Haiwell 海为®

Haiwell D Series Intelligent HMI

Haiwell Intelligent HMI Instructions

Edit History

Date	Author	Revise Content
2025/02/20	Overseas Department	V20250220NO.1
2025/05/27	Overseas Department	V20250527NO.2
2025/07/24	Overseas Department	V20250724NO.3
2025/08/21	Overseas Department	V20250821NO.4

- V20250527NO.2: HMI hardware parameters upgrade.
- V20250724NO.3: Illustration of the serial port of the added D4 HMI.
- V20250821NO.4: Adjust the product specification table description.

Catalogue

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 project 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						
Display	Monitor	4.3〃 TFT	7〃 TFT		10.1〃 TFT		15.6〃 TFT	
	Resolution	800x480 pixels	1024x600 pixels		1280x800 pixels		1920x1080 pixels	
	Colour	16.7M					262K	
	Brightness	280 cd/m²	450 cd/m²		400 cd/m²		350 cd/m²	
	Viewing angle	80'/80'/80'/80'	85'/85'/85'/85'					
	Touch type	Resistance-type	Capacitive-type					
Backlight	Backlight type	LED						
	Lifespan of backlight	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%						
	Power consumption	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						
	Insulation impedance	500V AC						
	Insulation impedance	Exceed 50MΩ @500VDC						
Environment	Vibration resistance	10~25 Hz (X、Y、Z axis 2G/30 minutes)						

	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）						
	Usage 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					
	External dimensions (WxHxD)	137x85x30mm	193x120x33mm		260x167x32mm		394x256x45mm	
	Hole 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	Support 802.11b/g/n, optional						
	Wireless Network	4G optional	Supports 4G full network connectivity (with built-in eSIM), 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	External	Built-in	External	Built-in	External	Built-in
Certification	Certification type	/	CE					

2. Product Model List

3. Model	TFT screen	Storage	LAN+COM	USB	Intelligent configuration	Voice	Local video	RFID	Satellite positioning	WIFI	Wireless network	Hole size W*H（mm）	Product size W*H*D（mm）
D4	4.3" 800*480 HD	4G+512M	1+2	1		Yes						132*80 Rounding chamfer:R7mm	137*85*30
D4-G		4G+512M	1+2	1		Yes					4G（China）		
D4-W		4G+512M	1+2	1		Yes				Yes			
D7	7" 1024*600 HD Capacitive Screen Aluminum Alloy Shell	8G+512M	1+3	1	speaker	Yes						187*114 Rounding chamfer: R7mm	193*120*33
D7-G		8G+512M	1+3	1	speaker	Yes					*Build-in eSIM		
D7-W		8G+512M	1+3	1	speaker	Yes				Yes			
D7-GP		8G+512M	1+3	1	speaker	Yes			Yes		*Build-in eSIM		
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		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes					
D7 Pro-G		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes			*Build-in eSIM		
D7 Pro-W		8G +1G	2+3	2	microphone, speaker	Yes	Yes	Yes		Yes			
D7 Pro-GP		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 HD Capacitive Screen Aluminum Alloy Shell	8G +1G	1+3	1	speaker	Yes						254*161 Rounding chamfer: R7mm	260*167*32
D10-G		8G +1G	1+3	1	speaker	Yes					*Build-in eSIM		
D10-W		8G +1G	1+3	1	speaker	Yes				Yes			
D10-GP		8G +1G	1+3	1	speaker	Yes			Yes		*Build-in eSIM		
D10-GW		8G +1G	1+3	1	speaker	Yes				Yes	*Build-in eSIM		
D10-E		8G +1G	1+3	1	speaker	Yes					Global 4G		
D10-EW		8G +1G	1+3	1	speaker	Yes				Yes	Global 4G		
D10 Pro		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						383*245 Rounding chamfer: R7mm	394*256*45
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		

Note: The functions marked with * are only available in China.

