

# Haiwell D Series Smart-Link HMI

## Haiwell Smart-Link HMI Instructions



## Edit History

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# I. Product Instruction

## 1. Main Functions

Haiwell HMI embedded system is developed based on embedded Linux system and is an embedded system software that runs on industrial automation monitoring and management equipment. By running Haiwell configuration project, it can intuitively observe the on-site situation of the industry, communicate with various industrial control devices, and monitor the production signals collected from the industrial site. Timely notify relevant personnel of alarm information on industrial sites through screens, computer language, WeChat, SMS, email, and other forms. Support the use of network engineering to enable multiple devices to act as clients and servers for each other, share data through the network, and achieve distributed control. Support recording and storing data. Analyze and analyze real-time and historical operating data to solve production failures, improve production efficiency, and enhance product quality.

## 2. Core Highlights

- LAN interconnection: instant connection with mobile phones, tablets, computers, televisions, cameras, and other HMIs
- Internet of Things function: instant connection with computers, tablets, computers, televisions, cameras and other HMI through the Internet
- Remote access: Breaking the traditional VNC protocol, no need for secondary configuration, what you get is what you get; Holding asynchronous synchronous monitoring for multiple people simultaneously
- Data Security: All data can be transmitted and stored on designated servers, deployed locally or on the public network, and is secure and controllable
- Open interface: Supports MQTT, OPCUA, HTTP, TCP and other interfaces to easily integrate with ERP, MES and other third-party applications
- Screen integration: third-party software APP、Mini programs and other applications can directly embed HMI screens, instantly possessing remote control capabilities for devices
- Device intelligence: supports applications such as text to speech broadcasting, full scene voice intercom, audio file playback, camera monitoring, RFID/NFC recognition, etc
- Electronic Dashboard: By networking with Haiwell TVBOX, it can easily meet large screen application scenarios such as data visualization and centralized device monitoring, achieving intelligent work
- Satellite positioning: supports Beidou positioning and trajectory tracking, making device positioning more accurate and achieving functions such as dynamic trajectory tracking and electronic fencing
- New definition of HMI: The entire series adopts high-definition screen, narrow border design, built-in eSIM, microphone, speaker, RFID components

## II Product Specification

### 1. Product Parameters Specification

Specifications Parameter		D4	D7	D7 pro	D10	D10 pro	D15	D15 Pro
Software	Programming Management Software	Haiwell cloud configuration SCADA						
	Monitor	4.3" TFT	7" TFT		10.1" TFT		15.6" TFT	
Display	Resolution Ratio	800x480 pixels	1024x600 pixels		1280x800 pixels		1920x1080 pixels	
	Colour	16.7M					262K	
	Lightness	280 cd/m <sup>2</sup>	450 cd/m <sup>2</sup>				350 cd/m <sup>2</sup>	
	View Angle	80°/80°/80°/80°			85°/85°/85°/85°			
	Touch Type	resistance-type	capacitive screen					
	Backlight	Backlight Type	LED					
Backlight Life Span		50,000 hours						
Automatic Sleep Function		support, configurable						
Hardware	Flash	4GB	8GB					
	RAM	512M	512M	1G	1G	1G	1G	1G
	Ethernet Port	10/100 Base-T*1	10/100 Base-T*1	10/100 Base-T*2	10/100 Base-T*1	10/100 Base-T*2	10/100 Base-T*2	
	Serial Port	COM1:RS232*1 COM2:RS485*1	COM1:RS232*1 COM2:RS485*1 COM3:RS485*1					
	USB Host	USB2.0 *1	USB2.0 *1	USB2.0 *2	USB2.0 *1	USB2.0 *2	USB2.0 *2	
	RTC	Built in real-time clock						
Power Supply	Input Power Supply	24V DC±20%						
	Function waste	6W@24V DC	12W@24V DC	15W@24V DC	13W@24V DC	17W@24V DC	23W@24V DC	
	Power protection	Equipped with surge protection and anti reverse connection protection						
	withstanding voltage	500VAC						
	Isolation resistance	over 50MΩ @500VDC						

	Vibration resistance	10~25 Hz (X、Y、Z axis 2G/30 minutes )						
Environment	cooling method	Natural wind cooling						
	protection grade	The panel meets IP65 standards, and the body meets IP20 standards						
	Storage environment temperature	-20~70℃						
	operating ambient temperature	-10℃ ~ 60℃						
	relative humidity	10 ~ 90% RH (no condensing)						
	application environment	Dustproof, moisture-proof, corrosion-resistant, and protected from electric shock and external impact environments						
Appearance	Shell Material	Engineering plastic ABS (flame retardant grade)	All aluminum alloy shell+glass panel					
	Overall Dimension (WxHxD)	137x85x30mm	193x120x33mm	260x167x32mm	394x256x45mm			
	opening size (WxH)	132x80mm (R7mm)	187x114mm (R7mm)	254x161mm (R7mm)	383x245mm (R7mm)			
	Weight	0.3kg	1.0kg	1.5kg	3.2kg			
	Installation Method	panel installation		panel installation、VESA(75*75)		panel installation、VESA(100*100)		
Function	WiFi (optional)	Support 802.11b/g/n,optional						
	Wireless Network (optional)	4G (China) optional	China 4G,optional					
	RFID	Not support	Not support	standard configuration	Not support	standard configuration	Not support	standard configuration
	satellite positioning	Not support	optional					
	Speaker	external connection	built-in					
	Microphone	external connection	external connection	built-in	external connection	built-in	external connection	built-in

Certification	Certification type	CE
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## 2. Product Model List

Model	TFT screen	Storage	LAN+COM	USB	Intelligent configuration	Voice	Local video	RFID	GPS	WIFI	Wireless network	Hole size W*H (mm)	Product size W*H*D (mm)	
D4	4.3" 800*480	4G+512M	1+2	1		Yes						132x80	137x85x30	
D4-G		4G+512M	1+2	1		Yes					4G (China)	Rounding		
D4-W		4G+512M	1+2	1		Yes				Yes		chamfer:R7 mm		
D7	7" 1024*600	8G+512M	1+3	1	speaker	Yes						187x114	193x120x33	
D7-G		8G+512M	1+3	1	speaker	Yes					*Build-in eSIM			Rounding
D7-W		8G+512M	1+3	1	speaker	Yes				Yes				
D7-GP		8G+512M	1+3	1	speaker	Yes			Yes		*Build-in eSIM			R7mm
D7-GW		8G+512M	1+3	1	speaker	Yes				Yes	*Build-in eSIM			
D7-E		8G+512M	1+3	1	speaker	Yes					Global 4G			
D7-EW		8G+512M	1+3	1	speaker	Yes				Yes	Global 4G			
D7 Pro		HD	8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes					
D7 Pro-G		Capacitive	8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes					*Build-in eSIM
D7 Pro-W		Screen	8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes			
D7 Pro-GP		Aluminum Alloy Shell	8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes	Yes				*Build-in eSIM
D7 Pro-GW			8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes			*Build-in eSIM
D7 Pro-E			8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes					Global 4G
D7 Pro-EW	8G +1G		2+3	2	microphone, speaker	Yes	Yes	Yes		Yes	Global 4G			
D10	10.1" 1280*800	8G +1G	1+3	1	speaker	Yes						254x161	260x167x32	
D10-G		8G +1G	1+3	1	speaker	Yes					*Build-in eSIM			Rounding
D10-W		8G +1G	1+3	1	speaker	Yes				Yes				
D10-GP		HD	8G +1G	1+3	1	speaker	Yes		Yes		*Build-in eSIM			R7mm
D10-GW		HD	8G +1G	1+3	1	speaker	Yes			Yes	*Build-in eSIM			
D10-E		Capacitive	8G +1G	1+3	1	speaker	Yes				Global 4G			
D10-EW		Screen	8G +1G	1+3	1	speaker	Yes			Yes	Global 4G			
D10 Pro		Aluminum Alloy Shell	8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes					
D10 Pro-G			8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes					*Build-in eSIM

D10 Pro-W		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes		
D10 Pro-GP		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes	Yes		*Build-in eSIM	
D10 Pro-GW		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes	*Build-in eSIM	
D10 Pro-E		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes	Global 4G	
D10 Pro-EW		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes	Global 4G	
D15	15.6" 1920*1080 HD Capacitive Screen Aluminum Alloy Shell	8G +1G	2+3	2	speaker	Yes						
D15-G		8G +1G	2+3	2	speaker	Yes					*Build-in eSIM	
D15-W		8G +1G	2+3	2	speaker	Yes				Yes		
D15-GP		8G +1G	2+3	2	speaker	Yes			Yes		*Build-in eSIM	
D15-GW		8G +1G	2+3	2	speaker	Yes				Yes	*Build-in eSIM	
D15-E		8G +1G	2+3	2	speaker	Yes					Global 4G	
D15-EW		8G +1G	2+3	2	speaker	Yes				Yes	Global 4G	
D15 Pro		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes				
D15 Pro-G		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes			*Build-in eSIM	
D15 Pro-W		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes		
D15 Pro-GP		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes	Yes		*Build-in eSIM	
D15 Pro-GW		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes	*Build-in eSIM	
D15 Pro-E		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes			Global 4G	
D15 Pro-EW	8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes	Global 4G		

