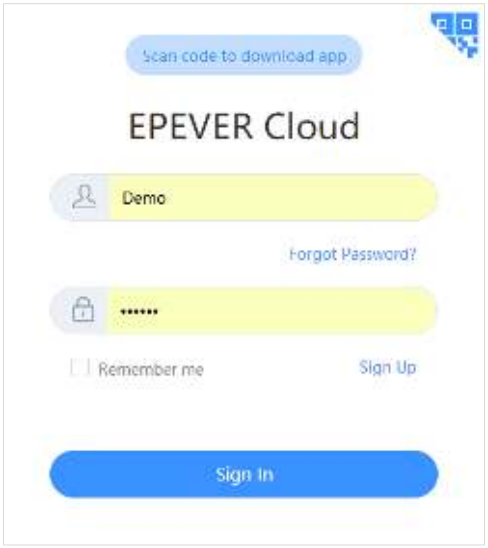
3.1 Configure and monitor by the EPEVER cloud

Step1: Connect the device and power it on.

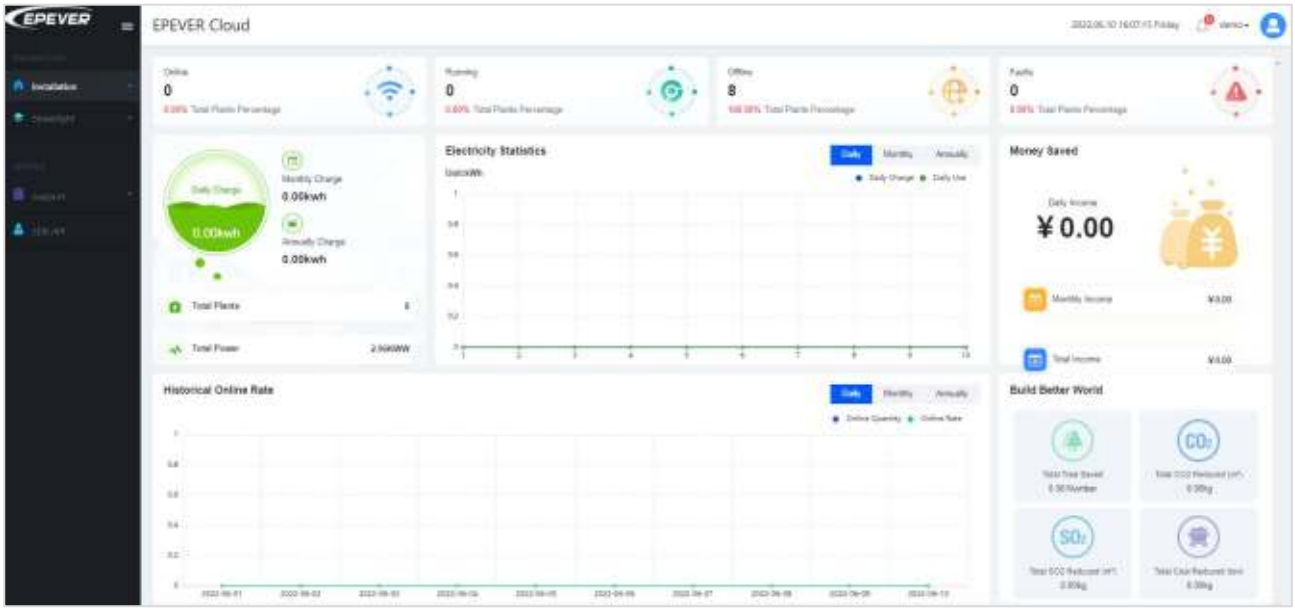
Connect the device per the chapter "2 Connection > 2.1 EPEVER cloud connection", and power it on by the battery.

Notes: The rated input voltage of the TCP module is 5VDC (powered by RS485 com. port).

Step2: Enter the EPEVER cloud server (https://iot.epever.com) on the PC or open the cloud APP on the phone. And then log in with a registered account.



Take the EPEVER cloud on PC as an example: log in with a streetlight account, and enter the main interface of the streetlight management system.



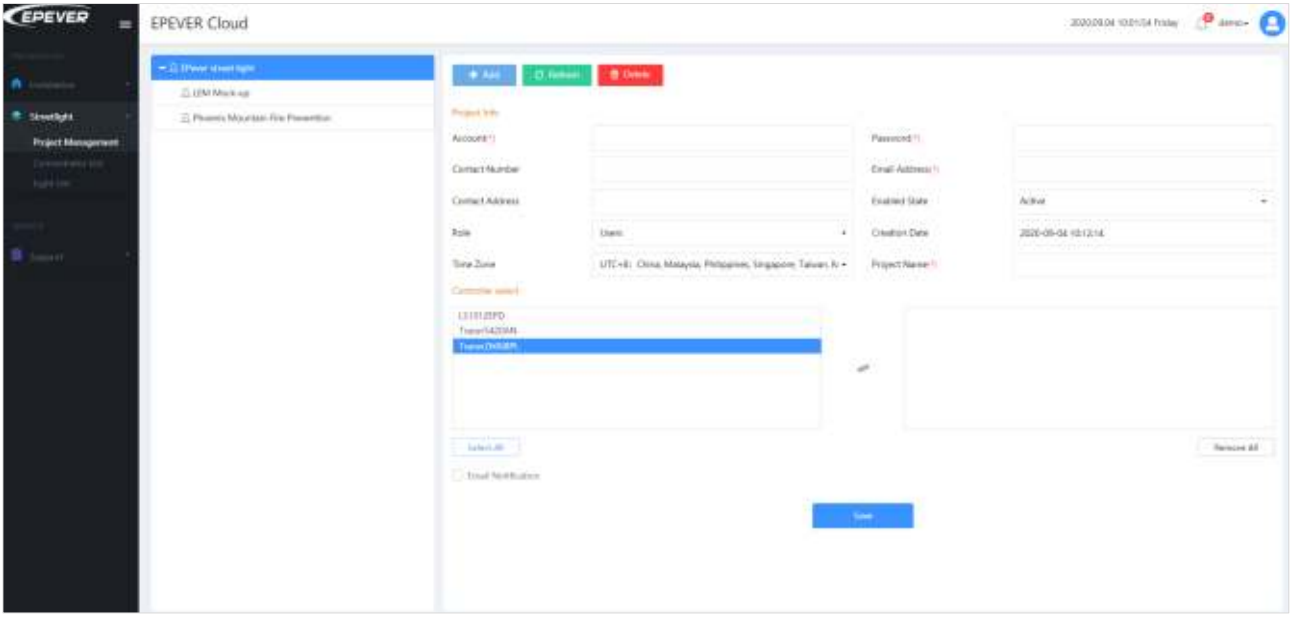
Notes:

