Wireless LAN Device Series

High Power Multi-Mode AP

AP-G200 User Manual

Version. 1.2.2 (24.02.2006)

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Preface

This guide is for the networking professional who installs and manages the AIR802 AP-G200 High Power Multi-Mode Indoor AP, hereafter referred to as the “device”. To use this guide, you should have experience working with the TCP/IP configuration and be familiar with the concepts and terminology of wireless local area networks.

Ch 1. AP-G200 Installation

Packing List

Before you start to install the device, make sure the package contains the following items：

- AP-G200 High Power Multi-Mode AP
- PoE Power Injector

AP-G200	PoE Power Injector
	

Hardware Installation

Once you check off everything from the package, you can start to install the device. You can use the wall mount hole on the bottom of the device to mount the device on the wall, or just put the device on the desktop. The administrator can refer to the figure below while constructing your WLAN environment.

Connect Two Ethernet Patch Cables As Follows:

1) **Data In:** connects to your router or other network uplink
2) **P+Data Out:** connects to AP-G200 (this provides both the Ethernet + 48VDC power to the unit)

Ch 2. First Time Configuration

Before Start to Configure

There are two ways to configure the device, one is through web-browser, and the other is through Secure Shell CLI interface. To access the configuration interfaces, make sure you are using a computer connected to the same network as the device. The default IP address of the device is 192.168.2.254, and the subnet-mask is 255.255.255.0.

The device has three operation modes (Router/Bridge/WISP). In bridge mode, also known as AP Client, you can access the device by both WLAN (Wireless Local Area Network) and wired LAN. And in router/WISP modes, the device can be accessed by both WLAN and WAN. The default IP addresses for the device are 192.168.2.254(for LAN), 172.1.1.1(for WAN), so you need to make sure the IP address of your PC is in the same subnet as the device, such as 192.168.2.X (for LAN), 172.1.1.X (for WAN).

Please note that the DHCP server inside the device is default to up and running. Do not have multiple DHCP servers in your network environment, otherwise it will cause abnormal situation.

We also provide an auto-discovery tool which is for finding out the IP of the device. In case, you've forgot the IP of the device or the IP of the device has been changed, you can use the tool to find out the IP of the device even your PC is not in the same subnet as the device is.

Knowing the Network Application

AP-G200 can act as the following roles, and it supports WDS (Wireless Distribution System) function.

- Access Point
- WDS (Wireless Repeater)
- Bridge/Router
- WISP (See Appendix A for Bridged Wireless Network Configuration)
- AP Client

The device provides 3 different operation modes and the wireless radio of device can act as AP/Client/WDS. The operation mode is about the communication mechanism between the wired Ethernet NIC and wireless NIC, the following is the types of operation mode.

Router

The wired Ethernet (WAN) port is used to connect with ADSL/Cable modem and the wireless NIC is used for your private WLAN. The NAT is existed between the 2 NIC and all the wireless clients share the same public IP address through the WAN port to ISP. The default IP configuration for WAN port is static IP. You can access the web server of device through the default WAN IP address 172.1.1.1 and modify the setting base on your ISP requirement.

Bridge

The wired Ethernet and wireless NIC are bridged together. Once the mode is selected, all the WAN related functions will be disabled.

WISP (Wireless ISP)

This mode can let you access the AP of your wireless ISP and share the same public IP address form your ISP to the PCs connecting with the wired Ethernet port of the device. To use this mode, first you must set the wireless radio to be client mode and connect to the AP of your ISP then you can configure the WAN IP configuration to meet your ISP requirement.

The wireless radio of the device acts as the following roles.

AP (Access Point)

The wireless radio of device serves as communications “hub” for wireless clients and provides a connection to a wired LAN.

AP Client

This mode provides the capability to connect with the other AP using infrastructure/Ad-hoc networking types. With bridge operation mode, you can directly connect the wired Ethernet port to your PC and the device becomes a wireless adapter. And with WISP operation mode, you can connect the wired Ethernet port to a hub/switch and all the PCs connecting with hub/switch can share the same public IP address from your ISP.

WDS (Wireless Distribution System)

This mode serves as a wireless repeater; the device forwards the packets to another AP with WDS function. When this mode is selected, all the wireless clients can’t survey and connect to the device. The device only allows the WDS connection.

WDS+AP

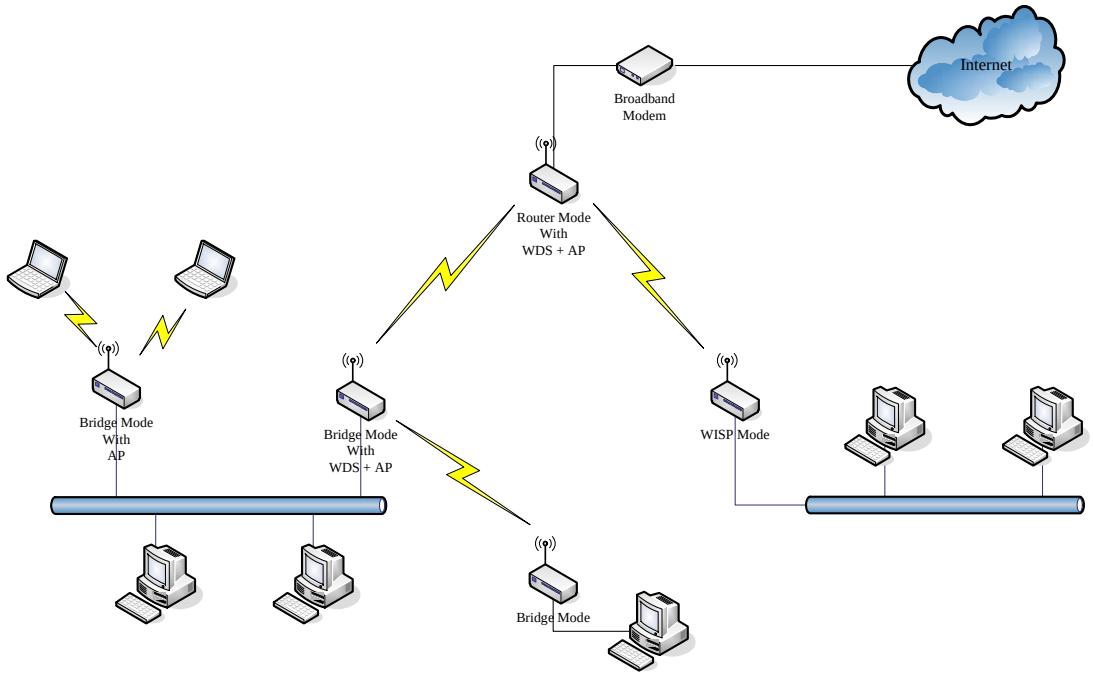
This mode combines WDS plus AP modes, it not only allows WDS connections but also the wireless clients can survey and connect to the device.

The following table shows the supporting combination of operation and wireless radio modes.

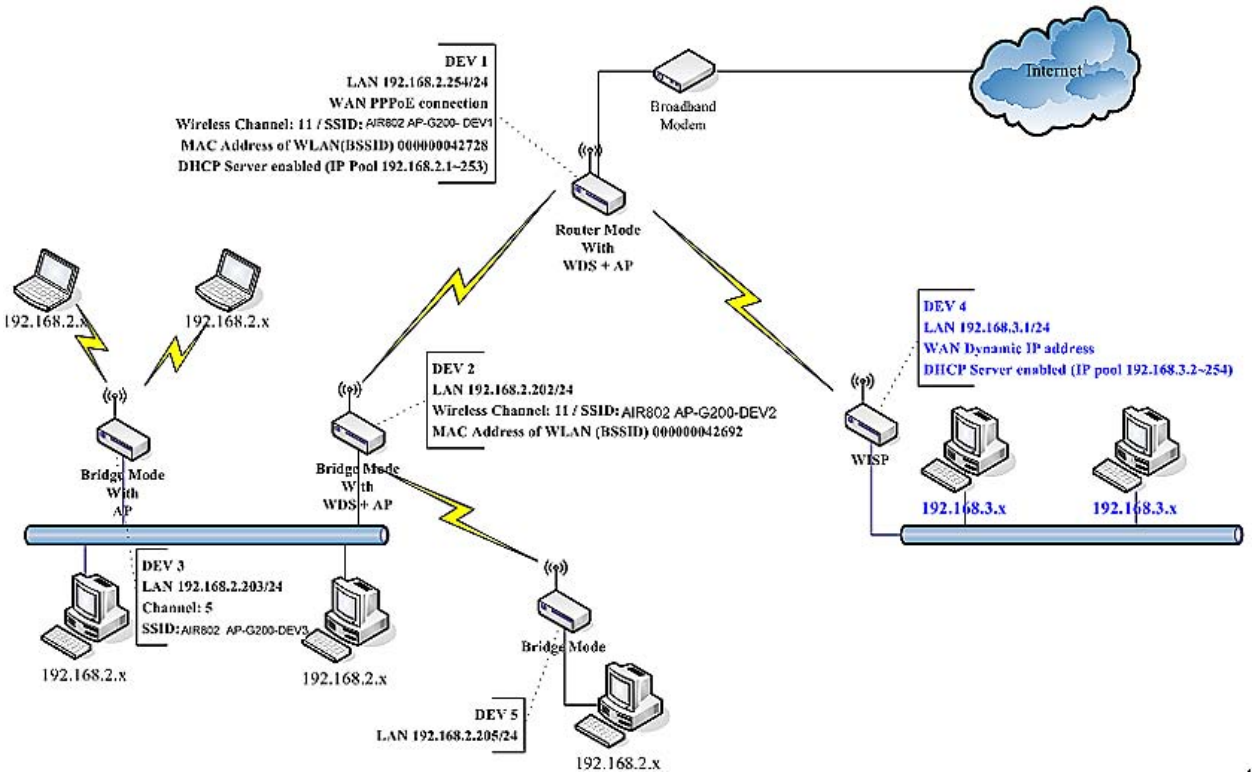
	Bridge	***Router***	***WISP***
AP	V	V	X

WDS	V	V	X
Client	V	X	V
AP+WDS	V	V	X

Hereafter are some topologies of network application for your reference.