III. Product Description

1. Product Front Appearance

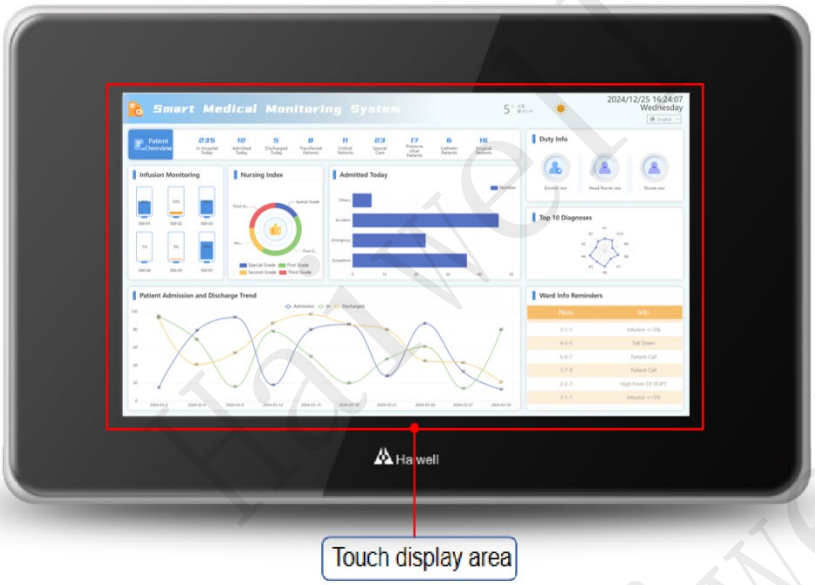


Figure1 HMI D4

Figure2 HMI D7

Figure3 HMI D7 Pro

Figure4 HMI D10

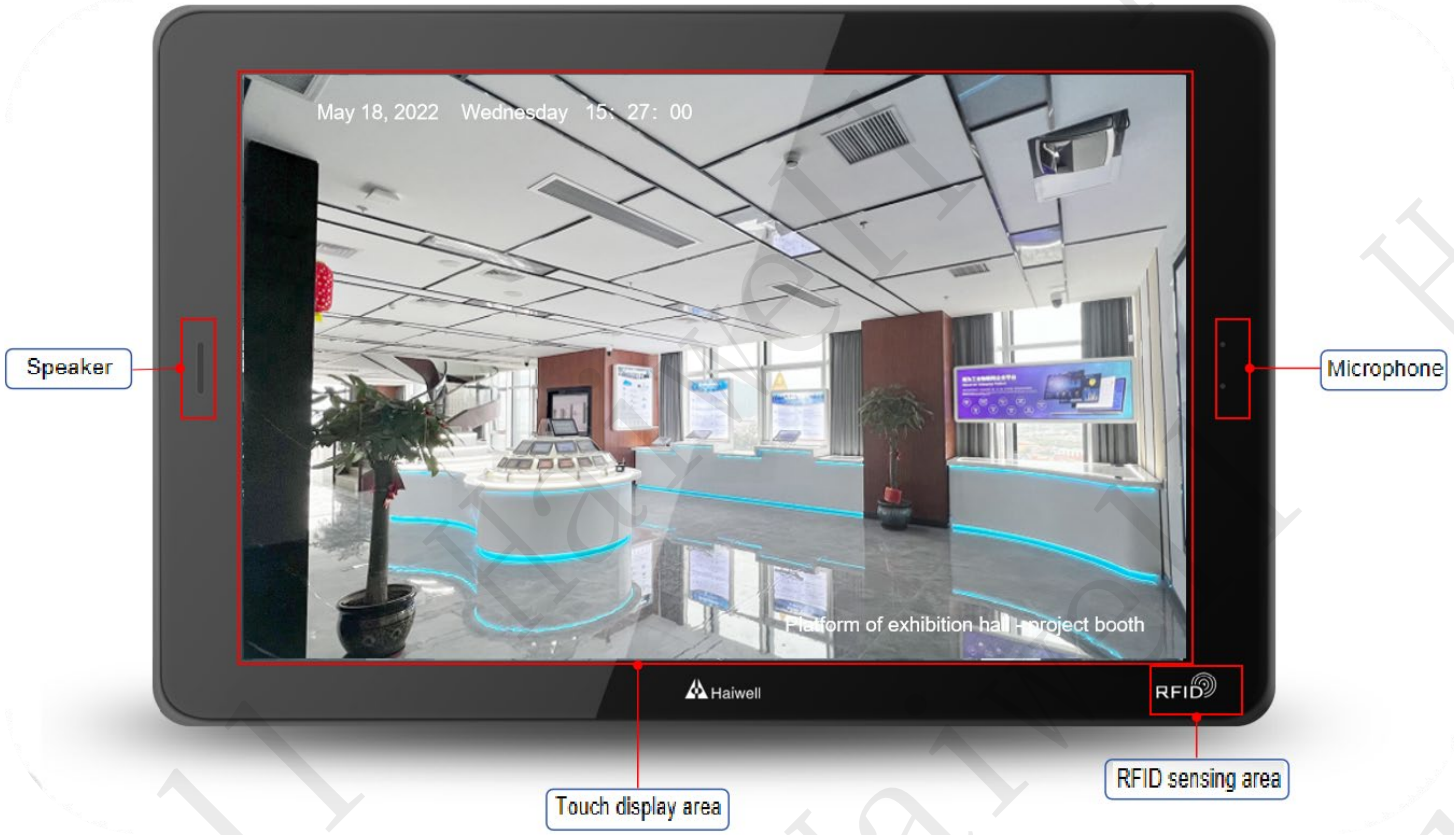


Figure5 HMI D10 Pro

Figure6 HMI D15

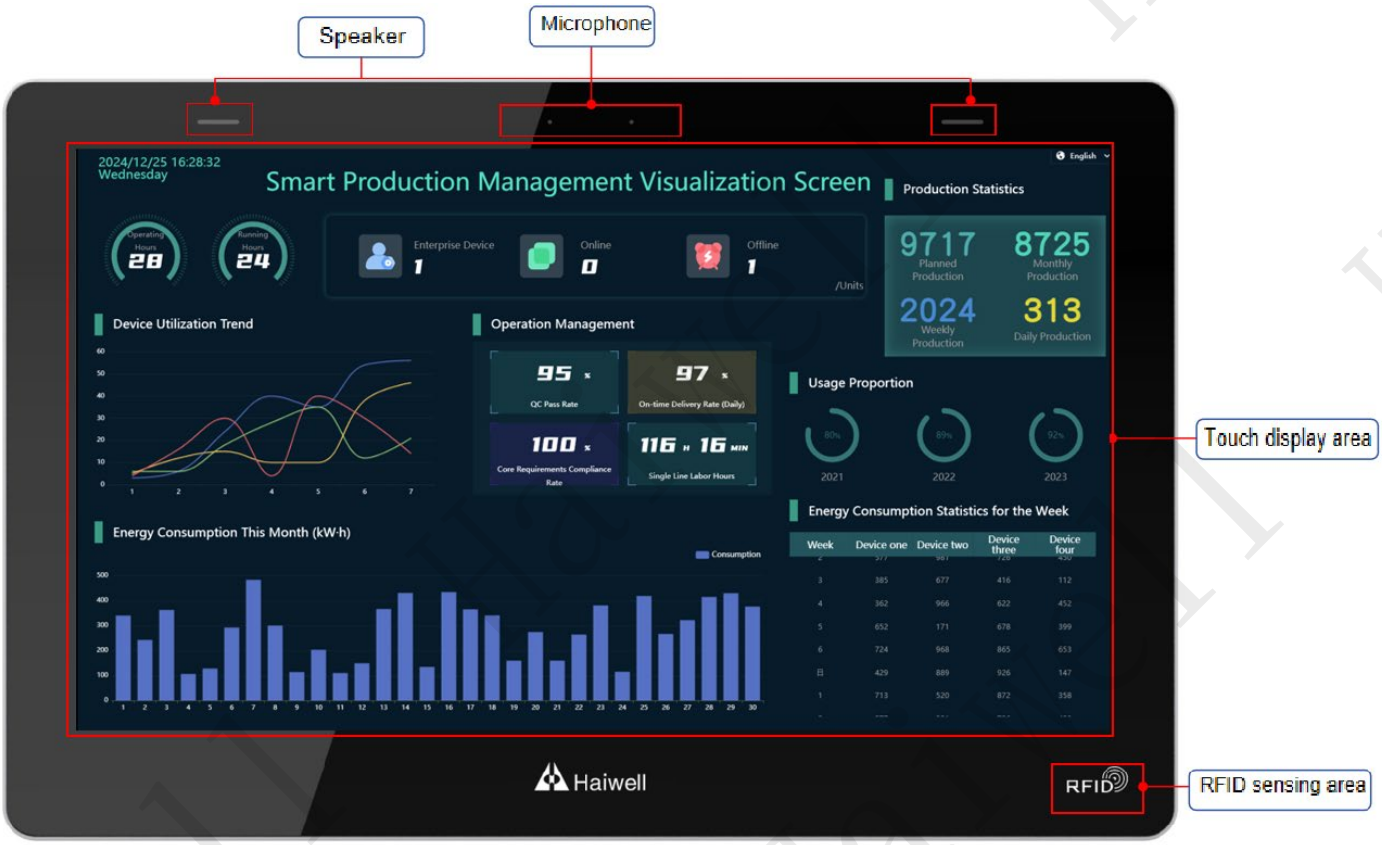


Figure7 HMI D15 Pro

2. Product Back Side Description

Figure8 Instructions on the Back of HMI

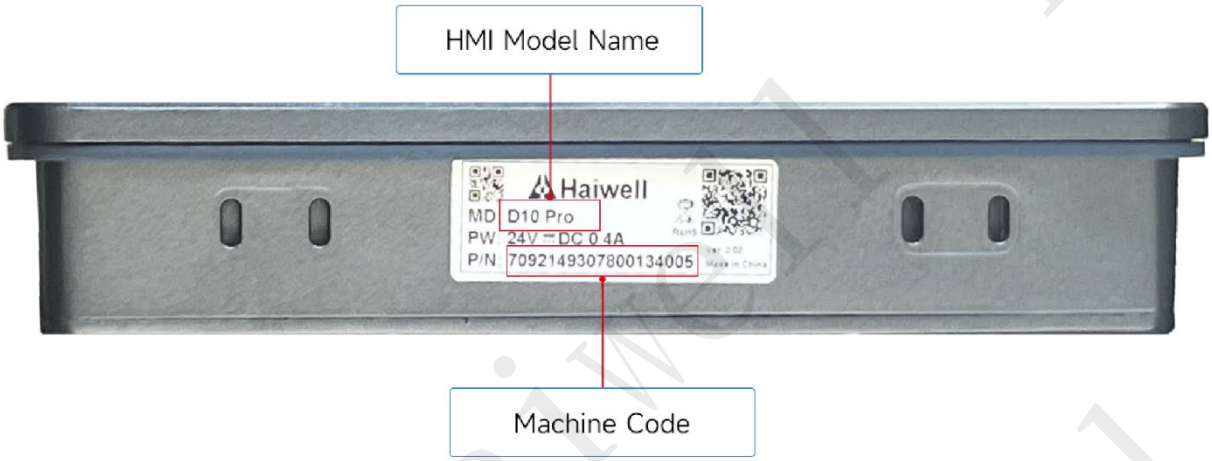


Figure9 HMI Side Description

3. Products Size

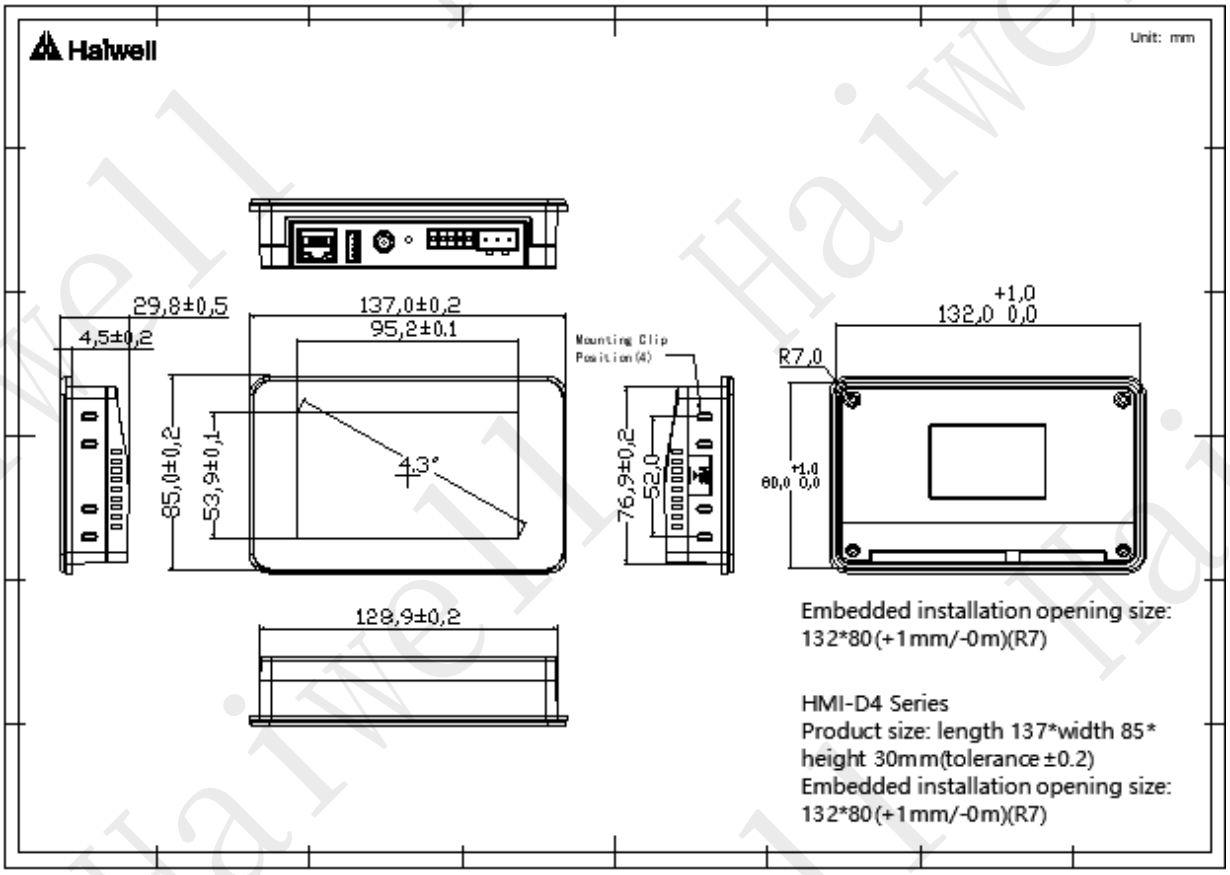


Figure10 HMI D4

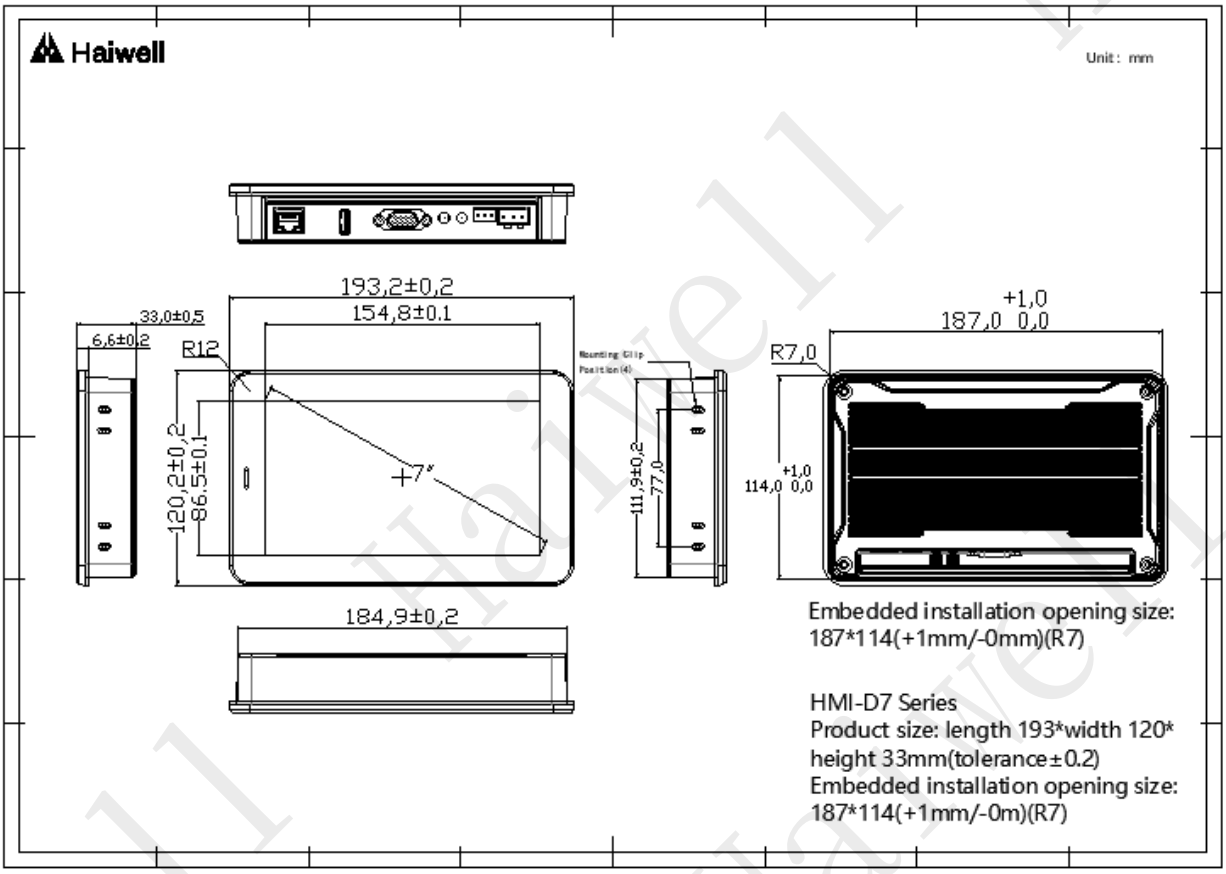


Figure11 HMI D7

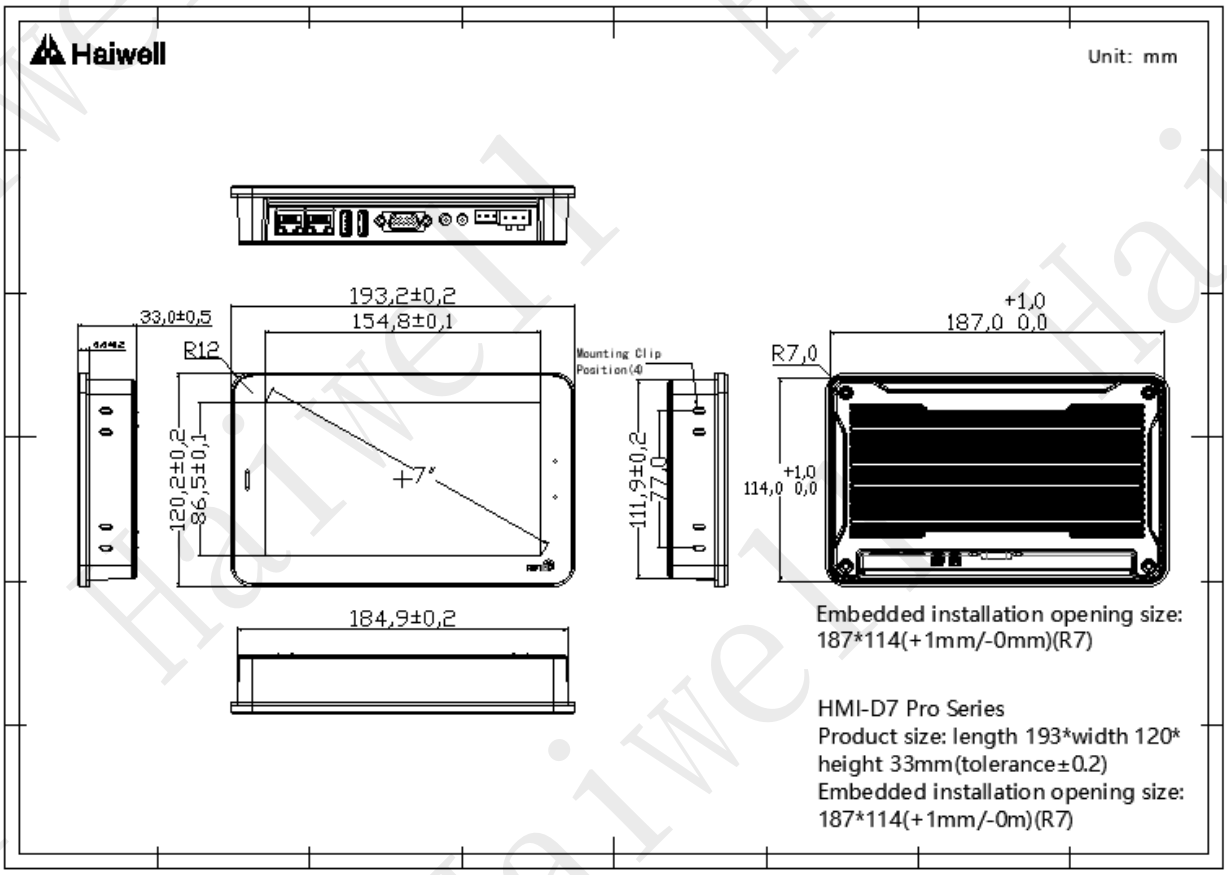


Figure12 HMI D7 Pro

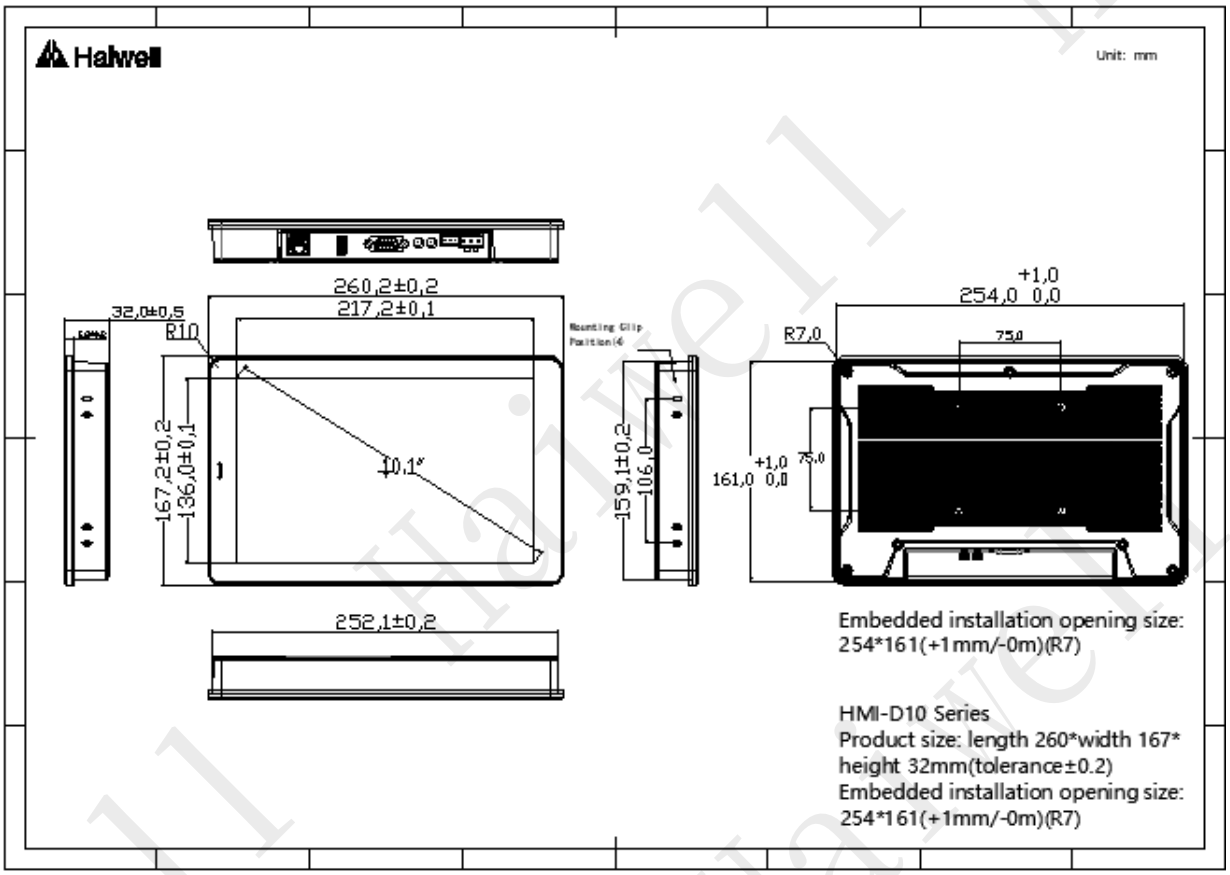


Figure13 HMI D10

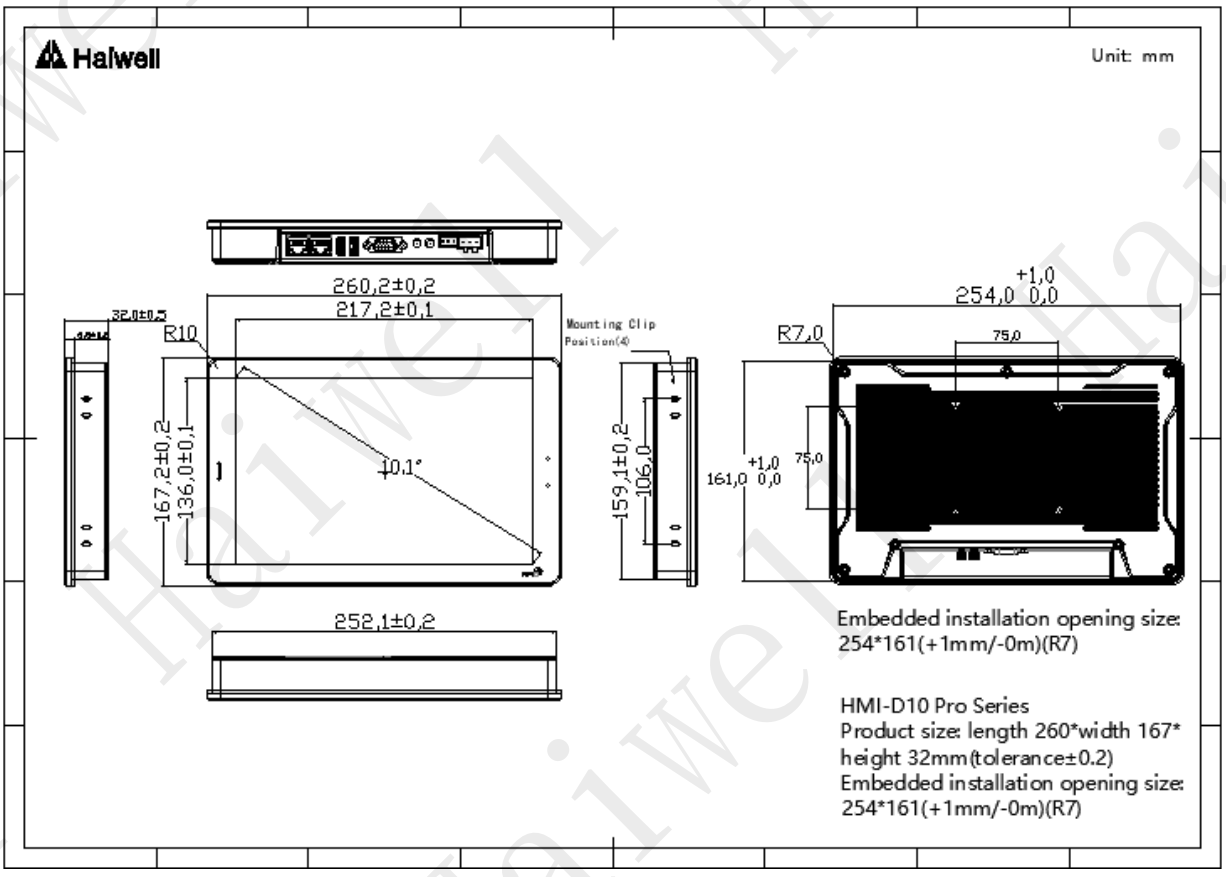


Figure14 HMI D10 Pro

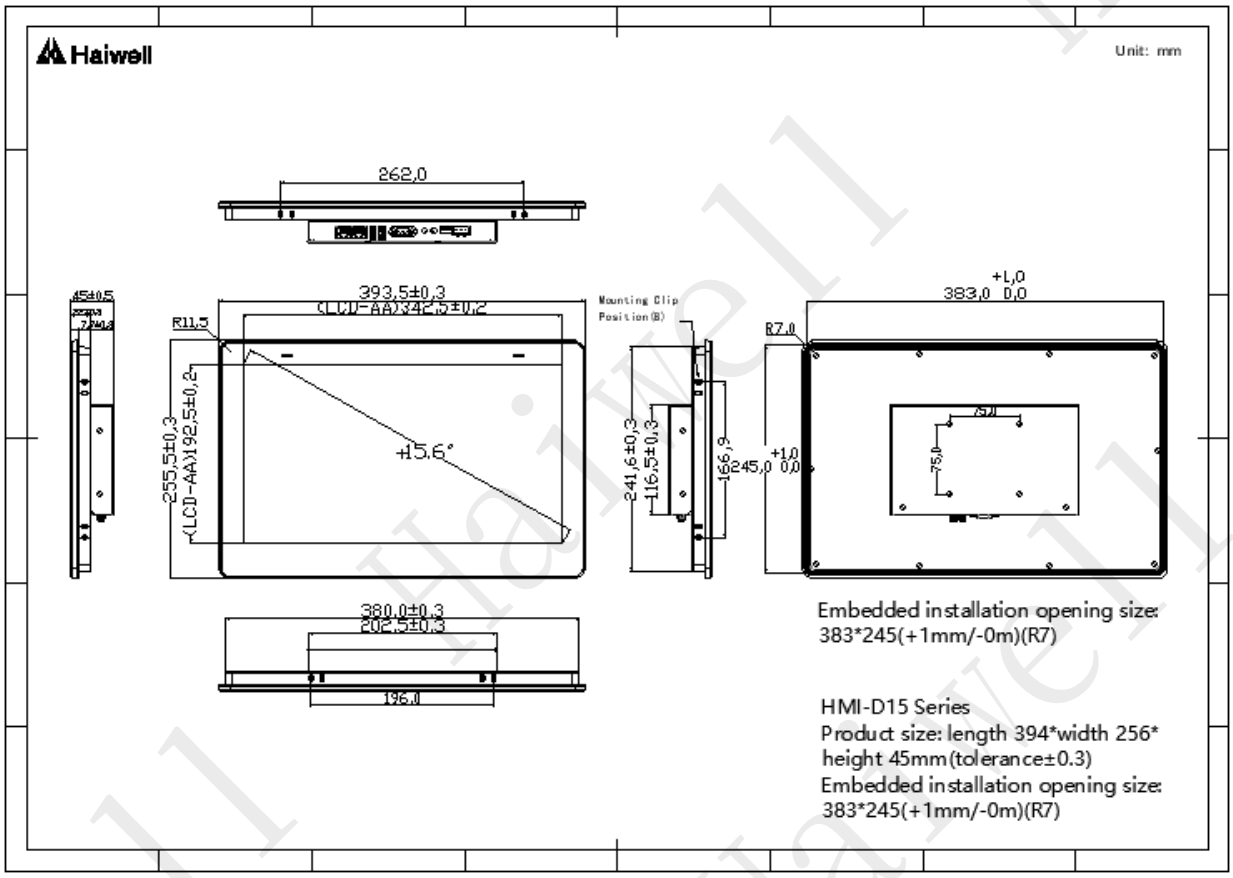


Figure15 HMI D15

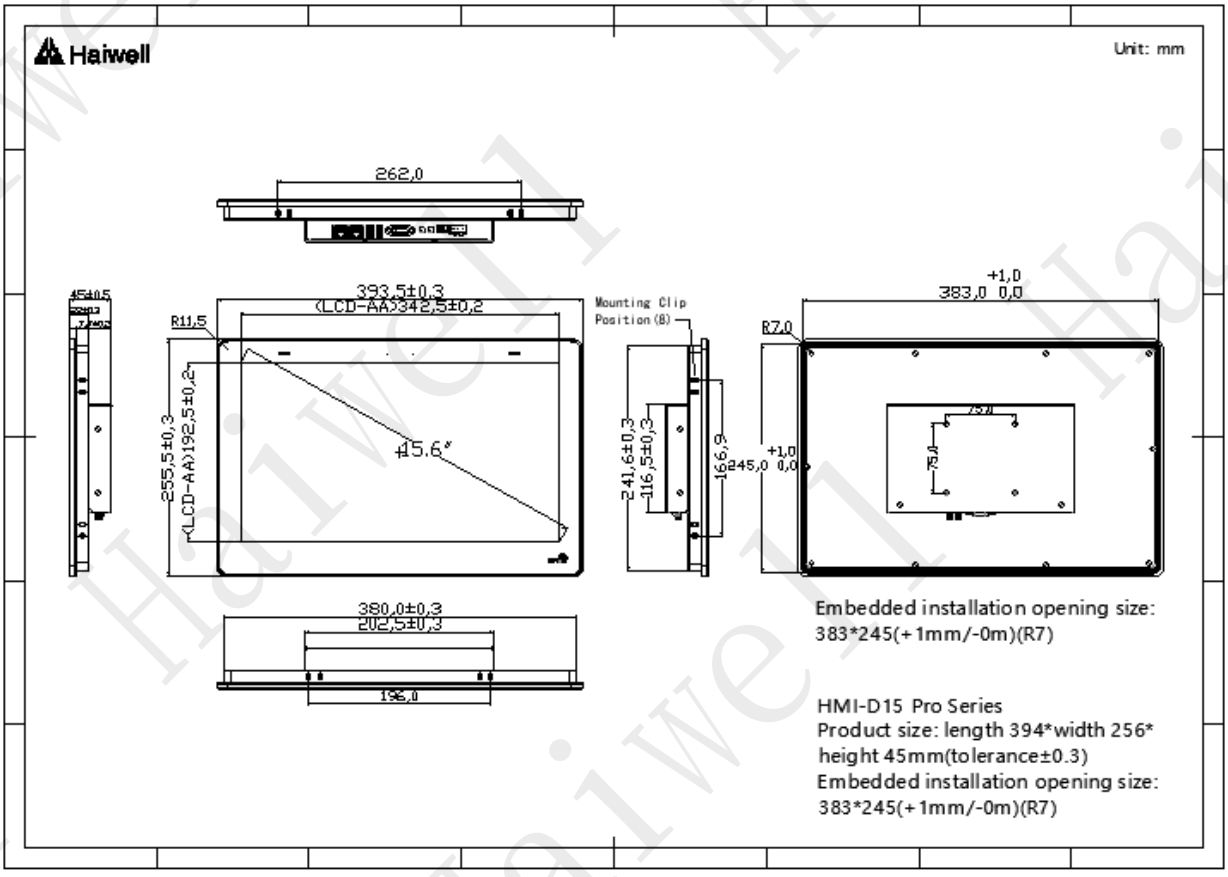


Figure16 HMI D15 Pro

4. Product Interface

4.1 Interface Diagram

（1） HMI D4/D4-G/D4-E/D4-W

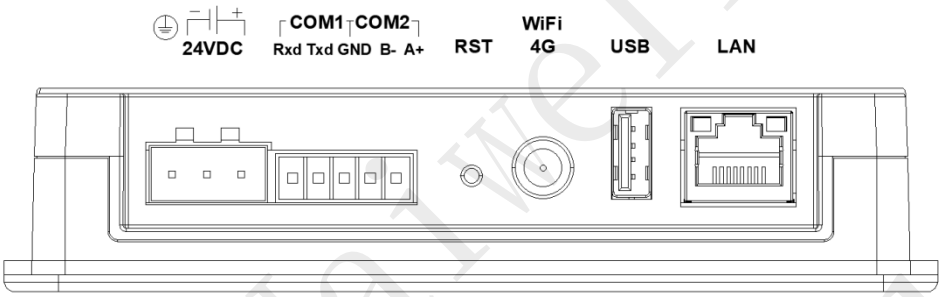


Figure17 HMI D4 Common Interface

（2） HMI D7/D7-G/D7-W/D7-GP/D7-GW/D7-E/D7-EW

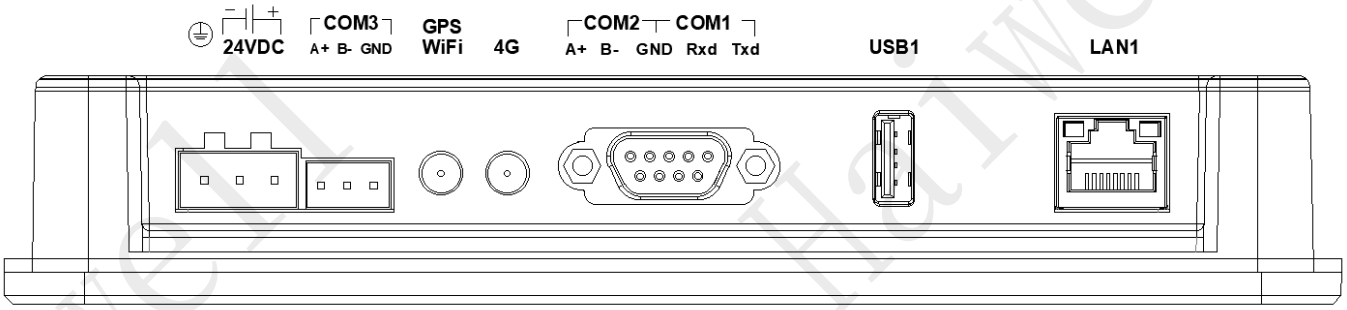


Figure18 HMI D7 Common Interface

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

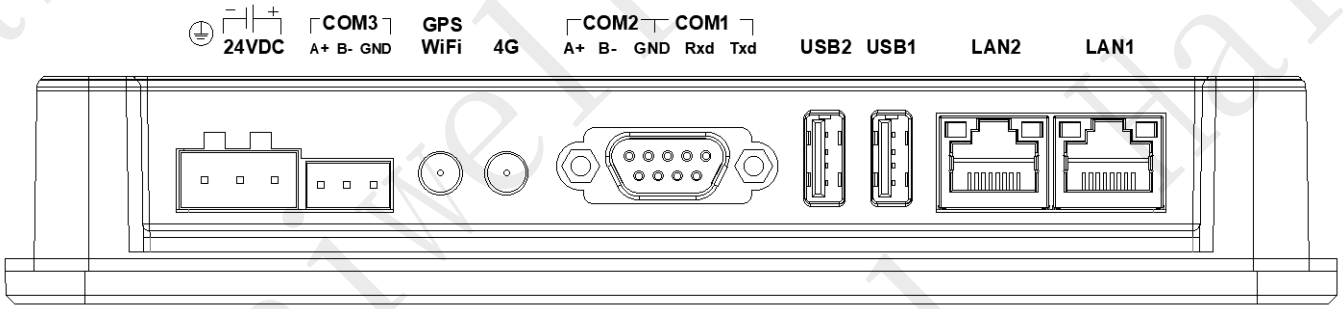


Figure19 HMI D7 Pro Common Interface

（4） HMI D10/D10-G/D10-W/D10-GP/D10-GW/D10-E/D10-EW

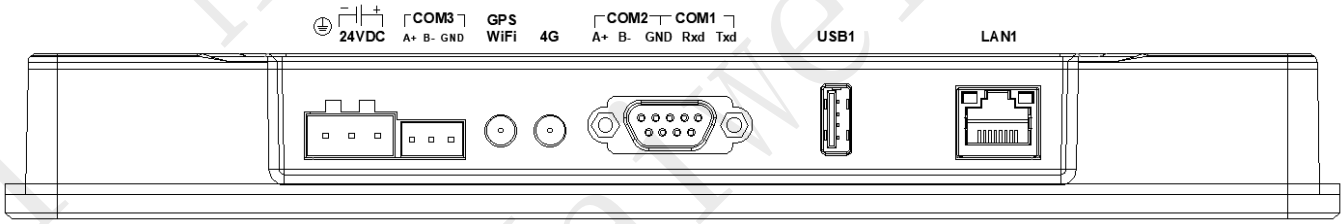


Figure20 HMI D10 Common Interface

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

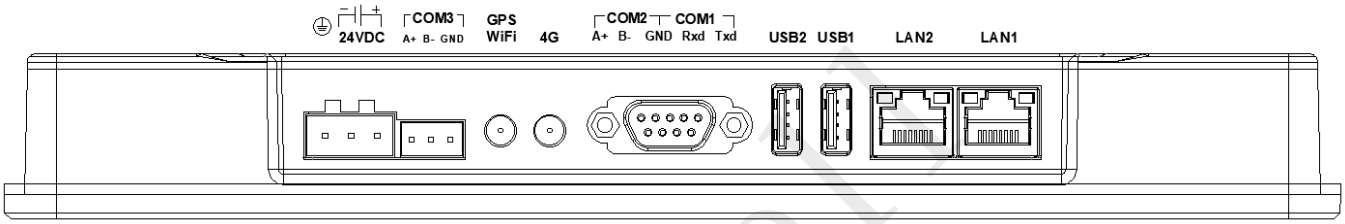


Figure21 HMI D10 Pro Common Interface

（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

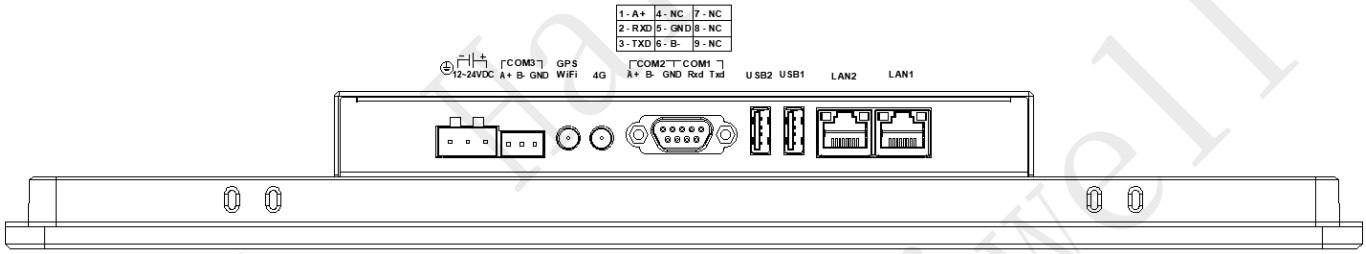


Figure22 HMI D15/D15 Pro Common Interface

4.2 Definition of Communication Interface

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

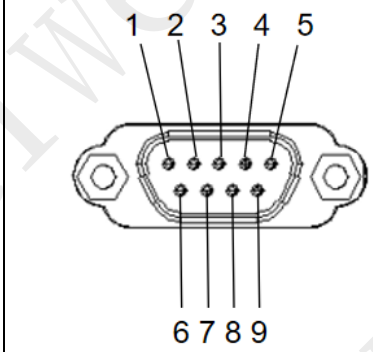
COM1/COM2 Definition of Nine Pin Serial Port Pins			
 RS232:COM1 RS485:COM2	Pin No	Definition	Pin Instructions
	1	COM2:A+	RS485communication “A+”
	2	COM1:RXD	RS232 communication receiving data
	3	COM1:TXD	RS232 communication sending data
	4	NC	None Signal
	5	COM1:GND	Signal ground wire
	6	COM2:B-	RS485 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)

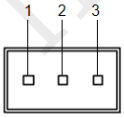
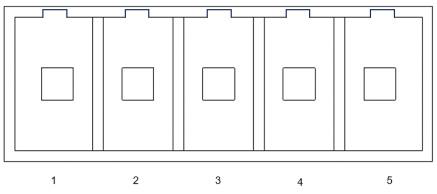
COM3 RS485 Pin Definition			
	Pin No	Definition	Pin Instruction
	1	COM3:A+	RS485 communication “A+”
	2	COM3:B-	RS485communication “B-”
	3	COM3:GND	Signal ground wire

Table 3 Definition of Five Pin Serial Port Pins (D4 Series)

COM1/COM2 Definition of Five Pin Serial Port Pins			
 RS232:COM1 RS485:COM2	Pin No	Definition	Pin Instructions
	1	COM1:RXD	RS232 communication receiving data
	2	COM1:TXD	RS232 communication sending data
	3	COM1/2:GND	Signal ground wire
	4	COM2:B-	RS485 communication “B-”
	5	COM2:A+	RS485communication “A+”

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.

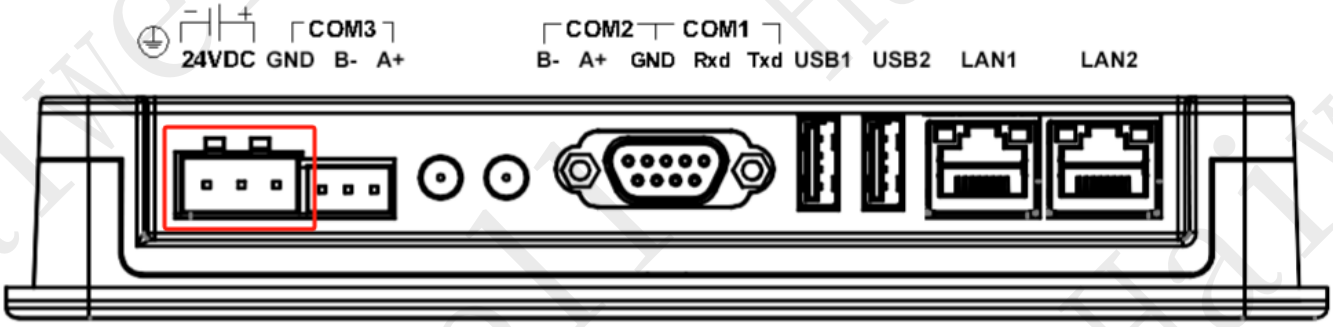


Figure23 Power Supply Terminal

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.

2. 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.

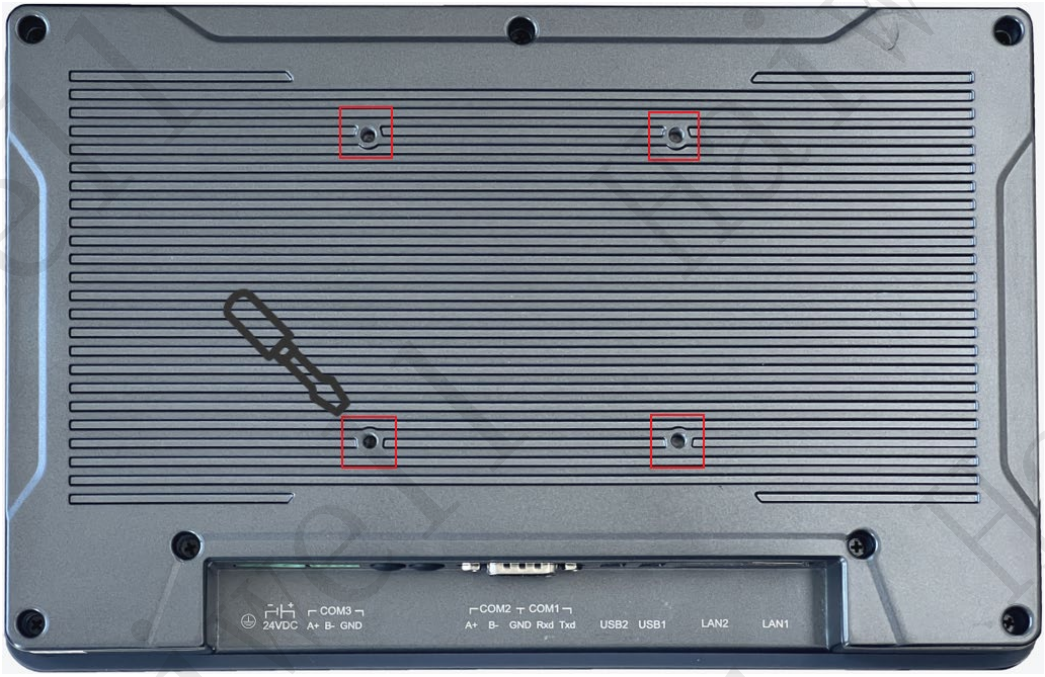


Figure26 Bracket Arm Installation

Note:

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.

Note:

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.

Note:

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.

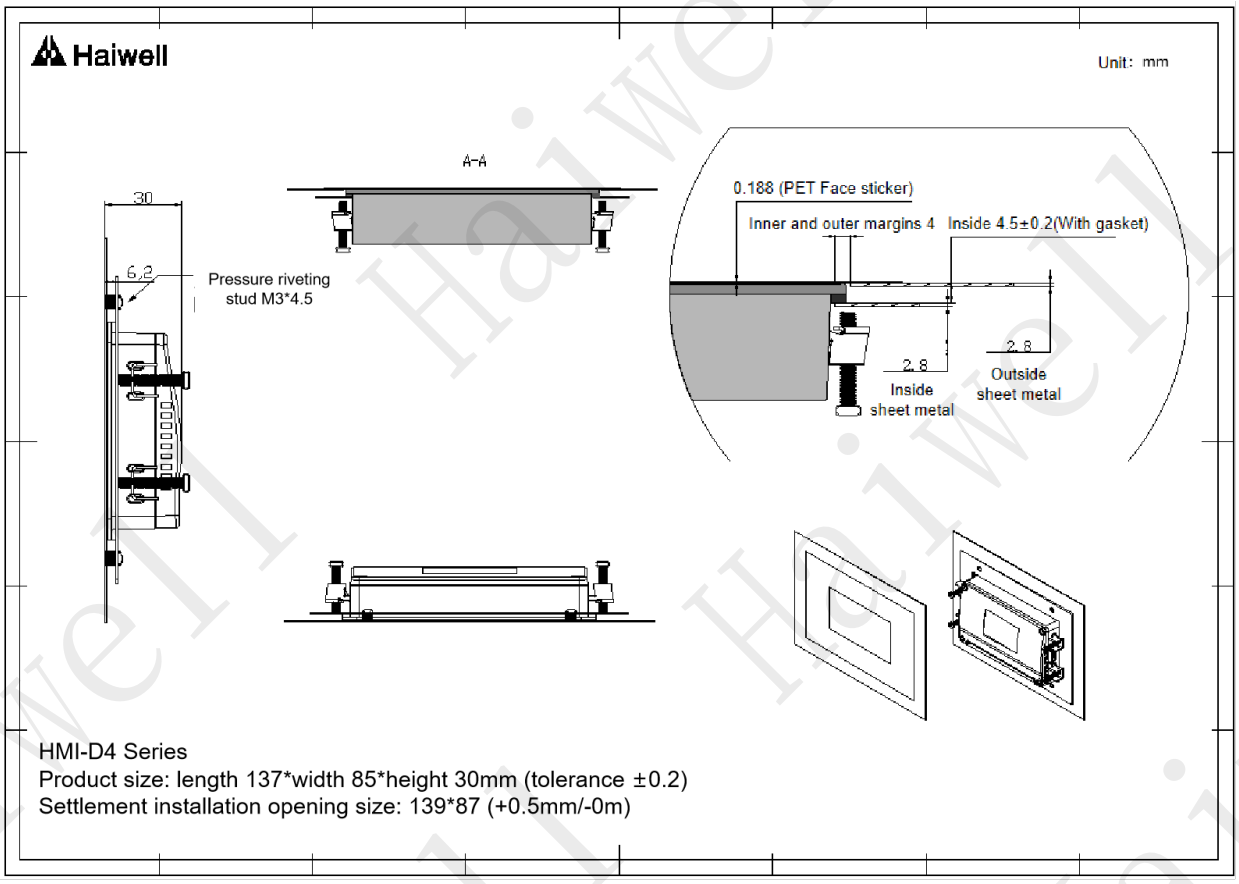


Figure27 HMI D4 Series Settlement Installation

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.

Figure28 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.

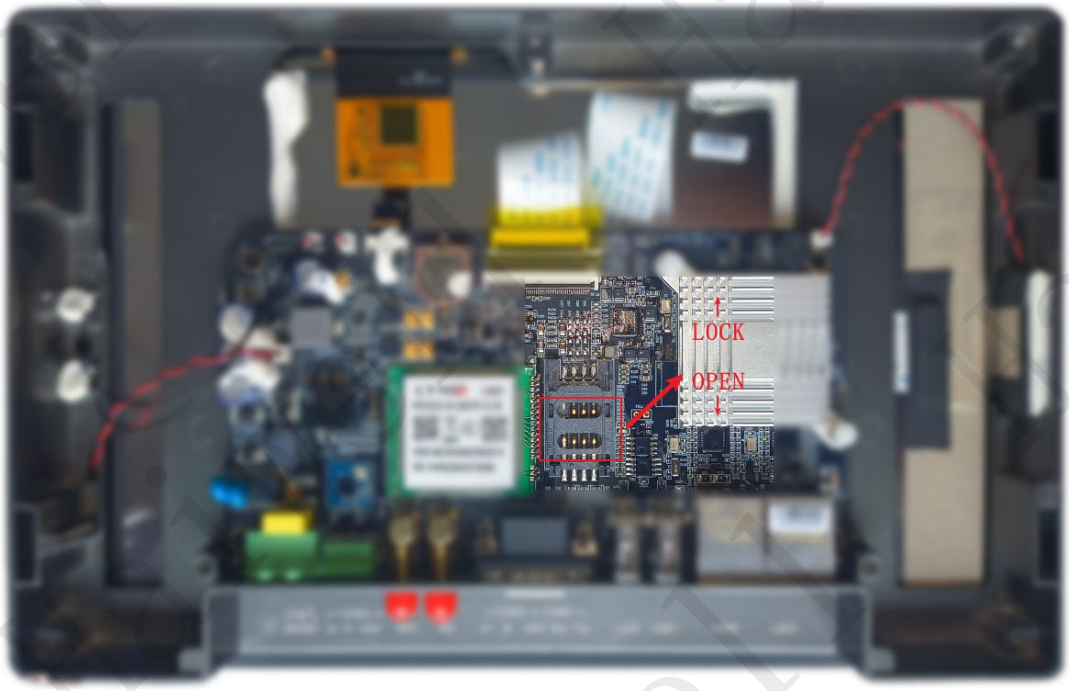


Figure29 HMI 4G Card Installation

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/ Satellite positioning 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 Figure30 below:

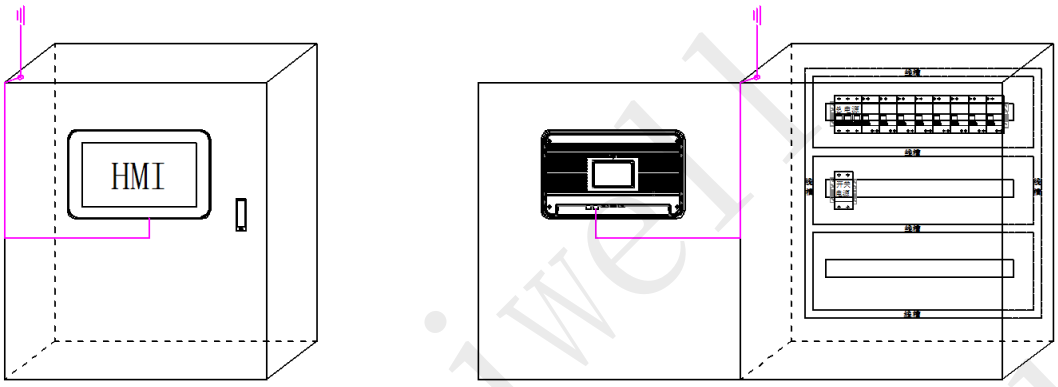


Figure30 Schematic Diagram of HMI Antenna Installation

V. HMI Settings

1. HMI Supporting Software

Haiwell HMI needs to be used in conjunction with Haiwell SCADA editing software. Please download it from the official website of Haiwell Software Download Center.

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.

Figure31 Entering Background Settings

2.2 Project Setting

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

（1） Connection Network Project

Enter the HMI background Settings screen, click【Project Settings】, click【Connect to Network Project】, 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.

（2） Download Project

① Generate 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】.