- **Log in with a power plant account to enter the plant management interface.**

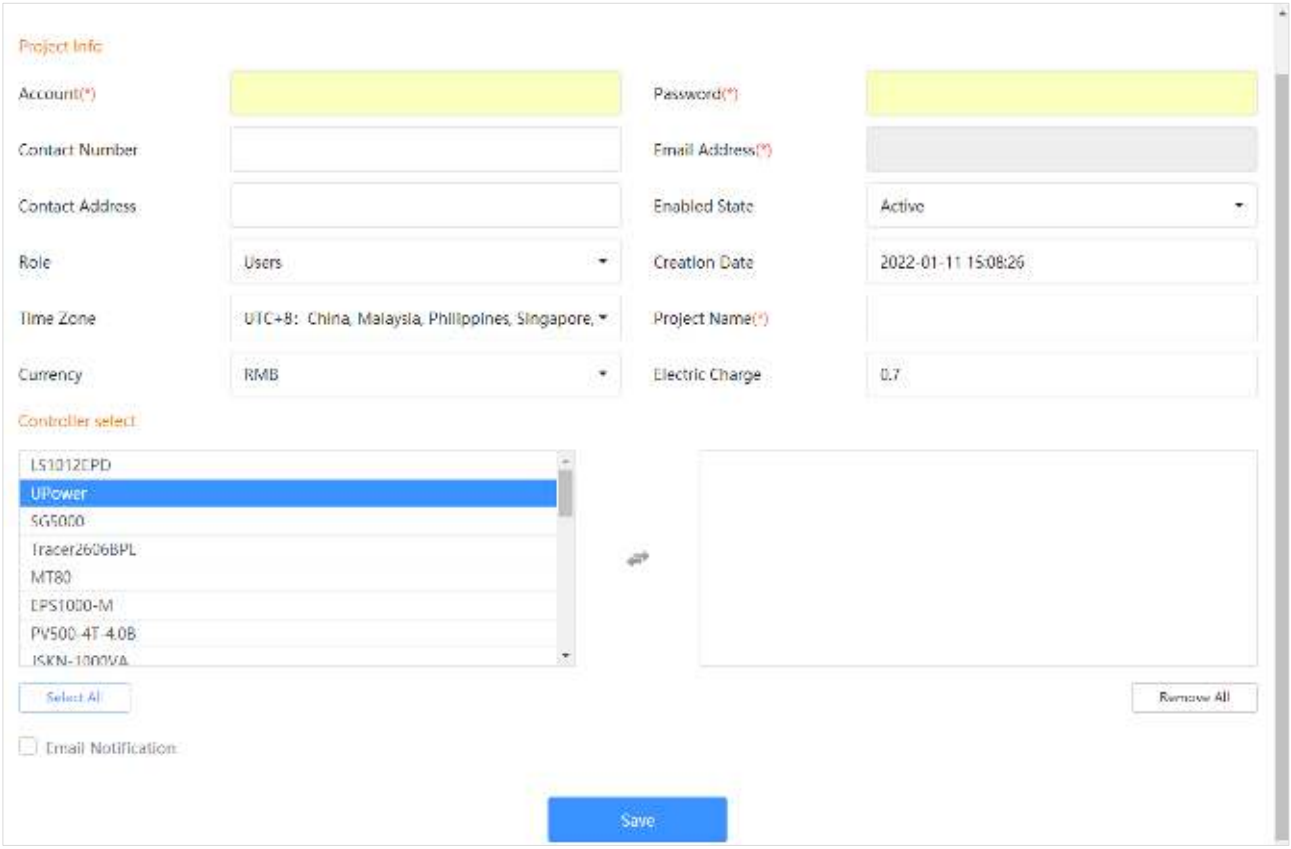
- **The EPEVER cloud operations on the mobile phone are similar to that on PC; please refer to the EPEVER cloud APP user manual.**

(Optional) Step 3: Add a streetlight project (if it already exists, skip the step).

Click "Streetlight > Project Management" in the left navigation window to add/edit/delete the projects.



Click + Add to add a new project.



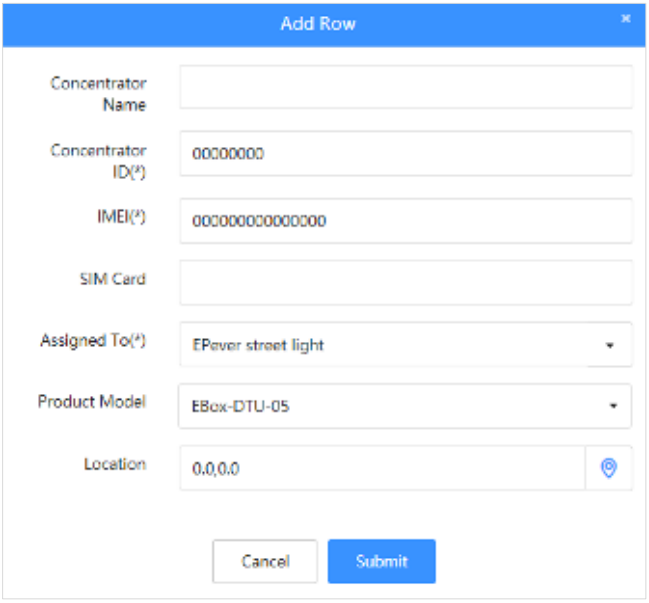
Input the project information (Items marked with*are required) and select controllers. Click the "Save" button to add the new project.

