WIZ630wi User Manual

(Version 0.93)

For more information, please visit our website at http://www.wiznet.co.kr

Document Revision History

Date	Revision	Changes
2012-01-31	V0.91	

<Contents>

1. Introduction

WIZ630wi is a gateway module for converting the RS-232 protocol to TCP/IP protocol. WIZ630wi enables a device with RS-232 serial interface to connect to TCP/IP network through LAN and operate remote measuring, administration, and control. WIZ630wi has an embedded switch inside for IP-Router function, and can operate as 3G-Router/WiBro-Router through USB interface. Devices that communicates through serial communication use Serial-to-LAN, Serial-to-WIFI, Serial-to-3G, and Serial-to-WiBro; WIZ630wi can be used for TCP and UDP communication to the upper layer administration server.

1.1 EVB Construction

1.1.1. Packaging

Figure 1. WIZ630wi-EVB Packaging

1.1.2. Contents

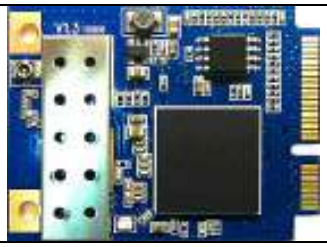
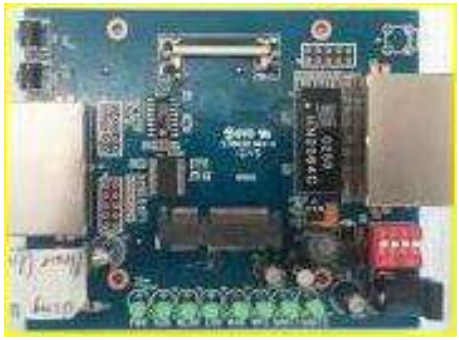
Section	Qnt.	Contents
WIZ630wi	1ea	WIZ630wi
		
WIZ630wi-EVB	1ea	WIZ630wi-EVB
		
Antenna	1 ea	2dBi WI-FI Antenna (Dipole)
		
Serial Cable	2 ea	Serial Cable
		
LAN Cable	1 ea	LAN Cable
WI-FI Jump cable	1 ea	WI-FI Jump cable (connection between Module and Antenna)
		
Adapter	1ea	DC 5V/2A Adapter

Table 1. WIZ630wi-EVB Contents

1.1.3. HW Interface

- LAN ports
- Serial ports
- 1 USB
- 1 Config Switch
- WIZ630wi I/F Socket
- 1 Reset Button
- 1 WPS Button
- Power connector

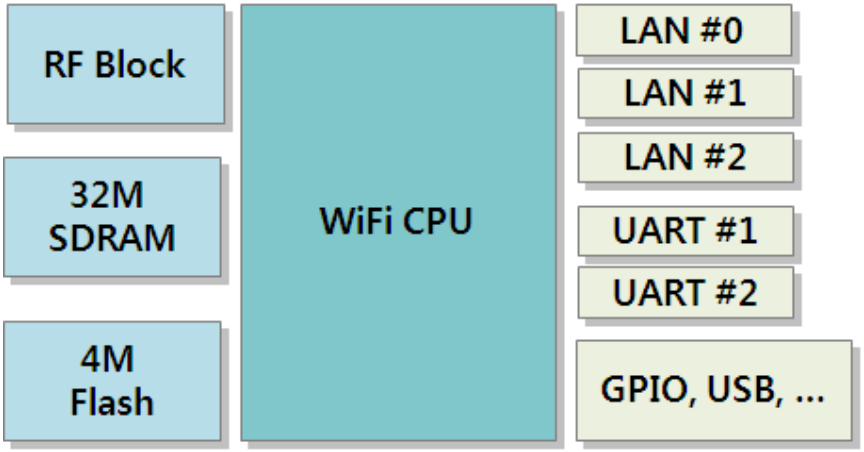


Figure 2. WIZ630wi Interface

1.2 Features

- Complies with IEEE802.11n 4.0.
- Router/AP(Bridge)/AP-Client/Client(Station)/Ad-hoc Mode , WDS/Repeater supported
- 1T1R RF Interface
- Physical link rate up to 150Mpbs
- Built-in 1 WAN and 2 LAN ports
- USB / 2 Serial Ports supports
- Working as Wi-Fi Router
- Working as 3G Router
- Working as Wibro / Wimax Router
- WEP 64/128bit, WPA/WPA2-PSK TKIP, AES and 802.1x
- 802.11e and WMM (Wi-Fi Multimedia)
- Router and Firewall function supported
- Serial to WiFi/Ethernet / Serial to 3G Internet / Serial to Wibro(Wimax)

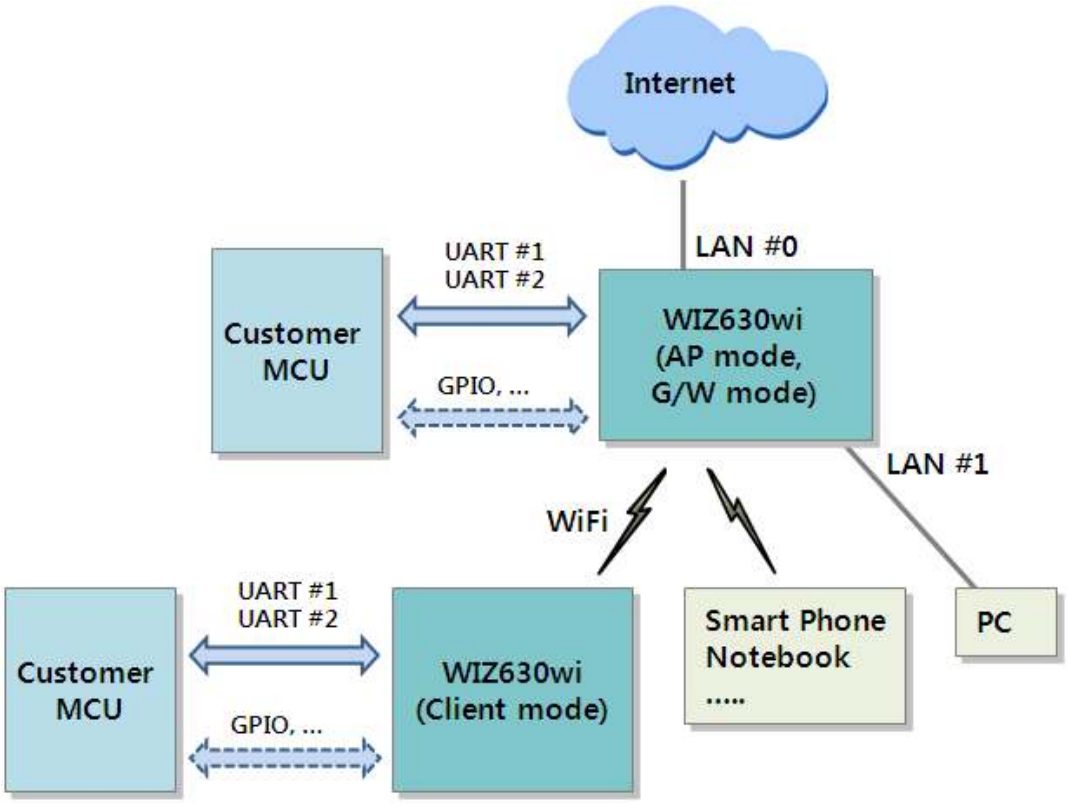


Figure 3. WIZ630wi Functions

1.3 Specifications

1.3.1. Wireless Specifications

Type	Description
Wireless Standard	IEEE802.11b/g/n
Frequency Range	USA: 2.400 ~ 2.483GHz Europe: 2.400 ~ 2.483GHz Japan: 2.400 ~ 2.497GHz China: 2.400 ~ 2.483GHz
Operating Channels	USA/Canada: 11(1 ~ 11) Major Europe Countries: 13(1 ~ 13) France: 4(10 ~ 13) Japan: 14 for 802.11b(1 ~ 14), 13 for 802.11g(1 ~ 13) Korea/China: 13(1 ~ 13)
Output Power (Tolerance(+/-1dBm)	802.11b: 17dBm@11Mbps 802.11g: 14dBm@54Mbps 802.11n: 14dBm@150Mbps/72Mbps
Receive Sensitivity	802.11b: -89dBm@11Mbps 802.11g: -74dBm@54Mbps 802.11n(40MHz): -66dBm@150Mbps 802.11n(20MHz): -70dBm@72Mbps
Data Rates	802.11b: 1,2,5.5,11Mbps 802.11g: 6,9,12,18,24,36,48,54Mbps 802.11n(20MHz): 7,14.5,21.5,28.5,43.5,57.5,65,72Mbps 802.11n(40MHz): 29.5,86.5,115,130,144,150Mbps
Modulation Type	11g: OFDM(64QAM, 16QAM, QPSK, BPSK) 11b: DSS(CCK, DQPSK, DBPSK)
Operation Distance (???)	802.11b Outdoor: 150m@11Mbps, 300m@1Mbps Indoor: 30m@11Mbps, 100m@1Mbps 802.11g Outdoor: 50m@54Mbps, 300m@6Mbps Indoor: 30m@54Mbps, 100m@6Mbps 802.11n Outdoor: 30m@150Mbps, 250m@7Mbps Indoor: 20m@150mbps, 100m@7Mbps
Antenna	u.FL (EVB : 1T1R 2dBi)

Table 2. WiFi Specifications

1.3.2. Hardware

Type	Description
Interface	**Serial port** : 2 EA **LAN port** : 3EA **USB port** : 1 USB Host Port **Socket Type** : Mini-PCI Express socket
	U.FL(wireless)
Temperature	Operation: -30℃~80℃ Storage: -30℃~80℃
Humidity	Operation: 10% to 90%, Non-Condensing Storage: 5% to 90%, Non-Condensing
Serial	Baud Rate : 1200 ~ 921,600bps
	Stop bits: 1, 2
	Parity: None, Odd, Even
	Flow Control: UART1: XON/XOFF(software), CTS/RTS(hardware), none UART2: XON/XOFF, none
Power	5V 2A (Module 3.3V/1A) (???)
Power Consumption (???)	1W = 5V x 200mA (No LAN port used) 1.05W = 5V x 200mA + 50mA x 1 (1 LAN port) 1.10W = 5V x 200mA + 50mA x 2 (2 LAN ports) 1.20W = 5V x 200mA + 50mA x 3 (3 LAN ports)
Dimension	33mm X 43mm X 4.5mm
Weight	6g

Table 3. HW Specifications

1.3.3. Software

Type	Description
Operation Mode	Access Point(Bridge), Client(Station), Gateway, AP-Client, ad-hoc
Protocol	ARP, UDP, TCP, Telnet, ICMP, DHCP, PPPoE, BOOTP, HTTP
Security	WEP 64/128bit WPA/WPA2-PSK AES/TKIP 802.1x(Radius)
Management	HTTP, Serial, UDP
Notification	Event Logging
Serial To WiFi	2 Serial Port supported
3G router	3G(WCDMA) Router function

Table 4. SW Specifications

2. Connecting the Web page of WIZ610wi

◆ Some items may be not supported depending on the version.

2.1 Web address

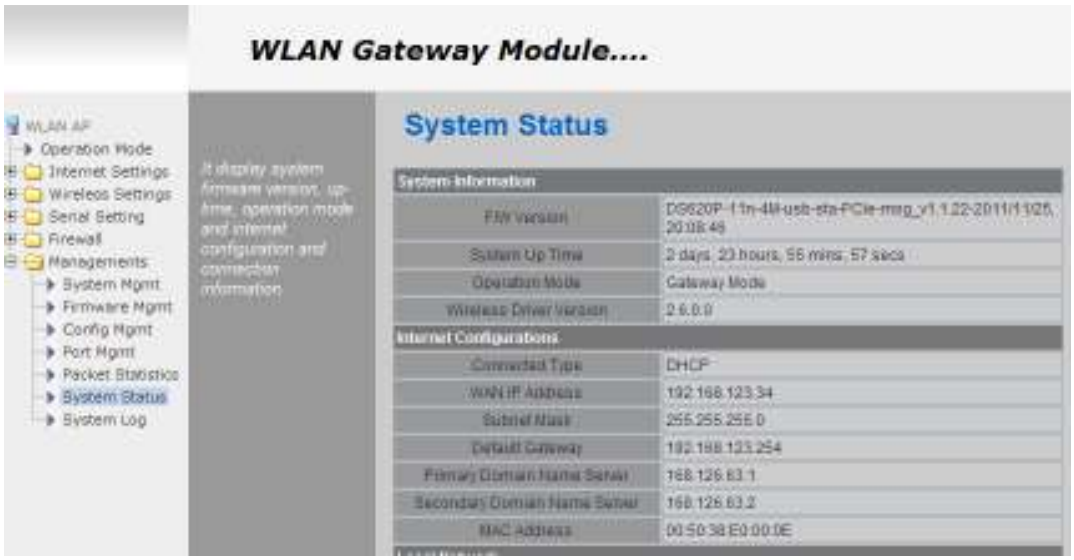
◆ Open a web browser on user's PC. Input the default IP address of WIZ630wi, "192.168.16.254" and click Enter.

2.2 Web Login

◆ A pop up will request user to input User ID and Password

◆ User ID: admin / Password: admin

◆ The system's basic information, as shown below, will appear if successfully authenticated.

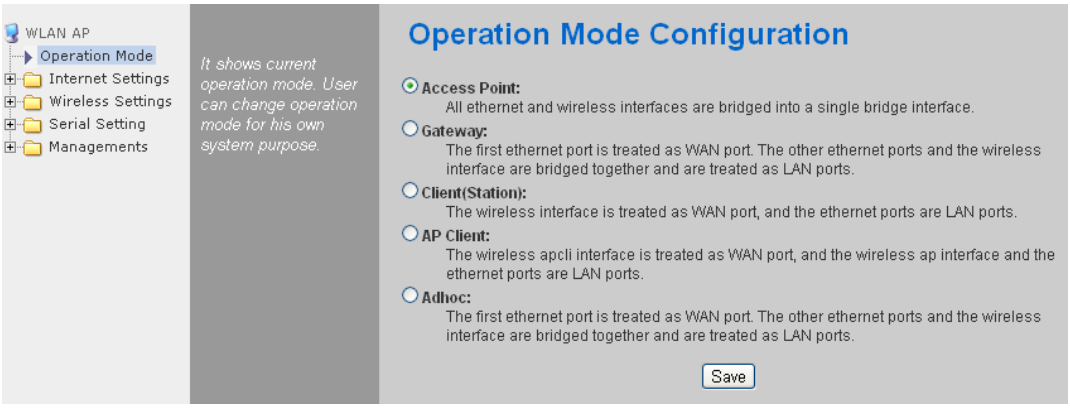


Type	Description
F/W Version	The firmware version of WIZ630wi is displayed.
System Up Time	System up time displayed.
Operation Mode	System operation mode displayed.
Internet Configuration	Information of the external network is displayed.
Local Network	Information of the Local network is displayed.
Ethernet Port Status	Link of LAN Port status is displayed.

3. Operation mode

◆ User can select the operation mode.

◆ The default setting of WIZ630wi is AP Mode. (DHCP Server Enabled)



3.1 Access Point (Bridge)

In this mode, all Ethernet ports and wireless interface are bridged together. Wired/Wireless interface has the same IP address space with its top mesh. DHCP Server function is disabled and WIZ630wi does not assign an IP. Wireless (LAN Port included) sending periodic Broadcast Packet to Station and maintains a connection with Station.

3.2 Gateway (Router)

Operate in router mode. Interfaces are separated into WAN I/F (Top Internet Business Network), LAN I/F (Sub Private Network: 192.168.16.xxx), Wireless I/F (Sub Private Network: 192.168.16.xxx). Port # 0 will be assigned to the WAN Port. WIZ630wi periodically sends Broadcast Packet to Sub-LAN (LAN Port included) and maintains connection with Station.

3.3 Client (Station)

Wireless I/F is assigned as WAN Port and all Ethernet Ports are bound to LAN Port. Set the profile and the WIZ630wi is automatically connected to the AP when re-booting in the future. Devices that are connected through the LAN port are assigned a private IP. WIZ630wi periodically sends PING Packet to AP Gateway and maintains connection with AP.

3.4 AP-Client mode

Wireless I/F is assigned as WAN Port and all Ethernet Ports are bound to LAN Port. This mode is similar to Station mode, however the difference is that the Wireless I/F will operate as client with AP simultaneously. WIZ630wi periodically sends Broadcast Packet to Sub-LAN (LAN Port included) and maintains connection with Station.

