



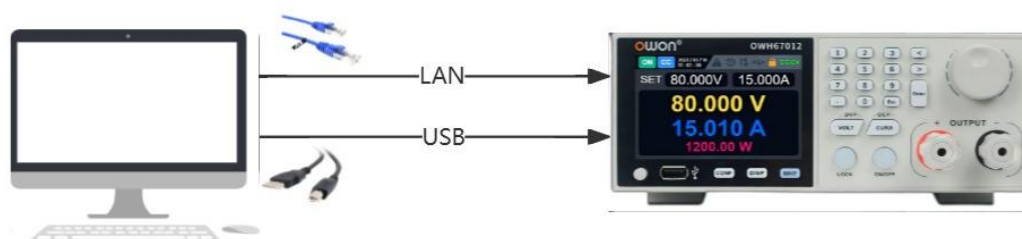
## **OWH Software Help Tool**

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# 1. Connection Method for quick view

OWH67 series product supports two connection methods to connect OWH software, one is USB serial, another one is LAN, please refer to below picture.



## 1.1 USB serial port for communication

### 1.1.1 Driver installation

1. Please find the driver software compressed package  
"iPowerCtrlv RemoteControl Installer V X.X.X ".
2. Decompress it directly to get the following files.



3. Select the serial port chip driver as shown below:



4. Double-click or right-click to decompress the "Serial Port Chip Driver" compressed package to directly install the CH340 driver, as shown below:



5. Click Install, wait for the installation to complete, and click "OK", as shown below:

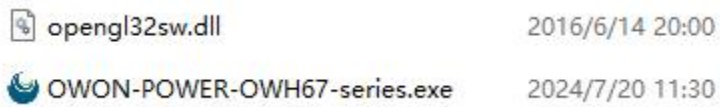


6. Return to the PC, click Device Manager, and check the COM port number and driver, as shown below:

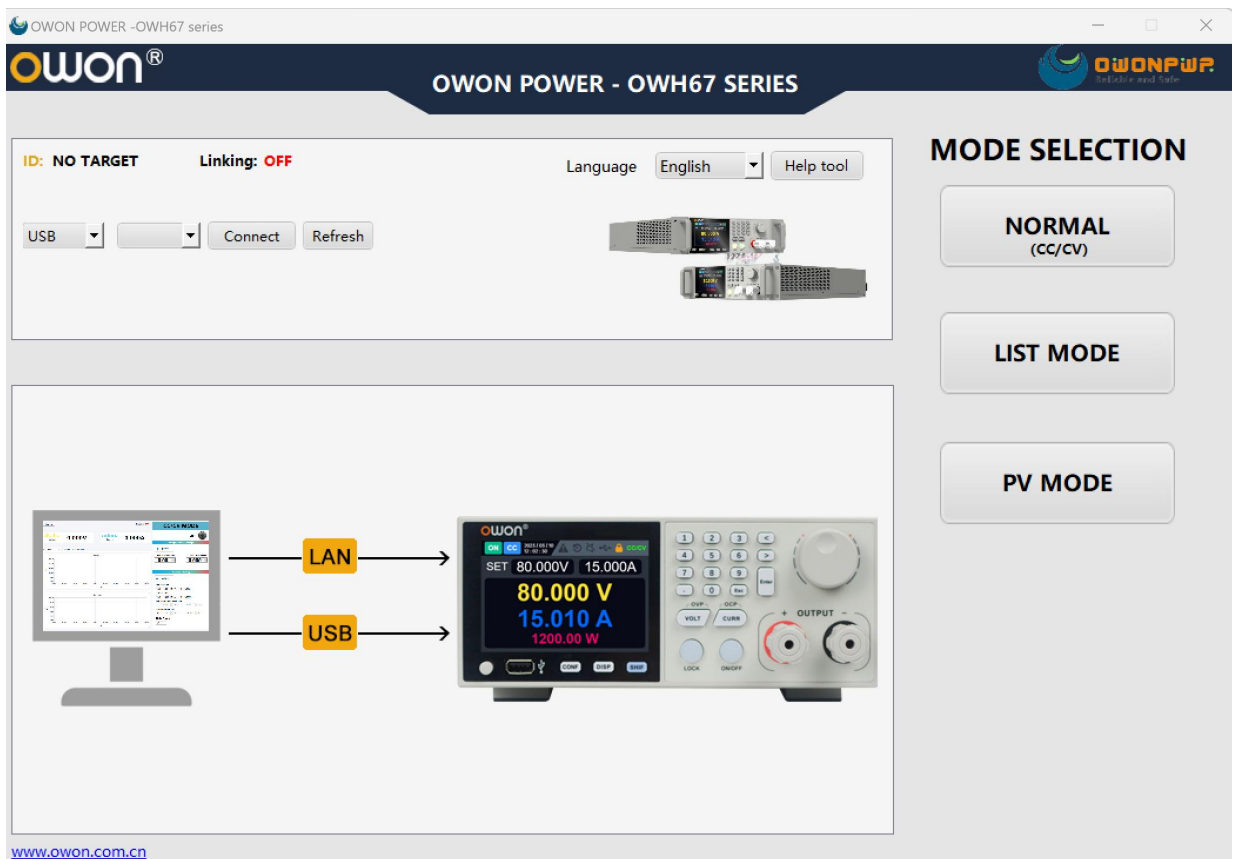


## 1.1.2 Device Connection

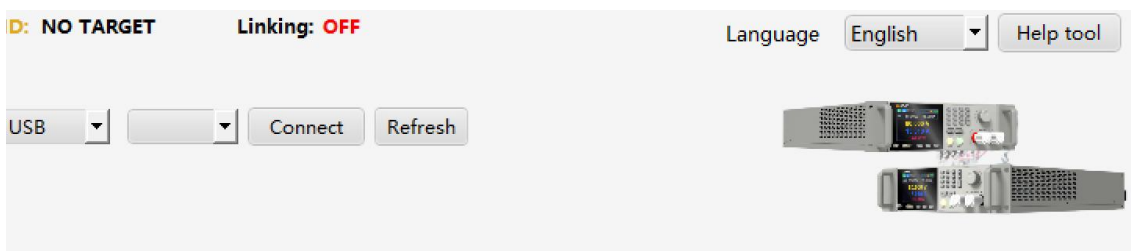
1. Right click or double click to open the "exe" file.



2. Enter the main page of the software as shown below.



3. Click the drop-down option box and select "USB" and port, and click fresh if you cannot find the device port.



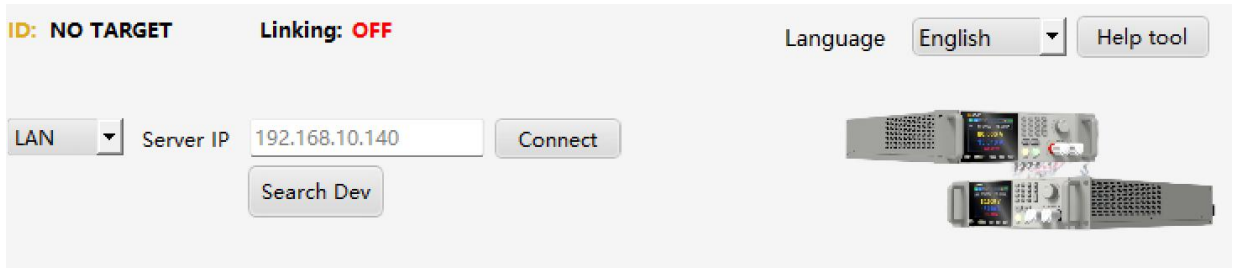
4. Click the "Connect" button to connect the device. You can see the status ON and ID when the connection is successful.



