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WIZ610wi User's Manual

(Version 1.9.1)

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Upgrade History

Date	Version	Comment
2009-01-31	V1.0	Release
2009-03-16	V1.1	-Gateway mode 8080 port access added -Client mode WAN setting added -Serial Packing Condition added -Serial Command added
2009-05-18	V.1.2	-Client mode IP setting amended -Power Consumption fact amended -IGMP function added -Server connection trying interval function added on the serial client mode. -Data Packet ConditionTime(Second→Millisecond)
2009-06-18	V.1.3	-Serial Command Added
2009-07-14	V.1.4	-Serial Command Amended
2009-08-11	V.1.5	-Serial Command Added Server-Client connection status checking -Reference Schematic Amended(Pin No. 6, 7)
2009-10-30	V.1.6	-Pin description (table 9) Amended. GPIO7 -> nRS232_LED -Reference Schematic Amended (Pin No. 5) -Wizard Program introduction Added
2010-03-09	V.1.7	-Serial Command Added *Socket Connection Status Checking *TCP Server setup(IP address or Domain Name) -SSL module added -Default SSID is changed to 'WLANAP' -Serial to WiFi Reference schematic Added
2010-08-03	V.1.8	-Serial command amended
2010-12-01	V.1.9	-Serial command modified & amended -Serial max baud rate modified (Max 921,600bps) -Temperature specification modified -Aging test report added.
2011-01-25	V.1.9.1	-Pin pitch information added at Fig.36

WIZnet's Online Technical Support

If you have any questions about our products, please visit our website and submit your questions on the Q&A Board. We will reply your questions as soon as possible

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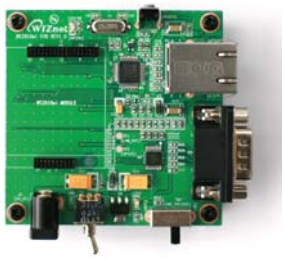
1. Introduction

WIZ610wi is the gate way module which provides a bridge for RS-232 or Ethernet to IEEE802.11 b/g wireless communications. Devices with the interface of RS-232 serial or Ethernet can established a wireless network which can enable remote monitoring, management and controlling.

Main Features

- Embedded 802.11b/g Wireless Networking
- Access Point, Client, Gateway, Serial to WLAN mode Supported
- Ethernet to Wireless Bridging
- Security with 64/128 bit WEP, WPA, WPA2(AES)
- MII, UART, U.FL(WLAN) Interface
- Ready to use serial to wireless application
- Max 25Mbps Data Streaming
- Compact Size : 39mm X 32mm X 4.7mm
- RoHS Compliant

Products Contents (WIZ610wi-EVB)

	WIZ610WI Module
	WIZ610wi Evaluation Board
	Serial Cable (Connect Serial Device to Test Board)
	Network Cable (Crossover Cable)
	Power (DC 5V 2A Adaptor)

	Antenna (2dBi PCB type + Coaxial Cable)
	CD (Manual, H/W & SW related Materials)

Table 1. Products Contents.

1.1 Product Specification

1.1.1 WIZ610wi Module

Wireless

ITEM	Specification
Wireless Standard	IEEE802.11b/g
Frequency Range	2.412~2.485GHz
Output Power (Tolerance(+/-1dBm)	802.11b: 16dBm@11Mbps 802.11g: 14dBm@6~54Mbps
Receive Sensitivity	802.11b: -65dBm@11Mbps 802.11g: -76dBm@54Mbps
Data Rates	54Mbps-1Mbps
Modulation Type	11g: OFDM(64QAM, 16QAM, QPSK, BPSK) 11b: DSS(CCK, DQPSK, DBPSK)

Table 2. Products Specification - Wireless

Hardware

ITEM	Specification
Interface	MII, UART, Power, 1.27mm Pitch Header Pin
	U.FL(wireless)

Temperature	Operation: -30℃~70℃ (Refer to the 7. Aging test report) Storage: -40℃~115℃
Humidity	Operation: 10% to 90%, Non-Condensing Storage: 5% to 90%, Non-Condensing
Serial	Baud Rate : Max 921,600bps
	Stop bits: 1
	Parity: None, Odd, Even
	Flow Control: XON/XOFF(software), CTS/RTS(hardware), none
Power	3.3V
Power Consumption	Under 480mA(3.3V)
Dimension	39mm X 32mm X 4.7mm Ø 3mm hole X 1
Weight	8.0g

