



# 2-Wire Hotel Solution User Manual

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# 1 Safety Instruction

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## 1.1 Safety Instruction

Please read the following safety notices before installing or using this unit. They are crucial for the safe and reliable operation of the device.

- Please use the product-specified power adapter. If you need to use a power adapter provided by another manufacturer due to special circumstances, please confirm that the voltage and current of the provided adapter meet the specifications of this product, and it is recommended to use a product that has passed safety certification, otherwise it may cause fire or electric shock accidents. When using this product, do not damage the power cord, do not twist, stretch and strap it, and do not press it under heavy objects or sandwich between items, otherwise it may cause fire or electric shock caused by broken power cord.
- Before using the product, please confirm that the temperature and humidity of the environment in which it is located meet the working needs of the product.
- Do not attempt to open it. Non-expert handling of the device could damage it. Consult your authorized dealer for help, or else it may cause fire, electric shock and breakdown.
- Please refrain from inserting metal objects such as pins or wires into the vents or crevices. Doing so may cause electric shock accidents due to the passage of current through the metal objects. If foreign objects or similar metallic items fall inside the product, usage should be stopped promptly.
- Please do not discard or store the plastic bags used for packaging in places accessible to children to prevent them from covering their heads, leading to obstruction of the nose and mouth, which may cause suffocation.
- Do not install this phone in an ill-ventilated place. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

## 2 Product Overview

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### 2.1 Overview

The 2-Wire hotel phone solution includes a 2-Wire PoE switch and hotel phones, designed for low-cost, rapid deployment to upgrade hotel phone networks and enhance efficiency and guest experience.

The 2-Wire devices PN1, PN8, and PN24 are efficient, flexible, and easy-to-install network devices. They provide excellent connectivity and communication, utilizing existing wiring (PSTN lines, 2-wire intercom, analog phone lines) for seamless data transfer and integration. Suitable for intercoms, home users, small businesses, or large organizations, they offer outstanding performance and reliability.

The 2-Wire hotel phone H1-2 Wire can be directly connected using the existing RJ11 telephone line, eliminating the need for complex interface conversions and greatly simplifying the installation process. It seamlessly integrates with PN8/PN24 devices, allowing hotels to quickly set up networks with simple configurations, meeting the needs of hotels of various sizes. With advanced voice coding technology, it ensures clear calls and provides a high-quality communication experience. The number of phones can be flexibly adjusted based on the hotel's scale and needs, without the need to reconstruct the existing network architecture, ensuring the sustainability of the investment.



PN24



PN8



H1-2 Wire



PN1

## 2.2 Specification Parameter

### 2.2.1 Switch Specifications

Model	PN1	PN8	PN24
Network Interface	1 RJ45	1 RJ45	1 RJ45
Network Speed	10/100Mbps	10/100Mbps	10/100Mbps
2-Wire Interface	1 group of terminal blocks	8*RJ11 interface	24*RJ11 interface
Power Supply	54V 1.5A	54V 1.5A	54V 3A
Operating Temperature	-20°C~50°C	-20°C~50°C	-20°C~50°C
Enclosure Material	ABS	Galvanized Steel	Galvanized Steel
Weight	0.69 KG	11.33 KG	13.62 KG
Dimensions (LWH)	85x68x22.7mm	195x130x40mm	440x189.85x44mm
Installation Method	Desktop/Wall-mounted	Desktop/Wall-mounted/Rack-mounted	Desktop/Rack-mounted

## 2.2.2 Phone Specifications

Model	H1-2 Wire
SIP Line	2
Line Key	/
High-definition Voice	Support G.722, Opus voice coding
Operating Temperature	0°C- 45°C
Size (LWH)	169x184x124mm
Power Supply Method	2-Wire Power over Ethernet 12V DC Power Supply
Installation Method	Desktop/Wall-mounted

### 3 Installation Instruction

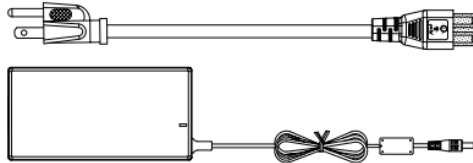
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#### 3.1 Device Inventory

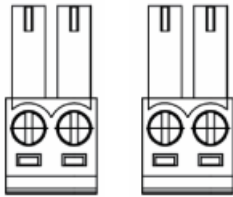
##### 3.1.1 PN1 Device Inventory



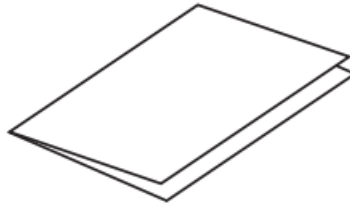
PN1\*2



Power Adapter



Terminal block \*2



Quick Installation Guide

##### 3.1.2 PN8 Device Inventor



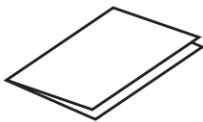
PN8



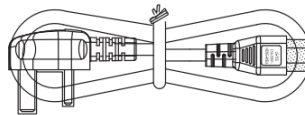
Screw \*2



Expansion Plug \*2



Quick Installation Guide



Power Cord



### 3.1.3 PN24 Device Inventory



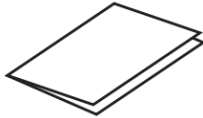
PN24



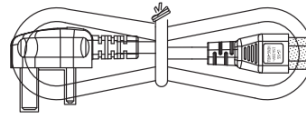
Screw \*8



Mounting Ear \*2

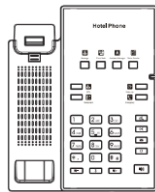


Quick Installation Guide



Power Cord

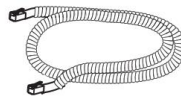
### 3.1.4 H1-2 Wire Device Inventor



Hotel Phone



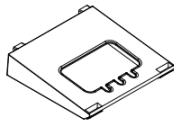
Handset



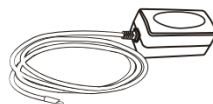
Handset



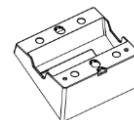
2-Wire Cord



Stand



Power Adapter (Buy separately)