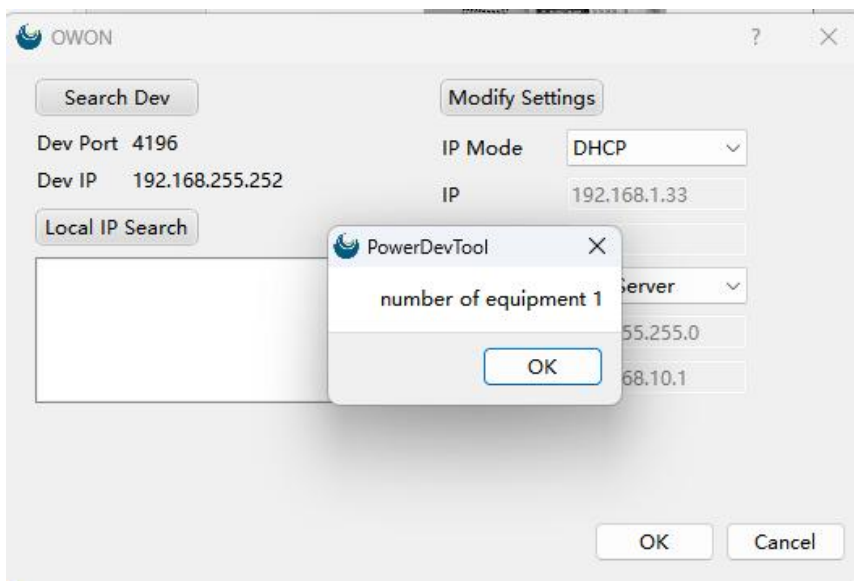
## 1.2 LAN connection for communication

### 1.2.1 Static connection

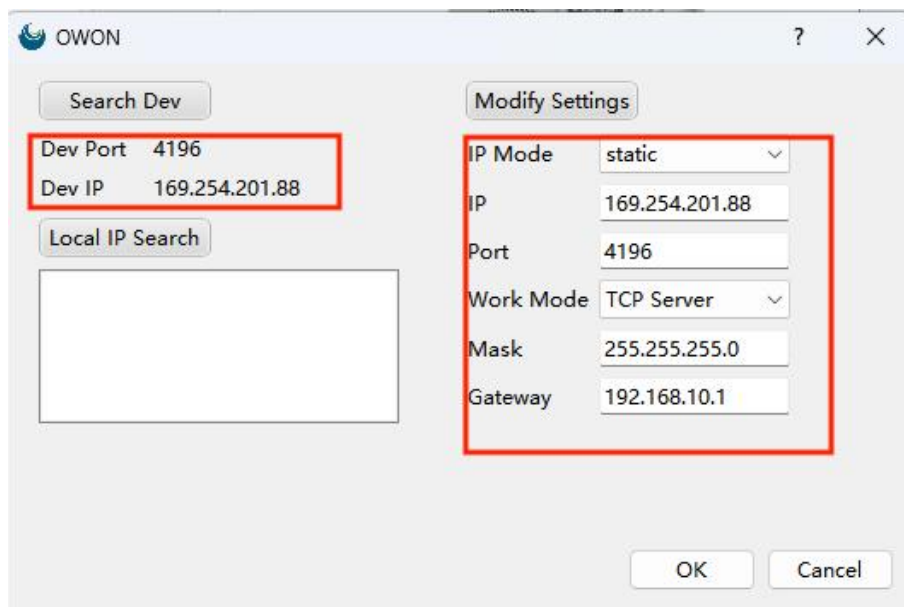
1. Please select “LAN”, and click Search Dev for IP configuration.



2. Click “Search Dev” to check whether the instrument is connected to the local area network.



3. Once connected, the software can read the current instrument settings, such as IP mode, port, etc., for easy viewing and modification.



4. Click "Local IP Search" to view the local IP of the computer connected to the instrument.

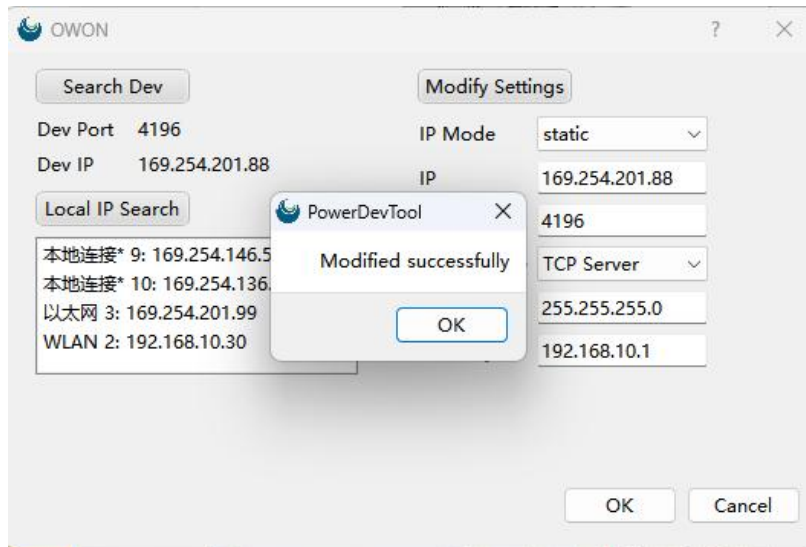
Eg., "Ethernet 3" is the local IP of the computer connected to the instrument at this time.



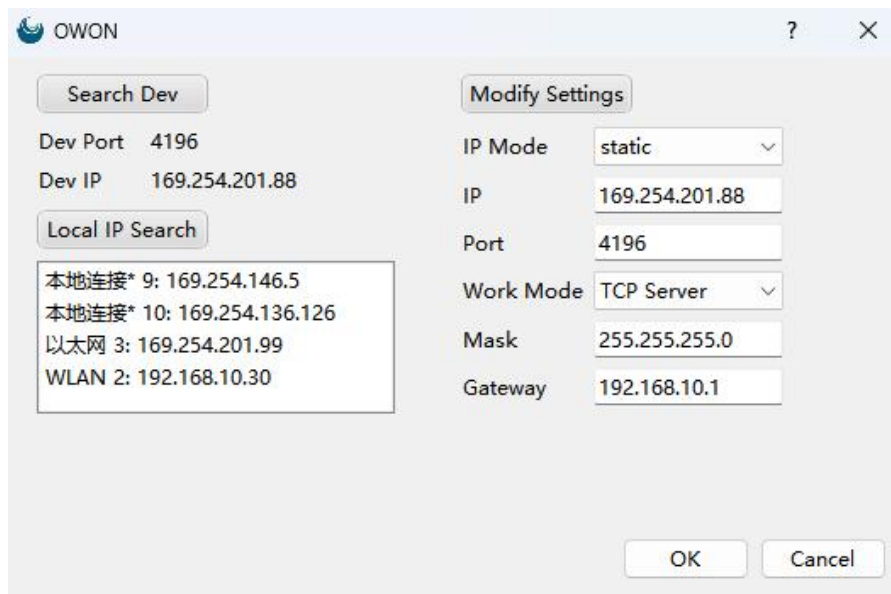


5. Modify the instrument IP parameters. Change the instrument IP in the settings to the same network number as "Ethernet 3" and a different host number, such as 169.254.201.88.

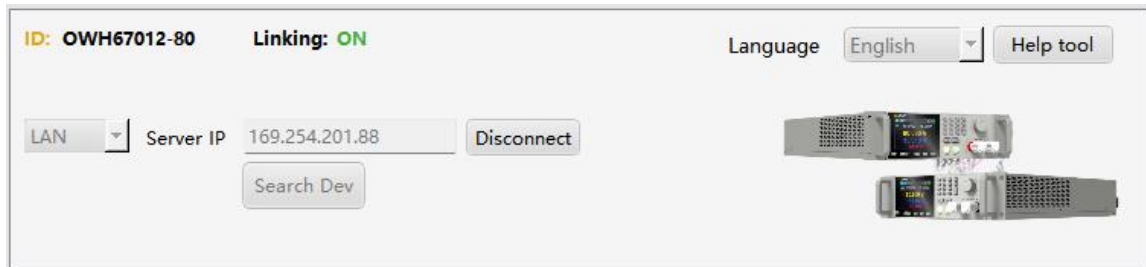
Click Modify Settings.



6. Click "Search Device" again to update the instrument IP settings



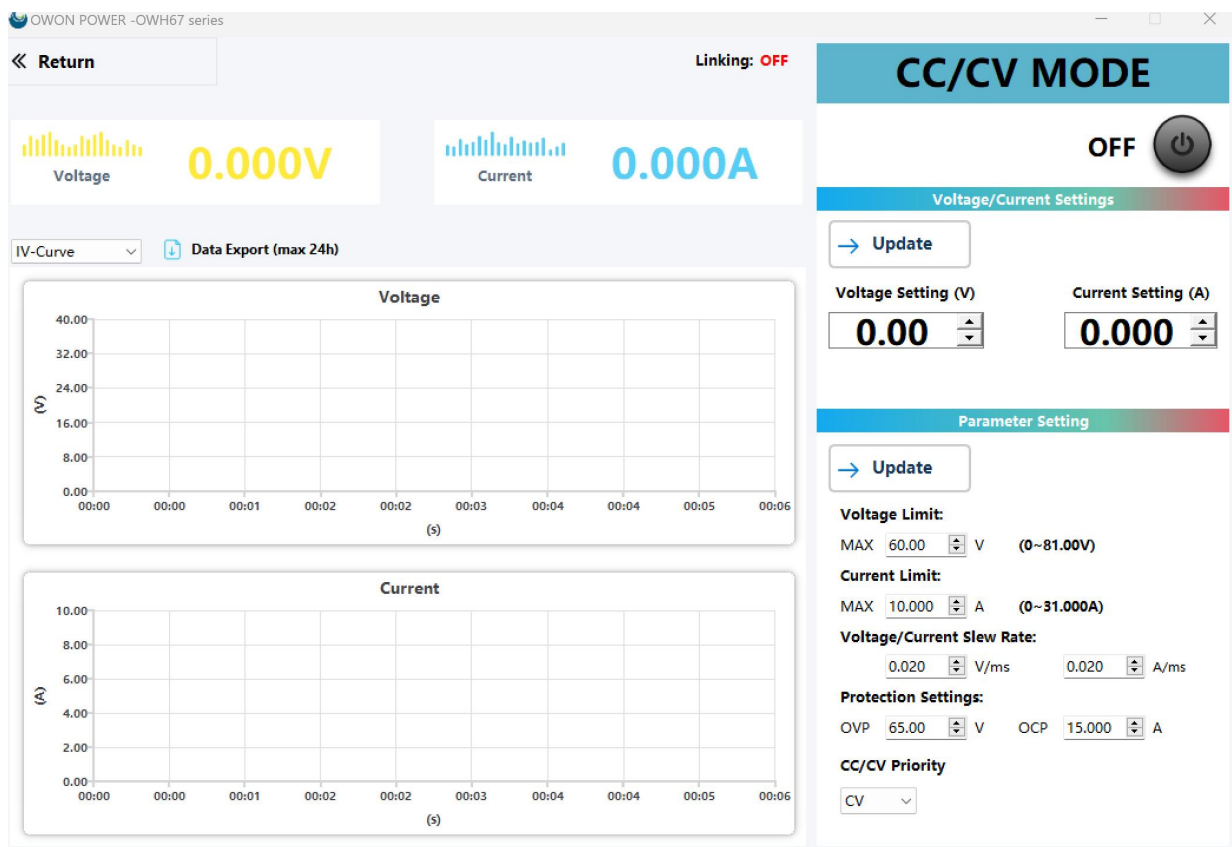
7. Click "OK" to complete the connection settings, and click the "Connect" button to connect the device. After the connection is successful, the instrument ID and connection status will be displayed.



