

# WIZ630wi User Manual

(Version 0.93)



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## Document Revision History

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2012-01-31	V0.91	

## <Contents>

<b>1. Introduction.....</b>	<b>5</b>
1.1    EVB Construction.....	5
1.1.1.    Packaging .....	5
1.1.2.    Contents.....	6
1.1.3.    HW Interface .....	7
1.2    Features.....	8
1.3    Specifications .....	9
1.3.1.    Wireless Specifications.....	9
1.3.2.    Hardware .....	10
1.3.3.    Software .....	11
<b>2. Connecting the Web page of WIZ610wi .....</b>	<b>12</b>
2.1    Web address.....	12
2.2    Web Login.....	12
<b>3. Operation mode.....</b>	<b>14</b>
3.1    Access Point (Bridge).....	14
3.2    Gateway (Router).....	14
3.3    Client (Station).....	14
3.4    AP-Client mode.....	14
3.5    ad-hoc mode .....	14
<b>4. Internet Setting.....</b>	<b>16</b>
4.1    Internet connection setting .....	16
4.2    Local network setting .....	19
4.3    DHCP Client Information .....	20
4.4    VPN setting .....	20
4.5    Static Routing Setting .....	21
<b>5. Wireless setting.....</b>	<b>22</b>
5.1    Basic settings.....	22
5.2    Advanced Wireless Settings.....	24
5.3    Wireless Security .....	26
5.3.1.    Wireless Security setting .....	27
5.3.2.    Wireless Authentication Setting .....	28
5.3.2.1.    WEP.....	28
5.3.2.2.    TKIP/AES authentication .....	28
5.3.2.3.    Wireless 802.1x authentication .....	28
5.4    WDS Setting.....	29
5.5    WPS Setting.....	30
5.6    Wireless network status .....	31
5.7    AP Wireless Statistics .....	32
<b>6. Serial to LAN(Wired and Wireless).....</b>	<b>33</b>
6.1    Main Connection settings .....	34
6.2    Aux Connection Settings .....	34
6.3    Packing Condition (Incoming serial data packing condition).....	35
6.4    Ethernet Data Tagging Option.....	35
<b>7. Firewall settings.....</b>	<b>36</b>

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7.1	DMZ.....	36
7.2	Port forwarding .....	37
7.3	Packet filtering.....	38
7.4	Contents filtering .....	39
7.5	System Security .....	40
<b>8.</b>	<b>Managements.....</b>	<b>41</b>
8.1	System Management .....	41
8.2	Firmware .....	42
8.3	Config Settings .....	42
8.4	Port Setting .....	44
8.5	Packet Statistics.....	45
8.6	System Status.....	46
8.7	System Log.....	47
<b>9.</b>	<b>Client(Station) Mode setting .....</b>	<b>48</b>
9.1	Client Mode Setting.....	48
9.2	Profile .....	48
9.3	Link Status.....	50
9.4	Site Survey .....	51
9.5	Packet Statistics.....	52
9.6	Station Advanced Configurations .....	53
9.7	Station QoS/DLS(Direct Link Setup) Configurations.....	54
9.8	WPS Settings .....	55
<b>10.</b>	<b>AP-Client Mode Settings .....</b>	<b>56</b>
10.1	AP-Client mode settings .....	56
10.2	WIFI Multi-Bridge settings.....	57
<b>11.</b>	<b>ad-hoc mode setting.....</b>	<b>58</b>
<b>12.</b>	<b>WIZ630wi Pin Map .....</b>	<b>59</b>
<b>13.</b>	<b>Dimensions.....</b>	<b>61</b>
<b>14.</b>	<b>Serial commands.....</b>	<b>62</b>
<b>15.</b>	<b>Important Notice .....</b>	<b>63</b>

## 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

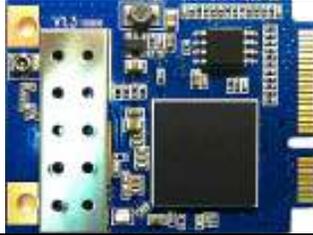
Section	Qnt.	Contents
WIZ630wi	1ea	WIZ630wi
		
WIZ630wi-EVB	1ea	WIZ630wi-EVB
		
Antenna	1 ea	2dBi WI-FI Antenna (Dipole)
		
Serial Cable	2 ea	Serial Cable
		
LAN Cable	1 ea	LAN Cable
WI-FI Jump cable	1 ea	WI-FI Jump cable (connection between Module and Antenna)
		
Adapter	1ea	DC 5V/2A Adapter

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

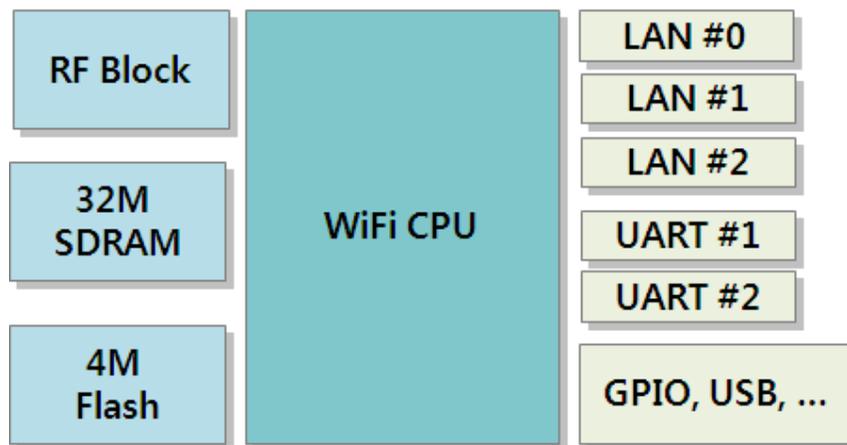


Figure 2. WIZ630wi Interface

## 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 150Mbps
- ◆ 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)

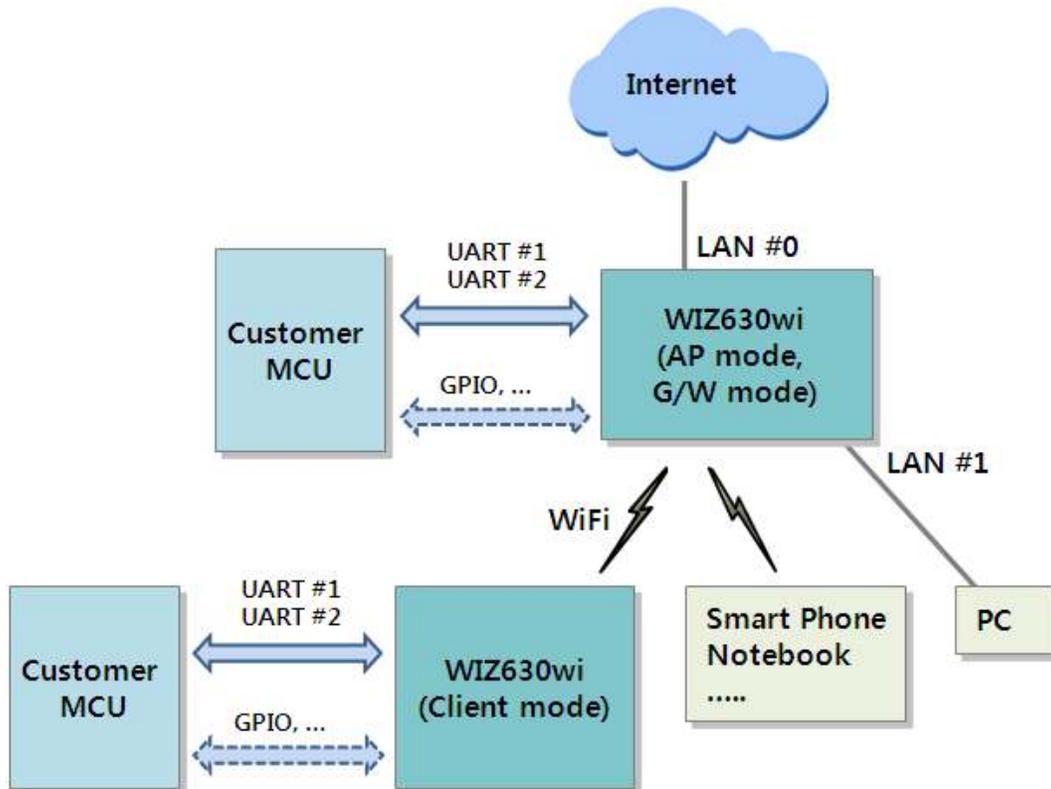


Figure 3. WIZ630wi Functions

## 1.3 Specifications

### 1.3.1. Wireless Specifications

Type	Description
<b>Wireless Standard</b>	IEEE802.11b/g/n
<b>Frequency Range</b>	USA: 2.400 ~ 2.483GHz Europe: 2.400 ~ 2.483GHz Japan: 2.400 ~ 2.497GHz China: 2.400 ~ 2.483GHz
<b>Operating Channels</b>	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)
<b>Output Power (Tolerance(+/-1dBm))</b>	802.11b: 17dBm@11Mbps 802.11g: 14dBm@54Mbps 802.11n: 14dBm@150Mbps/72Mbps
<b>Receive Sensitivity</b>	802.11b: -89dBm@11Mbps 802.11g: -74dBm@54Mbps 802.11n(40MHz): -66dBm@150Mbps 802.11n(20MHz): -70dBm@72Mbps
<b>Data Rates</b>	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
<b>Modulation Type</b>	11g: OFDM(64QAM, 16QAM, QPSK, BPSK) 11b: DSS(CCK, DQPSK, DBPSK)
<b>Operation Distance (???)</b>	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
<b>Antenna</b>	u.FL (EVB : 1T1R 2dBi)

Table 2. WiFi Specifications

### 1.3.2. Hardware

Type	Description
Interface	<b>Serial port</b> : 2 EA <b>LAN port</b> : 3EA <b>USB port</b> : 1 USB Host Port <b>Socket Type</b> : Mini-PCI Express socket
	U.FL(wireless)
Temperature	Operation: -30°C~80°C Storage: -30°C~80°C
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 not be 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.

**WLAN Gateway Module....**

- WLAN AP
  - Operation Mode
  - Internet Settings
  - Wireless Settings
  - Serial Setting
  - Firewall
  - Managements:
    - System Mgmt
    - Firmware Mgmt
    - Config Mgmt
    - Port Mgmt
    - Packet Statistics
    - System Status**
    - System Log

**System Status**

It display system firmware version, up-time, operation mode and internet configuration and connection information.

