



Star Charge<sup>®</sup>  
星星充电

Charging Infrastructure  
**Venus 30 Commissioning Manual**

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## **Legal Statement**

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## 1 General Principle




### 1.1 Purpose of this Document

The purpose of this document is to ensure the successful delivery and use of EVSE after being installed, and to find and eliminate the dangers, faults and risks caused by installation quality and site conditions; to ensure the EVSE can work stably, efficiently and safely.

### 1.2 Application Scope


This document is applied for the commissioning work of Venus 30 before delivering to customer.

### 1.3 Definition of Warning Sign

Item	Sign	Definition
1		<p>“Warning” indicates danger.</p> <p>Please pay attention to the operation sequence. Any incorrect operation or practice will lead to personal injury or death. Operations marked “Warning” symbol can only be performed if the indicated conditions are fully understood and met.</p>
2		<p>“Attention” indicates danger.</p> <p>Please pay attention to the operation. Any incorrect operation or practice will lead to the product damaged. Operations marked “Attention” can only be performed if the indicated conditions are fully understood and met.</p>
3		<p>“Notice” indicates useful operation skills or information.</p> <p>The operation will be marked “Notice” symbol if any useful skill and information is available. No warning or attention</p>

## 2 Preparation before Commissioning

### 2.1 Safety Notice

	<p><b>Warning!</b></p> <p>Only manufacturer’s engineers or engineers trained by manufacturer are allowed to do commissioning to EVSE. Star Charge will not be responsible for any loss caused by the operation of any third-party engineers without Star Charge’s authorization.</p> <p>Each step of commissioning must be handled carefully. If any problem, the test must be stopped at once until the problems are identified and resolved.</p> <p>In case of rain, snow, sandstorm and other harsh condition, no any commissioning operation is allowed!</p>
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- 1) The engineers operating the commissioning must have basic electrical safety knowledge, understand the technology and performance of EVSE, and know how to handle the emergency caused by electric shock or other danger, so that they could identify and handle any emergency on the site of commissioning.
- 2) When operating on the site, engineer must be concentrated on the operation. Drinking and fighting is absolutely prohibited on the operating site. The engineer is not allowed to operate if feeling uncomfortable.
- 3) During commissioning operation, insulation protection shoes and gloves must be worn. Safety helmet and other protection equipment should be worn when necessary. All the insulation equipment, device and tools must be checked to be good and reliable.
- 4) Any electrical equipment and lines are deemed to be powered before being checked by the operator, and are not allowed to be touched. Before touching electrical equipment, the engineer must strictly follow the operation process of powering off the equipment, checking, discharging (if equipment has capacitance), rechecking, and hanging a warning sign of “No power on, someone is working” or other preventive tools to prevent power on when operating.
- 5) Before operating, please strictly follow the procedure of power off, hanging warning sign and lock.
- 6) Please try the best to operate without power. If it’s necessary to operate with power, there must be a specific engineer who is qualified to monitor the process. And during the operation, the engineer who is qualified to monitor the process must not be allowed to do any other job.
- 7) When operating with power, please clearly identify the L line, N line and PE line, and choose proper operation place. Touching the energized part and grounding part at the same time is prohibited during operating.

- 8) Without authorization and approval, any change of connection and structure inside of the EVSE is not allowed.
- 9) After operating, please put the components back to the original place, count the tools to prevent missing, and clean the operation site.
- 10) In case of any emergency, please launch the emergency response plan immediately, report the situation to the responsible person according to the plan, and carry out the on-site emergency treatment in the first time to control spreading, and rescue person and property.
- 11) In case of electric shock, cut off the power and start the first-aid immediately, call ambulance for medical help and report to the leader at the same time, and keep the accident into record.
- 12) Power on sequence: high voltage power, low voltage input and output, load (substation → power distribution → EVSE);  
Power off sequence: load, low voltage input and output, high voltage power (EVSE → power distribution → substation)

## 2.2 Outside Appearance of EVSE

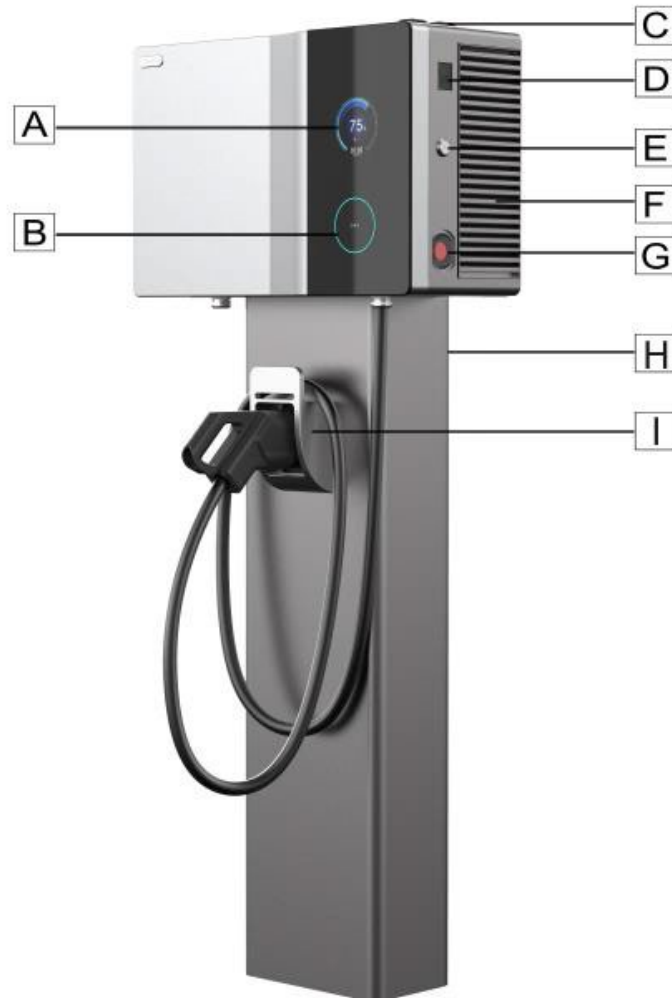
- Wall-mounted



- [A]—Touch screen
- [B]—LED status indicating light and RFID identification area
- [C]—Meter
- [D]—Air-cooling outlet
- [E]—Lock
- [F]—Emergency stop button
- [G]—Charging cable and cable holder



● **Column-mounted**



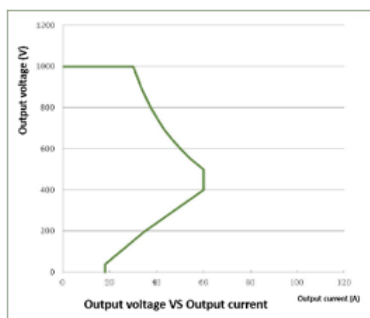
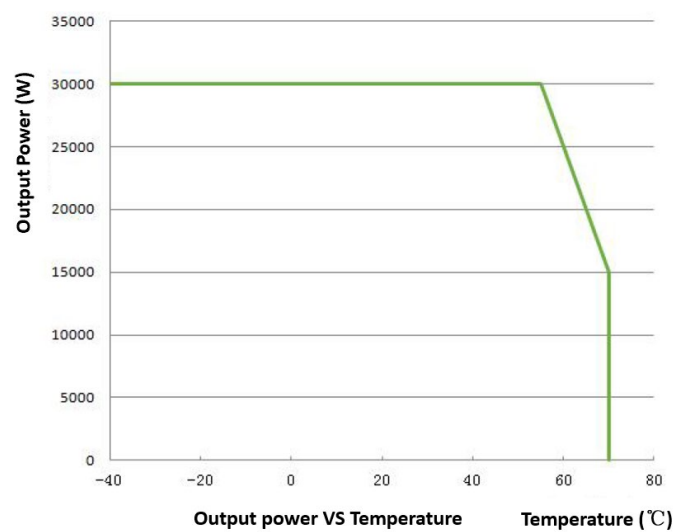
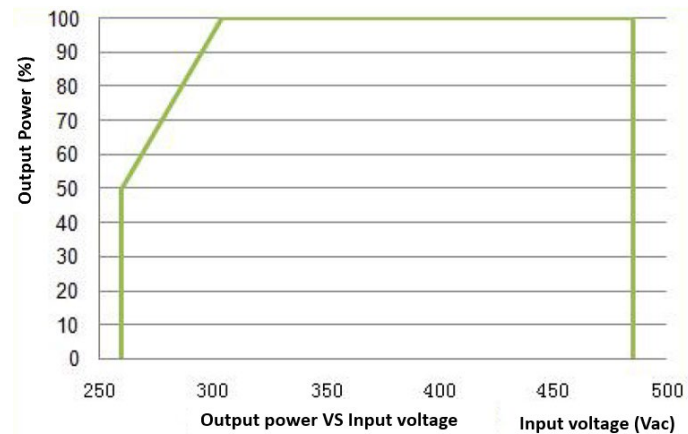
- [A]—Touch screen
- [B]—LED status indicating light and RFID identification area
- [C]—Antenna
- [D]—Meter
- [E]—Lock
- [F]—Air-cooling outlet
- [G]—Emergency stop button
- [G]—Column
- [I]—Charging cable and cable holder

## 2.3 Datasheet

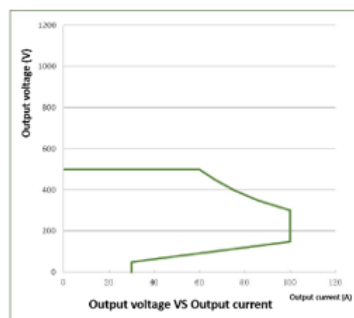
Venus 30		
Power Input	Input Rating	400Vac±10%, 3-Phase, 50/60 Hz, L1+L2+L3+N+PE
	Power Factor	0.98 at nominal output power
	Current THD	≤5% at nominal output power
	Efficiency Rectifier	≥95% at nominal output power
Power Output	Output Interface	1 x CCS2
	Output Power	30kW max. @ 375-1000V
	Output Voltage	200-1000Vdc
	Output Current	80A max.
User Interface & Control	Display	7" LCD Touch Panel
	Support Language	Simplified Chinese, English, Other languages available upon request
	Push Buttons	Emergency stop button
	RFID Reader	ISO/IEC 14443 A/B Mifare RFID reader
Communication	Network Interface	4G, Wi-Fi, Ethernet
	Protocol	OCPP1.6J
Environmental	Operating Temperature	-30°C-50°C
	Storage Temperature	-40°C-70°C
	Humidity	5%-95% no condensation
	Altitude	≤2000m
Mechanical	Ingress Protection	IP55
	Enclosure Protection	IK08
	Cooling	Forced air
	Charging Cable Length	3.4m
	Dimension (W*H*D)	680*440*280mm
	Weight	Approx. 35kg (excluding power module)
	Installation	Wall-mounted, Column-mounted
Regulation	Certificate	CE, TR25

## 2.4 Specification of Power Module

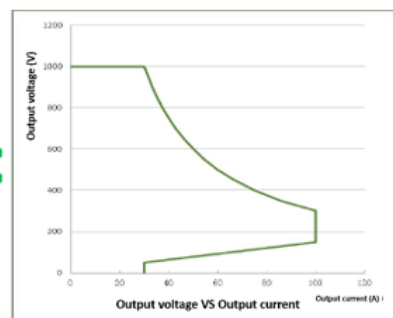
Venus 30 uses Star Charge 30kW 1000V power module, which has a feature curve as follows:



**High-voltage**



**Low-voltage**



**Max output power**

Module	High-voltage	Low-voltage
Parameter	Value	Value
Range of output voltage	200~1000V	150~500V
Rated output voltage	1000V	500V
Rated output current	30A	60A



## 2.5 LED Light Indication

LED Light State	Definition
Steady green	Normal
Flashing green	RFID card identified
Steady yellow	There's some fault which doesn't affect charging.
Steady blue	Charging
Steady red	Fault
Flashing red	Fail to verify RFID Card

## 2.6 Commissioning Tools

Please check and prepare the following tools before commissioning:

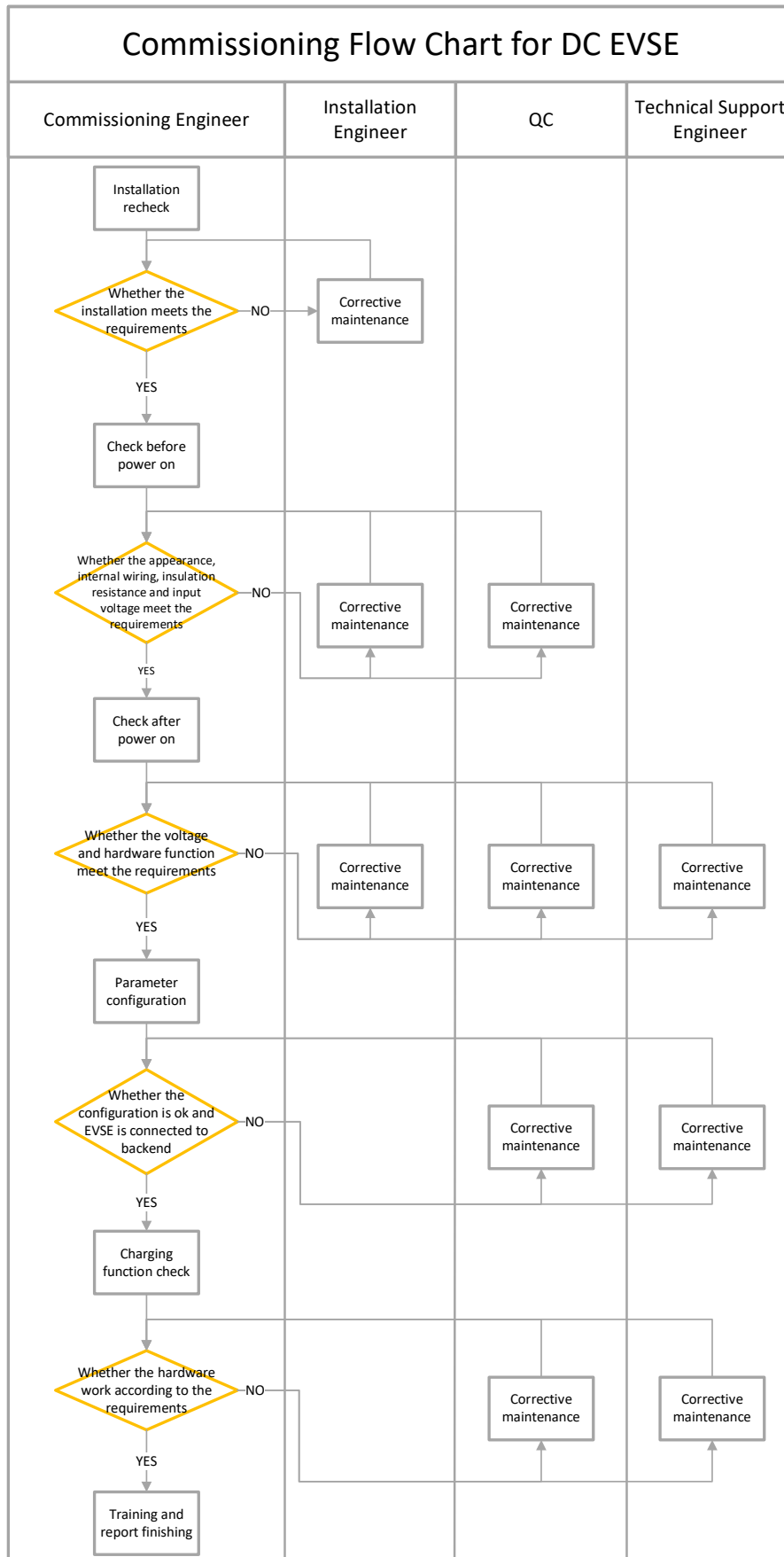
Item	Tools	Usage	Example
1	Laptop	Configure the settings, And read the log	
2	Ethernet cable	Web configuration	
3	J – LINK tool	Programming	
4	RS232 tool and adaptor	Read the log, Programming	
5	TF Card and reader	Programming	
6	Screwdriver set	Assemble and disassemble the screws	
7	Wrench set	Standby	
8	Electrical multimeter	Electric measurement	
9	Megohmmeter	Test the insulation	
10	Safety Sign	Warn potential danger on site	

11	Electrician protective Gloves	Safety protection	
12	Electrician protective Shoes		

### 3 Commissioning Process

#### 3.1 Commissioning Flowchart

The commissioning flowchart of DC EVSE is as follow:





**Warning!**

During the commissioning process, the engineer cannot leave when the cabinet is opened and must remind any other people of staying far away. Make sure that all doors of the cabinet are closed when leaving the commissioning site.

### 3.2 Installation Recheck

Commissioning must be operated by the engineers qualified by local special operation regulations.

The installation must be carried out in accordance with the requirements of “Installation Manual”. The local laws and regulations must be observed during construction and installation. Any problem relating to the installation found during the recheck must be recorded accordingly in time.



**Notice!**


Before commissioning, make each procedure of this part must be carried out carefully and protective equipment (protective shoes, gloves and etc.) must be worn. Refer to local regulations and policies for safe operation requirement.

#### 3.2.1 Basic Check

- 1) Foundation: whether fixed and sealed well.
- 2) Input power cable: Check whether the specification of all the cable used meet the requirement of EVSE, whether there is any break, damage, or scratch, whether the electrical connection is correct and complete, whether the connection is stable and solid, whether the grounding is reliable.
- 3) Grounding/Insulation resistance: The external grounding resistance must be  $\leq 4\Omega$ , the internal grounding resistance must be  $\leq 0.1\Omega$ . The inlet cable insulation resistance must be  $\geq 10M\Omega$ . The specific value should comply with the requirements of local standard.
- 4) Outside appearance of EVSE: The surface of cabinet is intact without any dirt, and the charging cable is not broken or damaged. All doors of cabinet can be opened, closed and locked. The EVSE is not tilting, shaking or reverse assembling.
- 5) Nameplate and sign: Check whether nameplate and other signs are printed correct and complete, whether the safety sign is posted in correct place.
- 6) Documents with EVSE: Check with the customer whether the configuration information of the EVSE on site complies with the contract requirements and whether the accessories are complete.



- 7) Others: Whether the fireproof material inside of the EVSE is in place to prevent insects or dirt from entering the cabinet.