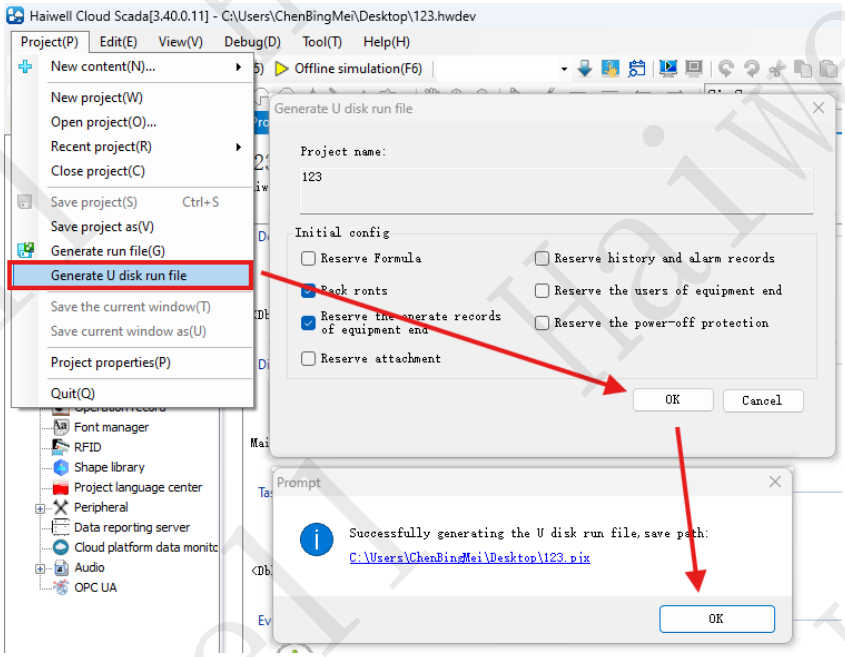


Figure33 Generate the USB Flash Drive Run File

② USB Flash Drive Download Project

Step 1: Enter the HMI background setting interface, click【Project setting】, enter the project 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.

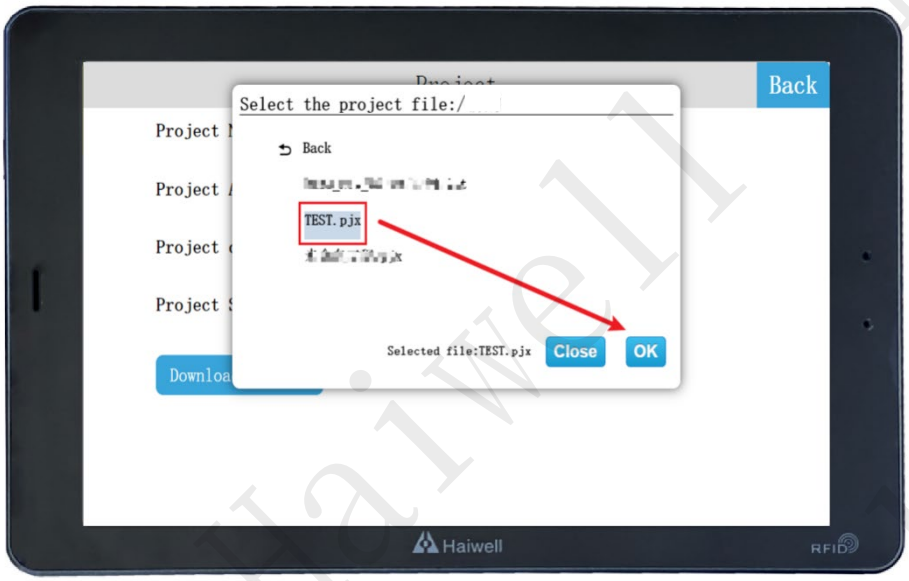


Figure34 USB Flash Drive Download Project

2.3 The Local Settings Mainly Set the Basic Functions and Parameters of the HMI

（1） Local Settings

① Set 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.

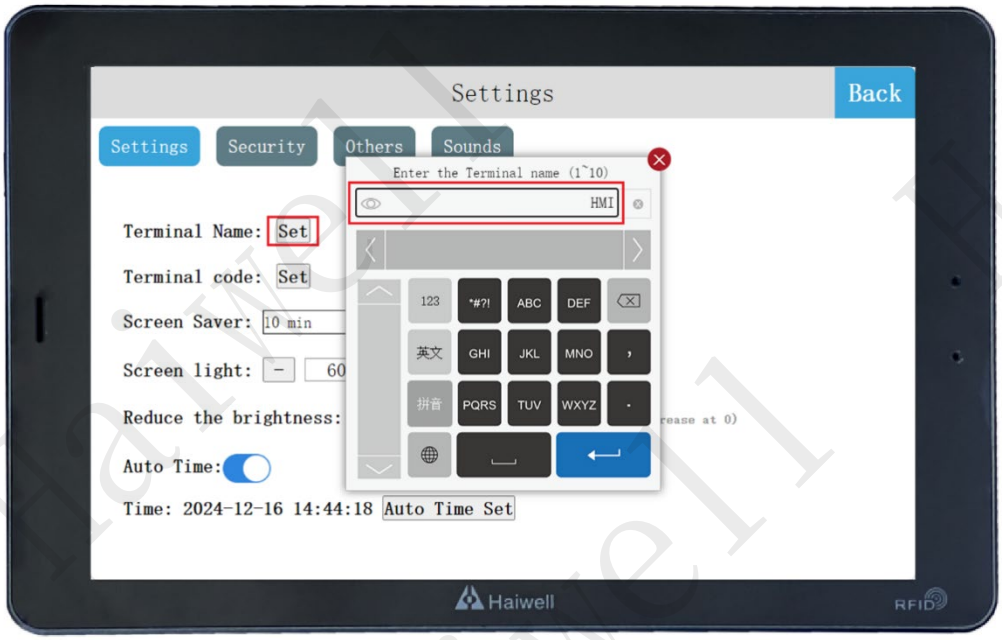


Figure35 Setting the Terminal Name

Note: The terminal name contains 1 to 10 characters.

② Set 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.

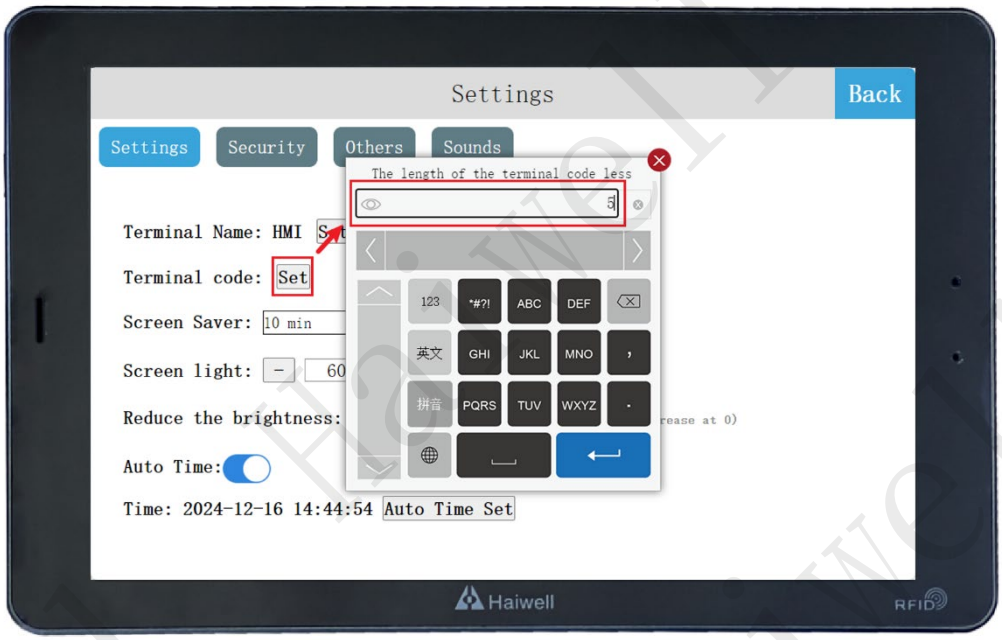


Figure36 Setting the Terminal Number

Note: The terminal number contains 0 to 10 characters.

（2） Set 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

（3） Security Settings

① Download 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.

② Access 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.

③ LAN 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.

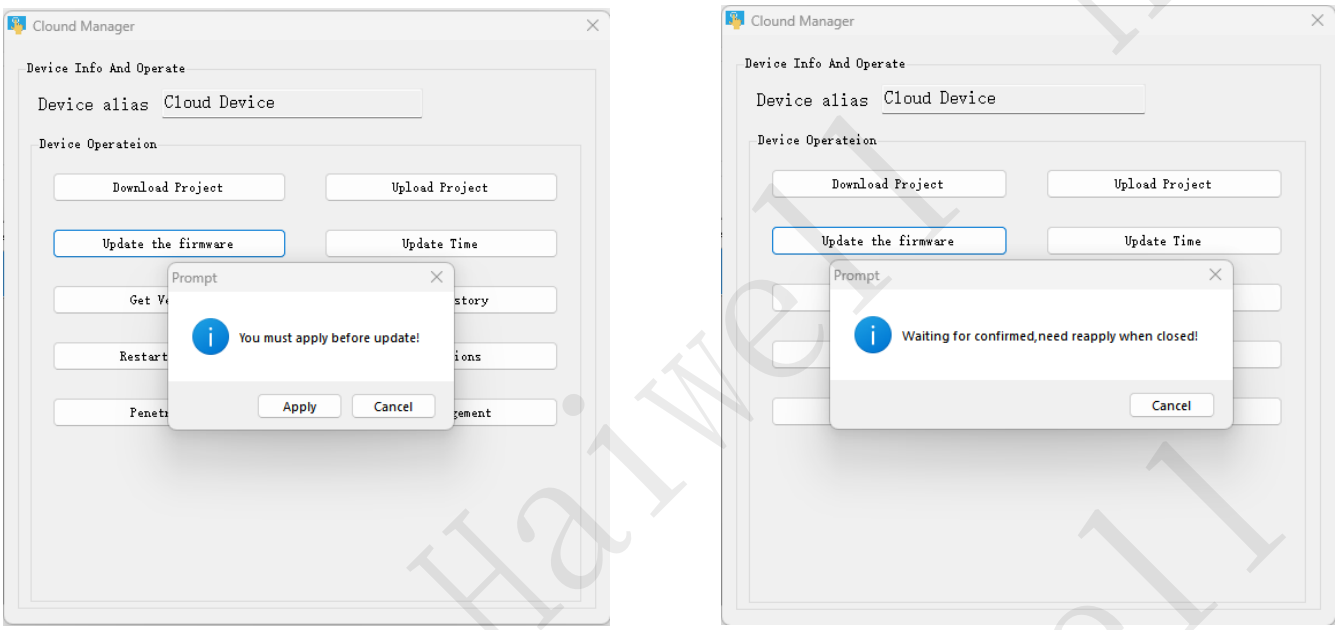
Figure41 Set the LAN Access Password

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

④ Cloud Management Firmware and Project 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 project.



(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).

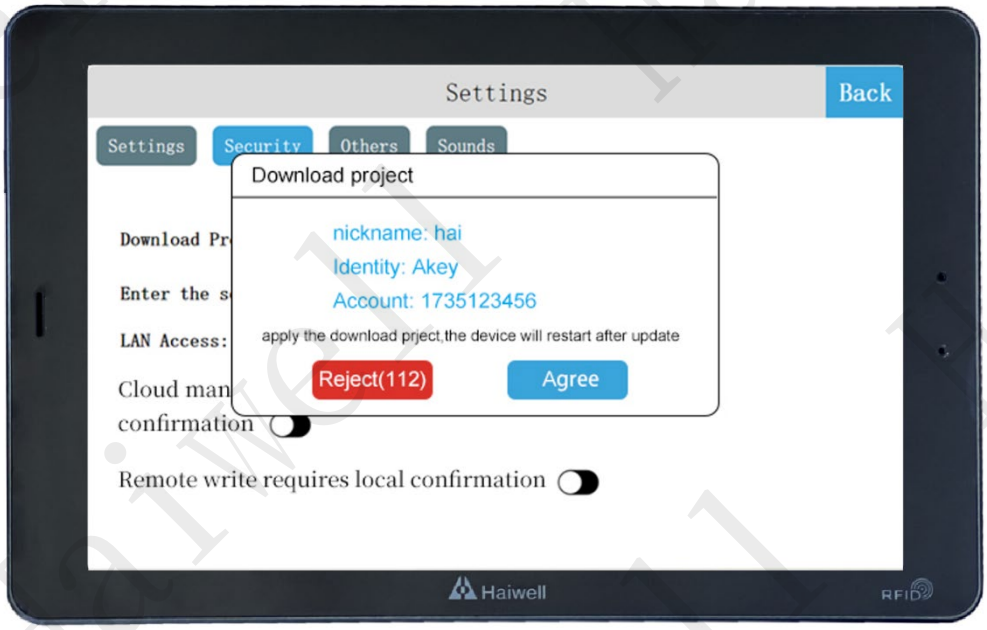


Figure44 HMI Remote Download Project Prompt Box

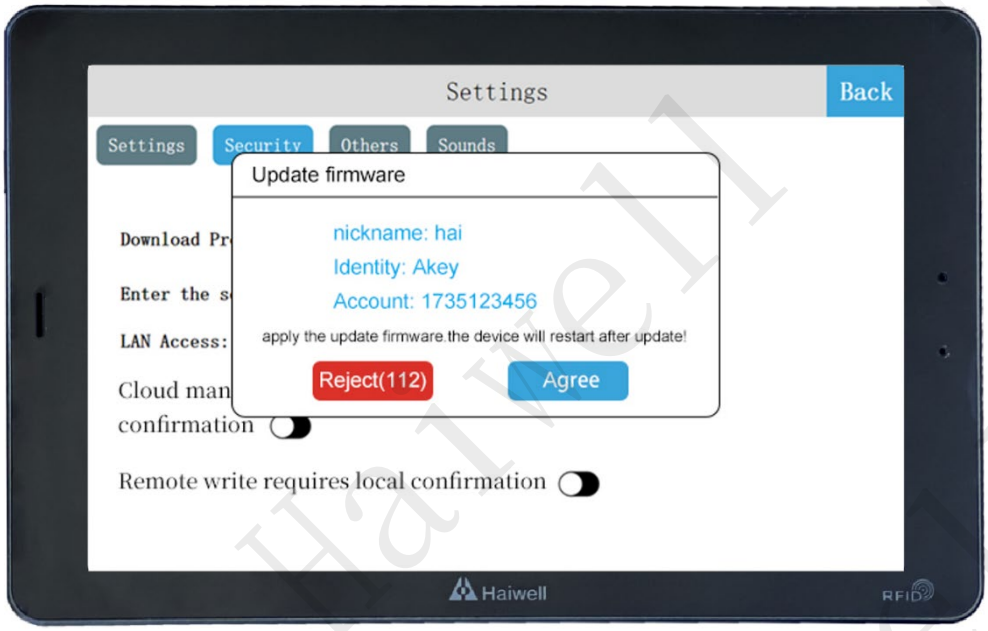


Figure45 HMI Remote Firmware Update Prompt Box

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.

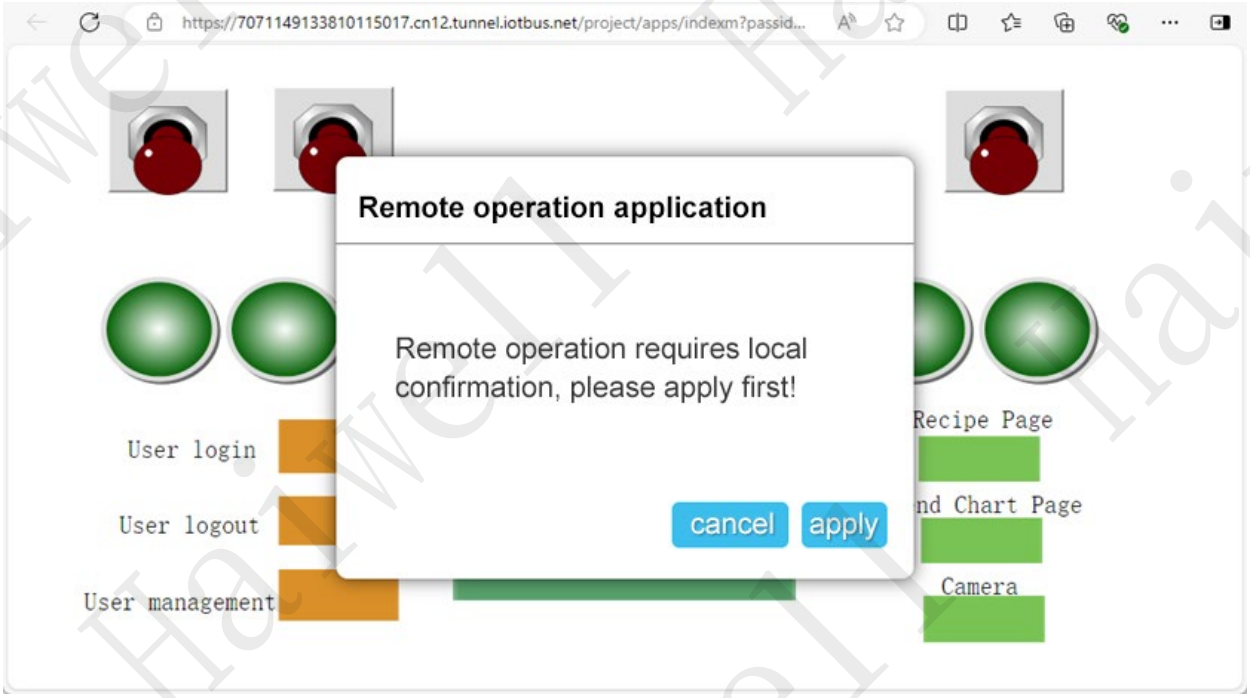


Figure46 HMI Remote Firmware Update Prompt Box

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).

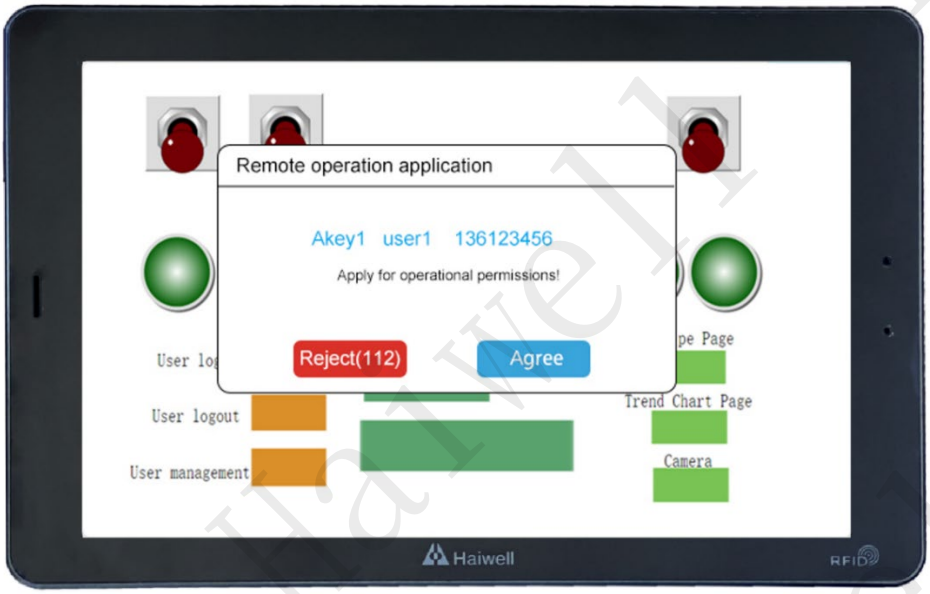


Figure47 HMI Remote Operation Request Prompt Box

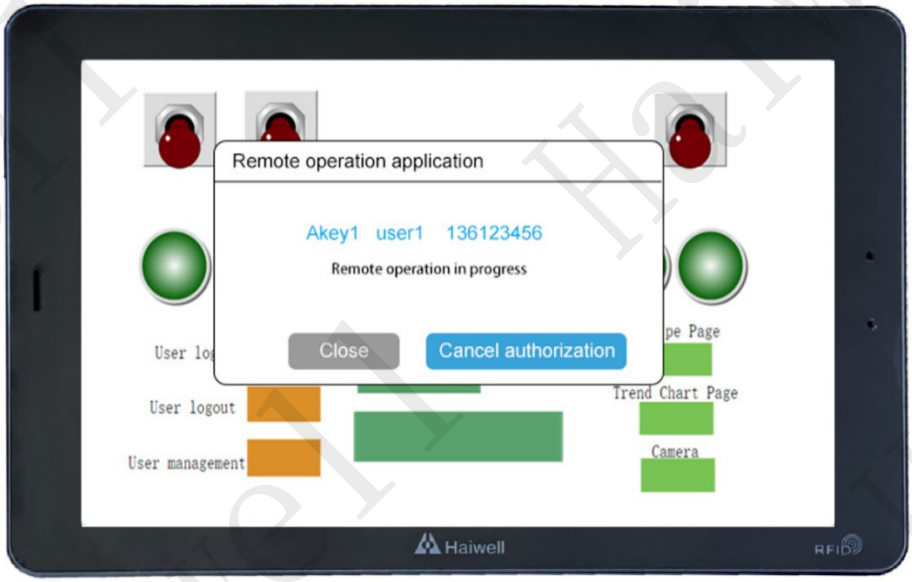


Figure48 HMI Remote Operation Request Authorization

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

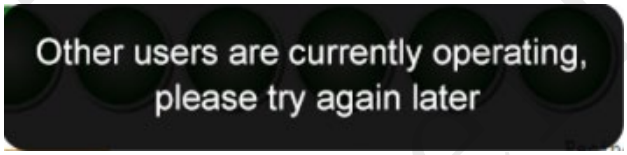


Figure49 HMI Prompt Box

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.

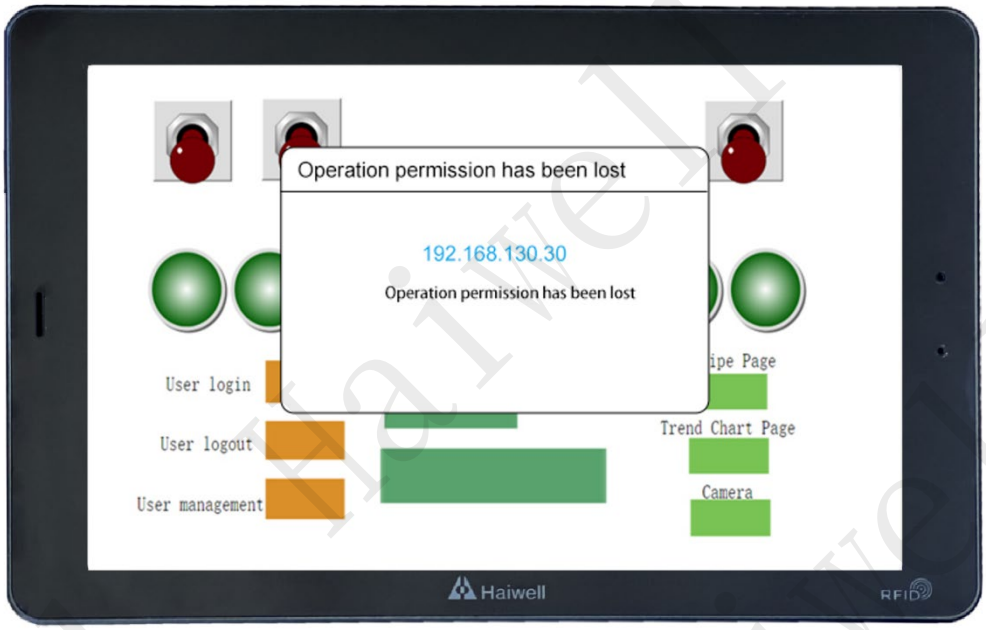


Figure51 HMI the Operation Permission has been Lost

（4） Other Settings

① Set 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

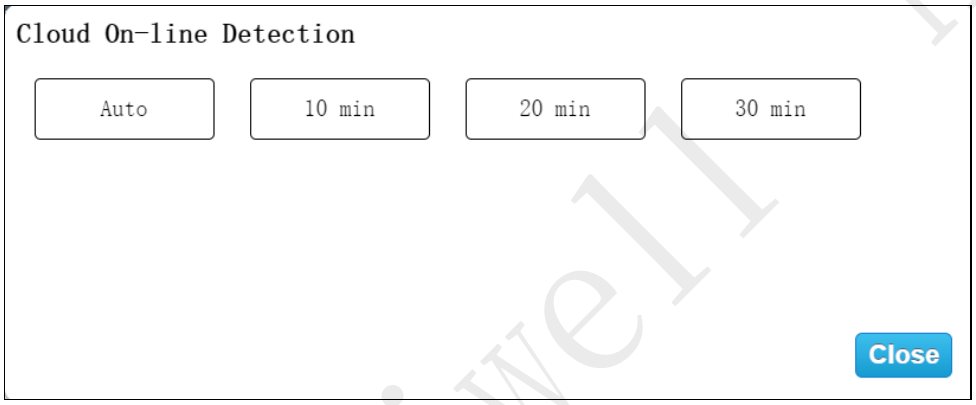


Figure53 Frequency of Device Cloud Online Detection

② Set 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

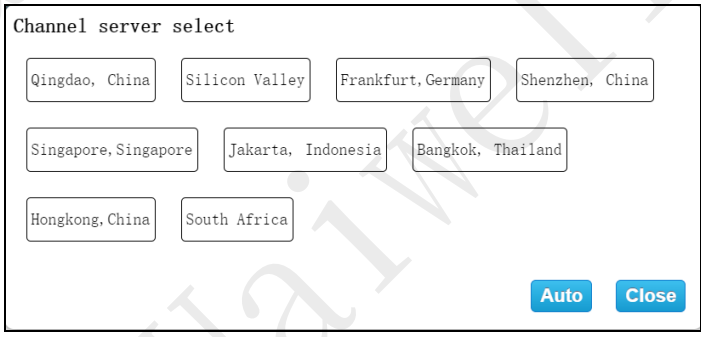


Figure55 Channel Server Selection

③ MQTT 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

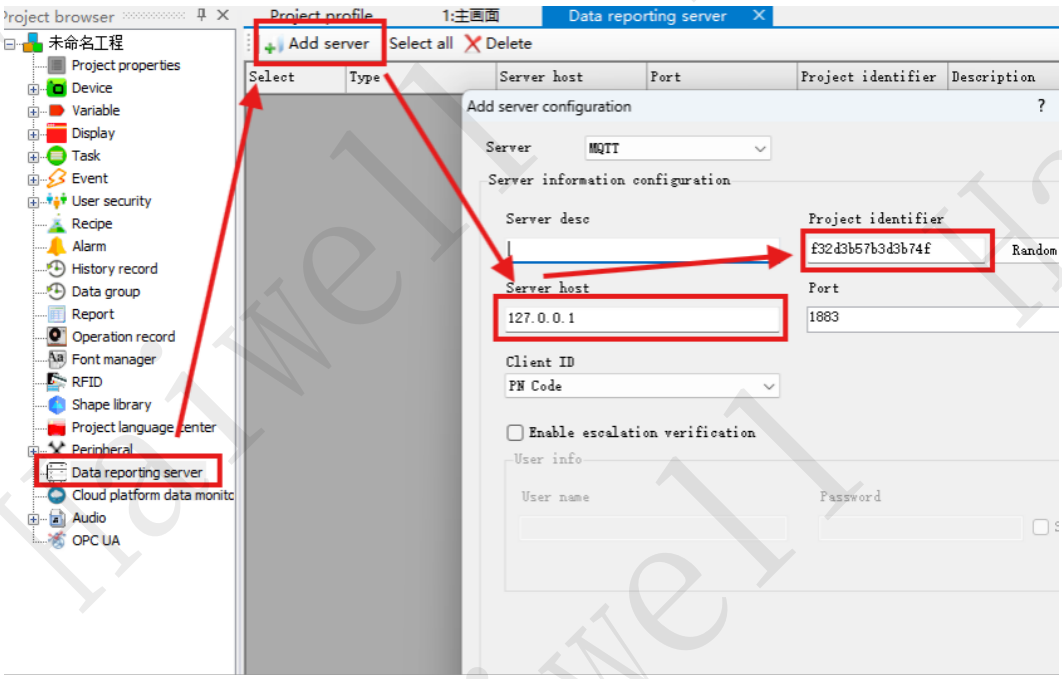


Figure57 SCADA Project Server Settings

（5） 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 Boot Music

Enter the HMI background settings interface, click on【Local Settings】, switch to the【Sound Settings】interface, turn on the "Power on Music" switch, and when the device is turned on, the configured music will be played.

Figure59 Boot Music

Project Attribute Settings:

Open Haiwell SCADA (version 39.0 or above), double-click Project properties to enter the project properties interface, click on【Boot Setting】, enable power on music, and set the power on music: you can set the last device used music; User can also choose "Customize", click ··· to import local audio, and customize the startup music settings. Users can choose whether to turn on "stop playing music when entering the interface" according to their needs.

Figure60 Custom Settings for Boot Music

When selecting "Factory ", check "Clear device side custom music" to perform factory settings and clear existing custom music.

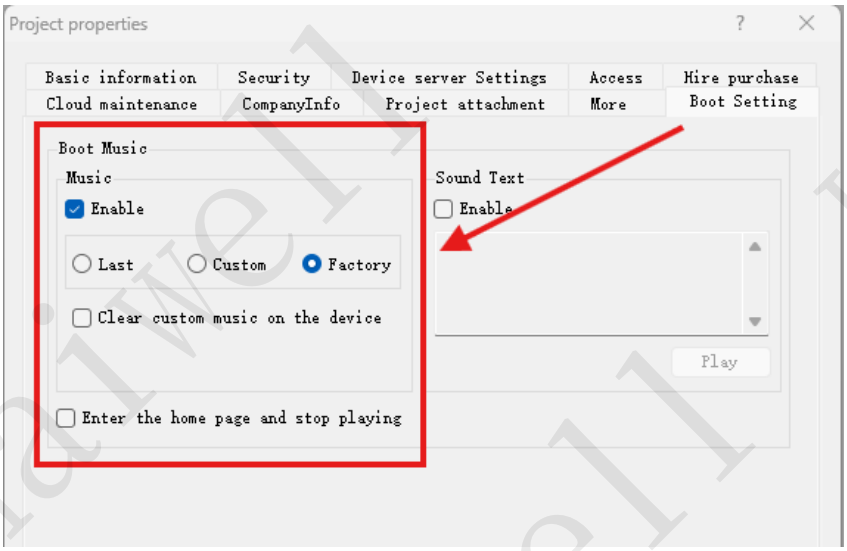


Figure61 Factory Settings for Boot Music

Device Manager Settings:

Open Haiwell SCADA (version 39.0 or above), click to enter the device manager interface, enter the IP address of the device to be accessed, click on【Management】, click on【Boot Options】, and click on【Custom Power on Music】to make the settings.

