CAMBRIDGE INDUSTRIES (GROUP) CO LTD. CIG

WF-630R1 APUser Manual

Version 2

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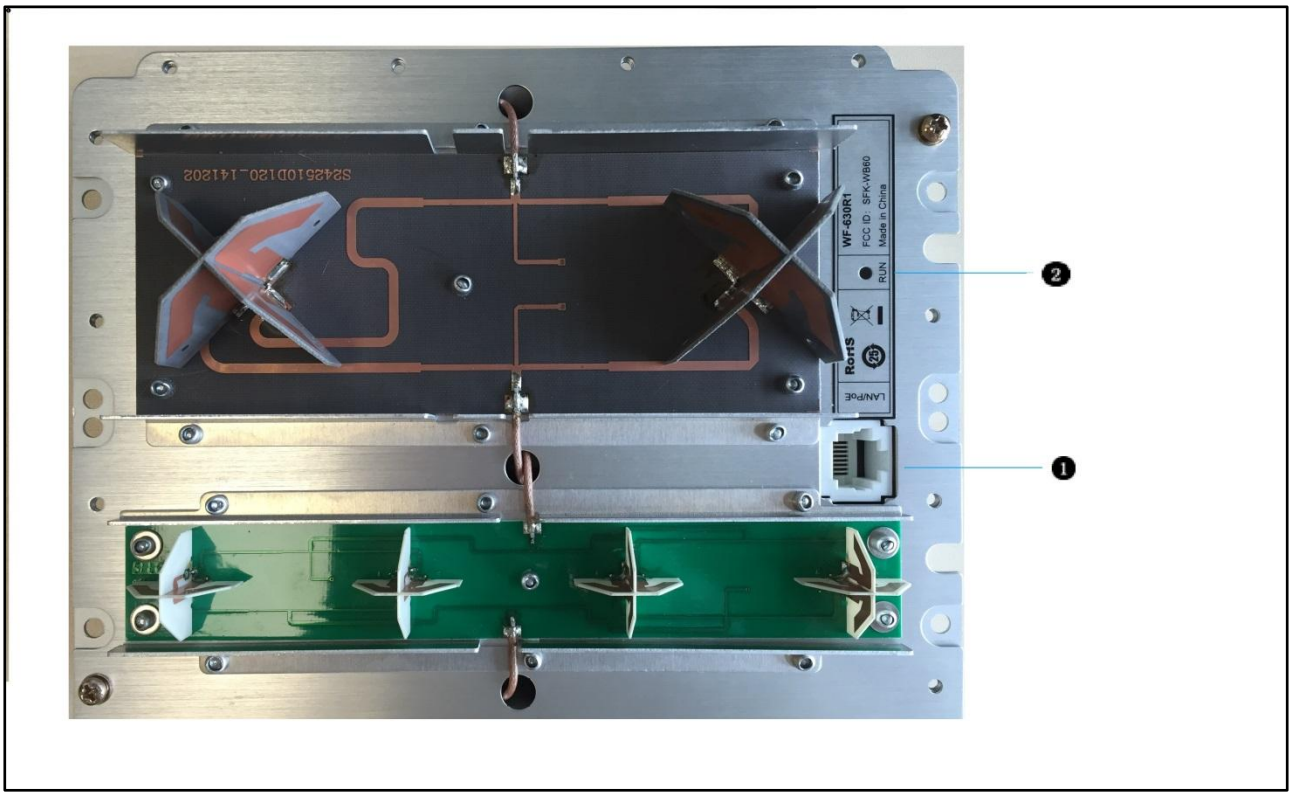
1 Quick Start

Thank you for buying this product. The following information aims to give you general information about product introduction, product overview and installation procedure and so on.

1.1 Introduction

WF-630R1 is a dual-band 802.11ac 2x2 outdoor Wi-Fi AP module, which is complied with the IEEE802.11n/11ac standard and designed for high-density deployments in offices, schools, hospitals and hotels that require premium performance. Having together MIMO (Multiple-in&Multiple-out) technology with high-throughput mode techniques, WF-630R1 works with most wireless terminals to builds a high capacity Wi-Fi network.

1.2 Product Overview



No.	Name	Function
❶	LAN Port	10/100/1000M Base-T Ethernet port (RJ-45), used as a WAN port and used for being powered by PoE function.
❷	LEDs	See LED Definition

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1.3 Installation

To reduce the risk of bodily injury, electrical shock, fire, and equipment damage, read all warnings and precautions in this guide before installing or maintaining product.

Caution

> ⚠ To avoid risk of injury from electrical shock or energy hazard, installation and service of this product must be performed by qualified service personnel.

Safety Statement

- To avoid the abnormal work, do not install the device near the power line, electric lamp, power grid, or in any forceful power grid place
- Ensure the power adapter is grounded well if install the device indoor.
- Install other lightning protection equipment near the device if necessary, because the lightning protection module inside the device is basic.
- Use the steady power grid to provide the power to the device, which is to avoid the abnormal work.
- Use a less than 50m network cable to connect the PoE port, which is to acquire the steady power. The network cable complies with the DC resistance definition in the YD/926.2 protocol.

Installation Environment

- Operating ambient temperature: -40℃ ~ +70℃
- Operating ambient humidity: 5% ~ 95%non-condensing

Installation mode:

- Pole mounting

Installation tool:

- Screws, screw-driver and wrench

Installation site:

- Please ensure the visibility ofproduct and no tall buildings and woods block between them.

1.4 LED Definition

Label	Function	LED mode	Status
RUN	AP power / ready status	Off	No power to AP
		Red	Device hardware failure
		Flashing - Green	Device is managed by controller

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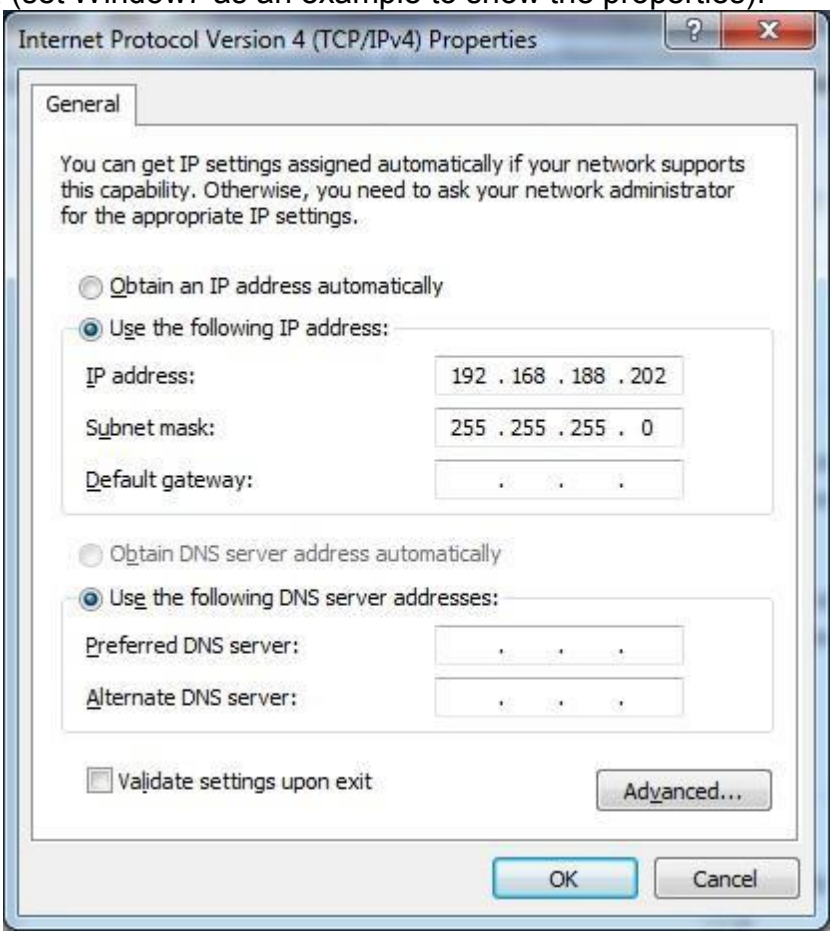
		On - Green	Device ready

1.5 Software Installation

Logging in to the Web Page

1. To configure PC IP address, fill 192.168.188.x in “IP address” and 255.255.255.0 in “Subnet mask”(set Window7 as an example to show the properties).



2. Input the default IP address 192.168.188.251 in the address bar of the web browser and press Enter.
3. Enter username and password (username: admin, password: password), after password authentication is successful, the web page is displayed.

1.6 Product Specification

Physical specification

LED	RUN

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Ethernet interface	RJ-45 connector

Electrical specification

Power input	Standard 802.3at PoE
Power consumption	≤24W

Environmental specification

Working temperature	-40℃~ +70℃
Working humidity	5% ~ 95% non-condensing
Elevations	86kPa ~ 106kP0061
Lightning protection	6KV common mode surge

1.7 Product Proper Disposal

Waste of Electrical and Electronic Equipment

Directive 2002/96EC on Waste of Electrical and Electronic Equipment are designed to tackle the fast increasing waste stream of electrical and electronic equipment and complements European Union measures on landfill and incineration of waste. CIG products at end of life are subject to separate collection and treatment in the EU Member Statues and therefore are marked with the symbol.

European Union RoHS

EU Restriction and Hazardous Substances Directive 2011/65/EC (RoHS) restricts the use of specific hazardous materials in manufacture of electrical and electronic equipment. Specially, restricted materials are Lead, Cadmium, Mercury, Hexavalent Chromium, and Bromine. CIG products comply with this requirement and all marked with “RoHS” shown at the left.

China RoHS WF-630R1 complies with China environmental declaration requirements and is labeled with “EFUP 20” label shown as follows.

有毒有害物质声明

Hazardous Materials Declaration

部件名称（Parts）			有毒有害物质或元素（Hazardous Substance）		
铅（Pb）	汞（Hg）	镉（Cd）	六价铬	多溴联苯	多溴二苯醚

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			（Cr6+）	（PBB）	（PBDE）
电路模块（circuit modules）	×	O	O	O	O	O
电缆及电缆组件（Mechanicalassemblies）	x	O	O	O	O	O
金属部件（Metal Parts）	O	O	O	O	O	O
塑料和聚合物部件（Plastic and Polymeric Parts）	O	O	O	O	O	O

0：表示该有毒有害物质在该部件所有均质材料中的含量在SJ/T11363 －2006标准规定的限量要求下。Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard. **X**：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. 对销售之日的所售产品，本表显示剑桥公司供应链的电子信息产品可能包含这些物质。注意：在所售产品中可能会也可能不会含有所有所列的部件。This table shows where these substances may be found in the supply chain of CIG electronic information products, as of the date of sale of the enclosed product. Note that some of the component types listed above may or may not be a part of the enclosed product.

除非另外特别的标注，此标志为针对所涉及产品的环保使用期标志。某些零部件会有一个不同的环保使用期贴在其产品上。此环保使用期限只适用于产品是在产品手册中规定的条件下工

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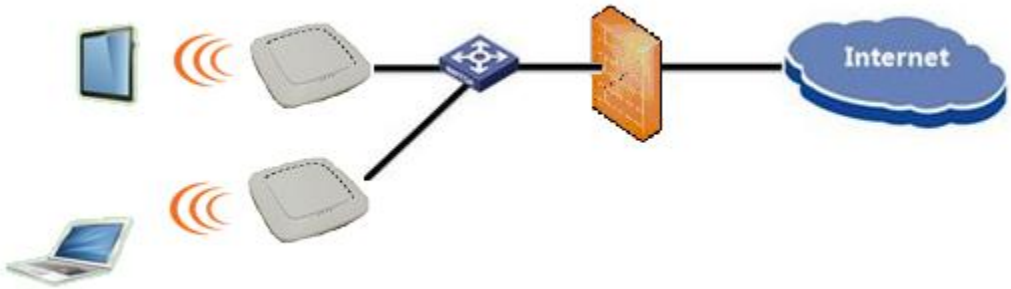
作。The Environment-Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUPand so are marked to reflect such. The Environment-Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.

1.8 Safety and Regulatory compliance

WF-630R1 has been tested and complied with the standards as follows:

- NRTL Listed 60950 (US & CA)
- CB with IEC/EN 60950-1
- EN 60601-1-1: 2001UL2043

2 AP Network Topology



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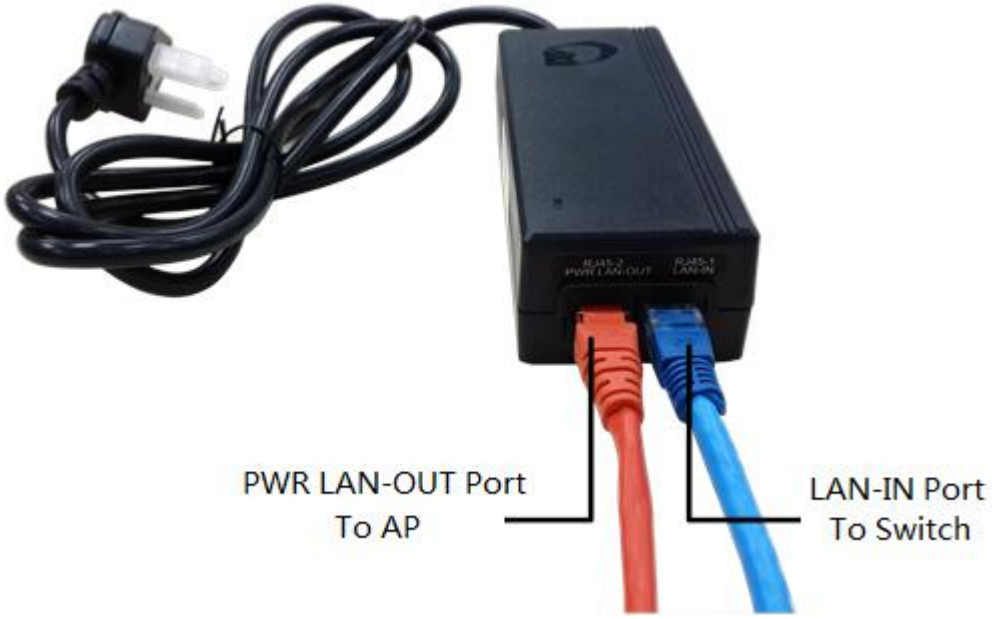
2.1 Connect PoE Adapter to AP



Notes: Please connect the Ethernet Port labeled "PWR LAN-OUT" on PoE Adapter to "ETH1" port of AP and the Ethernet Port labeled "LAN-IN" on PoE Adapter to your PC or Switch.