3.5 ad-hoc mode

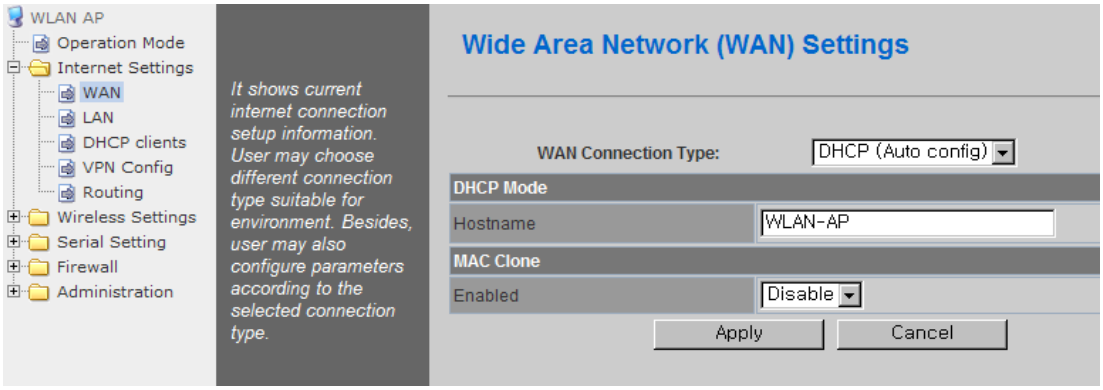
This mode is similar to Gateway mode. The Wireless I/F operates as ad-hoc and connects to Station Point-

to-Point. There is no communication between the LAN Port and Wireless I/F (ad-hoc).
WAN ←→ ad-hoc: OK
WAN ←→ LAN: OK
ad-hoc ←→ ad-hoc: OK
ad-hoc ←→ LAN: No Communication

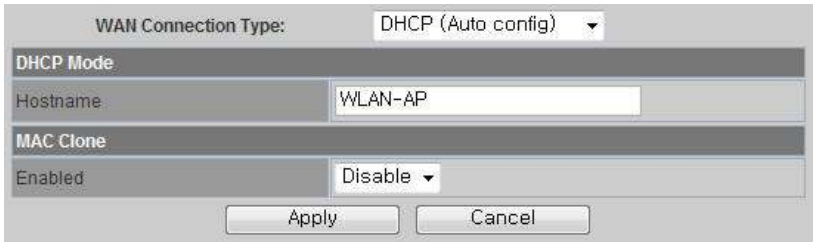
4. Internet Setting

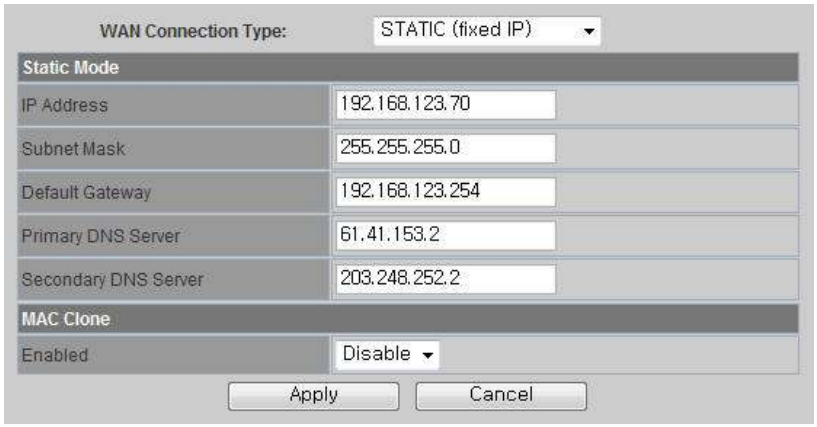
4.1 Internet connection setting

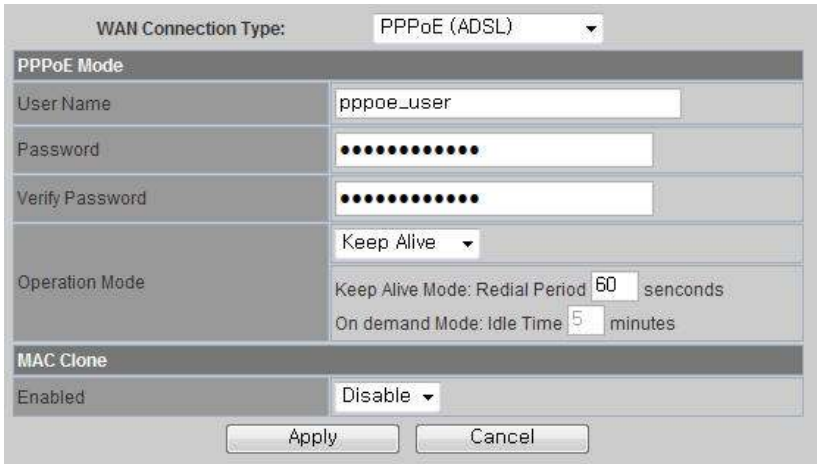
- Select the internet service type and WIZ630wi can connect to the internet
- If users would like to access to Internet, Gateway Mode should be selected.



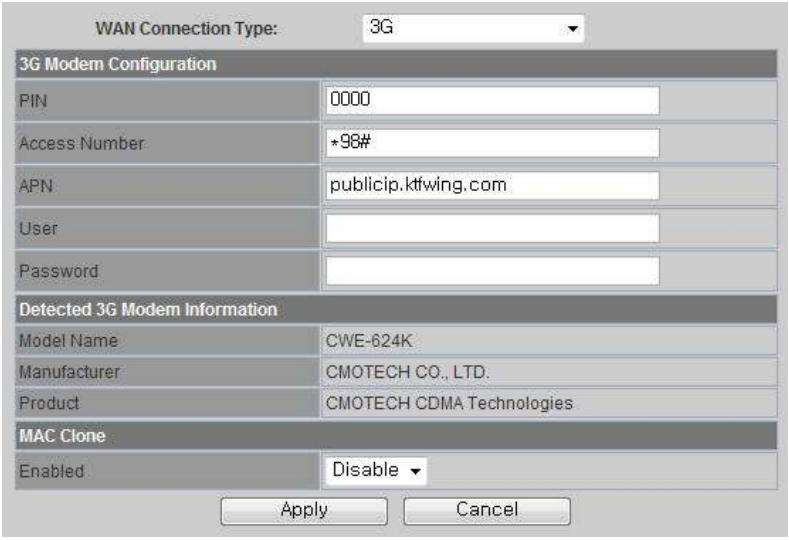
Type	Description
WAN Connection Type	Select the communication ways for Internet's connection - Static(Fixed IP) - DHCP (Auto config) - PPPoE
Host Name	Settings about module's host name
Mac Clone	Some ISPs require that you register a MAC address. Users can directly enter MAC address or use the MAC Clone function.

Type	Description
DHCP(Auto config)	User should choose DHCP Mode when the user connects to the internet service such as FTTH, cable modems, VDSL, IP-ADSL. 
Static(Fixed IP)	Static IP setting window. If user receives static IP from ISP, user should set the Fixed IP .

<table>
<tr><td></td><td> 

Input the network information that got from ISP
(such as IP, Subnet, Gateway, DNS)</td></tr>
<tr><td>PPPoE(ADSL)</td><td> 

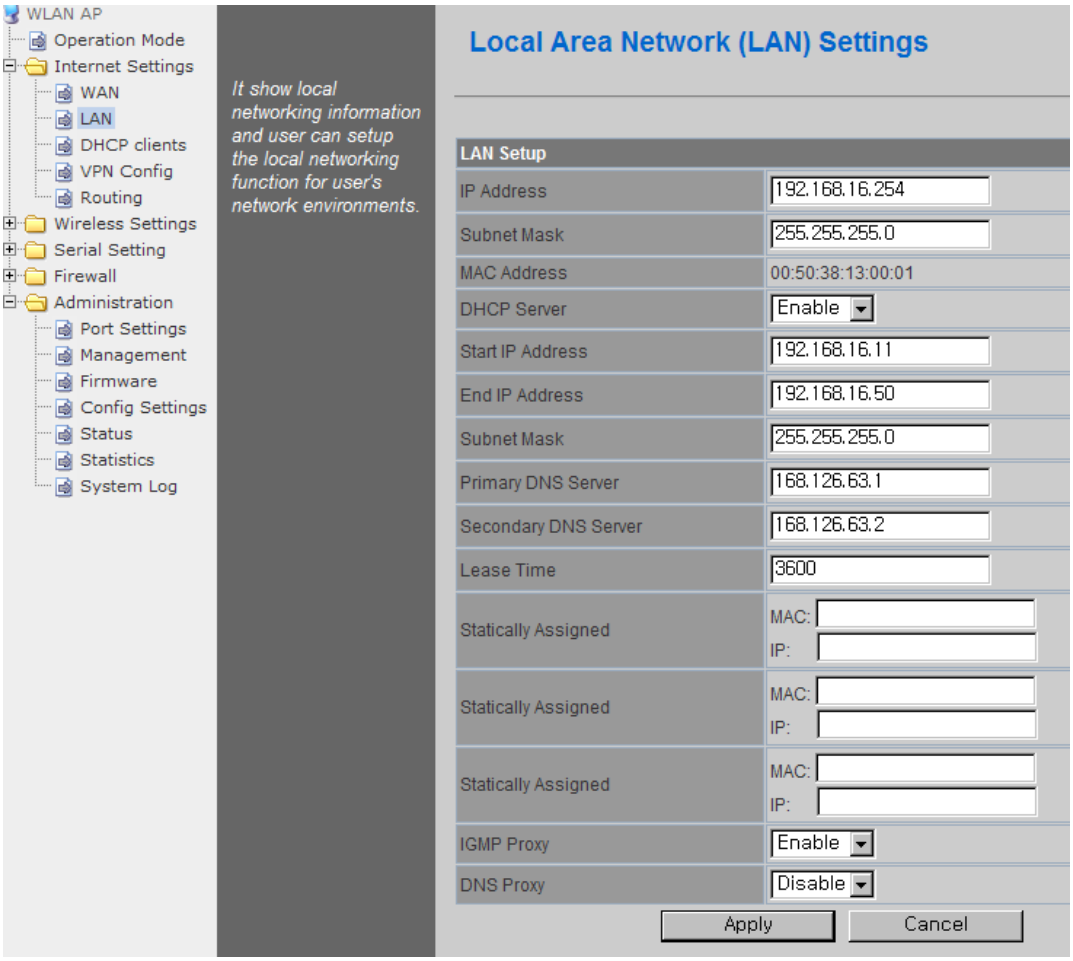
-. User Name: Setting the User Name received from ISP
-. Password: Password assigned by ISP
-. Operation Mode: This mode is used for re-connecting when connection is bad.</td></tr>
<tr><td>3G Mode</td><td>-. This mode is supported only in 3G-Router, Wibro, Wimax Router firmware
-. Connect the 3G modem or WiBro/Wimax modem to the module’s USB port and WiFi/Wired LAN service will be provided.</td></tr>
</table>



Wibro/Wimax supports all USM modems that use Xronet's chips, and certain USB modems that use Samsung's WiBro chipset.

4.2 Local network setting

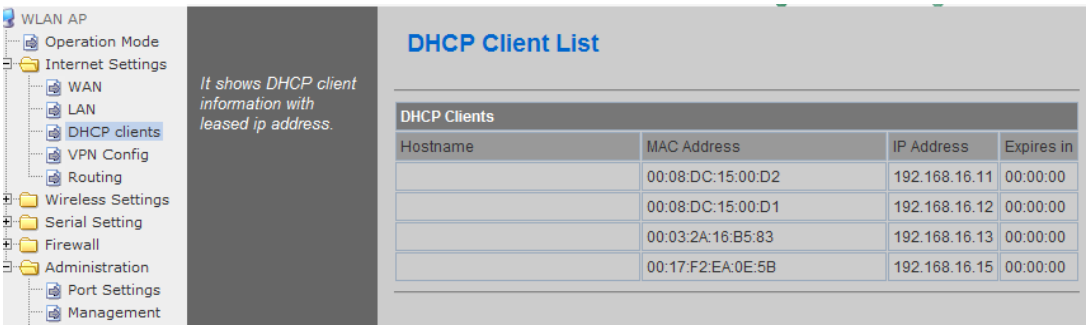
◆ WIZ630wi internal IP setting, DHCP server setting and DHCP.



Type	Description
IP Address	Enter the module's IP. (Default Value : 192.168.16.254)
Subnet Mask	Enter the module's subnet mask.
MAC Address	MAC Address of module's LAN port (Wireless included). (Read Only)
DHCP Server	Decide whether the module's DHCP server will be used.
Start IP Address	Set the start IP address that will be assigned from the DHCP server
End IP Address	Set the end IP address that will be assigned from the DHCP server.
Subnet Mask	Enter the value of subnet mask.
Primary DNS Server	Enter the primary DNS server address.
Secondary DNS Server	Enter the secondary DNS server.
Lease Time	Enter the lease time when IP address is assigned.
Statically Assigned	Maximum of three IP can be statically assigned when IP address is assigned.

4.3 DHCP Client Information

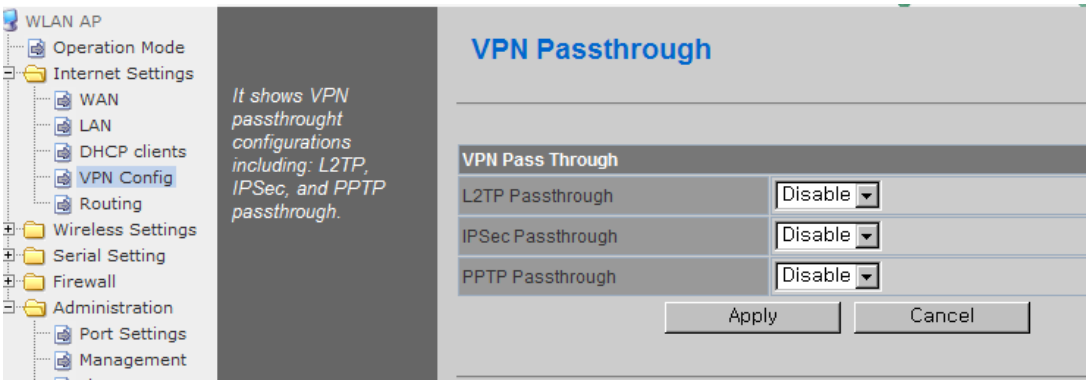
◆ The IP information that is assigned from the DHCP server is shown.



Type	Description
Host name	Client's host name is shown
Mac Address	Client's MAC address is shown.
IP Address	Client's IP address is shown.
Expires in	The usable time of client's IP address is shown.

4.4 VPN setting

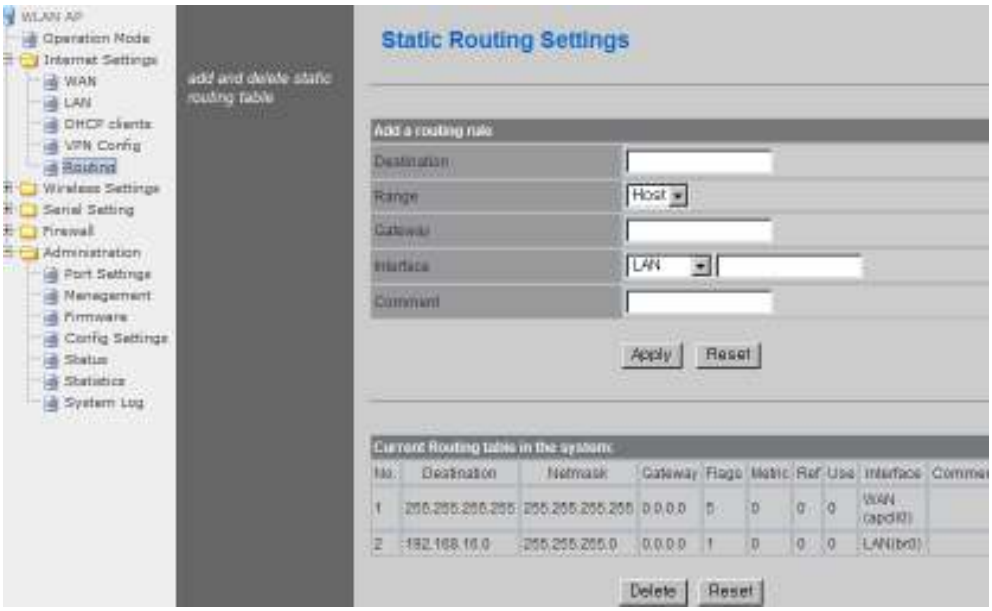
◆ This section will explain on VPN packet settings.



Type	Description
L2TP Pass-through	Enable : VPN L2TP packet is passed through WAN. Disable : VPN L2TP packet is not passed through WAN. (Default value)
IPSec Pass-through	Enable : VPN IPSec packet is passed through WAN. Disable : VPN IPSec packet is not passed through WAN. (Default value)
PPTP Pass-through	Enable : VPN PPTP packet is passed through WAN. Disable : VPN PPTP packet is not passed through WAN. (Default value)

4.5 Static Routing Setting

- ◆ User can modify the routing table at static routing settings.
- ◆ We do not recommend any modification.

