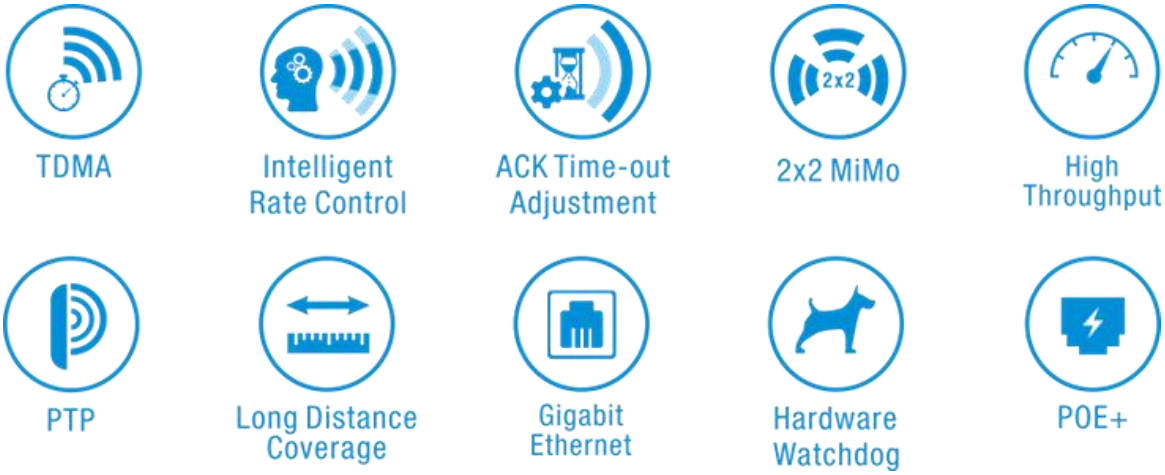
CP5-1200


TDMA
Intelligent Rate Control
ACK Time-out Adjustment
2x2
2x2 MiMo
High Throughput
PTP
Long Distance Coverage
Gigabit Ethernet
Hardware Watchdog
POE+

Catalog

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🕮 Purpose

This document is proposed for the users of CP5-1200 devices, helping them to configure the device and list the troubleshooting, so that the devices can be used successfully quickly.

This document mainly contains the following parts: hardware information, web configuration menu descriptions, network configuration examples, and troubleshooting. It can help the customers quickly be familiar with the devices and use them correctly.

🕮 Definitions

Table 1 Definitions

No.	Items	Description
1	CP5-1200	Outdoor, long distance AP/CPE/Bridge devices.
2	VTrans	VTrans is a series of wireless technologies, including TDMA, 5M/10M/20M/40MHz bandwidth support, intelligent rate control, Auto ACK Time-out adjust, having the advantage of long transmission range, high date rate and robust transmission.
3	AP	Access point
4	Station(Client)	WIFI station that can be associated to an access point.

1 Product Overview

CP5-1200 is a powerful WIFI Bridge/AP/CPE device, which allows WIFI access and video/audio/data transmission device, enables long-range, fast speed and robust wireless connections. Integrated with VTrans technology, CP5-1200 has the advantages of long-distance, high-throughput, and Strong anti-interference.

VTrans technologies include TDMA, 10M/20M/40M/80MHz bandwidth, intelligent rate control, Auto ACK Time-Out Adjust and so on. TDMA technology solves the problems of hidden-node problem in the 802.11 network. 10M/20M/40M/80MHz bandwidth can be flexibly configured by the uses in different working scenario to achieve the best link quality. Intelligent rate control algorithm can be adapted to quick channel quality variations automatically, thus stabilizing the wireless throughput. ACK Time-Out Auto Adjust can automatically detect the distances of the CP5-1200 devices, and thus adjust the wireless parameters to achieve the best wireless link quality.

The longest transmission range and max speed of CP5-1200 can be as high as 20Km and 867Mbps, making it suitable for many applications of WIFI Bridge/CPE, especially have advantages for point-to-multi-point communication.

1.1 Product Advantages

The CP5-1200 has the industrial leading technology, owing the performance capability of a wireless base station with only a small form factor.

CP5-1200 has the following advantages compared to the competitors:

1. Embedded VTrans technology

CP5-1200 devices is embedded with VTrans technology, including TDMA, 10M/20M/40M/80MHz bandwidth, intelligent rate control, Auto ACK Time-out adjust. They make the device have longer transmission distance, higher throughput and better point-to-multi-point performance.

2. Longer transmission distance, higher throughput

The longest transmission distance of CP5-1200 can be as far as 20km, and the max throughput can be 867Mbps. It can satisfy the needs of most of the applications.

3. Embedded hardware watchdog

CP5-1200 is embedded with hardware watchdog, which is used to monitor the working status of the device. Once the system is not working properly, the CP5-1200 device can be rebooted to guarantee the stability of the system.

4. Software Ping watchdog function

CP5-1200 software ping watchdog function enable the device periodically ping another device associated to, so that it can detect if the system is working well. If the wireless link is lost or there is any problem, the device is rebooted. This is important because the devices can be restored to work automatically if there is any problem, and avoid the extra human labour to maintain the outdoor devices.

5. More Non-standard channels availability

Currently most of the WIFI devices are working at standard 802.11 5.8GHz frequency. However, standard 802.11 5.8GHz only provide limited channels, and there is serious interference if there are a lot of 5.8G WIFI devices nearby.

CP5-1200 support more channels near 5.8GHz band, and spread the band to non-standard frequency part: 4920MHz~6100MHz.The advantage of working at the non-standard band is to avoid the interference in the standard channels, and the wireless throughput can be improved.

Note: Please confirm whether those non-standard channels are permitted locally before using them.

6. Outdoor industrial product

CP5-1200 device can work at all kinds of outdoor severe environments, including -40 to 65 degree temperature, 5% to 95% humidity, while maintain good performance.

1.2 Electrical Specifications

The electrical specifications are shown are the following table:

Table 2 Electrical Specifications

	Items	Specifications
Wireless	Standard	IEEE802.11 a/n/ac
	Operation Frequency	5745~5825MHz(More Non-standard channels is availability,4920MHz~6100MHz)
	Antenna	Directional 23dBi
	Max power	27dBm
	Receive Sensitivity	11a：-91dBm@6Mbps 11n: -85dBm@MCS0 11ac: -85dBm@MCS0
	Max Transmission Rate	11a：54Mbps 11n：300Mbps 11ac：867Mbps
	Distance	Outdoor open area: <20 km

Hardware	Power supply	48V
	Interface	PoE+
	Operation Temperature	-40℃~65℃
	Storage Temperature	-40℃~85℃
	Operation Humidity	5%~95%RH
	Device Size	Diameter: 372.2 mm, thickness: 241.02 mm
Software	Encryption	WPA-PSK/WPA2-PSK
	Network	Router/Bridge
	Operation Mode	Access Point/Station/WDS Access Point /WDS Station
	Security	IP/MAC filter, SSID hidden
	Network protocol	TCP/UDP/ARP/ICMP/DHCP/HTTP/NTP
	TDMA	Supported (Avoid 802.11 hidden-node problems, and improve the point-to-multi-point performance)
	Auto ACK timing Adjust	Supported
	Management and Logs	NTP, SNMP, Syslog, AC
	Web based Configuration	Supported
	Firmware Update	Supported
	Bandwidth supported	10M/20M/40M/80MHz

1.3 Features

- High performance 802.11n 2×2 MIMO chip
- Longest transmission range: 20Km, and max transmission throughput: 867Mbps
- Integrated VTrans technology, including TDMA, intelligent rate control, Auto ACK Time-out adjust
- TDMA solves the problems of hidden-node problem in the 802.11 network, thus having better long-distance and PTMP performance
- Support 4 operation mode: Access Point, Station, WDS Access Point, WDS Station
- Support point-to-point, point-to-multipoint connection
- Unique RF and antenna design enables long-range transmission

- Wireless multimedia optimization technology guarantees video/audio transmission QoS
- Web based working scenario selection makes the installation and setting much easier
- Reliable PoE+ power supply, support 802.3at standard
- Web-based configuration, easy to use
- Waterproof housing and accessory kit protects

1.4 Using Example

The CP5-1200 usage examples are shown in Figure 1-1; it can be used as WIFI AP, CPE, or outdoor PTP, PTMP topology. Therefore, CP5-1200 is suitable for various applications like wireless video transmission, and wireless signal coverage.

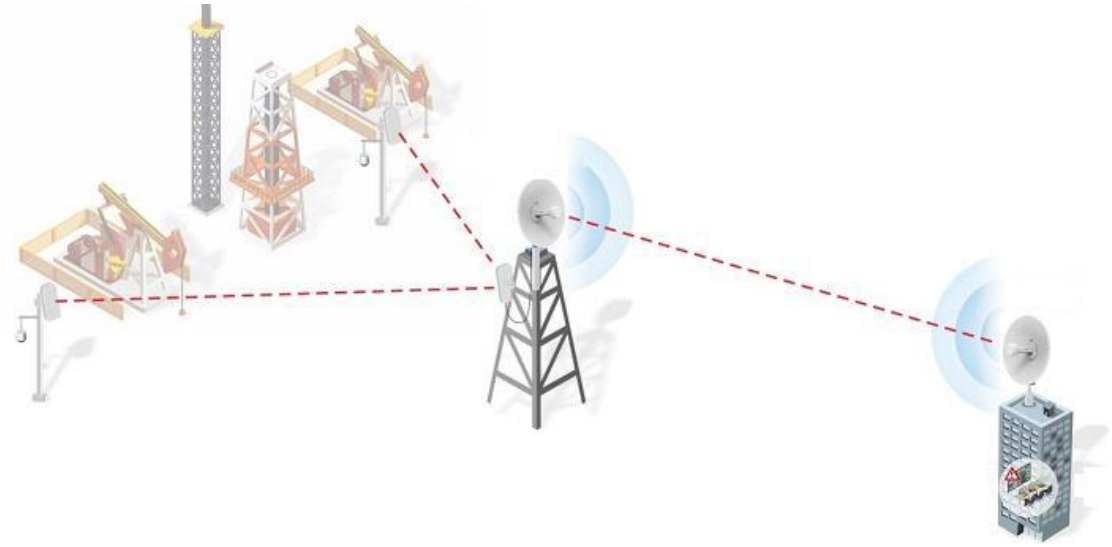

Figure 1-1 CP5-1200 using examples

1.5 Applications

CP5-1200 can be used widely in the following applications:

- Wireless video surveillance (free-way, city, police, oil pipeline, forest and etc.)
- Carrier wireless backhaul and rural area internet last-mile wireless solution
- Enterprise local area network inter-connection
- WIFI signal coverage and rural wireless coverage

1.6 Hardware Overview

CP5-1200's hardware information is described in the following Table 3:

Table 3 Hardware information

Hardware Specifications	
CPU/Baseband Radio	IPQ4028
Memory	256MB DDR3，32MB Flash
Physical Interface	1×100/1000M Base-TX (Cat. 5/5E, RJ-45) Ports
Power supply	PoE+ 48V

2 Installation

This chapter describes how to install CP5-1200 device in the bridge mode, and the installation method of router mode can be seen in Chapter 7.