Table 3. Products Specification - Hardware

Software

ITEM	Description
Operation Mode	Access Point, Client, Gateway, Serial to Wireless LAN
Protocol	ARP, UDP, TCP, Telnet, ICMP, IGMP, DHCP, PPPoE, BOOTP, HTTP, TFTP
Security	WEP 64/128big WPA/WPA2 PSK/AES/TKIP 802.1x(Radius) SSL
Management	HTTP, Telnet, Serial, UDP
Notification	Event Logging

Table 4. Products Specification - Software

1.1.2 WIZ610wi Test Board

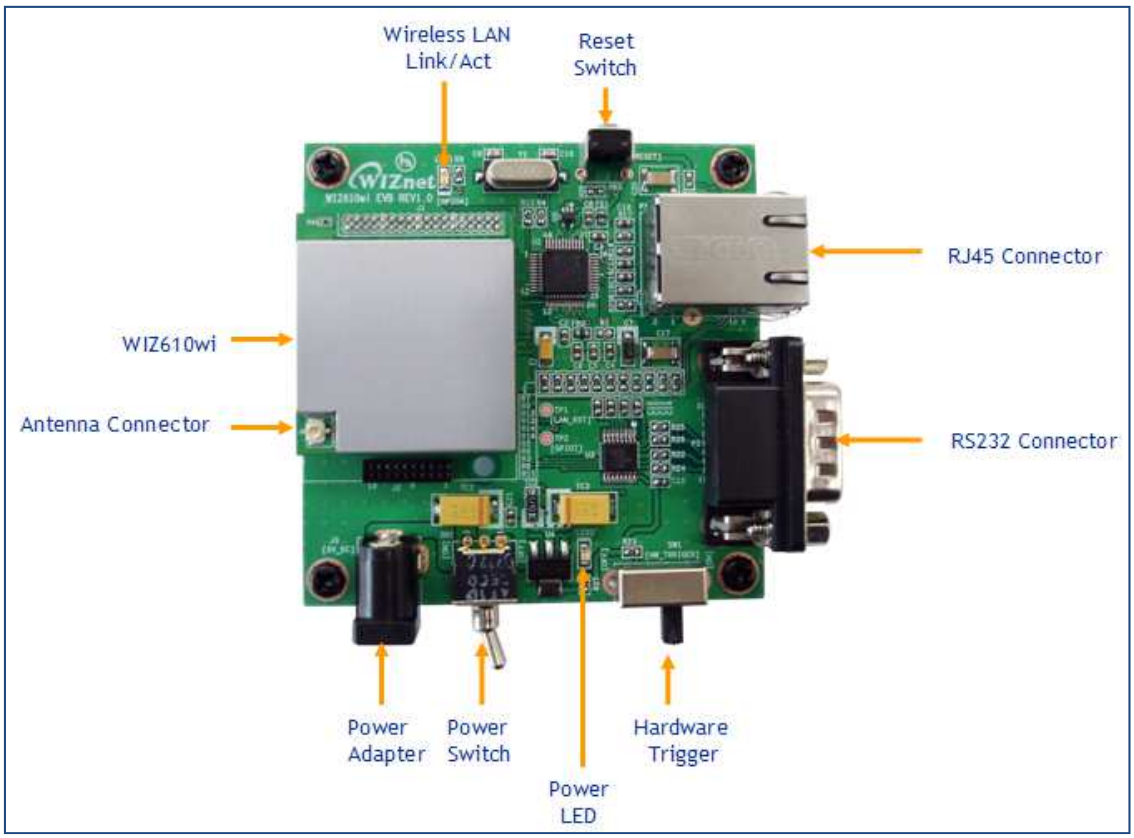


Figure 1. WIZ610wi Test Board

2. Getting Started

This manual describes all configurations in detail. For the quick and easy installation, please refer to "WIZ610wi Quick Installation Guide"

2.1. Hardware Installation

For the testing, module and test board should be prepared.

- **STEP1**: Insert WIZ610wi module in the socket of test board.
- **STEP2:** Connect the test board to the HUB or PC by using a network cable.
- **STEP3:** Connect the test board to the serial device by using the RS-232 serial cable.
- **STEP4:** Insert the power supply connector to the test board by using the 5V DC power adaptor.

