Hi-Checker
User Manual

PC Software

Content

Thank you for choosing our company's commercial air conditioner.To ensure the correct use of Hi-Checker, please read this manual and <Hi-Checker User Guide> carefully before use. Please keep it after reading. Should you have any question, please contact the dealer or our company's service center.

Preface

- This product is a general-purpose control product. Product features require air conditioning system support, Connecting with some certain types of air conditioners may void part of the functions indicated in this manual.

- Do not use this product in the following places where the product is prone to fail.

  Steamy places, or places where oil(including machinery oil)sprays; Places, such as hot spring, with high concentration of sulphide gases; Places where flammable gas may generate or flow; Coastal areas with high salinity; Places with high acidity or alkalinity.

- When using medical device and other devices that produce electromagnetic waves, the transmitting surface of electromagentic wave shall not face this product directly to avoid mis-operation.

  In addition, in order to prevent electromagnetic waves propagating in the air from affecting the air conditioner. Please place equipment that can generate electromagnetic waves, radio transmitters, etc., at a distance of 3m away from the product.

Meaning of the symbol

⚠ Warning: Indicates mis-operation may reuslt in serious injury or death.

🚫 : Indicates prohibited items.

❗ : Indicates mandatory items, and provides guidance to the actions of unspecified general users.

Attention : Indicates issues need attention

shortcut : Helps to facilitate your operation.

Safety Tips

- Please read this chapter before using the product.

- Items need attention are categorized into [⚠ Warning] . [⚠ Warning] indicates items that may lead to severe consequences due to improper installation. It is a must to obey the requirments.

- After reading, please keep this manual in a safe place for reference at any time.

Installation . Electrical construction	
⚠ Warning	• Installation shall be performed in strict accordance with this manual and by the professionals designated by our company. Otherwise, it may lead to electric shock or falling, and a fire may break out.
	• Electrical constructors or entrusted distributors shall be qualified for construction. Otherwise it may lead to electric shock or a fire.

Safety Tips

	Equipment Wiring
⚠️ Warning	● Do not connect the communication terminal of Hi-Checker to a high-voltage power supply.
	● Please ensure that the alligator clip of the communication cable is clamped on the communication terminal of the air conditioner.
	● When using the power adapter to power the Hi-Checker device, please ensure a specification of 5V ⎓ 500mA.

	In operation
⚠️ Warning	● Waterproof measures should be taken when using Hi-Checker device. Please pay attention to check the dial code before use, and refer to the <Hi-Checker User Guide>.
	● When an abnormality (burnt smell, etc.) occurs, immediately stop the operation and cut off the main power supply. Operating under abnormal conditions may cause malfunctions, electric shocks, fires and other accidents. Please contact the dealer or our company's designated service center.

Preset

1 Port Configuration

Hi-Checker's PC software can be used after decompression. Connect device and air conditioner, plug the Hi-Checker device into the computer, the port number of the device can be queried from the device manager. Select the port number in the "Options" menu in the PC software. If the communication is normal, the communication status light of the computer software will change from red to green, or will prompt "The communication port is not detected, please check or re-insert the communication port, the system will automatically detect it after insertion", All functions are usable except data collection.

2 PC software function configuration

PC software supports its own system language switching. The switching range is: Chinese, English, Italian, Spanish, Russian, French, German, Turkish, Polish, Thai, Vietnamese, Arabic in total 12 languages，and supports the conversion of units between metric and imperial. Click the "Options" button in the upper right corner of the PC software to pop up the "Option" dialog box. Click the "Activate" button to activate specific functions. This activation is only valid for the Grab Communication function. If the function is not needed and the activation can be passed. For specific activation methods, please consult customer service or local dealers.
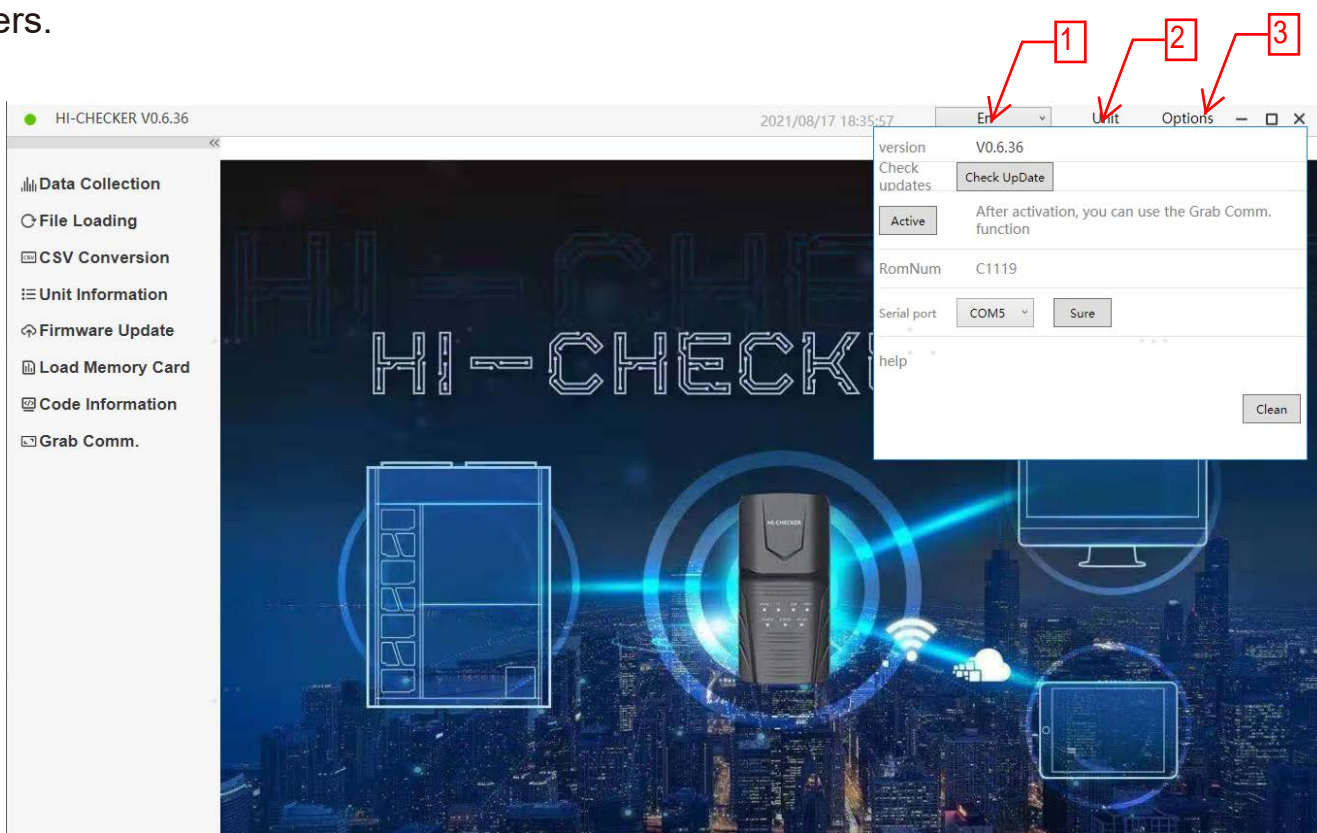
Fig1 Sketch map of Activate function

- 1：System language switch；
- 2：Unit switch；
- 3：Select the port, view the software version number and activation function；

Attention

- If the Grab Communication function is not needed, there is no need to activate the PC software.
- If the computer cannot recognize the port number of the device, Please search the description file named CDC_Demo.inf in Software installation directory "*** \Hi-Checker\Data"，update the device port driver to the description file will do.

Data Collection

1 Preparation for data collection

First connect the Hi-Checker device and PC via USB, Connect Hi-Checker device and air conditioner through communication line. Wiring is shown in Figure 2. Open the PC software, When the PC software establishes a connection with Hi-Checker (the status light in the upper left corner changes from red to green), Then click the data collection menu item in the function bar on the left side of the main interface.
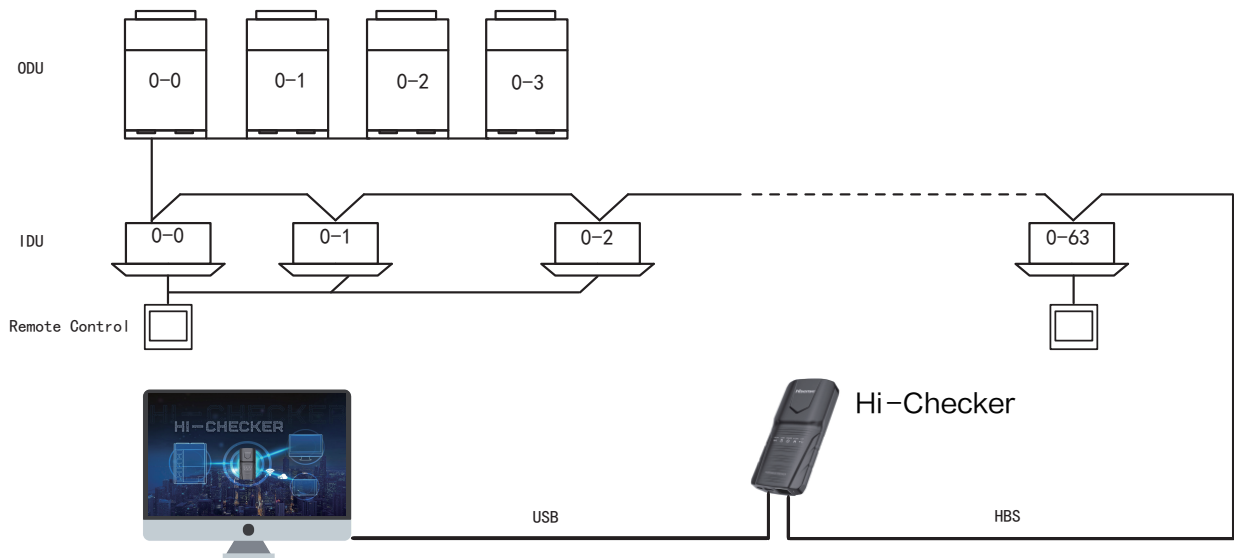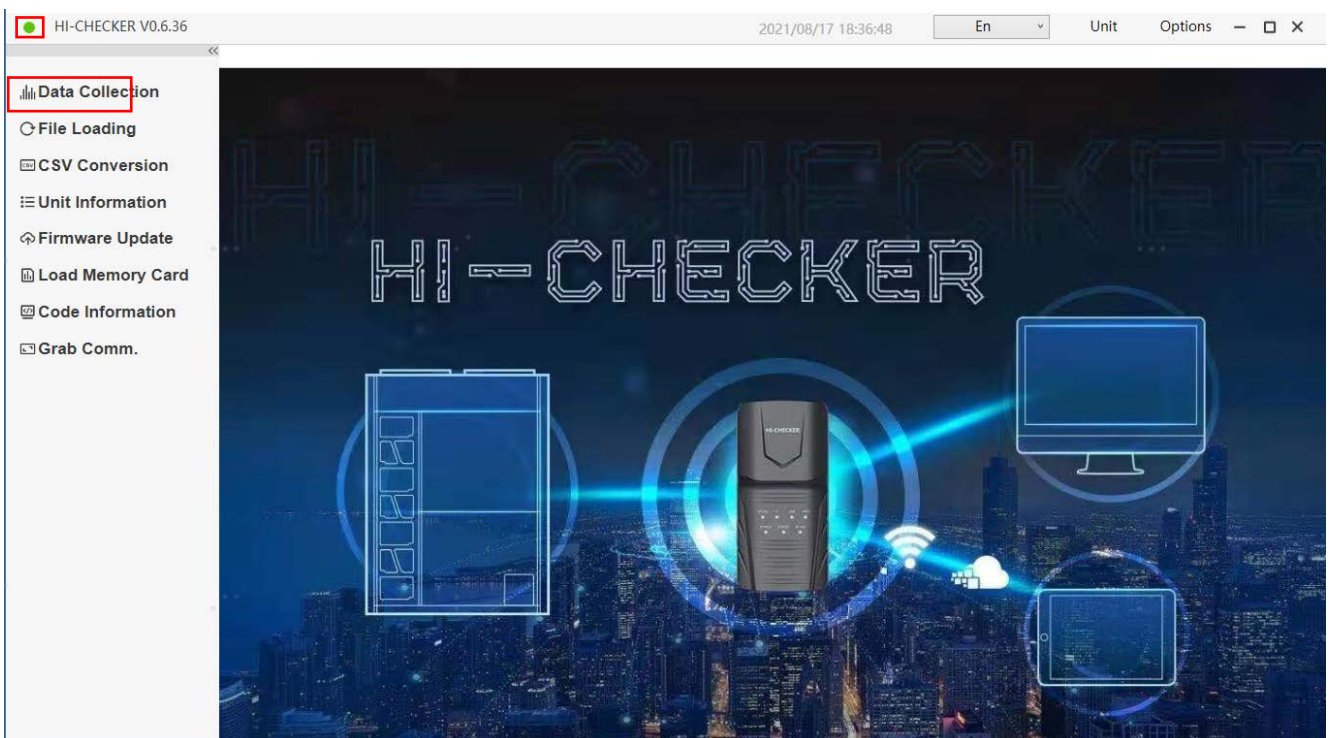