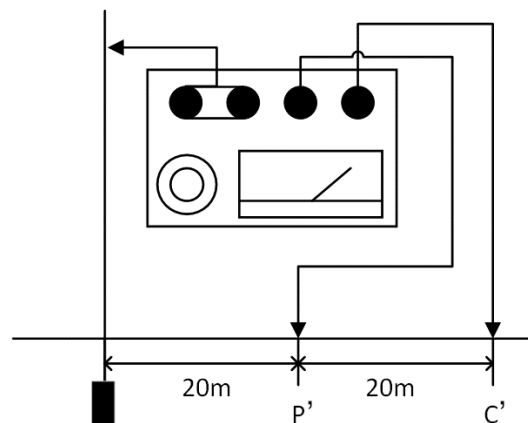
	<p><b>Notice!</b></p> <p>It's unnecessary to check again, if the checkpoint is accepted and listed in the construction acceptance report. The requirement listed above is the basic requirement. It is subject to the local laws and regulations.</p>
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### 3.2.2 Grounding Resistance Check

Test the grounding resistance inside of the EVSE by the grounding resistance tester, the value of grounding resistance should be  $\leq 0.1\Omega$ .

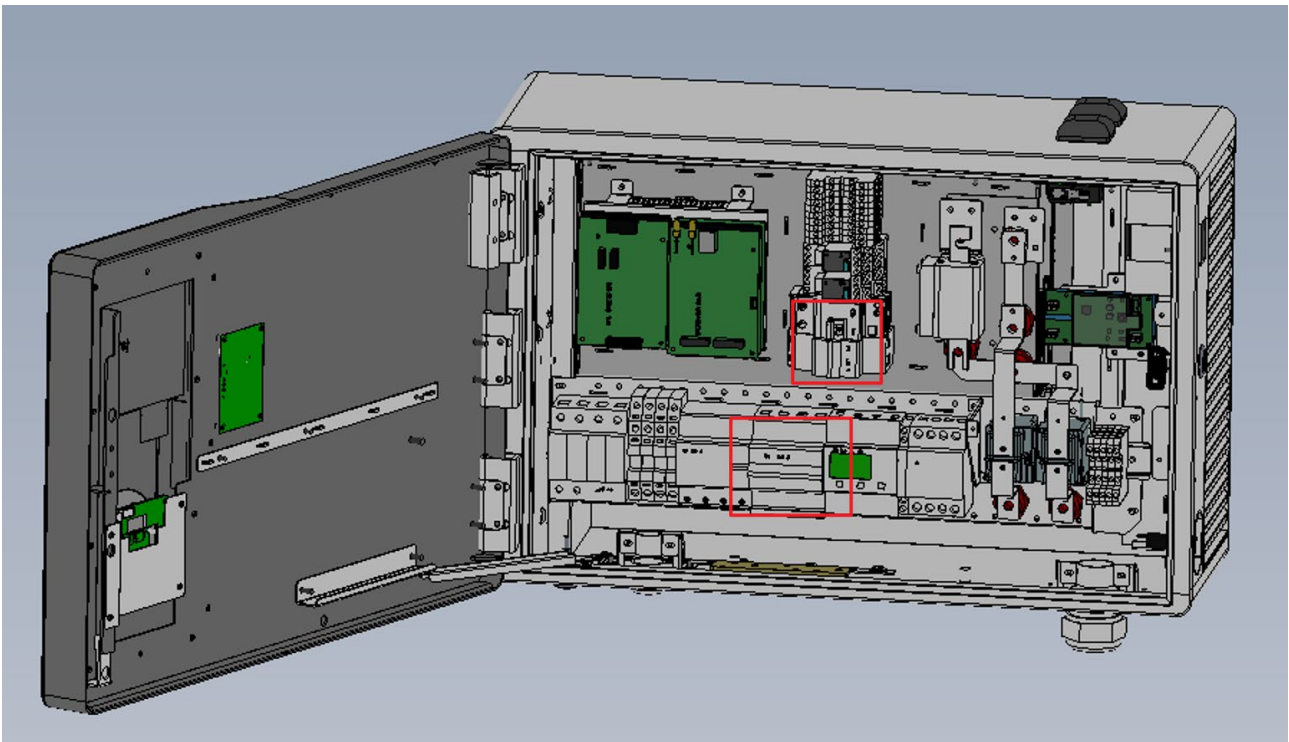
Regulation of connecting method when test the grounding resistance:

The E terminal connects to 5m cable, P terminal connects to 20m cable, C terminal connects to 40m cable. The other end of each cable separately connects to the grounding terminal E' of measured objected, potential probe P' and current probe C'. And E', P' and C' must be in the straight line with a distance of 20m. Connect the 2 E terminals on the tester and measure according to the connection as shown in the following picture.

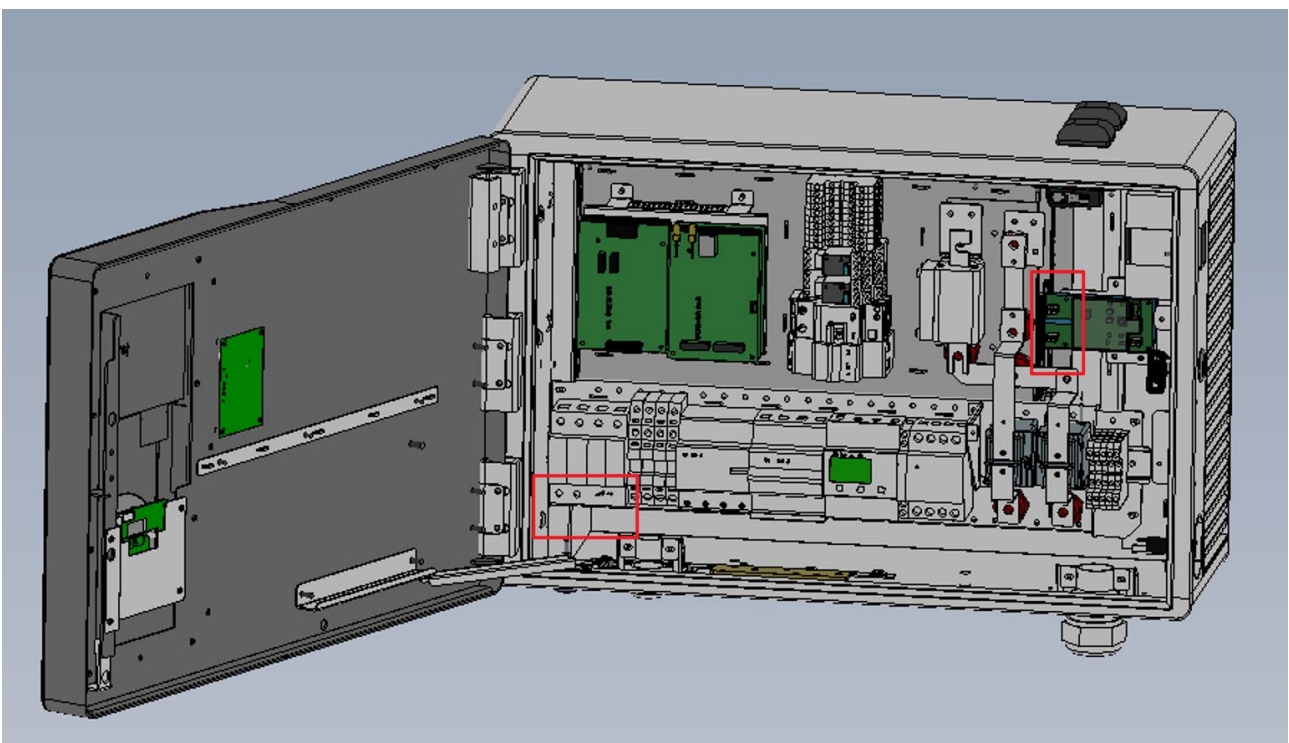


### 3.2.3 Insulation Resistance Check of Input Power Cable

**Step 1:** Disconnect the switch in the power distribution cabinet corresponding to the EVSE; disconnect the switch inside of the EVSE.

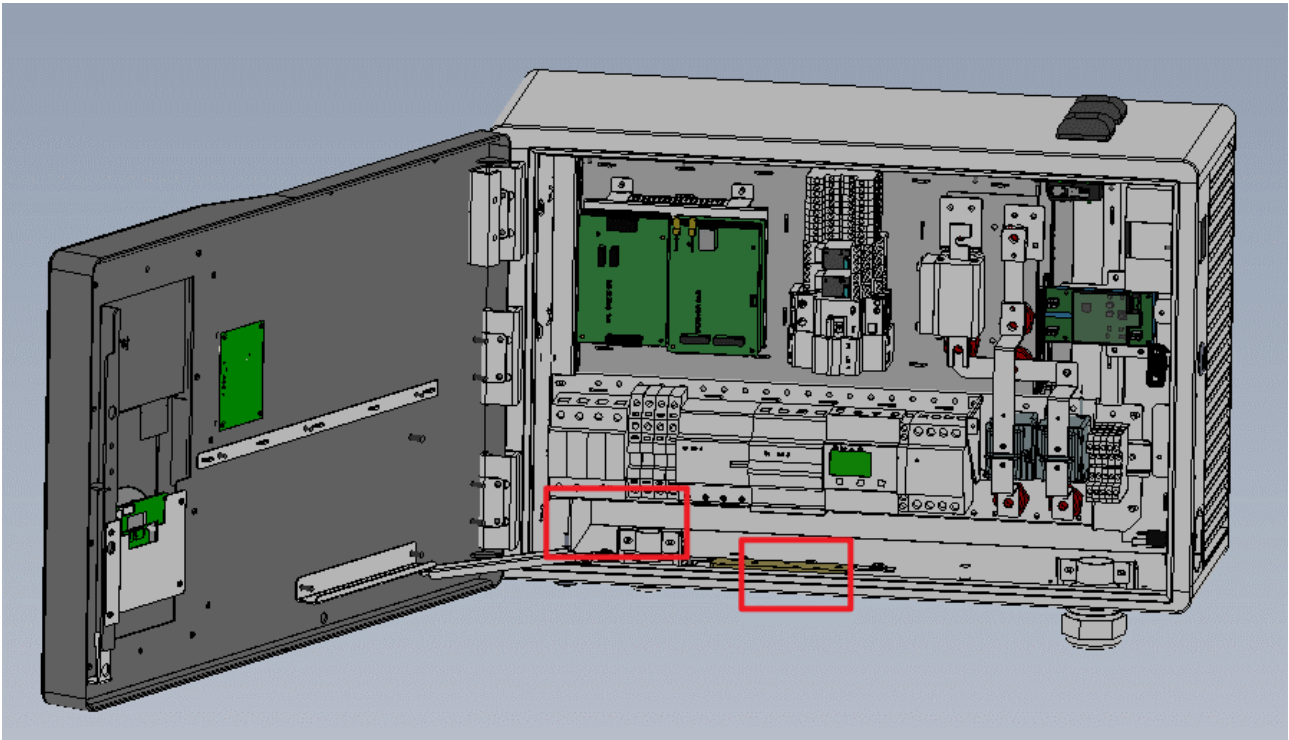


**Step 2:** Take out all the power modules inside of the EVSE, detach it from the socket at the end of each module, remove the grounding line of the surge protector, and remove the DC+ and DC- ports on the insulation testing board.



**Step 3:** Get the megohmmeter ready.

**Step 4:** Connect the megohmmeter to item to be tested. The black test lead E connects to the PE terminal of EVSE, connect red test lead L to the inlet cable L1, L2, L3 and N of EVSE. The insulation value should be  $\geq 10\text{M}\Omega$ . The specific value should comply with the requirement of local standard.



**Step 5:** Recover the situation inside of the EVSE to the original state after the test.

### 3.3 Check before Power on

#### 3.3.1 Using Condition Check

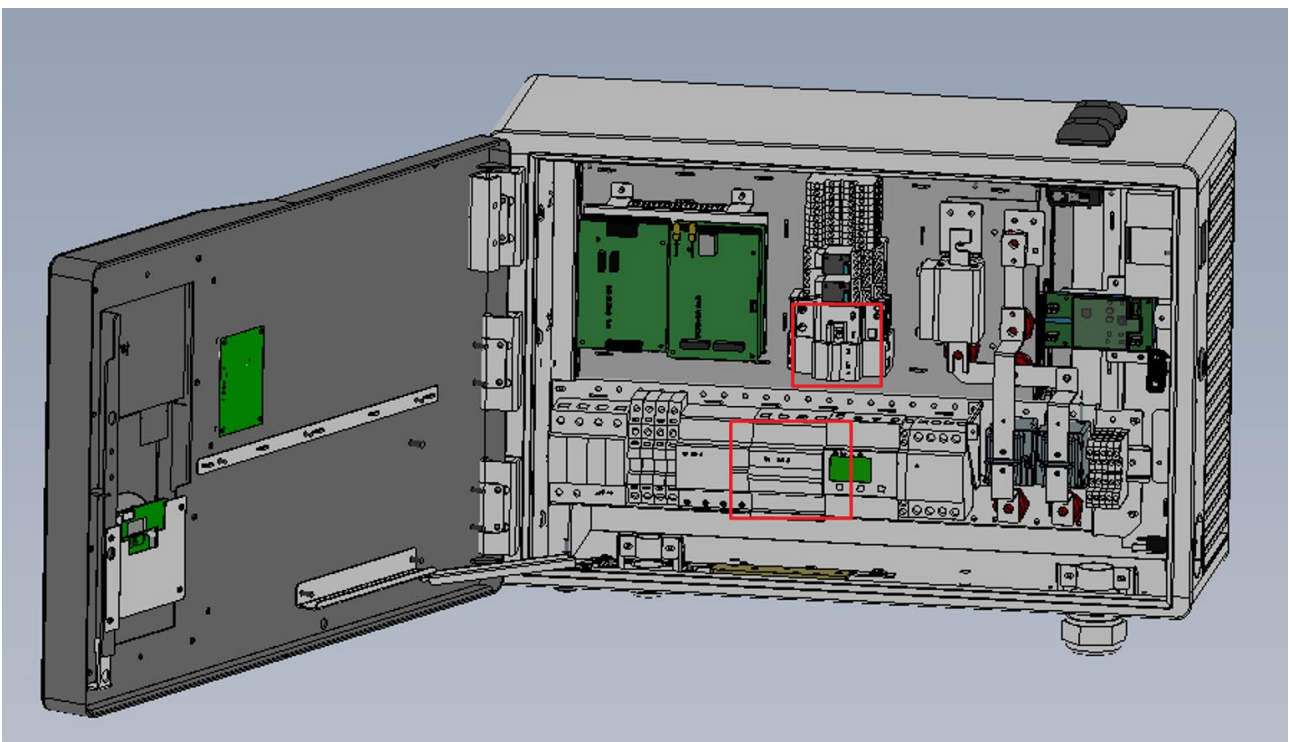
- 1) Working temperature:  $-30^{\circ}\text{C}\sim 50^{\circ}\text{C}$ ;
- 2) Working humidity: 5%~95%, no condensation;
- 3) Working altitude:  $\leq 2000\text{m}$

#### 3.3.2 Internal Wiring Check

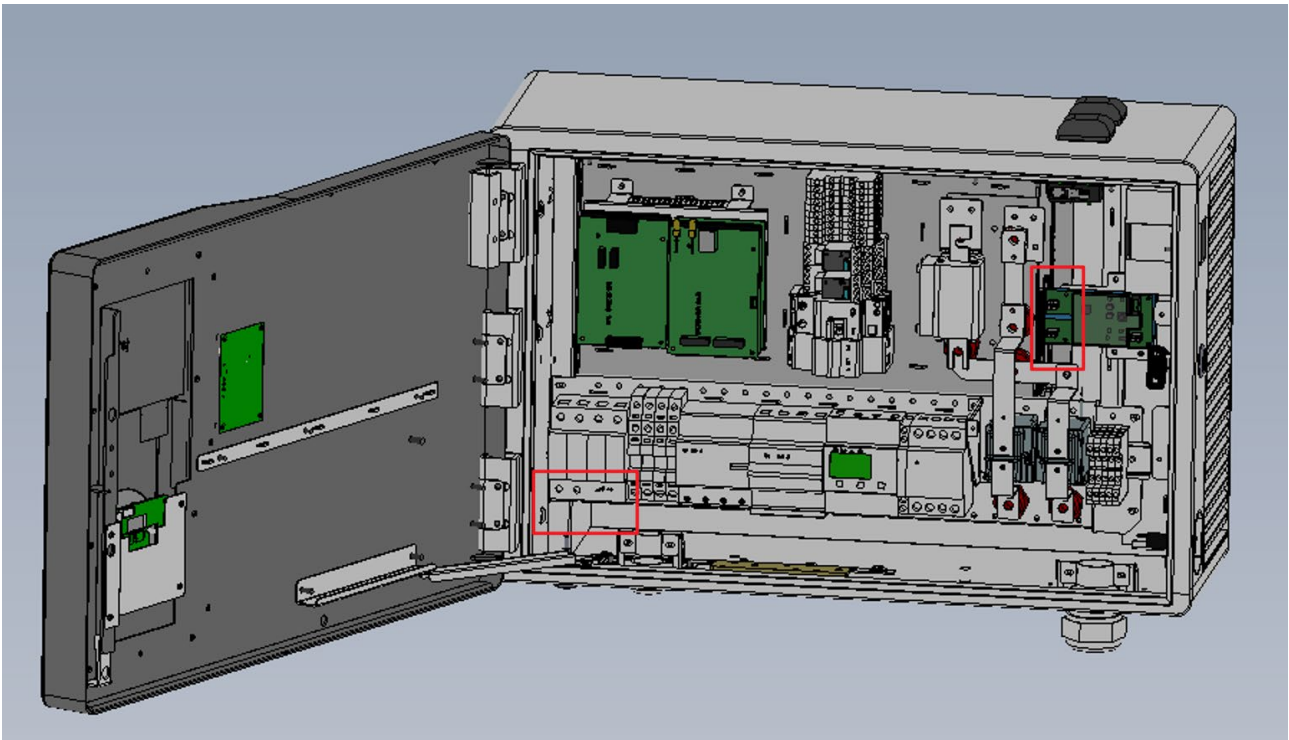
- 1) Short circuit: Check the input power cable connecting power distribution cabinet to the EVSE. Check whether there's any short circuit between 3-phase live wire, neutral wire and grounding wire and whether the phase sequence is correct. Refer to the Appendix 2 for specific checkpoint.
- 2) Loose wire and fasten screw: Check whether the fastening torque of each line connection, connector, terminal with screw and brass plate can meet the requirement, and whether there's any looseness, poor connection and etc. Refer to the appendix 2 for specific checkpoint.
- 3) Voltage check before power on: Before powering on the equipment, check whether the input voltage of the main breaker inside of the EVSE is correct, and make sure there's no fault such as phase loss, overvoltage, undervoltage and wrong phase sequence.

#### 3.3.3 Check the Insulation Resistance of Charging Cable

**Step 1:** Disconnect the switch in the power distribution cabinet corresponding to the EVSE; disconnect the switch inside of the EVSE.

