# TECHNICAL NOTE

# GoFree WIFI-1 web interface settings

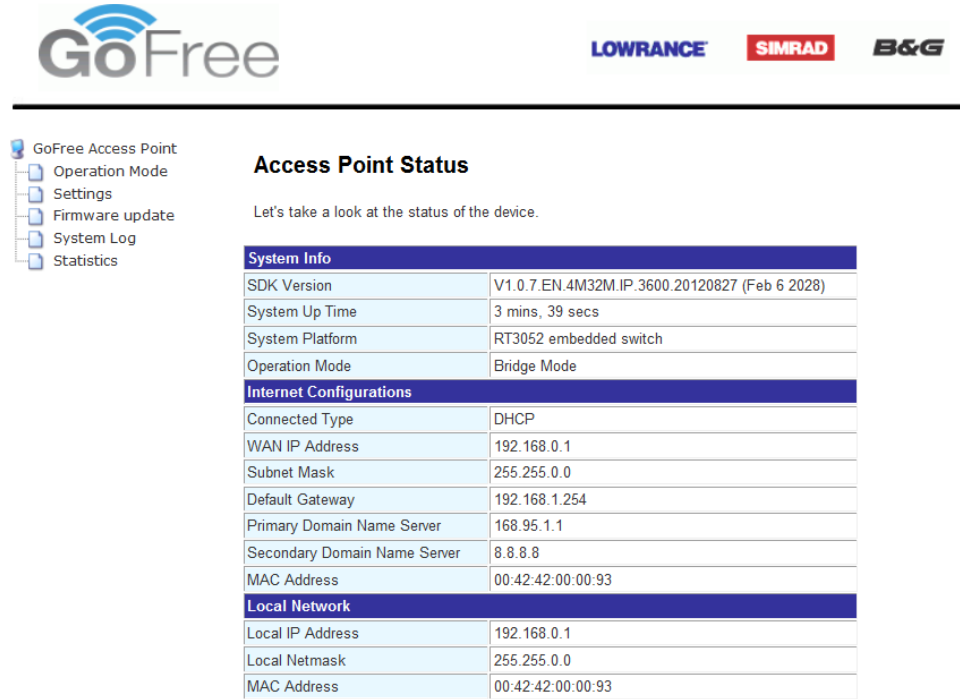| Revision | Comment | Author | Date |
|----------|---------|--------|------|
| 0.0a | First release | James Zhang | 10/09/2012 |
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| | | | |
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# Web interface settings under admin mode



**Figure 1: web interface admin log in home page**

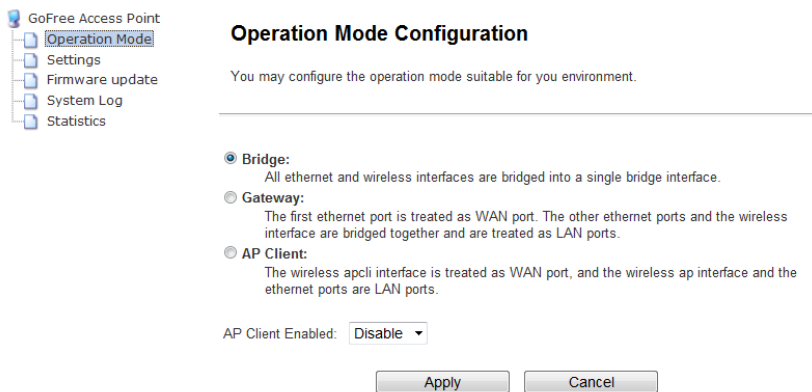## 1. Operation mode configuration:



**Figure 2: Operation mode configuration page**

**Bridge mode:**

In this mode, the WIFI-1 performs as a wireless access point. All Ethernet and wireless interfaces are bridged into a single bridge interface. Wired and wireless devices are under same subnet. (Default)

**Gateway mode:**

The first Ethernet port is treated as a WAN port, the second Ethernet port and the wireless interface are bridged together and are treated as LAN ports.  WAN port and LAN port use different subnets. This mode will do an address translate and route the packets to different subnet.

**AP client:**

The wireless apcli interface is treated as a WAN port and the wireless ap interface and the Ethernet ports are LAN ports.  This mode is able to connect to another wireless access point.