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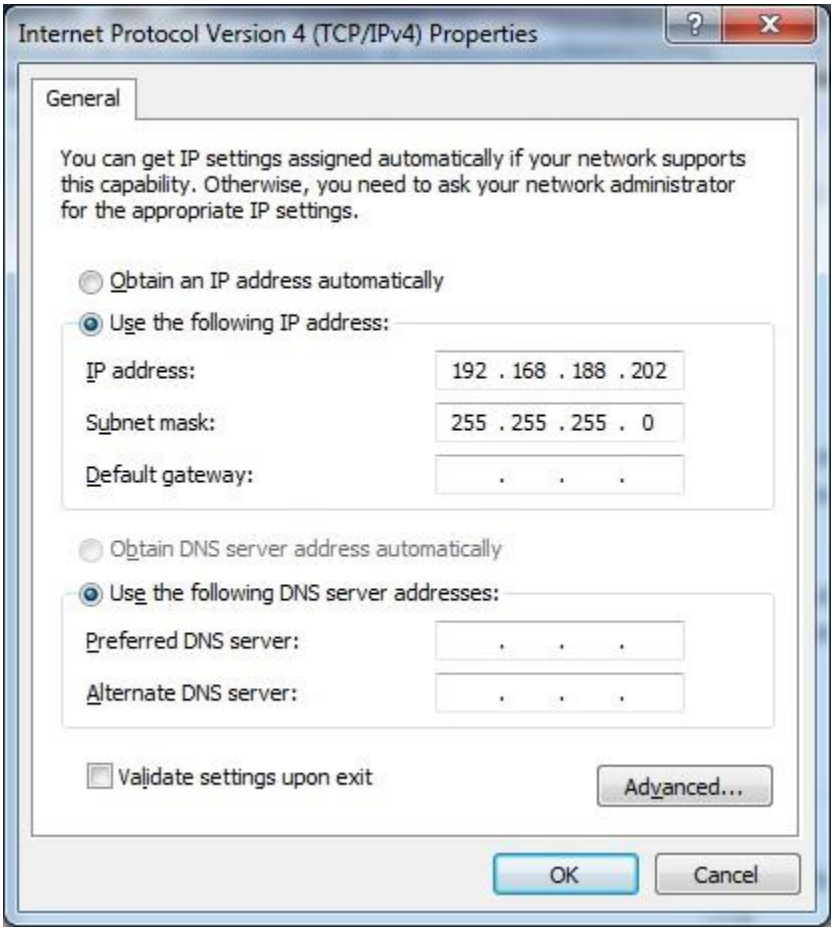
2.2 Configure PC IP address



Notes: Connect your PC to the "LAN-IN" port on PoE Adapter of AP, manually configure your wired NIC with a static IP address on the 192.168.188.x subnet (e.g. 192.168.188.202).

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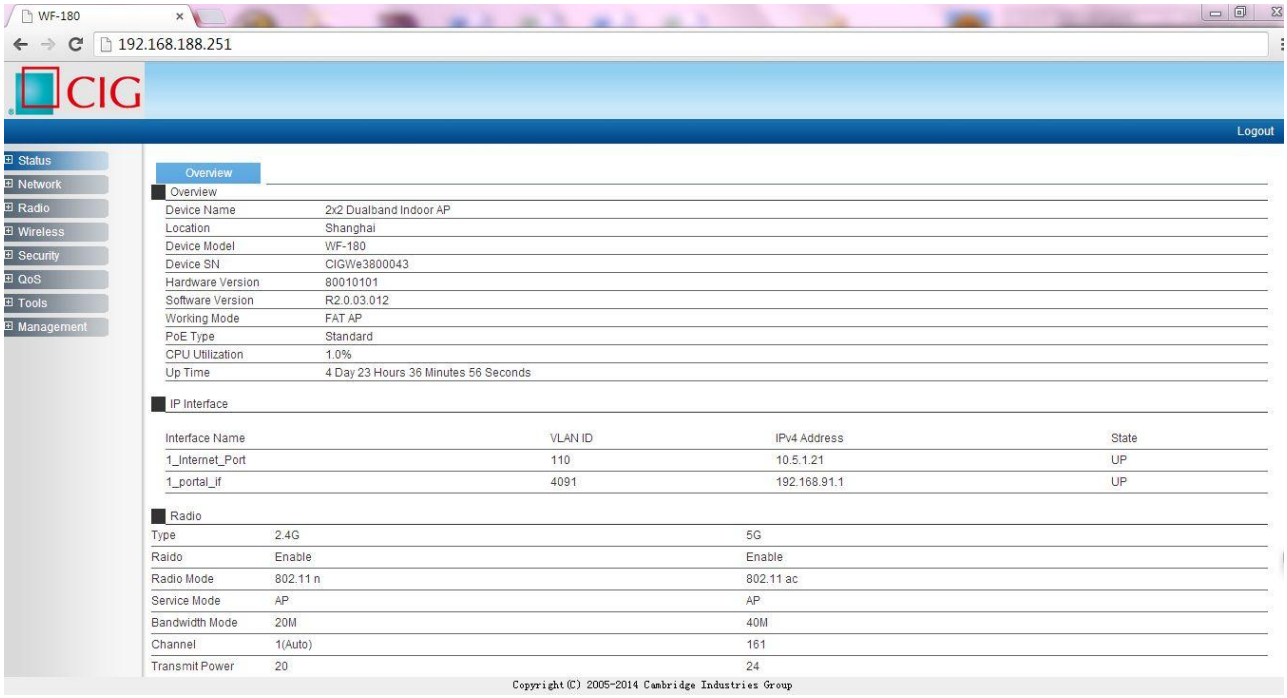
2.3 Visit AP Web page



Notes: Input the default IP address "192.168.188.251"in the address bar of browser. Then enter the default username and password (username: admin, password: password) to enter the Web interface of AP.

2.4 Configure IP address for AP

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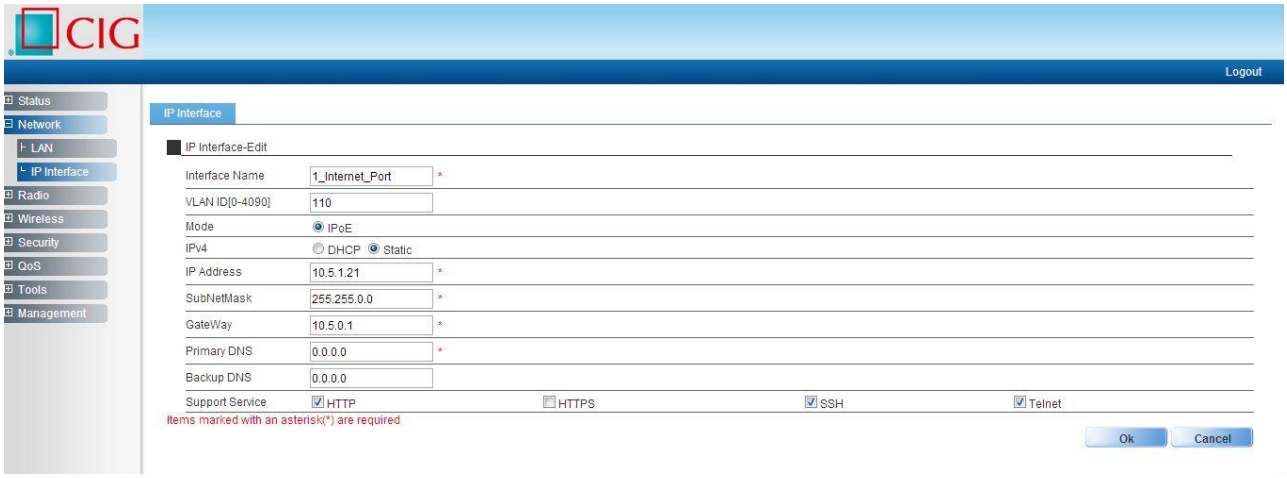
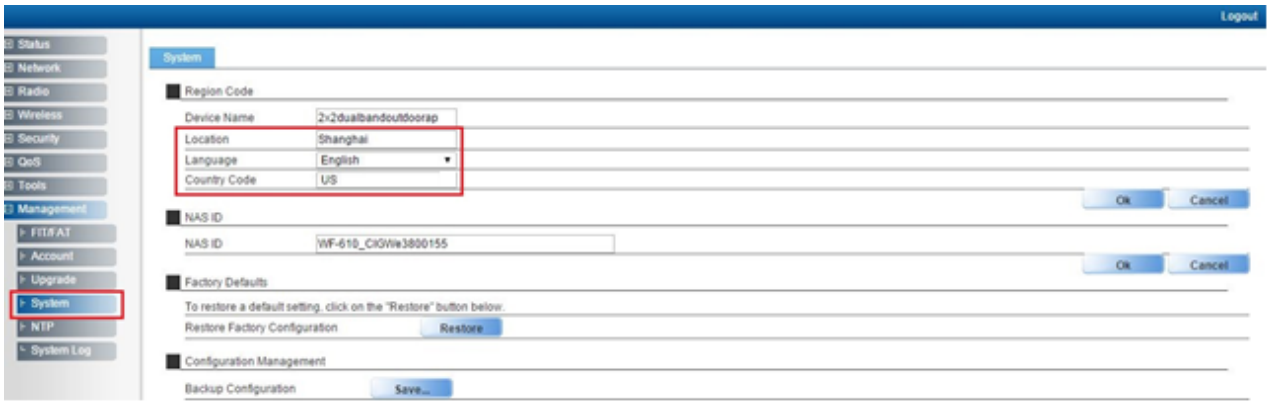


2.5 Connect AP to Switch

🕮Notes: Connect AP to Switch and confirm it can visit Internet, then configure your PC to the same subnet and connect to the same Switch in order to continue to configuring the AP.

2.6 Configure location, Language and Country code for AP



🕮Notes:The country code is US and can't be modified.

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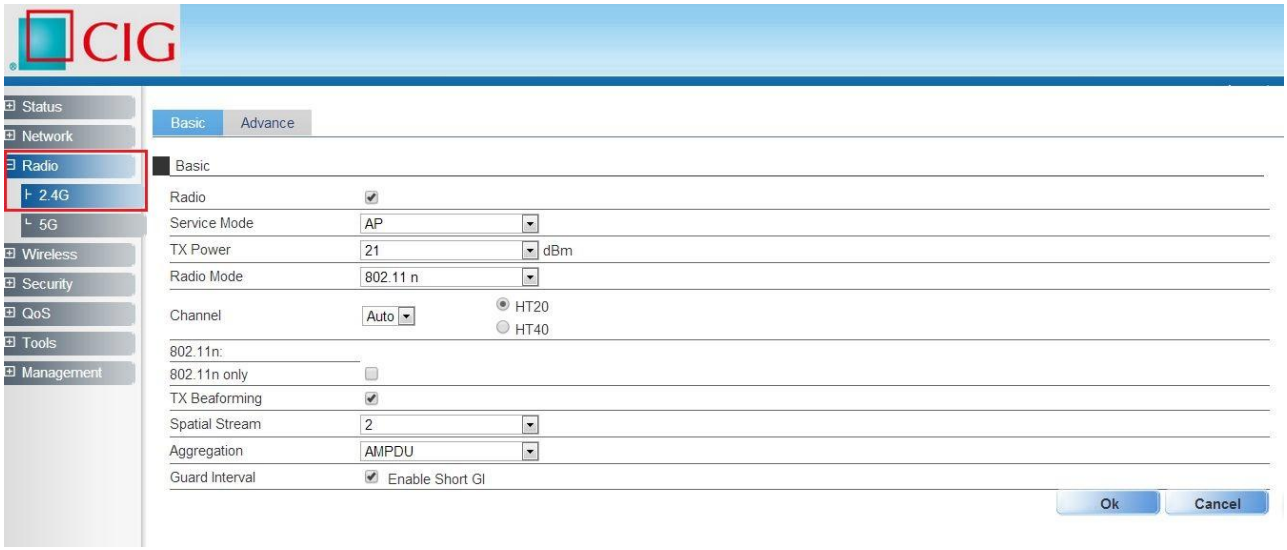
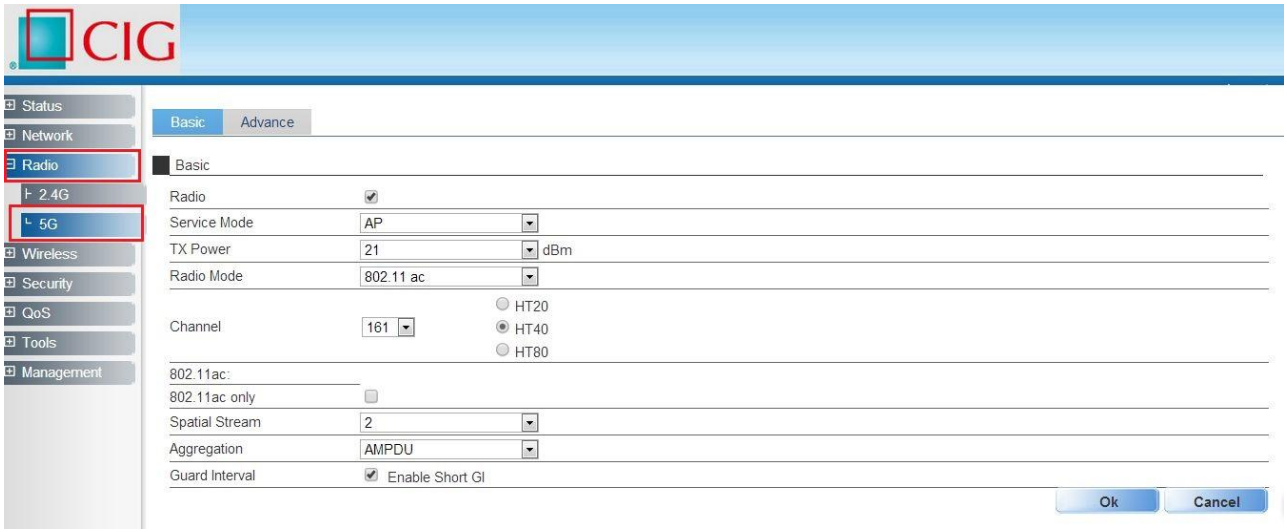
2.7 Configure detailed WiFi parameters for AP





2.8 Configure Radius parameters for AP

🕮Notes: If want to use the 802.1x authentication, it need to configure the Radius profile firstly. Then in the security profile, the radius profile will be presented in the drop-down list.