383x245  
Rounding  
chamfer:  
R7mm  
394x256x45

### III Product Description

#### 1. Product Front Appearance



Figure 1 HMI D4



Figure 2 HMI D7



Figure 3 HMI D7 Pro



Figure 4 HMI D10

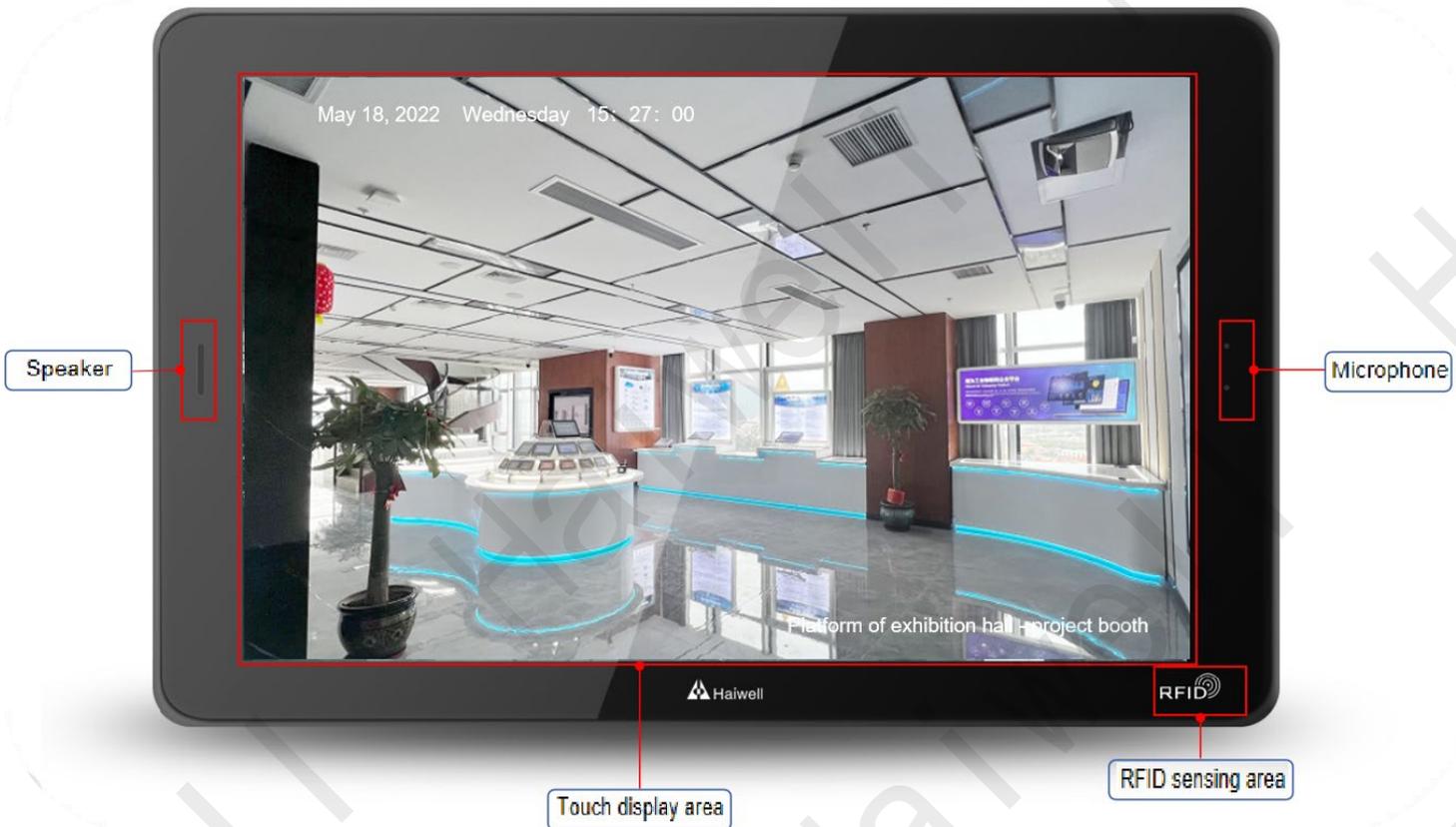


Figure 5 HMI D10 Pro

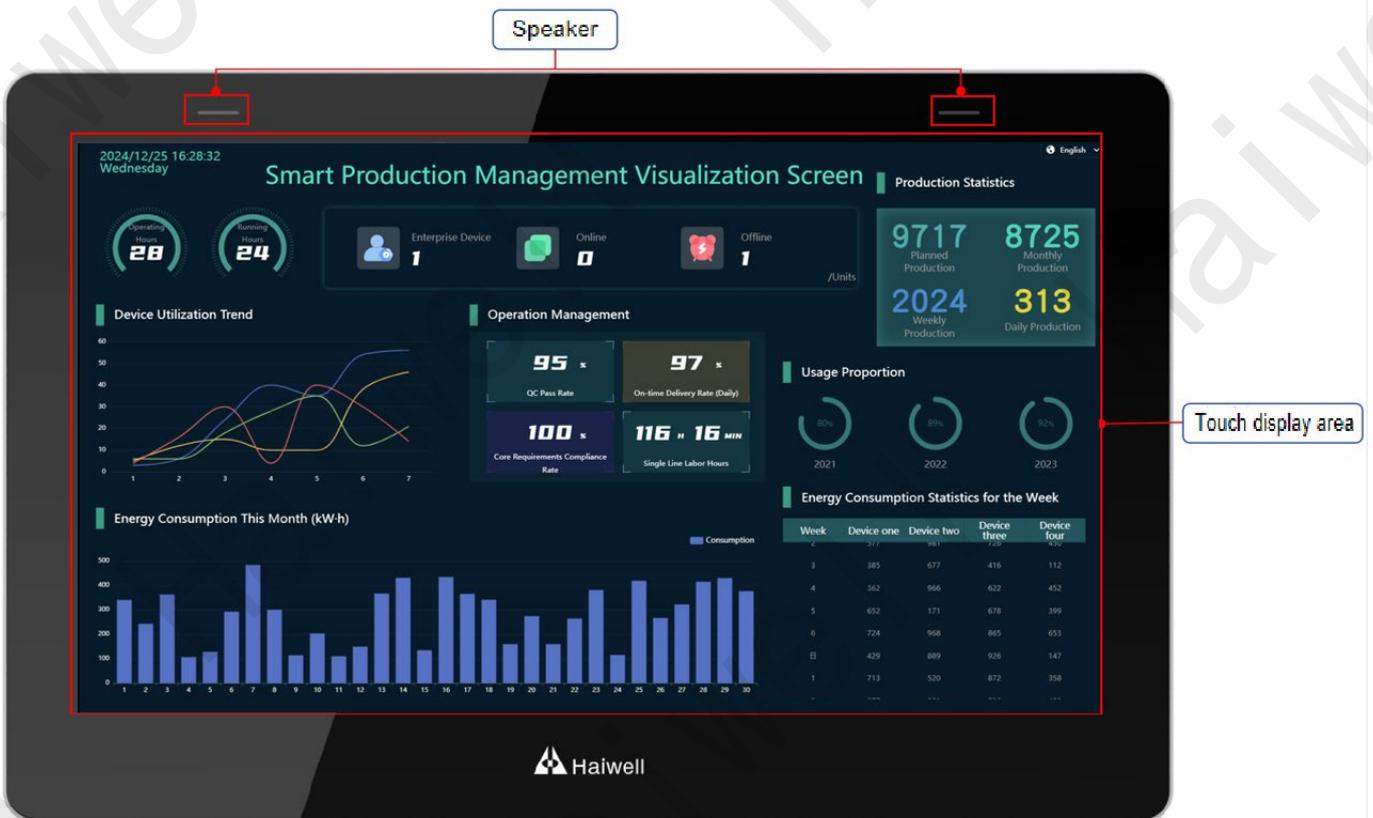


Figure 6 HMI D15

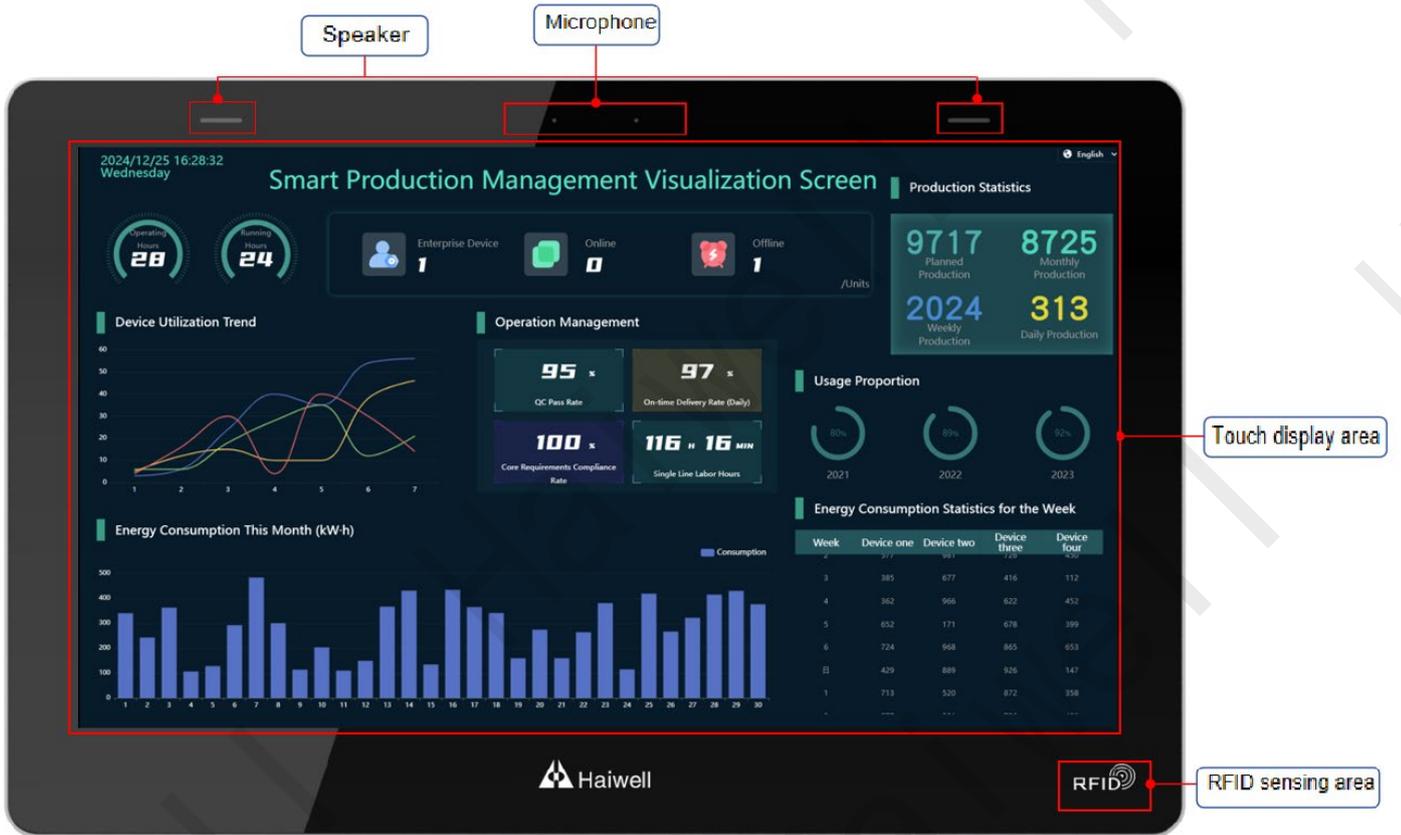


Figure 7 HMI D15 Pro

## 2. Product Back Side Description



HMI Bottom Interface

Figure 8 Instructions on the Back of HMI

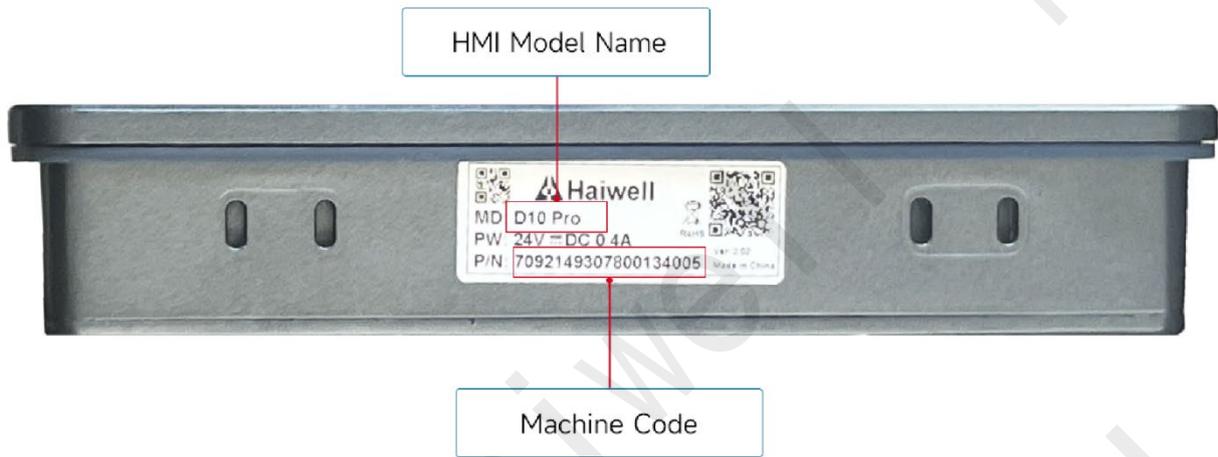


Figure 9 HMI Side Description

### 3. Products Size

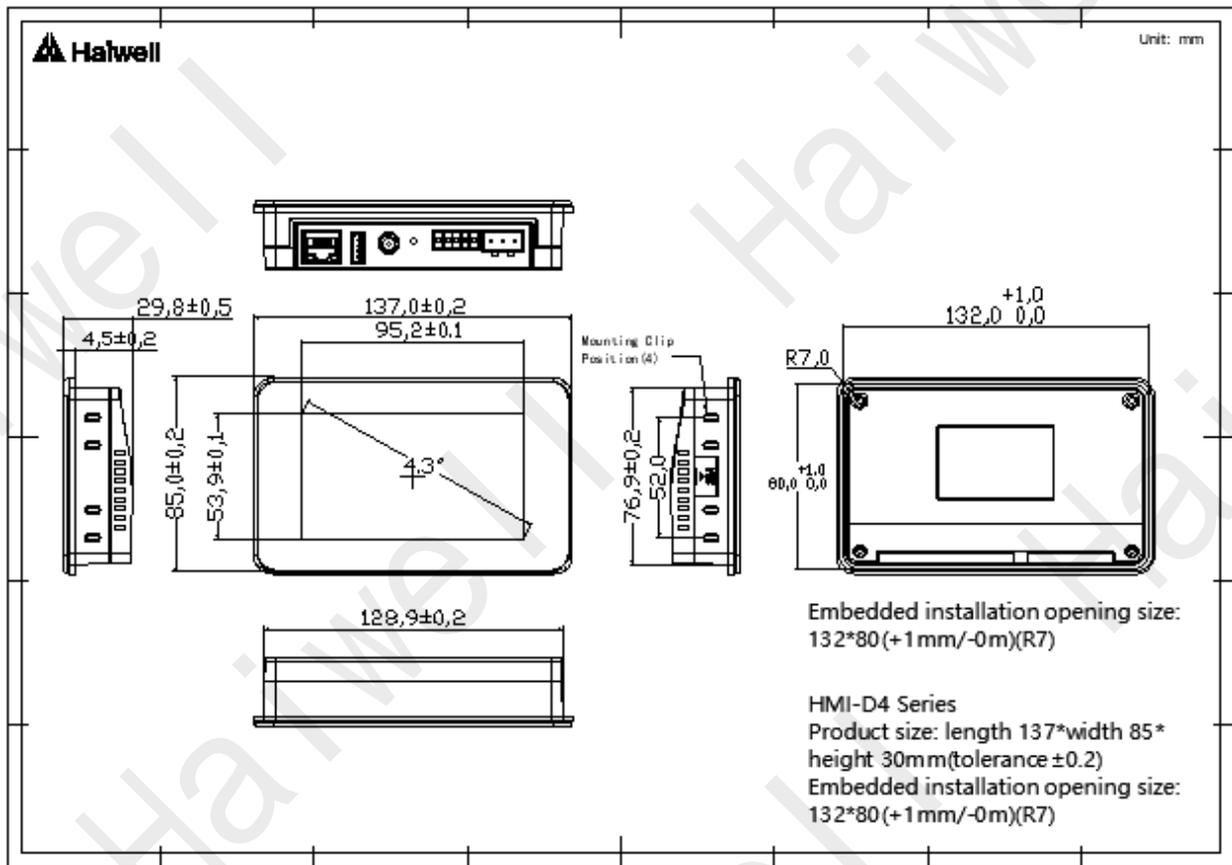


Figure 10 HMI D4

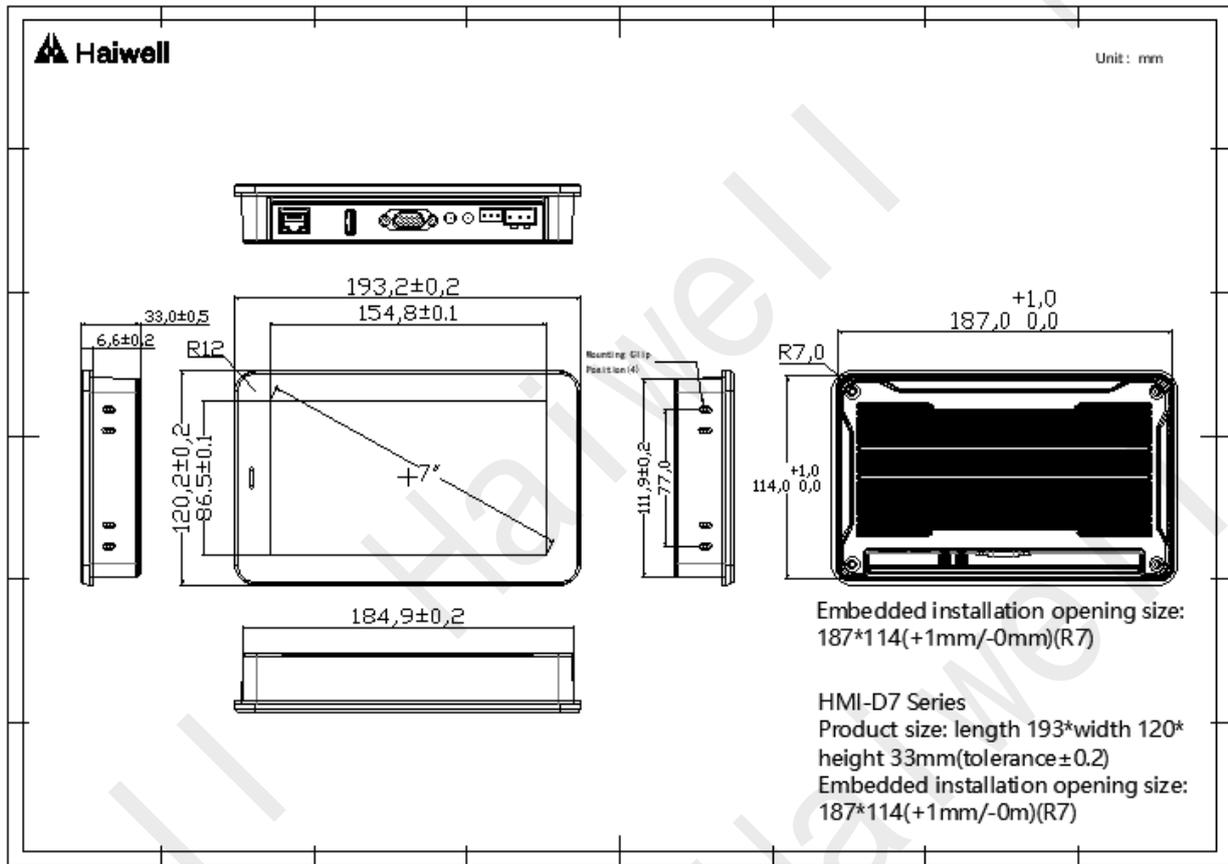


Figure 11 HMI D7

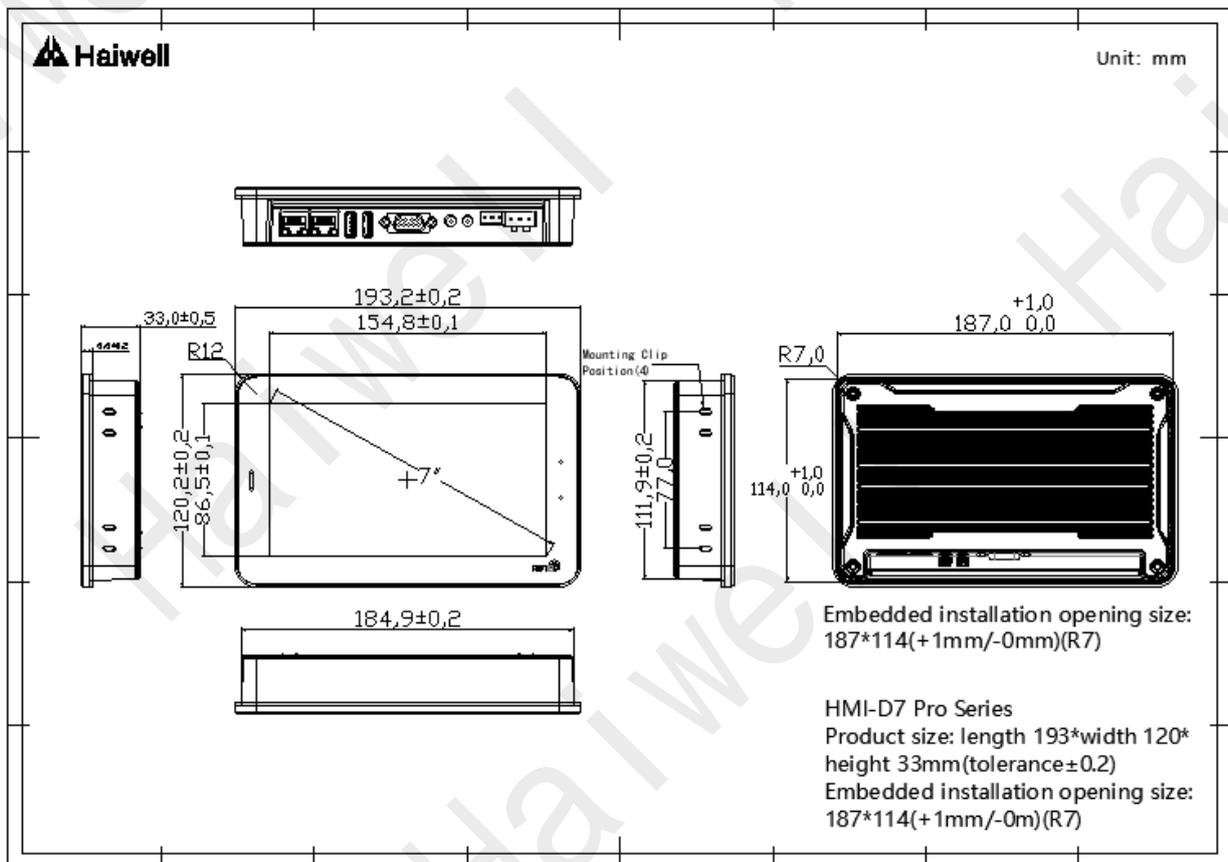


Figure 12 HMI D7 Pro

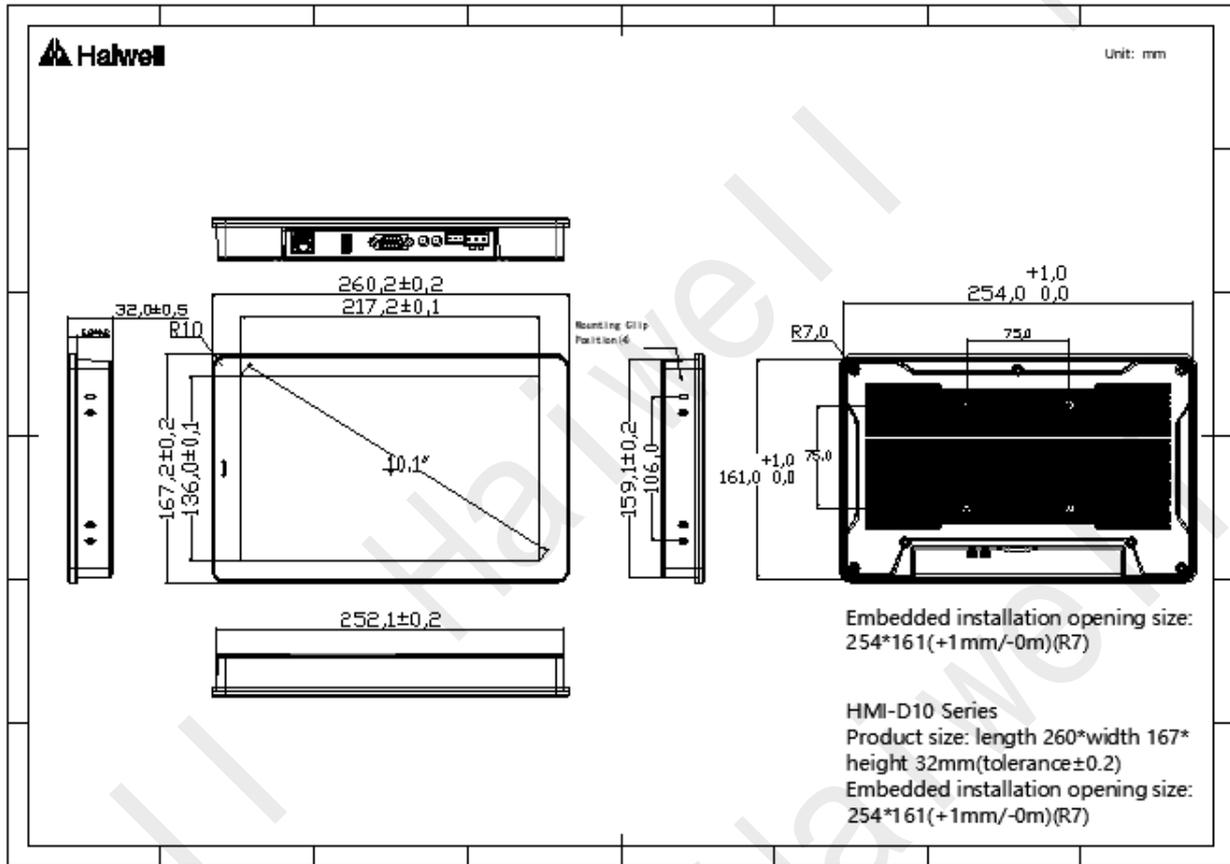


Figure 13 HMI D10

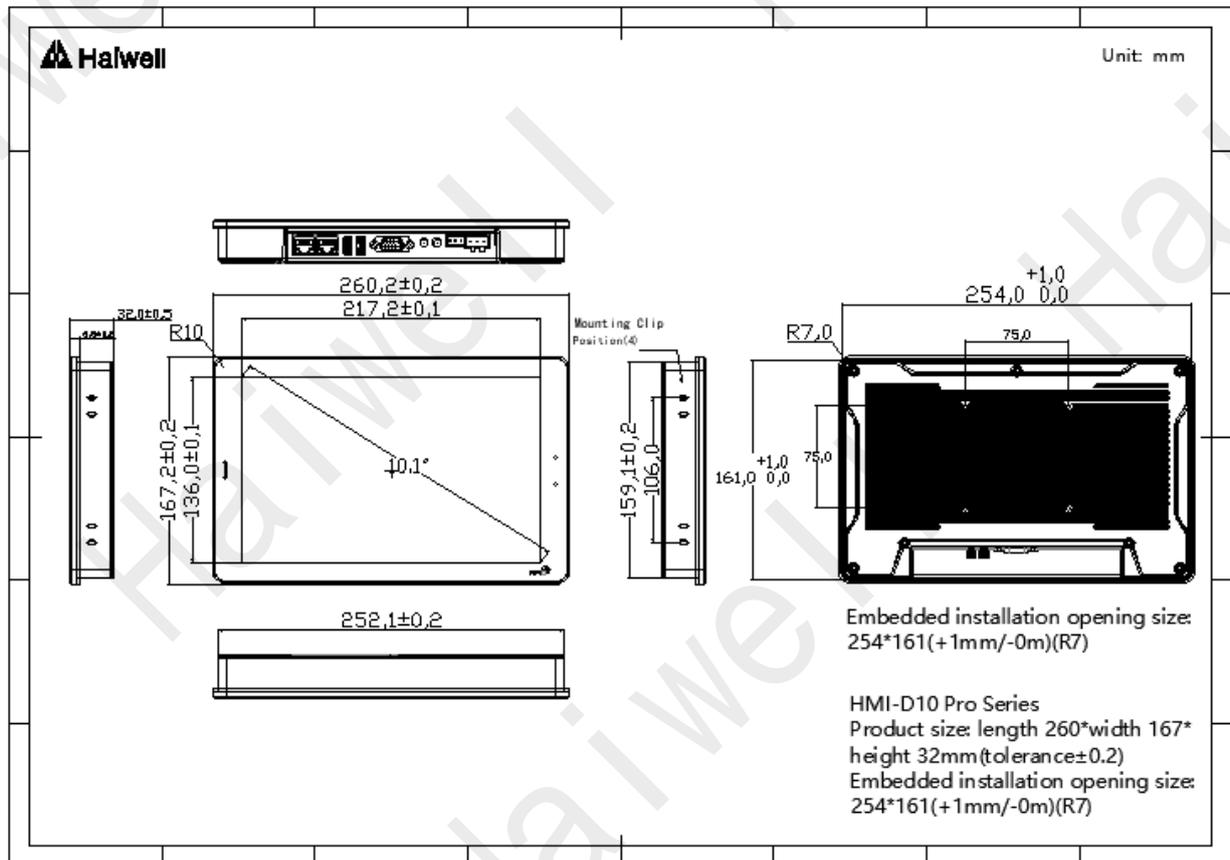


Figure 14 HMI D10 Pro

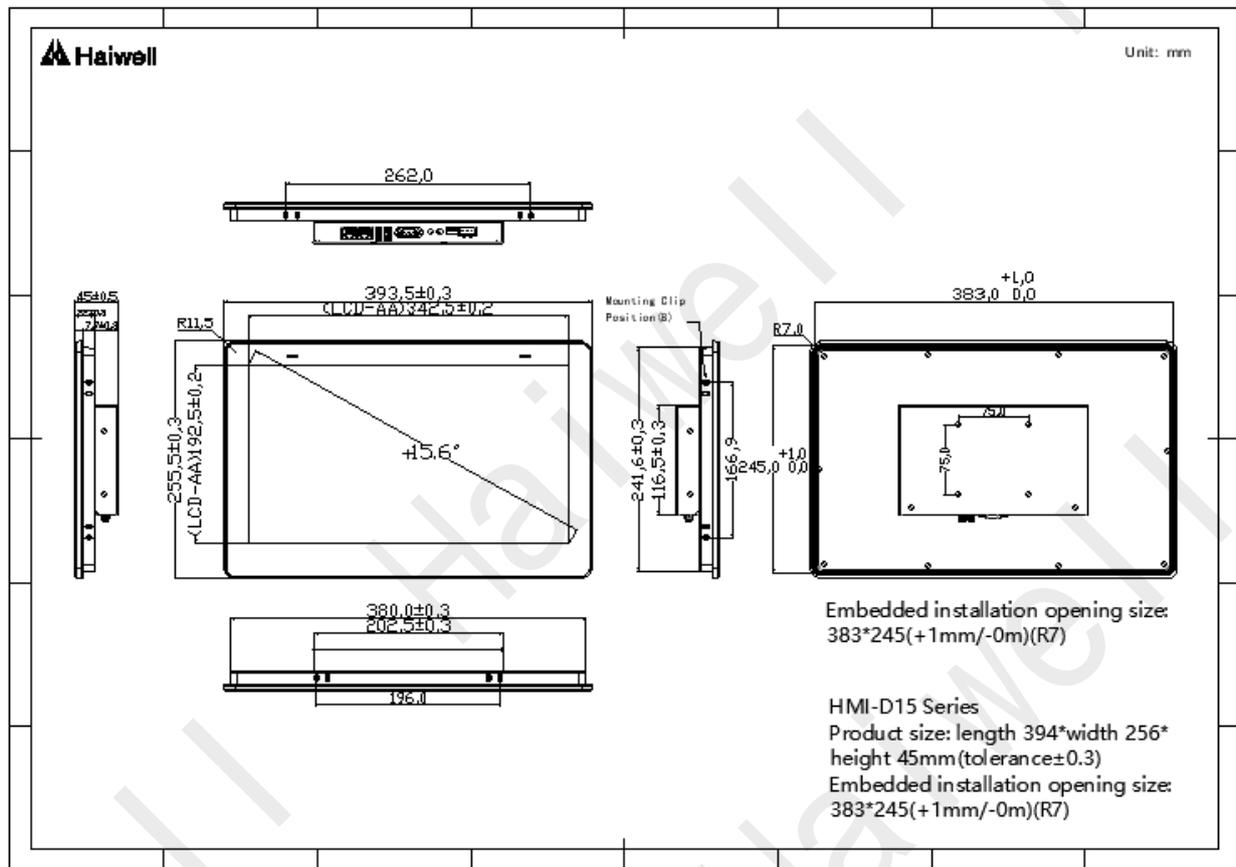


Figure 15 HMI D15

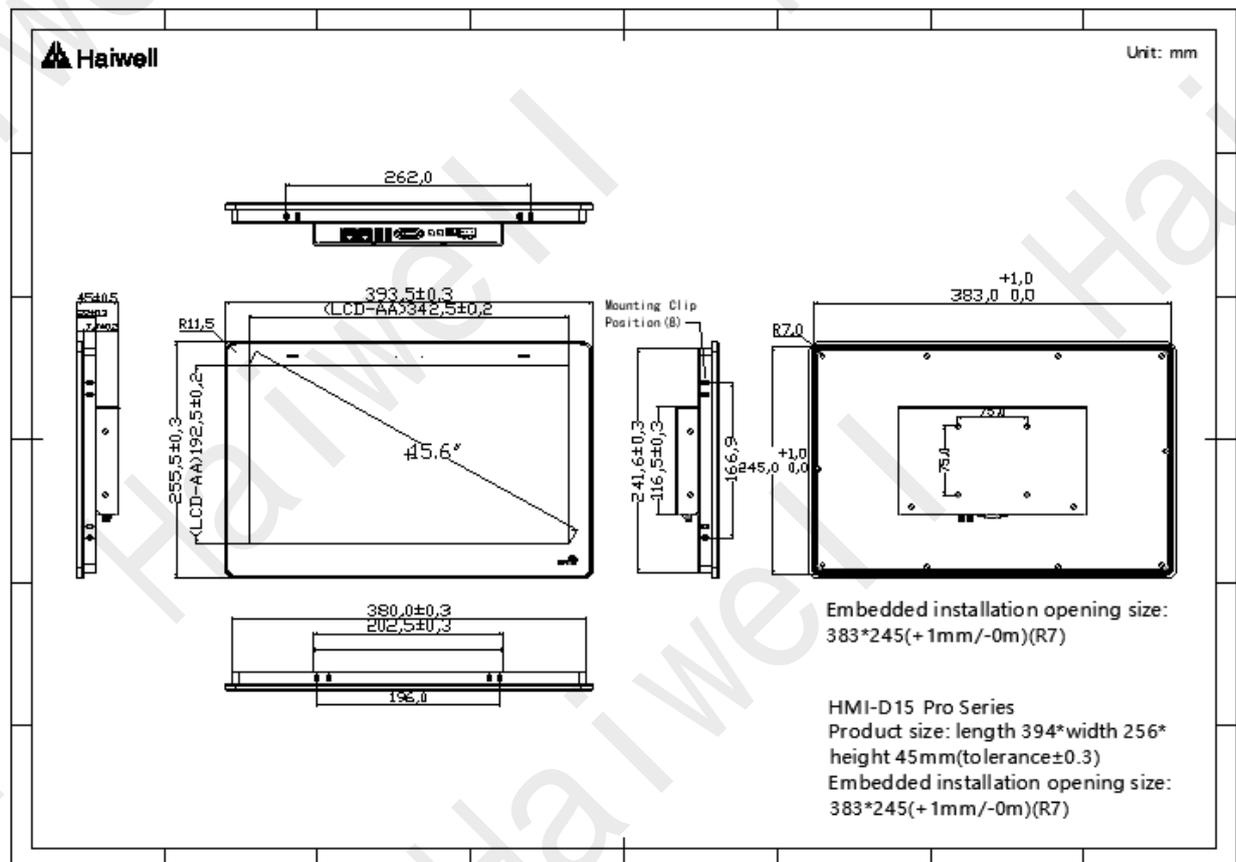


Figure 16 HMI D15 Pro

## 4. Product Interface

### 4.1 Interface Diagram

#### ①HMI D4/D4-G/D4-E/D4-W

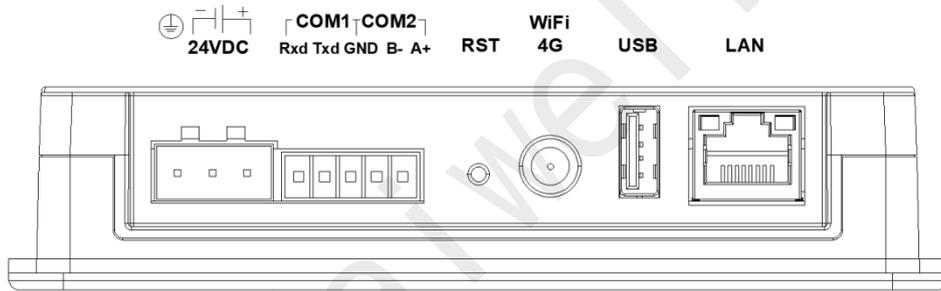


Figure 17 HMI D4 common interface

#### ②HMI D7/D7-G/D7-W/D7-GP/D7-GW/D7-E/D7-EW

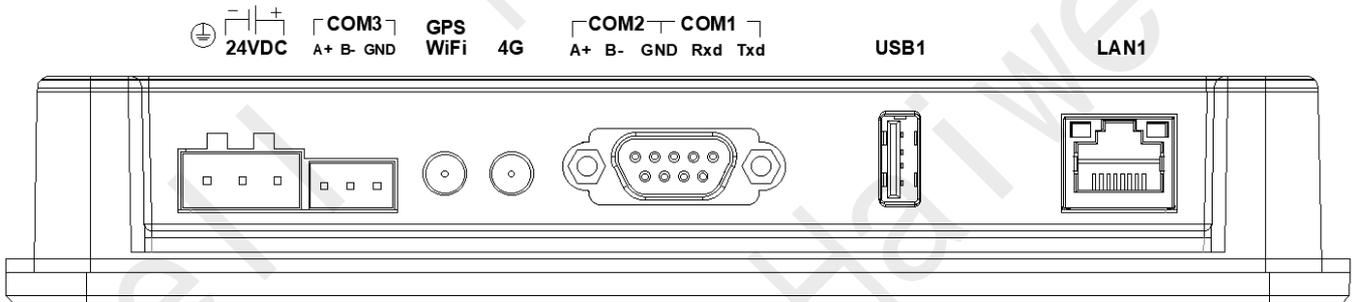


Figure 18 HMI D7 common interface

#### ③HMI D7 Pro/D7 Pro-G/D7 Pro-W/D7 Pro-GP/D7 Pro-GW/D7 Pro-E/D7 Pro-EW

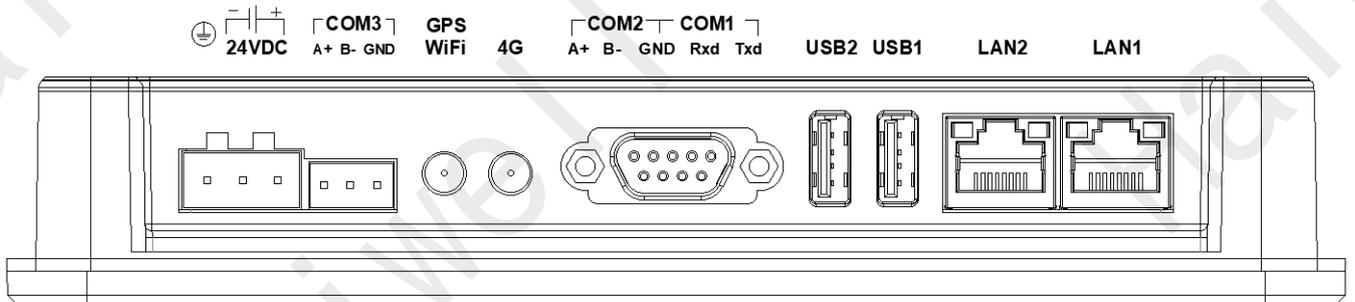


Figure 19 HMI D7 Pro common interface

#### ④HMI D10/D10-G/D10-W/D10-GP/D10-GW/D10-E/D10-EW

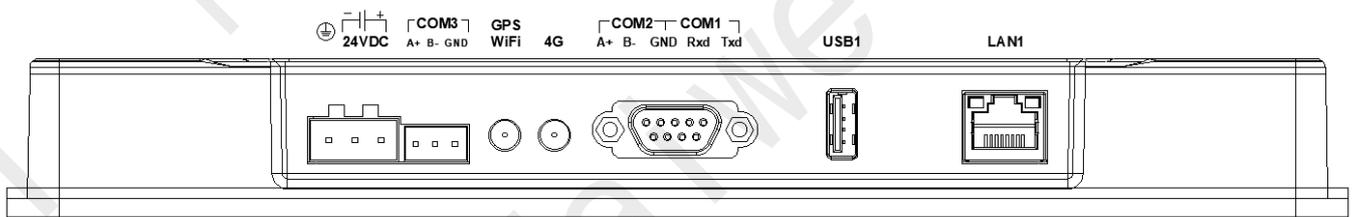


Figure 20 HMI D10 common interface

⑤ HMI D10 Pro/D10 Pro-G/D10 Pro-W/D10 Pro-GP/D10 Pro-GW/D10 Pro-E/D10 Pro-EW

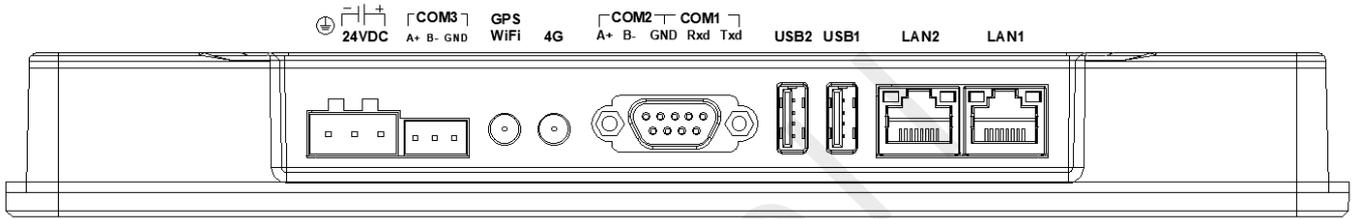


Figure 21 HMI D10 Pro common interface

⑥ HMI D15/D15-G/D15-W/D15-GP/D15-GW/D15-E/D15-EW/D15 Pro/D15 Pro-G/D15 Pro-W/D15 Pro-GP/D15 Pro-GW/D15 Pro-E/D15 Pro-EW

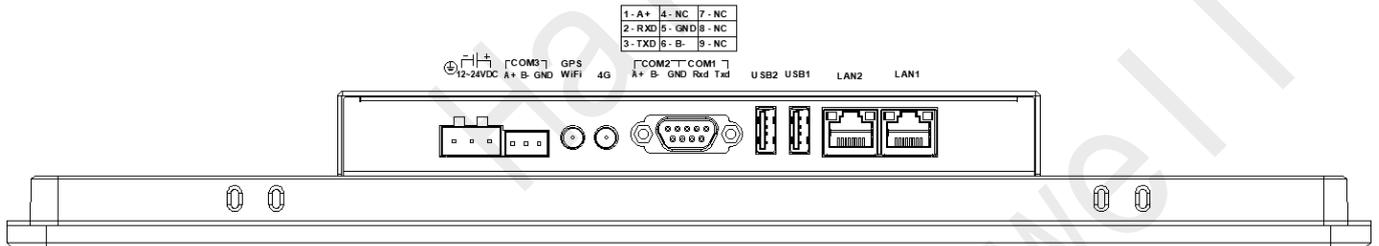


Figure 22 HMI D15/D15 Pro common interface

4.2 Definition of Communication Interface

Table 1 Definition of Nine Pin Serial Port Pins (D7/D10/D15 Series)

COM1/COM2 Definition of nine pin serial port pins			
	Pin No	definition	pin instructions
	1	COM2:A+	RS485 communication "A+"
	2	COM1:RXD	RS232 communication receiving data
	3	COM1:TXD	RS232 communication sending data
	4	NC	None Signal
	5	COM1:GND	Signal ground wire
	6	COM2:B-	RS485 communication "B+"
	7	NC	None signal
	8	NC	None signal
	9	NC	None signal

Table 2 Definition of COM3 serial port pins (D7/D10/D15 Series)

COM3 RS485 pin definition			
	Pin No	definition	pin instruction
	1	COM3:A+	RS485 communication
	2	COM3:B-	RS485 communication
	3	COM3:GND	Signal ground wire

5. HMI Electrical Connection

5.1 Power Supply Connections

The HMI power interface is located on the leftmost side of the bottom of the device. The "24V+" of

the switch power supply is connected to the "24V+" port of the device, and the "24V -" (0V) of the switch power supply is connected to the "24V -" port of the device. In order to better protect the equipment and reduce electromagnetic interference, the HMI can be grounded and connected to the "GND" port of the device.

In addition, the D series 15 inch HMI has a 12V power supply port, and it is recommended to use 24V voltage. Please refer to 4. Product Interface -4.1 Interface Diagram ⑥ for specific interface definitions.

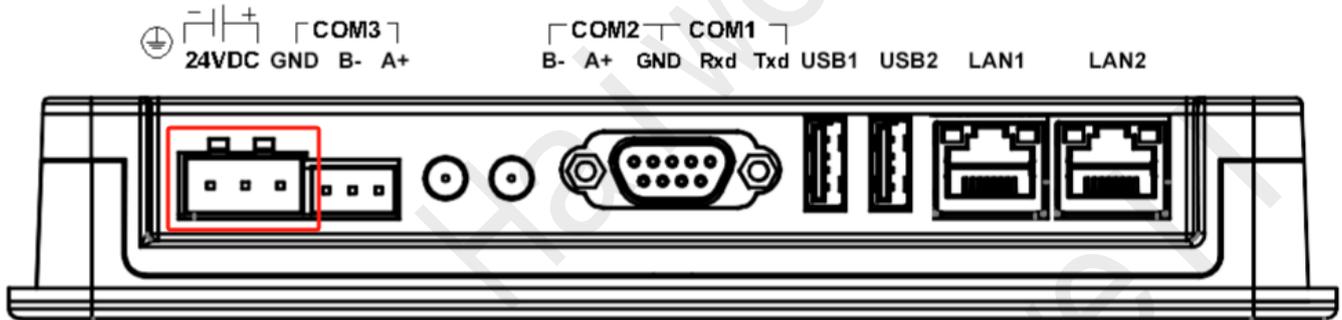


Figure 23 power supply terminal

## 5.2 Ethernet Connection

The Ethernet LAN port of HMI is located on the far right side of the bottom of the device and is mainly used to connect the PC through the HMI network cable, achieve communication between the HMI and PC, and complete operations such as uploading and downloading projects. The LAN port can also be connected to the PLC for communication.

## IV HMI Installation and Use

### 1. Bracket arm installation

#### Step 1: Prepare and position the support arm

1. Check if the bracket arm includes all necessary accessories, such as M4 screws, nuts, and installation instructions.
2. According to the instructions of the bracket arm, determine the installation position of the HMI and mark the fixing points of the bracket arm.
3. Place the bracket arm in the designated position, ensuring that the fixing hole of the bracket arm aligns with the M4 hole on the back of the touch screen.

#### Step 2: Assemble the bracket arm

1. Connect the various components according to the assembly instructions of the bracket arm to form a complete bracket structure.

If the bracket arm needs to be fixed to a wall or other surface, use an electric drill to drill holes at the marked fixing points and install the corresponding wall mounted accessories.

3. Secure the bracket arm to the wall or other surface, using screws and nuts to ensure its firmness.

#### Step 3: Install the touch screen

1. Align the four M4 holes on the back of the touch screen with the fixed holes on the bracket arm.
2. Thread the M4 screw through the fixed hole of the bracket arm and place the nut on the bracket arm.
3. Use a screwdriver to tighten the screws until the touch screen is securely fixed to the bracket arm, and check if the touch screen is installed flat and stable.

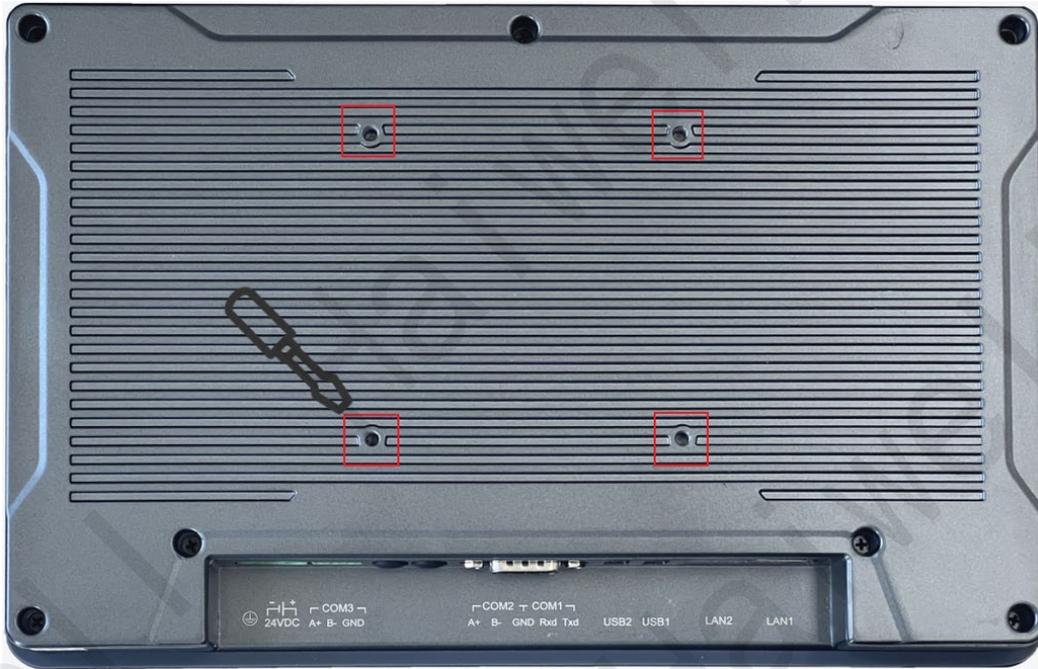


Figure 26 Bracket arm installation

**Matters needing attention:**

- ① Before installing the bracket arm, ensure that the selected installation surface can withstand the total weight of the touch screen and bracket arm, avoiding installation in unstable or insufficiently load-bearing areas.
- ② During installation, ensure that all screws and nuts are securely fastened in place to prevent the touch screen from coming loose during use.
- ③ This method is currently only supported on HMI D10 and HMI D15 series.

**2. Panel installation**

**Step 1: Prepare to install the panel**

1. Determine the opening size: Determine the opening size on the panel based on the HMI size and installation instructions.
2. Drilling: Use appropriate tools to drill holes on the installation panel. Ensure that the size and shape of the openings match the installation holes of the HMI.

**Step 2: Install HMI**

1. Align the HMI with the opening: Align the HMI with the opening on the panel, ensuring that the front of the HMI faces outward and the back faces inward.
2. Gently push in: Slowly and evenly push the HMI into the opening until the edge of the HMI is flush with the panel.

### Step 3: Fix HMI

1. Find the buckle: There are 4 buckles on the side of the HMI.
2. Locking buckles: Gently press each buckle with your hand to secure it to the edge of the installation panel. Ensure that each buckle is securely fixed to the panel to prevent the HMI from loosening or falling off.

#### Matters needing attention:

- ① The installation direction must be in accordance with the instructions in this manual, and the wiring must strictly follow the direction marked on the terminal, otherwise it may cause product failure or burning.
- ② The product and other bottom components must maintain sufficient space to avoid equipment damage caused by poor heat dissipation.

## 3. Settlement installation (Only D4 is supported)

### Step 1: Assemble the Double-Layer Frame

1. Align the through-holes of the mounting iron parts with the studs on the panel. Use a screwdriver to tighten the screws in a diagonal sequence (top-left → bottom-right → top-right → bottom-left).
2. Ensure the frame is stable without shaking and the surface is flat without protrusions.

### Step 2: Embed the HMI Device

1. Place the HMI face up and horizontally insert it into the panel opening. Gently push until it is fully embedded.
2. Check that the device surface is flush with the panel and there are no gaps around the edges.

### Step 3: Secure the Device Clips

1. Insert the 4 fixing clips into the left and right hanging holes on the machine body. Use a screwdriver to tighten them evenly.
2. Ensure the screws press against the mounting iron parts with moderate tightness, and the device does not shift.

### Step 4: Apply the Custom Face Sticker

1. Clean the panel surface, peel off the back adhesive of the face sticker, and align it with the opening position. Apply it smoothly.
2. Press to remove air bubbles, adjust until the display area is fully exposed, and ensure no edges are curled up.

#### Matters needing attention:

Design the opening panel and mounting iron parts according to the dimensional drawings provided in the product manual, with a material thickness between 1mm and 2mm.

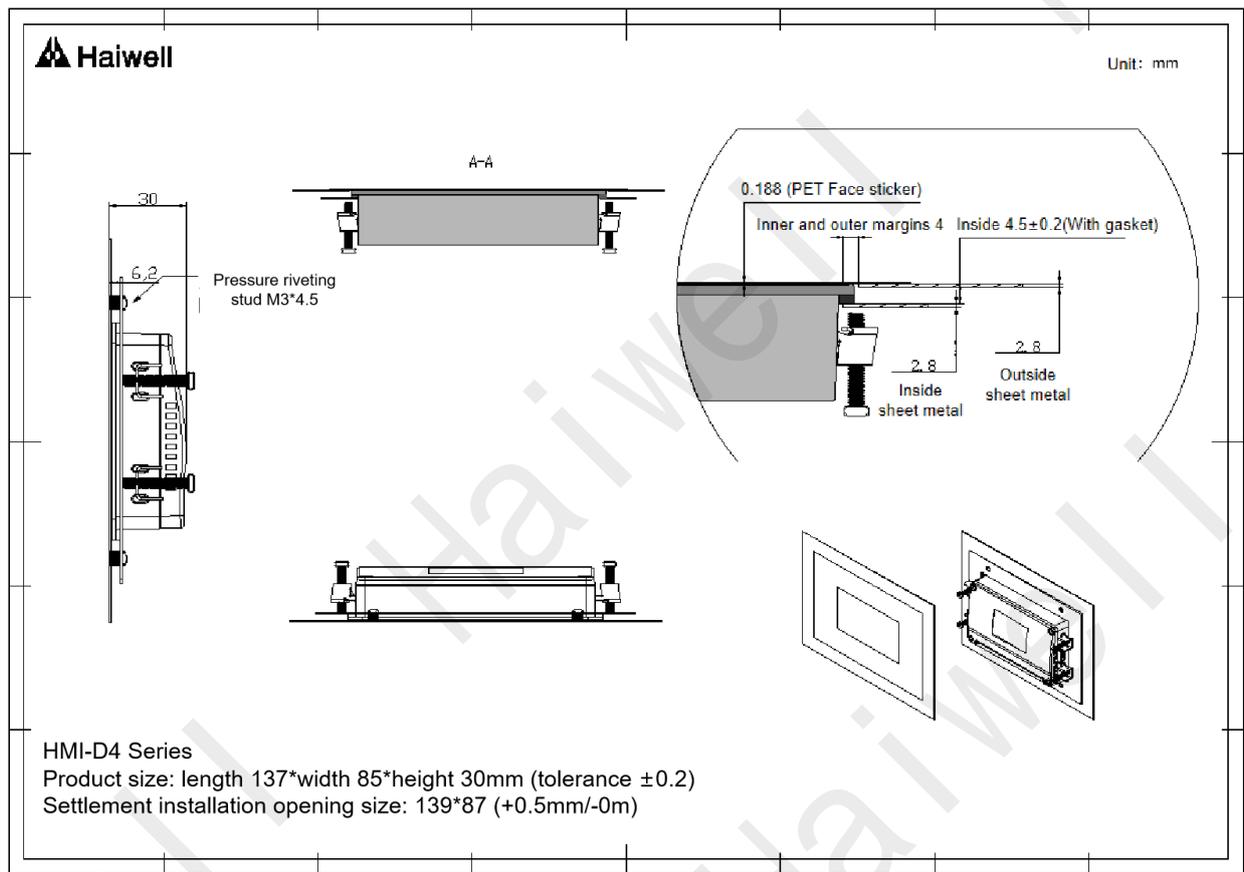


Figure 27 HMI D4 Series Settlement Installation

#### 4. External 4G card installation

**Step 1:** The HMI external 4G card is installed inside the rear of the HMI. Remove the aluminum alloy backplane shell. The backplane has screws that can be unscrewed.



Figure 28 HMI 4G card

**Step 2:** After disconnecting the aluminum backplane shell, press the card slot downward to open it, insert the 4G card after opening it, and press the card slot to lock it.

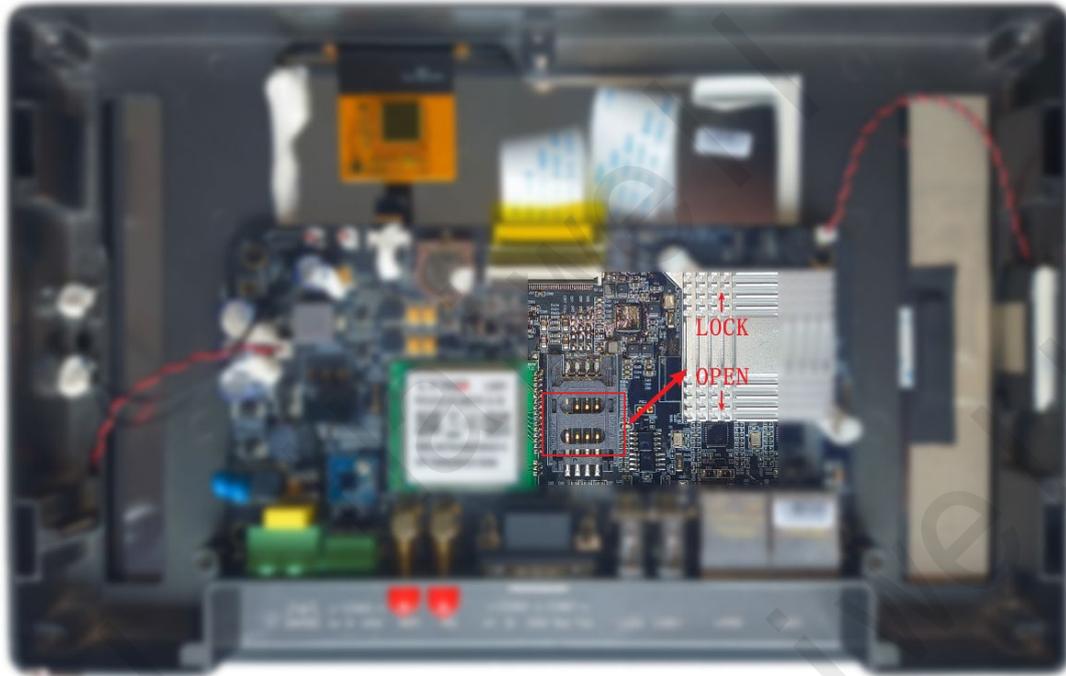


Figure 29 HMI 4G card installation

**Note:** After inserting the 4G card, you need to restart the HMI to correctly identify the SIM card.

## 5. Antenna installation

The HMI can be equipped with 4G/WiFi/GPS functions, for the best signal strength, please draw the antenna out of the control cabinet. After the antenna is extracted from the HMI, route the cable on the cabinet door, and pay attention to the antenna to avoid the power cord. The antenna goes straight through the opening and closing side of the cabinet door to the opening hole on the top of the cabinet to draw out the antenna, as shown in Figure 30 below:

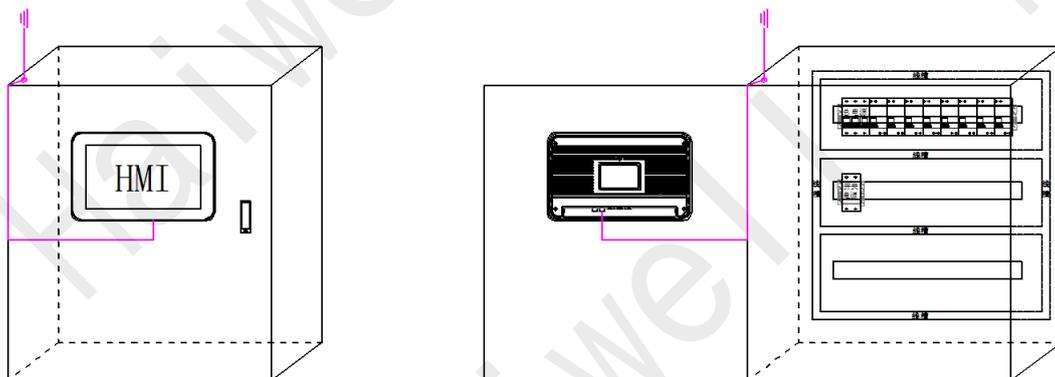


Figure 30 Schematic diagram of HMI antenna installation

## V HMI Settings

### 1. HMI software

HMI needs to be used with Haiwell SCADA editing software. Please download it from the download center of domestic PLC|HMI|SCADA on the official website of Haiwell - Industrial Internet of Things | (<https://haiwell.com/download/download.php?class2=34>).

### 2. HMI Background setting

#### 2.1 Background set the access mode

Press and hold the upper right corner of the HMI screen (about 5s) and release it when you hear the "drip" sound from the device. At this time, the HMI enters the background setting screen.



Figure 31 Entering background Settings

#### 2.2 Engineering setup

The Engineering Settings mainly support the download of the engineering operation file generated by the U disk, and the access to the engineering screen of other intelligent connected devices in the LAN through the device IP.

##### Connection network Engineering:

Enter the HMI background Settings screen, click **【Engineering Settings】**, click **【Connect to Network Engineering】**, and enter the IP address that needs to be connected to the HMI in the same LAN. Remote access between the HMI and HMI can be realized.

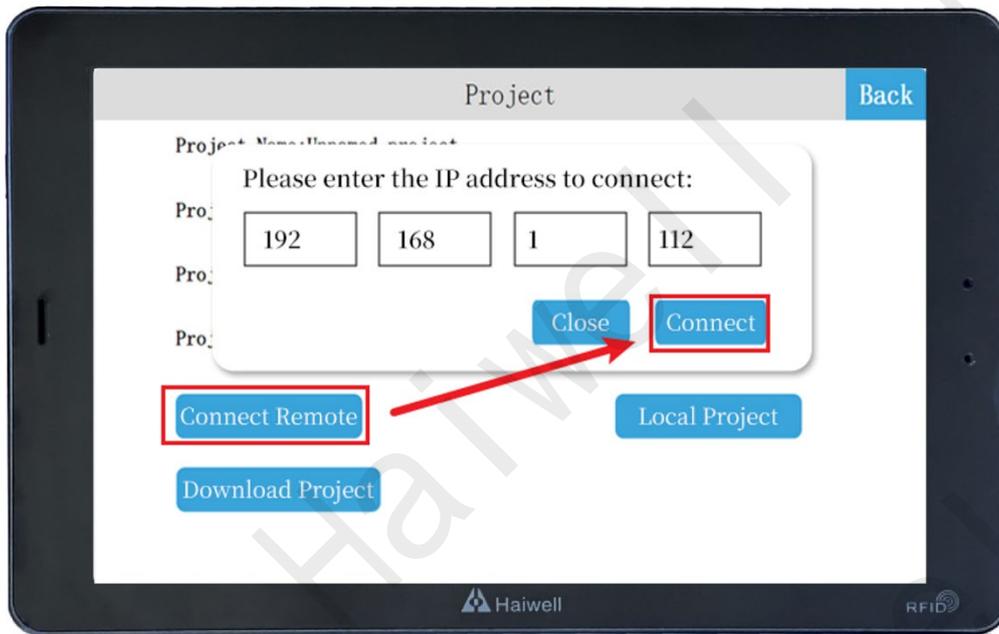


Figure 32 Connecting the network project

**Connect to local projects:**

After the HMI connects to the network project, other HMI projects are accessed and run. To return to the original HMI project, click **【Run Local Project】**.

