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WH-9200AP Dual Band

Connection Guide

For WDS Bridge Mode

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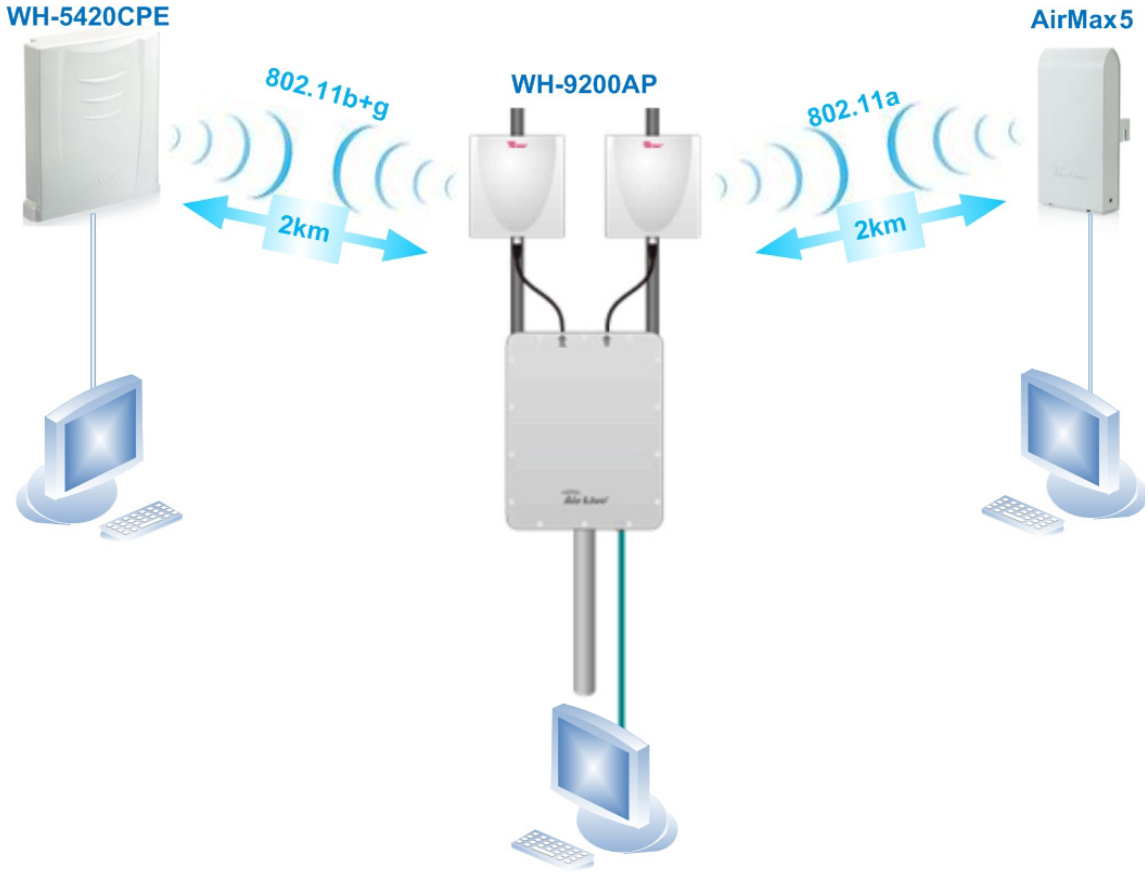
Overview

This document guides we use WH-9200AP to connect two wireless networks simultaneously that radio1 is 802.11b/g mode and radio2 is 802.11a mode in 2km.



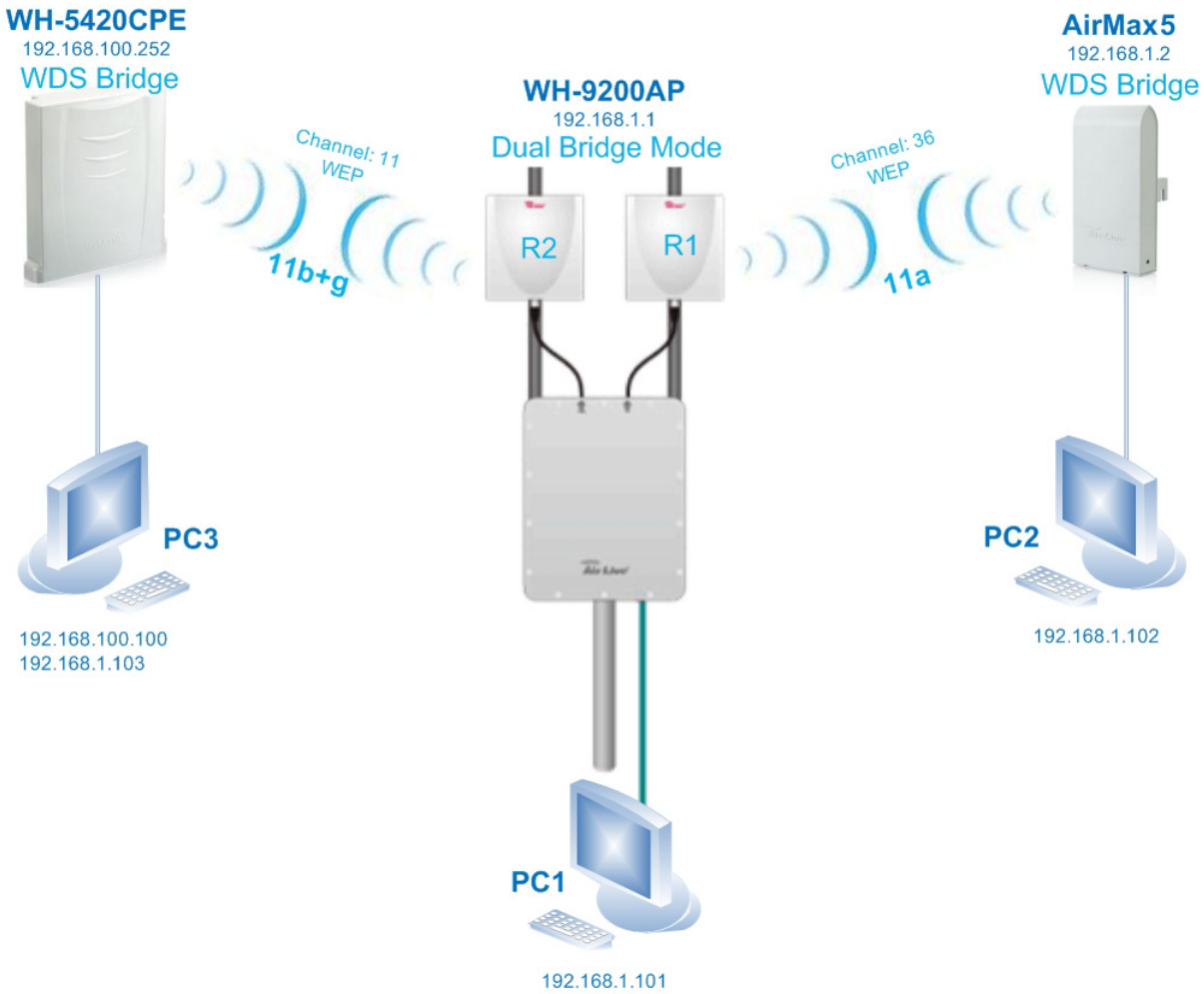
Devices:

1. WH-9200AP (firmware version is v1.00e07a)
2. WH-5420CPE (firmware version is 5420cpe_e1_eu)
3. AirMax5 (firmware version is 1.00e13)
4. PC * 3