Note: When adding a new project, the item "Account" in the [Project Info] column must be an account that has not been signed up yet.

Step4: Add the EPEVER TCP module to the cloud server.

Click "Streetlight > Concentrator List" in the left navigation window to enter the below figure.

Click + Add to enter the "Add Concentrator" interface.



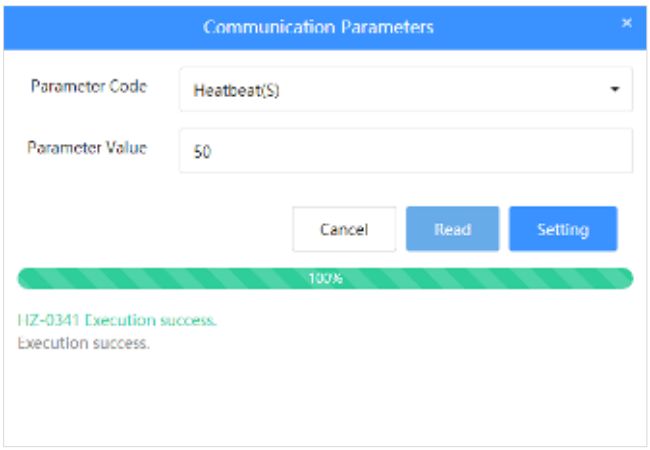
Input the Concentrator Name, Concentrator ID, IMEI, and SIM Card. Select the Product Model, Location, and project (the concentrator is assigned). Click the "Submit" button to add the new concentrator.

Notes:

- **Items marked with * are required.**
- **When adding a concentrator, query the required information through the product silk screen label or consult the servicer directly.**
- **Click the icon to enter the map interface, select the specific location directly and click the "Submit" button.**

(Optional) Step 5: Modify the TCP module's parameters (if there is no need to modify, skip the step).

Select the concentrator and click " Operations > Communication parameters" to read or write.



1) Select a communication parameter from the [Parameter Code] drop-down list and click the "Read" button to read the parameter.

Note: The concentrator cannot be multi-selected when reading the parameter. Only one concentrator can be read once time.

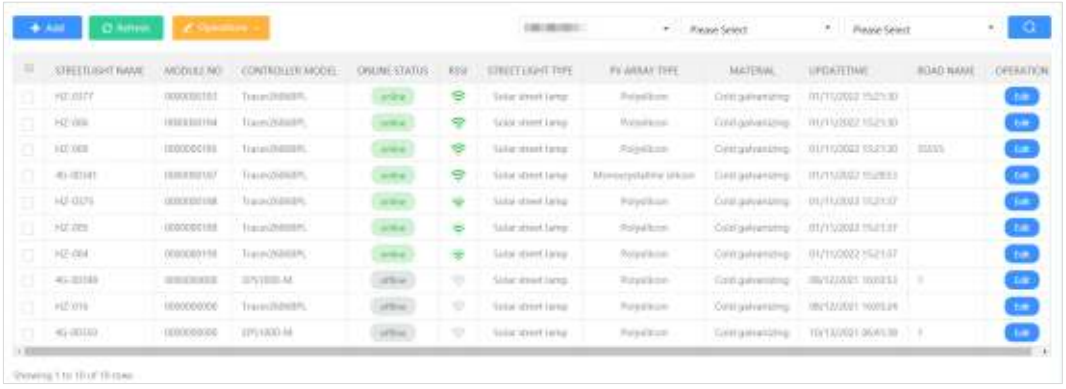
2) Select a communication parameter from the [Parameter Code] drop-down list and input a new value in the [Parameter Value] item. Click the "Setting" button to set the new value to the selected concentrator.

Notes:

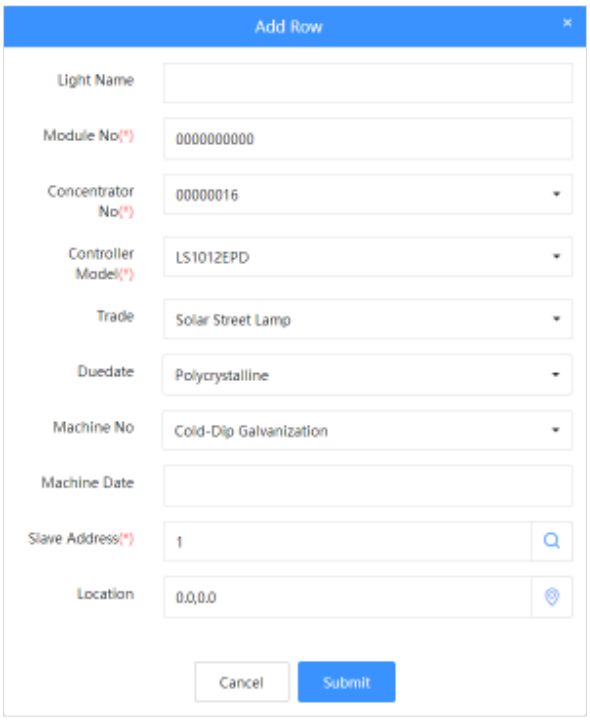
- **The concentrator can be multi-selected when setting the parameter. The parameter of multi concentrators can be set once time.**
- **The current device's parameters can be normally read or set when running. When the current reading or setting is not finished, other parameters cannot be carried out; the interface prompts reading or writing. The TCP module cannot be read or written when offline.**

Step 6: Add devices connected with the TCP module to the EPEVER cloud server. Take the connection of the streetlight controller as an example:

Click "Streetlight > Light List" in the left navigation window to enter the light list interface.



Click + Add to enter the "Add Light" interface.