Fig2 System Wiring Diagram

Fig3 Schematic Diagram of Collection Entry

D a t a   C o l l e c t i o n

Enter the data collection setting interface. On this page, user can set the file name, save path, and whether to use the control function. After setting, click the "Sure" button to enter the air conditioner searching interface.
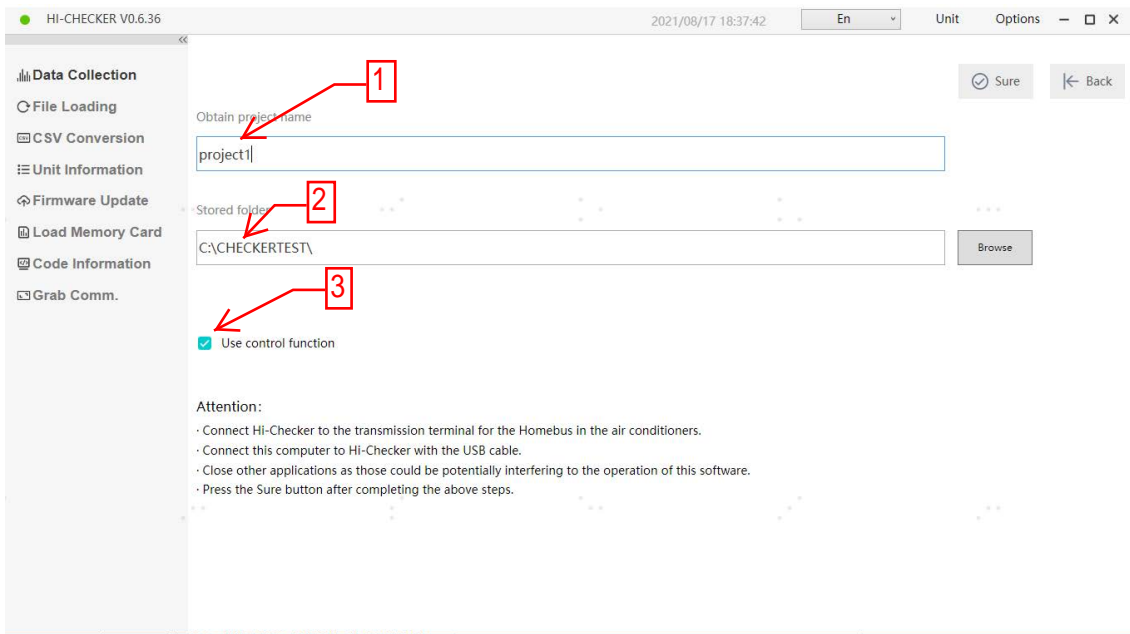

Fig4 Schematic Diagram of Data Collection Setting

- 1：Enter the name of the data collection project;
- 2：Select the working directory for data storage;
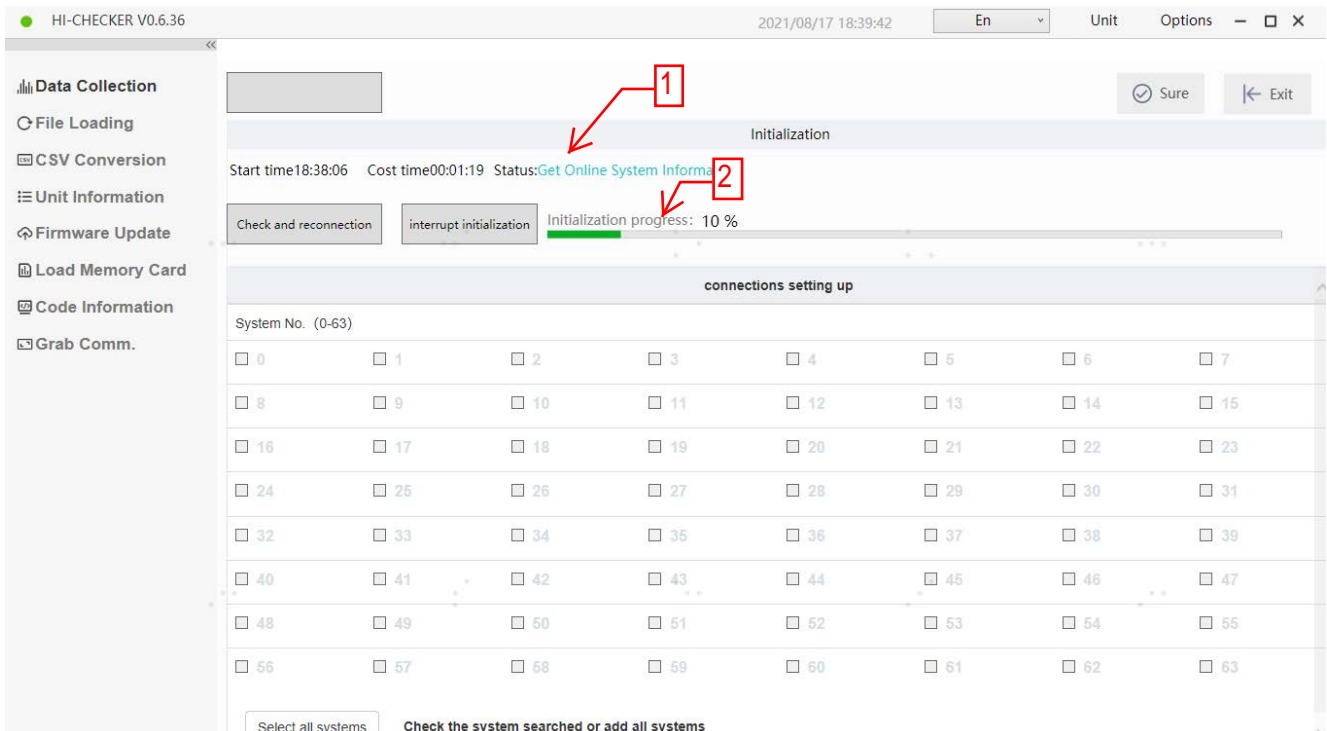- 3：Choose whether to use the control function;

Fig5 Schematic Diagram of Data Collection Initialization

5

Data Collection

- 1: Display air conditioner search status;
- 2: Display air conditioner search progress ;

In the initialization page of Fig5，Hi-Checker will continue to search for air conditioners. Depending on the number of air-conditioning connections, searching will last for 4-20 minutes. During this period the number or the fixed parameters of air conditioners need to be adjusted, the "Interrupt Initialization" button should be clicked first, then click the "Check Reconnect" button to conduct a new round of search for air conditioners . The air conditioner search completion interface is as shown in the figure below:
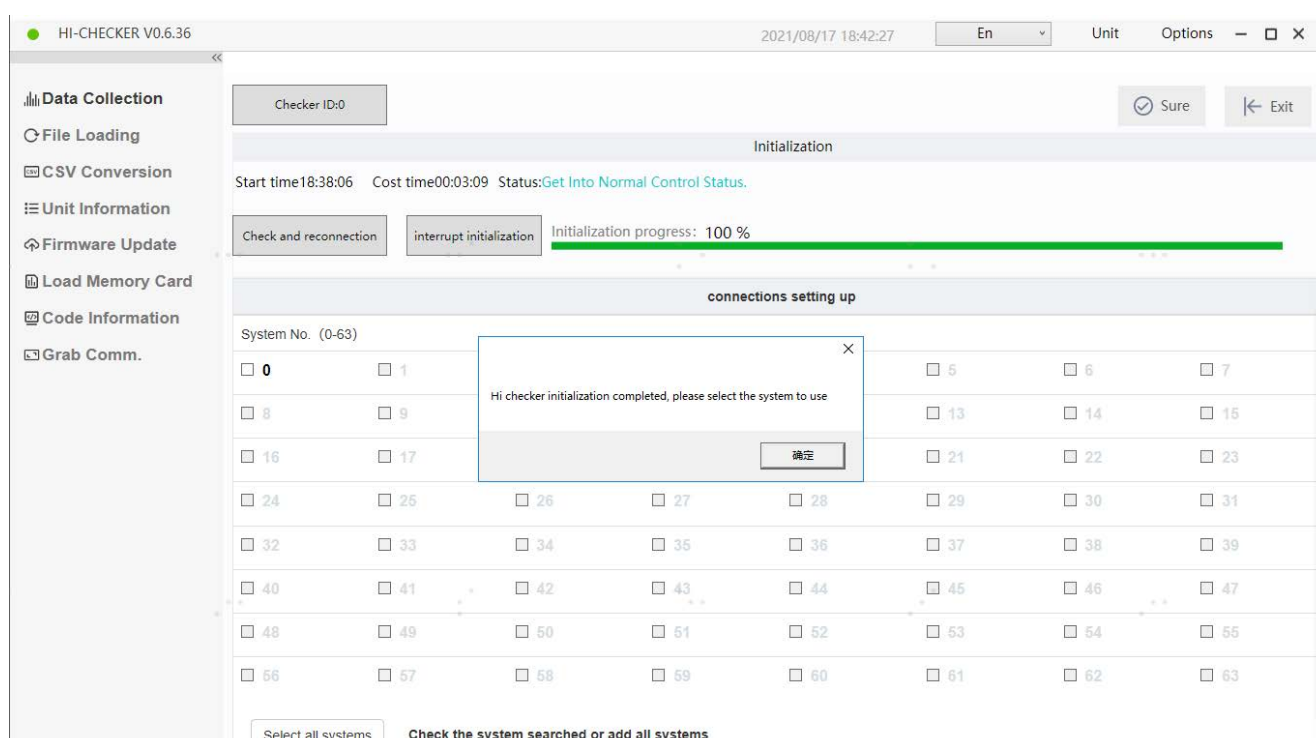

Fig6 Schematic diagram of completion of data collection initialization

Please select at least 1 system for data collection. After checking the target system number, click the "Sure" button to enter the next page. Use the "Select All Systems" button to complete the operation with one key, it should be noted here that if the system number is not selected, the next page cannot be entered .
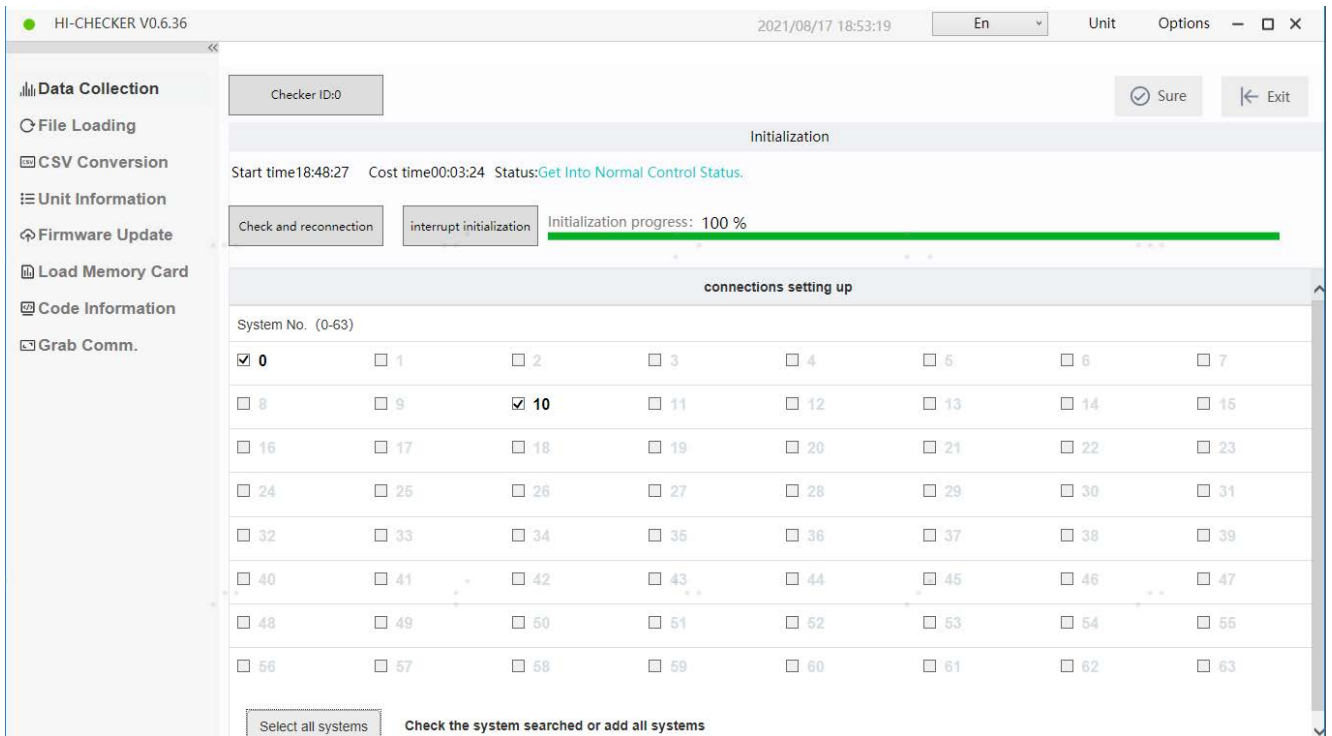
Fig7 Schematic Diagram for System Number Selection of Data Collection

Please select at least 1 system for data collection, after checking the target system number, click the "Sure" button to enter the next page. Here user can use the "Select All Systems" button to complete the operation with one click, It should be noted here that if user do not select the system number, you cannot enter the next page. After the collection parameters are set, click the "Sure" button to enter the data collection homepage.
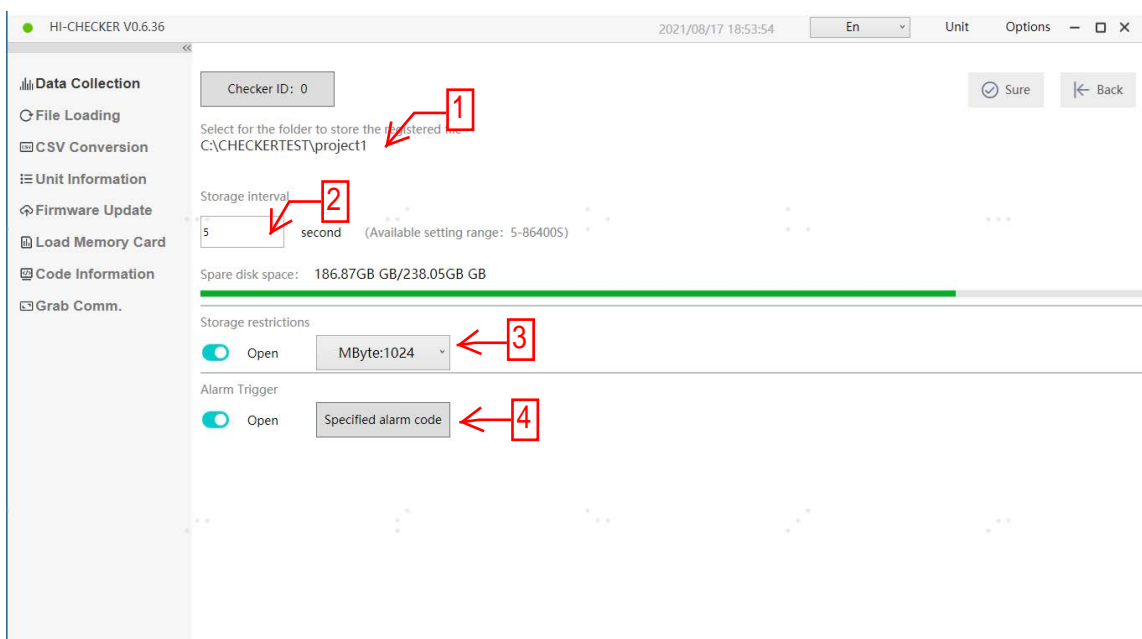