## 2.OWH control panel operation introduction

### 2.1 CC/CV MODE

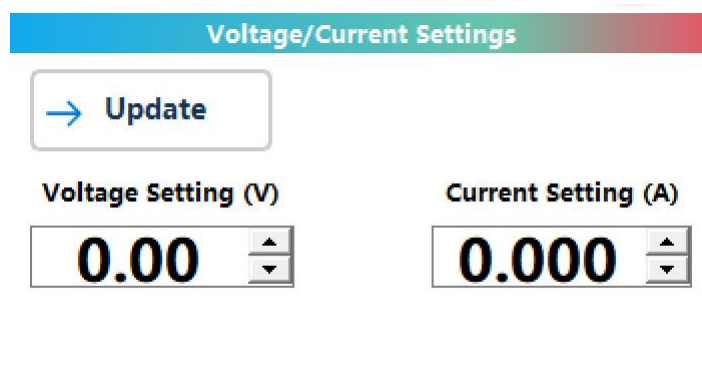
After successfully connecting to the instrument, enter CC/CV mode to remotely operate the instrument. When entering the interface, the software will synchronize the relevant CC/CV settings of the current instrument.



#### 2.1.1 CC/CV MODE Operation Introduction

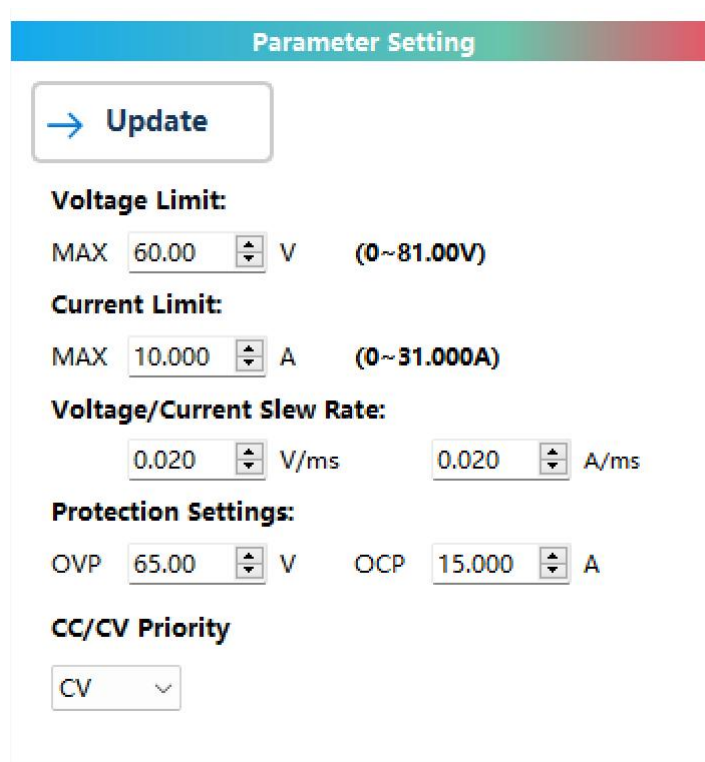
1. By modifying the voltage/current parameter setting box, you can modify the settings of the lower computer instrument.

Click "Update Settings" to send the voltage/current parameters at the same time. To modify a single setting parameter such as "voltage", enter the value and press "Enter" on the keyboard to modify it.



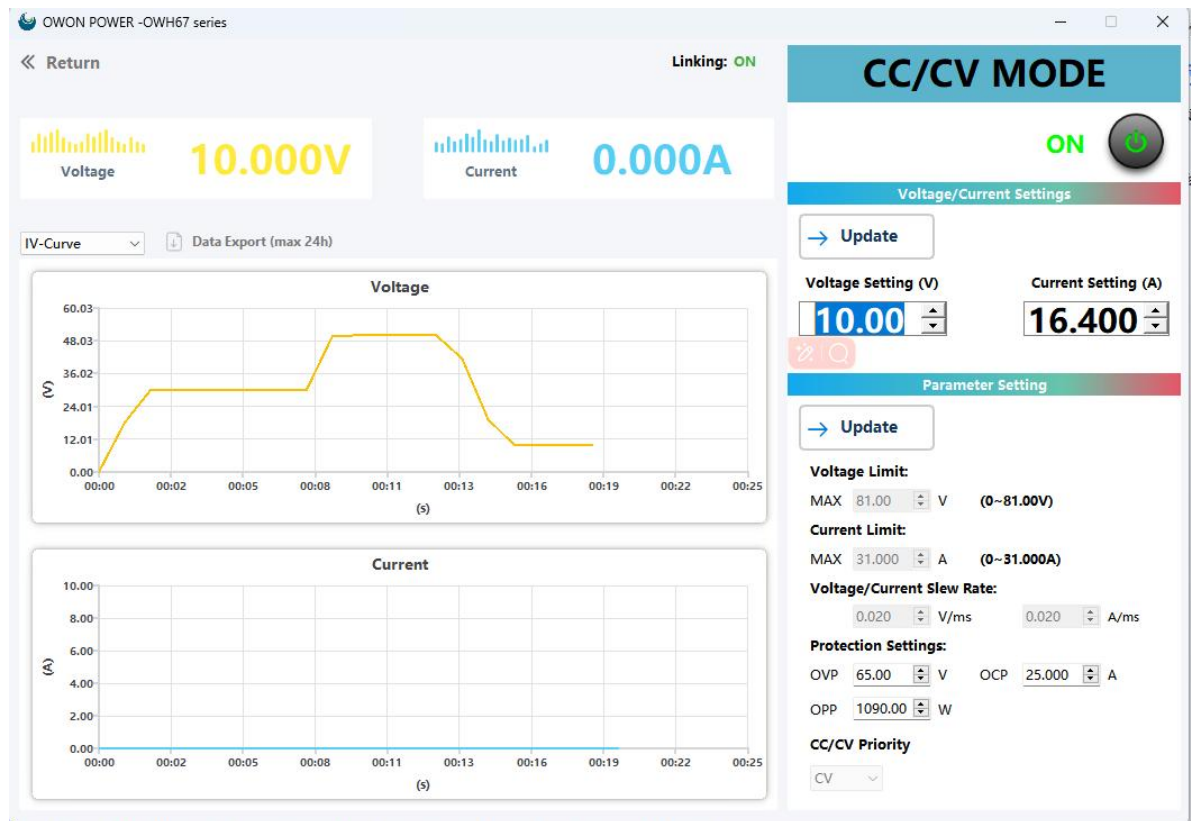
The screenshot shows a dialog box titled "Voltage/Current Settings" with a blue header bar. Inside, there is a button with a right-pointing arrow and the text "Update". Below this button are two input fields. The first is labeled "Voltage Setting (V)" and contains the value "0.00". The second is labeled "Current Setting (A)" and contains the value "0.000". Both fields have small up/down arrows on their right sides.

2. By modifying the setting boxes of other parameters, you can modify the settings of the lower computer instrument. Click "Update Settings" to send other setting parameters at the same time. To modify a single setting parameter such as "Voltage Limit", enter the value and press "Enter" on the keyboard to modify it.