2.2. Configuration

2.2.1 Wizard Program

Execute Wizard Program. You can download the Wizard Program from WIZnet webstie.

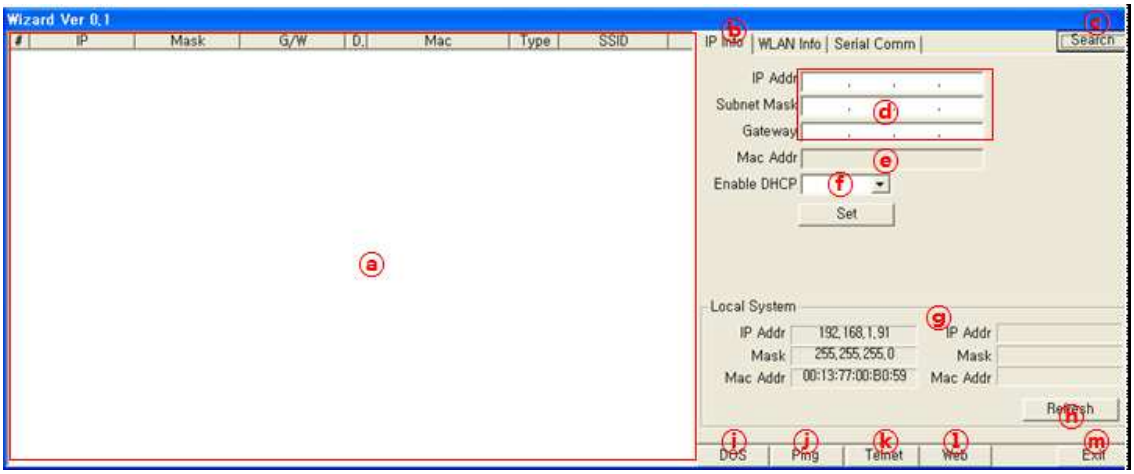


Figure 2. WIZ610wi Wizard Program

ⓐ: If you click ⓒSearch button, details about WIZ610wi on the same network will be displayed. You can check IP address, Subnet Mask, Gateway, DHCP, MAC Address, Standard Type (802.11b or g) and SSID.

ⓑ IP Info: If you select a WIZ610wi, the IP address information is displayed.

ⓓ You can check or modify the IP address, Subnet Mask and Gateway of a WIZ610wi module.

ⓔ MAC Addr: It displays the MAC Address of a WIZ610wi.

ⓕ Enable DHCP: You can enable or disable DHCP Server function.

After configuring ⓓ and ⓕ, click Set button for completing the configuration.

ⓖ Local System: It displays IP and MAC addresses of the PC where Wizard Program is installed.

ⓗ Refresh: After changing IP address of the PC, click Refresh button to display the updated information.

ⓘ DOS: It opens Command Prompt window.

ⓙ Ping: It sends Ping command to the selected WIZ610wi.

ⓚ Telnet: If you click Telnet Button, the window for telnet connection is shown. The default

login ID and password are admin.

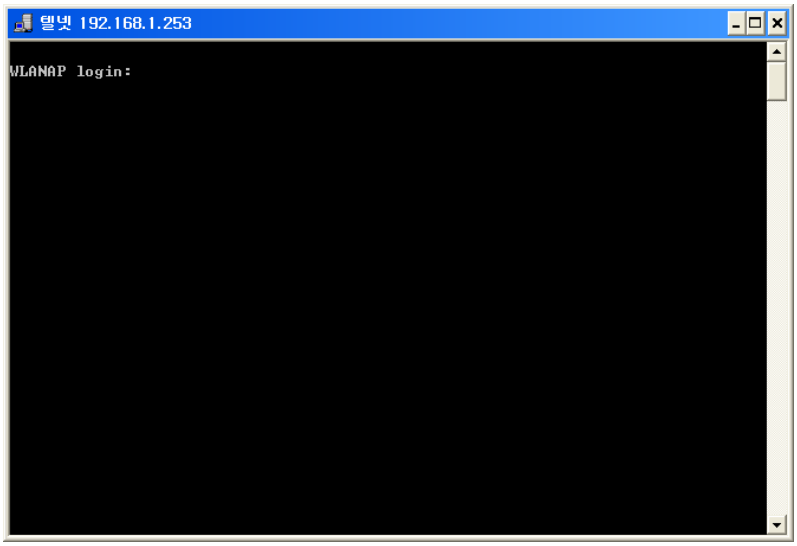


Figure 3. WIZ610wi Telnet Window

① WEB: If you click WEB button, the web configuration window will be shown. For the detail about web configuration, refer to 2.2.2 Connecting the webpage of WIZ610wi.