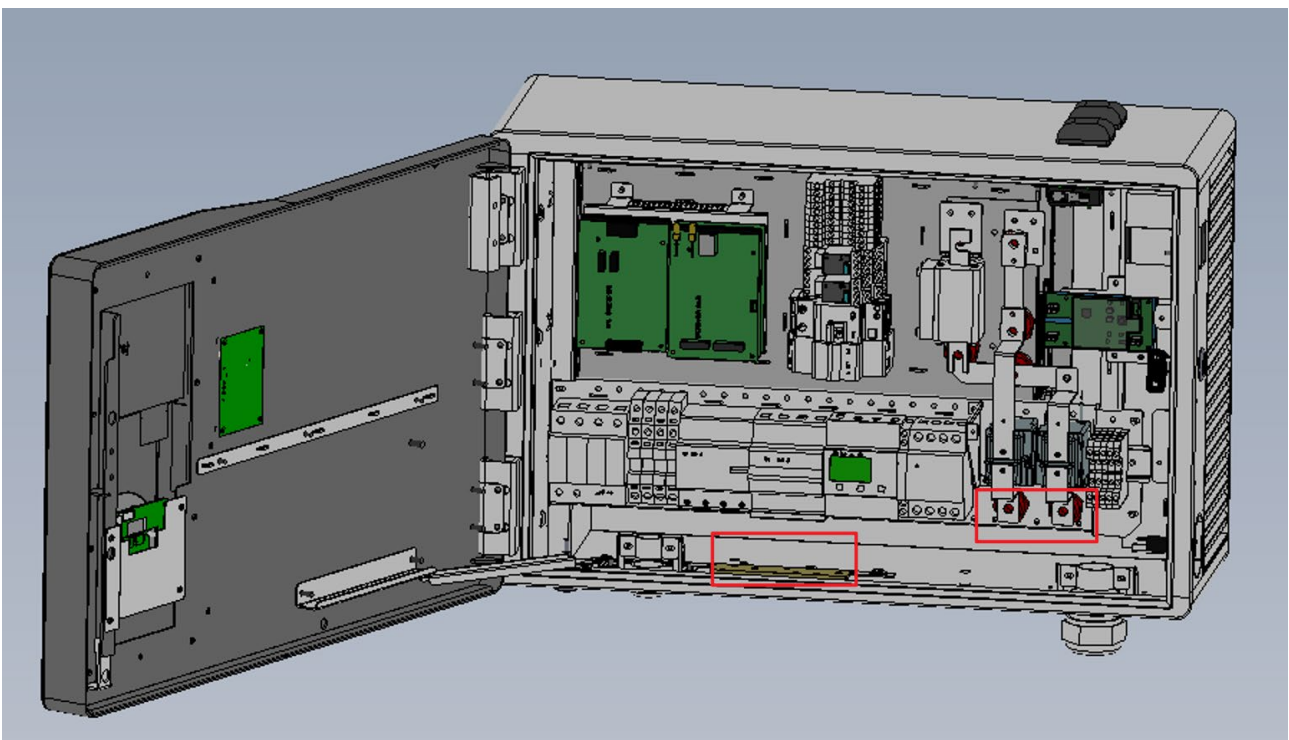


**Step 2:** Take out all the power modules inside of the EVSE, detach it from the socket at the end of each module, remove the grounding line of the surge protector, and remove the DC+ and DC- ports on the insulation testing board.



**Step 3:** Get the megohmmeter ready

**Step 4:** Connect the megohmmeter to the item to be tested. The black test lead E connects to the PE terminal of EVSE, connect red test lead L to the DC+ copper bar or DC- copper bar of EVSE. The insulation value under 500V should be  $> 1M\Omega$ .



**Step 5:** Recover the situation inside of the EVSE to the original state after the test.

### 3.4 Check after Power on

**Notice!**

The equipment must be powered on strictly in accordance with the following steps. Pay attention to the risk of electric shock, and wear protective gloves and shoes.

#### 3.4.1 Basic Check

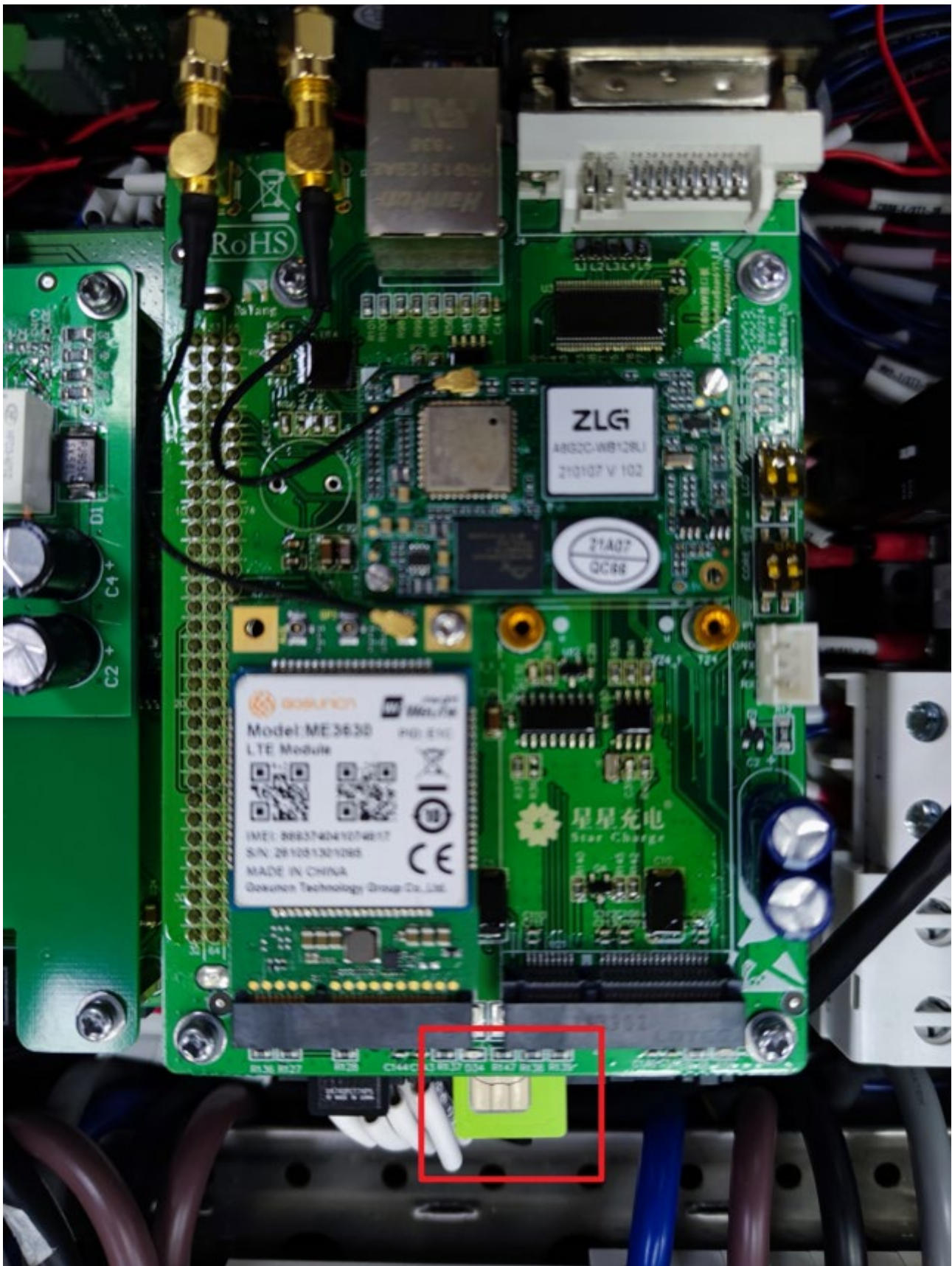
- 1) Voltage check after power on: Check whether the output voltage of the main breaker inside of the EVSE is correct, and make sure there's no fault such phase loss, overvoltage, undervoltage and wrong phase sequence.
- 2) Touch screen: Check whether the touch screen displays normal, has obvious dead pixel, displays words clearly, is operated well and clear UI.
- 3) LED indicator light: Check whether the LED indicator light on the EVSE works as the design requirement.
- 4) Switching power supply: Switch power supply can provide stable voltage power. Use electrical multimeter to check whether the output voltage of switching power supply inside of the EVSE meets the requirement.

## 3.4.2 Web Configuration

### 3.4.2.1 Connection

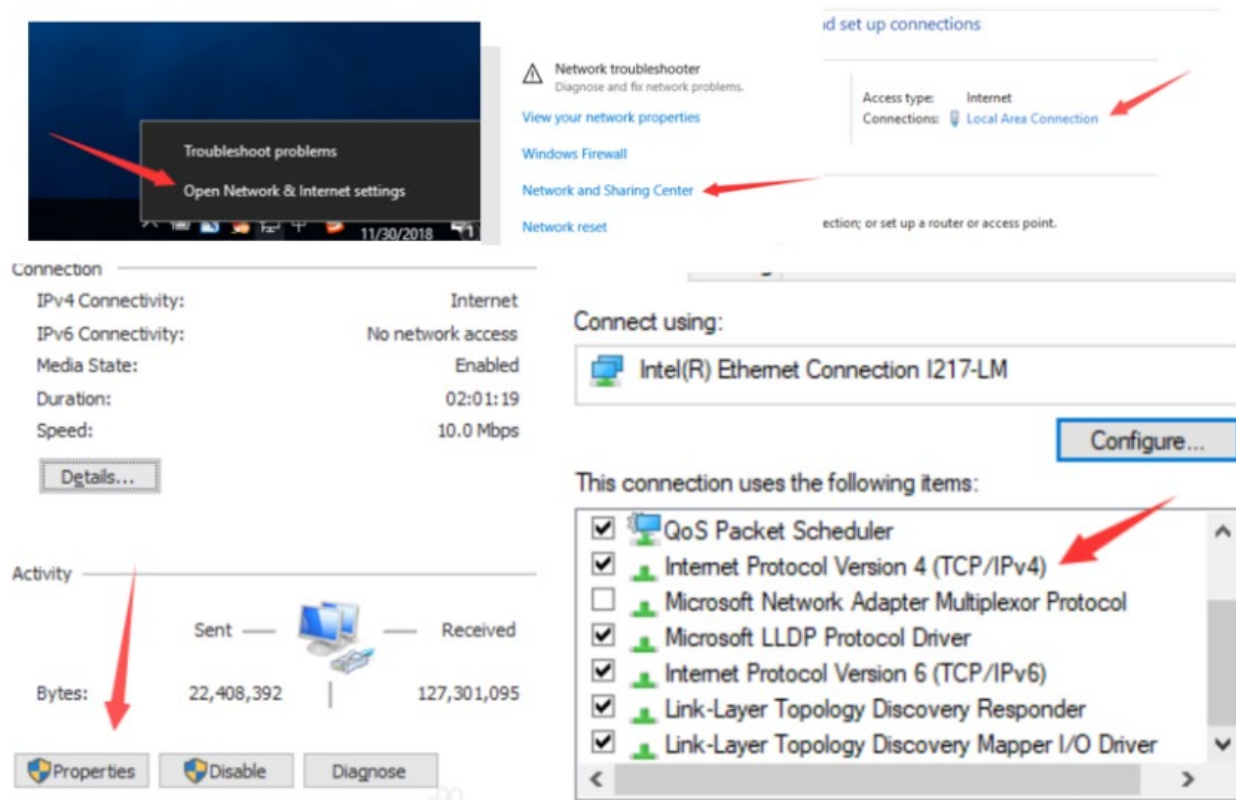
To connect to the network, insert the SIM (mini-SIM) according to the location of 4G communication module.





Connect the main board to the laptop by an Ethernet cable, and set the IP address as shown in the following picture (192.168.88.xxx, xxx can be any number but 206)





**Troubleshoot problems**  
Open Network & Internet settings

**Network troubleshooter**  
Diagnose and fix network problems.

View your network properties  
Windows Firewall  
Network and Sharing Center  
Network reset

Access type: Internet  
Connections: Local Area Connection

Connection

IPv4 Connectivity:	Internet
IPv6 Connectivity:	No network access
Media State:	Enabled
Duration:	02:01:19
Speed:	10.0 Mbps

Details...

Activity

Bytes:	Sent: 22,408,392	Received: 127,301,095
--------	------------------	-----------------------

Properties Disable Diagnose

Connect using:  
Intel(R) Ethernet Connection I217-LM  
Configure...

This connection uses the following items:

- QoS Packet Scheduler
- Internet Protocol Version 4 (TCP/IPv4)
- Microsoft Network Adapter Multiplexor Protocol
- Microsoft LLDP Protocol Driver
- Internet Protocol Version 6 (TCP/IPv6)
- Link-Layer Topology Discovery Responder
- Link-Layer Topology Discovery Mapper I/O Driver

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically

Use the following IP address:

IP address:	192 . 168 . 88 . 200
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192 . 168 . 88 . 1

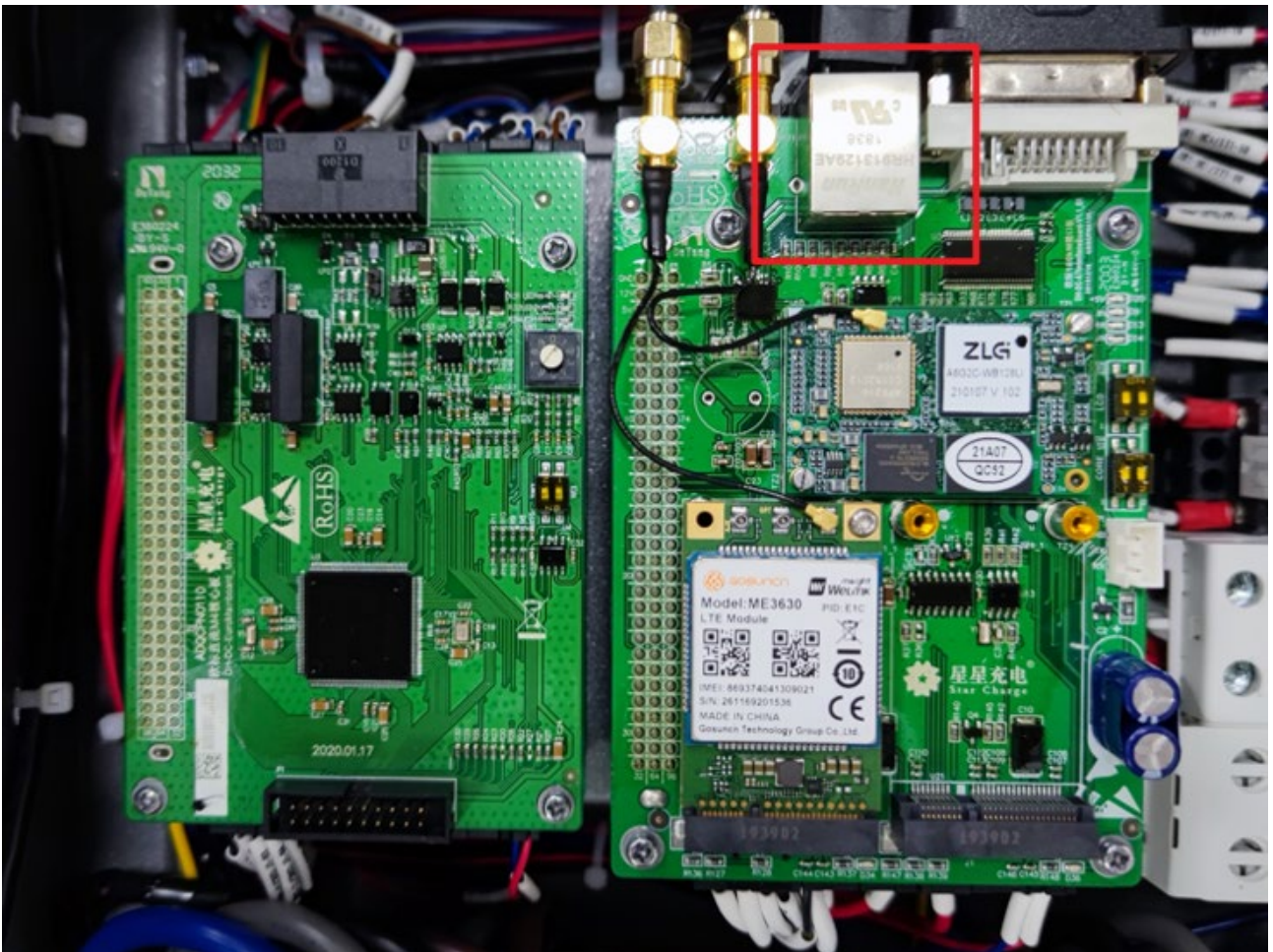
Obtain DNS server address automatically

Use the following DNS server addresses:

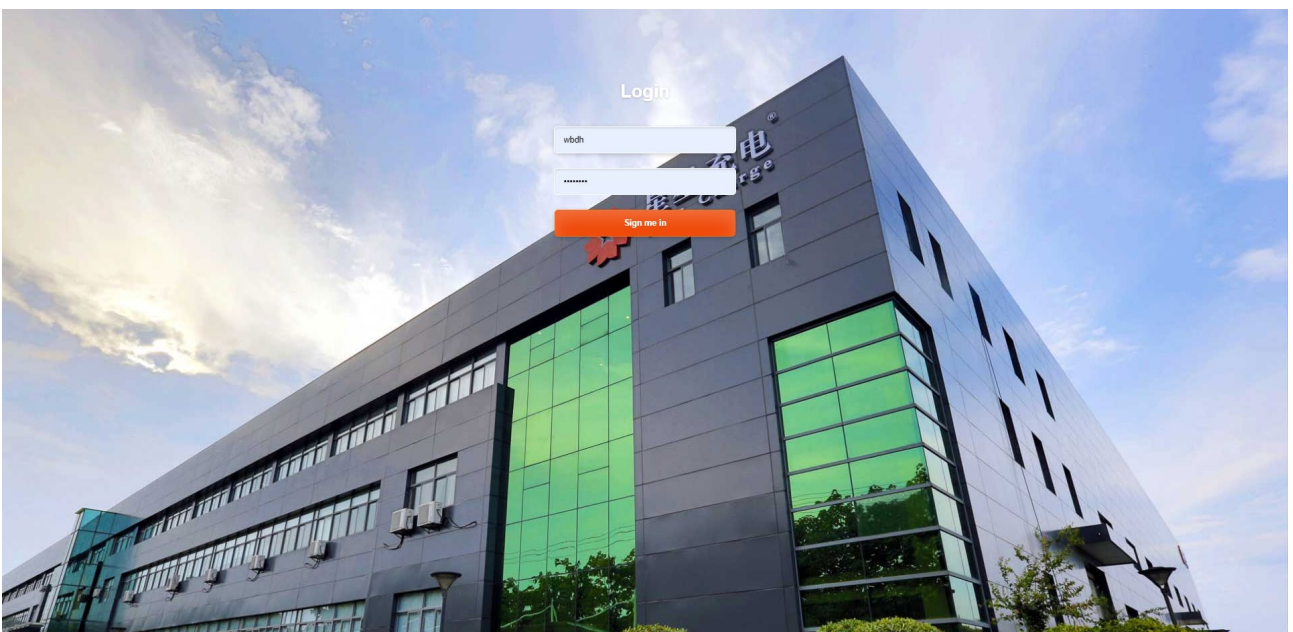
Preferred DNS server:	. . .
Alternate DNS server:	. . .