Configuration

1. Topology:

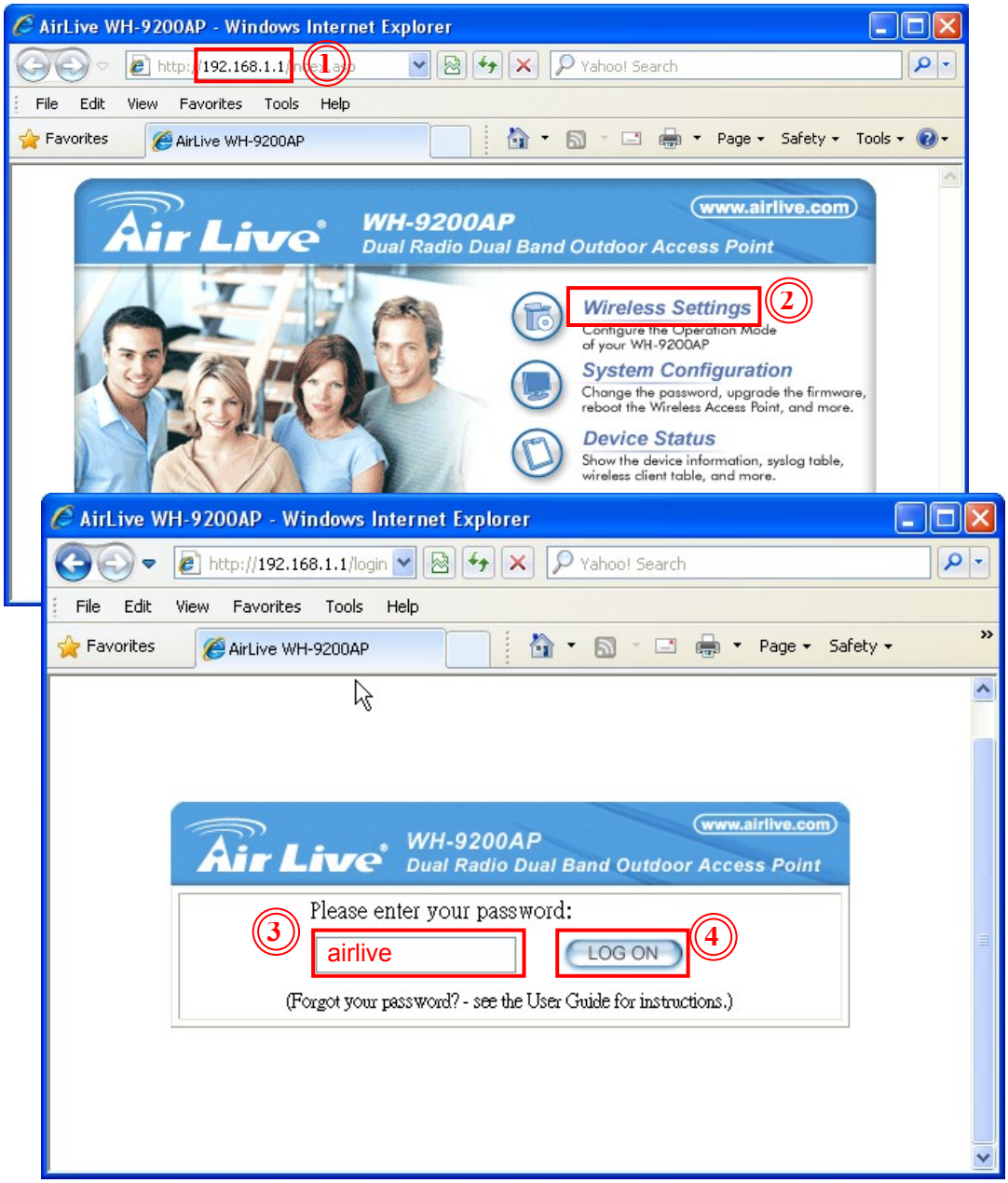
In this sample, we are going to introduce you to connect WH-5420CPE and AirMax5 with the “Dual Bridge mode” of WH-9200AP. The Radio1 of WH-9200AP is 802.11a band that connect to AirMax5 via WEP encryption, and the radio2 is using 802.11b/g band to connect with WH-5420CPE via WEP encryption.
Before the process, please change the IP address of each PC and direct the devices with the following topology.



2. WH-9200AP Settings

Step 1. Change the mode to Dual Bridge

1. In PC1, type the WH-9200AP's IP address into the web browser's address field to access the device.① (default IP is 192.168.1.1)
2. Press the "Wireless Settings" button② then key-in the password to login the device.③ (default password is "airlive")

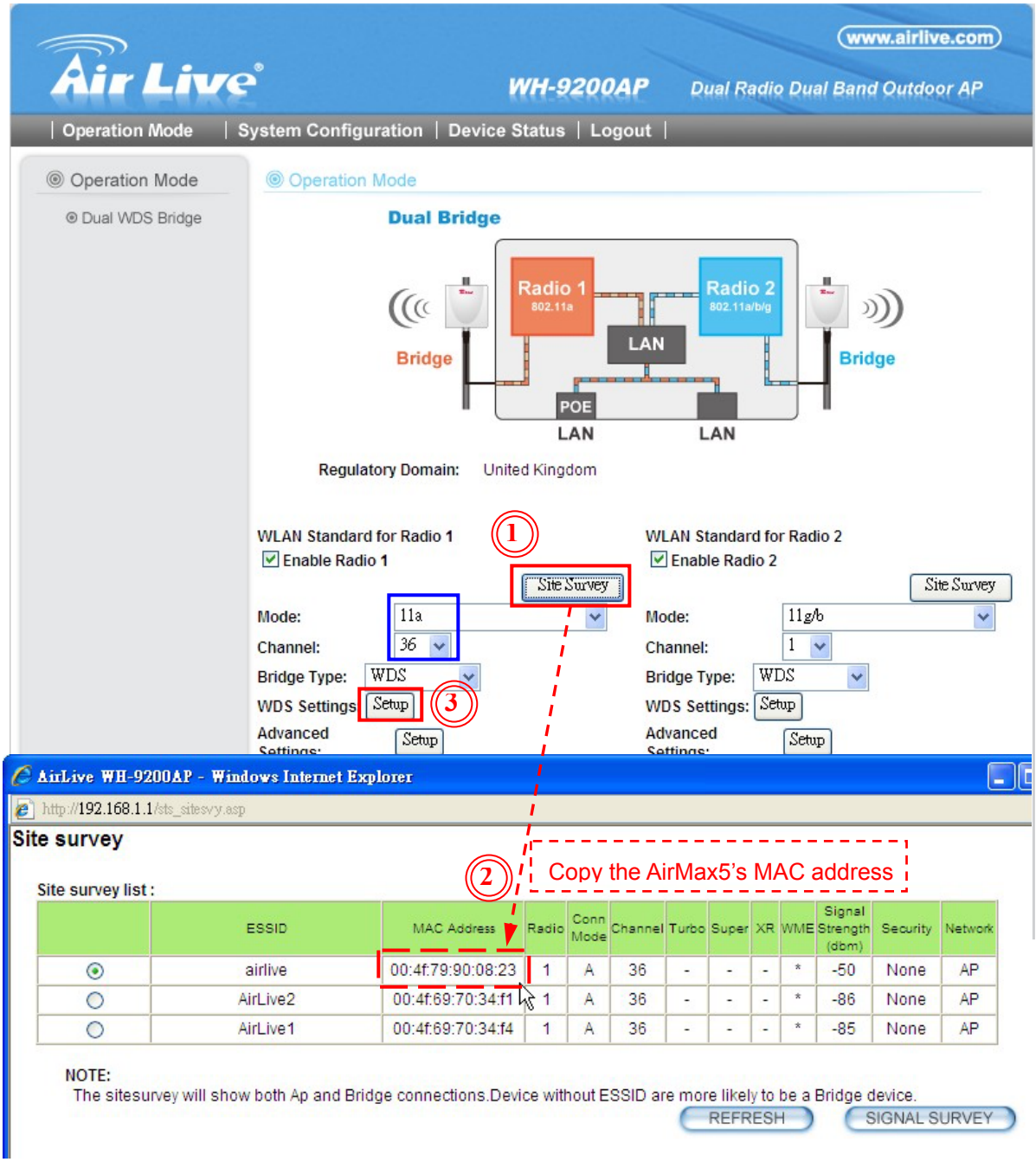


3. Press the “Setup” button of Dual Bridge mode to into the set up page.⑤

Step 2. Encryption and connection settings for radio 1.

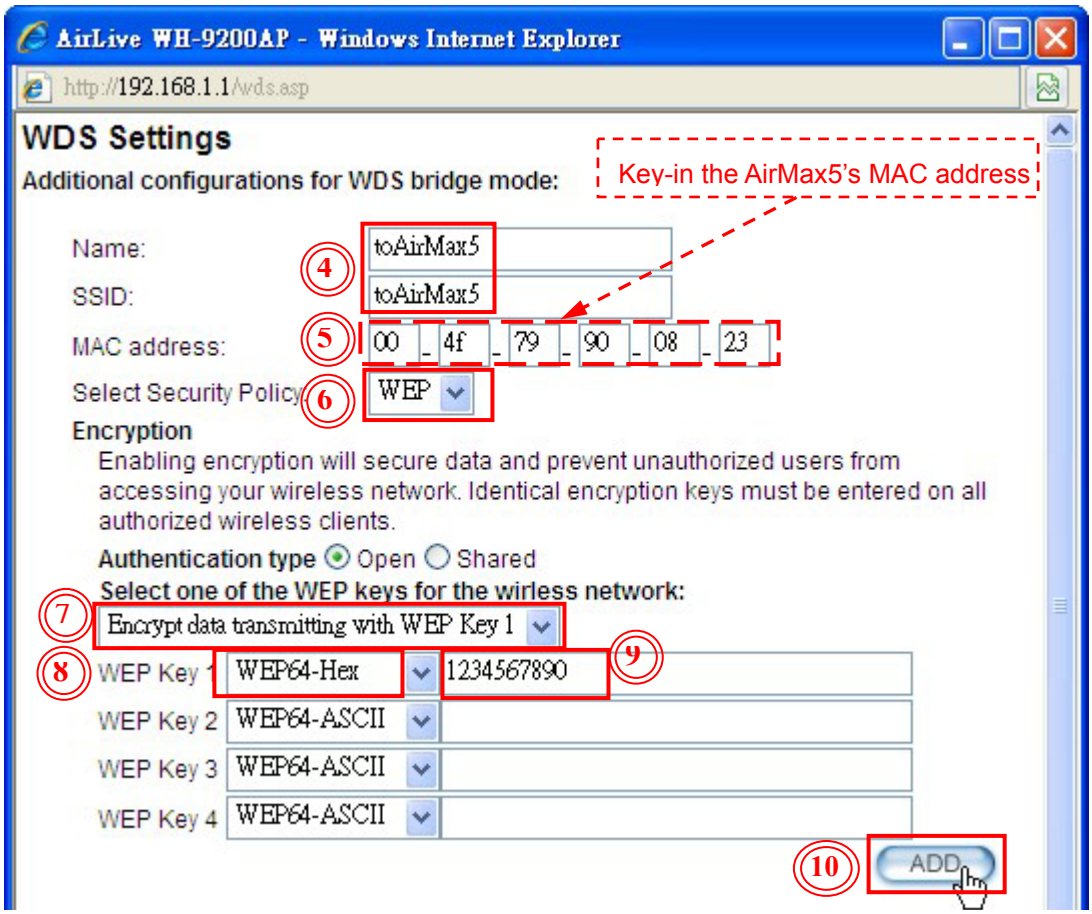
1. Check if Radio1 and Radio2 is already enabled.
   In this sample, the Radio Mode and the Channel number are using the default settings show as following.
   Radio Mode: 11a
   Channel: 36
2. Please press the “Site Survey” button to site survey the signal in your environment.①
3. You can see the SSID with AirMax5, please copy the AirMax5’s MAC address②. (In our sample, the SSID is “AirLive2”)