**Download project:**

**①Generate a USB flash drive run file**

Step 1: Create a project, click **【Project】** in the Scada menu bar, expand the TAB, click **【Generate USB drive run file...】** ;

Step 2: Enter the compilation interface, after compiling, set the appropriate output path, click **【Save】** ;

Step 3: After the file is saved successfully, the system displays a dialog box indicating that the file is saved successfully. Click **【OK】** .

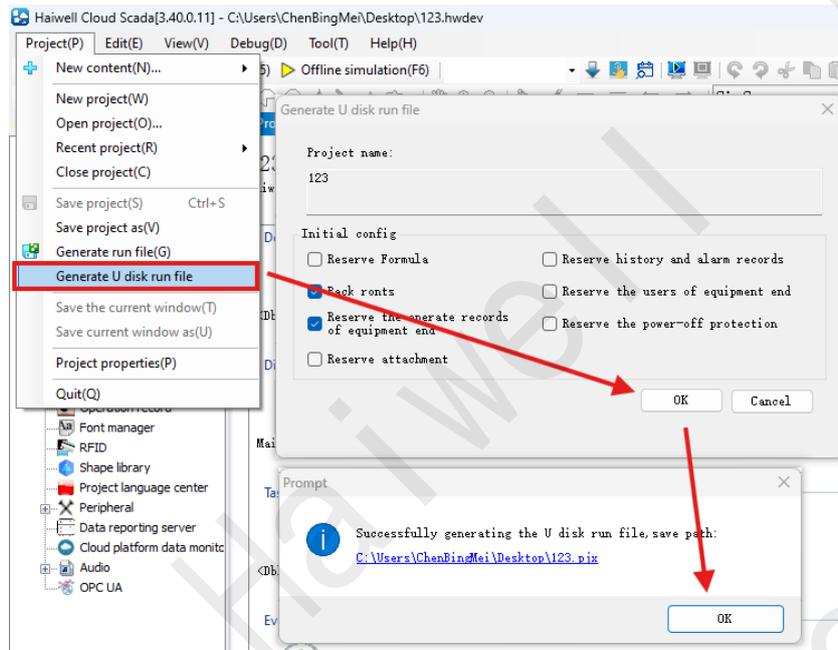


Figure 33 Generate the USB flash drive run file

## ②USB Flash Drive download project

Step 1: Enter the HMI background setting interface, click **【Engineering setting】**, enter the engineering setting interface;

Step 2: Click **【Download Project】** to enter the project download interface;

Step 3: Insert U disk, select **【USB】**; Select the project according to the requirements, click **【OK】**, and the HMI device will automatically restart after the download is successful.

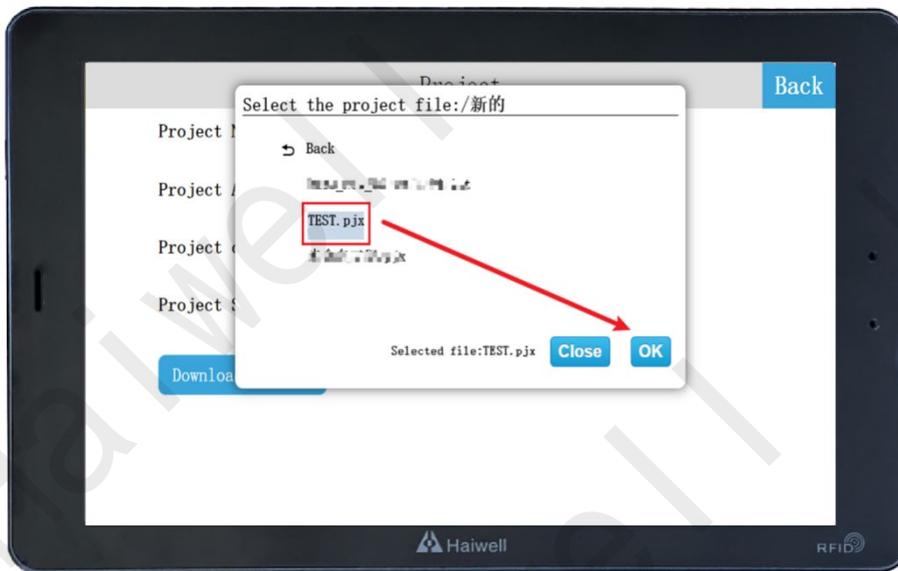


Figure 34 USB flash drive download project

## 2.3 The local Settings mainly set the basic functions and parameters of the HMI.

**【Local Settings】** :

### ①Set the terminal name

Enter the HMI background setting interface, click **【Local Settings】**, in the **【Local Settings】** interface, you can see **【Terminal Name】**, click **【Settings】**, enter a new terminal name, click Enter on the keyboard,

terminal name: device name.

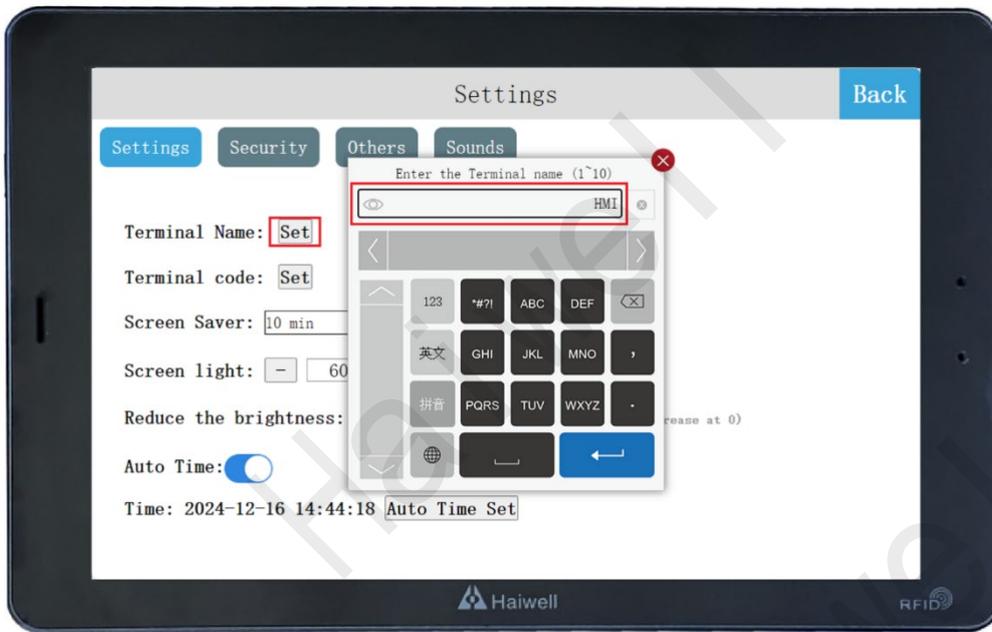


Figure 35 Setting the terminal name

**Note:** The terminal name contains 1 to 10 characters.

②Set the terminal number

Enter the HMI background setting interface, click **【Local Settings】**, in the **【Local Settings】** interface, you can see **【Terminal Number】**, click **【Settings】**, enter the new terminal number, click Enter on the keyboard, terminal number: device number.

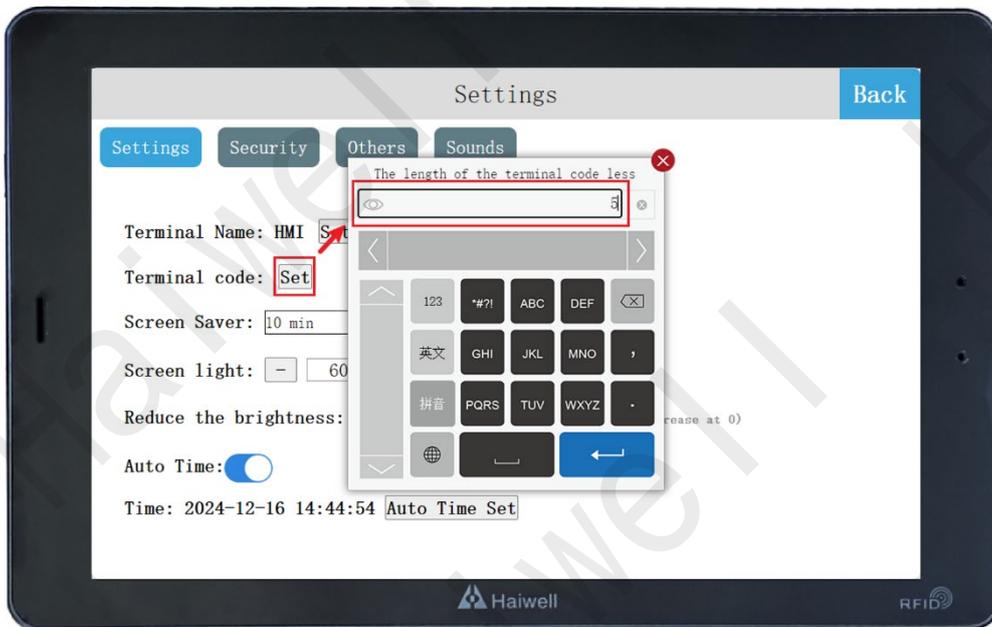


Figure 36 Setting the terminal number

**Note:** The terminal number contains 0 to 10 characters.

### ③Set network timing

Enter the HMI background setting interface, click **【Local Settings】**, when the network pair is opened in the **【Local Settings】** interface, and then click the automatic time setting, the current time will automatically correspond to the network time.



Figure37 Set network timing1

Enter the HMI background setting interface, click **【Local Settings】**, when the network pair is closed in the **【Local Settings】** interface, click Change time, you can manually enter the setting time, click OK after the input is completed, click Cancel will not save the input.

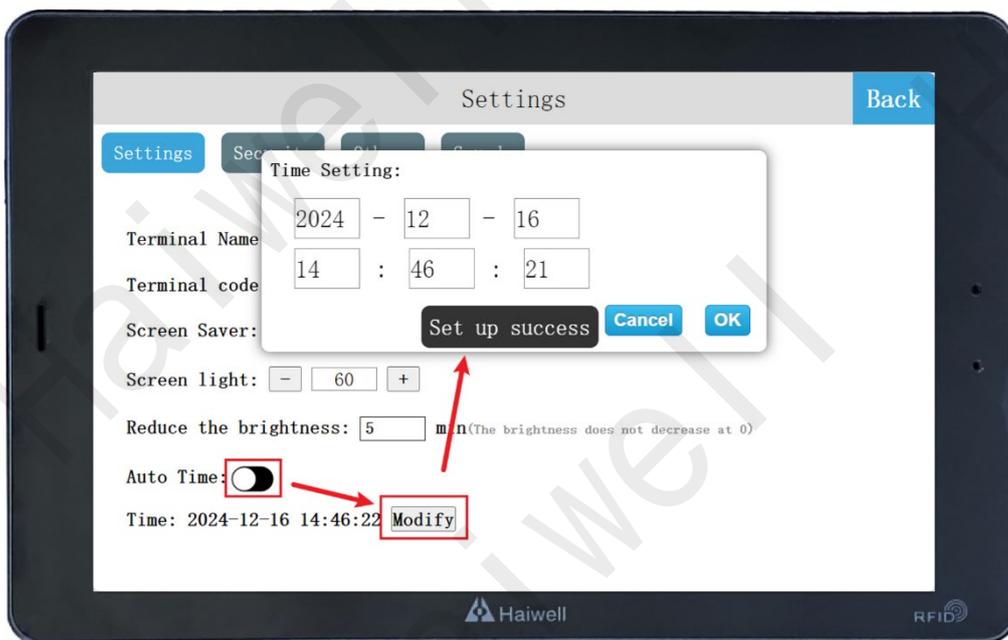


Figure38 Set network timing2

## 【Security Settings】 :

### ①Download Project Password

Enter the HMI background setting interface, click 【Local Settings】 , open the 【Download Project Password】 function in the 【Security Settings】 interface, and set the HMI download project password. After the successful setting, users need to verify the password to download the project and update the firmware; otherwise, relevant operations cannot be performed.

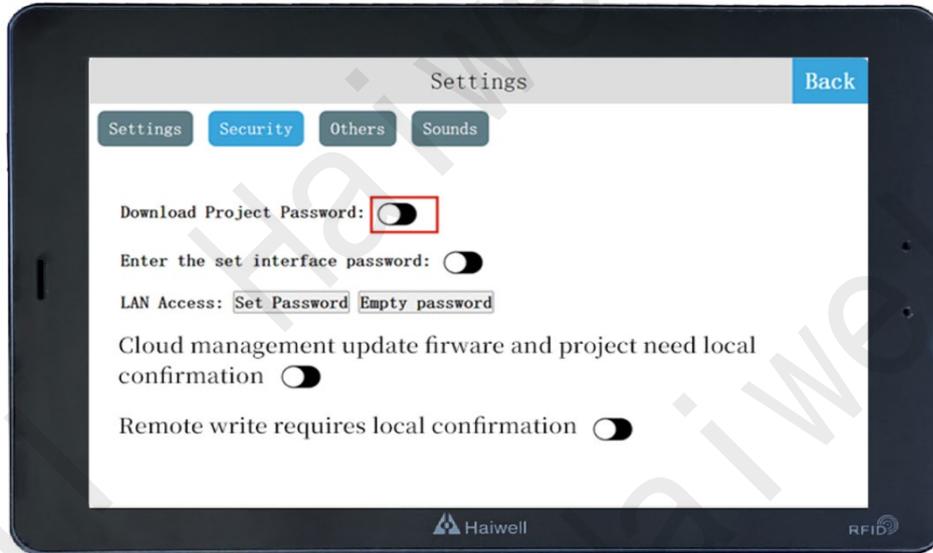


Figure39 Download Project Password

**Note:** The project password must be set carefully when you download it. If you forget the password, you need to restore the factory Settings to reset it.

### ②Access background password

Adding password verification to enter the background can avoid security risks and economic losses caused by irrelevant personnel's mis operation, the specific operations are as follows:

- Step 1: Enter the HMI background setting interface, click 【Local Settings】 ;
- Step 2: Open the 【Enter Background Password】 function on the 【Security Settings】 interface;
- Step 3: Set the password for logging in to the background. After the password is set, the user needs to verify the password for logging in to the background Settings.

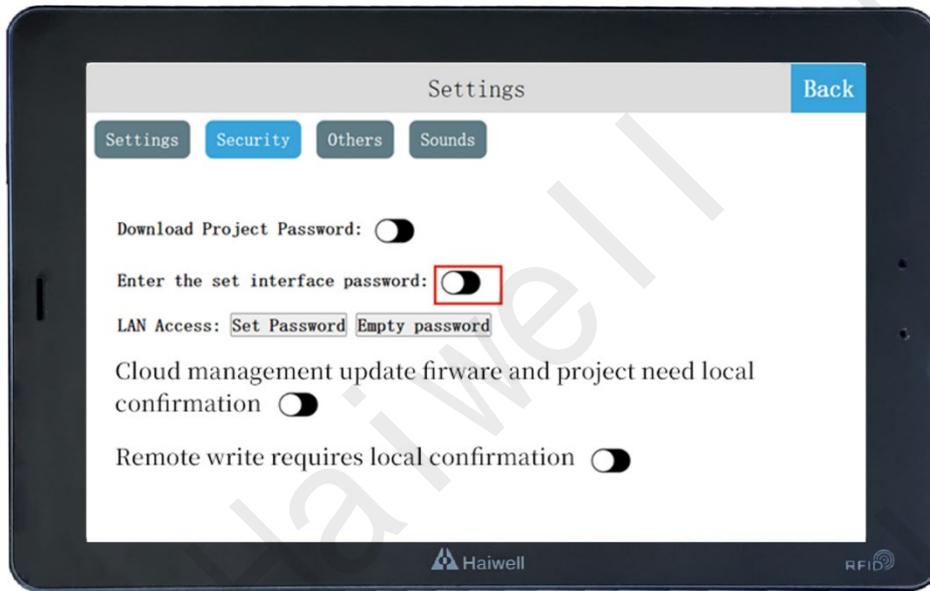


Figure40 Set the background password

**Note:** Set the password to enter the background carefully. If you forget the password, contact Haiwell Technology to clear it.

### ③LAN access

Enter the HMI background Settings screen, click **【Local Settings】**, switch to the **【Security Settings】** screen, and enable LAN access by default. The user can click **【Set password】**, enter the password to be set, press Enter, enter the password just entered again, and press Enter, that is, save the LAN access password just set. If the user wants to access the device through the LAN, mobile APP, cloud website, TVBOX, etc., the user must enter the correct LAN access password.

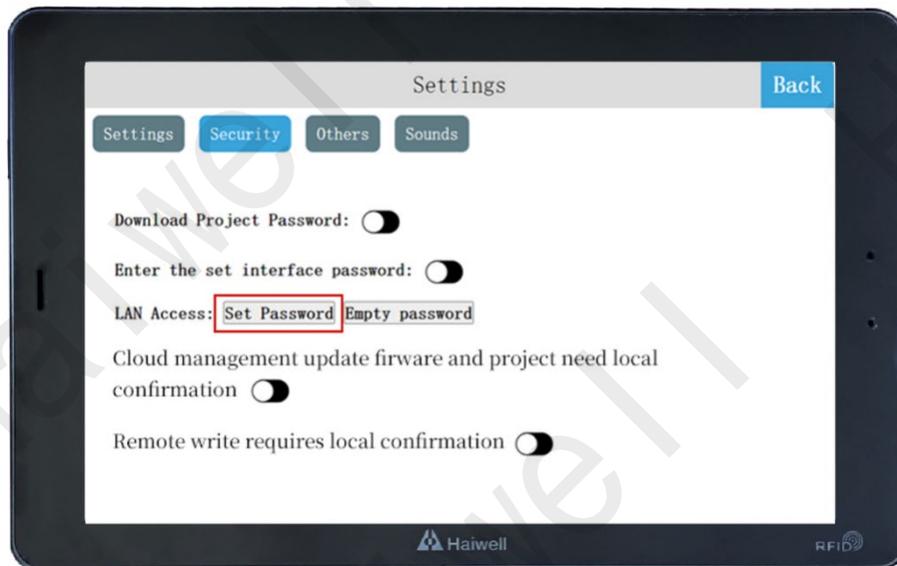


Figure41 Set the LAN access password

Click to clear the password, the pop-up "Setting successful, it is recommended to set the password to improve security", that is, clear the previously set LAN password, the user can access the HMI through the LAN (without entering the password).

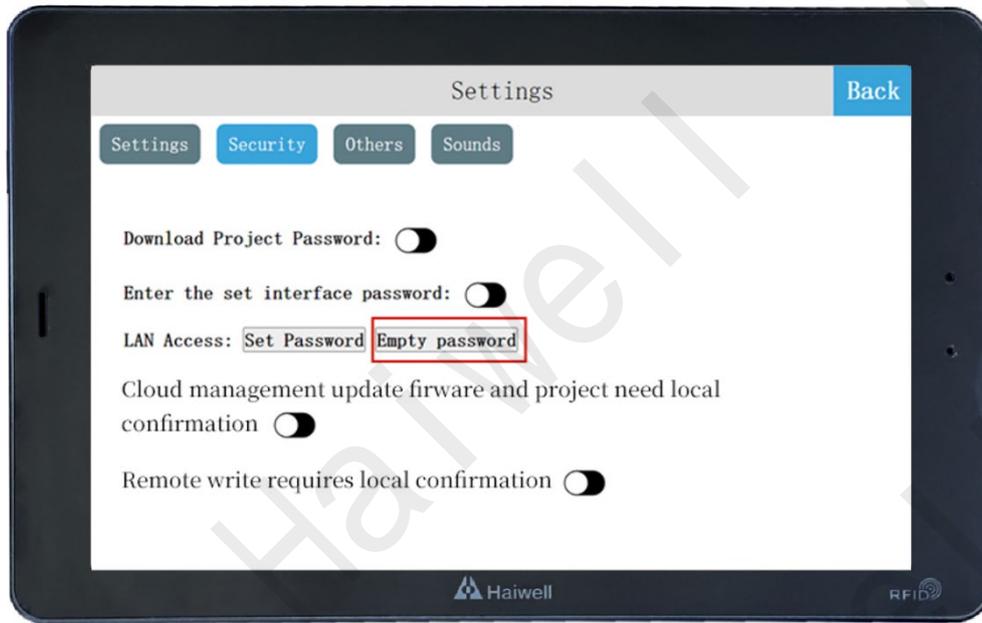
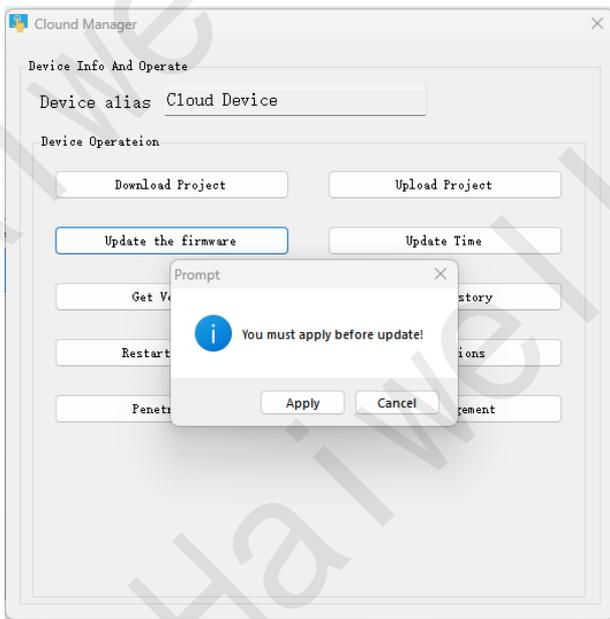


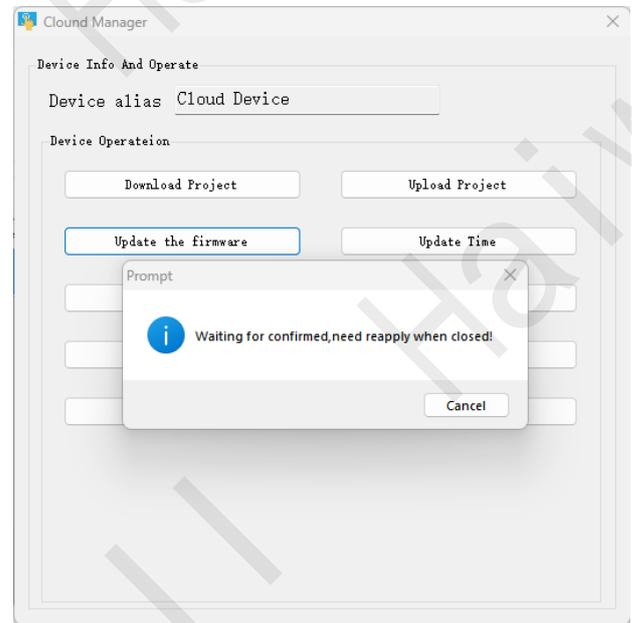
Figure42 Clear the LAN access password

**④Cloud Management Firmware and engineering updates require local confirmation (off by default)**

After this function is enabled, you need to apply for local confirmation when performing remote firmware update or engineering.



(a)



(b)

Figure43 Cloud Management Update firmware request

After the application is successful, the local device will receive the corresponding message, and the following screen will be displayed. After the update is approved, the device will automatically restart (rejected after 120S by default).

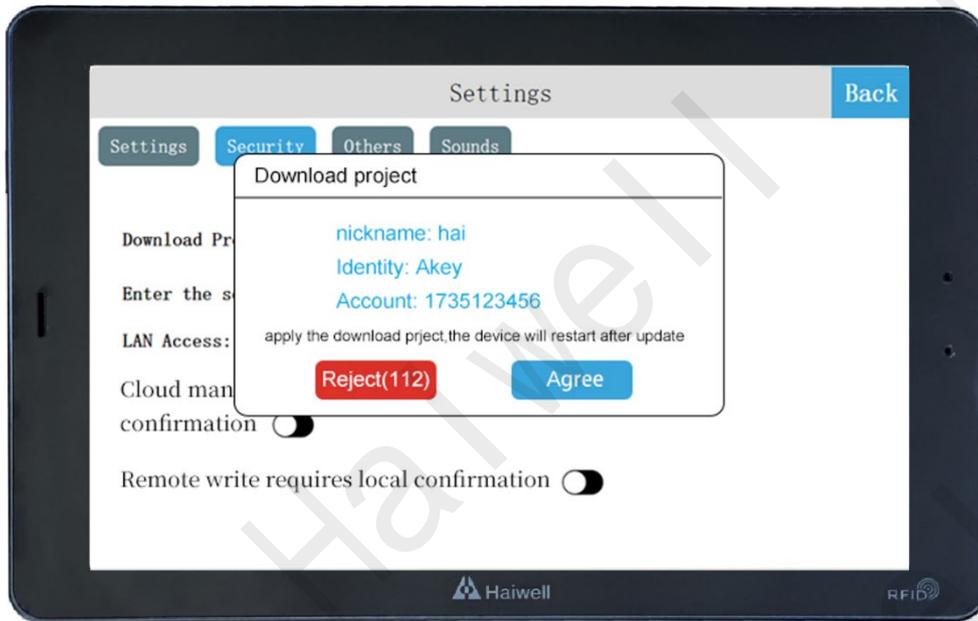


Figure44 HMI Remote download project prompt box

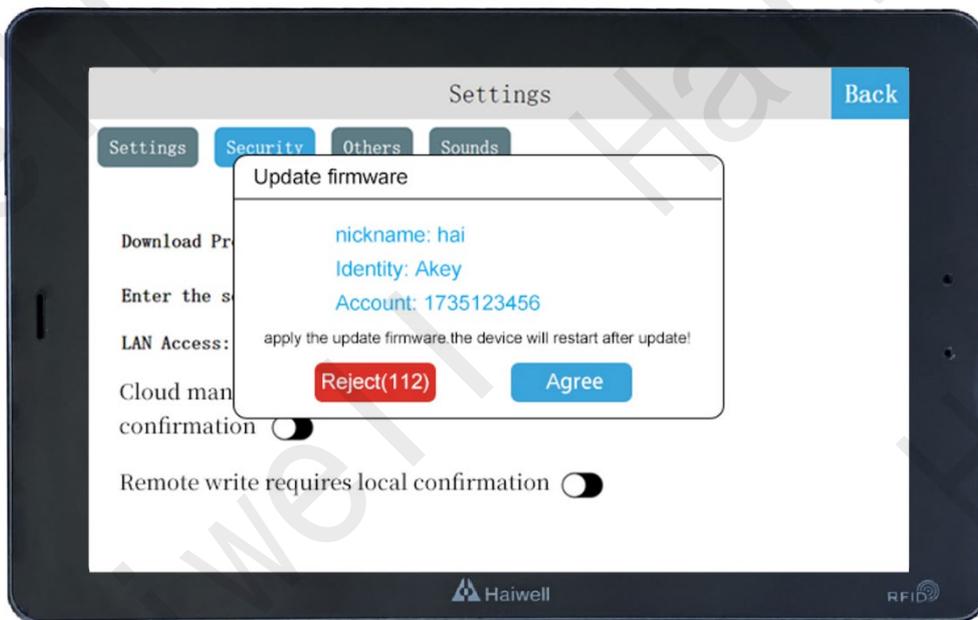


Figure45 HMI Remote firmware update prompt box

**⑤ Remote writes require local confirmation (off by default)**

After this function is enabled, you need to apply for local confirmation when using the cloud APP or cloud website for remote operation.

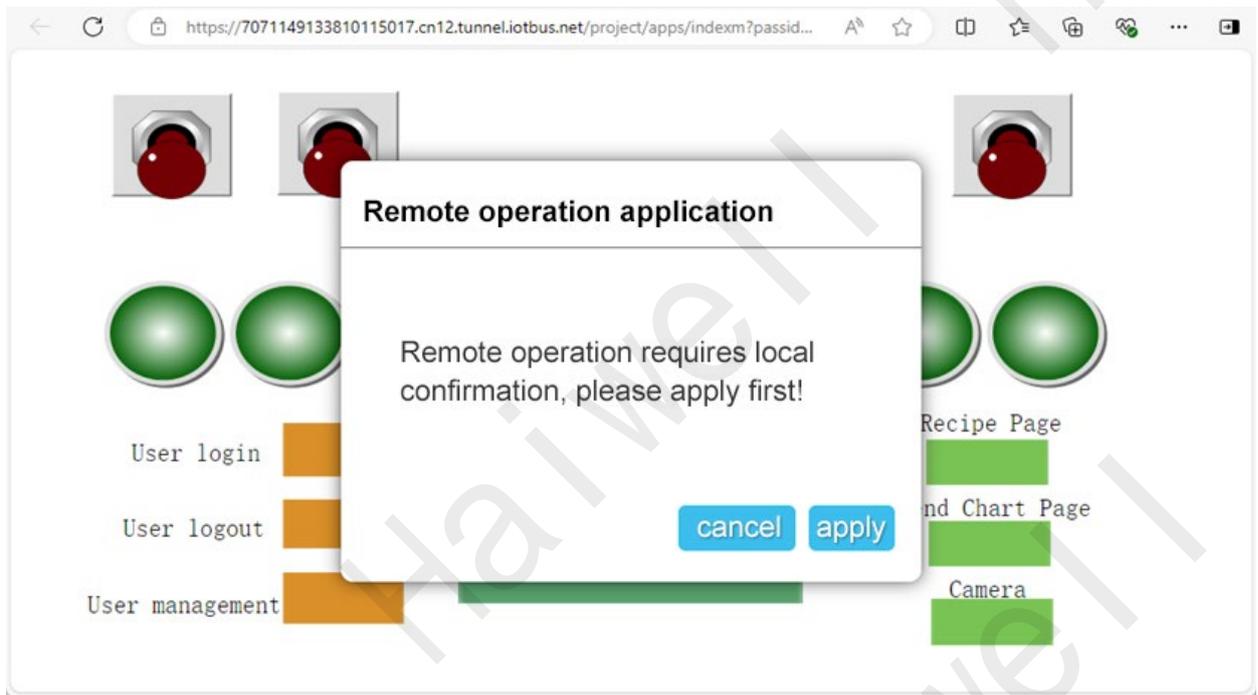


Figure46 HMI Remote firmware update prompt box

After receiving the request, the following screen will be displayed on the local device. If the request is approved, the device has the remote write permission (rejected after 120S by default).

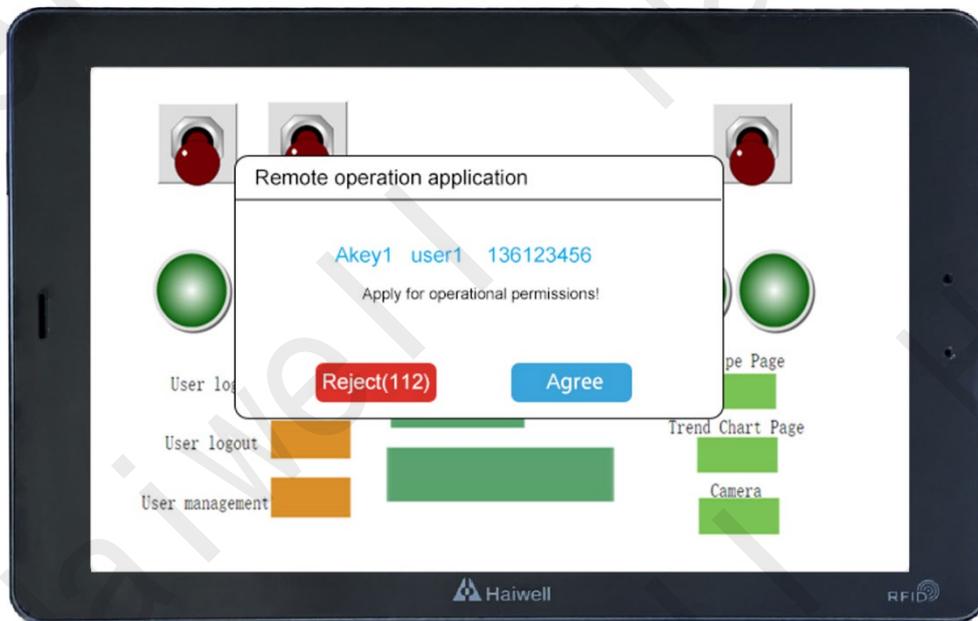


Figure47 HMI Remote operation request prompt box

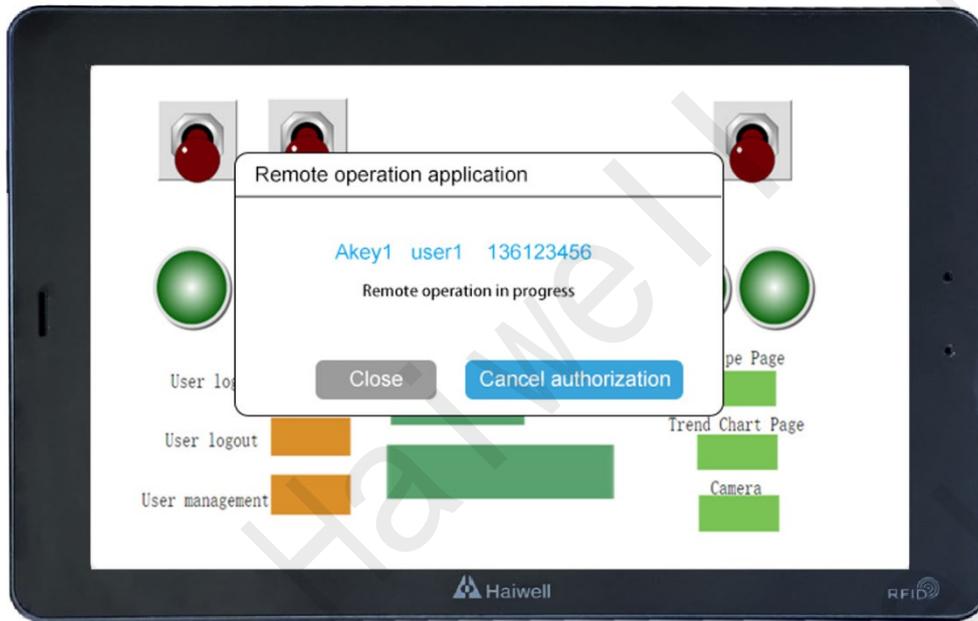


Figure48 HMI Remote operation request authorization

The following page is displayed when another device applies for the application again.

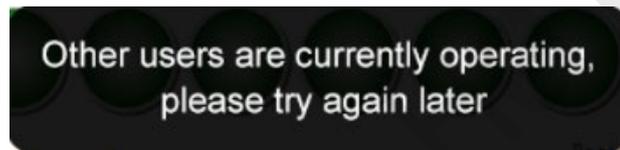


Figure49 HMI Prompt box

An interactive identifier appears in the lower left corner of the local device. You can use this identifier to modify permissions on the device.



Figure50 HMI Interactive identification

After the authorization is cancelled, the following screen is displayed on the remote device. In this case, other remote devices can apply for the operation.