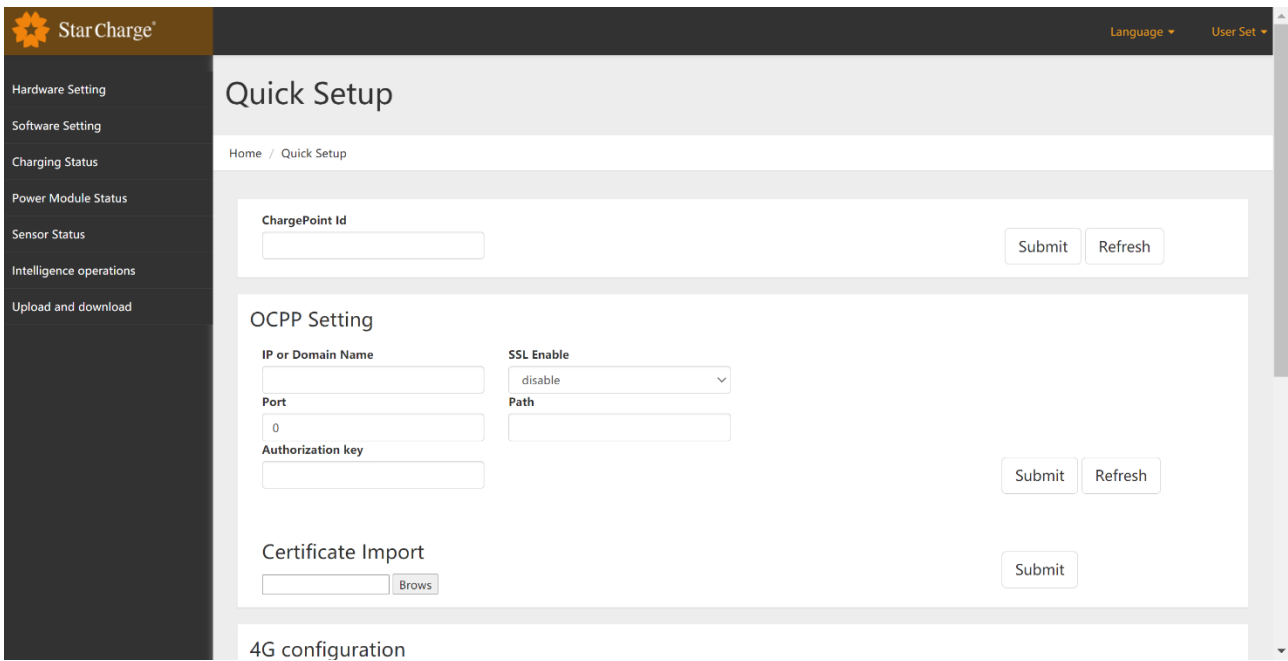
Validate settings upon exit

Advanced...

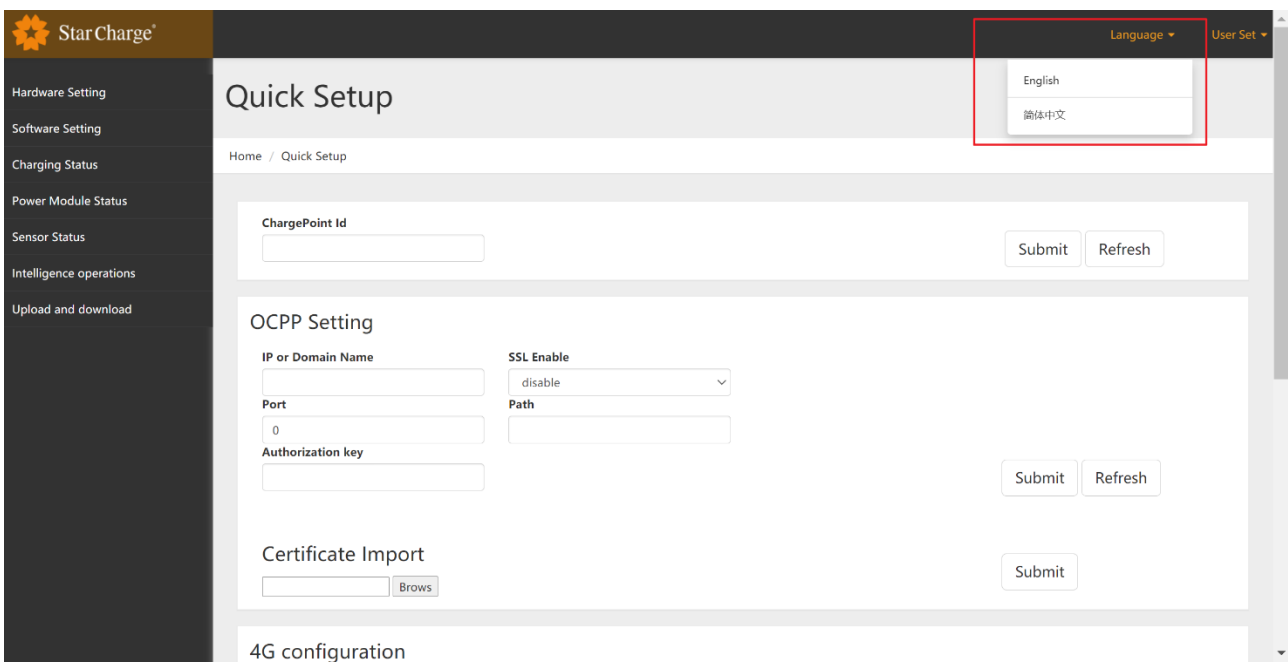


Open the browser and input 192.168.88.206, log in with username (xxcd) and password (28912891)





Change the language:



### 3.4.2.2 Software Update

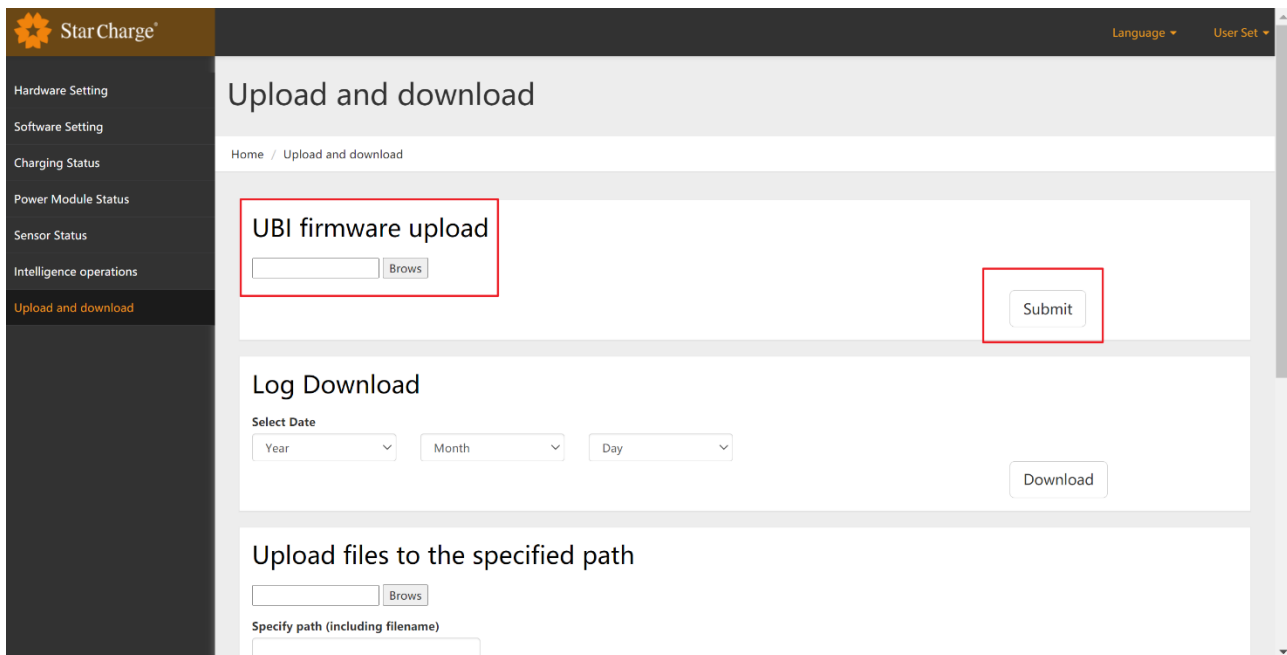


#### Notice!

Program update is not the necessary step of commissioning. Contact with Star Charge engineer for specific program version information.

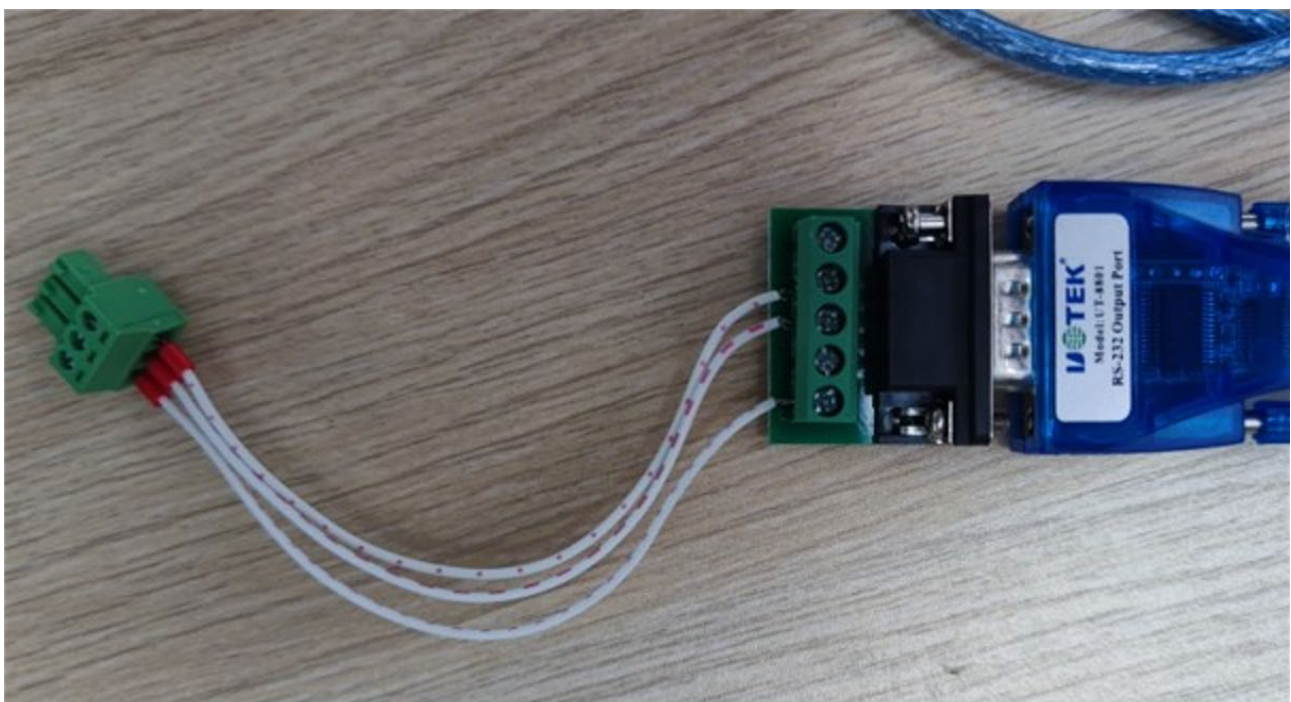
#### Firmware Update:

Click “Upload and download” – “Brows” – “firmware.zip” – “Submit”



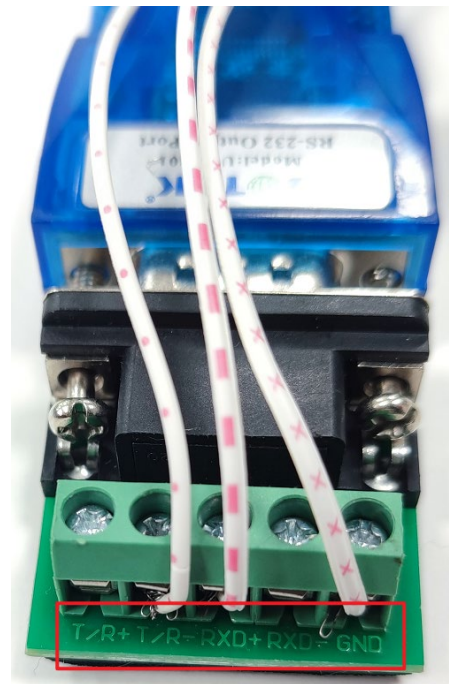
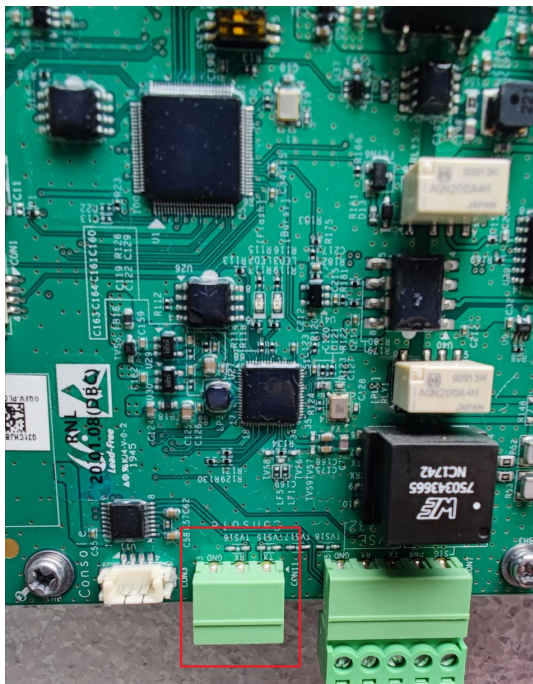
#### PLC Update:


- 1) Connect to RS232 tool

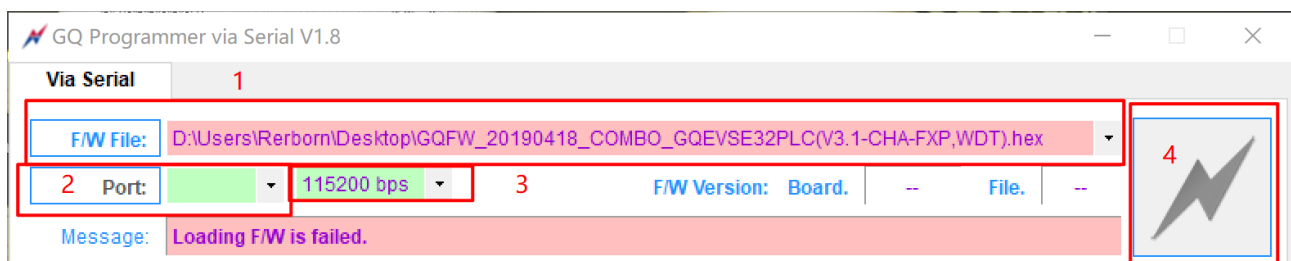


2) Shown as below, connect RS 232 tool to port on PLC board.

T/R- to TX, RXD+ to RX, GND to GND



- 3) Open programing software “”
- 4) Follow the steps shown below to update

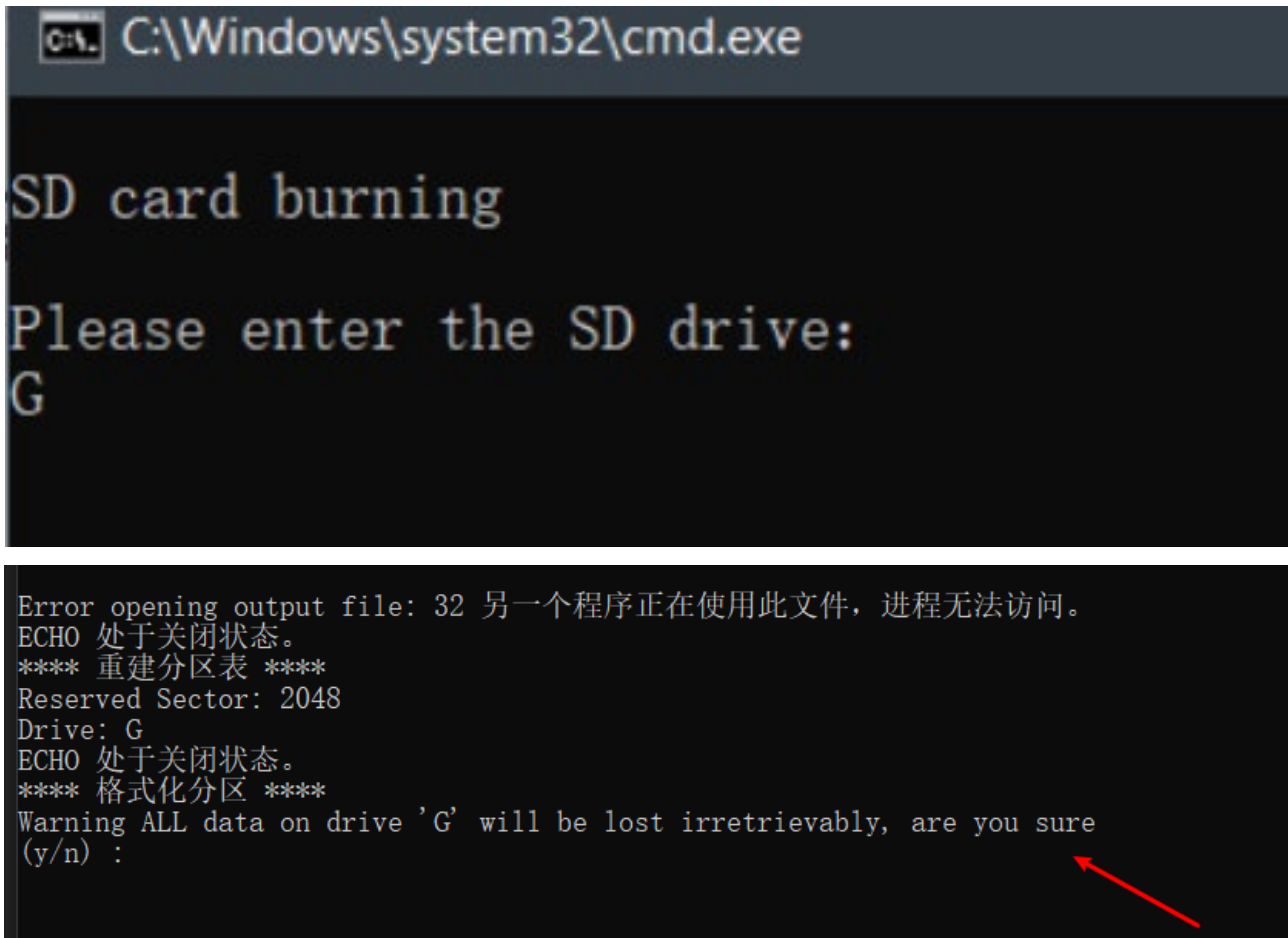


### Update via TF Card:

- 1) Insert TF card into laptop adaptor (specific card for programming, don't use the TF card put in the

EVSE).