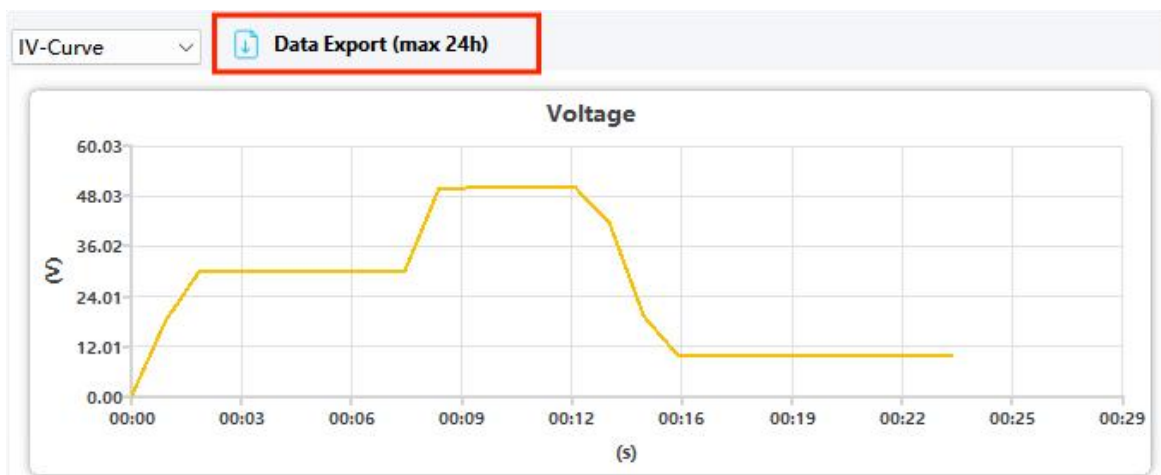


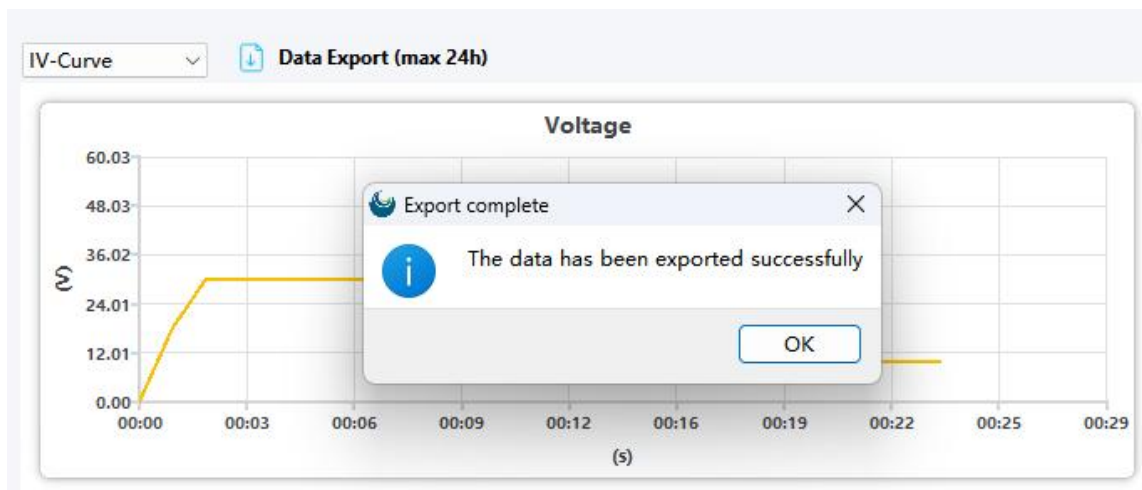
The screenshot shows a dialog box titled "Parameter Setting" with a blue header bar. It contains an "Update" button at the top. Below the button are several sections of settings. The "Voltage Limit:" section has a "MAX" value of "60.00" V with a range of "(0~81.00V)". The "Current Limit:" section has a "MAX" value of "10.000" A with a range of "(0~31.000A)". The "Voltage/Current Slew Rate:" section has two input fields, both set to "0.020", with units "V/ms" and "A/ms" respectively. The "Protection Settings:" section has "OVP" set to "65.00" V and "OCP" set to "15.000" A. At the bottom, the "CC/CV Priority" is set to "CV" in a dropdown menu.

3. After the modification is completed, click the "OFF" power button and the instrument will start output. During the output period, the voltage/current setting parameters can be adjusted to modify the output in real time.



4. After closing the output, you can click the "Export Data" button to export the voltage/current data. The data is a CSV file and can be opened in Excel or text.

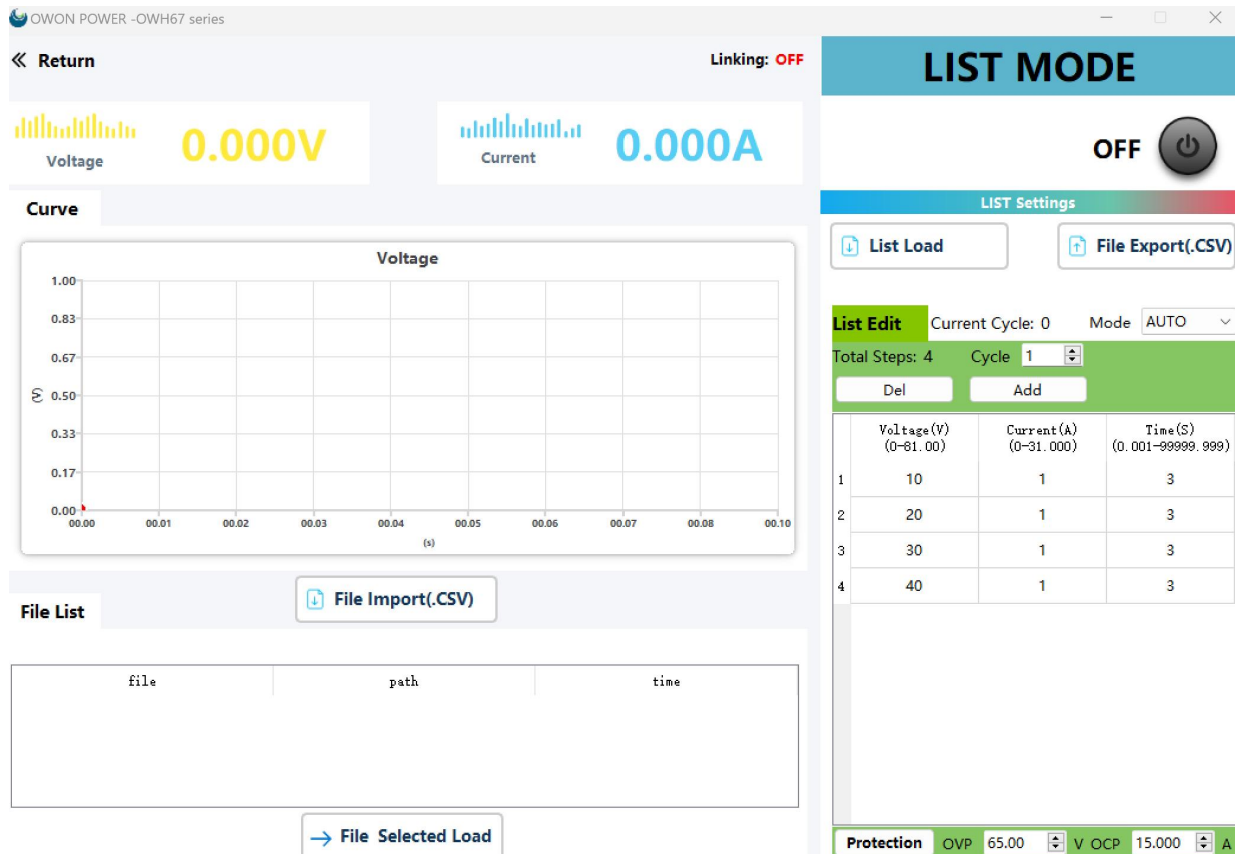




Out Data			
Time(s)	Volt(V)	Curr(A)	
0	0	0	
1	18.134	0	
2	30.083	0	
3	30.009	0	
4	30.004	0	
5	29.999	0	
6	30	0	
7	30	0	
8	30	0	
9	49.69	0	
10	50.029	0	
11	50.009	0	
12	50.001	0	
13	50.001	0	
14	41.472	0	
15	19.252	0	
16	9.91	0	
17	9.971	0	
18	9.999	0	
19	9.999	0	

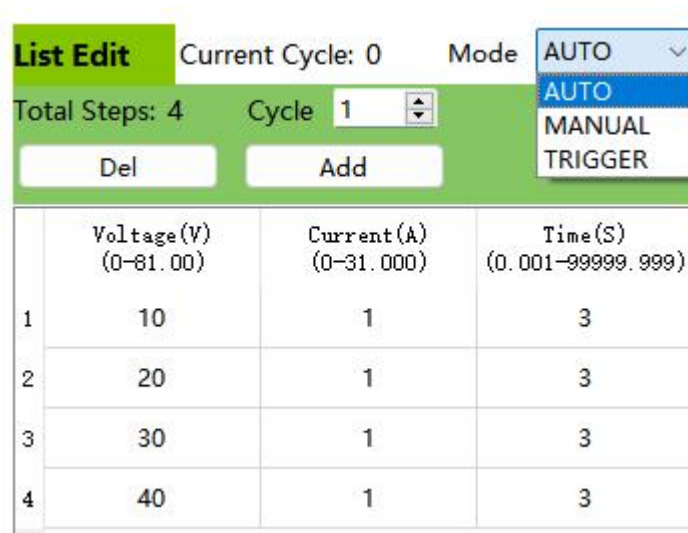
## 2.2 LIST MODE

After successfully connecting to the instrument, enter the LIST mode to remotely operate the instrument.



## 2.2.1 LIST MODE -AUTO MODE

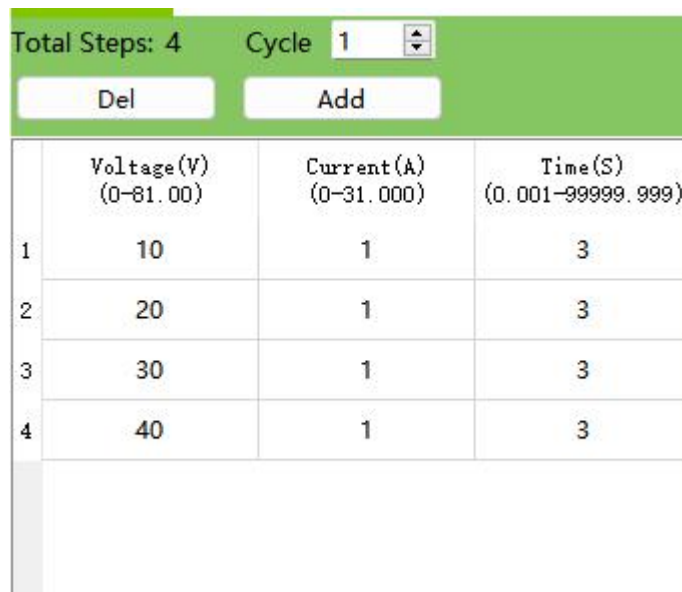
1. Select AUTO mode from the "Mode" drop-down box. This mode will automatically execute each parameter in the LIST table.



