
WF-96A User Manual

Version 4

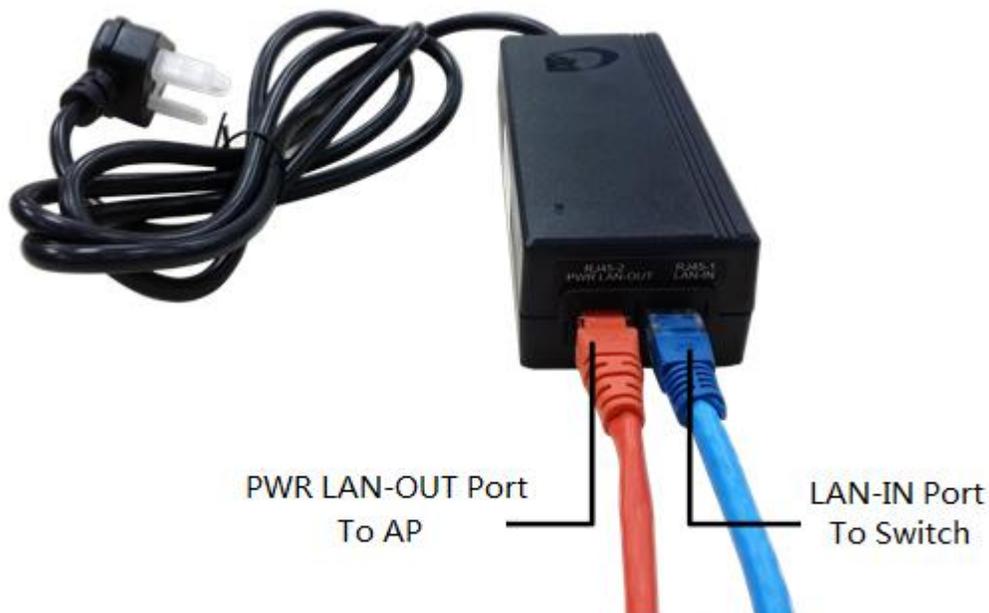
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1 Quick Start

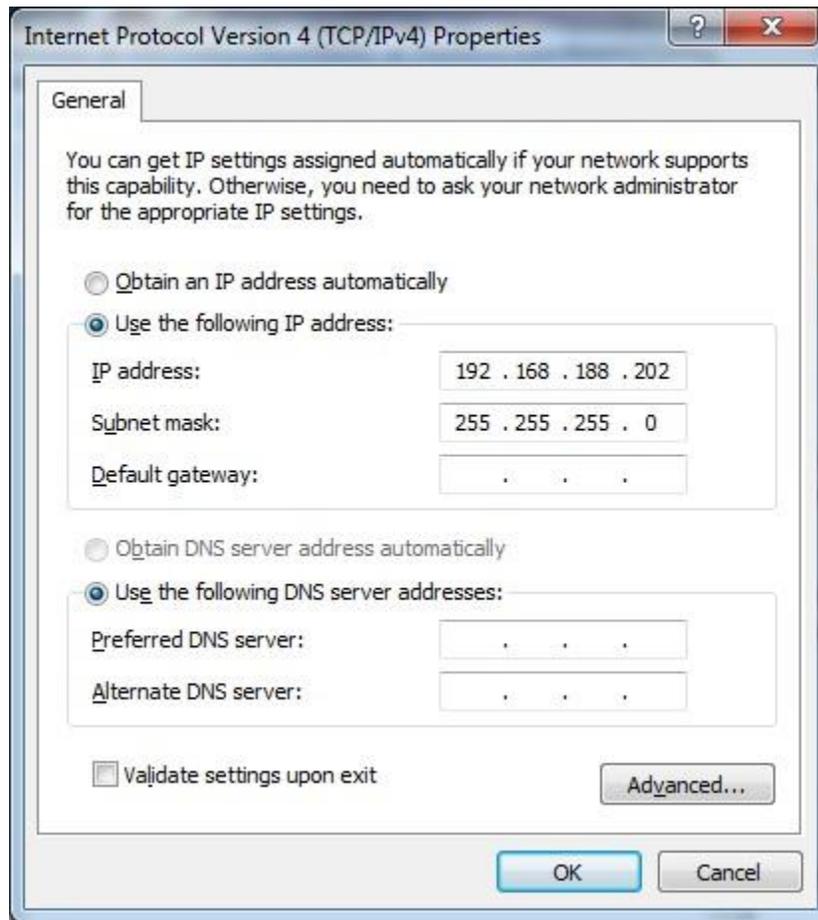
WF-96A can work as the point to point wireless AP. WF-96A can be bridged and provide the high speed wireless connection between two networks. In some cases, it is difficult to connect two wire networks, such as across the river or in the high buildings. WF-96A is an ideal resolution in this scenario. The higher transmitter power make the transmission distance reach 2km.

1.1 Connect PoE Adapter to WF-96A



Notes: Now WF-96A can be powered by standard 802.3at PoE PSE. Please connect the Ethernet Port labeled "PWR LAN-OUT" on PoE Adapter to "ETH" port of AP and the Ethernet Port labeled "LAN-IN" on PoE adapter to your PC or Switch.

1.2 Configure PC's 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).

1.3 Visit WF-96A Web Page

The screenshot shows a web browser window with the address bar containing '192.168.188.251/index.html'. The browser's taskbar shows several open applications. The web page has a blue header with a 'Logout' link. On the left, there is a navigation menu with items like 'Status', 'Overview', 'Radio 5G', 'Ethernet Status', 'VLAN', 'Network', 'Radio', 'Wireless', 'Security', 'QoS', 'Tools', and 'Management'. The main content area is divided into two sections: 'Overview' and 'IP Interface'. The 'Overview' section displays various device details in a table-like format.