4. Please press the “Setup” button of “WDS settings” to show the “WDS settings” dialog box.③

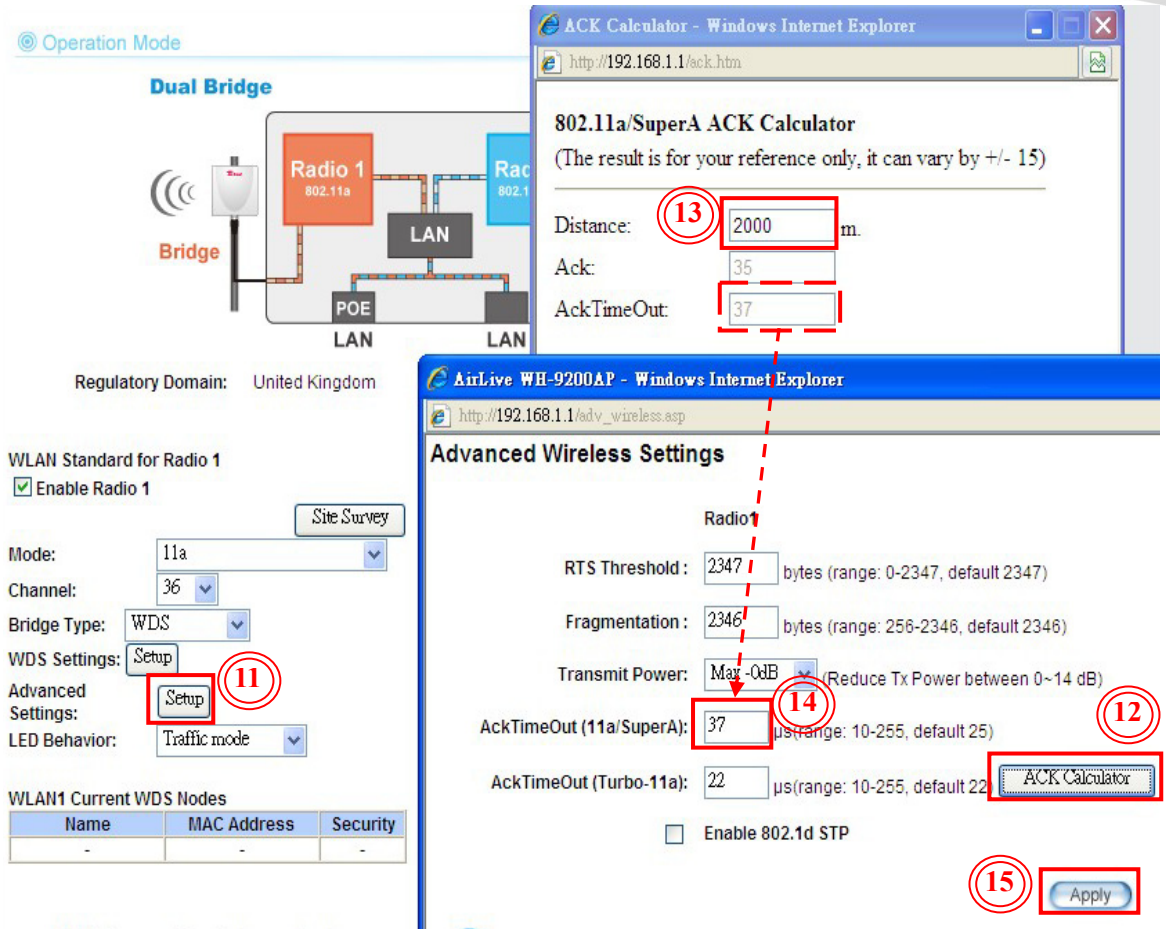


5. lease enter any name and SSID for your own reference (i.e. toAirMax5).④
6. Then enter the AirMax5’s wireless MAC address in “MAC address” field.⑤
   (In this sample, the AirMax5’s wireless MAC address is 00-4f-79-90-08-23)

7. Select the “WEP” encryption.⑥
   In our sample, we use these parameters:
   Encrypt data transmitting: WEP Key 1⑦
   WEP Key 1: WEP64-Hex⑧
   WEP Key 1 string: 1234567890⑨
   (If you want to use other encryptions, you must use the same as AirMax5’s wireless encryptions.)
   Then press “ADD” button to add the WDS connection in WH-9200AP’s Radio1.⑩



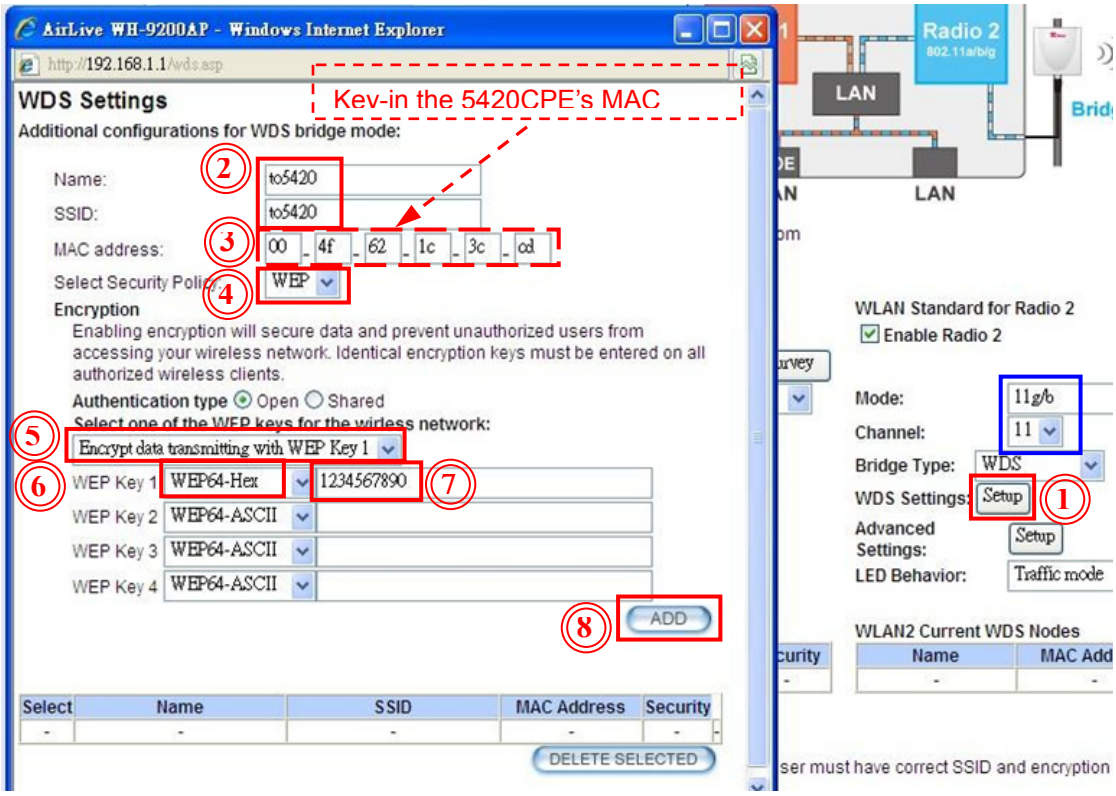
8. Press the “Setup” button of “Advanced Settings” to show the “Advanced Wireless Settings” dialog box⑪, then press “ACK Calculator” button⑫.
   It shows “802.11a/SuperA ACK Calculator” dialog box.
   Please enter the distance between WH-9200AP and AirMax5⑬, then press the “Tab” button on your keyboard, at this time it shows the Ack time out value in the field.
   (In this sample, the distance is 2000m; the Ack Time Out is 37)
   You can copy the value to paste with “AckTimeOut(11a/SuperA)” field⑭.
   Remember press “Apply” button to save the settings⑮.