The screenshot shows the 'List Edit' window. At the top, 'Current Cycle: 0' is displayed. The 'Mode' dropdown menu is open, showing 'AUTO' as the selected option, with 'MANUAL' and 'TRIGGER' as other options. Below the mode menu, 'Total Steps: 4' and 'Cycle 1' are shown. There are 'Del' and 'Add' buttons. The main table has four columns: an index column, 'Voltage(V) (0-81.00)', 'Current(A) (0-31.000)', and 'Time(S) (0.001-99999.999)'. The table contains four rows of data.

	Voltage(V) (0-81.00)	Current(A) (0-31.000)	Time(S) (0.001-99999.999)
1	10	1	3
2	20	1	3
3	30	1	3
4	40	1	3

2. The LIST table can be simply edited by "adding" and "deleting" a line. The "total number of steps" always records the current number of steps in the list. The value of the "number of cycles" corresponds to the number of times the instrument executes the entire list.



This screenshot is similar to the previous one, but the 'Total Steps' is now 4, reflecting the four rows in the table. The 'Mode' dropdown is not open. The table structure and data are identical to the previous screenshot.

	Voltage(V) (0-81.00)	Current(A) (0-31.000)	Time(S) (0.001-99999.999)
1	10	1	3
2	20	1	3
3	30	1	3
4	40	1	3



3. You can quickly edit the LIST list by right-clicking the mouse. If you select multiple lines, press Ctrl+C on the keyboard to copy the selected lines, and then press Ctrl+V to paste the selected lines back into the LIST.

List Edit

Current Cycle: 0

Mode 

AUTO

Total Steps: 4

Cycle 

1

Del

Add

	Voltage(V) (0-81.00)	Current(A) (0-31.000)	Time(S) 1.001-99999.999
1	10	1	3
2	20	1	3
3	30	1	
4	40	1	

Del

Copy(Ctrl+C)

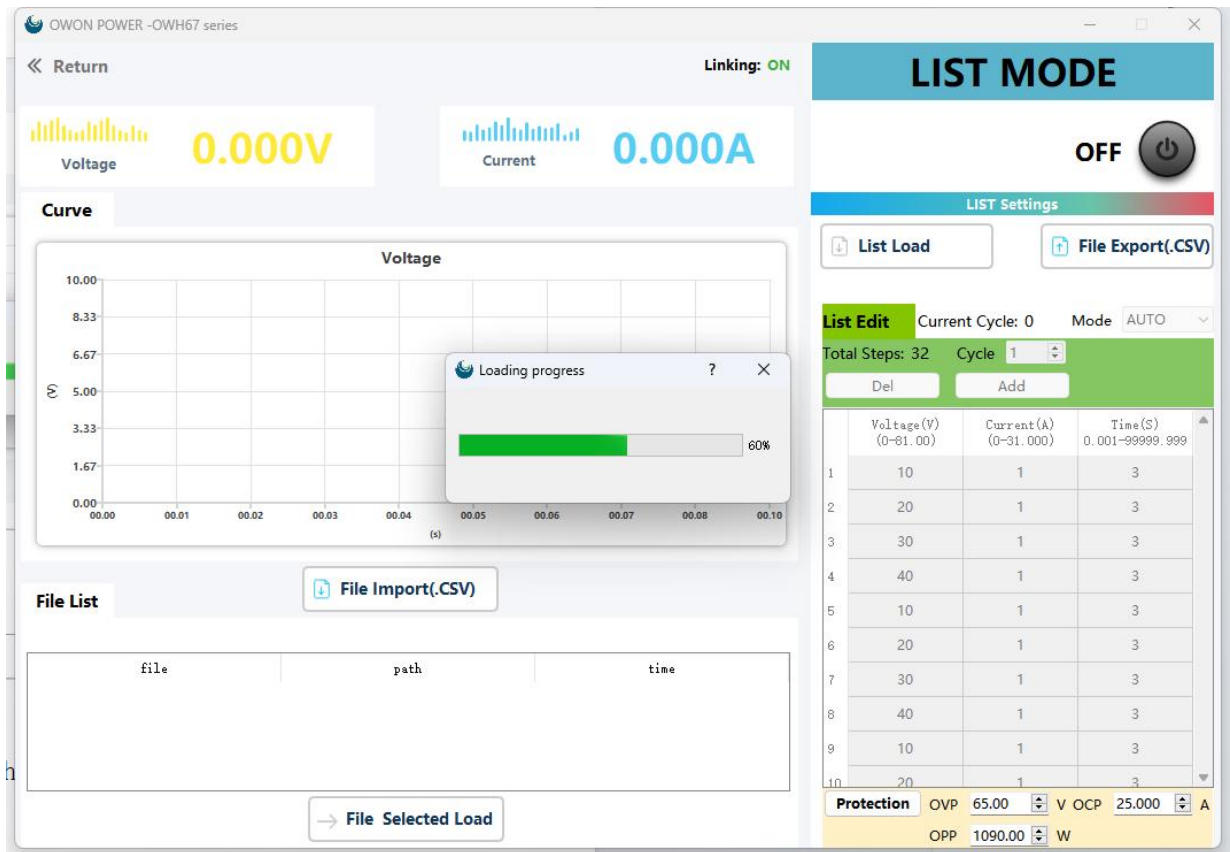
Paste(Ctrl+V)