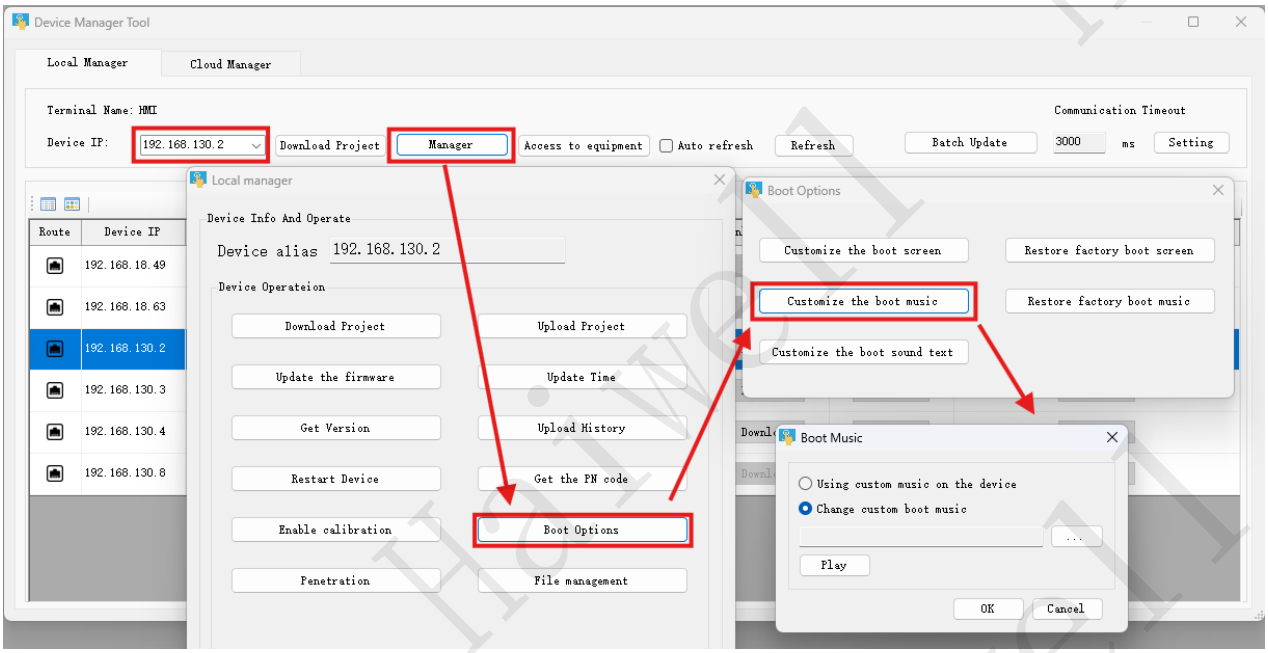


Figure62 Custom Boot Music

③ Startup Text Voice

Enter the HMI background settings interface, click on【Local Settings】, switch to the【Sound Settings】interface, turn on the "Startup Text Voice" switch, and when the device is turned on, it will broadcast the configured text content.

Figure63 Power on Text Voice

Project Attribute Settings:

Open Haiwell SCADA (version 39.0 or above), double-click to enter the project properties interface, click on【Boot Setting】, enable text voice, and enter the corresponding text content to complete the settings.

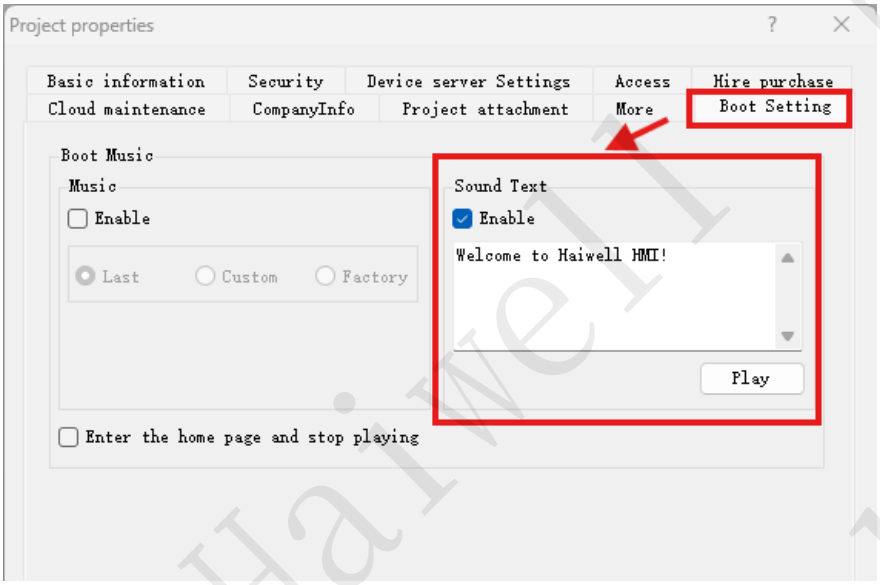


Figure64 Text and Voice Settings

Device Manager Settings:

Open Haiwell SCADA (version 39.0 or above), click to enter the device manager interface, enter the IP address of the device to be accessed, click on【Management】, click on【Boot Options】, and click on【Custom Power on Voice Text】to make the settings.

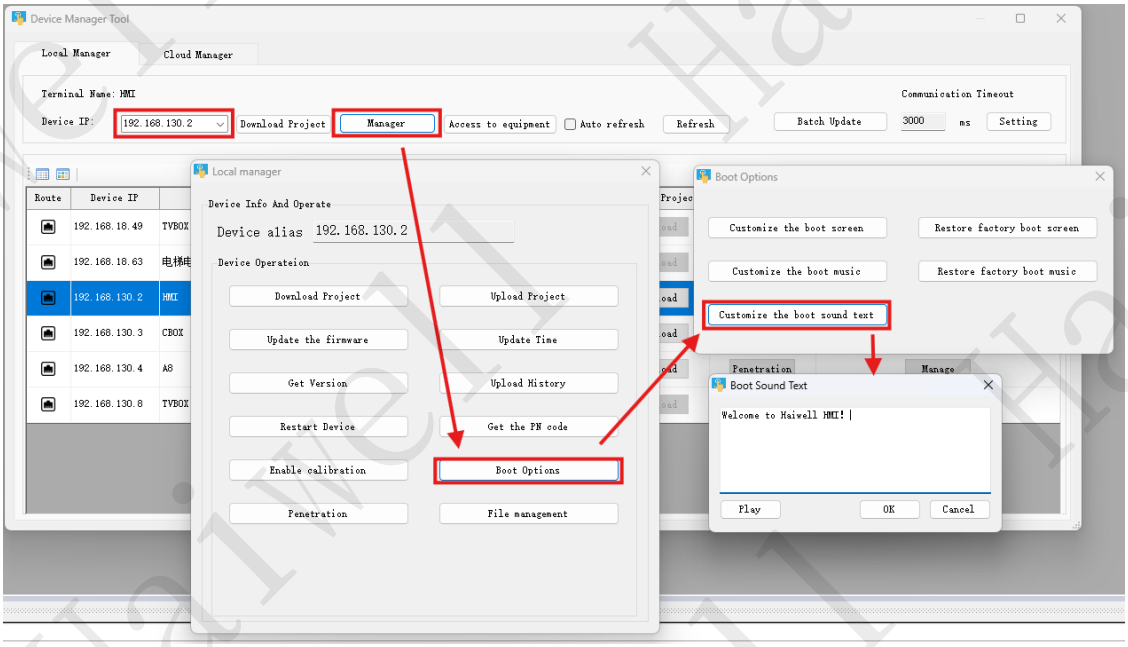


Figure65 Custom Power on Voice Text

2.4 System Information

（1） Restart Device

The user enters the HMI background settings interface, clicks on【System Information】, and selects【Restart Device】to restart the HMI device.

Figure66 Restart the Device

（2） Firmware Update

Update the firmware on the USB drive, enter the HMI background settings, click on【System Information】, select【Firmware Update】, enter the firmware upgrade interface, select【USB】, choose the appropriate firmware update package, click【OK】to upgrade the firmware. After the upgrade is successful, the device will restart.

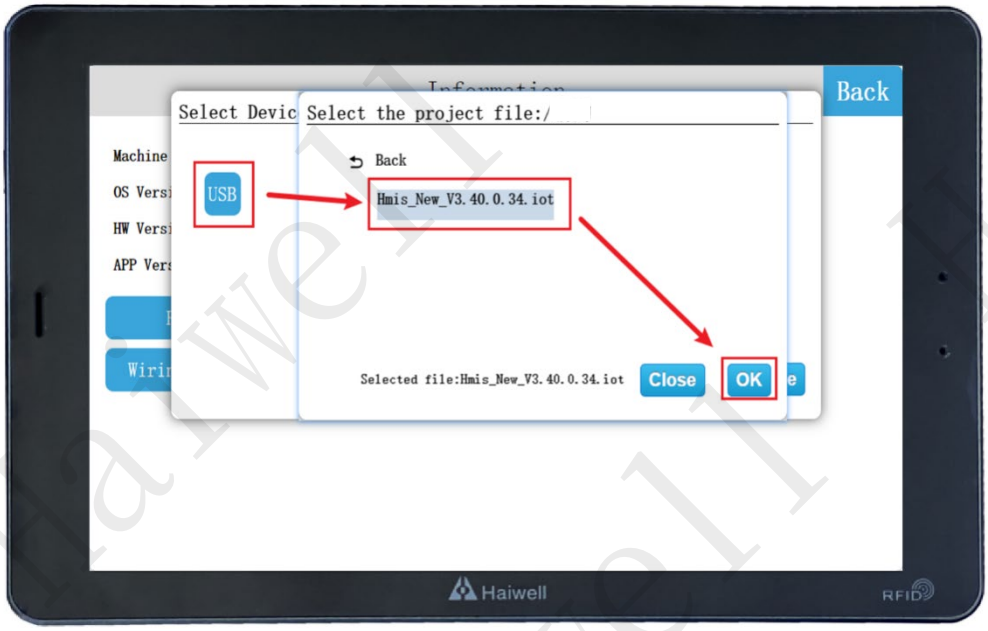


Figure67 Firmware Update

（3） Start Touch Screen Calibration

Click on【Enable Touch Screen Calibration】, and a pop-up will appear saying【Enabling Calibration will restart the device, do you want to restart calibration?】Click 'Confirm' to perform touch screen calibration.

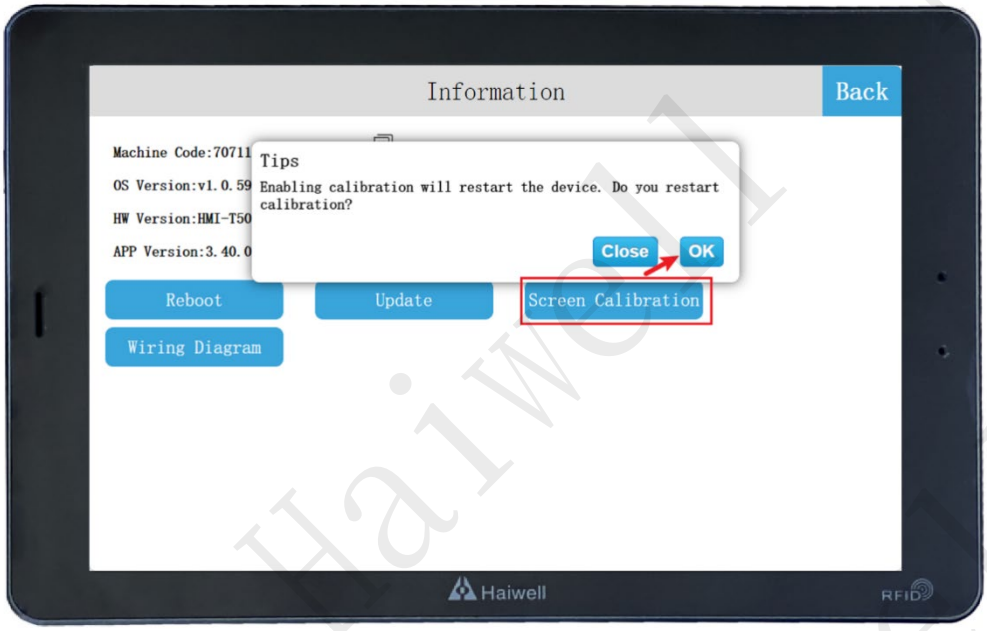


Figure68 Start Touch Screen Calibration

Specific calibration related operations Reference VIII. HMI Calibration.

（4） Factory Reset

Click on【Restore Factory Settings】and a prompt box will pop up saying【After restoring factory settings, all configuration information will be cleared. Do you want to restore it?】Click' Confirm 'to restore factory settings.

Figure69 Restoring Factory Settings

Note: Restoring factory settings cannot recover cloud settings account binding information. Please delete the device on the cloud app/platform.

（5） Serial Port Wiring Diagram

Click on the【Serial Port Wiring Diagram】and a nine pin serial port COM1/COM2 pin definition will

pop up.

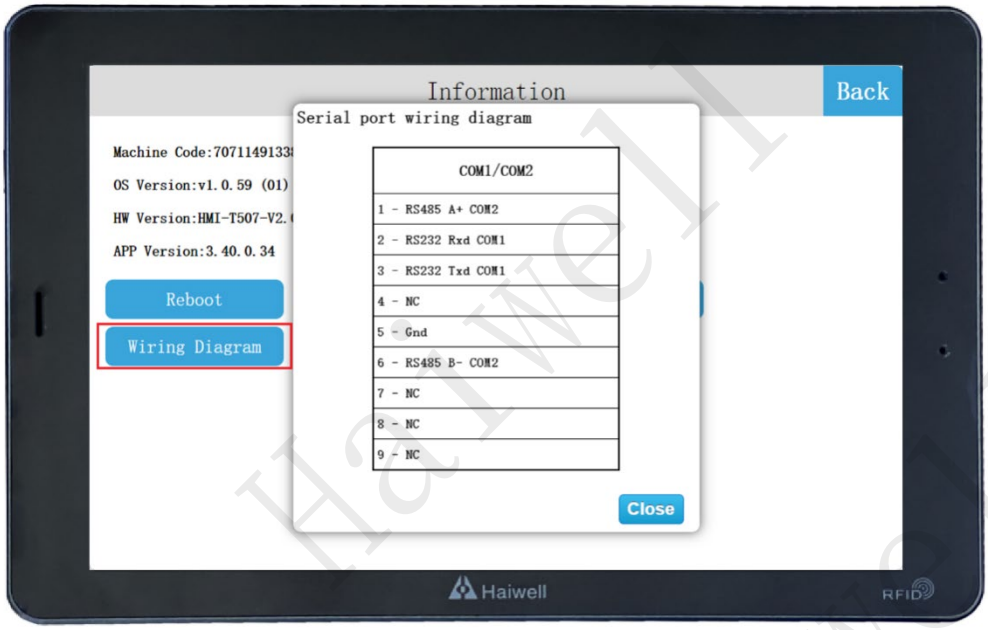


Figure70 Serial Port Wiring Diagram

2.5 Cloud Settings

Cloud settings are mainly used to bind devices to personal devices or enterprise devices. The premise of using this function is to ensure that devices can connect to the Internet normally.

① APP

Scan the QR code to obtain it directly

Figure71 Download the QR Code of Haiwell Cloud APP

② WeChat Mini Program

Search Xiamen Haiwell on WeChat official account, click Send Message, select Hotspot - applet in the chat box, and you can directly enter Haiwell APP.

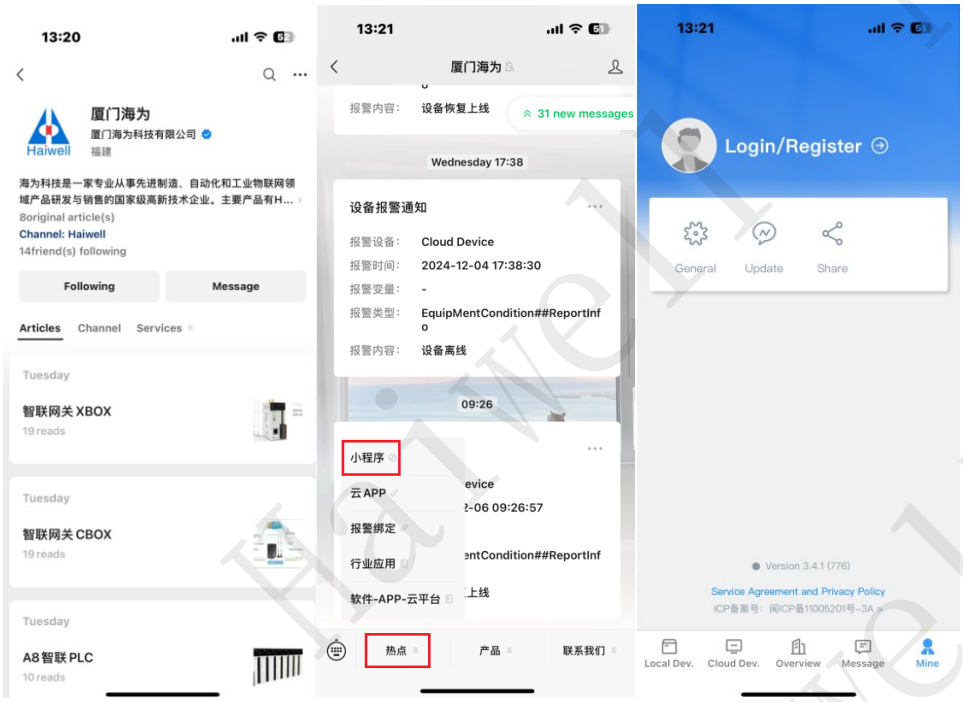


Figure72 Download the QR Code of Haiwell Cloud APP

Note: The WeChat mini program does not have a local device and requires downloading the Haiwell APP.

（2） Haiwell Cloud APP/WeChat Mini Program Scan Code to Bind QR Code

Enter the HMI background settings interface, click on 'Cloud Settings', turn on the cloud switch, and a QR code and machine code will pop up. If the cloud status shows offline, please check if the HMI has successfully connected to the external network.

Figure73 Binding Cloud Settings QR Code

Log in to the Haiwell Cloud APP on your mobile phone, enter the local device interface, click the button ⊕ in the upper left corner of the main interface, and then click on the dropdown menu to scan. Scan the QR code to add the device. A confirmation binding prompt box pops up on the device, click【Confirm】,

the device is successfully added, and the user can remotely access the device.

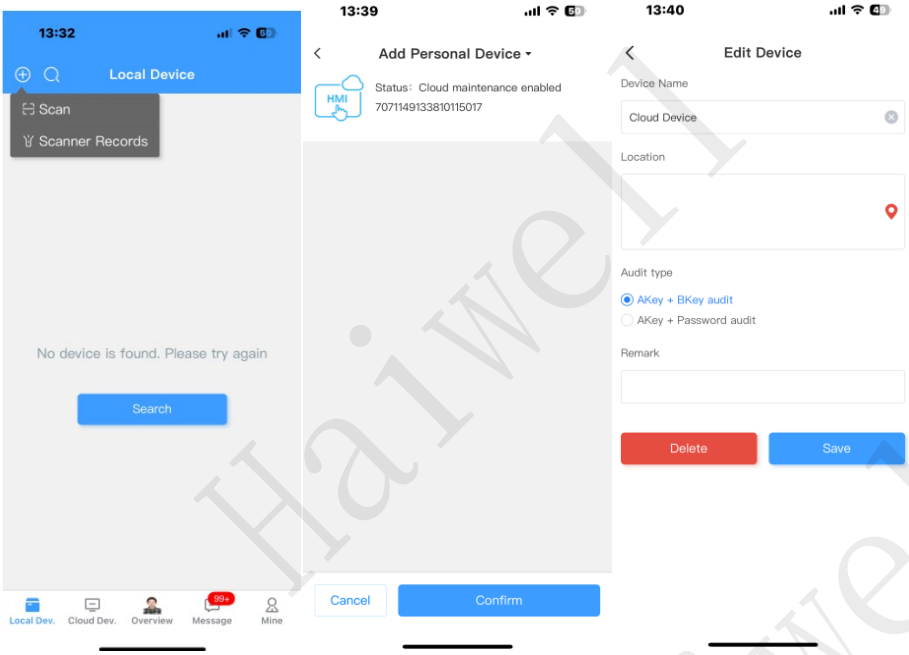


Figure74 Binding Device to Mobile APP

Figure75 Determination of Binding for HMI Cloud Settings

Figure76 HMI Cloud Setting Binding Information

（3） Remote Monitoring and Control

Open the Haiwell Cloud app on your phone and enter the cloud device; Find the corresponding device and click on【Access】in the bottom right corner to remotely access the device. If the current project allows remote operation, users can control the device remotely through their mobile phone.

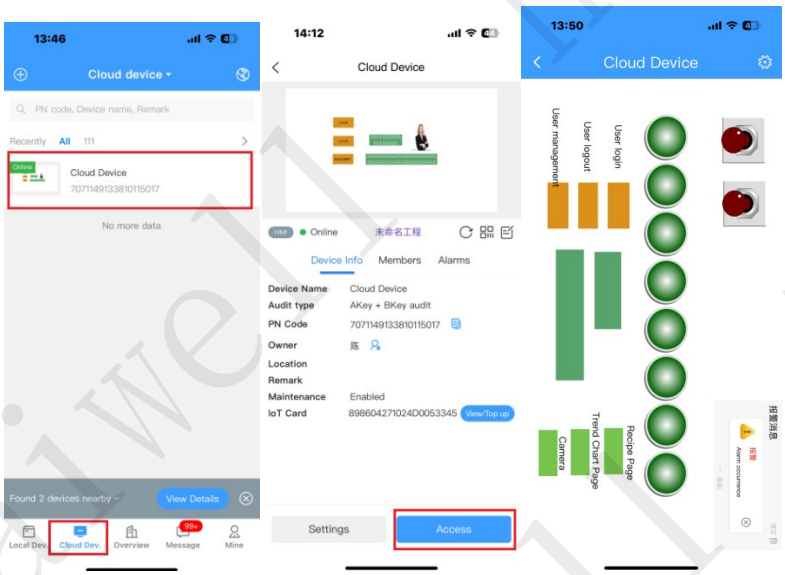


Figure77 Remote Access via Mobile APP

2.6 Network Settings

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

（1） Ethernet Connection

Go to the HMI background Settings screen, Tap【Network Settings】to enter the Ethernet Settings screen, Open the【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.

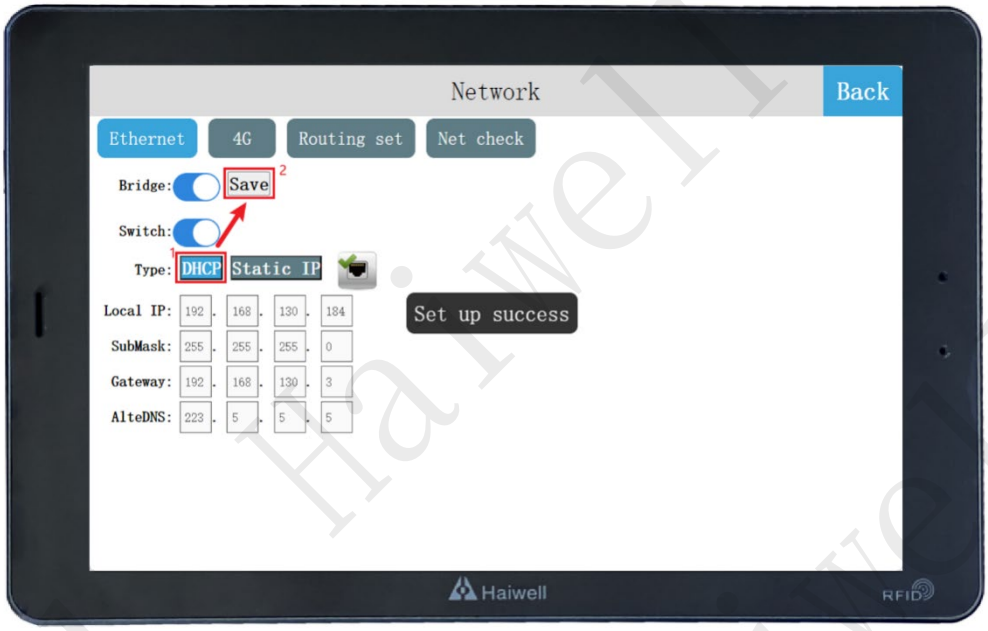


Figure78 Obtaining IP Dynamically

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】.

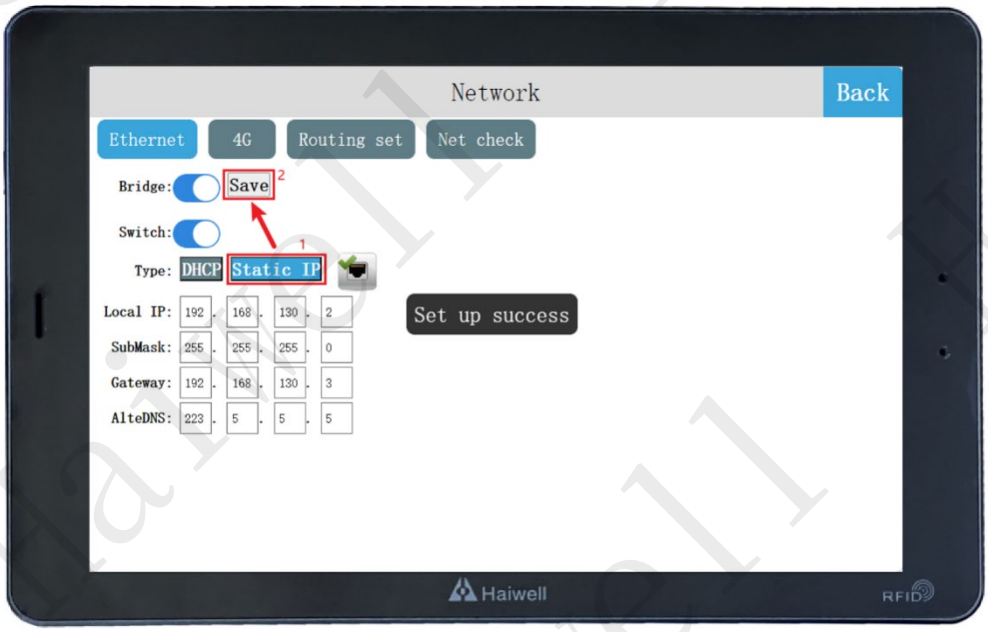


Figure79 Static IP Settings

Note: After the touch screen 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 touch screen for the external network. Then select【Static IP】to change the IP address, and click【Save】.

（2） WIFI 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 Settings

After the connection is successful, a green check mark is displayed "".

Figure81 WIFI Connection Successful

After the connection is successful, gray " "is displayed. Click the gray " " icon to set the IP address, subnet mask, default gateway, and 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: ①The 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 Hotspot

Click【AP】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.

Figure83 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.

Figure84 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.

Figure85 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.

（4） 4G 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).

Disable 4G: 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.

Figure86 4G is not Enabled

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..." when displayed "Setting succeeded", the device can access the 4G network.

Figure87 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.

Figure88 Enabling the eSIM Card

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

Figure89 Check Remaining Data Balance

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.

Figure90 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.

Figure91 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.

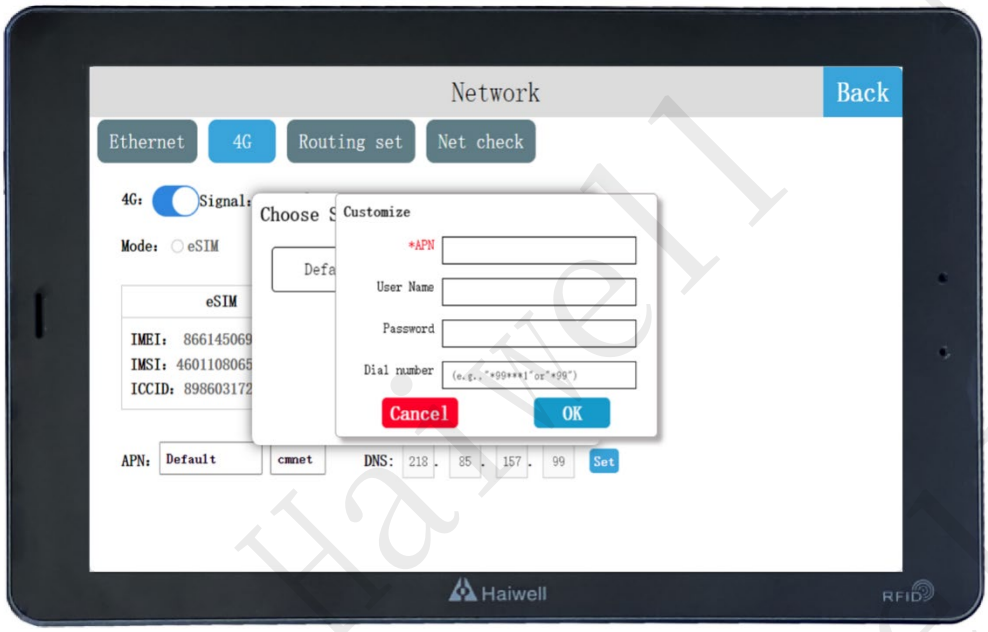


Figure92 APN Settings

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.

Figure93 DNS Settings 1

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

Figure94 DNS Settings 2

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

Figure95 DNS Settings 3

The DNS server is configured successfully.

Figure96 DNS Settings 4

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

Figure97 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: D7 Pro)

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: D7 Pro-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: D7 Pro-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: D7 Pro-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.

（6） Route 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".

Figure98 Route Settings

The Routing Mode is Disabled: On the HMI background Settings screen, tap【Network Settings】to enter the route configuration screen. Disable the route switch then the prompt "Closing..." will pop up, next 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.

Figure99 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.

Figure100 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.

Figure101 4G Routing Mode

Relay Mode: Go to the HMI background Settings screen, tap【Network Settings】to enter the route configuration screen, turn on the route switch, tap "Settings", set the device Internet access mode to "WIFI", set the external network mode to "Hotspot", and tap "Save", The message "Setting succeeded, 4G has been disabled for you" is displayed. In this case, the relay mode is set.

In "relay" mode, only the WIFI connected hotspot provides the network. First, connect to a hotspot that can access the Internet, and then provide a network for other devices through the personal hotspot of the device, supporting the local area network and the external network. The wired network in this mode supports only LAN networks.

Figure102 Relay Mode

Client Mode: Go to the HMI background setting screen, tap【Network Settings】to enter the route configuration screen, turn on the route switch, tap "Settings", set the device Internet access mode to "WIFI", set the external network mode to "LAN", click "Save", and the prompt "Setting succeeded, 4G has been disabled for you" is displayed. , then set to the client mode;

In the "client" mode, the network is provided by the WIFI connected hotspot, and the HMI is equivalent to the router. The HMI connects to the wired network, and then connects to the device through the cable to provide the network for the device. The personal hotspot function is not supported in this mode.

