

Service Tool G2 User Manual

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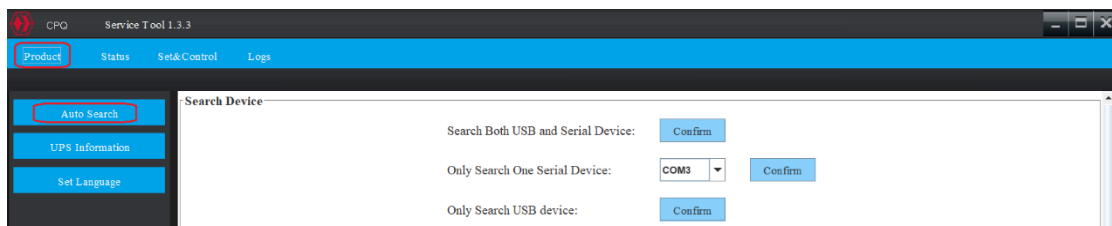
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1 Auto Search Automatically

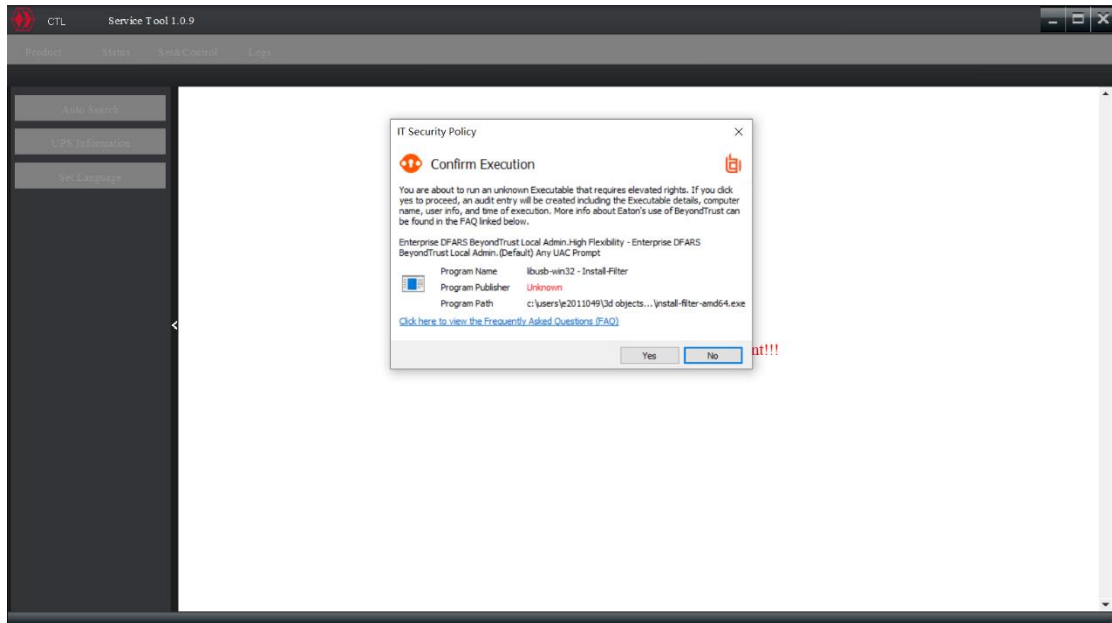
- Double click "ServiceTool.exe" icon to start service tool.

Name	Date modified	Type	Size
config	2024/5/28 10:26	File folder	
jre	2024/5/28 10:38	File folder	
lib	2024/5/28 0:15	File folder	
libUSB_driver	2024/5/27 16:32	File folder	
logs	2024/5/29 14:32	File folder	
resources	2024/5/27 16:32	File folder	
jspWin.dll	2024/5/27 11:32	Application extens...	64 KB
jusb.dll	2024/5/27 11:32	Application extens...	413 KB
lax.jar	2024/5/27 16:14	Executable Jar File	60 KB
libUSB_Win.dll	2024/5/27 11:32	Application extens...	38 KB
ServiceTool.exe	2024/5/27 16:14	Application	587 KB
ServiceTool.lax	2024/5/27 16:14	LAX File	6 KB
StartServiceTool.jar	2024/5/29 12:59	Executable Jar File	9,913 KB

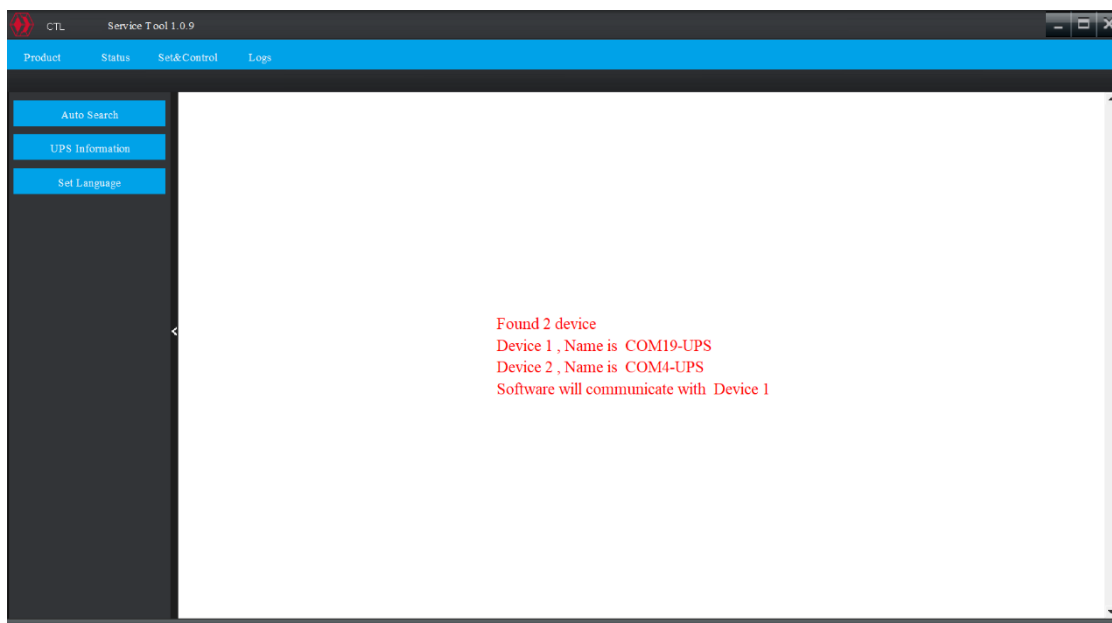
- After the Service Tool starts, it automatically jumps to the device search page. You can select different search methods: search for one single serial device, search only for USB devices, or search for both USB and serial devices.
When searching for devices, all components will become grey.
The time for ending search task will take 30-60s, Software supports three communication protocols: Q-RS232, shut-R232, and hid-USB.