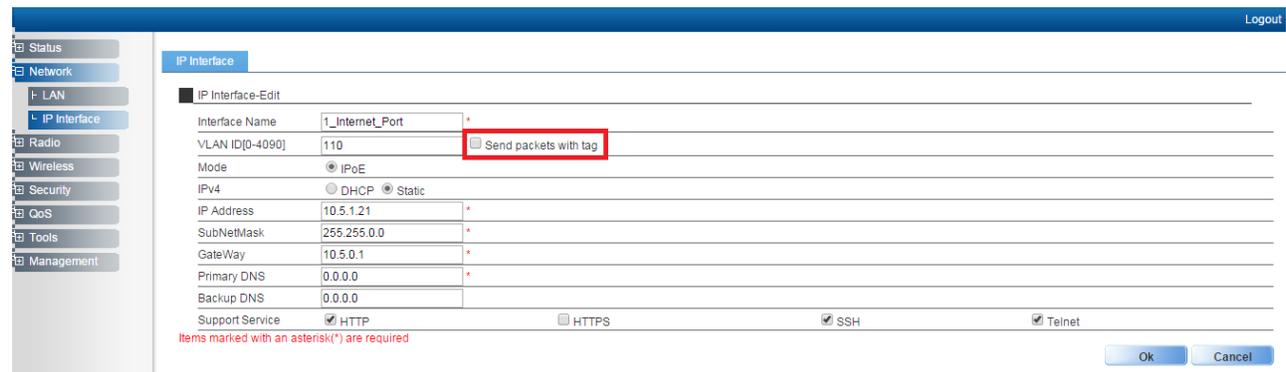
Overview	
Device Name	802.11ac2x2_5GCPE
Location	Shanghai
Device Model	WF-96
Device SN	CIGGD123456
Hardware Version	80020201
Software Version	R2.0.05.034
Working Mode	FAT AP
PoE Type	Standard
CPU Utilization	41.5%
Up Time	0 Hours 1 Minutes 35 Seconds

IP Interface			
Interface Name	VLAN ID	IPv4 Address	State
1_Internet_Port	1	192.168.188.251	UP

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.

1.4 Configure Management Interface for WF-96A



Notes: You can configure management IP/subnetmask/gateway/DNS here. By default, packets are sent without tag. Packets can be sent with tag by selecting the option as shown in the figure.

1.5 Connect WF-96A to Switch

Notes: Connect WF-96A 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 configure WF-96A

1.6 Configure Location, Language

The screenshot shows the 'System' configuration page. The 'Region Code' section is highlighted with a red box and contains the following fields:

Device Name	2x25GCPE
Location	Shanghai
Language	English
Country Code	US

Other sections visible include:

- NAS ID:** NAS ID: WIF-96A_CIGWw380155
- Factory Defaults:** Restore Factory Configuration button.
- Configuration Management:** Backup Configuration button.

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

1.7 Configure Security Profile for Different Authentication Types

1.7.1 WEP

The screenshot shows the 'Security' configuration page. The 'Security' menu item in the left sidebar is highlighted with a red box. An 'Add' button is also highlighted with a red box.

WEP-OPEN:

The screenshot shows the 'Security-Edit' configuration page. The 'Security Profile Name' is set to WEP. The 'Security Type' and 'Authentication Type' fields are highlighted with a red box. The 'Security Type' is set to WEP and the 'Authentication Type' is set to Open.

Security Profile Name	WEP
Security Type	WEP
Authentication Type	Open
WEP Key Length	64 bits
WEP Key Type	ASCII
WEP Key	11111
WEP Key Index	1

Items marked with an asterisk(*) are required

WEP-Shared Key:

Security	
Security-Edit	
Security Profile Name	WEP
Security Type	WEP
Authentication Type	Shared Key
WEP Key Length	64 bits
WEP Key Type	ASCII
WEP Key	11111 <input checked="" type="checkbox"/> Show
WEP Key Index	1
Items marked with an asterisk(*) are required	
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

1.7.2 WPA2-PSK

Security	
Security-Edit	
Security Profile Name	WPA2
Security Type	WPA2
Authentication Type	PSK
Encryption	AES/TKIP
WPA Preshared Key	12345678 <input checked="" type="checkbox"/> Show
Items marked with an asterisk(*) are required	
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

Notes: With parameter "Encryption", you can select AES, or TKIP. AES/TKIP isn't supported by station mode.

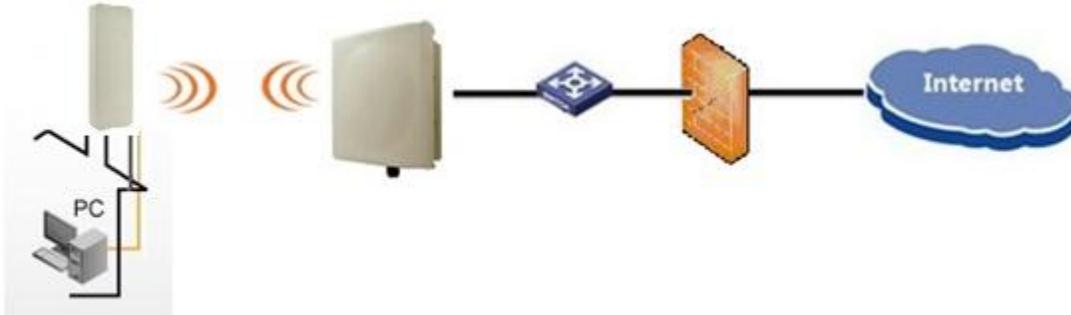
1.7.3 WPA/WPA2-PSK

Security	
Security-Edit	
Security Profile Name	WPAWPA2
Security Type	WPAWPA2
Authentication Type	PSK
Encryption	AES/TKIP
WPA Preshared Key	12345678 <input checked="" type="checkbox"/> Show
Items marked with an asterisk(*) are required	
<input type="button" value="Ok"/> <input type="button" value="Cancel"/>	

Notes: With parameter "Encryption", you can select AES or TKIP. AES/TKIP isn't supported by station mode.