ⓜ EXIT: Wizard Program will be closed.

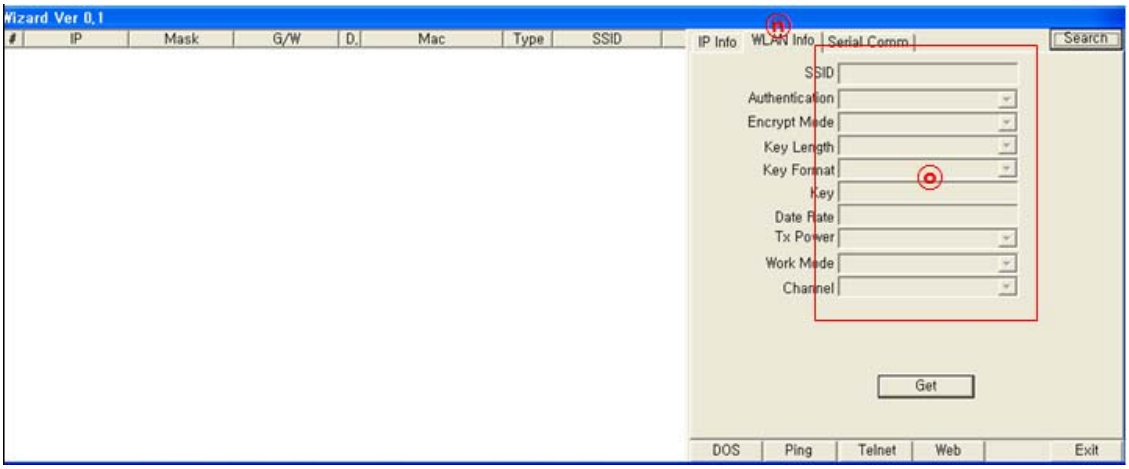


Figure 4. WIZ610wi Wizard Program

ⓝ: Select a WIZ610wi on the left window and click Get button. The wireless LAN configuration detail of the selected module will be displayed after 4 seconds. You can check the detail of SSID, Authentication, Encryption Mode, Key length, Key Format, Key Value, Data Rate, Tx Power, Work Mode, Channel and etc. You can't change the configuration.

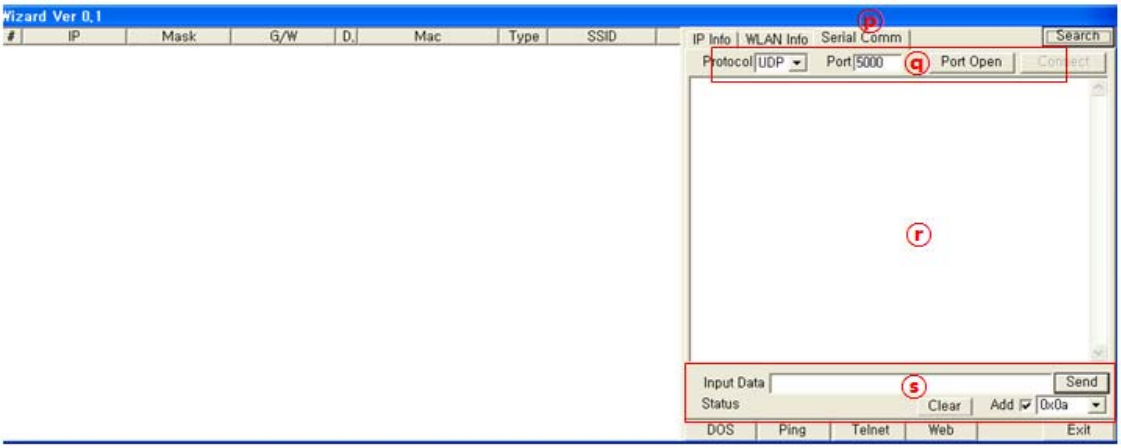


Figure 5. WIZ610wi Wizard Program

ⓟ Serial Comm: You can test the function of "Serial to Wireless". After connecting PC and WIZ610wi using serial cable, execute serial terminal program.