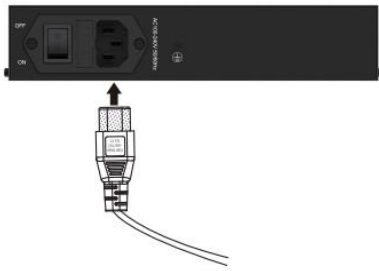
Wall Stand (Buy separately)

## 3.2 Network Installation

### 3.2.1 PN8/PN24 Installation

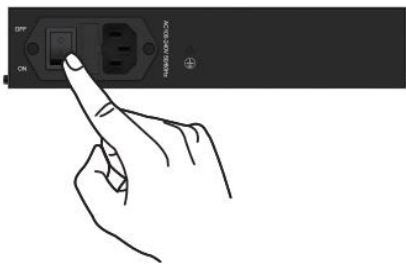
#### 1. Install the power cord

Insert the power cord with the cloverleaf connector firmly as shown in the picture below, and then plug the other end into the power strip.



## 2. Turn on the power switch

Switch from OFF to ON, and the power indicator light will turn on, indicating that the device can started normally.

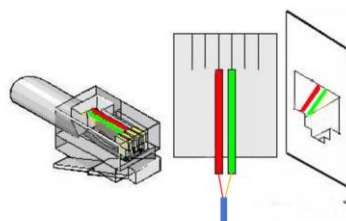


### 3.2.2 Connect H1-2 Wire

Take out the 2-Wire cord from the H1-2 Wire package and use it to connect the switch and the phone. The PN8/PN24 will provide both network connection and power to the H1-2 Wire through the 2-Wire cord, and the phone will start up normally.

#### ⚠ Note:

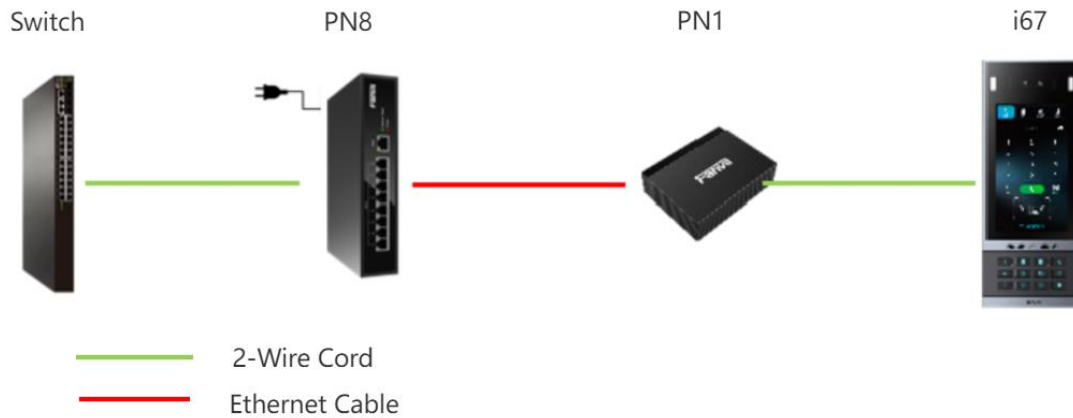
- If you are not using the cord included in the package and are making your own 2-Wire cord, please crimp the two wires into the two center positions of the RJ11 connector as shown in the picture below.
- When wiring, please disconnect the power of the switch, as otherwise there may be a slight electric shock accident.



### 3.2.3 Connect To Other Standard RJ45 Interface Device

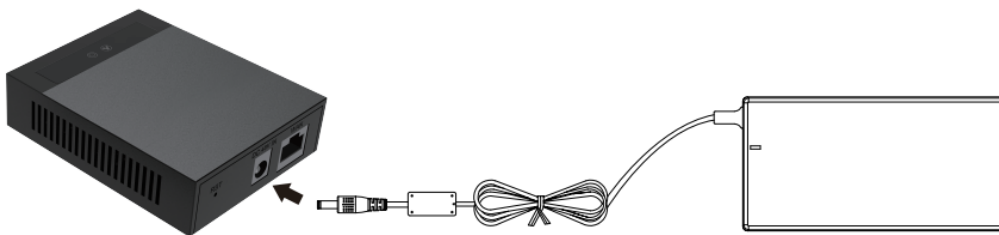
**Method 1:**

1. Connect the PN8/PN24 according to the switch installation method described above.
2. Use the 2-Wire cord to connect PN8/PN24 and PN1, and then connect them to the devices via Ethernet cables.

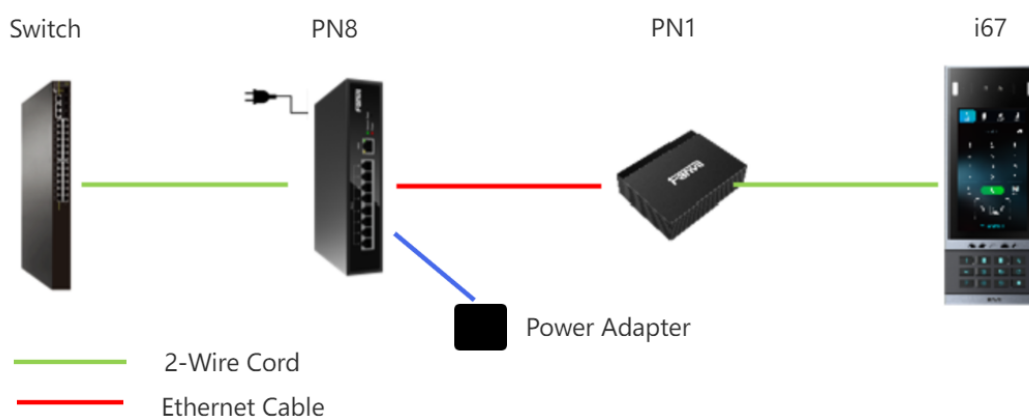


**Method 2:**

- 1, Insert the circular end of the power cord as shown in the picture, and then plug the other end into the power strip. The power indicator light will illuminate, indicating that the device has been powered on.