2.1 Connections and installation

The connection of CP5-1200 device to PoE and power supply is shown in Figure 2-1.

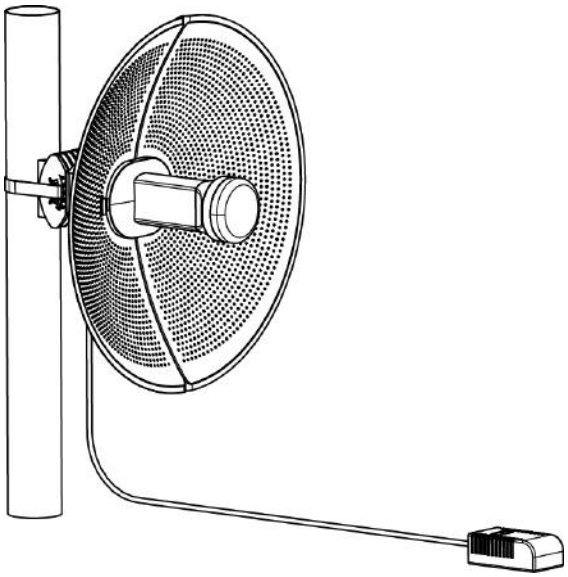

Figure 2-1 Connections at Bridge mode

CP5-1200 has an RJ45 port, in the bridge mode, please connect the device with the PoE power adaptor in the following way:

1) Remove the bottom cover from the CP5-1200 device, and you will see the

RJ45 port.

2) Using an Ethernet cable to connect the PoE power adaptor and the port of the CP5-1200 device.

3) Connect the PoE adaptor to the normal power supply board.

4) Mount the CP5-1200 securely to the pole by locking the strap tightly.

2.2 Restore to the Factory Settings

In some cases, uses can restore the device to the factory settings by the following way in the Figure 2-2. Push the reset button for 5~10 seconds. This will restore to the factory setting. During this process, the CP5-1200's RJ45 port will be connected and disconnected twice.

Figure 2-2 Restore to the factory settings

For default, all the factory settings are shown in the following Table 5.

Table 5 Main parameters at the factory settings

Items	Default Settings
IP address	192.168.1.1
User name	root
Password	admin
Wireless mode	Access Point
SSID	WirelessCard2
Output power	High
Encryption	WPA->WPA2->CCMP->Password:1234567890abc
Network mode	Bridge

3 Quick Configuration

This chapter describe how to configure the device quickly.

3.1 Log in

To log in the CP5-1200 device, user needs to configure the TCP/IP of your computer first as the following steps:

1. Right click Local Area Connection icon of your computer and click properties, then click Continue, the Local Area Connection Properties dialog box appears as Figure 3-1.

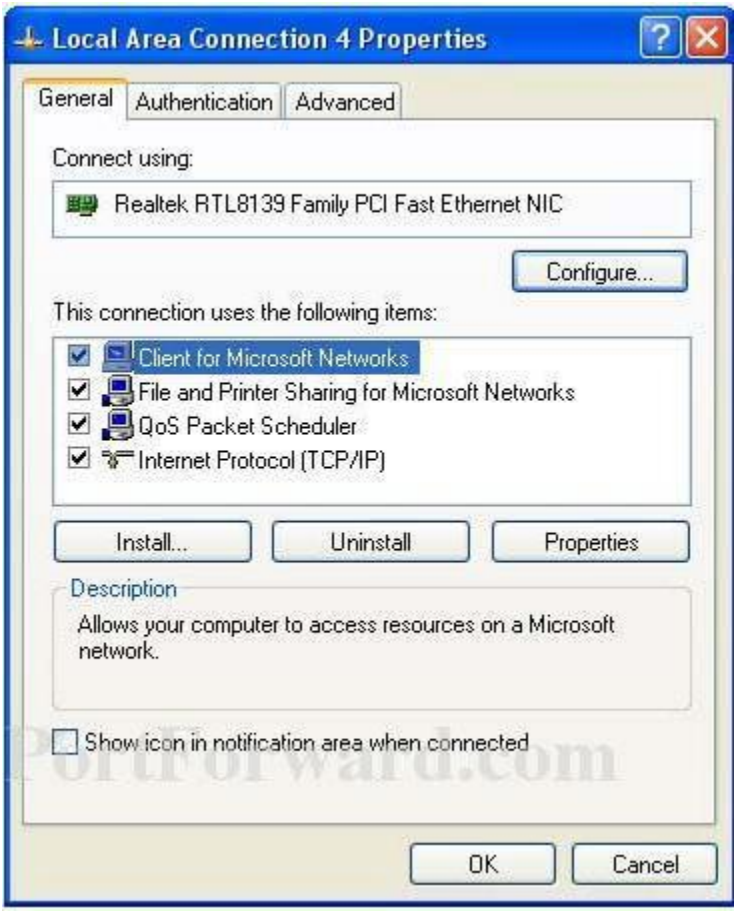

Figure 3-1 Local Area Connection Properties

2. Select Internet Protocol (TCP/IP) and click Properties button, and the following dialog box appear:

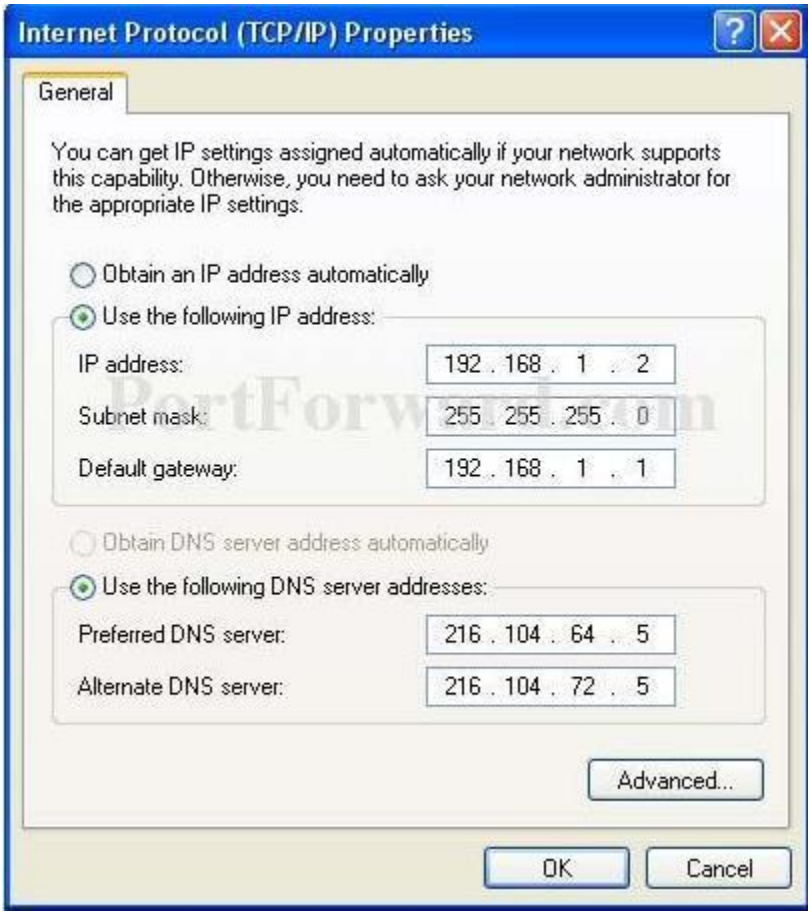

Figure 3-2 IP settings

3. In the above Figure 3-2, IP address should be set to 192.168.1.*, here * can be a number between 1-255 (but not 36) since the CP5-1200 default IP address is 192.168.1.1.

4. When the above IP setting is done, input the default IP 192.168.1.1 into the address bar of your web browser, and the following log in interface appears as shown in Figure 3-3.

5. In Figure 3-3, input the user name and password (default is admin/admin) and click the Confirm button, then you can log in to the web configuration menu of the CP5-1200 device.

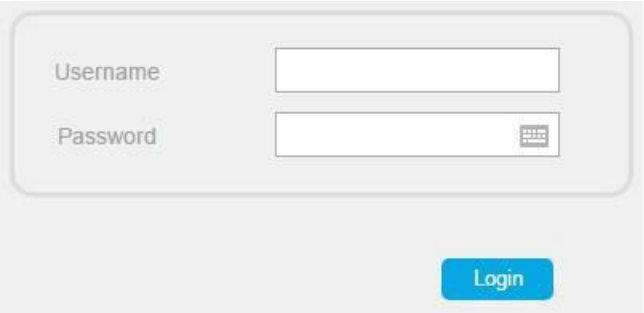

Figure 3-3 CP5-1200 Log in interface

3.2 Quick Configuration of the Device

The users will see how to configure the CP5-1200 device quickly in this chapter.

1. The first page shown after log in is the Status page, which indicates the working status, current setting, software version and other information of the CP5-1200 device. Users can switch to other pages by clicking the left main menus in Figure 3-4.