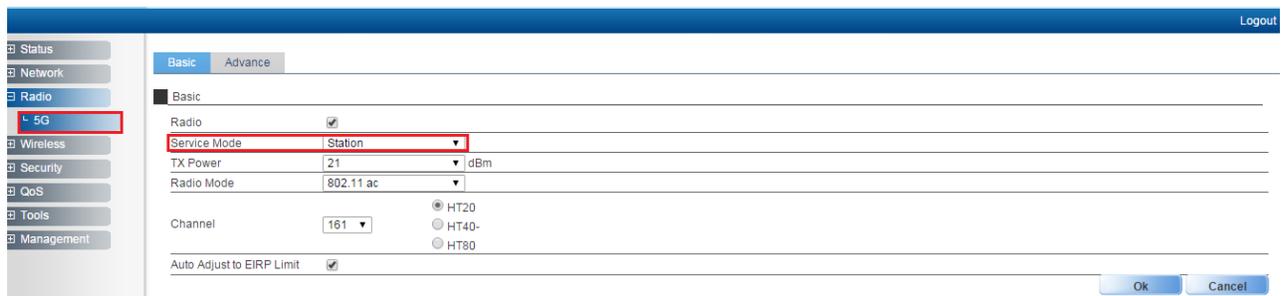
2 Station Mode

2.1 Station Mode Network Topology

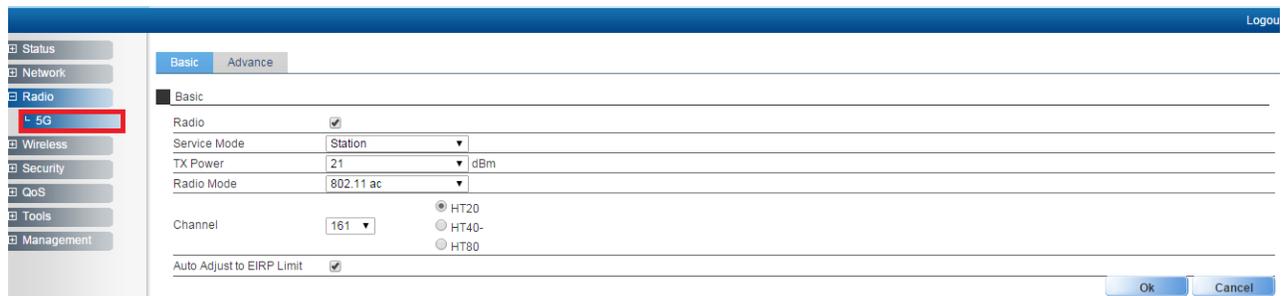


Notes: WF-96A supports station mode. WF-96A accesses to the AP by Wi-Fi, and provides the Ethernet access to the client via the LAN port.

2.2 Enable Station mode

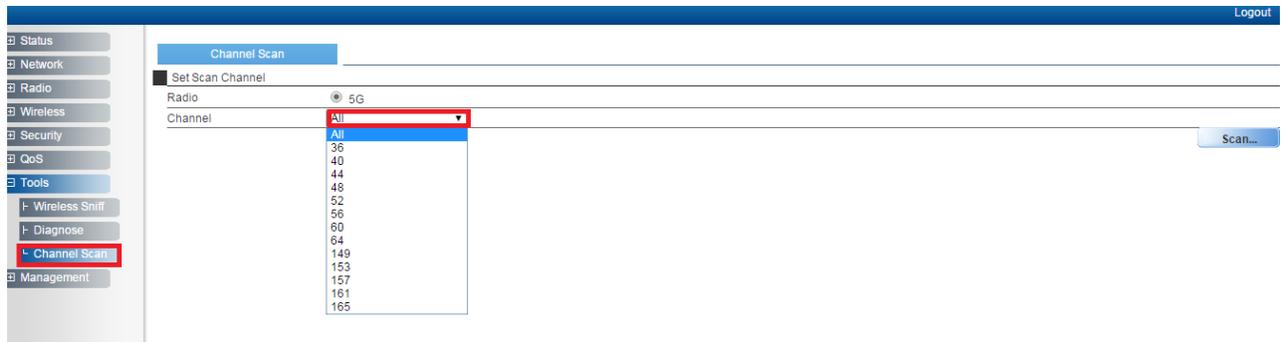


2.3 Configure Radio Parameters

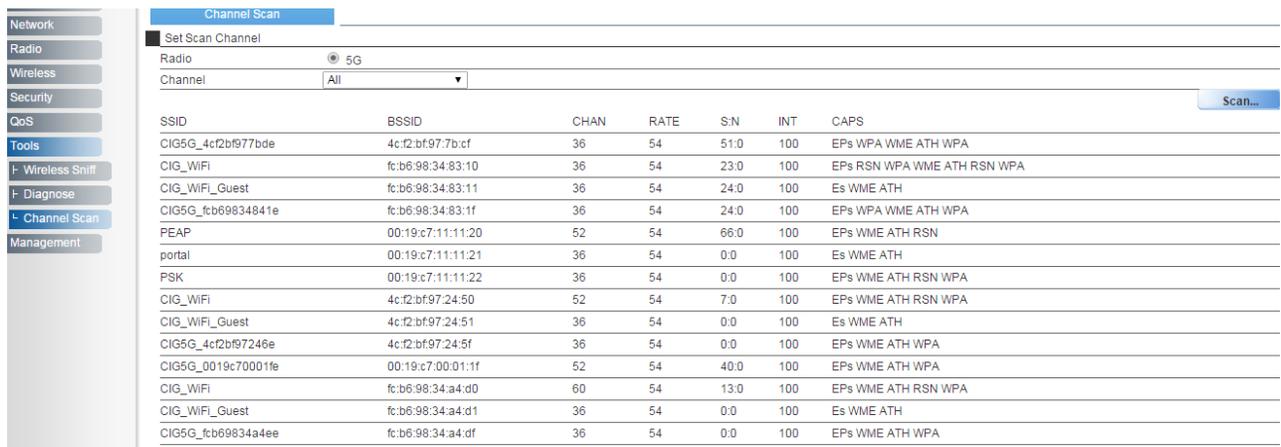


2.4 Channel Scan

You can select one channel or all, then click “Scan”button.