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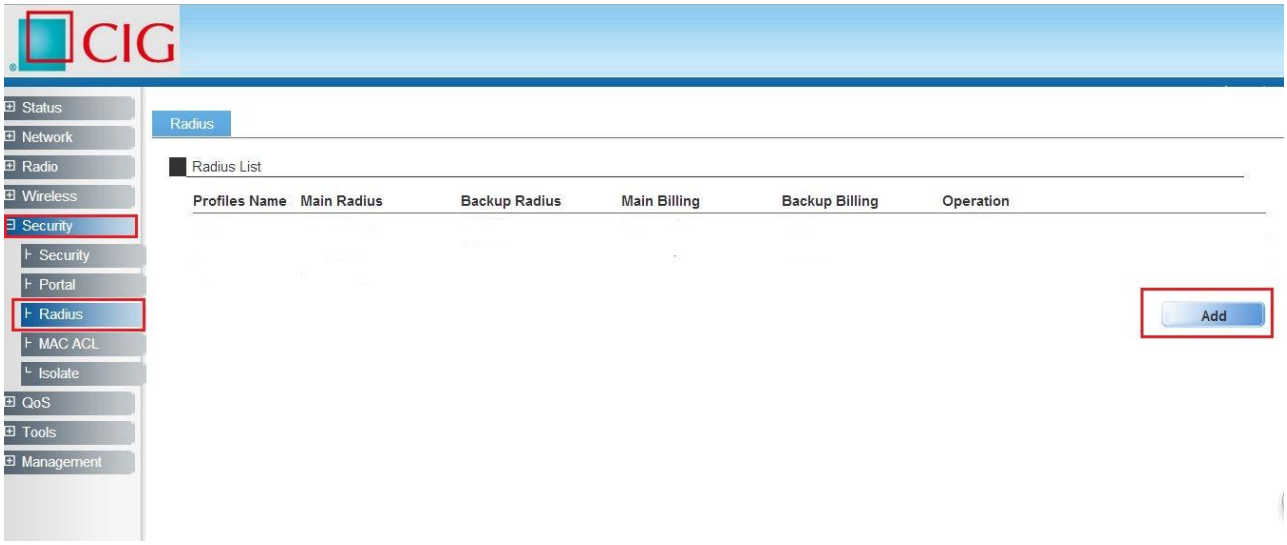

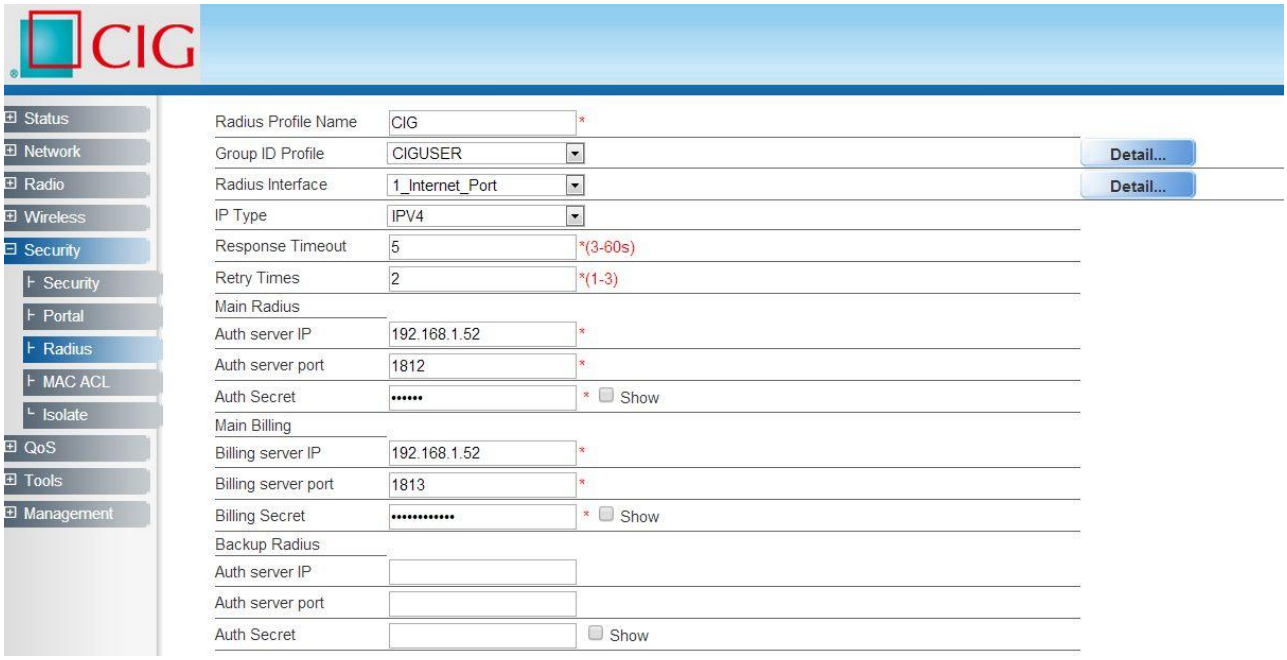

2.9 Configure Portal parameters for AP

🕮Notes:The AP can support Web authentication based onChillispot. If want to use the Web authentication, it need to configure the Portal profile and Radius profile firstly. Then in the security profile, the Portal profile and Radius profile will be presented in the drop-down list.Above all, you need to setup a Web authentication server and radius server.

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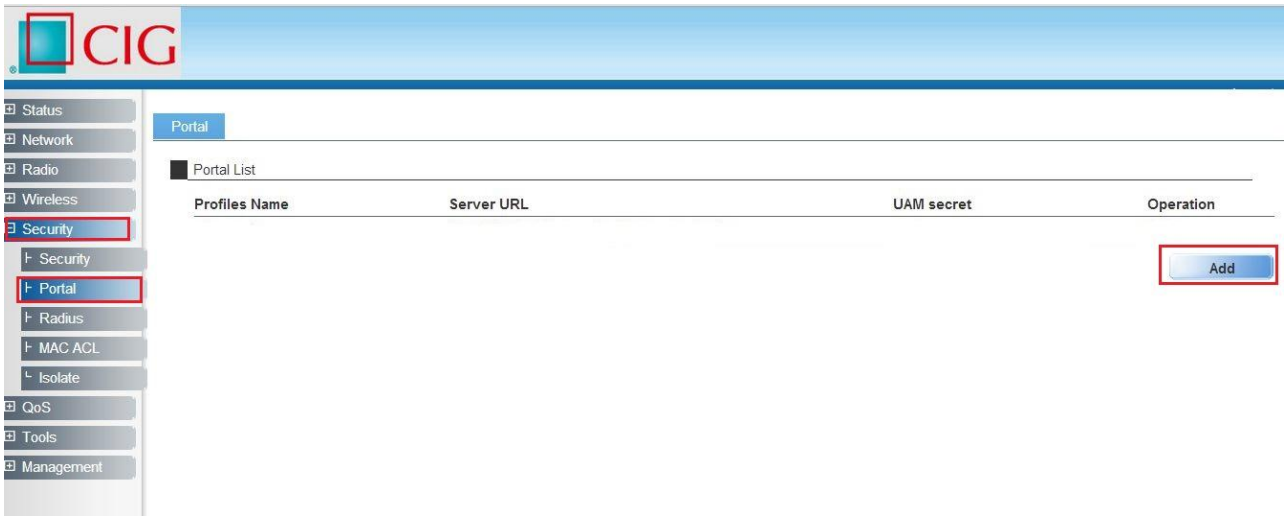

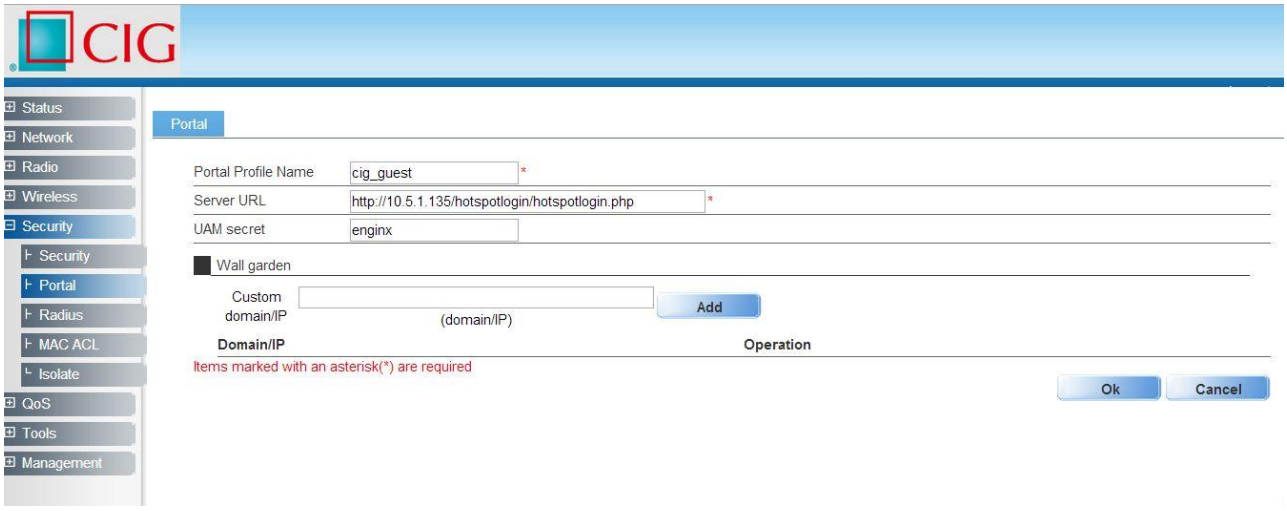

2.10 Configure security parameters for AP

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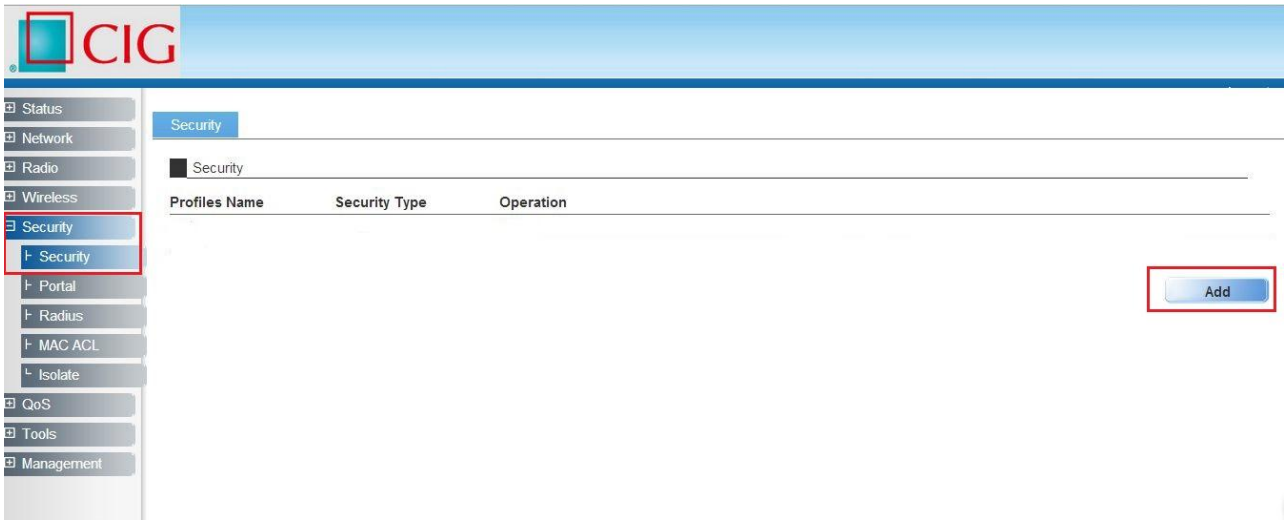

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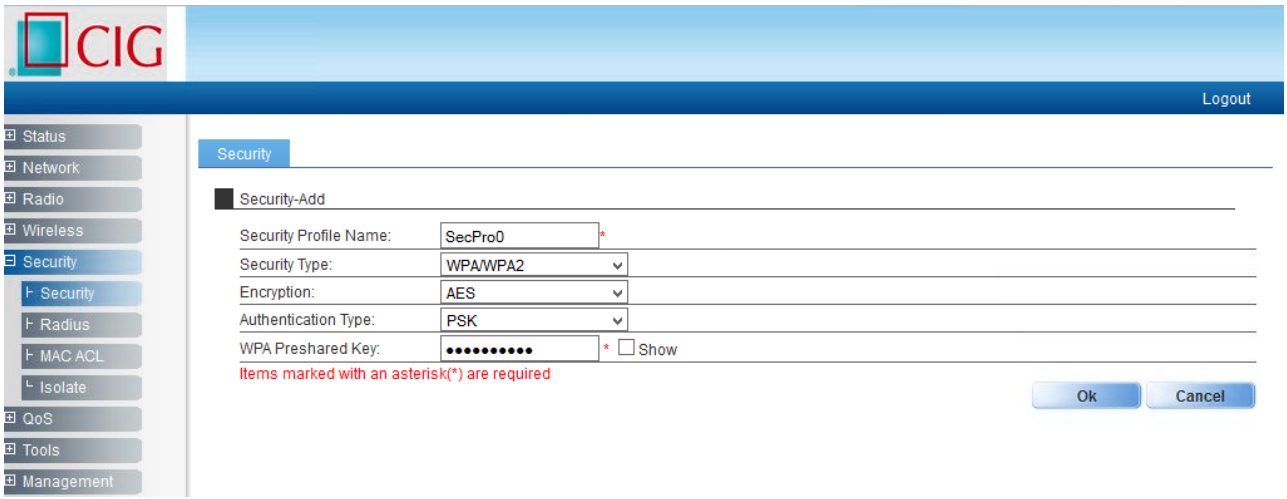

802.1x Authentication

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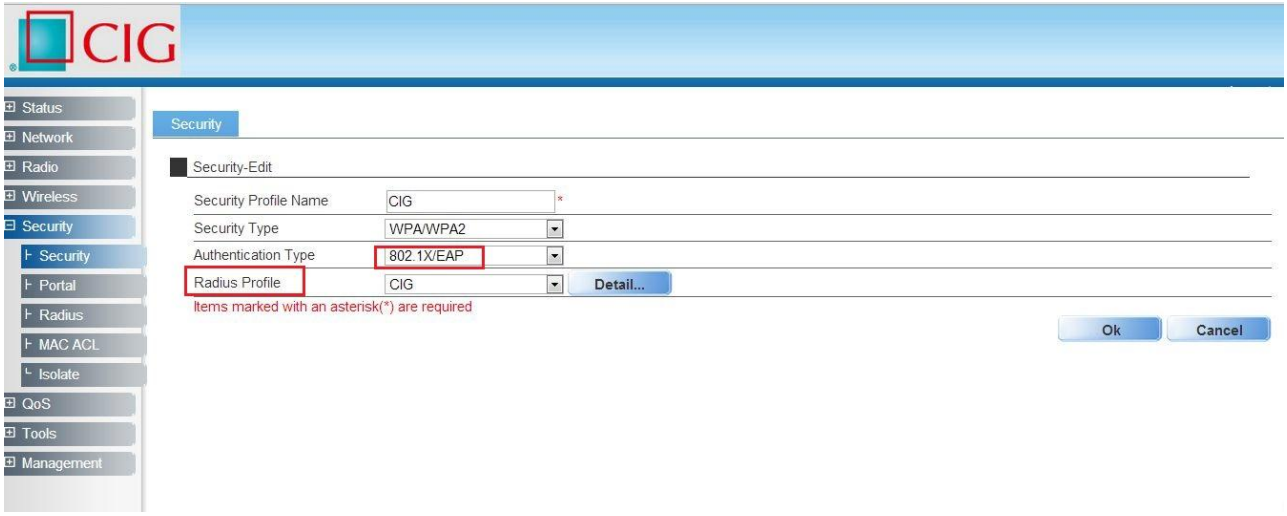
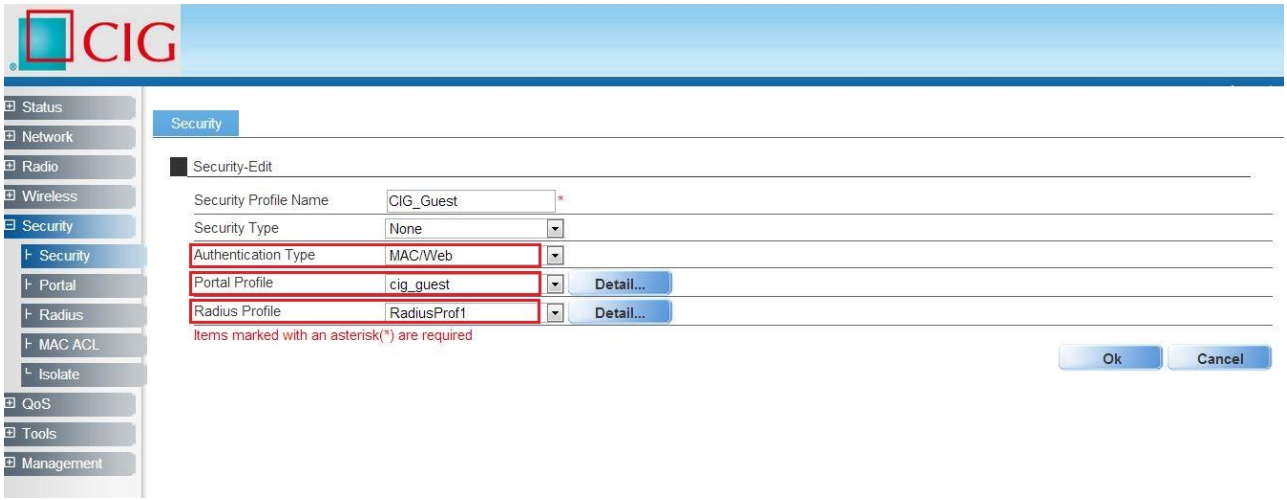


Web Authentication



2.11 Configure Rate limit rule (Optional)

🕮Notes: Rate Limit profile will be cited in the AP configuration.