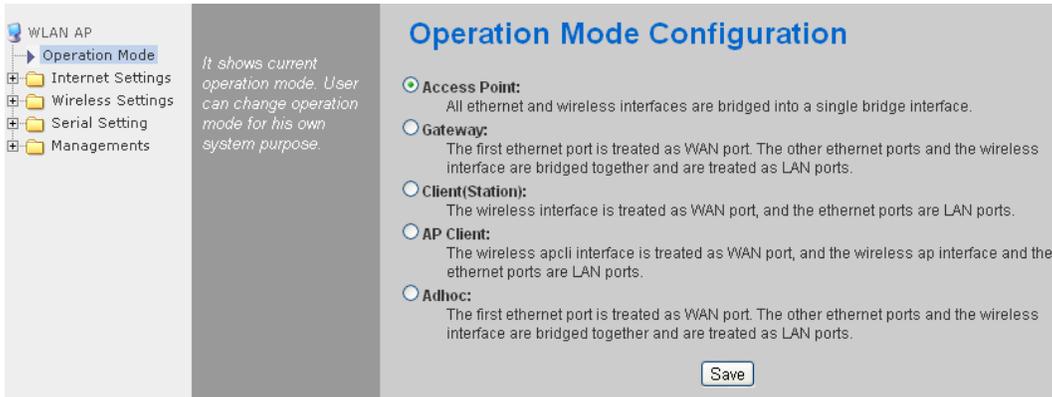
System Information	
F/W Version	DG620P-11n-4M-usb-sta-PCle-mng_v1.1.22-2011/1/10/5, 20:18:49
System Up Time	2 days, 23 hours, 55 mins, 57 secs
Operation Mode	Gateway Mode
Wireless Driver Version	2.6.0.0

Internet Configurations	
Connected Type	DHCP
WON IP Address	192.168.123.34
Subnet Mask	255.255.255.0
Default Gateway	192.168.123.254
Primary Domain Name Server	168.126.63.1
Secondary Domain Name Server	168.126.63.2
MAC Address	00:50:38:E0:00:0E

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

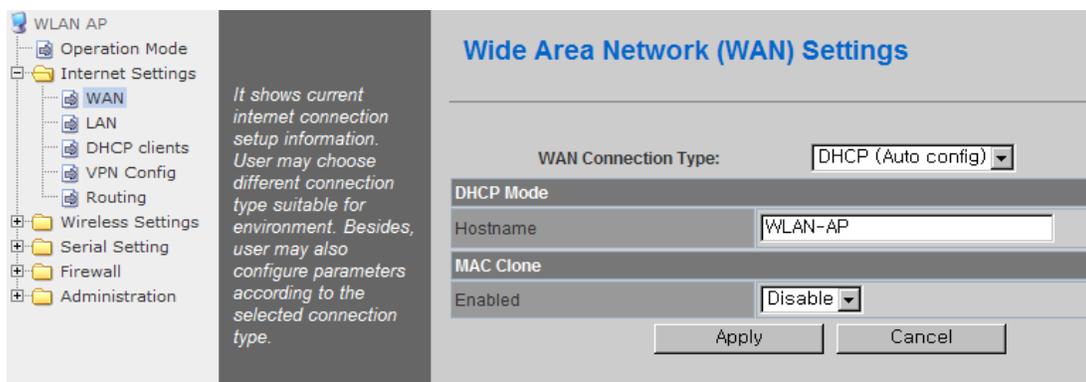
ad-hoc ↔ ad-hoc: OK

ad-hoc ↔ LAN: No Communication

## 4. Internet Setting

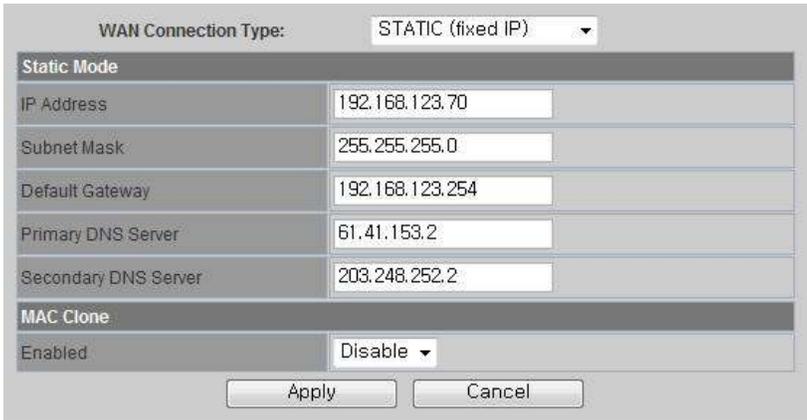
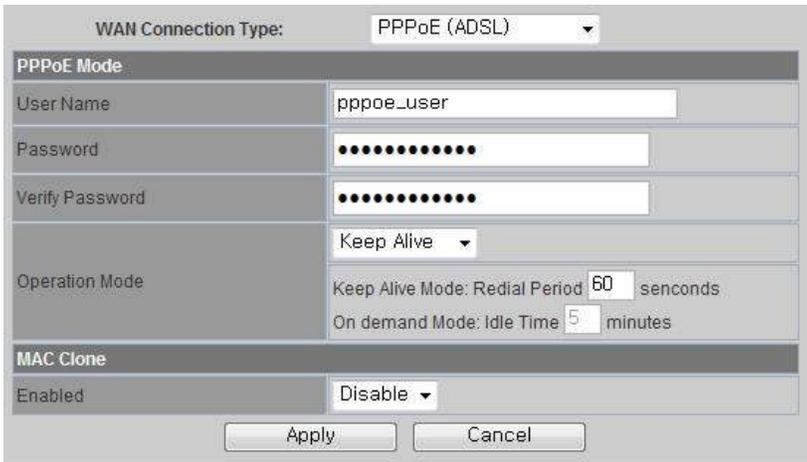
### 4.1 Internet connection setting

- ◆ 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
<b>WAN Connection Type</b>	Select the communication ways for Internet's connection <ul style="list-style-type: none"> <li>- Static(Fixed IP)</li> <li>- DHCP (Auto config)</li> <li>- PPPoE</li> </ul>
<b>Host Name</b>	Settings about module's host name
<b>Mac Clone</b>	Some ISPs require that you register a MAC address. Users can directly enter MAC address or use the MAC Clone function.

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

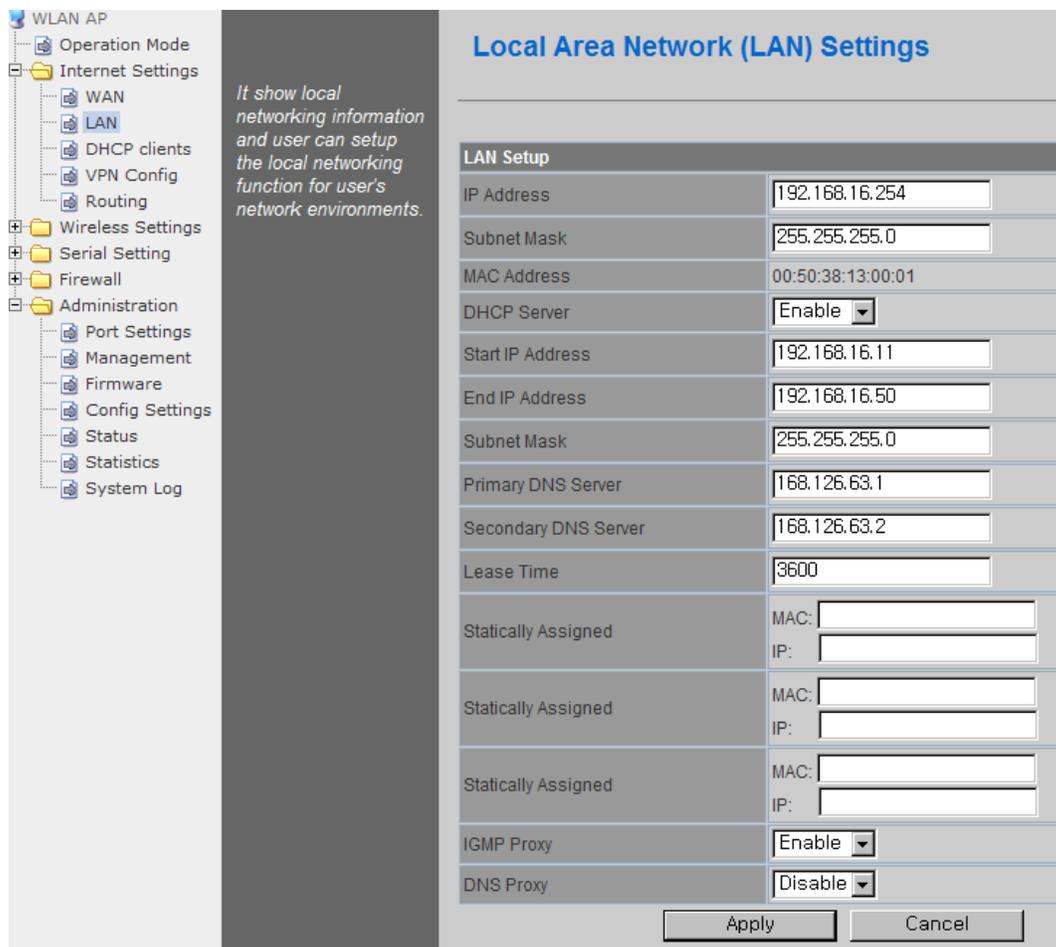
	 <p>Input the network information that got from ISP (such as IP, Subnet, Gateway, DNS)</p>
<p><b>PPPoE(ADSL)</b></p>	 <p>- User Name: Setting the User Name received from ISP          - Password: Password assigned by ISP          - Operation Mode: This mode is used for re-connecting when connection is bad.</p>
<p><b>3G Mode</b></p>	<p>- 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.</p>

WAN Connection Type: 3G	
<b>3G Modem Configuration</b>	
PIN	0000
Access Number	*98#
APN	publicip.ktfwing.com
User	
Password	
<b>Detected 3G Modem Information</b>	
Model Name	CWE-624K
Manufacturer	CMOTECH CO., LTD.
Product	CMOTECH CDMA Technologies
<b>MAC Clone</b>	
Enabled	Disable
Apply Cancel	

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.



*It show local networking information and user can setup the local networking function for user's network environments.*

### Local Area Network (LAN) Settings

LAN Setup	
IP Address	<input type="text" value="192.168.16.254"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
MAC Address	00:50:38:13:00:01
DHCP Server	<input type="button" value="Enable"/>
Start IP Address	<input type="text" value="192.168.16.11"/>
End IP Address	<input type="text" value="192.168.16.50"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Primary DNS Server	<input type="text" value="168.126.63.1"/>
Secondary DNS Server	<input type="text" value="168.126.63.2"/>
Lease Time	<input type="text" value="3600"/>
Statically Assigned	MAC: <input type="text"/> IP: <input type="text"/>
Statically Assigned	MAC: <input type="text"/> IP: <input type="text"/>
Statically Assigned	MAC: <input type="text"/> IP: <input type="text"/>
IGMP Proxy	<input type="button" value="Enable"/>
DNS Proxy	<input type="button" value="Disable"/>

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

### 4.3 DHCP Client Information

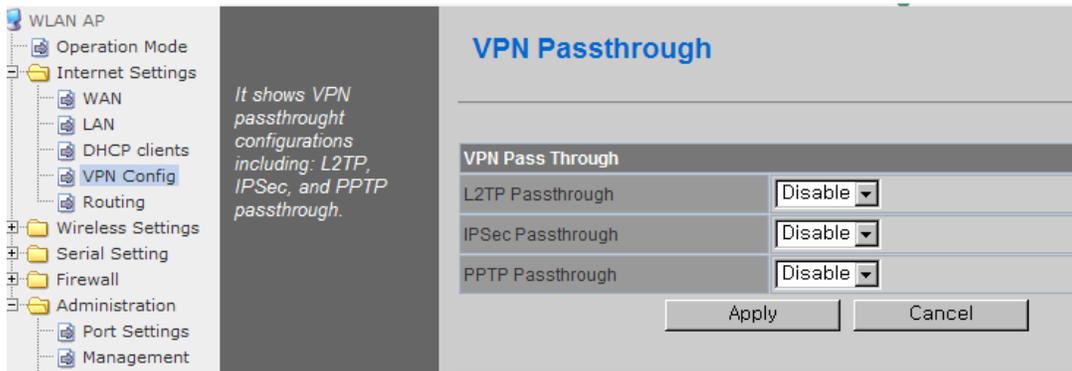
- ◆ The IP information that is assigned from the DHCP server is shown.



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

### 4.4 VPN setting

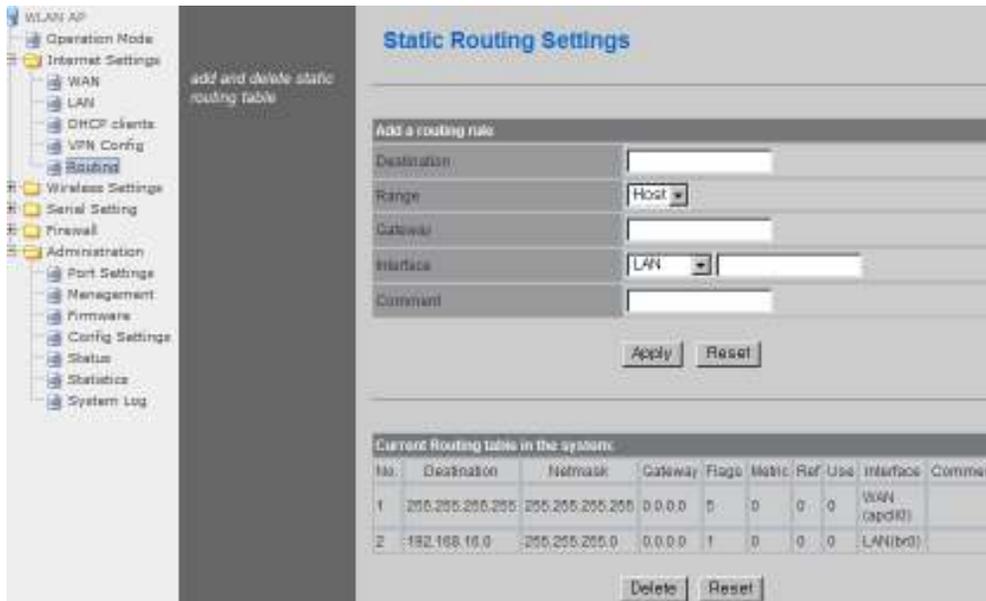
- ◆ This section will explain on VPN packet settings.