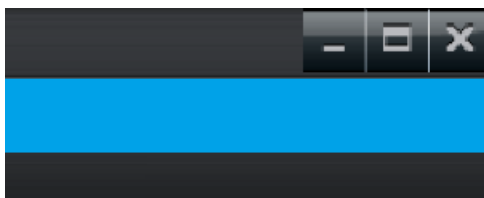
- If it is the first searching for USB device, you need to click "Yes" to load the library file. Otherwise you can click "No" to ignore this step.



- All UPS devices attached to the computer will be searched, but the software will only communicate with the first device be founded.



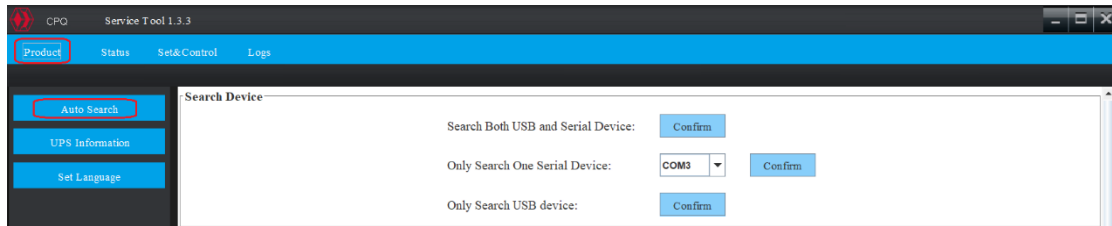
- By clicking the button in the upper right corner, you can minimize, maximize, and close the interface.



2 Product

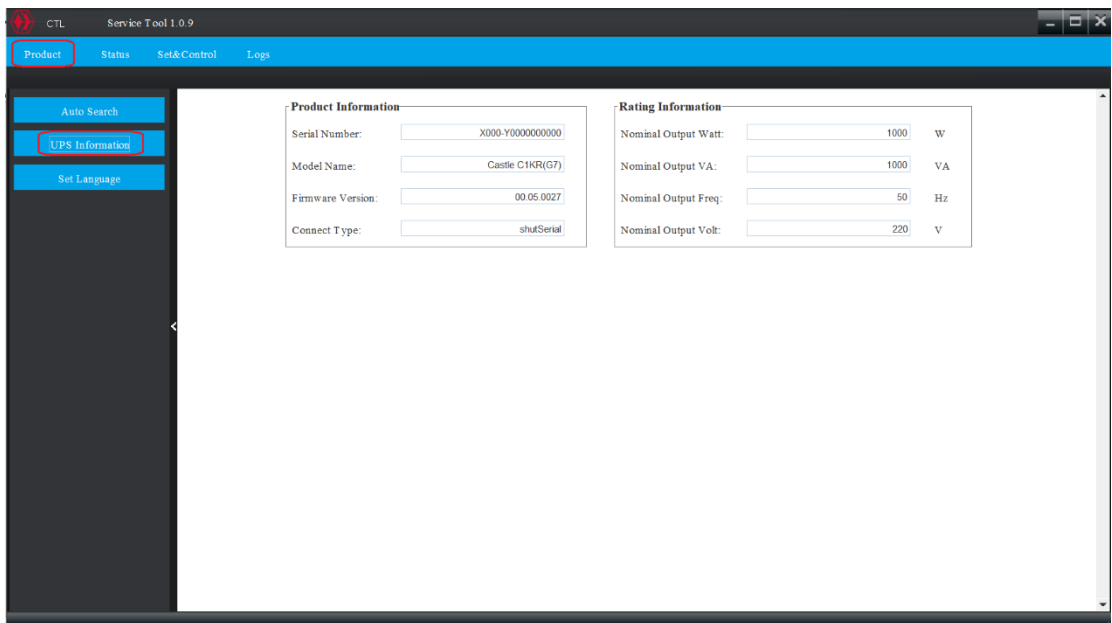
2.1 Auto Search Manually

- If a different model of UPS is replaced, you need to initiate search again. Click on "Product" -> "Auto Search", Choose one search method



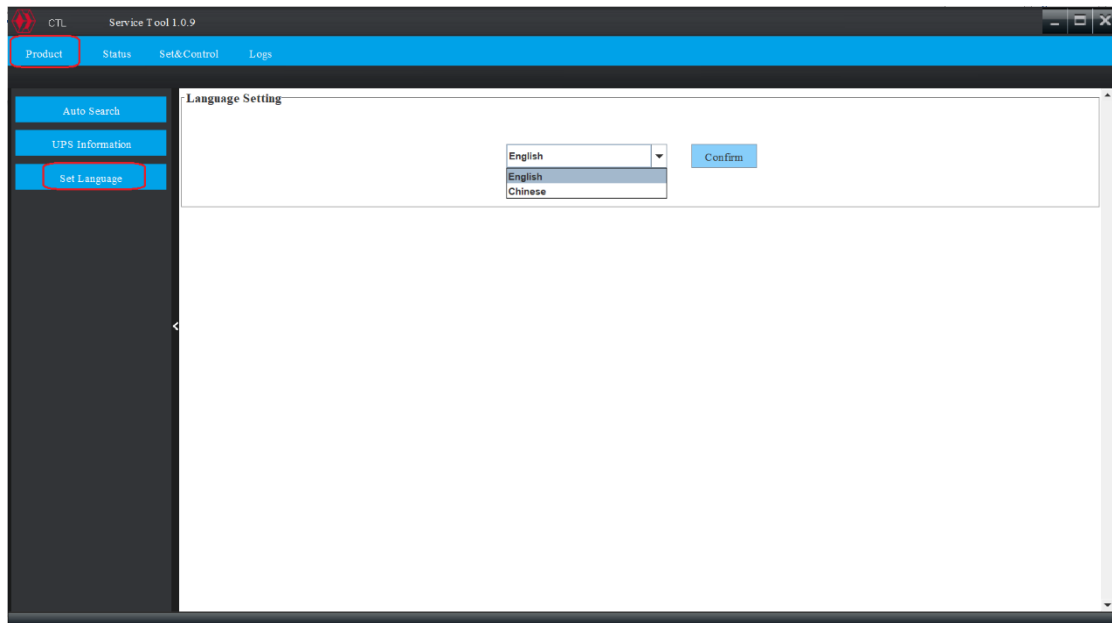
2.2 UPS Information

- Click "Product"->"UPS Information", View UPS product information and rating information