Insert rows above

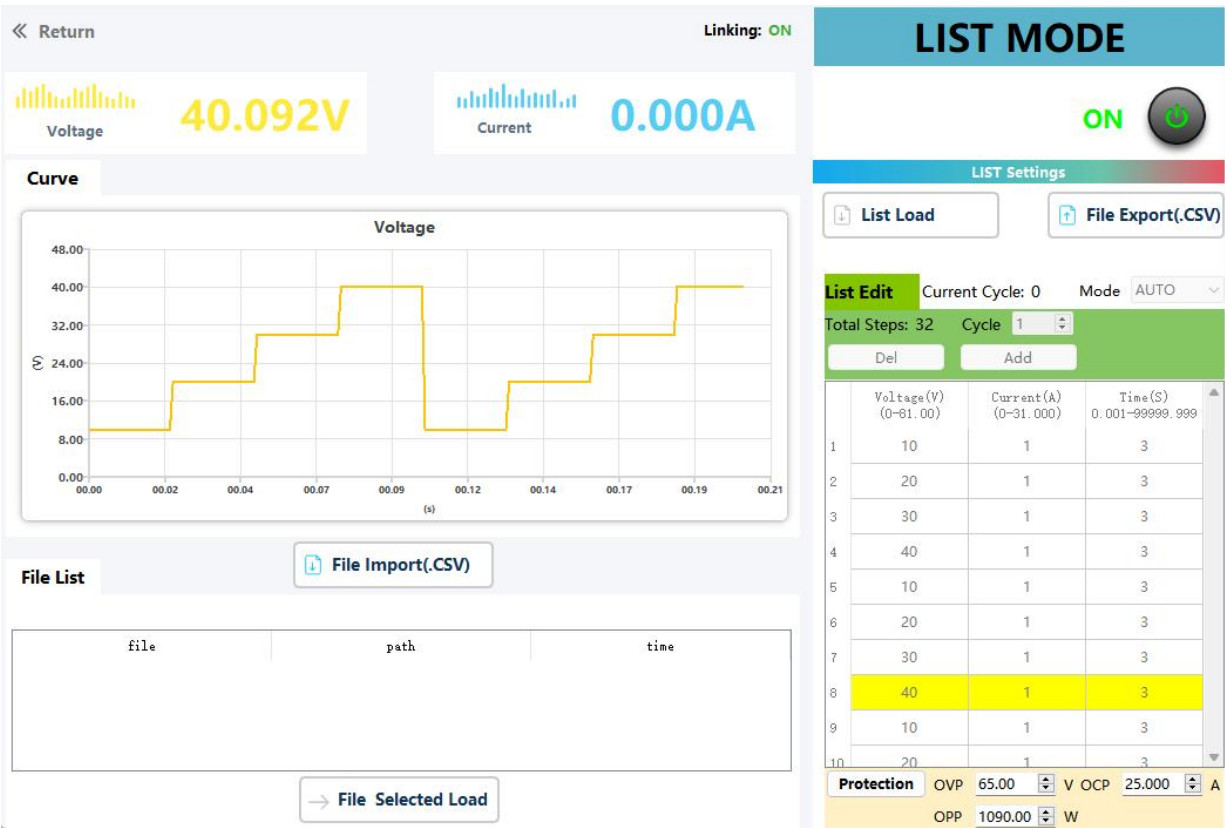
Insert rows below

Clear file list

4. Click "Load current list" or the power button to load the list data to the instrument.

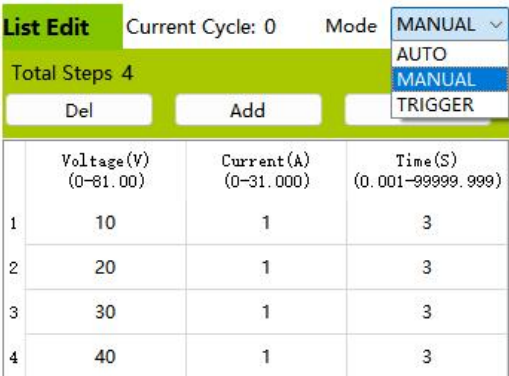


5. Click the power button, and the list will be automatically output after powering on.

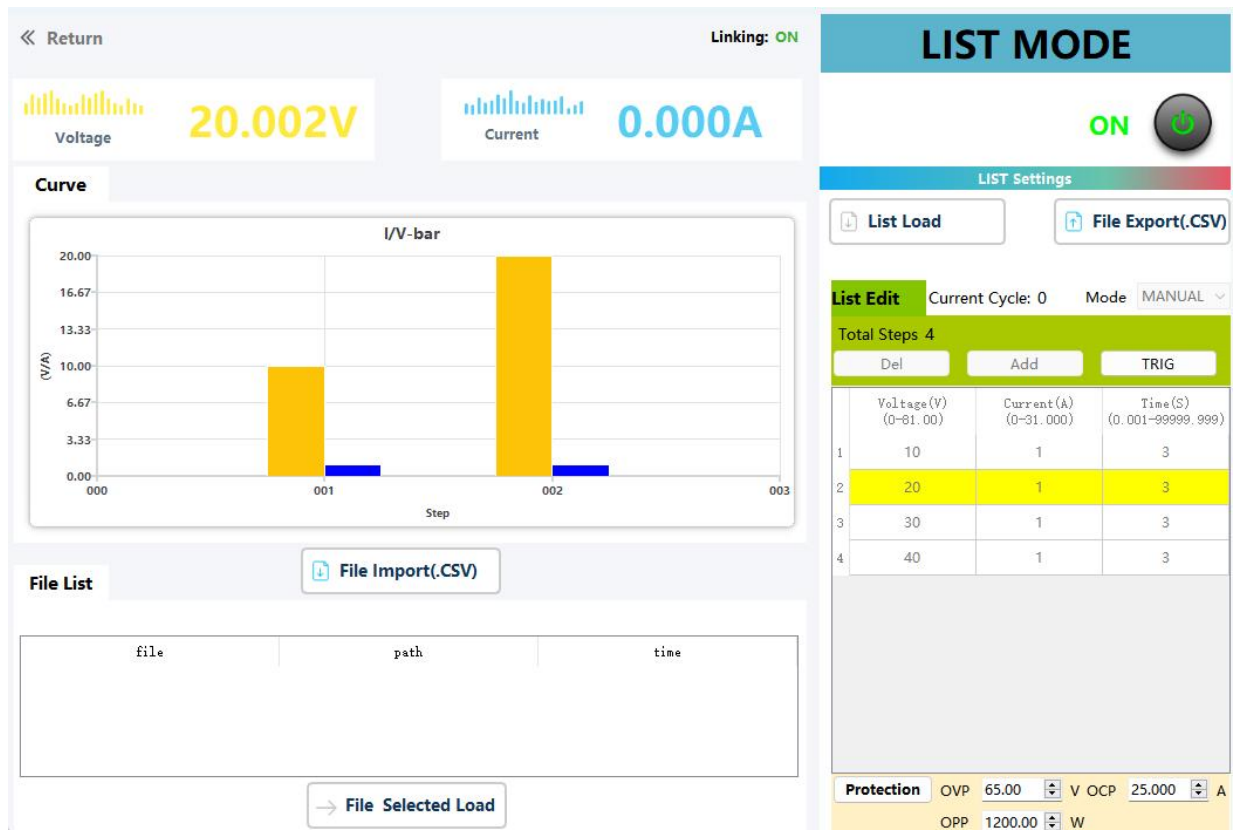


## 2.2.2 LIST MODE -MANUAL MODE operation introduction

1. Select the MANUAL mode from the "Mode" drop-down box. This mode will execute each parameter in the LIST list by actively pressing the button.

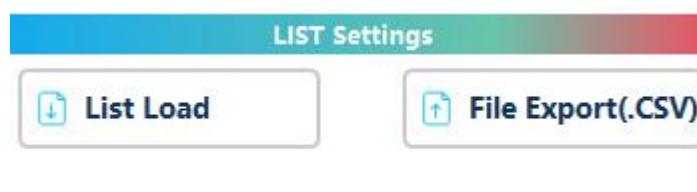


2. The LIST editing method is the same as the AUTO mode
3. Click "Load current list" or the power button to send the list data to the instrument.
4. Press the "TRIG" button once to trigger a LIST step.



## 2.2.2 LIST MODE file import and export operation

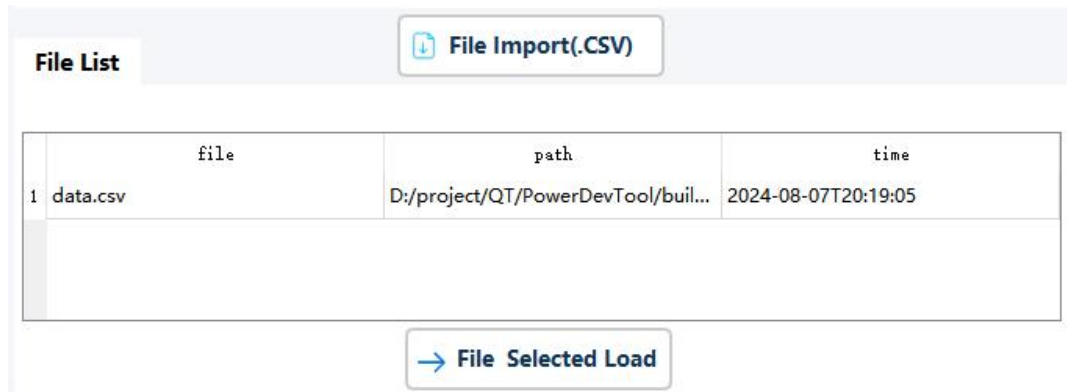
1. Click "Export File" to export the current data in CSV file format. Users can use Notepad/Microsoft Office Excel or other similar software to edit the CSV file.



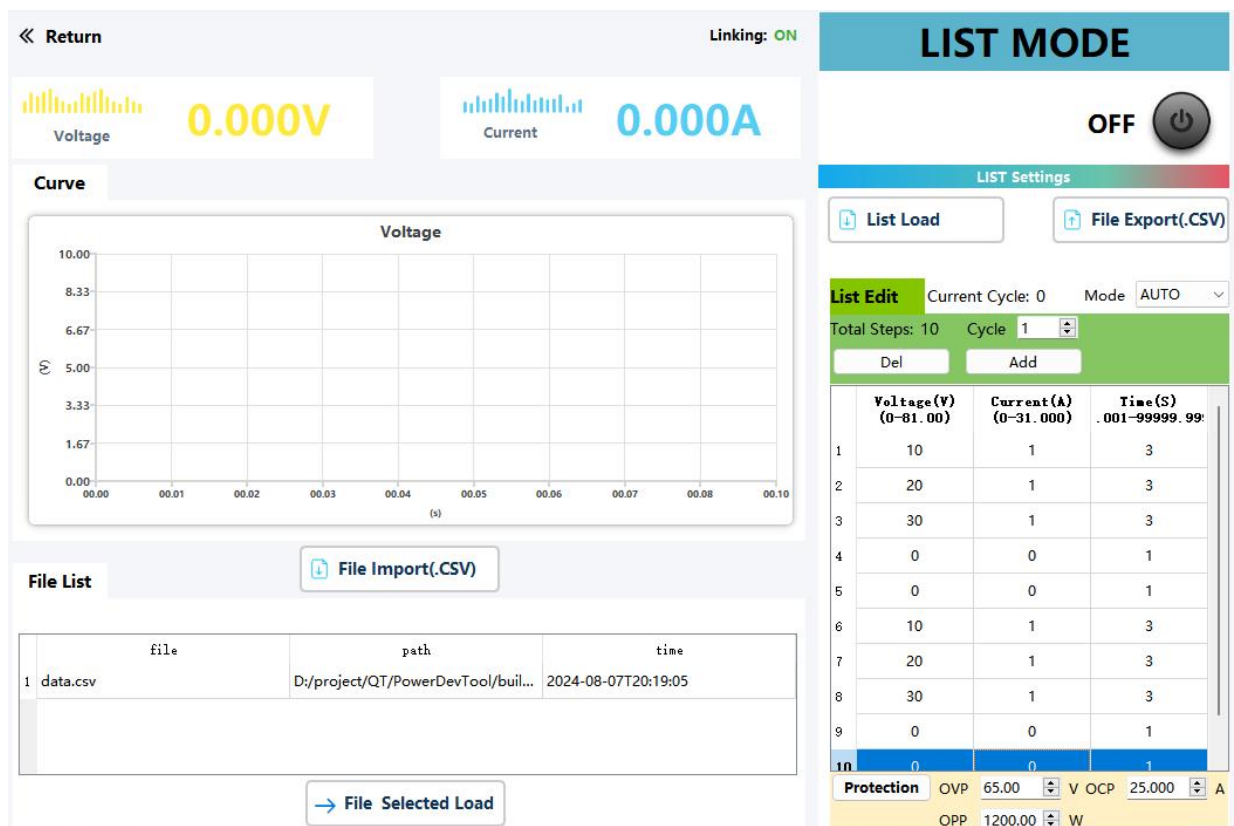
	A	B	C	D	
1	#TotalCounts	10			#TotalCounts,10,,
2	#Cycles	1			#Cycles,1,,
3	#Mode	auto			#Mode,auto,,
4	STEP	VOLT	CURR	TIME	STEP, VOLT, CURR, TIME
5	#1	10	1	3	#1,10,1,3
6	#2	20	1	3	#2,20,1,3
7	#3	30	1	3	#3,30,1,3
8	#4	0	0	1	#4,0,0,1
9	#5	0	0	1	#5,0,0,1
10	#6	10	1	3	#6,10,1,3
11	#7	20	1	3	#7,20,1,3
12	#8	30	1	3	#8,30,1,3
13	#9	0	0	1	#9,0,0,1
14	#10	0	0	1	#10,0,0,1