Fig8 Schematic Diagram of Data collection setup

Data Collection

- 1：Display the current data storage directory;
- 2：Set the data storage interval. The shorter the interval, the higher the sampling frequency and the larger the data storage;
- 3：Set the hard disk storage threshold. If the threshold is exceeded, no data will be stored;
- 4：Specify the alarm code that requires special reminders. If an alarm is encountered during the acquisition process, it will be highlighted at the alarm position;
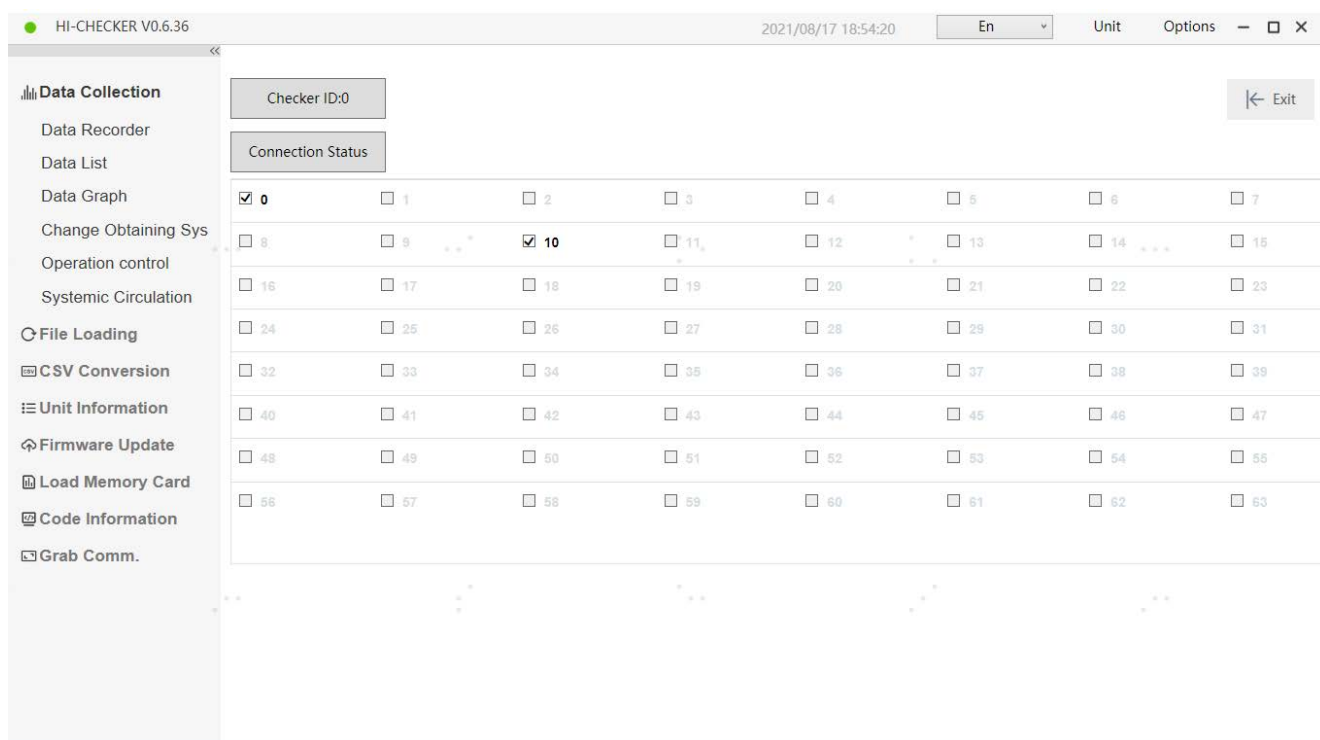

Fig9 Schematic Diagram of the Data Collection Homepage

After entering the main page of data collection, the secondary menu under this function will be expanded for users to view.
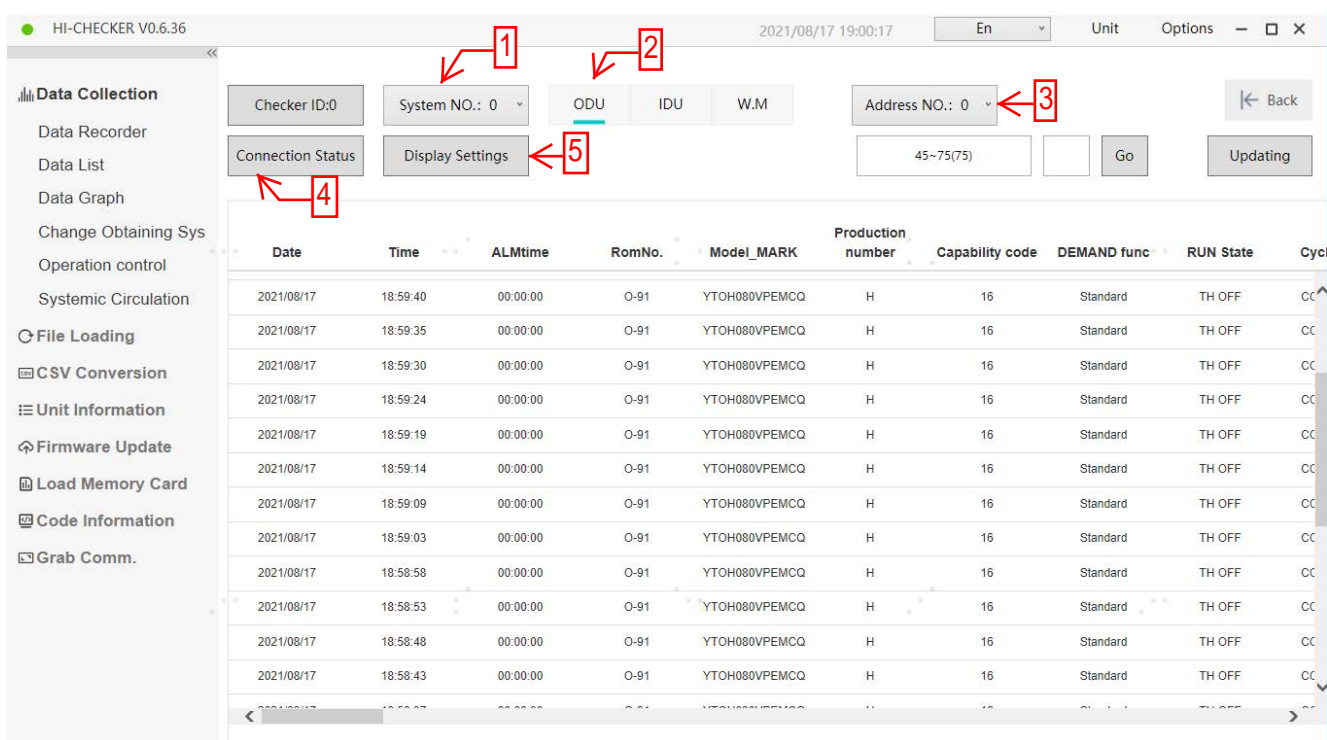
2 Data recording function

Fig10 Data Collection -Data Recording Function Dagram

- 1： System number of current collection target;
- 2： Equipment type of current collection target;
- 3： Address number of the collection target;
- 4： Entry of system connection status;

- 5： Entry of parameter display setting;

　　Under this function, you can view all the operating parameters of a certain air conditioner horizontally, and update it row by row as the data is updated. Through the device type, the system number and address number of the collection target data can be accurately located, and the switching of the viewing target can be realized by switching the system number and address number. The switching range of the system number here is related to selected system in Fig7, and the display switching can only be performed in the selected system.

　　After the "connection status display" button is clicked, all air-conditioning connection status information searched by the Hi-Checker device will pop up, which is convenient for users to view the system and address numbers of all online indoor and outdoor units.

　　After the "Display Settings" button is clicked to enter, the user can set the state of the parameter display. Parameters do not need attention can be set to "OFF", which is easier to view after returning to the data record page.
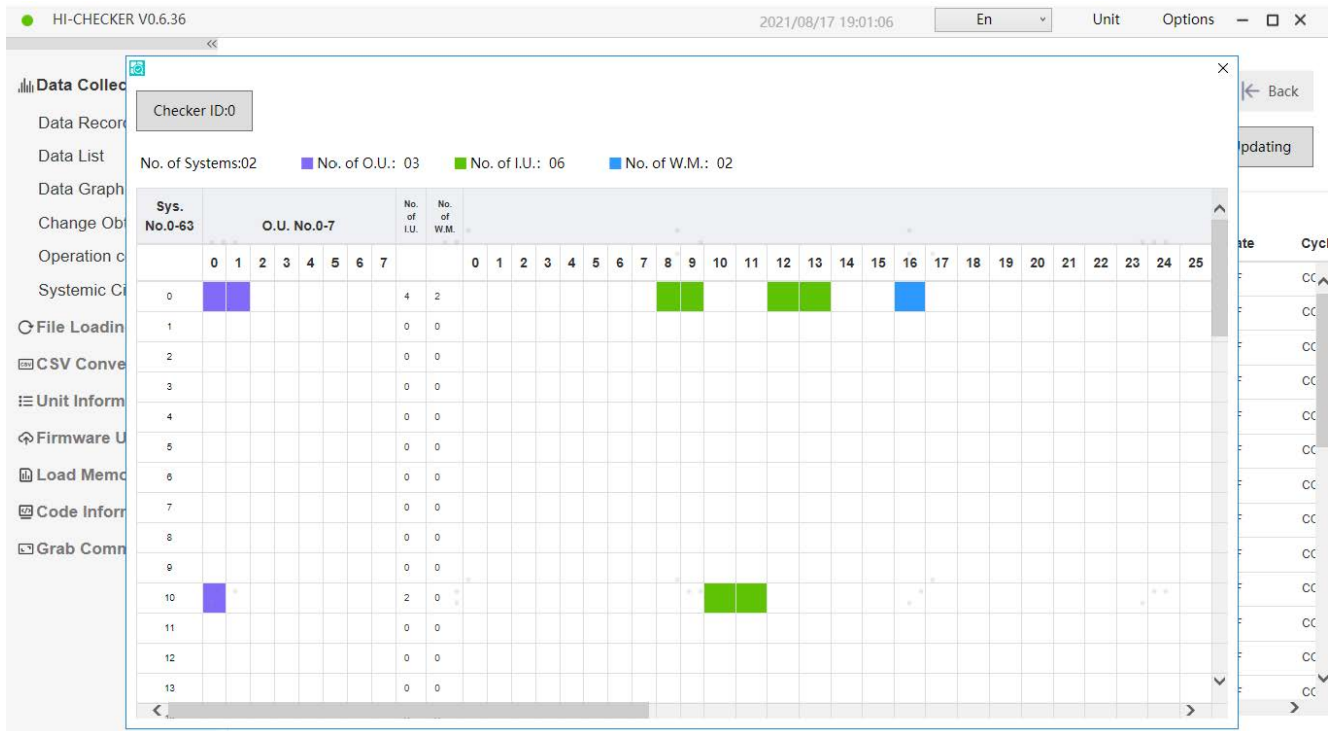
Data Collection

2 Data recording function

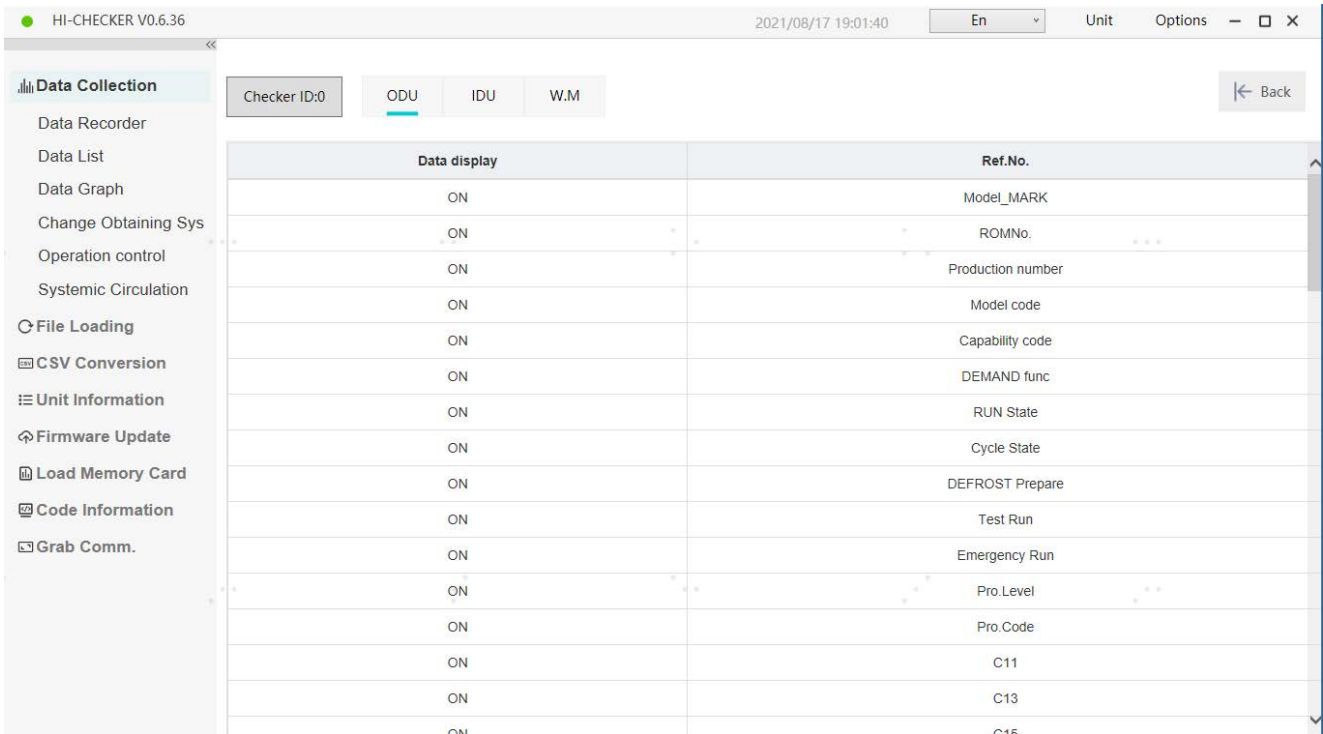Fig11 Schematic Diagram of the Connection Status

Fig12 Schematic diagram of Display settings page

3Data list function

Fig13 Data Collection -Schematic diagram of data List

Under this function, you can view the current latest operating parameters of all indoor and outdoor units in a system longitudinally, which is convenient for users to compare unit data horizontally. Under this function, only one system's parameters can be displayed, so only system number can be selected and switched. The "connection status display" function under this function is consistent with the data record. After entering the "parameter explanation" button, a detailed explanation of all the parameters of the unit will be presented in the form of a pop-up window.