Figure103 Client Mode

4G Client Mode: Enter the HMI background setting screen, tap【Network Settings】to enter the route configuration screen, turn on the route switch, tap "Settings", set the device Internet access mode to "4G", set the external network mode to "LAN", click "Save", and the prompt "Setting succeeded, WIFI has been

turned off for you" will be displayed. In this case, set to the 4G client mode.

In "4G client" mode, the network is provided by 4G, and the HMI is equivalent to a router. The HMI connects to the wired network, and then connects to the device through the wired network to provide the network for the device. The personal hotspot function is not supported in this mode.

Figure104 4G Client Mode

（7） Network Diagnosis

External Network Access: Use network diagnosis, click the website , select the website to access, if the return information indicates that the device is connected to the network.

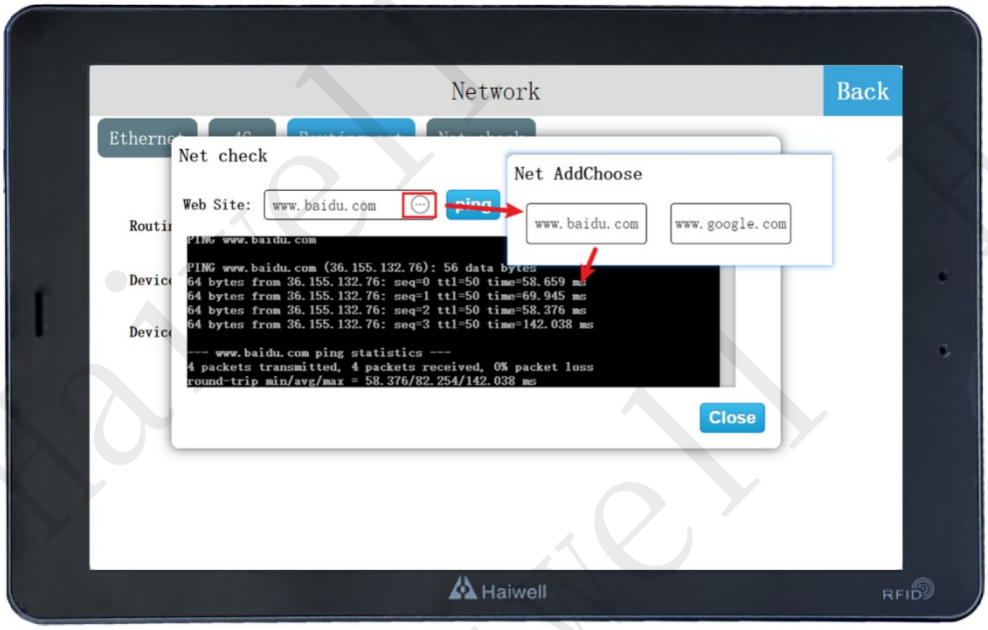


Figure105 Internet Access

LAN Access: Use network diagnosis, click on the website, enter the corresponding IP address of the device you want to access, such as the IP address of the HMI communication PLC is 192.168.13.212, if the following information is returned, the successful access to the mutual communication.

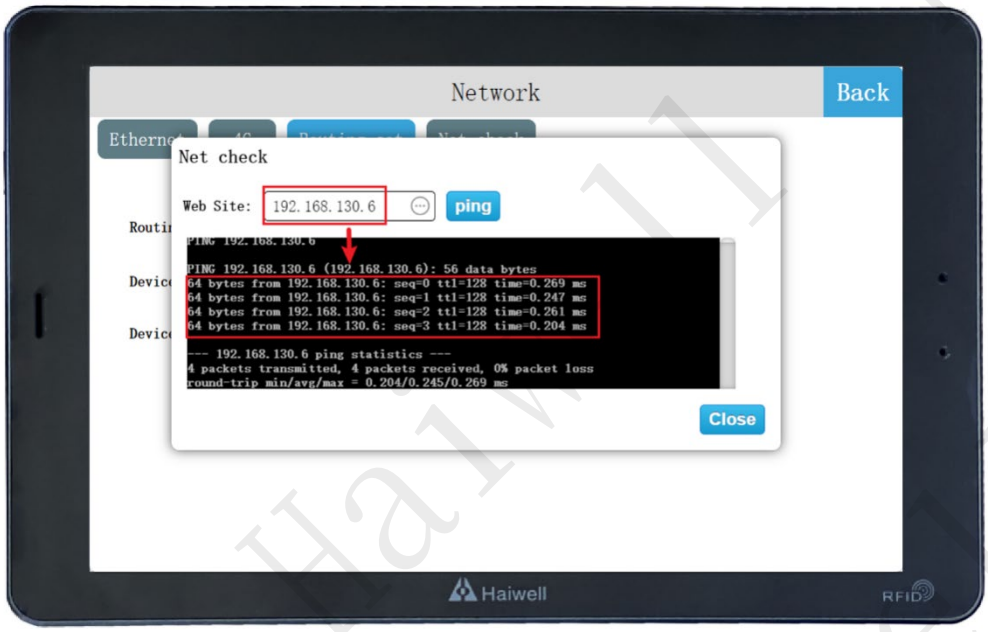


Figure106 LAN Access

VI. Configuration SCADA Project

1. Project Establishment

This paper takes a new project as an example to realize HMI and Siemens 200smart Ethernet communication, and can achieve local access and remote access to HMI screen control PLC.

1.1 Add New Project

Step 1: Open the Haiwell Cloud Configuration SCADA software and click "New Project" on the configuration software start page.

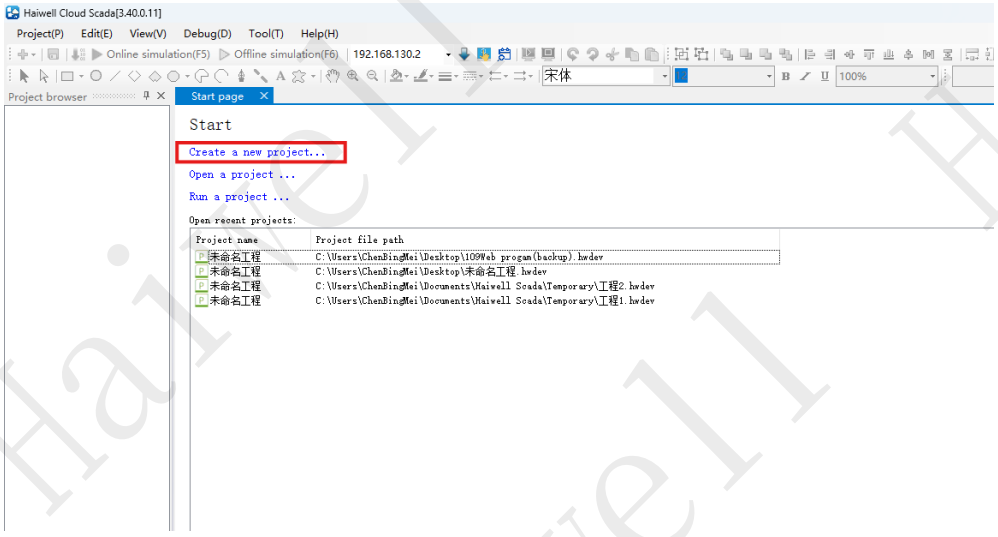


Figure107 New Project

Step 2: Click "Create a new project" and the project property window will pop up, the project name can be customized, and the corresponding operation platform can be selected. D7 Pro-G is taken as an example here, and Haiwell HMI D7 Pro (the model ending number -W or -G or -GW is a common operation platform) can be selected, and the screen resolution of the device used can be seen after selection. You can select an Angle as required. If the Angle is not set, the default value is 0°. Select LAN access to use the

LAN access function, you can use the Haiwell Cloud APP/ computer browser /TVBOX to access the LAN, the password can be set to empty, that is, you do not need to enter the password to access, and finally click "OK".

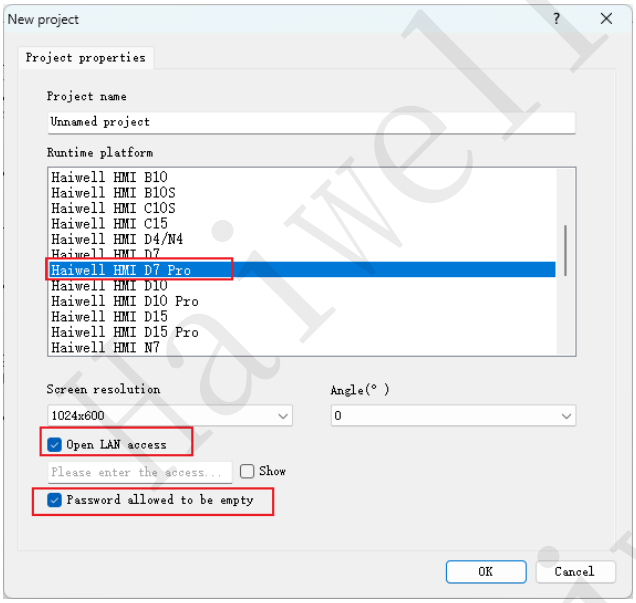


Figure108 Selecting a Running Platform

1.2 Add New Device

Step 1: Right-click Ethernet in Project Browser and choose "Add Device". Click OK.

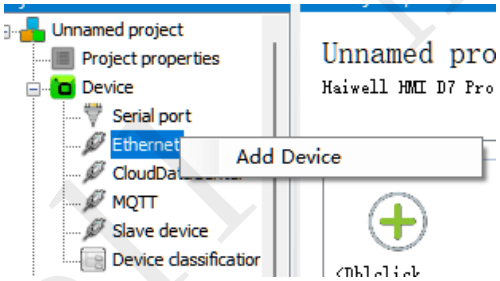


Figure109 Adding a Device

Step 2: Select Ethernet (TCP/IP) for the device interface, select the device on the left to find the corresponding Siemens model, and enter the IP address of Siemens PLC in the device properties.

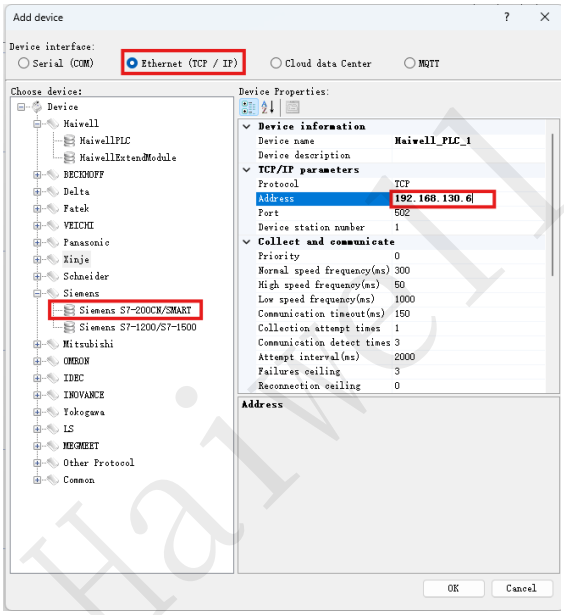


Figure110 Setting device Communication Parameters

1.3 Add the New Variables

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

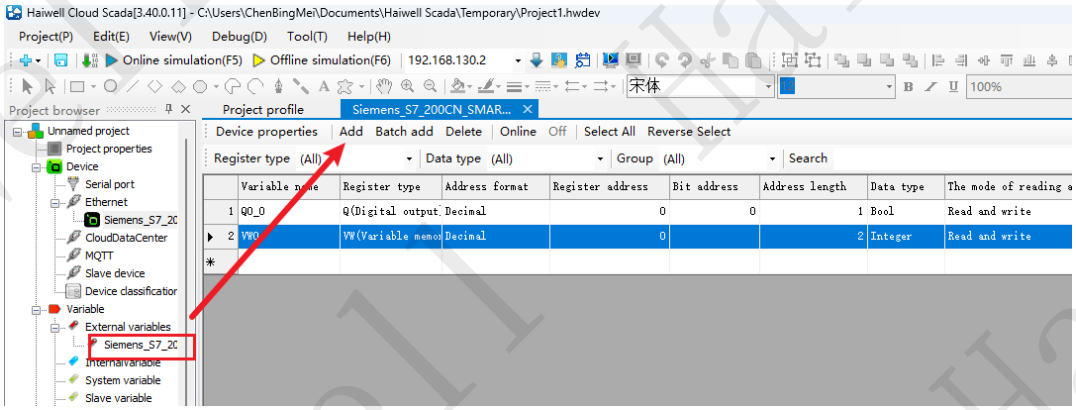


Figure111: Create New Variable

1.4 Edit Screen

Project browser select the main screen, in the right of the library - function components, drag "bit Settings" and "numerical display input" to the screen, double-click the meta binding variable.

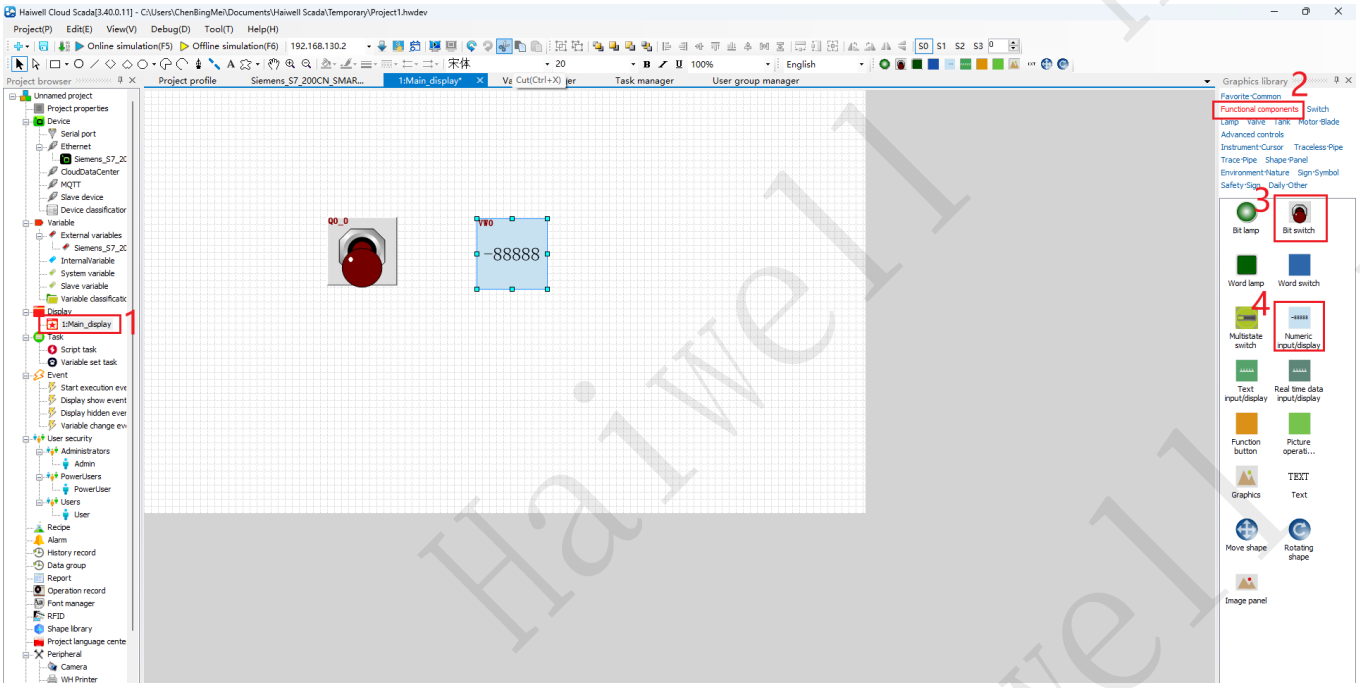
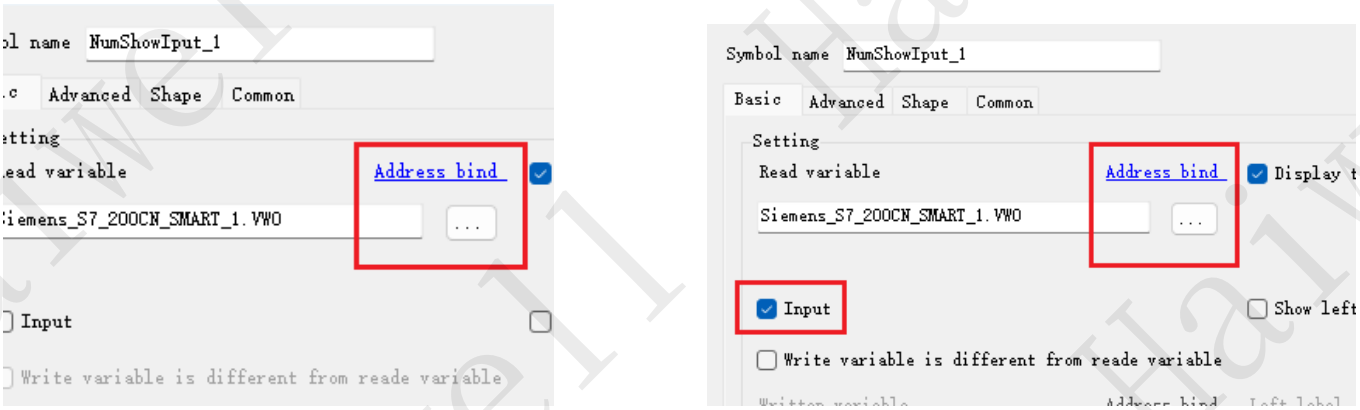


Figure112 Edit Screen

If users need to write the VW value to the PLC, you need to select Input in the value display input attribute, otherwise only read-only attribute.



(a) （b）

Figure113 Meta Binding Variable

1.5 Debugging and Running

The developed and edited project can be run and debugged through "online simulation" and "offline simulation".

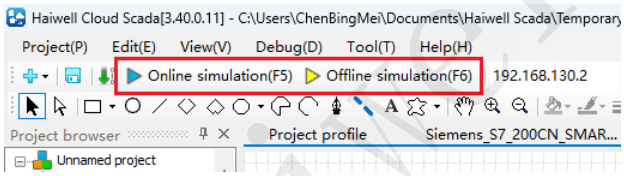


Figure114 Simulation and Debugging

（1） Online Simulation and Offline Simulation Differences

Online Simulation: take the port on the computer as the port of the HMI touch screen, communicate with the PLC, etc., for simulation and debugging.

Offline Simulation: that is, it does not communicate with the actual PLC, but only simulates the screen of the simulation operation.

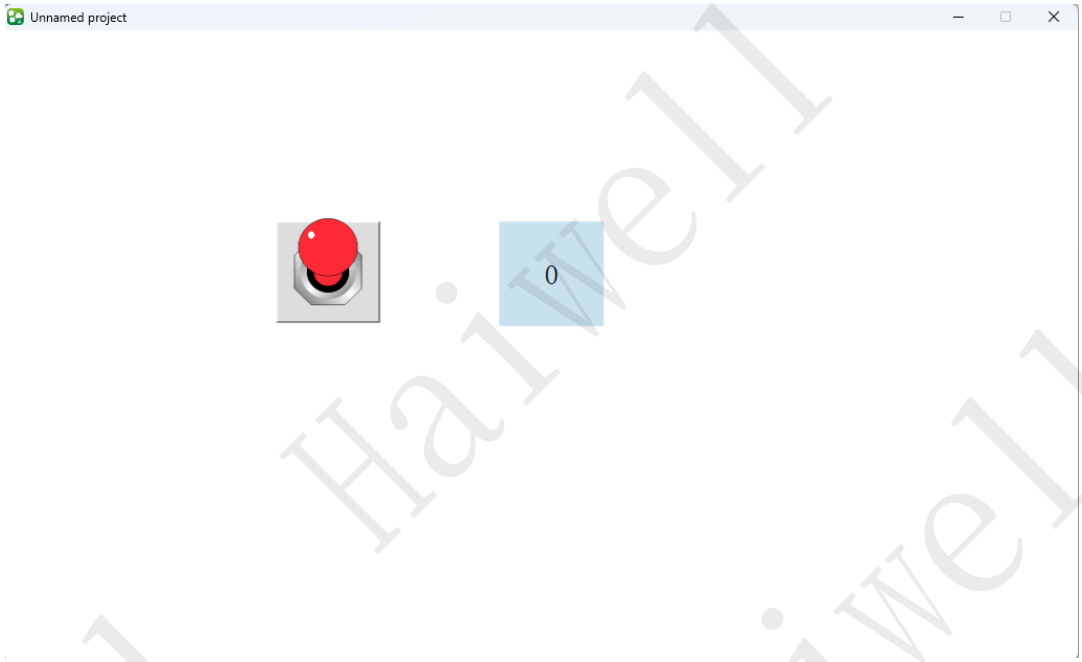


Figure115 Online/Offline Simulation Screen

2. Device Management Tool

Open the configuration design terminal on the computer, click the device management tool icon in the menu bar to enter the device management tool; Or click【Programs】, expand the installation file【Haiwell Scada】, and click【Haiwell Cloud HMI Manager】to enter the device management tool.

Supports effective HMI control using local and cloud management.

2.1 Local Management

In local management, you can select and manage devices based on the IP addresses of devices on the LAN.

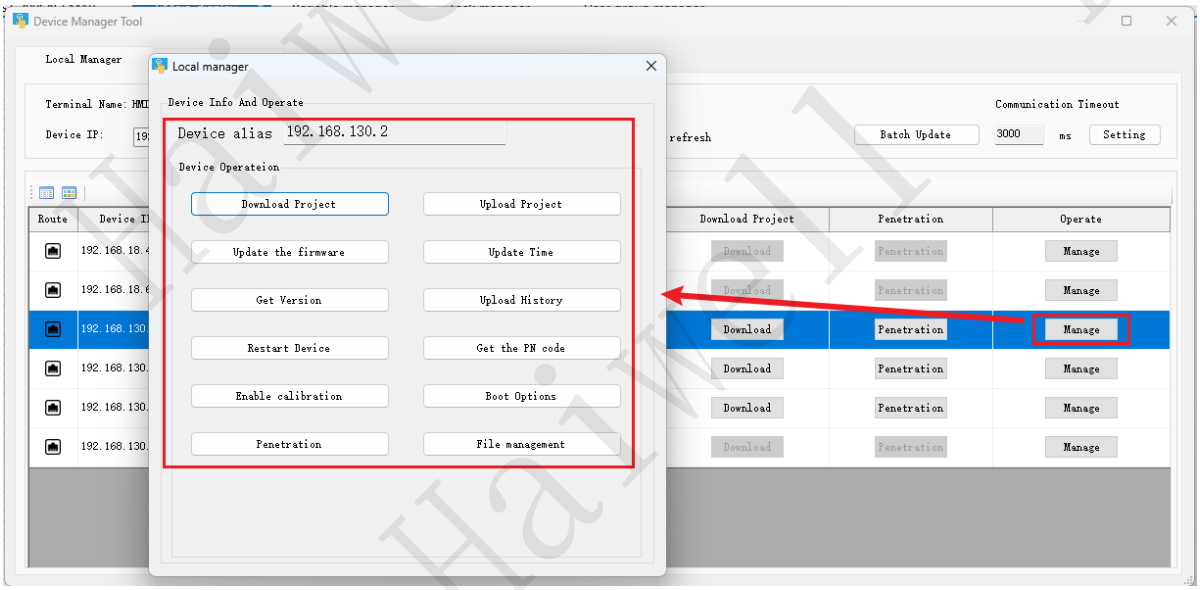


Figure116 Local Manager

2.2 Cloud Management

In cloud management, users can log in by mobile phone or email. Device administrators and owners can manage current devices, but common users do not have device management rights. Users can log in to the device Manager by entering the correct account and password. After login, users can select a specific device and perform management operations.

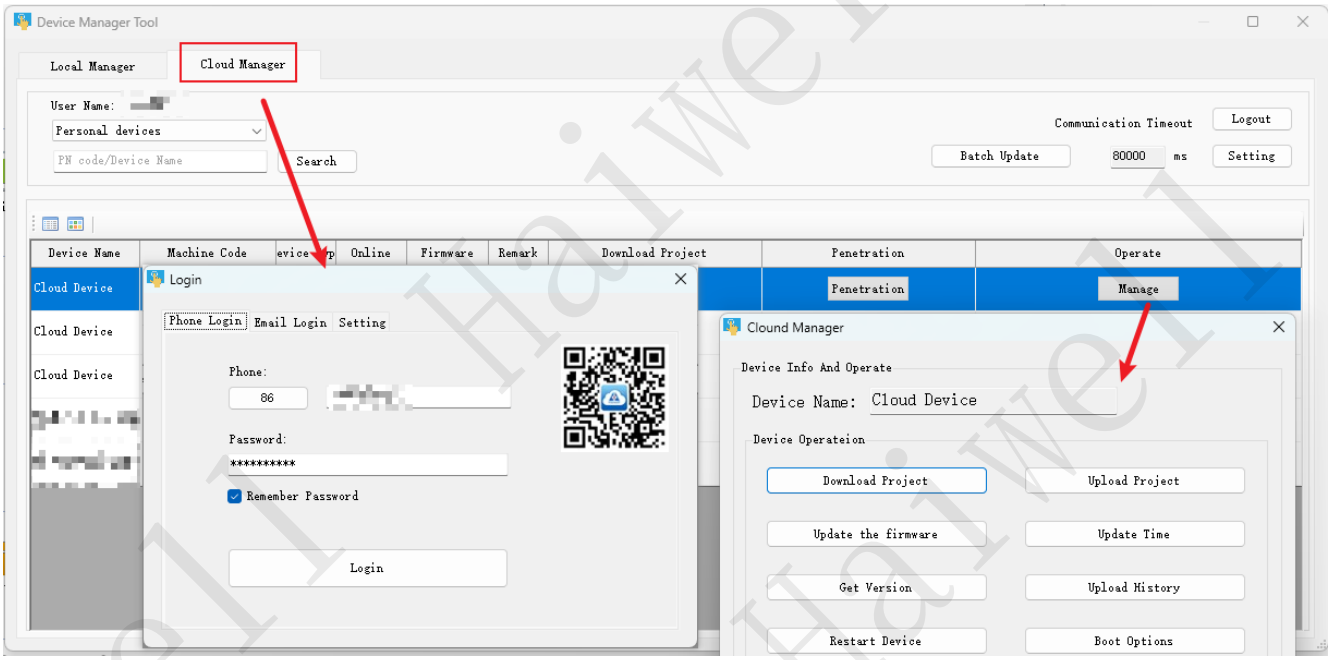


Figure117 Cloud Manager

3. Project Download

3.1 Local Download

Step 1: Go to the Device management tool. You can choose to use local management or cloud management, find the corresponding HMI, and click "Download Project".

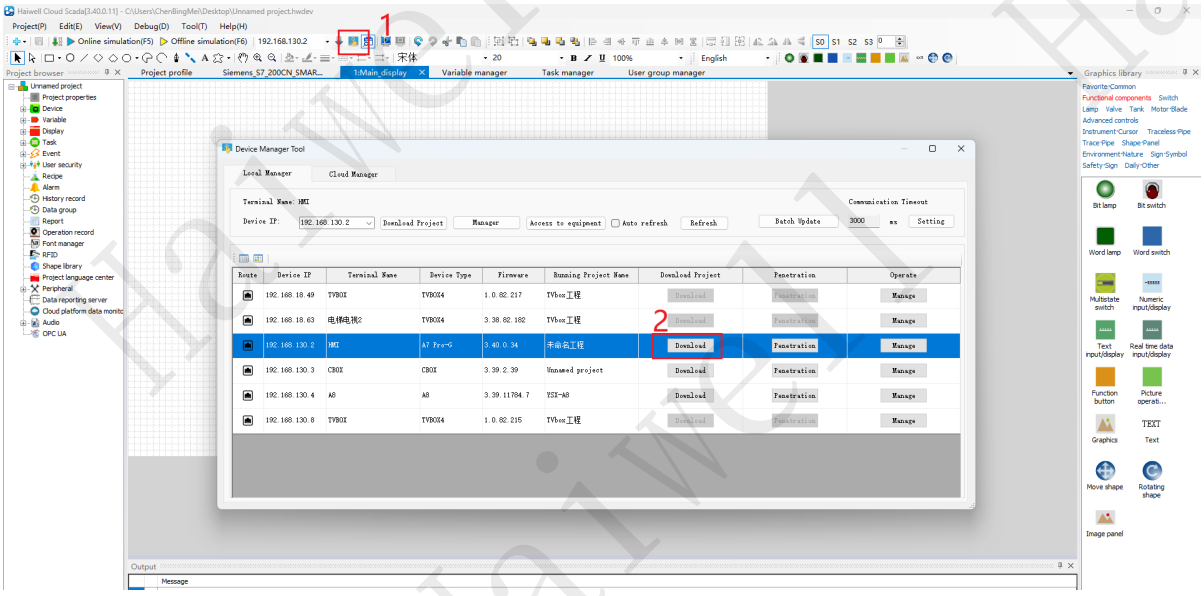


Figure118 Local Download Project

Step 2: In the confirmation download interface, you can choose whether to retain history and alarm

records, whether to retain recipes, and whether to pack fonts for download according to your needs. You can check it by default and click "OK".

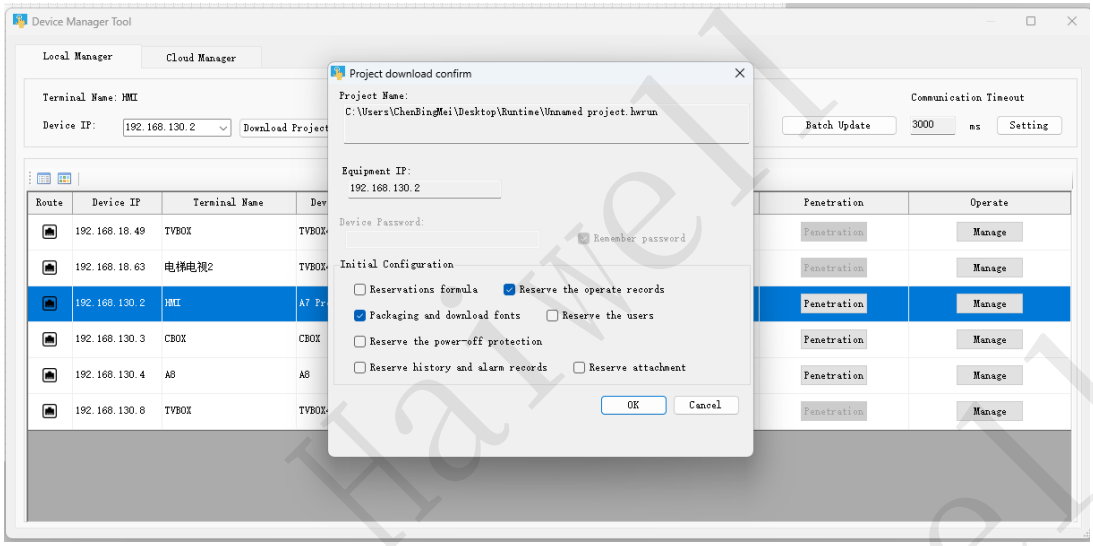


Figure119 Project Download Confirmation

Step 3: Wait until the message "Download success!" is displayed. Click "OK" to run the new project on the HMI.