ⓠ Select protocol type – UDP or TCP, and input port number. Port Open button is enabled at the UDP mode, and Connect button is enabled at the TCP mode.

ⓡ Transferring data are displayed.

ⓢ Input data to be transmitted, and click Send button.

2.2.2 Connecting the Web page of WIZ610wi

1) Open a web browser on your PC and input "192.168.1.254", the default IP address of WIZ610wi.

Figure 6. Connecting to the Web page of WIZ610wi

Notice : Configure the network parameters of WIZ610wi and your PC.

- The default IP address of WIZ610wi is "192.168.1.254". Your PC's IP address should start with these three sets of numbers "192.168.1.XXX".
- WIZ610wi and PC can be connected through wireless network. Connect to WIZ610wi from PC by using default SSID "WLANAP"

---

2) A pop up will request you to input your User ID and Password.

Default User ID : admin Password : admin

Figure 7. Input ID & Password

2.2.3 Checking Status

1) System Data

Figure 8. System Data

ITEM	Description
Firmware Version	The firmware version of WIZ610wi is displayed
Firmware Date	The last date and time of firmware upgrade
MAC Address(LAN)	the MAC Address of WIZ610wi for Ethernet communication.
IP Address	the IP address of WIZ610wi.

Network Mask	the Network Mask of WIZ610wi.
Default Gateway	the Gateway of WIZ610wi.
DHCP Server	shows the DHCP server function is activated or not.
DHCP Start IP Address	shows the first IP address to be assigned from DHCP server.
DHCP Finished IP Address	shows the last IP address to be assigned from DHCP server.
MAC Address(WLAN)	the MAC Address for wireless communication.
SSID	the SSID of WIZ610wi.
Channel	the wireless channel of WIZ610wi.

Table 5. System Data

Notice : WIZ610wi supports the MAC addresses for both Ethernet and Wireless interfaces.

2) Active Client

Figure 9. Active Clients

In this page, the information of clients connecting to WIZ610wi is displayed. If you click "Refresh" button, the client list and information are updated.

2.2.4 Network Setting

You can configure network parameters of WIZ610wi.

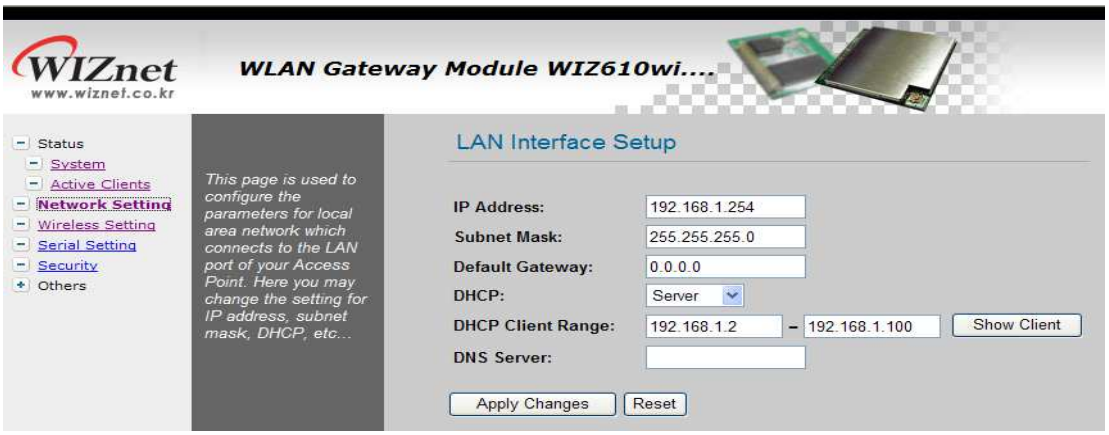


Figure 10. Network Setting

- **IP Address**: The default IP Address is set as "192.168.1.254".
- **Subnet Mask**: The default Subnet Mask is set as "255.255.255.0".
- **Default Gateway**: The default Gateway is set as "0.0.0.0".
- **DHCP**: If you want to activate the DHCP Server function, select the "Server". If not, select "Disable".