## 2.  Simple settings:



**Network SSID:**

"Service set identifier" is the name of your wireless network.

**Pass phrase:**

It is the password of your wireless network. It has to be equal or longer than 8 characters

**Frequency (Channel):**

This setting indicates the frequency channel that the device is chosen. It can be set to a fix frequency channel in 2.4 GHz band. The AutoSelect will allow the GoFree to choose the channel with the least amount of interference. (AutoSelect as default)

**DHCP wireless only:**

DHCP stands for Dynamic Host Control Protocol. The DHCP server will automatically assign an IP address to the devices. If this setting is enabled, the GoFree WIFI-1 will only serve the IP addresses to the devices which are connected wirelessly. (Default: Disable)

## 3. Upgrade Firmware

**Update Firmware:**

This function allows user to load a firmware image from local computer and perform the firmware upgrade of the device. It takes about 1 minute to program the unit.

**Update Bootloader:**

This function allows the user to load a new boot loader to the device. The boot loader is similar to windows bios which allows the device to begin loading the system image.

## 4. System Log



This option enables the user to monitor the system information from the wireless access point.

## 5. Statistics
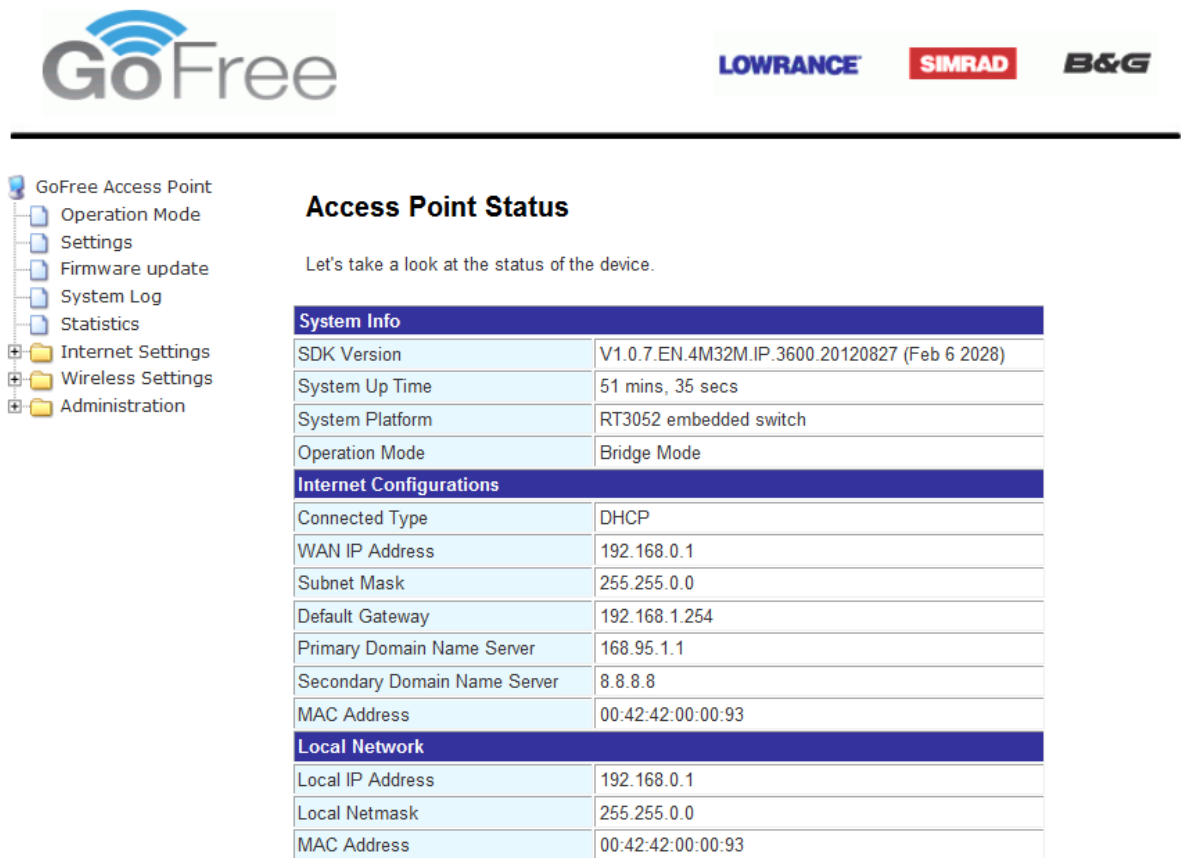
This option records some of the router's parameters. It indicates the memory use age, number of packets and bytes transferred from WAN/LAN ports and all other interfaces.