Type	Description
<b>L2TP Pass-through</b>	Enable : VPN L2TP packet is passed through WAN. Disable : VPN L2TP packet is not passed through WAN. (Default value)
<b>IPSec Pass-through</b>	Enable : VPN IPsec packet is passed through WAN. Disable : VPN IPsec packet is not passed through WAN. (Default value)
<b>PPTP Pass-through</b>	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
<b>Destination</b>	Enter the Target IP address or network address.
<b>Range</b>	Select whether the routing table is HOST or NETWORK
<b>Netmask</b>	If Range is NETWORK, enter subnet mask.
<b>Gateway</b>	Enter the gateway address to be passed when communicating with target.
<b>Interface</b>	Select whether the target is LAN or WAN.

## 5. Wireless setting

### 5.1 Basic settings

◆ This chapter is about basic setting for wireless LAN.

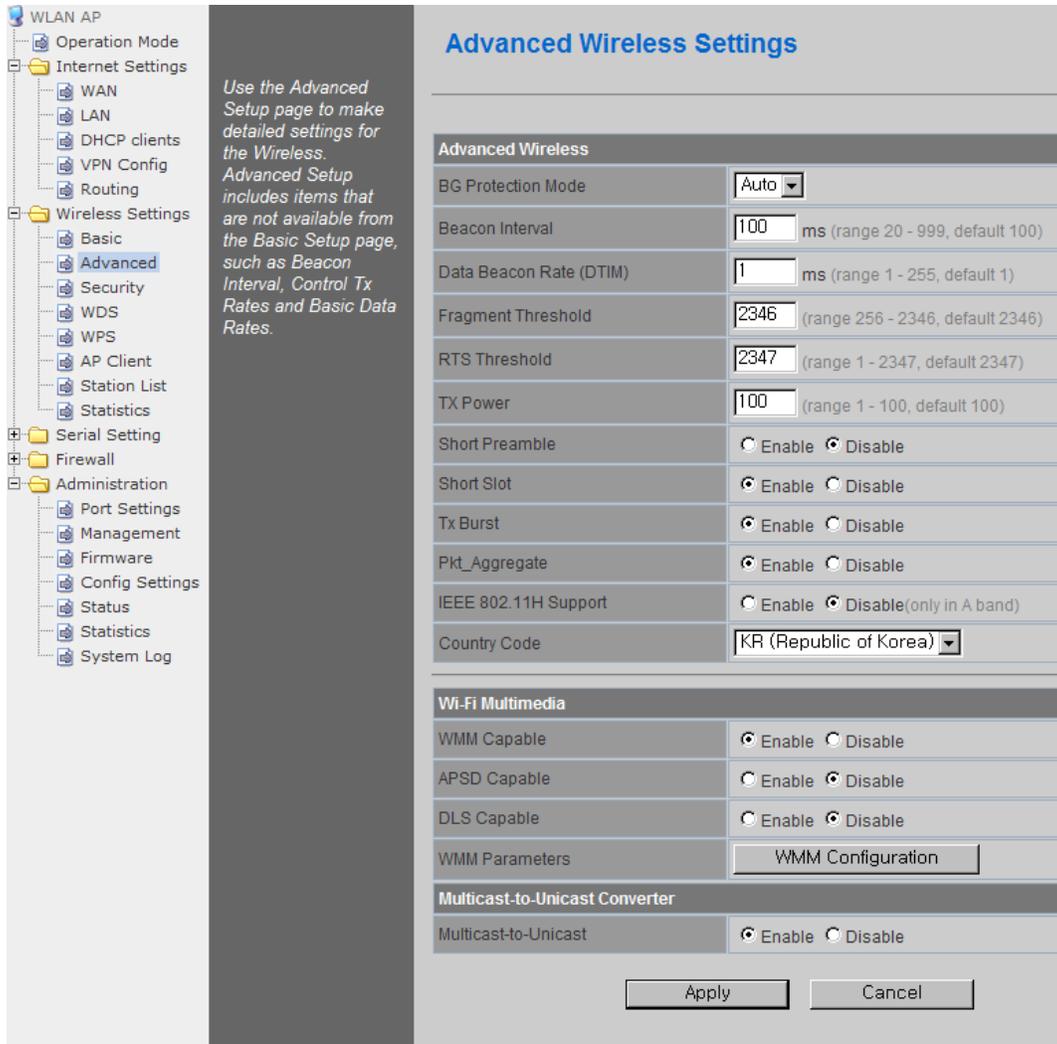
Type	Description
<b>Radio On/Off</b>	Decide radio on/off of wireless AP function.
<b>Network Mode</b>	11b/g/n mixed mode: 802.11b/g/n are supported. 11b/g mixed mode: 802.11b/g are supported. 11b only: only 802.11b is supported. 11g only: only 802.11g is supported. 11n only: only 802.11n is supported

<b>SSID</b>	Enter the name of the wireless network.
<b>Channel</b>	Select the channel of wireless network.
<b>Broadcast Network Name</b>	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.
<b>AP Isolation</b>	The communication between stations that are connected to the identical SSID is blocked.
<b>MBSSID AP Isolation</b>	The communication between stations that are connected to different SSID is blocked.

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

## 5.2 Advanced Wireless Settings

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



Use the Advanced Setup page to make detailed settings for the Wireless. Advanced Setup includes items that are not available from the Basic Setup page, such as Beacon Interval, Control Tx Rates and Basic Data Rates.

Advanced Wireless	
BG Protection Mode	Auto
Beacon Interval	100 ms (range 20 - 999, default 100)
Data Beacon Rate (DTIM)	1 ms (range 1 - 255, default 1)
Fragment Threshold	2346 (range 256 - 2346, default 2346)
RTS Threshold	2347 (range 1 - 2347, default 2347)
TX Power	100 (range 1 - 100, default 100)
Short Preamble	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Short Slot	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Tx Burst	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Pkt_Aggregate	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IEEE 802.11H Support	<input type="radio"/> Enable <input checked="" type="radio"/> Disable(only in A band)
Country Code	KR (Republic of Korea)

Wi-Fi Multimedia	
WMM Capable	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
APSD Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
DLS Capable	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
WMM Parameters	WMM Configuration

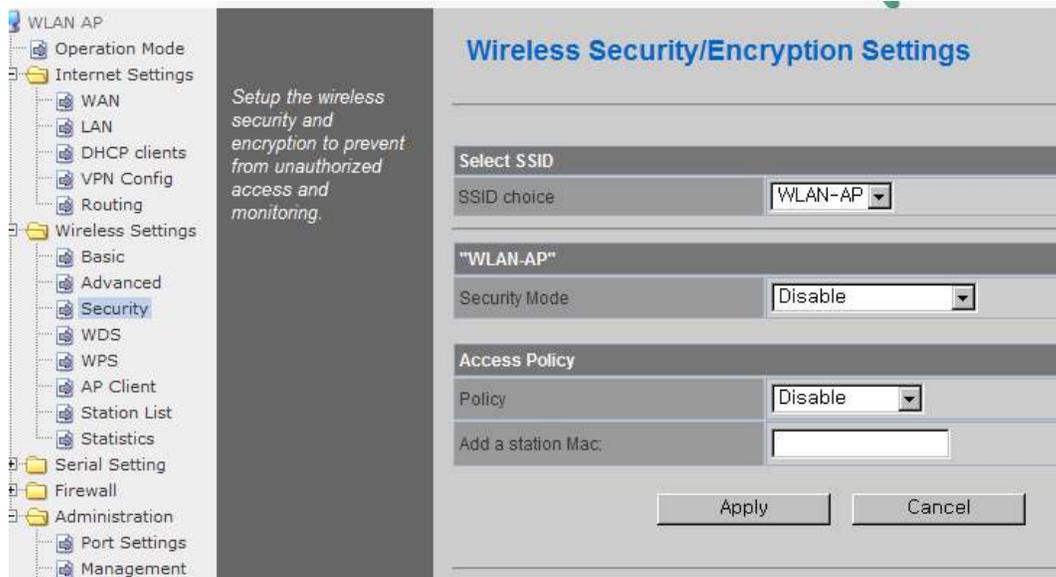
Multicast-to-Unicast Converter	
Multicast-to-Unicast	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

Type	Description
<b>BG Protection</b>	Setting for wireless communication when using both 11b and 11g LAN cards. Recommended for automatic settings in general.
<b>Beacon Interval</b>	Controls the interval of sending beacon. The setting range is 20~999 and 100ms is usually used
<b>DTIM</b>	Controls the data rate of beacon being sent. The setting range is 1~255 and 1ms is usually used.
<b>Fragmentation Threshold</b>	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.

<b>RTS Threshold</b>	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.
<b>Tx Power</b>	Controls the range of wireless radio being sent. The range of wireless radio being sent gets larger as the value is larger.
<b>Short Preamble</b>	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.
<b>Short Slot</b>	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.
<b>Tx Burst</b>	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.
<b>Pkt_Aggregate</b>	Numerous packets can be transmitted in one MPDU by enabling this function.
<b>802.11H</b>	Supported only for 802.11a.
<b>Country Code</b>	Setting for country code. Example: KR(Republic of Korea), US(United State), FCC(Europe), JP(Japan), FR(France), ES(Spain)
<b>WMM</b>	Decide to whether or not use WMM function.
<b>APSD</b>	Decide to whether or not use Power Saving Mode.
<b>DLS</b>	Decide whether or not use DLS (Direct Link Setup) function.
<b>WMM Parameter</b>	If WMM is enabled, set the value for WMM Parameter.
<b>Multicast-to-Unicast</b>	Decide whether or not use Multicast function.

## 5.3 Wireless Security

- ◆ This chapter is about settings for wireless network security.



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

### 5.3.1. Wireless Security setting

◆ Authentication settings

<b>"WLAN-AP"</b>	
Security Mode	WPAPSKWPA2PSK ▾
	Disable
	OPENWEP
	SHAREDWEP
WPA Algorithms	WEP-AUTO
	WPA
Pass Phrase	WPA-PSK
	WPA2
	WPA2-PSK
Key Renewal Interval	WPAPSKWPA2PSK (4303)
	WPA1WPA2
Access Policy	802.1X

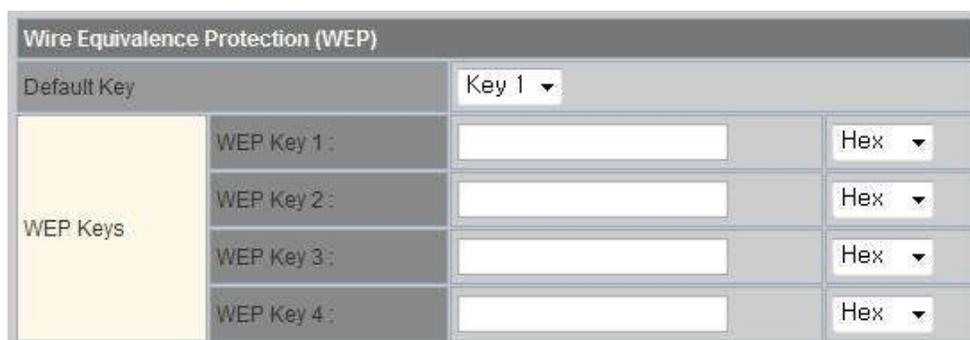
Type	Description
<b>OPENWEP</b>	All users are authorized.
<b>SHAREDWEP</b>	Users only with correct network key are authorized.
<b>WEP-AUTO</b>	OPEN/SHARED Mode is selected automatically.
<b>WPA-PSK</b>	WPA certified standard with improved security.
<b>WPA2-PSK</b>	Improved WPA certified standard
<b>WPAPSKWPA2PSK</b>	Both WPZ-PSK and WPZ2-PSK are supported.
<b>WPA</b>	WPA certified standard including 802.1x.
<b>WPA2</b>	Improved WPA certified standard.
<b>WPA1WPA2</b>	Both WPA and WPA2 are supported.
<b>802.1x</b>	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/	WEP encryption algorithm is used with 64bit key.
WEP128	WPAUTO/802.1x	WEP encryption algorithm is used with 128 bit key.
TKIP	WPA/WPA2/	More complex encryption algorithm than WEP Is used.
AES	WPA-PSK/ WPA2-PSK/	New encryption algorithm is used.
TKIP/AES	WPA1WPA2/ WPAPSKWPA2PSK	Support TKIP/AES simultaneously