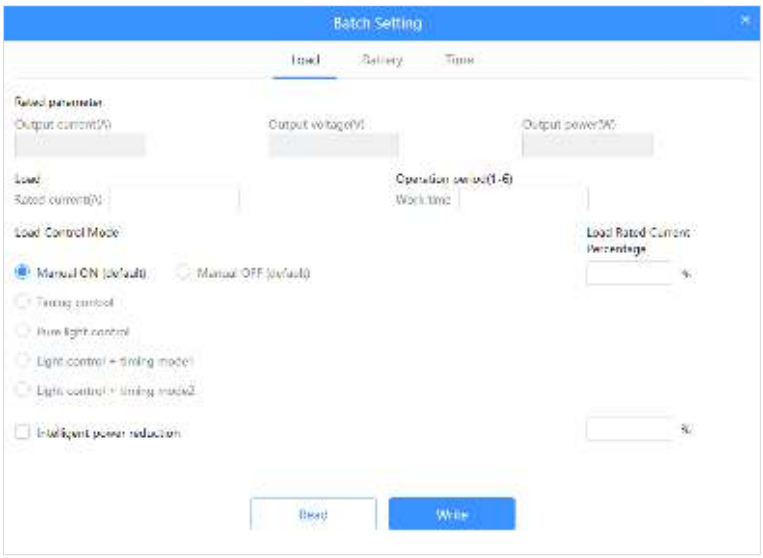
Input light information such as Light Name/Module No/Machine Date/Slave Address, select concentrator Number to which the light is assigned, Controller Model, Trade, Duedate, Machine No, and Location. Click the "Submit" button to save.

Notes:

- **Items marked with * are required.**
- **"Module No" is the number of the slave LORA connected to the streetlight controller, which can be obtained directly from the *LORA configuration table*.**
- **"Slave Address": 1 for the controller, 3 for the inverter, and 10 for the inverter/charger. Please do not modify it; otherwise, normal communication may be affected.**
- **For the "Location" item, click the icon to enter the map interface, select the specific location and click the "Submit" button.**

(Optional)Step 7: Modify the streetlight controller's parameters (if there is no need to modify, skip the step).

Select the streetlight and click " Operations > Batch parameters" to read or write parameters.



In the [Batch Setting] interface, users can read or write the Load/Battery/Time tab parameters. Detail instructions about parameters on the Load/Battery/Time tab; refer to the EPEVER cloud server user manual.

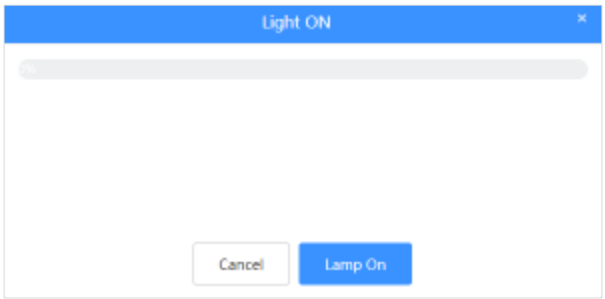
Notes:

- **Multi streetlight controllers of the same series can simultaneously carry out the [Batch parameters]. In contrast, the different series cannot simultaneously carry out the [Batch parameters].**
- **The streetlight controller cannot be multi-selected when reading the parameter. Only one device can be read at a time.**
- **The streetlight controller can be multi-selected when writing the parameter. Select a parameter on the [Batch parameters] interface and input a new value. Click the "Write" button.**
- **The current device's parameters can be normally read or set when running. When the current reading or setting is not finished, other parameters cannot be carried out; the interface prompts reading or writing. When the current device is offline, it cannot be read or written.**

Step 8: Remote monitor the streetlight.

1. Turning the light on/off

Select the streetlight and click " Operations > Lamp on" to pop a prompt box.

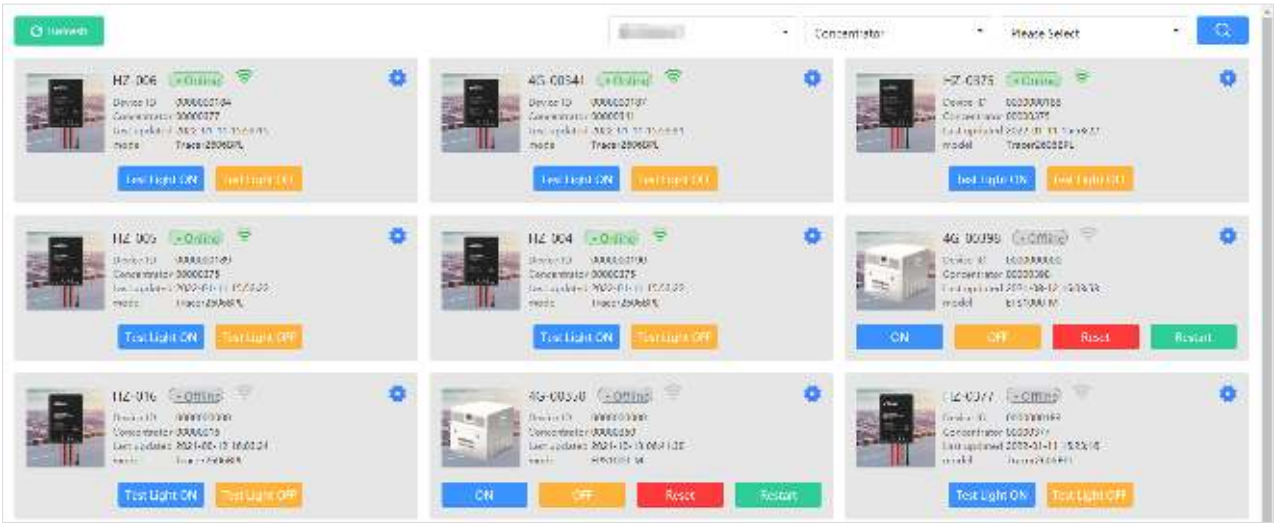


Click the "Lamp On" button to turn the light on remotely.

Note: Click " Operations > Lamp off" to turn the light off remotely.