2.3 Set Language

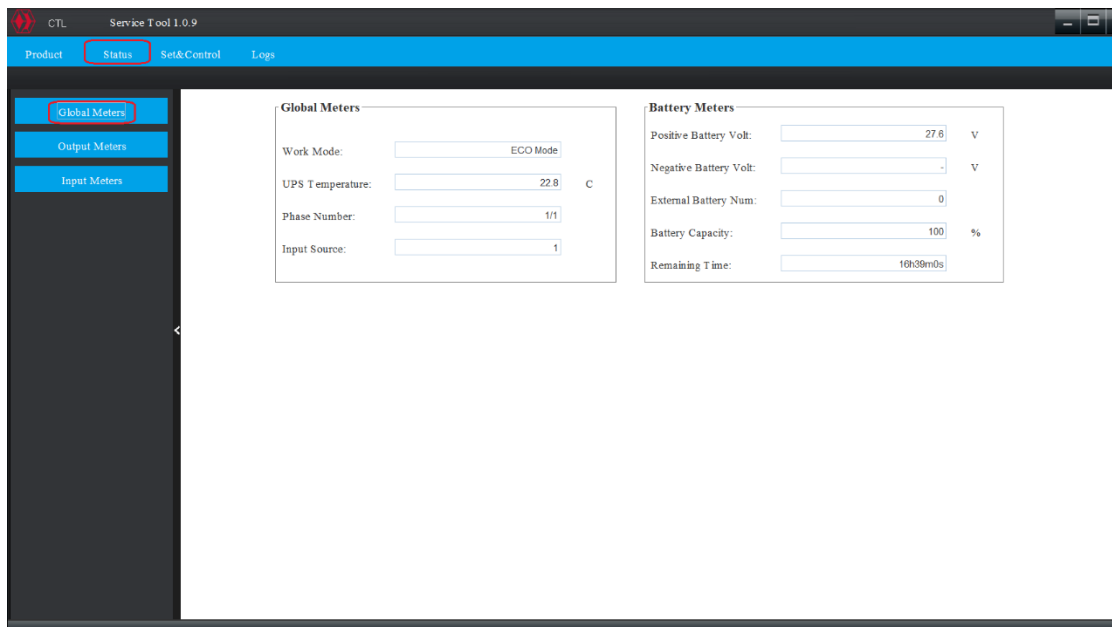
- Click "Product" -> "Set Language", software support two language "English" and "Chinese"



3 Real-Time Status

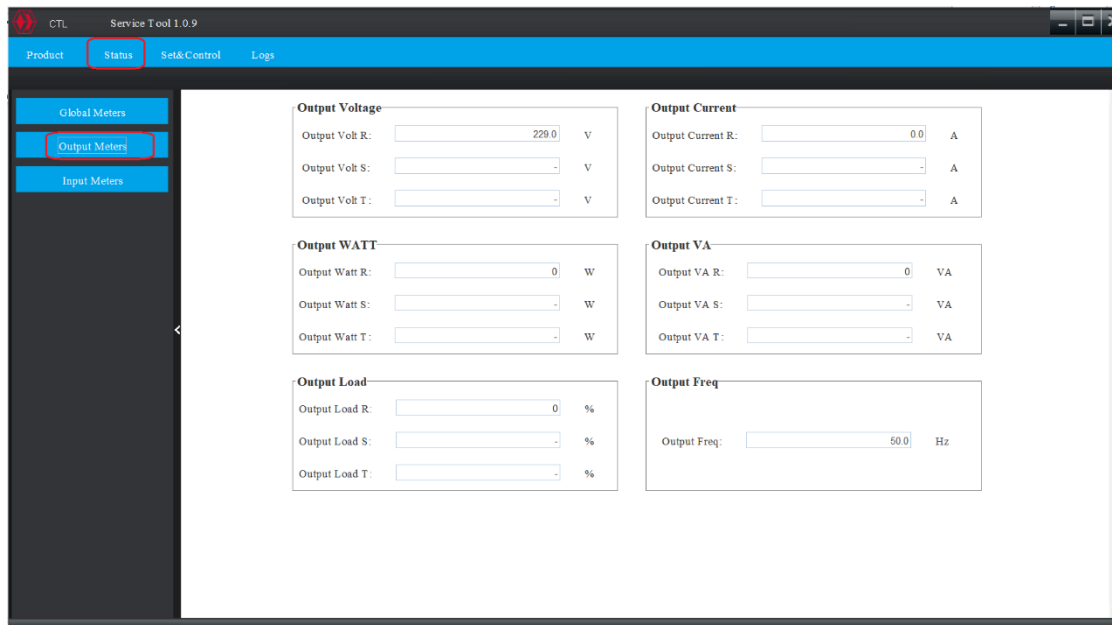
3.1 Global Meters

- Click “Status”->“Global Meters”, check the global meters



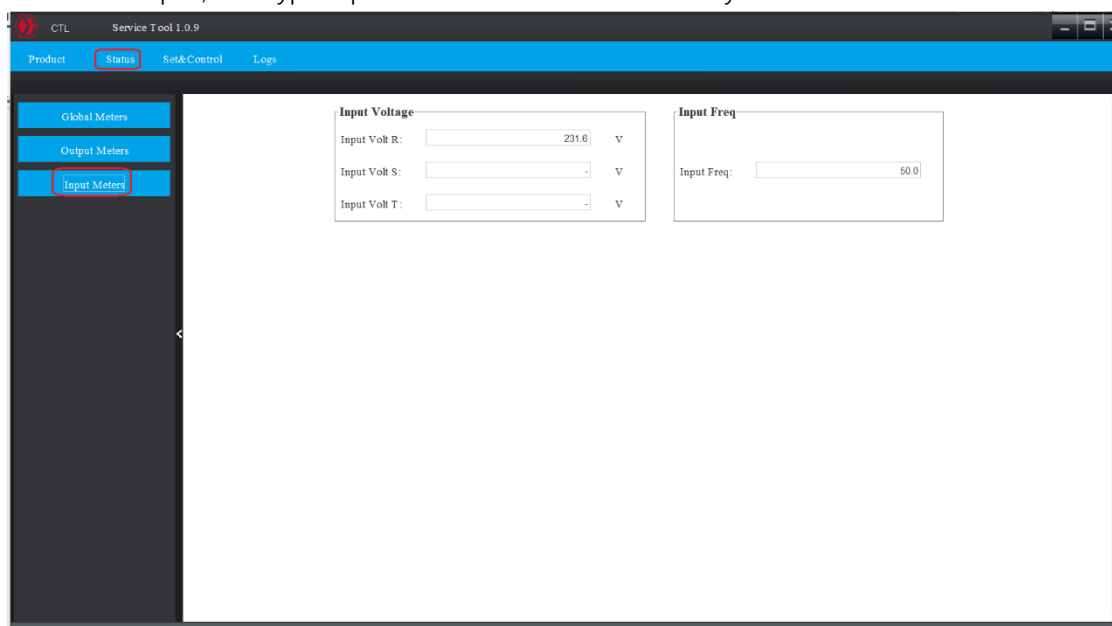
3.2 Output Meters

- Click “Status”->“Output Meters”,check UPS output meters



3.3 Input Meters

- Click “Status”->“Input Meters”, check UPS input meters
If it is dual input, the bypass parameters will be automatically loaded.