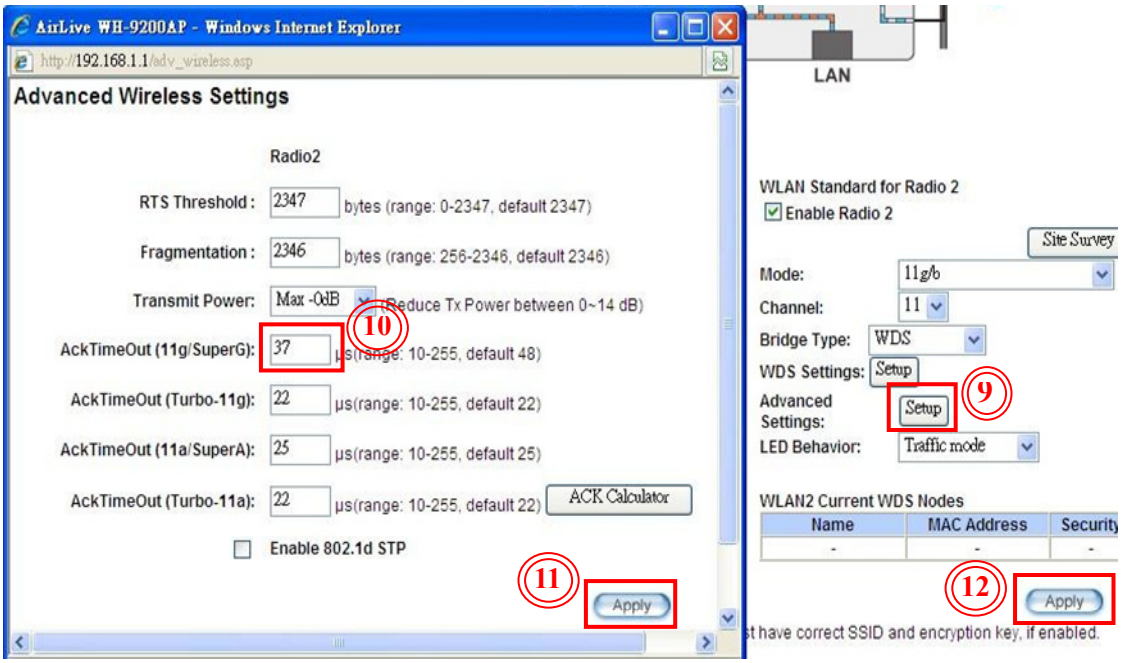
Step 3. Encryption and connection settings for Radio 2.

1. Check the radio1 is 11b/g mode and the channel number is 11.
2. Please press the "Setup" button of "WDS settings" to show the "WDS settings" dialog box.①
3. Enter any name and SSID for your own reference(i.e. to5420).② Then key-in the WH-5420CPE's MAC address in "MAC address" field.③
   (In this sample, the WH-5420CPE's MAC address is 00-4f-62-1c-3c-cd)
4. Select the "WEP" encryption.④
   In our sample, we use these parameters:
   Encrypt data transmitting: WEP Key 1⑤
   WEP Key 1: WEP64-Hex⑥
   WEP Key 1 string: 1234567890⑦
   (If you want to use other encryptions, you must use the same as WH-5420CPE's wireless encryptions.)

   Then press "ADD" button to add the WDS connection in WH-9200AP's Radio1.⑧



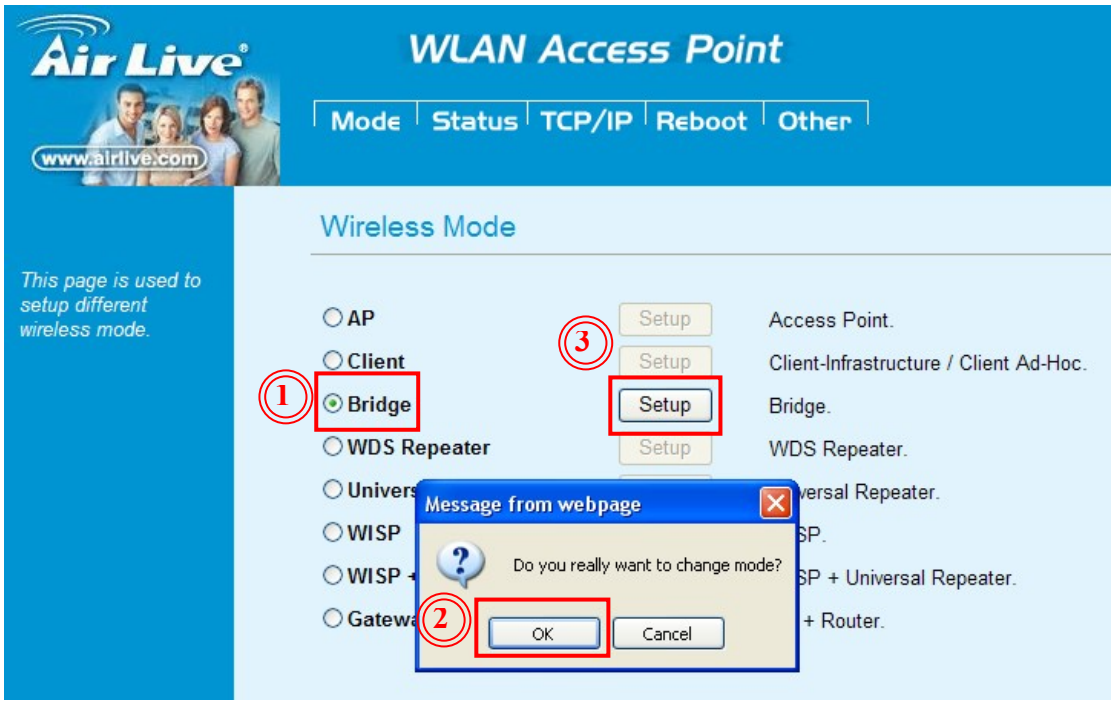
5. Press the "Setup" button of "Advanced Settings" to show the "Advanced Wireless Settings" dialog box⑨.
   Then enter the Ack Time Out value in "AckTimeOut(11g/SuperG)" field⑩.
   The value is the same as 11a. (In this sample, the Ack Time Out is 37)
   Remember press "Apply" button to save the settings.⑪⑫



3. WH-5420CPE Settings

Step 1. Change the 5420CPE to Bridge Mode.

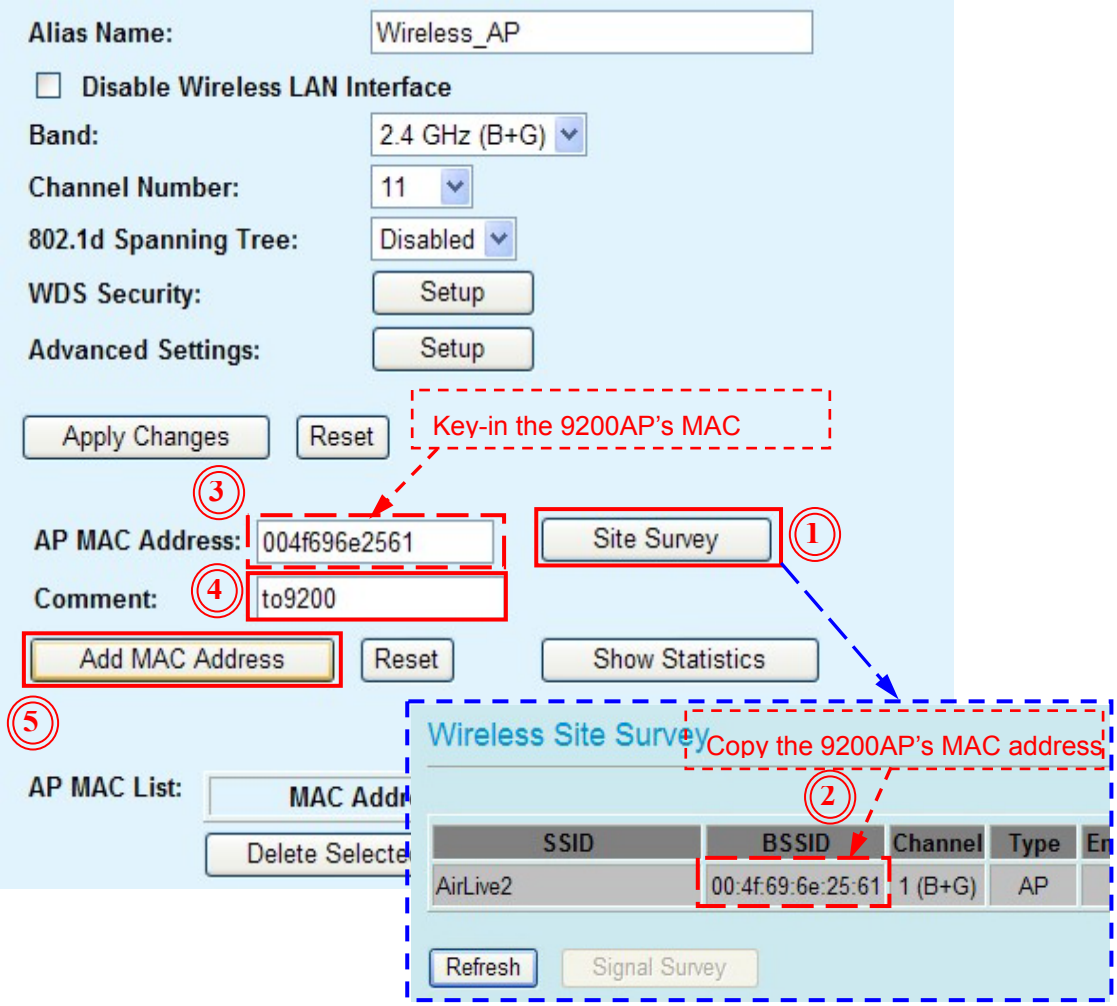
1. In PC3, type the WH-5420CPE's IP address into the web browser's address field to access the device. (default IP is 192.168.100.252)
2. Press the "Mode" button then select "Bridge"① → "OK" button② to change operation mode with WDS Bridge Mode.
3. After changed mode, please press the "Setup" button to into the "Bridge mode Settings" page.③



Step 2. Site survey and connect with 9200AP.