2. Real-time monitoring

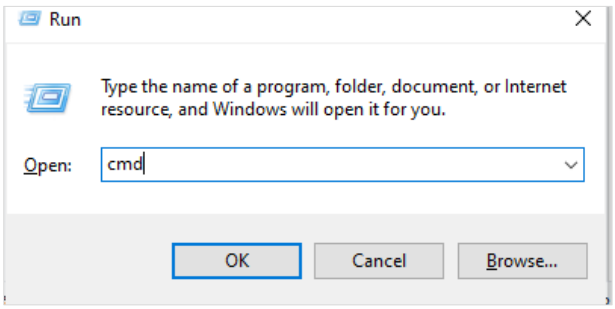
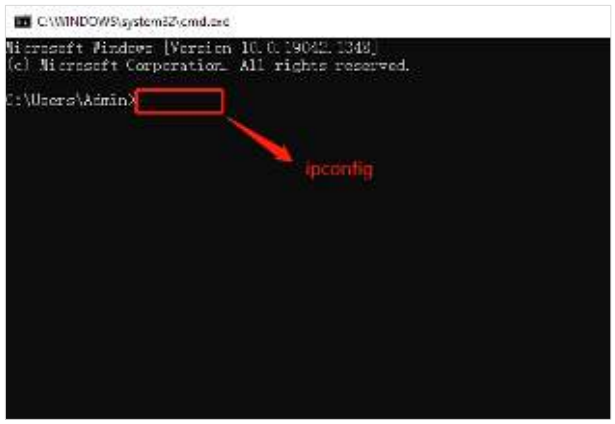
Click "Installation > Monitoring" in the left menu navigation window to enter the monitoring interface. Real-time monitor the streetlights, remote turn on/off lights, and set parameters.

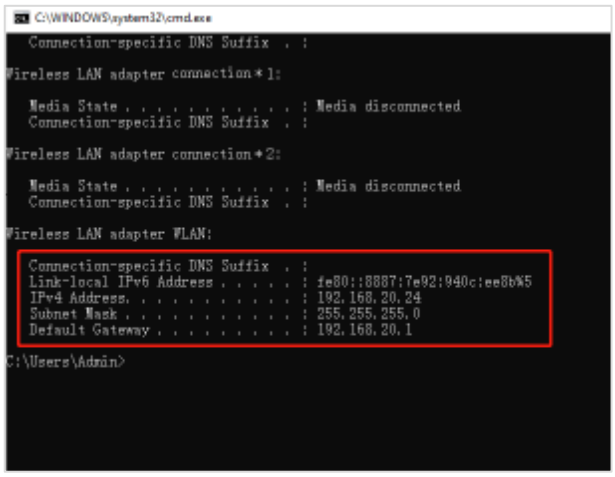


3.2 Configure and monitor by the LAN (Serial port)

1. Check the local IP address

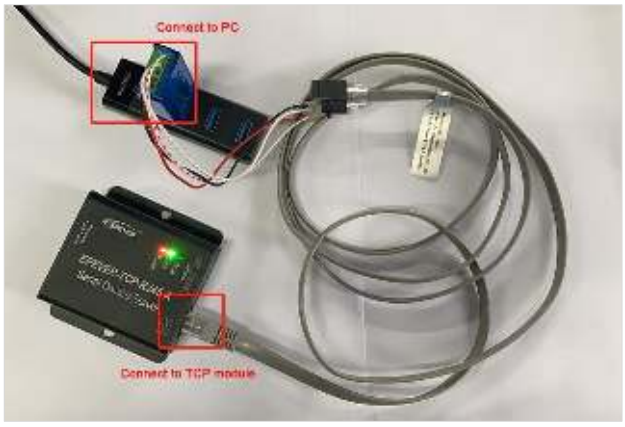
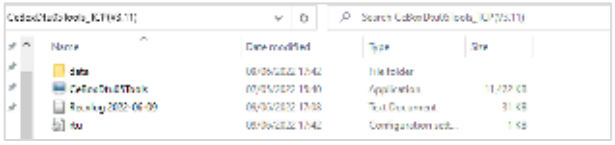
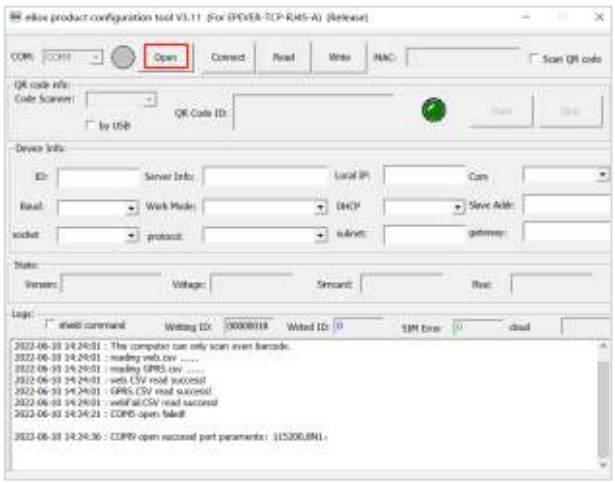
<u>The operating steps are as below:</u>

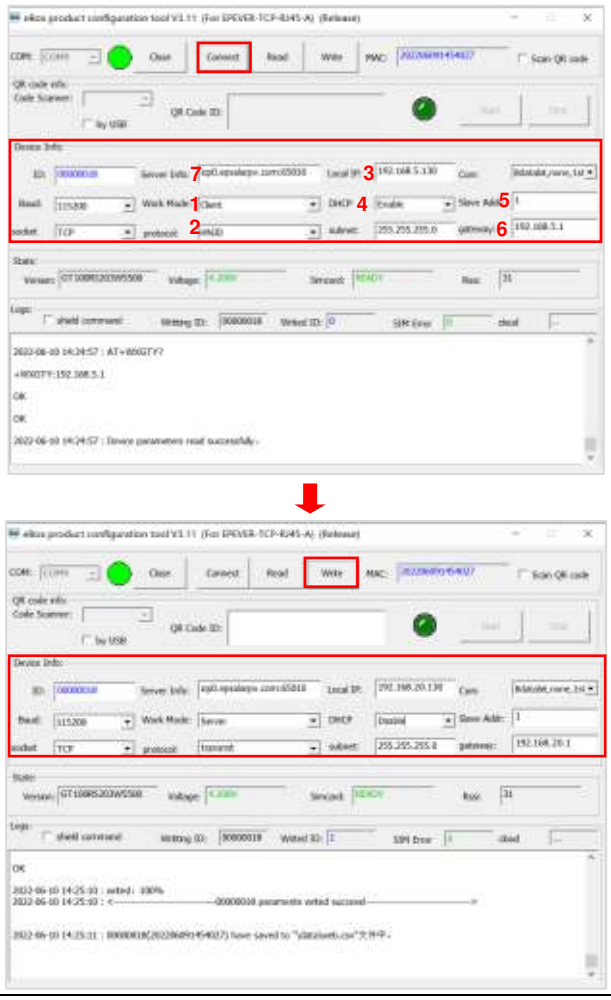
	1. Pop up the "Run" window by clicking the shortcut key "⊞+R" on the PC keyboard, enter the "cmd" command, and press the "Enter" key.
	2. Enter the "ipconfig" command in the pop-up window and press the "Enter" key to view the local IP address.