- 2, Use the 2-Wire cord to network-connect another PN1. Use an Ethernet cable to connect it to a standard RJ45 interface device. The device does not require an additional power source.



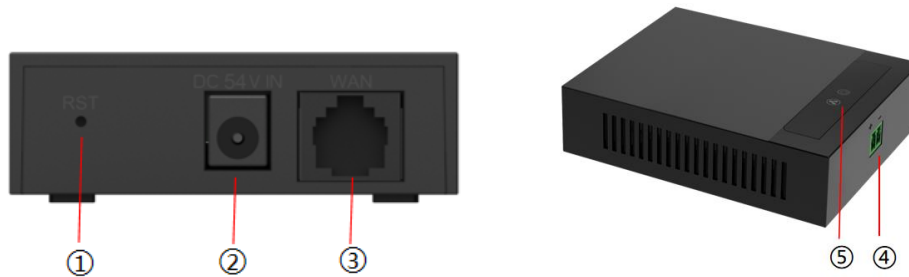
**Note:**

- **The 2-Wire connection between two PN1 devices needs to distinguish positive and negative poles.**

## 4 User Guide

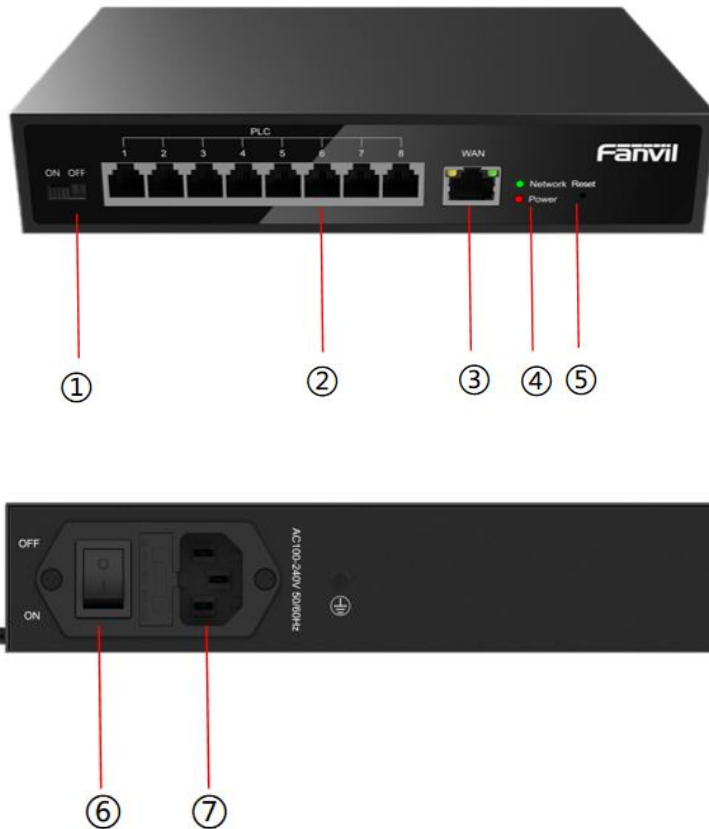
### 4.1 Button and Interface Instructions

#### 4.1.1 PN1 Button And Interface Instructions



Number	Name	Description
①	Restart Button	Long press for 10 seconds to restart the 2-Wire switch
②	Power Port	Connect the external power supply, 54V 1.5A
③	Network Port	RJ45 interface, used to connect to the upper-level switch to access the network
④	2-Wire Port	Use the connector to connect to another PN1 via 2-Wire
⑤	Network Status Indicator Light Power Indicator Light	<ul style="list-style-type: none"> <li>When there is network data exchange between the 2-Wire switch and the phone, the status of indicator light will flash</li> <li>When the 2-Wire switch is powered on, the status of indicator light will remain solid red</li> </ul>

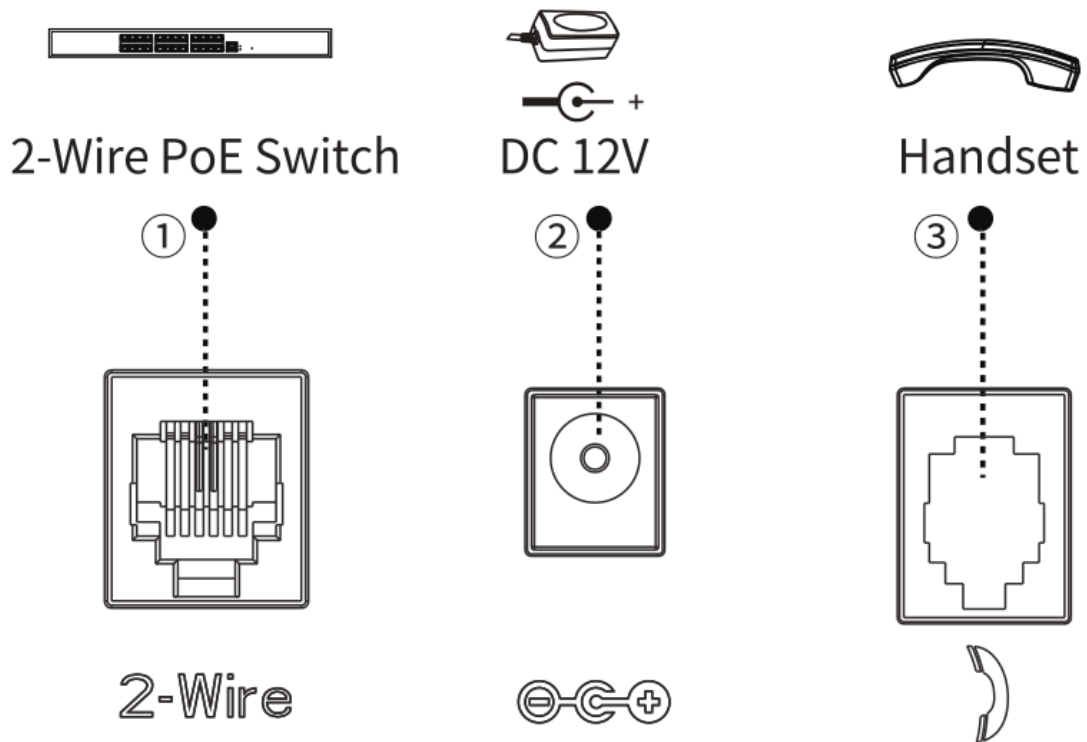
## 4.1.2 PN8/PN24 Button and Interface Description