#### 5.3.2.1. WEP

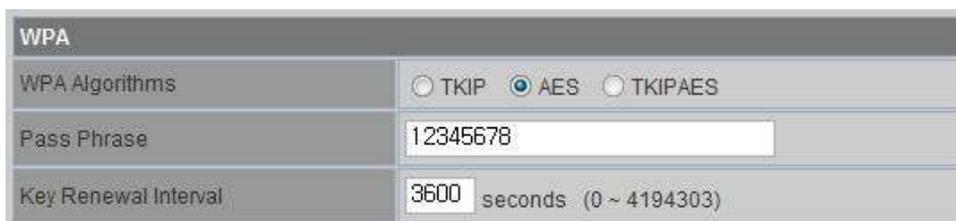
- ◆ Enter key for WEP64 or WEP128 network.
- ◆ Use either character string or hex character when entering key.
- ◆ Select 1~4 for 'Default Key..
- ◆ Enter at least one WEP Key.
- ◆ The entered WEP key is used for connection from wireless terminal



The image shows a configuration window titled "Wire Equivalence Protection (WEP)". It includes a "Default Key" dropdown menu currently set to "Key 1". Below this is a section labeled "WEP Keys" containing four rows, each with a label (WEP Key 1 through 4), an input field, and a "Hex" dropdown menu.

#### 5.3.2.2. TKIP/AES authentication

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



The image shows a configuration window titled "WPA". It features three main sections: "WPA Algorithms" with radio buttons for TKIP, AES (which is selected), and TKIPAES; "Pass Phrase" with a text input field containing "12345678"; and "Key Renewal Interval" with a text input field containing "3600" and the label "seconds (0 ~ 4194303)".

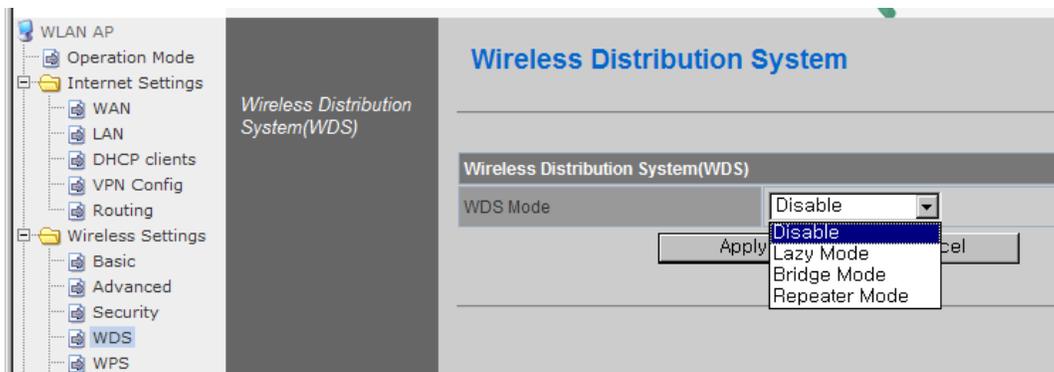
#### 5.3.2.3. Wireless 802.1x authentication

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

<b>WPA</b>	
WPA Algorithms	<input type="radio"/> TKIP <input checked="" type="radio"/> AES <input type="radio"/> TKIPAES
Key Renewal Interval	3600 seconds (0 ~ 4194303)
<b>Radius Server</b>	
IP Address	<input type="text"/>
Port	1812
Shared Secret	<input type="text"/>
Session Timeout	0
Idle Timeout	<input type="text"/>

## 5.4 WDS Setting

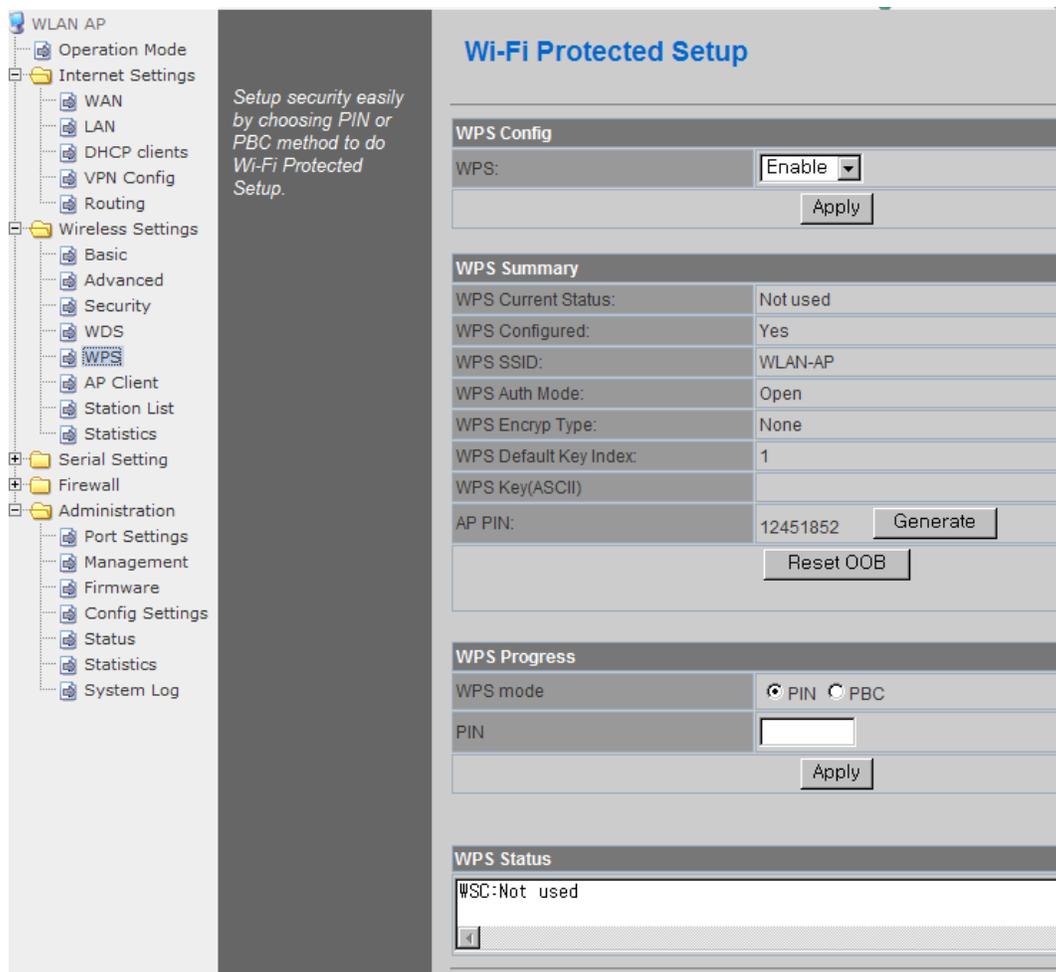
- ◆ Connection with different AP is possible with WDS (Wireless Distribution System) function.
- ◆ Maximum of four APs can connect through WDS function.
- ◆ 2 APs must use the same channel and authentication / encryption method.



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



Setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup.

### Wi-Fi Protected Setup

**WPS Config**

WPS:

**WPS Summary**

WPS Current Status:	Not used
WPS Configured:	Yes
WPS SSID:	WLAN-AP
WPS Auth Mode:	Open
WPS Encryp Type:	None
WPS Default Key Index:	1
WPS Key(ASCII)	
AP PIN:	12451852 <input type="button" value="Generate"/>
	<input type="button" value="Reset OOB"/>

**WPS Progress**

WPS mode  PIN  PBC

PIN

**WPS Status**

WPS: Not used

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

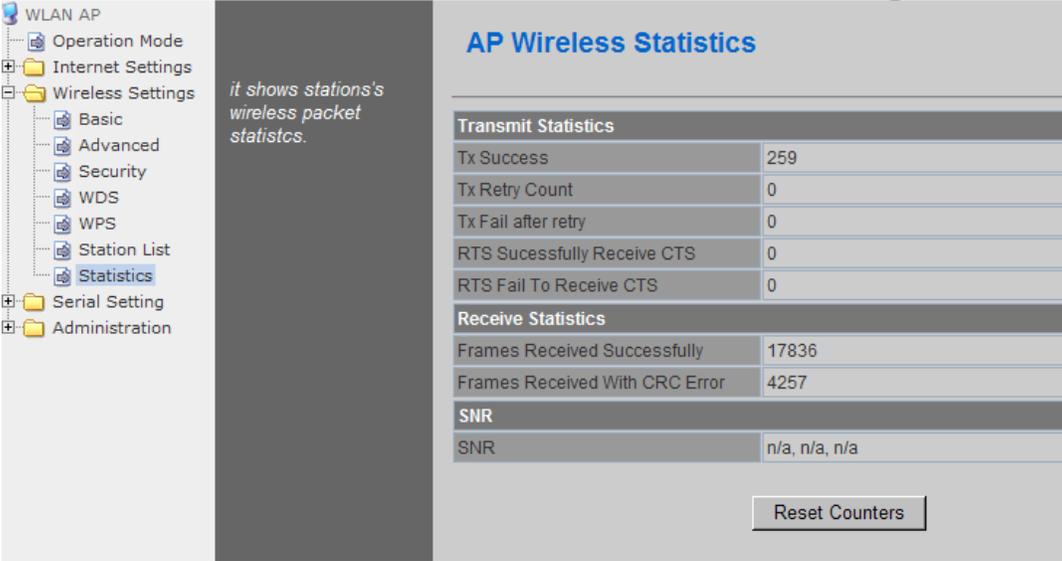
The screenshot shows the 'Station List' page in the WIZnet web interface. The left sidebar contains navigation options: WLAN AP, Operation Mode, Internet Settings, Wireless Settings (Basic, Advanced, Security, WDS, WPS, Station List, Statistics), Serial Setting, and Administration. The main content area is titled 'Station List' and contains two tables. The first table, 'Wireless Network', has columns: MAC Address, Ad, PSN, MimoPS, MCS, BW, SGI, STBC. The second table, 'Neighboring Wireless Networks', has columns: Channel, SSID, BSSID, Security, Signal (%), W-Mode, Type. The 'Neighboring Wireless Networks' table lists various wireless networks with their respective details.

Channel	SSID	BSSID	Security	Signal (%)	W-Mode	Type
1		00:01:36:57:6b:3b	WPAPSKTKIP	60	11b/g	In
1	myLGNet6B3E	00:01:36:57:6b:3c	WEP	60	11b/g	In
1	NESPOT	06:30:0d:59:19:d6	NONE	0	11b/g	In
1	QOOknSHOW	00:30:0d:59:19:d6	WPATKIPAES	0	11b/g	In
2	myLGNet	00:02:a8:84:c5:b1	WEP	0	11b/g	In
3	iptime1004	00:08:9f:d9:ee:14	WEP	10	11b/g/n	In
6		00:01:36:25:1b:5e	WPAPSKTKIP	0	11b/g	In
6	QOOknSHOWbasic	00:25:a6:a3:e7:78	NONE	0	11b/g/n	In
6	KT_WLAN_5445	00:30:0d:5a:a4:52	WPA1PSKWPA2PSKTKIPAES	34	11b/g/n	In
6		00:02:a8:9e:67:84	WPAPSKTKIP	0	11b/g	In
6	myLGNet	00:02:a8:9e:67:85	WEP	0	11b/g	In
6	KT_WLAN	00:25:a6:a3:e7:79	WEP	0	11b/g	In
6		02:30:0d:5a:a4:52	WPA1PSKWPA2PSKTKIPAES	29	11b/g/n	In
6	QOOknSHOW	00:25:a6:a3:e7:77	WPA1WPA2TKIPAES	0	11b/g/n	In
6	myLGNet	00:01:36:25:1b:60	WEP	0	11b/g	In
7		00:08:9f:7c:c8:d8	WPAPSKTKIP	0	11b/g	In
7	myLGNet	00:08:9f:7c:c8:d9	WEP	0	11b/g	In
7		00:40:5a:65:3b:78	WPAPSKTKIP	5	11b/g/n	In
7	U+Net3B7B	00:40:5a:65:3b:79	WPA2PSKIAES	0	11b/g/n	In
7	Anyang_N704m	00:08:9f:4a:1e:88	WEP	0	11b/g/n	In
9	WIZARD-AP	00:08:9f:be:79:fc	NONE	100	11b/g/n	In
9	yjh	00:26:66:2c:a7:40	WPA1PSKWPA2PSKIAES	50	11b/g/n	In
11	3-WLAN-AP	00:50:38:12:f:58	NONE	100	11b/g/n	In
11	2-WLAN-AP	00:50:38:12:f:5e	NONE	100	11b/g/n	In
11	QOOknSHOWbasic	00:25:a6:a2:2b:62	NONE	0	11b/g/n	In
11	WLAN-AP	00:50:38:12:f:64	NONE	15	11b/g/n	In

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

## 5.7 AP Wireless Statistics

- ◆ The Statistics of wireless communication is shown.