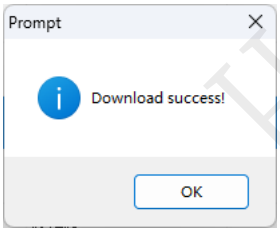


Figure120 Download Successfully

3.2 Remote Download

Step 1: To use cloud management, you need the HMI to connect to the Internet and the cloud is online. Log in to the cloud APP account and password, find the bound HMI, and select Download Project.

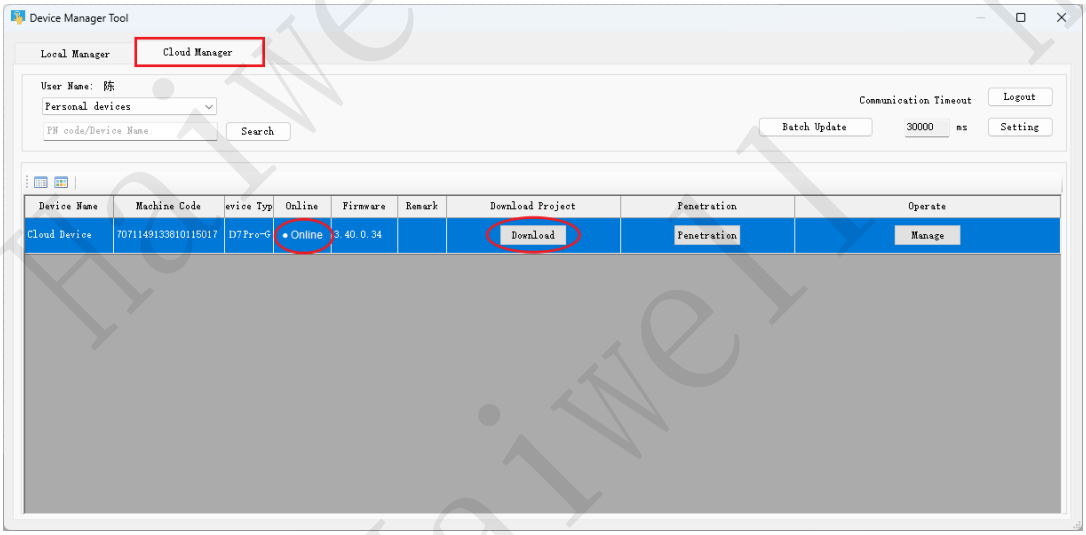


Figure117 Remote Download Project

Step 2: The follow-up is the same as the local download, and will not be summarized here.

4. Project Operation

After the project download is successful, wait for HMI restart, after the successful restart, the touch screen will automatically open the project start screen, the toggle bit is set to on, the value displays the input write value of 10, and you can observe the PLC monitoring to see that there is a successful write.

Figure122 HMI Running Screen

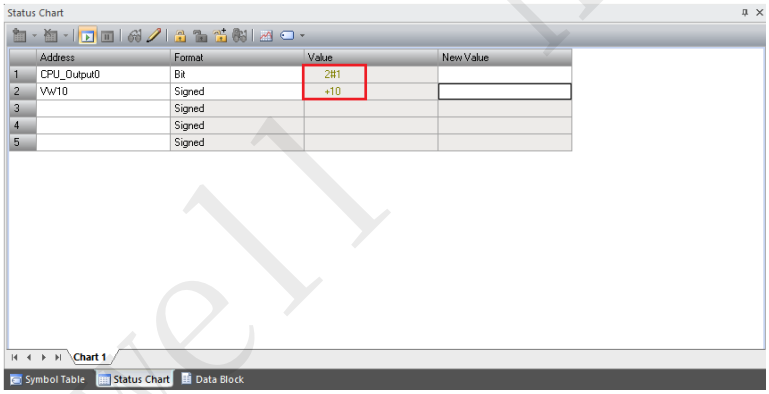


Figure123 PLC Real-time Monitoring

5. Local/Remote Access HMI Screen

5.1 PC Local/Remote Access

（1） PC Local Access

Method 1: Local management After downloading the project, check the project properties to run LAN access, you can enter the HMI IP address in the browser and press Enter to locally access the HMI screen (for example: 192.168.13.202).

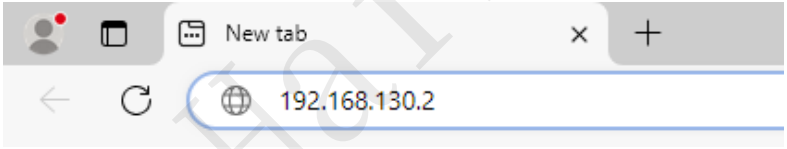


Figure124 Enter IP in the Browser

Method 2: Local management in the Device management tool Click Access Device. The browser is automatically displayed to access the device on the LAN.

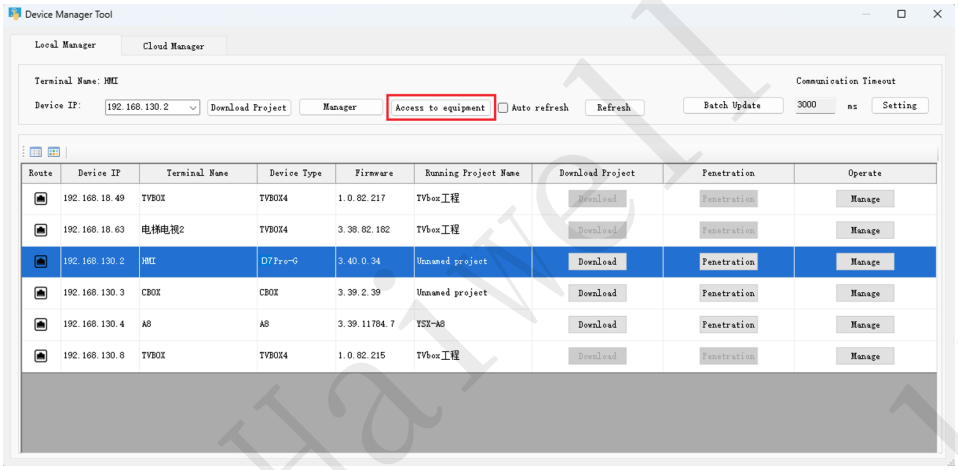


Figure125 Local Management Access Devices

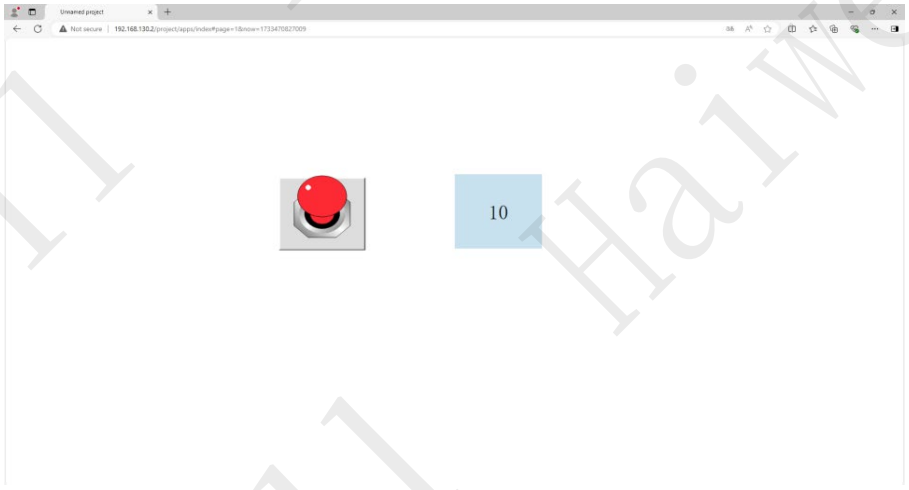


Figure126 Browser LAN Access

（2） PC Remote Access

Step 1: open the computer browser, type https://ecloud.haiwell.com/ access to the Haiwell for IIoT at cloud platform, login password is selected to individual users into the platform.

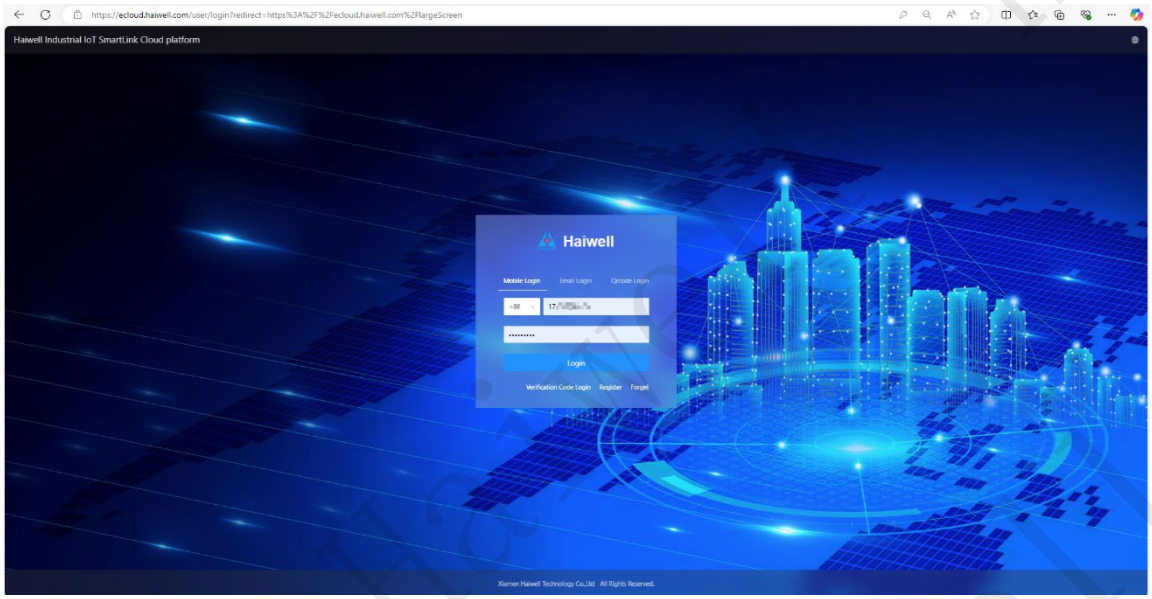


Figure127 Log in Haiwell IIOT Intelligent Cloud Platform

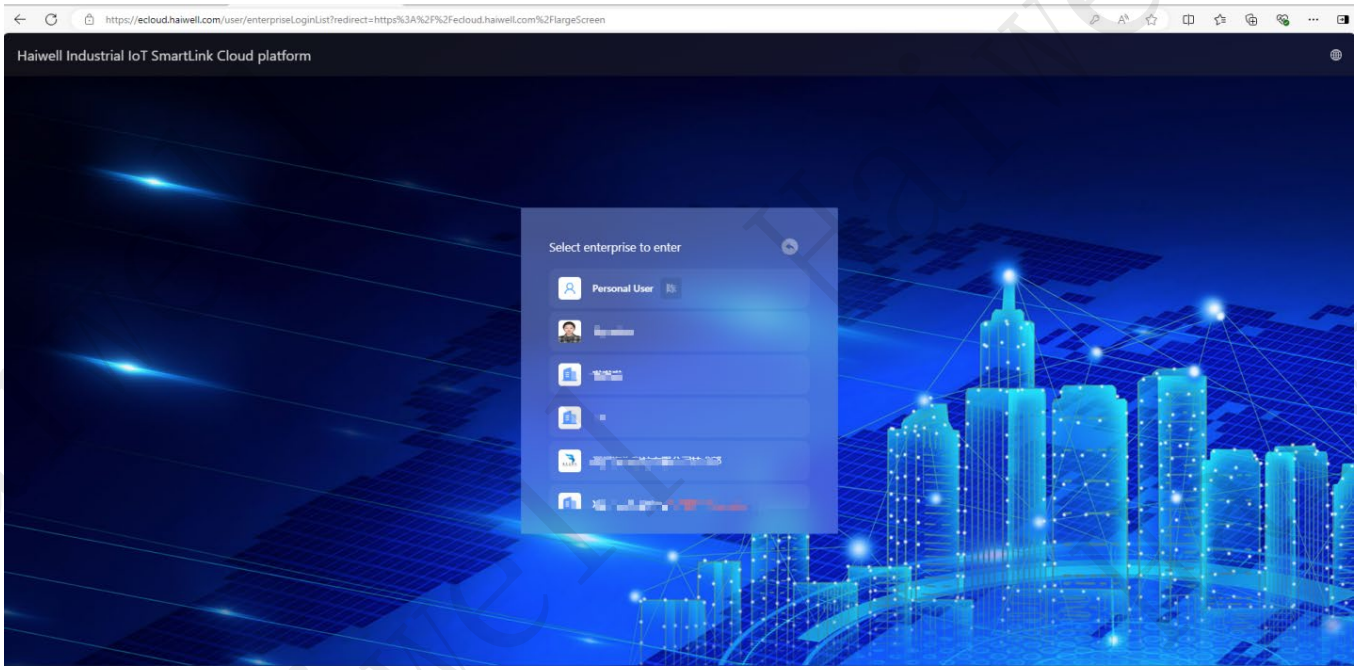


Figure128 Selecting Individual Users

Step 2: In the device list, select the corresponding HMI and click  Enter device details.

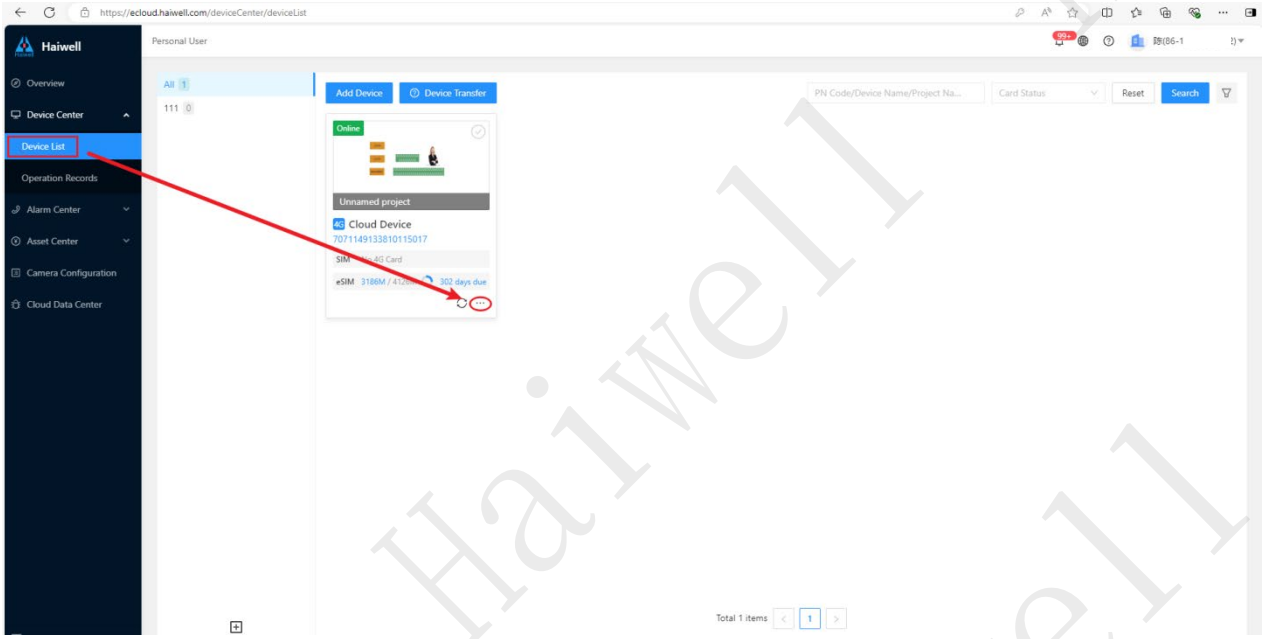


Figure129 Enter Device Details

Step 3: Click "Access Program" in the device details to access the HMI screen remotely.

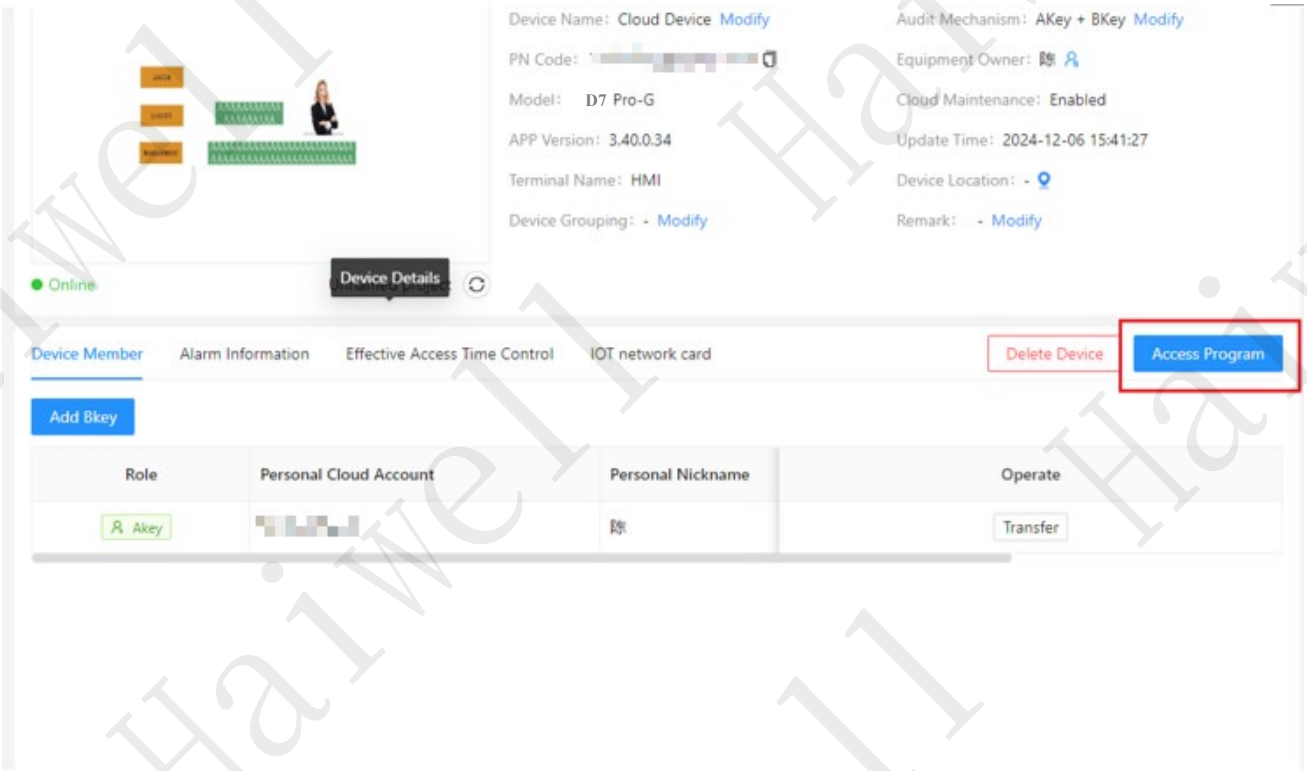


Figure130 Access Program

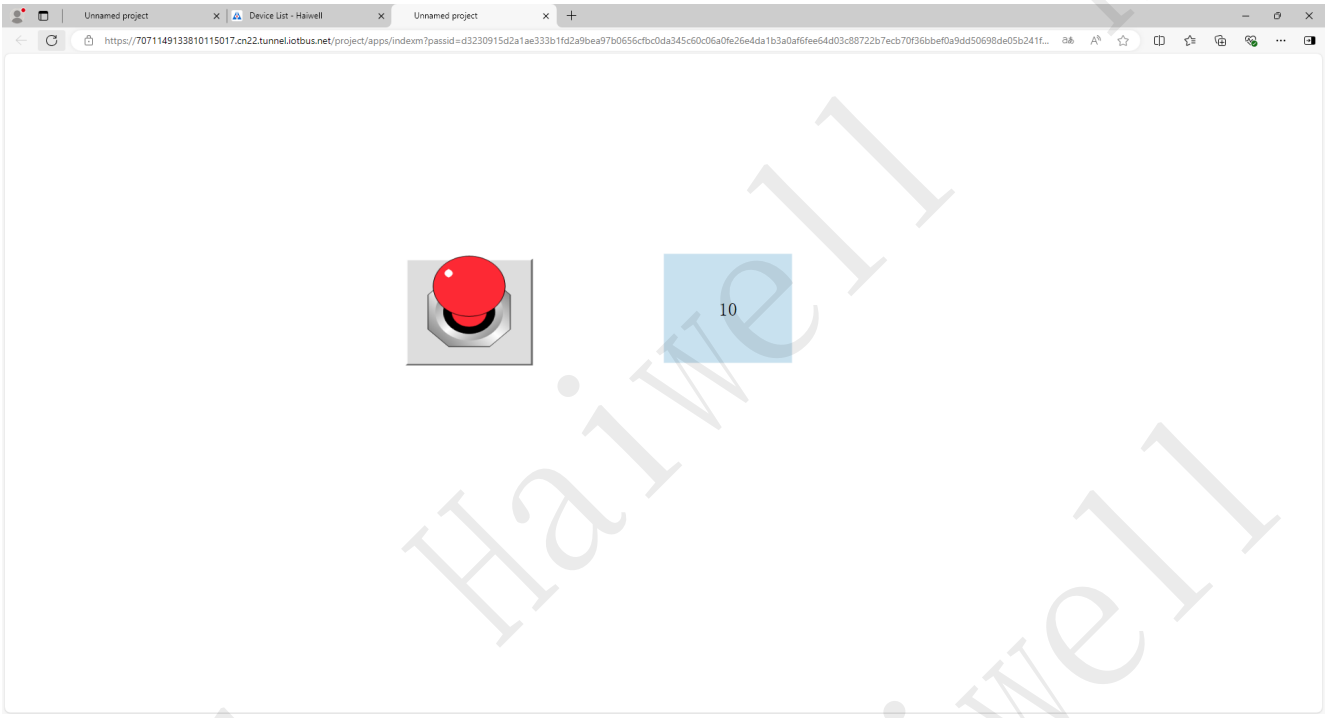


Figure131 Remote Access to HMI Screen

5.2 Remote Access on Mobile

Open the Haiwell Cloud APP or WeChat Mini program on your mobile phone, log in to the cloud device with the account password, select the corresponding HMI device, and finally click "Direct access".

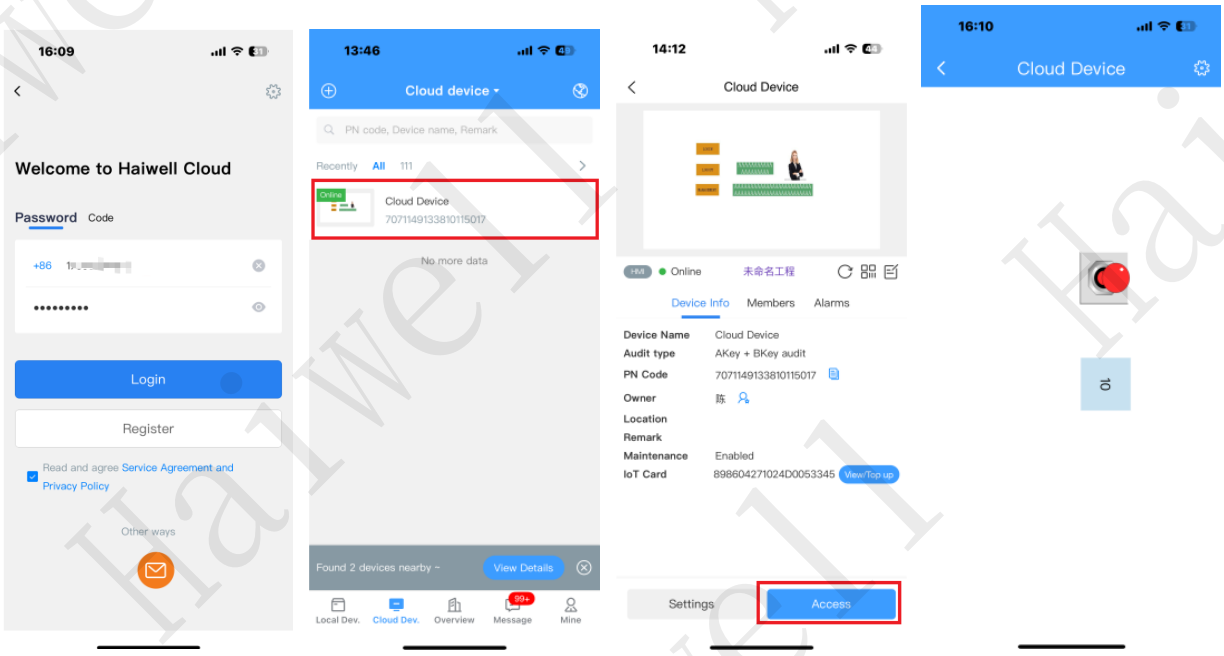


Figure132 Remote Access to HMI screen on Mobile Phone

VII. Remote Transparent Transmission PLC

In this paper, Siemens 200 smart transparent transmission as an example, in the case of successful Ethernet communication between HMI and PLC, then perform the following steps to achieve the remote download of PLC function.

1. Modify the Computer Supply Network Segment

Open your computer Settings and click【Change Adapter Options】

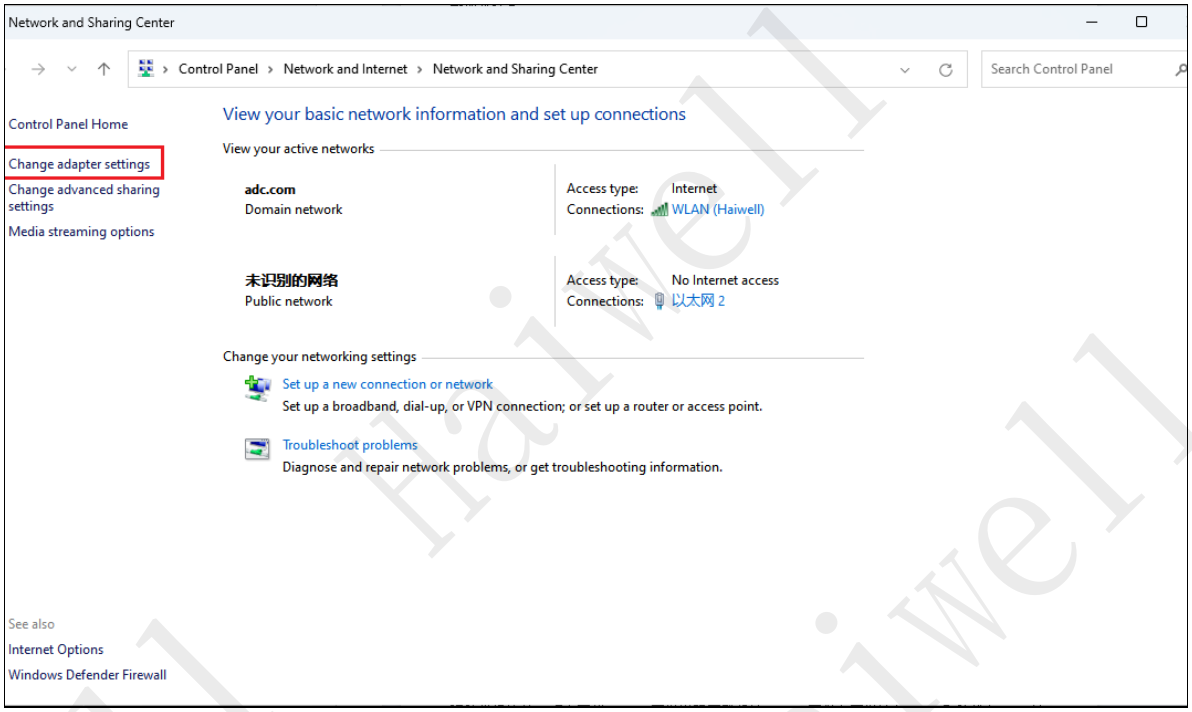


Figure133 Open Computer Settings

If the computer is supplied by Ethernet, check the Ethernet IP address segment to ensure that the Ethernet IP address segment is different from the PLC IP address segment. For example, if the PLC IP address is 192.168.14.133, the computer Ethernet IP address segment must be changed to other than 14.