Fig14 Schematic Diagram of Parameter Explanation

3 Data list function

Under this function, the water module is an independent type of air conditioning equipment, and its parameters can be displayed separately. At present the types of water modules supported by Hi-Checker are:

（1）Split water module;

4 Data Chart Function

Under this function, you can view the operating parameter curve of one air conditioner. It is convenient for the user to view the change of the unit parameters. The "connection status display" button under this function is consistent with the data record. When entering this function for the first time, user needs to enter the curve setting page through the "Display Setting" button, after selecting the displayed parameter and setting the display color of the parameter, it can be displayed normally after returning to the chart page.
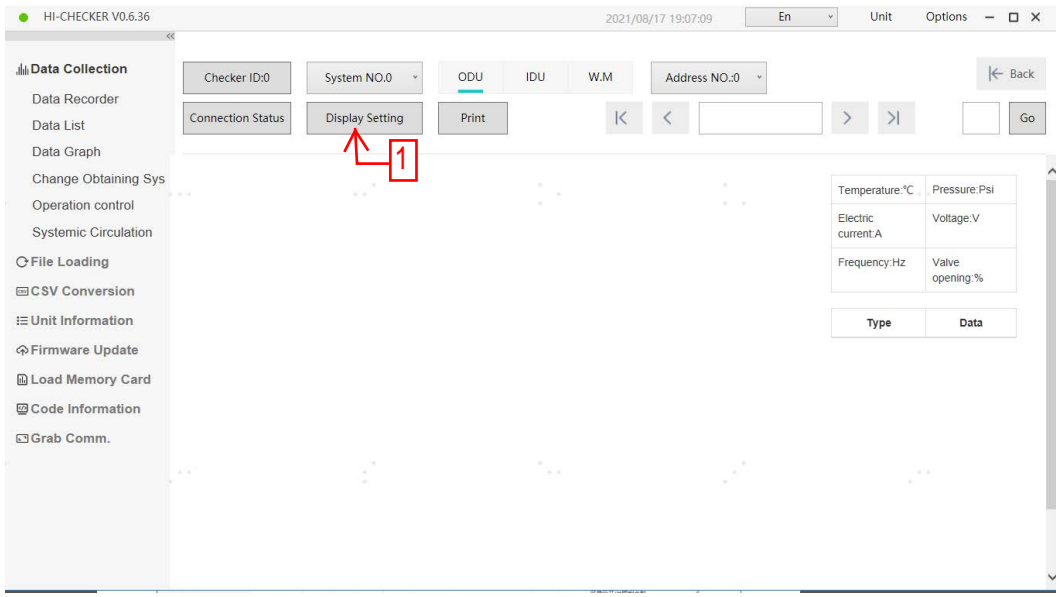
Fig15 Schematic Diagram of Data Chart Page
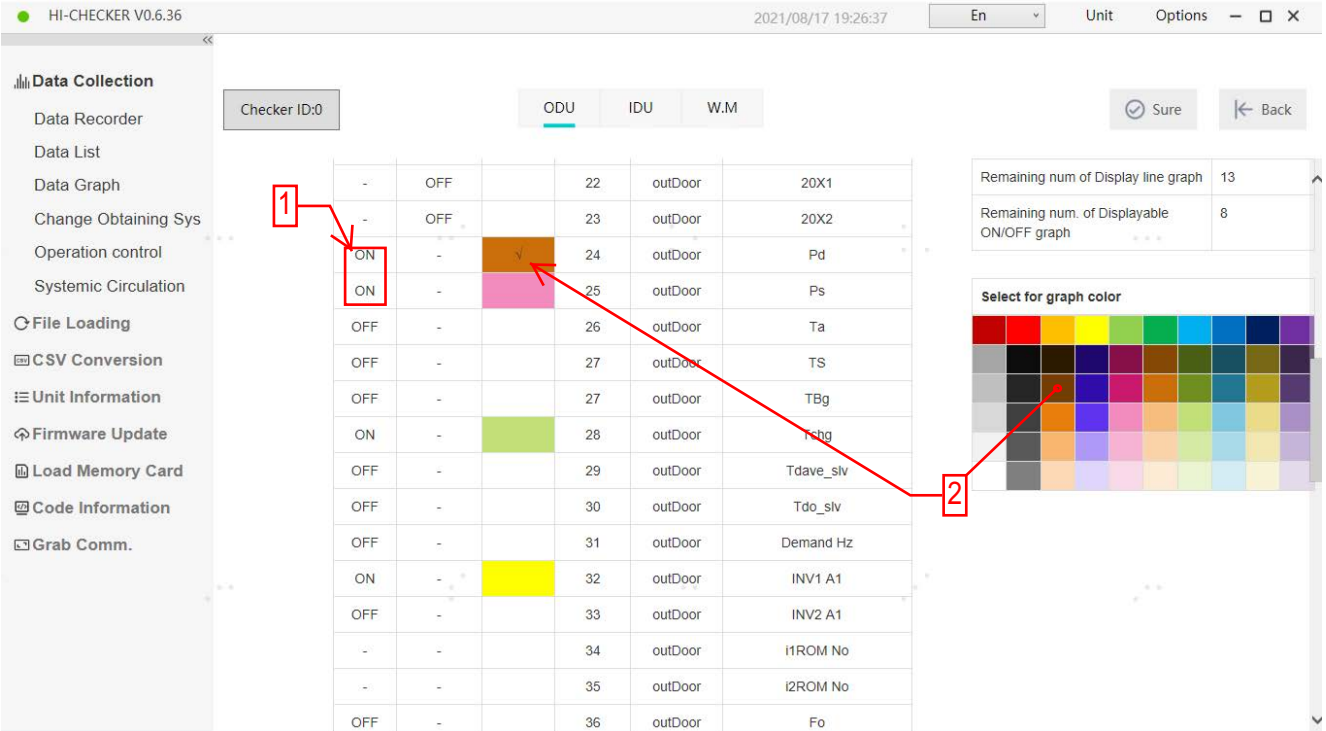
- 1: Parameter curve setting entrance;

Fig16 Schematic Diagram of Curve Setting Page

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4 Data Chart Function

- 1: Switch setting of Data Curve Display;
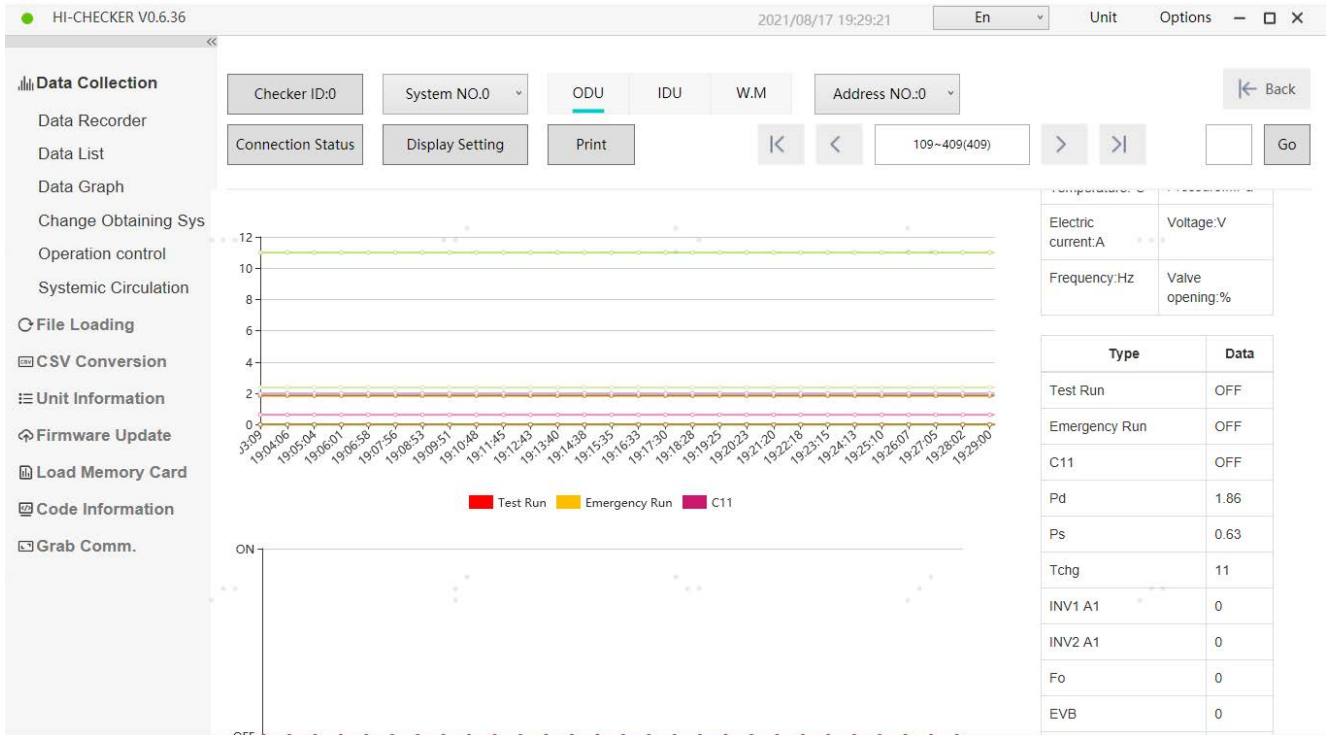- 2: Color setting of Data curve;

Fig17 Schematic Diagram of Curve Display Page

In this display page, the displayed parameter curves are all from the parameters checked as "ON" on the setting page, and the colors of the curve display all come from the colors selected by the user on the setting page.

5 Operation Control Function

Under this function, the user must check "Use control function" in the initialization interface to enter the operation control page ，three types of controlled objects: outdoor units, indoor units, and water modules.
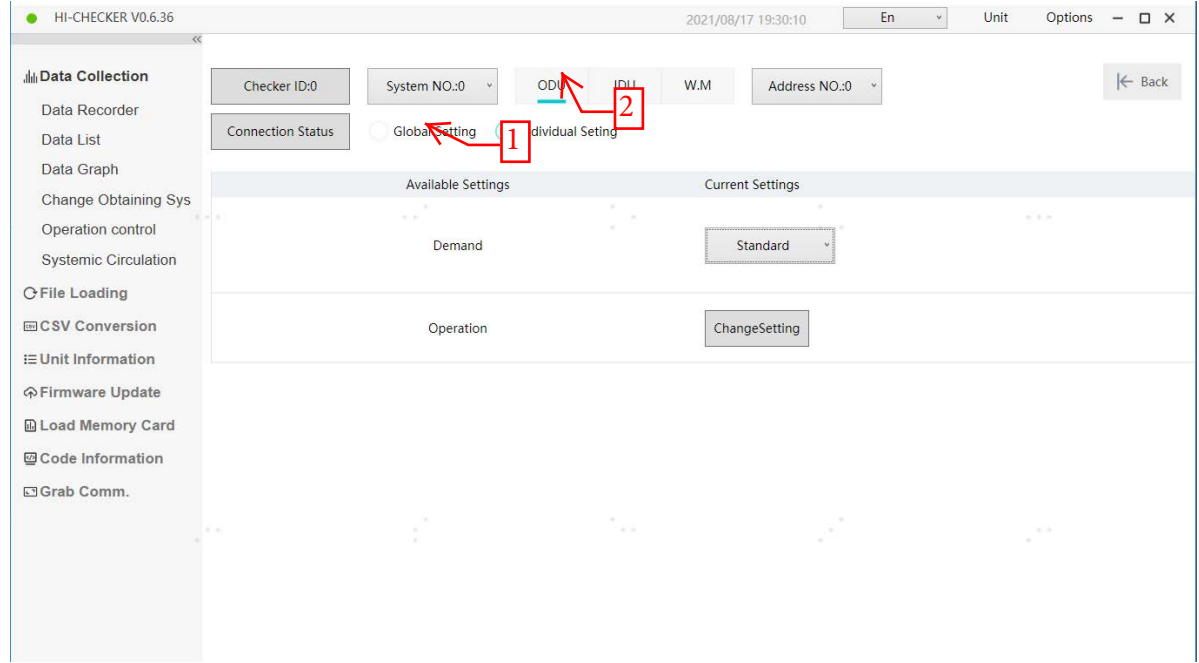

Fig18　Operation control -Schematic Diagram of Outdoor Unit

- 1：Choose how to set control commands ;
- 2：Select the type of controlled object;

Under this function, you can select global settings and local settings. The global means to modify the present operating status of all outdoor/indoor units/water modules in the system, and the local means to set control commands based on the selected system and address number of one air conditioner. When individually controlling an air conditioner, be sure to select "Local Settings". Select the system and address number to switch the controlled air conditioner.
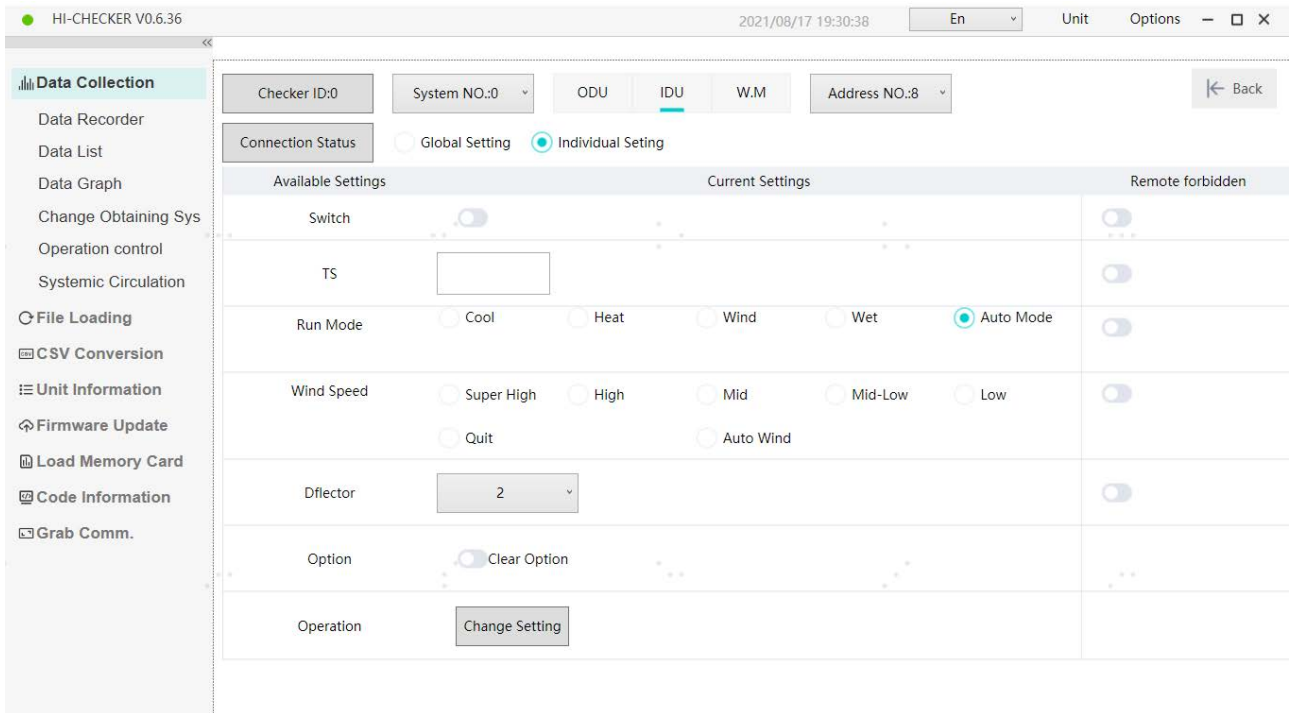
5 Operation Control Function