### Table editing instructions:

- The first row: Total step setting A1: #TotalCounts, #TotalCounts is the identification name, B1: Total step number
  - The second row: Cycle setting A2: #Cycles, #Cycles is the identification name, B2: Total cycle number
  - The third row: Mode setting A3: #Mode, #Mode is the identification name, B2: auto/manual/trigger
  - The fourth row: Parameter title
  - The fifth row: start setting the first step, the corresponding number of steps, voltage value, current value, duration, the corresponding table B5 is the voltage setting value of STEP1, C5 is the current setting value of STEP1, and D5 is the time setting value of STEP1.
  - The sixth row: similar to the fifth row, the number of steps plus 1.
2. After the table editing is completed, load the file into the LIST file list by clicking "Import File" in the software.

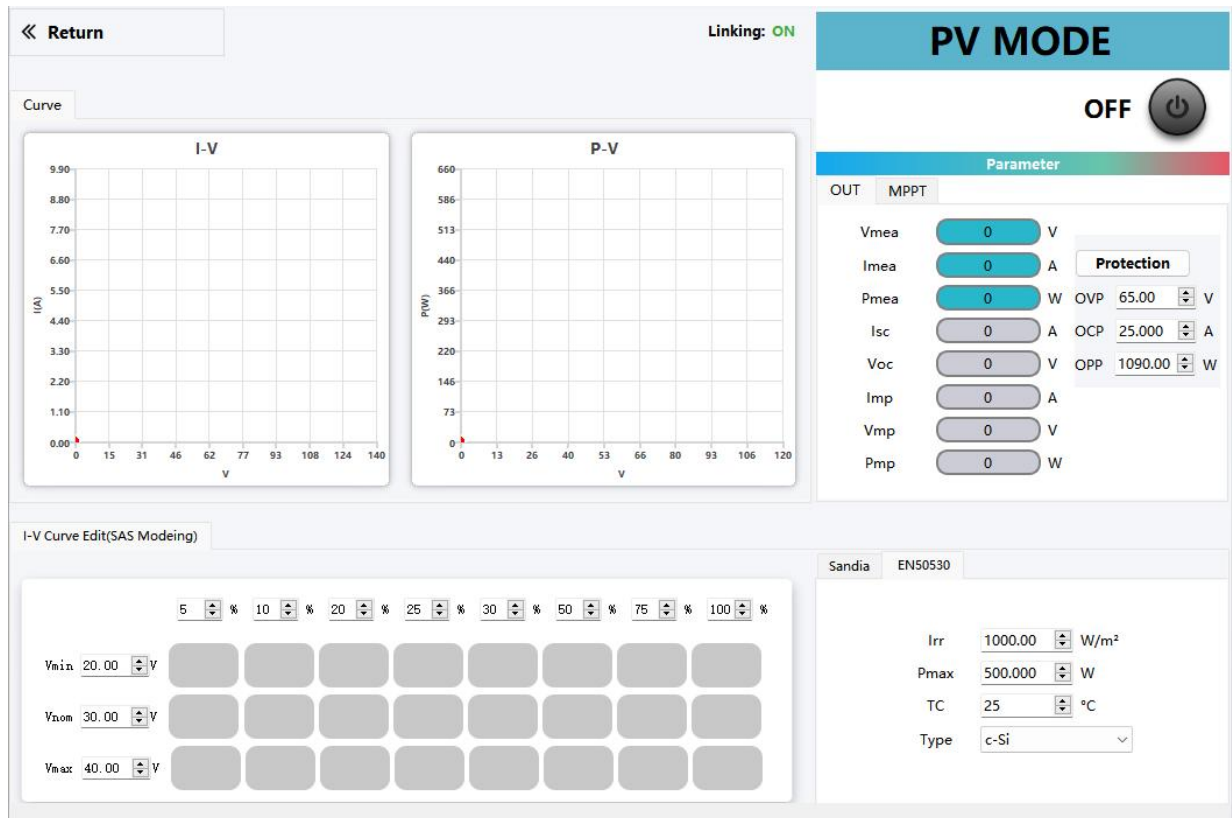


3. Select the file to be loaded and click "Load Selected File" to further load the data into the LIST editing list.



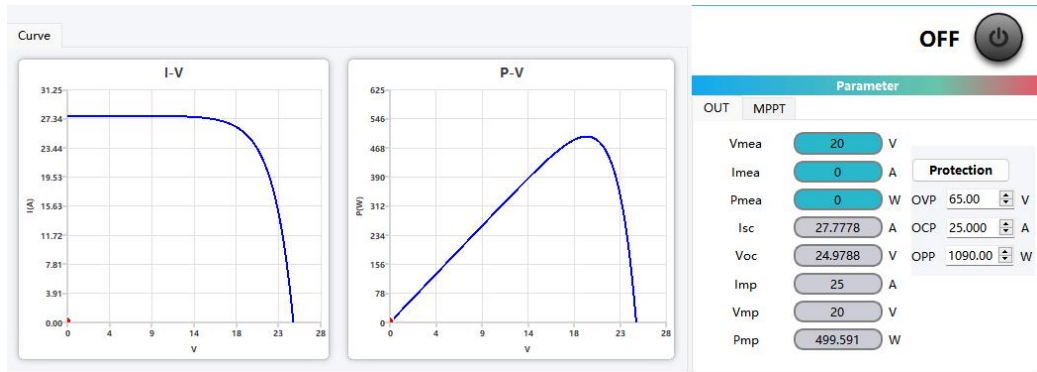
## 2.3 PV Mode

After successfully connecting to the instrument, enter the PV mode to remotely operate the instrument.

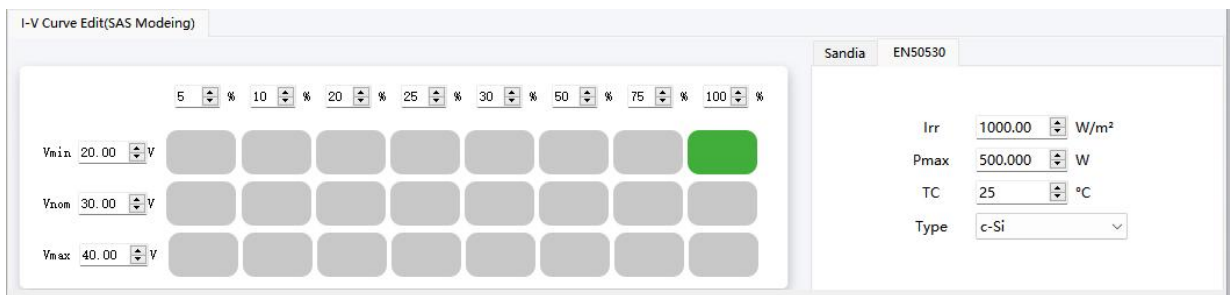


### 2.3.1 PV MODE Operation Instructions

1. The I-V and P-V curves on the left side of the figure below are the output characteristic curves of the target photovoltaic panel PV. The "Parameters" page shows the output data sampling (measured voltage, measured current, measured power) of the machine and the key indicator parameters of the corresponding photovoltaic panel output (short-circuit current, open-circuit voltage, maximum power point current, maximum power point voltage).



2. The console will remotely modify the instrument PV parameters, such as photovoltaic model, light intensity, maximum power, etc. At the same time, the power matrix percentage can be coordinated to allow the machine to generate the target photovoltaic characteristic power curve in real time. (Note: actual output power = maximum power \* percentage).



### 2.3.2 PV MODE MPPT Operation Introduction

1. MPPT data dashboard, output parameter information and MPPT static test function. Output parameter information includes output average voltage, average current, average power, efficiency and other output parameters. MPPT static test function includes "Run Time" edit box to set the run time.