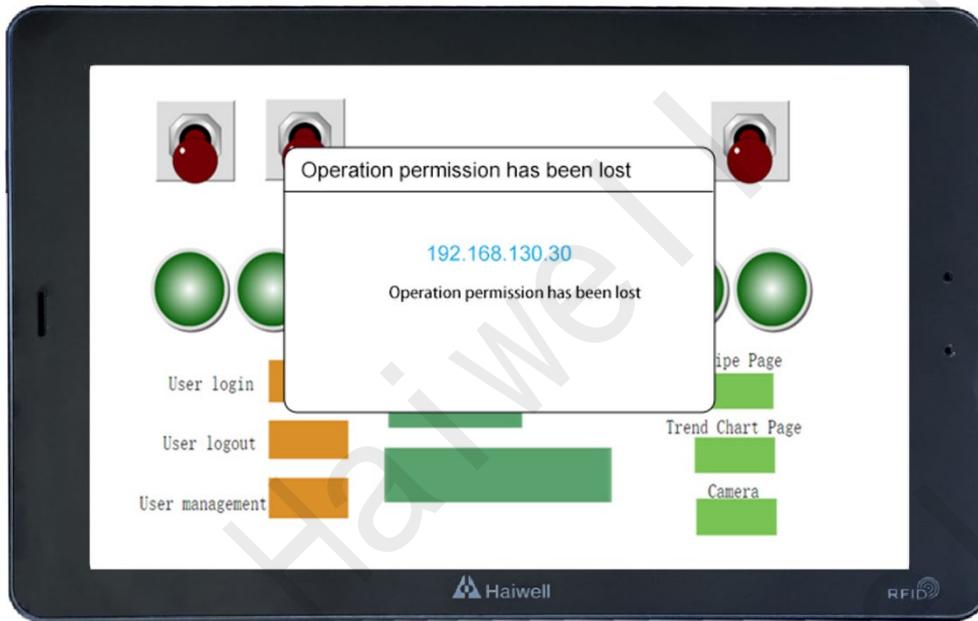


Figure51 HMI The operation permission has been lost

**【Other Settings】 :**

**①Set the online cloud detection frequency**

Enter the HMI background setting interface, click **【Local Settings】**, switch to the **【Other Settings】** interface, click **【Settings】** on the **【Set cloud online detection frequency】**, and select the required cloud online detection frequency.



Figure52 Frequency of device cloud online detection

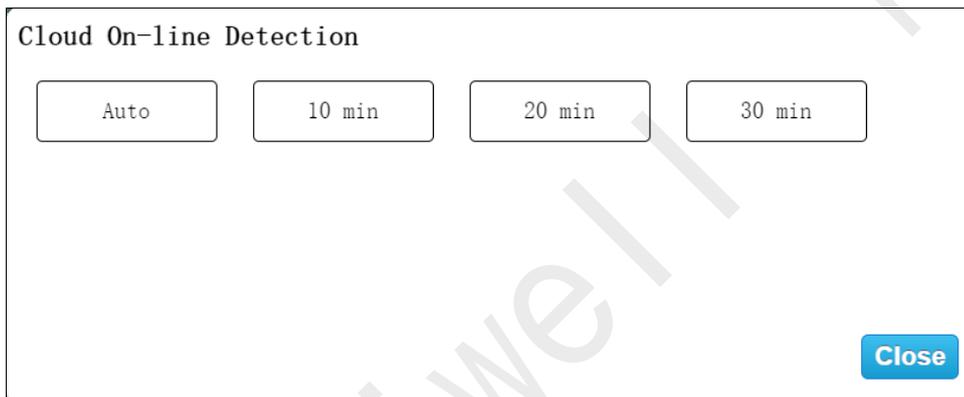


Figure53 Frequency of device cloud online detection

②Set the current cloud server

Enter the HMI background setting interface, click **【Local Settings】**, switch to the **【Other Settings】** interface, click **【Settings】** on the "Current Cloud server", select the cloud server address we need, then the current cloud server will be displayed as the selected server address. Click **【Automatic selection】** to automatically select the nearest cloud server address based on the IP address. Click **【Close】** to close the window.



Figure54 Set the current channel server

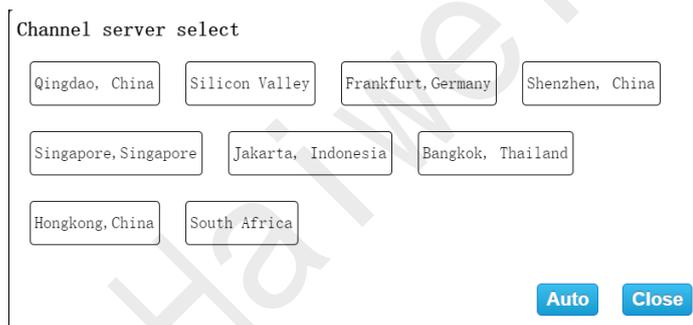


Figure55 Channel server selection

### ③MQTT agency

Click MQTT agent to enable or disable MQTT agent. When MQTT agent is enabled, HMI is used as a small MQTT server, and the server address is the Ethernet IP address or WiFi IP address of the device. Refer to the MQTT user manual for specific usage. After it is enabled, it will continue to be enabled until it is manually closed.



Figure56 MQTT agency

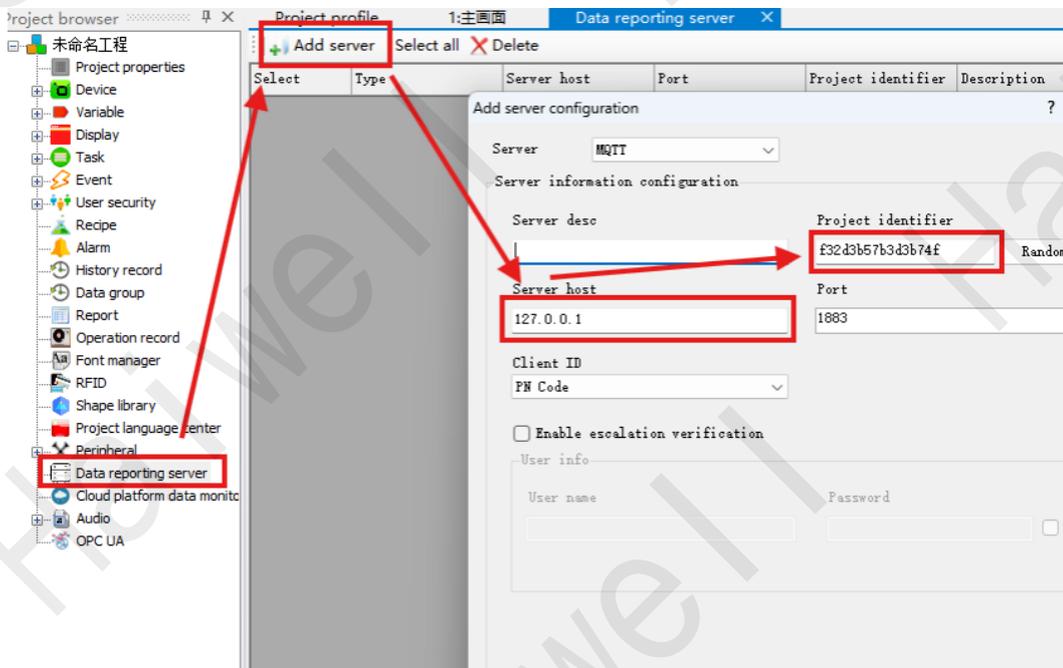


Figure57 SCADA project server Settings

### 【Sound setting】 :

Users can enable the Buzzer Switch, Power On Music, and Power On Text Music as required, and set the sound size.

### (1) Buzzer switch

Enter the HMI background setting interface, click **【Local Settings】**, switch to the **【Sound Settings】** interface, open the "buzzer switch", touch the device will make a sound "drip";



Figure58 Buzzer switch

### (2) Startup music

#### ①Engineering property setting

Enter the HMI background setting interface, click **【Local Settings】**, switch to the **【Sound Settings】** interface, turn on the "Startup music" switch, and play the configured music when the device is powered on.



Figure59 Start music

Open Haiwell SCADA(version 39.0 or above) and double-click  **Project properties** , Enter the project properties interface, click **【Boot option】** , enable the boot music, and set the boot music: you can set the last device used music; You can also select "Custom" and click  Import local audio and customize startup music. Users can choose whether to enable "Enter the project screen to stop playing" as required.



Figure60 Boot music custom Settings

When Factory is selected, select Clear custom music on the device to perform factory Settings and clear existing custom music.

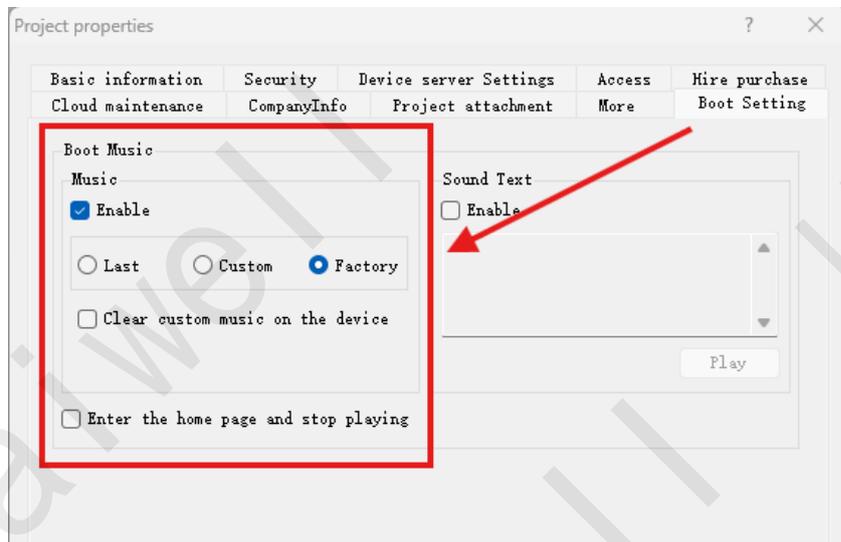


Figure61 Boot music factory Settings

## ②Device Manager Settings

Open Haiwell SCADA(version 39.0 or above) and click  , Enter the device Manager interface, enter the IP address of the device to be accessed, click **【Manage】** , click **【Boot Option】** , and click **【Customize boot music】** to set the device.

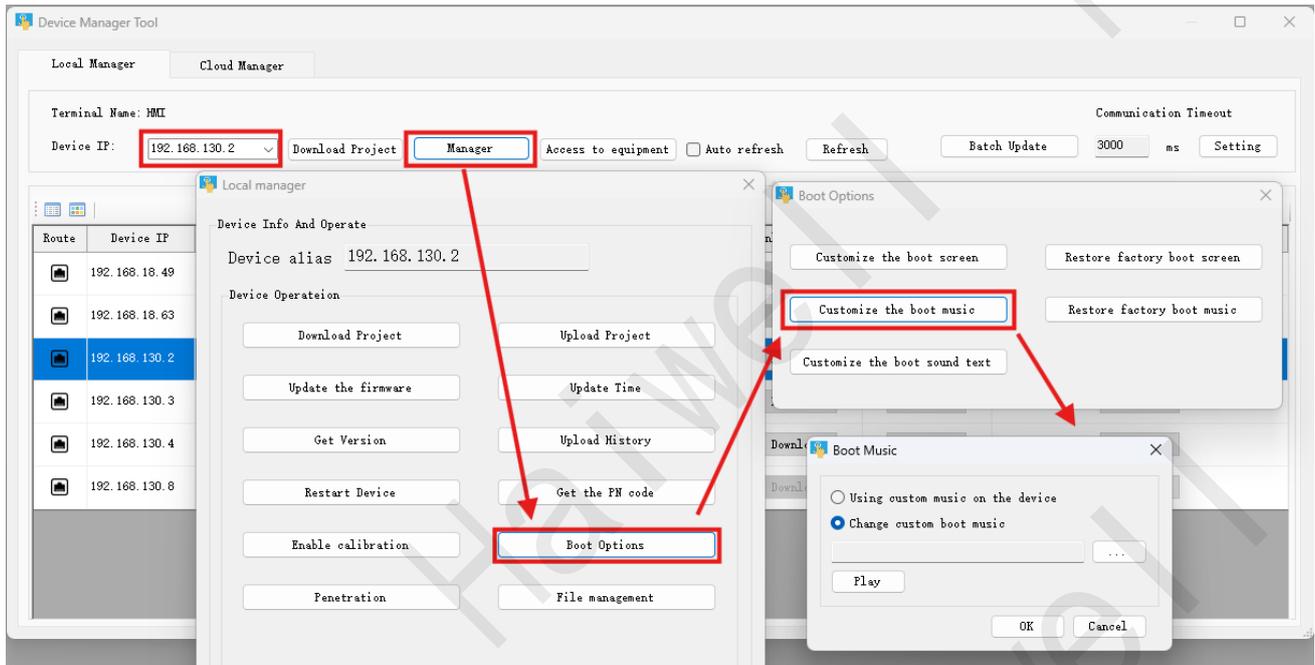


Figure62 Customize startup music

### (3) Power-on text-to-voice

#### ① Engineering property setting

Enter the HMI background setting interface, click **【Local Settings】**, switch to the **【Sound Settings】** interface, open the "startup text voice" switch, and the text content set in the configuration will be announced when the device is powered on.



Figure63 Power-on text-to-voice

Open Haiwell SCADA(version 39.0 or above) and double-click **Project properties**, Enter the project properties interface, click **【Boot option】**, enable text and voice, and enter the corresponding text content to complete the setting.

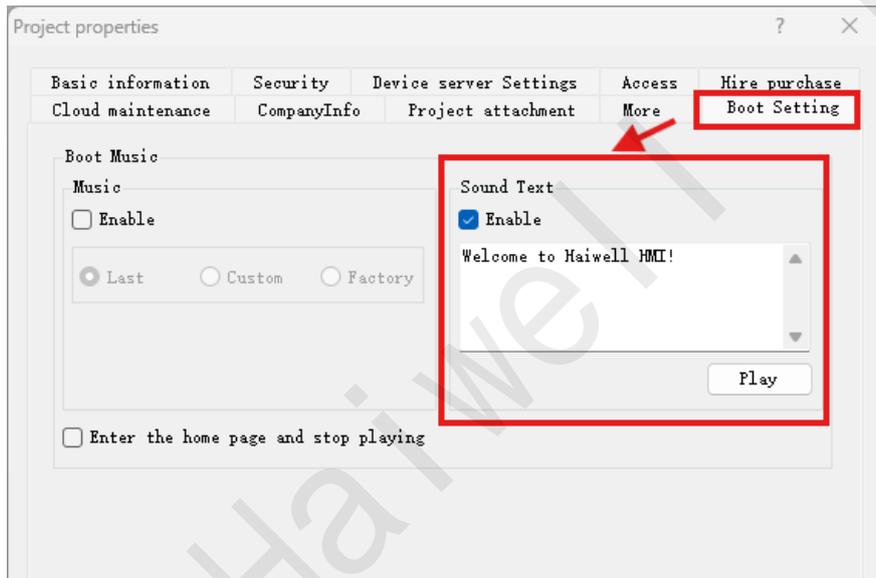


Figure64 Text-to-speech Settings

### ② Device Manager Settings

Open Haiwell SCADA(version 39.0 or above) and click  , Enter the device Manager interface, enter the IP address of the device to be accessed, tap **【Manage】** , tap **【Boot Option】** , tap **【Customize boot voice text】** , and then you can set.

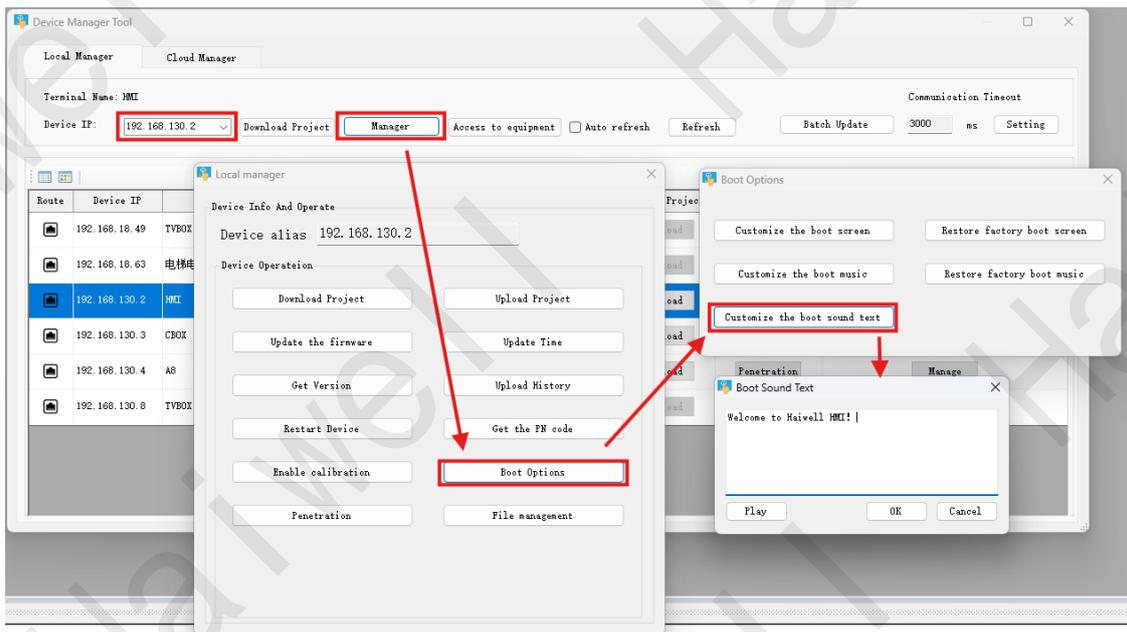


Figure65 Customize startup voice text

## 2.4 System information

### **【Restart the device】 :**

To restart the HMI, click **【System Info】** and select **【Restart Device】** on the HMI background Settings screen.



Figure66 Restart the device

**【Firmware Update】 :**

USB flash drive to update the firmware, enter HMI background Settings, click **【System Info】** , select **【Firmware Update】** , enter the firmware upgrade interface, select **【USB】** , select the appropriate firmware update package, click **【OK】** to upgrade the firmware, after the successful upgrade, the device will restart.

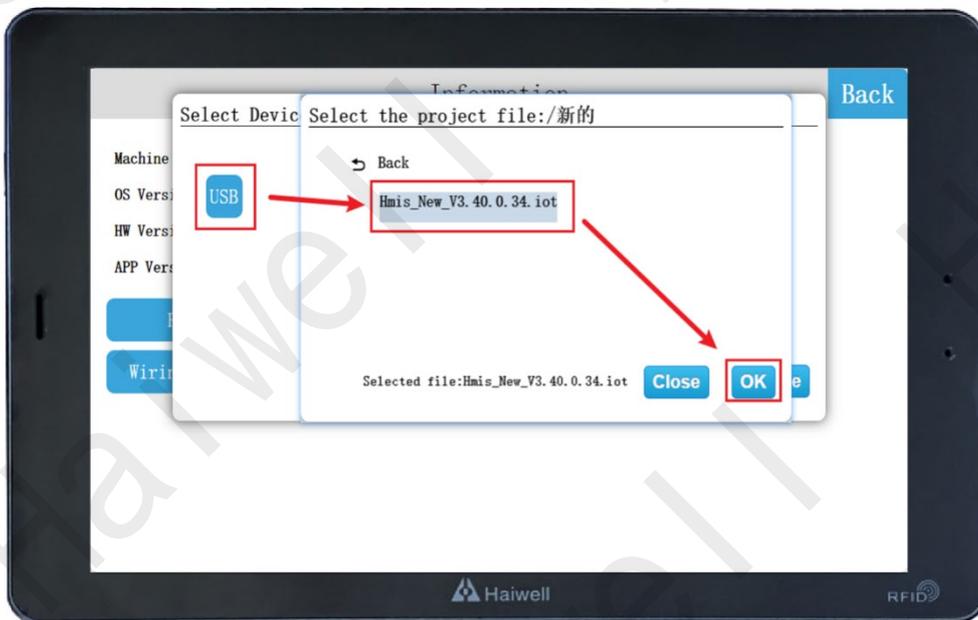


Figure67 Firmware update

**【Start screen calibration】 :**

Click **【Enable screen calibration】** , the pop-up **【Enable calibration will restart the device, do you want to restart the calibration?】** Click Confirm to calibrate the touch screen.



Figure68 Start screen calibration

Specific calibration related operations Reference [VIII. HMI calibration.](#)

**【Restore factory Settings】 :**

Click "Restore factory Settings" and a prompt box will pop up. "All configuration information will be cleared after factory Settings are restored. Click OK to restore factory Settings.



Figure69 restore factory setting

**Note:** Restoring factory Settings cannot restore the binding information of the cloud Settings account. Please delete the device in the cloud APP/ cloud platform.

**【Serial Port wiring diagram】 :**

Click **【Serial port wiring diagram】** , the nine-pin serial port COM1/COM2 pin definition pops up.

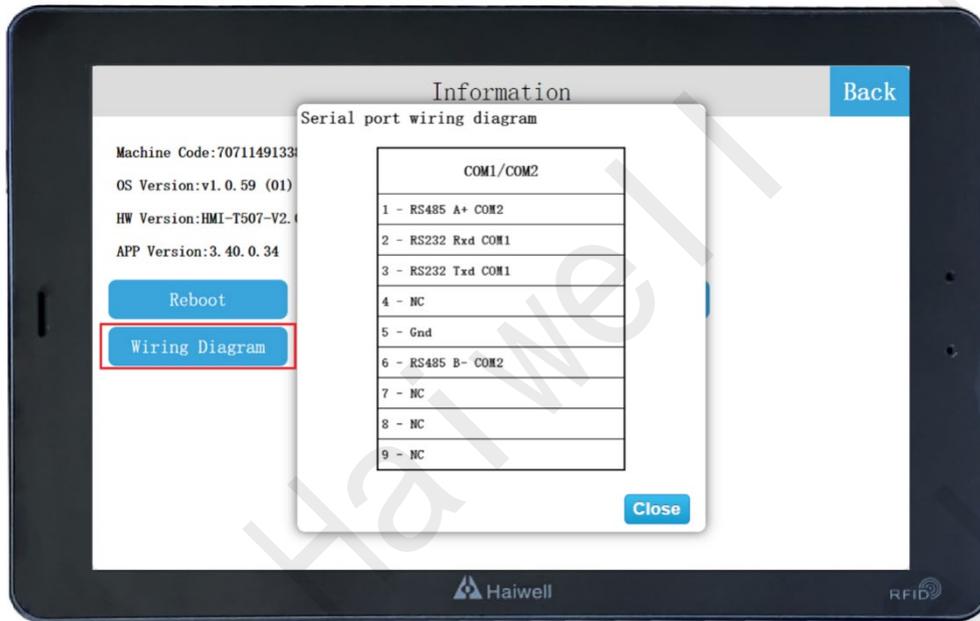


Figure70 Serial port wiring diagram

## 2.5 Cloud Settings

Cloud Settings are used to bind devices to personal devices or enterprise devices. Ensure that the devices can properly connect to the Internet before using this function.

### ① Mobile cloud APP/ WeChat mini program download

#### APP:

Scan QR code to obtain directly.



Scan QR code to download APP



Haiwell Cloud

Figure71 APP or code download

#### WeChat mini program:

In the WeChat public number search Xiamen Haiwell, click to send a message, the chat box in turn select the hot spot - mini program, you can directly enter the small program.

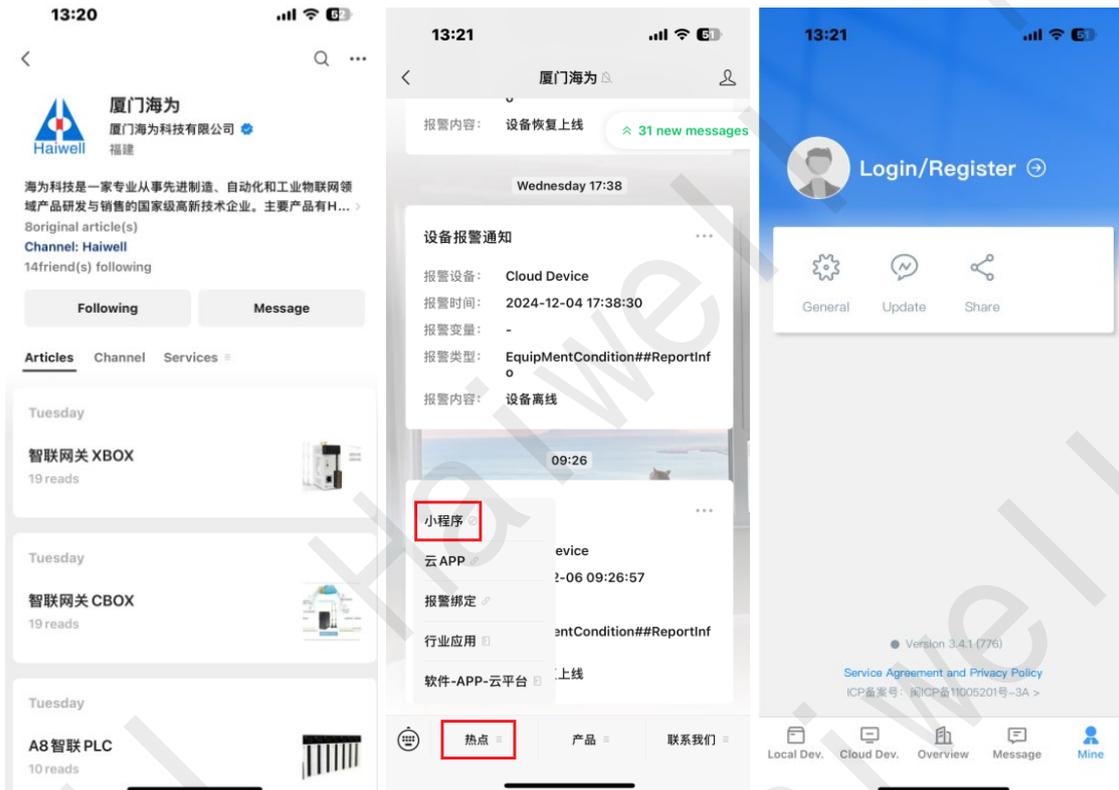


Figure72 Cloud APP QR code download

**Note: WeChat mini program does not have a local device, you need to download Haiwell APP.**

**②Haiwell Cloud APP/ mini program scanning code binding QR code**

Enter the HMI background setting interface, click **【cloud setting】**, open the cloud switch, and the QR code and machine code pop up. If the cloud status is offline, check whether the HMI is successfully connected to the Internet.



Figure73 Bind cloud to set QR code

Log in the Haiwell Cloud APP on your mobile phone, enter the local device interface, and click the

upper left corner of the main interface  button, Drop down the box and click to scan, scan the QR code to add the device. A confirmation dialog box is displayed on the device. Click **【OK】**, The device is successfully added and users can remotely access the device.

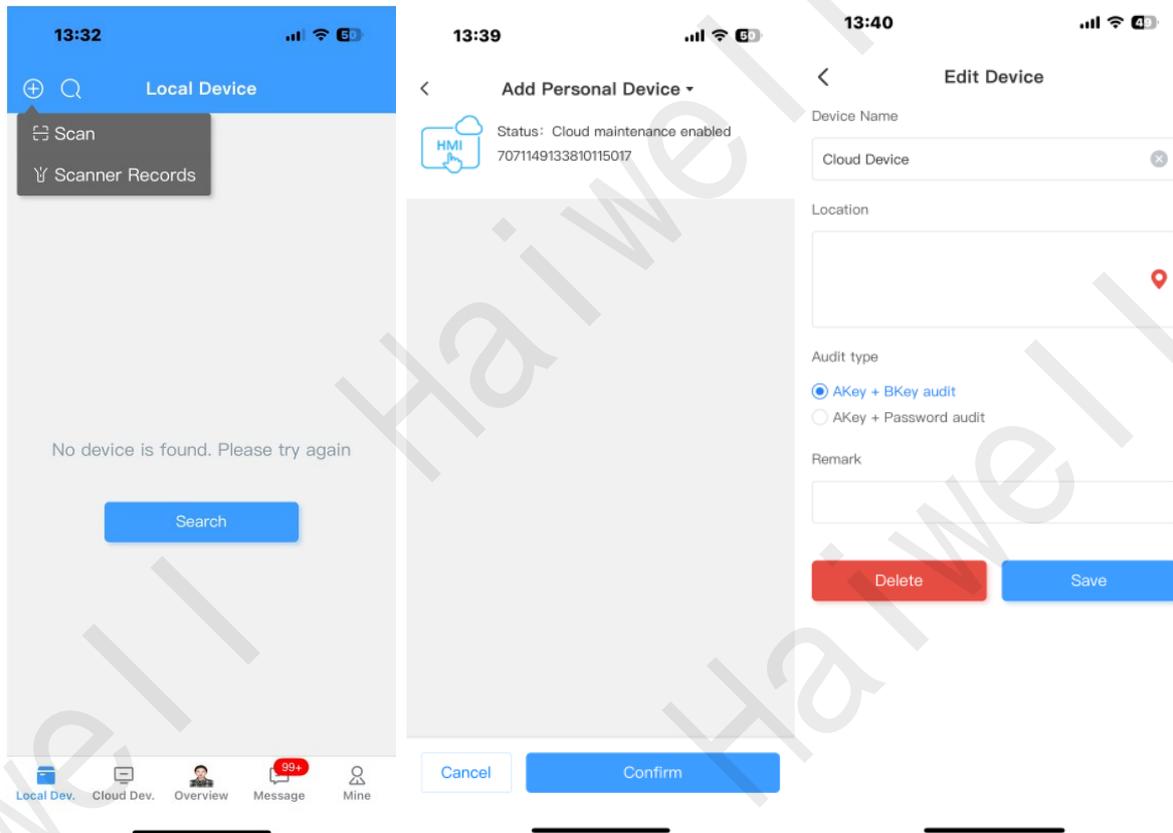


Figure74 APP Bind device



Figure75 HMI Cloud Settings determine binding



Figure76 HMI Cloud Settings binding information

### ③Remote monitoring and control

Open the Haiwell Cloud APP on your mobile phone and enter the cloud device; Find the corresponding device and enter, click **【Direct access】** in the lower right corner, you can access the device remotely. If the current project allows remote operation, the user can remotely control the device through the mobile phone.

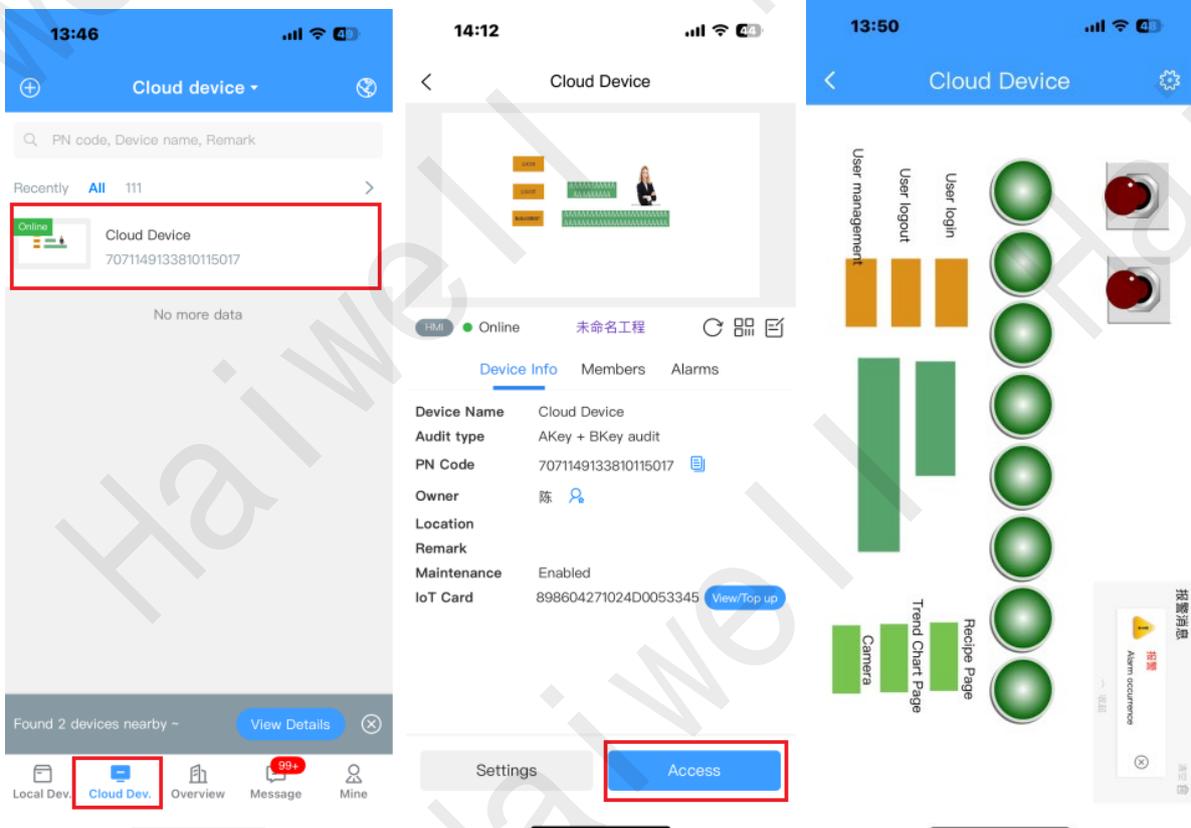


Figure77 APP remote access

## 2.6 Network Settings

HMI supports a variety of network connection modes Ethernet, WiFi, 4G, through different networking modes, so that the HMI connected to the Internet, remote access, remote operation, remote transparent transmission operation.

### ① Ethernet connection

Enter the HMI background setting interface, click **【Network Settings】**, enter the Ethernet setting interface, and open **【Network switch】**. The network type includes DHCP and Static IP.

**Dynamic IP:** Connect the network cable, select **【DHCP】**, and click **【Save】**. The device automatically obtains an IP address.

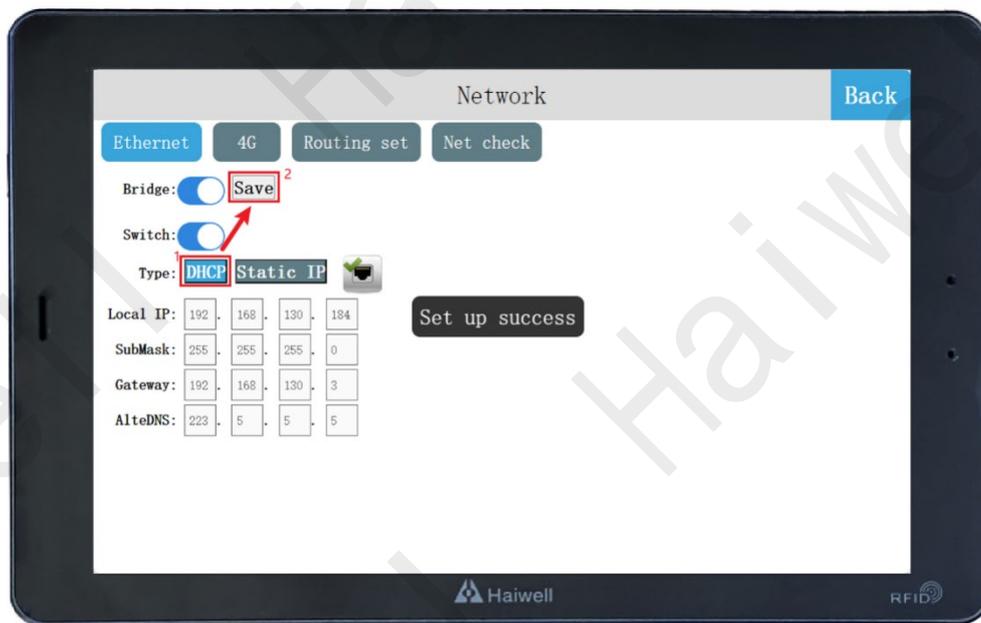


Figure78 Dynamic acquisition IP

**Static IP:** Connect the network cable. Select **【Static IP】** for the network type. Enter the correct IP address, subnet mask, default gateway, and DNS. Click **【Save】**.

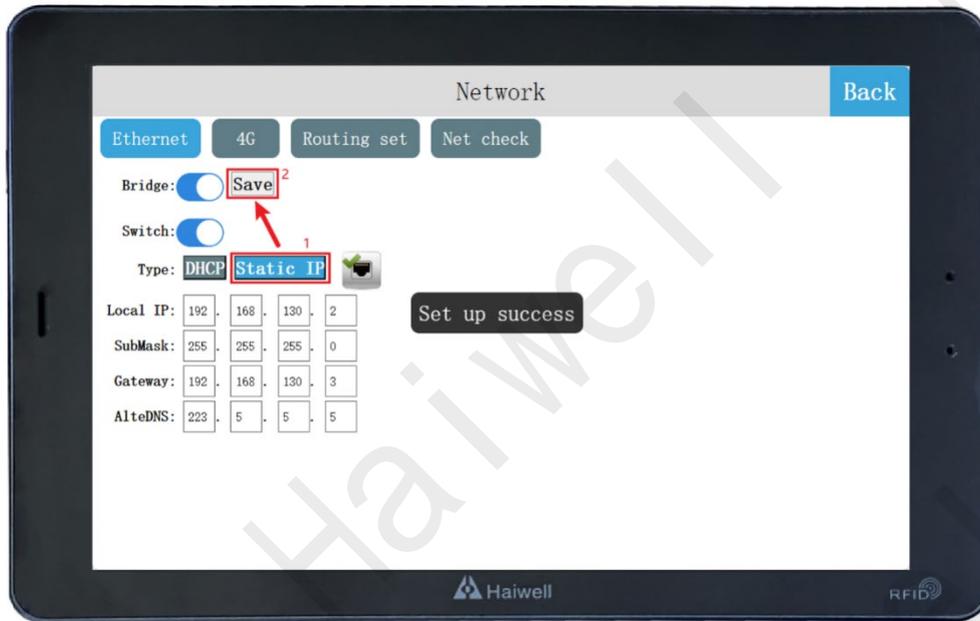


Figure79 Static setting IP

Process tip: After the HMI network port is plugged into the network cable of the external network, enter the background Settings - **【network Settings】**, and obtain the IP address dynamically first, select **【DHCP】** and then click **【Save】**, it will automatically obtain the IP address and make the HMI for the external network. Then select **【Static IP】** to change the IP address, and click **【Save】**.