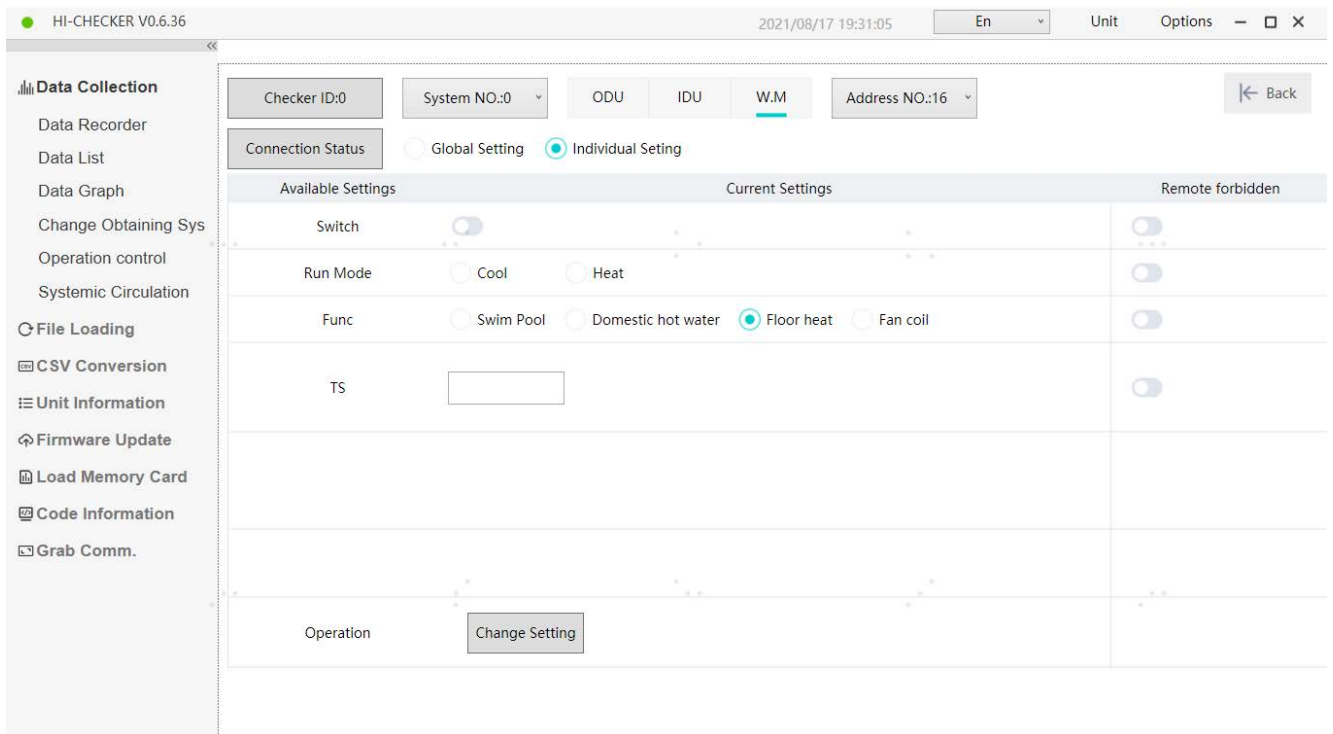Fig19   Operation control -Schematic Diagram of Indoor Unit

Fig20   Operation control -Schematic Diagram of Water Module

Attention

● This operation control page will only be displayed when the water module is connected in the system，and the controlled items of different types of water modules are not completely the same.
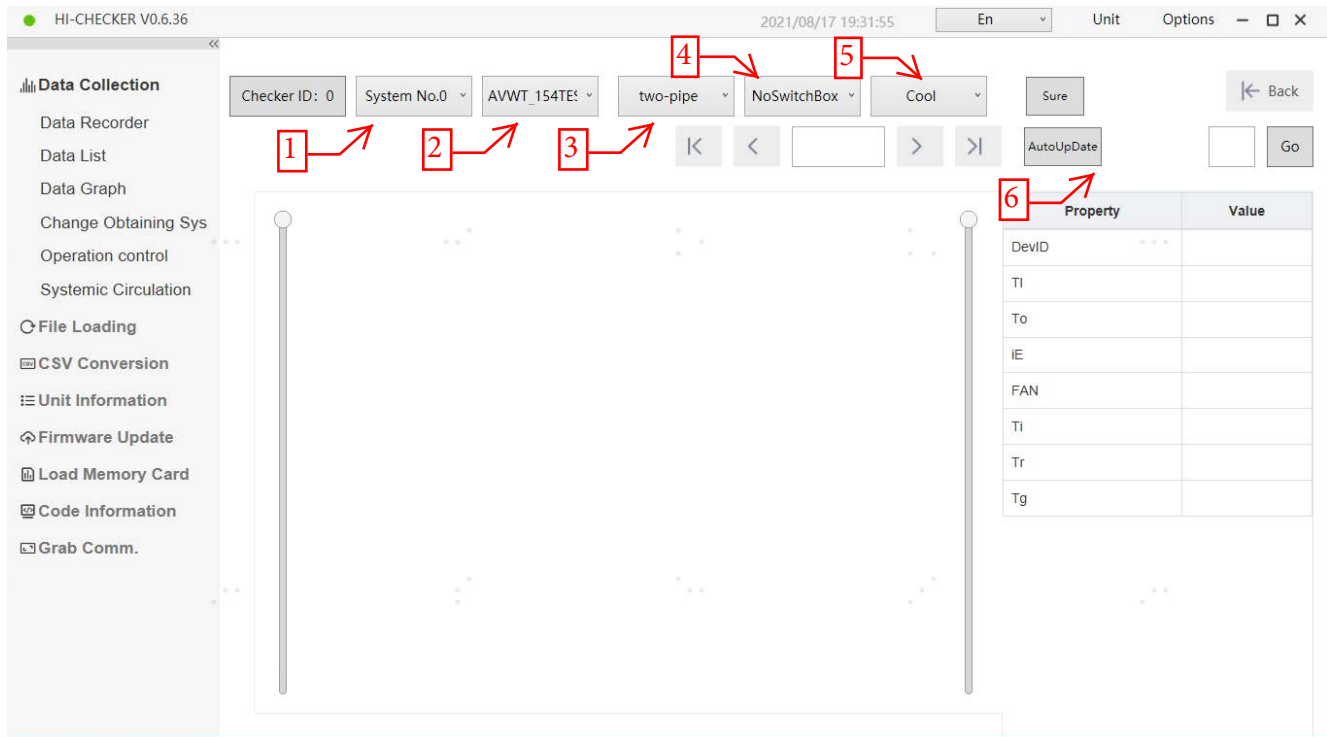
Data Collection

6 System Cycle Diagram Function

Fig21 Schematic Diagram of System Cycle Diagram Homepage

Under this function, the connection status of all air conditioners under a system and the changes of real-time parameters can be displayed in the form of pictures. This function requires the user to configure the parameters in advance, the steps are as follows:

（1）Select the system number to be viewed.

（2）Unified selection of outdoor unit models.

（3）Current outdoor unit pipeline connection mode selection.

（4）Selection of SW BOX accessories.

（5）Indoor unit ability attribute selection.

（6）Click the "Sure" button, and the cycle diagram will be automatically generated according to the configuration.

（7）Click "Auto Update" and the parameters in the data table on the right will change dynamically according to the Hi-Checker device's report.

Data Collection

6 System Cycle Diagram Function

Fig22 Schematic diagram of the system cycle diagram display page

shortcut

（1）Press and hold the middle mouse button to move the whole picture.

（2）Click on the blank space of the cycle diagram and swipe up to enlarge the overall picture.

（3）Click on the blank space of the cycle diagram and swipe down to reduce the overall picture.

（4）Click on the picture of an outdoor or indoor unit, and its real-time parameter values will be displayed in the parameter table on the right.

7 Change data system function

Under this function, user can switch the air conditioning system that is being collected according to the actual usage . After switching, the sub-functions under data collection are displayed according to the number of systems after switching.
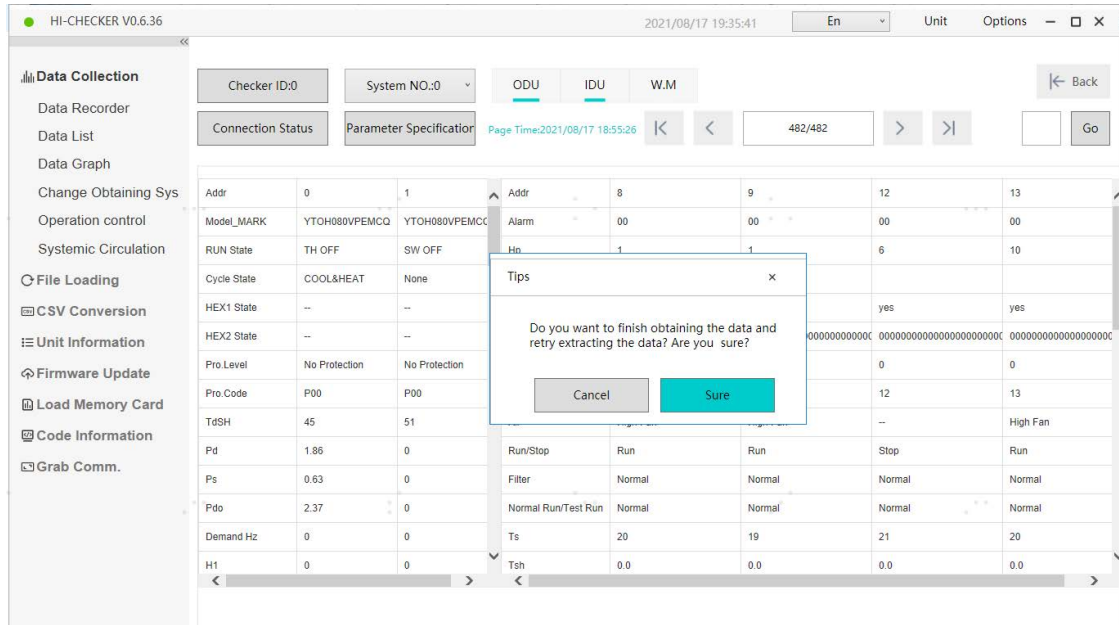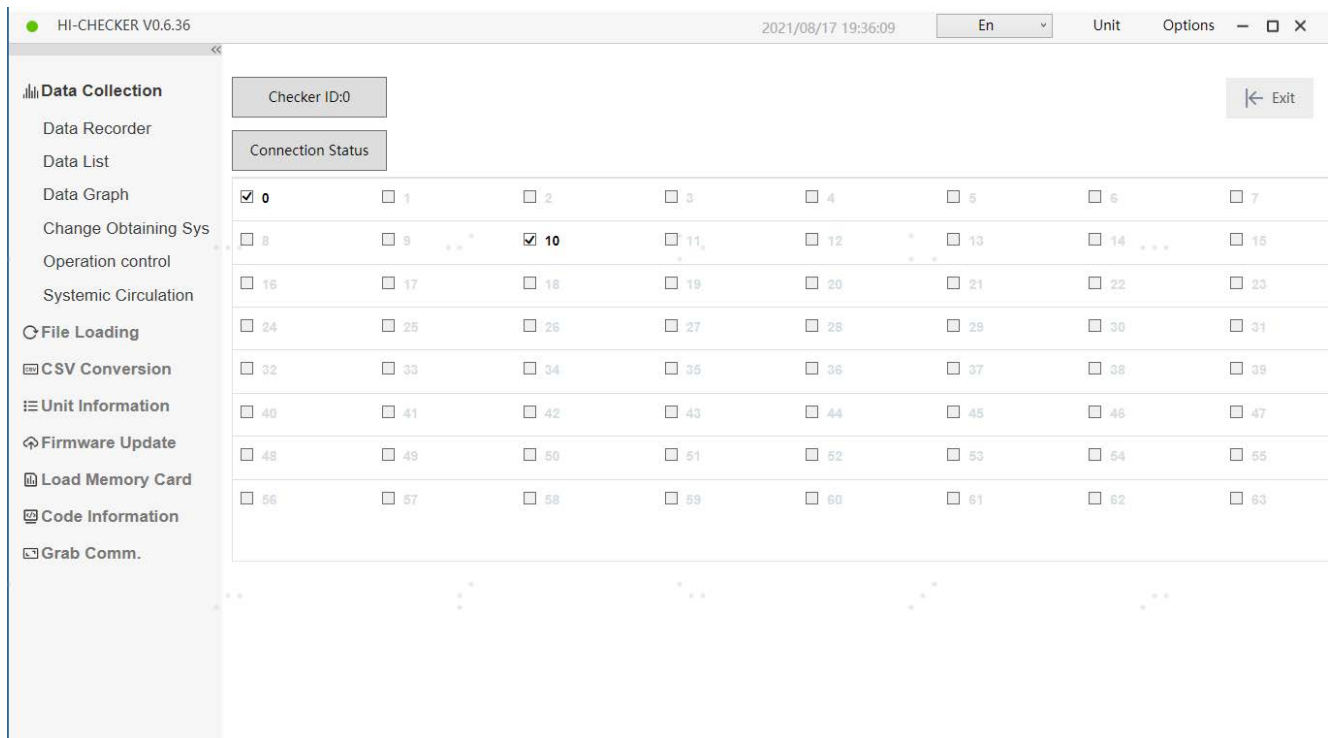
Fig23 Change the Data System Diagram

Fig24 Schematic diagram of the data collection homepage

Attention

● Click "Change Data Collection System" and a pop-up prompt will appear.
● After returning to the data collection homepage, you can re-select the collection system. After selection, click the secondary menu again to continue data monitoring.