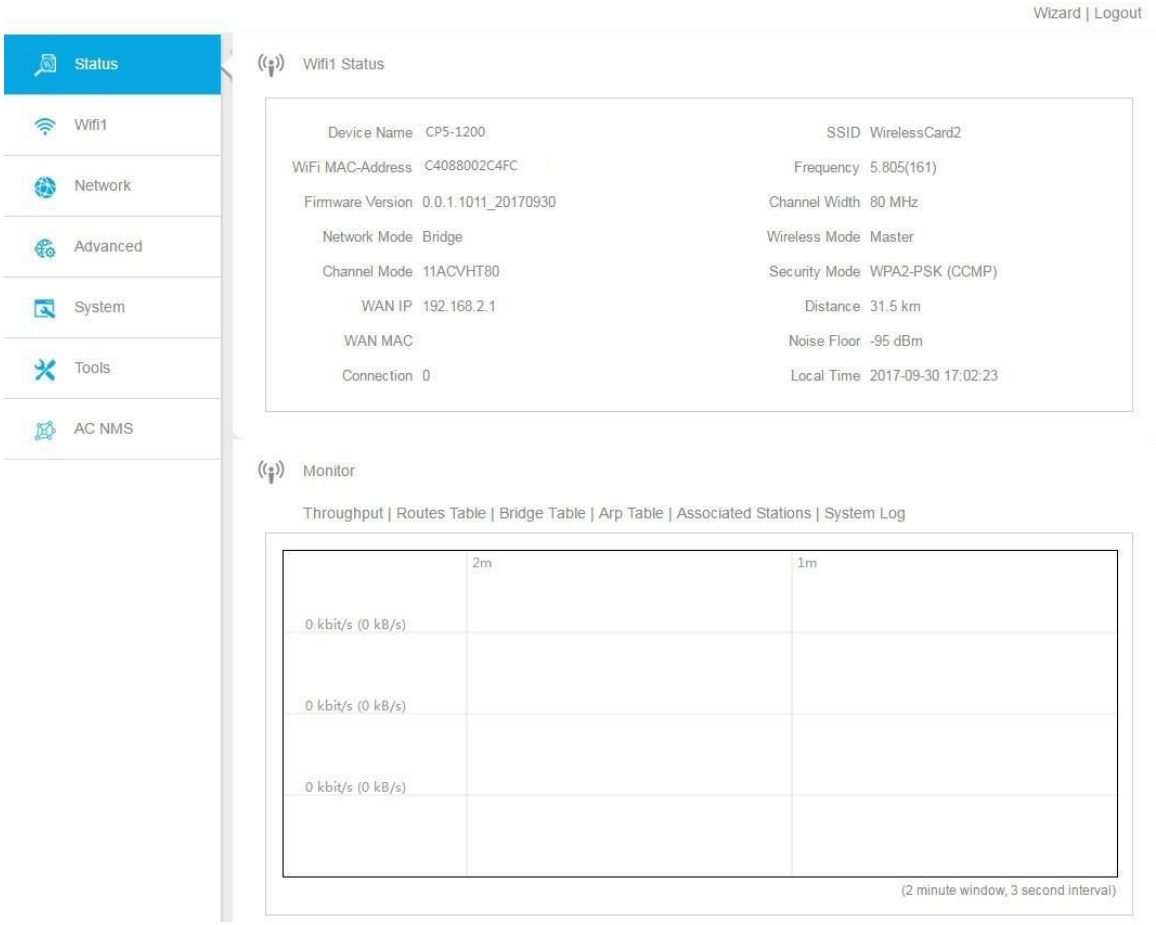

Figure 3-4 Status Page

2. Click Wizard menu, the users can configure the device quickly, including Network and Wireless settings and so on. It is Wizard System page as shown in Figure 3-5, this page can modify the device name and select the interface language.

Figure 3-5 Wizard System

3. Click next and it goes to Wizard Network page, this page helps to set the basic network parameters. The default mode is Bridge mode, and the default LAN IP address is 192.168.1.1.

Note: If several CP5-1200 devices are connected in the Point-to-Point or Point-to-Multi-Point topologies, they must be configured to different IP address to avoid collisions.

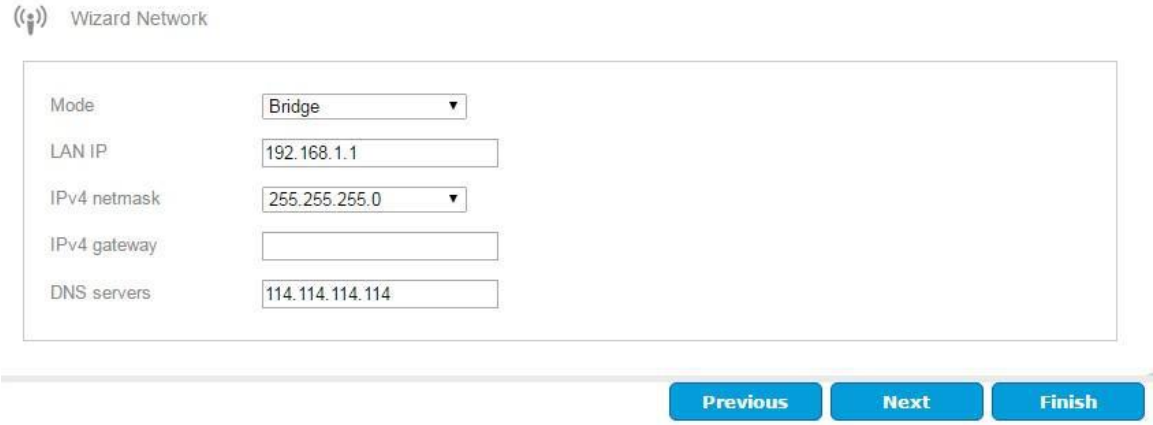

Figure 3-6 Wizard Network-Bridge

4. If you select the router mode here, the device can be used as a wireless router. If the user wants to configure the device to Router mode, please click Network in the main menu.

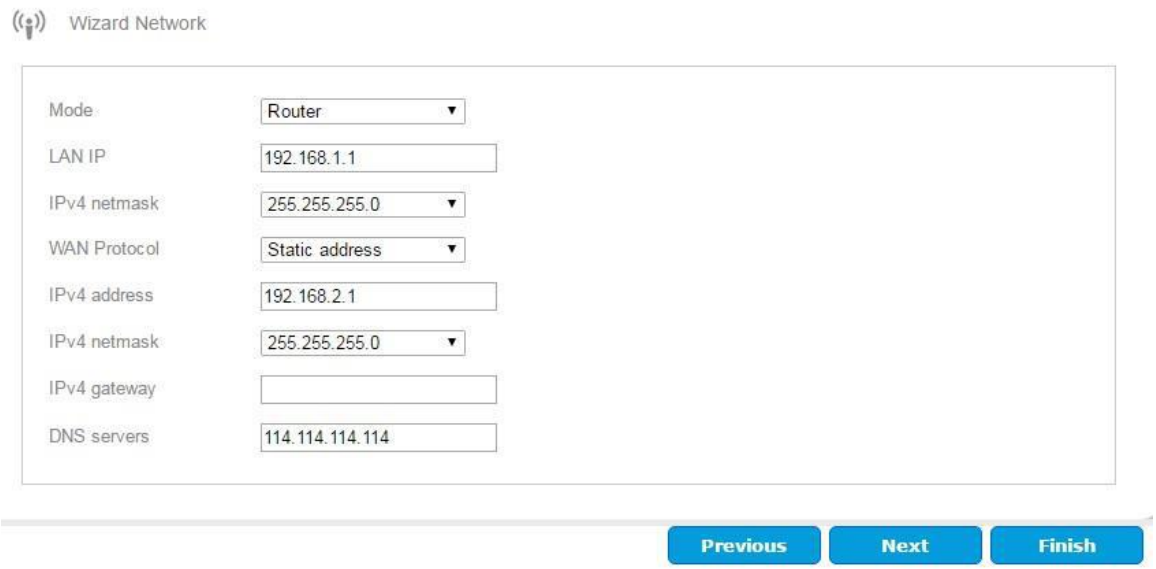

Figure 3-7 Wizard Network-Router

5. After finishing the Wizard Network settings, click next and it goes to Wizard Wireless page shown in Figure 3-8. The most used wireless mode is the Access Point and the Station.

Client mode: The device acts as a WIFI station, and it can be connected to a normal home access point or CP5-1200 access point.

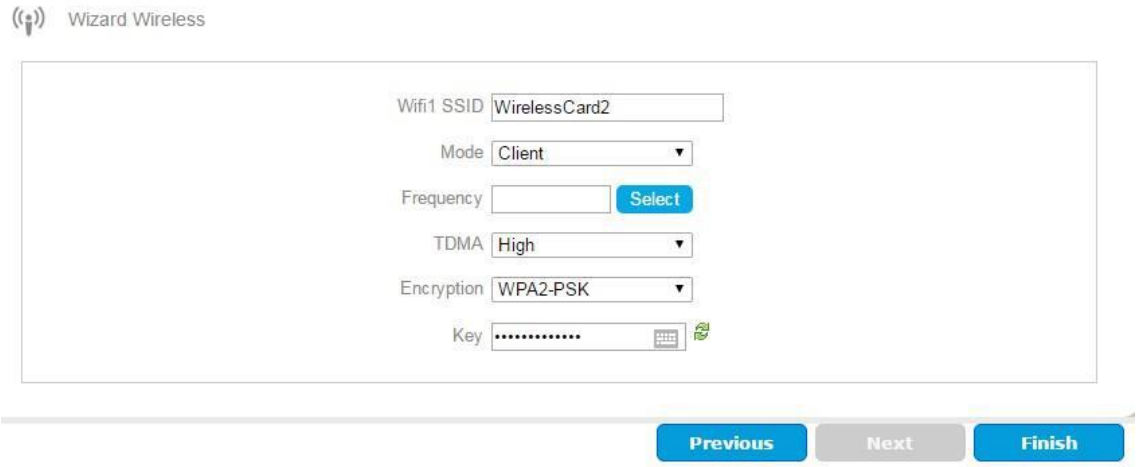

Figure 3-8 Wizard Wireless-Client

Access Point mode: The CP5-1200 device acts as an access point, which allows normal WIFI stations access. For detail settings of wireless mode, please click Wireless in the main menu.

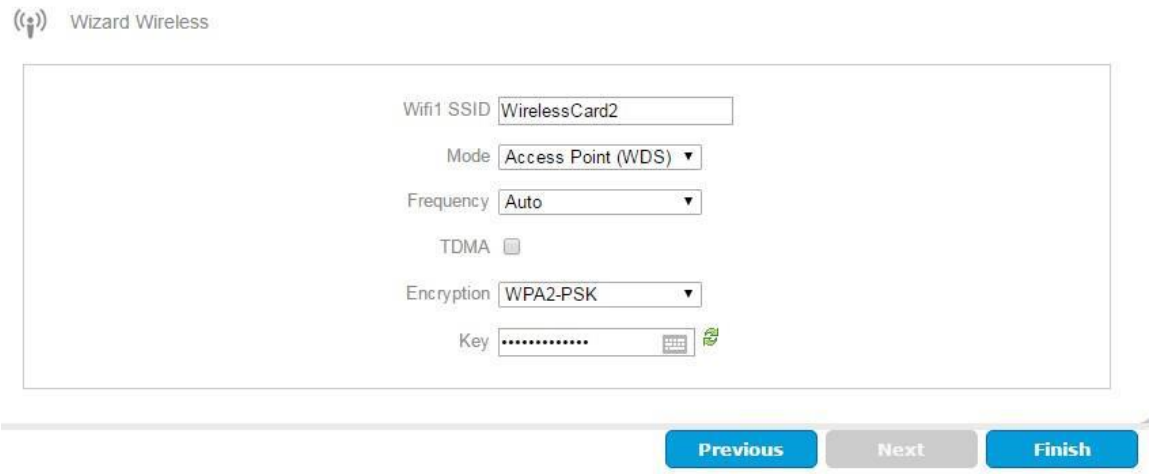

Figure 3-9 Wizard Wireless-AP

Note: If two CP5-1200 devices need to be connected in point-to-point topology, one of the device need to be configured as Access Point, and the other one need to be configured as Station, and both of them should have the same Encryption method.

4. Click "Finish", the device will reboot and take effect, as shown below.

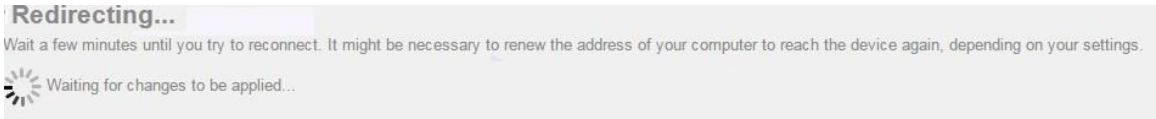

Figure 3-10 Wizard Finish

4 Status

Status shows the current configuration and real-time monitoring of the device. This page is divided into 2 parts: Status and Monitor.