**Parameter**

OUT
MPPT

V AVG(V)  

0

I AVG(A)  

0

P AVG(W)  

0

Energy (Wh)  

0

Efficiency (%)  

0

Capacity (Ah)  

0

**1s refresh**

V\_1s (V)  

0

I\_1s (A)  

0

P\_1s (W)  

0

Run Time

0

10

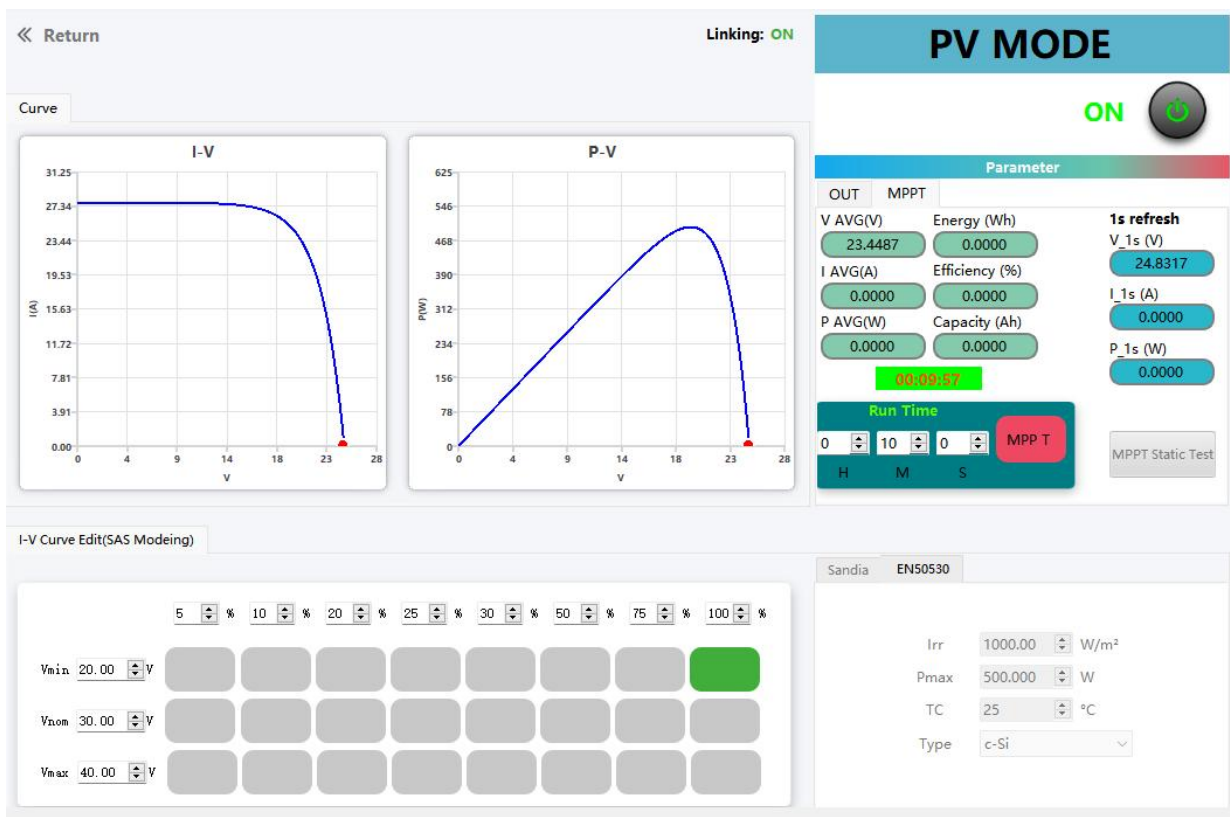
0

MPP T

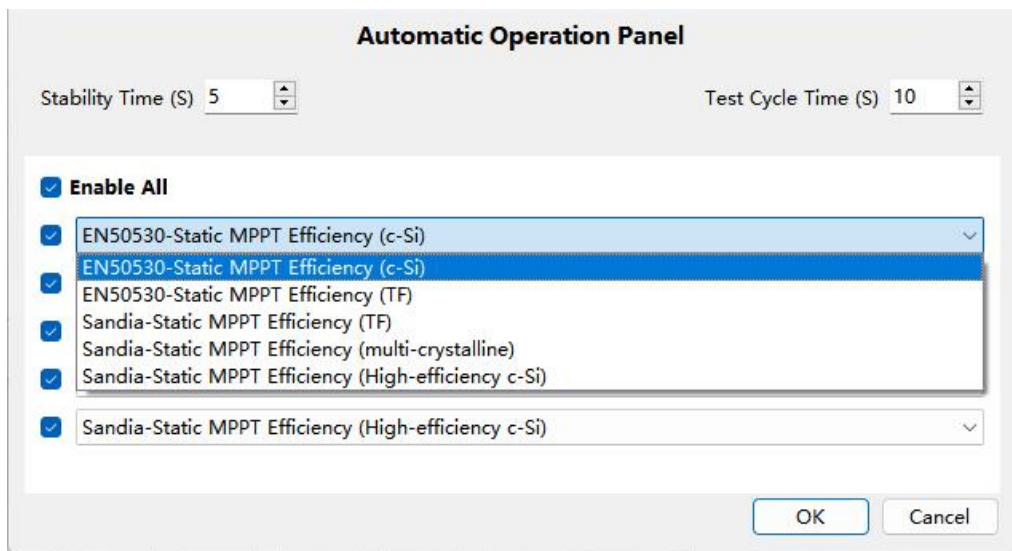
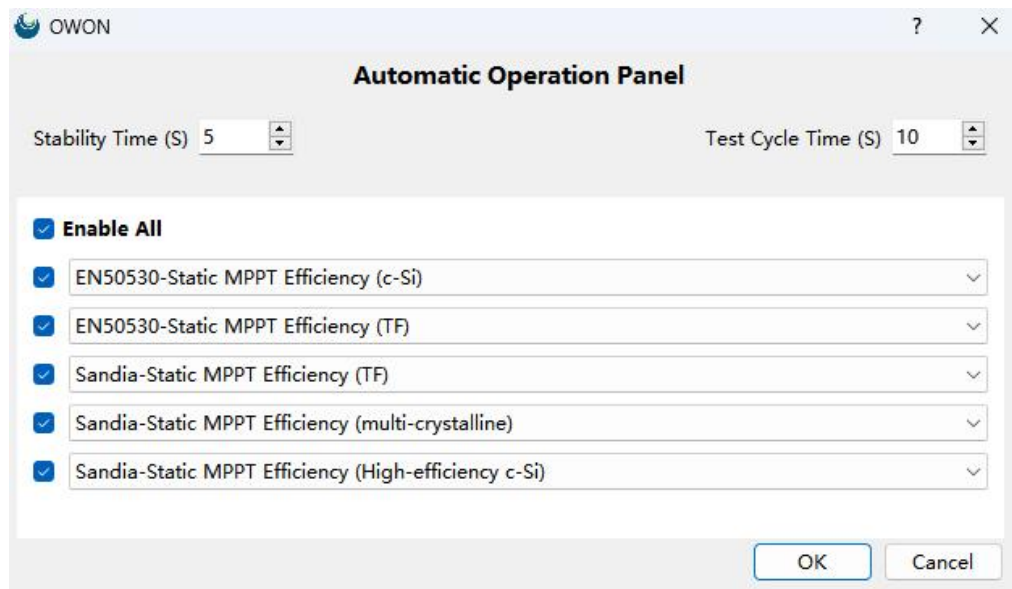
H      M      S

MPPT Static Test

2. Reminder: The "MPPT" button can only be clicked after the power button is clicked, and the test will be automatically closed after the running time ends.



to stabilize. Each test point starts to calculate the efficiency after this time. The "test cycle time" is the time to continue calculating the efficiency at this time. You can select different materials for testing. After editing, click "OK" to start the static test.



4. When the test is completed, the test file will be exported. The software will automatically jump and open. If it is closed midway, the file will be blank. The file is in the STATIC\_MPPT folder under the software directory.

A	B	C	D	E	F	G	H	I	J
<b>Sandia-Static MPPT Efficiency (multi-crystalline)</b>									
Pmp Value(T)=500 W									
MPPT voltage	Type	0.050	0.100	0.200	0.250	0.300	0.500	0.750	1.000
Vmin=50 V	multi-crystalline	99.337868	99.331131	99.323288	99.308876	99.312691	99.299805	99.342316	99.312004
Vmon=55 V	multi-crystalline	99.111267	99.11734	99.089081	99.107613	99.108398	99.114845	99.110497	99.12101
Vmax=65 V	multi-crystalline	90.278130	90.249611	90.273727	90.273193	90.262749	90.255119	90.267410	90.276871
<b>Sandia-Static MPPT Efficiency (High-efficiency c-Si)</b>									
Pmp Value(T)=500 W									
MPPT voltage	Type	0.050	0.100	0.200	0.250	0.300	0.500	0.750	1.000
Vmin=50 V	High-efficiency c-Si	99.029716	99.044838	99.014565	99.010765	99.008598	99.021042	99.032234	99.026001
Vmon=55 V	High-efficiency c-Si	97.984123	97.956200	97.937271	97.957581	97.940987	97.962532	97.970894	97.980736
Vmax=65 V	High-efficiency c-Si	88.906158	88.925972	88.907684	88.889420	88.909943	88.914246	88.904297	88.898102

MPPTLOG	2024/7/23 14:24
platforms	2024/7/20 16:21
STATIC_MPPT	2024/7/23 14:35
styles	2024/7/20 16:21
translations	2024/7/20 16:21