1 File loading preparation

Under this function, you can view and analyze in different ways by loading historical data. You need to prepare a previously collected data file package. By loading the file, you can view it in the form of data records, data lists, data charts, and system cycle diagrams. The display form of each sub-function is the same as that of data collection.
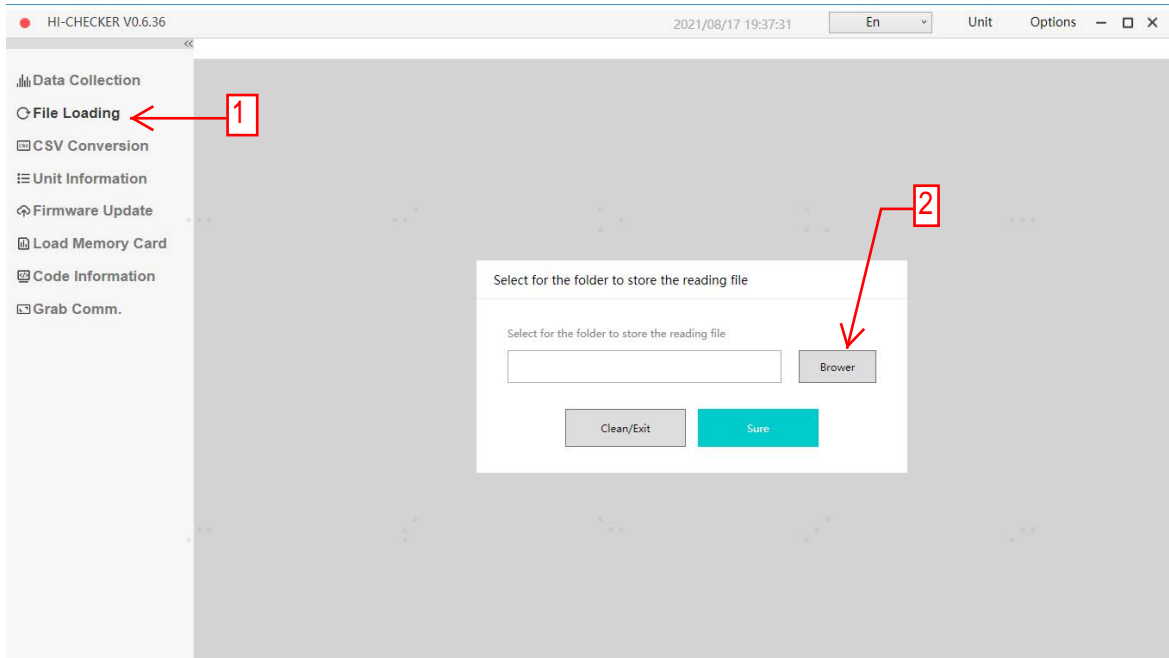

Fig25 Schematic diagram of file loading page

- 1： Enter the main function of file loading;
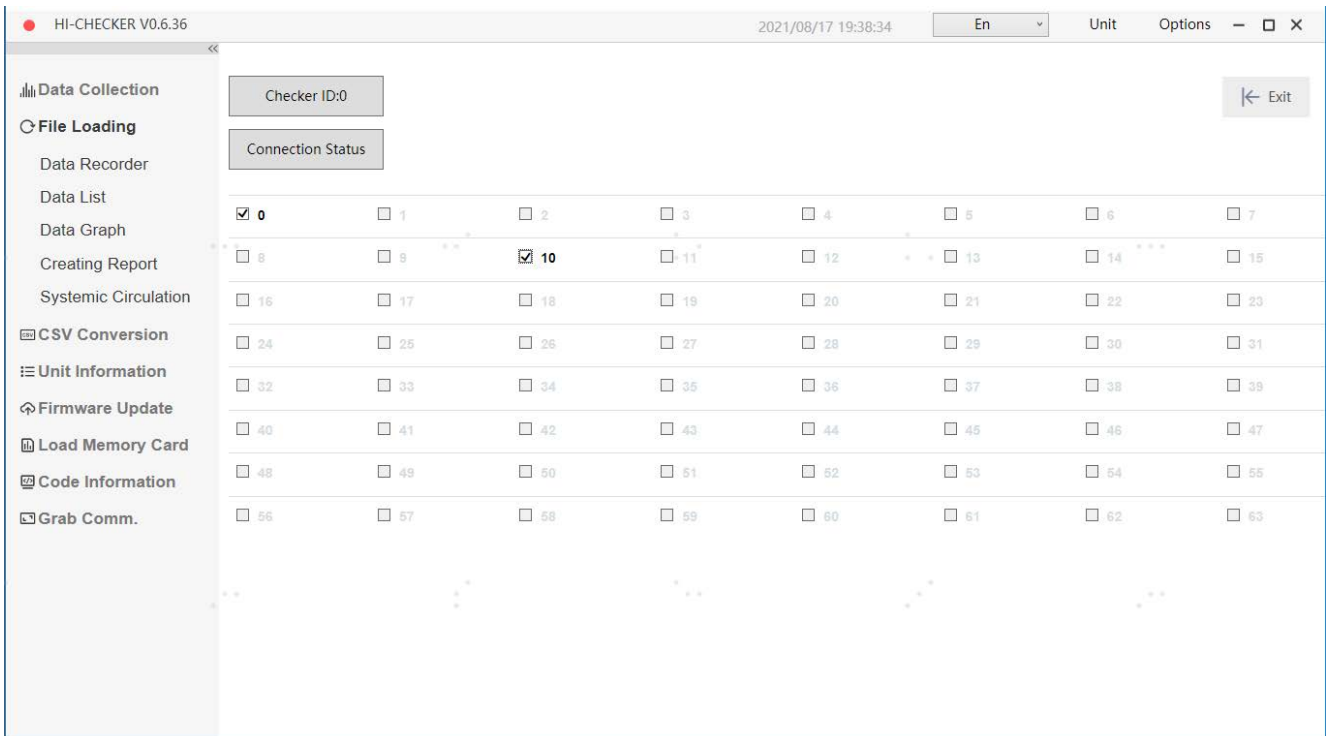- 2： Select the saved historical file;

Fig26 File loading home page diagram

2 Create data report

This function is a report generated based on loading historical data. The user needs to fill in project information, unit information, project opinions, and check the parameters that user wants to print. The report will display all the checked parameters. After clicking the "Sure" button in the figure below, the report will be automatically stored in the work directory.
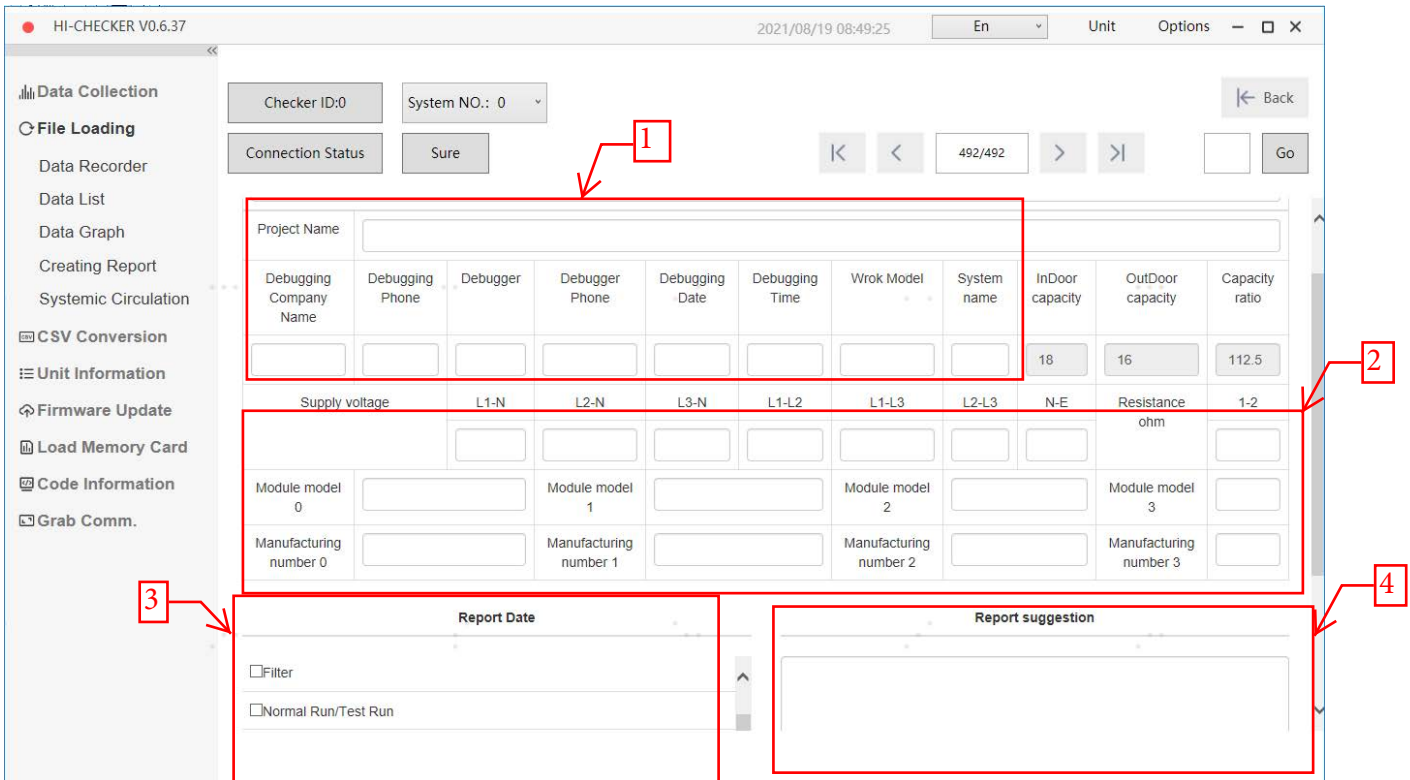

Fig27 Schematic diagram of creating data report page

- 1: Project information input area ;
- 2: Unit information input area;
- 3: Printing parameter selection area;
- 4: Inspection opinion filling area;

C S V   C o n v e r s i o n

This function can convert the data stored in the PC software into a common CSV format, allowing users to open the data file with software that supports this format.
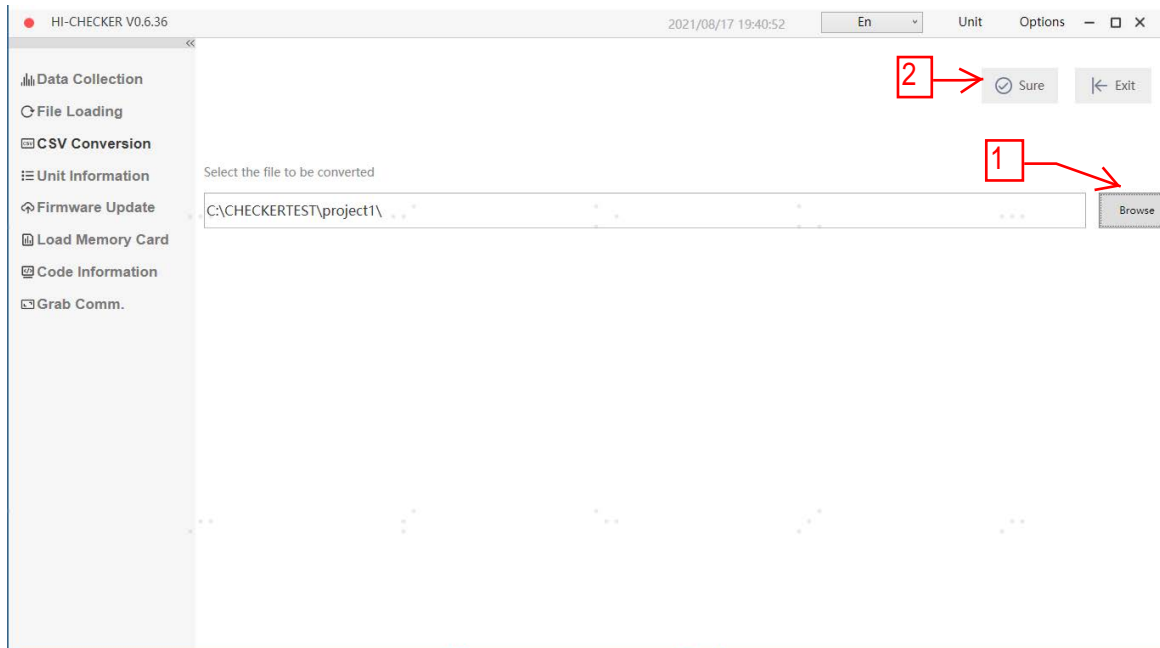