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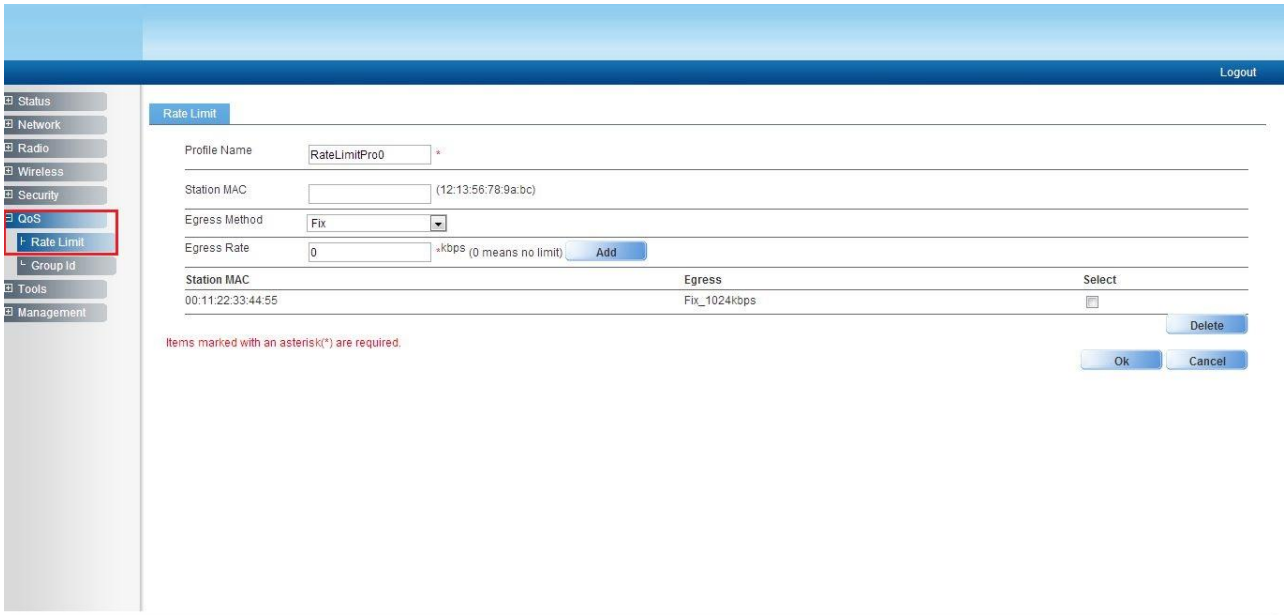

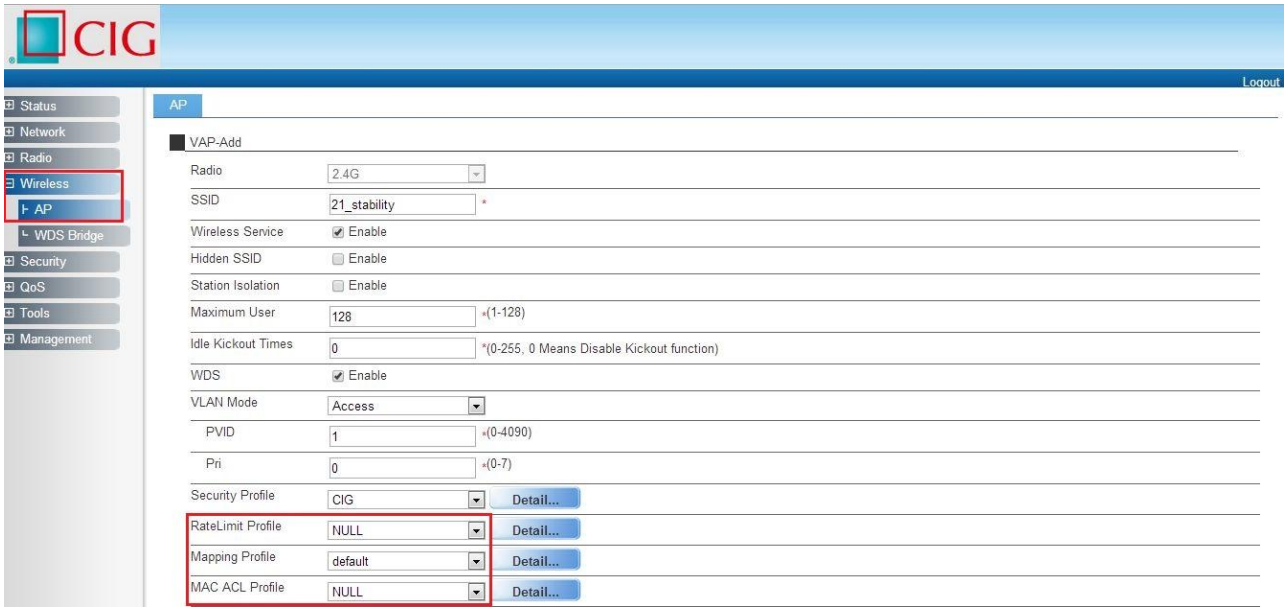

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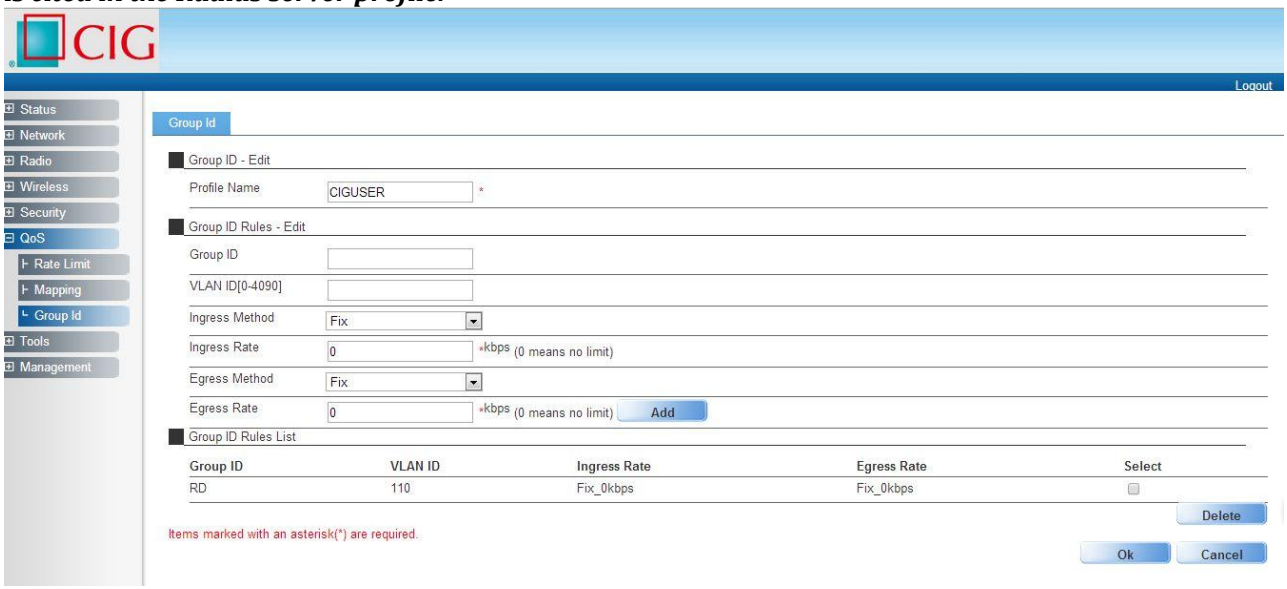
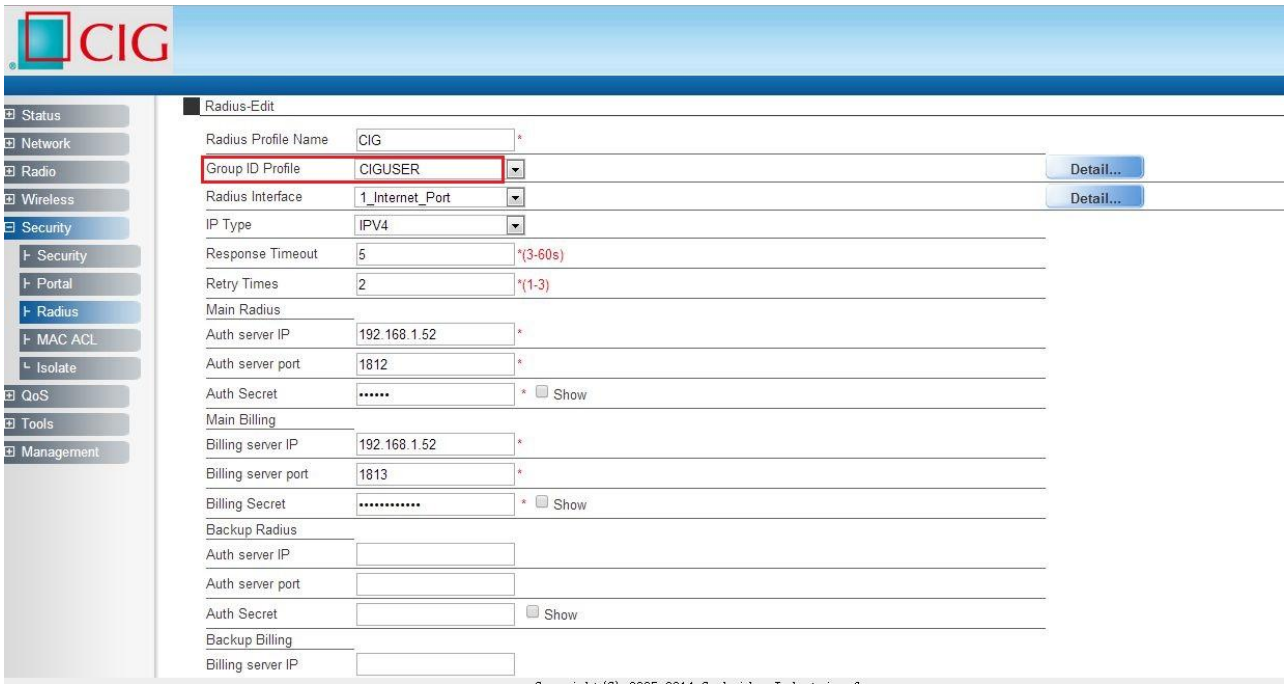
2.12 Configure Group ID (Optional)

🕮Notes: Group profile is used for 802.1x/Web authentication. Group is classifiedby Filter-ID attribute in radius access accept message. The Group is bound with the role of the user. Different group has different VLAN and rate limit configuration. When a station sends the username and password to the Radius server for authentication, the server can respond with a Filter-ID (optional) to the AP. After AP gets the Filter-ID attribute, AP will search the Filter-ID in the Group profiles. If the Filter-ID can be matched in one profile, the traffic VLAN and rate limit will be applied to the station. The Group profile is cited in the Radius server profile.





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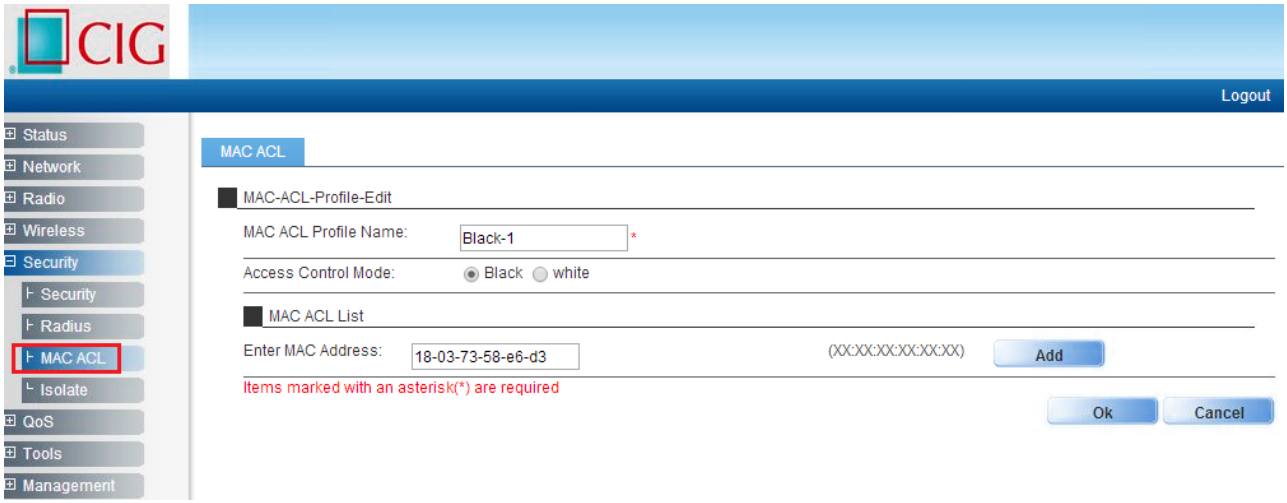
2.13 Configure MAC ACL rule (Optional)