Notice: When the WIZ610wi's IP address is managed by another DHCP server in the upper layer, the DHCP function in your wireless module will be disabled. All your clients connecting to your WIZ610wi can not recognize your module as a DHCP server.

- **DHCP Client Range**: When WIZ610wi operates as the DHCP Server, the IP address range must be

assigned in order for the clients to connect. If the DHCP server function is disabled, this DHCP Client

Range is not activated.

- **Show Client :** If you click the "Show Client" button, a window is popped up to show a list of clients.

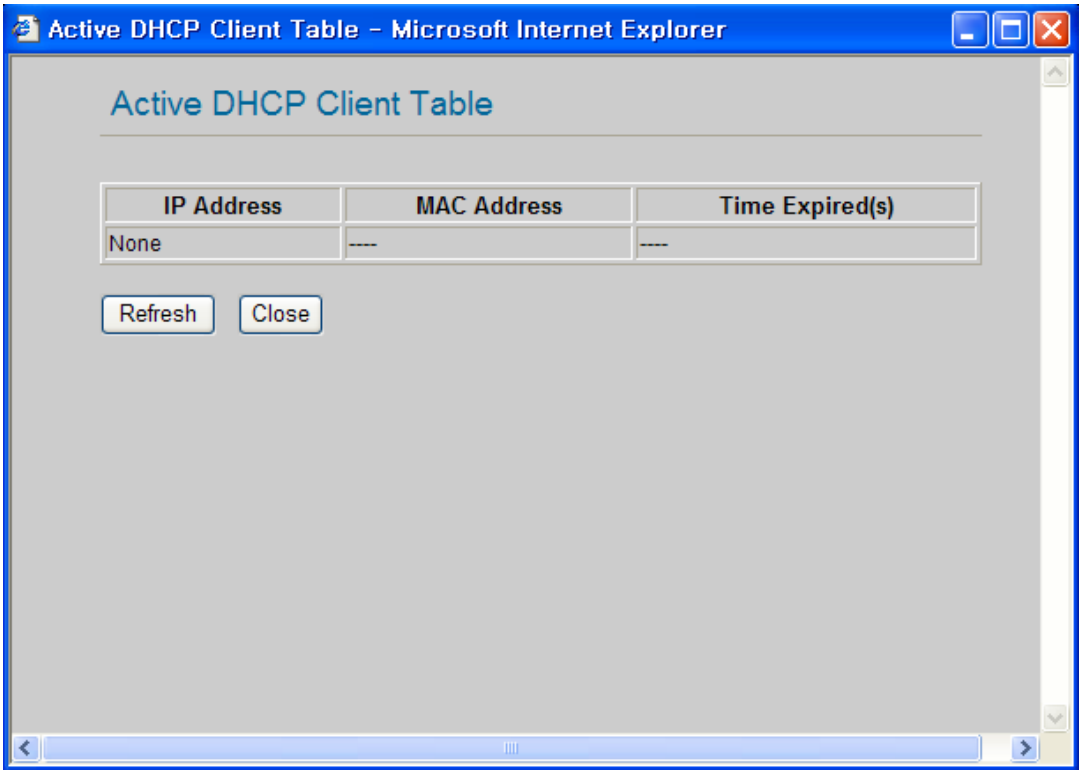


Figure 11. Active DHCP Client Table

- **Apply Changes** : By clicking this button, the modified values are applied. After changing, the page is refreshed to re-connected to the new IP address.

2.2.5. Wireless Setting

2.2.5.1. Mode Selection

You can select one of Access Point, Gateway and Client for the wireless connection mode.