- 2) Enter the folder (A6G2C-WB128LI-Flash), double click the file (m6g2c\_burn\_script.bat), enter the driver of TF card. For example, the driver of my TF card is G. If there's warning shown as picture, enter y to confirm and wait for the file to be copied completely. After that, press any key to exit and finish the programming TF card.



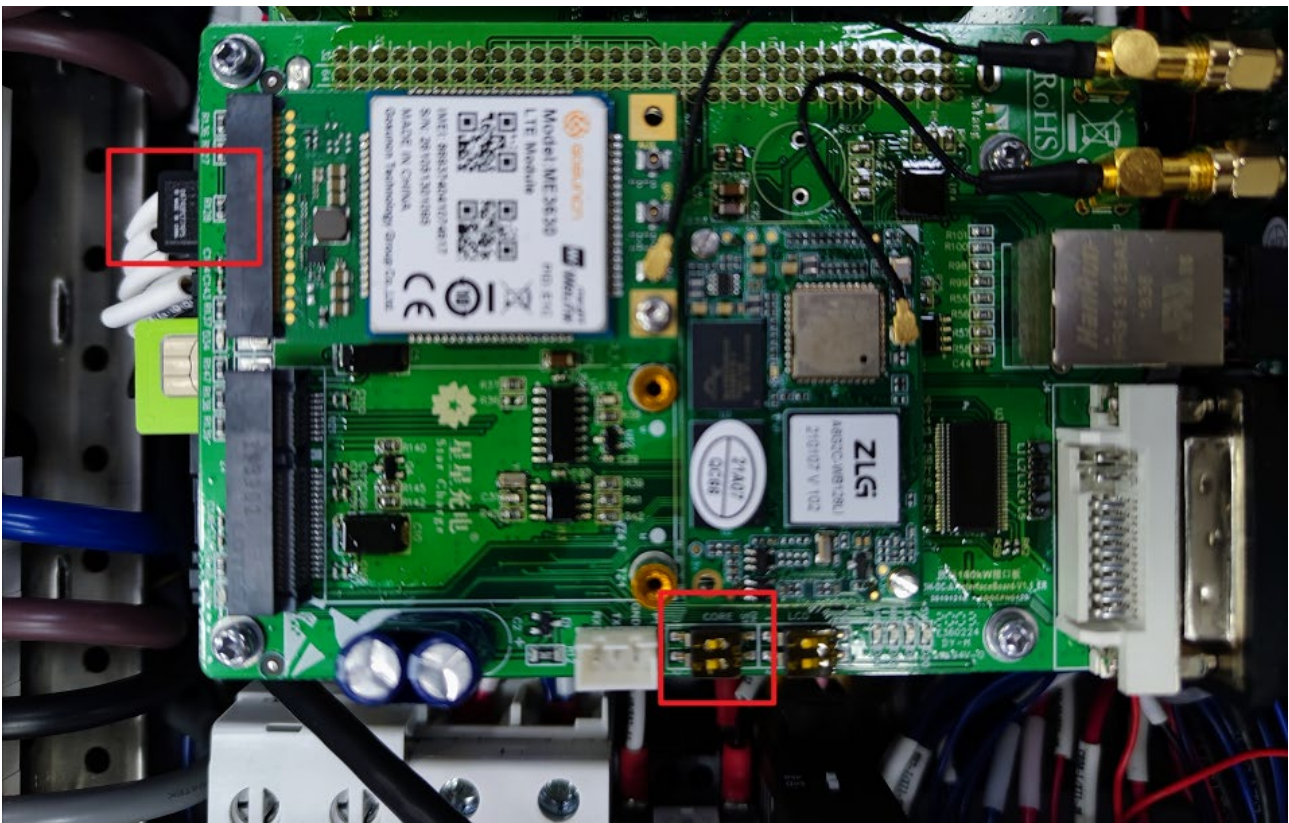
```
C:\Windows\system32\cmd.exe

SD card burning

Please enter the SD drive:
G

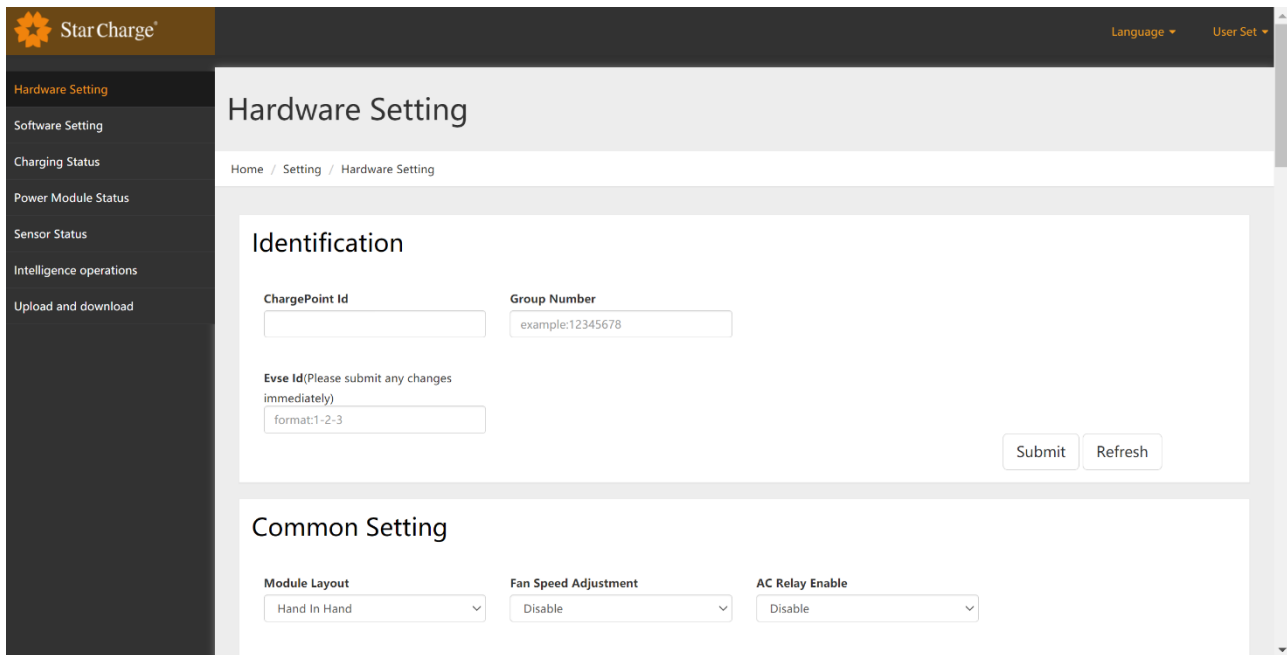
Error opening output file: 32 另一个程序正在使用此文件，进程无法访问。
ECHO 处于关闭状态。
**** 重建分区表 ****
Reserved Sector: 2048
Drive: G
ECHO 处于关闭状态。
**** 格式化分区 ****
Warning ALL data on drive 'G' will be lost irretrievably, are you sure
(y/n) :
```

- 3) Insert TF card, switch both 2 switches marked red shown in the picture on. (Very important!)

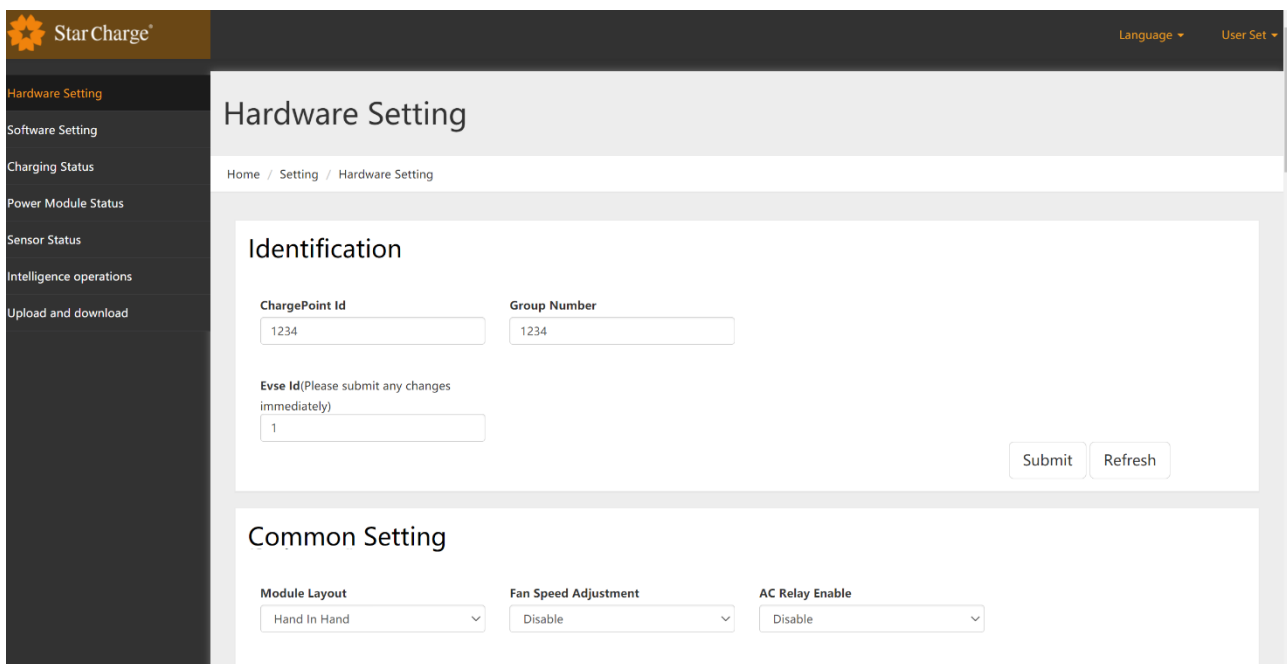


- 4) Power on again, the LED light on the core board will be flashing all the time or steady lighting during the updating.
- 5) When the LED light on the core board is off (flashing all the time or steady lighting before), wait for 30 seconds and then power offer, switch both 2 switches back to position 1 and 2 (very important!).
- 6) Insert the TF card inserted in the module before, power on again and finish programming. It will take a little longer for first reboot.

### 3.4.2.3 Web-Hardware Setting




- 1) Enter ChargerPoint ID (if no, default is 1234), Group Number (if no, default is 1234), EVSE ID: 1
- 2) Click “Submit”.



The default settings are shown as below:




Language ▾ User Set ▾

## Charging Gun Setting

### EVSE 1

#### Conn 1

Type CCS2 ▾

Max Voltage(V)

Min Voltage(V)


Max Current(A)

Max Temperatur(°C)

Max Power(kW)

Meter Insulation Board PLC Board

Type A ▾


Language ▾ User Set ▾

## Power Module Setting

Max Power(kW)

Under-voltage Protection(V)

Over-voltage Protection(V)

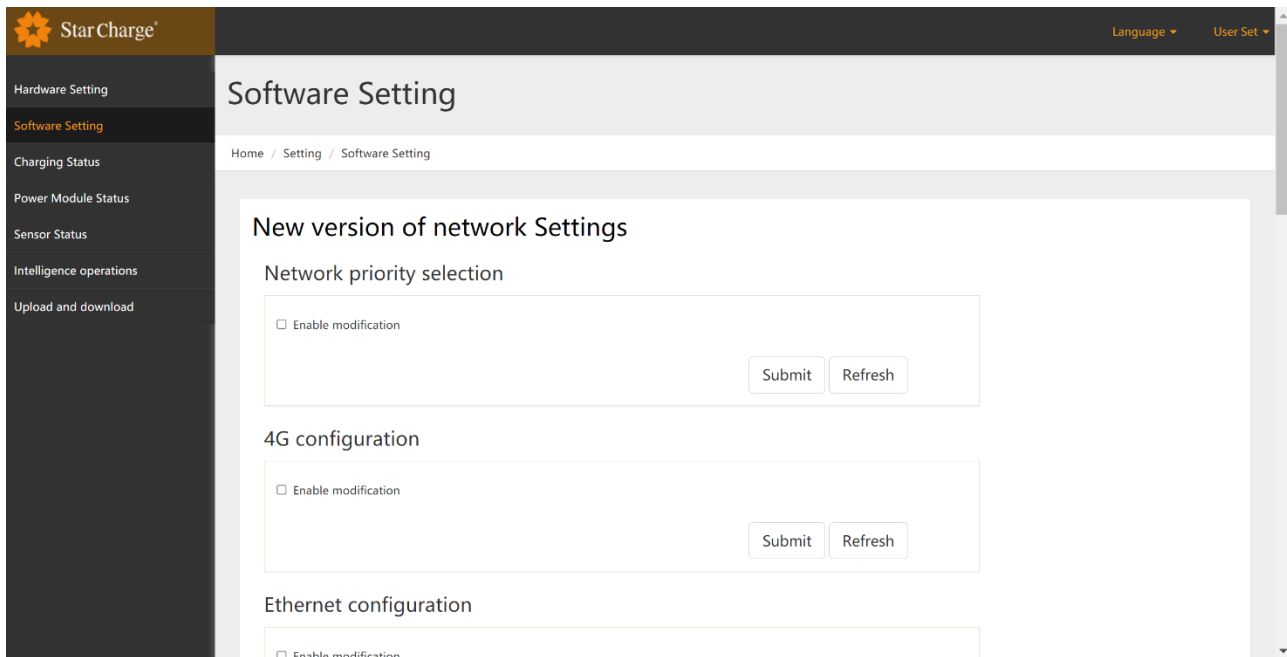
Module Number

Module Type StarCharge 30KW ▾

Serial Number	Module SN Number	Module Group Number
1	1	1
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

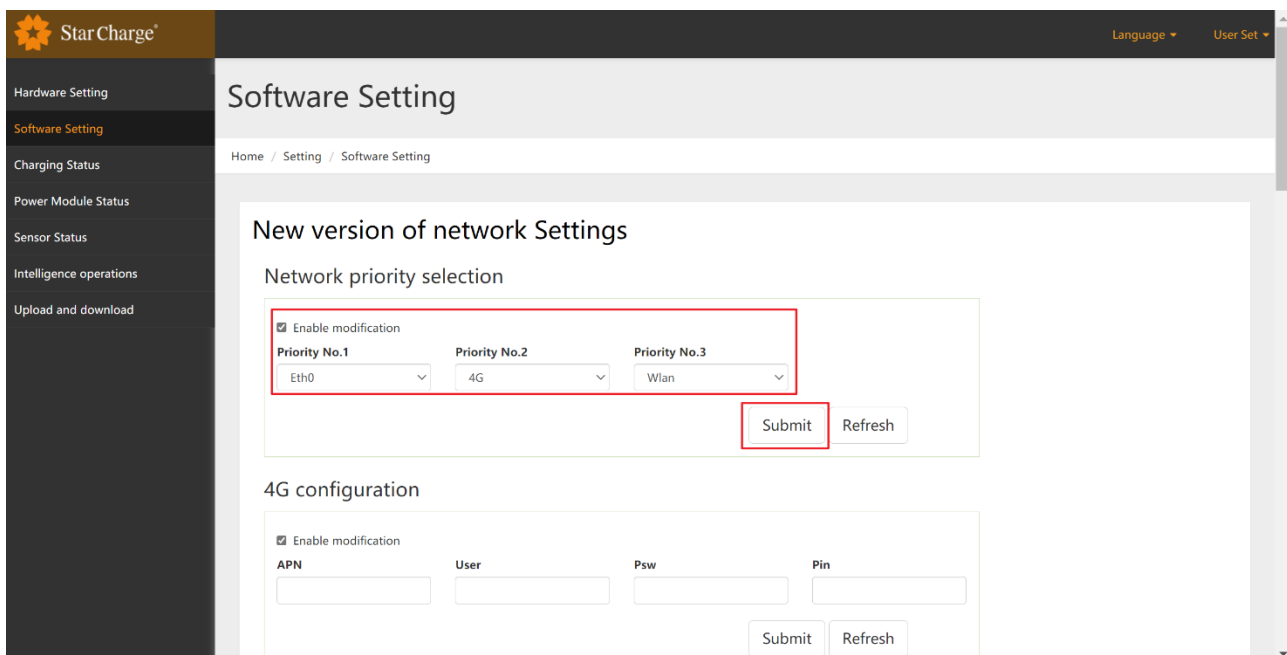
Serial Number	Module SN Number	Module Group Number
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		

### 3.4.2.4 Web-Software Setting



#### Network Priority:

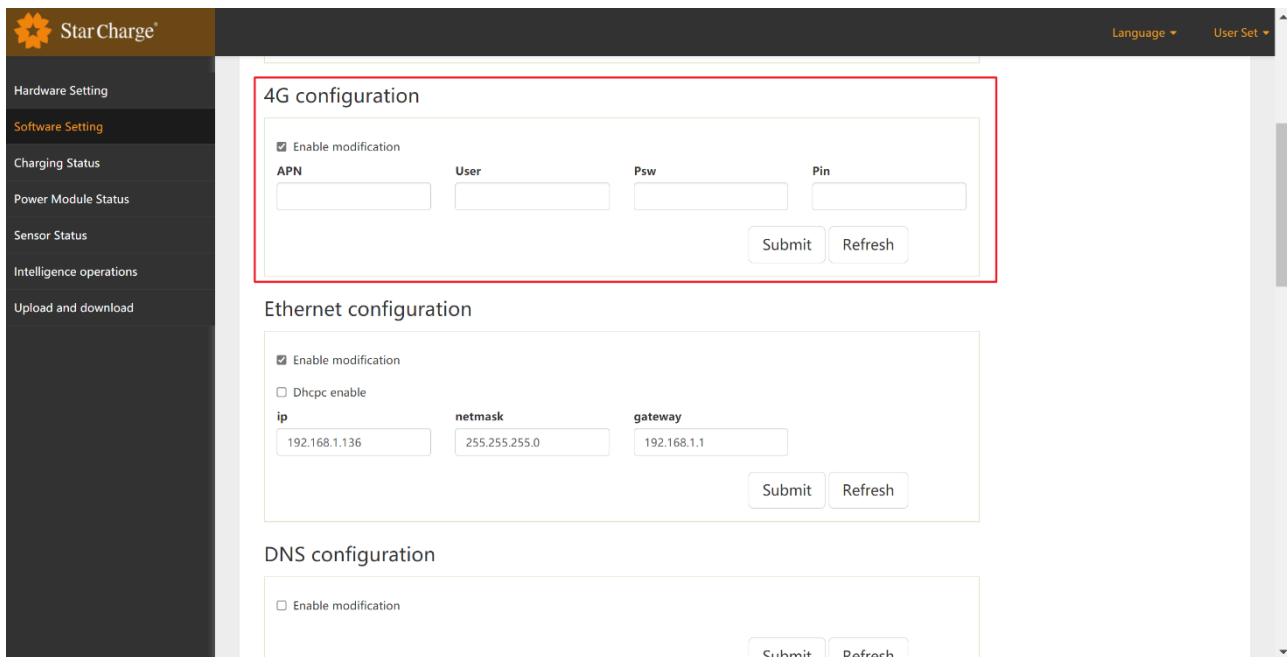
- 1) Find “Network priority selection”
- 2) Click “Enable modification”
- 3) Set the priority, Ethernet>4G>WIFI for default
- 4) Click “Submit”.