4.1 Status

The status page is shown in the following Figures：

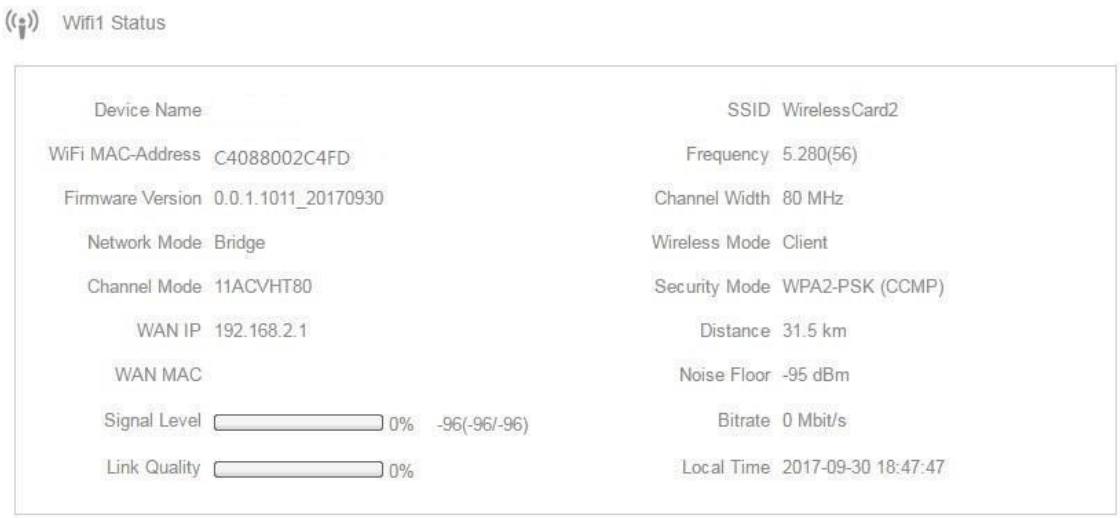

Figure 4-1 Status-Client

Figure 4-2 Status-AP

All the configurations in Status page is shown in Table 6.

Table 6 Configurations shown in Status

Items	Description	Items	Description
Device Name	Name of the device	SSID	The name of the wireless network
WiFi MAC-Address	MAC of the wireless port	Frequency	Wireless channel chosen
Firmware Version	Software version number	Channel Width	10MHz/20MHz/40MHz/80MHz
Network Mode	Network mode: Router or Bridge	Wireless Mode	Access Point, Station, WDS Access Point, WDS Station
Channel Mode	Wireless communication protocol, for	Security Mode	Wireless encryption method

	example, 11 a/n		
WAN IP	WAN IP address	Distance	The distance between two associated devices
WAN MAC	MAC of the WAN port	Noise Floor	Noise Floor value, in order to achieve the best equipment, it is generally recommended at least less than -95dBm noise in the use of the environment.
Signal Level(Only the client page is displayed)	It indicates the signal strength of the device, recommended signal strength of 60% or more (or -30dBm ~ -60dBm), when the signal strength is less than 25%, the display bar turns red	Bitrate(Only the client page is displayed)	The date rate of current device during sending and receiving data
Link Quality(Only the client page is displayed)	Quality of the connection link, the recommended value is more than 60%, when the display is less than 25%, the display turns red	Local Time	The real-time.
Connection(Only the AP page is displayed)	The number of station devices that the device is connected to		

4.2 Monitor

Throughput: The figure here monitors the real-time throughput of the wireless link, shown in the following Figure 4-3.

Figure 4-3 Throughput

Routes Table: It is stored in a router that lists the routes to particular network destinations, and in some cases, metrics (distances) associated with those routes. The route table contains information about the topology of the network immediately around it.

Figure 4-4 Router Table

Bridge Table: It lists all the devices that communicate through the CP5-1200 device.

Figure 4-5 Bridge Table

ARP Table: It lists the IP address and MAC address of the devices that communicate through the LAN port of the CP5-1200 device.

Throughput | Routes Table | Bridge Table | Arp Table | Associated Stations | System Log

IP Address	MAC Address	Interface
192.168.1.100	3C:97:0E:56:88:9F	br-lan

Figure 4-6 ARP Table

Associated Stations: Showing the status information of the associated devices.

For example, if the CP5-1200 device is an AP, and the associated device is a Station, and this Station Information shows the related information of the Station device in the Figure 4-7.

Monitor

Throughput | Interfaces | Routes Table | Bridge Table | ARP Table | Station Information | Syslog

MAC Address	TX/RX Rate	Signal / Noise	CCQ	Remove

Figure 4-7 Station Information of an AP

If the CP5-1200 is a Station, and AP Information shows the associated AP device's information, seen in Figure 4-8.

Throughput | Routes Table | Bridge Table | Arp Table | Associated Stations | System Log

MAC-Address	Network	Device Name	IPv4-Address	Signal	Noise	RX Rate	TX Rate
No information available							

Figure 4-8 AP Information of a Station

System Log: Display the log information of CP5-1200.

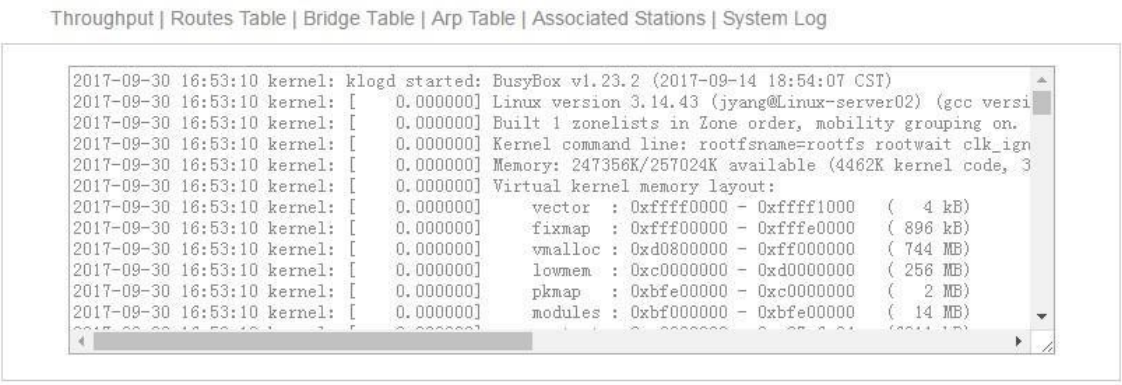

Figure 4-9 Syslog

5 Wireless

The wireless settings page is shown in the figures below.