Examples of Configuration



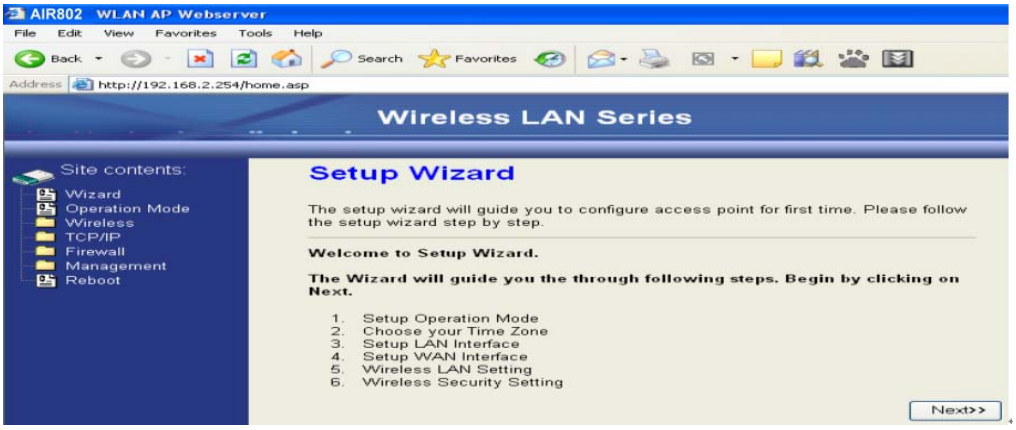
This example demonstrates how to set up a network with different device configurations. There are 2 DHCP servers (DEV1/DEV4) in the network to control the IP configuration of 2 domains (192.168.2.x/192.168.3.x). Once the setting is done, all the PCs can visit Internet through DEV1.

We assume all the devices keep the factory default setting. To make sure that user can continuing press the rest button for more than 5 seconds to restore the factory default setting.

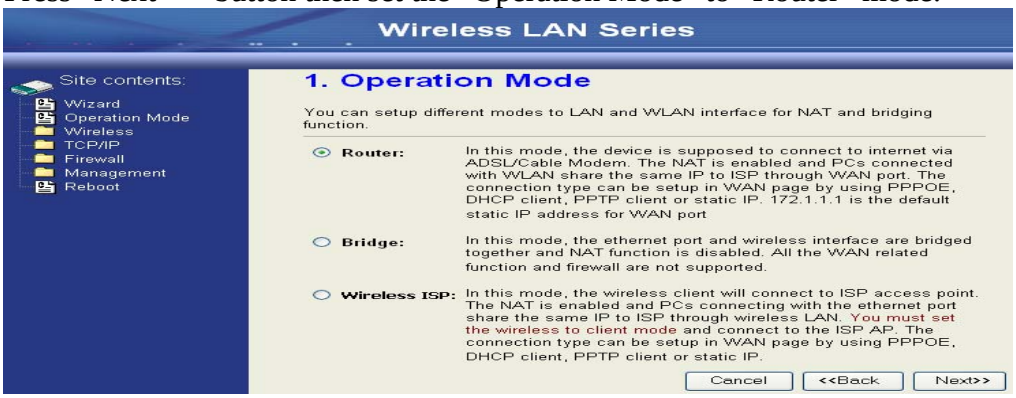
The following descriptions show the steps to configure DEV1 to DEV5.

Configure DEV1:

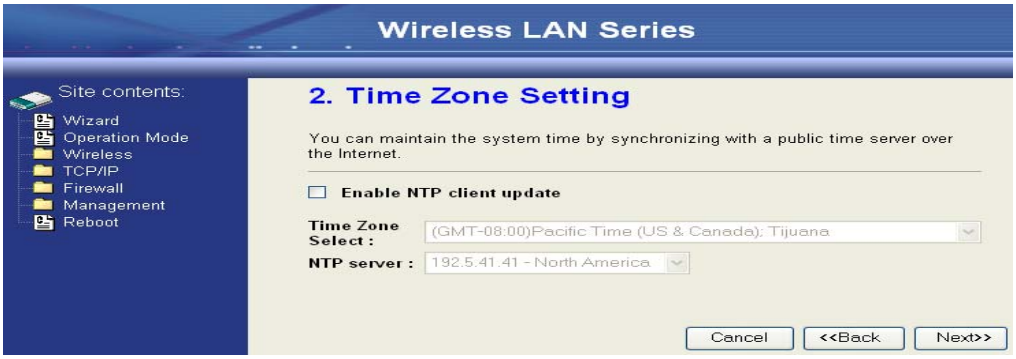
1. Connect the ADSL modem to Ethernet port of device using Ethernet cable.
2. Access the web server (http://192.168.2.254) of device from the wireless station.
3. Use Wizard page to setup device.



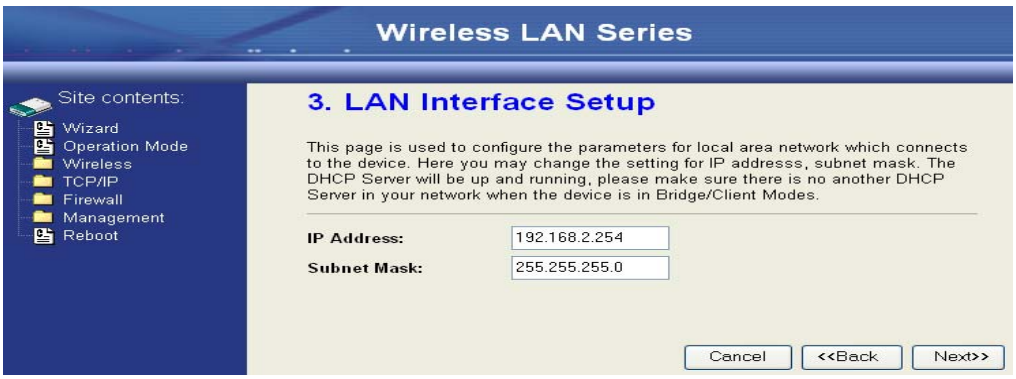
4. Press “Next>>” button then set the “Operation Mode” to “Router” mode.



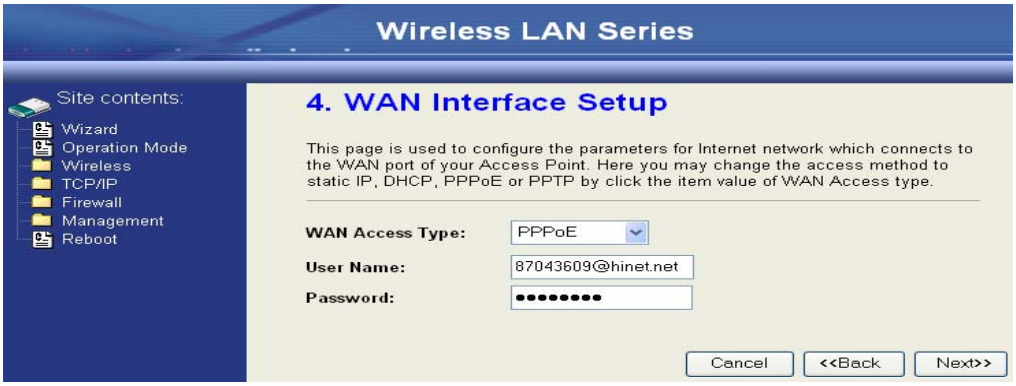
5. Press “Next>>” button then disable “Time Zone” function.



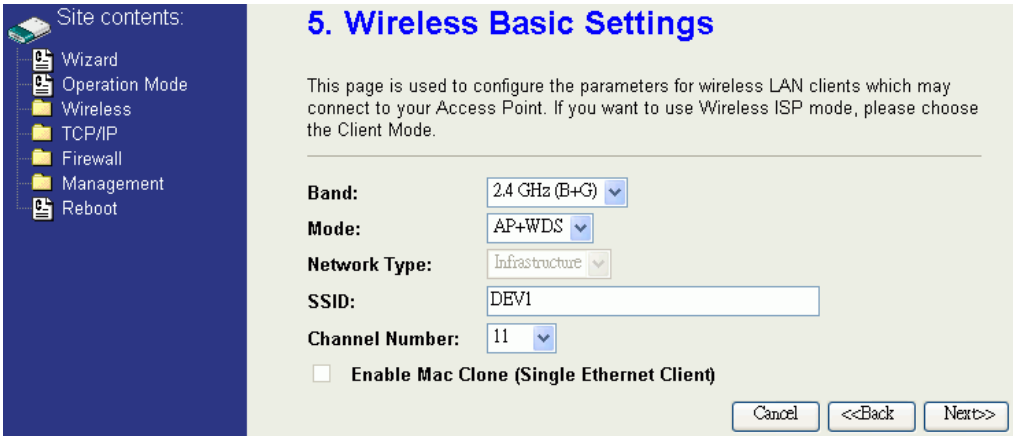
6. Press “Next>>” button then set the IP address of LAN interface.