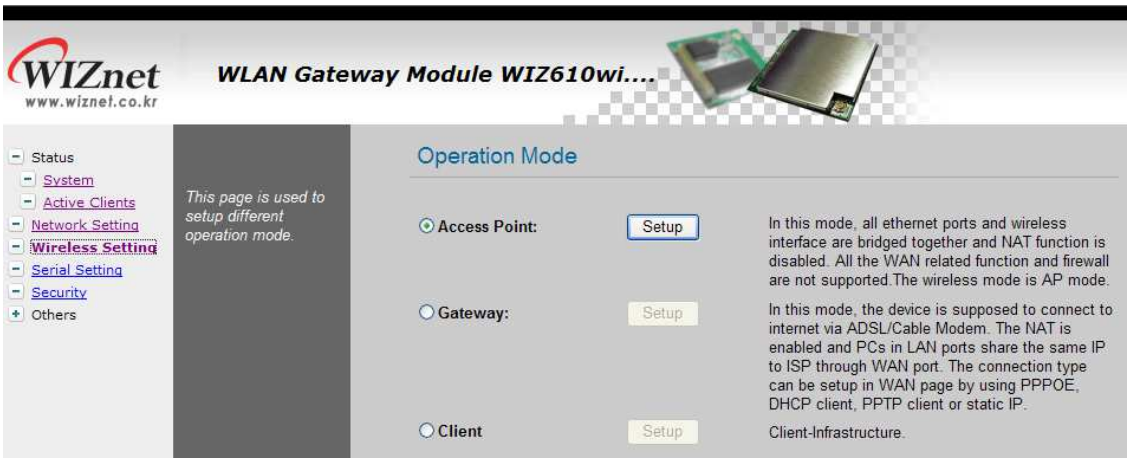


Figure 12. Operation Mode

Access Point is the default mode. If you select Gateway or Client and click the "Setup" button, the progress bar will be shown.

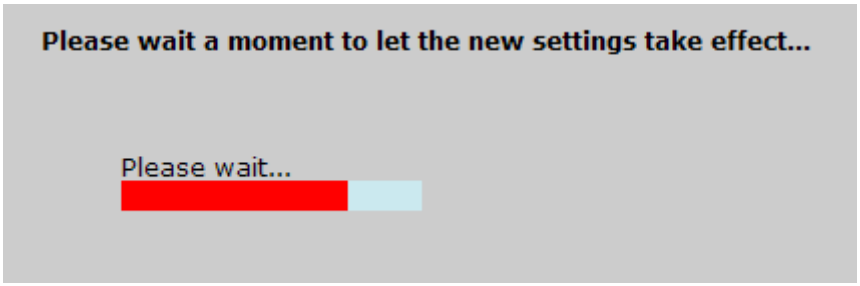


Figure 13. Changing Operation Mode

1) Access Point Mode

In this mode, all Ethernet ports and wireless interface are bridged together and NAT function is disabled. All the WAN related function and firewall are not supported.

2) Gateway Mode

In this mode, your device can connect to the internet via ADSL/Cable Modem. The NAT is enabled and PCs in LAN ports share the same IP to ISP through WAN port. WAN connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client or static IP.

3) Client Mode

In this mode, your device act as a client. If you configure PC or application device as DHCP client, Access Point will be the DCHP Server and WIZ610wi doesn't act as DHCP Server.

2.2.5.2. IP Configuration in Each Mode

1) Access Point Mode

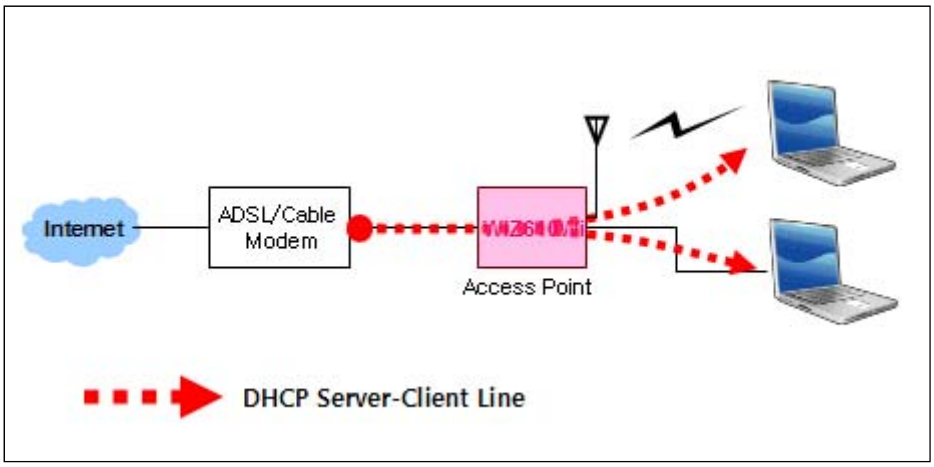


Figure 14. Access Point Mode - 1

- The IP address assigned to WIZ610wi is for administration and web configuration.
- Even though the WIZ610wi is configured as DHCP Server, the PC will acquire IP address from IP Sharing device or ADSL/Cable Modem.