WLAN AP

- Operation Mode
- Internet Settings
- Wireless Settings
  - Basic
  - Advanced
  - Security
  - WDS
  - WPS
  - Station List
  - Statistics
- Serial Setting
- Administration

*it shows stations's wireless packet statistics.*

### AP Wireless Statistics

Transmit Statistics	
Tx Success	259
Tx Retry Count	0
Tx Fail after retry	0
RTS Successfully Receive CTS	0
RTS Fail To Receive CTS	0

Receive Statistics	
Frames Received Successfully	17836
Frames Received With CRC Error	4257

**SNR**

SNR	n/a, n/a, n/a
-----	---------------

Reset Counters

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

### WLAN Gateway Module...

WLAN AP

- ▶ Operation Mode
- ▶ Internet Settings
  - ▶ WAN
  - ▶ LAN
  - ▶ DHCP Clients
  - ▶ VPN Config
  - ▶ Routing
  - ▶ QoS(802.1p)
  - ▶ VLAN(802.1q)
- ▶ Wireless Settings
  - ▶ Basic
  - ▶ Advanced
  - ▶ Security
  - ▶ WDS
  - ▶ WPS
  - ▶ Station List
  - ▶ Packet Statistics
- ▶ Serial Setting
  - ▶ Serial Port#1
  - ▶ Serial Port#2
- ▶ Firewall
- ▶ Managements

Serial-to-Ethernet(Serial #1)

*It shows current Serial to LAN conguration for serial port #1. user can change it.*

Main Connection Configuration	
Status:	<input checked="" type="checkbox"/> Enable
Protocol:	<input type="radio"/> UDP <input checked="" type="radio"/> TCP
Mode:	<input type="radio"/> Server <input checked="" type="radio"/> Client <input type="radio"/> Mixed
Server IP:	255   255   255   123 or <input style="width: 100px;" type="text"/>
Server Port:	<input type="text" value="5000"/>
Reconnect Interval:	<input type="text" value="10"/> Seconds(1-30, default: 10)
Connection Option:	<input checked="" type="radio"/> System BootUp <input type="radio"/> Serial Data In
Baudrate:	<input type="text" value="38400"/>
Databits:	<input type="text" value="8"/>
Parity:	<input type="text" value="None"/>
Stopbits:	<input type="text" value="1"/>
Flowcontrol:	<input type="text" value="None"/>

Aux Connection Configuration	
Status:	<input type="checkbox"/> Enable
Protocol:	<input type="radio"/> UDP <input checked="" type="radio"/> TCP
Mode:	<input checked="" type="radio"/> Server <input type="radio"/> Client
Server IP:	255   255   255   123 or <input style="width: 100px;" type="text"/>
Server Port:	<input type="text" value="5050"/>

Data Packing Condition	
Time:	<input type="text" value="0"/> milli-second(100-5000, default: 0)
Size:	<input type="text" value="0"/> Bytes(0-1500, default: 0)
Char:	<input type="text" value="00"/> Hexacode(00-ff, default: 0)
Inactivity Time:	<input type="text" value="0"/> Seconds(00-60, default: 0)
Command Mode:	<input type="checkbox"/> Enable(Enable: HW GPIO Used)

Ethernet Data Tagging Option	
Status:	<input type="checkbox"/> Enable
Main Port:	<input type="text" value=" MAIN "/> string(1-16 chars)
Aux Port:	<input type="text" value=" AUX! "/> string(1-16 chars)

## 6.1 Main Connection settings

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

## 6.2 Aux Connection Settings

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

### 6.3 Packing Condition (Incoming serial data packing condition)

Type	Description
<b>Time</b>	Data packing until the set time and then sent to server after the set time.
<b>Size</b>	Data packing until the set size and then sent to the server.
<b>Character</b>	Data packing until the set character and then sent to the server.
<b>Inactivity Time:</b>	TCP/IP connection is discontinued if there is neither serial data nor network data during the set time.
<b>H/W CMD switch</b>	- . 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.

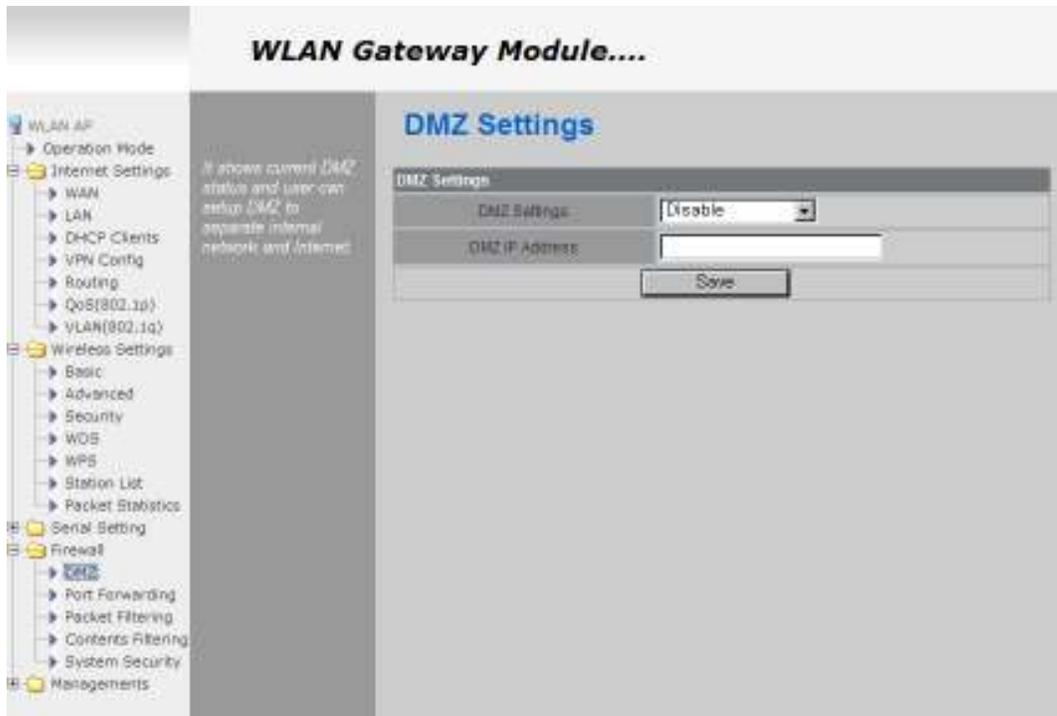
Type	Description
<b>Status</b>	Enable or disable this option (Checked : Enable, Un-Check : Disable)
<b>Main Port</b>	Before sending data from Main port to serial port, WIZ630wi added a TAG in the front of payload. For example: In-come LAN Data : "abcdegf" Output data to Serial Port : "!MAIN!abcdegf"
<b>Aux Port</b>	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
<b>DMZ Settings</b>	Disable/Enable DMZ
<b>DMZ IP Address</b>	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
<b>Port Forwarding</b>	Disable/Enable Port Forwarding
<b>IP Address</b>	Internal IP address
<b>Service Port</b>	External ports range
<b>Protocol</b>	Supports TCP and UDP
<b>Internal Port</b>	Internal port

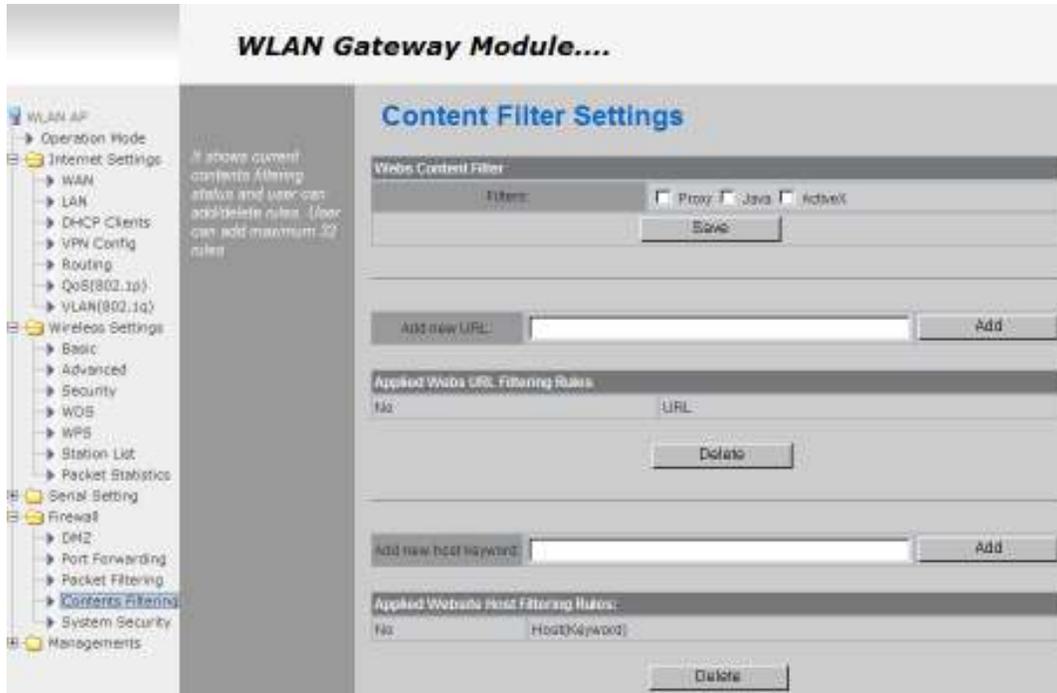
## 7.3 Packet filtering

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

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

## 7.4 Contents filtering

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



Type	Description
<b>URL Filter</b>	Block all the websites whose domain is the input text For example, if you input "sex", the websites like <a href="http://www.sex.com">www.sex.com</a> is blocked. But <a href="http://www.sexgood.com">www.sexgood.com</a> is not blocked. If you would like to block all the websites whose domain name contains the input text, please use Host Filter function
<b>Host Filter</b>	Block all the websites whose domain name contains the input text. For example, if you input "game", the websites like <a href="http://www.hangame.com">www.hangame.com</a> , <a href="http://www.hangame.co.kr">www.hangame.co.kr</a> are blocked

## 7.5 System Security

- ◆ Defense of external attack.

**WLAN Gateway Module....**

- WLAN AP
  - Operation Mode
  - Internet Settings
    - WAN
    - LAN
    - DHCP Clients
    - VPN Config
    - Routing
    - QoS(802.1p)
    - VLAN(802.1q)
  - Wireless Settings
    - Basic
    - Advanced
    - Security
    - WDS
    - WPS
    - Station List
    - Packet Statistics
  - Serial Setting
  - Firewall
    - DMZ
    - Port Forwarding
    - Packet Filtering
    - Contents Filtering
    - System Security**
  - Managements

*It shows current system security to protect attacking. User can change the this settings to protect our-side attacking.*

### System Security Settings

<b>Remote Web Management</b>		
Remote Web Access(via WAN)	Allow	Port: 8080
<b>Remote Telnet Management</b>		
Remote Telnet Access (via WAN)	Allow	Port: 23
<b>Ping from WAN Filter(Drop)</b>		
Ping from WAN Filter(Drop)	Disable	
<b>Broadcast Storm Filter</b>		
Broadcast Storm Filter	Disable	
<b>Block Port Scan</b>		
Block port scan	Disable	
<b>Block SYN Flood</b>		
Block SYN Flood	Disable	
Save		

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

## 8. Managements

### 8.1 System Management

**WLAN Gateway Module....**

**System Management**

Configure language code for web server, login account and password, NTP (system time zone), Green AP function for power save, Dynamic DNS.