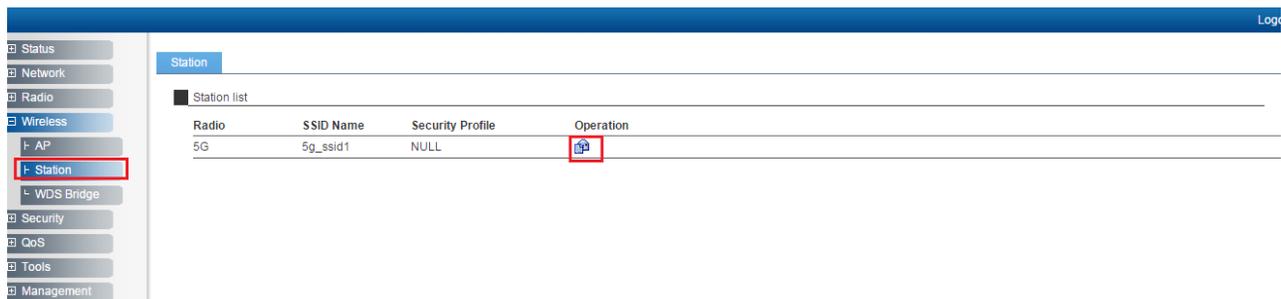


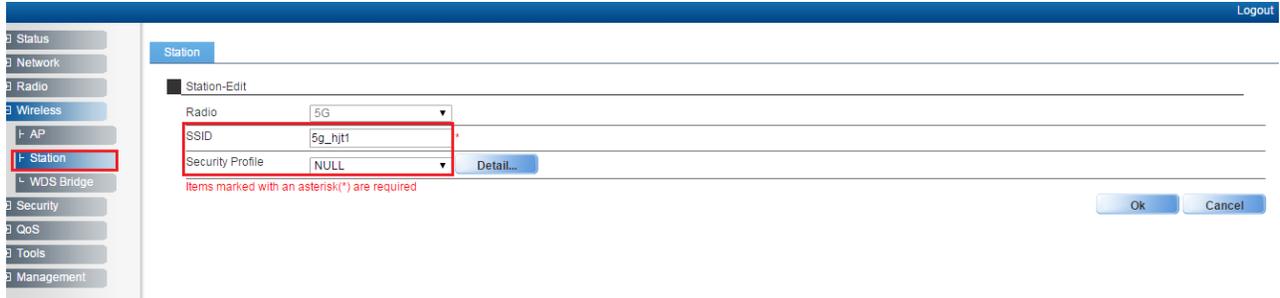
After about 10 seconds, scan result is shown as follows.



2.5 Station Configuration

After channel scanning, you need to configure the SSID manually. If you want to use the security method, you need to configure the “security profile” firstly and then cite it here.

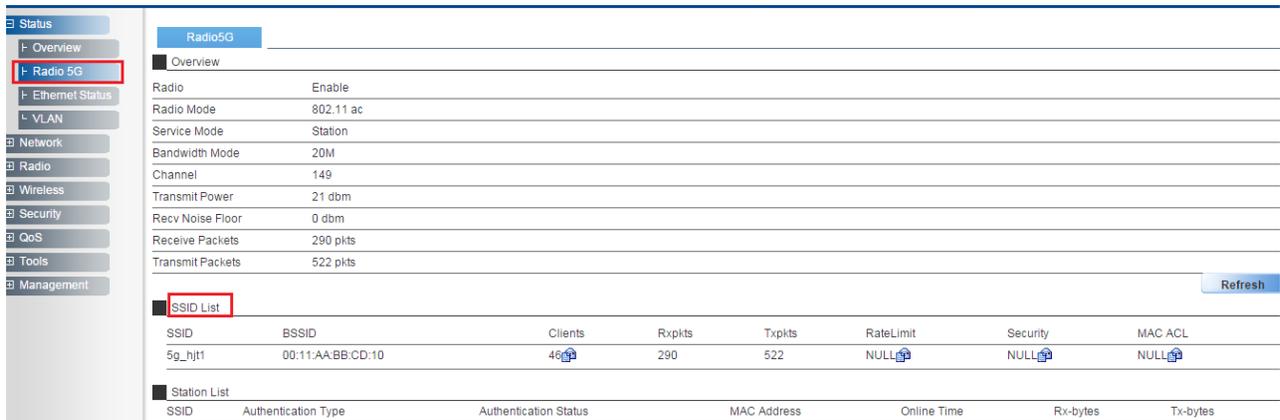




Notes: Now, station mode only supports the following security types: OPEN;WEP; WPA2-PSK-AES(Or TKIP);WPA/WPA2-PSK-AES(Or TKIP). TKIP/AES is not supported.

2.6 Station Status

After WF-96A access to an AP successfully, you can check the station status on the Web GUI.



3 Status

3.1 Overview

You can check some summary info here, for example, software version, ip interface and radio configuration.

Status

- Overview**
- Radio 5G
- Ethernet Status
- VLAN

Network

- Radio
- Wireless
- Security
- QoS
- Tools
- Management

Overview

Overview

Device Name	2x2 Dualband Indoor AP
Location	Shang
Device Model	test
Device SN	CIGGf0123456
Hardware Version	80010101
Software Version	R2.0.05.034
Working Mode	FAT AP
PoE Type	Standard
CPU Utilization	4.0%
Up Time	2 Hours 28 Minutes 55 Seconds

IP Interface

Interface Name	VLAN ID	IPv4 Address	State
1_Internet_Port	1	192.168.188.251	UP
1_portal_if	4091	192.168.91.1	UP

Radio

Type	5G
Radio	Enable
Radio Mode	802.11 ac
Service Mode	Station
Bandwidth Mode	20M

3.2 Radio

In this page, you can see service mode for radio 5G is station mode. Also, you can see SSID and BSSID of master AP. Information will be updated by clicking “Refresh” button.