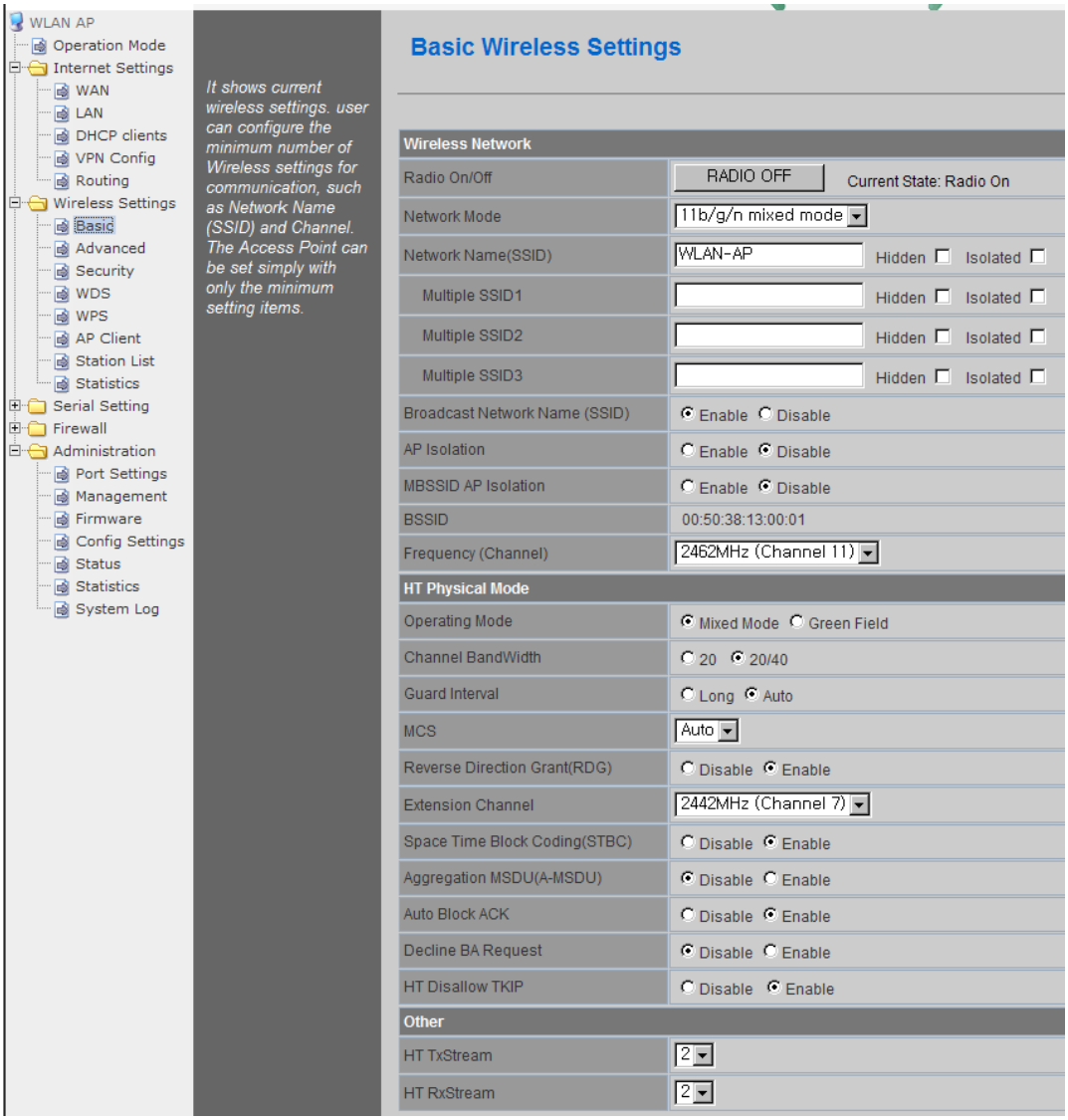


Type	Description
Destination	Enter the Target IP address or network address.
Range	Select whether the routing table is HOST or NETWORK
Netmask	If Range is NETWORK, enter subnet mask.
Gateway	Enter the gateway address to be passed when communicating with target.
Interface	Select whether the target is LAN or WAN.

5. Wireless setting

5.1 Basic settings

◆ This chapter is about basic setting for wireless LAN.



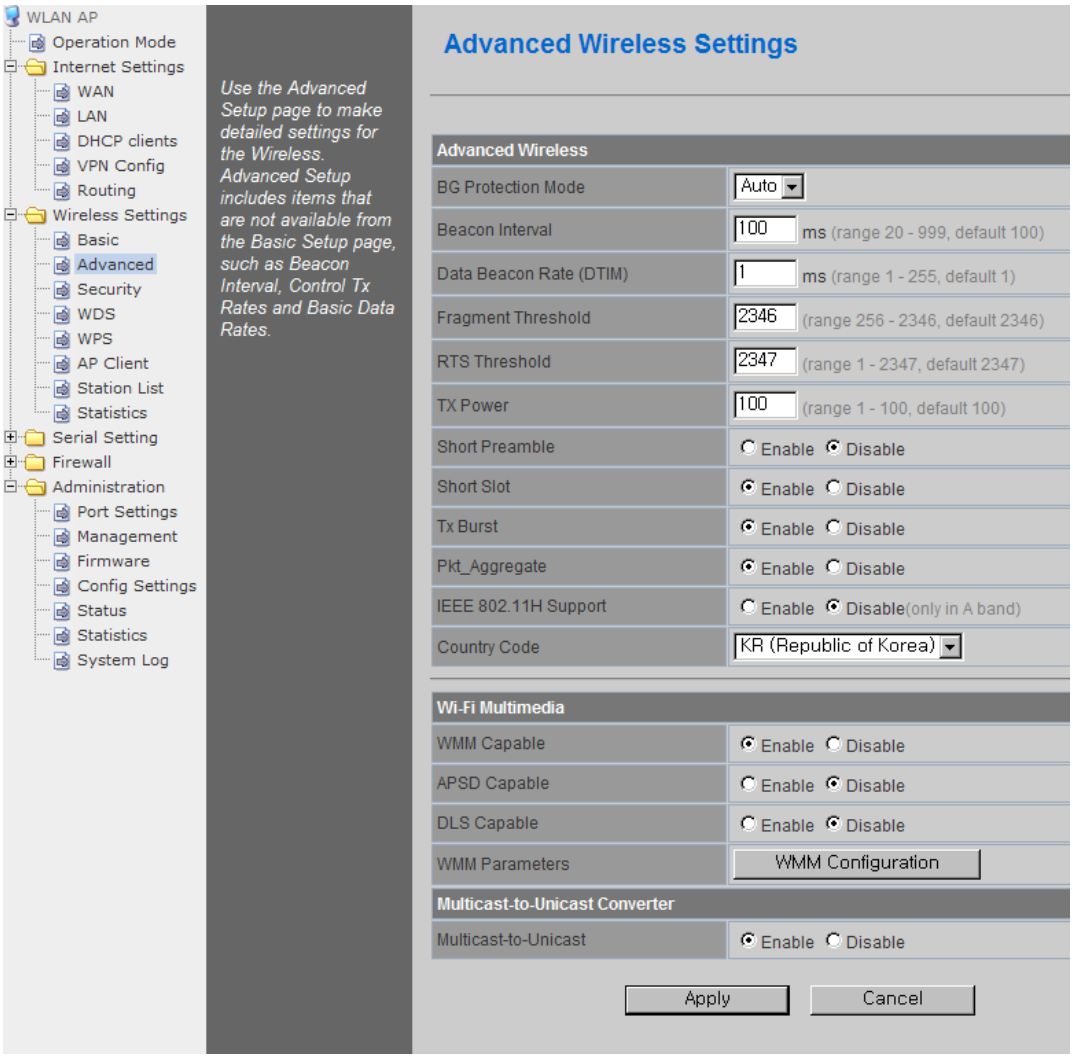
Type	Description
Radio On/Off	Decide radio on/off of wireless AP function.
Network Mode	11b/g/n mixed mode: 802.11b/g/n are supported. 11b/g mixed mode: 802.11b/g are supported. 11b only: only 802.11b is supported. 11g only: only 802.11g is supported. 11n only: only 802.11n is supported

SSID	Enter the name of the wireless network.
Channel	Select the channel of wireless network.
Broadcast Network Name	AP or Wireless network status can be checked by notifying the SSID to the wireless device. AP cannot be searched if this function is disabled.
AP Isolation	The communication between stations that are connected to the identical SSID is blocked.
MBSSID AP Isolation	The communication between stations that are connected to different SSID is blocked.

Type	Description
Operation Mode	Decide whether the PHY mode is going to be Mixed Mode or Green Field Mode.
Channel Bandwidth	Fix bandwidth channel to 20MHz. Use 40MHz as bandwidth in case connection with wireless station that supports 11n channel bonding.
Guard Interval	Long: 800nsec, Short: 400nsec
MCS	Control link rate. Set link rate to auto considering any interruptions.
RDG	The wireless performance can be improved using Reverse Direct Grant, 11n's RDG technology.
Extension Channel	Setting for the other 20MHz area when channel bandwidth is set to 40MHz.
STBC	STBC is supported when the value of MCS is 0-7.
A-MSDU	Decide whether numerous MSDUs inside one MPDU will transmit.
Auto Block ACK	Decide whether Block ACK will be transmitted automatically.
Decline BA Request	Decide whether user wants to decline Block ACK request.
HT Disallow TKIP	Decide whether to operate in 802.11g, if using TKIP.
HT TxStream	Setting for number of Tx antennas of 2T2R system.
HT RxStream	Setting for number of Rx antennas of 2T2R system.

5.2 Advanced Wireless Settings

◆ This chapter is about higher-level setting for wireless LAN

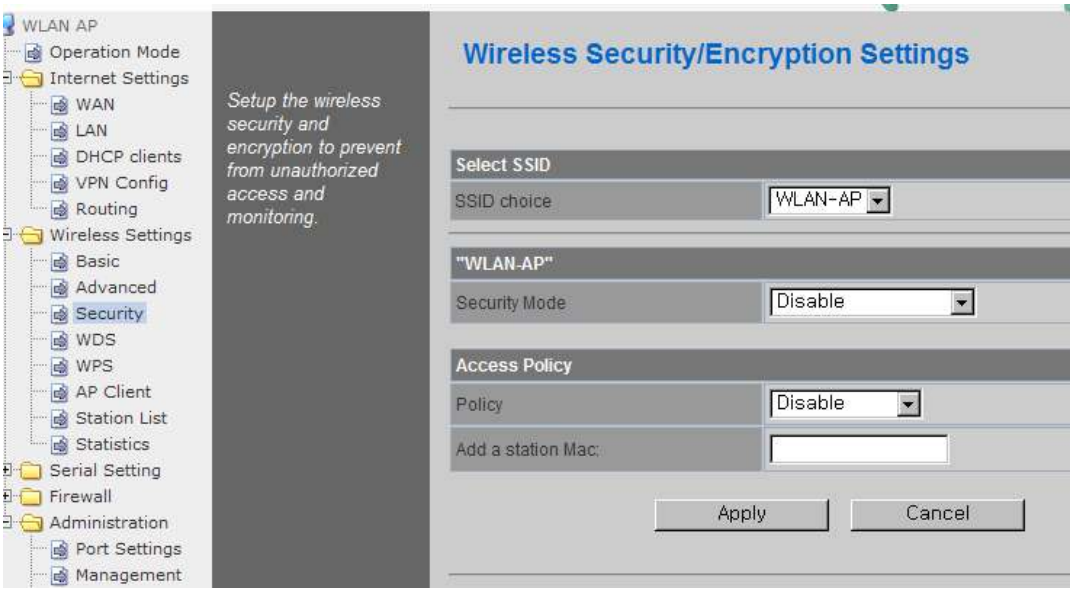


Type	Description
BG Protection	Setting for wireless communication when using both 11b and 11g LAN cards. Recommended for automatic settings in general.
Beacon Interval	Controls the interval of sending beacon. The setting range is 20~999 and 100ms is usually used
DTIM	Controls the data rate of beacon being sent. The setting range is 1~255 and 1ms is usually used.
Fragmentation Threshold	When a data that is larger than the threshold size, it is fragmented and sent. Smaller threshold size may enable more stable wireless communication; however the maximum speed is lower. Smaller threshold size is recommended in case of many interruptions from surrounding signals. The setting range is 256~2346.

RTS Threshold	When a data that is larger than the threshold size, it can be sent RTS/CTS. Smaller threshold size may enable more stable wireless communication; however the maximum speed is lower. Smaller threshold size is recommended in case of more wireless stations are connected at the same time. The setting range is 1~2347.
Tx Power	Controls the range of wireless radio being sent. The range of wireless radio being sent gets larger as the value is larger.
Short Preamble	If user enables Short Preamble, performance might slightly improve. However, the compatibility with wireless LAN card when connecting could decrease. It is recommended to disable Short Preamble for best compatibility.
Short Slot	The performance of wireless station connected to 11g can be improved by enabling Short Slot. However, it is recommended to disable Short Slot if there is a wireless station with unstable connection.
Tx Burst	The wireless speed can be maximized by enabling this function. However, it is recommended to disable this function for stable connection when numerous stations are connected together.
Pkt_Aggregate	Numerous packets can be transmitted in one MPDU by enabling this function.
802.11H	Supported only for 802.11a.
Country Code	Setting for country code. Example: KR(Republic of Korea), US(United State), FCC(Europe), JP(Japan), FR(France), ES(Spain)
WMM	Decide to whether or not use WMM function.
APSD	Decide to whether or not use Power Saving Mode.
DLS	Decide whether or not use DLS (Direct Link Setup) function.
WMM Parameter	If WMM is enabled, set the value for WMM Parameter.
Multicast-to-Unicast	Decide whether or not use Multicast function.

5.3 Wireless Security

◆ This chapter is about settings for wireless network security.



Type	Description
SSID choice	If multiple SSID are in use, choose the corresponding SSID for security.
Security Mode	Select security mode.
Access Policy	Disable : Access Control function will be disabled.. Allow Listed : allows communication with listed MAC client. Reject Listed: blocks communication with listed MAC client.
Add a station MAC	Enter the client's MAC address for controlling.

5.3.1. Wireless Security setting

◆ Authentication settings

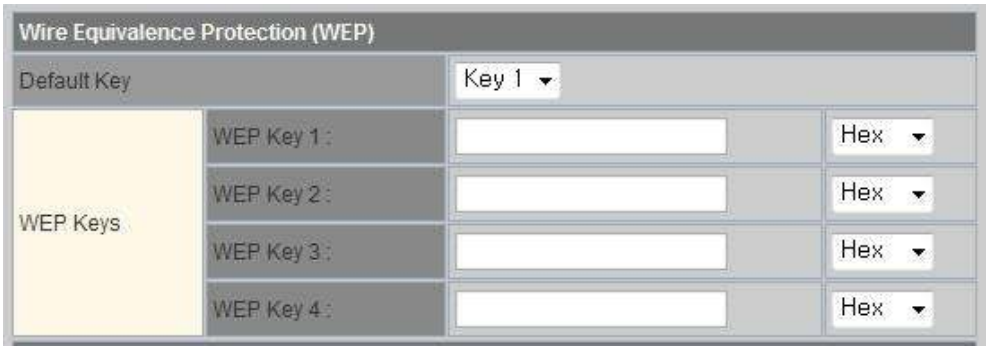
Type	Description
OPENWEP	All users are authorized.
SHAREDWEP	Users only with correct network key are authorized.
WEPAUTO	OPEN/SHARED Mode is selected automatically.
WPA-PSK	WPA certified standard with improved security.
WPA2-PSK	Improved WPA certified standard
WPAPSKWPA2PSK	Both WPZ-PSK and WPZ2-PSK are supported.
WPA	WPA certified standard including 802.1x.
WPA2	Improved WPA certified standard.
WPA1WPA2	Both WPA and WPA2 are supported.
802.1x	Radius authentication through WEP Key.