# Web interface settings under super mode



## Access Point Status

Let's take a look at the status of the device.

| System Info | |
| --- | --- |
| SDK Version | V1.0.7.EN.4M32M.IP.3600.20120827 (Feb 6 2028) |
| System Up Time | 51 mins, 35 secs |
| System Platform | RT3052 embedded switch |
| Operation Mode | Bridge Mode |
| **Internet Configurations** | |
| Connected Type | DHCP |
| WAN IP Address | 192.168.0.1 |
| Subnet Mask | 255.255.0.0 |
| Default Gateway | 192.168.1.254 |
| Primary Domain Name Server | 168.95.1.1 |
| Secondary Domain Name Server | 8.8.8.8 |
| MAC Address | 00:42:42:00:00:93 |
| **Local Network** | |
| Local IP Address | 192.168.0.1 |
| Local Netmask | 255.255.0.0 |
| MAC Address | 00:42:42:00:00:93 |

# 1. Internet Settings:

## Local Area Network (LAN) Settings

You may enable/disable networking functions and configure their parameters as your wish.

| LAN Setup | |
|---|---|
| IP Broadcast Block | ⦿ Enable  ○ Disable |
| IP Address | 192.168.0.1 |
| Subnet Mask | 255.255.0.0 |
| LAN 2 | ○ Enable  ⦿ Disable |
| LAN2 IP Address | |
| LAN2 Subnet Mask | |
| Default Gateway | 192.168.1.254 |
| Primary DNS Server | 168.95.1.1 |
| Secondary DNS Server | 8.8.8.8 |
| MAC Address | 00:42:42:00:00:93 |
| DHCP Type | Server ▾ |
| Start IP Address | 192.168.0.10 |

Left navigation tree:
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## A. LAN (Local Area Network) settings

**IP Broadcast Block:**
This setting blocks all of the broadcast packets flowing from the wire side into the wireless side. (Default: NO)

**IP Address:**
This is the IP address of the router. (Default: 192.168.0.1)

**Subnet Mask:**
This allows user to modify the subnet mask

**LAN2:**
This setting allows the user to set up the LAN to another subnet, eg. 169.254.x.x and 192.168.x.x at the same time (Default: OFF)

**LAN 2 IP:**

The user is able to modify the second LAN IP address.

**LAN2 Subnet:**

The user is able to modify the second LAN subnet mask.

**Default Gateway:**

Devices in the network are able to talk to the GoFree WIFI-1 through this gateway. (Default: 192.168.0.1)
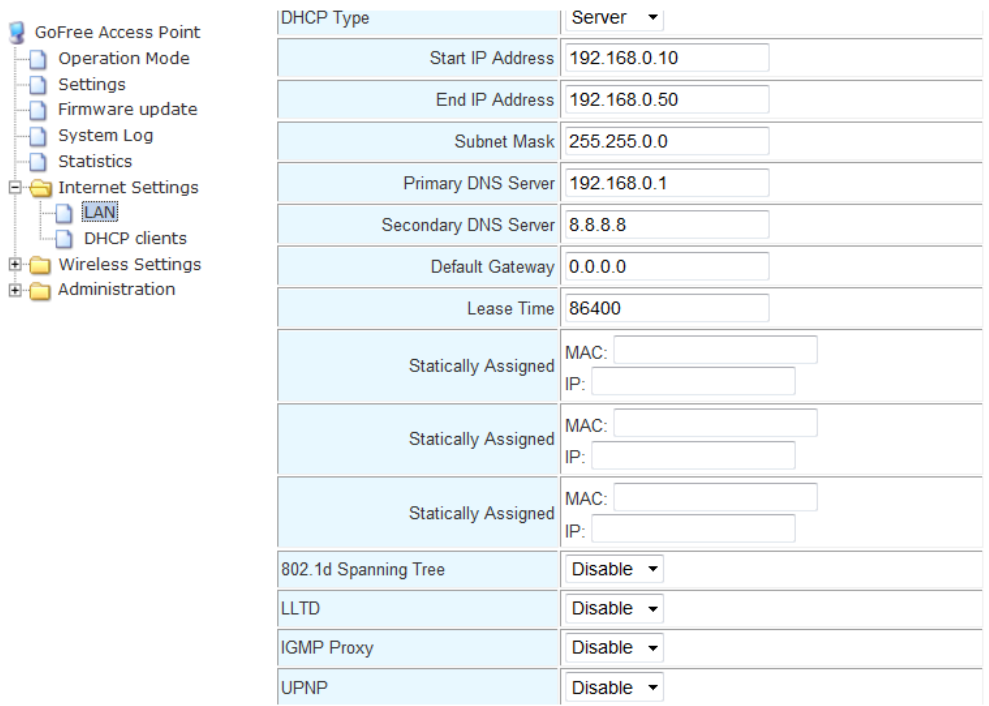
**Primary and Secondary DNS:**