## ②WIFI Settings

Click **【WIFI Settings】** to enter the WIFI setting interface, which supports connecting to the network through WIFI. Enter the WIFI setting interface, turn on the WIFI switch, select the target WIFI account, enter the correct WIFI password, and connect to the WIFI network after verification.

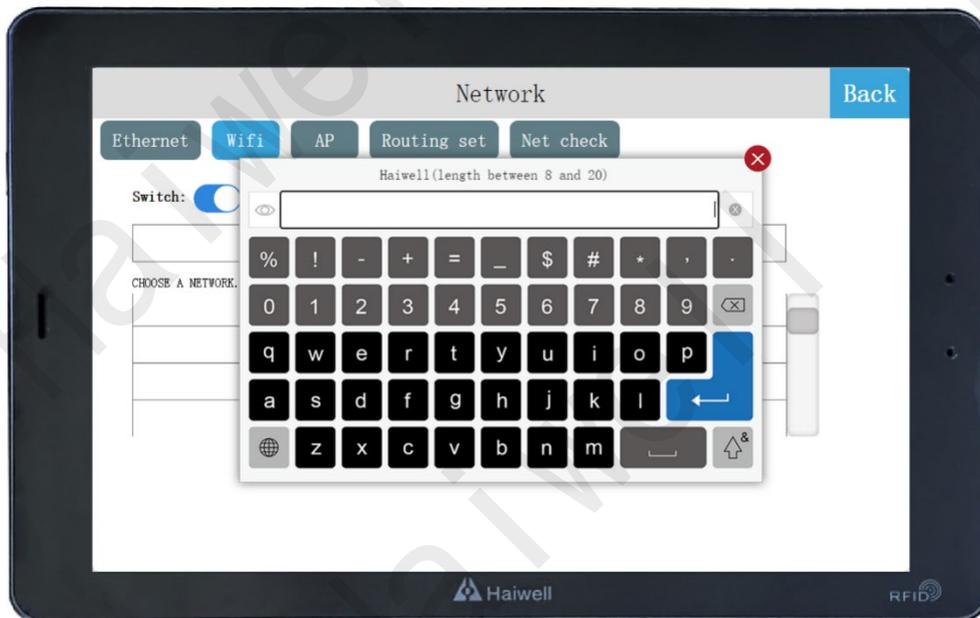


Figure80 wifi Password setting

After the connection is successful, a green check mark is displayed “✔”。

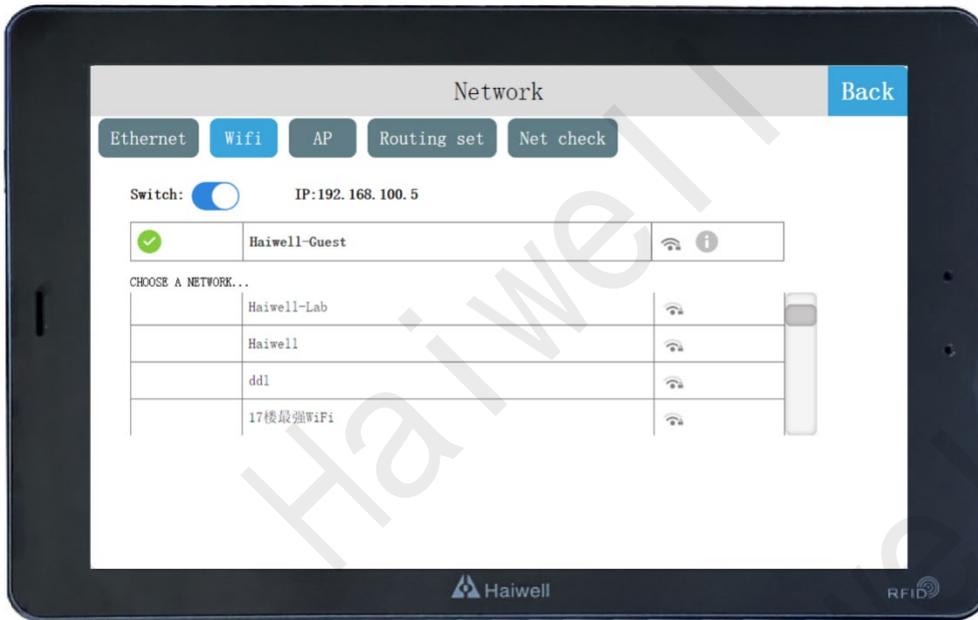


Figure81 wifi Connection successful

After the connection is successful, gray is displayed “i”, Click the gray i icon, you can set the IP address, subnet mask, default gateway, DNS static or dynamic. After setting, click **【Save】** to set the IP address of WIFI. Click "Ignore this network", that is, disconnect the WIFI connection, if you want to use the WIFI, you need to re-enter the password to connect.

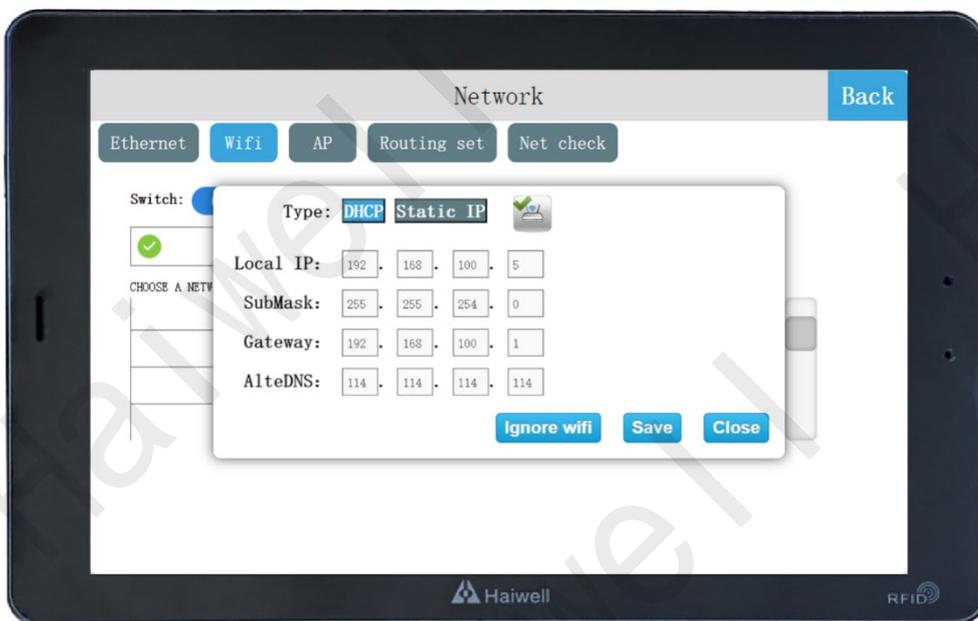


Figure82 wifi ip Settings

Note: ① The HMI needs to be connected to the WIFI antenna, otherwise the signal strength is weak and the WIFI cannot be connected or searched.

②WIFI can only search the AP band 2.4GHz, 5GHz cannot be searched, if you use a mobile phone

to open WIFI hotspot, please pay attention to set the hotspot band.

### ③ Personal hot spot

Click **【Personal hotspot】** to enter the personal hotspot interface, the HMI built-in network card can also share the WIFI hotspot for other users. Turn on the personal hotspot switch, set the hotspot name and password, and you can share the WIFI hotspot for other users.



Figure 83 Personal hotspot Settings

Set the hotspot name, click "Hotspot name", the hotspot name input box is displayed. Enter the hotspot name, click Enter, and then click Save to save the added hotspot name.



Figure 84 Personal hotspot Settings name

Set the password, click "Password", the password input box appears, click the upper left corner  of

the input box to switch the plain text and cipher text of the password. Enter the password, click **【Enter】** , and click **【Save】** to save the added password. The factory default WIFI password of the HMI is empty.



Figure 85 Personal hotspot setting password

**Note:** The hotspot name contains 6 to 18 characters, and the password can be left blank or 8 to 20 characters. Click Enter to enter the hotspot name, the password will not be displayed in the corresponding position, and a pop-up prompt will be displayed.

#### ④4G configuration

Click **【4G】** to enter the 4G configuration interface, which contains two modes: internal eSIM card and external SIM card. Users can identify or obtain the relevant information of the device and its SIM card through three codes: IMEI (International Mobile Equipment Identity Code), IMSI (International Mobile User Identification Code) and ICCID (Integrated Circuit Card Identification Code).

**4G not enabled:** turn off the 4G switch and the message "Closing..." is displayed. If only the IMEI code is displayed, the device is not connected to the 4G network.



Figure 86 4G is disabled

**Enable 4G:** Turn on the 4G switch and pop up the "4G Option" pop-up window. Users can click "Enable built-in eSIM" or "Enable External SIM Card" as required. After clicking, the pop-up message "Closing..." will be displayed. , "Setting succeeded", the device can access the 4G network.



Figure 87 Enabling 4G

**eSIM card mode:** When the eSIM card mode is enabled, Using is displayed on the right of the eSIM card information, and you can view the built-in eSIM card information.



Figure 88 Enabling the eSIM card

Click **【View data】** to display the total data and remaining data of the eSIM card in this period.

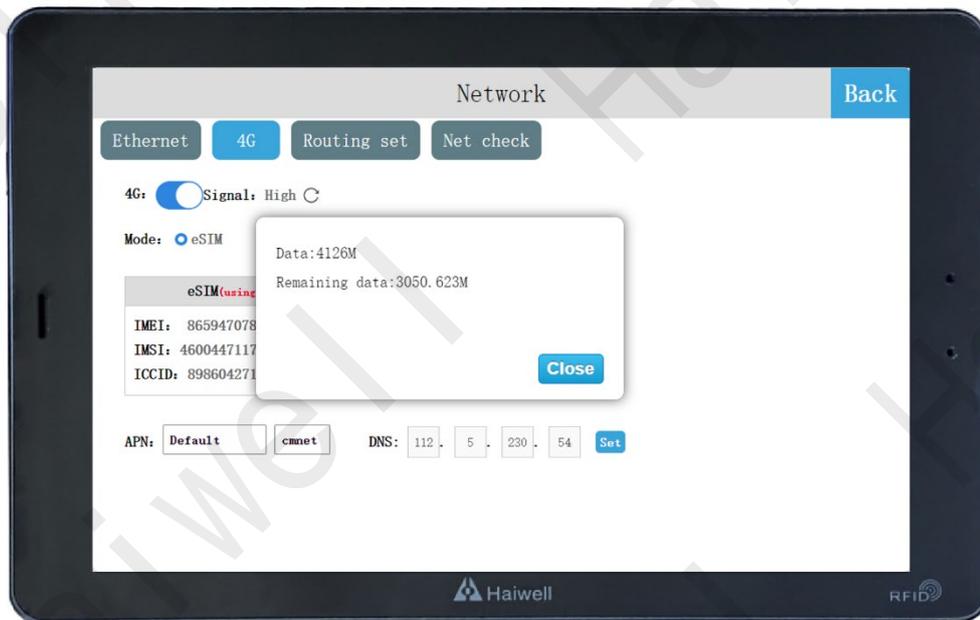


Figure 89 Viewing data

**SIM Card mode:** When the SIM card mode is enabled, "In Use" is displayed on the right of the SIM card information, and information about the external SIM card can be viewed.

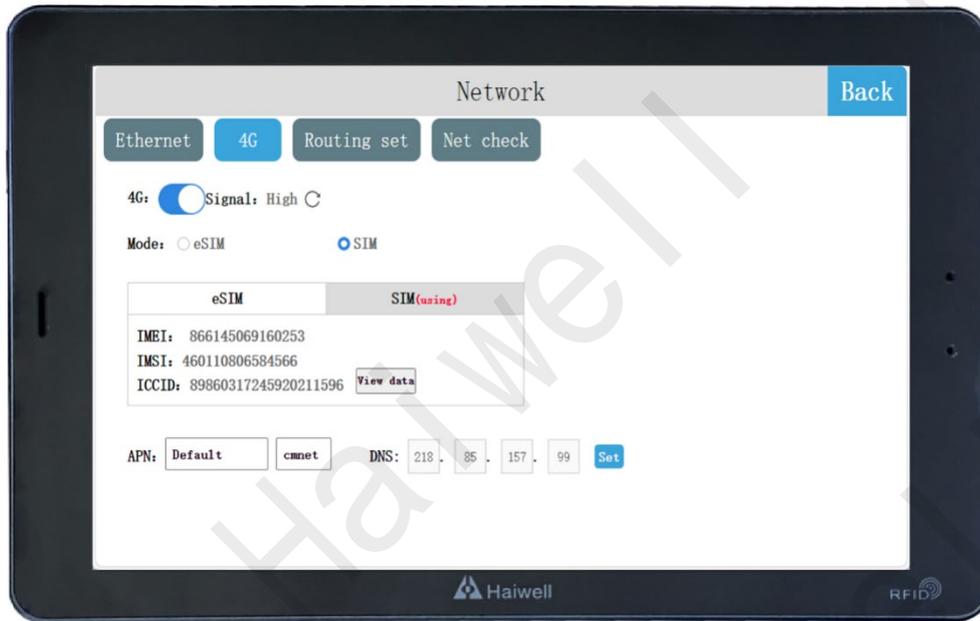


Figure 90 Enabling the SIM card

Click **【View data】**, if the SIM card is not the Internet of Things card provided by Haiwell, the prompt "Failed to obtain data" will pop up.

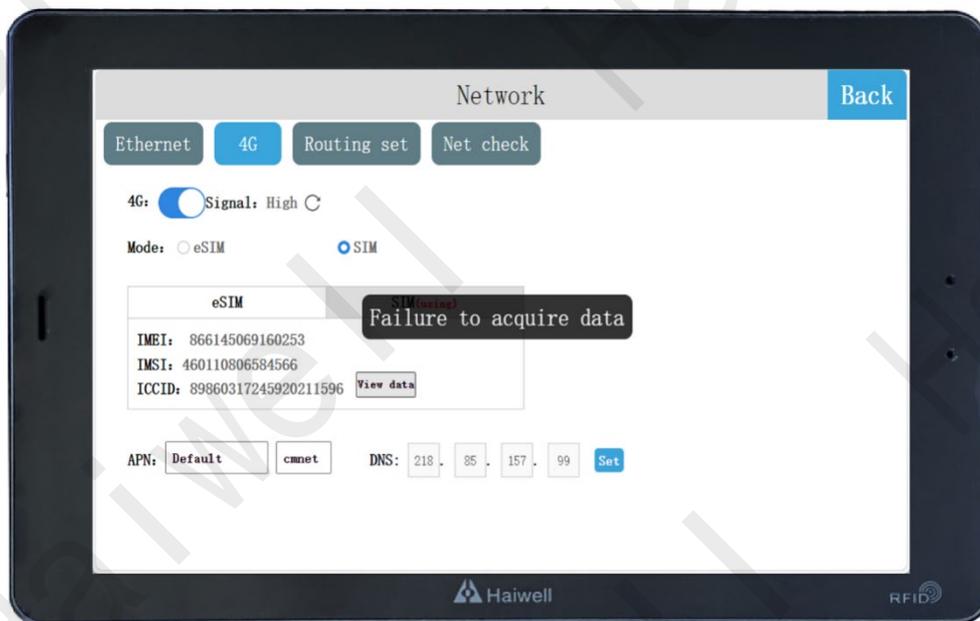


Figure 91 Viewing data

**APN Settings:** Click Default on the APN. You can select Default or Custom. If you select Custom, you can modify the APN (Network access point) name, user name, password, and dial number as required.



Figure 92 APN Settings

**DNS Settings:** Background 4G DNS Settings function, to achieve self-configuration of DNS, to solve the 4G network automatically obtain probabilistic DNS anomalies, resulting in the 4G network cannot be used.

Click **【Settings】** on the DNS page, the DNS configuration pop-up window is displayed. You can select the DNS server assignment mode. You can customize the DNS server assignment mode by selecting Manual.



Figure 93 DNS Settings 1

Click the DNS server address input box to modify the value of the address.



Figure 94 DNS Settings 2

After setting the DNS server address, click **【Save】** to save the DNS server address.

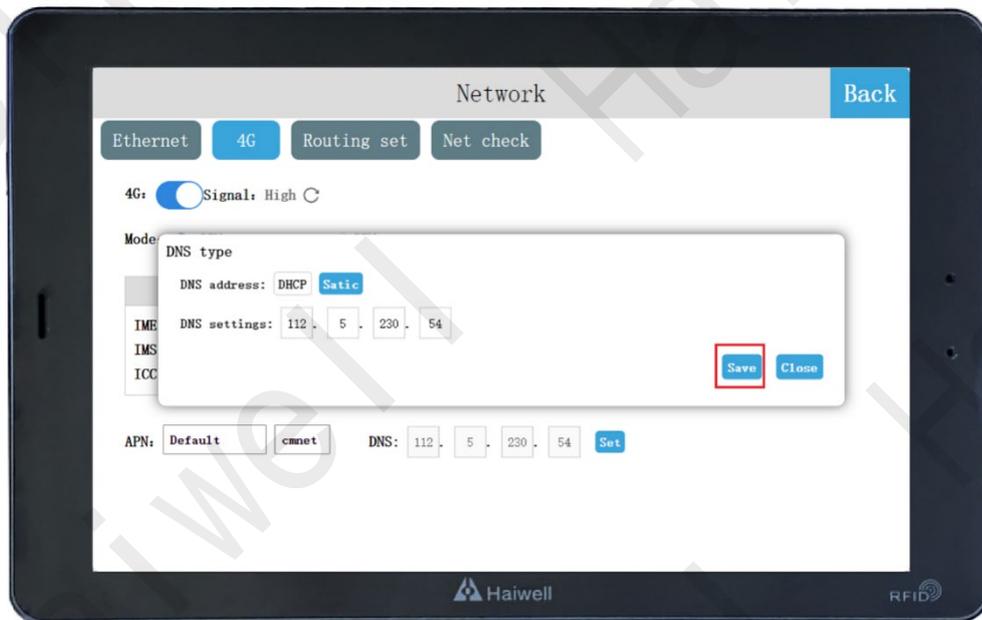


Figure 95 DNS Settings 3

The DNS server is configured successfully. Procedure



Figure 96 DNS Settings 4

Note: DNS information is not displayed when the signal strength is "No Service".

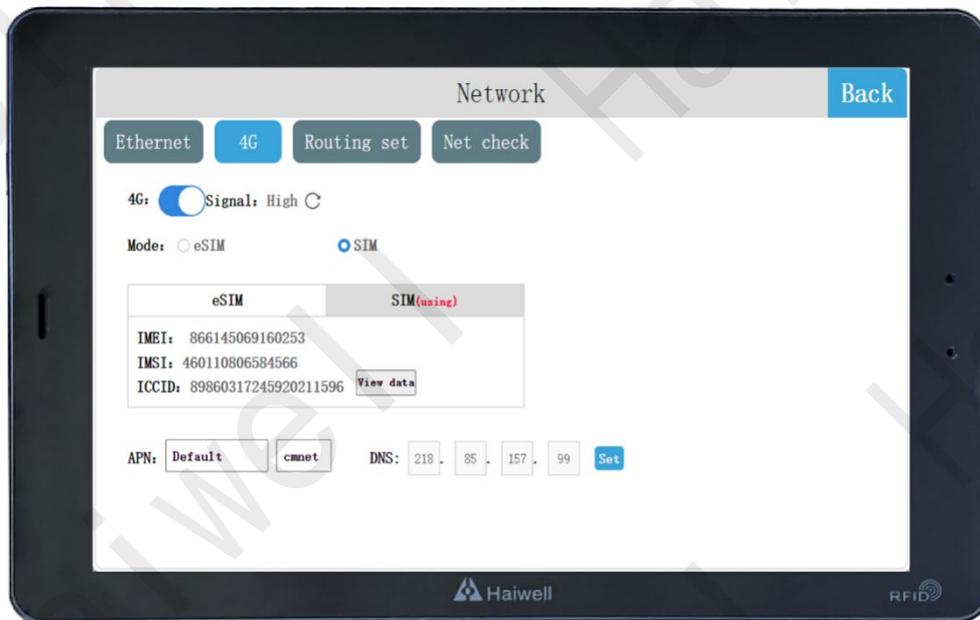


Figure 97 DNS not displayed

### ⑤ Network configuration model

The new series HMI is available in the following four models with different network configurations.

#### Standard version (example: A7pro)

The HMI Standard Edition only has Ethernet, does not include WiFi/4G/ hotspot/routing module, and is only provided by the network cable.

#### WiFi version (example: A7pro-W)

The HMI with WiFi version only includes Ethernet and WiFi, does not include 4G/ hotspot/routing

module, and is provided by network cable /WiFi.

**With 4G version (example: A7pro-G)**

HMI with WiFi version includes Ethernet and 4G and routing module, does not contain WiFi/ hot spot, provided by network cable /4G, routing mode is: not enabled routing mode /4G client mode, about the specific use of each routing mode will be explained later.

**4G with WiFi version (example: A7pro-GW)**

HMI with 4G and WiFi version includes Ethernet /WiFi/4G/ routing module, which provides the network by Ethernet /WiFi/4G. The routing modes are: not enabled routing mode/wireless access point mode /4G routing mode/client mode/relay mode /4G client mode. The specific use of each routing mode will be explained later.

**⑥Route configuration**

Route configuration not only supports the device to access the Internet through LAN, WIFI, and 4G modes, achieving "device Internet access". In addition, you can share a LAN or directly create a hotspot to provide external network connections.



Figure 98 Route Settings

**Route Disabled mode:** On the HMI background Settings screen, tap Network Settings to enter the route configuration screen. Disable the route switch. , and hides the Internet access and external network information of the device. In this case, the routing mode is disabled.

In Route Disabled mode, only the routing function of the current Ethernet, WIFI, and 4G is disabled. In this mode, the hotspot supports only the local area network (LAN) and does not support the Internet. The function Settings of Ethernet, WIIF, and 4G remain unchanged.



Figure 99 Disable routing mode

**Wireless access Point mode:** Enter the HMI background setting screen, click **【Network Settings】** to enter the route configuration screen, turn ON the route switch, and the setting screen will pop up (it will pop up when the switch is set to ON from OFF, otherwise you need to click "Setting" to enter the setting screen), set the device Internet access mode to "LAN", set the external network supply mode to "Hotspot", and click "Save". The message "Setting succeeded. 4G and WIFI have been turned off for you." is displayed. "Is set to wireless access point mode.

In wireless Access Point mode, only the wired network provides the network. Other devices can connect to the personal hotspot of the device to access the LAN and the external network.



Figure 100 Wireless access point mode

**4G routing mode:** Enter the HMI background setting screen, tap **【Network Settings】** to enter the routing configuration screen, turn on the routing switch, tap "Settings", set the device Internet access mode to "4G", set the external network mode to "hotspot", click "Save", and the pop-up message "Setting succeeded, WIFI has been turned off for you." In this case, the routing mode is set to 4G.

In 4G routing mode, only 4G provides the network for the device. Other devices can connect to the personal hotspot of the device to access the LAN and the Internet. The wired network in this mode supports only LAN networks.

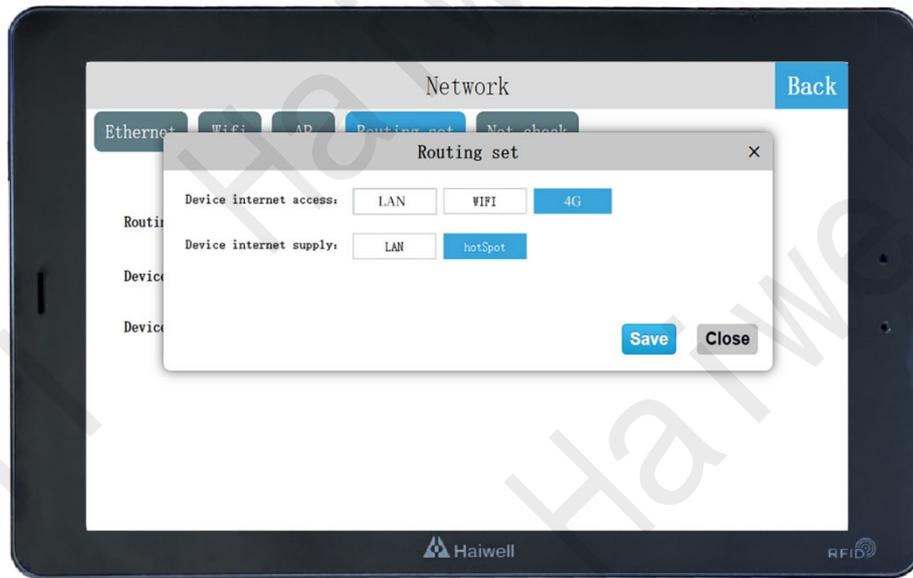


Figure 101 4G routing mode

**Relay Mode:** Enter the HMI background settings interface, click on **【Network Settings】**, enter the routing configuration interface, turn on the routing switch, click "Settings", select "WIFI" for the device's internet access mode and "Hotspot" for the external network supply mode, then click "Save". A prompt will pop up saying "Settings successful, 4G has been turned off for you." At this point, the device is set to relay mode.

In "Relay" mode, only the network provided by the connected WIFI hotspot is available. First, connect to a hotspot with internet access, then use this device's personal hotspot to provide network access to other devices. It supports both local area networks and the external network. In this mode, the wired network only supports local area networks.



Figure 102 Relay Mode

**Client mode:** Enter the HMI background settings interface, click on **【Network Settings】** enter the routing configuration interface, turn on the routing switch, click "Settings", select "WIFI" for the device's internet access mode and "LAN" for the external network supply mode, then click "Save". A prompt will pop up saying "Settings successful, 4G has been turned off for you." At this point, the mode is set to client mode.

In "Client" mode, the network is provided by the hotspot connected via WIFI. In this case, the HMI acts as a router. The HMI is connected to the wired network, and then the device can be provided with a network through the wired connection. Personal hotspot function is not supported in this mode.



Figure 103 Client Mode

**4G Client Mode:** Enter the HMI background settings interface, click on **【Network Settings】** , enter the routing configuration interface, turn on the routing switch, click "Settings", select "4G" for the device's

internet access mode and "LAN" for the external network supply mode, then click "Save". A prompt will pop up saying "Settings successful, Wi-Fi has been turned off for you." At this point, the mode is set to 4G Client Mode.

In the "4G Client" mode, the network is provided by 4G. At this time, the HMI acts as a router. The HMI is connected to a wired network, and then connected to the device through a wired connection to provide the network for the device. This mode does not support the personal hotspot function.

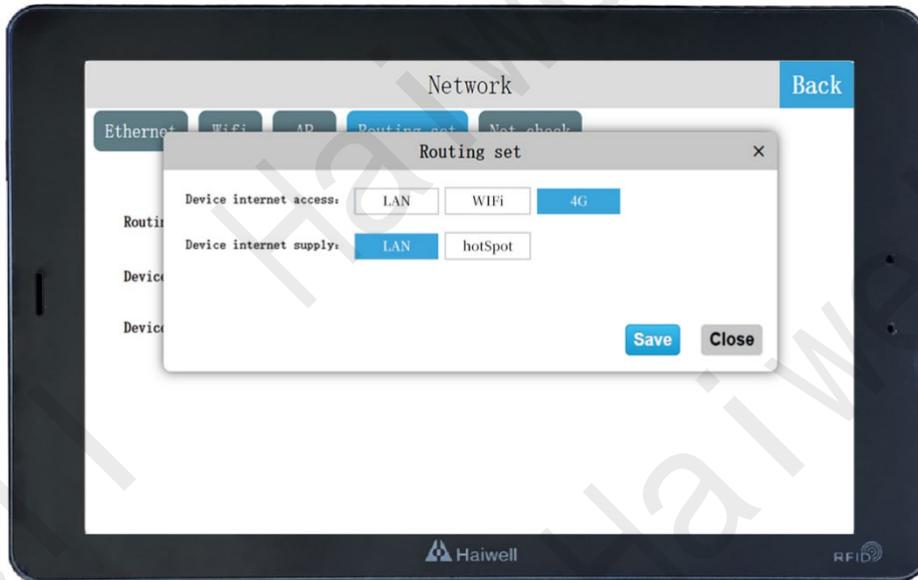


Figure 104 4G Client Mode

### ⑦ Network diagnosis

**External network Access:** Use network diagnosis, click on the URL section, select the URL for access. If information is returned, it indicates that the device is connected to the network.

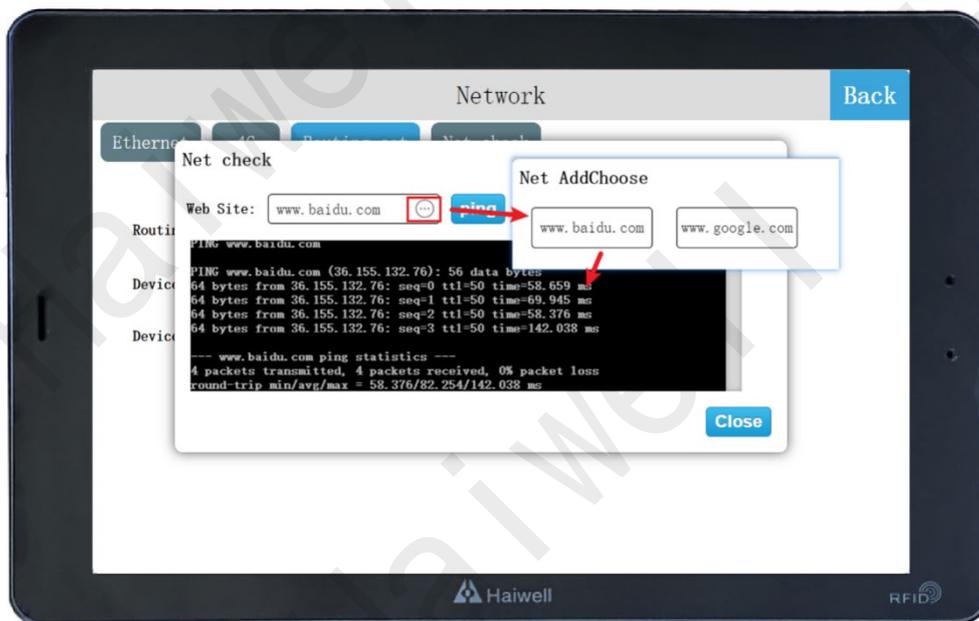


Figure 105 External Network Access

**Local Area Network Access:** Use Network Diagnostics, click on the URL field, and enter the corresponding IP address of the device you want to access. For example, the IP address of the HMI communication PLC is 192.168.13.212. If the following information is returned, it indicates successful access and communication.

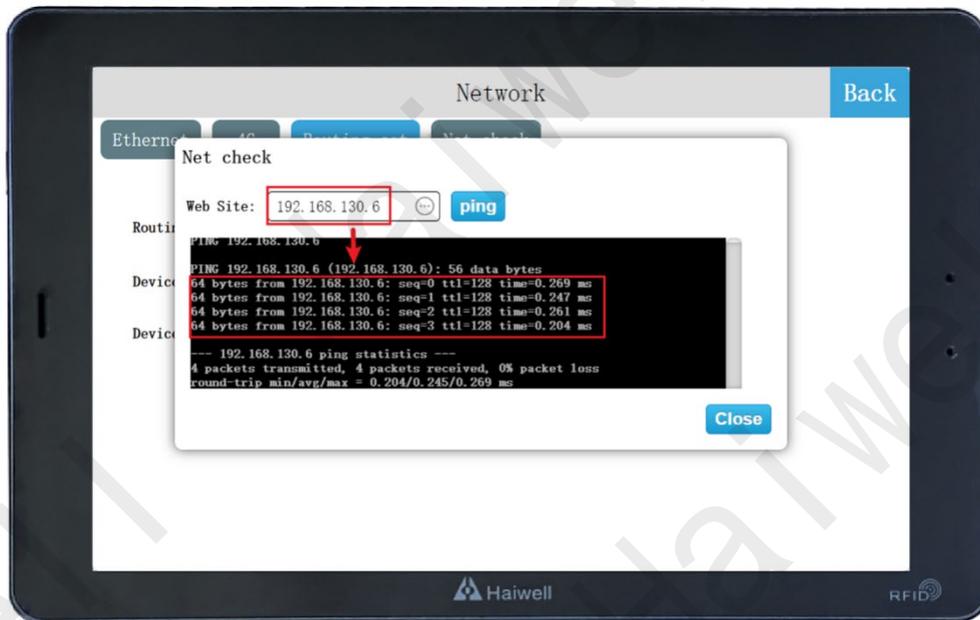


Figure 106 Local Area Network Access

## VI Scada project connection

### 1. Project establishment

This article takes the creation of a new project as an example to realize the Ethernet communication between HMI and Siemens 200smart, and it can also achieve local and remote access to the HMI screen to control the PLC.

#### 1.1 New project

**Step 1:** Open the Haiwell Cloud Configuration SCADA software and click "Create a New Project" on the initial page of the configuration software.

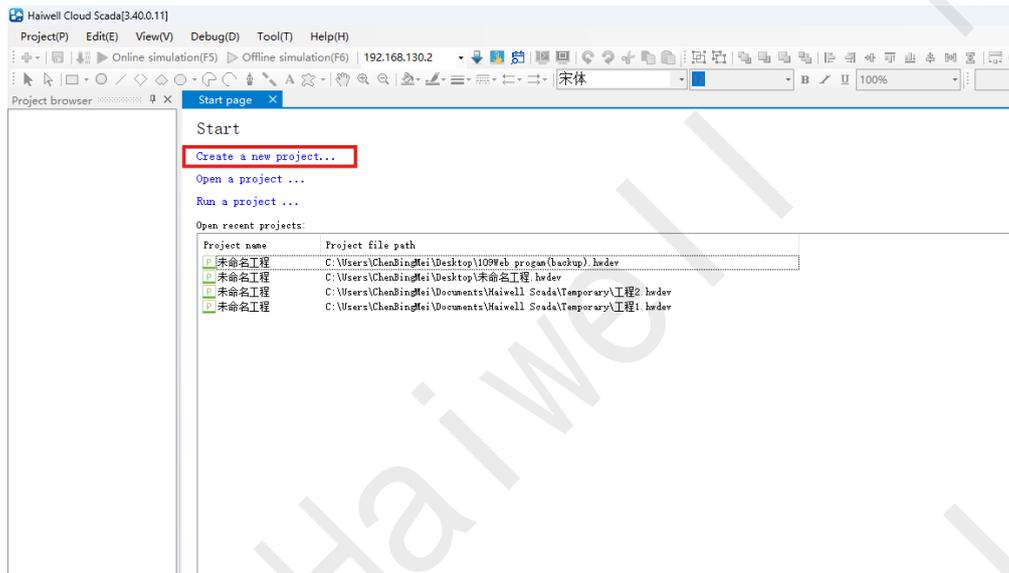


Figure 107 New Project

**Step 2:** After clicking "Create a New Project", a project property window will pop up. The project name can be customized. Select the corresponding operating platform. Here, taking D7 Pro-G as an example, select Haiwell HMI D7 Pro (models with tail numbers -W, -G, or -GW all share the same operating platform). After selection, you can see the screen resolution of the used device. You can choose the corresponding angle according to actual needs. If the angle is not set, it will default to 0°. Select "Local Area Network Access" to enable the local area network access function. You can use the Haiwell Cloud APP, computer browser, or TVBOX for local area network access and viewing. The password can be left blank, meaning no password is required for access. Finally, click "OK".