5.3.2. Wireless Authentication Setting

Encryption	Type	Description
사용 안 함	OPEN	Encryption algorithm is not used.
WEP64	SHARED/ WEPAUTO/802.1x	WEP encryption algorithm is used with 64bit key.
WEP128		WEP encryption algorithm is used with 128 bit key.
TKIP	WPA/WPA2/ WPA-PSK/ WPA2-PSK/ WPA1WPA2/ WPAPSKWPA2PSK	More complex encryption algorithm than WEP Is used.
AES		New encryption algorithm is used.
TKIP/AES		Support TKIP/AES simultaneously

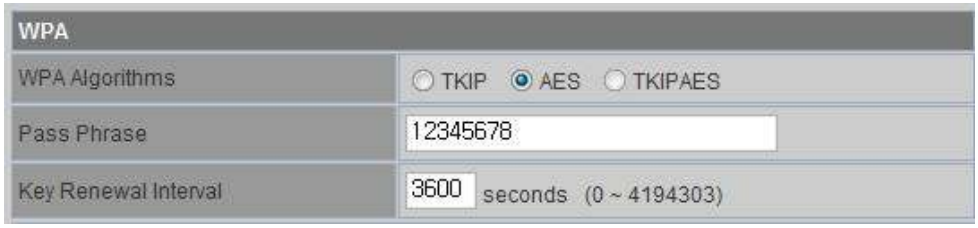
5.3.2.1. WEP

- Enter key for WEP64 or WEP128 network.
- Use either character string or hex character when entering key.
- Select 1~4 for 'Default Key..
- Enter at least one WEP Key.
- The entered WEP key is used for connection from wireless terminal



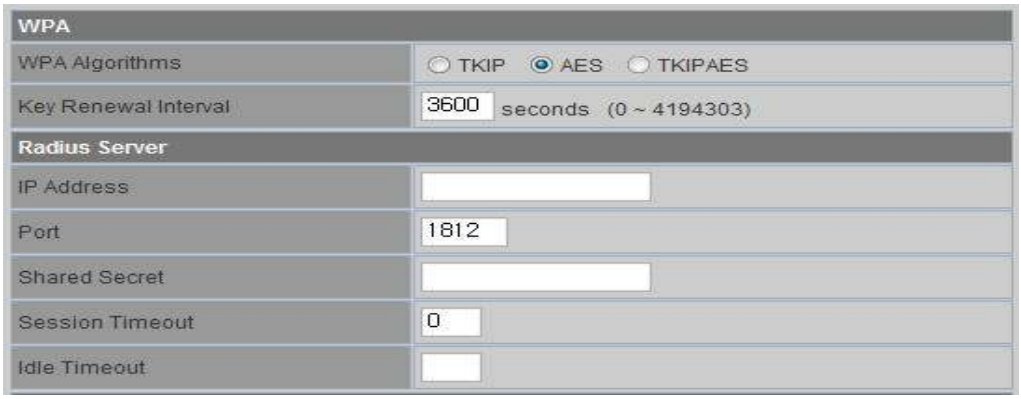
5.3.2.2. TKIP/AES authentication

- Enter at least 8 characters of character string for the network key value.



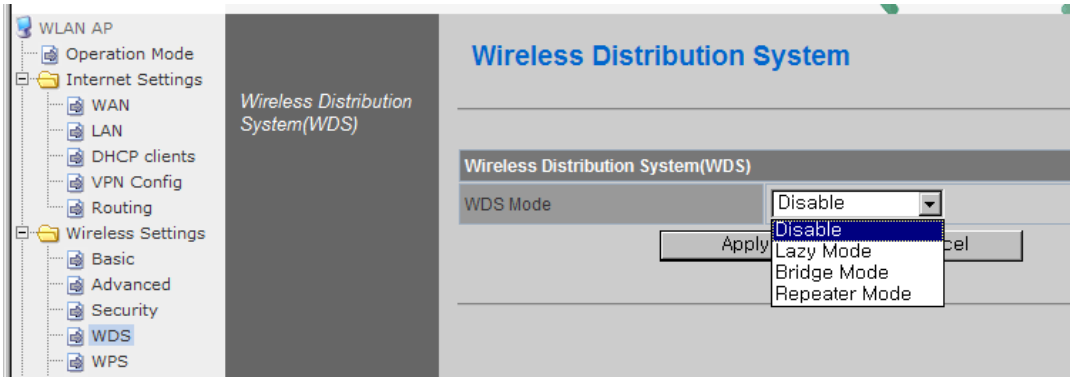
5.3.2.3. Wireless 802.1x authentication

- Enter the value for linking with the Radius Server.
- The values related to the Radius Server are provided by the internet service company.



5.4 WDS Setting

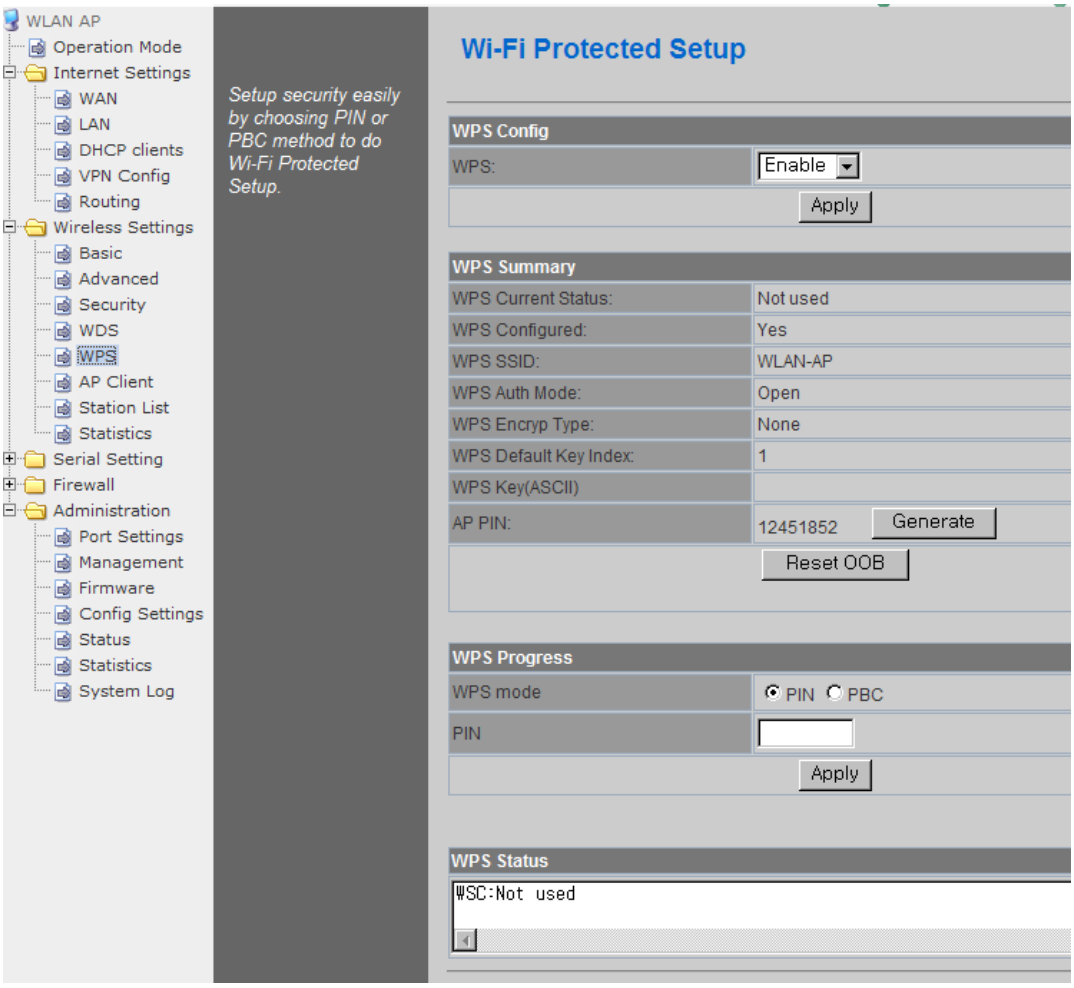
- Connection with different AP is possible with WDS (Wireless Distribution System) function.
- Maximum of four APs can connect through WDS function.
- 2 APs must use the same channel and authentication / encryption method.



Type	Description
Disable	WDS function is not used. (Default disable)
Lazy Mode	Do not register the MAC of AP to be connected. Connect the AP's MAC to the registered AP. (???) AP function is provided.
Bridge Mode	Register the MAC of AP to be connected. Connect the registered MAC to the AP. (???) AP function is not provided.
Repeater Mode	Register the MAC of AP to be connected. Connect the registered MAC to the AP. AP function is provided. (The performance of WDS is best in Repeater Mode.)

5.5 WPS Setting

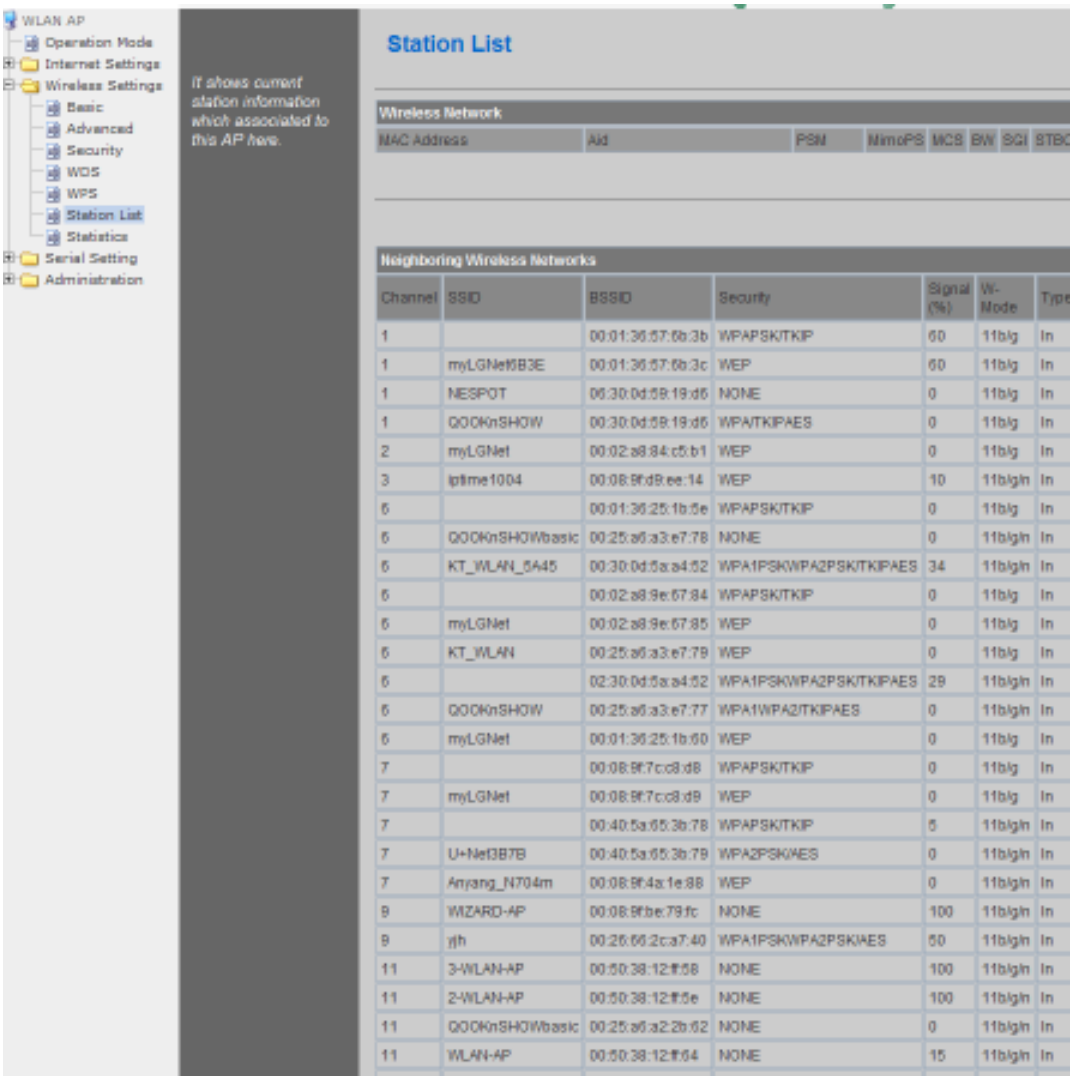
◆ The WDS function enables easier wireless network setting..



Item	Description
WPS	Enable / Disable WPS.
WPS Current Status	Shows whether WPS is used or not for the connection with station.
WPS Configured	Shows whether WPS is configured or not.
WPS SSID	Shows the SSID connected to the station.
WPS Auth Mode	Shows the authentication used with WPS.
WPS Encryp Type	Shows the Encryption used with WPS.
WPS Default Key Index	Shows the default key ID used with WPS.
WPS Key(ASCII)	Shows the WPS Key.
AP PIN	Shows the PIN value used when connecting to station.
WPS Mode	Select PIN or PBC.

5.6 Wireless network status

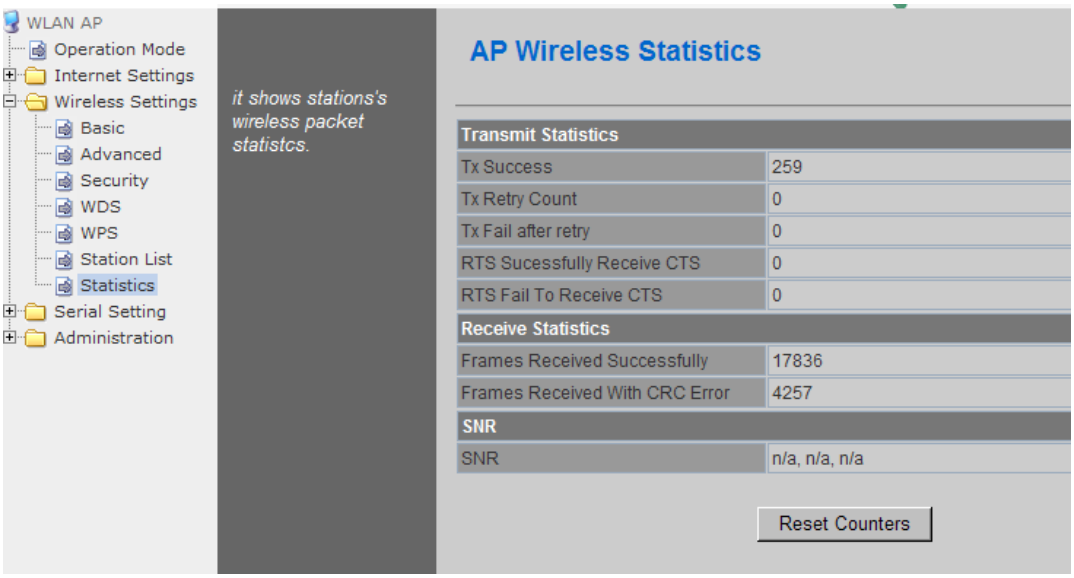
- The status of the station that is connected to WIZ630wi is shown.
- The surrounding wireless AP's status are shown..



Type	Description
Channel	Channel information of AP
SSID	SSID of AP
BSSID	MAC address of AP
Security	Encryption method of AP
Signal	Signal strength with AP
W-Mode	Wireless mode of AP
Type	Network Type of finding AP In: Infrastructure, Ad: ad-hoc

5.7 AP Wireless Statistics

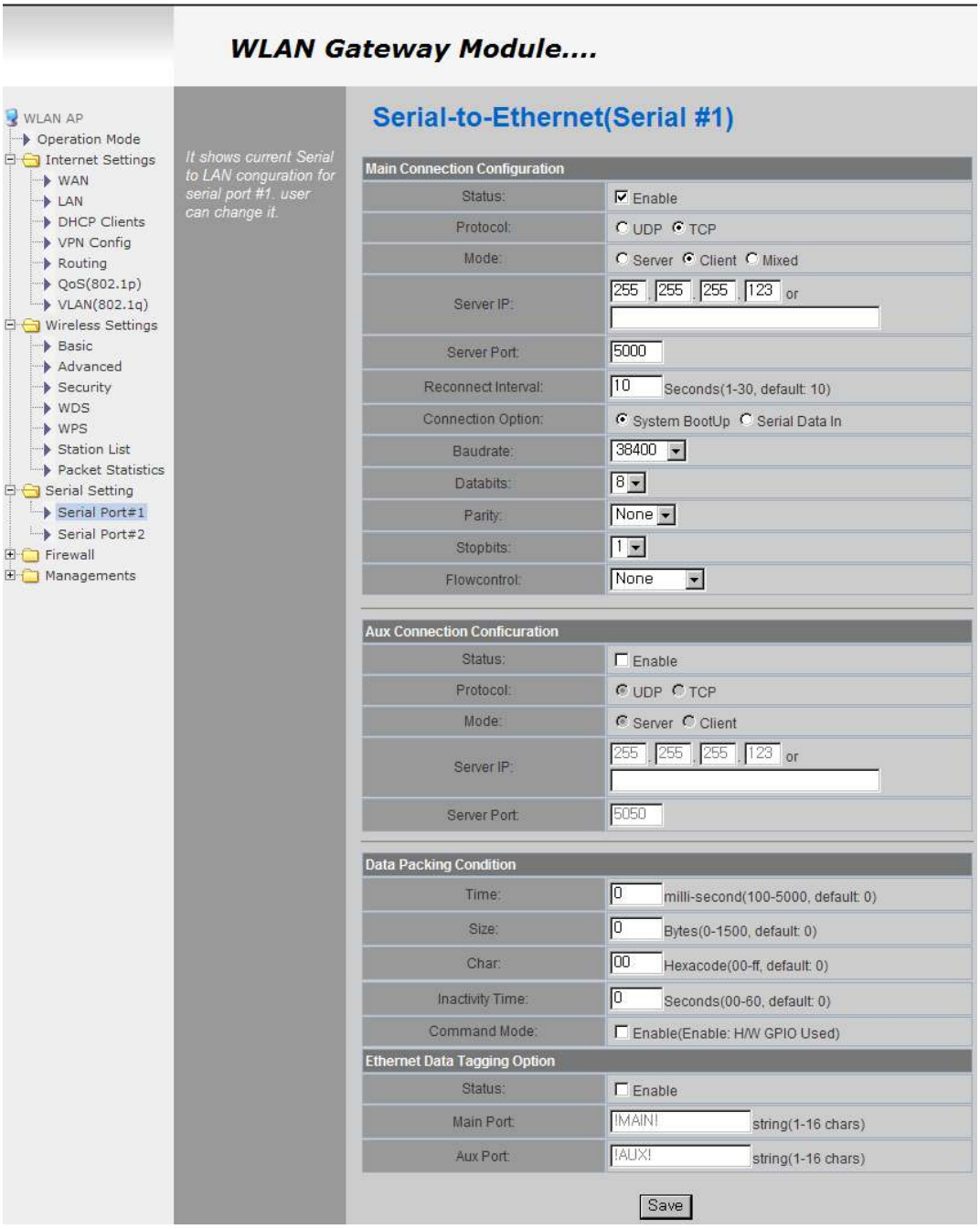
◆ The Statistics of wireless communication is shown.