7. Press “Next>>” button then select the “PPPoE” for “WAN Access Type” and fill in the “User Name” and “Password” fields.

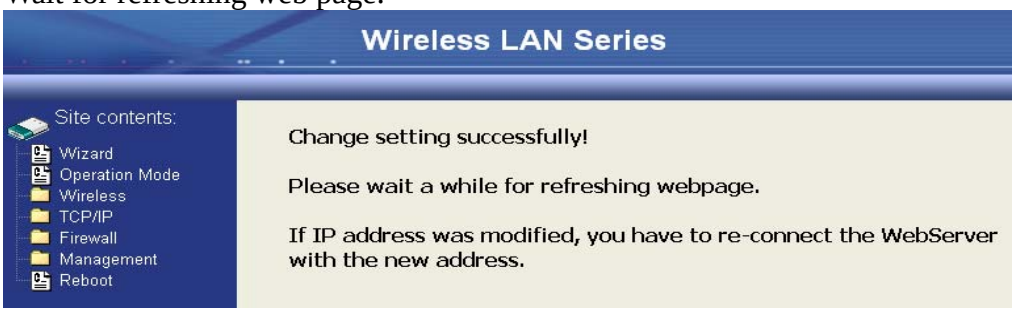


8. Press “Next>>” button then select the “AP+WDS” for “mode” and change the SSID to “DEV1”.

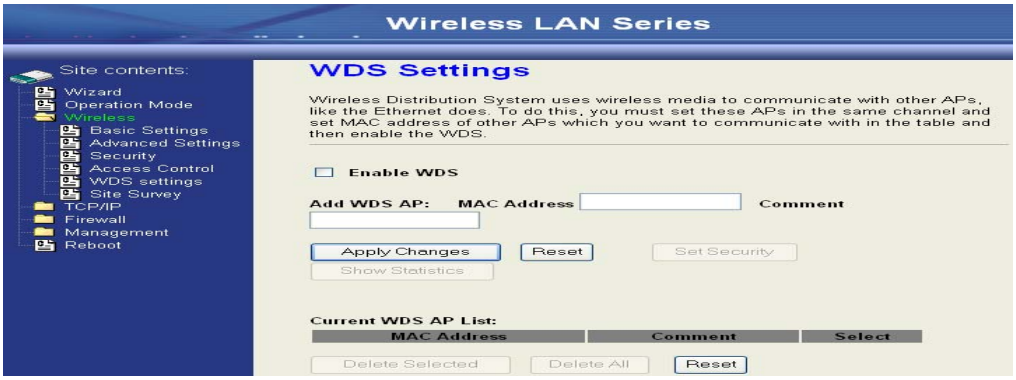


9. Press “Next>>” button then select “None” for “Encryption” then press “Finished” button.

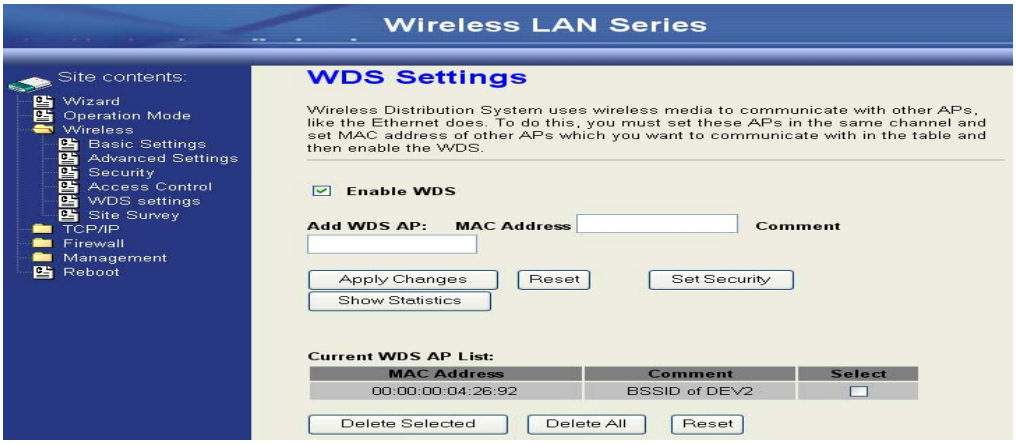
10. Wait for refreshing web page.



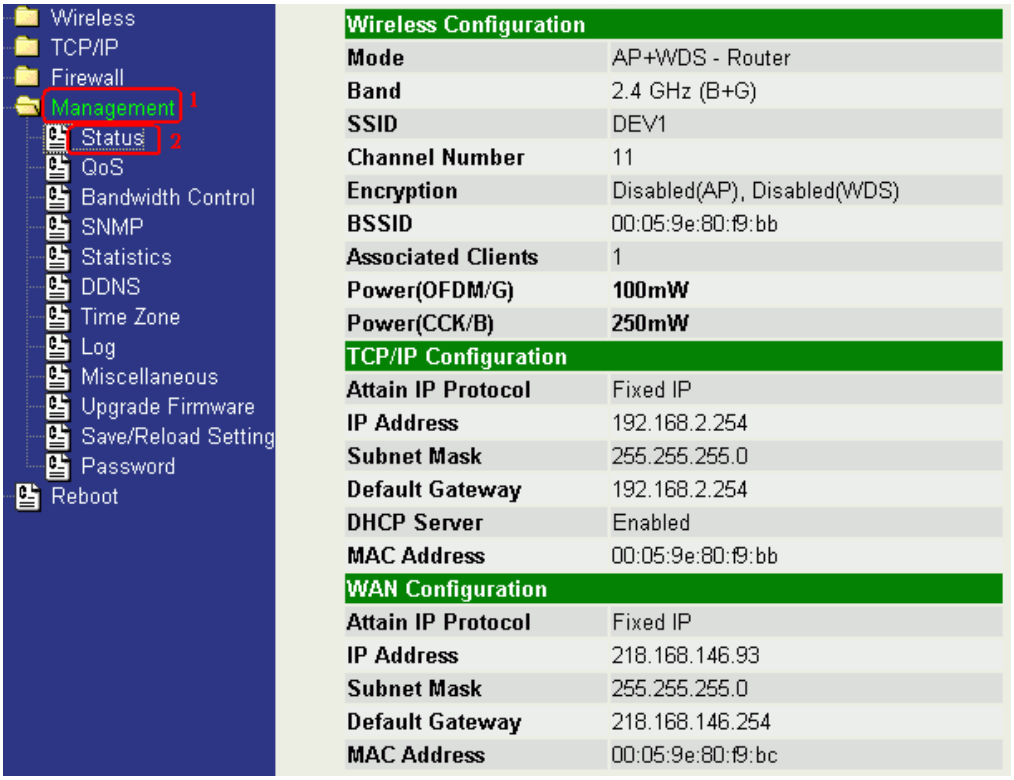
11. Use “WDS Settings” page to configure WDS.



12. Enable WDS function and add the BSSID of DEV2 to “Current WDS AP List”.



13. Since we access the device by wireless connection, it may temporarily disconnect when applying the WDS setting. After re-connecting to the device, use the “Status” page to check the settings.


Wireless
TCP/IP
Firewall
Management
1
Status
2
QoS
Bandwidth Control
SNMP
Statistics
DDNS
Time Zone
Log
Miscellaneous
Upgrade Firmware
Save/Reload Setting
Password
Reboot
Wireless Configuration
Mode AP+WDS - Router
Band 2.4 GHz (B+G)
SSID DEV1
Channel Number 11
Encryption Disabled(AP), Disabled(WDS)
BSSID 00:05:9e:80:f9:bb
Associated Clients 1
Power(OFDM/G) 100mW
Power(CCK/B) 250mW
TCP/IP Configuration
Attain IP Protocol Fixed IP
IP Address 192.168.2.254
Subnet Mask 255.255.255.0
Default Gateway 192.168.2.254
DHCP Server Enabled
MAC Address 00:05:9e:80:f9:bb
WAN Configuration
Attain IP Protocol Fixed IP
IP Address 218.168.146.93
Subnet Mask 255.255.255.0
Default Gateway 218.168.146.254
MAC Address 00:05:9e:80:f9:bc

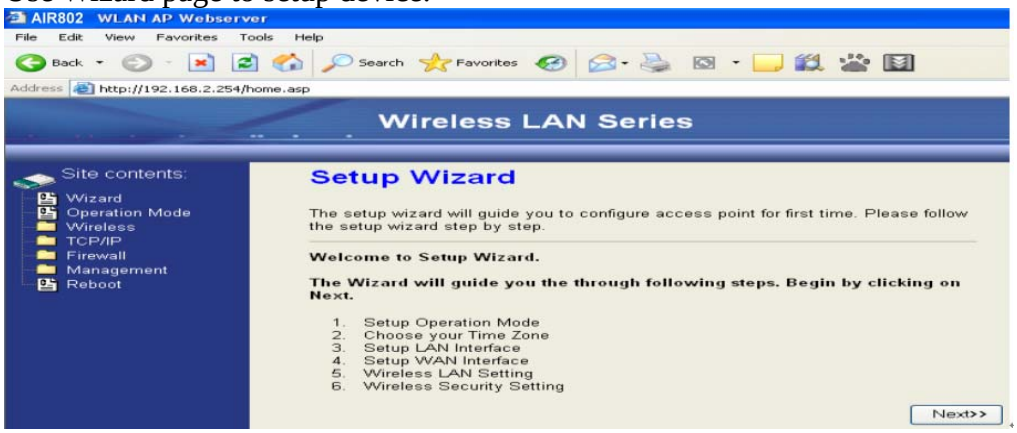
Configure DEV2:

1. Access the web server (http://192.168.2.254) of device from the Ethernet port.

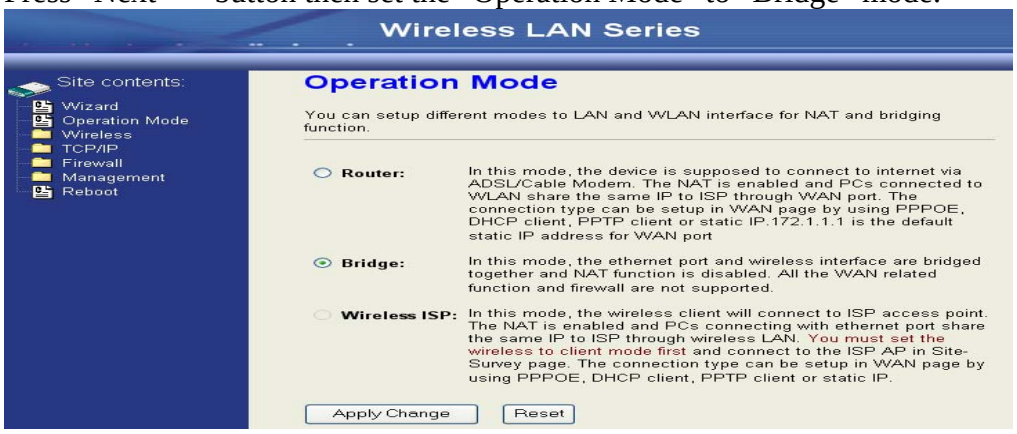
Caution

If you configure multiple devices in the same PC, since the devices have the same default IP address but different MAC addresses, it may cause you not able to access the web server of device. If the situation happens, please try to clean the ARP table of your PC by DOS command "arp –d" then you can access the web server of device using the default IP address.

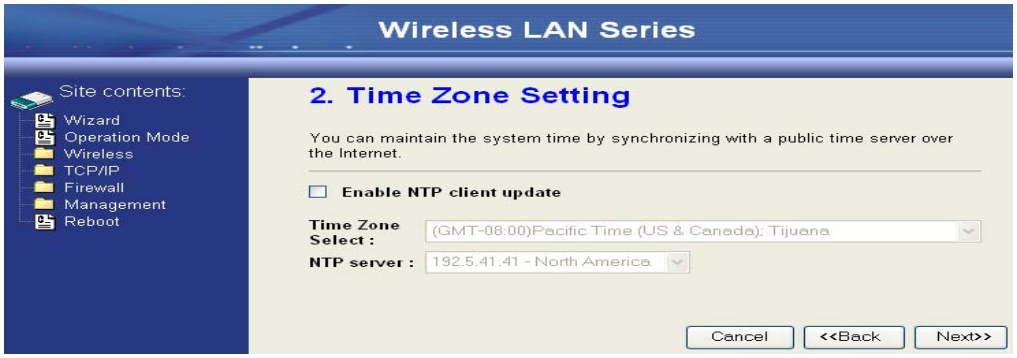
2. Use Wizard page to setup device.



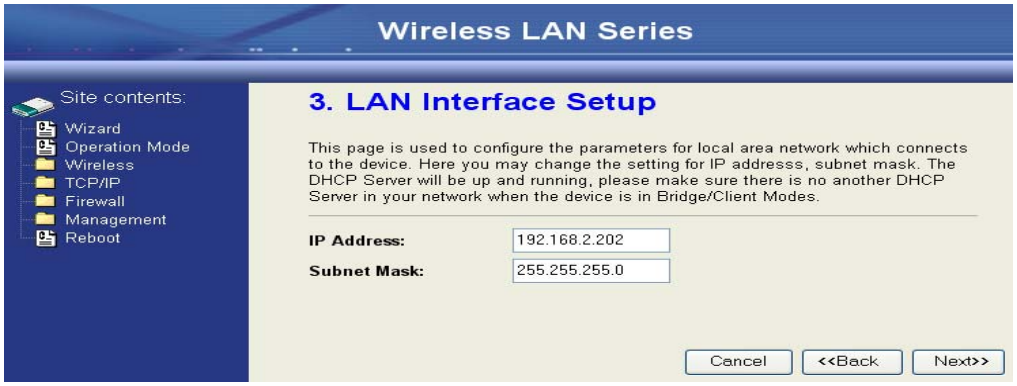
3. Press "Next>>" button then set the "Operation Mode" to "Bridge" mode.



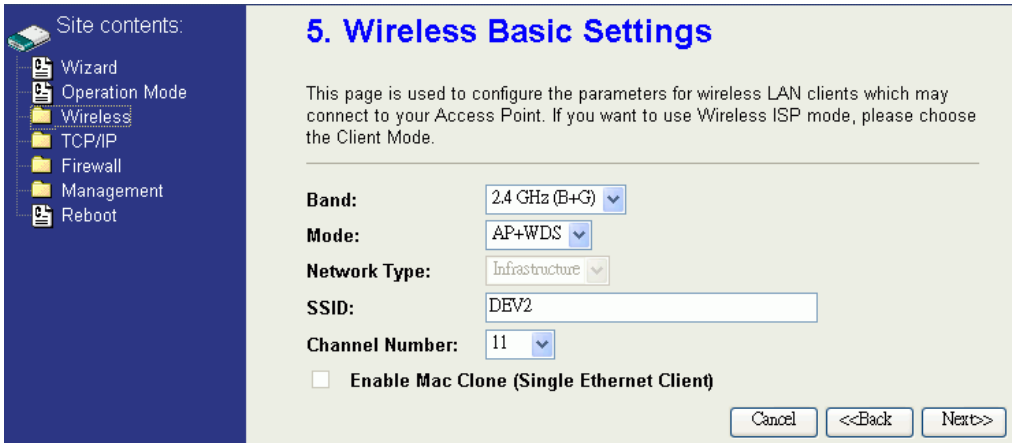
4. Press "Next>>" button then disable "Time Zone" function.