	3. Shown as in the left figure: Local IP address: 192.168.20.24 Subnet mask: 255.255.255.0 Default Gateway: 192.168.20.1

2. Configure parameters by the TCP tool

<u>The operating steps are as below:</u>

	1. Connect the "COM" port of the TCP module and the PC through the USB to RS485 communication adapter (additional purchased). When the Link indicator is green solid, the connection is successful.
	2. Click to open the "CeBoxDtu05Tools.exe" tool, which can be requested from the after-sales technicians.
	3. Select a serial port from the "COM" drop-down list, and click the "Open" button. **Note: Install the serial port driver tool (USB-SERIAL CH340) first; otherwise, the PC cannot identify the serial port. The driver tool can be requested from the after-sales technicians**



4. Click the "Connect" button to read the TCP module parameters. Modify the parameters by the sequence number marked on the left figure :

（1）Change the "Work Mode" to" Server."

（2）Change the "protocol" to "transmit."

（3）The first 3 bits of the "Local IP" item should be consistent with the current PC. The current PC's local IP is 192.168.20.24. Thus the "Local IP" item needs to be changed to 192.168.20.130 (the last bit can be written at will).

（4）Change the "DHCP" to "Disable."

（5）"Slave Addr": 1 for the controller, 3 for the inverter, and 10 for the inverter/charger.

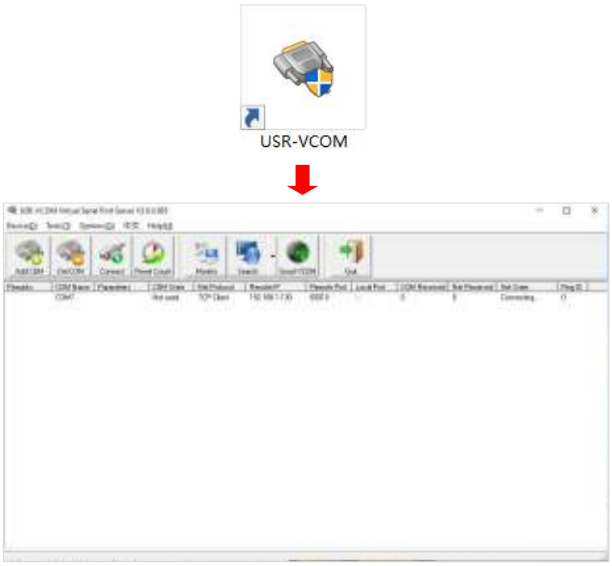
（6）The value of the "subnet" and "gateway" items should be consistent with the current PC. The current PC's subnet is 255.255.255.0, and the default gateway is 192.168.20.1. Change the value of the "subnet" and "gateway" items to the same.

（7）"Server Info": 65010 is the COM number.

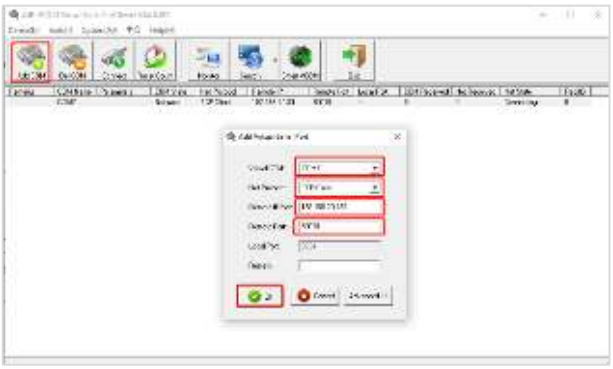
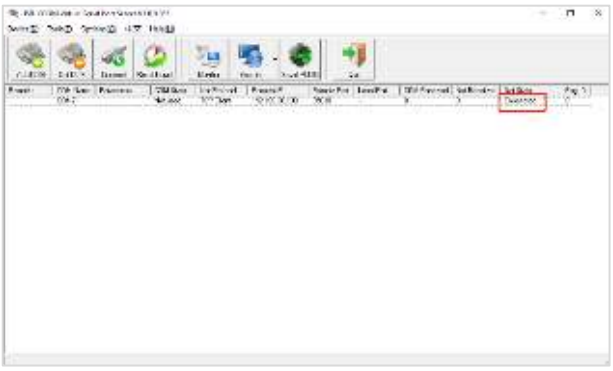
After modifying the above parameters, click the "Write" button.