Status

- Overview
- Radio 5G**
- Ethernet Status
- VLAN

Network

- Radio
- Wireless
- Security
- QoS
- Tools
- Management

Radio5G

Overview

Radio	Enable
Radio Mode	802.11 ac
Service Mode	Station
Bandwidth Mode	20M
Channel	149
Transmit Power	21 dbm
Recv Noise Floor	0 dbm
Receive Packets	1674 pkts
Transmit Packets	936 pkts

[Refresh](#)

SSID List

SSID	BSSID	Clients	Rxpkts	Txpkts	RateLimit	Security	MAC ACL
5g_hj11	00:11:AA:BB:CD:10	42	1674	936	NULL	NULL	NULL

Station List

SSID	Authentication Type	Authentication Status	MAC Address	Online Time	Rx-bytes	Tx-bytes
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4 Management

4.1 Backup/Import Configuration

The screenshot shows the 'System' configuration page. The left sidebar has 'Management' and 'System' highlighted. The main content area is divided into several sections:

- Region Code:** Device Name: 2x2 Dualband Indoor AP; Location: Shanghai; Language: English; Country Code: US. Buttons: Ok, Cancel.
- NAS ID:** NAS ID: WF-180_CIGWe3600043. Buttons: Ok, Cancel.
- Factory Defaults:** To restore a default setting, click on the "Restore" button below. Restore Factory Configuration button: Restore.
- Configuration Management:** Backup Configuration button: Save...; Specify the name and location of the file used to import the configuration. Import File name: choose file; No file chosen; Upload button: Upload.
- Reboot Device:** To reboot the gateway, click on the "Reboot" button below. Reboot button: Reboot.

Notes: Press "Save" button to save current configuration. If you want to import one new configuration file, please click "choose file" to select the new file and then press "Upload" button to upload. After that, WF-96A will reboot.

4.2 Software Upgrade

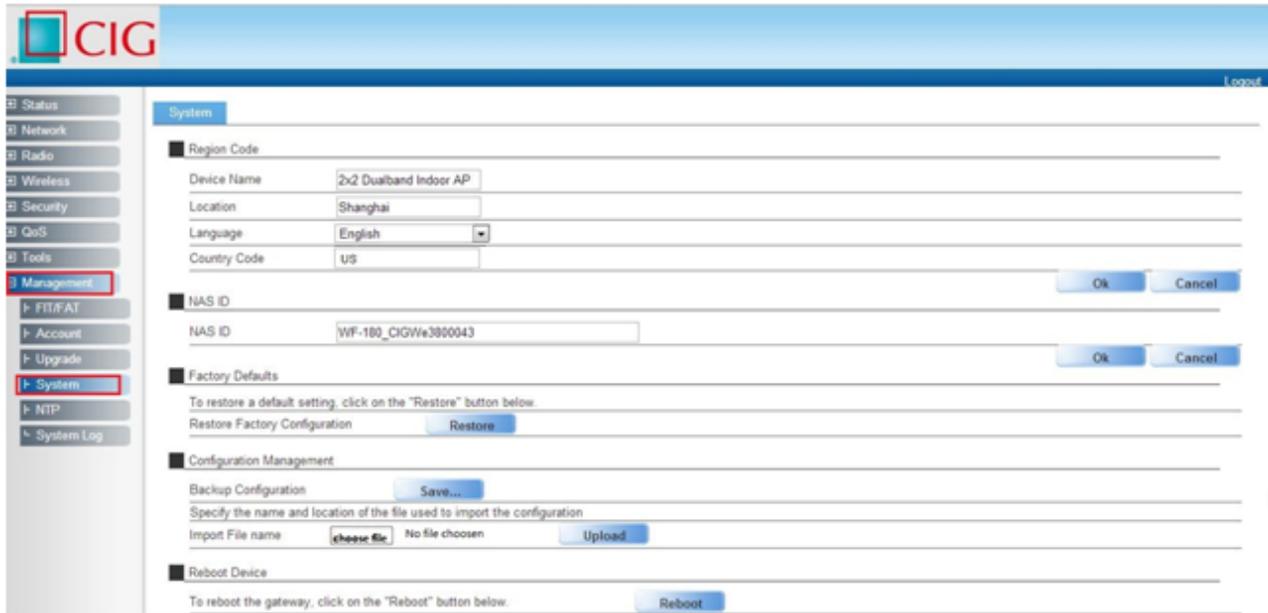
The screenshot shows the 'Upgrade' page. The left sidebar has 'Management' and 'Upgrade' highlighted. The main content area is titled 'Upgrade Software Image' and contains:

- Current Firmware Version: R1.2.02.003
- Downloaded file: Choose File; No file chosen
- Upgrade button: Upgrade

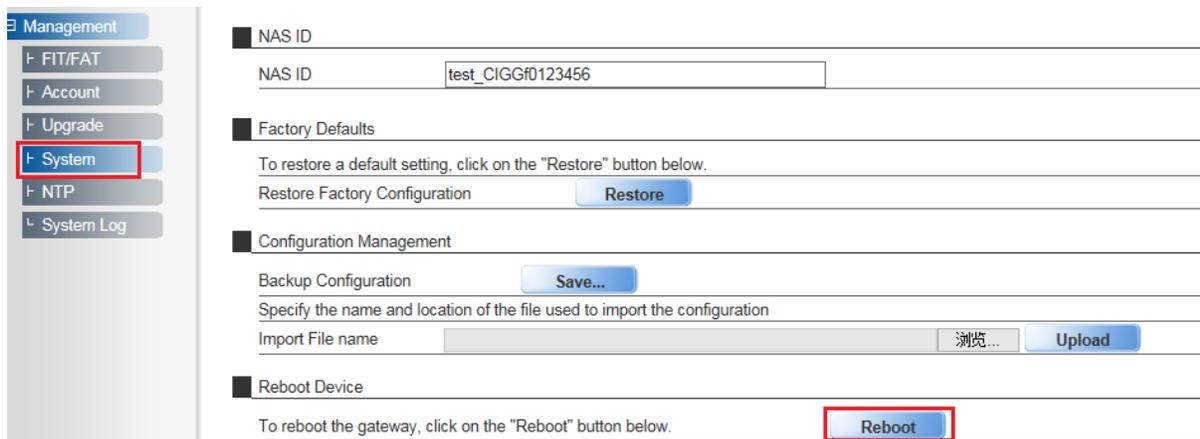
Notes: Press "Choose File" button to select firmware file that you want to upgrade, then press "Upgrade" button to upgrade.