Fig28 Schematic diagram of CSV conversion function page

- 1:Select the file to be converted;
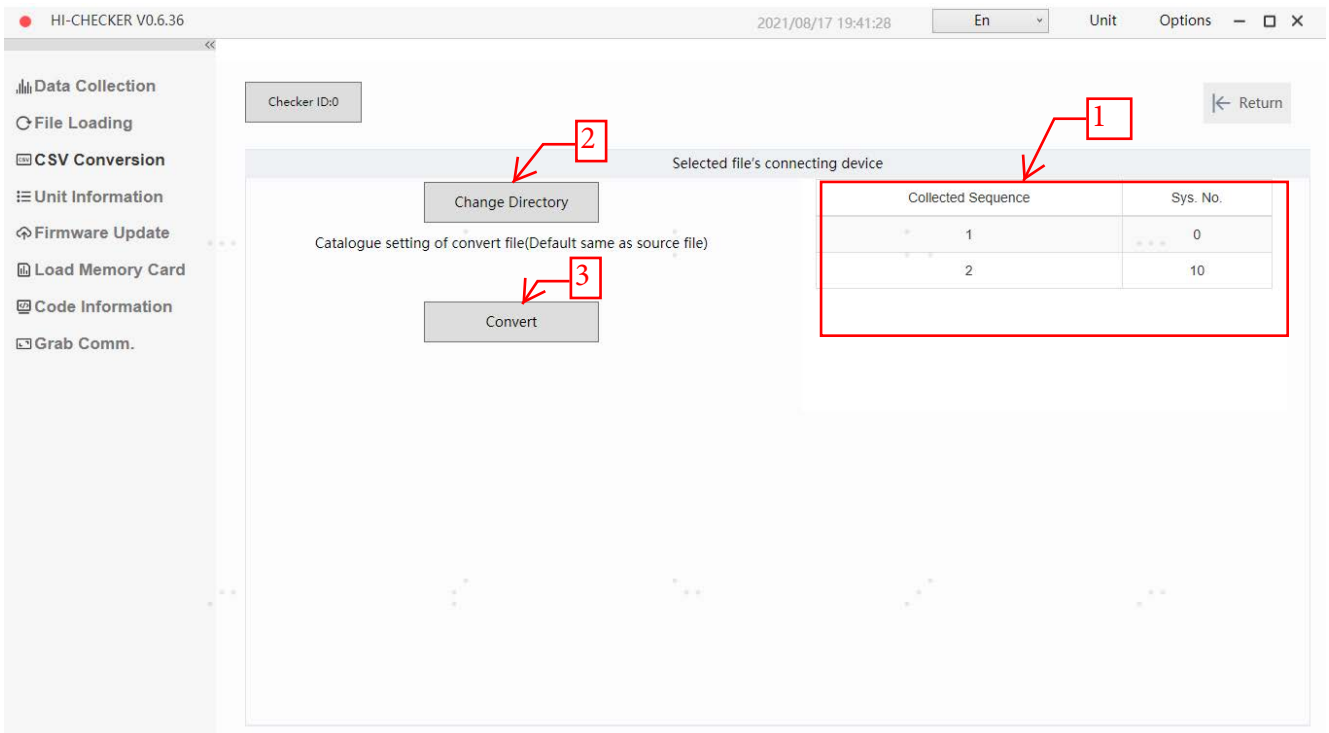- 2: Start conversion after clicking "Sure";

Fig29 CSV conversion settings page

- 1: Display the number of systems that need to be converted;
- 2: Select the storage directory of the converted file. If not , it will be stored in the working directory by default;
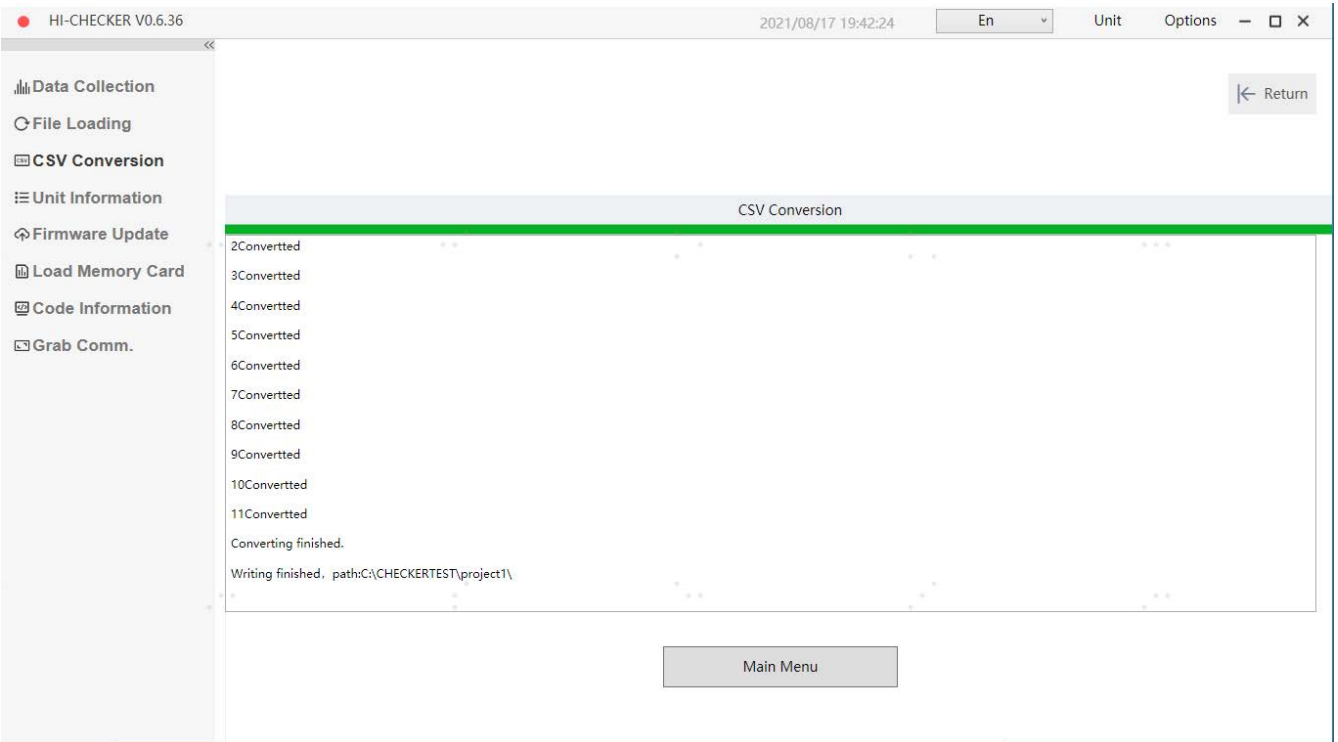- 3： After the conversion button is clicked, the conversion work will start;

Fig30 Schematic diagram of CSV conversion completed page

M o d e l   L i s t

The purpose of this function is to view the list of models supported by the current Hi-Checker software. This function will be upgraded with Hi-Checker software to support more models.
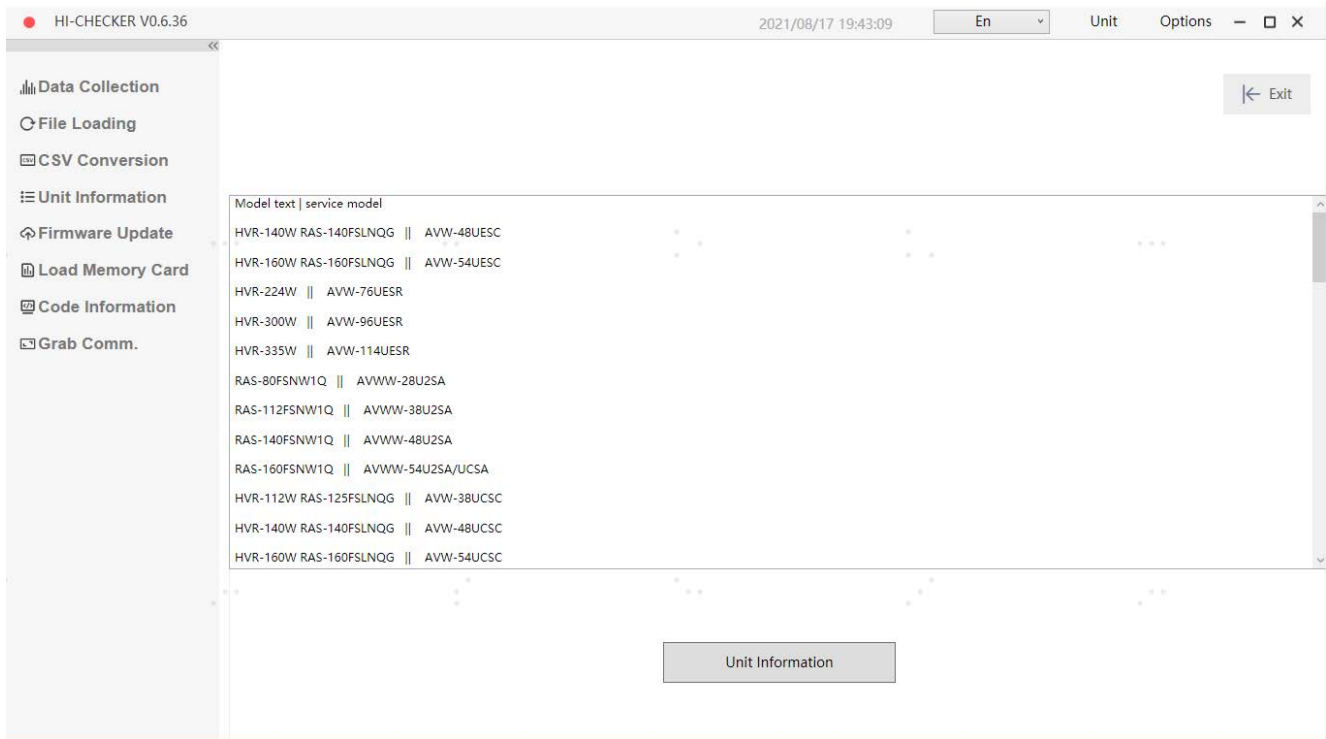

Fig31 Schematic diagram of model list page

Firmware Upgrade

The purpose of this function is to upgrade the firmware version of the Hi-Checker device through the PC software. The prerequisite is that the PC software needs to establish normal communication with the Hi-Checker device. The specific operation steps are shown in the figure below.
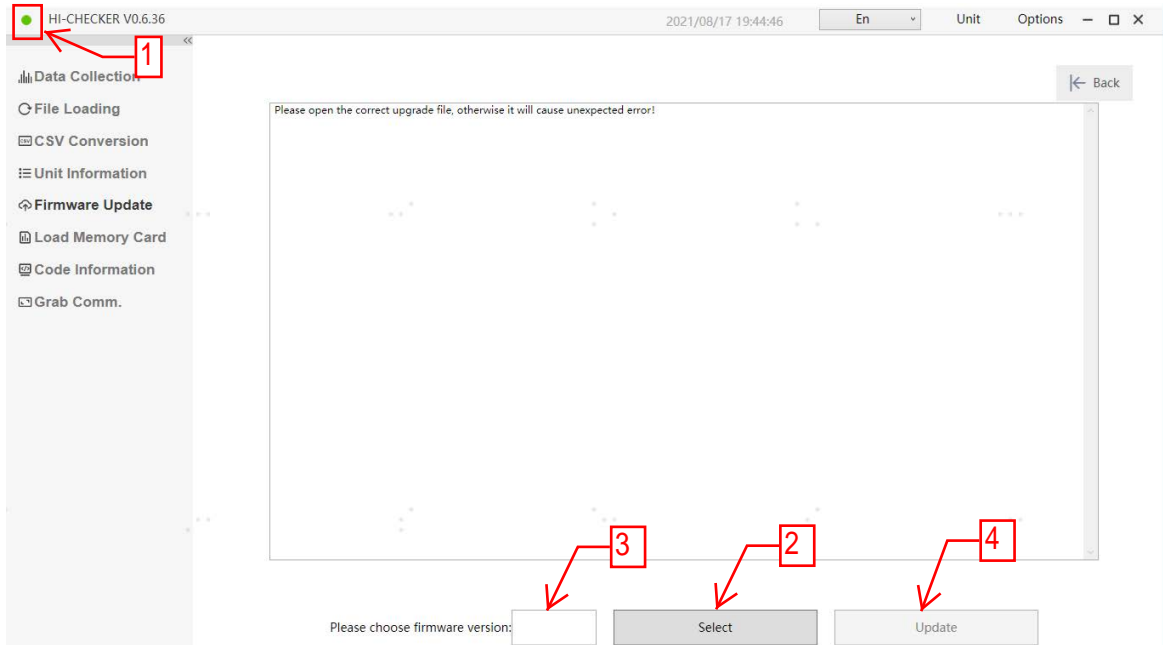

Fig32 Schematic diagram of firmware upgrade page

- 1: Please ensure reliable communication between the PC and Hi-Checker;
- 2:Select the target firmware to be upgraded;
- 3: Enter the new firmware version number;
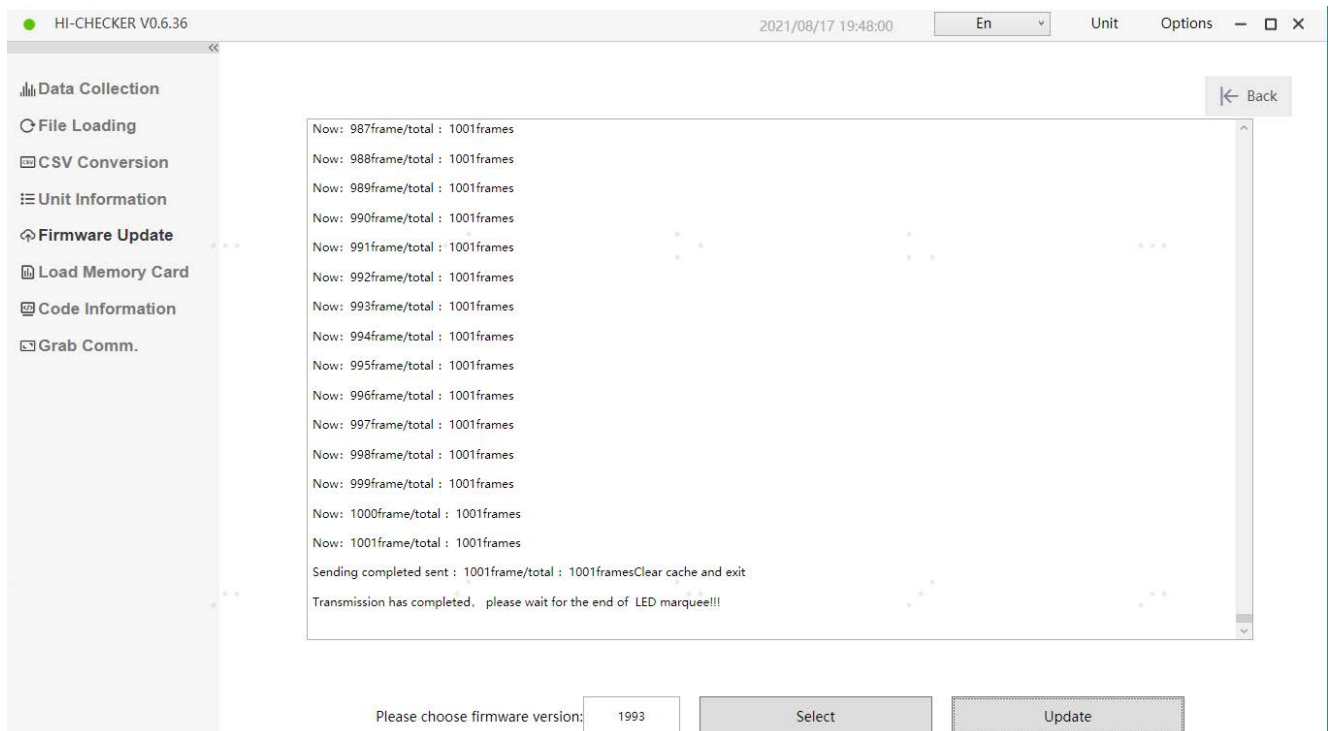- 4: Click Upgrade to start issuing the upgrade file;