3. Add Virtual COM

<u>The operating steps are as below:</u>



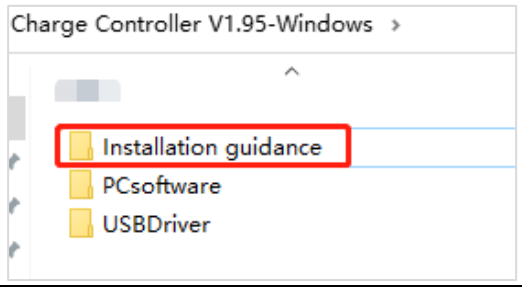
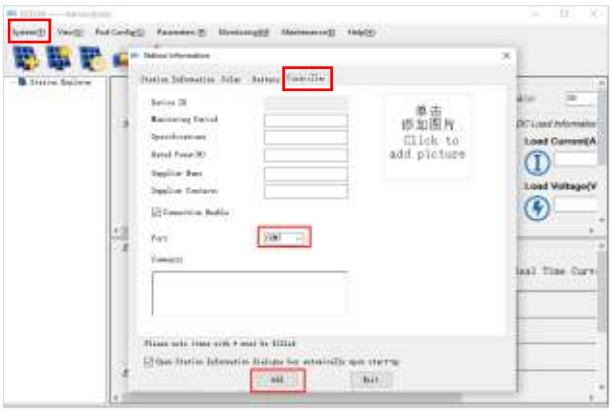
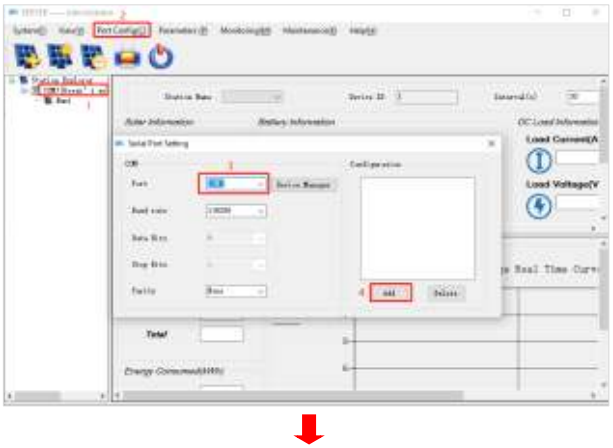
1. Install and open the USR-VCOM software (Version number: V3.6.0.985). The software installer can be requested from the after-sales technicians.

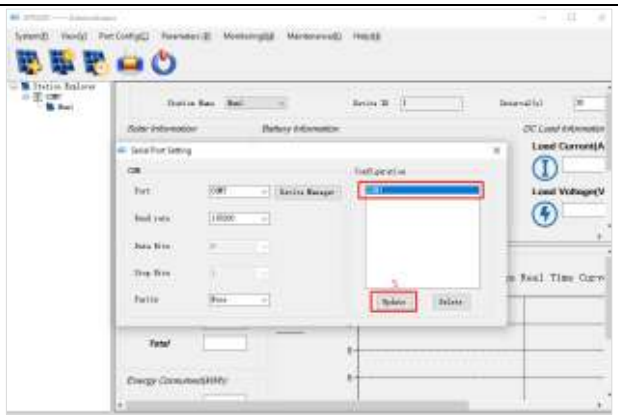
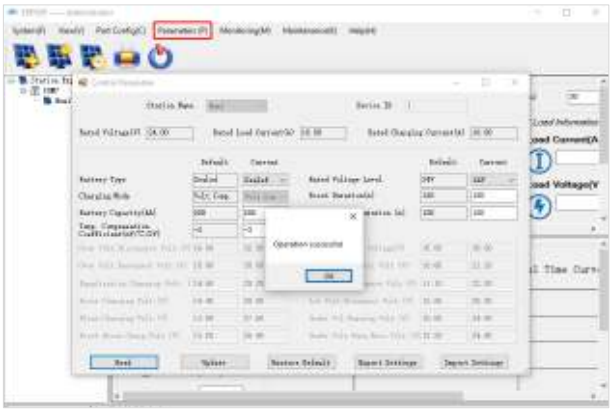
	2. Click the "Add COM" icon to add a virtual COM port per the following procedures: （1）"Virtual COM": COM1~COM255. For example, select "COM7 ". （2）"Net Protocol": Select "TCP Client." （3）"Remote IP/addr": Enter the "Local IP (192.168.20.130)" set by the TCP tool. （4）"Remote Port": Automatically display "65010" by the TCP Tool. After finishing all settings, click the "OK" button.
	3. The "Net State" column displays "Connected," indicating that the virtual COM has been added successfully. **Note: If the "Net State" column displays a failed connection, please check whether the TCP module and the current PC are in the same network.**

4. Monitor devices by the PC software

<u>The operating steps are as below:</u>

	1. Connect the TCP module's "COM" port or RS485 interface with the device. The detailed communication cable refers to chapter 1.2 Applicable products. And connect the TCP module's "Ethernet" port to the router by a network cable (The TCP module and the PC must share the same network).