4.3 Factory Reset via WEB

Click "Restore" button to do factory reset. All of the configuration will be restored to default.



4.4 Reboot via WEB



4.5 Factory Reset via Sending Special Packet

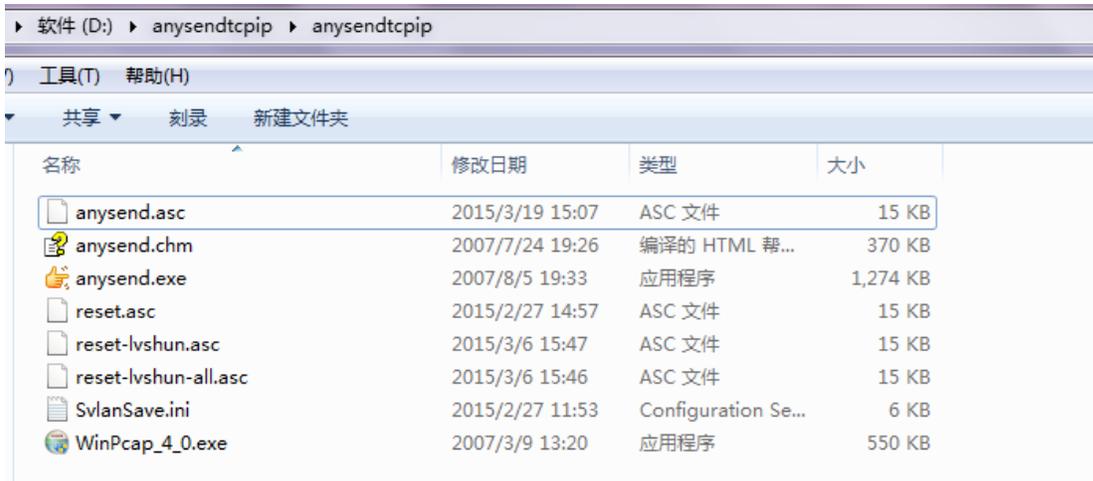
WF-96A has no reset button. If you forget WF-96A's IP, you can use a simple tool—`anysendtcpip` to execute factory reset via sending special packet. After that, you can telnet WF-96A with default IP 192.168.188.251.



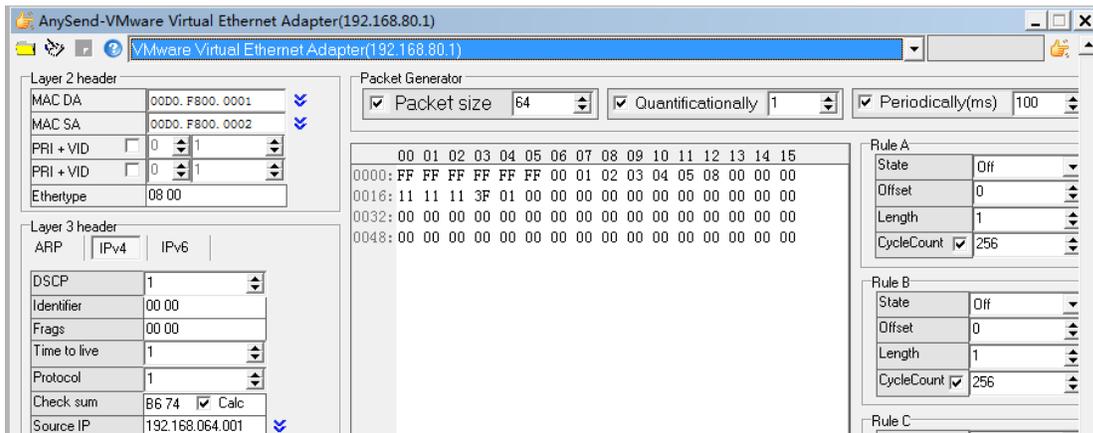
`anysendtcpip.rar`

4.5.1 Factory Reset One Single Device

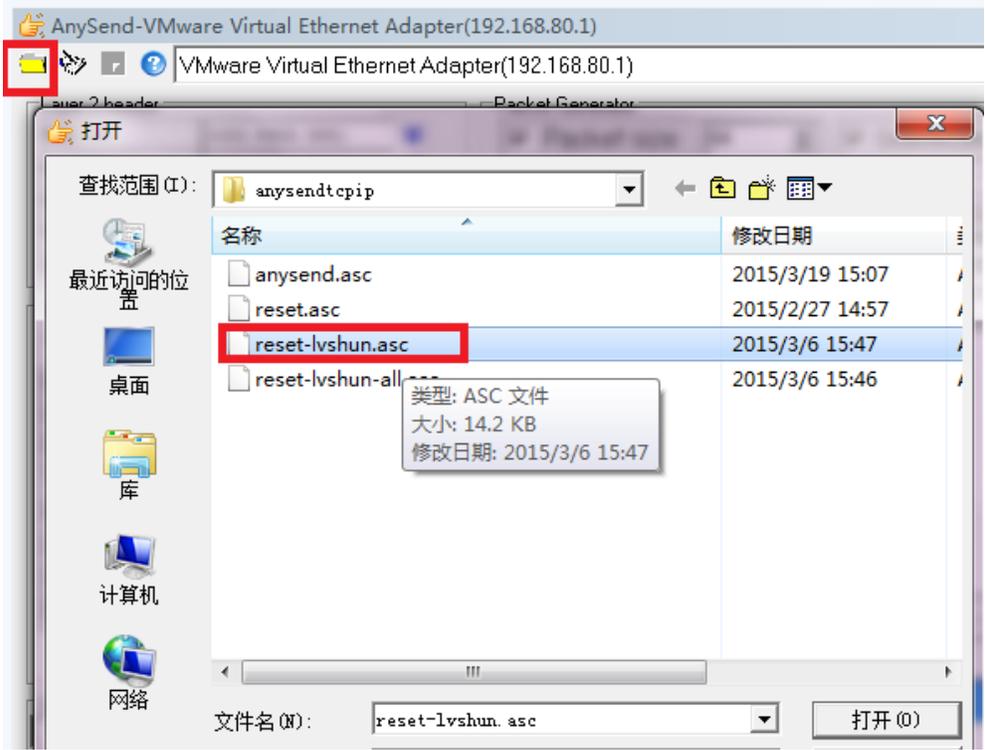
Open file folder<anysendtcpip>.