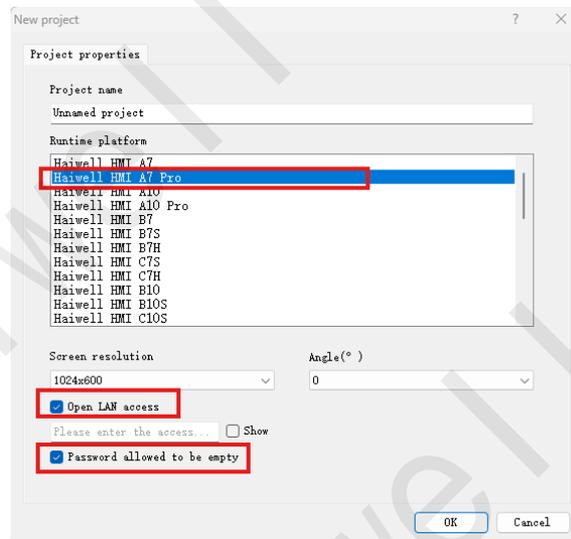


Figure 108 Select the Operating Platform

## 1.2 Newly constructed equipment

**Step 1:** In the **【Project Browser】**, select Ethernet, right-click and choose "Add Device", then click "OK" to complete the addition.

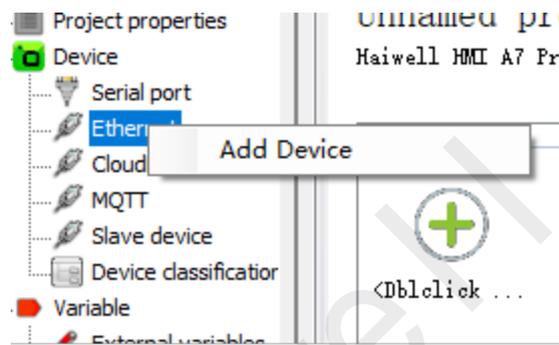


Figure 109 Add Device

**Step 2:** Select Ethernet (TCP/IP) for the device interface. On the left, choose the device and find the corresponding Siemens model. Fill in the IP address of the Siemens PLC in the device properties.

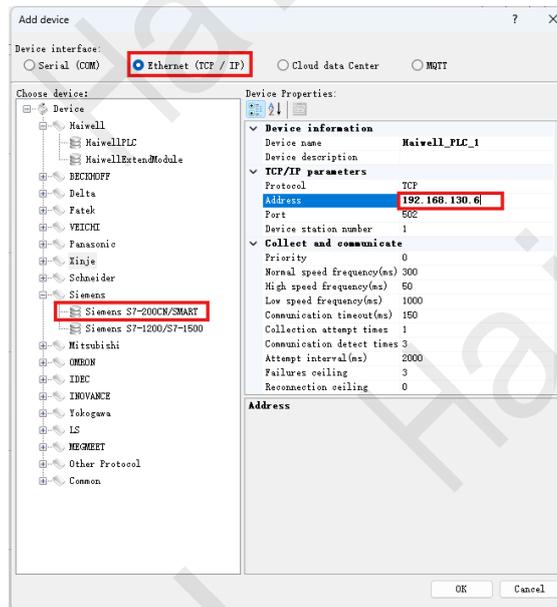


Figure 110: Set Device Communication Parameters

### 1.3 Create new variable

After clicking "OK" to add a device, a prompt box will pop up asking whether to define variables for the device immediately. Select "Yes", and add one Q0.0 and one VW0.0 respectively.

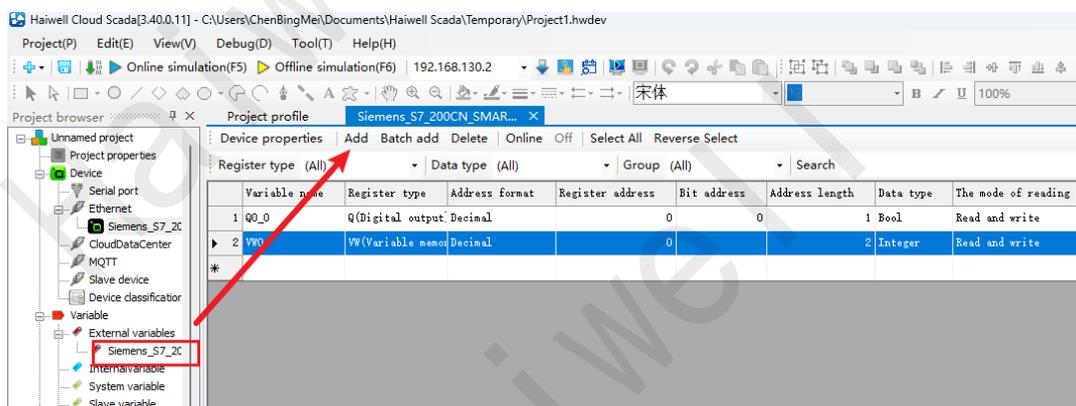


Figure 111: Create a New Variable

### 1.4 Editing screen

On the main screen of the engineering browser, in the symbol library on the right - functional

components, drag the "Bit Setting" and "Numeric Display Input" symbols onto the screen, and double-click the symbols to bind the variables.

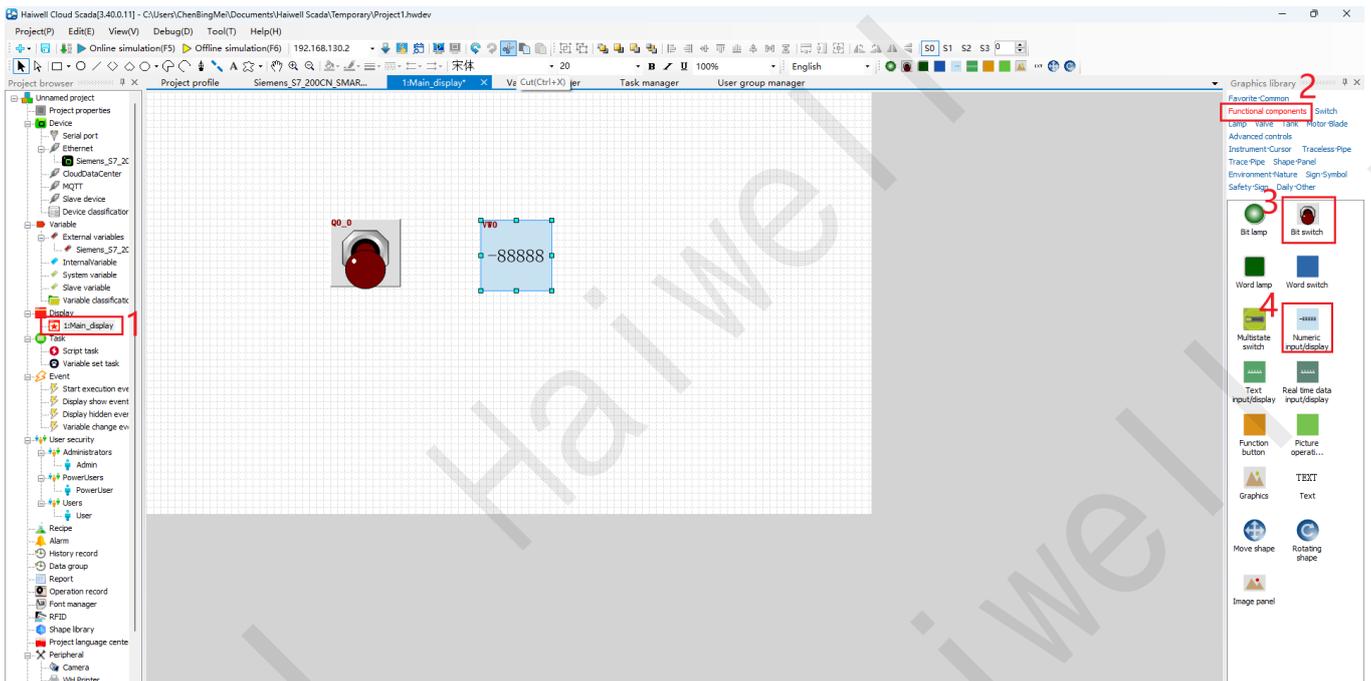
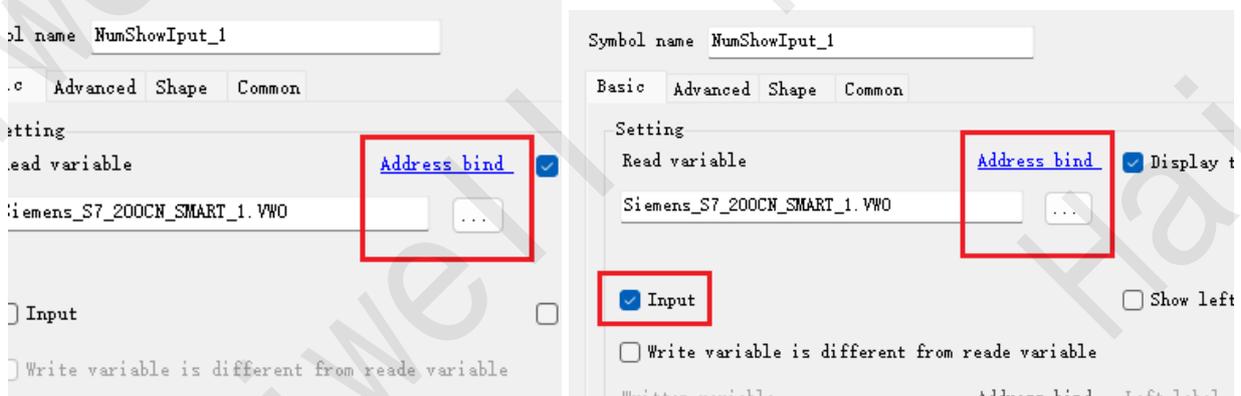


Figure 112 Editing Screen

If you need to write VW values on the HMI, you must select the "Input" option in the numerical display input property; otherwise, it will only have read-only attributes.



(a)

(b)

Figure 113 Element Binding Variables

## 1.5 Debug and run

The developed and edited project can be run and debugged through "Online Simulation" and "Offline Simulation".

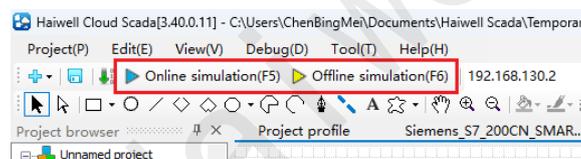


Figure 114 Simulation Debugging

**The difference between online simulation and offline simulation:**

Online simulation: Treat the port on the computer as the port of the HMI touch screen to communicate with the PLC and other devices for simulation and debugging.

Offline simulation: That is, without communicating with the actual PLC, only simulate and operate the interface.

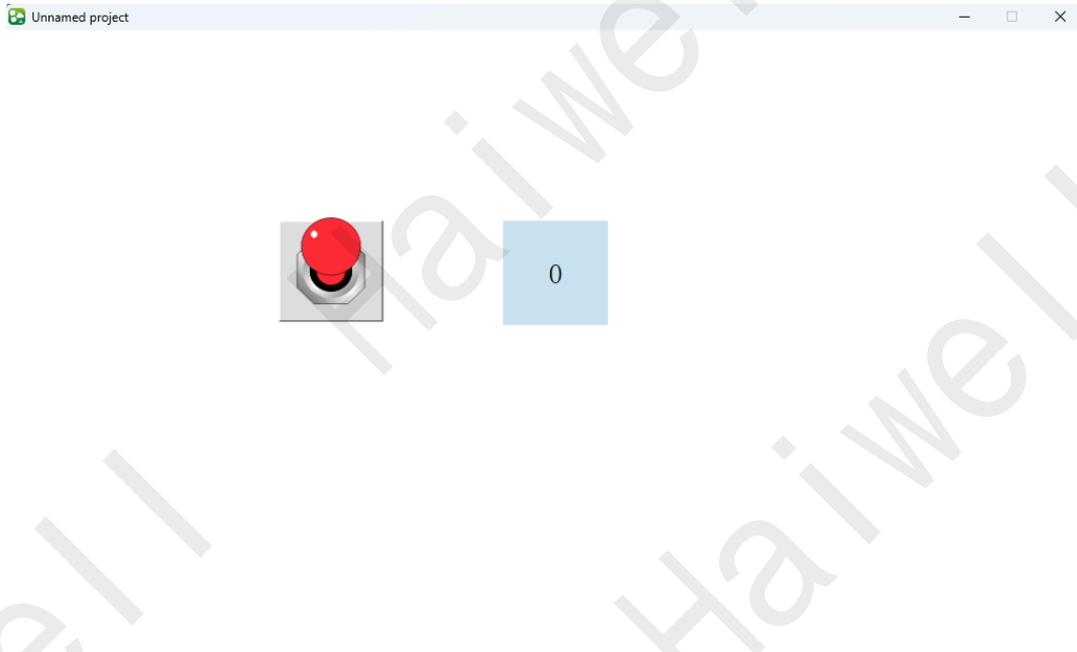


Figure 115 Online/Offline Simulation Screen

**2. Equipment management tool**

Open the configuration design end of the computer, click on the device management tool icon in the menu bar to enter the device management tool; or click on【Programs】, expand the 【Haiwell Scada】 installation file, and click on 【Haiwell Cloud HMI Manager】 to enter the device management tool. It supports effective control of HMI through both local management and cloud management.



**2.1 Local management**

In local management, users can select devices based on their IP addresses within the local area network and perform management operations.

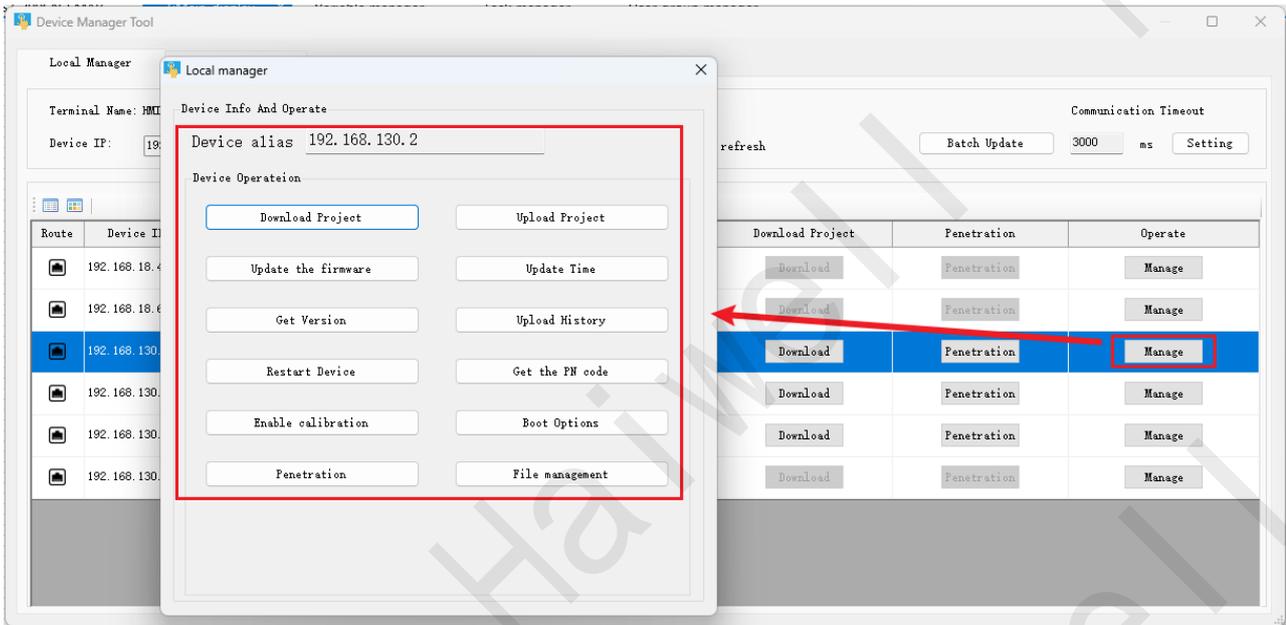


Figure 116 Local Manager

## 2.2 Cloud management

In cloud management, users can log in via mobile phone or email. Device administrators and owners can manage the current device, but ordinary users do not have device management permissions. Users can log in to the device manager by entering the correct account and password. After logging in, users can select a specific device and perform management operations.

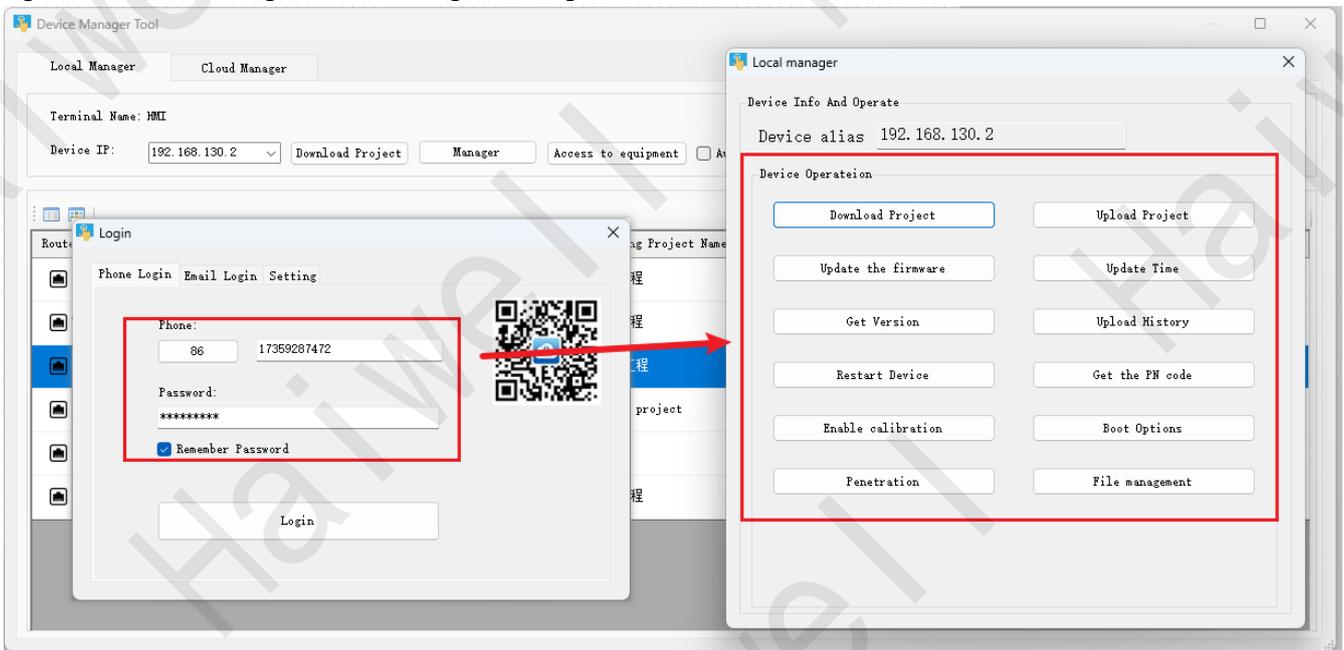


Figure 117 Cloud Manager

## 3. Project download

### 3.1 Local download

**Step 1:** Enter the device management tool. You can choose to use local management or cloud management. Find the corresponding HMI and click "Download Project".

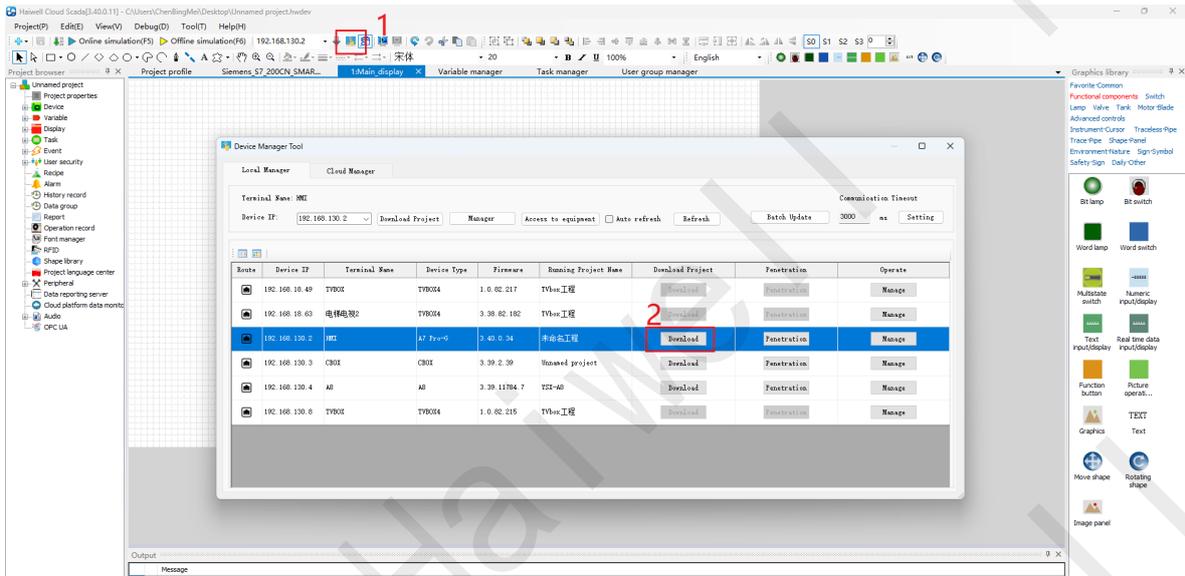


Figure 118 Local Download Project

**Step 2:** On the download interface, you can choose whether to retain historical and alarm records, whether to retain recipes, and whether to download fonts as a package according to your needs. The default options are usually fine. Just click "OK".

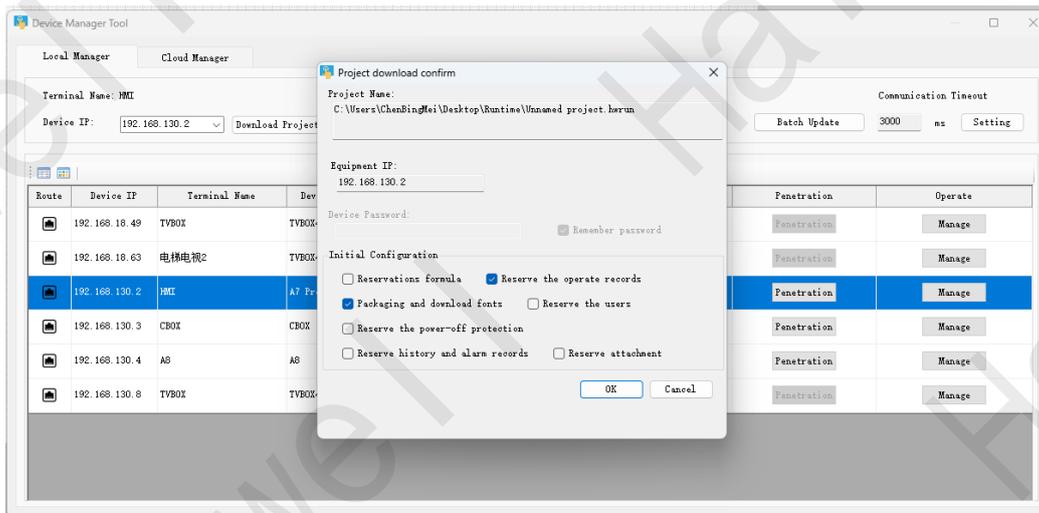


Figure 119 Project Download Confirmation

**Step 3:** Wait for the prompt "Download successful!" to pop up, click "OK", and then the new project can be run on the HMI.

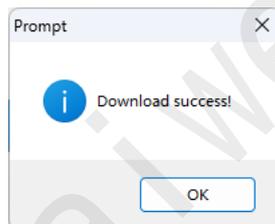


Figure 120 Download successful

### 3.2 Remote download

**Step 1:** To use cloud management, the HMI needs to be connected to the Internet and the cloud must be online. Log in to the cloud APP with your account and password, find the bound HMI, and then select to download the project.

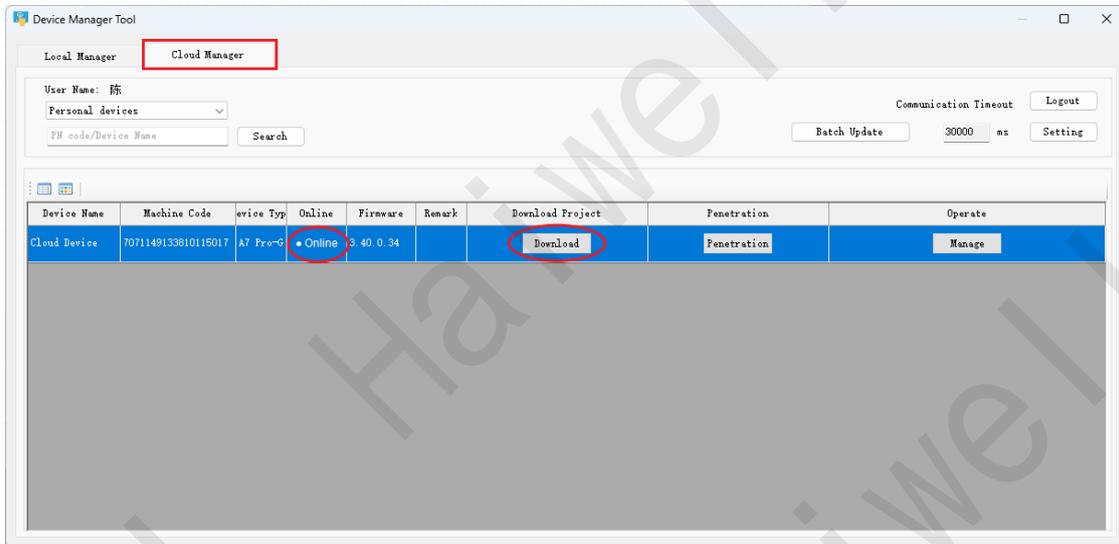


Figure 121 Remote Download Project

**Step 2:** The subsequent steps are consistent with the local download, and will not be outlined in detail here.

### 4. Project program operation

After the project download is successful, wait for the HMI to restart. After the restart is successful, the touch screen will automatically open the project startup screen, set the toggle to on, and the numerical display will show an input write value of 10. The PLC monitoring can be observed to see successful writing.



Figure 122 HMI operation screen

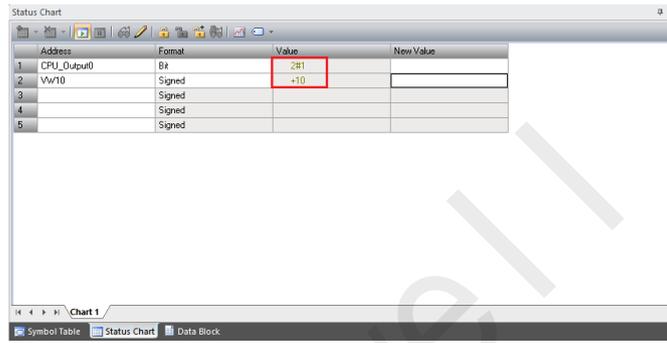


Figure 123 Real time monitoring of PLC

## 5. Local/Remote Access HMI Screen

### 5.1 PC local/remote access

#### PC local access:

Method 1: After downloading the project locally, if the "Run LAN Access" option is selected in the project properties, you can enter the HMI IP in the browser and press Enter to access the HMI screen locally (such as: 192.168.13.202)



Figure 124 Browser Input IP

Method 2: In the device management tool, simply click on "Access Device" to automatically pop up the browser LAN access device.



Figure 125: Local Management Access Devices

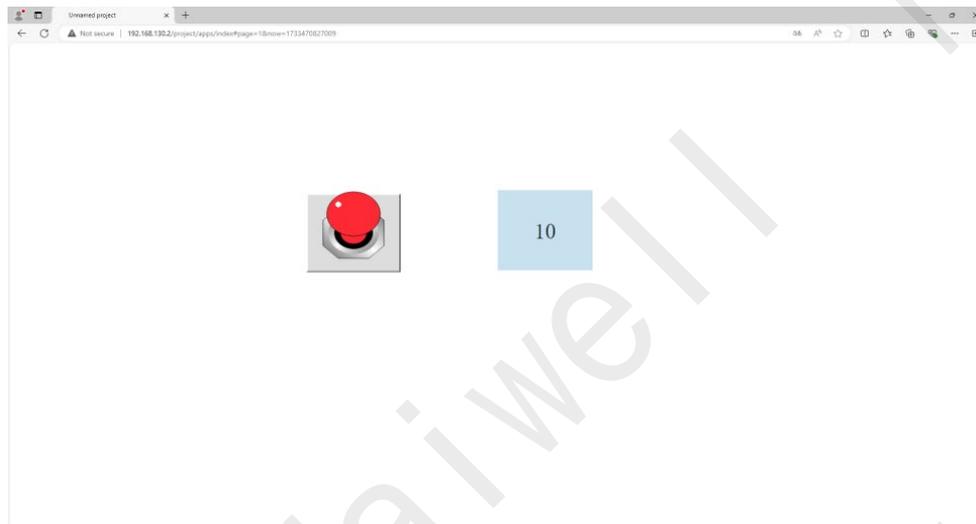


Figure 126 Browser LAN Access

**PC remote access:**

**Step 1:** Open a computer browser and enter <https://ecloud.haiwell.com> Visit the Haiwell Industrial IoT Intelligent Cloud Platform, log in with your account and password, select 'Personal User' to enter the platform.

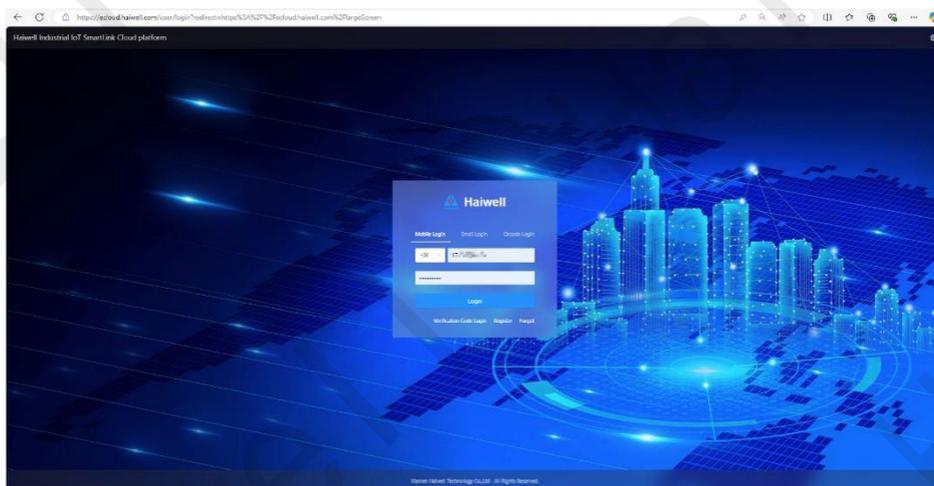


Figure 127 Login to Haiwell Industrial IoT Intelligent Cloud Platform

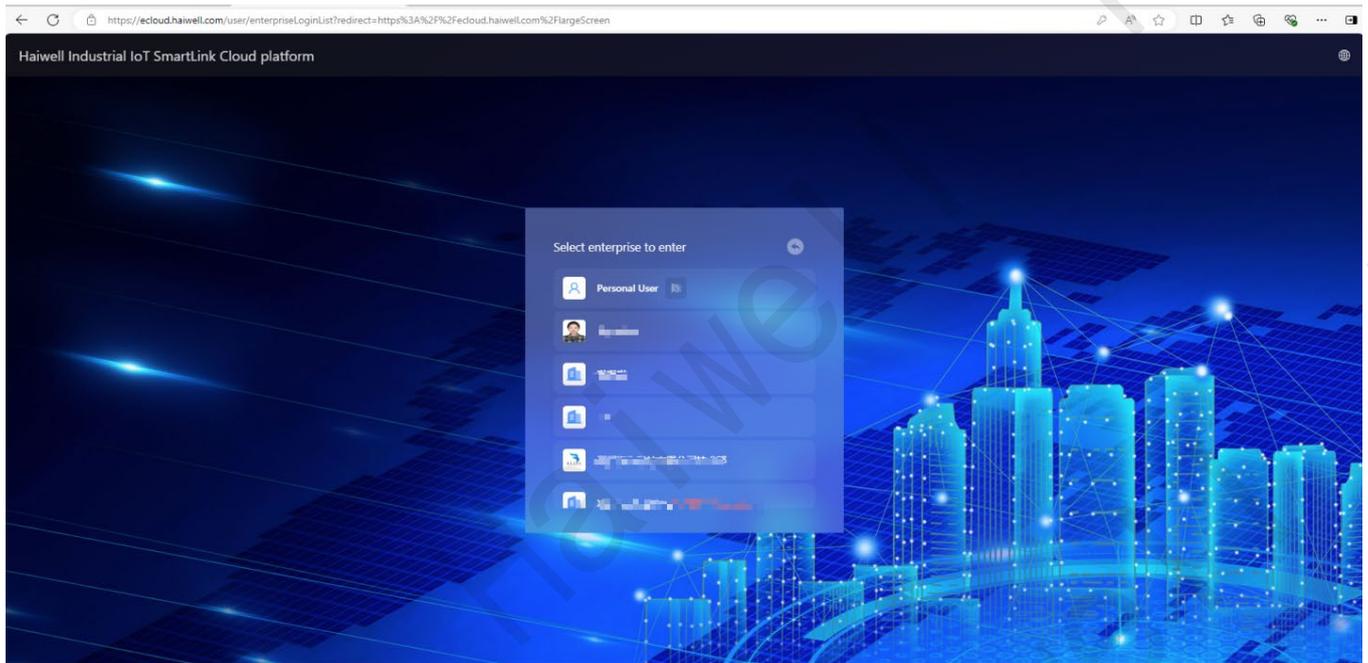


Figure 128: Selecting Individual Users

**Step 2:** In the device list, select the corresponding HMI and click to  enter the device details.

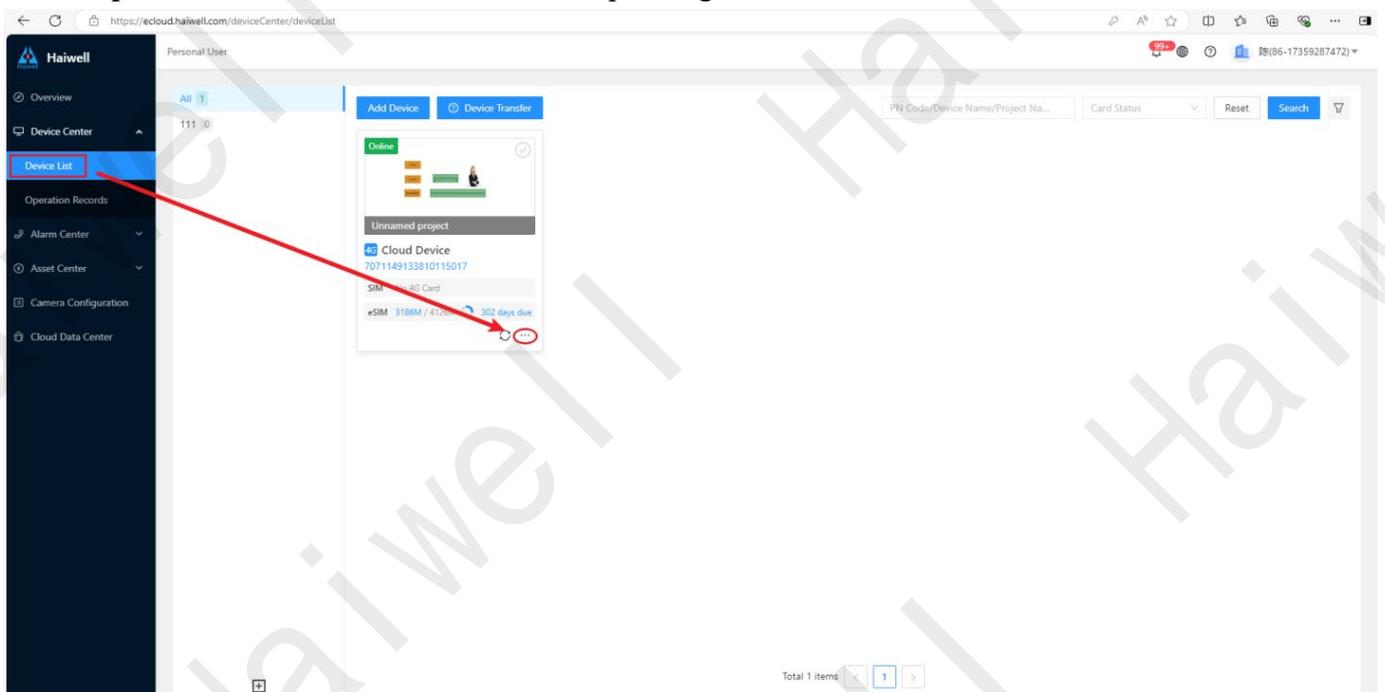


Figure 129 Enter device details

**Step 3:** Click on "Access Project" in the device details to remotely access and enter the HMI screen.



Figure 130 Access Project



Figure 131 Remote Access HMI Screen

## 5.2 Remote access on mobile devices

Open the Haiwell cloud app or WeChat mini program on your phone, log in with your account and password to enter the cloud device, select the corresponding HMI device, and finally click "Direct Access".