Number	Name	Description
①	Power and Network Switch	Choose between two operating modes: power and network supplied / power not supplied. (Default setting is power and network supplied.)
②	2-Wire Port	RJ11 Interface, Connect to 2-Wire Phone
③	Network Port	RJ45 Interface, Used to Connect to Upper-level Switch for Network Access
④	Network Status Indicator Light Power Indicator Light	<ul style="list-style-type: none"> <li>The status indicator light on the 2-Wire switch will flash during network data exchange</li> <li>The status indicator light on the 2-Wire switch will be light when powered on and enabled</li> </ul>

⑤	Reset Button	Press and hold for 10 seconds to restore the device to factory settings.
⑥	Master Switch	Used to turn on/off the main power of the switch
⑦	Power Port	Connect the power cord

### 4.1.3 H1-2 Wire Button And Interface Instructions



Number	Name	Description
①	2-Wire Port	Connect the 2-Wire PoE switch to provide both power and network access for the phone
②	Power Port	Power with 12V/1A
③	Handset Port	Connect the handset to the phone

## 5 2-Wire Hotel Phone

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### 5.1 Language Settings

The user can set the phone language through the phone interface or web interface.

#### To set the language on the H1-2 Wire web page interface:

Log in to the device's web page, then set the language from the drop-down menu in the top right corner of the page.



### 5.2 Device Status

Users can view the status of the H1-2 Wire device through the device screen/web page.

#### View the status of the H1-2 Wire device through the web page:

Refer to [5.3 Web Management](#). Login to the web management page, go to **[System] >> [Information]**, and view the device status.

- System Information: Displays the device model name, hardware version number, software version number, running time, last running time, WAN port rate, memory information, system time, and SN information.
- Network: Displays the device network mode, MAC address, Ethernet IP, subnet mask, and switch information

### 5.3 Web Management

#### 5.3.1 Device IP Address

##### Retrieve Device IP through Scanning Tool:

1. Connect the computer and H1-2 Wire to the same local network, and install Device Manager on the PC.

(Device Manager download link:

<https://www.fanvil.com/service/doc/soft/tools/tools/ipscanner/index.html>)



2. Open the IP scanning tool (Device Manager), click on the scan button to obtain the IP address of the H1-2 Wire within the local network.

MAC	IP Address	Model	Version	Version Status	Description
0c38:3e61:1c50	172.18.28.17	H1-2 Wire	1.0.3	<span style="color: red;">■</span> <span style="color: red;">⊘</span>	--
0c38:3e61:1c0a	172.18.28.4	H1-2 Wire	1.0.2	<span style="color: blue;">■</span>	--
0c38:3e61:1c48	172.18.28.2	H1-2 Wire	1.0.3	<span style="color: blue;">■</span>	--
0c38:3e61:1c14	172.18.28.17	H1-2 Wire	1.0.3	<span style="color: blue;">■</span>	--

**Retrieve the device IP by pressing the button:**

The user can retrieve the device IP address by long-pressing the "#" key, which will announce the IP.

### 5.3.2 Web Interface

Ensure that the computer and the device are on the same local network. Open a web browser, enter the obtained device IP, log in to the device's web page, and access the login page.

Users must enter the correct username and password to log in to the web page. The default username and password are both "admin".

## 5.4 Line Settings

The device supports up to 2 SIP accounts simultaneously, which can be registered according to the application. You can switch between the 2 SIP accounts.

Users can register SIP accounts through the web interface.