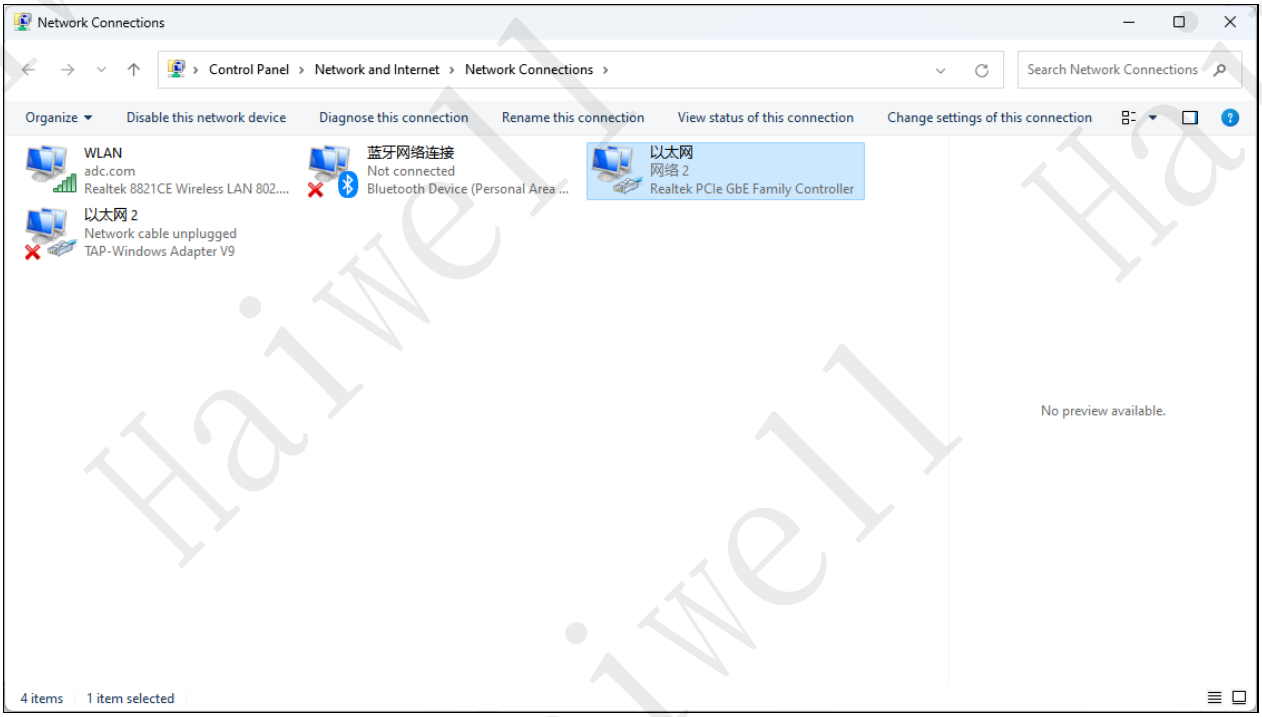


Figure134 Check the Supply Network Segment 1

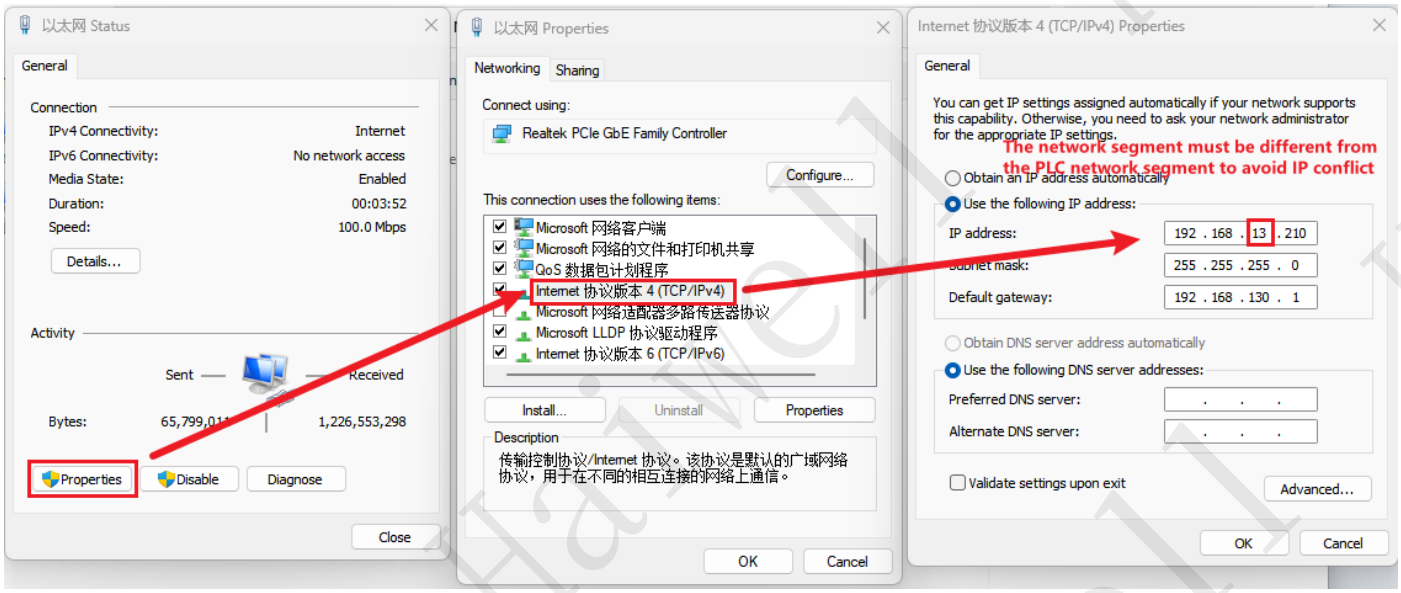


Figure135 Check the Supply Network Segment 2

Note：If the computer has WIFI function, the network mode can use WIFI first and then perform VPN transparent transmission operation.

2. Open the Device Management Tool

After the successful communication between HMI and Siemens 200 smart according to the previous project, open the configuration SCADA software - Tool - Device management tool, select Cloud Management, and carry out transparent transmission of the device.

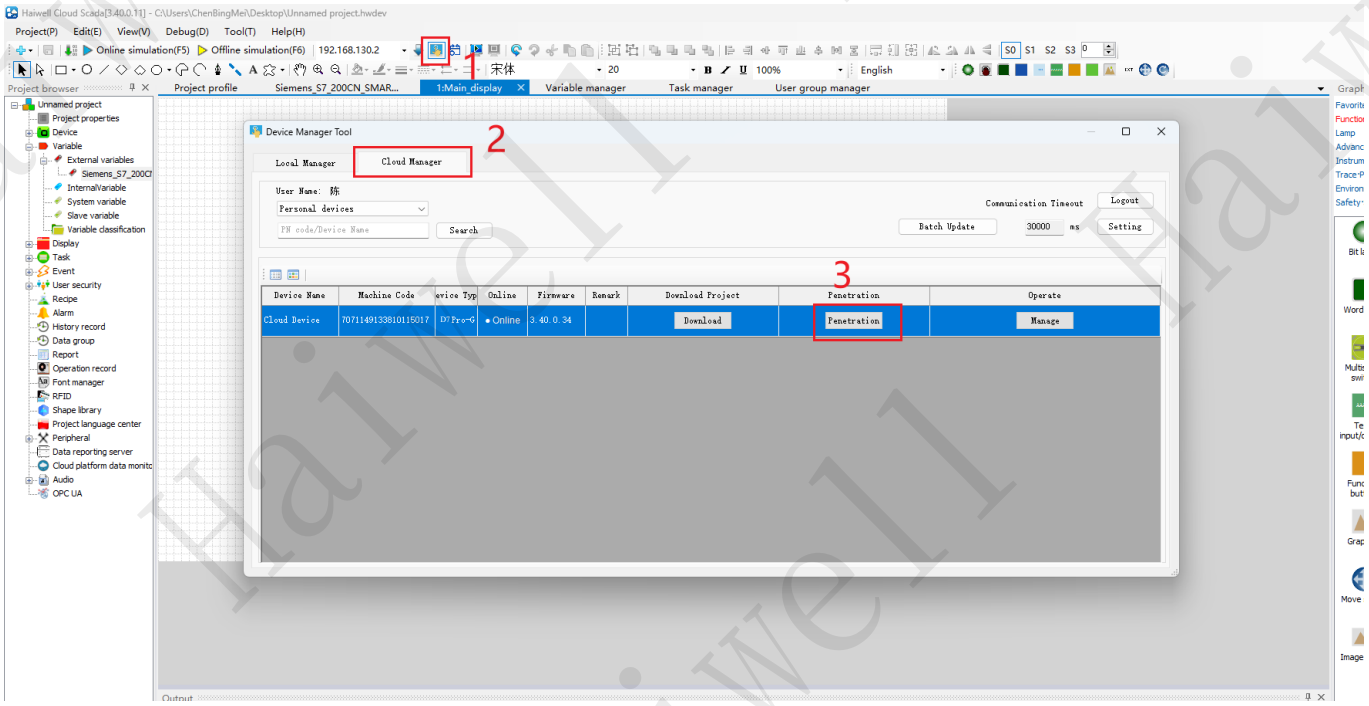


Figure136 Open the Device Management Tool

3. Connect Transparent Transmission Devices

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

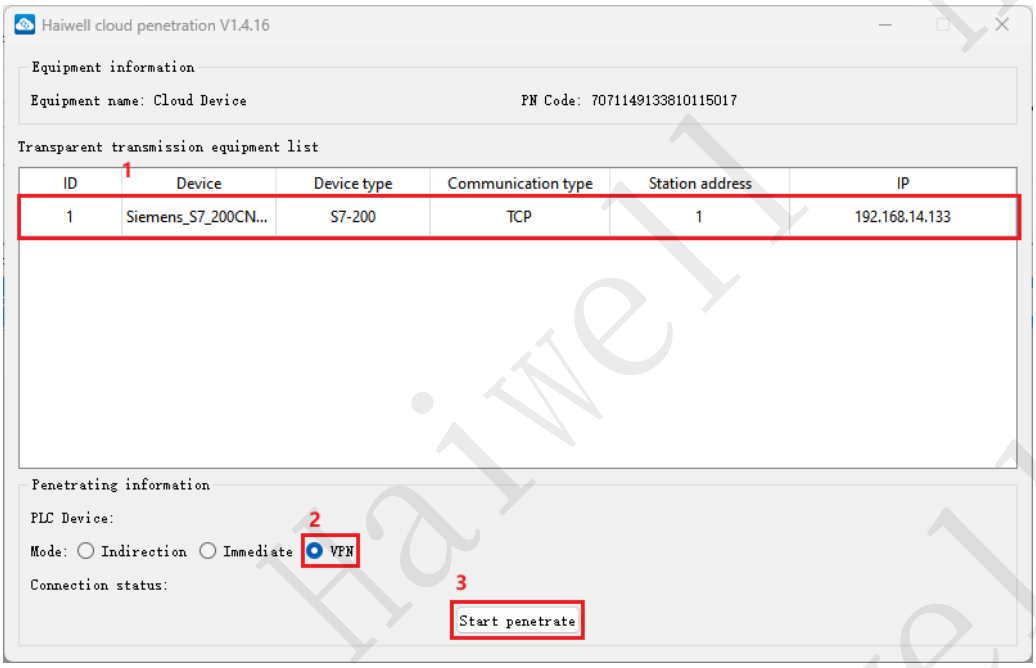


Figure137 VPN Connect the Transparent Device

After connecting the device - select the corresponding PLC, and the transparent transmission mode is the transit mode by default. In this paper, select VPN, click Start transparent transmission, and fill in the IP address to establish a virtual IP address through the touch screen.

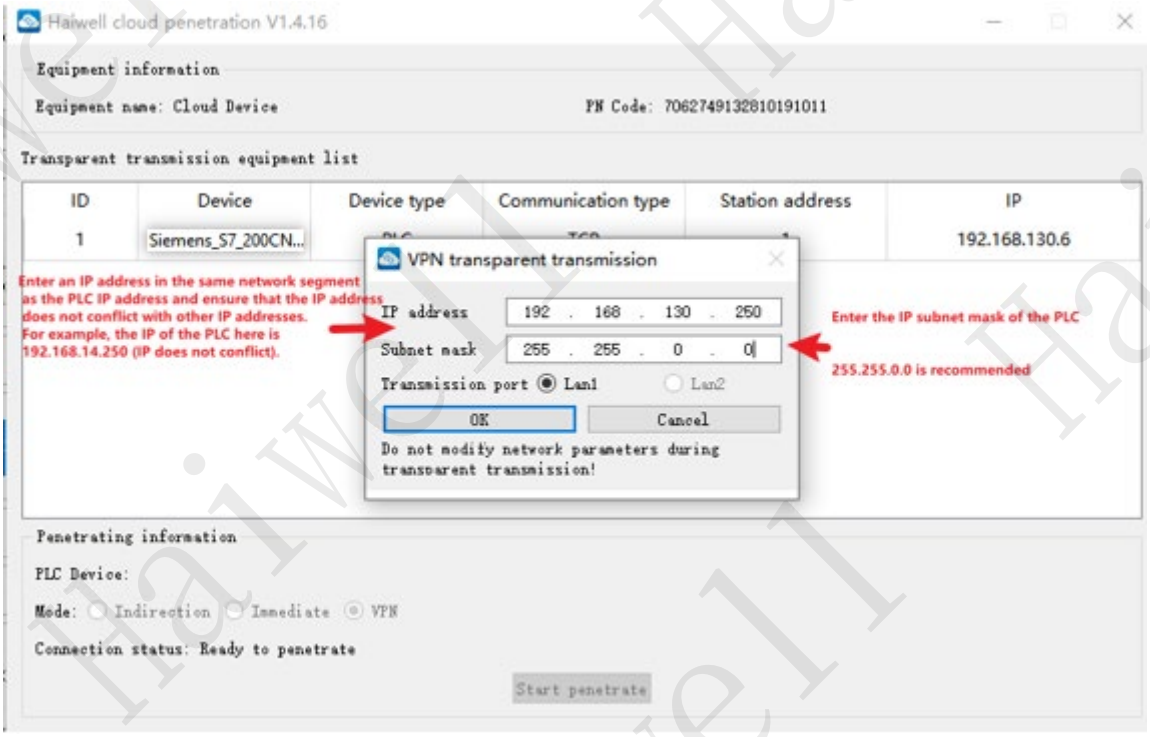


Figure138 VPN Transparent Transmission Fill Information

Note: Click after start pass through. The virtual IP address that needs to be set up here is not an IP address that is exactly the same as that of the PLC. The IP address 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 local area network where the PLC device is located. Subnet Mask Enter the subnet mask corresponding to the PLC IP address or 255.255.0.0, and click OK.

4. VPN Status Check

After the preceding operations are performed and transmission through is enabled, you need to check the VPN status. Open your computer Settings and click【Change Adapter Options】.

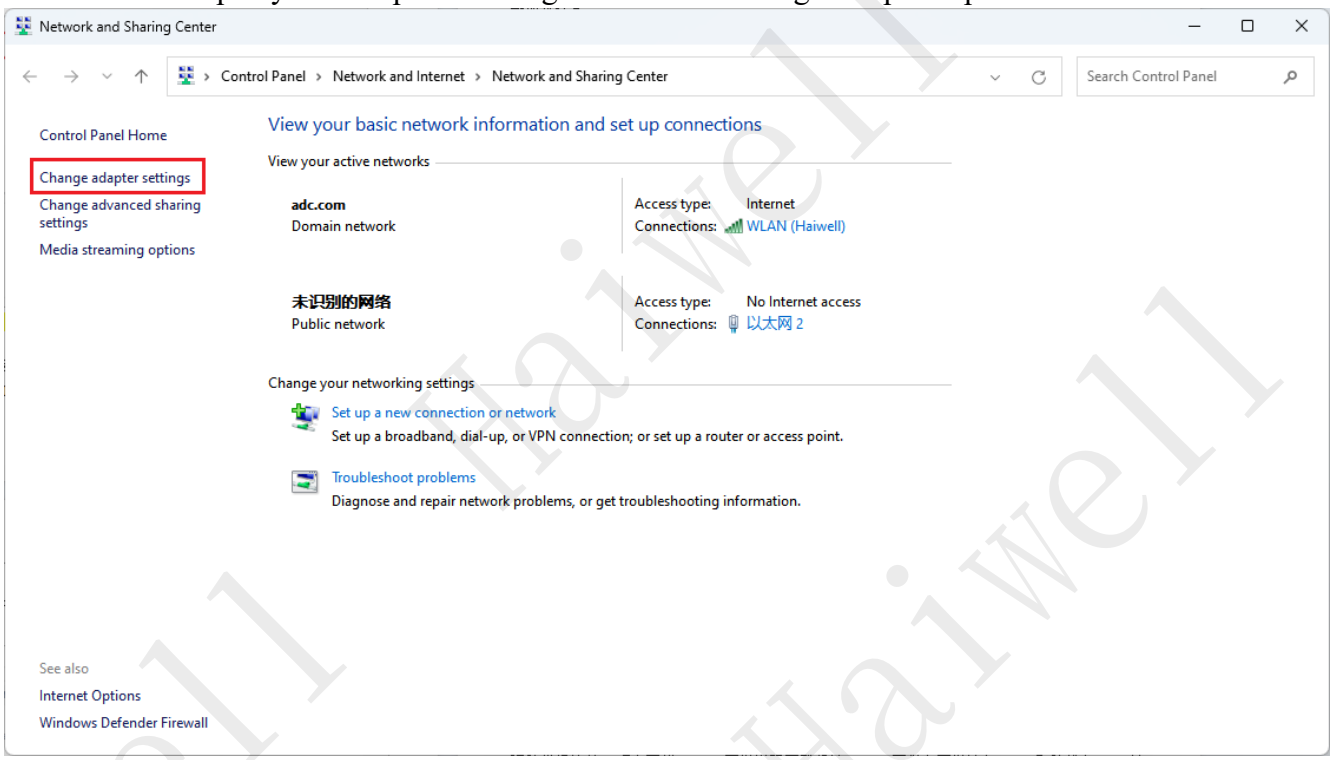


Figure139 Change Adapter Options

Locate the Ethernet (in this case, Ethernet 2) where the virtual network interface TAP-Windows Adapter V9 is located. Double-click the "Ethernet 2" interface.

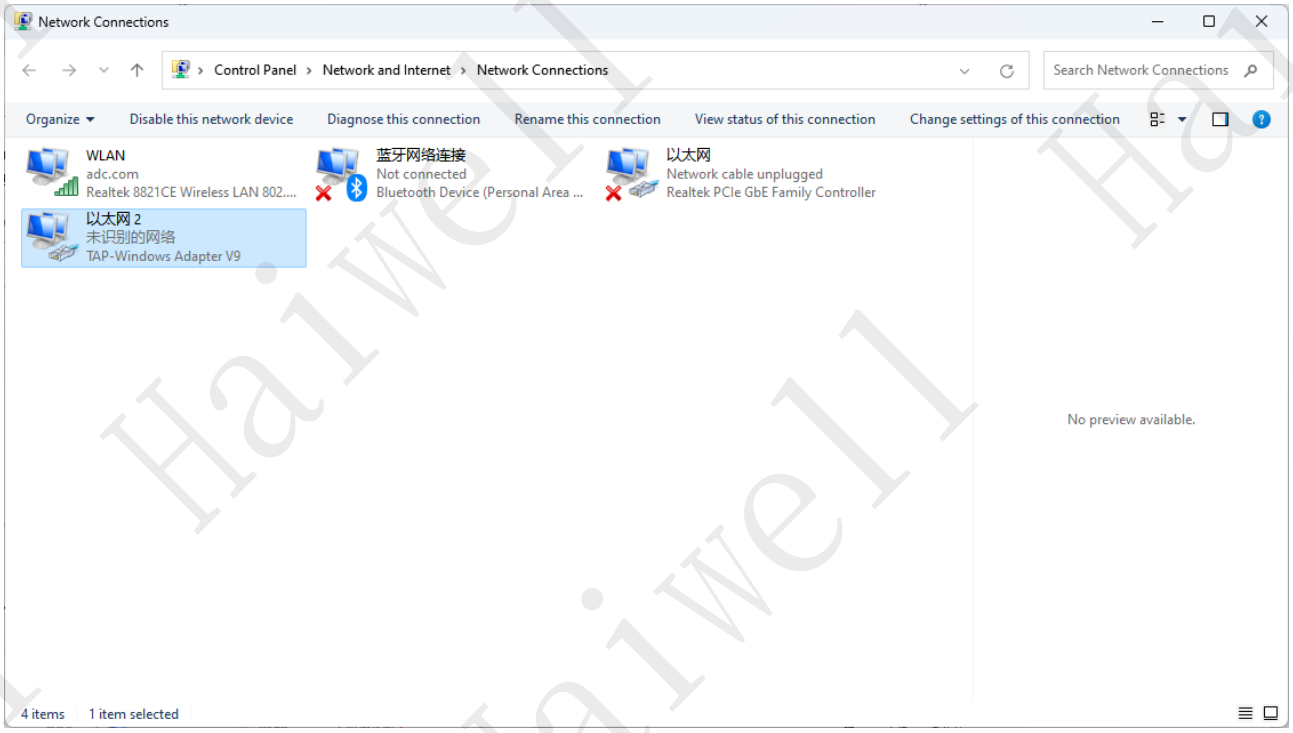


Figure140 Open the Virtual Network Card

Click【Details】, you can check the IPv4 address and IPv4 subnet mask information in the pop-up

"Network Connection Details" page, and when the two are consistent with the VPN parameter Settings, you can start the transparent transmission PLC device.

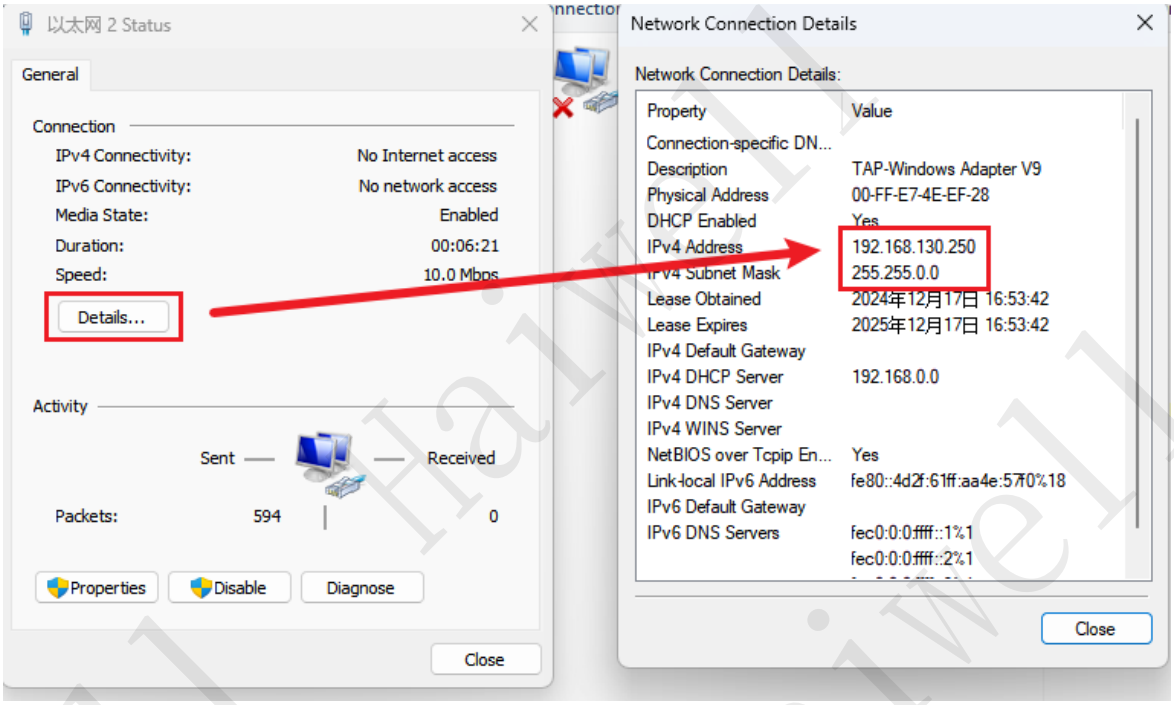


Figure141 Check the IP Address of the Virtual Network Card

Note: When the result of the query is: The generated TAP-Windows Adapter V9 network interface is connected to an unidentified network, and its right-click status is displayed - The IPv4 address and IPv4 subnet mask in the details are consistent with the VPN parameter Settings, you can start transparent transmission of PLC devices.

(The preceding method is used to query VPN status in windows 10. In windows 11, you only need to click Settings > Network and Internet > Advanced Network Settings to query related network information.)

5. Transparent Transmission PLC

Open the Siemens programming software and click to go online. In the dialog box that is displayed, select the TAP-Windows Adapter V9 network interface driver. Click Find CPU, you can appear online PLC, if there is no CPU can be added manually enter the PLC IP address.

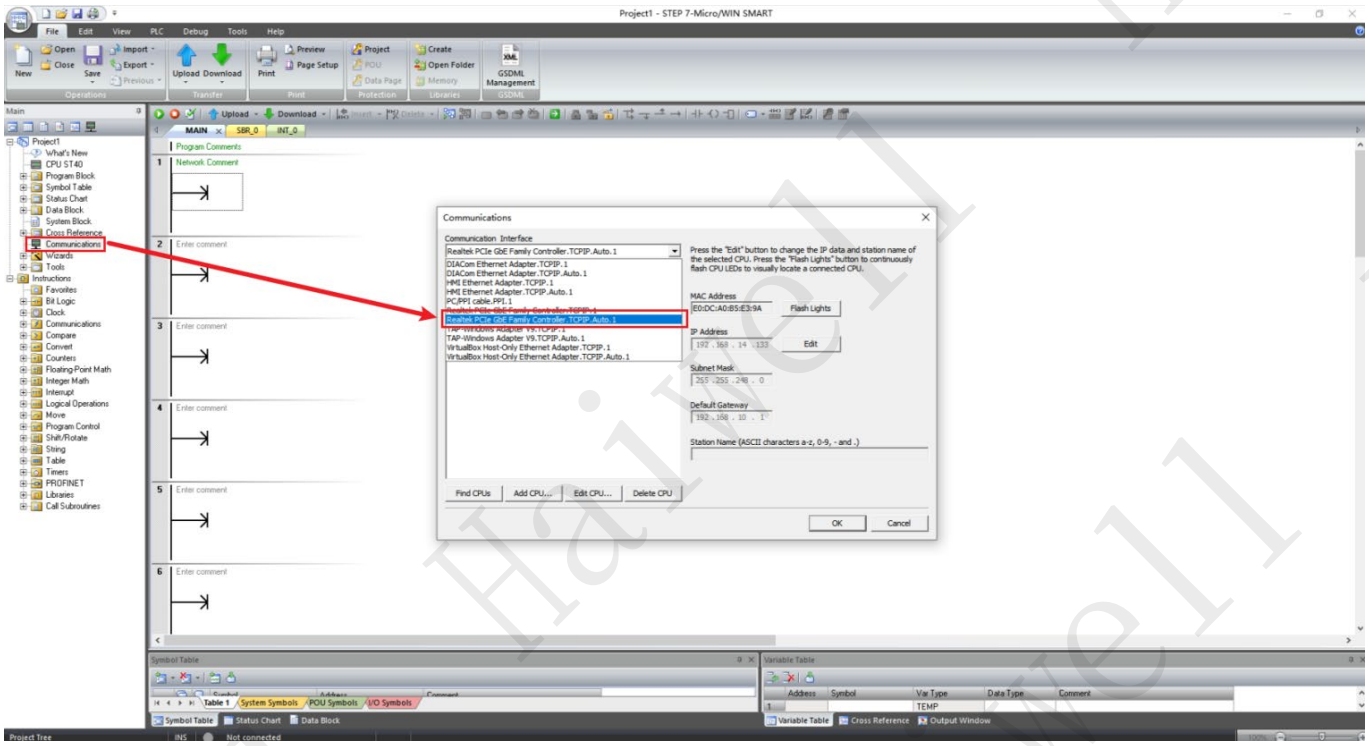


Figure142 Select the V9 Communication Interface

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

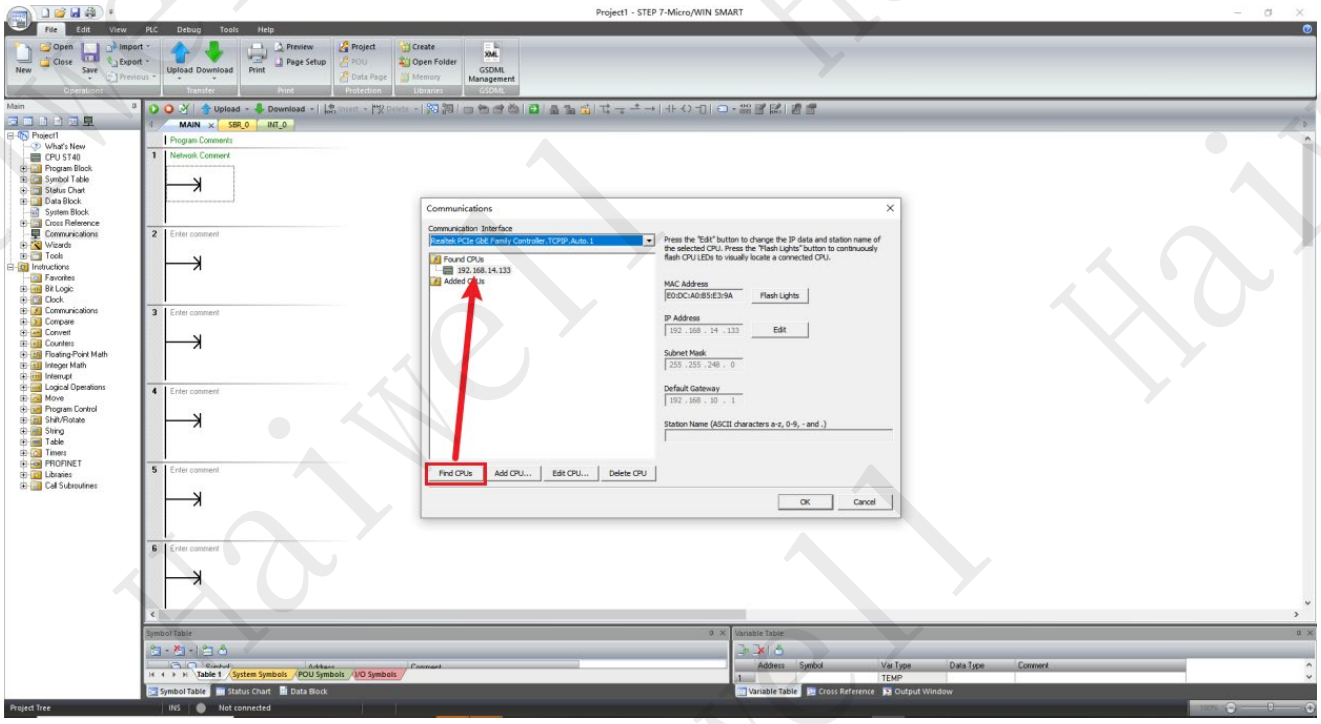


Figure143 Look Up CPU

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

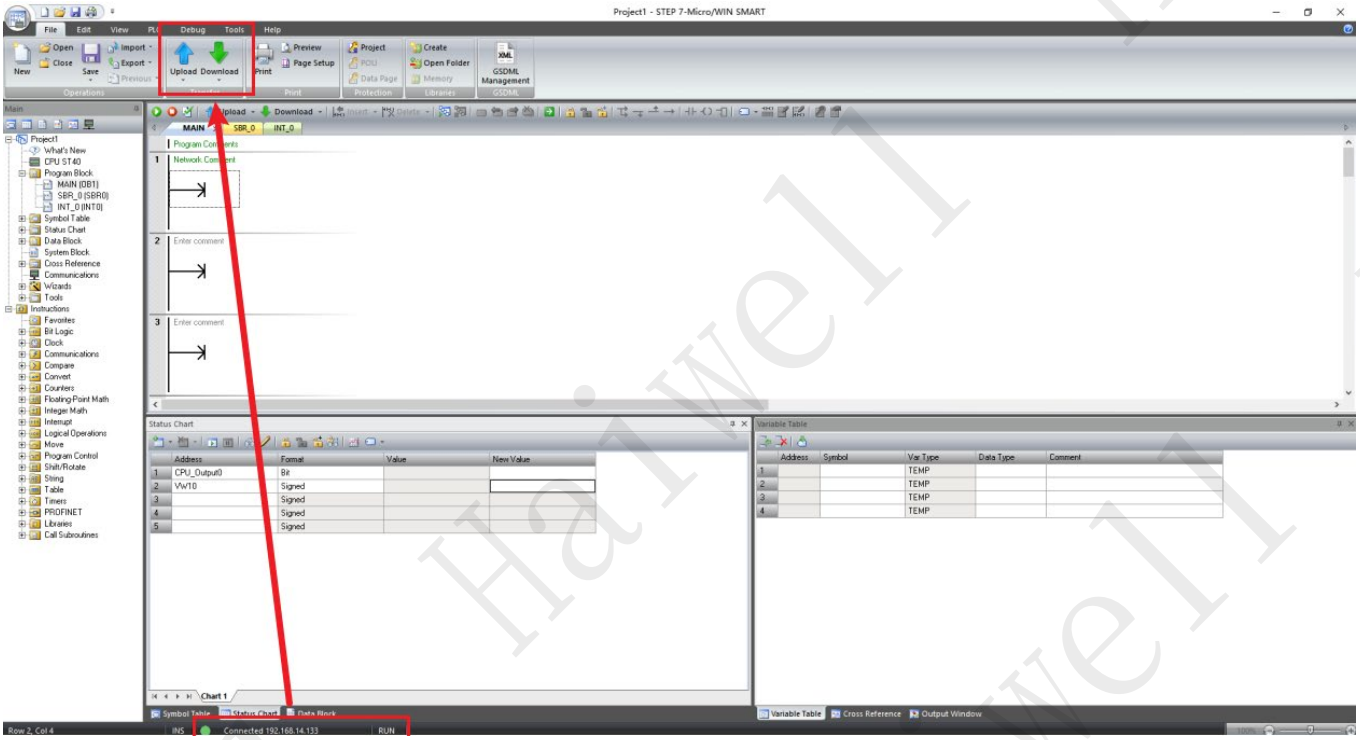


Figure144 Check Connection Status

Note: VPN transparent transmission support PLC and Haiwell products communication failure can also be normal transparent transmission;

VPN transparent transmission supports all PLC devices in the same LAN with transparent transmission set IP address parameters.