4 Set & Control

4.1 Set Meters

4.1.1 Read Meters

- Click on "Set & Control" -> "Set Meters" to set the parameter information of UPS.
Due to different UPS, the supported parameters are different. If UPS does not support a certain parameter, the button will automatically turn gray. Check the image as below.

Note: After setting the parameters, you need to click the "Refresh" button to retrieve the results from UPS again

The screenshot displays the 'CPQ Service Tool 1.2.5' interface. The top navigation bar includes 'Product', 'Status', 'Set&Control' (highlighted with a red box), and 'Logs'. On the left sidebar, 'Set Meters' is selected. The main content area is divided into several sections:

- Meter Setting:** Contains three rows of settings:
 - 'Rated Output Volt' with a dropdown set to '220' and a 'Confirm' button.
 - 'Rated Output Freq' with a dropdown set to '60' and a 'Confirm' button.
 - 'Design Battery Capacity(AH)' with an empty text field and a grayed-out 'Confirm' button.
- Operation Option:** Contains several settings with radio buttons and 'Confirm' buttons:
 - 'Line Reverse Detection': Radio buttons for 'Yes' and 'No' (both unselected), and a grayed-out 'Confirm' button.
 - 'Audible Alarm': Radio buttons for 'Yes' (selected) and 'No'.
 - 'Automatic Restart': Radio buttons for 'Yes' and 'No' (selected).
 - 'Standby On Bypass': Radio buttons for 'Yes' and 'No' (selected).
 - 'Manual Bypass': Radio buttons for 'Yes' and 'No'.
 - 'Converter Mode': Radio buttons for 'Yes' and 'No' (selected).
 - 'ECO Mode': Radio buttons for 'Yes' and 'No' (selected).
- Calibration:** Contains an 'Input Volt R' dropdown, an empty text field, and 'Write' and 'Read' buttons.
- Load Segment Setting:** Displays the message 'Load Segment does not exist'.

At the bottom, a red text prompt reads 'Please click the Refresh button after setting meters:' next to a 'Refresh' button.

4.1.2 Specificity Conditions

- "Rated Output Volt", "Rated Output Freq", "Converter mode" can be set when the output is off. Otherwise the following dialog will pop up.

Meter Setting

Rated Output Volt: 220 ▼ Confirm

Rated Output Freq: 50 ▼ Confirm

ERROR ✕

 This command can be executed when device is in standby mode

OK

- “ECO mode” can be set when the ups is off or bypass mode. Otherwise it will pop up “This command can be executed when device is in standby mode or in bypass mode”

4.1.3 Calibration

- Q supports three-phase calibration, while the Shut and USB only support R-phase calibration.
- Click on "Set & Control" -> "Set Meters", you can write and read calibration meters. When writing, it is necessary to follow the format of the example.

Calibration

Input Volt R ▼ Write Read

Write For exmaple: 220.0

Calibration

Battery Volt ▼ Write Read

Write For exmaple: 42.0

for example, if you are asked to enter 220.0 but you enter 220.05, it will pop up "Please enter valid values as prompted".

ERROR
×



Please enter valid values as prompted

OK

Calibration

Input Volt R

▼

222.05

Write

Read

Write For exmaple: 220.0

- Select different calibration options to read the corresponding values. Read the current input voltage, the respond value is 225.6.

Calibration

Input Volt R

▼

-

Write

Read

Read value: 225.6

- “Query Charger Status” and “Query Charger voltage” can be read but can't be written. Reading the charger status is “Floating”.

Calibration

Query Charger Status

▼

-

Write

Read

Read Charger Status: Floating

4.1.4 Load Segment Setting

- Software will detect the number of LS automatically. You can set the shutdown delay time and startup delay time for LS.

Load Segment Setting

LS1 shutdown timer:

240

sec

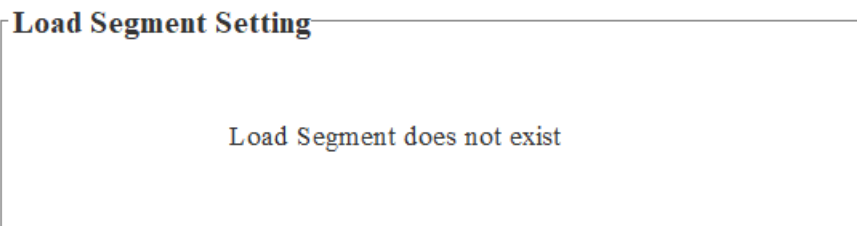
LS1 startup timer:

5

sec

Confirm

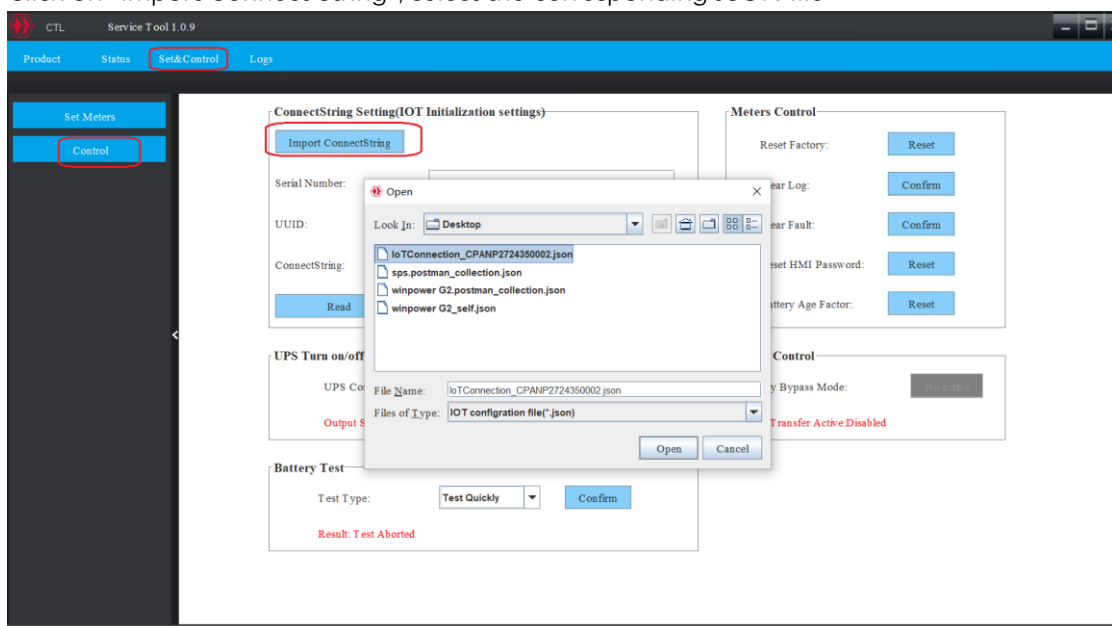
- If the UPS does not support LS, software will show that "Load Segment does not exist"



4.2 Control

4.2.1 Connect-String Setting

- Click on "Set & Control" -> "Control", Set the Connect String.
This function is used for the initialization settings of IOT cards, and only Q protocol supports this function.
Click on "Import Connect String", select the corresponding JSON file



- After decryption, it will display as following image. Click "Write" to write the serial number, UUID, and Connect String into UPS.

ConnectionString Setting(IOT Initialization settings)

Import ConnectString

Serial Number: CPANP2724350002

UUID: 00309ded-185a-462e-9ad0-4d6b5f097e65

ConnectionString: ~~tcp://192.168.1.100:502~~ t.DeviceId=00309ded-185a-462e-9ad0-4d6b5f097e65;Sh

Read Write

- Click "Read", Read the corresponding information from UPS and check if the write function is executed successfully

4.2.2 Battery Test

- Click on "Set & Control" ->"Control", execute battery self-test.
Test types are different for different UPS or communication protocol.
After executing the test function, the "Result" field will display the test result.

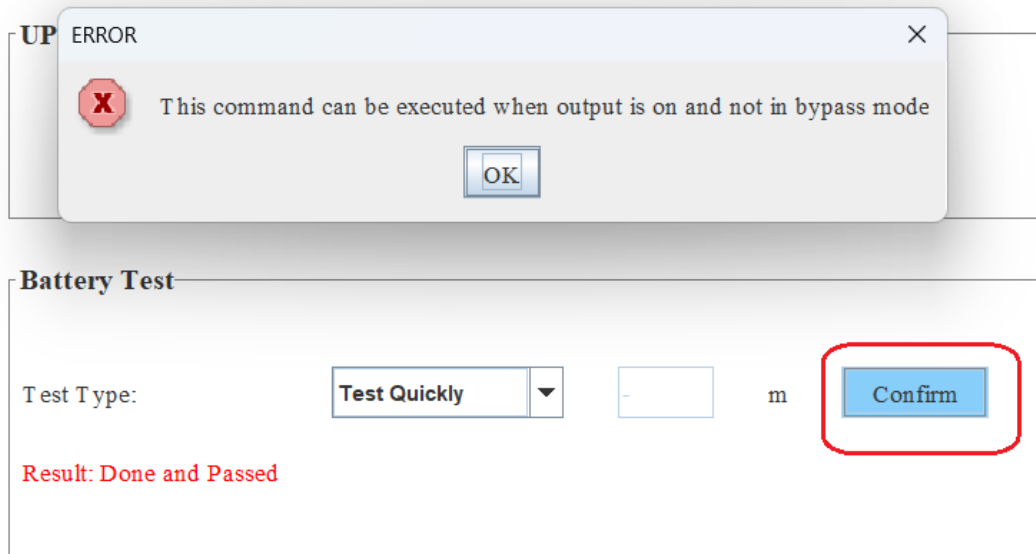
Battery Test

Test Type: Test Quickly Test Quickly Test Battery Low Test Specify Time Cancel Test

Result: Done and Passed

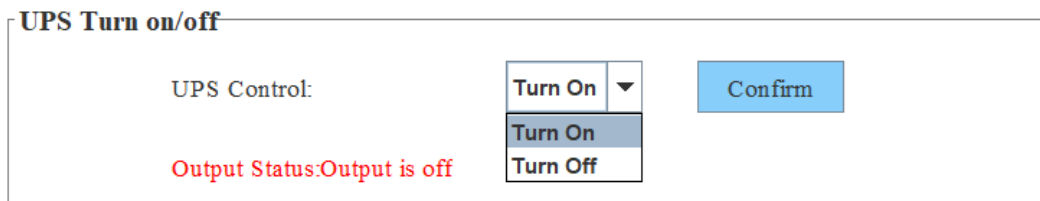
- m Confirm

- The battery self-test must be performed when the output is on and not in bypass mode.
Otherwise the following dialog will pop up



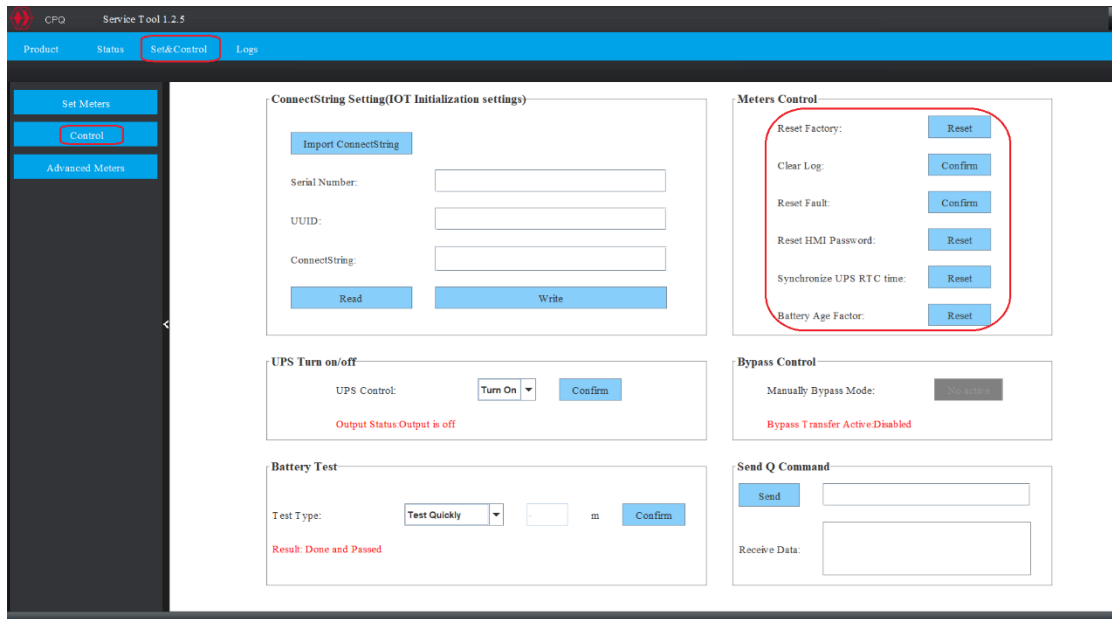
4.2.3 UPS turn on/off

- Click on "Set & Control" ->"Control", you can turn on/off the UPS.
"Output status" field will show UPS is on or off.