**Registering an account through the web interface:**

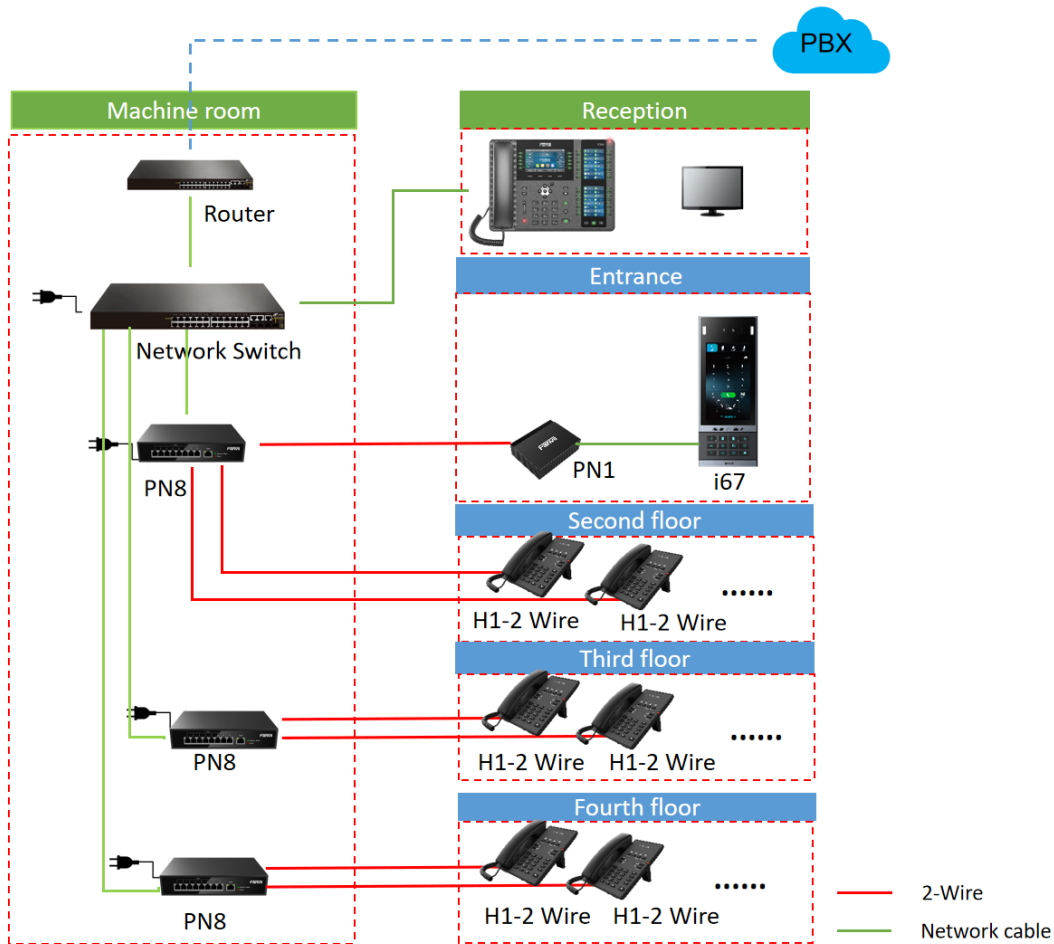
Users can select the registered line via the web page by navigating to **[Line] >> [SIP] >> [Line]**. Register the SIP account through **[Basic Settings]**. After completing the SIP parameter settings, click **[Apply]** to register successfully.

**SIP Parameters:**

Parameters	Description
Line Status	On this page, the current status of the line is displayed. To obtain the latest online status, users must manually refresh the page.
Enable	The status of this line is 'Enabled'
Username	Enter the username of the service account.
Authentication User	Enter the authentication name of the service account.
Display Name	Enter the display name shown when a call request is sent.
Authentication Password	Enter the authentication password of the service account.
Server Address	Enter the SIP server address.
Server Port	Enter the SIP server port.

## 6 Network Topology Diagram

### 1. Small to medium-sized hotels (55 Phones)

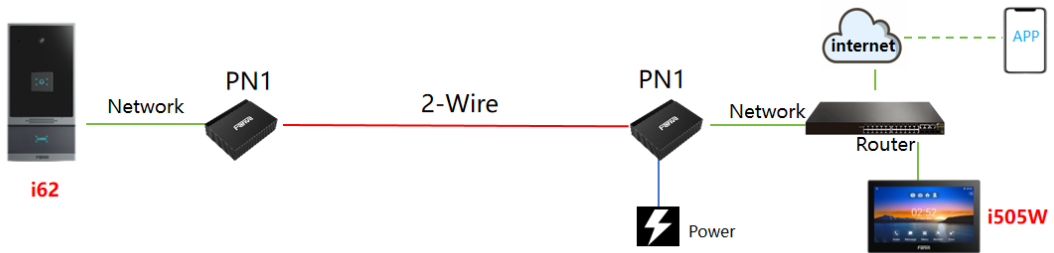


#### ! Note:

- If it is a large-scale enterprise office ( $\geq 55$  Phones) network, or if networking is done using cables of 100 cores and above, PLC tools are required for network grouping settings. Please refer to the [Network Grouping Key Configuration](#) for details. Otherwise, there is a risk of partial phone network paralysis.
- If network grouping settings are used, after deployment, please use PLC tools to export the MAC addresses of each device along with their corresponding network grouping passwords, and save them. This prevents situations where the passwords of switch and phones do not match when devices are replaced or added later, resulting in inability to access the network. This facilitates subsequent device maintenance and management.

- Strong electricity and weak electricity cannot be wired in the same route, they need to be wired separately and the distance should be more than 0.5 meter.

2. PN1 Network Topology Diagram



## 7 2-Wire Transmission Distance

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**Supply network and power transmission distance:**

Cable Type	PN8 ~H1-2 Wire	PN24 ~ H1-2 Wire	PN8 ~ PN1	PN24~PN 1	PN1~PN1
Cat 5e	300m	300m	300m	300m	300m
RVV 2*0.5	300m	300m	300m	300m	300m
HYV 2*0.5	300m	300m	300m	300m	300m