5. Press "Next>>" button then set the IP address of LAN interface.

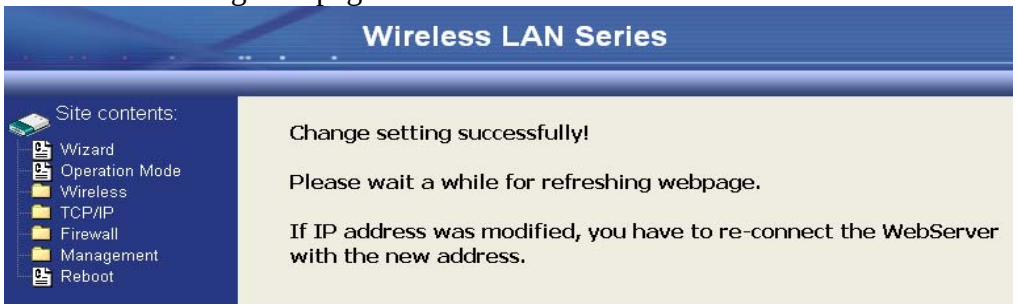


6. Press “Next>>” button then select the “AP+WDS” for “mode” and change the SSID to “DEV2”.

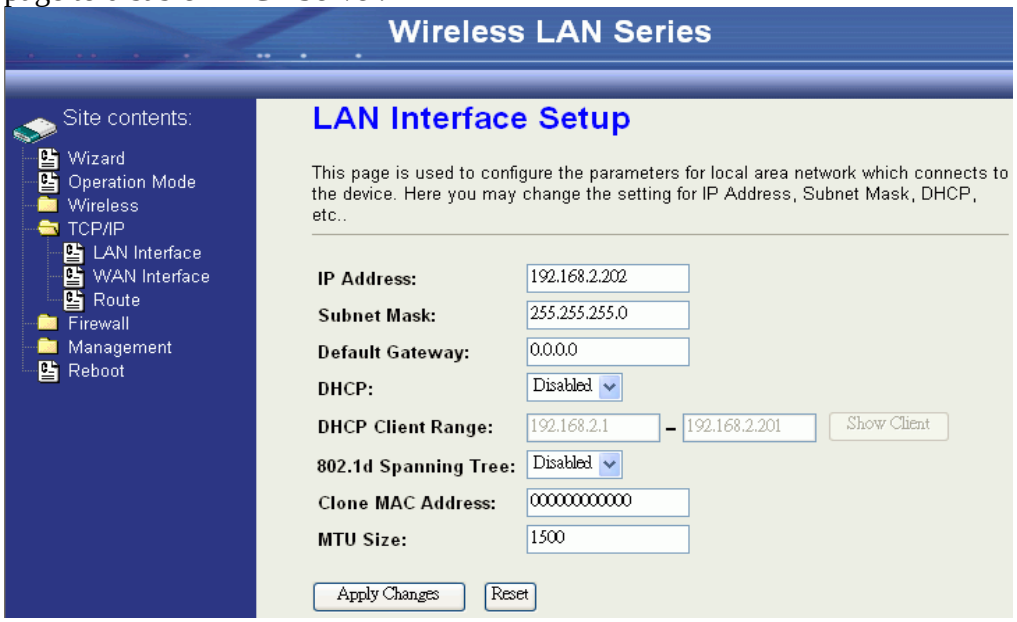


7. Press “Next>>” button then select “None” for “Encryption” then press “Finished” button.

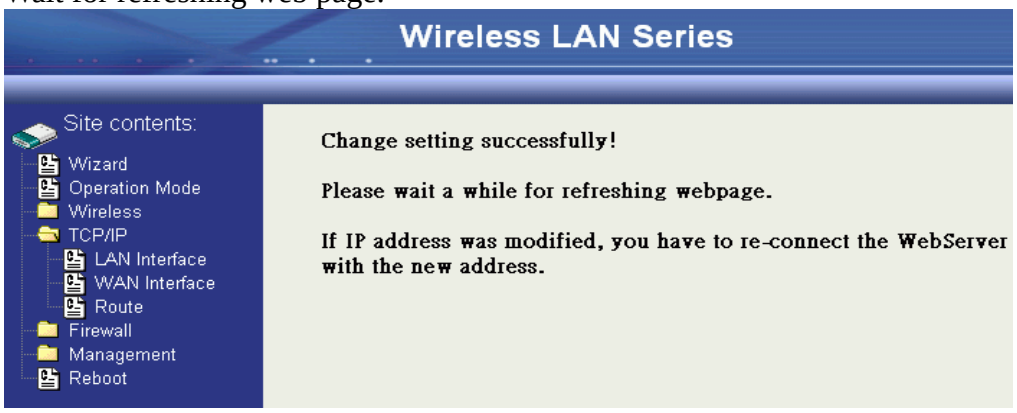
8. Wait for refreshing web page.



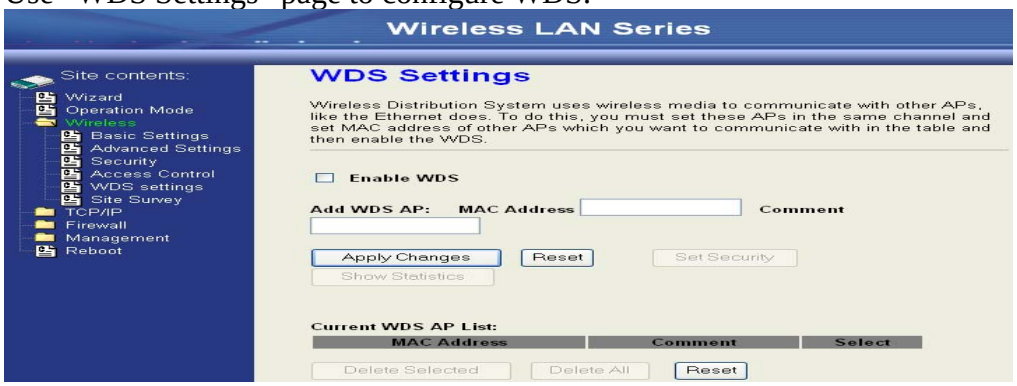
9. Access the web server by new IP address “192.168.2.202” then use “LAN Interface” page to disable DHCP Server.



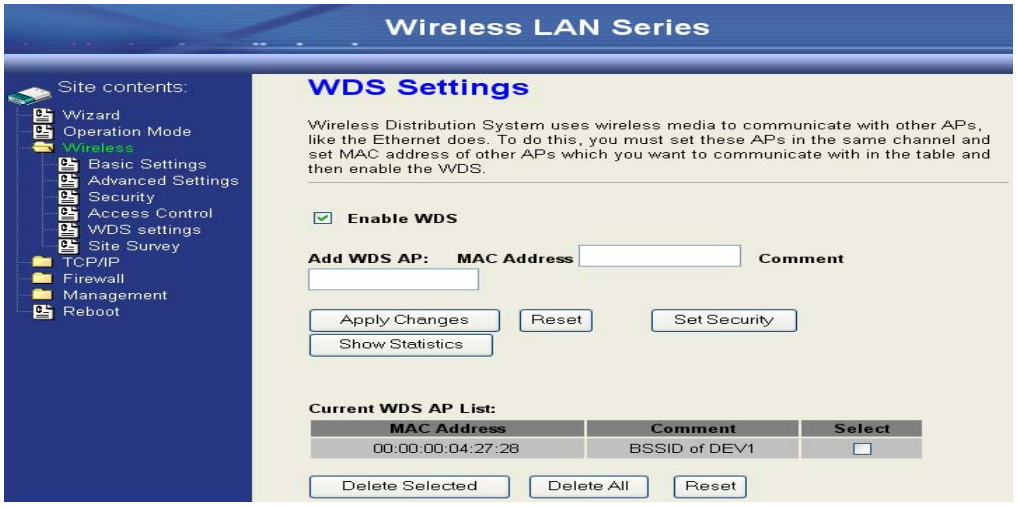
10. Wait for refreshing web page.



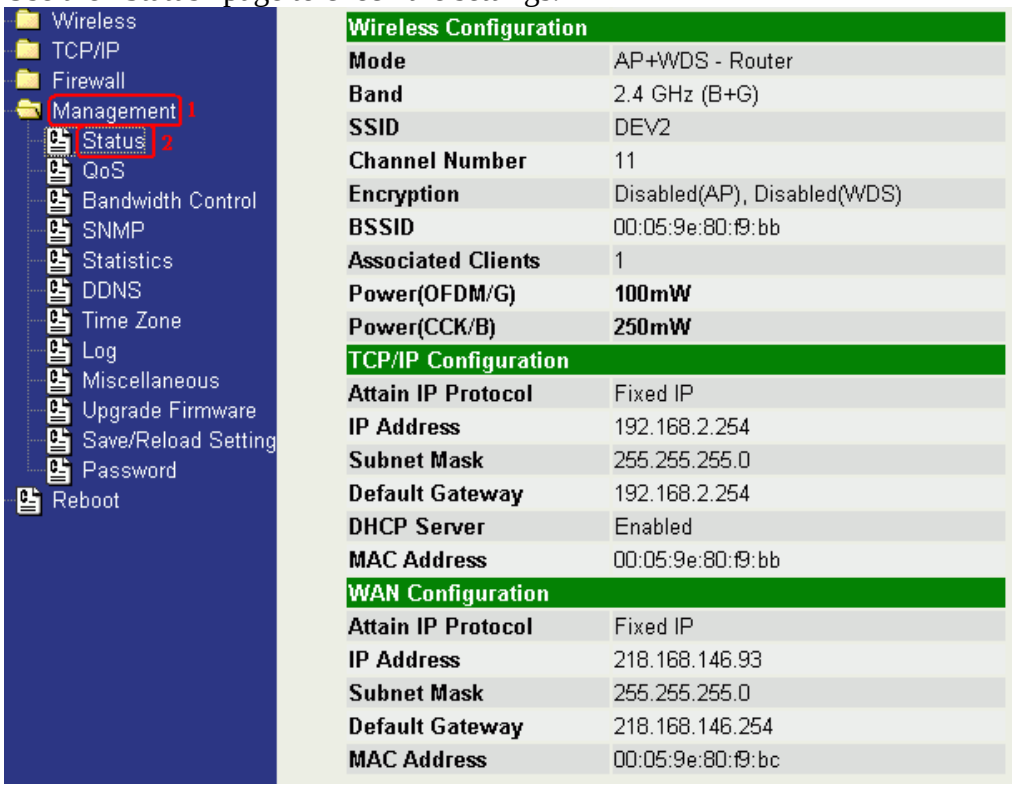
11. Use “WDS Settings” page to configure WDS.



12. Enable WDS function and add the BSSID of DEV1 to “Current WDS AP List”.



13. Use the “Status” page to check the settings.



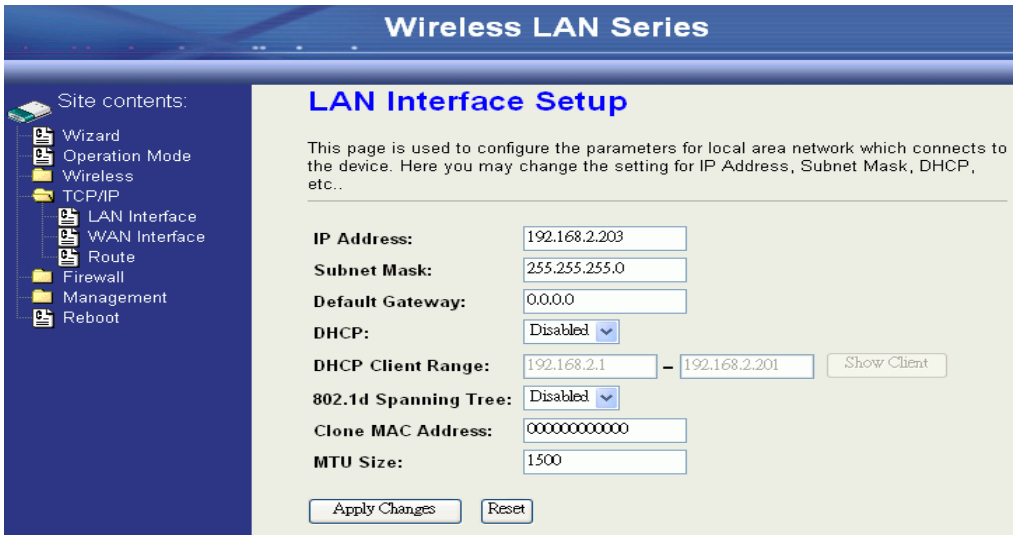
Configure DEV3:

1. Access the web server (http://192.168.2.254) of device from the Ethernet port.

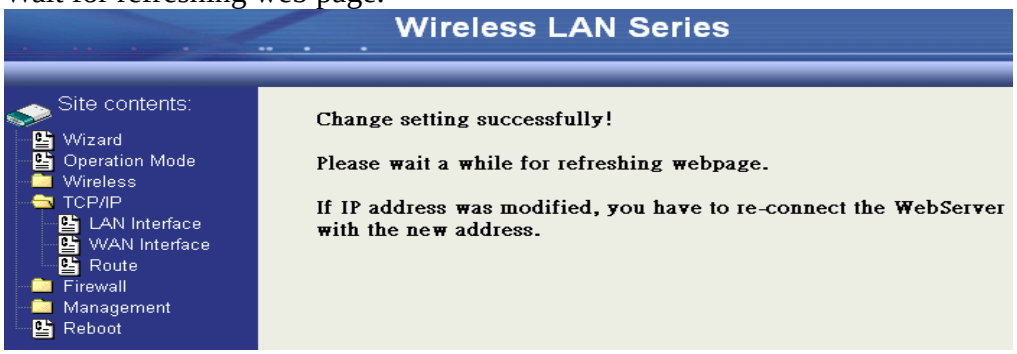
Caution

If you configure multiple devices in the same PC, since the devices have the same default IP address but different MAC addresses, it may cause you not able to access the web server of device. If the situation happens, please try to clean the ARP table of your PC by DOS command “arp –d” then you can access the web server of device using the default IP address.