**Language Settings**

Select Language:

**Module Name**

Name:

**Administrator Settings**

Account:  Password:

**Token Connection Count**

Count:  (default 5, 1-10)

**NTP Settings**

Current Time:

Time Zone:

NTP Server:

NTP synchronization (hours):

**Green AP**

Duration	Action
<input type="text" value="00"/> : <input type="text" value="00"/> ~ <input type="text" value="00"/> : <input type="text" value="00"/>	<input type="text" value="Disable"/>
<input type="text" value="00"/> : <input type="text" value="00"/> ~ <input type="text" value="00"/> : <input type="text" value="00"/>	<input type="text" value="Disable"/>
<input type="text" value="00"/> : <input type="text" value="00"/> ~ <input type="text" value="00"/> : <input type="text" value="00"/>	<input type="text" value="Disable"/>
<input type="text" value="00"/> : <input type="text" value="00"/> ~ <input type="text" value="00"/> : <input type="text" value="00"/>	<input type="text" value="Disable"/>

**DDNS Settings**

Dynamic DNS Provider:

Account:

Password:

DDNS:

**System Status Report**

Status:

IP/Domain:Port #1:   0-65535

IP/Domain:Port #2:   0-65535

Interval:  (1-1440)Minutes

System Description:

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 <a href="http://www.dyndns.org">www.dyndns.org</a> 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

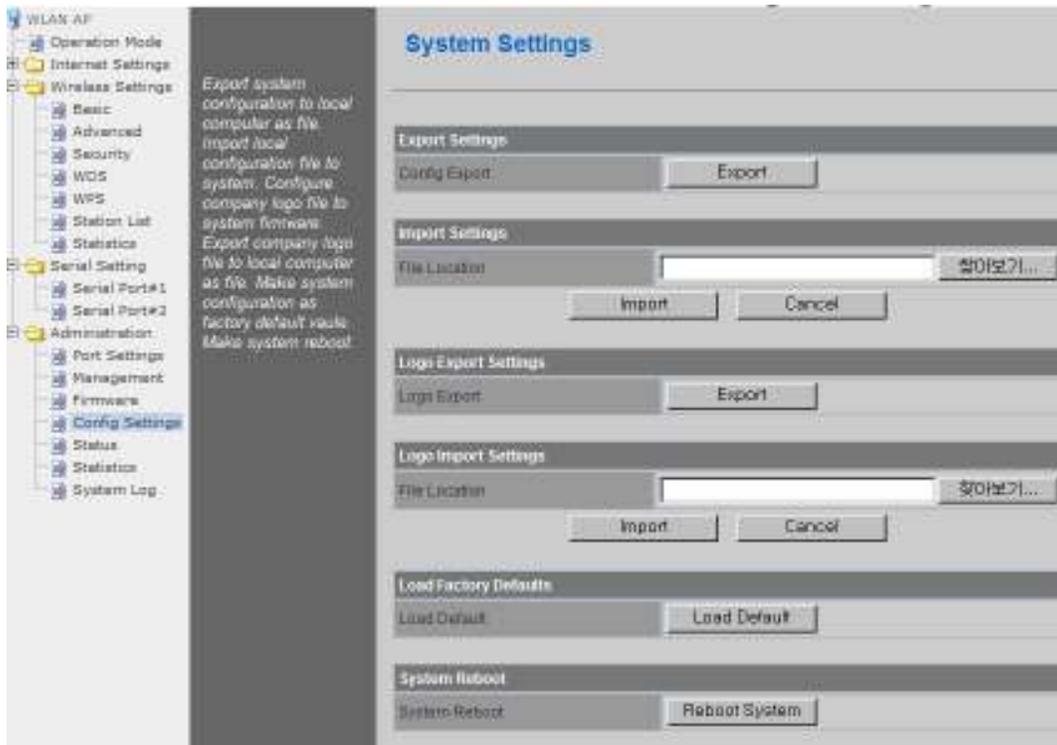
## 8.2 Firmware

- ◆ 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
<b>Export Settings</b>	The setting files from the PC file are applied to the module.
<b>Import Settings</b>	The system's setting information is saved as a file in the PC.
<b>Logo Export Settings</b>	User's company logo file is saved in the PC.
<b>Logo Import Settings</b>	User's company logo from the PC is applied to the system. ( GIF file size : 10K , 126x42)
<b>Load Factory Defaults</b>	Change the module's setting to default setting.
<b>Reboot</b>	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
<b>WAN Port</b>	Select the WAN Port in case of Gateway Mode.
<b>Port #0</b>	Enable / Disable Port #0.
<b>Port #1</b>	Enable / Disable Port #1.
<b>Port #2</b>	Enable / Disable Port #2.
<b>Port #3</b>	Enable / Disable Port #3.
<b>Port #4</b>	Enable / Disable Port #4.

## 8.5 Packet Statistics

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

**WLAN Gateway Module...**

WLAN AP

- ▶ Operation Mode
- ▶ Internet Settings
- ▶ Wireless Settings
- ▶ Serial Setting
- ▶ Firewall
- ▶ Managements
- ▶ System Mgmt
- ▶ Firmware Mgmt
- ▶ Config Mgmt
- ▶ Port Mgmt
- ▶ **Packet Statistics**
- ▶ System Status
- ▶ System Log

It displays packet information per interface.

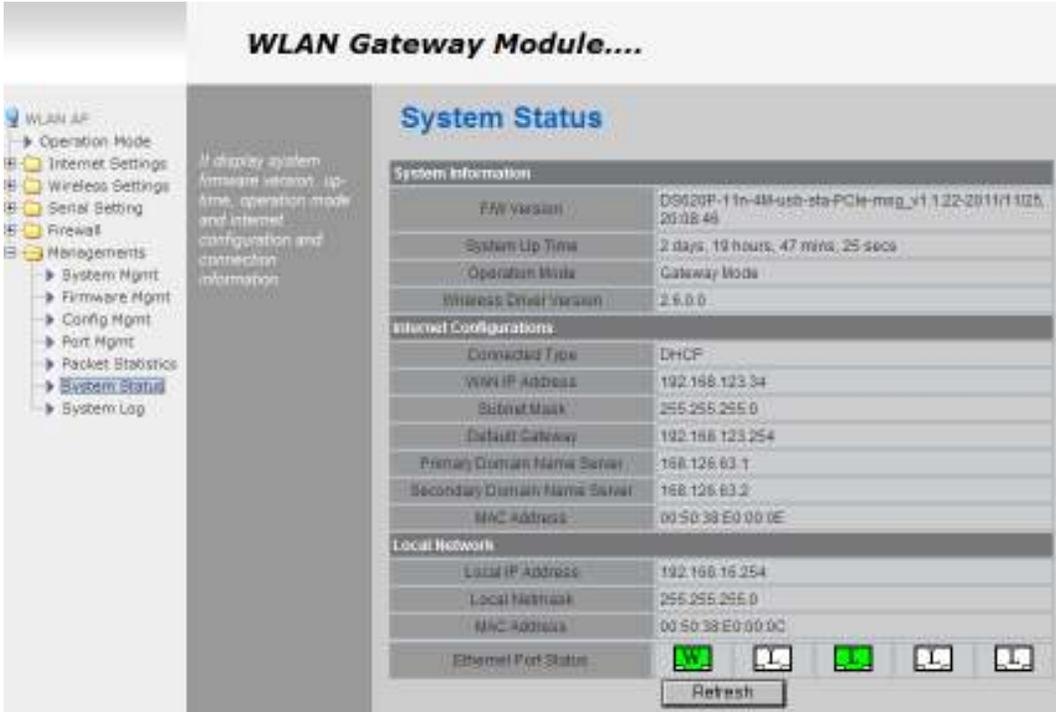
### Statistics

Memory				
Memory total	20556 kB			
Memory left	14144 kB			
WLAN				
Name	Rx Packet	Rx Byte	Tx Packet	Tx Byte
WIFI	1298224	250077840	1123498	101524989
LAN	1842535	110308448	1233337	246591250
All interfaces				
Name	Rx Packet	Rx Byte	Tx Packet	Tx Byte
eth0	1647338	300404530	2075250	224395836
lo	21133	1842945	21133	1842945
ra0	14173882	3522868524	2080870	347533600
wlan0	0	0	0	0
wlan1	0	0	0	0
wlan2	0	0	0	0
wlan3	0	0	0	0
at2.1	349100	26453300	951682	110058829
at2.2	1298228	250077840	1123502	101525198
btll	1842538	110308580	1233338	246591343

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

## 8.6 System Status

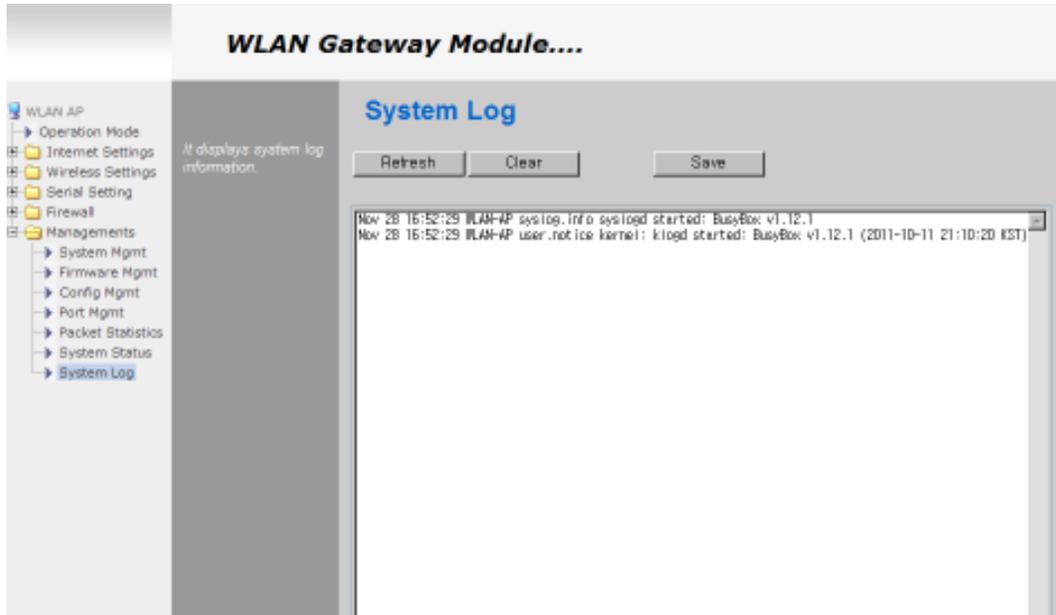
- ◆ System Status shows the status of the system, status of the system's network information, and the link status of LAN port.



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

## 8.7 System Log

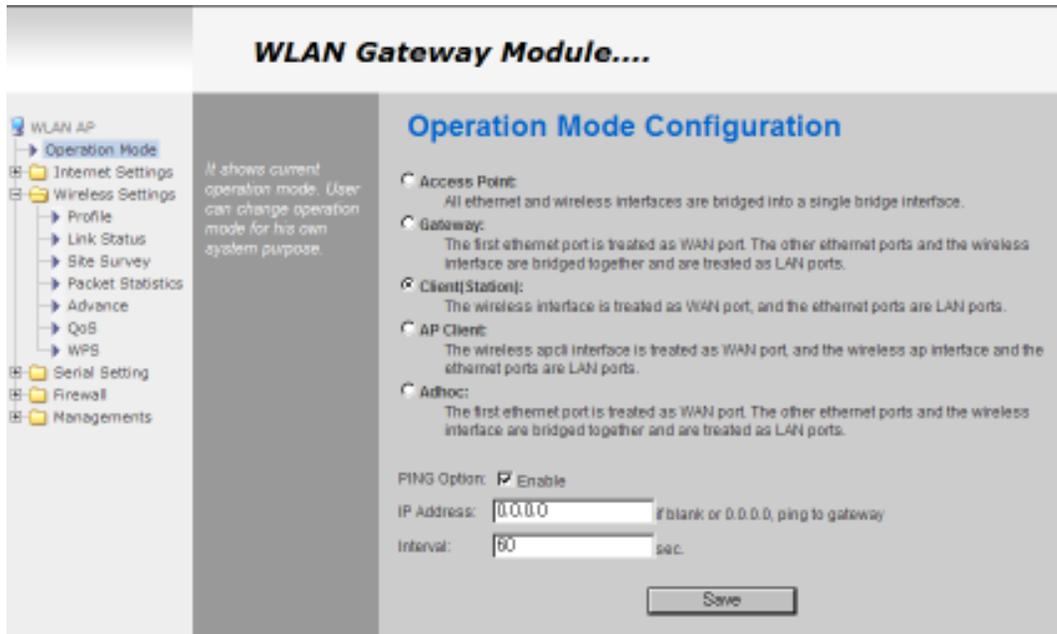
- ◆ The operation history of WIZ630wi can be checked by using System Log.
- ◆ If the system log exceeds 24Kbyte, more recent log record are added..