#### 4G:

- 1) Find “4G configuration”

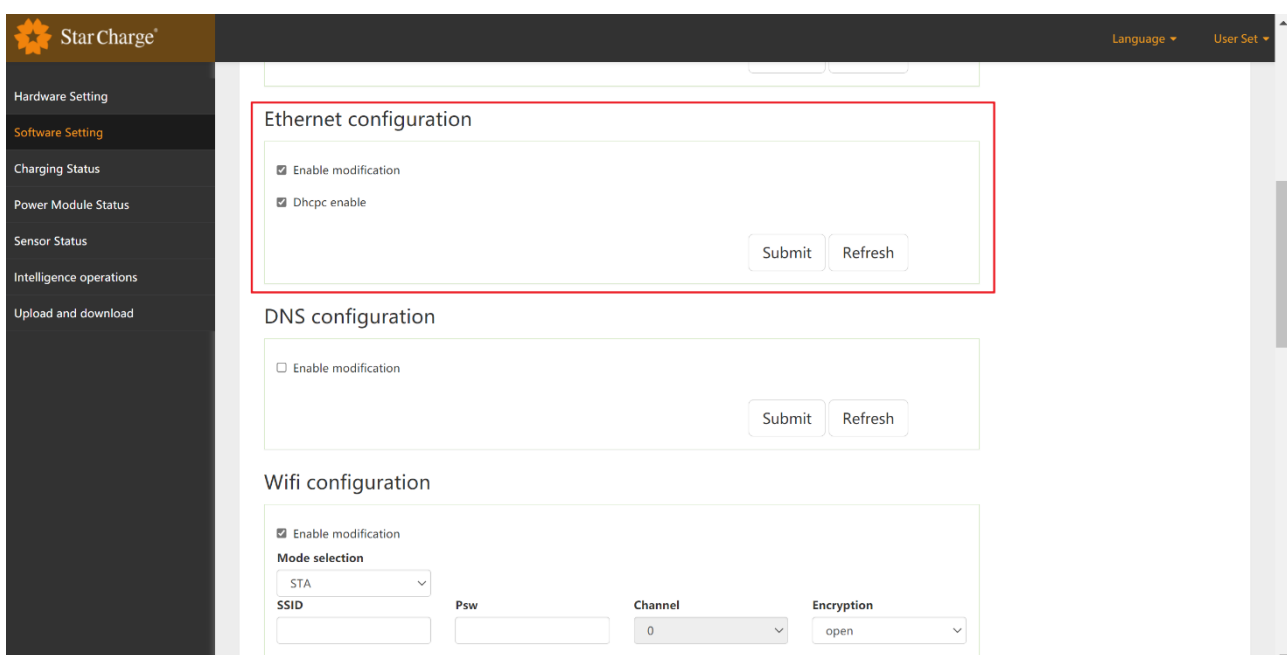
- 2) Click “Enable modification”
- 3) Set APN, User, Psw, Pin according to actual usage
- 4) Click “Submit”.



The screenshot shows the Star Charge web interface with a sidebar on the left containing menu items: Hardware Setting, Software Setting (highlighted), Charging Status, Power Module Status, Sensor Status, Intelligence operations, and Upload and download. The main content area is titled '4G configuration' and is enclosed in a red box. It contains a checkbox for 'Enable modification' which is checked. Below it are four input fields labeled 'APN', 'User', 'Psw', and 'Pin'. At the bottom of this section are 'Submit' and 'Refresh' buttons. Below the 4G configuration is the 'Ethernet configuration' section, which also has a checked 'Enable modification' checkbox and an unchecked 'Dhcp enable' checkbox. It features three input fields for 'ip' (192.168.1.136), 'netmask' (255.255.255.0), and 'gateway' (192.168.1.1), with 'Submit' and 'Refresh' buttons below. The 'DNS configuration' section is partially visible at the bottom, showing an unchecked 'Enable modification' checkbox and 'Submit' and 'Refresh' buttons.

### Ethernet:

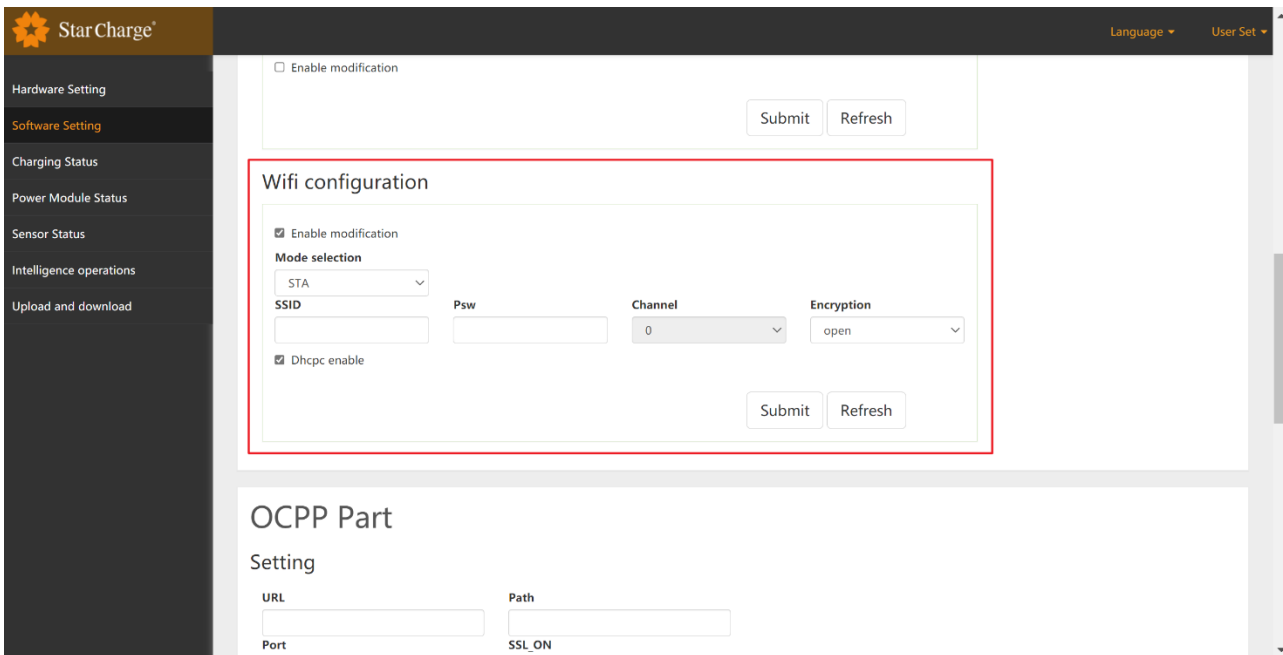
- 1) Connect Ethernet cable
- 2) Find “Ethernet configuration”
- 3) Click “Dhcp enable”
- 4) Click “Submit”.



The screenshot shows the Star Charge web interface with the same sidebar as the previous image. The main content area is titled 'Ethernet configuration' and is enclosed in a red box. It contains a checked 'Enable modification' checkbox and a checked 'Dhcp enable' checkbox. At the bottom of this section are 'Submit' and 'Refresh' buttons. Below the Ethernet configuration is the 'DNS configuration' section, which has an unchecked 'Enable modification' checkbox and 'Submit' and 'Refresh' buttons. The 'Wifi configuration' section is partially visible at the bottom, showing a checked 'Enable modification' checkbox, a 'Mode selection' dropdown menu set to 'STA', and input fields for 'SSID', 'Psw', 'Channel' (set to 0), and 'Encryption' (set to open). There is also an unchecked 'Dhcp enable' checkbox at the bottom of the Wifi configuration section.

## WIFI:

- 1) Find “Wifi configuration”。
- 2) “Mode selection” choose “STA”
- 3) Fill in “SSID”(WIFI ID) “Psw”(WIFI password) “Encryption”(EncryMode, generally choose wpa2)
- 4) Click “Dhcpc enable”
- 5) Click “Submit”.



The screenshot shows the Star Charge web interface. On the left is a navigation menu with items like 'Hardware Setting', 'Software Setting', 'Charging Status', etc. The main content area is divided into sections. The 'Wifi configuration' section is highlighted with a red border and contains the following fields:

- Enable modification
- Mode selection: STA (dropdown)
- SSID: [text input]
- Psw: [text input]
- Channel: 0 (dropdown)
- Encryption: open (dropdown)
- Dhcpc enable
- Submit and Refresh buttons

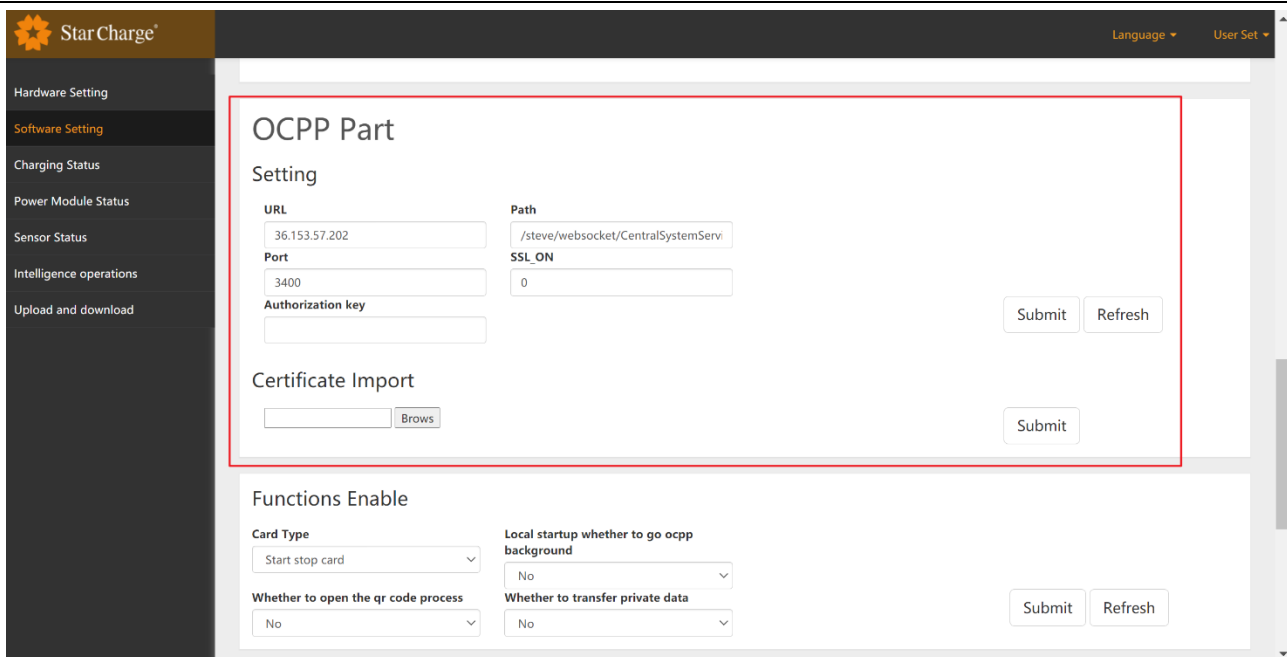
Below the Wifi configuration is the 'OCPP Part' section, which includes a 'Setting' area with the following fields:

- URL: [text input]
- Path: [text input]
- Port: [text input]
- SSL\_ON: [text input]

## OCPP:

Take <http://36.153.57.202:3400/steve/websocket/CentralSystemService> as an example. The information need to be filled in is shown as below:

- 1) Find “OCPP Part”
- 2) “URL”: Enter IP address or domin name of the backend;
- 3) “Path”: Enter the path after IP in “Path”
- 4) “Port”: Enter Port number of backend
- 5) “SSL\_O”: The value is 1 when the backend uses TLS for access, otherwise the value is 0.
- 6) “Authorization key”: If the backend doesn’t use Basic authorization, just leave it blank. (no need to fill in most cases)
- 7) Click the “Submit” in OCPP Part to confirm delivering the setting information to the backend.
- 8) “Certificate Import”: Load in the CA certificate offered by customer when using TLS; otherwise, leave it blank.
- 9) Click “Submit” to deliver certificate if loading in the certificate.



**OCPP Part Setting**

URL:  Path:

Port:  SSL\_ON:

Authorization key:

Certificate Import:

**Functions Enable**

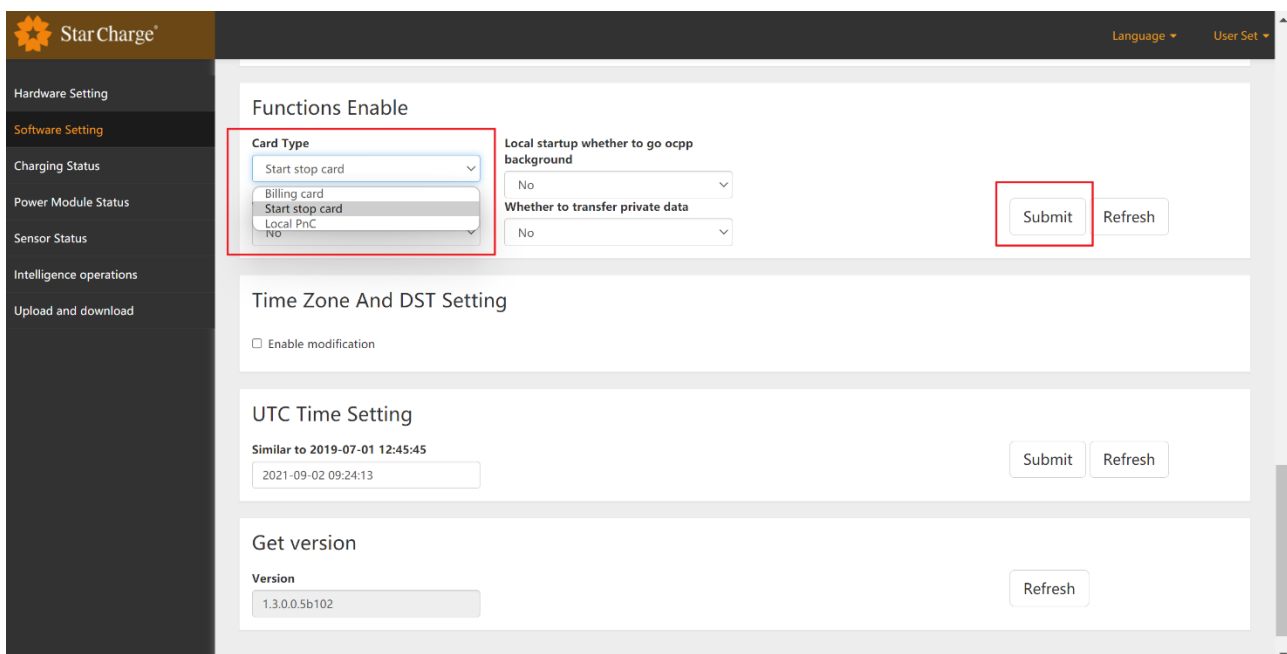
Card Type:  Local startup whether to go ocpp background:

Whether to open the qr code process:  Whether to transfer private data:

### Card Type:

- 1) "Start stop card": Local start-stop card, the EVSE can work by swiping the card without connecting to the backend.
- 2) "Billing card": Authentication card, the UID of RFID card must be entered into backend before using, and EVSE must connect to the backend
- 3) "Local PnC": plug in and charge

Click "Submit" after the configuration.