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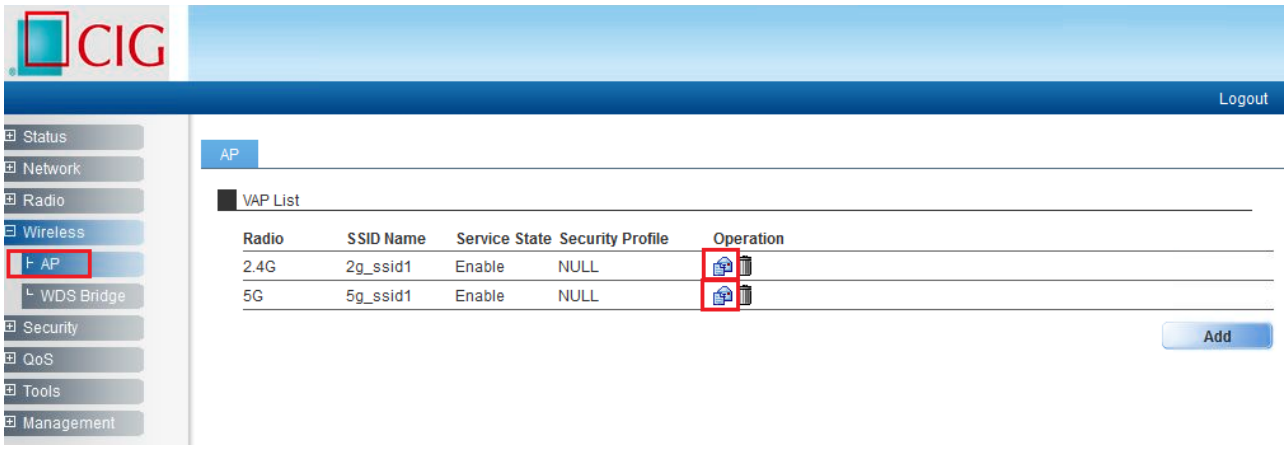
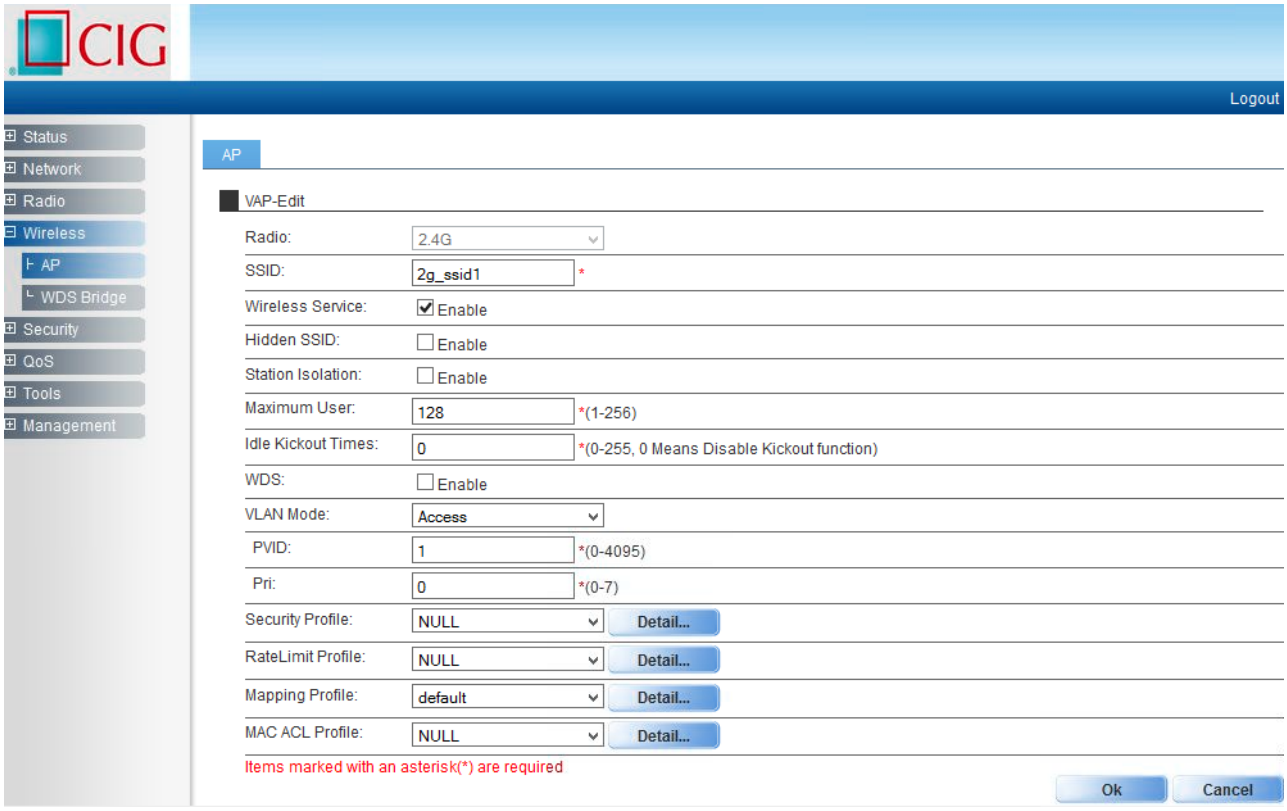
2.14 Configure SSID





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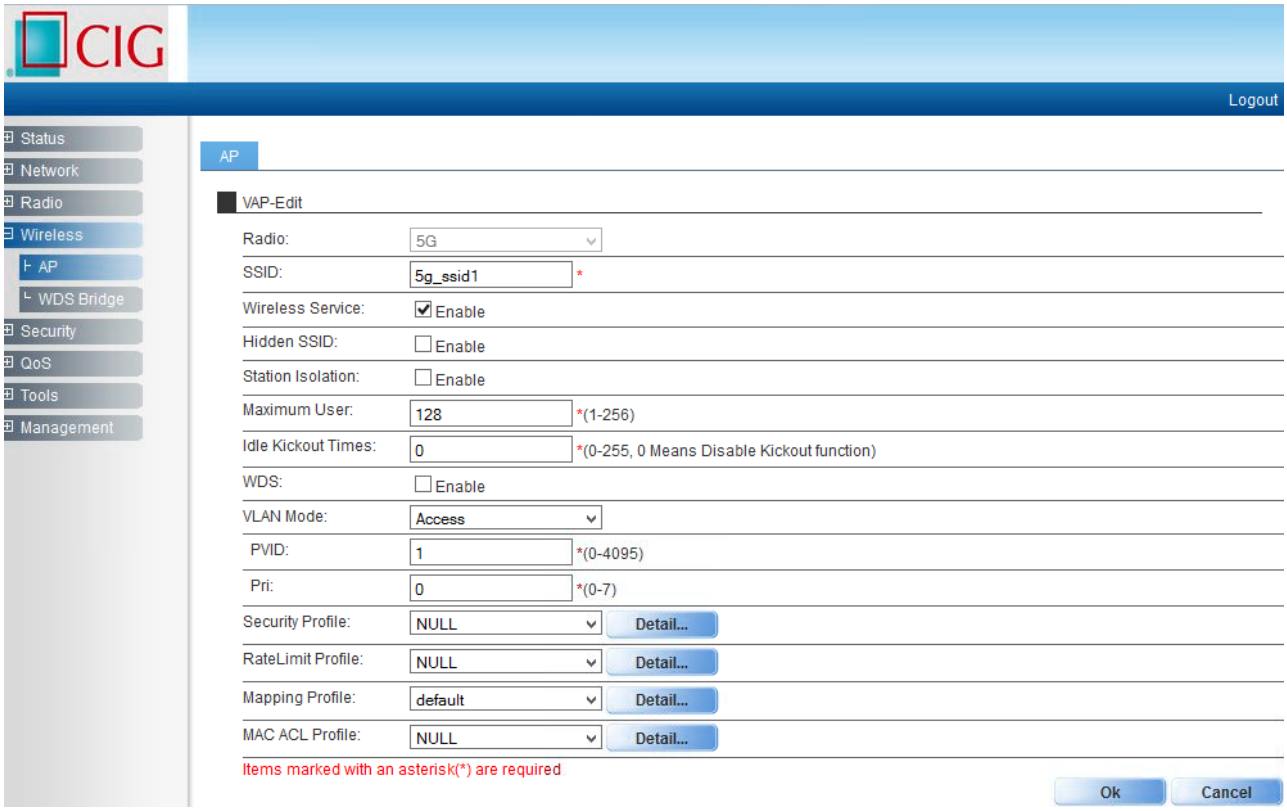

Notes: You may apply the relevant Security, Rate Limit, Mapping or MAC ACL profiles which you configured here. After the above setting, wireless stations can connect to the relevant SSID of AP and get IP address from DHCP server of firewall to visit Internet.

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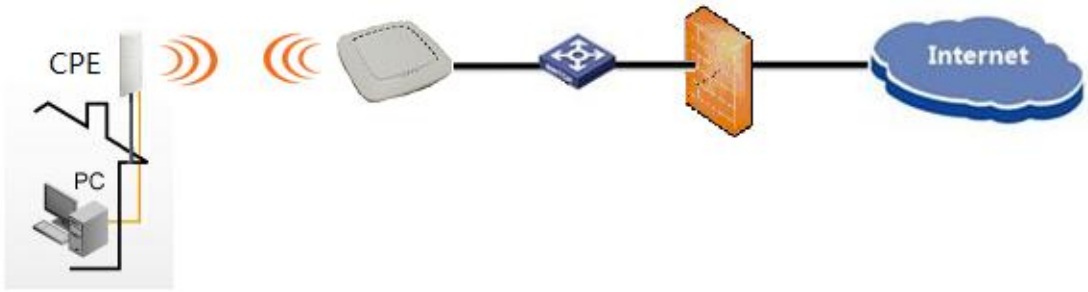
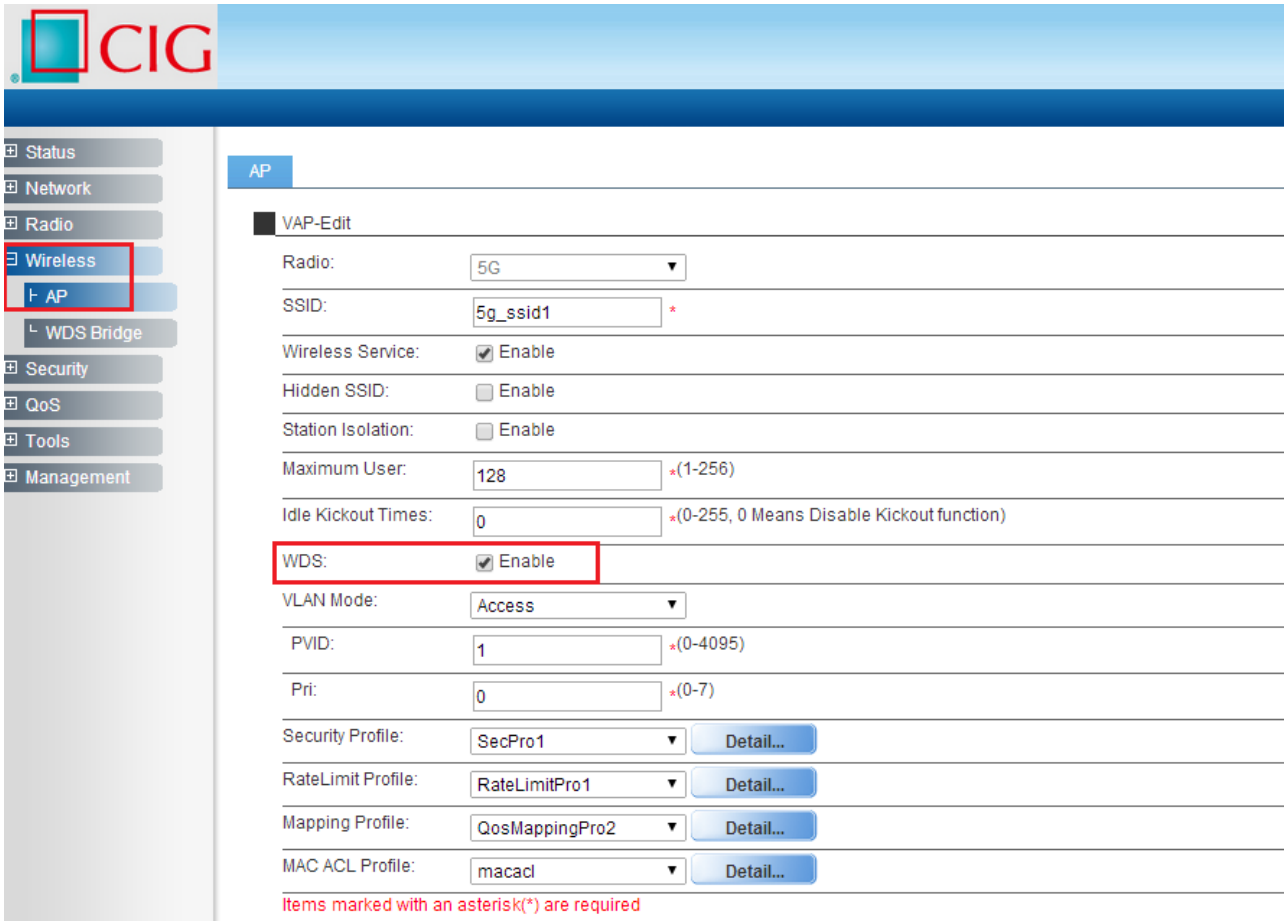
3 AP WDS Network Topology



3.1 Enable WDS function



Note: Enable WDS function when you configure SSID.