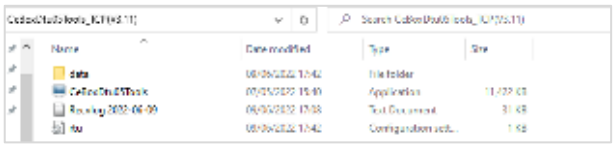
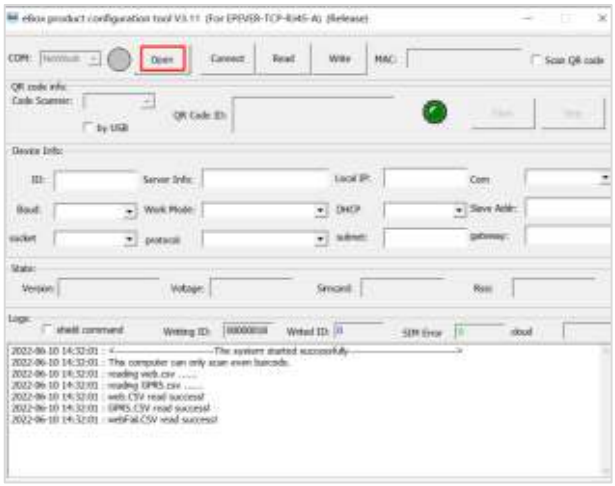
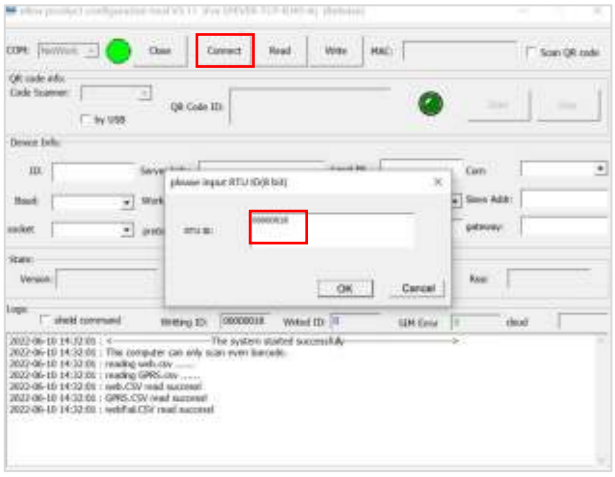
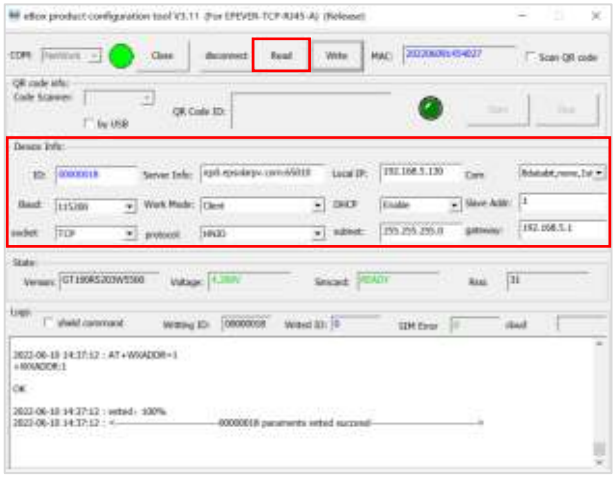
<table>
<tr>
<td> 
</td>
<td>2. Download the PC software "Charge Controller V1.95 Windows" from the EPEVER website: https://www.epever.com/support/softwares/. Install the PC software "Solar Station MonitorV1.95" as the Installation guidance.</td>
</tr>
<tr>
<td>  </td>
<td>3. Double click the icon  on the PC to open the "Solar Station MonitorV1.95" software. The initial interface is shown in the left figure.</td>
</tr>
<tr>
<td>  </td>
<td>4. Click the "System" menu to pop a "Station Information" box. Then click the "Controller" tab and select "COM7" for the "Port" item ("COM7" is the virtual COM set in chapter 3. Add Virtual COM).
After finishing all settings, click the "Add" button.</td>
</tr>
<tr>
<td>  </td>
<td>5. After adding the "COM7", it displays "COM7 (Doesn't exist or not yet set up)" in the left navigation window. Configure the "COM7" in the following procedures.
（1）Click the "COM7 (Doesn't exist or not yet set up)" in the left navigation window.
（2）Click the "Port Config" on the top menu bar to pop up a "Serial Port Setting" box.
（3）Select "COM7" for the "Port" item.
（4）Click the "Add" button to add the "COM7 "into the "Configuration" blank field; then, the "Add" button automatically becomes the "Update" button.
（5）Select the "COM7 "in the "Configuration" field, and click the "Update" button to finish.</td>
</tr>
</table>

	
	6. Click the "Parameters" on the top menu bar to monitor the devices and modify related parameters.

3.3 Configure and monitor by the LAN (Network)

The operating steps are as below:

	1. Connect the TCP module's "COM" port or RS485 interface with the device. The detailed communication cable refers to chapter 1.2 Applicable products. And connect the TCP module's "Ethernet" port to the router by a network cable (The TCP module and the PC must share the same network).

<table>
<tr><td>  </td><td>2. Click to open the "CeBoxDtu05Tools.exe" tool, which can be requested from the after-sales technicians.</td></tr>
<tr><td>  </td><td>3. Select "Network" from the "COM" drop-down list, and click the "Open" button.</td></tr>
<tr><td>  </td><td>4. Click the "Connect" button to pop up the "please input RTU ID (8 bit)" prompt box. Input the 8-bit RTU ID to be configured and click the "OK" button (Take the RTU ID "00000018" as an example).</td></tr>
<tr><td>  </td><td>5. Click the "Read" button to display the TCP module information. Check whether the displayed information conforms to the request below.
• ID: It shall be the RTU ID set in the previous step.
• Work Mode: It shall be the "Client."
• Protocol" It shall be the "HNJD."
• DHCP: It shall be "Enable."
• Slave Addr: 1 for the controller, 3 for the inverter, and 10 for the inverter/charger.
If the TCP module information conforms to the above request, you do NOT need to modify them. Otherwise, normal communication will be affected.
If the TCP module information is not the same as the above request, modify them and click the "Write" button to issue the new parameters.</td></tr>
</table>

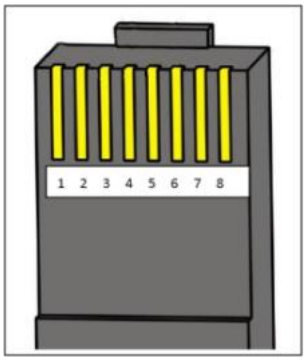
	6. Enter the EPEVER cloud server (https://iot.epever.com) on the PC. Click "Streetlight > Concentrator List" to enter the concentrators management page. Input the RTU ID (such as 00000018) and click  to search the specified TCP module. If it displays "online" status, the TCP module successfully has been added to the EPEVER cloud server.

Note: After successfully adding the TCP module to the EPEVER cloud server, end-users can monitor the device connected with the TCP module by the EPEVER cloud server or PC software.

4 Pin definition

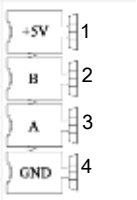
4.1 RJ45 port

Pin	Definition
1	+5VDC
2	+5VDC
3	RS485-B
4	RS485-B
5	RS485-A
6	RS485-A
7	GND
8	GND



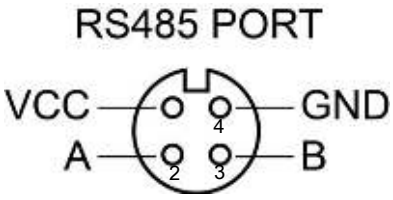
4.2 3.81-4P terminal

Pin	Definition
1	+5VDC
2	RS485-B
3	RS485-A
4	GND



4.3 Water-proof RS485 port

Pin	Definition
1	+5VDC
2	RS485-A
3	RS485-B
4	GND



Any changes without prior notice! Version number: V1.1

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