DNS is short for Domain Name Server.

Primary and Secondary DNS servers which are generally applied to each newly registered domain. They are name server computers where the record of your domain name is stored. The information on both servers is identical. The two DNS values are usually configured by your ISP or hosting provider and given to you as a very important part of your domain registration order details.

**MAC address:**

The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

| | |
|---|---|
| DHCP Type | Server |
| Start IP Address | 192.168.0.10 |
| End IP Address | 192.168.0.50 |
| Subnet Mask | 255.255.0.0 |
| Primary DNS Server | 192.168.0.1 |
| Secondary DNS Server | 8.8.8.8 |
| Default Gateway | 0.0.0.0 |
| Lease Time | 86400 |
| Statically Assigned | MAC: <br> IP: |
| Statically Assigned | MAC: <br> IP: |
| Statically Assigned | MAC: <br> IP: |
| 802.1d Spanning Tree | Disable |
| LLTD | Disable |
| IGMP Proxy | Disable |
| UPNP | Disable |

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**DHCP server:**

This setting enables the DHCP server on wire and wireless side (Default:ON)

**Start and end IP address:**

These two settings give the range of the DHCP IP pool. The DHCP server is able to assign the IP addresses to devices in this IP range.

**Lease time:**

Lease time allows the user to set the time for the DHCP server to renew their lease to devices. Every device rents an IP from DHCP server and server is able to check and release the IP when the lease time is expired.

**802.1d spanning Tree:**

This is a network protocol that ensures a loop-free topology for any bridged Ethernet local area network

**LLTD:**

Link Layer Topology Discovery is a proprietary Link Layer protocol for network topology discovery and quality of service diagnostics. Microsoft developed it as part of the Windows Rally set of technologies. The LLTD protocol operates over both wired (such as Ethernet (IEEE 802.3) or Power line communication) as well as wireless networks (such as IEEE 802.11).
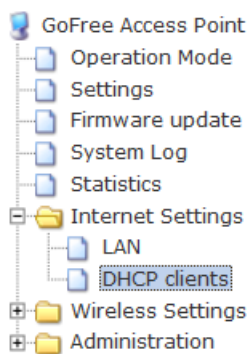
**IGMP proxy:**

Part of IGMP protocol. It routes the IGMP packets.