**Functions Enable**

Card Type:  Local startup whether to go ocpp background:

Whether to transfer private data:

**Time Zone And DST Setting**

Enable modification

**UTC Time Setting**

Similar to 2019-07-01 12:45:45

**Get version**

Version:

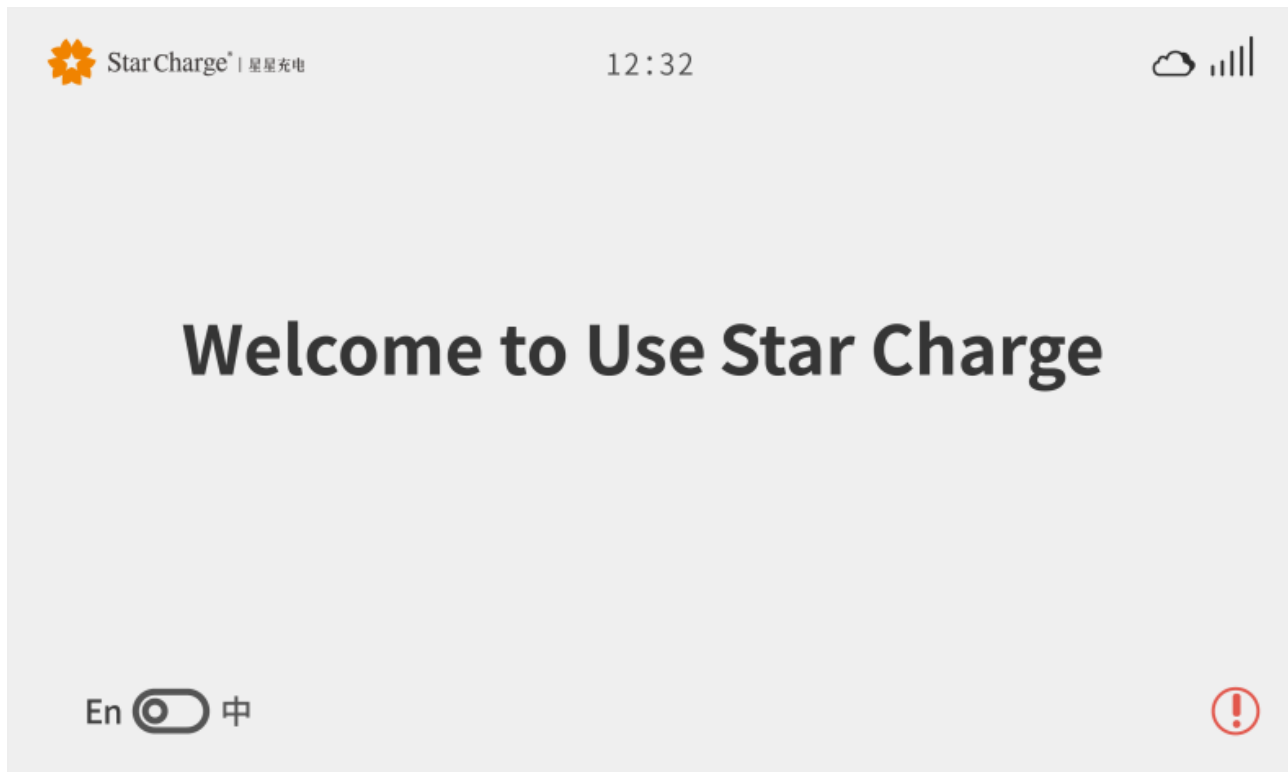
### 3.5 Charging Function Check

#### 3.5.1 Charging Test

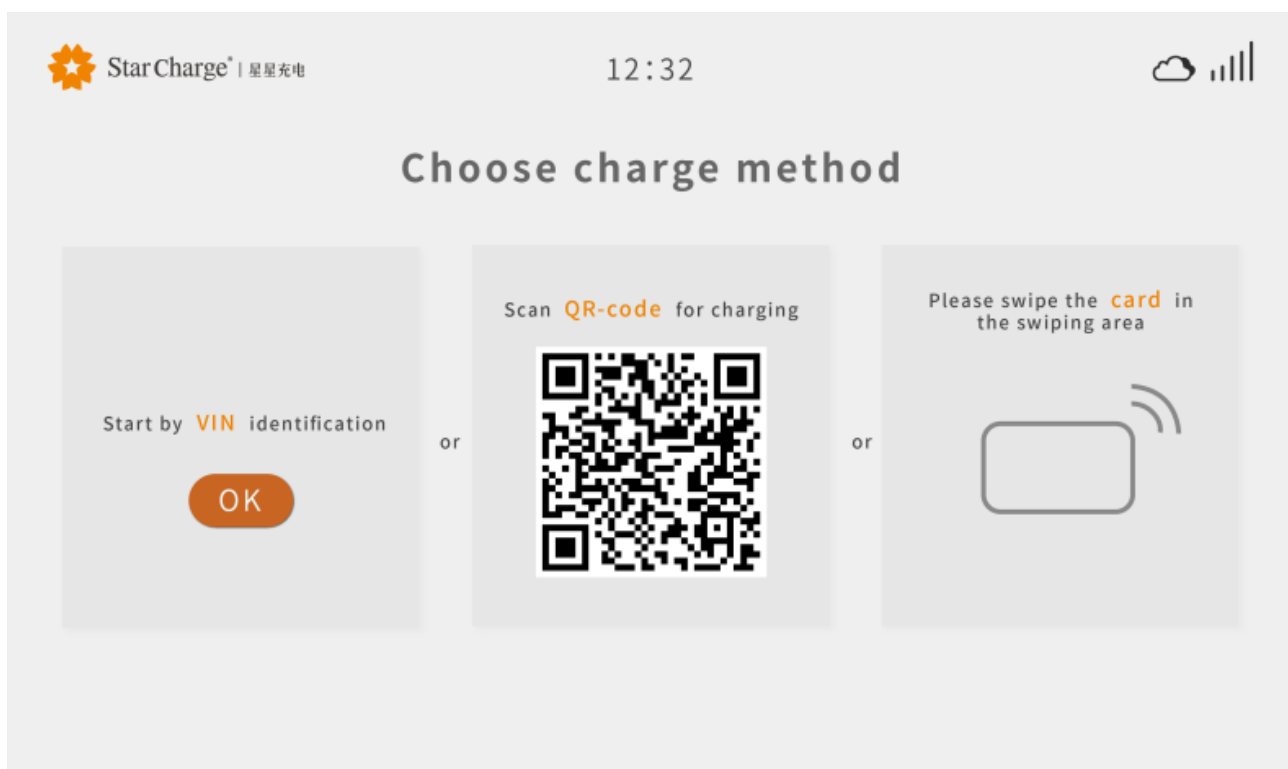
- **Swipe Card for Charging**

Operation steps are shown as below:

**Step 1:** Click anywhere to turn on the touch screen.

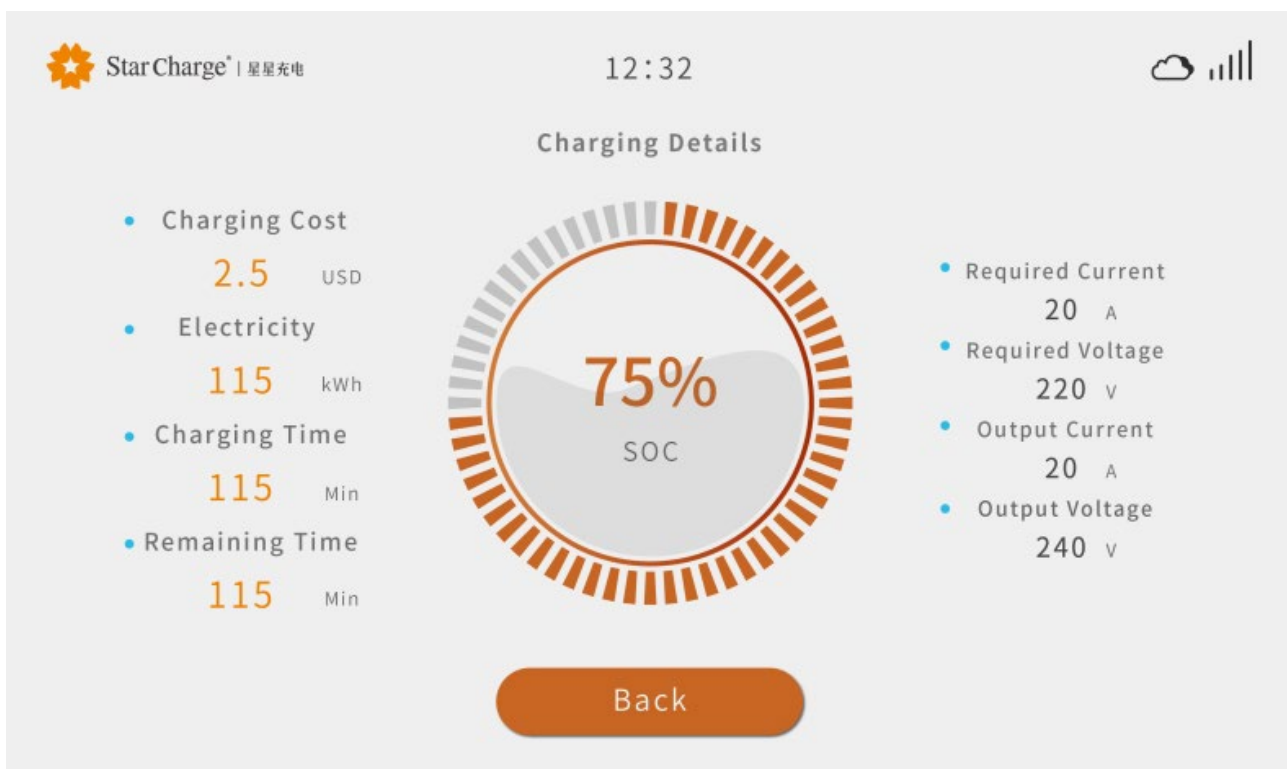
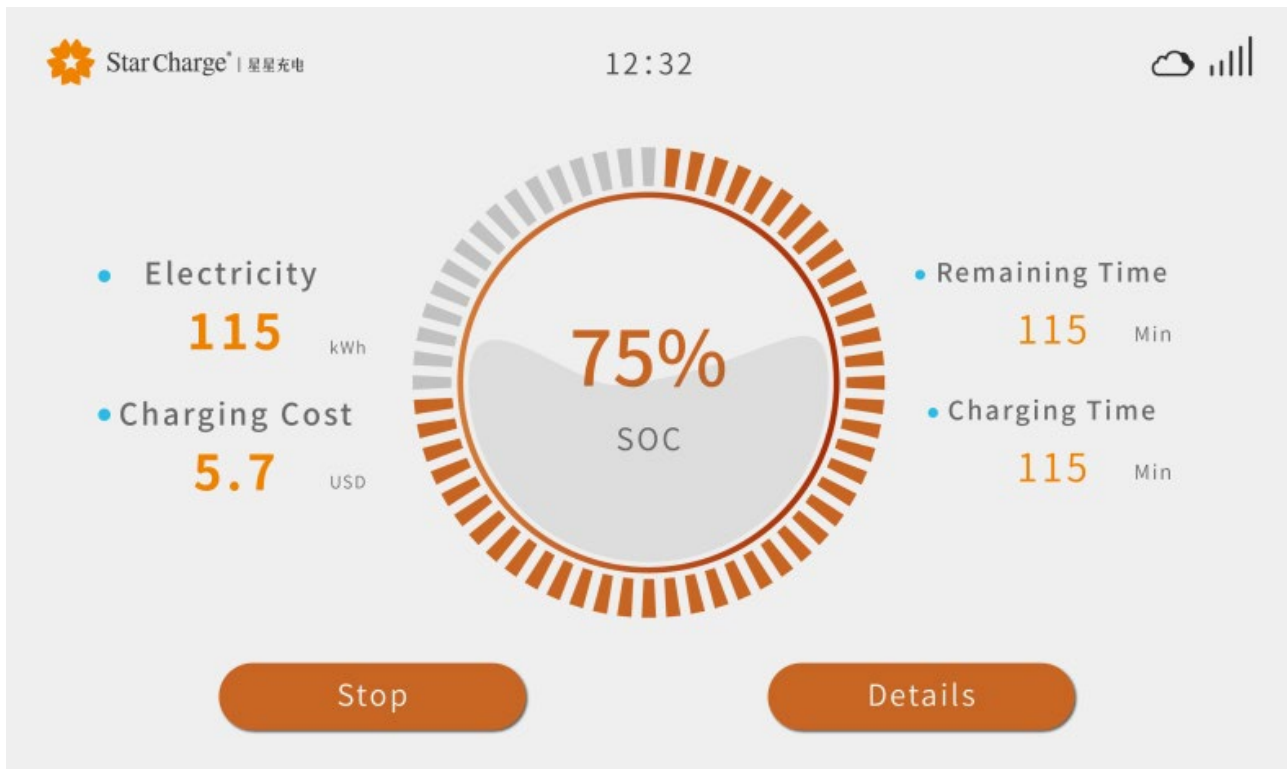


**Step 2:** The screen will automatically jump to next step after plugging the charging cable.

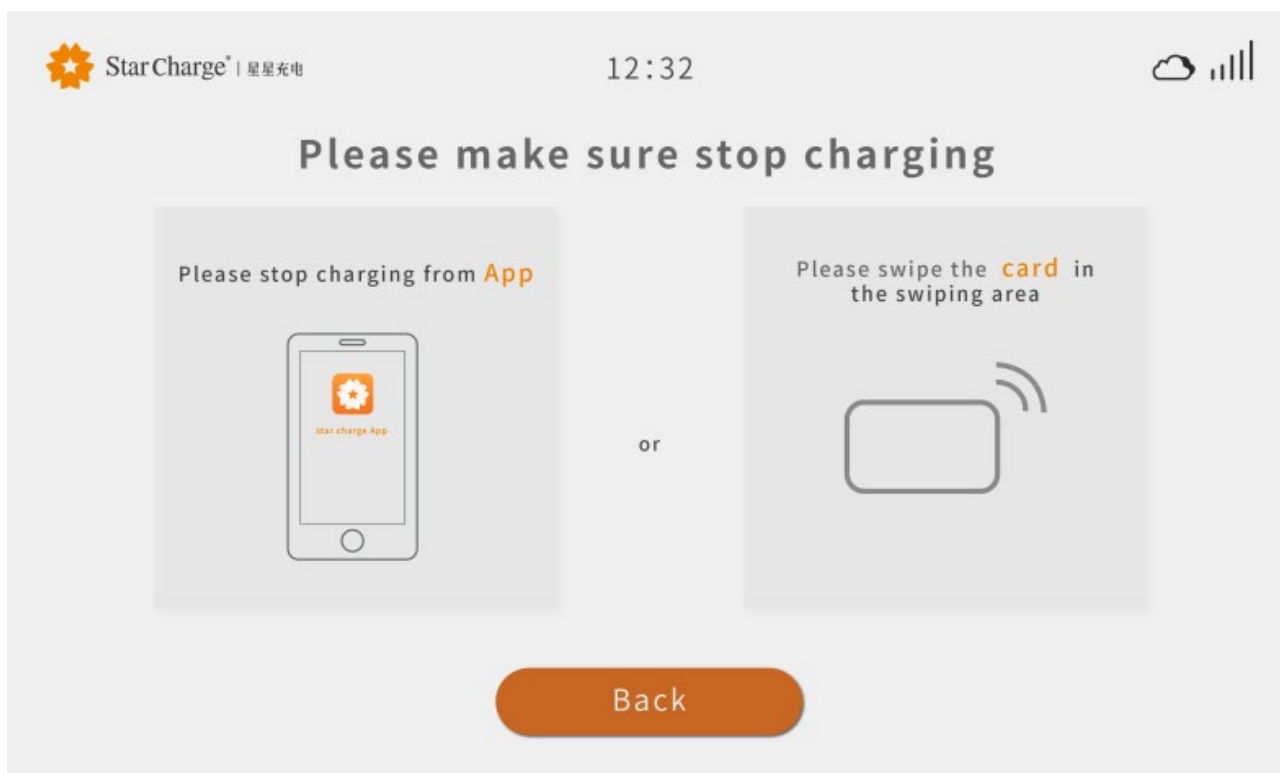


**Step 3:** Swipe the card for charging: swipe the RFID card in the specific swiping area to start the EVSE charging.

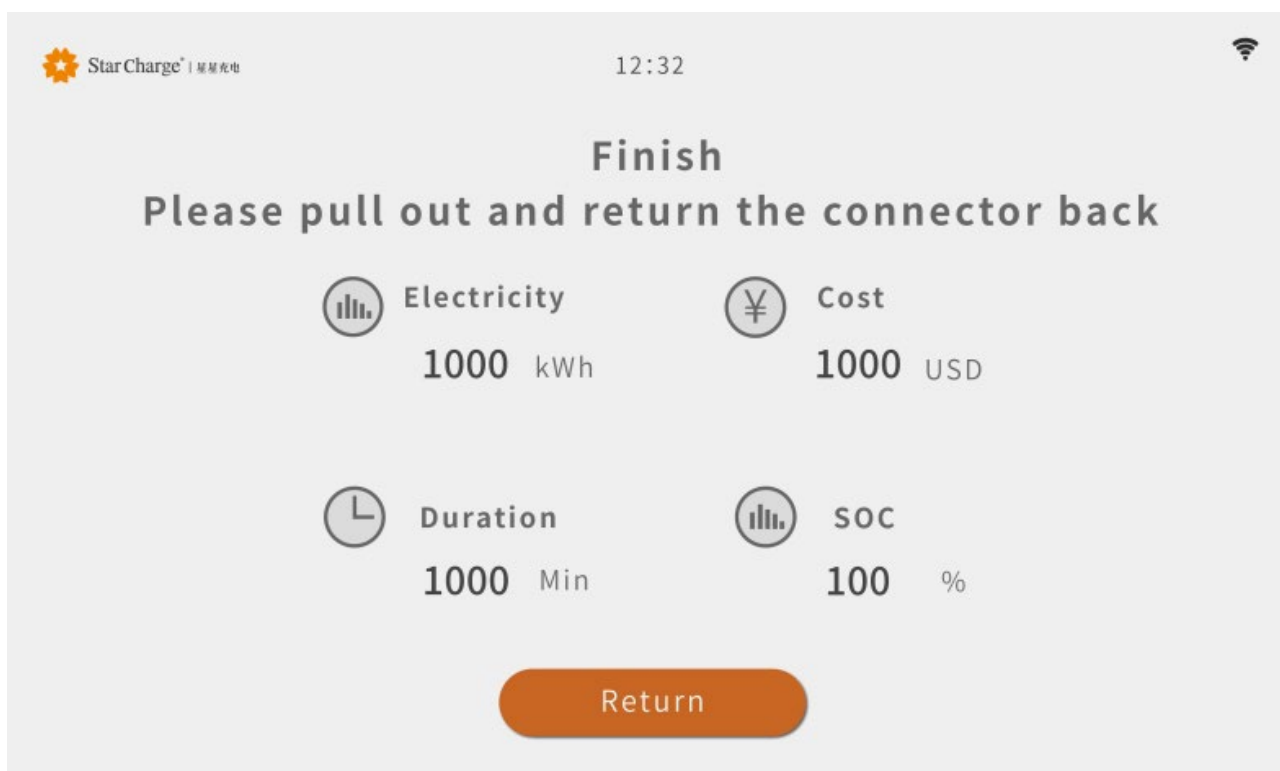
**Step 4:** The screen shows the charging status when charging, click “Details” for more specific information.



**Step 5:** Swipe the card for stopping charging: Click “Stop” to enter stop charging interface and select mode of “swipe the card” to stop charging.