VIII. HMI Calibration

The optimized power on calibration mode ensures the precise correspondence between the touch point and the display position when the user uses the HMI, improves the accuracy of the operation, and can help adjust the deviation caused by environmental changes, hardware aging or replacement.

1. Enter Calibration Mode

Method 1: The HMI background Settings directly enter the calibration mode

Long press the upper right corner of the touch screen for five seconds to enter the background Settings, tap【System Info】, and then tap【Start Touch Calibration】to enter the calibration mode interface.

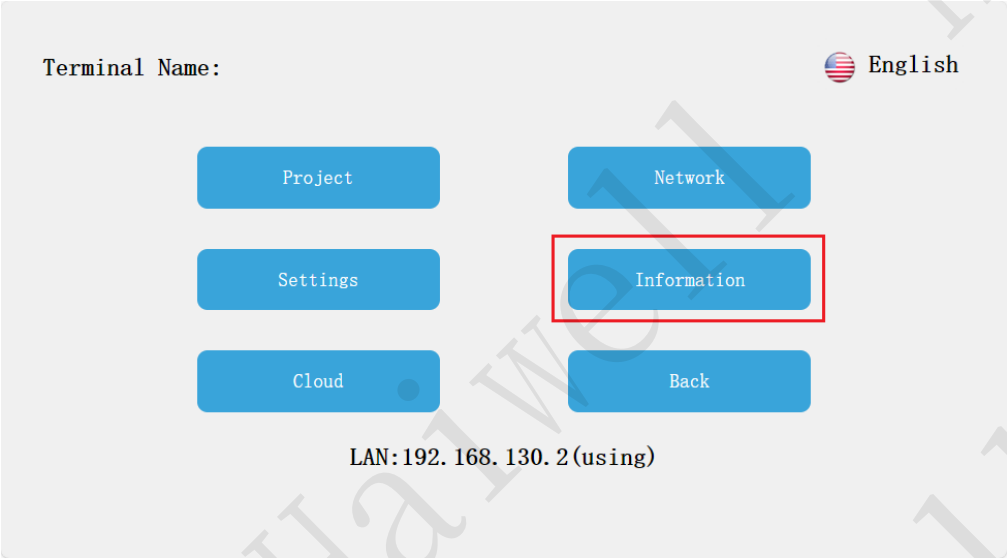


Figure145 Click System Information

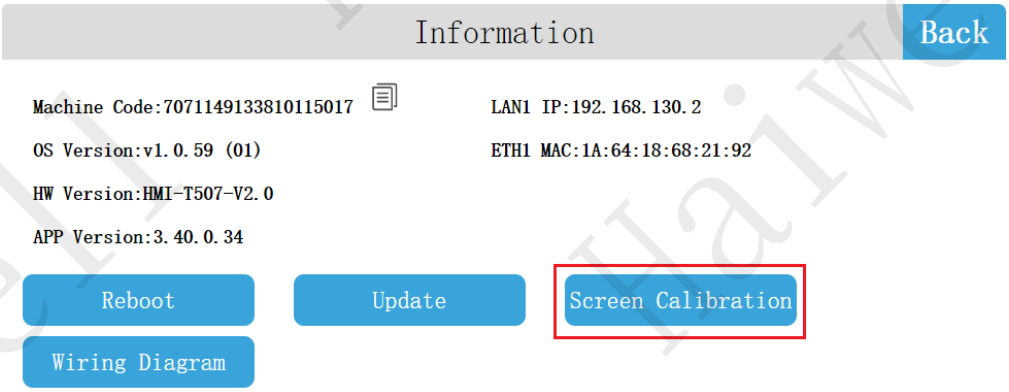


Figure146 Click to Initiate Touch Screen Calibration

The touch screen calibration has failed, it can be operated according to the following ways.

Method 2: Power off and restart the HMI. Enter the background Settings and recalibrate

Step 1: Go to background Settings

During the HMI startup stage, long press any position of the screen for 10s to automatically enter the background setting. If the HMI screen is held for less than 10s, the screen will be released, and the project screen will be directly entered.

Figure147 Press and Hold 10s to Enter Calibration 1

Step 2: Enter calibration mode

On the HMI background Settings screen, hold down 10s to enter calibration mode. If the user enters the background Settings through other methods, the HMI screen will not enter the calibration mode when long pressed.

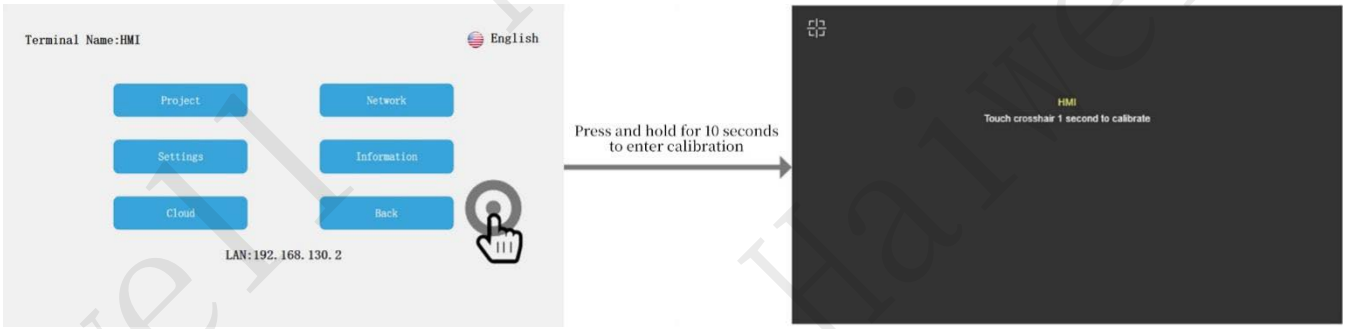


Figure148 Press and Hold 10s to Enter Calibration 2

Method 3: Enter the HMI background Settings for the mobile APP

Open the Haiwell Cloud APP on your mobile phone, and access the HMI device from the local device or cloud device. Take the cloud device as an example, enter the corresponding HMI device, and then click background Settings - System information - start touch calibration.

Figure149 The Phone Starts Touch Screen Calibration for the APP

Method 4: Computer LAN access HMI background Settings

If the HMI and the PC are in the same LAN and on the same network segment, you can enter the HMI IP/setting (for example, 192.168.13.202/setting) in the browser to access the HMI background Settings - System information - enable touch calibration.

Figure150 LAN Activates Touch Screen Calibration 1

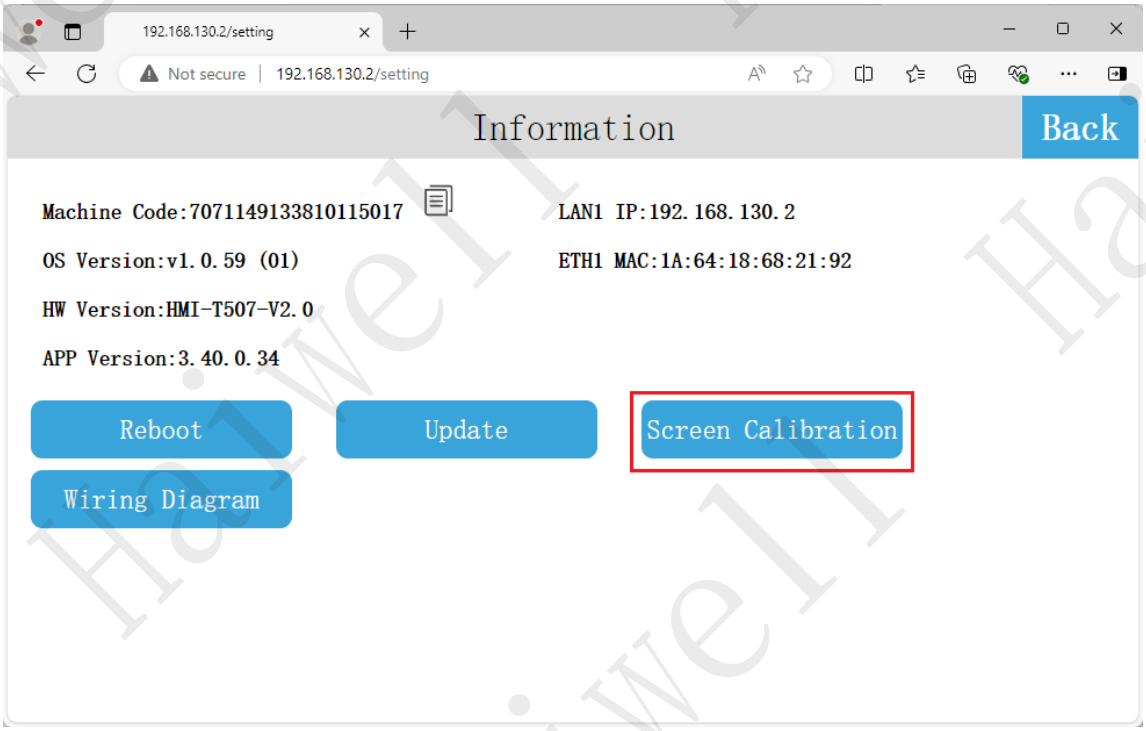


Figure151 LAN Activates Touch Screen Calibration 2

Method 5: Configure the software Local device/cloud device to start the calibration mode

If the HMI and the PC are on the same LAN and the network segment is the same, open the configuration software and click Device Management Tool, Local management or Cloud management

Select the HMI. Click Manage - Enable Calibration.

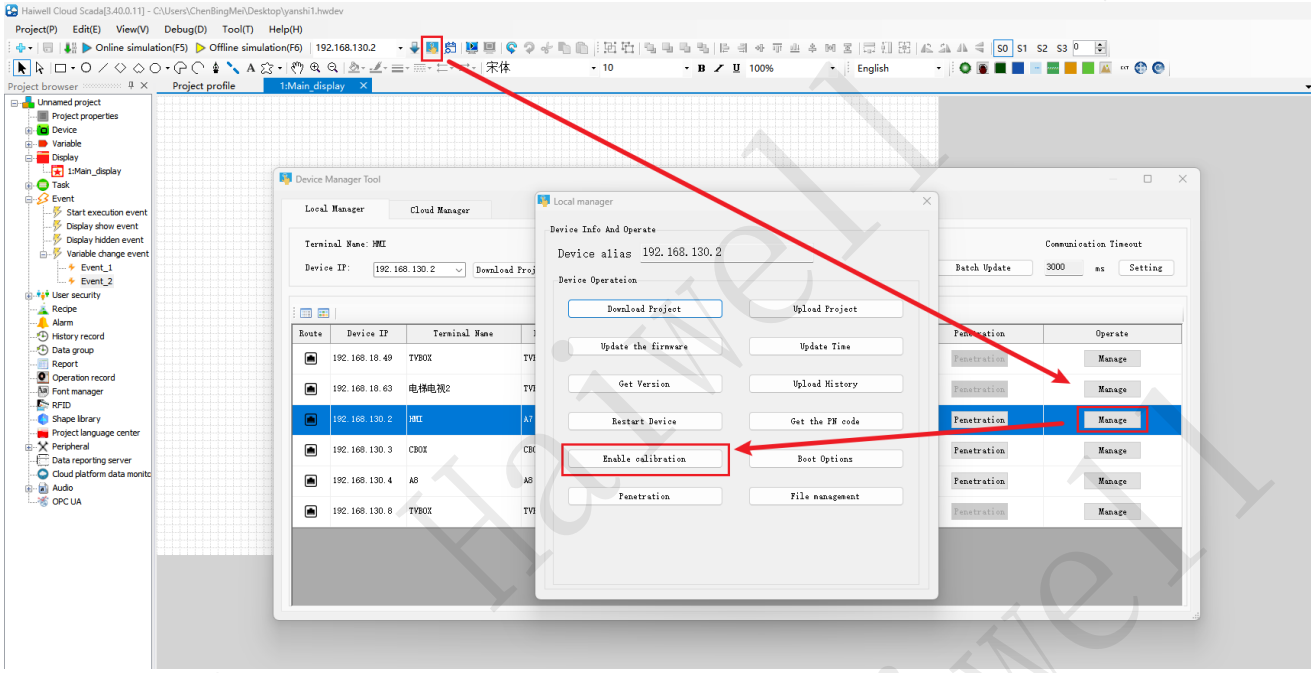


Figure152 SCADA Starts Touch Screen Calibration

2. Operation Calibration Mode Interface

In the Calibration Mode screen, the calibration cross symbol appears at the top left of the screen, Long press the cross for one second until you hear a drop release, enter the next calibration position, calibrate the touch screen of the device successively according to the five sequences of "upper left, upper right, lower right, lower left, middle". Finally, the HMI will restart if the calibration is successful.

Figure153 Calibration Interface

IX. Common Problem

1. What is the factory IP address of HMI?

The factory default IP address of the HMI is 192.168.1.112. To change the IP address of the HMI, see Ⅴ. HMI Settings -2. Background Settings -2.6 Network Settings.

2. How to download projects locally from HMI?

Local download project: If the HMI and the PC are on the same LAN and the PC network segment and HMI network segment must be the same, open configuration software - Device Management Tool - Local Device, find the corresponding HMI in the list, and click Download Project.

Local upload project: The HMI and the computer are in the same LAN and the computer network segment and the HMI network segment must be the same. Open the configuration software - Device Management Tool - Local Device, find the corresponding HMI in the list, select Management, enter the local manager, and click Upload Project. (The project disables uploading by default. If the project needs to set the upload function, open the configuration software, click Engineering - Project properties - Security Settings, and check Allow the upload project Settings upload password.

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

The A Series HMI Factory Demo project upload password is AHMI.

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

Method 1: LAN Access

① PC: On the LAN, you can also access the HMI through a browser. The prerequisite is that the PC and HMI are on the same LAN and on the same network segment. Enter device IP address +/setting (for example, 192.168.11.123/setting) to enter the background setting screen.

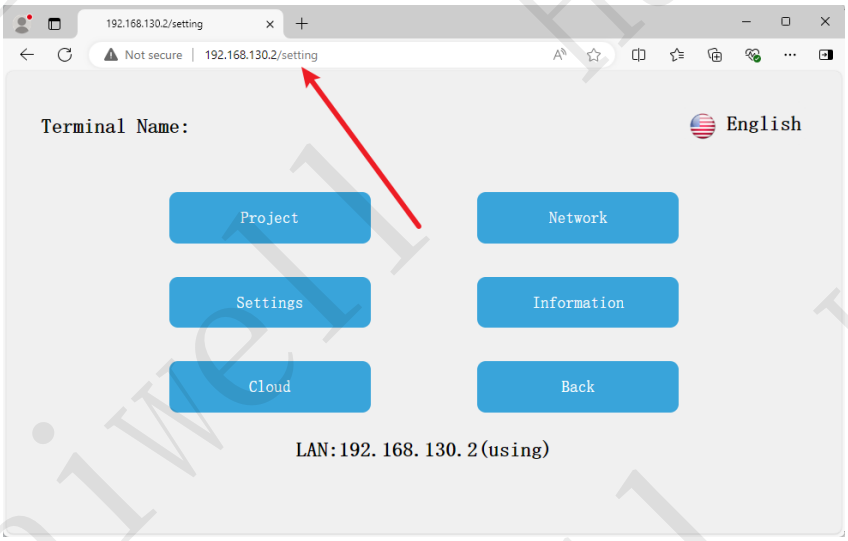


Figure154 Computer Browser LAN Access Background Settings

② Mobile terminal: If the HMI has a model with WIFI version, the mobile WIFI can connect to the hot spot of the HMI, and then open the Haiwell Cloud APP- Local device to find the HMI device. If the local device does not appear, you can find the HMI device in the upper left corner of the local device Enter the IP address of the hotspot 10.5.5.1 to access the device page.

Figure155 Personal Hotspot Name

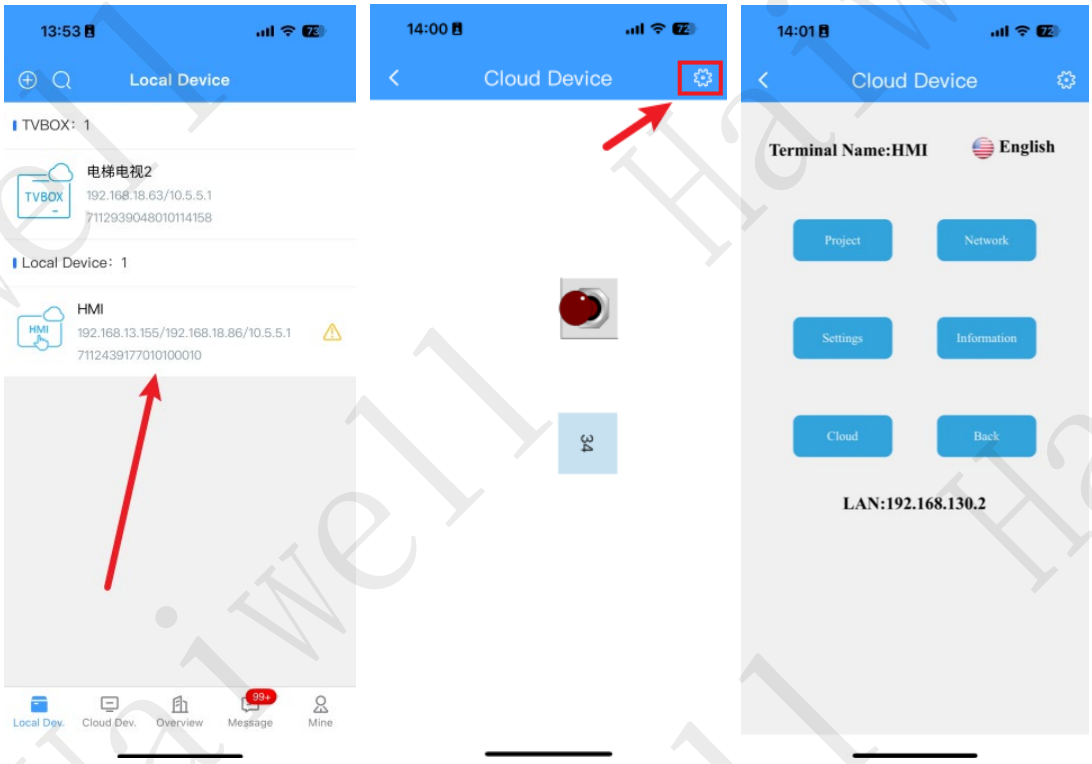


Figure156 Mobile LAN Access

Method 2: Access the project picture meta

In the advanced pixel of Haiwell Cloud configuration SCADA, pull out the "function button" of the pixel, double-click to enter the properties, select the function【Enter system device】, download the project to the HMI, click this button to enter the background Settings.

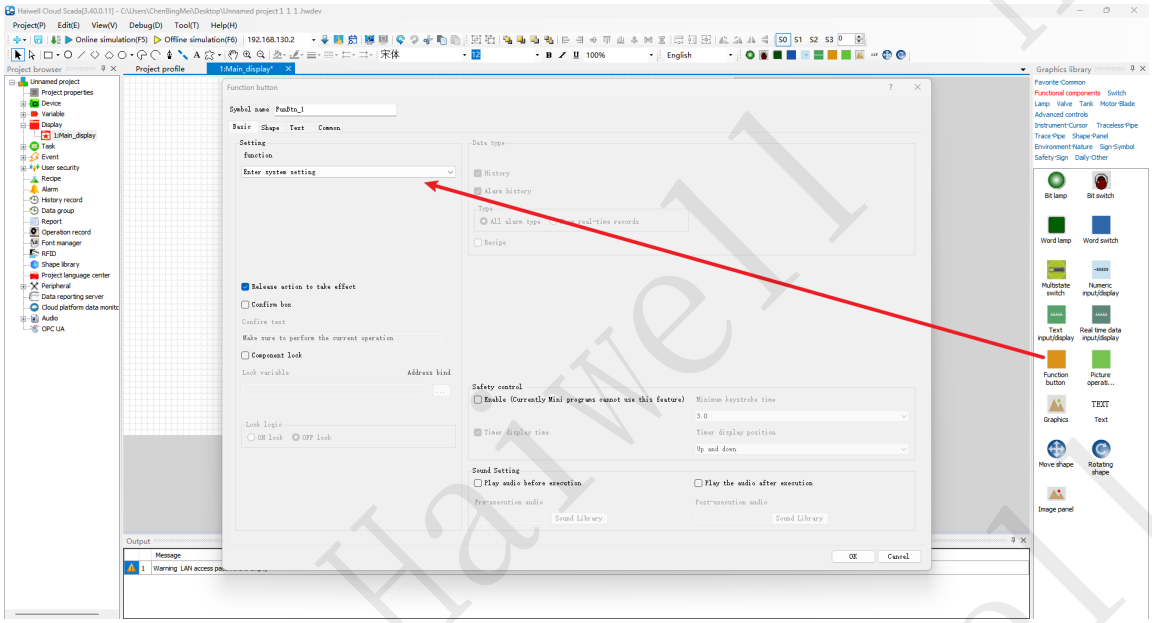


Figure157 SCADA Screen Enters the System Settings

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

You can download it.

Step 1: Open the configuration software to enter the project, click the configuration software menu bar - Engineering - Generate USB flash drive run file, copy the USB flash drive run file to the USB flash drive.

Step 2: Insert the USB flash drive into the USB port of the HMI, long press the upper right corner of the HMI display area to enter Background Settings - Local Settings - Project download - Select Generate USB flash drive running file to download successfully.

Refer to Ⅴ. HMI Settings-2. Background Settings-2.2 Project Settings.

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

Communication failure：

Step 1: Check whether the communication cable is connected, if necessary, use a multimeter to measure whether the pin of the line is corresponding, and then check whether the communication protocol of the device (COM port, equipment station number, communication type, baud rate, data format, etc.) is configured in the configuration project.

Step 2: If the above check is correct, you can first use a third-party tool to communicate with the device, such as Modbus poll to check whether the communication can be successful. If not, the device may not be a non-standard device according to the standard Modbus protocol, and the communication may not be possible.

Unreliable communication:

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

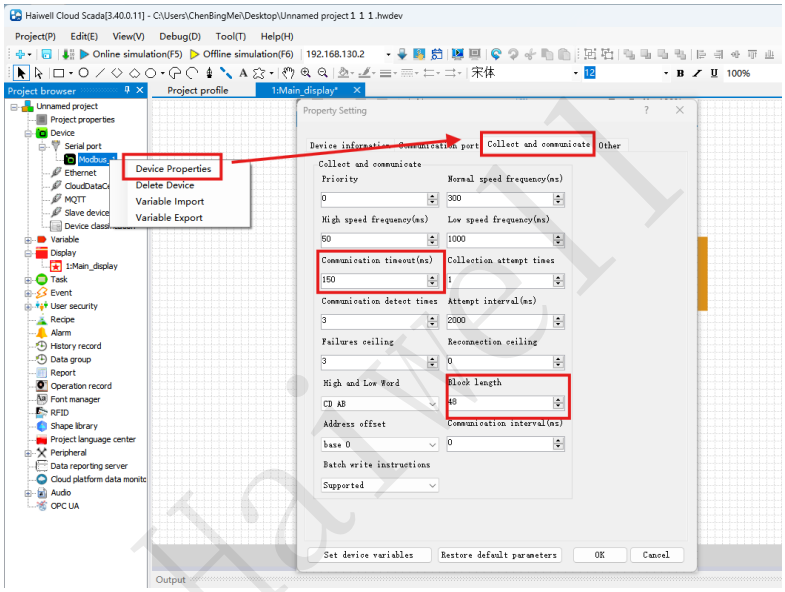


Figure158 Modify Collection Communication Parameters

Step 2: Do not place the power line and 485 line in a wire slot, and take anti-interference measures with shielded lines, magnetic rings, filters, etc.

7. How to deal with the normal communication flow meters, electricity meters and other instrumentation equipment, but the value read is not the same?

By default, the high and low byte order of the HMI device is CD AB, which needs to be adjusted according to the byte order of the device. If you do not know the byte order of the device, you can use the third-party tool Modbus poll to adjust the byte order for different values.

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

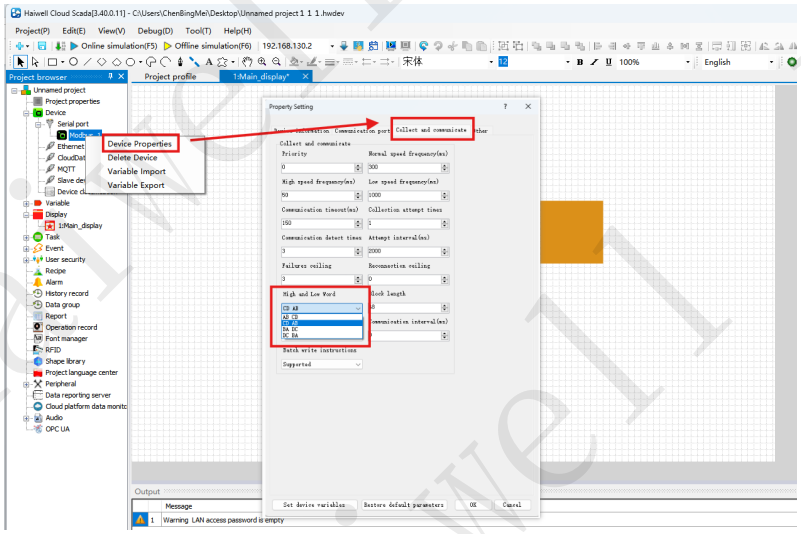


Figure159 Modify Collection Communication Parameters

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

The AKey identity of the user is known and the login account is available:

Mobile: open the Haiwell Cloud APP/ WeChat mini program, click the corresponding device in the cloud device to enter the device details, then click the upper right corner to enter the edit device, and

finally click Delete device. (If the device contains other users, delete the other users before deleting the device.)

On the computer side: go to ecloud.haiwell.com in the browser, click Device Center - Device list one by one after logging in, enter device details for the corresponding device on the right, and click Delete device.

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

Step 1: Go to the background of the device, click Network Settings - Network Diagnosis, enter the address cloud.haiwell.com to test whether the device can be pinged through to confirm whether it can connect to our server. If the fault cannot be rectified, perform the following steps to rectify the fault.

Step 2: Also in the background interface select the local Settings - other Settings in the current channel server click Settings, such as: the original Shenzhen server to switch to Qingdao, the original Qingdao server to switch to Shenzhen server.

Step 3: If the network is 4G, try to turn off the switch or set the 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 whether the 4G card status, traffic balance, and Internet access status are normal. If the 4G card is a directional card, domain name binding is required. (Domain Name Reference Appendix)

Step 2: Place the 4G card when the HMI is powered off. Note that the chip face of the card faces the pin.

Step 3: Hold down the upper right corner of the HMI for 5 seconds to enter Background Settings - Network Settings -4G, turn on the 4G switch, and check whether information such as card number and signal strength can be read normally on the screen.

Step 4: Background Settings - Network Settings - Network Diagnosis, use the diagnostic tool to select www.google.com (Haiwell is cloud: Other countries or regions select Hong Kong, China or closer to the server channel).

11. How to handle HMI WIFI connection failure?

Step 1: Check whether the WIFI antenna of the HMI is properly installed. The antenna must be placed close to the signal source.

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

Step 3: WIFI name and password do not contain Spaces and special symbols.

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

Step 1: Check whether 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 replace another network mode (WIFI).

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

Step 3: After the above steps are checked and correct, the computer can Uninstall the VPN tool,

uninstall the file path: C:\Program Files\Open VPN, double-click uninstall. eve to uninstall the VPN. Then open the configuration software, the VPN transparent transmission operation will automatically reinstall the VPN tool, and finally follow the normal transparent transmission operation steps.

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

The resolution of the camera is recommended to be 1920*1080P or lower and the frame rate is 25fps or lower. If "Onvif verification failure or network exception" is reported, check whether the integration protocol of Hikvision is enabled first.

14. How to handle RTSP access to Hikvision camera and configuration camera example path not displaying?

Touch screen using RTSP visit Hikvision cameras such as configuration camera sample path or "rtsp://admin:1230192.168.1.1:554/h264/ch1/main/av_stream" failing to show, Try 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