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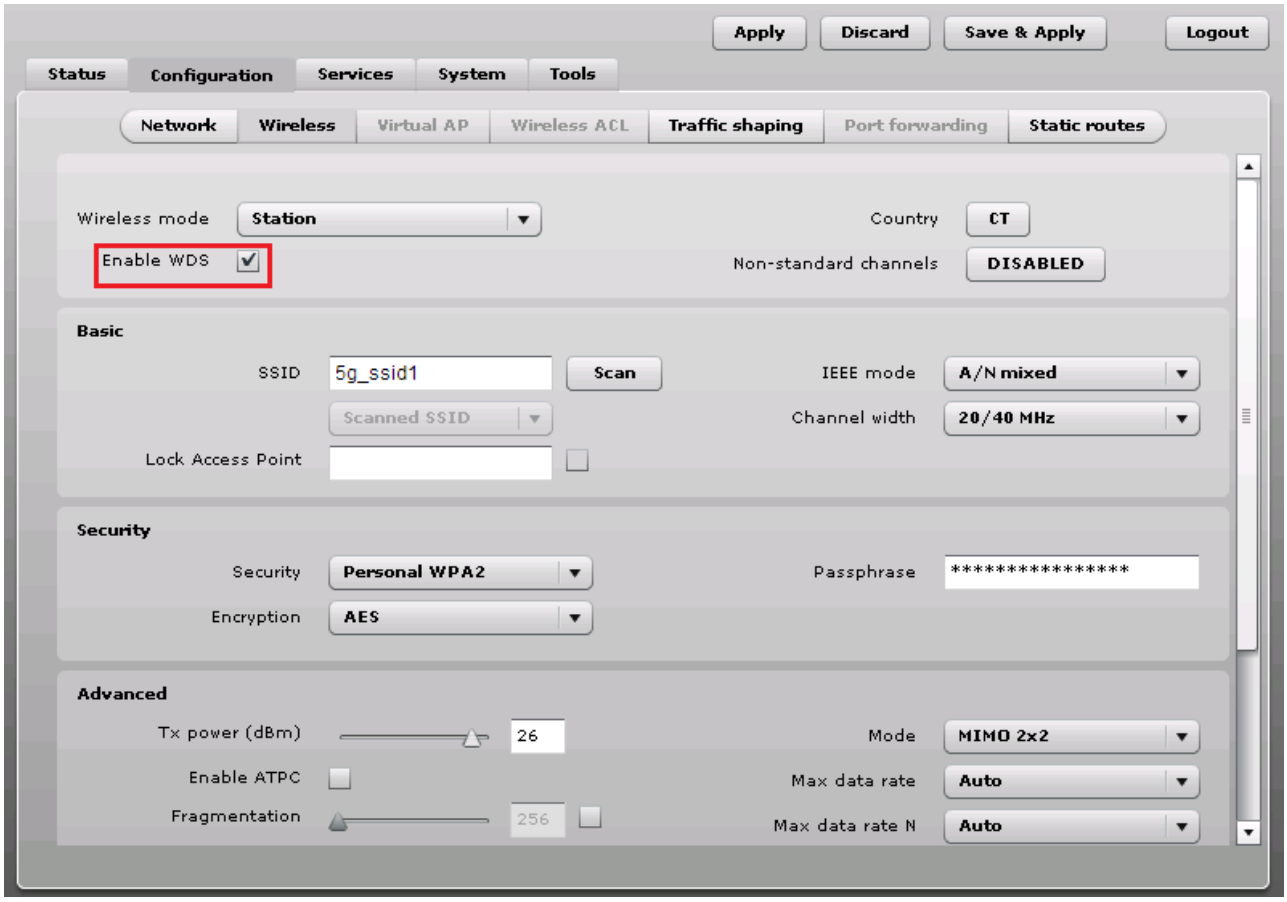
3.2 Configure CPE WDS



Note: Enable WDS function too when you configure CPE to connect to AP.

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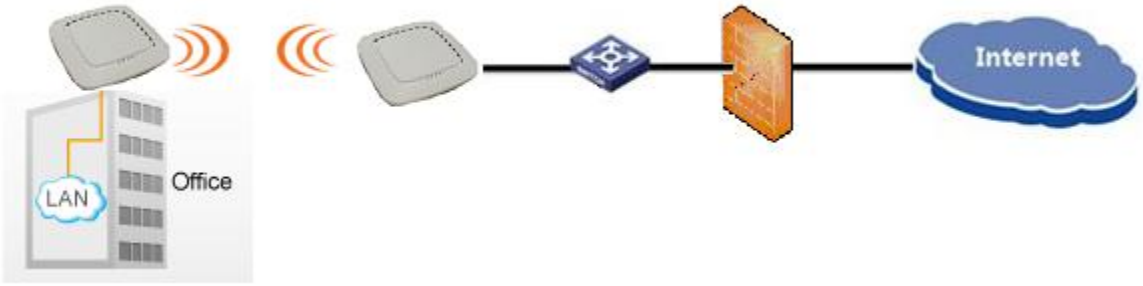
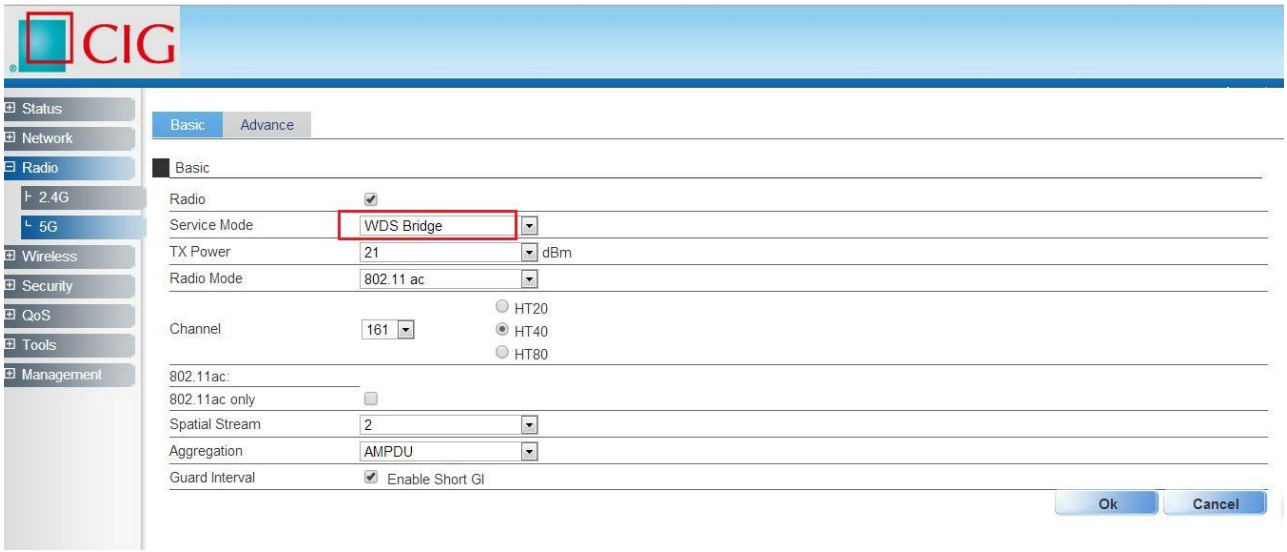
4 NAWDSNetwork Topology



4.1 Configure WDS bridge mode



Note: Please select a specified Channel(for example 161) here.

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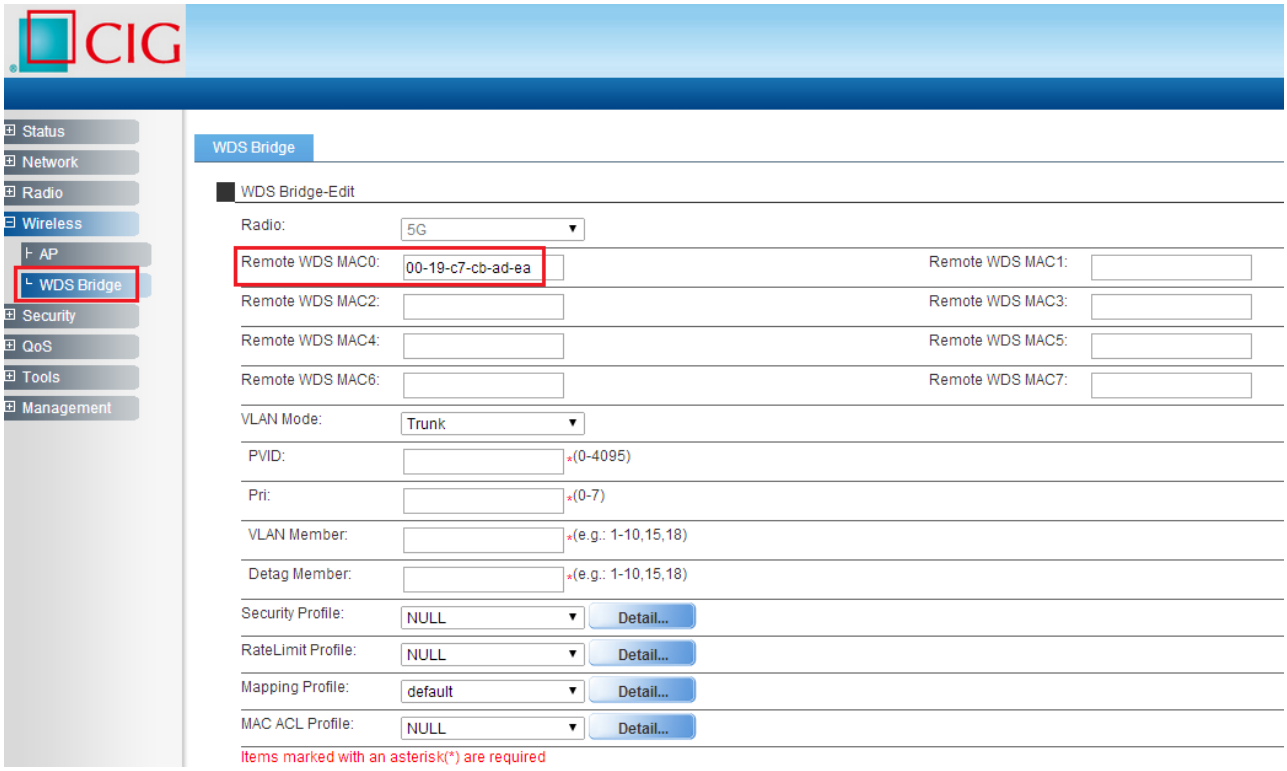
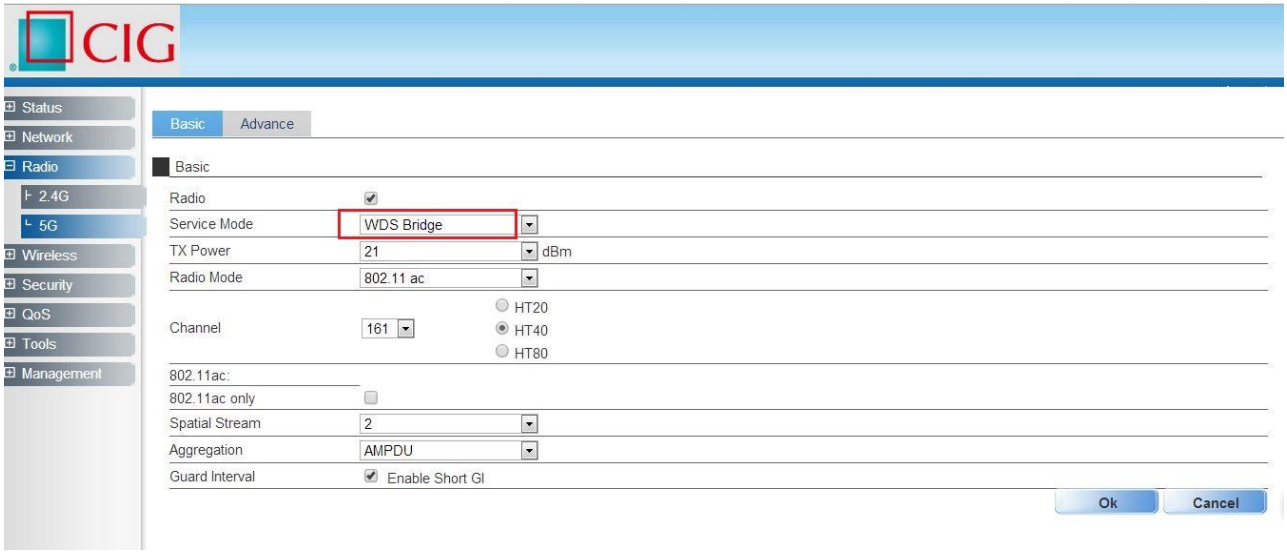
4.2 Input remote AP MAC



4.3 *The configuration in remote AP*



Note: Please select the same Channel as the Channel ofAP which you want to connect via WDS.

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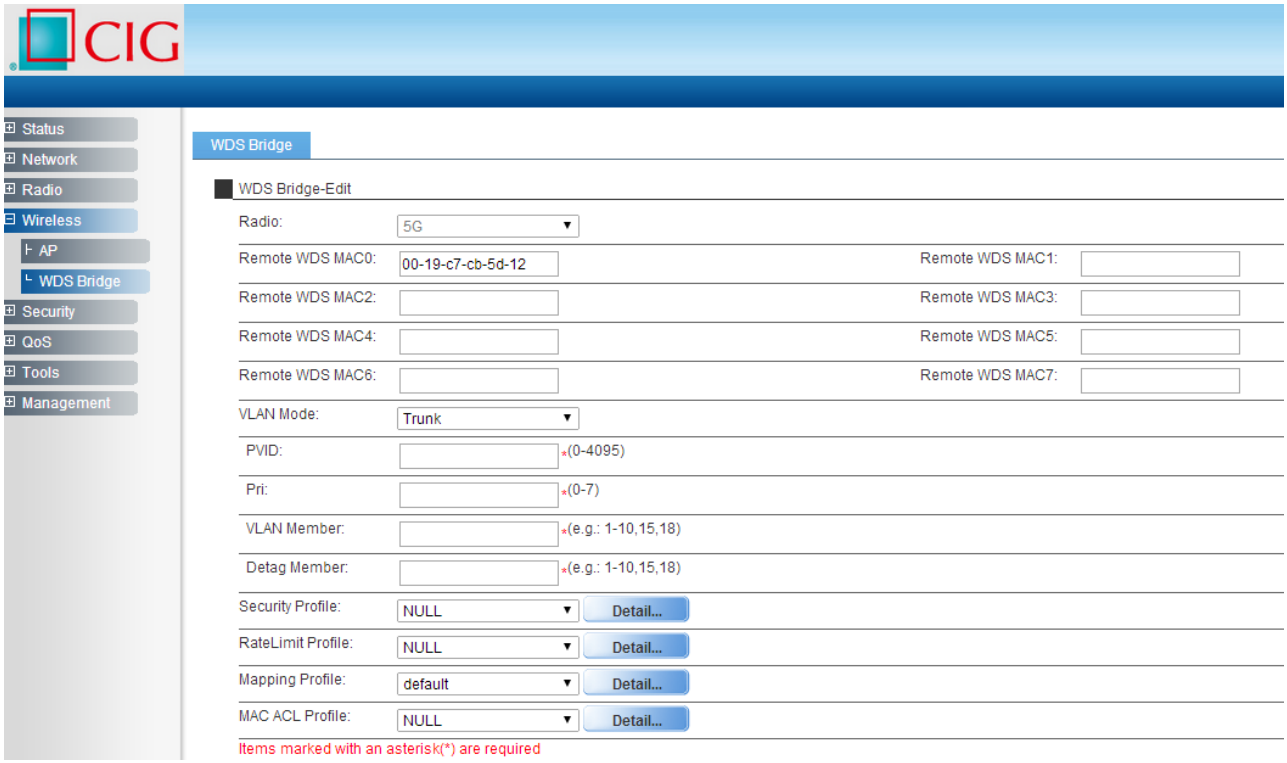

Note: Please input the MAC address of AP which you want to connect via WDS.