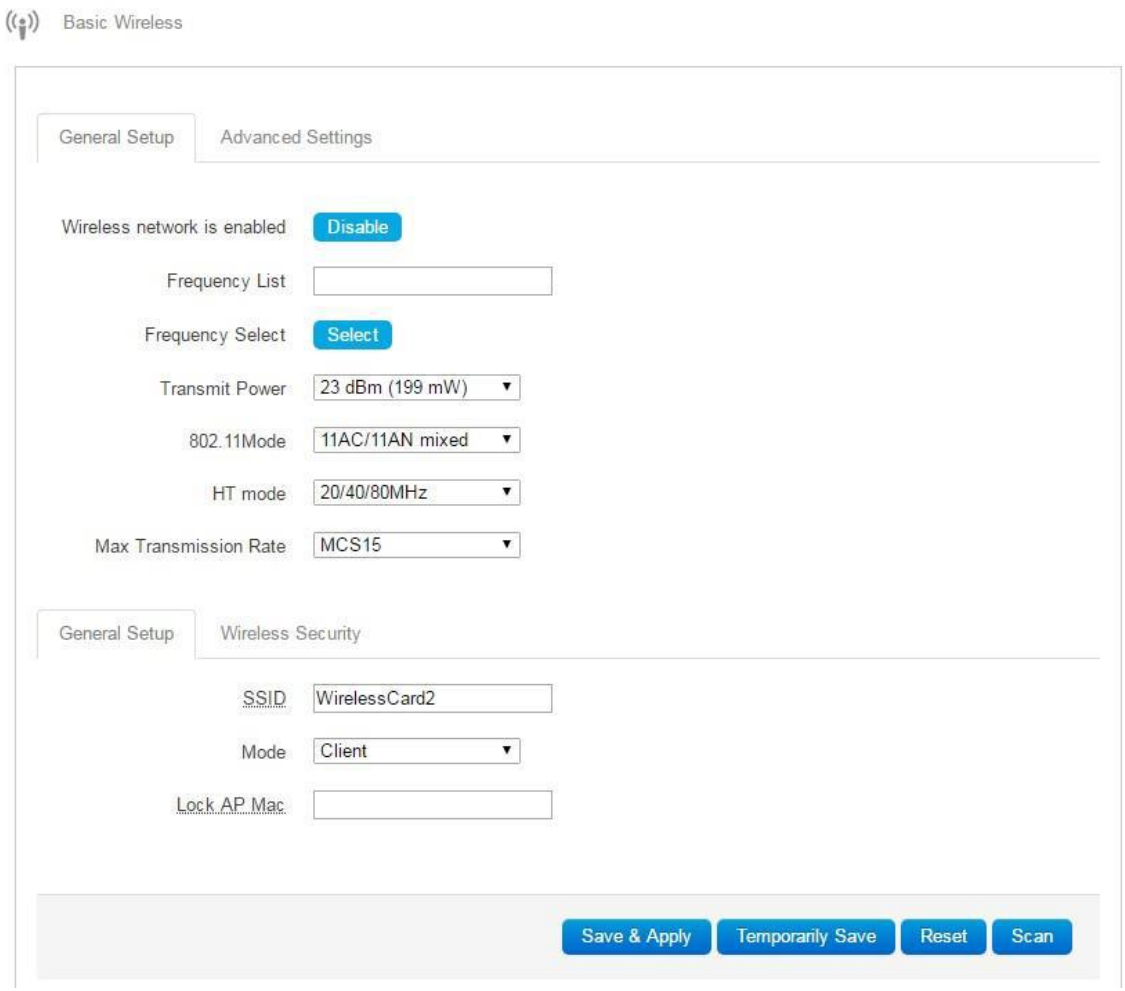

Figure 5-1 Wireless-Station

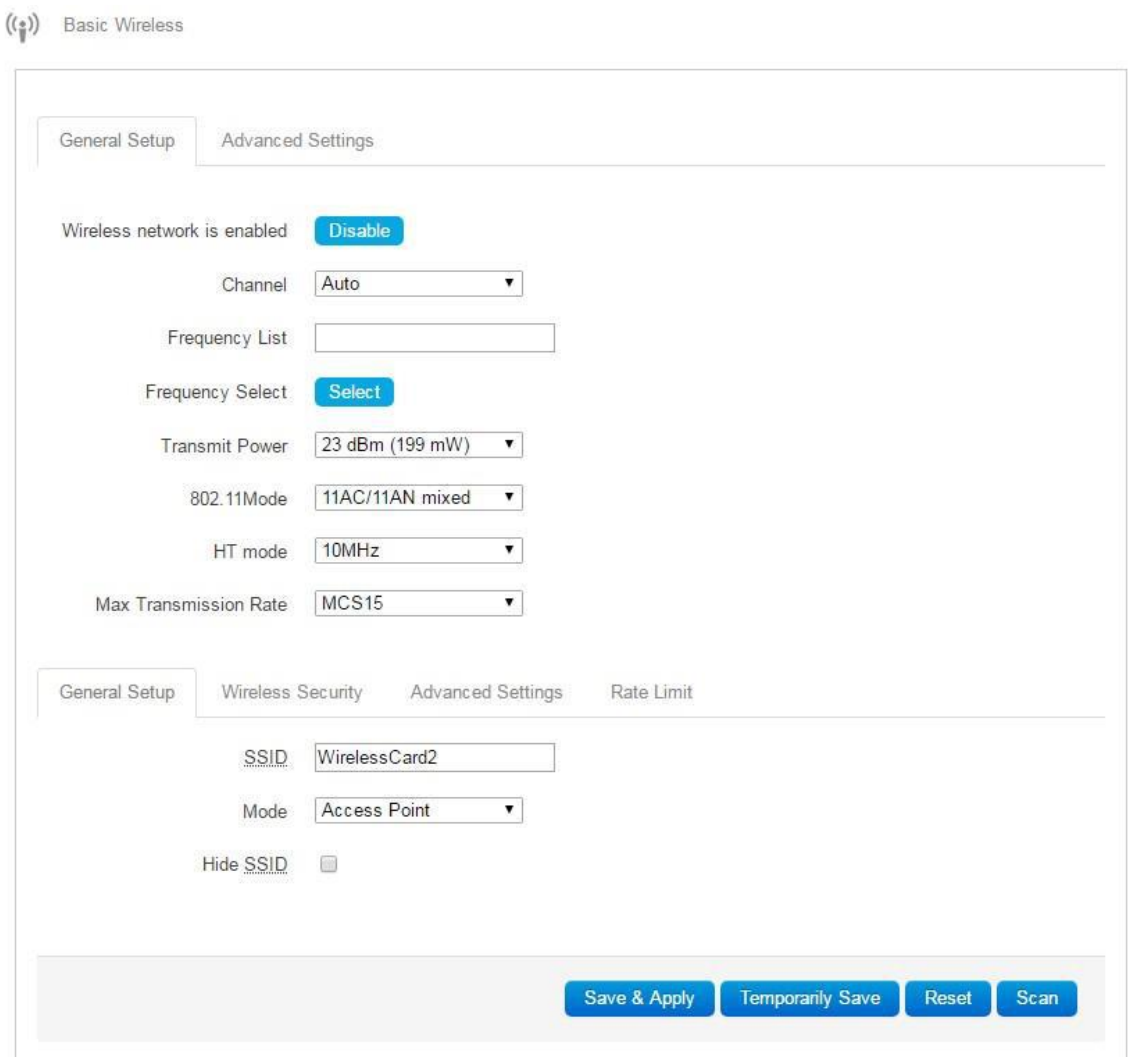

Figure 5-2 Wireless-AP

Wireless network is enabled: Control whether wireless is enabled. Users can set whether to turn off the wireless switch as required.

Figure 5-3 Wireless network is disabled

Channel： The channel can be modified when the device is configured to Access Point mode or WDS Access Point mode. The device can only work on one channel at the same time.

Frequency Select: Limit the frequency of use, select the frequency range by selecting the frequency limit.

Figure 5-4 Frequency Select

Transmit Power: The device output power. When the output power is increased, the signal distance and signal strength will be improved.

802.11 Mode: You can keep the default 802.11g+n mode to guarantee optimal transmission rate.

HT mode: Channel width selection, the device supports 20/40+/40-MHz bandwidth. In general, the wider the bandwidth is, the greater the data throughput rate.

Max Transmission Rate: it can be used to limit the max transmission rate of the device.

SSID: Name of a wireless.

Wireless Mode: There are totally 4 wireless modes, including: Station, Access Point, WDS Station, WDS Access Point.

Access Point: Access point.

Station: A client device that can be connected to an AP.

WDS Station: Use WDS feature to link multiple APs in a network, all associated stations from any AP can communicate with each other like in ad-hoc mode. WDS station means this device is a station in WDS mode.

WDS Access Point: Use WDS feature to link multiple APs in a network, all associated stations from any AP can communicate with each other like in ad-hoc mode. WDS AP means this device is an AP in WDS mode.

Lock AP Mac: In Station, WDS Station modes, users can use this to limit the APs associated to (only client page display).

Hide SSID: To hide the broadcast name of the wireless network to avoid being connected to others. Check this function; others will not be able to search the SSID.

Click Advanced Settings, you can configure the advanced settings of the device in this section. Client page as shown below:

Figure 5-5 Advanced Settings- Client

Access point page as shown below:

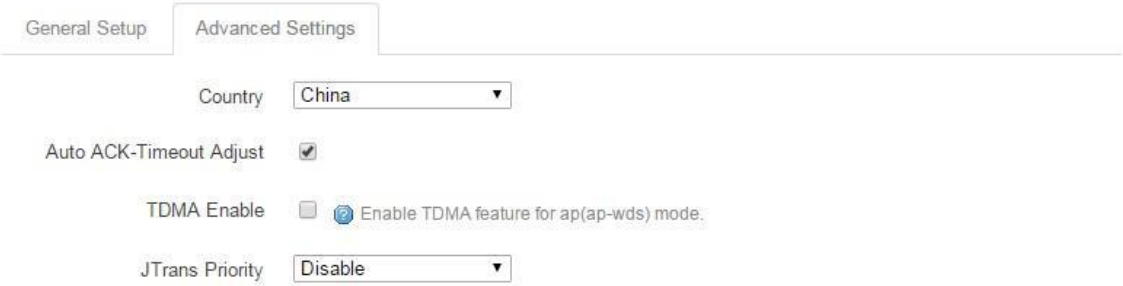

Figure 5-6 Advanced Settings-AP

Country: Different countries allows different channels, use can choose the country code to only allow the device works at the channels permitted in the particular country.

Auto ACK-Timeout Adjust: It is suggested to enable this function, so that the distance between 2 devices can be detected and all the related parameters can be optimized to achieve the best link quality.

TDMA: To use the TDMA, the user needs to enable TDMA mode in the AP device, and set a priority level in the station device. When several stations are connected to one AP, different stations demand different throughput. If the station demands higher throughput, its priority level can be set to High, otherwise set to Low. When the stations demand the same throughput, their priority level can be set to the same level.

Note: When using TDMA mode, the TDMA button need to be enabled at both AP and station devices in the web-based configuration menu. The devices from other vendors cannot be connected to CP5-1200 in the TDMA mode.

JTrans Priority: JTrans can attack the channel allocation mechanism and defence to prevent wireless internal attack, client and access point must be turned on at the same time when JTrans is enabled. This feature will affect the performance of devices without JTrans-like functionality in the surrounding area, seize more channel resources for your own use. When peripheral devices also have similar functions with JTrans, the device which has already turned on JTrans will automatically defend it, to ensure the normal operation of the device. When JTrans is set to high, the impact on related equipment is stronger, when JTrans is set to low, the impact on related equipment is small.

Click on "Wireless Security" as shown below:

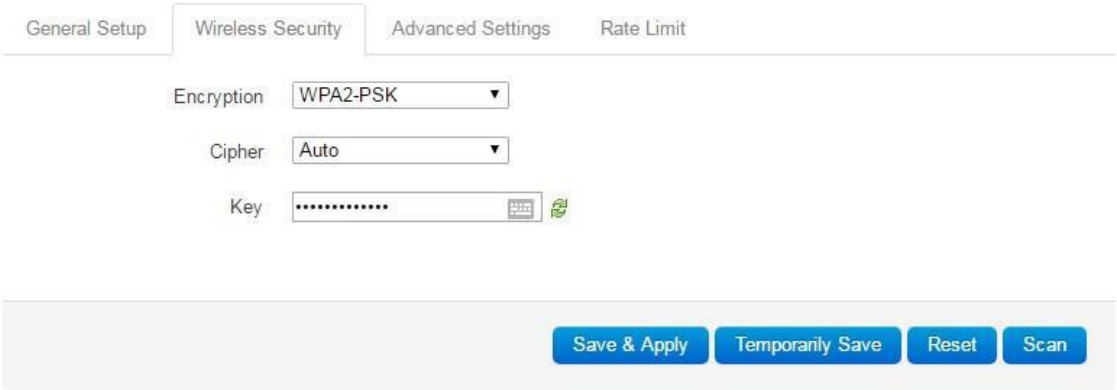

Figure 5-7 Wireless Security

Security: User can set the security based on needs to guarantee the wireless security.

WPA: Encryption method supported by 802.11 Protocol.

When the device selects the access point mode, there are "Advanced Settings" and "Rate Limit" options behind "Wireless Security" at the bottom of the "Basic Wireless" page.

Click "Advanced Settings" as shown below:

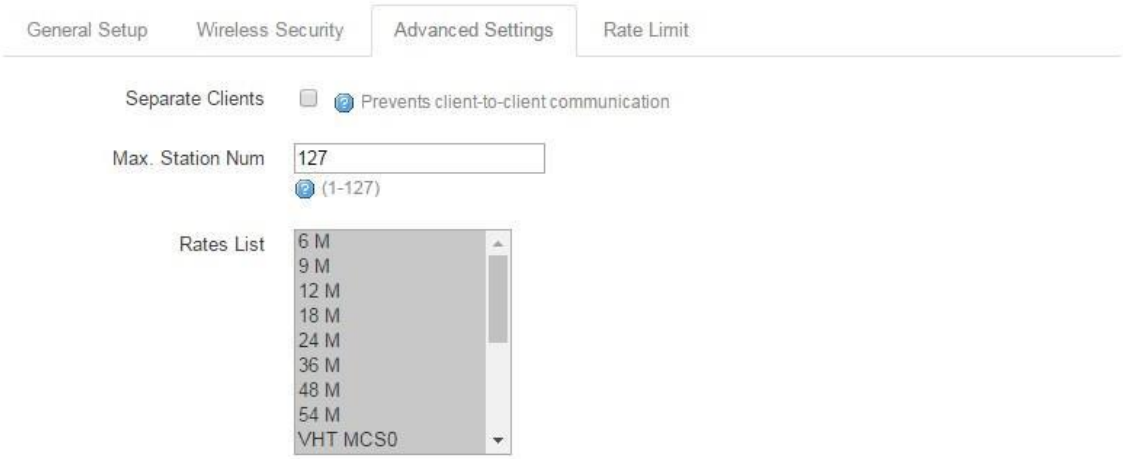

Figure 5-8 Advanced Settings

Station Isolation: Enable this function, STA can't communicate with each other.

Max Station Limit: You can set the number of STA that connect to AP.