Type	Description
Tx Success	Number of successfully transmitted frames
Tx Retry Count	Number of retransmitted frames
Tx Fail after retry	Number of failed frames
RTS Successfully Receive CTS	Number of frames that successfully received CTS
RTS Fail To Receive CTS	Number of frames that failed to receive CTS
Frames Receive Successfully	Number of frames successfully received
Frames Received With CRC Error	Number of frames that failed due to CRC error
SNR	Receiving signal strength

6. Serial to LAN(Wired and Wireless)

- Individual settings for serial #1 / serial #2 are possible.
- Set the serial parameters for serial to wireless (ethernet) function.
- Set two channels (Main connection, Aux connection) for each serial port
- Setting management of Serial #1 and #2 (Main connection, Aux connection)



6.1 Main Connection settings

Type	Description
Status	Enable checked : Serial to LAN is used. Enable un-check: Serial to LAN is not used.
Protocol	Protocol used in Serial to LAN communication -TCP -UDP
Mode	Serial to LAN operation mode. (Client Mode recommended) - Server : waits for connection. - Client : connected to the remote server of WIZ630wi - Mixed : not recommended
Server IP	Enter the IP address for WIZ630wi setting.
Server Port	Enter the port number for remote serial data server host PC.
Reconnect Interval	Interval of TCP reconnection.
Connection	WIZ630wi의 Serial LAN의 connection Type(TCP Only) System Bootup : connected to the remote server upon bootup. Serial Data In : once serial data comes in, connect to remote server. (end connection after inactive time)
Baud rate	Select the serial communication speed.
Databits	Select the databits.
Parity	Select the method for parity check.
Stopbits	Select the stopbits.
FlowControl	Select the method for flow control. (Option: none, Xon/Xoff, RTS/CTS)

6.2 Aux Connection Settings

Type	Description
Status	Select whether to enable serial port or not.
Protocol	Protocol used in Serial to LAN communication.
Mode	Select Server or Client Mode.
Server IP	Enter the IP address for WIZ630wi setting.
Server Port	Enter the port number for remote serial data server host PC.

6.3 Packing Condition (Incoming serial data packing condition)

Type	Description
Time	Data packing until the set time and then sent to server after the set time.
Size	Data packing until the set size and then sent to the server.
Character	Data packing until the set character and then sent to the server.
Inactivity Time:	TCP/IP connection is discontinued if there is neither serial data nor network data during the set time.
H/W CMD switch	-. Enable/Disable the H/W CMD switch pin. -. H/W CMD switch pin is the switch for sending commands from CPU to WIZ630wi.

6.4 Ethernet Data Tagging Option

This option is used to help serial device to identify who is the received serial data's source: the received serial data comes from Main Port or Aux Port.

Type	Description
Status	Enable or disable this option (Checked : Enable, Un-Check : Disable)
Main Port	Before sending data from Main port to serial port, WIZ630wi added a TAG in the front of payload. For example: In-come LAN Data : "abcdegf" Output data to Serial Port : "!MAIN!abcdegf"
Aux Port	Before sending data from Aux port to serial port, WIZ630wi added a TAG in the front of payload. For example: In-come LAN Data : "abcdegf" Output data to Serial Port : "!AUX!abcdegf"

7. Firewall settings

◆ Only work at the Gateway Mode

7.1 DMZ

◆ Enable/Disable DMZ function

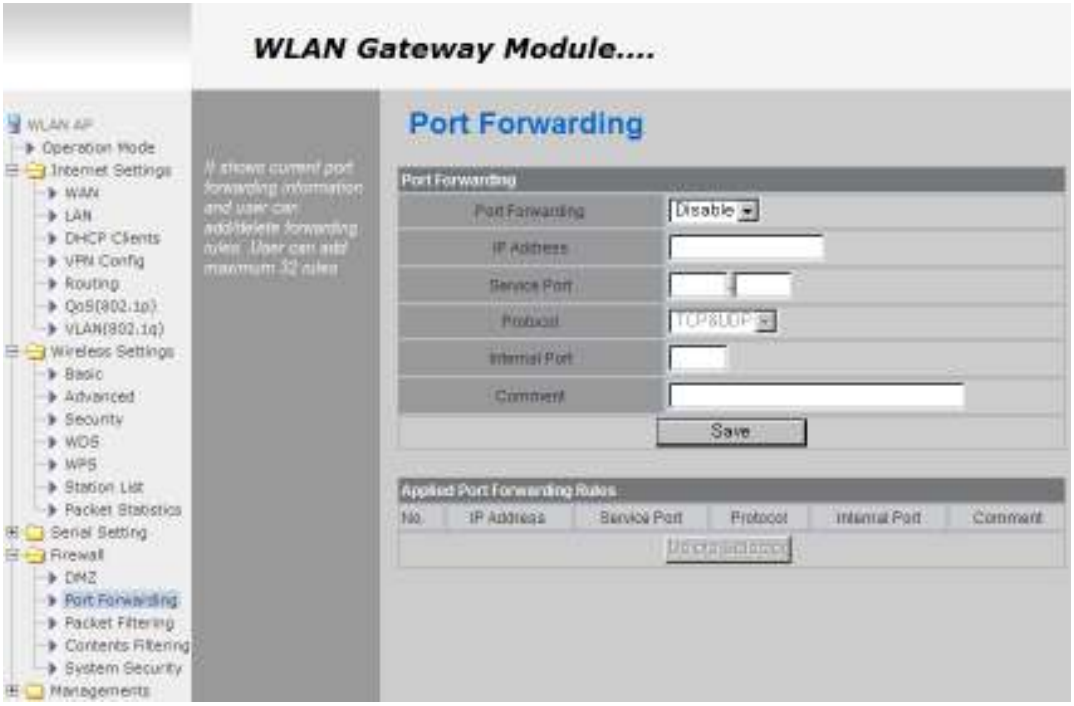
◆ A DMZ allows a single computer on your LAN to expose ALL of its unused ports to the Internet. When doing this, the exposed computer is no longer behind the firewall.

◆ Sometimes TCP/IP applications require very specialized IP configurations that are difficult to set up or are not supported by your router. In this case, placing your computer in the DMZ is the only way to get the application working.

Type	Description
DMZ Settings	Disable/Enable DMZ
DMZ IP Address	Input the IP address that you would like to expose all of its unused ports to the Internet

7.2 Port forwarding

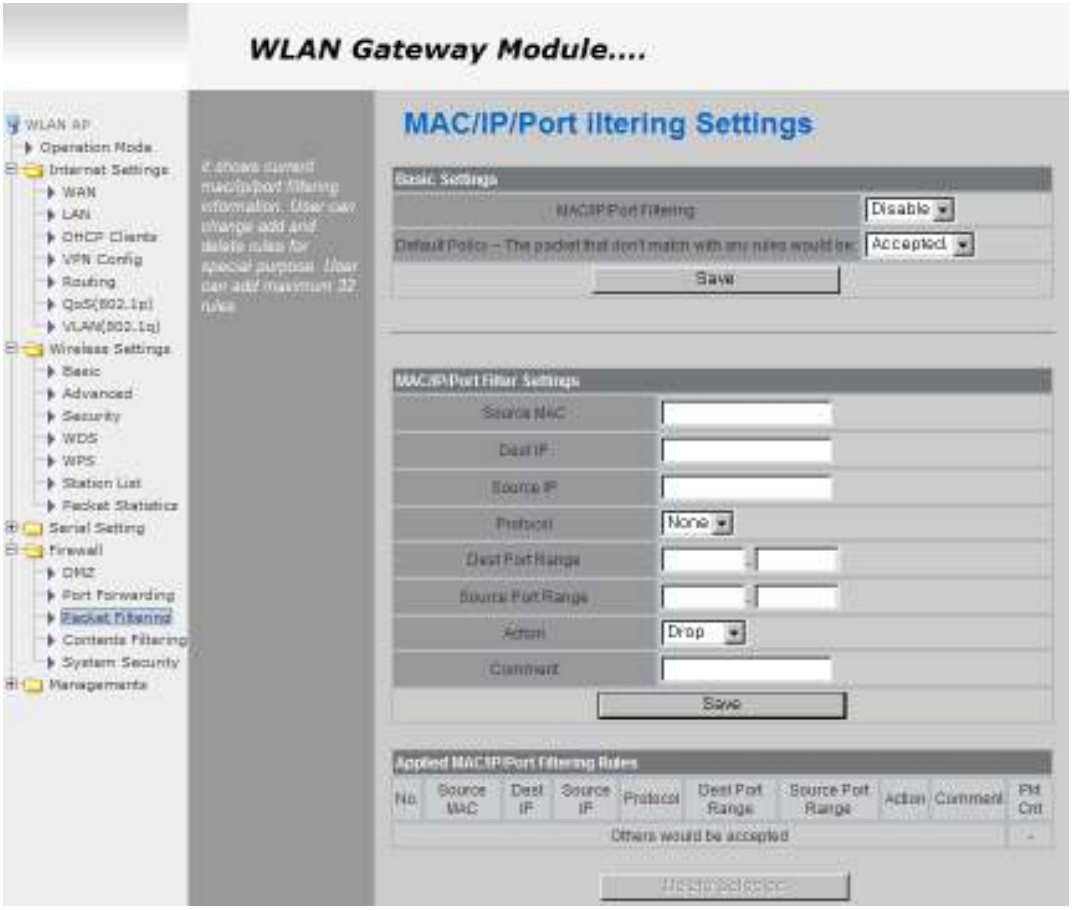
When a computer on the internet sends data to the external IP address of the router (WIZ630wi), the router (WIZ630wi) needs to know what to do with the data. Port Forwarding simply tells the WIZ630wi which computer on the local area network to send the data to. When you have port forwarding rules set up, your router takes the data off of the external IP address:port number and sends that data to an internal IP address:port number. Port Forwarding rules are created per port. So a rule set up for port 53 will only work for port 53.



Type	Description
Port Forwarding	Disable/Enable Port Forwarding
IP Address	Internal IP address
Service Port	External ports range
Protocol	Supports TCP and UDP
Internal Port	Internal port

7.3 Packet filtering

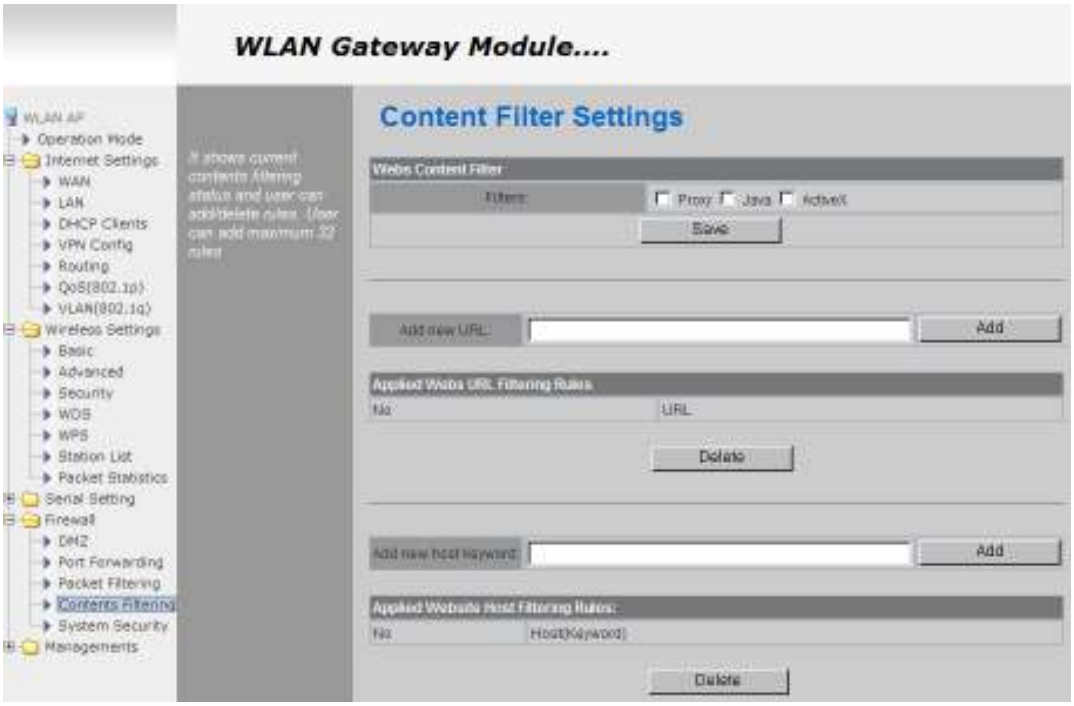
- ◆ WIZ630wi can accept or block Internet packets according to pre-defined MAC or IP address
- ◆ First, please do basic settings



Type	Description
Source MAC	Pre-defined source MAC address for MAC filtering function
Dest IP Address	Destination IP address
Source IP Address	Source IP address
Protocol	Supports TCP, UDP, ICMP
Dest Port Range	Destination port range
Source Port Range	Source port range
Action	Enable/Disable MAC/IP/Port filtering function

7.4 Contents filtering

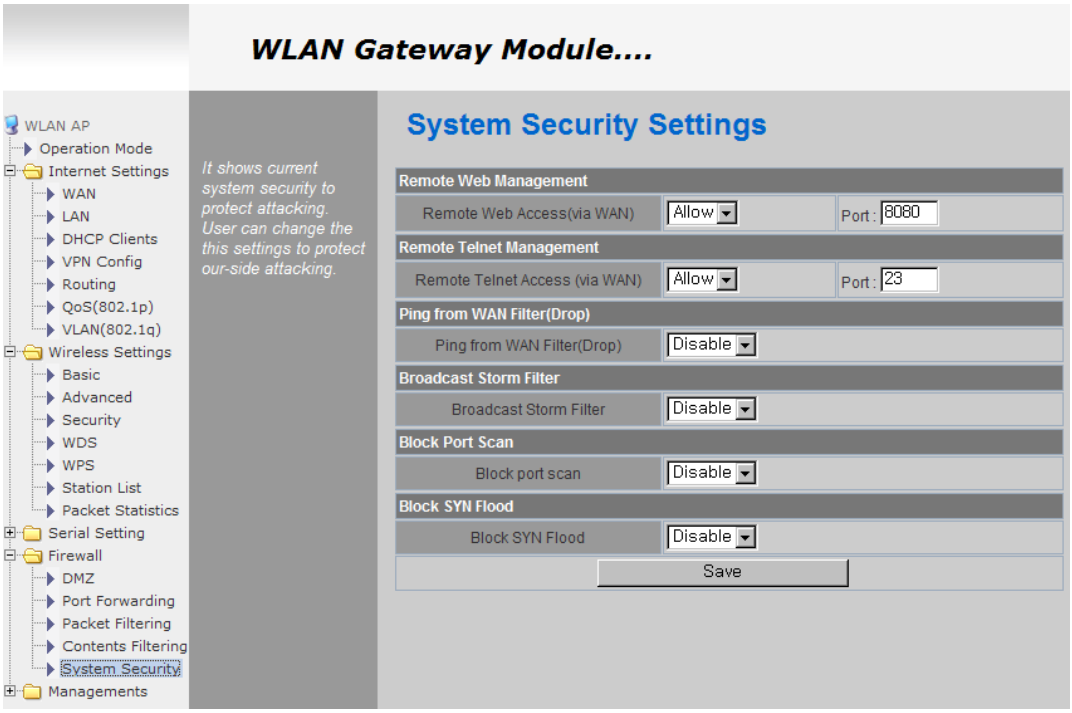
◆ Used to block certain websites (IP or domain names)



Type	Description
URL Filter	Block all the websites whose domain is the input text For example, if you input “sex”, the websites like www.sex.com is blocked. But www.sexgood.com is not blocked. If you would like to block all the websites whose domain name contains the input text, please use Host Filter function
Host Filter	Block all the websites whose domain name contains the input text. For example, if you input “game”, the websites like www.hangame.com, www.hangame.co.kr are blocked