## 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
<b>Client(Station)</b>	Client mode setting
<b>Ping Option</b>	Send Ping data to top connected AP by using any time unit
<b>IP Address</b>	If IP is 0.0.0.0, send Ping data to top connected AP.
<b>Interval</b>	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
<b>Profile</b>	Profile Name
<b>SSID</b>	SSID of AP to be connected
<b>Channel</b>	Channel information of AP to be connected. Channel information is needed only when connecting with ad-hoc.
<b>Authentication</b>	Authentication method of AP to be connected.
<b>Encryption</b>	Encryption method of AP to be connected.
<b>Network Type</b>	Select AP / ad-hoc.

## 9.3 Link Status

- ◆ Shows the link status between wireless LAN and AP.

**WLAN Gateway Module....**

**Station Link Status**

If access module is WIZnet module, it is seen at the client (station) mode.

Link Status		
Status	WIZARD-AP ←→ 00-50-3B-E0-00-0C	
Extra Info	Link is Up	
Channel	11 ←→ 2462000 KHz, Central Channel #	
Link Speed	Tx(Mbps): 135.0	Rx(Mbps): 1.0
Throughput	Tx(Kbps): 0.0	Rx(Kbps): 58.9
Link Quality	Good 92%	
Signal Strength1	Good 90%	<input type="checkbox"/> dBm format
Signal Strength2	Weak 0%	
Signal Strength3	Weak 0%	
Noise Level	Low 0%	

HT	
BW	40
GI	long
STBC	none
MCS	7
SNR0	20
SNR1	na

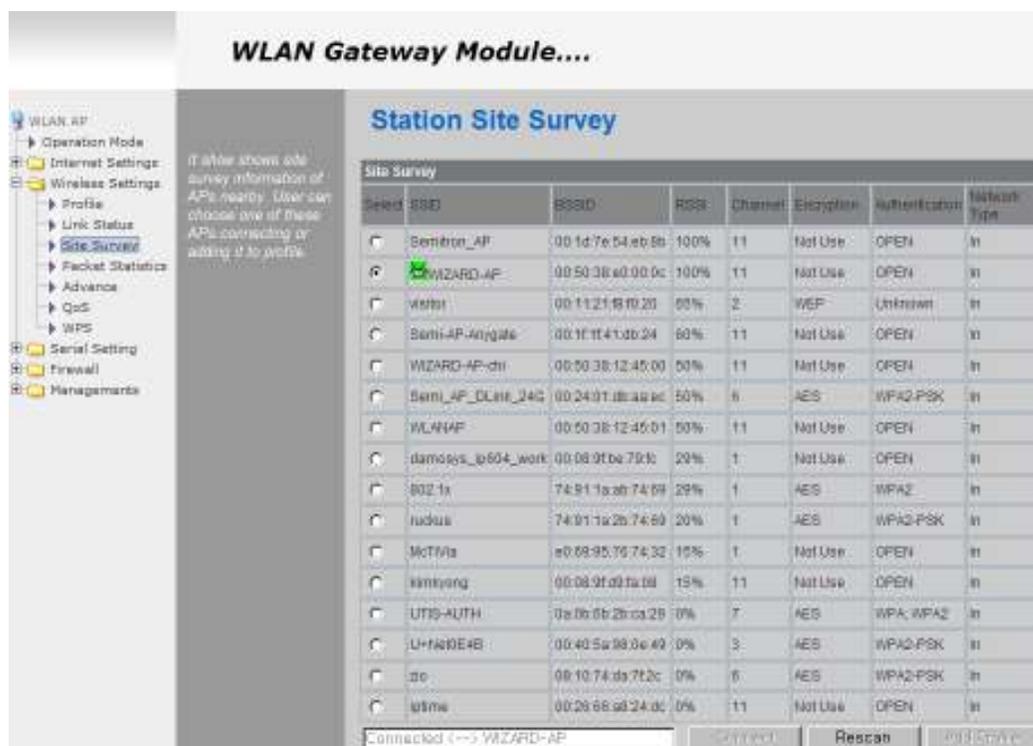
Type	Description
<b>Status</b>	SSID and BSSID of connected AP.
<b>Extra Info</b>	Link status.
<b>Channel</b>	Channel information of connected AP.
<b>Link Speed</b>	Link speed rate of connected AP.
<b>Throughput</b>	Real performance through communication.
<b>Link Quality</b>	Link quality of connected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

- ◆ HT항목은 802.11n으로 AP와 연결되었을 때만 나타난다.

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

## 9.4 Site Survey

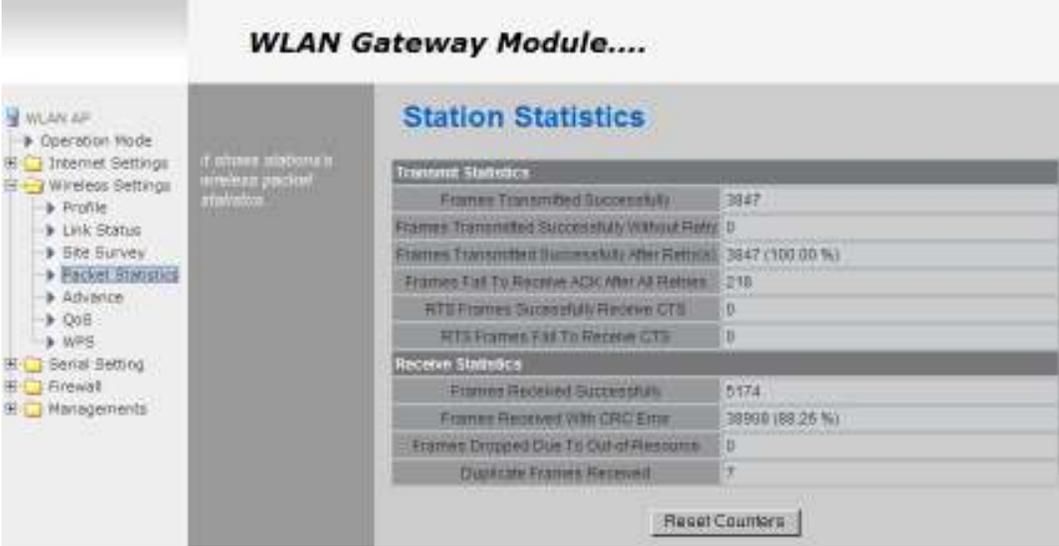
- ◆ Site Survey searches for AP surrounding WIZ630wi
- ◆ Select an AP and click the connect button. (If the module is rebooted, the module will connect to the previous profile.)
- ◆ Click “Add Profile” if user wishes to add to profile.



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

## 9.5 Packet Statistics

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



**WLAN Gateway Module....**

**Station Statistics**

Transmit Statistics	
Frames Transmitted Successfully	3047
Frames Transmitted Successfully Without Retry	0
Frames Transmitted Successfully After Retries	3047 (100.00 %)
Frames Fail To Receive ACK After All Retries	218
RTS Frames Successfully Receive CTS	0
RTS Frames Fail To Receive CTS	0

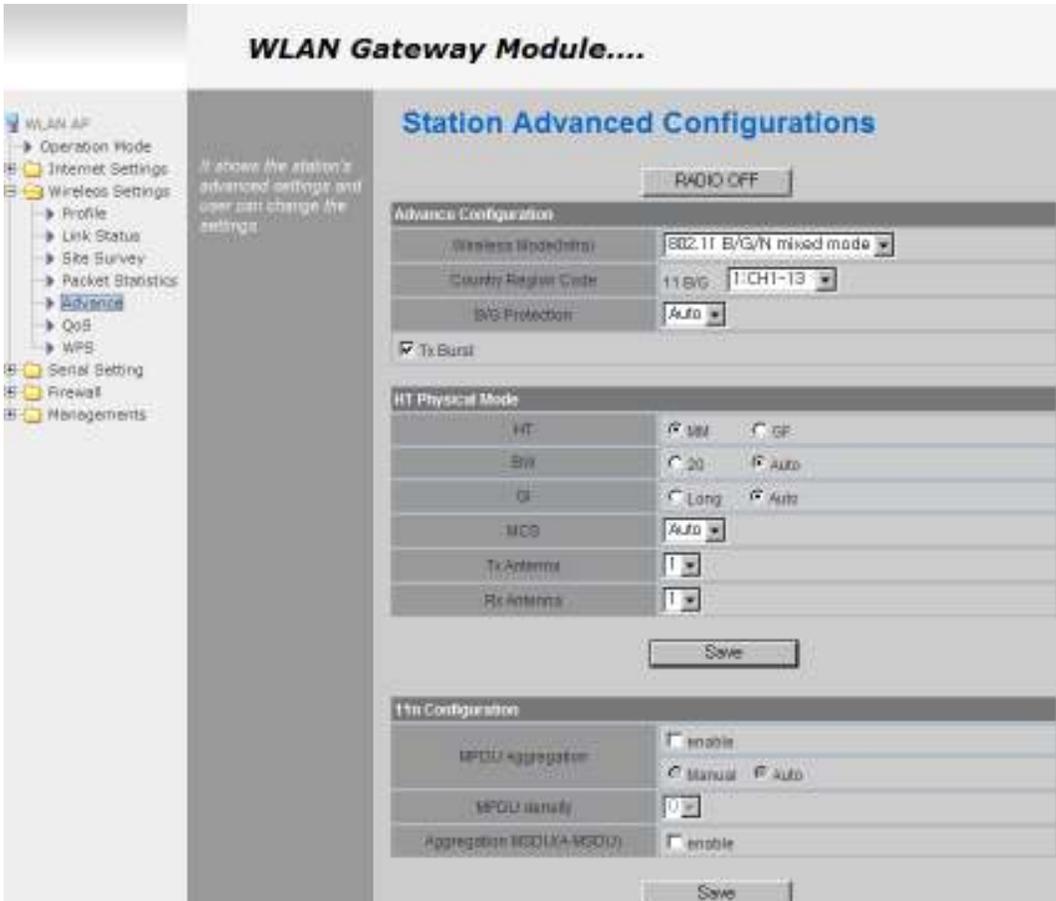
Receive Statistics	
Frames Received Successfully	5174
Frames Received With CRC Error	3898 (88.26 %)
Frames Dropped Due To Out-of-Resources	0
Duplicate Frames Received	7

Reset Counters

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

## 9.6 Station Advanced Configurations

- ◆ Set Station advanced configurations in station mode.