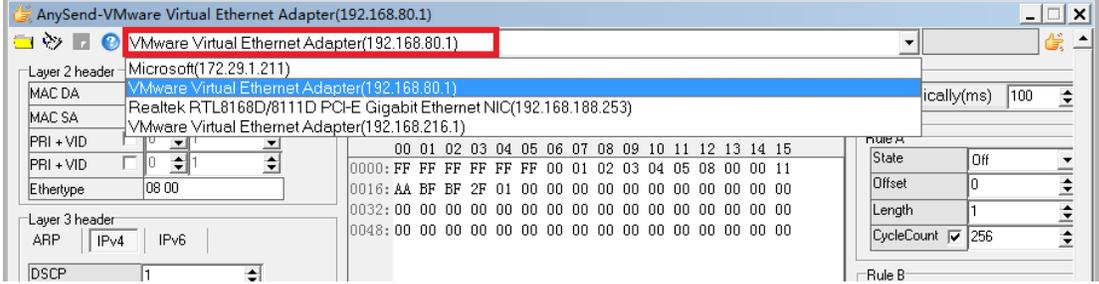
Double click anysend.exe.



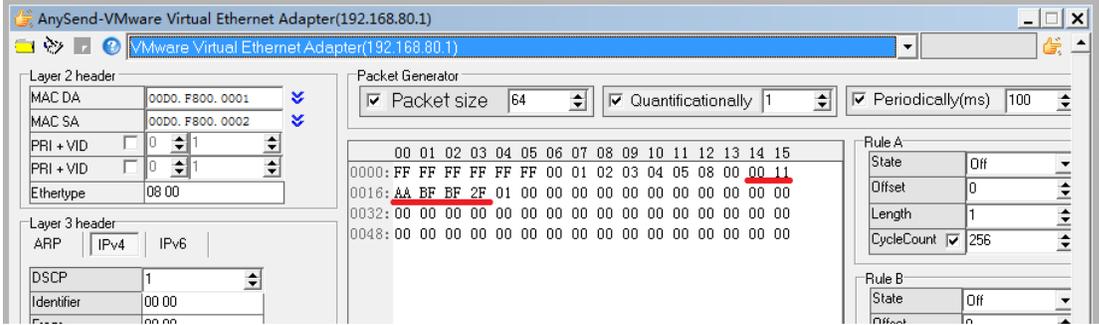
Click the yellow icon located top left corner , and select <reset-lvshun.asc>.



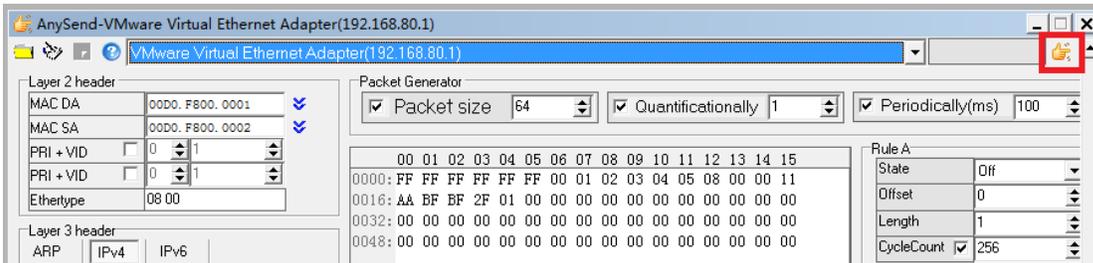
Select right network card which is used to send packet.



Modify the MAC address marked in red to be WF-96A's MAC with which you want to do factory reset.