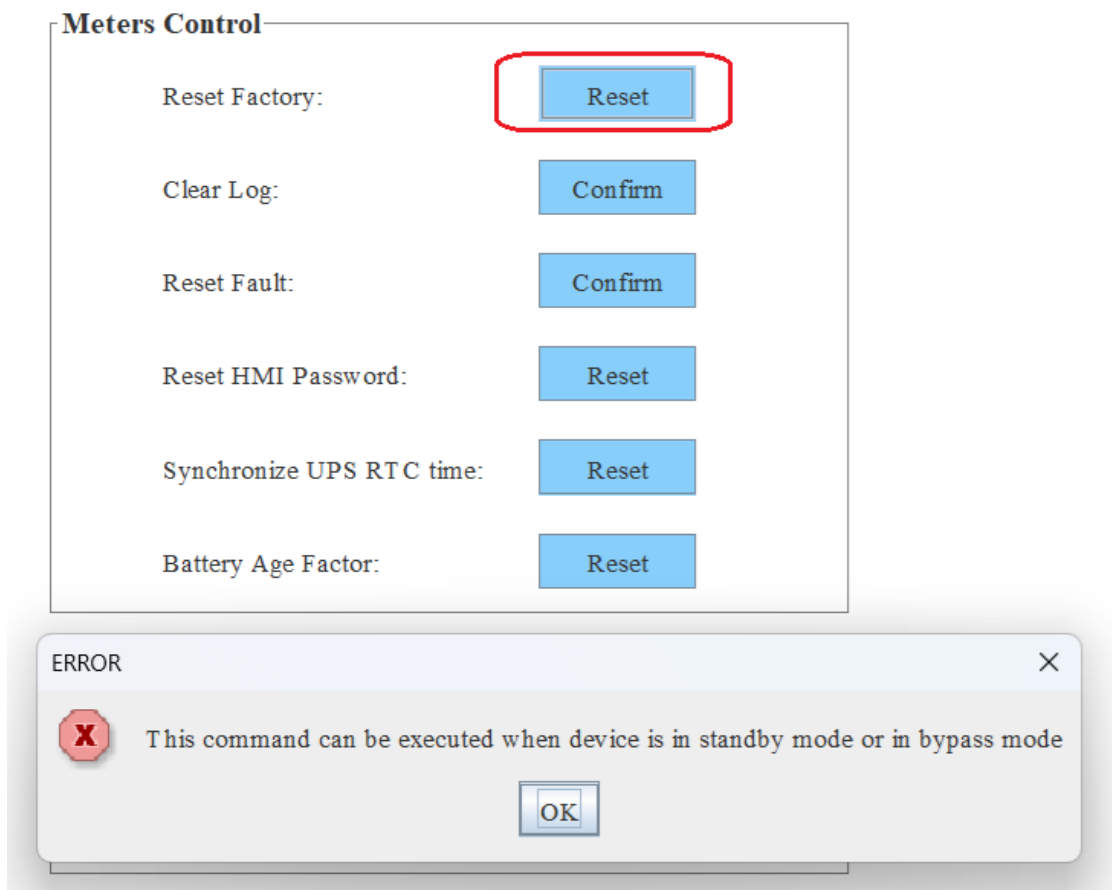


4.2.4 Meters Control

- Click on "Set & Control" ->"Control", you can set the "Meters Control" as below image.
You can set the meters: "Reset Factory", "Clear log", "Reset Fault", "Reset HMI Password", "Synchronize UPS RTC time", "Battery Age Factor"



- "Reset Factory" and "Reset Fault" can be executed when the UPS is on bypass or standby mode. Otherwise the following dialog will pop up.



4.2.5 Go to Bypass

- Click on "Set & Control" -> "Control" -> "Go to Bypass", UPS will go to bypass mode manually, this function can be supported by USB and shut protocol, Q can't be supported

CPQ Service Tool 1.3.3

Product Status Set&Control Logs

Set Meters Control Advanced Meters

ConnectString Setting(IOT Initialization settings)

Import ConnectString

Serial Number:

UUID:

ConnectString:

Read Write

Meters Control

Reset Factory:

Clear Log:

Reset Fault:

Reset HMI Password:

Synchronize UPS RTC time:

Battery Age Factor:

UPS Turn on/off

UPS Control:

Output Status Output is on

Battery Test

Test Type:

Result: Test Aborted

Bypass Control

Manually Bypass Mode:

Bypass Transfer Active Enabled

Send Q Command

Send

Receive Data:

- The "Manual Bypass" should be set to "Yes", otherwise the button will be grayed out and display "No Activate"

Operation Option

Line Reverse Detection: ☐ Yes ☒ No

Audible Alarm: ☒ Yes ☐ No

Automatic Restart: ☒ Yes ☐ No

Standby On Bypass: ☐ Yes ☒ No

Manual Bypass: ☒ Yes ☐ No

Converter Mode: ☐ Yes ☒ No

ECO Mode: ☒ Yes ☐ No

Bypass Control

Manually Bypass Mode:

Bypass Transfer Active Disabled

4.2.5 Send Q Command

- You can set any Q command.