1. In the "Bridge mode Settings" page, please press the "Site Survey" button to site survey the signal in your environment.①
2. It will show the site survey result of the "Wireless Site Survey" dialog window. You can see the SSID with WH-9200AP's Radio2, please copy its MAC address②. (In our sample, the SSID of WH-9200AP's Radio2 is "AirLive2")
3. Then enter the MAC address of WH-9200AP's Radio2 in "AP MAC Address" field③ and enter any name for your own in "Comment" field.④

4. Press the “Add MAC Address” button to add the WDS connection in WH-5420CPE.



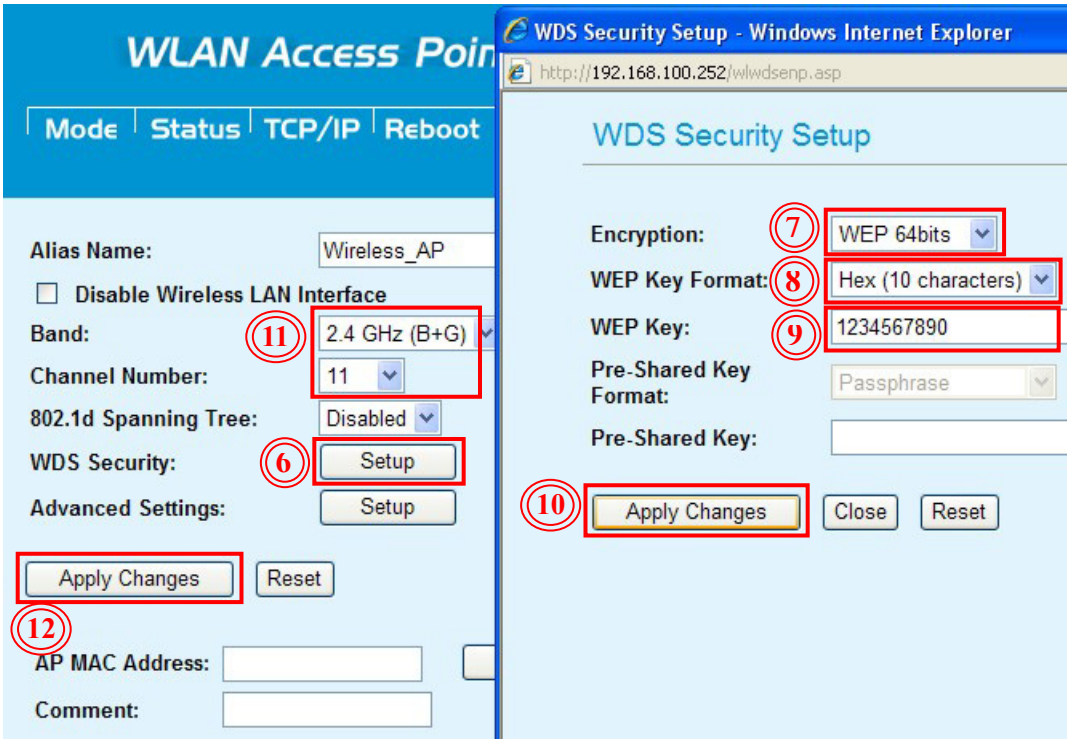
6. Press “Setup” button of “WDS Security” to show the “WDS Security Setup” dialog box.⑥
   In our sample, we use these parameters:
   Encryption: WEP 64bits⑦
   WEP Key Format: Hex(10 characters)⑧
   WEP Key string: 1234567890⑨

   Remember press “Apply Changes” button to save the WDS Security settings⑩

(If you want to use other encryptions, you must use the same as WH-9200AP Radio2’s encryptions.)

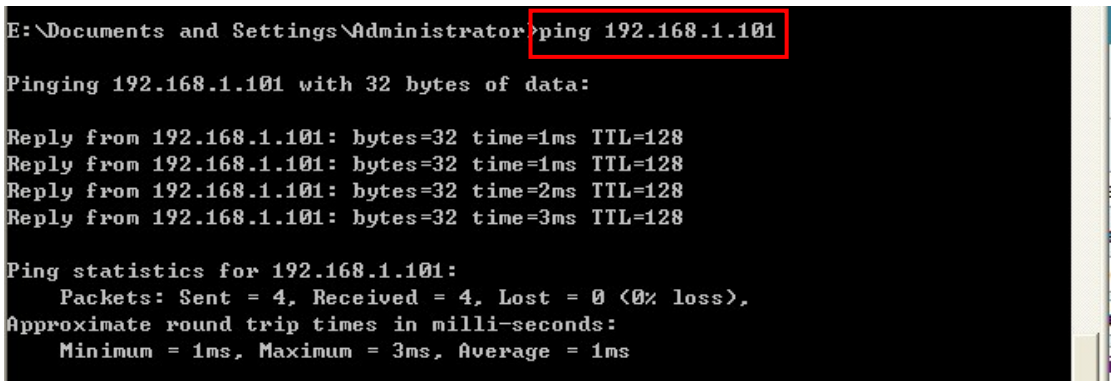
7. Check if the radio band is “2.4GHz (B+G)” and the channel number is “11” ⑪, please press “Apply Change” button to save the settings.⑫

8. You must reboot the device to apply all the settings.



Step 3. Check the connection.

After system reboot, you can ping the PC1 from PC3 to check if the connection was successful.



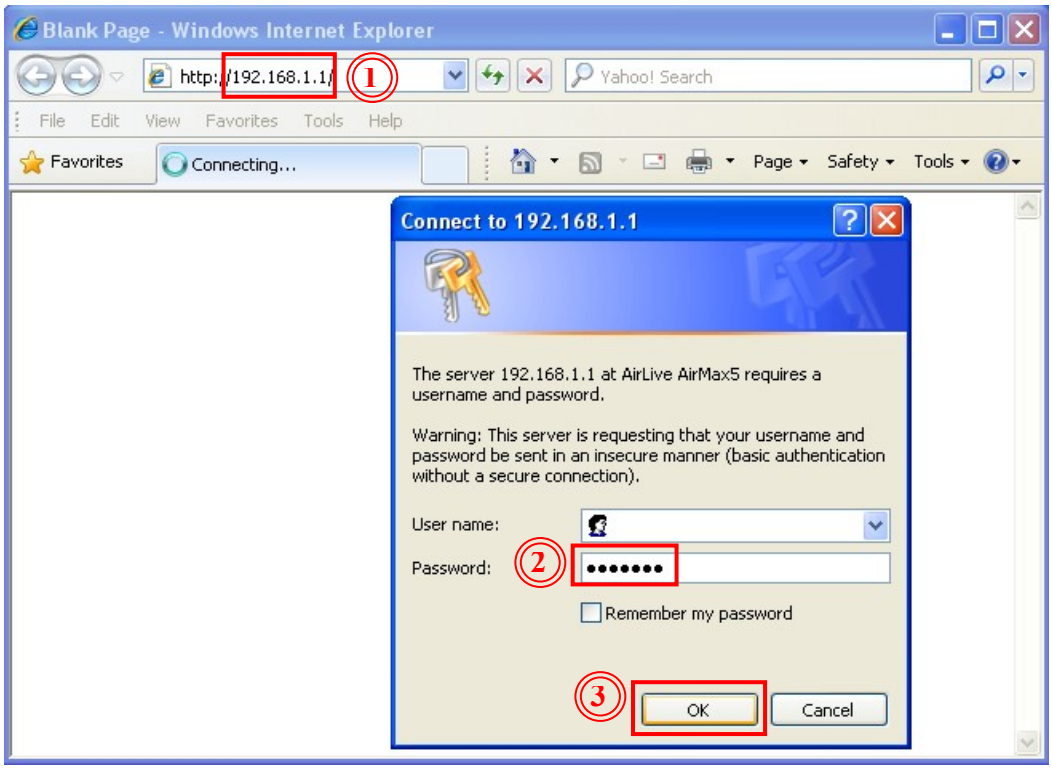
```
E:\Documents and Settings\Administrator>ping 192.168.1.101

Pinging 192.168.1.101 with 32 bytes of data:

Reply from 192.168.1.101: bytes=32 time=1ms TTL=128
Reply from 192.168.1.101: bytes=32 time=1ms TTL=128
Reply from 192.168.1.101: bytes=32 time=2ms TTL=128
Reply from 192.168.1.101: bytes=32 time=3ms TTL=128

Ping statistics for 192.168.1.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 3ms, Average = 1ms
```

If you can't ping the PC1, please check the firewall is already disable of PC1's OS.