7.5 System Security

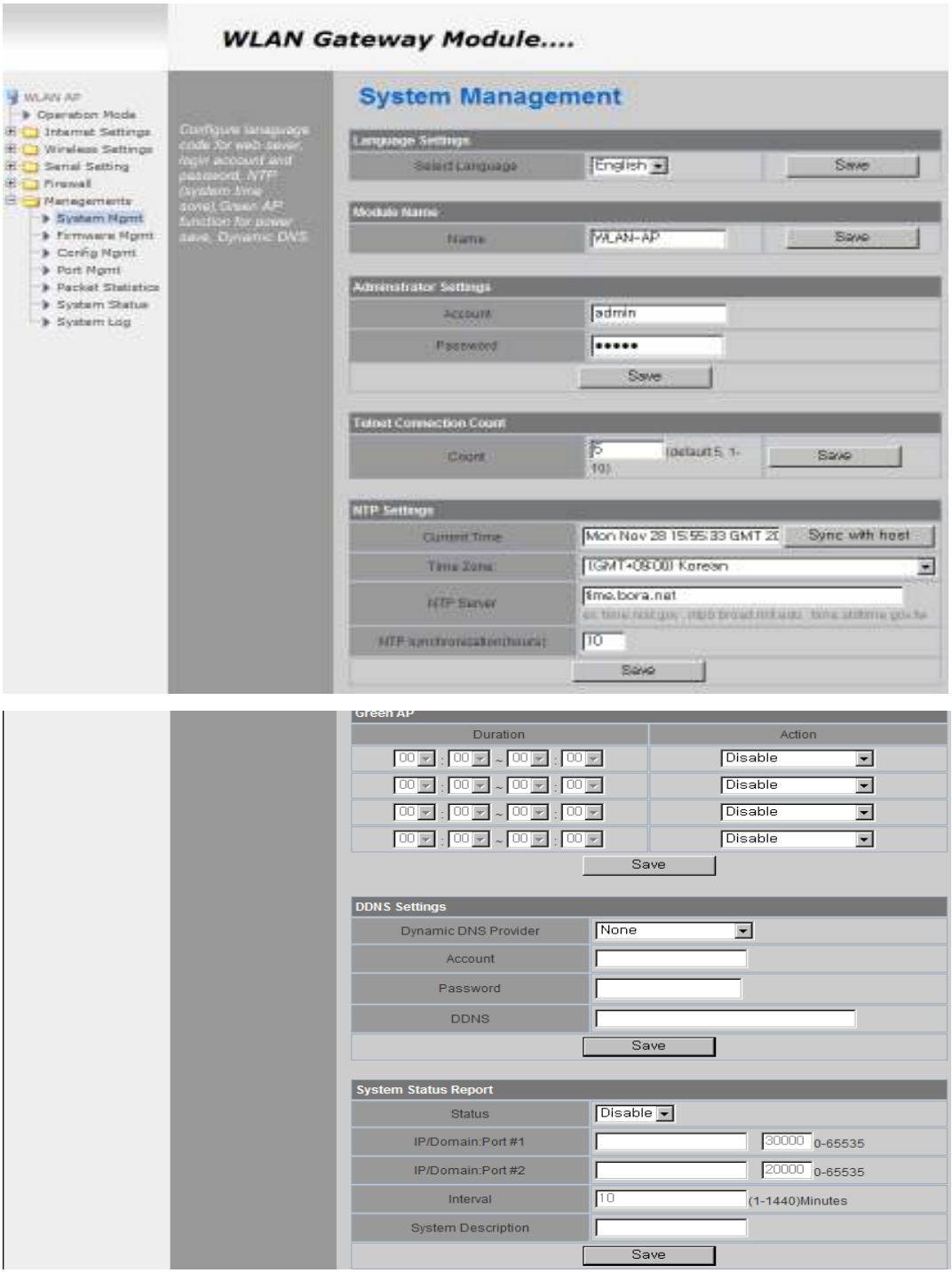
◆ Defense of external attack.



Type	Description
Remote management	Settings about accessing methods from WAN to WIZ630wi's embedded web server
Telnet management	Settings about accessing methods from WAN to WIZ630wi's telnet
Ping from WAN Filter	Disable/Enable the WIZ630wi's Ping response
Broadcast Storm filter	Block/Accept the Broadcast packets
Block Port Scan	Block WIZ630wi's port-scan function
Block SYN Flood	Block SYN flood

8. Managements

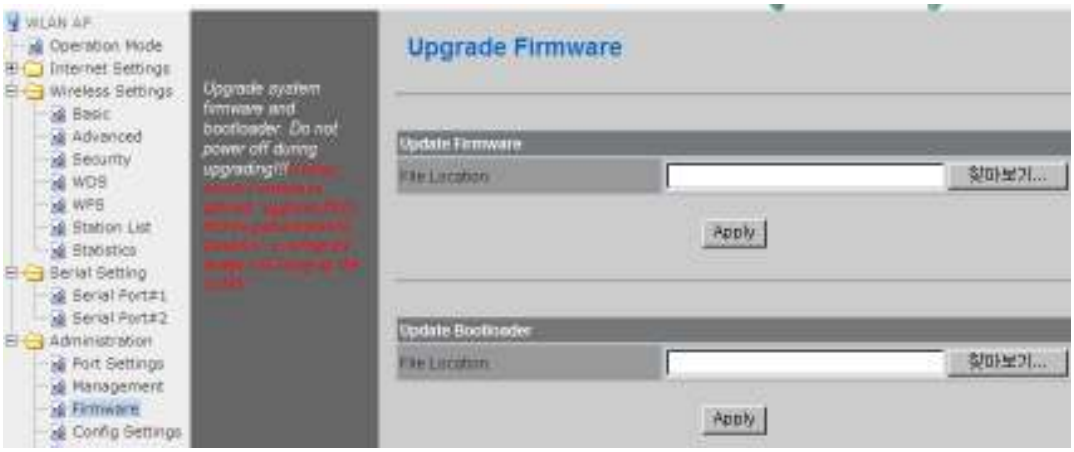
8.1 System Management



Type	Description
Language	Select language in the list
Administrator	Pre-defined ID/Password for webpage or Telnet login
NTP	Set NTP server
Green AP	Low power consumptive AP
DDNS	Once the DDNS server registers yours MAC address, your device can connect to the internet regardless of your address. DDNS service can be provided by DynDNS, freeDNS, zoneedit, no-ip. To use DynDNS, users should go to www.dyndns.org to create user name and domain name. And then, set related configurations by using WIZ630wi's webpage. Similarly, to use freeDNS zoneedit, or no-ip,users should go to their homepage first to create user name and domain name. And then, set related configurations by using WIZ630wi's webpage.
DDNS Provider	DynDNS, freeDNS, zoneedit, no-ip
Account	ID for DDNS.
Password	Password for DDNS
DDNS	Host name for DDNS

8.2 Firmware

◆ Upgrade firmware and bootloader. Now WIZ630wi doesn't support upgrading by Remote URL.



8.3 Config Settings

◆ Save the setting value of WIZ630wi to the PC,

Type	Description
Export Settings	The setting files from the PC file are applied to the module.
Import Settings	The system's setting information is saved as a file in the PC.
Logo Export Settings	User's company logo file is saved in the PC.
Logo Import Settings	User's company logo from the PC is applied to the system. (GIF file size : 10K , 126x42)
Load Factory Defaults	Change the module's setting to default setting.
Reboot	Reboots the system.

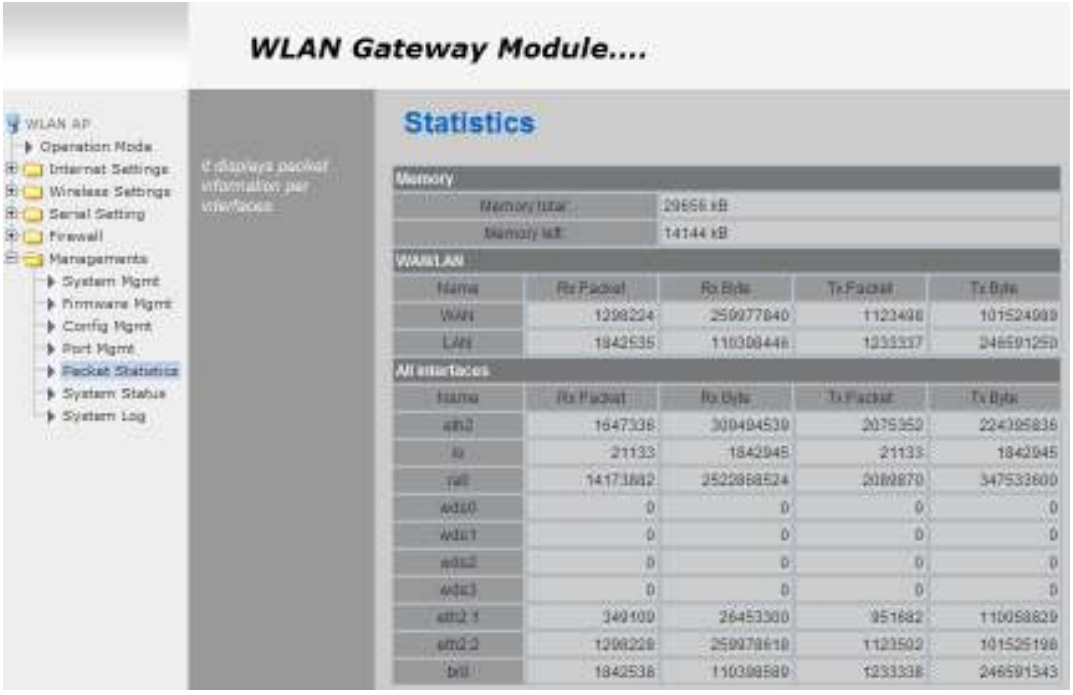
8.4 Port Setting

- ◆ Settings about wired port. In case of Gateway Mode, WAN port is set here
- ◆ In case of Gateway Mode, it is better to use the default WAN port number (Port #0)
- ◆ If you are not administrator, we do not recommend you do this change.

Type	Description
WAN Port	Select the WAN Port in case of Gateway Mode.
Port #0	Enable / Disable Port #0.
Port #1	Enable / Disable Port #1.
Port #2	Enable / Disable Port #2.
Port #3	Enable / Disable Port #3.
Port #4	Enable / Disable Port #4.

8.5 Packet Statistics

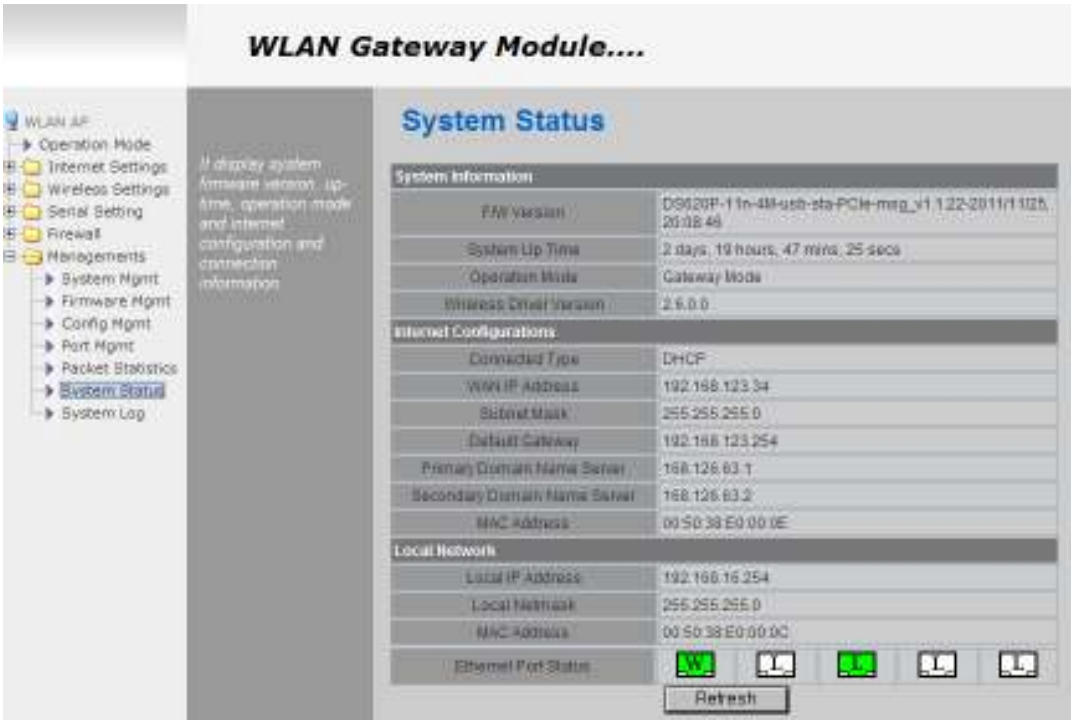
◆ System Statistics shows the system's memory information and system's data transmission size.



Type	Description
Memory Total	System Memory Size
Memory left	System Free Memory
Rx Packet	Rx Packets counts
Rx Byte	Rx Bytes Counts
Tx Packet	Tx Packet Counts
Tx Byte	Tx Bytes Counts

8.6 System Status

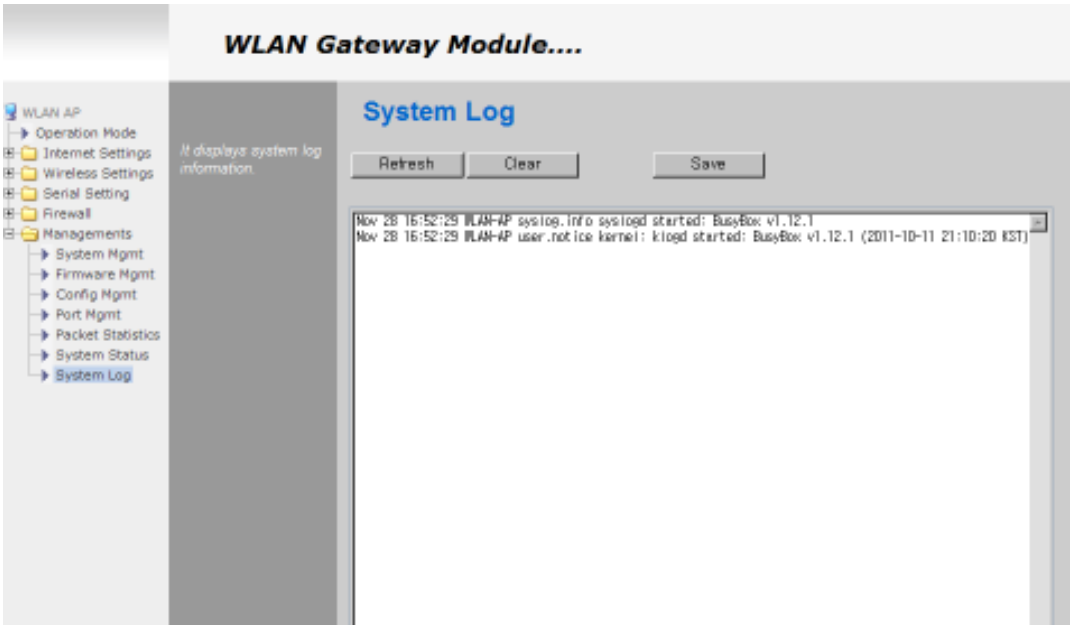
◆ System Status shows the status of the system, status of the system's network information, and the link status of LAN port.



Type	Description
F/W Version	Shows the firmware version.
System Up Time	Shows the system up time.
Operation Mode	Shows the operation mode currently being used.
Internet Configuration	Shows the internet configuration information.
Local Network	Shows the local network information.

8.7 System Log

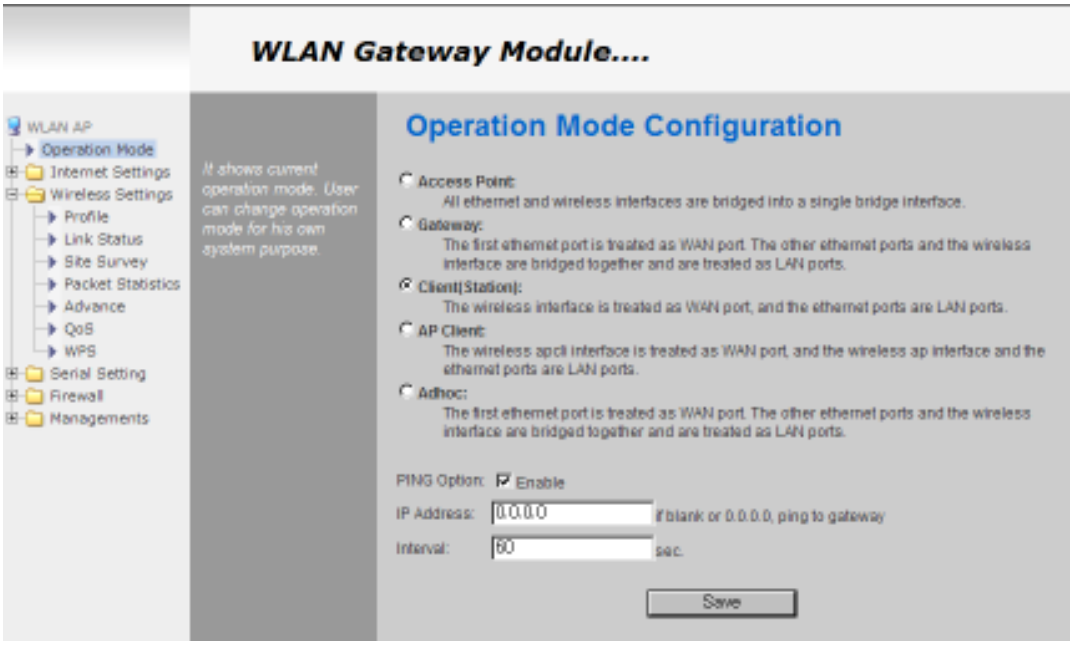
- The operation history of WIZ630wi can be checked by using System Log.
- If the system log exceeds 24Kbyte, more recent log record are added..