Fig33 Schematic diagram of firmware upgrade data transmission

Firmware Upgrade

According to the prompts in the software, after the PC software has issued the upgrade package, the successful upgrade of the Hi-Checker device will be prompted in the form of a marquee. The duration is about 30s. In the end, it will automatically reset and execute the new program. If a software upgrade fails due to interference, the marquee will not appear. At this time, the operation steps are as follows:

(1) Power on the Hi-Checker device again;

(2) Press the reset button for more than 30s;

(3) Wait for about 2 minutes, until the four LEDs of USB, WLAN, TF card, and STATUS light up at the same time to indicate that the reset is complete. After about 4s, Hi-Checker resets automatically, and a new round of firmware upgrade can be performed through the PC software;

1 Memory card data preparation

This function requires the files collected by the Hi-Checker device in the black box mode, please refer to the specific entry method of this mode <Hi-Checker User Guide>. The data of the memory card needs to be copied to the local computer and read by the PC software. After selecting the storage location of the parsed file and renaming it, click "OK" to enter the next page.
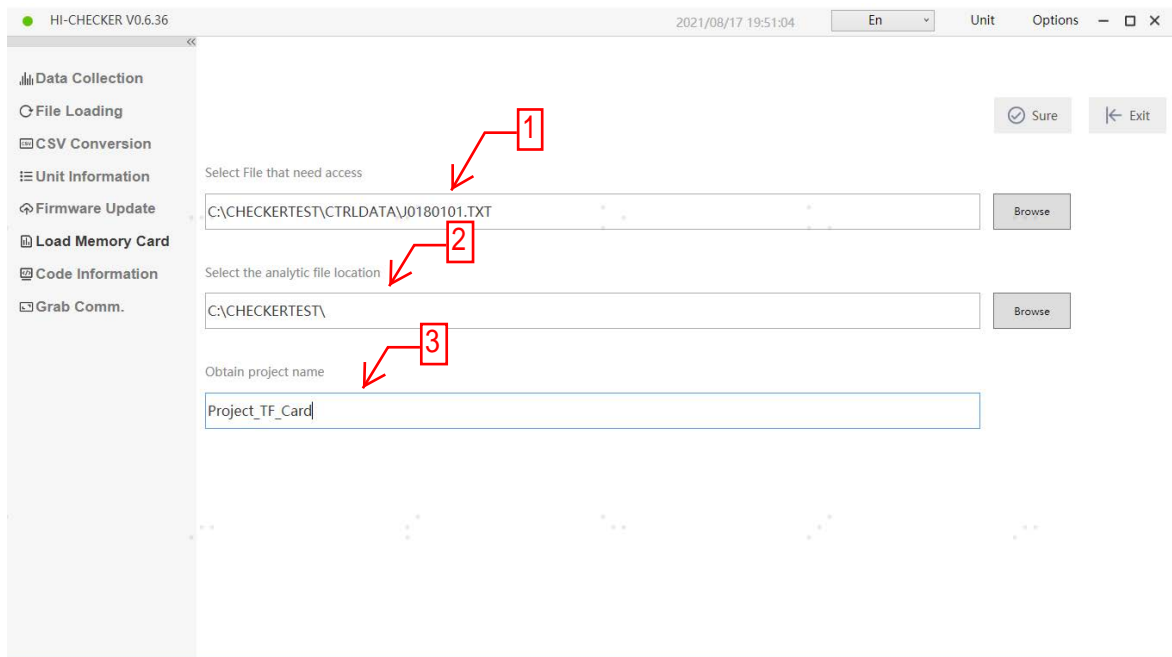

Fig34 File Loading Diagram

- 1: Load the memory card file to be parsed;
- 2: Select the location to save the parsed file;
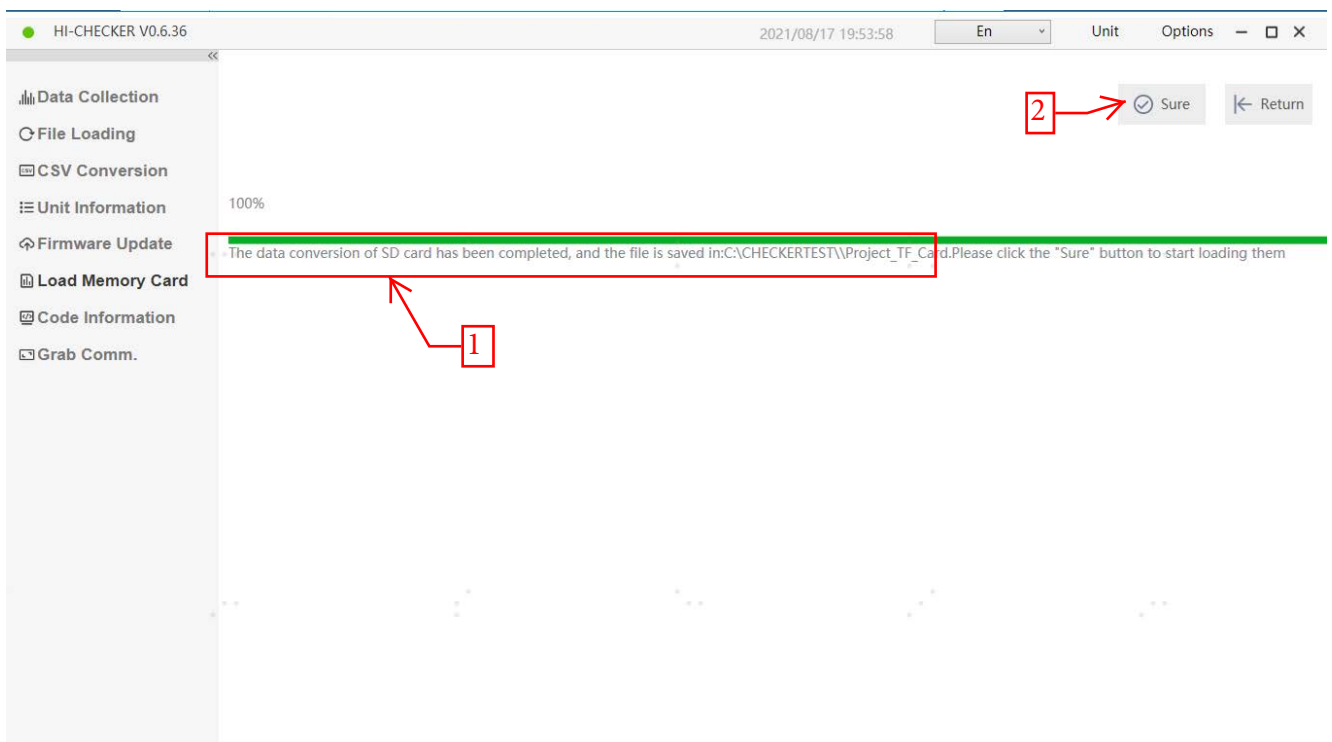- 3: Name the parsed project file;

Fig35 Schematic diagram of file parsing progress

- 1: Display the storage location of the parsed file;
- 2: After "OK", enter the file loading function automatically, and use this function to view the data;
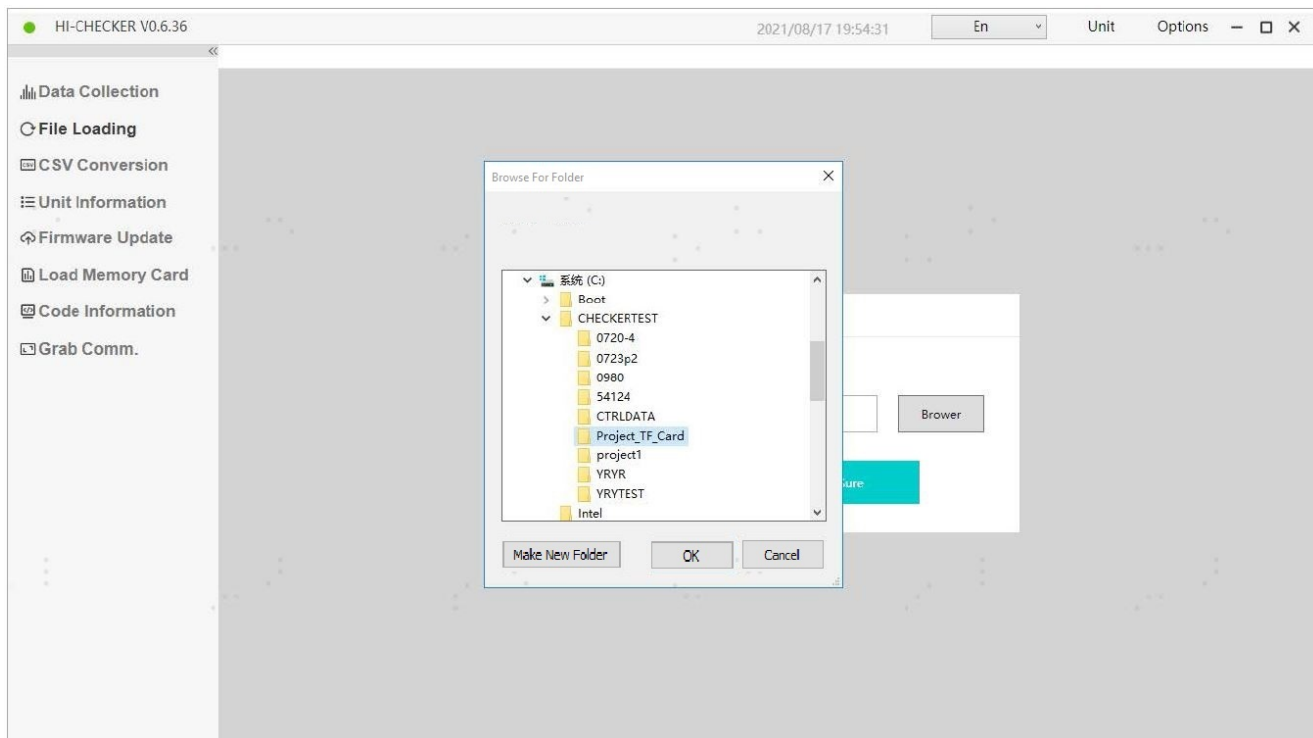

Fig36 Schematic diagram of the memory card data reading automatic jump page

Attention

Before using this function, Hi-Checker should connect with PC software and build communication first. Synchronize the local real-time time of Hi-Checker through the PC computer. Then adjust the Hi-Checker's DSW to enter the black box mode to collect data.

Code Information

This function is to facilitate the user to view the detailed meaning of fault codes during the entire use of Hi-Checker. According to the function definition of the code, it is divided into four categories, and retrieval is performed on demand.
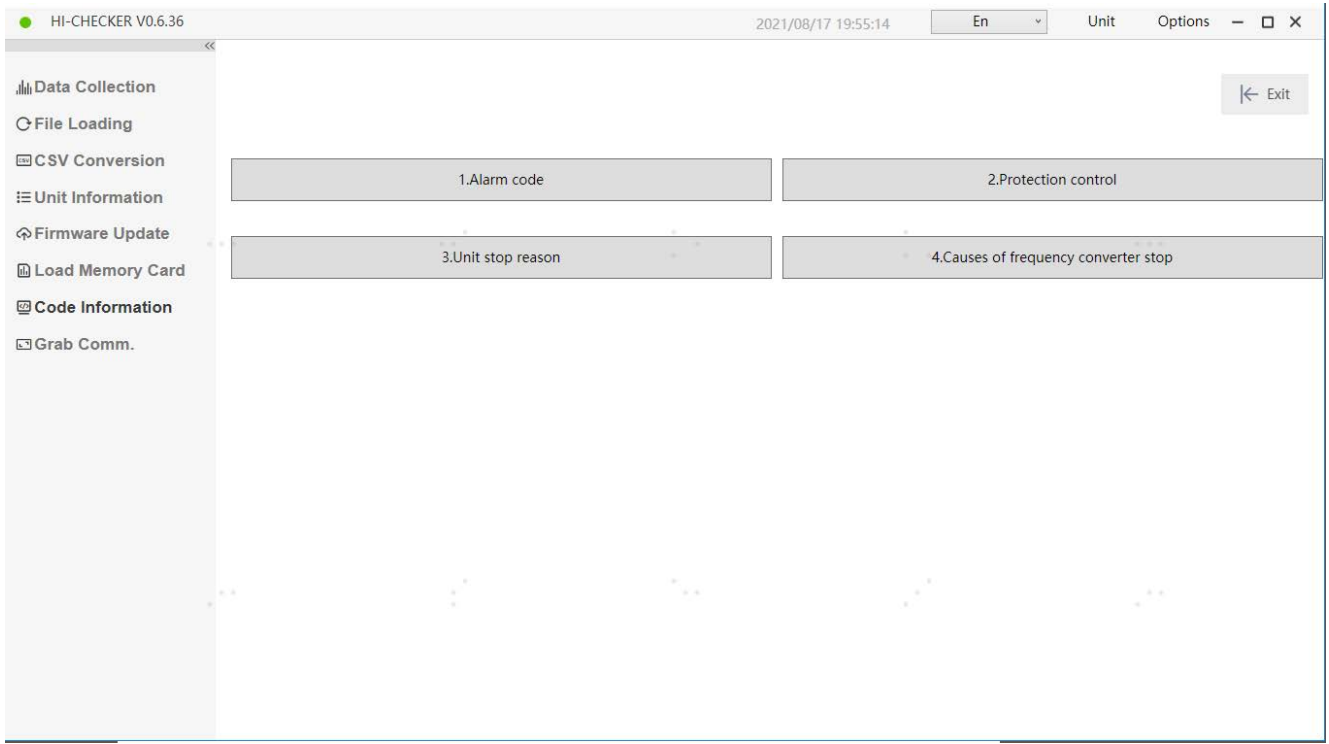
Fig37 Schematic diagram of code information page

Qingdao Hisense Hitachi Air-conditioning Systems Co.,Ltd.