The screenshot shows a software interface with a sidebar on the left containing 'Set Meters' and 'Control' tabs. The 'Control' tab is selected. The main area is divided into several panels:

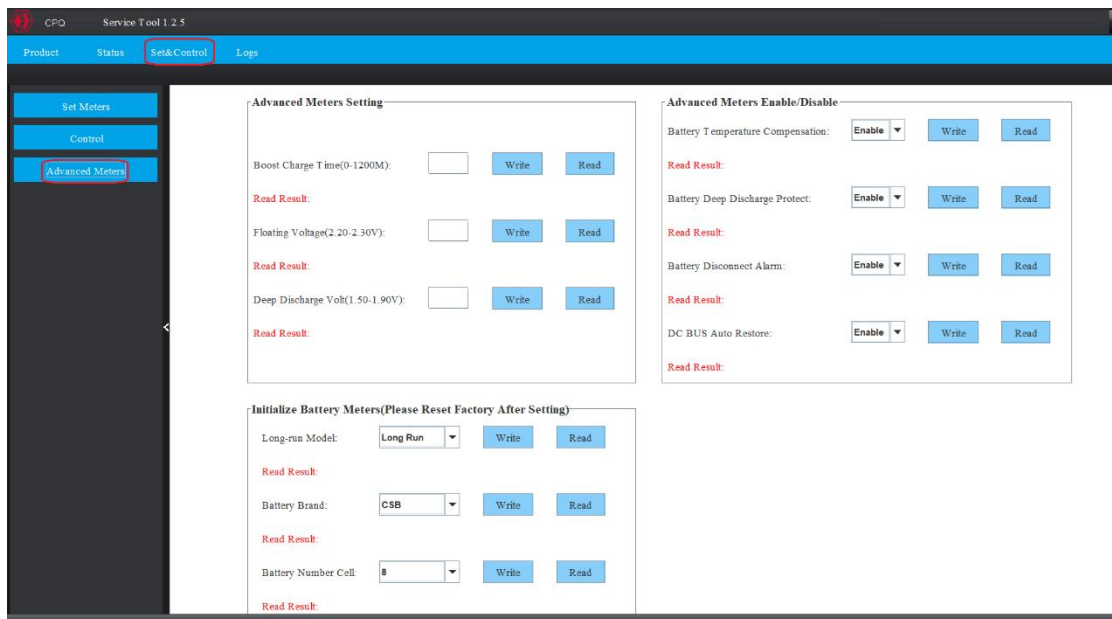
- ConnectString Setting(IOT Initialization settings):** Includes an 'Import ConnectString' button, input fields for 'Serial Number', 'UUID', and 'ConnectString', and 'Read' and 'Write' buttons.
- Meters Control:** Includes buttons for 'Reset Factory', 'Clear Log', 'Clear Fault', 'Reset HMI Password', and 'Battery Age Factor'.
- UPS Turn on/off:** Includes a 'Turn On' dropdown and a 'Confirm' button. Below it, it says 'Output Status Output is on'.
- Battery Test:** Includes a 'Test Type' dropdown set to 'Test Quickly', a 'Confirm' button, and a red message 'Result: Test Aborted'.
- Bypass Control:** Includes a 'Manually Bypass Mode' button (disabled) and a red message 'Bypass Transfer Active Disabled'.
- Send Q Command:** This section is highlighted with a red rectangle. It contains a 'Send' button and a text input field with 'Q1'.
- Receive Data:** A text area showing a hexadecimal string: '226.2 226.2 219.4 000 49.9 2.27 23.5 00000001'.

- Q command is composed of Numbers, Letters, "?" and "."

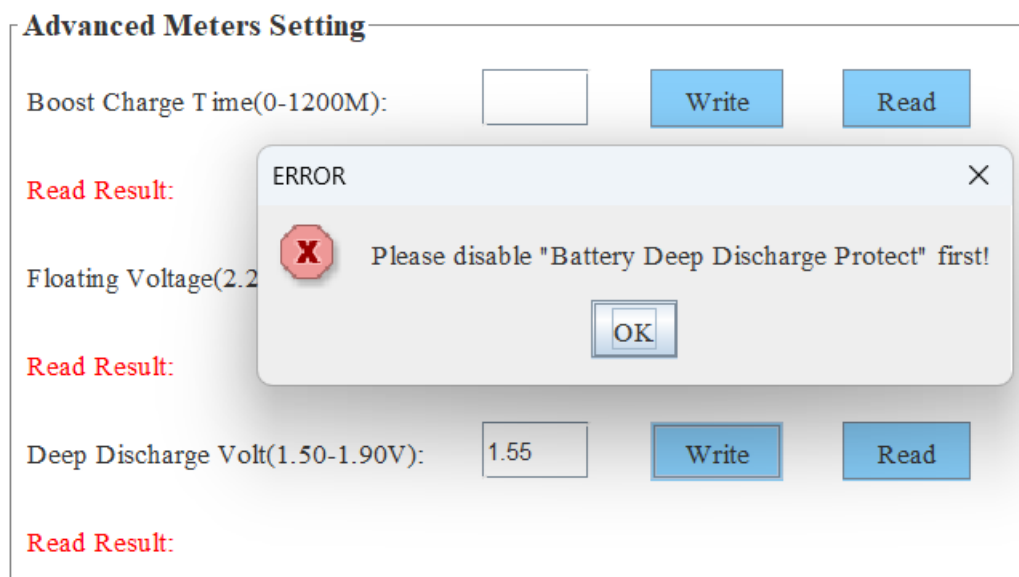
The screenshot shows an error dialog box with the title 'ERROR' and a red 'X' icon. The message inside the dialog is: 'Q Command is composed of Numbers, Letters, special characters ?.' Below the dialog box, the 'Send Q Command' section is visible, showing a 'Send' button and a text input field containing 'ZZ&'.

4.3 Advanced Meters

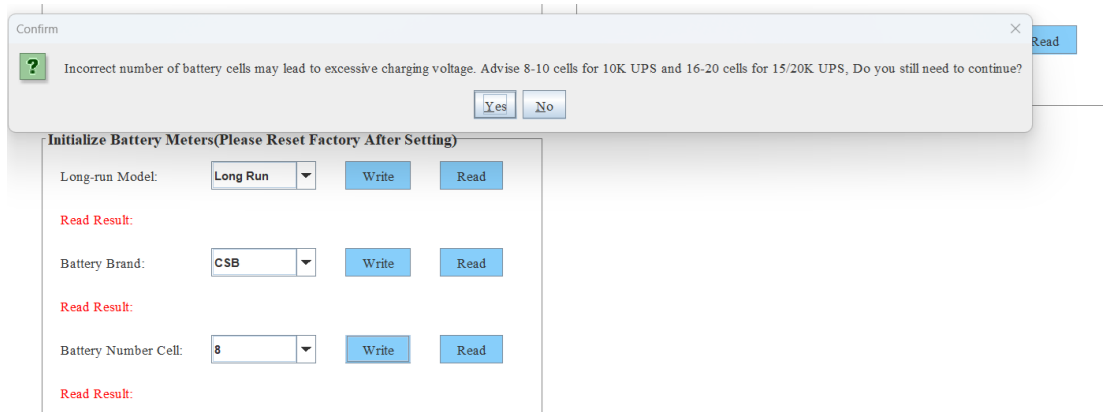
- Click on "Set&Control" ->"Advanced Meters", you can set the meters as below:
"Boost Charge Time", "Floating Voltage", "Deep Discharge Volt", "Battery Temperature Compensation", "Battery Deep Discharge Protect", "Battery Disconnect Alarm", "DC BUS Auto Restore", "Long-run Model", "Battery Brand", "Battery Number Cell"