**Step 6:** The charging result is displayed on the screen after charging and stopping.



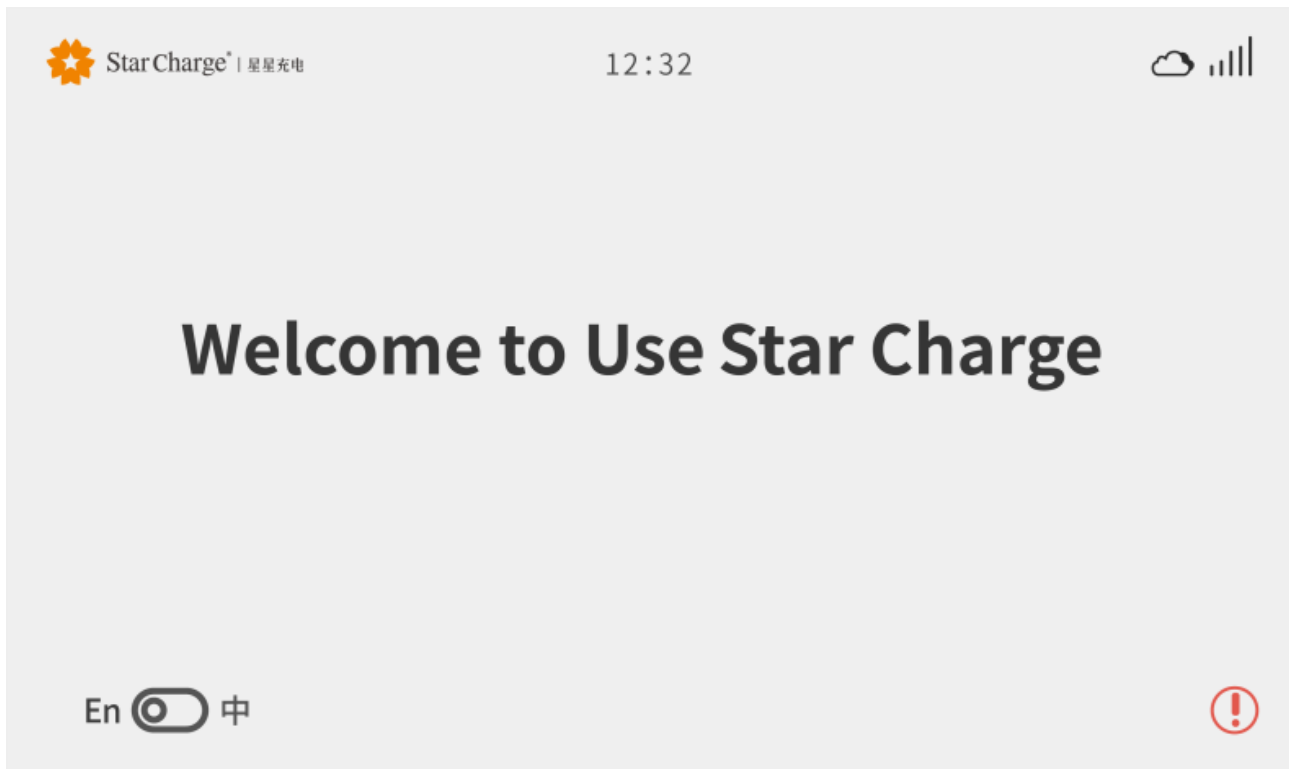
**Step 7:** Pull out of the charging cable charging on the vehicle. Put it back on the holder.



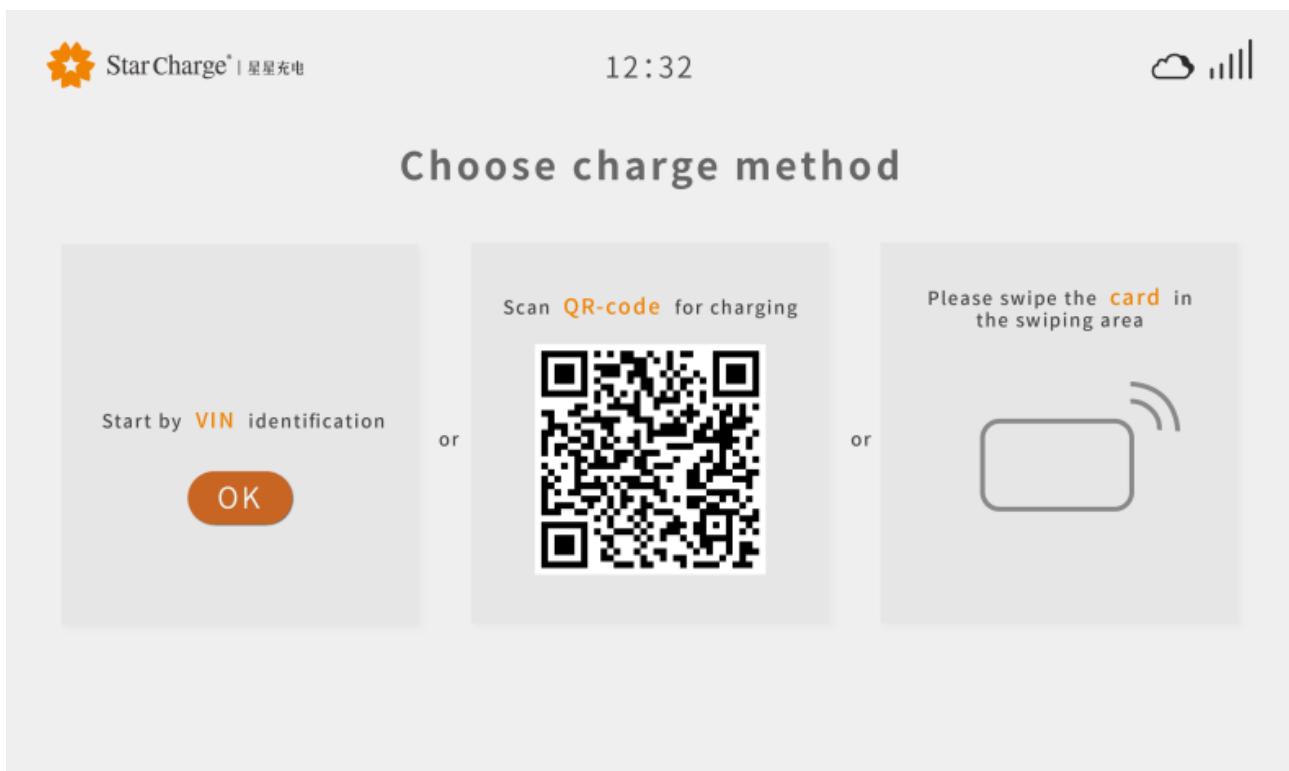
- **Scan QR Code for Charging**

Operation steps are shown as below:

**Step 1:** Click anywhere to turn on the touch screen.



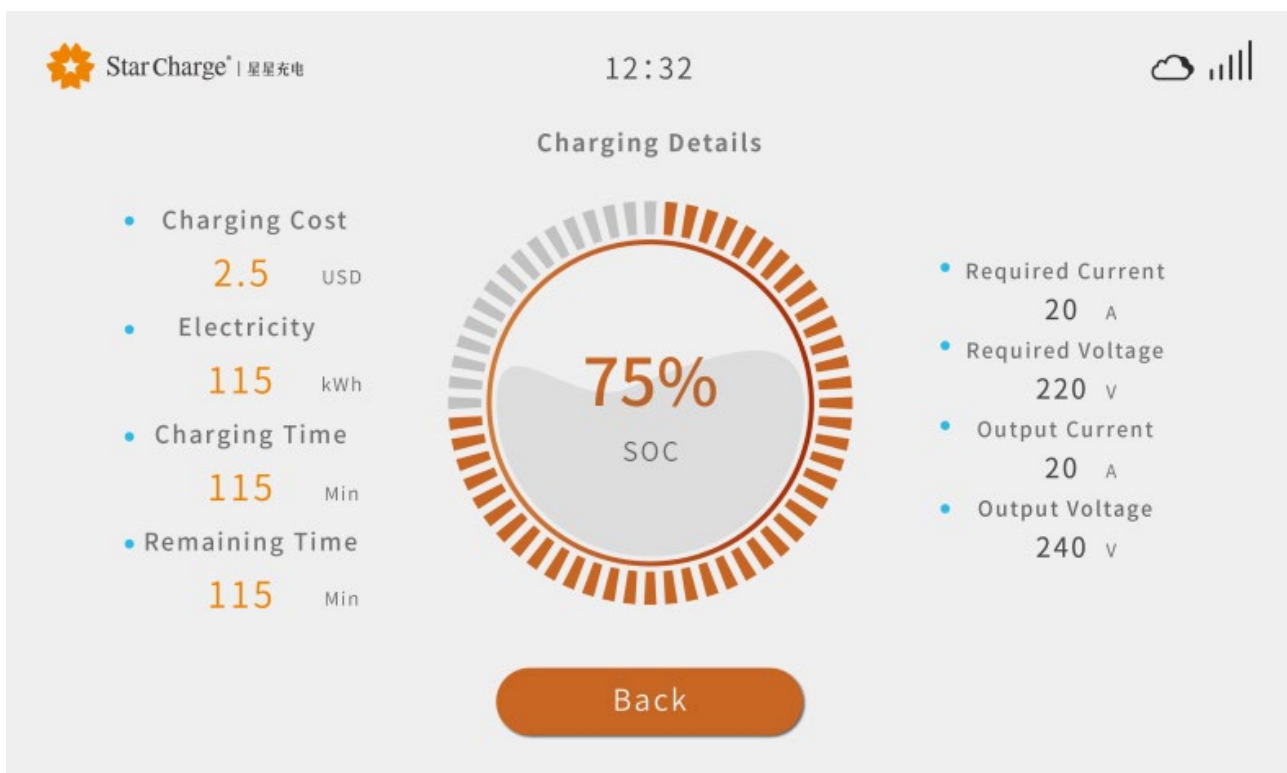
**Step 2:** The screen will automatically jump to next step after plugging the charging cable.



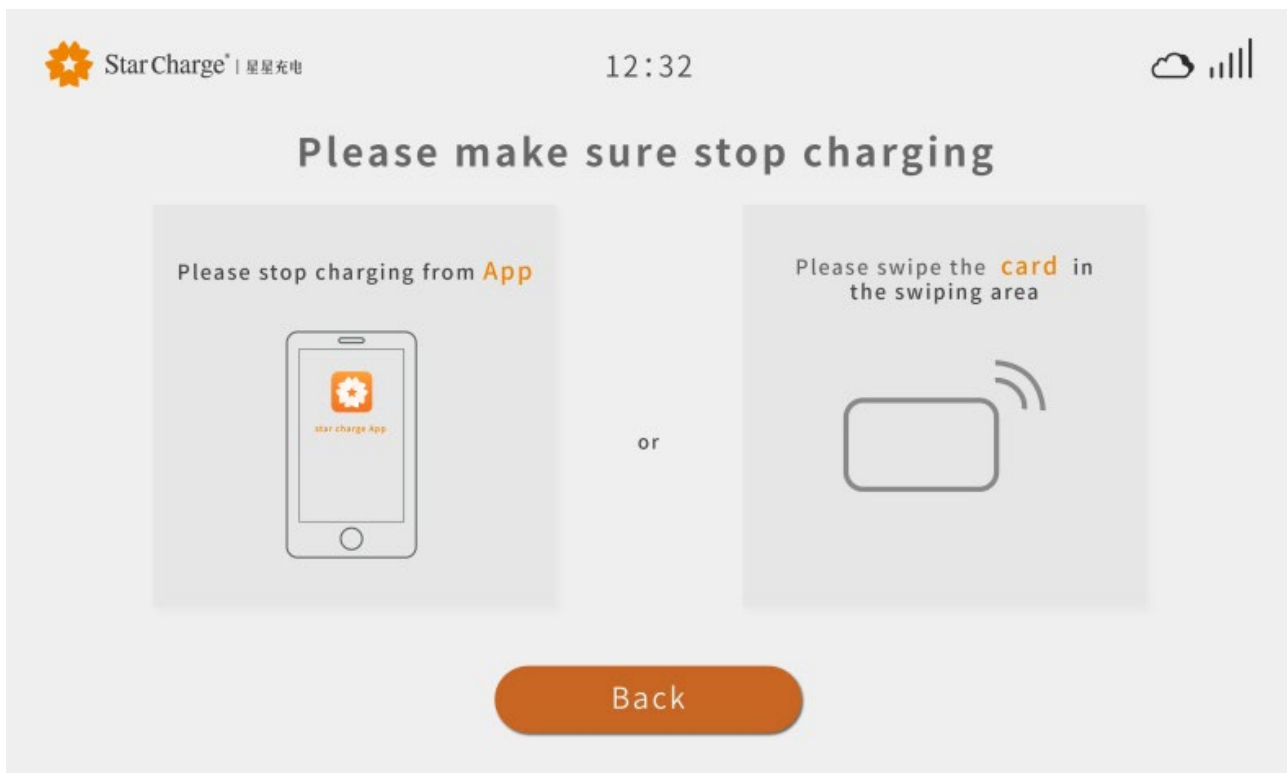
**Step 3:** Open the App and scan the QR code displayed on the screen.

**Step 4:** The screen shows the charging status when charging, click “Details” for more specific information.

The details will also be shown on APP.



**Step 5:** To stop charging during charging process, click “Stop” in APP to stop charging.



**Step 6:** The charging result is displayed on the screen after charging and stopping.



**Step 7:** Pull out of the charging cable charging on the vehicle. Put it back on the holder.

### 3.5.2 Hardware Function Test

- 1) Limit switch: Open the door of EVSE when charging, the EVSE should stop charging.
- 2) Emergency stop: Press the emergency stop button on the EVSE when charging, the EVSE should stop charging.
- 3) Fan: Check whether the fan inside of EVSE and fan of power module during charging.
- 4) Meter: Check whether the meter measures accurately during charging.
- 5) Charging cable: There's no burrs, no sharp edges, no ignition or burning, no loosen insulation cap on the easy touch surface of the charging cable. It's neither too tight nor too loose when inserting and pulling out the charging cable.

#### **4 Customer Training**

After the commissioning work for the EVSE, the engineer should give a basic training relating to the main characteristics of the EVSE to guide the customer on using and some basic knowledge. The training form can be through either document or practical explanation on-site. The training content should cover safety knowledge, basic charging procedure and etc.

After confirming customer's satisfaction, get the training file signed and recorded properly. Refer to Appendix 1 "Customer training record sheet" for details.

**Appendix 1 Customer Training Record Sheet**

## Customer Training Record Sheet

Customer:

Product		Trainer	
Training method		Training Date	
Training Department			
Training Content			
Training Purpose			
Outline of Training  handout	1.Basic charging operation procedure <input type="checkbox"/> 2.Using scenario of emergency stop <input type="checkbox"/> 3.Common sense of safety and emergency <input type="checkbox"/> 4.Troubleshooting process <input type="checkbox"/>		
Trainee Signature			
Customer feedback			

# Commissioning Report

Date:

Commissioning Engineer:

Charging Station:

Address:

**1 Details of EVSE**

<b>ID</b>	<b>Specification</b>	<b>Power module type</b>	<b>Power module quantity</b>	<b>Installation</b>	<b>Charging cable length</b>	<b>Firmware version</b>	<b>Backend</b>



## 2 Installation Recheck

Object	Content	Conclusion	Remark
Foundation	Check whether the foundation is fixed completely		
Power Cable	Check whether the cable specifications meet the power requirements of EVSE, no break, damage, or scratch, whether the electrical connection and wiring are correct and complete, whether the connection is solid, and whether the grounding is reliable		
Grounding resistance	Outside grounding resistance $< 4\Omega$ , inside grounding resistance $\leq 0.1\Omega$		
Insulation Resistance	The insulation resistance of power cable meets the requirements		
Surface	The surface is clean. The charging cable is not broken. The door could be closed and open. The EVSE is not tilted.		
Sign	No missing safety warning mark and the nameplate is clear.		
Requirements	The EVSE meets the requirements. The accessories are complete.		
Others	The fire-proof material is blocked in place.		

## 3 Check before Power on

### 3.1 Working Environment

Object	Content	Conclusion	Remark
Temperature	$-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$		
Humidity	5%~95%		
Elevation	$\leq 2000\text{m}$		

**3.2 Check the Internal Circuit (When using a multimeter to test the following items, ensure that the device is powered off.)**

Object	Content	Conclusion	Remark
Input L1 and L2	Open Circuit		
Input L1 and L3	Open Circuit		
Input L2 and L3	Open Circuit		
Input L1 and N	Open Circuit		
Input L2 and N	Open Circuit		
Input L3 and N	Open Circuit		
Input L1 and PE	Open Circuit		
Input L2 and PE	Open Circuit		
Input L3 and PE	Open Circuit		
N and PE	Open Circuit		
Input L1 and DC+/DC-	Open Circuit		
Input L2 and DC+/DC-	Open Circuit		
Input L3 and DC+/DC-	Open Circuit		
N and DC+/DC-	Open Circuit		
DC+ and DC- of charging cable	Open Circuit		
DC+ and DC- of output copper bar	Open Circuit		
DC+ of charging cable and DC+ of output copper bar	Close Circuit		
DC- of charging cable and DC- of output copper bar	Close Circuit		
All screws of input	All screws are fastened without loosening or missing		
All screws of main breaker	All screws are fastened without loosening or missing		
Screws on the input and output of the power module	All screws are fastened without loosening or missing		

Object	Content	Conclusion	Remark
socket			
All grounding screws	All screws are fastened without loosening or missing		
Screws on DC+ and DC-copper bar	All screws are fastened without loosening or missing		
Each plug on the main control board	Each plug is firmly without loosening, and the plug connection is firmly without loosening		
Switching power supply	All screws are fastened without loosening or missing		

### 3.3 Voltage check Before Power on

Object	Content	Conclusion	Remark
Input voltage of the main breaker	400V (±10%)		

### 3.4 Check the Insulation Resistance of Charging Cable

Object	Content	Conclusion	Remark
DC+ and PE	≥1MΩ		
DC- and PE	≥1MΩ		
DC+ and DC-	≥1MΩ		

## 4 Check after Power on

### 4.1 Voltage Check after Power on

Object	Content	Conclusion	Remark
Output voltage of the main breaker	400V (±10%)		

### 4.2 Basics

Object	Content	Conclusion	Remark
Touch Screen	The screen shows normally		
Indicators	The indicator lights work normally		

Switching power supply	The switching power supply can provide 12V/24V power supply voltage normally and stably		
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### 4.3 Parameter Configuration

Object	Content	Conclusion	Remark
Configuration	Configure according to the requirements		
Backend connection	Connect successfully		

## 5 Charging Function

### 5.1 Charging Testing

Object	Content	Conclusion	Remark
Charging via APP	Start and stop charging via APP		
Charging via swiping the RFID card	Start and stop charging via swiping the RFID card		

### 5.2 Hardware Function

Object	Content	Conclusion	Remark
Limit switch	When the device is in the charging state, if its cabinet door is opened, the device should stop charging instantly according to the design requirements.		
Emergency stop	When emergency stop button is pressed, the EVSE should stop.		
Fan	The fan can work normally.		
Meter	The meter could calculate during the charging process		
Charging cable	The surface of charging cable is normal. Plug in and out smoothly		

**6 Conclusion**

EV model	Required voltage (V)	Required current (A)	Output voltage (V)	Output current (A)	Remark

Conclusion	Remark
<input type="checkbox"/> Pass <input type="checkbox"/> Fail	

**Commissioning Engineer:**
**Customer:**
**Date:**