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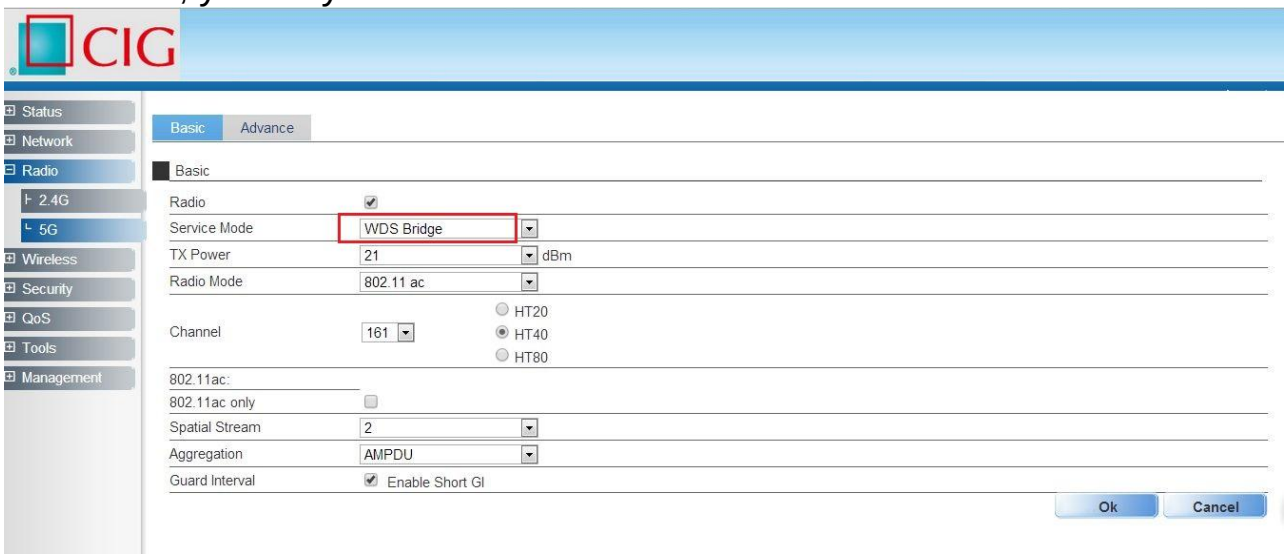
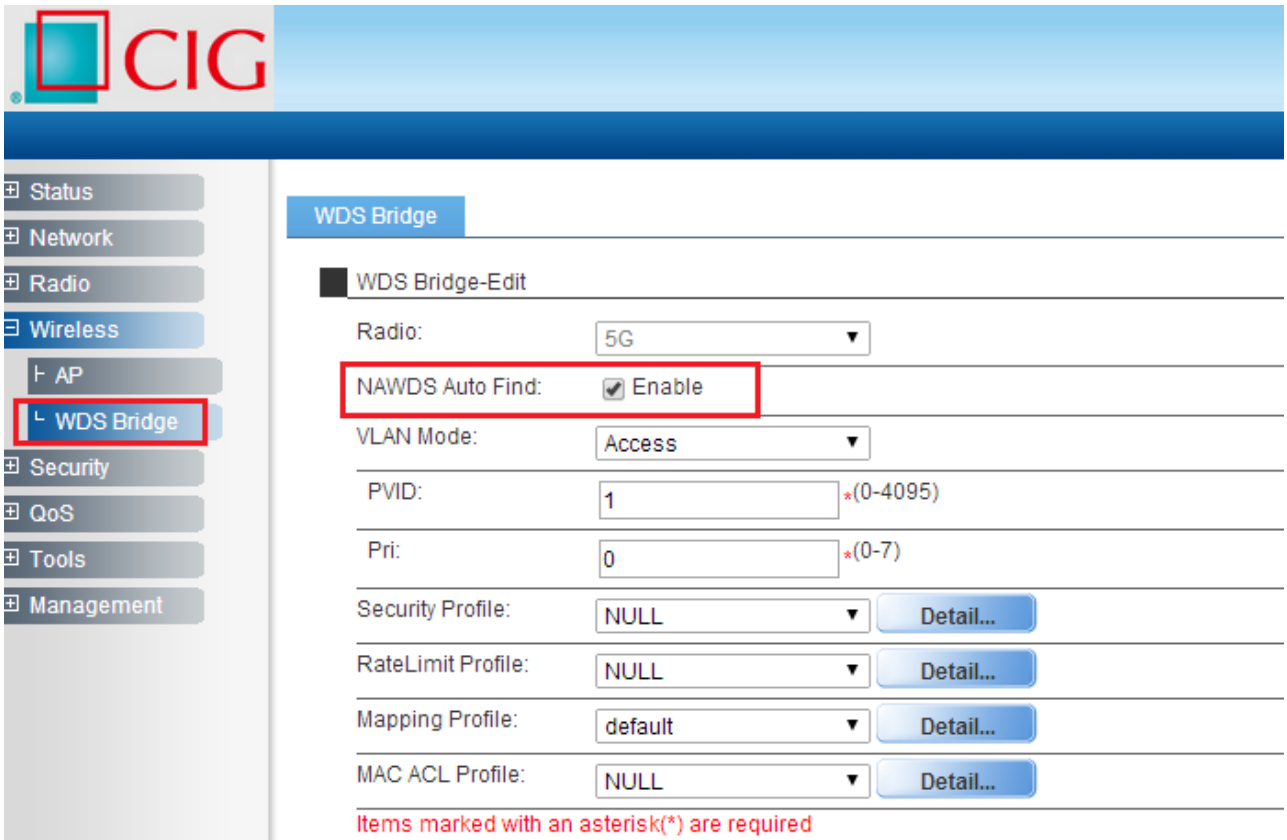
4.4 *NAWDS Auto Find*

WF-630R1also supports “NAWDS Auto Find” function, after you configure master AP, you mayenable “NAWDS Auto Find” function in slave AP.



Notes: Please select the same Channel as the Channel of AP which you want to connect via WDS.



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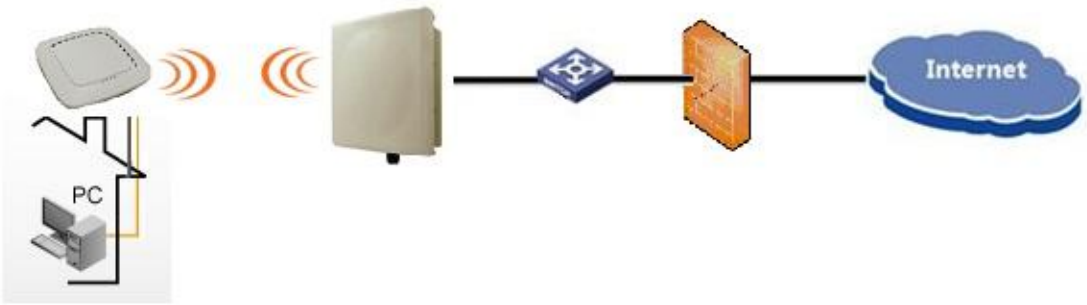
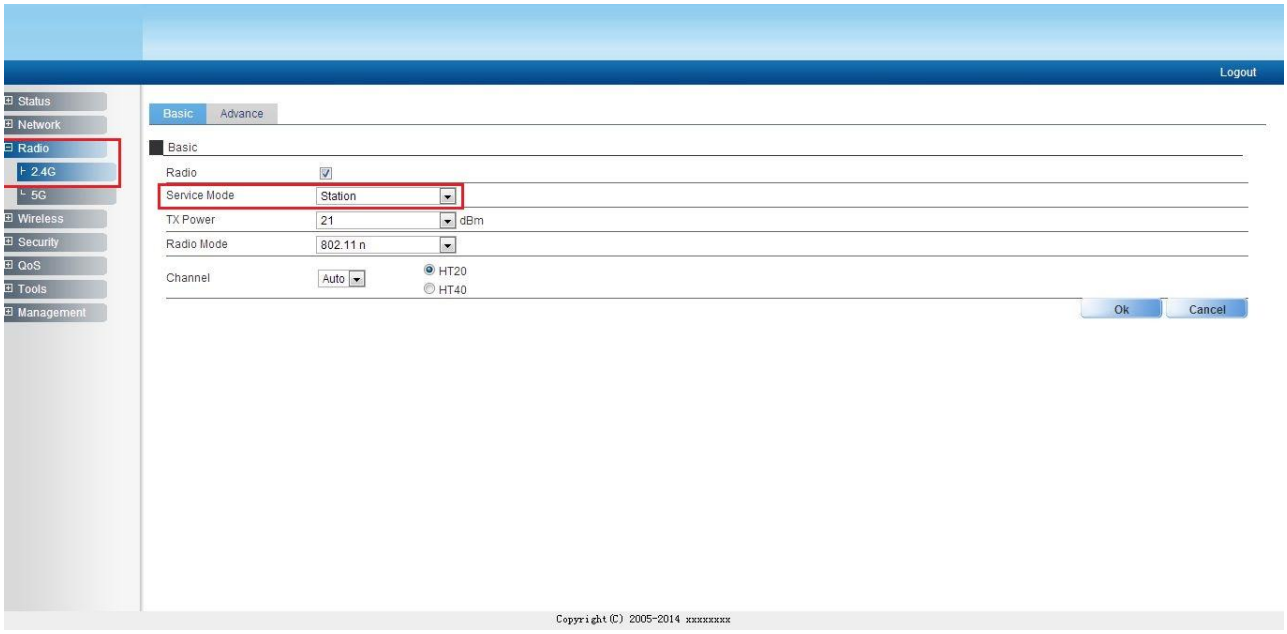
🕮Notes: After you enable "NAWDS Auto Find" function, the AP will connect to the master AP via WDS automatically.

5 Station Network Topology



🕮Notes:WF-630R1 supports station mode. WF-630R1 access to the AP by Wi-Fi, and provide the Ethernet access to the client by the LAN port.

5.1 Configure Station mode



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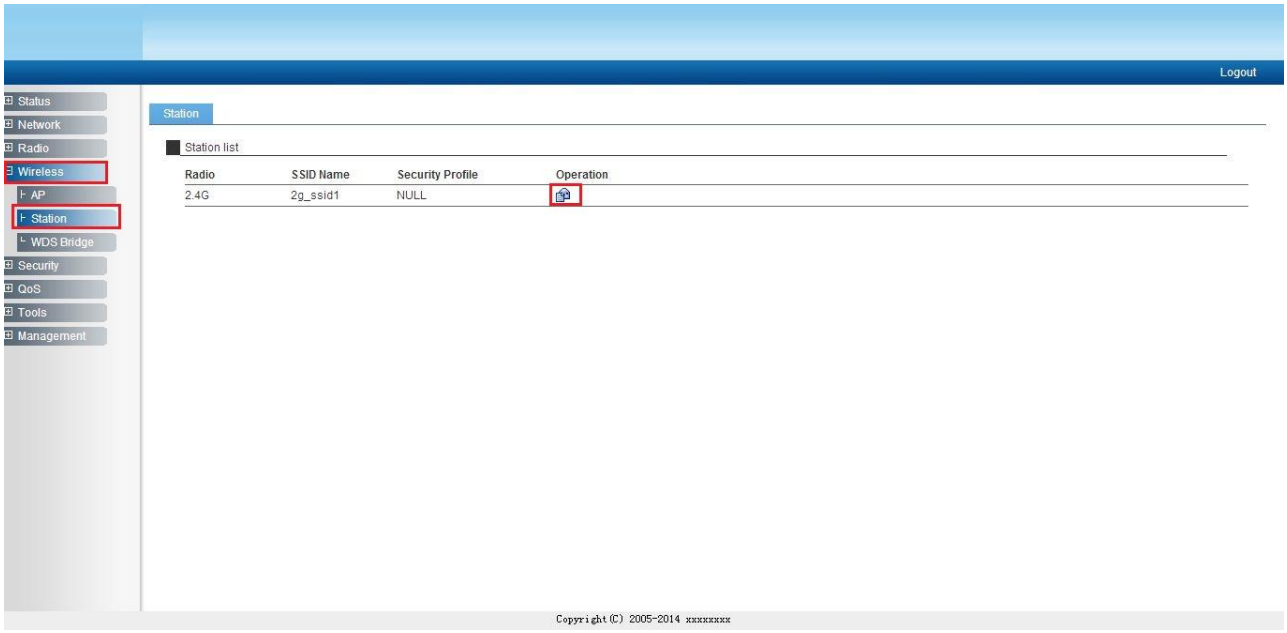
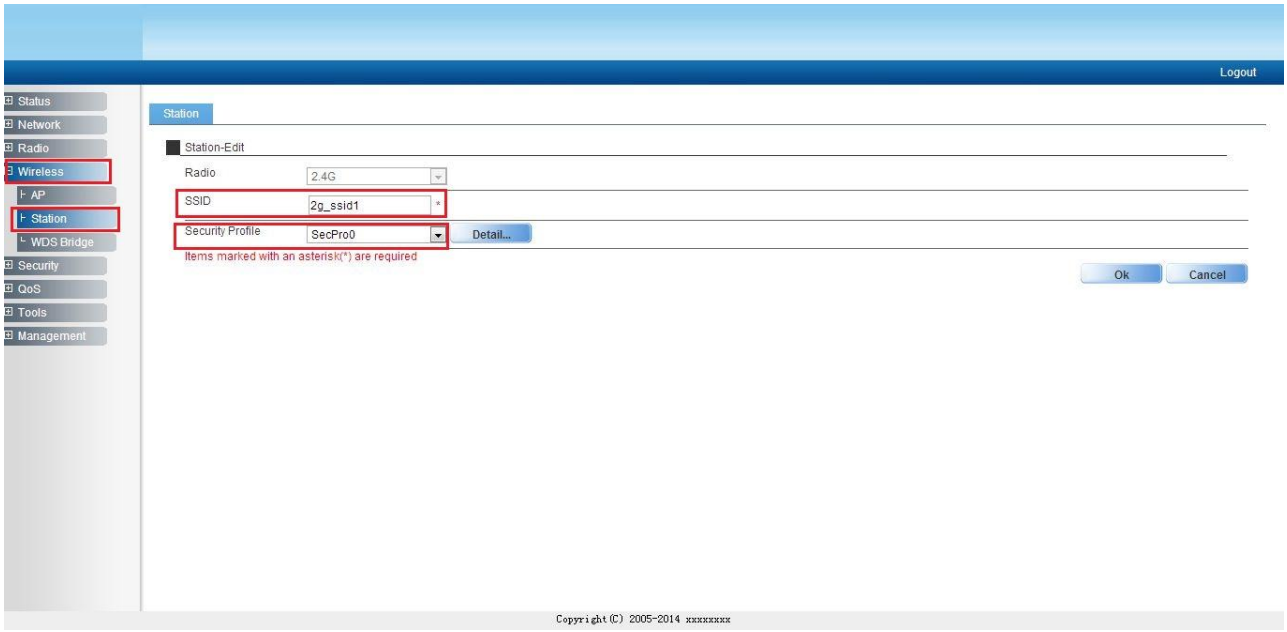
5.2 Station Access to AP





Notes:Need to configure the SSID manually. If want to use the security method, need to configure the "security profile" firstly and then cite it here.