9. Client(Station) Mode setting

- ◆ WIZ630wi works as a WiFi client(station) which is always paired with a WiFi AP.
- ◆ Users can take Client Mode as an opposite of Gateway Mode

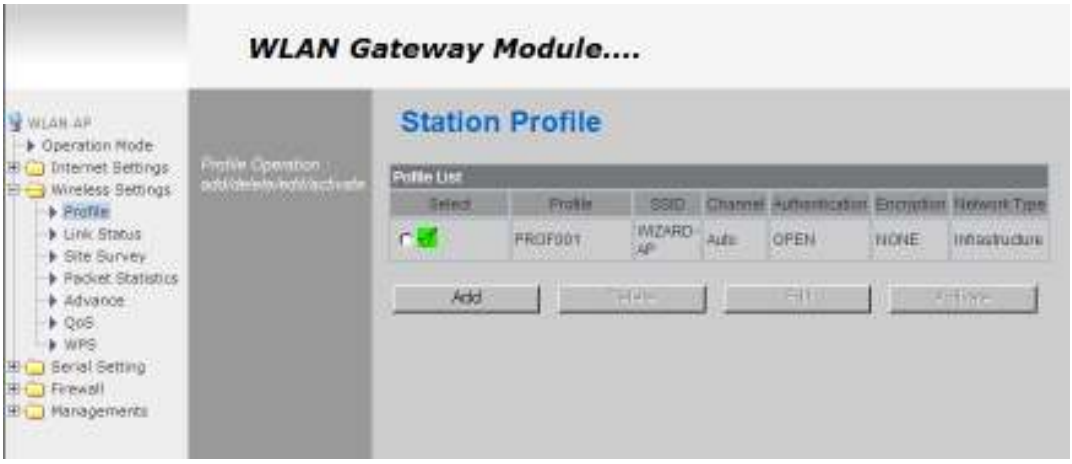
9.1 Client Mode Setting



Type	Description
Client(Station)	Client mode setting
Ping Option	Send Ping data to top connected AP by using any time unit
IP Address	If IP is 0.0.0.0, send Ping data to top connected AP.
Interval	Ping Interval setting (time unit: second)

9.2 Profile

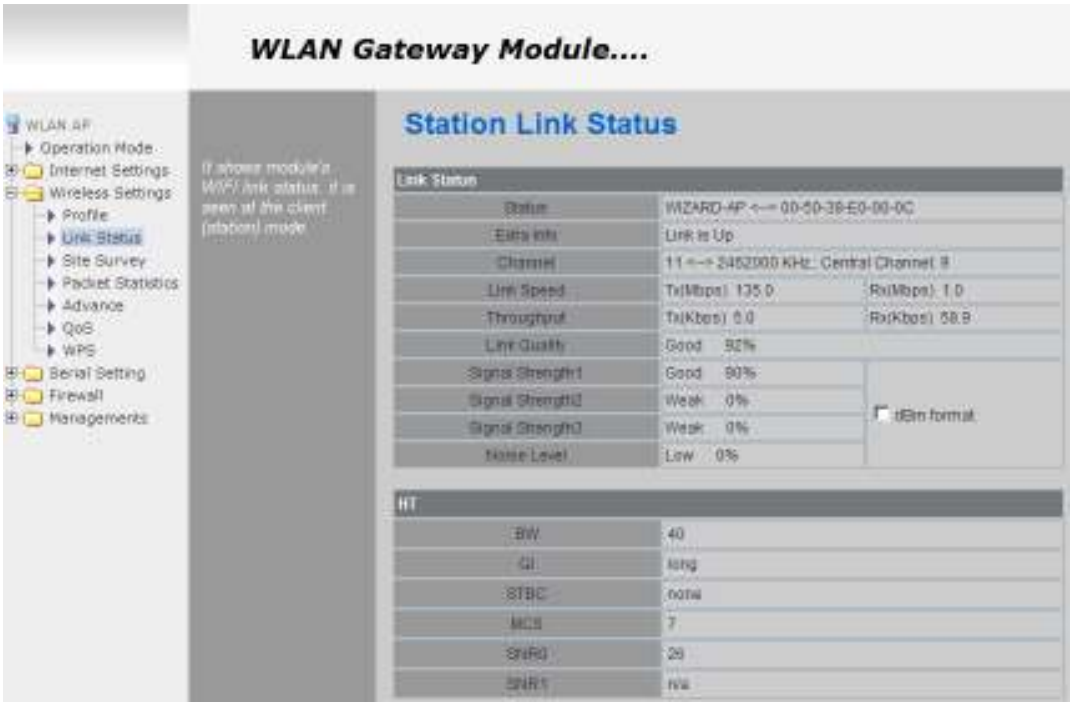
- ◆ Shows the profile of the connected AP. The profile information can be manually input. By using "Site Survey", it is very convenient to find and connect with an AP.
- ◆ Administration of maximum of two AP is possible after adding to profile
- ◆ The module automatically connects to the active AP (selected AP) upon booting



Type	Description
Profile	Profile Name
SSID	SSID of AP to be connected
Channel	Channel information of AP to be connected. Channel information is needed only when connecting with ad-hoc.
Authentication	Authentication method of AP to be connected.
Encryption	Encryption method of AP to be connected.
Network Type	Select AP / ad-hoc.

9.3 Link Status

◆ Shows the link status between wireless LAN and AP.



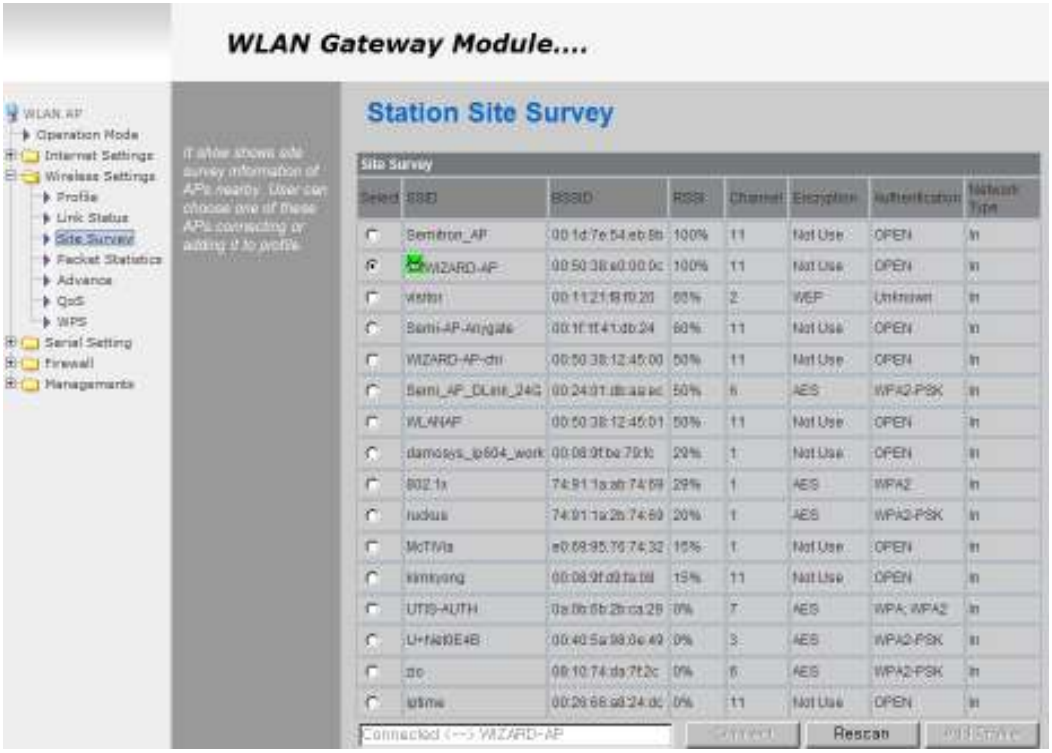
Type	Description
Status	SSID and BSSID of connected AP.
Extra Info	Link status.
Channel	Channel information of connected AP.
Link Speed	Link speed rate of connected AP.
Throughput	Real performance through communication.
Link Quality	Link quality of connected AP.
Signal Strength	Signal strength of connected AP.
Noise Level	Noise level of connected AP.

◆ HT항목은 802.11n으로 AP와 연결되었을 때만 나타난다.

Type	Description
BW	Channel Bandwidth. 20MHz or 40MHz.
GI	Guard Interval Long: 800nsec, Short: 400nsec
STBC	Supported only when value of MCS is 0-7.
MCS	Shows link rate.
SNR	Shows the receiving signal strength.

9.4 Site Survey

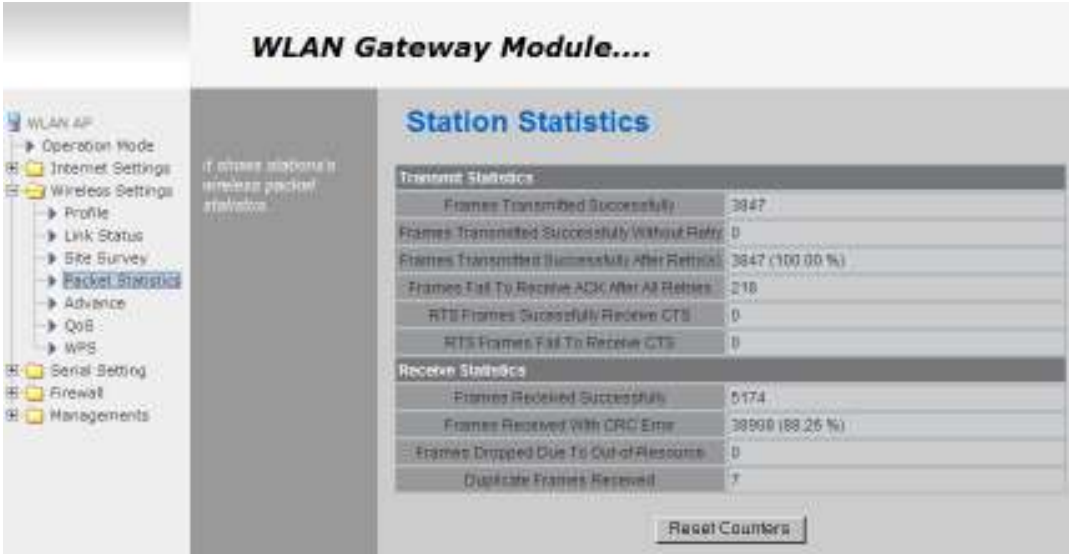
- Site Survey searches for AP surrounding WIZ630wi
- Select an AP and click the connect button. (If the module is rebooted, the module will connect to the previous profile.)
- Click “Add Profile” if user wishes to add to profile.



Type	Description
SSID	SSID of searched AP
BSSID	Wireless MAC Address of searched AP.
RSSI	Signal strength of searched AP.
Channel	Channel of searched AP.
Encryption	Encryption method of searched AP.
Authentication	Authentication method of searched AP.
Network Type	Network type of searched AP. In: Infrastructure, Ad: ad-hoc
Connected	SSID of AP connected with WIZ630wi.
Connect	Connects with AP.
Rescan	Rescans for surrounding AP.
Add Profile	Adds to profile.

9.5 Packet Statistics

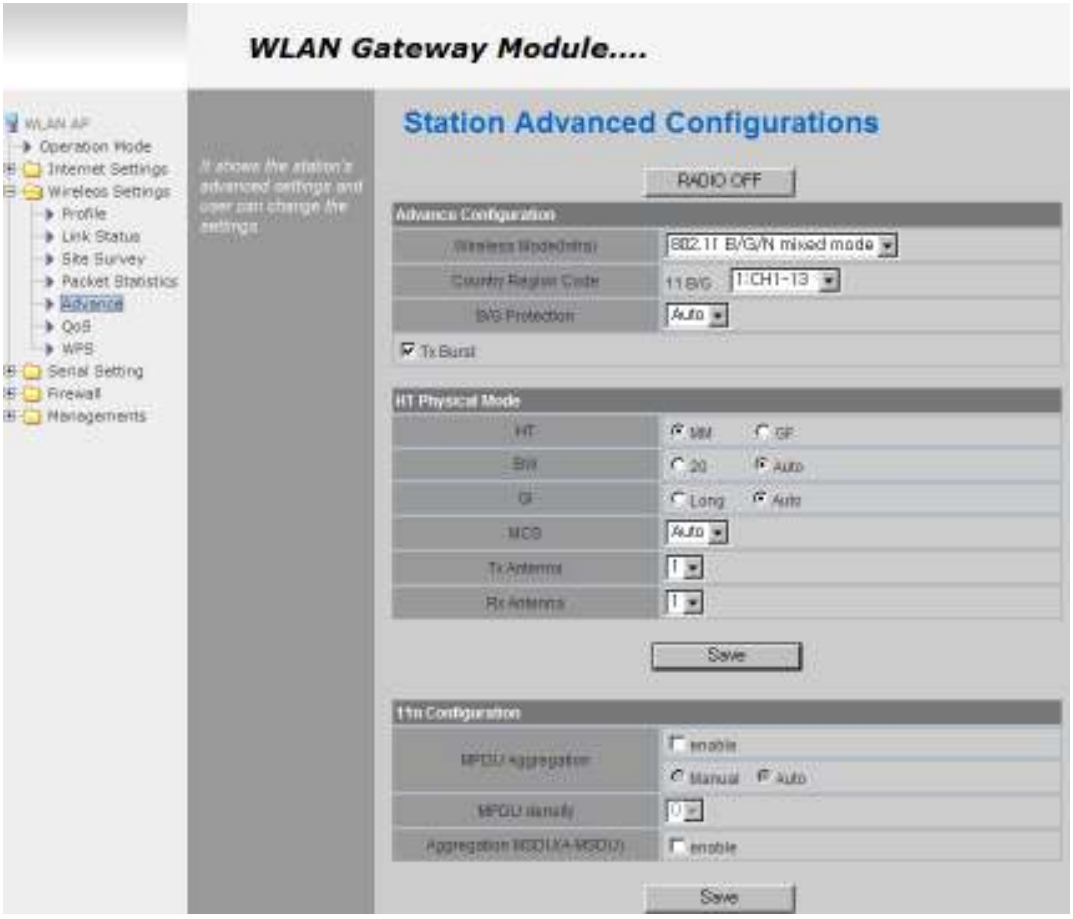
◆ Station statistics shows the information of wireless data packet in station mode.



Type	Description
Frames Transmitted Successfully	Number of frames successfully transmitted.
Frames Transmitted Successfully Without Retry	Number of frames successfully transmitted without a retry.
Frames Transmitted Successfully After Retry(s)	Number of frames transmitted successfully after retry.
Frames Fail To Receive ACK After All Retries	Number of frames failed to receive ACK after all retries.
RTS Frames Successfully Receive CTS	Number of RTS frames that successfully received CTS
RTS Frames Fail To Receive CTS	Number of RTS frames failed to receive CTS.
Frames Received Successfully	Number of frames successfully received.
Frames Received With CRC Error	Number of frames received with CRC error.
Frames Dropped Due To Out-of-Resources	Number of frames dropped due to out of resources.
Duplicate Frames Received	Number of duplicate frames received.

9.6 Station Advanced Configurations

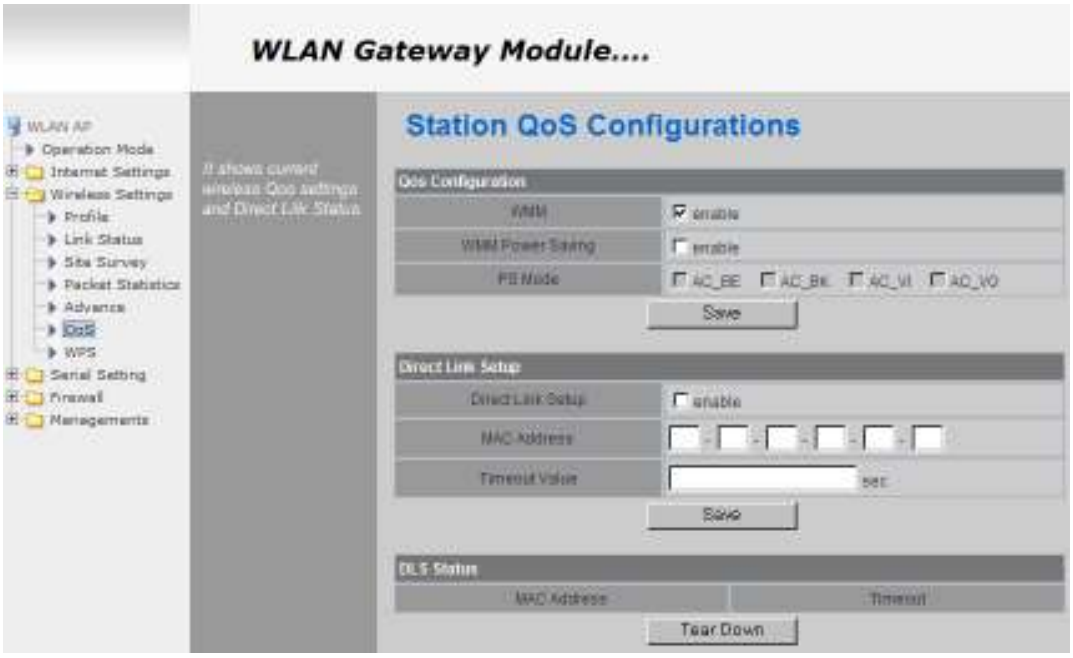
◆ Set Station advanced configurations in station mode.