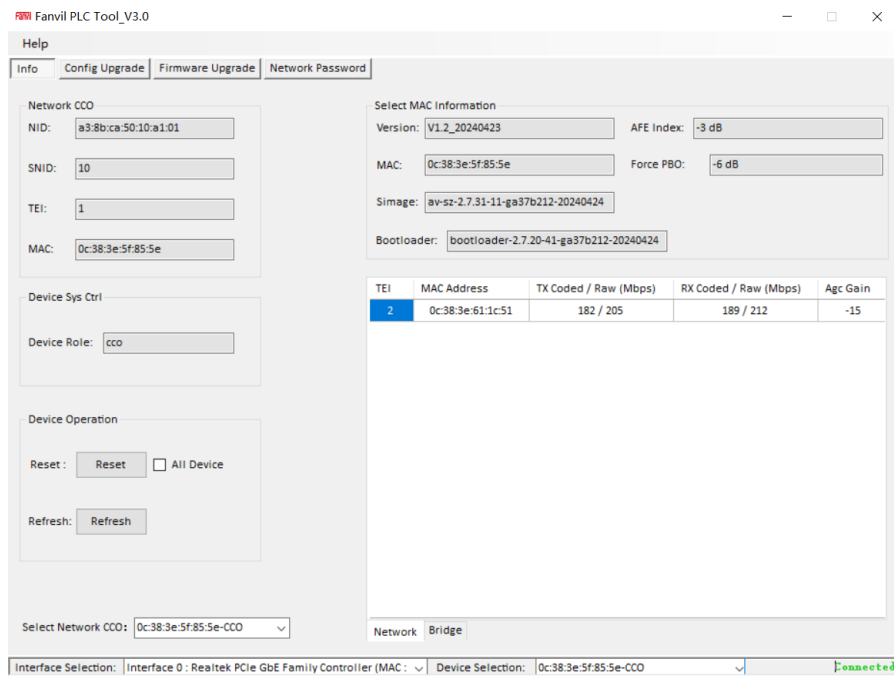
**The 2-Wire connection distance for PN1 is 1600 meters (only supply network)**

## 8 Equipment maintenance

### 8.1 Network Grouping Key Configuration

#### 8.1.1 Get Network Grouping Configuration Tool

Contact technical support personnel in your region to obtain the network grouping configuration tool (Fanvil PLC Tool) installation files and proceed with the installation.

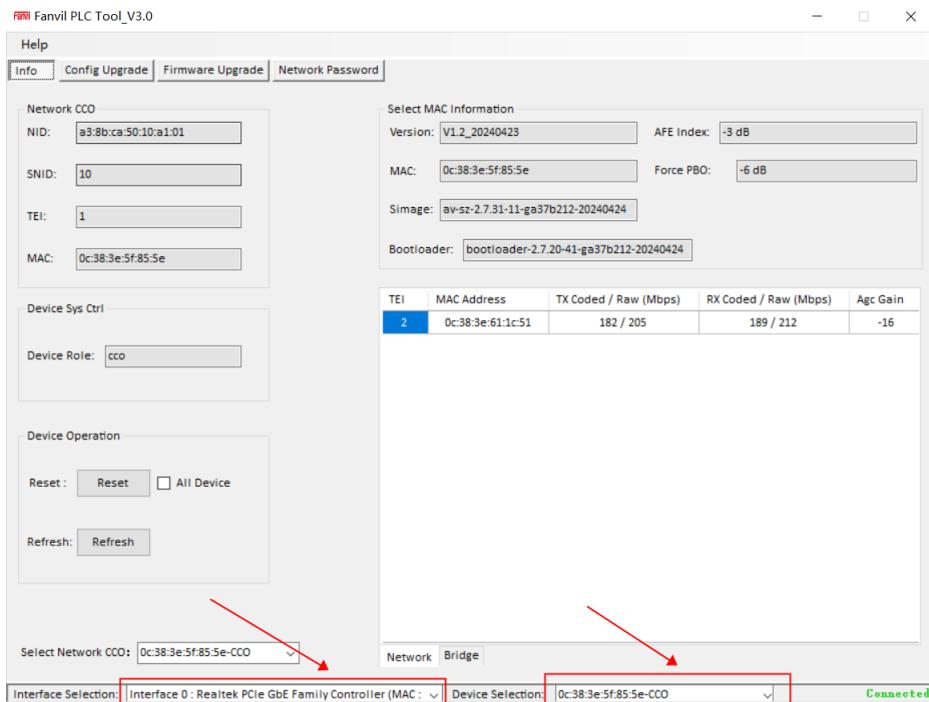


## 8.1.2 Network Grouping Key Configuration

**Note:**

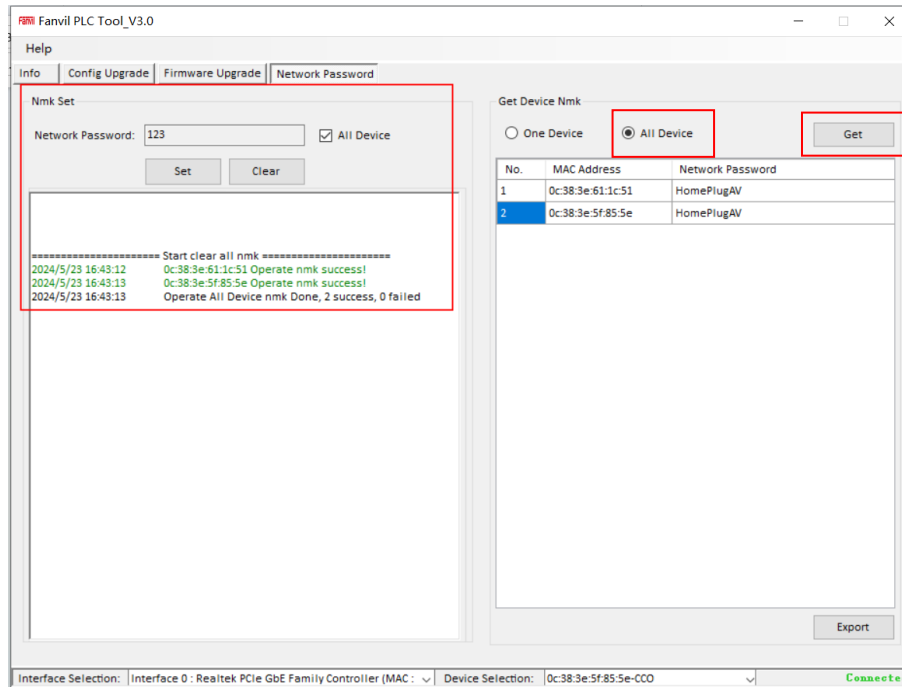
- When performing network grouping settings, power on individual switch and the phones under that switch separately. After completing the network grouping settings, power on another group and perform network grouping settings. Otherwise, network interference may occur, resulting in phones unable to access the network.
- After completing the network grouping settings for all devices, export the network grouping configuration information for saving, facilitating subsequent maintenance.
- After completing the network grouping settings, restart the phone and switch for the changes to take effect.