- Set the “Deep Discharge Volt” must disable “Battery Deep Discharge Protect” firstly, otherwise the following dialog will be prompted:



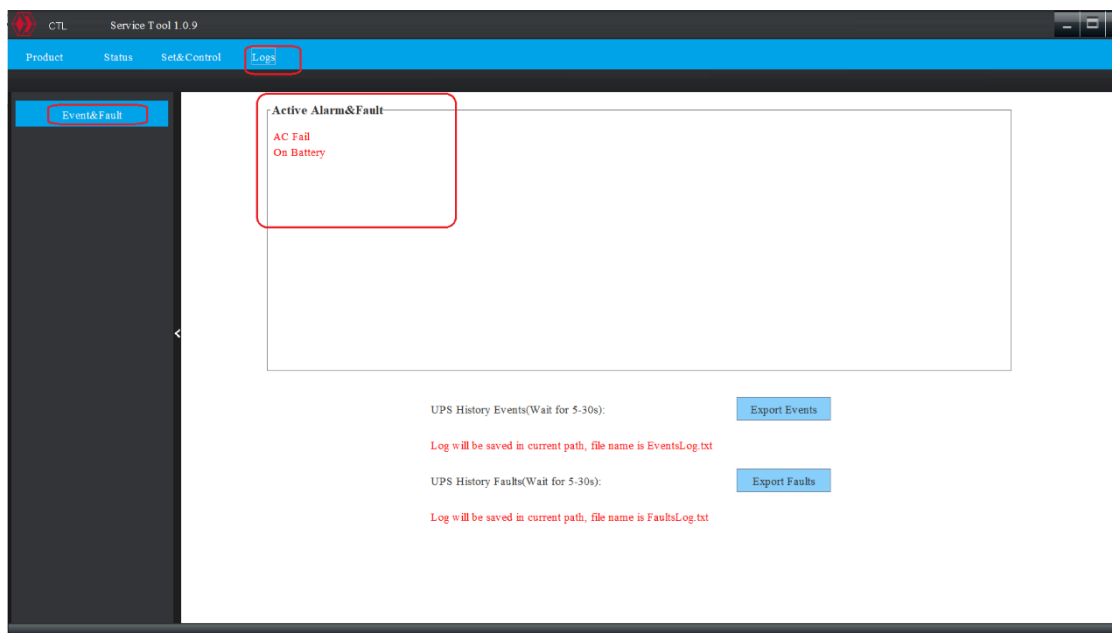
- Set the “Battery Disconnect Alarm” to enable, indicating that UPS will send “Battery Disconnect” Alarm.
Set the “Battery Disconnect Alarm” to disable, it means that UPS will not send the “Battery Disconnect” Alarm.
- The function of “Initialize Battery Meters” is mainly used for setting the initialization battery meters after replacing the control board. “Long-run model”, “Battery Brand”, and “Battery Number Cell” all need to be executed in the standby mode. The setting of battery cell is very important. If set incorrectly, it may cause UPS overcharging. Please consult after-sales for confirmation before setting. Set the battery cell will prompt the following dialog



5 Logs

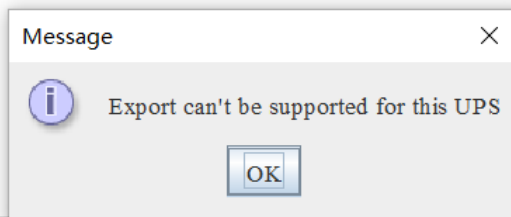
5.1 Event & Fault

- Click on “Logs” ->“Event & Fault” to view the currently activated events and faults



5.2 Export History Event & Fault

- If the Q ups does not support export function, it will pop up the dialog as below.



UPS History Events(Wait for 5-30s):

Export Events

Log will be saved in current path, file name is EventsLog.txt

UPS History Faults(Wait for 5-30s):

Export Faults

Log will be saved in current path, file name is FaultsLog.txt

- Click the export button, wait for 5-30 seconds, and view the EventsLog.txt or FaultsLog.txt in the current directory

```
EventsLog.txt - 记事本
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)
2012-05-13 15:57:24,Used as source of power converter (HE mode)
2012-05-13 15:56:45,CC Floating
2012-05-13 15:56:29,CC Charging
2012-05-13 15:56:25,CC OFF
2012-05-13 15:56:25,Online mode
2012-05-13 15:56:24,Bypass voltage in range
2012-05-13 15:56:24,In phase
2012-05-13 15:56:24,Bypass frequency in range
2012-05-13 15:56:24,Main AC is above charger level
2012-05-13 15:56:24,Frequency in range
2012-05-13 15:56:24,Voltage in range
2012-05-13 15:55:55,Main AC is below charger level
2012-05-13 15:55:55,CC Discharging
2012-05-13 15:55:55,Battery is discharging
2012-05-13 15:55:55,Bypass voltage out of range
2012-05-13 15:55:55,Bypass frequency out of range
2012-05-13 15:55:55,Phase out of range
2012-05-13 15:55:55,Voltage out of range
2012-05-13 15:55:55,Frequency out of range
2012-05-13 15:55:22,Online mode
2012-05-13 15:55:22,Load is not protected
2012-05-13 15:55:22,Load is powered
2012-05-11 13:59:59,CC Floating
2012-05-11 13:59:59,CC Charging
2012-04-24 19:52:13,CC Floating
2012-04-24 19:52:08,Bypass frequency in range
2012-04-24 19:52:08,Main AC is above charger level
2012-04-24 19:52:08,Frequency in range
2012-04-24 19:52:08,Voltage in range
2012-04-24 19:52:00,CC OFF
2012-04-24 19:51:55,Main AC is below charger level
2012-04-24 19:51:55,Bypass frequency out of range
2012-04-24 19:51:55,Frequency out of range
2012-04-24 19:51:55,Voltage out of range
2012-04-12 15:00:03,CC Floating
2012-04-12 13:24:17,CC Charging
2012-03-14 16:00:18,CC Floating
```