Click on "Rate Limit" as shown below:

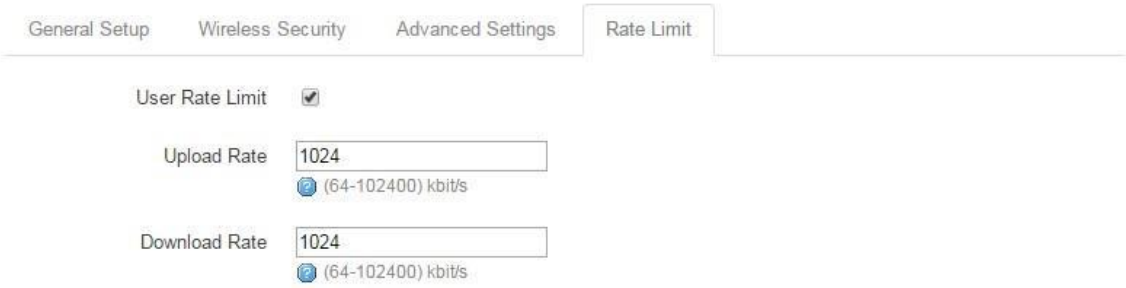

Figure 5-9 Rate Limit

User Rate Limit: The speed limit for each user.

6 Network

6.1 Router mode

CP5-1200 acts as a router when configured to Router mode. The Network page is shown in Figure 6-1.

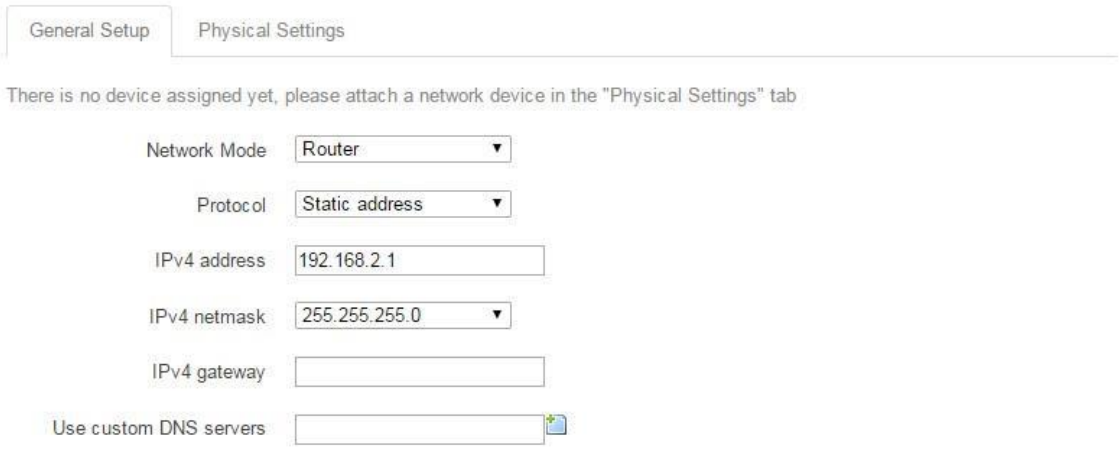

Figure 6-1 Router mode

Protocol: The interface access IP address options, it divided into static address, DHCP client (to obtain the IP dynamically), PPPoE and a variety of other ways. If you set a static IP, you need to set the IP, subnet mask, etc.; when set to DHCP client, the device can obtain IP from DHCP server automatically. When set to PPPoE, the user needs to fill in the PPPoE server name, Internet access account, and network password. The device uses dial-up authentication to obtain the IP address through the PPPoE server.

IPv4 address: IP address of this interface, you can configure it according to your own needs, but to ensure that IP cannot be the same as other devices in the same network, so as not to cause IP address conflict.

IPv4 netmask: The subnet mask of this interface, you can set it according to your own needs.

IPv4 gateway: In general, the IPv4 gateway address and WAN IP address are in the same network.

Use custom DNS server: It should be set to the value of the local DNS server.

6.2 Static IPv4 Routes

This feature can be set to static routing.

6.3 Firewall

When the firewall is enabled, the device can allow only some devices to be associated to. Shown in Figure 6-2, and there are 4 cases of Firewall filtering.

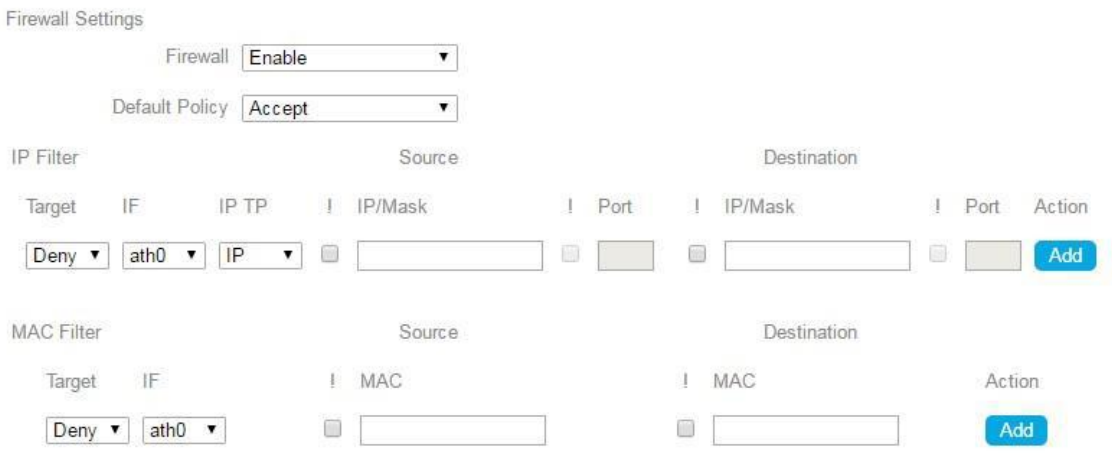

Figure 6-2 Firewall

1. Accept one or several devices with particular MAC address.
2. Deny one or several devices with particular MAC address.
3. Accept one or several devices with particular IP address.
4. Deny one or several devices with particular IP address.

6.4 IP Aliases

Add multiple IP to a network interface.

6.5 VLAN Settings

The VLAN function allows user to create multiple virtual local area network. As show below, we add a VLAN on port ath0. The VLAN ID is 10. The range of VLAN ID is 2~4094. Each VLAN ID represents a different VLAN.

Figure 6-3 VLAN

Bridge function is needed to use together with VLAN. As show below, we add VLAN 10 on port eth1 and ath0, they are eth1.10 and ath0.10, and put them into the same

bridge. The packets from eth1.10 or ath0.10 will be added a VLAN label which ID is 10. That requires: the opposite wireless connection side must support VLAN 10, the device which connects with eth1 is also need to support VLAN 10.

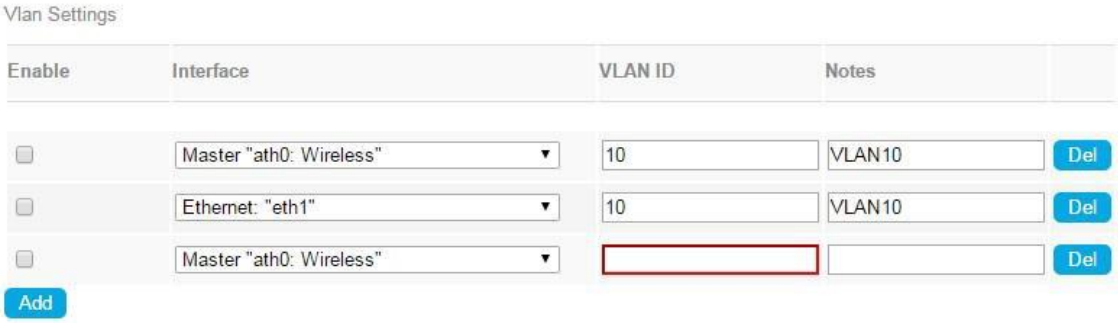

Figure 6-4 VLAN Setting

After saving the application, click on Physical Settings to view ath0.10 and eth1.10 in the interface, as shown below:

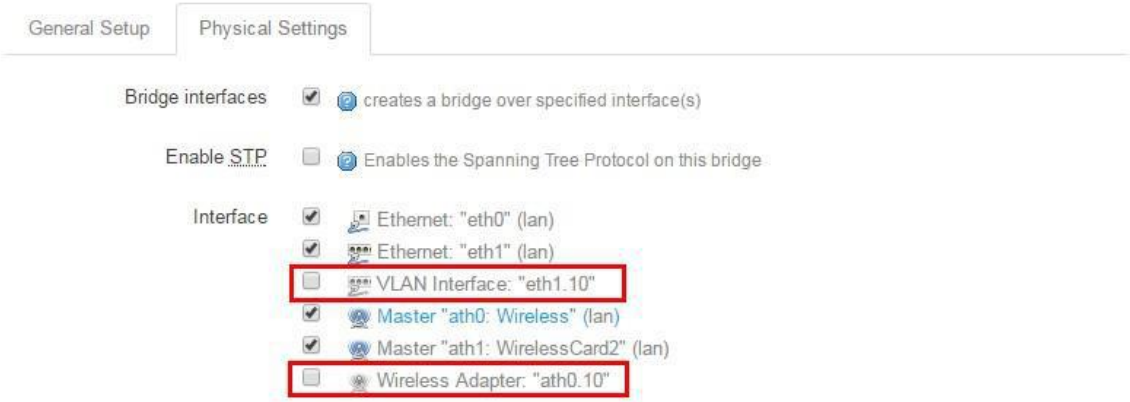

Figure 6-5 Physical Settings

Below is a common usage:

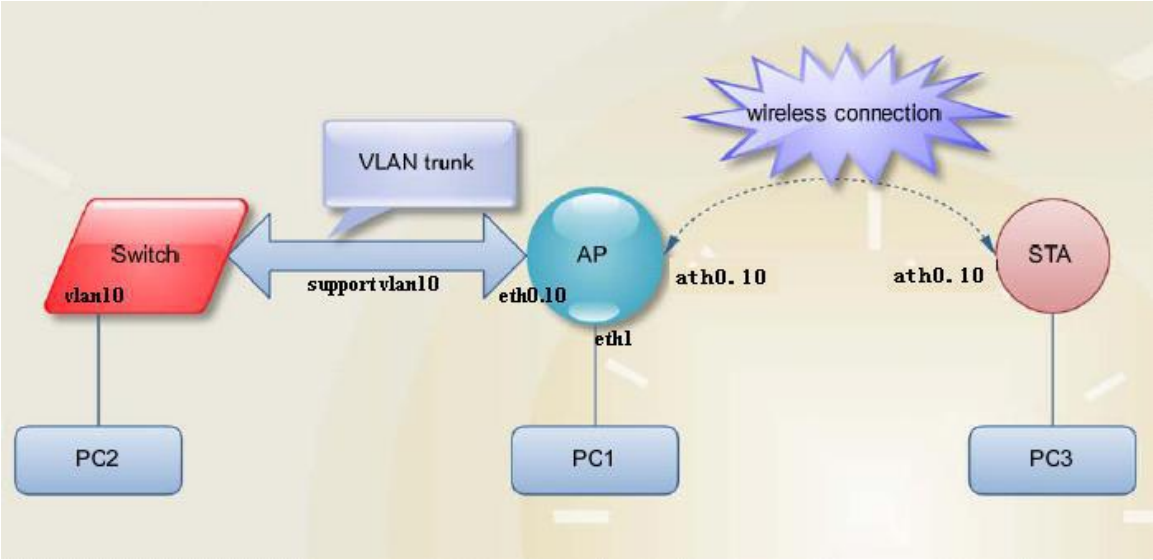

Figure 34 VLAN Scenarios

The device has VLAN transparent transmission function, can make the data in the transmission process, does not happen any kind of change, guarantees the transmission quality.