1. Choose the corresponding network card (default selection is the first one), and select the gateway device you want to configure.



2. Click on [Network Password]>[All Device]>[Get] to obtain the relevant information of the switch and all phones connected to it. The default network grouping key for phones and the switch is: HomePlugAV.

- Click [All Device], enter the desired network grouping key in the input box (password format: limited to within 64 characters, including uppercase letters, lowercase letters, numbers, and special characters (/\"?,"}-+!@(#¥%.& ) , and click [Set] to complete the network grouping settings for the gateway and all phones connected to it.
- Press the power switch of the switch to restart the switch and the related phones, and the network grouping settings will take effect.



- Select another switch device and repeat the above steps 2, 3, and 4 to complete the network grouping settings for the entire system.
- After completing the network grouping settings for the entire system, click on [Export] to export and save the password configuration and other information of the entire network grouping for easy maintenance in the future.

**Note:**

- The MAC addresses displayed and exported in the PLC Tool are actually the true MAC addresses of the phones with the last digit incremented by 1.

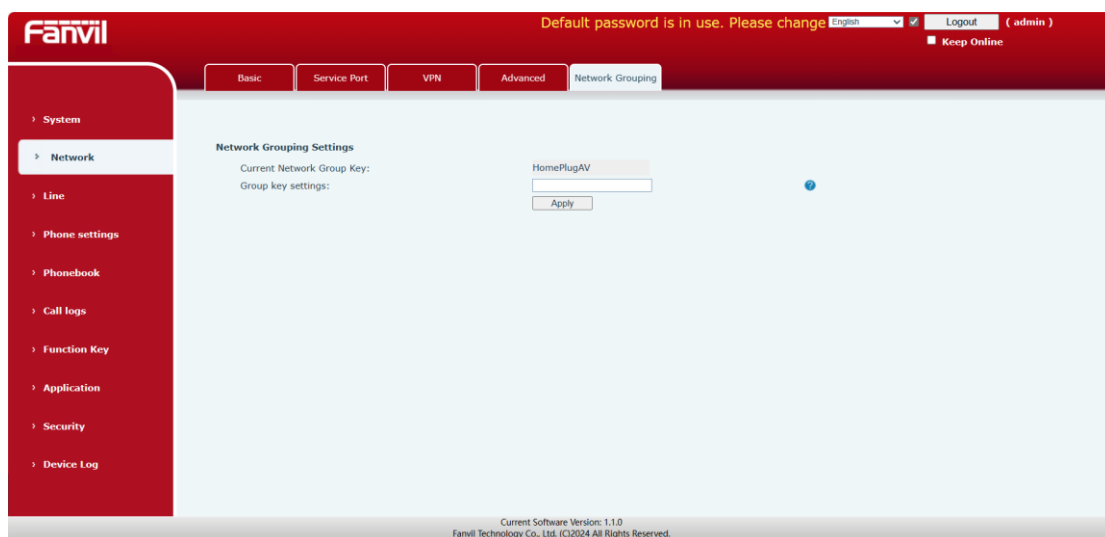


### 8.1.3 Clear Network Grouping Key

1. Choose the corresponding network card (default selection is the first one), and select the gateway device you want to configure.
2. Click on [Network Password] > [All Device]>[Get] to obtain the relevant information of the switch and all phones connected to it.
3. Click on [All Device]>[Clear] to clear the network grouping settings for the switch and all phones connected to it, restoring the default password.

### 8.1.4 Phone Web Setting Network Grouping Key

1. Enter the phone's web interface, click on [Network] > [Network Grouping] to perform network grouping settings.
2. In "Grouping Key Settings," enter the desired network grouping password, then click [Apply] to set it successfully. If the input value is empty, the phone's network grouping configuration will be cleared, restoring the default network grouping password **(the network grouping password for the phone and the switch should be consistent).**



### 8.1.5 Restore the Default Network Group Password on the Phone

In standby mode, press “#\*121” on the phone to restore the default network group password "HomePlugAV."

## 8.2 Power Configuration

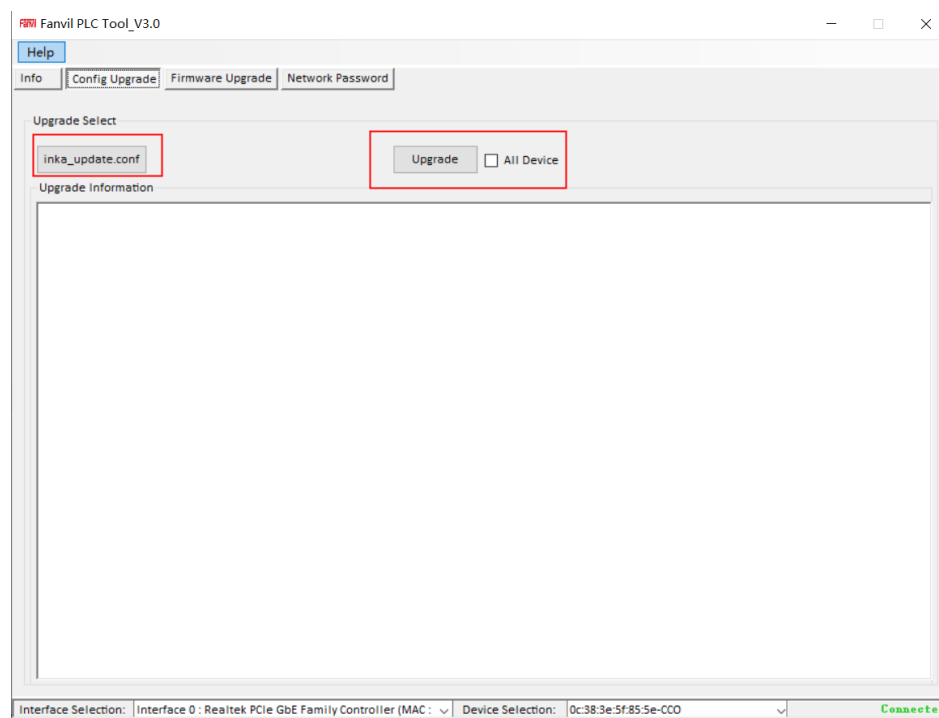
If you need to change the power configuration, please contact the technical support personnel in your area to obtain the appropriate power configuration file.