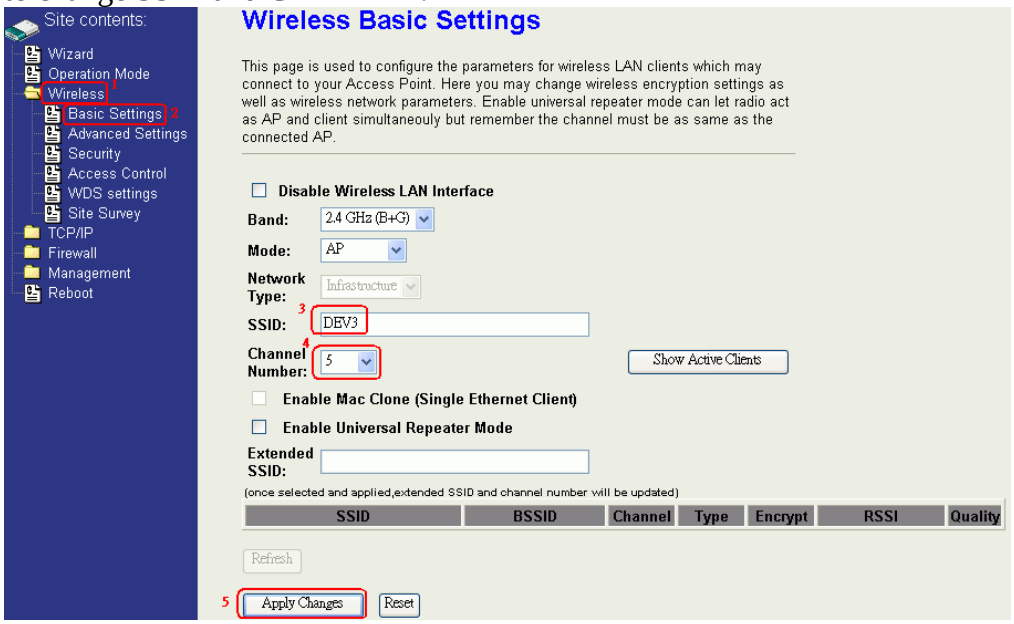
2. Use “LAN Interface” page to set the IP address of LAN interface and disable DHCP server.



3. Wait for refreshing web page.



4. Access the web server by new IP address “192.168.2.203” then use “Basic Settings” page to change SSID and CHANNEL.



5. Use the “Status” page to check the settings.

Configure DEV4:

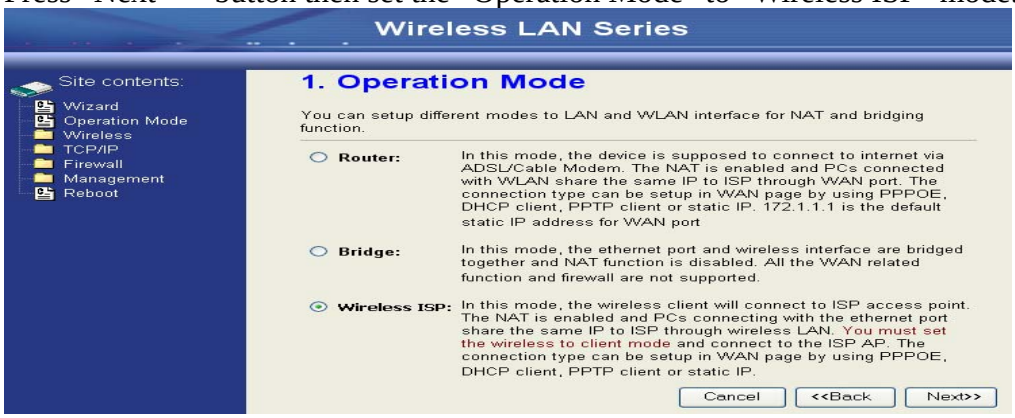
1. Access the web server (http://192.168.2.254) of device from the Ethernet port.

Caution

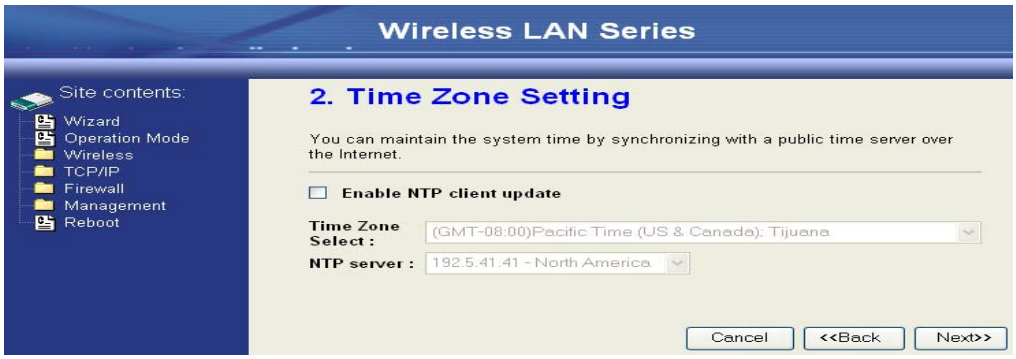
If you configure multiple devices in the same PC, since the devices have the same default IP address but different MAC addresses, it may cause you unable to access the web server of device. If the situation happens, please try to clean the ARP table of your PC by DOS command “arp –d” then you can access the web server of device using the default IP address.

2. Use Wizard page to setup device.

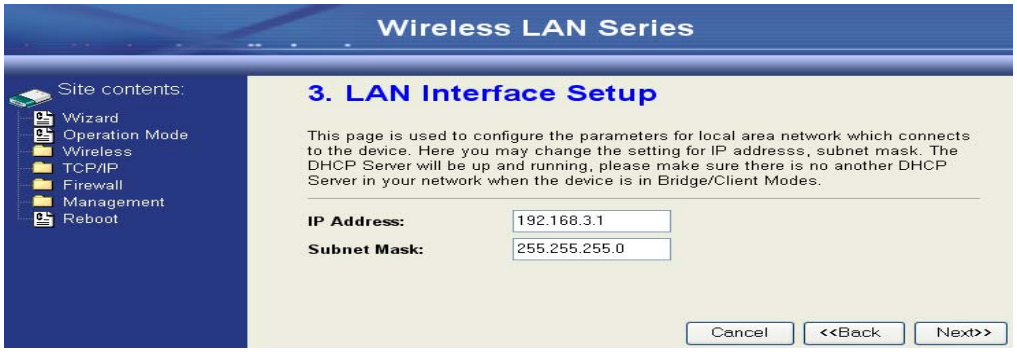
3. Press “Next>>” button then set the “Operation Mode” to “Wireless ISP” mode.



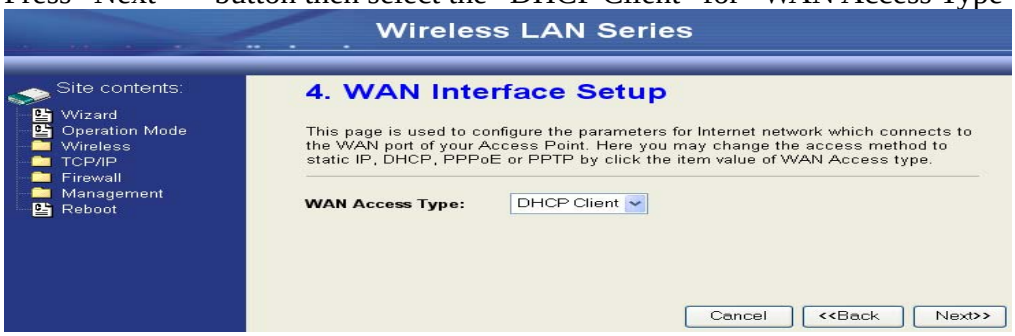
4. Press “Next>>” button then disable “Time Zone” function.