6.6 Traffic Shaping

Traffic shaping is used to control the traffic of ingress/egress based on each network port. As show below, the ingress of ath0 is limited to 1024Kbps, and the egress is limited to 2048Kbps. That means the receiving rate of the wireless link is limited within 10Mbps, the sending rate is limited to less than 20Mbps. But usually, the input limited effect is not obviously, that's because we could not control how quickly the traffic arrives. However, when a port sends out egress traffic, it can control how quickly the traffic exits.

Burst defines the how many bytes allowed for downloading/uploading during a quick time. That leads to momentary throughput can greater than the limit value.

Figure 6-6 Traffic Shaping

- Ingress traffic entering ath0, control the input rate
- Egress traffic exiting ath0, control the output rate

The relationship of rate and burst for ingress:

- Set burst to 0, the rate of ingress is unlimited
- Set burst to about 1/10 of rate limit, the rate curve is stable
- Set burst larger than rate limit, the rate curve will hold a high value for a while then down to stable

Below is the table that reflects the relationship between ingress rate limit and burst.

Ingress		Throughput when reach stable	
Rate Limit(kbps)	Burst(Kbytes)	(Mbps)	Description
10000	0	29.587	Unlimited
10000	10	4.286	Stable
10000	100	8.037	Oblique up to stable
10000	1000	8.825	From 9.5 down to stable
10000	10000	8.6	From 28.5 down to stable
10000	40000	8.6	Hold on 10 seconds at 29.6, then suddenly down to stable

The relationship of rate and burst for egress:

- Set burst less than 1/10 of rate limit, the rate curve is stable totally
- Set burst larger than rate limit, the rate curve will hold a while at a higher value then down to stable

Below is the table that reflects the relationship between egress rate limit and burst.

Egress		Throughput when reach stable	
Rate Limit(kbps)	Burst(Kbytes)	（Mbps）	Description
20000	0	18.853	Stable
20000	20	19.021	Stable
20000	200	19.205	Stable
20000	2000	19.437	From 23.5 down to stable
20000	20000	19.2	Hold on 20 seconds at 24.5, then suddenly down to stable
20000	80000	19.2	Hold on several minutes at 24.5, then suddenly down to stable

7 Advanced

The Advanced page is shown in Figure 7-1.

Figure 7-1 LED Configuration

LED Configuration: Here LED1, LED2, and LED3 are set to light the signal strength values required for the 3 LED lights of the device, the default range of LED1: -95~-1dBm, LED2: -71~-1dBm, LED3: -56~-1dBm. When the signal strength is higher than -95dB and below -71dBm, LED1 light; when the signal strength is higher than -71dB and below -56dBm, both LED1 and LED2 light; when the signal strength is higher than -56dBm, all the 3 LEDs light.

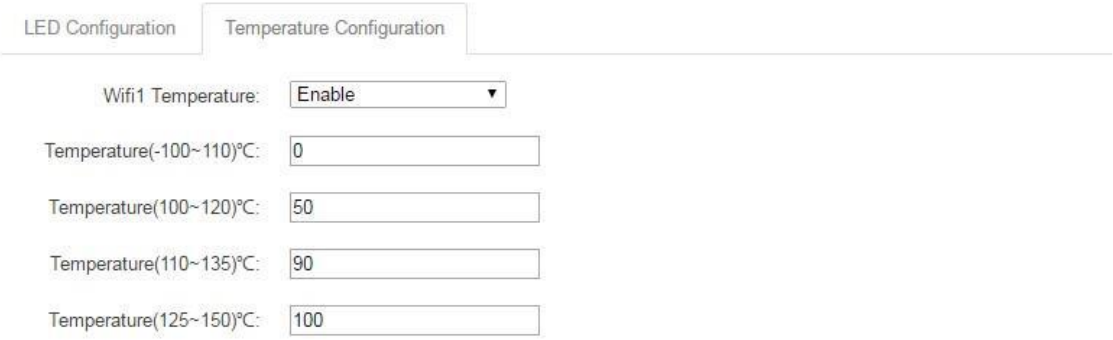

Figure 7-2 Temperature Configuration

Temperature Configuration: To extend the working life of equipment, overheating protection function can be enabled, the user can enter the Advanced Configuration - Temperature Configuration page to set, and this page shows the performance degradation rate of the device at different temperatures. When the temperature is between -100°C and 110°C, the rate does not change. When the temperature is between 100°C and 120°C, the rate drops by 50%. At a temperature between 110°C and 135°C, the rate drops by 90% and the temperature is between 125°C and 150° C, the rate of decline is 100%.

8 System

System page is shown in Figure 8-1, and it is divided into the following 3 parts: General Settings, Change Password, and Flash Operations.

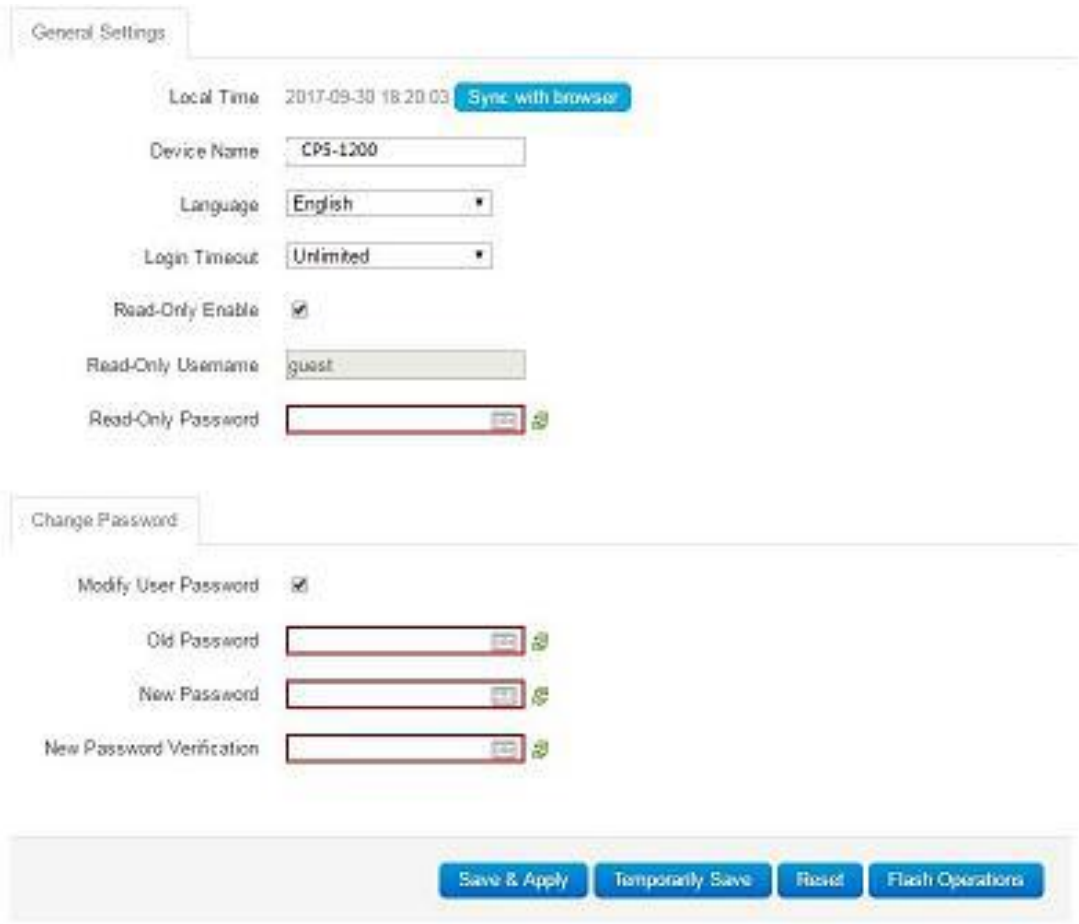

Figure 8-1 System Properties

General Settings:

Sync with browser: Click the Sync button, the device will automatically calibrate the time, synchronized with the system standard clock, and displayed on the Status page.

Device name: It can be set to any name needed.

Language: Language setting.

Login Timeout: Login Timeout setting.

Read-Only Enable: Check “Read-Only Enable” to modify the password of the read-only account. After logging into the device with this account, you can only read the value of the status display page.

Change Password:

Modify User Password: When the modification of the user password is enabled, the user can modify the user name and password of the login device management web page according to his own needs.

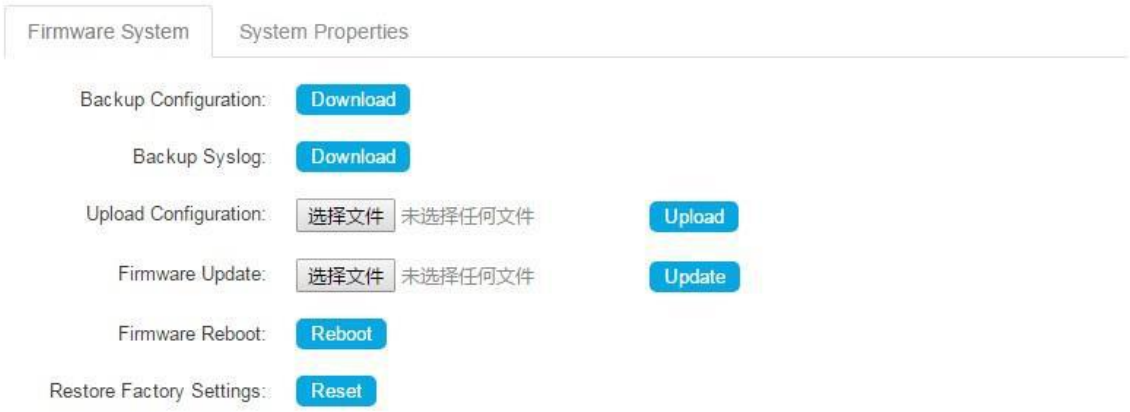

Figure 8-2 Firmware operations

Firmware System:

Backup configuration: When clicking Download button, the current configuration can be backed up to a file.

Backup Syslog: Click to download, backup the current system log information generated.

Upload configuration: When clicking browse, user can choose the backup configuration file and then click upload, so that the configuration stored in the backup file can be applied.

Firmware update: Click browse button and choose the file, and then click update button, the firmware can be updated to the latest version.

Firmware reboot: Click the Reboot button to reboot the device.

Restore Factory Settings: Click the Reset button to restore to the factory default settings.

9 Tools

The Tools page is shown in Figure 9-1.