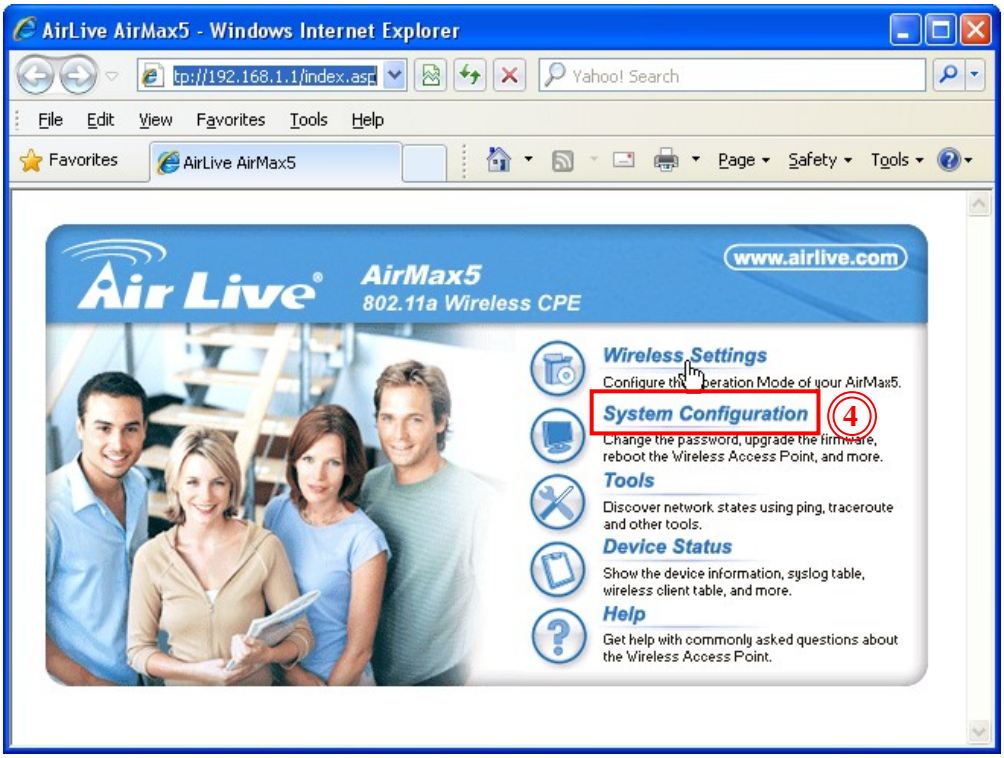
4. AirMax5 Settings

Step 1. Login the device and change its IP.

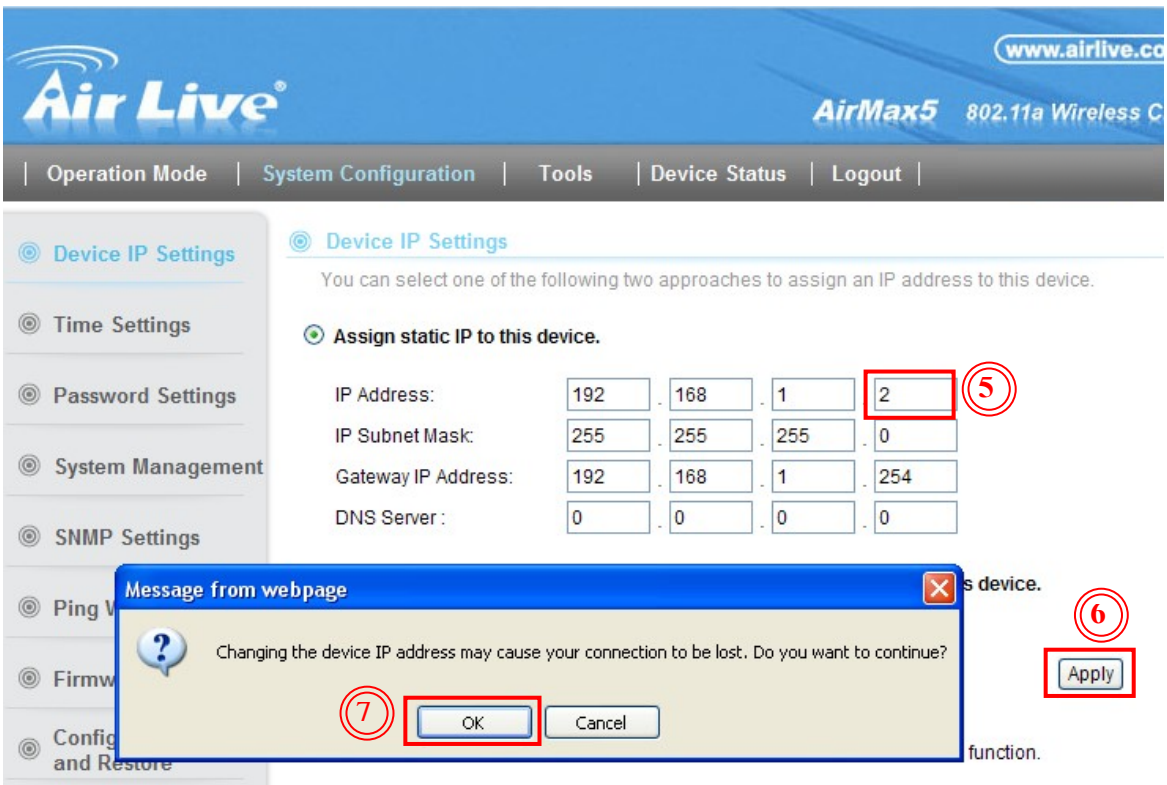
1. In the PC2, type the AirMax5's IP address into the web browser's address field to access the device.① (default IP is 192.168.1.1)
2. Then Key-in the password to login the device.② (default User name and password are "airlive")



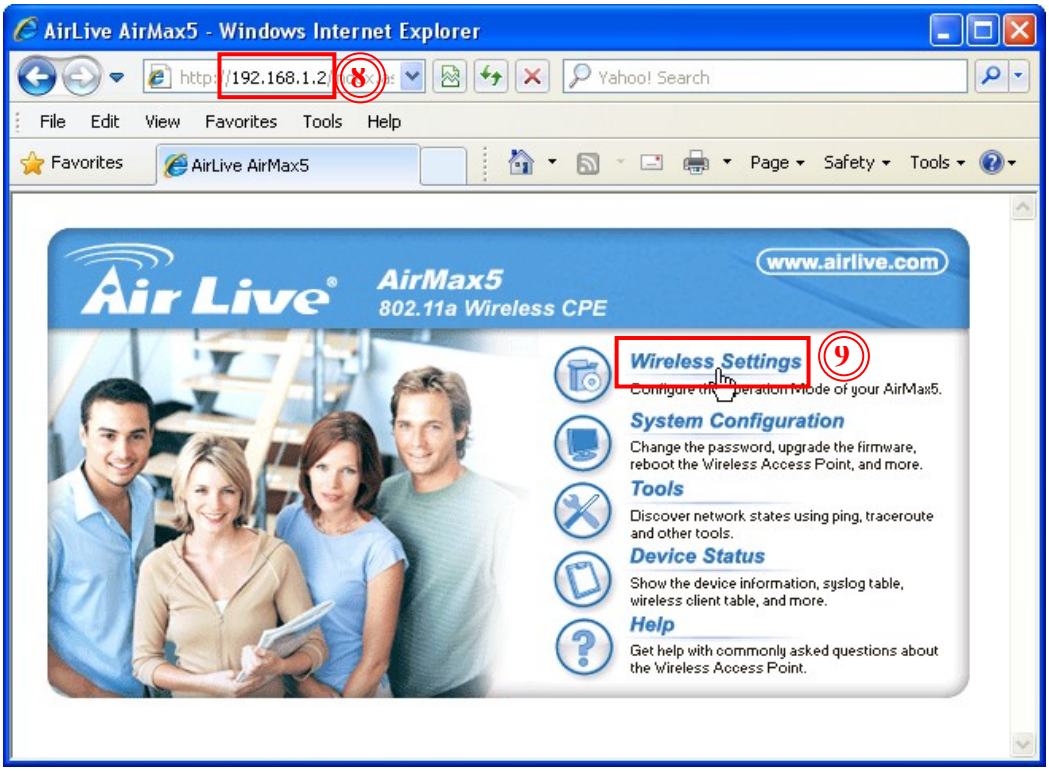
3. If your AirMax5's IP is the same as WH-9200AP's IP, you have to change another IP address to avoid the conflict. The same IP addresses can't exist in one LAN.
   In this case, please press the "System configuration" button to go to the "Device IP Settings" page.④