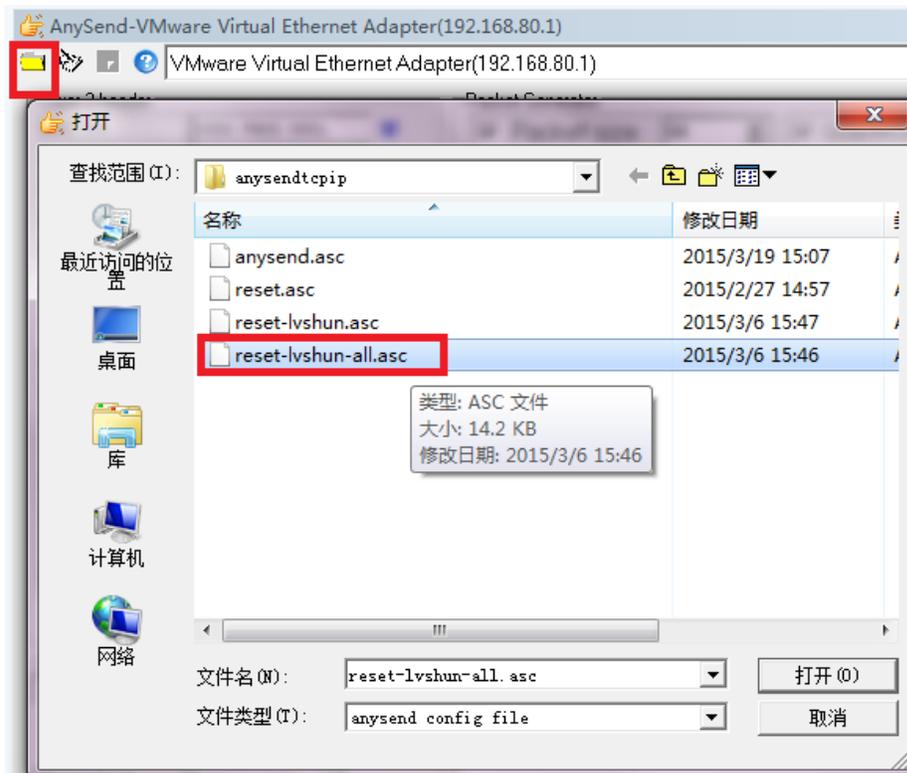


Click the yellow icon located top right corner, then it will start to send special broadcast packet. After devices receive the packet, they will check if it matches with their own MAC. If it does, device will execute factory reset. If not, device will do nothing.

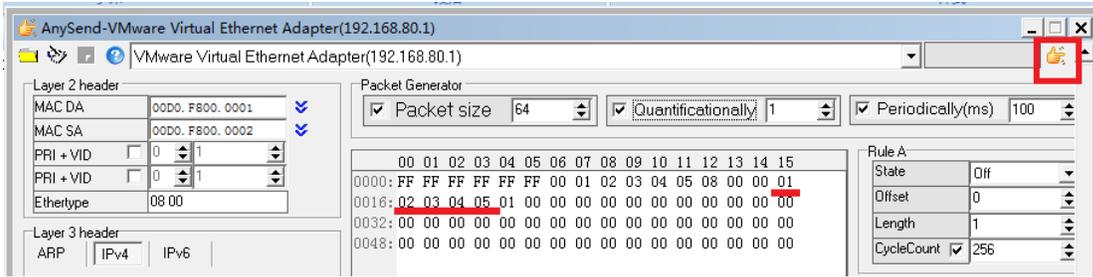


4.5.2 Factory Reset All Devices

Select and open <reset-lvshun-all.asc>.



Here you can see one special default MAC address marked in red color which is 00 : 01:02:03:04:05. You don't need to modify it. Select the right network card and click the yellow icon to send packet. After devices receive the packet, they won't check if it matches with their own MAC, and directly execute factory reset.



5 Troubleshooting

5.1 Ping Diagnose

Log

Tools > Diagnose

Ping TraceRT

Interface Select: 1_Internet_Port Detail...

IP Version: IPv4 IPv6

IP Address/URL: www.yahoo.com *

Packets Length: 32 *

Ping Times: 4 *

Items marked with an asterisk(*) are required

Start Stop

Ping Test Results

Reply From	Bytes	Time	TTL
203.84.197.25	32	39.210	47
203.84.197.25	32	45.901	47
203.84.197.25	32	39.171	47
203.84.197.25	32	36.807	47

Ping Statistics

Packets Sent	Packets Received	Packets Lost	Round Trip Min	Roundrip Max	Round Trip Average
4	4	0%	36.807	45.901	40.272

5.2 TraceRT Diagnose

Tools > Diagnose

TraceRT

Interface Select: 1_Internet_Port Detail...

IP Version: IPv4 IPv6

IP Address/URL: www.yahoo.com

Start Stop

Traceroute Results

Hop	Host/IP Address	Time1	Time2	Time3
1	*	*	*	*
2	192.168.1.10	0.630ms	0.335ms	0.337ms
3	222.66.163.89	1.893ms	9.490ms	5.386ms
4	180.166.188.165	1.665ms	1.394ms	1.099ms
5	124.74.54.117	1.197ms	1.169ms	1.183ms
6	124.74.254.189	15.740ms	23.928ms	*
7	202.101.63.242	3.920ms	3.901ms	4.082ms
8	202.97.33.114	2.452ms	2.312ms	3.888ms
9	202.97.33.154	3.941ms	4.173ms	6.279ms
10	202.97.61.130	29.348ms	29.415ms	29.363ms
11	202.97.122.30	33.273ms	31.628ms	31.280ms

5.3 LED Definition

LEDs are fully controlled by SW and they are defined as follows:

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
LAN	Ethernet Network Link Status / Activity (HW Control)	On - Green	Device ready
		Off	Ethernet link unavailable
		On - Yellow	Link speed 10/100M
5G Radio	5G Hz Radio Status	On - Green	Link speed 1G
		Flashing	Ethernet activity
		Off	Ethernet link unavailable
RSSI1	Radio Status	On-Green	5GHz radio enabled
		Off	5GHz radio disabled
RSSI2	Radio Status	On - Green	Signal strength
		Off	
RSSI3	Radio Status	On - Green	Signal strength
		Off	

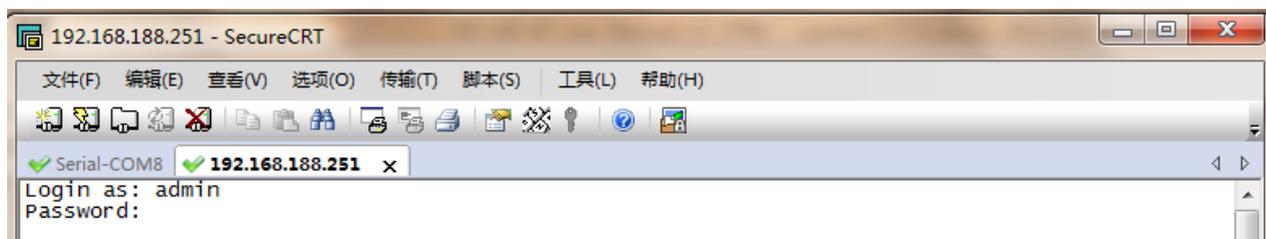
 **Notes:** RSSI LEDs are used in CPE station mode. It reflects the received signal strength. If the device works in AP mode, these LEDs will be off.

5.4 Debug via Telnet

You can debug WF-96A via Telnet.

Username: *admin*

Password: *password*



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 66 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.