**WLAN Gateway Module....**

**Station Advanced Configurations**

**Advance Configuration**

RADIO OFF

Wireless Mode: 802.11 B/G/N mixed mode

Country/Region Code: 11 B/G | CH1-13

B/G Protection: Auto

Tx Burst

**HT Physical Mode**

HT:  MI  GF

BW:  20  Auto

GI:  Long  Auto

MCS: Auto

Tx Antenna: 1

Rx Antenna: 1

Save

**11n Configuration**

MPOU aggregation:  enable  Manual  Auto

MPOU priority: 0

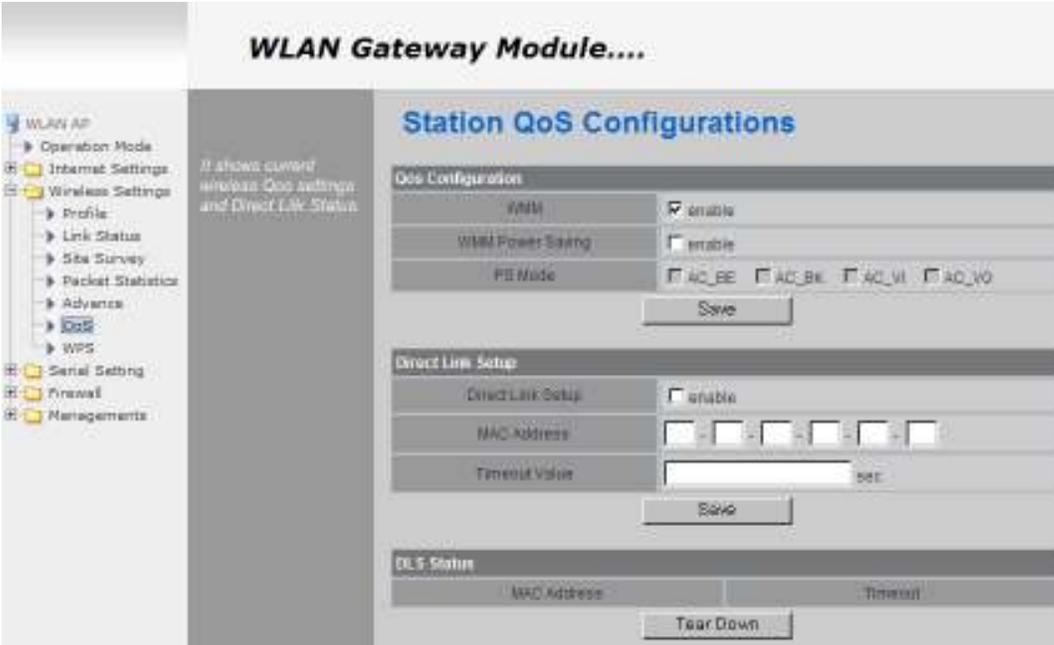
Aggregation BQ (VBA-MBQ):  enable

Save

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

## 9.7 Station QoS/DLS(Direct Link Setup) Configurations

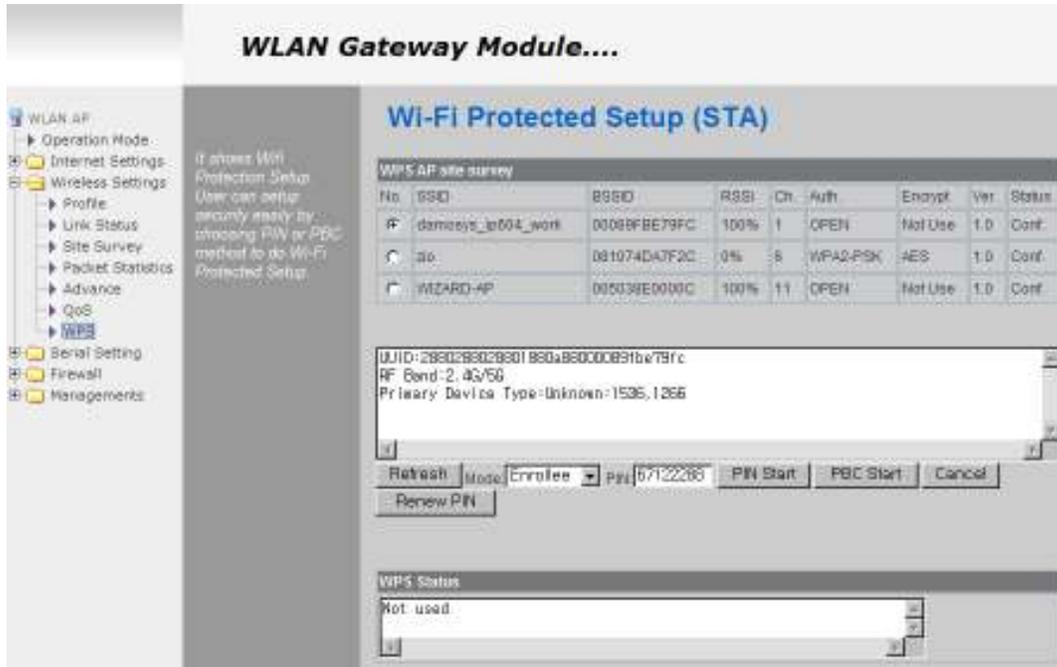
- ◆ Set Station QoS / DLS configurations in station mode



Type	Description
<b>WMM</b>	Enable WMM function or not.
<b>WMM Power Saving</b>	Enable Power Saving function or not.
<b>Direct Link Setup</b>	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.
<b>MAC Address</b>	Enter the MAC Address of the station to be connected using direct link function.
<b>Timeout Value</b>	Cancels the link if there are no traffic between stations for a period of time.

## 9.8 WPS Settings

- ◆ WPS settings in Station Mode.

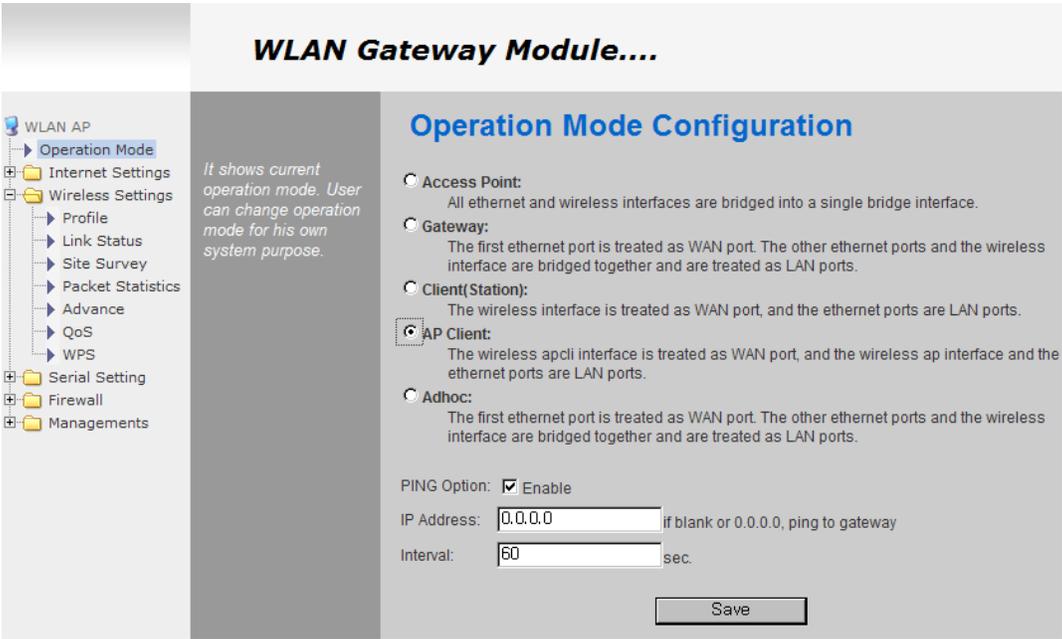


Type	Description
<b>Refresh</b>	Searches for WPS function activated AP.
<b>PIN Start</b>	Attempts connection with AP using PIN value.
<b>PBC Start</b>	Attempts connection with AP by virtually clicking the PBC button.
<b>Cancel</b>	Cancel the AP connection attempt.
<b>Renew PIN</b>	Renews the PIN value 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



**WLAN Gateway Module....**

**Operation Mode Configuration**

*It shows current operation mode. User can change operation mode for his own system purpose.*

- Access Point:**  
All ethernet and wireless interfaces are bridged into a single bridge interface.
- Gateway:**  
The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports.
- Client(Station):**  
The wireless interface is treated as WAN port, and the ethernet ports are LAN ports.
- AP Client:**  
The wireless apcli interface is treated as WAN port, and the wireless ap interface and the ethernet ports are LAN ports.
- Adhoc:**  
The first ethernet port is treated as WAN port. The other ethernet ports and the wireless interface are bridged together and are treated as LAN ports.

PING Option:  Enable

IP Address:  if blank or 0.0.0.0, ping to gateway

Interval:  sec.

## 10.2 WIFI Multi-Bridge settings

**WLAN Gateway Module....**

- WLAN AP
  - Operation Mode
  - Internet Settings
  - Wireless Settings
    - Basic
    - Advanced
    - Security
    - WDS
    - WPS
    - WIFI Multi-Bridge
    - Station List
    - Packet Statistics
  - Serial Setting
  - Firewall
  - Managements

You could configure AP Client parameters here.

### AP Client Feature

**Wireless multi-bridge configuration**

Operation Mode	<input checked="" type="checkbox"/> Wi-Fi is WAN <input type="checkbox"/> Multi-Bridge Mode	
SSID	<input type="text" value="WLAN_AP_1"/>	<input type="button" value="Search AP"/>
Frequency (Channel)	<input type="text" value="2412MHz (Channel 1)"/>	
MAC Address (Optional)	<input type="text" value="009035e01020"/>	
Security Mode	<input type="text" value="Open"/>	
Encryption Type	<input type="text" value="None"/>	
WEP Default Key	<input type="text" value="Key 1"/>	
WEP Keys	WEP Key 1	<input type="text"/> <input type="text" value="ASCII"/>
	WEP Key 2	<input type="text"/> <input type="text" value="ASCII"/>
	WEP Key 3	<input type="text"/> <input type="text" value="ASCII"/>
	WEP Key 4	<input type="text"/> <input type="text" value="ASCII"/>

Type	Description
<b>Operation Mode</b>	Select Gateway or Bridge Mode. Wi-Fi is WAN: operates in Gateway Mode. Multi-Bridge Mode: operates in Bridge Mode.
<b>SSID</b>	SSID of AP to be connected.
<b>Frequency (Channel)</b>	Channel of AP to be connected.
<b>MAC Address</b>	MAC Address of AP to be connected. (optional)
<b>Security</b>	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.

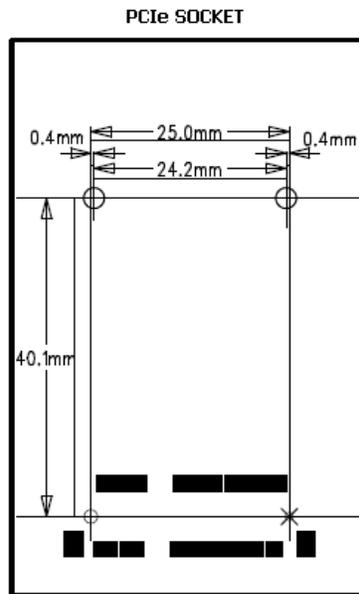
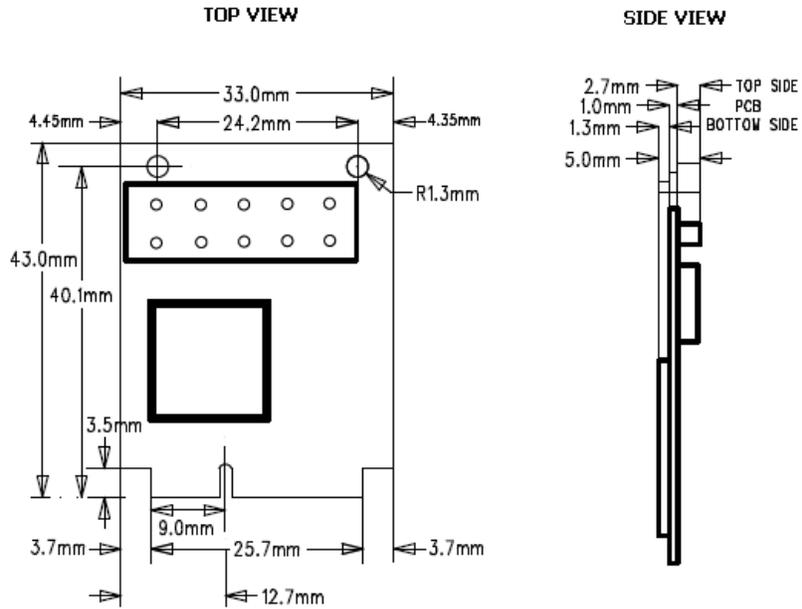
## 12. WIZ630wi Pin Map

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

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