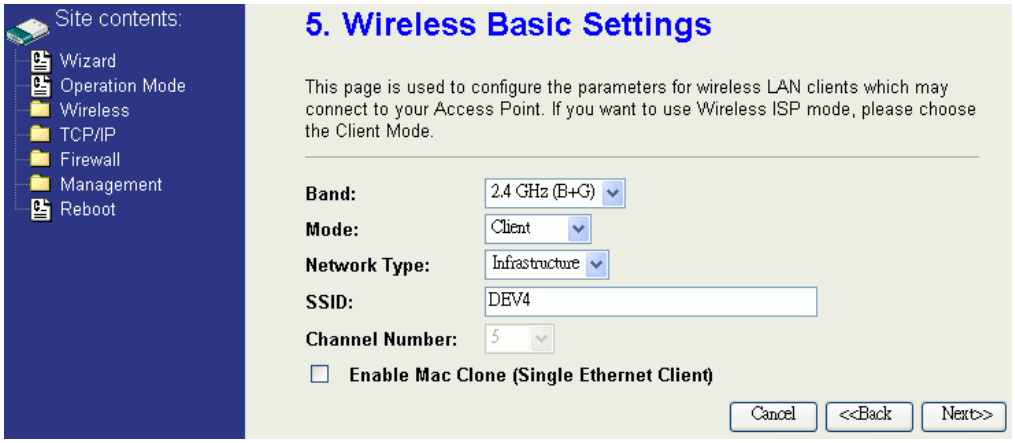
5. Press “Next>>” button then set the IP address of LAN interface.



6. Press “Next>>” button then select the “DHCP Client” for “WAN Access Type”.

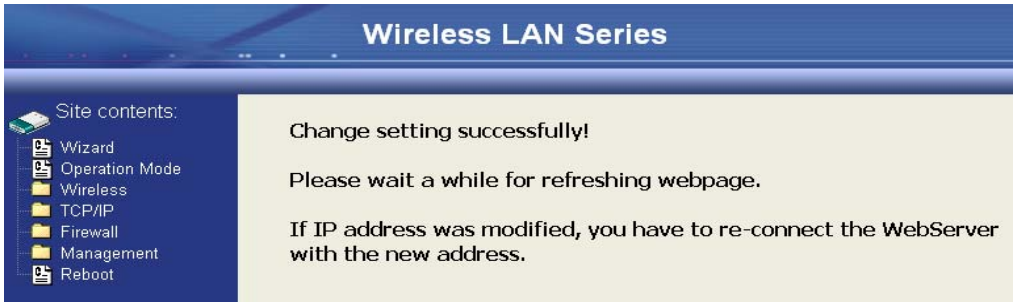


7. Press “Next>>” button then select the “Client” for “mode” and change the SSID to “DEV4”.

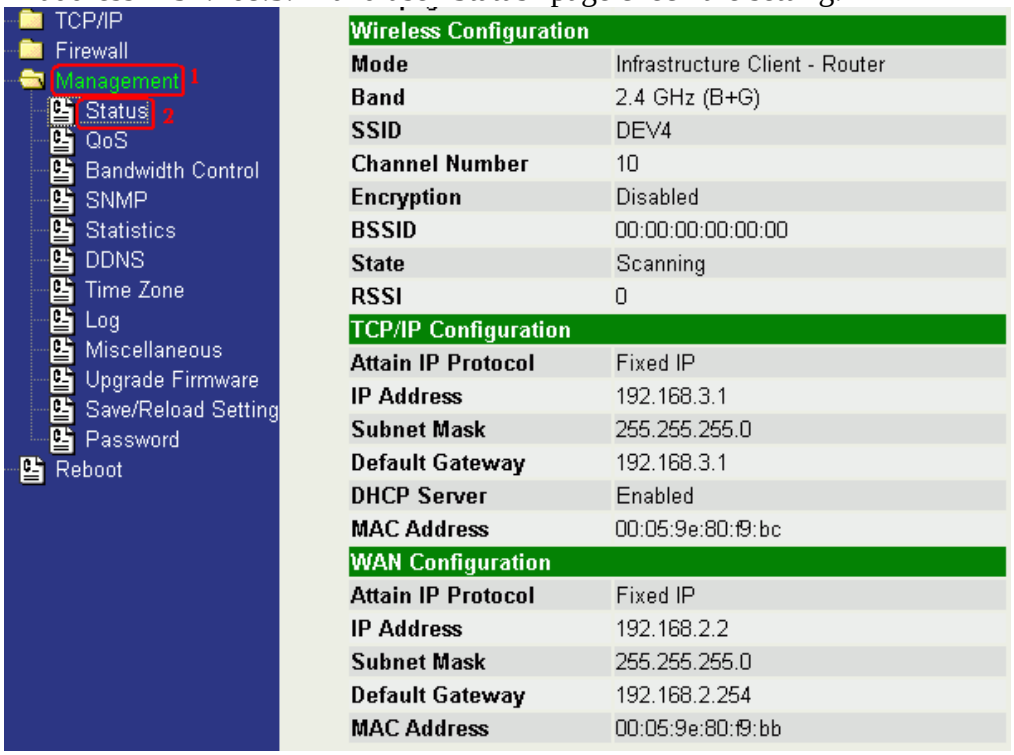


8. Press “Next>>” button then select “None” for “Encryption” then press “Finished” button.

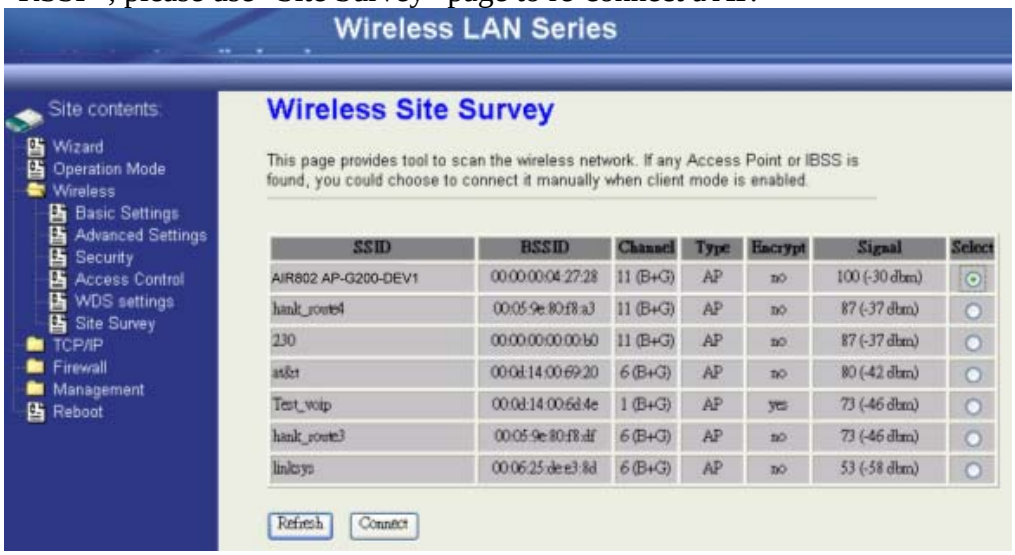
9. Wait for refreshing web page.



10. Change the IP address of your PC to 192.168.3.x then access the web server by the new IP address “192.168.3.1” and use “Status” page check the setting.



11. If the “State” of “Wireless Configuration” is not “Connected” or you want to refresh the “RSSI “, please use “Site Survey” page to re-connect a AP.



Configure DEV5:

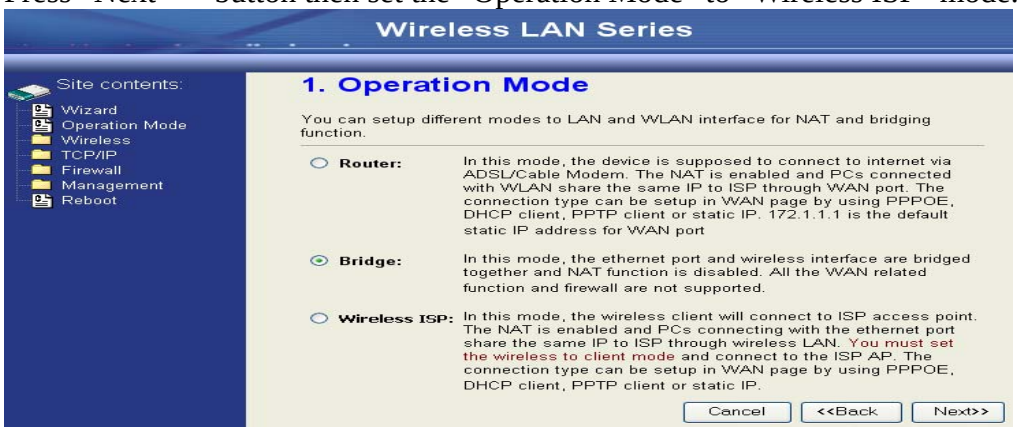
1. Access the web server (http://192.168.2.254) of device from the Ethernet port.

Caution

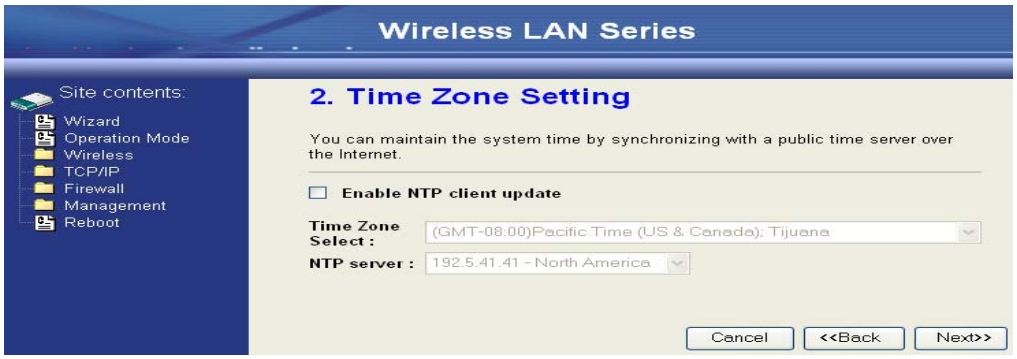
If you configure multiple devices in the same PC, since the devices have the same default IP address but different MAC addresses, it may cause you unable to access the web server of device. If the situation happens, please try to clean the ARP table of your PC by DOS command “arp –d” then you can access the web server of device using the default IP address.