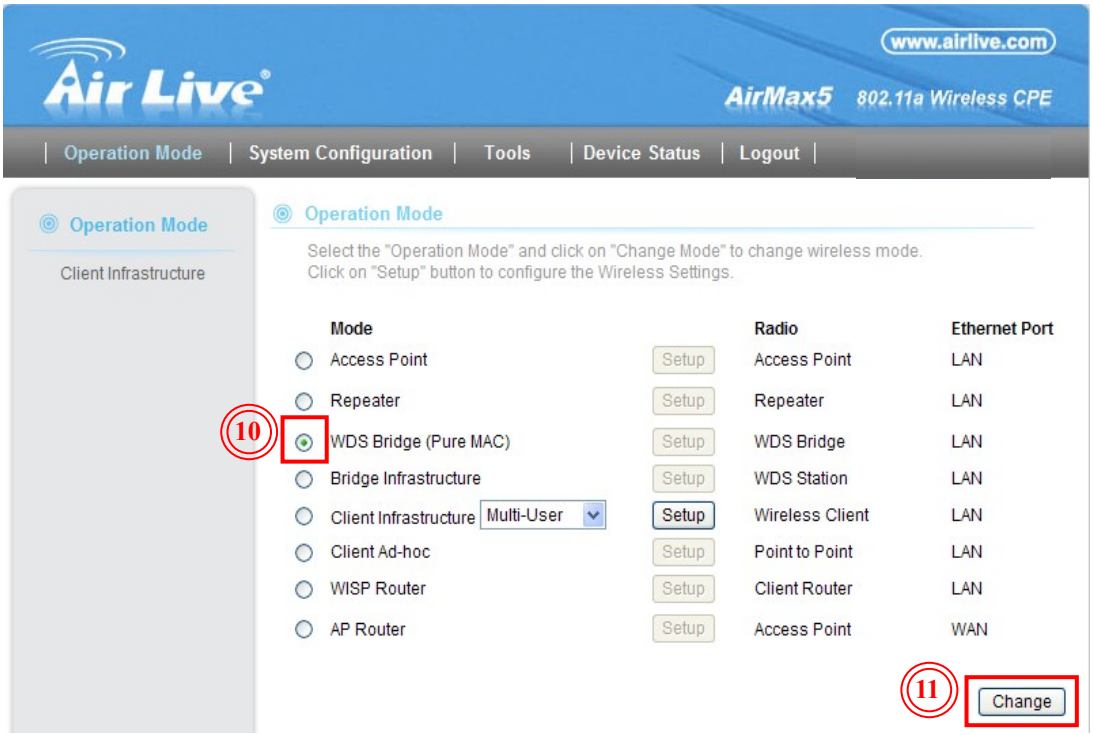
4. In our sample, we change the device's IP to 192.168.1.2⑤ → press "Apply"⑥ → "OK".⑦



5. Access the device as new IP⑧ then press the “Wireless Settings” button⑨.

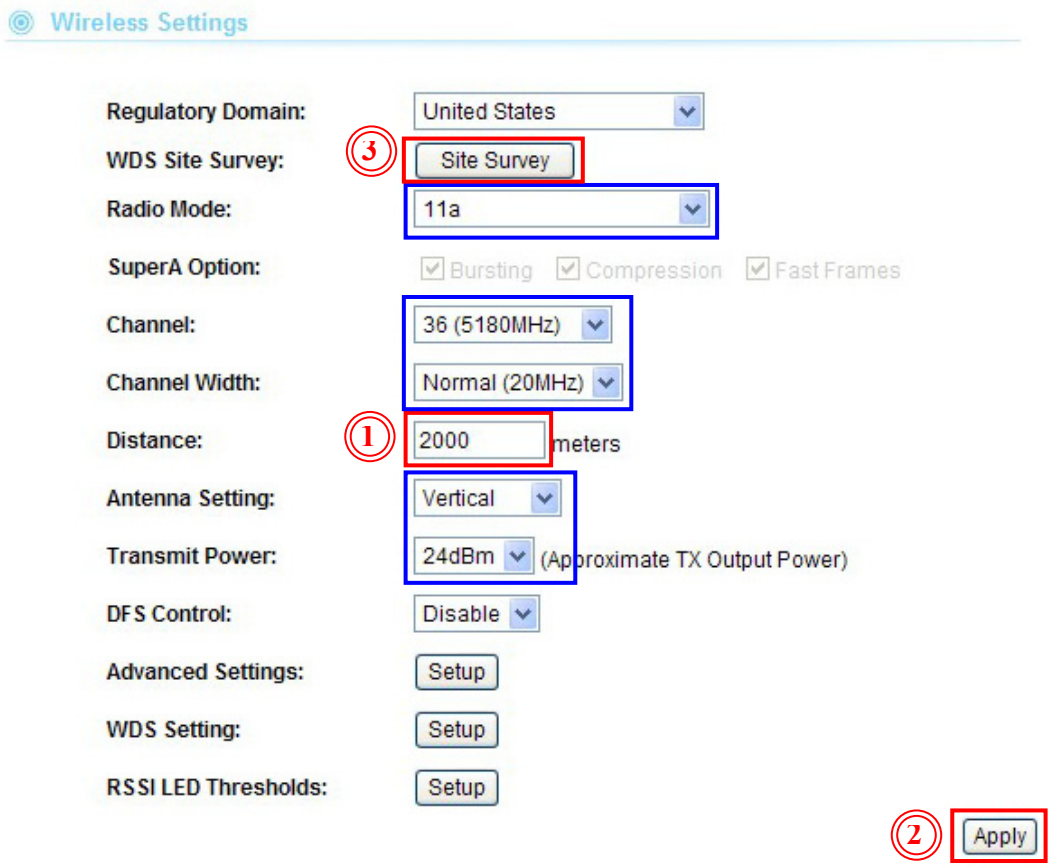


6. Then press the “Setup” button of “WDS Bridge (Pure MAC)” mode⑩ → press “Change” button to change the operation mode.⑪

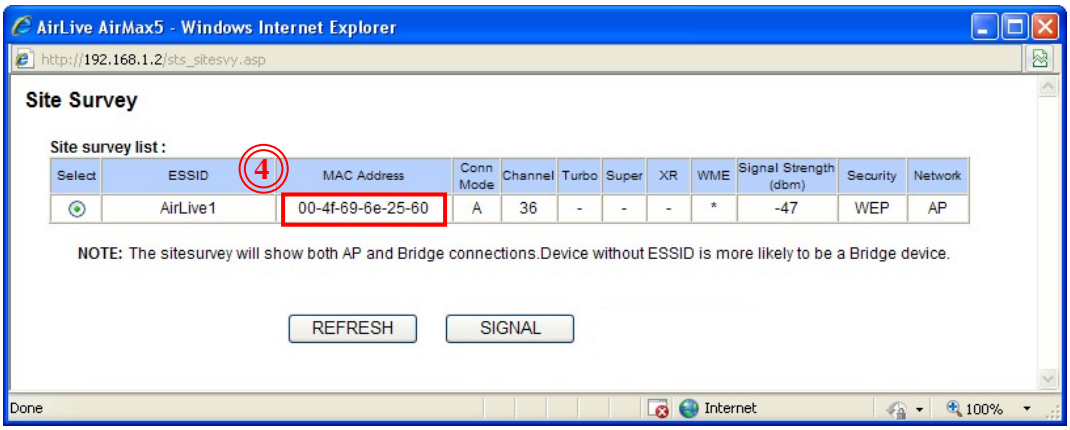


Step 2. Site survey and connect with 9200AP.

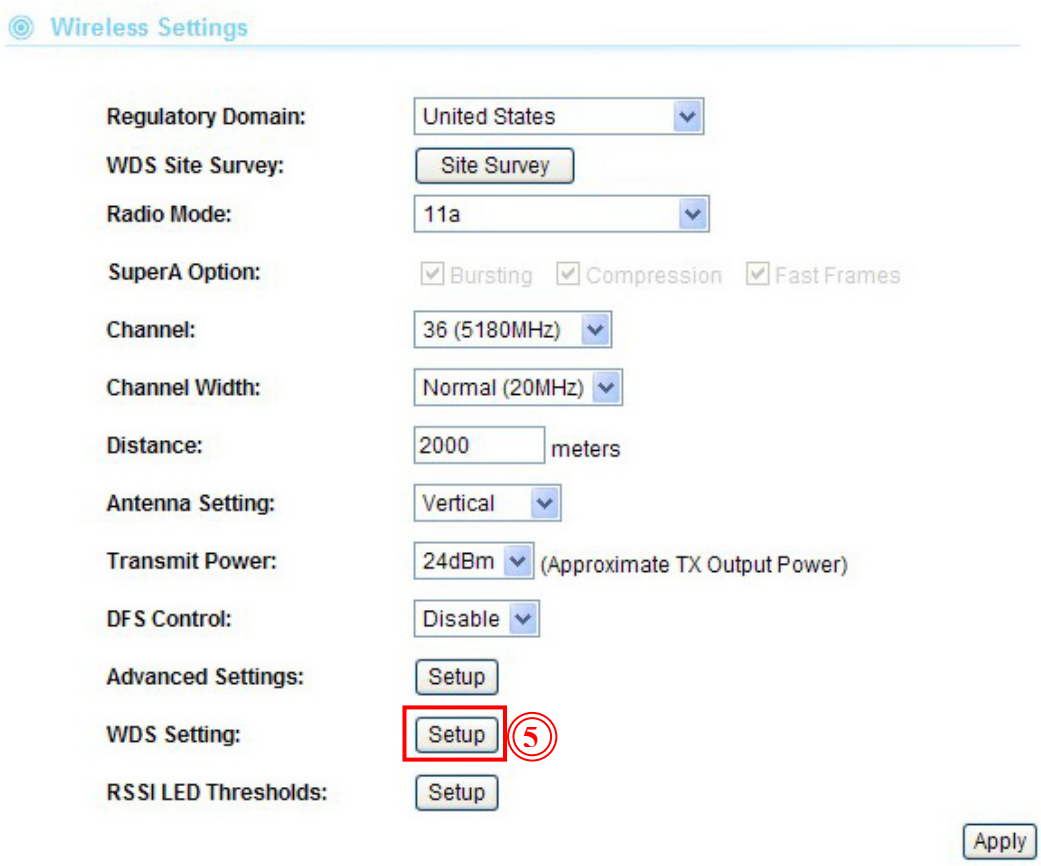
1. After changing the operation mode, please press “Setup” button of “WDS Bridge (Pure MAC)” to into the Wireless Settings page of bridge mode.
2. Check the “Radio Mode”, “Channel” and “Channel Width” were the same as WH-9200AP.
   (In our sample, we using 11a, channel 36 and the channel width is 20MHz.)
3. Enter the distance between WH-9200AP and AirMax5 in “Distance” field① then press “Apply” button to save the distance setting.②
   After configured successfully, please press “Site Survey” button to site survey the signal in your environment.③