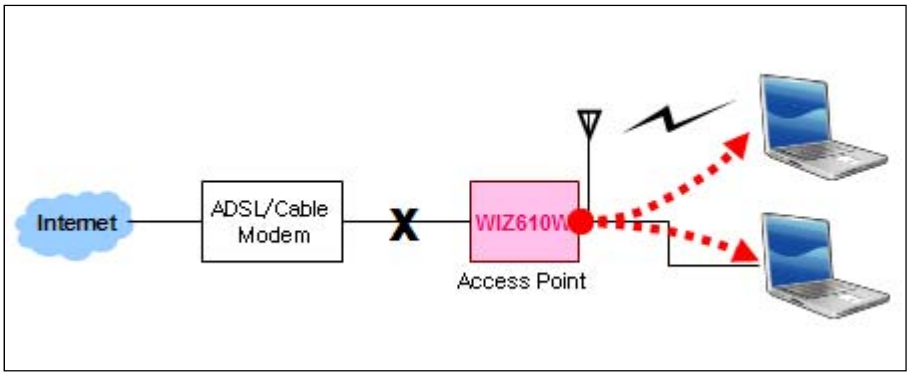


Figure 15. Access Point Mode -2

- If there is not IP Sharing Device or ADSL/Cable modem, WIZ610wi will assign the IP addresses which is in DHCP IP range to PCs through wired or wireless network.

2) Gateway Mode

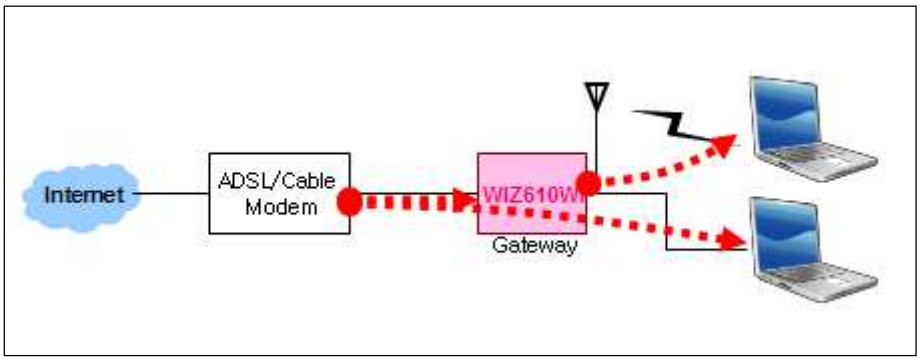


Figure 16. Gateway Mode

WIZ610wi operates as DHCP Server for the wireless communication.
WIZ610wi operates as Static/DHCP/Client/PPPoE for the wired (Ethernet) communication.

3) Client Mode

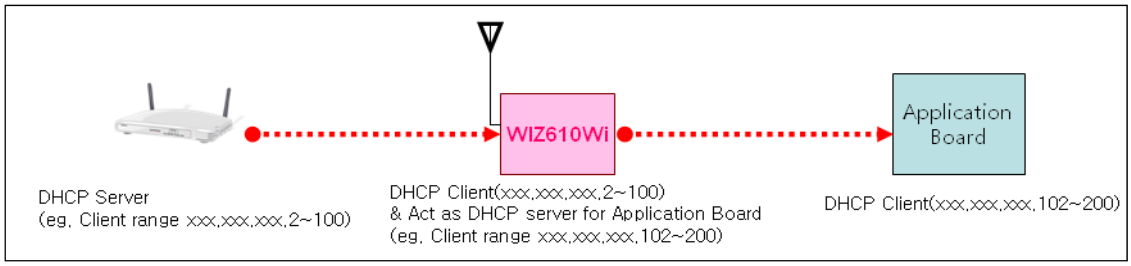


Figure 17. Client Mode

WIZ610wi can be set IP as Static or DHCP client at 'Client Setup>WAN Port Setup'. And also WIZ610wi can be act DHCP Server simultaneously by assigning adding 100 of first DHCP server. For example, if DHCP server's client range is XXX.XXX.XXX.2~100, then WIZ610wi's assigning DHCP Client IP address to application board is XXX.XXX.XXX.102~200.