**UPNP:**

Universal Plug and Play provides compatibility with networking equipment, software and peripherals.
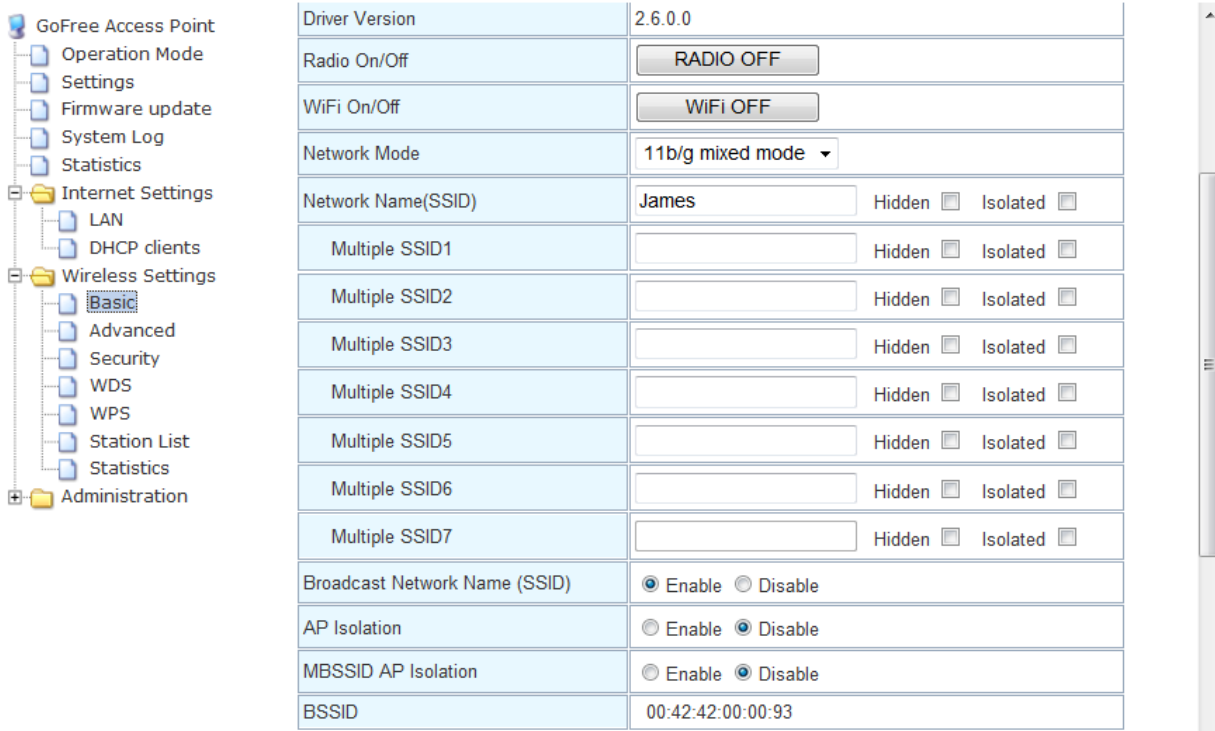
## B. DHCP Client List



This allows the user to monitor the devices which are served by GoFree's DHCP server

## 2. Wireless settings:

### A. Basic

| GoFree Access Point | Driver Version | 2.6.0.0 | | |
|---|---|---|---|---|
| Operation Mode | Radio On/Off | RADIO OFF | | |
| Settings | WiFi On/Off | WiFi OFF | | |
| Firmware update | Network Mode | 11b/g mixed mode ▼ | | |
| System Log | Network Name(SSID) | James | Hidden ☐ | Isolated ☐ |
| Statistics | Multiple SSID1 | | Hidden ☐ | Isolated ☐ |
| Internet Settings | Multiple SSID2 | | Hidden ☐ | Isolated ☐ |
| LAN | Multiple SSID3 | | Hidden ☐ | Isolated ☐ |
| DHCP clients | Multiple SSID4 | | Hidden ☐ | Isolated ☐ |
| Wireless Settings | Multiple SSID5 | | Hidden ☐ | Isolated ☐ |
| Basic | Multiple SSID6 | | Hidden ☐ | Isolated ☐ |
| Advanced | Multiple SSID7 | | Hidden ☐ | Isolated ☐ |
| Security | Broadcast Network Name (SSID) | ◉ Enable ○ Disable | | |
| WDS | AP Isolation | ○ Enable ◉ Disable | | |
| WPS | MBSSID AP Isolation | ○ Enable ◉ Disable | | |
| Station List | BSSID | 00:42:42:00:00:93 | | |
| Statistics | | | | |
| Administration | | | | |

**Driver Version:**

This provides the embedded system kernel version of the GoFree

**Radio On/Off:**

Use this option to turn off all of the radio circuitry

**WIFI On/Off:**

This option can be used to turn on/off the WIFI interface

**Network Mode:**

This determines which 802.11 protocol is used:

802.11b works better with the distance and interference, but the max bandwidth is 11 Mbits/sec

802.11g has higher bandwidth 54 Mbits/sec, but shorter range

(Default: 11b/g mixed mode)

**Multiple SSID:**

This means that a single wireless router can appear to be multiple wireless access points at the same time

**Broadcast Network Name (SSID):**

The network name will be broadcast to the entire network when it is enabled.
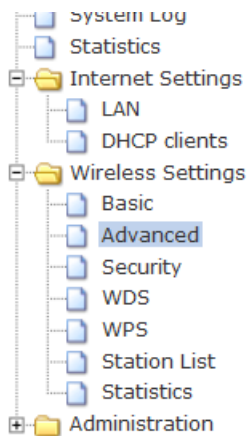
**AP Isolation:**

All of the devices that are connected into the access point cannot talk to each other

**MBSSID AP Isolation**

The ap can have more than one SSID, this setting prohibits devices connected with different SSID from communicating with each other.