2. Use Wizard page to setup device.

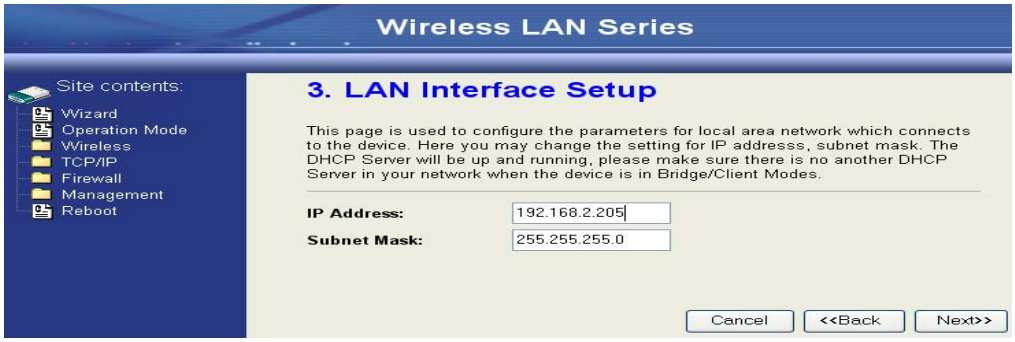
3. Press “Next>>” button then set the “Operation Mode” to “Wireless ISP” mode.



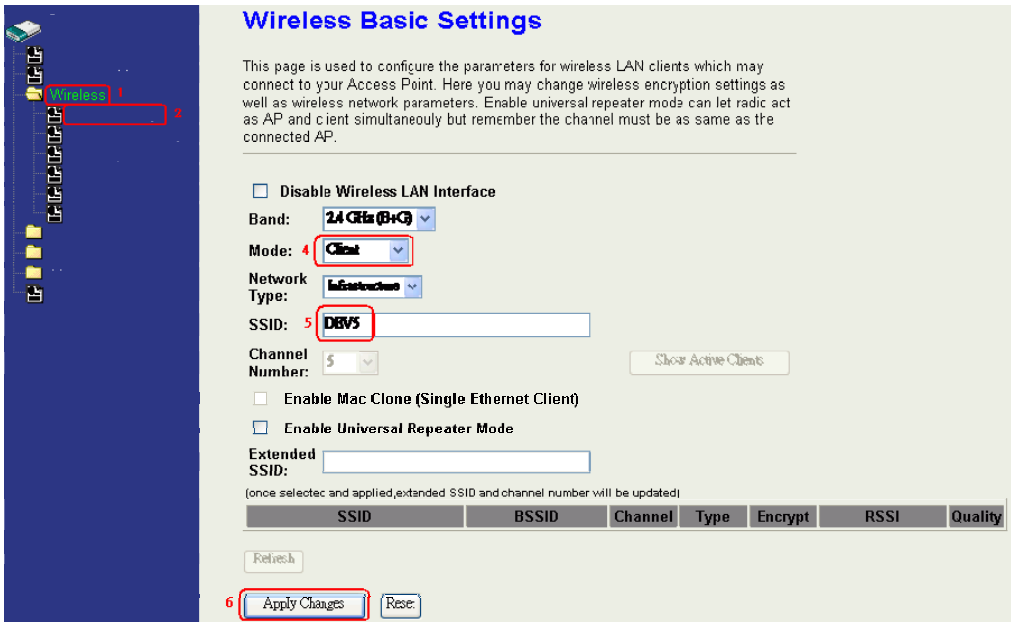
4. Press “Next>>” button then disable “Time Zone” function.



5. Press “Next>>” button then set the IP address of LAN interface.

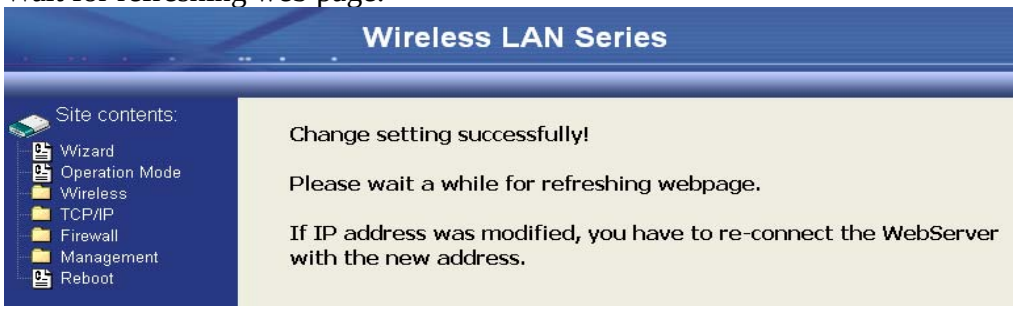


6. Press “Next>>” button then select the “Client” for “mode” and change the SSID to “DEV5”.



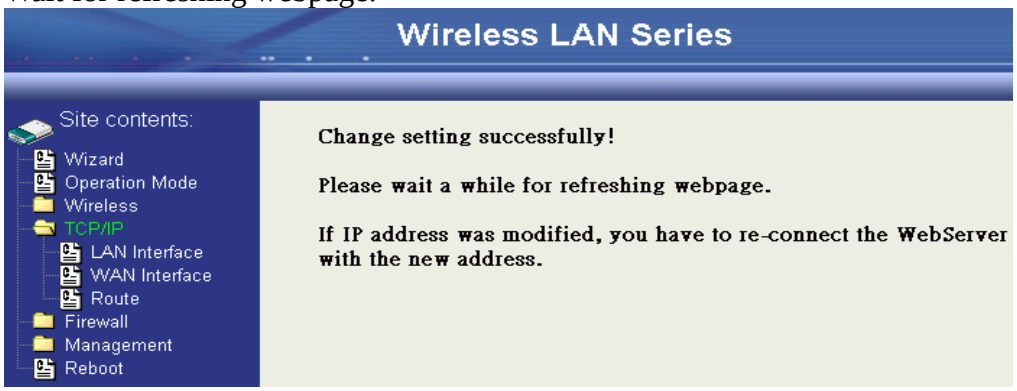
7. Press “Next>>” button then select “None” for “Encryption” then press “Finished” button.

8. Wait for refreshing web page.

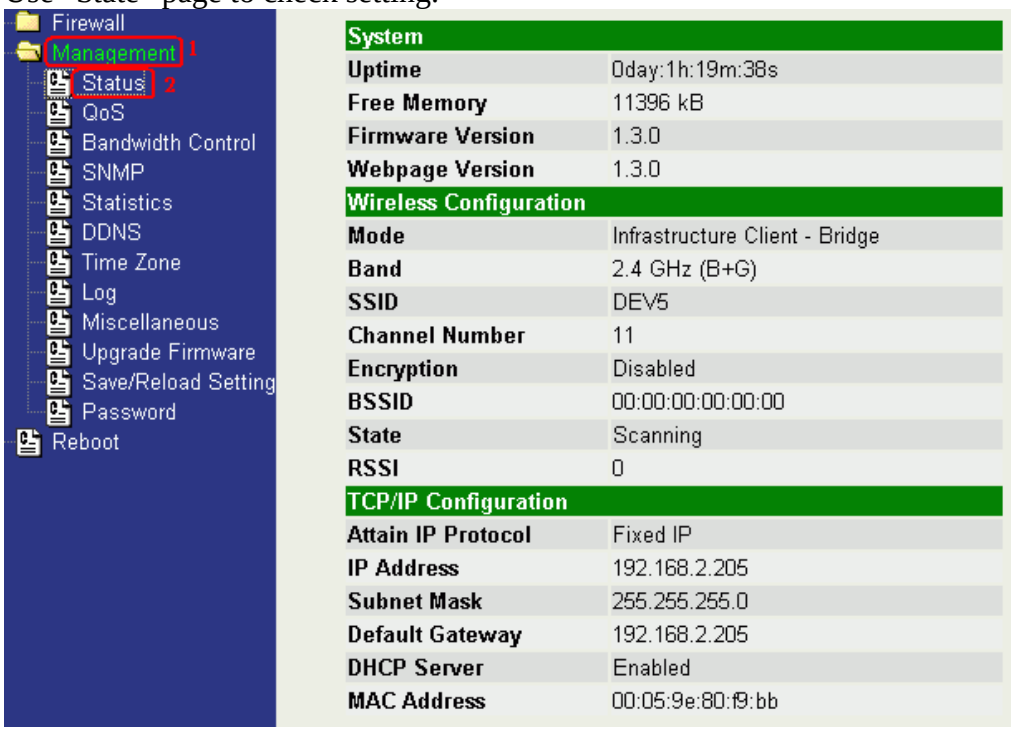


9. Access the web server by the new IP address “192.168.2.205” and use “LAN Interface” page to disable DHCP Server.

10. Wait for refreshing webpage.



11. Use “State” page to check setting.



12. If the “State” of “Wireless Configuration” is not “Connected” or you want to refresh the