The steps for importing the configuration file are as follows:

The steps for importing the configuration file are as follows:

Click the [Config Upgrade] interface to perform configuration upgrade operations.

1. Click [All Device] to select all devices under the switch (including the switch).
2. Click [inka\_update.conf] to import the power configuration file.
3. Click [Upgrade] to perform the upgrade.

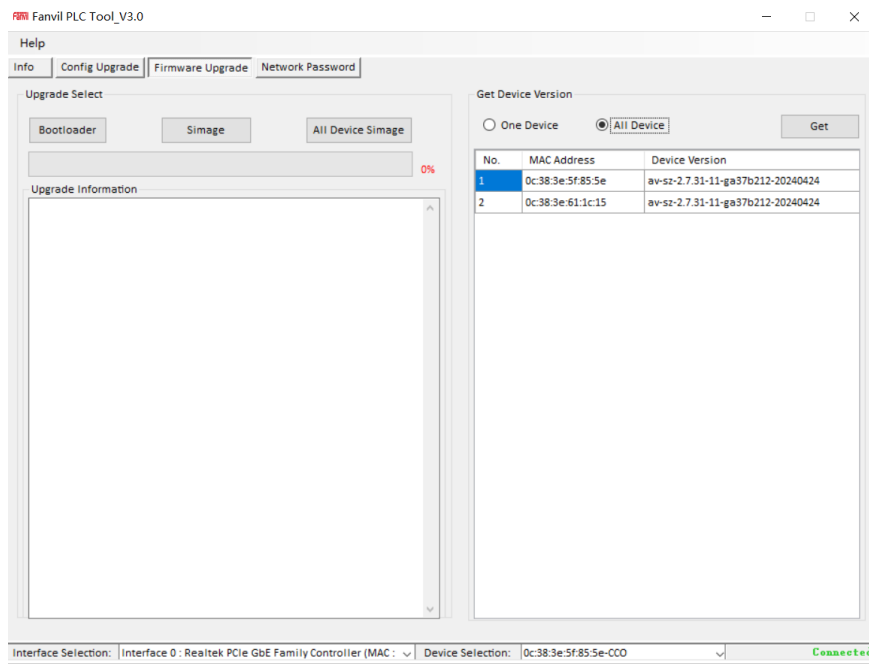


## 8.3 PLC Firmware Upgrade

Contact the technical support personnel in your area to obtain the PLC firmware upgrade file. The upgrade steps are as follows:

1. Click the [Firmware Upgrade] page.
2. [Simage]: Select a single device to upgrade the PLC firmware.  
 [All Device Simage]: Select the switch and all devices under the switch to upgrade the PLC firmware.

After the upgrade is complete, you can click [Get] to obtain the version information of all devices for verification.



## 9 Trouble Shooting

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### 9.1 Get Device System Information

#### 9.1.1 Get Phone Information

Users can obtain device information through the device webpage [System] >> [Information] or the device [Menu] >>[Status] options.

The following information will be provided:

1. Device information (model, MAC address, software and hardware versions, etc.)
2. Network information
3. Account information

Users can obtain device-related information through the PLC Tool.

The following information will be provided:

Device information (MAC address, PLC firmware version, current configuration file, power information)

#### 9.1.2 Get Switch Information

Users can obtain device-related information through the PLC Tool.

The following information will be provided:

Device information (MAC address, PLC firmware version, current configuration file, power information)

### 9.2 Reboot Device

#### 9.2.1 Reboot Phone

Users can restart the device through the webpage or device menu.

**Reboot the device from the webpage:**

Click [System] >> [Restart Phone] and press [OK].

**Reboot the device via the gateway:**

Use the power master switch of the switch device to restart both the switch and the phones.

**Reboot the device via the PLC Tool:**

Open the PLC Tool, select the phone device you want to restart, and click [Reset].

## 9.2.2 Reboot Switch

Use the power master switch of the switch device to restart the switch.

**Reboot the device via the PLC Tool:**

Open the PLC Tool, select the phone device you want to restart, and click [Reset].

## 9.3 Device Factory Reset

### 9.3.1 Phone Factory Reset

Users can restore the phone to its default settings through the webpage.

Reset the device from the webpage:

Click [System] >> [System Configuration] >> [Factory Reset] >> [Reset] button, and then press [OK].

### 9.3.2 Switch Factory Reset

Press and hold the switch's factory reset button for 10 seconds to restore the switch to its factory settings.

## 9.4 FAQ

Q1: Can 2-Wire gateways be used with 2-Wire products from other manufacturers?

A: It is not recommended. Using 2-Wire products from different brands together may lead to decreased transmission performance of the devices or other unforeseen issues.

Fanvil only guarantee the performance of our own equipment.

Q2: Can Fanvil's 2-Wire PoE Switch be directly connected to an analog phone?

A: Not supported.

Q3: Can it be compatible with mainstream PBX manufacturers, such as 3CX, Yeastar, and so on?

A: Yes

Q4: What technology is used in Fanvil's 2-wire solution?

A: It uses PLC technology, which stands for Power Line Communication.