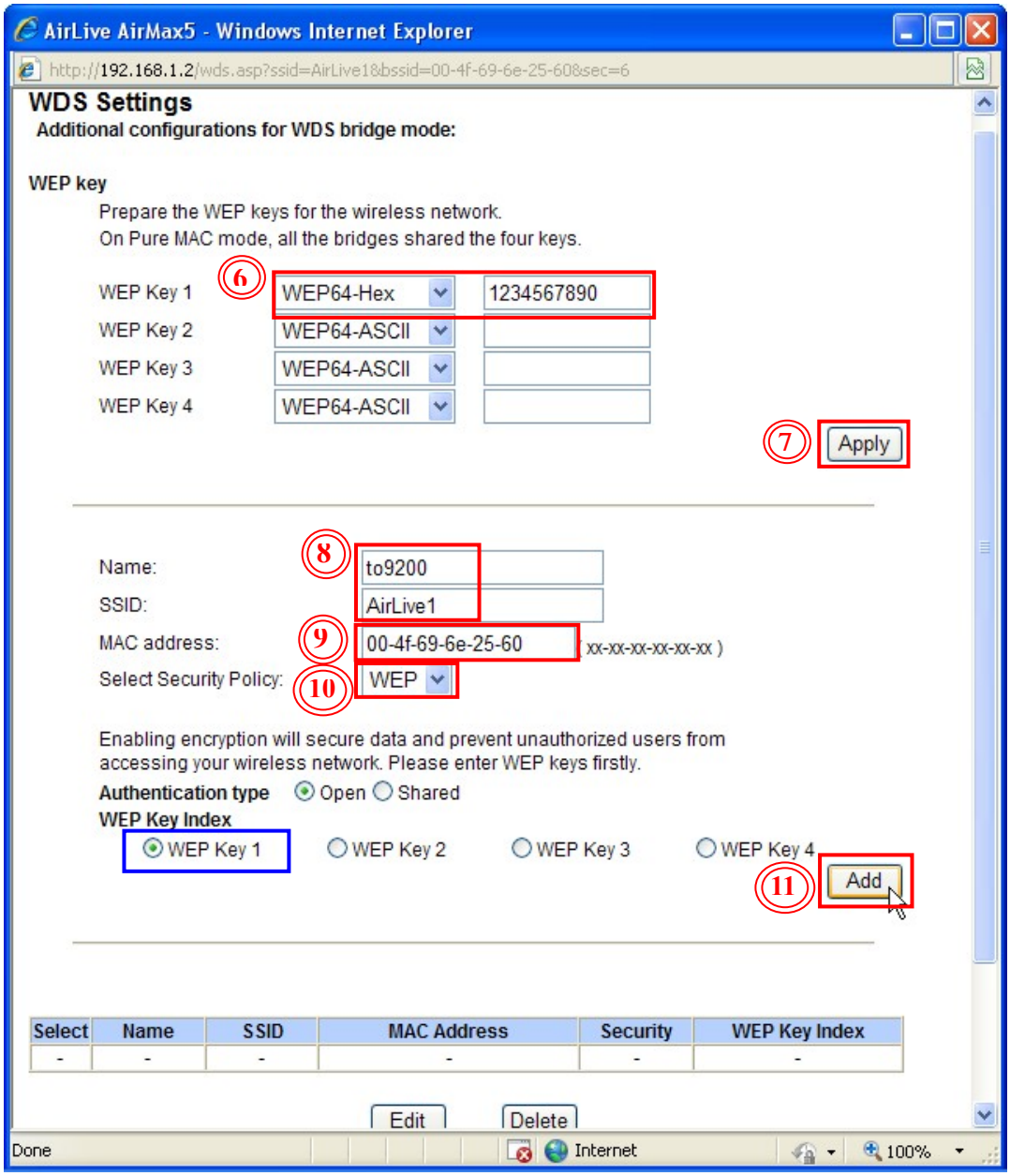
4. Then it will show the site survey result of the “Site Survey” dialog window. You can see the ESSID with WH-9200AP’s radio1, then please copy its MAC address.④
   (In our sample the ESSID is “AirLive1” of WH-9200AP’s Radio1)



5. Then come back to “Wireless Settings” page → Press “Setup” button of WDS Setting.⑤



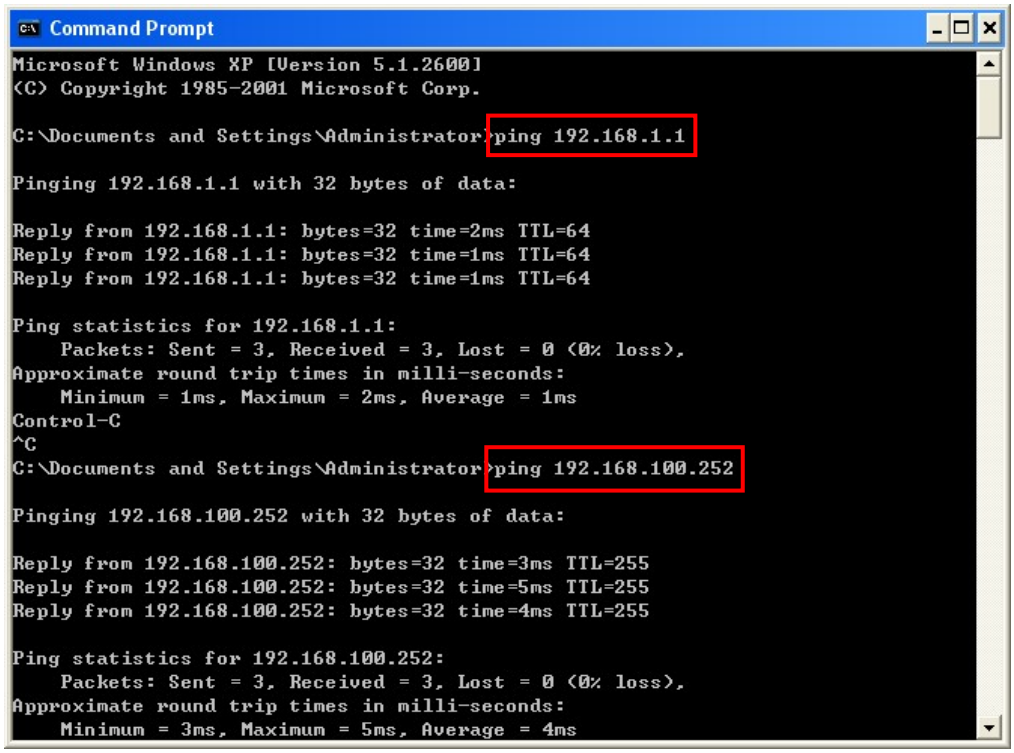
6. It will show the “WDS Settings” dialog window.
   We should be setting the encryption first.
   In this case, we use these parameters:
   WEP Key number: WEP Key 1
   WEP Key Format: WEP64-Hex
   WEP Key string: 1234567890⑥
   Remember press “Apply” button to save the encryption settings.⑦
   Then, enter any “Name” and “SSID” for your own in these field,⑧ then paste the WH-9200AP’s MAC address in the “MAC address” field.⑨
   Select the “WEP” with “Select Security Policy” field,⑩ then confirm the “WEP Key Index” is using “WEP Key 1” → press “Add” button to add the WDS connection of WH-9200AP’s Radio 1 in AirMax5.⑪

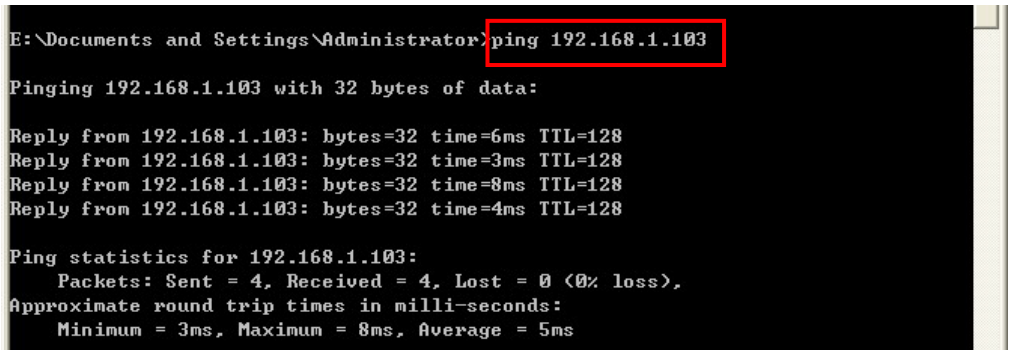


After configured successfully, the AirMax5 will connect with WH-9200AP's Radio1 automatic.

Step 3. Check the connections.

After configured successfully, you can ping WH-9200AP, WH-5420CPE and PC3's IP from PC2 to check if the connection was successful.





If you can't ping the PC3, please check the firewall is already disable of PC3's OS.