Type	Description
RADIO OFF	Enable / Disable wireless LAN.. User cannot use wireless LAN if user clicks RADIO OFF.
Wireless Mode	Selects wireless mode.
Country Code	Selects the country / regional code.
B/G Protection	Setting for better wireless communication when both 11b and 11g LAN cards are used. We recommend Auto.
HT	Select whether the PHY Mode of wireless to be Mixed Mode or GreenField Mode.
BW	Fix the channel bandwidth to 20MHz: 20MHz. 20/40MHz: Use 40MHz when wireless station that supports 11n channel bonding.
GI	Long: 800nsec, short: 400nsec
MCS	Controls link rate.
Tx Antenna	Select number of Tx antenna in 2T2R system.
Rx Antenna	Select number of Rx antenna in 2T2R system.

9.7 Station QoS/DLS(Direct Link Setup) Configurations

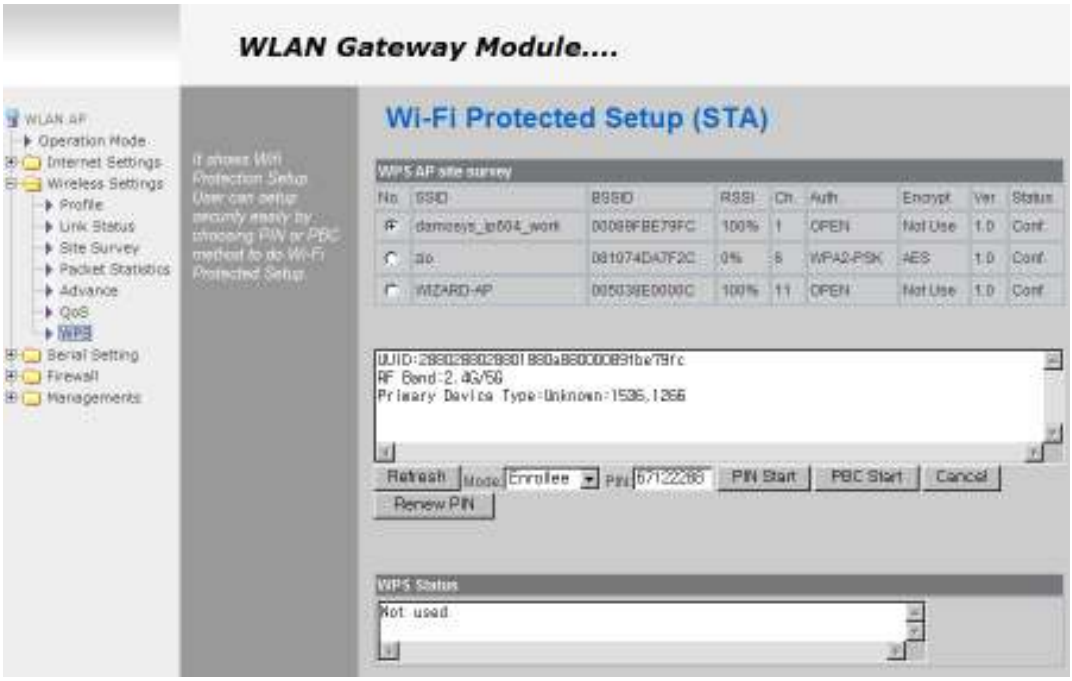
◆ Set Station QoS / DLS configurations in station mode



Type	Description
WMM	Enable WMM function or not.
WMM Power Saving	Enable Power Saving function or not.
Direct Link Setup	Enable Direct Link function or not. In order to use Direct Link function, the AP connected to WIZ630wi and the Station to be connected must support Direct Link function.
MAC Address	Enter the MAC Address of the station to be connected using direct link function.
Timeout Value	Cancels the link if there are no traffic between stations for a period of time.

9.8 WPS Settings

◆ WPS settings in Station Mode.

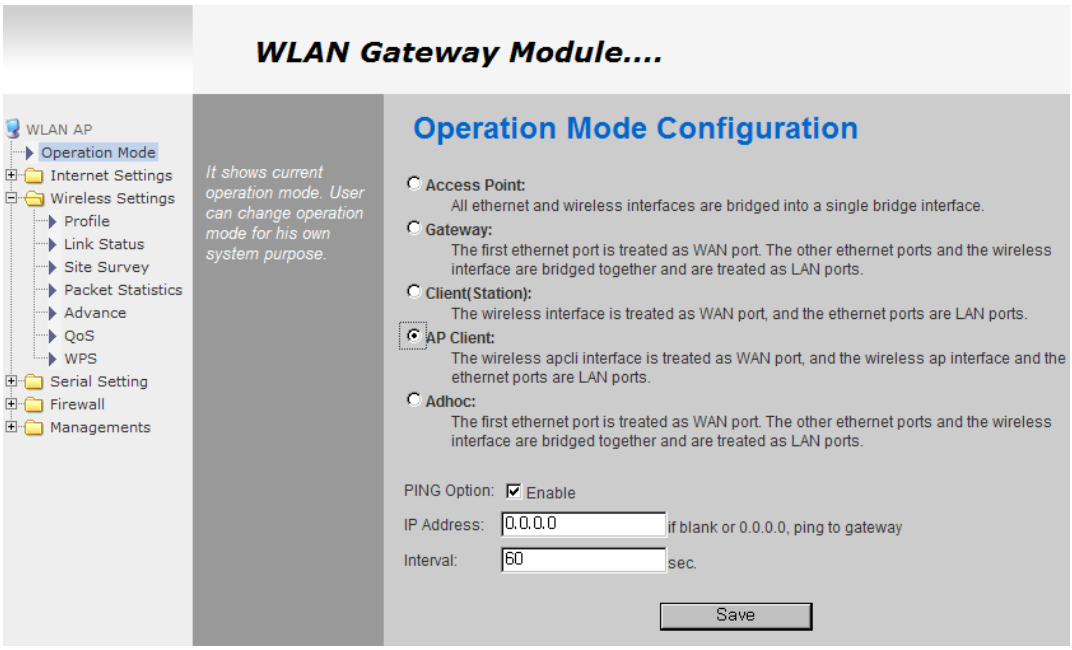


Type	Description
Refresh	Searches for WPS function activated AP.
PIN Start	Attempts connection with AP using PIN value.
PBC Start	Attempts connection with AP by virtually clicking the PBC button.
Cancel	Cancels the AP connection attempt.
Renew PIN	Renews the PIN value of WIZ630wi.

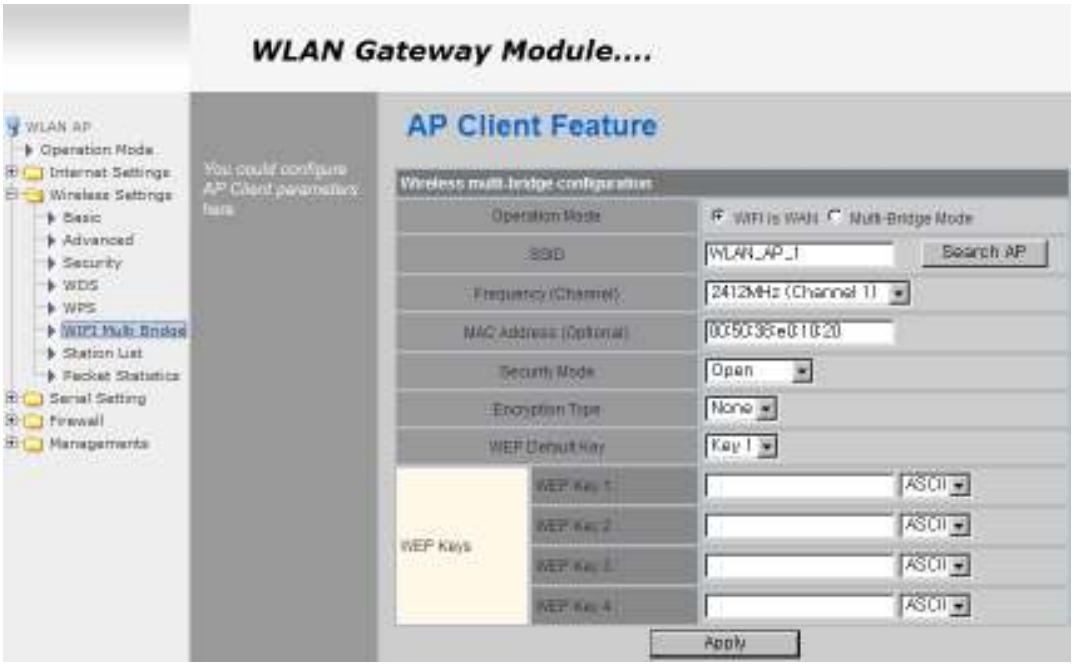
10. AP-Client Mode Settings

- AP-Client Mode Settings are very similar to the Gateway Mode Settings.
- The picture below is the only added feature of AP-Client mode.
- One module operates as both AP and Station.
- The wireless module connects to a different AP and functions as WAN port.
- The channel of WIZ630wi must be identical to the channel of AP to be connected
- Support wireless bridge.

10.1 AP-Client mode settings



10.2 WIFI Multi-Bridge settings



Type	Description
Operation Mode	Select Gateway or Bridge Mode. Wi-Fi is WAN: operates in Gateway Mode. Multi-Bridge Mode: operates in Bridge Mode.
SSID	SSID of AP to be connected.
Frequency (Channel)	Channel of AP to be connected.
MAC Address	MAC Address of AP to be connected. (optional)
Security	elect the same security option with AP to be connected.

11. ad-hoc mode setting

- Setting for ad-hoc mode is the almost same as the setting for Client (Station) Mode previously shown..
- The difference with Client mode is that Client mode is used to connect AP.
- Client Mode connects to AP, whereas ad-hoc Mode connects with stations that use the same SSID.
- Both 1:1 connection and 1:N connection are possible
- In case of 1:N, N is possible up to 255.

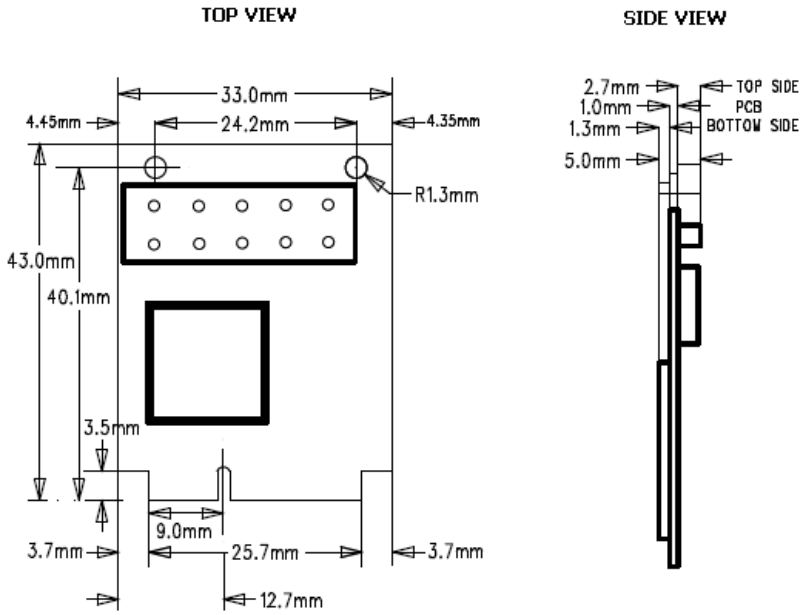
12. WIZ630wi Pin Map

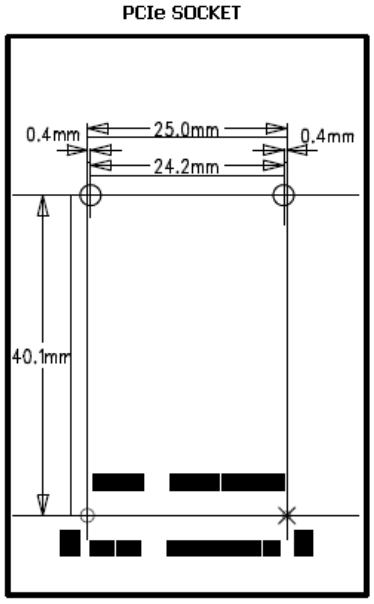
No	T	Name	Shared	Description
1		GND		
2		3.3V		
3		GND		
4		3.3V		
5	I/O, IPD	CTS_N	GPIO9	UART1 CTS-N
6	I/O, IPD	RTS_N	GPIO7	UART1 RTS-N
7	I/O, IPD	RIN	GPIO14	UART1 RIN
8	I/O, IPD	DTR_N	GPIO11	UART1 DTR-N
9	I/O, IPD	RxD	GPIO10	UART1 RXD
10	I/O, IPD	TxD	GPIO8	UART1 TXD
11	I/O, IPD	DSR_N	GPIO13	UART1 DSR-N
12	I/O, IPD	DCD_N	GPIO12	UART1 DCD-N
13	O	WLAN_LED		Wireless Init On/ Active Data:blinking
14		NC		
15	I/O	VBUS		USB OTG VBUS pin;Connect VBUS pin of the USB
16		NC		
17	I/O	PADP		USB OTG data pin Data+
18	I/O, IPD	UART_RX		UART2 RxD
19	I/O	PADM		USB OTG data pin Data-
20	I/O, IPD	UART_TX		UART2 TxD
21	O	TXOP0		10/100 PHY Port #0 TXP
22	I	RXIM0		10/100 PHY Port #0 RXN
23	O	TXOM0		10/100 PHY Port #0 TXN
24	I	RXIP0		10/100 PHY Port #0 RXP
25	I	RXIM1		10/100 PHY Port #1 RXN
26	O	TXOP1		10/100 PHY Port #1 TXP
27	I	RXIP1		10/100 PHY Port #1 RXP
28	O	TXOM1		10/100 PHY Port #1 TXN
29	I	RXIP2		10/100 PHY Port #2 RXP
30	O	TXOM2		10/100 PHY Port #2 TXN
31	I	RXIM2		10/100 PHY Port #2 RXN
32	O	TXOP2		10/100 PHY Port #2 TXP
33	O	LINK_LED_0		LAN port 0 Link LED
34	O	LINK_LED_2		LAN port 2 Link LED
35	O	LINK_LED_1		LAN port 1 Link LED
36	I/O, IPD	GPIO0		WPS Button Push
37	I, IPU	CPURST_N		
38	I/O, IPD	EJT_TDO		Reset Button Push(GPIO17)
39	I/O, IPD	EJT_TRSTN	GPIO21	UART2 Tx/Rx LED
40	I/O, IPD	EJT_TMS		Serial Command Mode #1(GPIO19)

41	I/O, IPD	EJT_TDI	GPIO18	UART1 Tx/Rx LED
42	I/O, IPD	EJT_TCK		WPS LED(GPIO20)
43		NC		
44		NC		
45		NC		
46		NC		
47	I/O, IPD	I2C_SCLK		Serial Command Mode #2(GPIO2)
48	I/O, IPD	I2C_SD		RUN LED(GPIO1)
49		GND		
50		3.3V		
51		GND		
52		3.3V		

Table 5. WIZ630wi Pin Map

13. Dimensions





14. Serial commands

- Please refer to WIZ6x0wi Serial Command Guide

15. Important Notice

WIZnet reserves the right to make corrections, modifications, enhancements, improvements and other changes to its products and services at any time, and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders, and should verify that such information is current and complete. All products are sold subject to WIZnet's terms and conditions of sale, supplied at the time of order acknowledgment. Information relating to device applications, and the like, is intended as suggestion only and may be superseded by updates. It is the customer's responsibility to ensure that their application meets their own specifications. WIZnet makes no representation and gives no warranty relating to advice, support or customer product design.

WIZnet assumes no responsibilities or liabilities for the use of any of its products, conveys no license or title under any patent, copyright or mask work rights to these products, and makes no representations or warranties that these products are free from patent, copyright or mask work infringement, unless otherwise specified.

WIZnet products are not intended for use in life support systems/appliances or any systems where product malfunction can reasonably be expected to result in personal injury, death, severe property damage or environmental damage. WIZnet customers using or selling WIZnet products for use in such applications do so at their own risk and agree to fully indemnify WIZnet for any damages resulting from such use.

All trademarks are the property of their respective owners.