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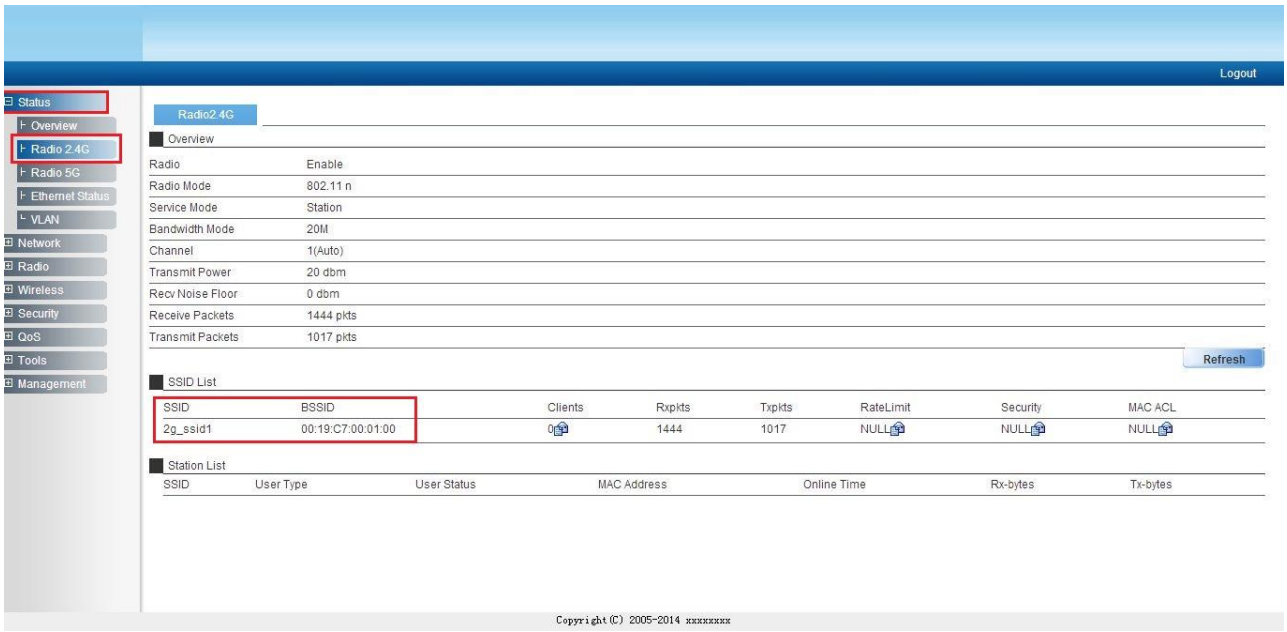
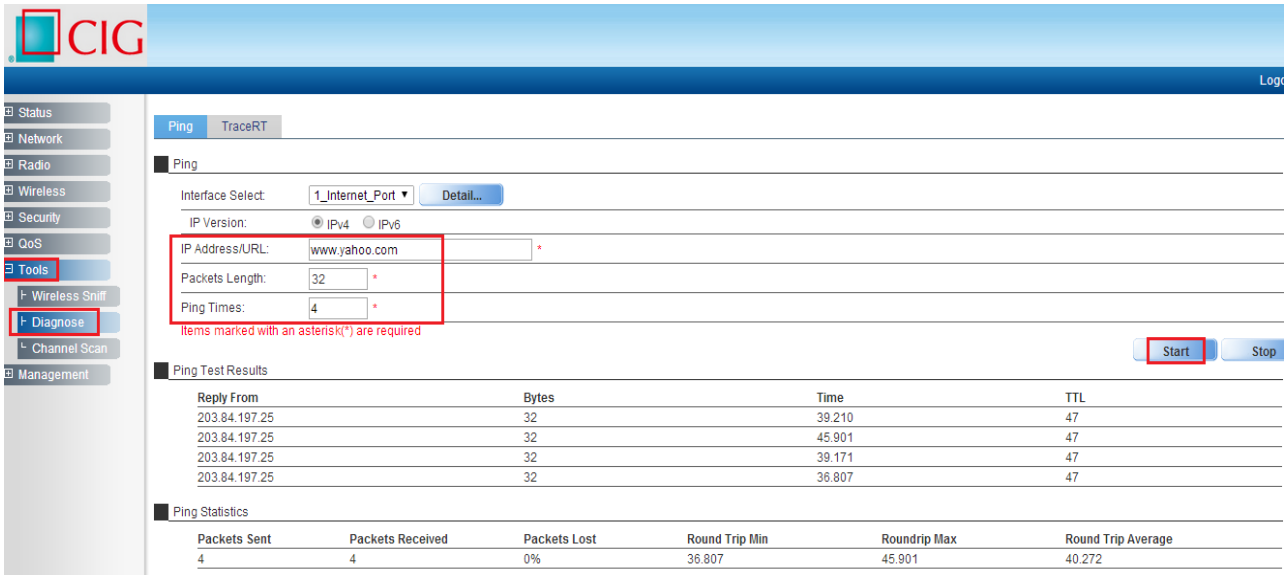
5.3 Station Status



Notes: After WF-630R1 access to a AP successfully, can check the station status on the Web GUI, for example, the SSID and BSSID.

6 Troubleshooting

6.1 Ping Diagnose



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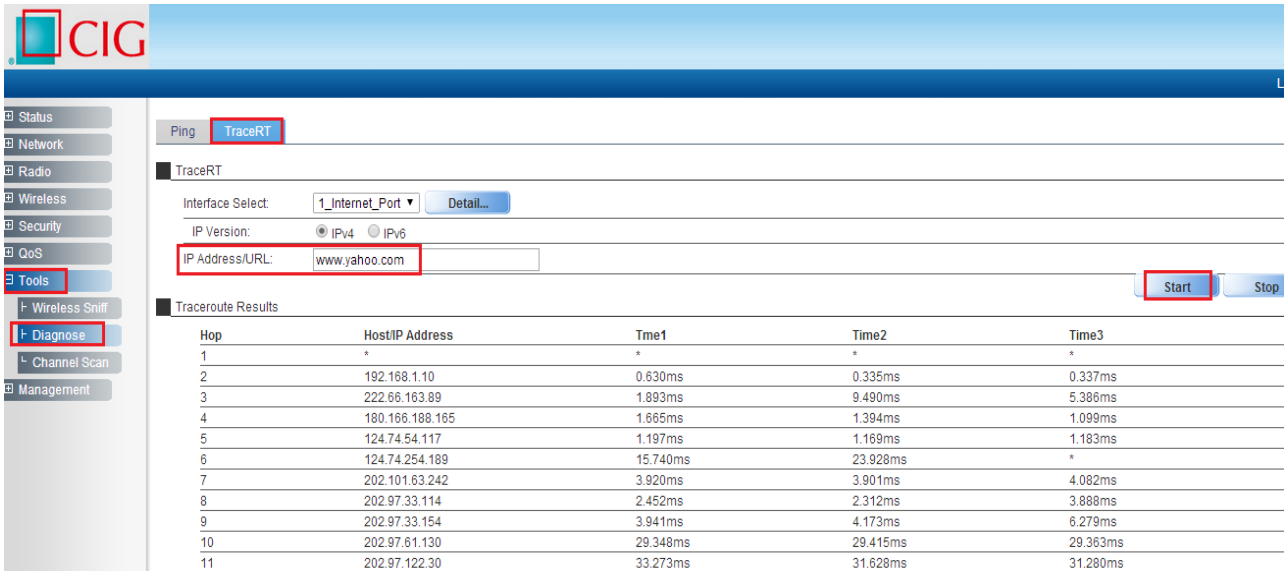
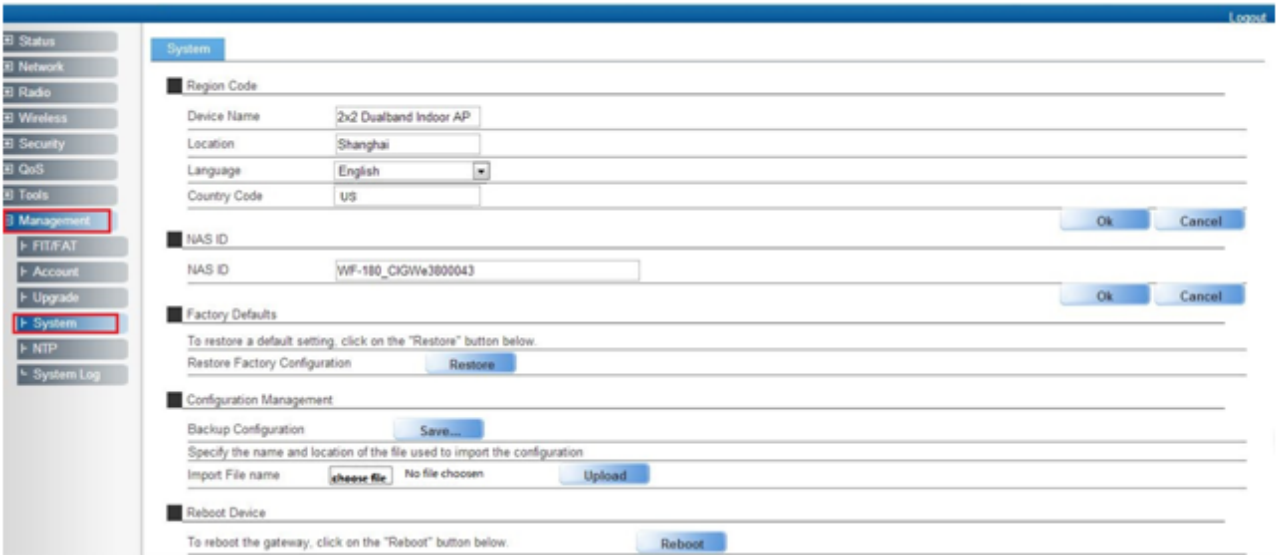
6.2 TraceRT Diagnose



6.3 How to backup/restore setting



Notes: Press "Save" button to save current setting. Press "Upload" button to load saved setting.

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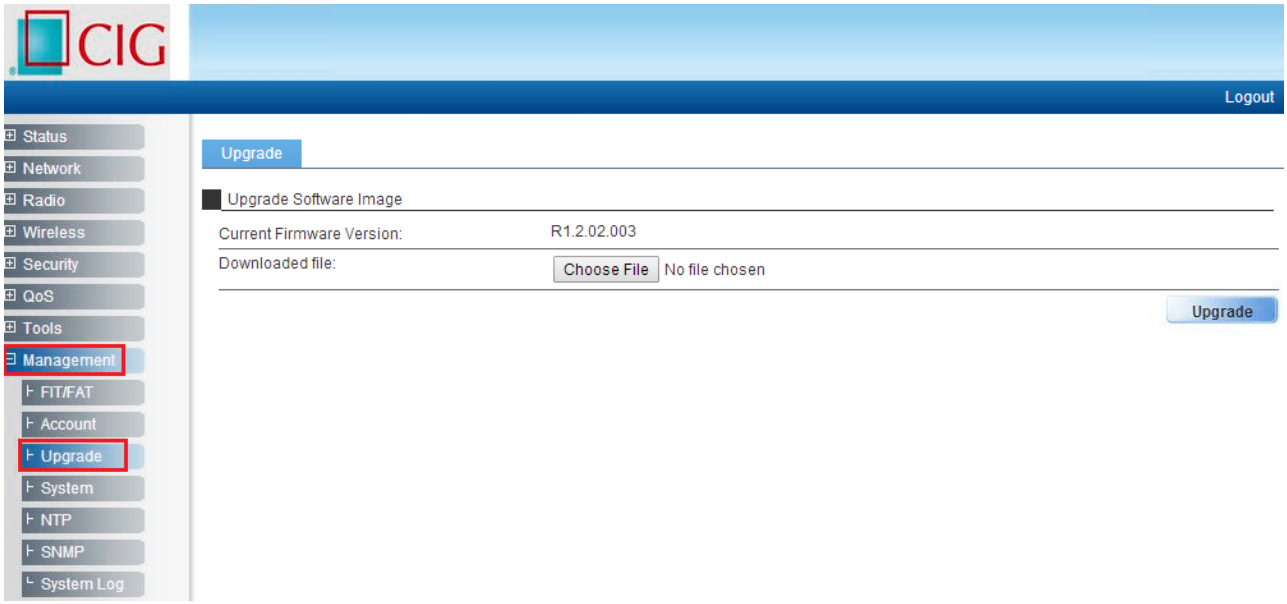
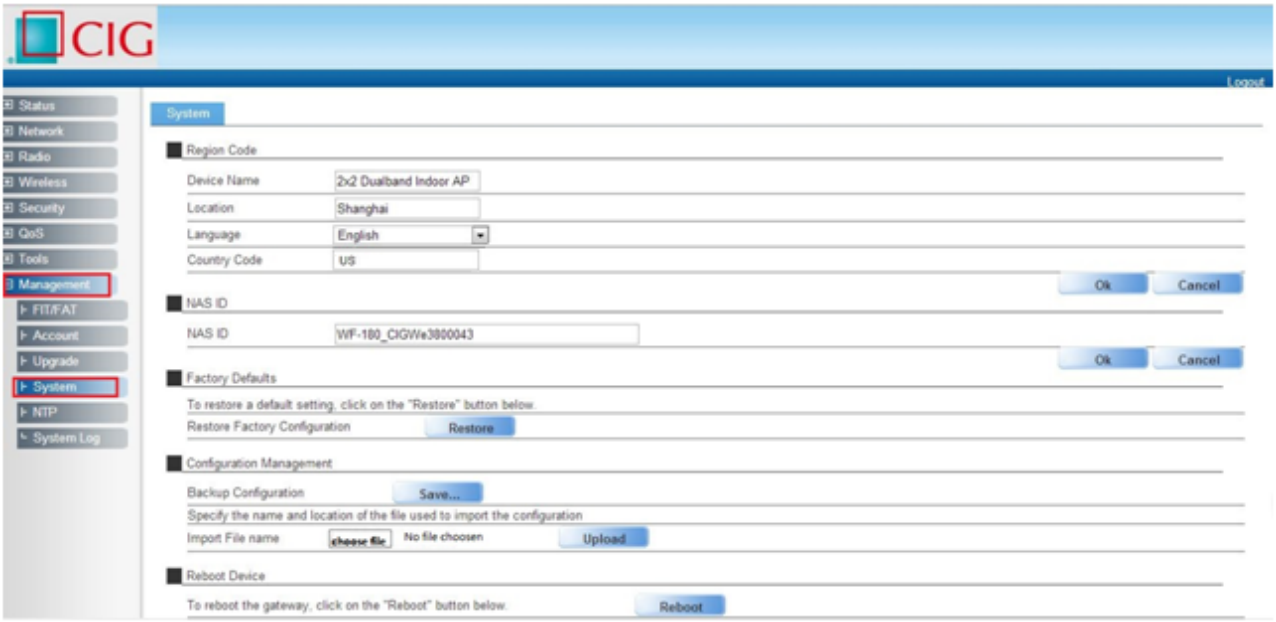
6.4 How to upgrade AP



Notes: Press "Choose File" button to select firmware file, then press "Upgrade" button to upgrade AP.

6.5 How to reset AP to default setting



Notes: If you can't visit AP web page, please press the "Reset" button of AP and hold for more than 5 seconds, the AP will reset to defaultsetting automatically. Or you can do it by the Web GUI.

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Federal Communications Commission (FCC) Interference Statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

RF exposure warning
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 48.25 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

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