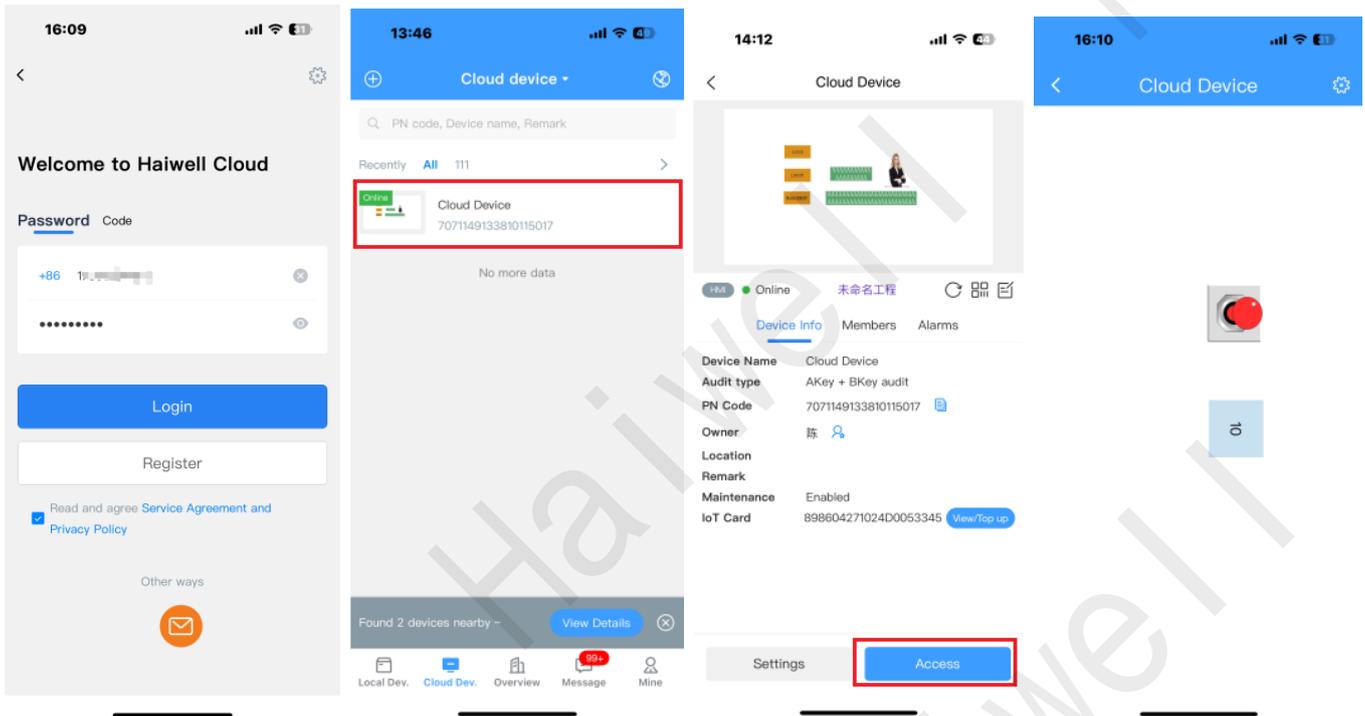


Figure 132 Mobile Remote Access HMI Screen

## VII Remote transparent transmission PLC

This article takes Siemens 200smart transparent transmission as an example. After successful Ethernet communication between HMI and PLC, perform the following steps to achieve the function of remotely downloading PLC.

### 1. Modify the network segment of the computer supply network

Open the computer settings and click on **【Change Adapter Options】**

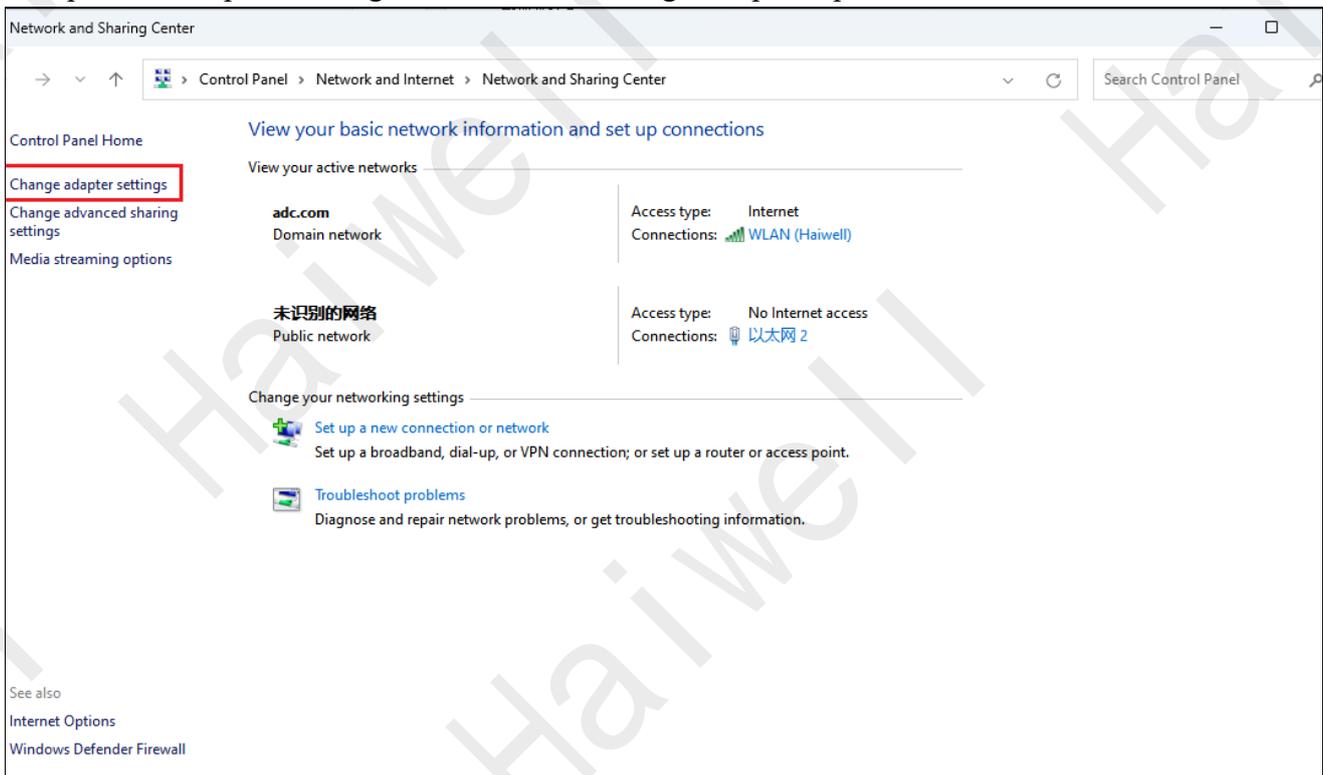


Figure 133 Open computer settings

If the computer's network supply method is Ethernet, it is necessary to check the IP network segment of the Ethernet network supply, so that the Ethernet IP network segment and the PLC network segment cannot be the same (for example, if the PLC's IP is 192.168.14.133, the computer's Ethernet network segment needs to be modified to be different from 14).

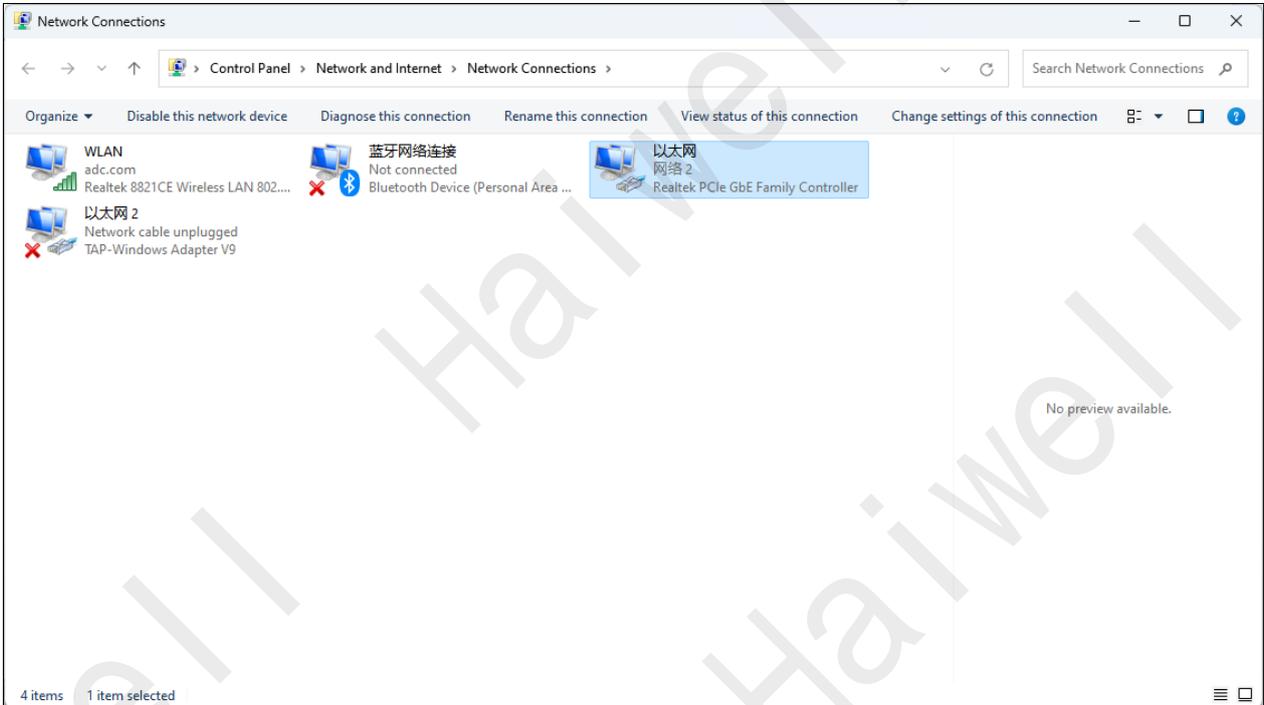


Figure 134 Check the supply network segment 1

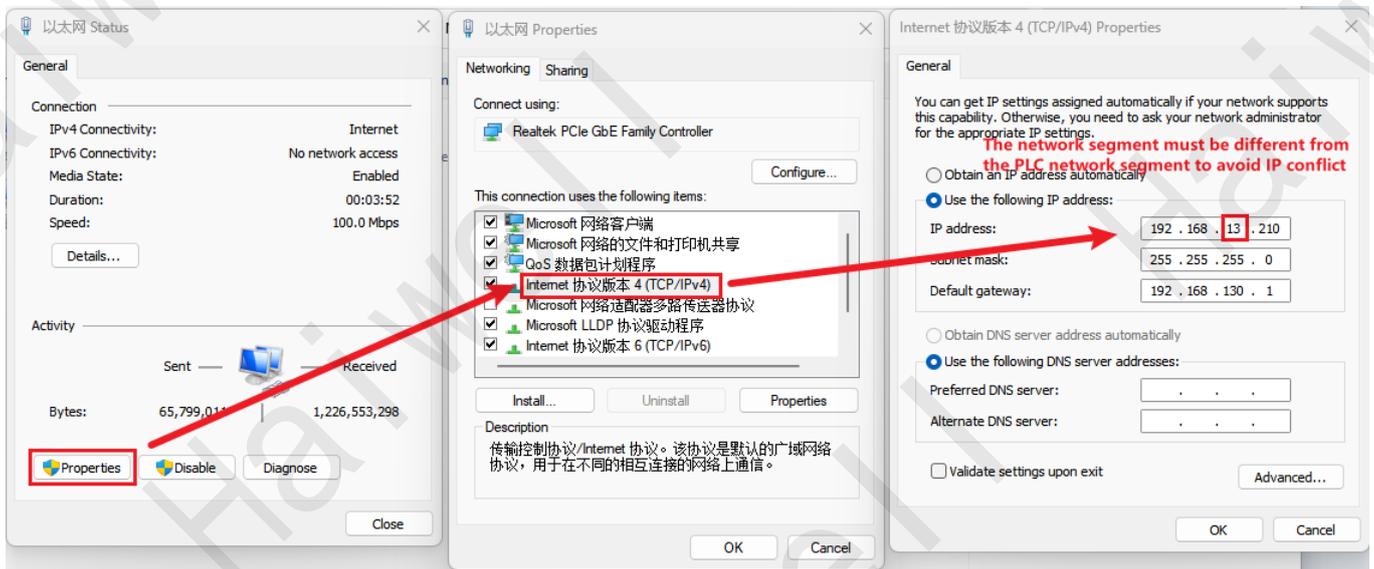


Figure 135: Checking the Supply Network Segment 2

**TIP:** If the computer has WIFI function, the network supply method can prioritize using WIFI before performing VPN transparent transmission operation.

## 2. Open the device management tool

After successful communication between the HMI and Siemens 200smart based on the previous project, open the SCADA configuration software - Tools - Device Management Tool, select Cloud

### Management, and perform transparent device transmission.

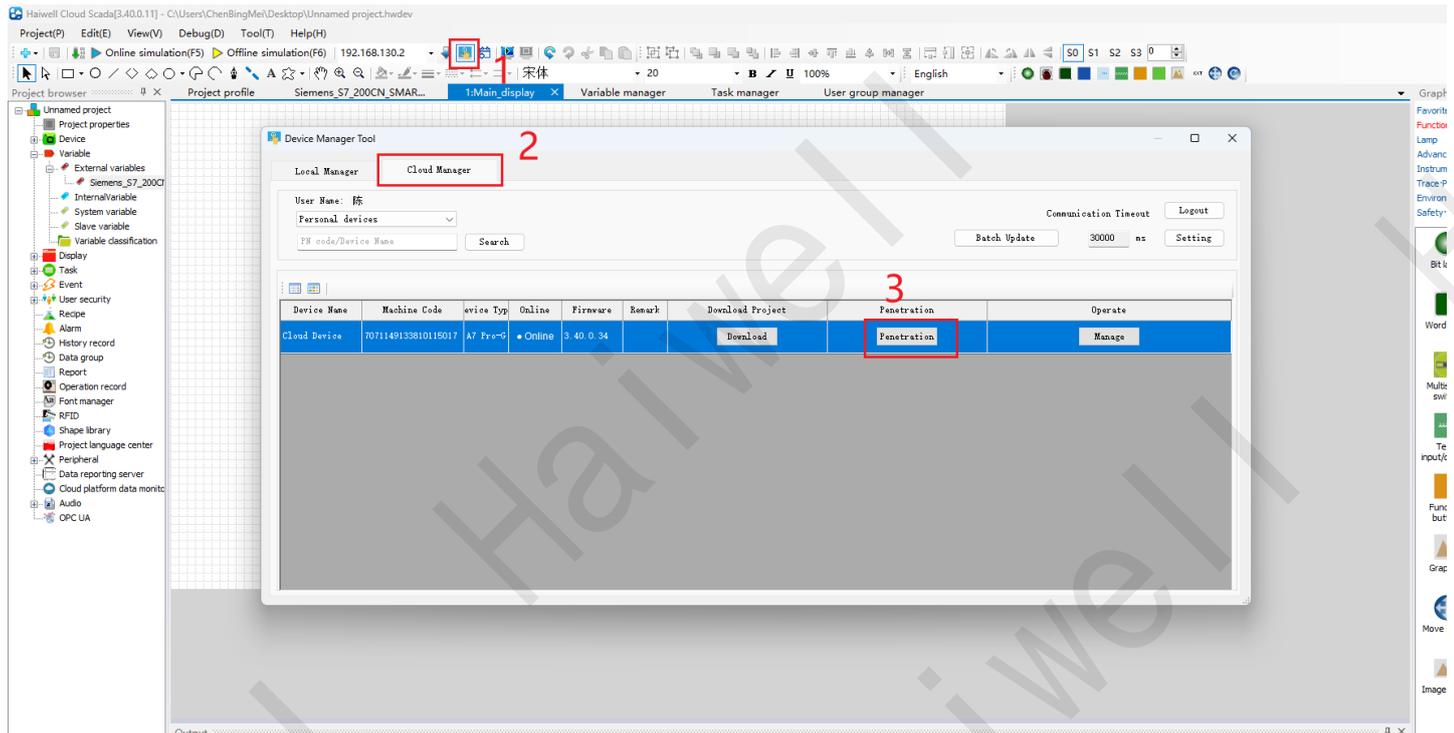


Figure 136 Open Device Management Tool

### 3. Connect transparent transmission devices

Use the device management tool - Cloud Management for VPN transparent transmission, log in to the cloud account, select the corresponding smart connected device - and connect the device.

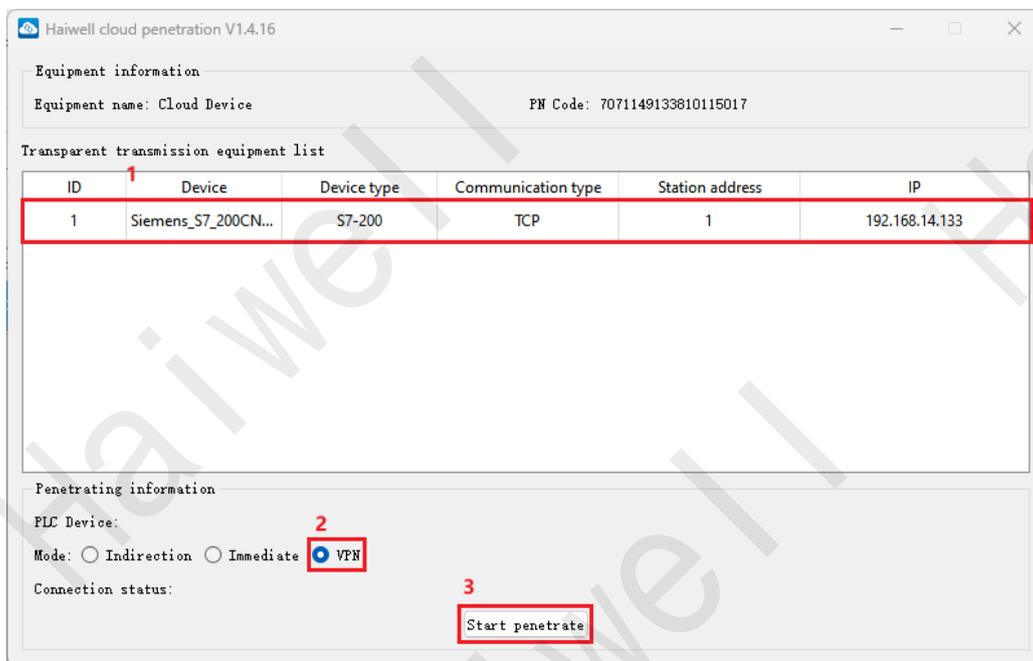


Figure 137 VPN connection transparent transmission device

After connecting the device - select the corresponding PLC, the transparent transmission mode defaults to intermediate mode. In this article, select VPN and click start transparent transmission. Fill in the IP address and create a virtual IP address through the touch screen.

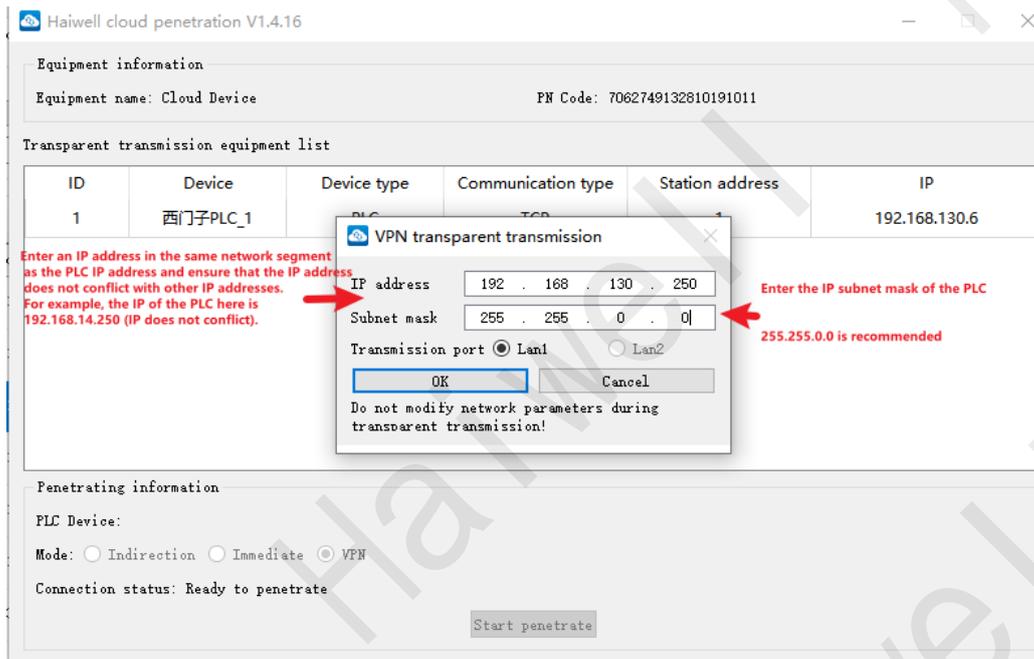


Figure 138 Fill in information for VPN transparent transmission

Attention: Click to start transparent transmission. VPN parameter settings will pop up. The virtual IP address you need to set up here is not the same IP address as the PLC. The IP address you need to fill in is in the same network segment as the IP information of the PLC device that needs VPN transparent transmission, and there is no IP address conflict with the LAN where the PLC device is located; Fill in the subnet mask information corresponding to the IP information of the PLC device or fill in 255.255.0.0. After filling in, click confirm.

#### 4. VPN status check

After completing the above operations and entering transparent transmission, it is necessary to perform a status check on the VPN. Open the computer settings and click on **【Change Adapter Options】**.

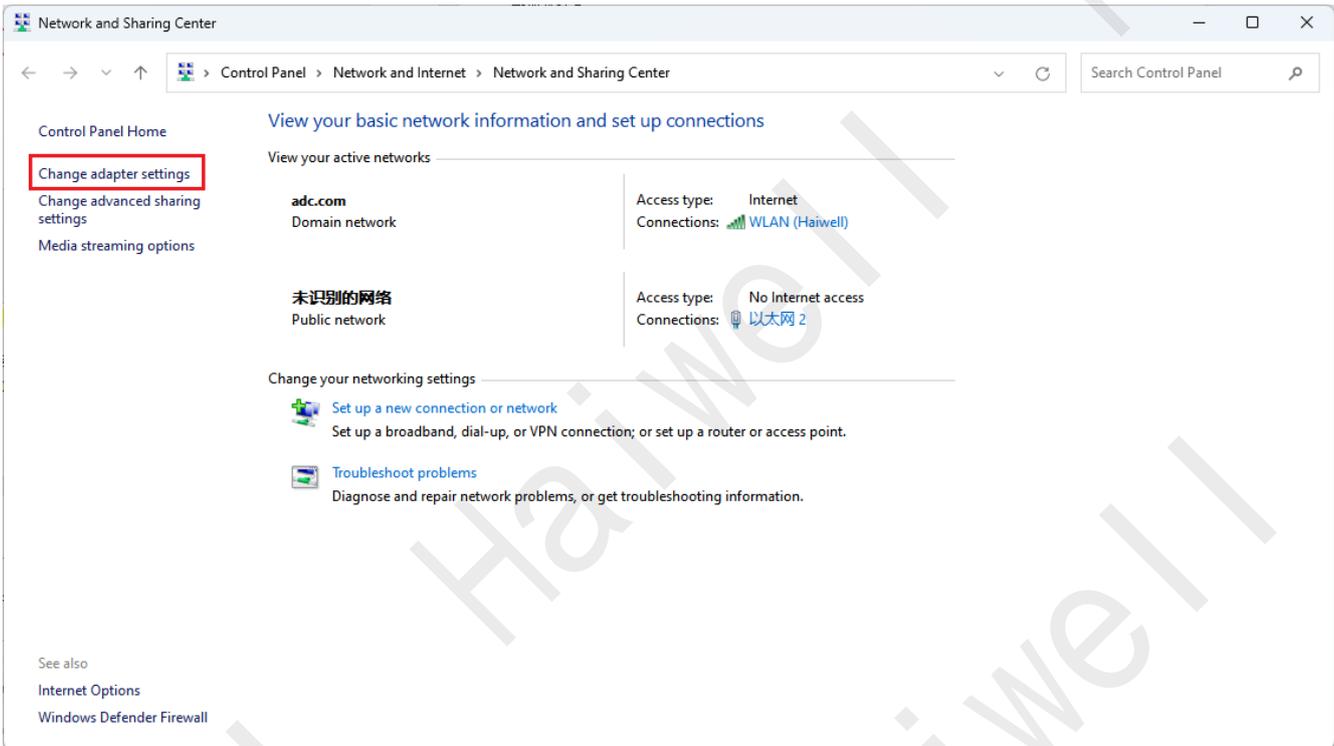


Figure 139 Changing adapter options

Find the Ethernet (Ethernet 2 in this case) where the virtual network interface TAP Windows Adapter V9 displayed as an unrecognized network is located, double-click to enter the "Ethernet 2" interface.

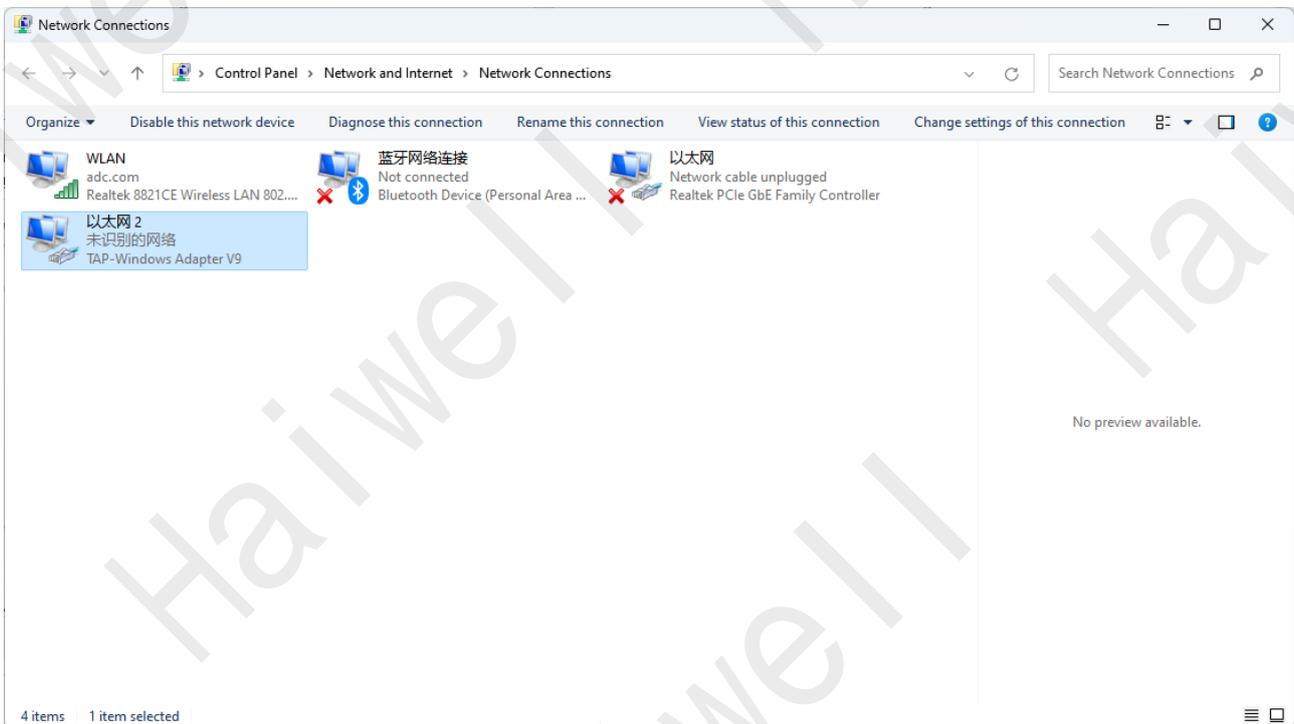


Figure 140 Open virtual network card

Click on **【Detailed Information】**, to check the IPv4 address and IPv4 subnet mask information in the pop-up 'Network Connection Details' page. When both are consistent with the VPN parameter settings, transparent transmission of PLC devices can begin.

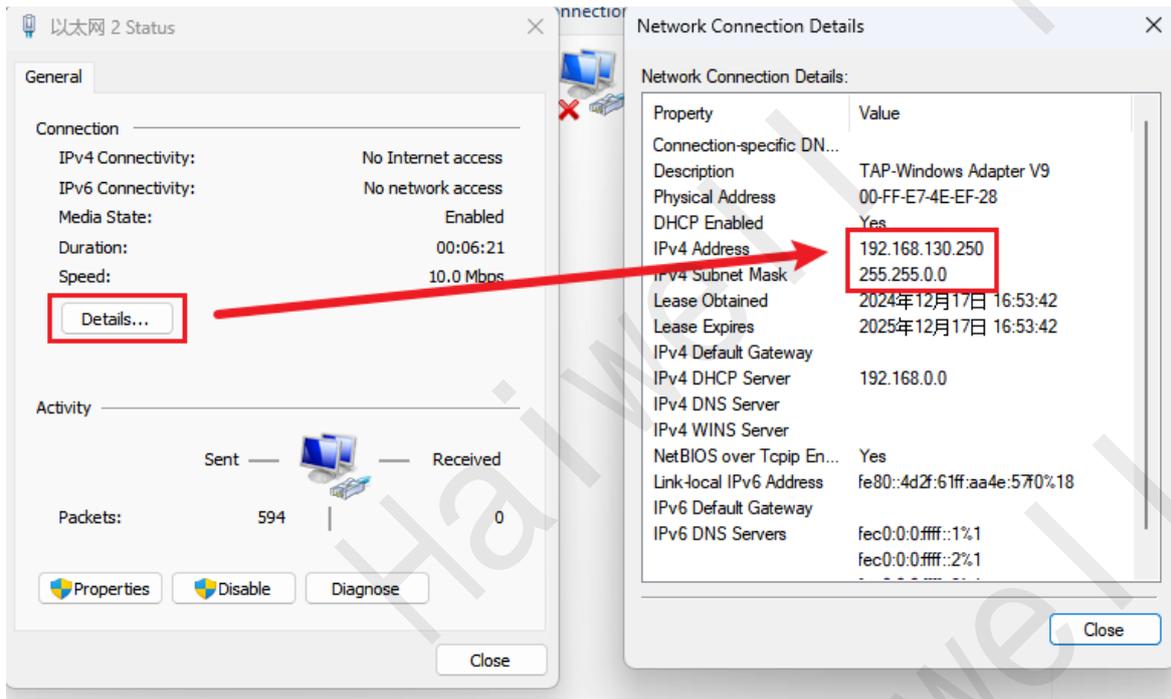


Figure 141 Checking virtual network card IP information

Attention: When the query result shows that the generated TAP Windows Adapter V9 network interface is connected to an unrecognized network and the IPv4 address and IPv4 subnet mask information in its right-click status - detailed information are consistent with the VPN parameter settings, it is possible to start transparent transmission to the PLC device.

(The above is the VPN status query method for Windows 10 system version. For Windows 11 version, simply click "Settings -->Network and Internet -->Advanced Network Settings" to query relevant network information.)

## 5. Transparent transmission PLC

Open Siemens programming software and click to go online. Select the TAP Windows Adapter V9 network interface driver in the pop-up window to connect. Click to search for CPU, and a PLC that can be connected online will appear. If not, you can manually input the IP address of the PLC by adding a CPU.

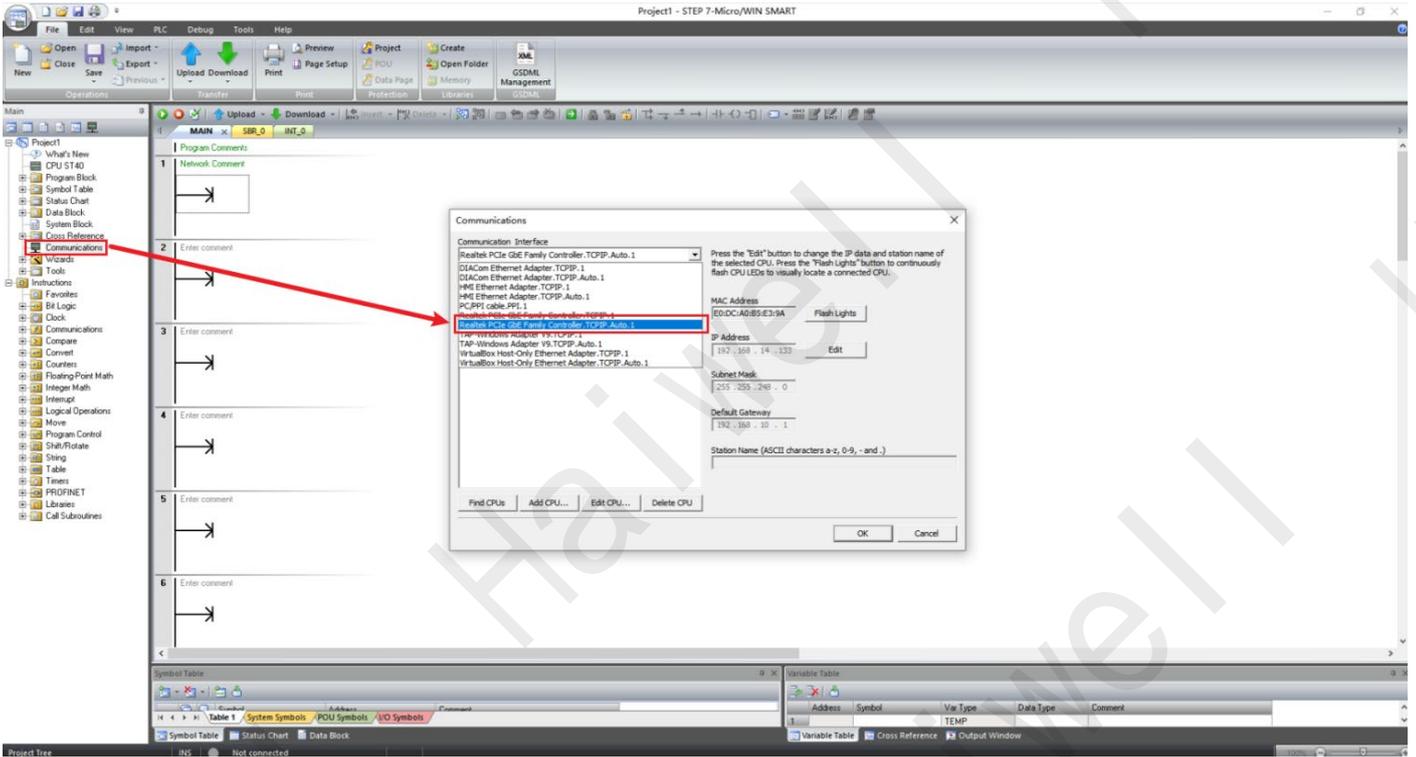


Figure 142: Selecting V9 Communication Interface

Select the IP device connected to Siemens SMART PLC, double-click on the corresponding IP to connect to the PLC.