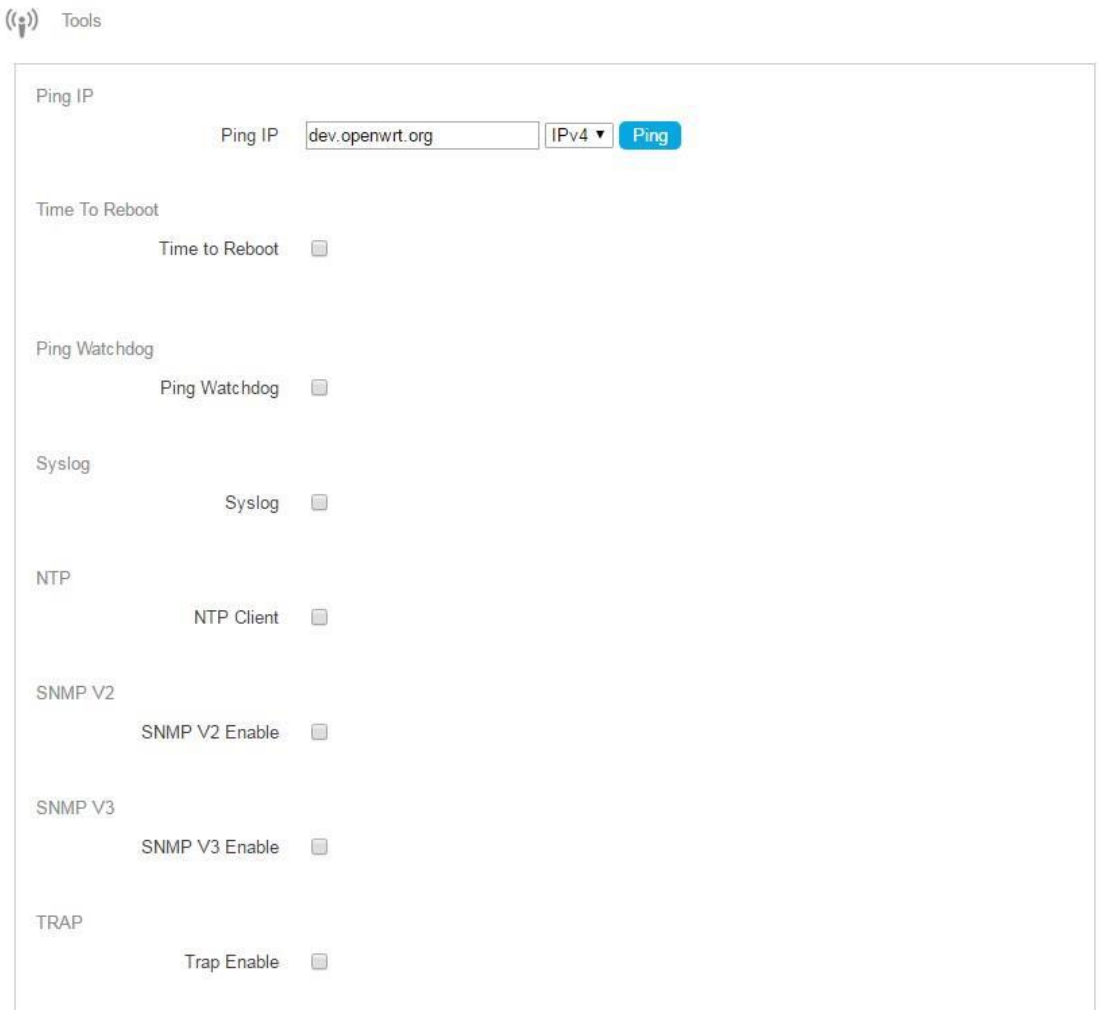

Figure 9-1 Tools

Ping IP: User can input the destination IP address of another device, and click Ping button. If that destination device is successfully connected to the CP5-1200 device, the result shows Alive, otherwise shows Not Alive.

Time To Restart: Timing restart equipment.

NTP: If this NTP server is set, and the CP5-1200 device can access to this NTP server. CP5-1200 device automatically calibrate the time and date information with the NTP server and show the time information in the Status page.

Ping Watchdog: The ping watchdog sets the CP5-1200 Device to continuously ping a user-defined IP address (for example, it can be the IP address of the AP the Client is connecting to). If it is unable to ping under the user defined constraints, the CP5-1200 device will automatically reboot. It is highly recommended that users enable this feature at the side of “Station” and disable this feature at the side of “Access Point”.

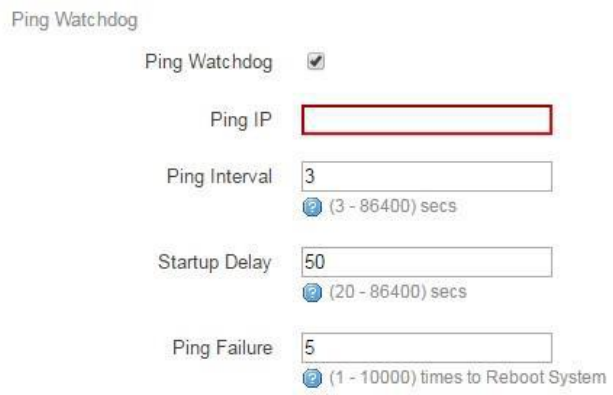

Figure 9-2 Ping Watchdog

Ping IP: Specify an IP address of the target which will be monitored by Ping Watchdog. If this feature is enabled at the side of “Station”, Ping IP Address should be the IP address of the AP the Client is connecting to.

Ping Interval: Specify time interval (in seconds) between the ping requests are sent by the Ping Watchdog

Startup Delay: specify initial time delay (in seconds) until first ping request is sent by the Ping Watchdog

Ping Failure: Specify the number of ping replies. If the specified number of ping replies is not received continuously, the Ping Watchdog will reboot the device.

Note: If users want to modify the parameters of Ping Watchdog, please disable it first and then apply. When the web page shows that Ping Watchdog is really disabled, users can now re-enable it with modified parameters.

Syslog: When Syslog is enabled, and the System Log server’s IP is also set here, the log information will be output to the Syslog server automatically.

NTP: When the CP5-1200 can access the Internet, enable the NTP client function and fill in the address where the NTP server is located, the CP5-1200 will automatically calibrate the device's time from the NTP server and display it on the status display page.

SNMP: When SNMP is enabled, use can check the working condition and information of the CP5-1200 device.

TRAP: The device supports triggering of Trap messages. You can choose to enable Trap, fill in the address of the SNMP management server, and receive Trap messages through the SNMP management tool.

10 AC Management

AC Management page is shown in Figure 10-1. After this function is enabled, the AC management system must be used.

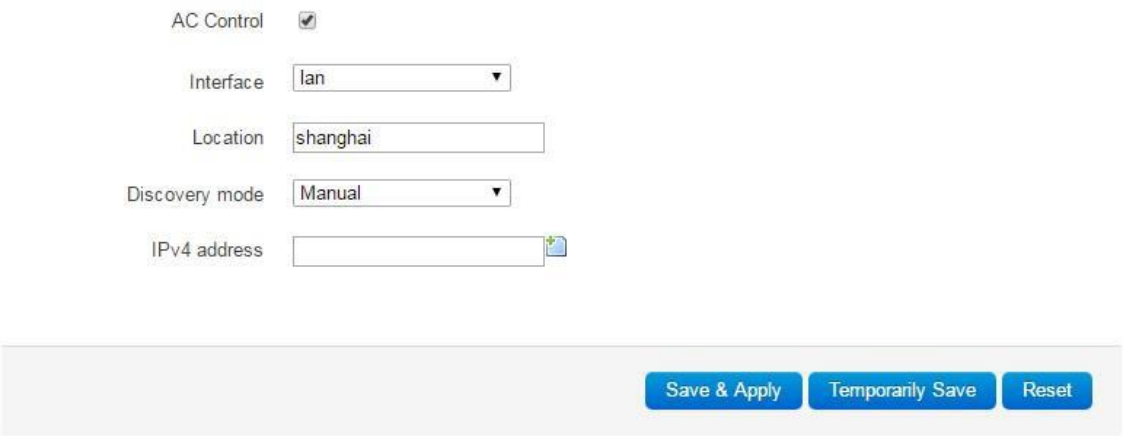

Figure 10-1 AC Management

Interface: By default, lan is selected. Advanced administrators can choose according to their own interface configuration.

Location: It’s the location information that is displayed on the AC.

Discovery mode: Users can choose Manual Adding or Automatic Get.

IPv4 address: This IP address can add up to eight, add the IP address is AC management interface’s IP and equipment is the same segment. After the AC control function is enabled, click save, application, this time the device will take effect on the AC configuration and restart, the device will join AC. After the AC control function is enabled, the user is able to display the current state of the page on the device page. After the AC control function is disabled, the user is able to modify the device's page.

Note: the client must be able to join the AC after it is connected to an access point that has been joined to the AC.

11 Logout

When you click logout button, the web will quit and return to the login web.

FAQ

1. **The device cannot be started after power on.**

1. The Ethernet cable between the CP5-1200 device and the POE adaptor is more than 40 meters long.
2. The Ethernet cable quality is not good enough, and it should be Cat 5e or even Cat 6 cable.
3. The RJ-45 plugs are not well connected.

2. Cannot be restored to the factory setting.

Please manually push the Reset button for 5~10 seconds until all LEDs are light on, then the user can log in the device by typing the default IP address 192.168.1.36.

3. My computer cannot be connected to the CP5-1200 Access Point.

Please try the following method to solve the problem:

1. Adjust the direction of the CP5-1200 device.

   Please rotate the CP5-1200 device since the antenna inside the device is directional.

2. Switch to other wireless channel

   Switch to other wireless channel cause there are much interferences in this channel.

3. Turn off the other interference sources

   Maybe there are other WIFI devices nearby and cause interferences. Try to turn off other WIFI devices nearby, or move CP5-1200 to another clean environment.

4. The signal strength between 2 CP5-1200 devices is too weak, and throughput is low.

1. The CP5-1200 AP and Station devices are not Line-of-Sight, or there are blocks like a building in between the AP and Station devices.

2. The Station device and AP device is not aligned very well, including both horizontally and vertically, since the antenna of the CP5-1200 is directional.

3. The Station device is installed in the windows, and the windows glass shields the wireless signal.

4. The distance between the AP and Station devices is too far.

5. The signal strength is high, but the throughput is low

1. There are too much interferences, or multi-path interferences. For example, there are too much 2.4GHz or 5.8GHz WIFI device working nearby.

2. The RJ45 ports of the CP5-1200 device don't work well.

6. During the point-to-point or point-to-multi-point connection, when ping from one device to another, the latency is too long or the packet is lost.

1. Isolate the several APs if they are connected to one POE switch.

2. The RJ45 ports are not connected very well.

7. The internet access is lost and the internet speed is low.

1. There are too much stations connected to one AP.

2. AP signal is too weak.

3. There are interference sources nearby.

4. Check the number of users and the max internet speed provided by the ISP.