**BSSID:**

All wireless access points are identified by a unique 'Basic service set identifier'. This is usually the radio's MAC address.



**BG Protection Mode:**

A protection mechanism prevents collisions among 802.11b/g modes. Once it turned on, it always send the frame with protection.

**Beacon interval**

Beacon Interval is the amount of time between beacon transmissions. Before a station enters power save mode, the station needs the beacon interval to know when to wake up to receive the beacon.

**Data Beacon Rate:**

The DTIM period indicates how many beacon frames can transmit before another DTIM is transmitted. Range from 1-255, default setting is 1

**Fragment Threshold:**

Fragmentation mechanism is used for improving the efficiency when 41 high traffic flows along in the wireless network. If the 802.11g MIMO Wireless Router often transmit large files in wireless network, you can enter new Fragment Threshold value to split the packet. The value can be set from 256 to 2346. The default value is 2346

**RTS Threshold:**

RTS stands for "Request to Send". This parameter controls what size data packet the low level RF protocol issues to an RTS packet. RTS Threshold is a mechanism implemented to prevent the "Hidden Node" problem. If the "Hidden Node" problem is an issue, please specify the packet size. The RTS mechanism will be activated if the data size exceeds the value you set. The default is 2347.

**Tx Power:**

TX Power measurement.

**Short Preamble:**

You can Disable or Enable this function, default setting is Disable. A preamble is a signal used in wireless environment to synchronize the transmitting timing including Synchronization and Start frame delimiter.

**Short Slot:**

When short slot is Enabled, the wireless device uses the short slot time only when all clients associated to the 802.11g, 2.4-GHz radio supports short slot time. Short slot time is an 802.11g-only feature and does not apply to 802.11a radios.

**Tx Burst:**

Enable the transmitted time slot to increase transmission throughput.

**Pkt_Aggregate:**

The parameter can be used to increase the delivered bandwidth in community networks including fixed and mobile stations.

**IEEE 802.11 H Support:**

The original purpose of the IEEE 802.11h standard was to extend WLAN operation in Europe to the 5 GHz band, where WLAN devices need dynamic frequency

**Country Code:**

Select your local Country code for pull-down menu. For Safety (FCC or CE rule) reason, please don't change this default setting.
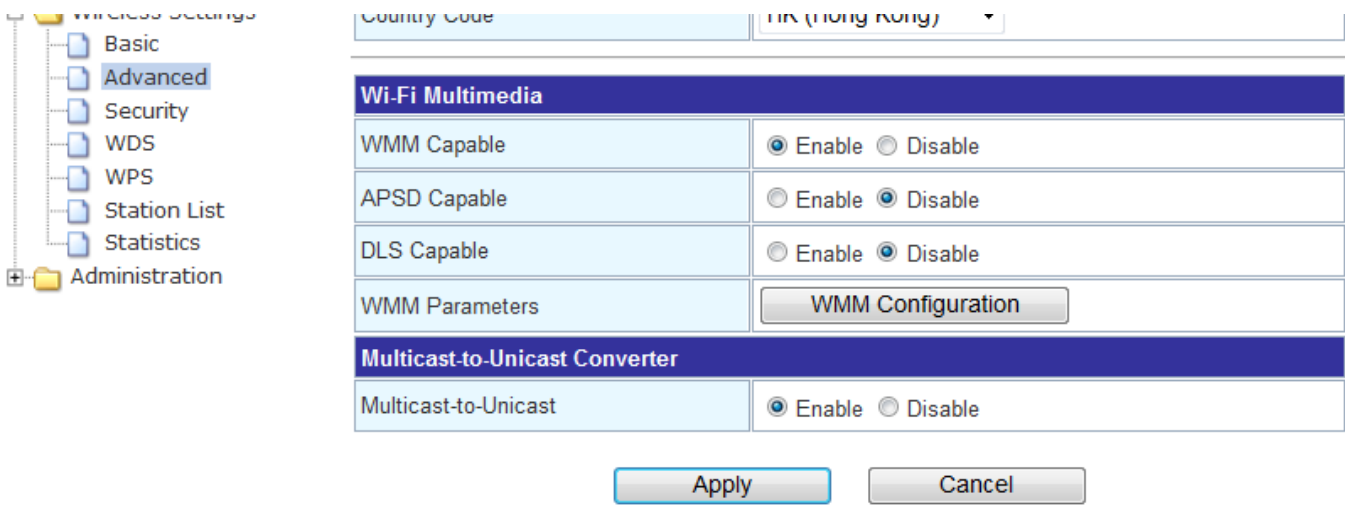