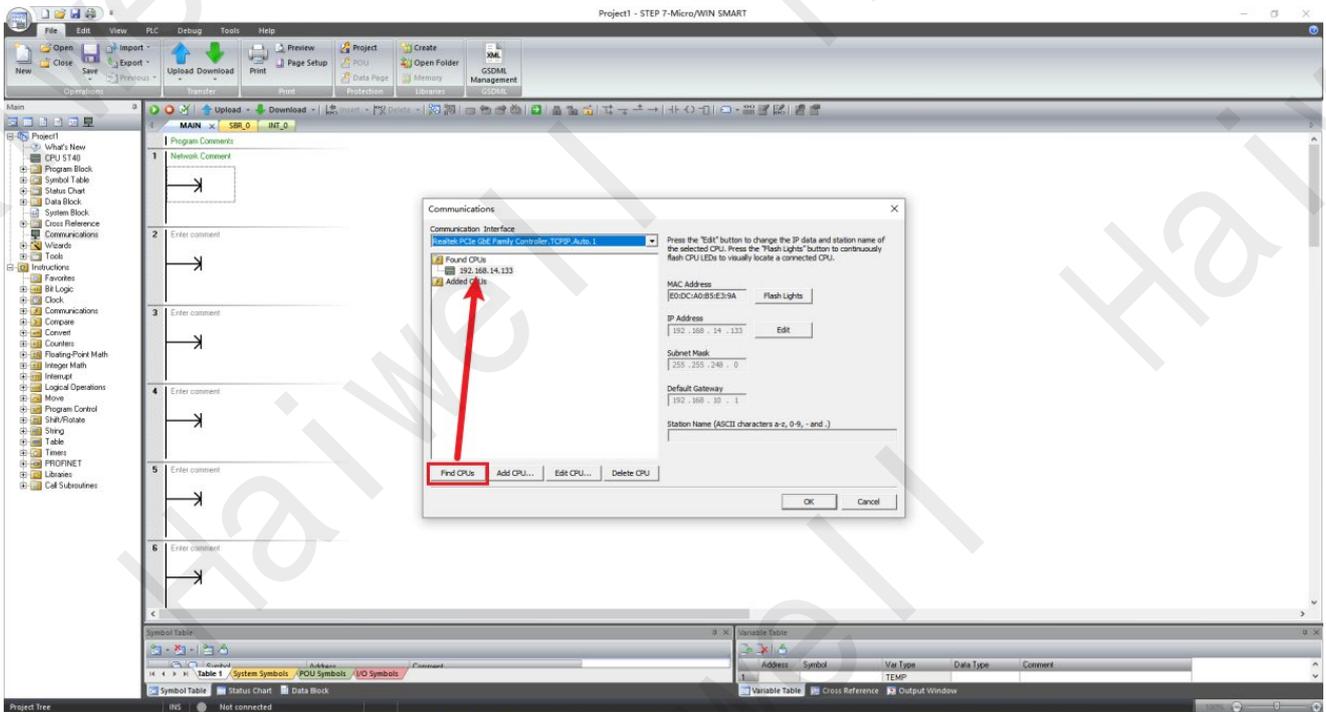


Figure 143: Searching for CPU

After successful connection, you can see the connection status below and proceed to download the PLC project.

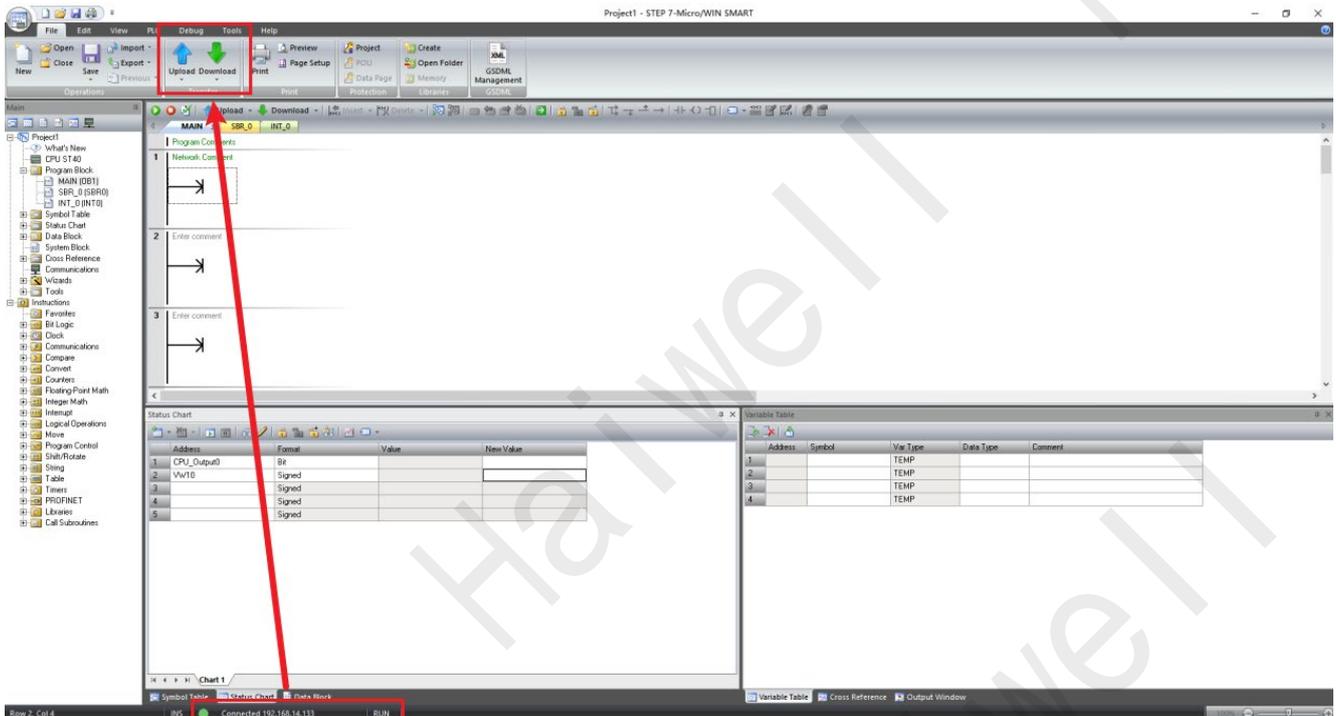


Figure 144 Check connection status

Attention: VPN transparent transmission supports normal transmission even in case of communication failure between PLC and Haiwell Smart-Link products;

VPN transparent transmission supports all PLC devices within the same local area network as the IP address parameters set by transparent transmission;

If you need other models of PLC transparent transmission tutorials, you can refer to them in Haiwell College - Learning Zone - Special Column 5 (Special Column | Haiwell College).

## VIII HMI calibration

Optimizing the startup calibration mode is to ensure accurate correspondence between touch points and display positions when using HMI, improve operational accuracy, and help adjust deviations caused by environmental changes, hardware aging, or replacement.

### 1. Enter calibration mode

Method 1: HMI local background settings directly enter calibration mode

Long press the top right corner of the touch screen for five seconds to enter the background settings, click on **【System Information】**, and then click on **【Start Touch Calibration】** to enter the calibration mode interface.

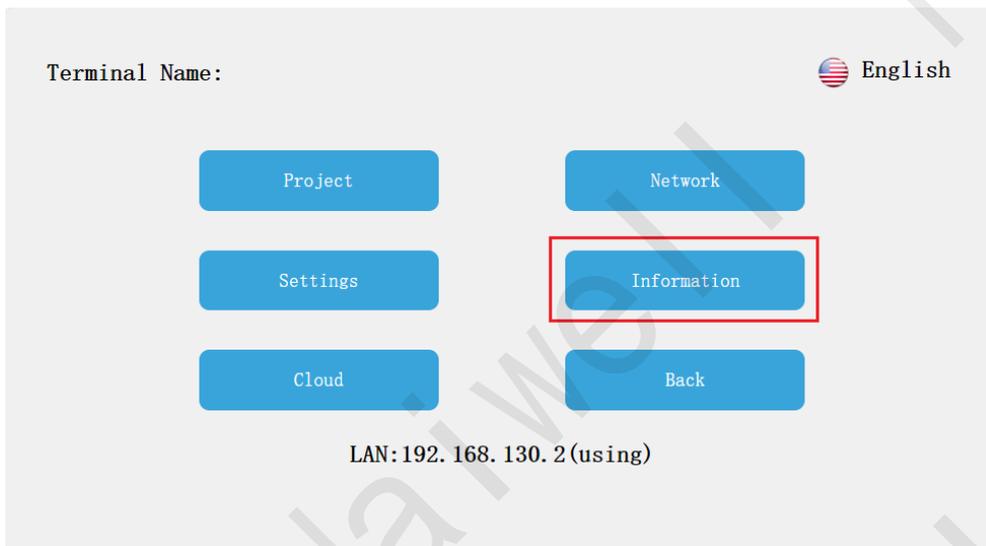


Figure 145 Click on System Information



Figure 146 Click to start touch screen calibration

If the calibration of the touch screen fails, you can operate it according to the following methods.

Method 2: HMI power off, restart, enter background settings, and recalibrate.

**Step 1: Enter the background settings**

During the HMI startup phase, long press any position on the screen for 10 seconds to automatically enter the background settings. If the HMI screen is not long pressed for 10 seconds and then released, it will directly enter the project screen.

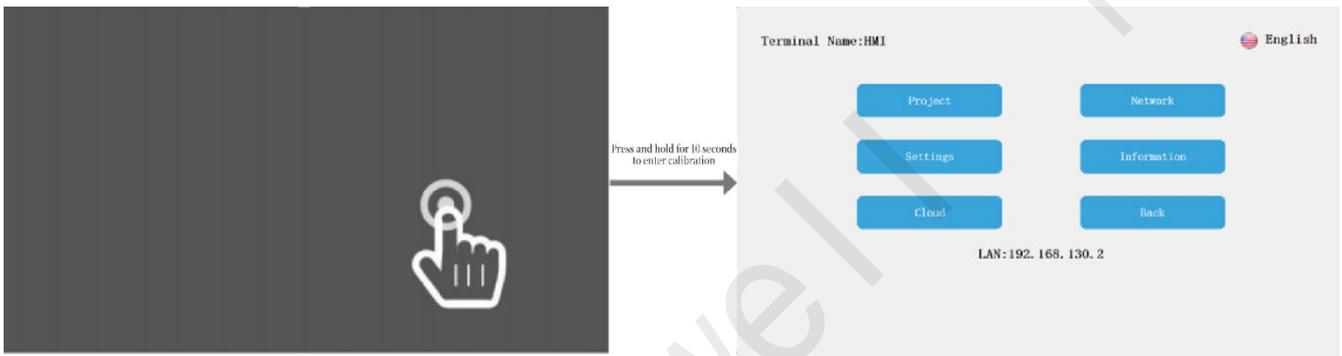


Figure 147: Press and hold for 10 seconds to enter calibration 1

**Step 2: Enter calibration mode**

Press and hold for 10 seconds at any position on the HMI background settings interface to enter calibration mode. If the user enters the background settings through other means, long pressing the HMI screen will not enter calibration mode.

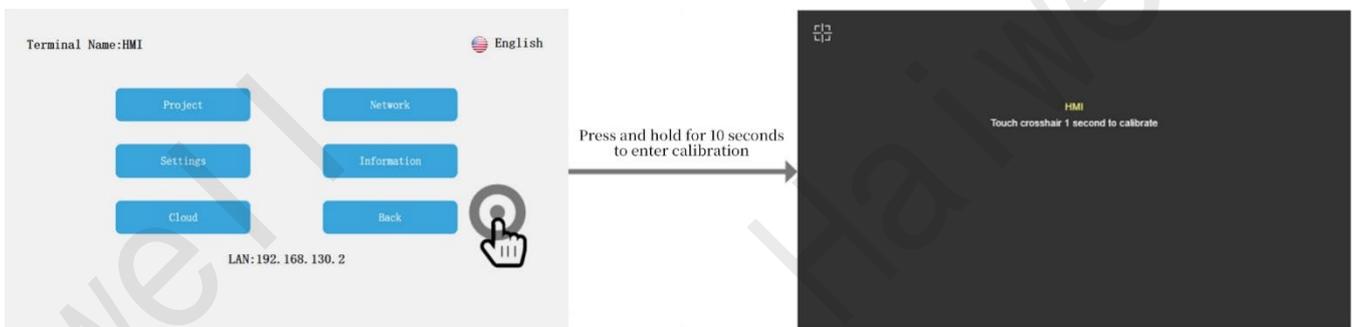


Figure 148: Press and hold for 10 seconds to enter calibration 2

**Method 3: Enter the HMI backend settings through the Haiwell APP on the mobile phone**

Open the Haiwell cloud app on your phone and access the HMI device on your local or cloud device. Taking the cloud device as an example, go to the corresponding HMI device and click on background settings - system information - start touch calibration.

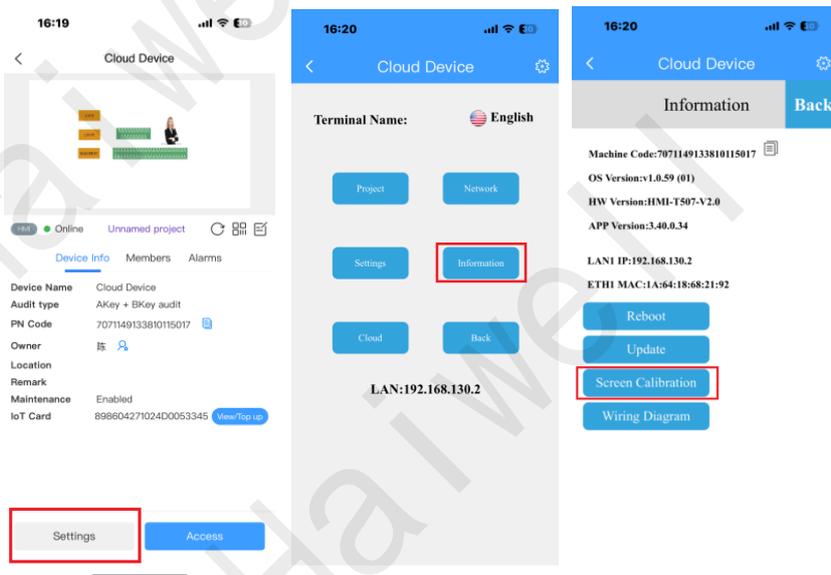


Figure 149: Haiwell APP on mobile phone starts touch screen calibration

#### Method 4: Accessing HMI background settings through computer LAN

HMI and computer are on the same local area network and have the same network segment. You can enter the HMI IP/setting (such as 192.168.13.202/setting) in the browser to access the HMI background settings - System Information - Start Touch Calibration.



Figure 150 LAN startup touch screen calibration 1

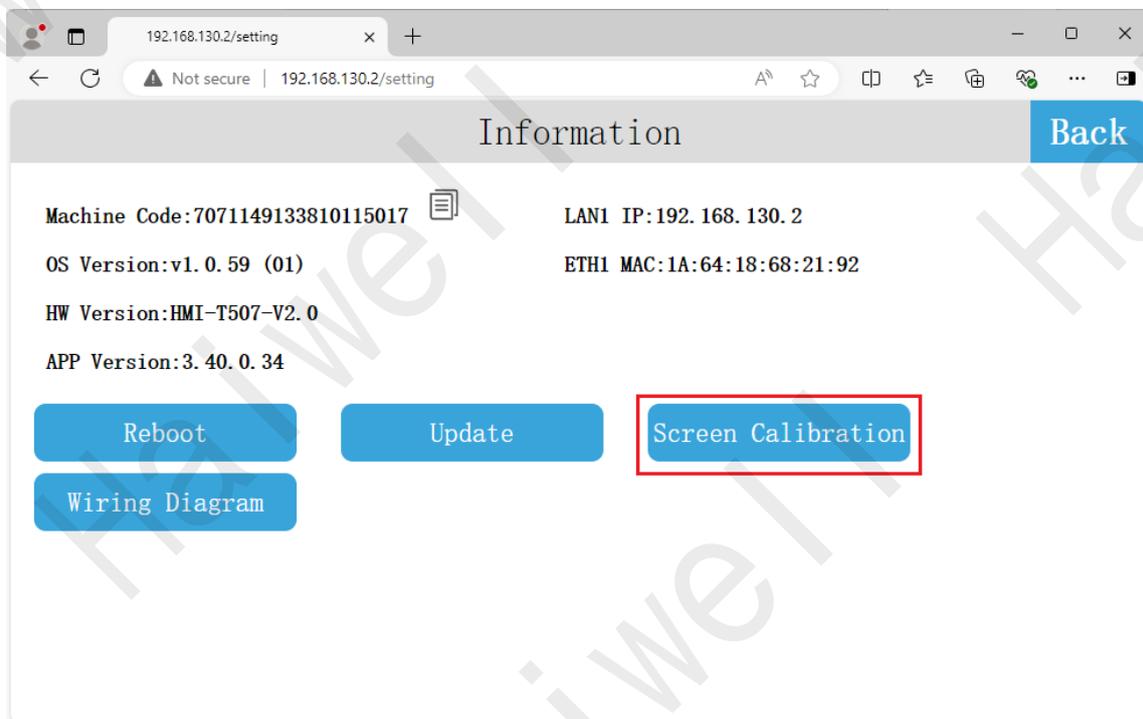


Figure 151 LAN startup touch screen calibration 2

Method 5: Configure software to start calibration mode for local/cloud devices

HMI and computer are on the same local area network and have the same network segment. Open the configuration software and click the button above to access the device management tool , Select the corresponding HMI for local or cloud management, click on "Manage" and select "Enable Calibration".

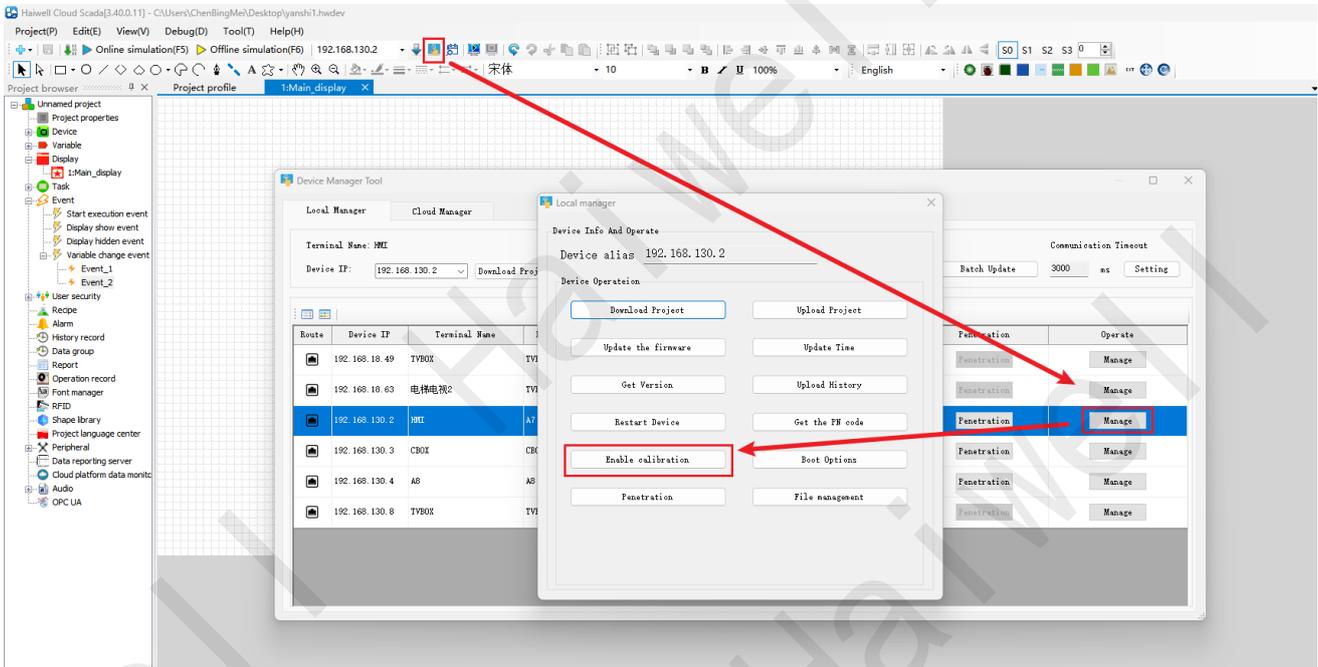


Figure 152 Configuration software startup touch screen calibration

## 2. Operation calibration mode interface

In the calibration mode interface, the calibration cross symbol appears in the upper left corner of the screen , Long press the cross for one second until you hear a beep and release it, then enter the next calibration position. Calibrate the device touch screen in the order of "top left, top right, bottom right, bottom left, and center". If the calibration is successful, the HMI will restart.



Figure 153 Calibration Interface

## IX Common Problems

### 1. What is the factory IP address for HMI?

The default IP address for the HMI factory is 192.168.1.112. If you need to modify the IP address of the HMI, please refer to [V. HMI Settings -2. HMI Background Settings -2.6 Network Settings](#).

### 2. How to download projects locally from HMI?

Local download project: HMI and computer are on the same LAN and the computer network segment and HMI network segment need to be consistent. Open the configuration software - Device Management Tool - Local Device, and finally find the corresponding HMI in the list and click Download Project.

Local Upload Project: The HMI and computer are on the same local area network, and the computer network segment and HMI network segment need to be consistent. Open the configuration software - Device Management Tool - Local Devices, find the corresponding HMI in the list, select Management to enter the Local Manager, and finally click Upload Project. (The project is disabled from uploading by default. To set the upload function for the project, open the configuration software, click on "Project" - "Project Properties" - "Security Settings", and select "Allow Upload Project" to set the upload password.)

### 3. What is the password for uploading HMI factory demonstration project?

The upload password for the D-series HMI factory demonstration project is DHMI or HMI.

### 4. Is there any other way to enter HMI background settings besides on the screen?

Method 1: Local Area Network Access

① Computer side: In the local area network, HMI can also be accessed through a browser, provided that the computer is in the same local area network and on the same network segment as HMI. Enter device IP+/setting (example: 192.168.11.123/setting) to enter the background settings interface.

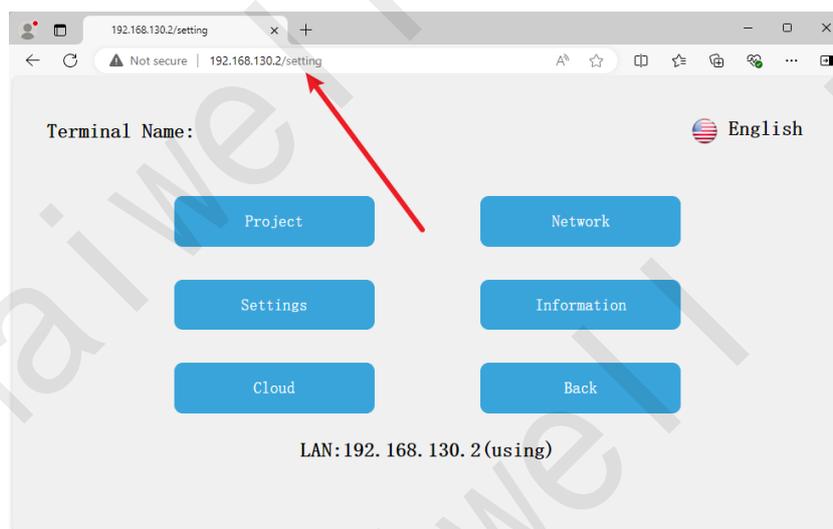


Figure 154: Computer Browser LAN Access Background Settings

② Mobile end: If there is a model with a WiFi version of the HMI, the mobile WiFi can connect to the HMI's built-in hotspot, then open the Haiwell cloud app - Local Device, find the HMI device, and if the local device does not appear, you can go to the top left corner of the local device  then enter the IP address 10.5.5.1 of the hotspot to access the device interface.



Figure 155: Personal Hotspot Names

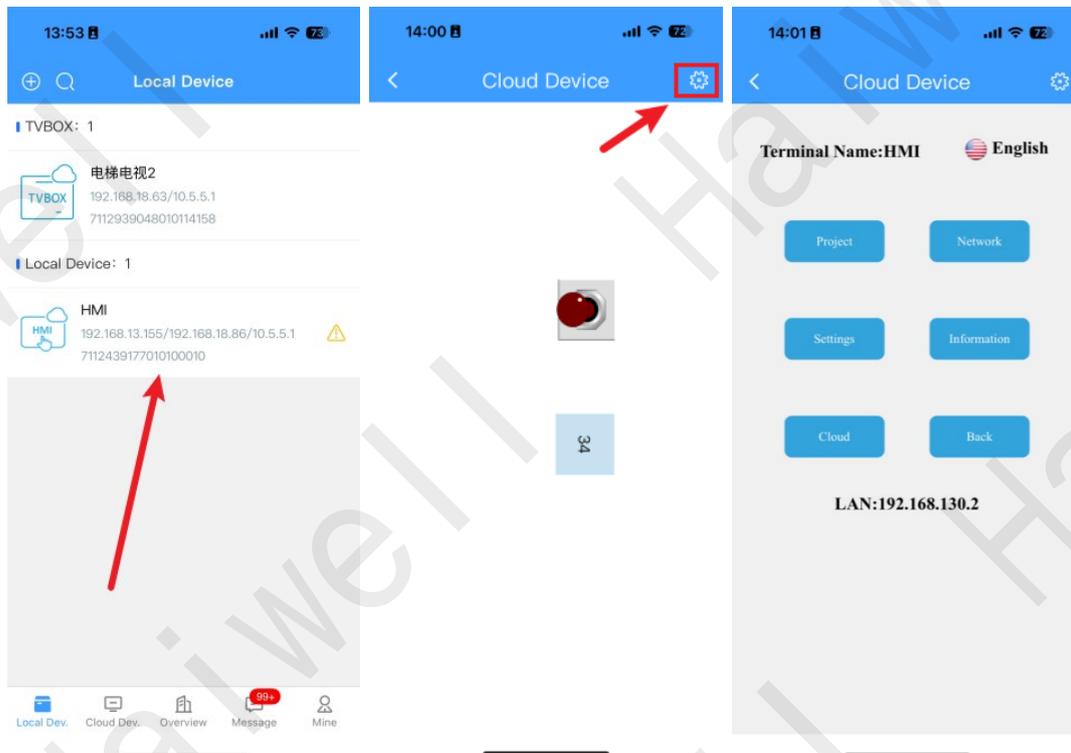


Figure 156 Mobile LAN Access

### Method 2: Access to engineering graphics elements

In Haiwell Cloud Configuration SCADA, select the advanced graphics element, pull out the "Function Button" of the graphics element, double-click to enter the properties, choose the **【Enter System Device】** function, download the project to HMI, and click this button to enter the background settings.

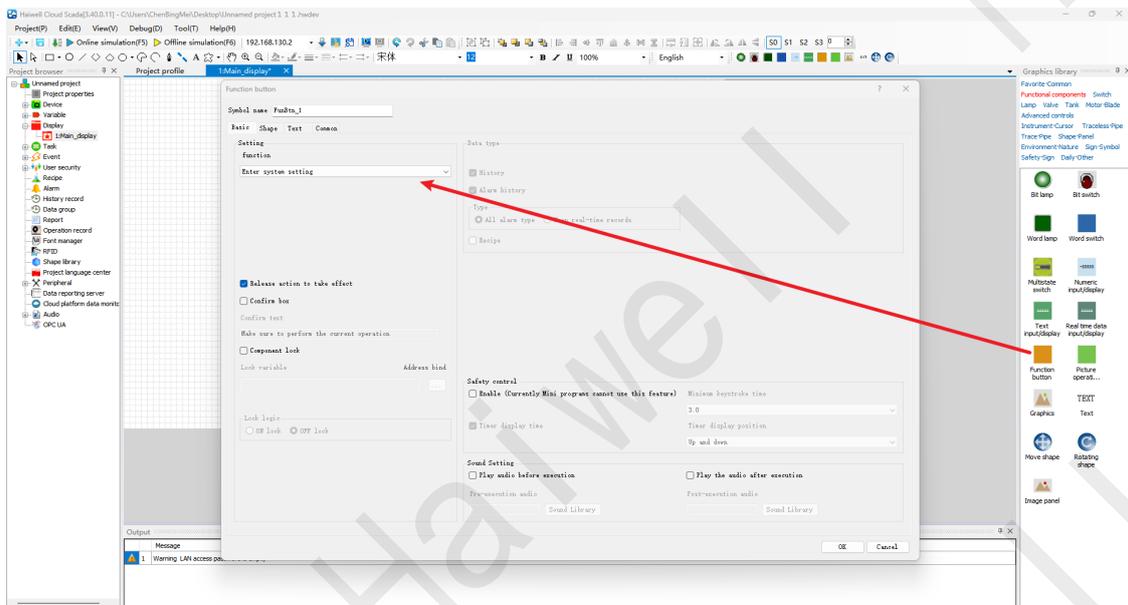


Figure 157 Configuration Screen Enters System Settings

## 5. Can I download programs from HMI's USB and how can I download them?

Can be downloaded.

Step 1: Open the configuration software to enter the project, click on the configuration software menu bar - Project - Generate USB Run File, and copy the USB run file to the USB drive.

Step 2: Insert the USB drive into the USB port of the HMI, and press the upper right corner of the HMI display area for a long time to enter the background settings - local settings - project download - select generate USB drive run file to download successfully.

Refer to [V. HMI Settings -2. HMI Background Settings -2.2 Engineering Settings.](#)

## 6. How to deal with unstable serial communication or offline communication reports between HMI and 485 devices?

Communication failure:

Step 1: Check if the communication wiring is connected correctly, and if necessary, use a multimeter to measure if the pins of the line correspond. Then check if the communication protocol of the device (COM port, device station number, communication type, baud rate, data format, etc.) is configured consistently in the configuration engineering.

Step 2: If all the above checks are correct, you can first use third-party tools to communicate with the device, such as using Modbus poll to check if communication can be successful. If not, it is possible that the device is not a standard Modbus protocol and belongs to a non-standard device, which may not be able to communicate.

Unstable communication:

Step 1: The communication timeout and packet length of the device can be adjusted. It is recommended to set the communication timeout to 1500ms and the packet length to 10, as shown in the following figure.

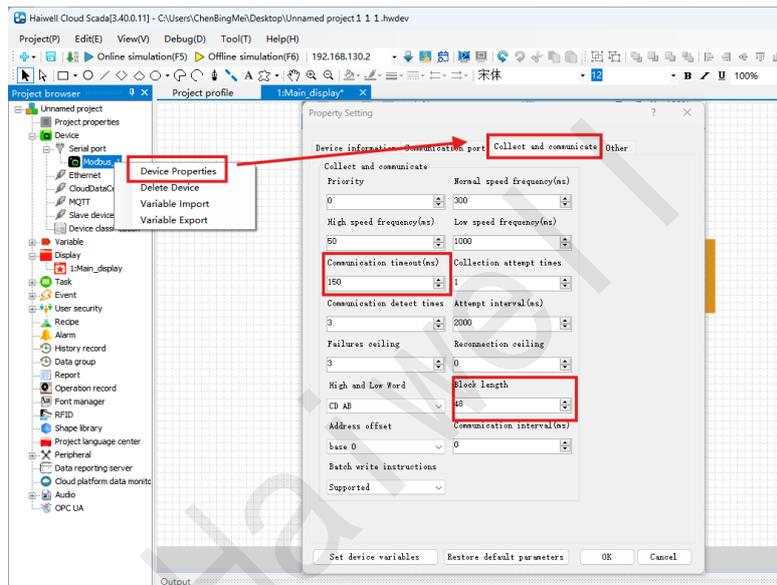


Figure 158: Modifying Collection and Communication Parameters

Step 2: Do not place the power line and 485 line in the same cable tray. Use shielded wires, magnetic rings, filters, etc. to take anti-interference measures.

## 7. HMI can communicate with other instrument devices such as flow meters and electric meters normally, but the values read are different. How to handle this?

The default high and low byte order of HMI devices is CD AB, which needs to be adjusted according to the byte order of the device. If you don't know what the byte order of the device is, you can first use the third-party tool Modbus poll to adjust different byte orders to correspond to different values.

The configuration engineering modifies the byte order position of the device as shown in the following figure.

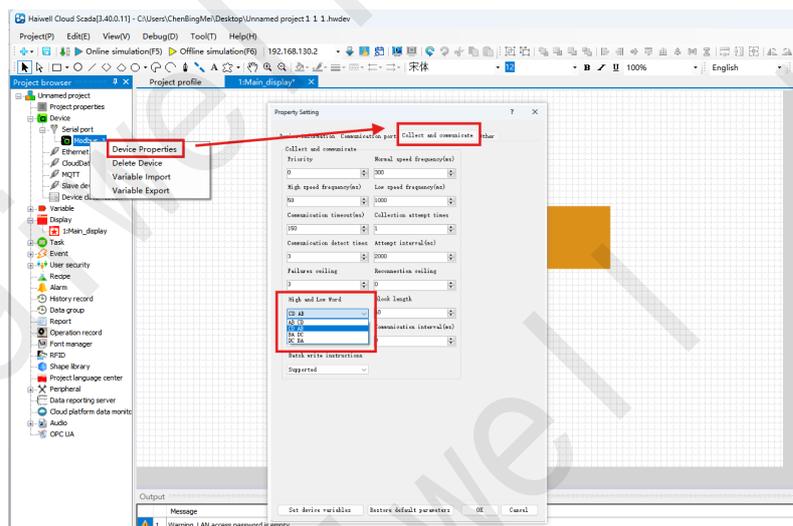


Figure 159: Modifying Collection and Communication Parameters

## 8. How to unbind the machine owner Akey in HMI cloud settings?

Scenario 1: The Akey identity of the user is known and the login account is available

Mobile: Open the Haiwell Cloud app/WeChat mini program, click on the corresponding device in the

cloud device to enter device details, and then click on the top right corner  enter the editing device and finally click to delete the device. (If the device contains other users, you need to delete them first before removing the device.)

On the computer side, enter the Haiwell cloud platform system (ecloud.haiwell.com) through the browser. After logging in, click on the device center - device list, enter the device details for the corresponding device on the right, and finally click on delete device.

Scenario 2: Unable to contact the owner A key

If the machine owner A key cannot be contacted, restoring the HMI factory settings is useless. Please contact the corresponding sales representative in the region for unbinding processing.

## 9. How to troubleshoot if HMI cloud settings are not online?

Step 1: Go to the device background and click on Network Settings - Network Diagnosis. Enter the address cloud.haiwell.com to test if the device is pinging and confirm if it can connect to our server. If it is not possible to troubleshoot the device's network supply issue, you can continue troubleshooting by following the steps below.

Step 2: In the background interface, select "Local Settings" - "Other Settings" and click on "Settings" on the current channel server. For example, switch from the Shenzhen server to the Qingdao server, or switch from the Qingdao server to the Shenzhen server.

Step 3: If it is a 4G network supply, you can try turning off the switch or setting DNS to 223.5.5.5.

## 10. How to deal with HMI displaying no service in the background when placing 4G card?

Step 1: Check if the 4G card status, data balance, and internet access are normal. If the 4G card is a targeted card, domain name binding is required. (Domain Name Reference Appendix)

Step 2: When the HMI is powered off, place the 4G card with the chip facing the pins.

Step 3: Long press the upper right corner of the HMI for 5 seconds to enter the background settings - network settings -4G, turn on the 4G switch, and check if the interface information can read card number, signal strength, and other information normally.

Step 3: Long press the upper right corner of the HMI for 5 seconds to enter the background settings - network settings -4G, turn on the 4G switch, and check if the interface information can read card number, signal strength, and other information normally.

Step 4: Background settings - network settings - network diagnostics. Use the diagnostic tool to select www.baidu.com (Haiwell cloud: cloud.haiwell.com) to ping whether the connection can be normal. If the device can ping cloud.haiwell.com, the device cloud status is offline, return to the background settings - local settings - other settings, and click to set the current server channel switch (Chinese Mainland switches to Shenzhen, China or Qingdao, China, and other countries or regions select Hong Kong, China, or a server channel closer to it)

## 11. How to handle HMI WiFi connection failure?

Step 1: Check if the WiFi antenna of the HMI is installed properly, and place the antenna close to the signal source.

Step 2: The HMI requires a WiFi frequency band of 2.4GHz.

Step 3: The WiFi name and password do not contain spaces or special symbols.

## 12. How to deal with VPN transmission failure to connect to PLC?

Step 1: Check if the computer network segment is in the same network segment as the PLC. If so, it is recommended to modify the computer network segment or switch to another network supply method (WIFI).

Step 2: Check if the IP address of the virtual network card created by the computer firewall and antivirus software is correct.

Step 3: After completing the above steps without any errors, the computer can uninstall the VPN tool. The uninstallation file path is: C:\Program Files\OpenVPN, Double click Uninstall.exe to uninstall VPN. Next, open the configuration software and the VPN tool will be automatically reinstalled when performing VPN transparent transmission operation. Finally, follow the normal transparent transmission operation steps.

## 13. How to handle RTSP cameras that can display images but cannot be controlled?

Attention should be paid to the resolution of the camera, which is recommended to be 1920 \* 1080P or below, and the frame rate should be 25fps or below. If it reports "ONVIF verification failure or network abnormality", first check if the integrated protocol is enabled for the Hikvision camera.

## 14. RTSP access to Hikvision camera using configuration camera example path cannot be displayed, how to handle it?

Touch screen using RTSP to access Hikvision camera. The example path for configuring the camera is as follows: "rtsp://admin:1230192.168.1.1:554/h264/ch1/main/av\_stream" When unable to display, you can try a new path "rtsp://account: password@camera IP:554/Streaming/Channels/101"

## Appendix

### 1. Self-shopping IoT network card binding domain name collection

Serial Number	Agreement	Wildcard Domain Name
1	UDP	time.windows.com
2	UDP	*.ntp.org.cn
3	TCP UDP HTTP HTTPS	*.tunnel.iotbus.net
4	HTTP HTTPS WS WSS	*.haiwell.com
5	TCP UDP MQTT	*.iotbus.net
6	TCP UDP MQTT	*.cloud.haiwell.com
7	TCP UDP	47.107.224.237
8	TCP UDP ICMP	223.5.5.5