**WMM Capable:**

Enable/Disable the Wi-Fi Multimedia (WMM) support.

**APSD Capable:**

Enable/Disable the APSD support.

**DLS Capable:**

Direct Link Setting (DLS) enables all client data to be transmitted effectively. If DSL is enabled, the wireless LAN router establishes the connection of all the clients at this unit and speeding up of data transmission. The default setting is "Disable".

**WMM Parameters:**
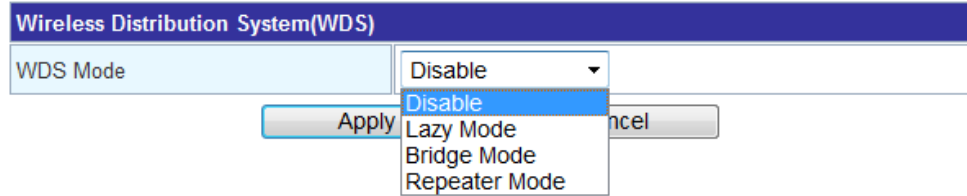
Click "WMM Configuration" to setup the WMM function.

**Multicast-to-Unicast:**

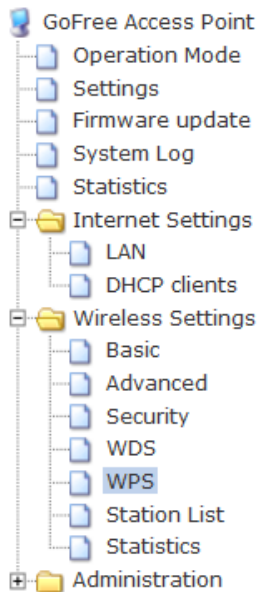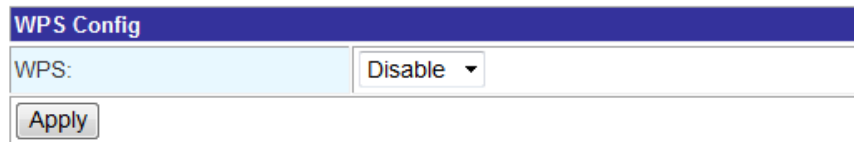IGMP snooping. Convert Multicast data to Unicast one.The default setting is "Enable".
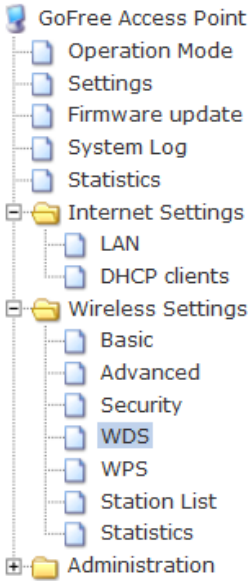
**WDS Mode:**

Select the mode from the pull-down menu, Disable, Lazy Mode, Bridge Mode, or Repeater Mode.



**Wi-Fi Protected Setup:**

This feature is designed to ease the setup of security enabled WiFi networks in the home and small office environment. It supports methods that are familiar to most consumers to configure a network and enable security, like pushing a button (PBC method) or entering a PIN code (PIN method). The new system, which will be incorporated in Windows Vista, will work with computers, gateways peripherals, and consumer electronics. You would initiate a WPS mode on gateway and then enter a simple sequence of digits (like a PIN code) or press a button, use a similarly easy method to start a secure key exchange to retrieve the WPA/WPA2 key.