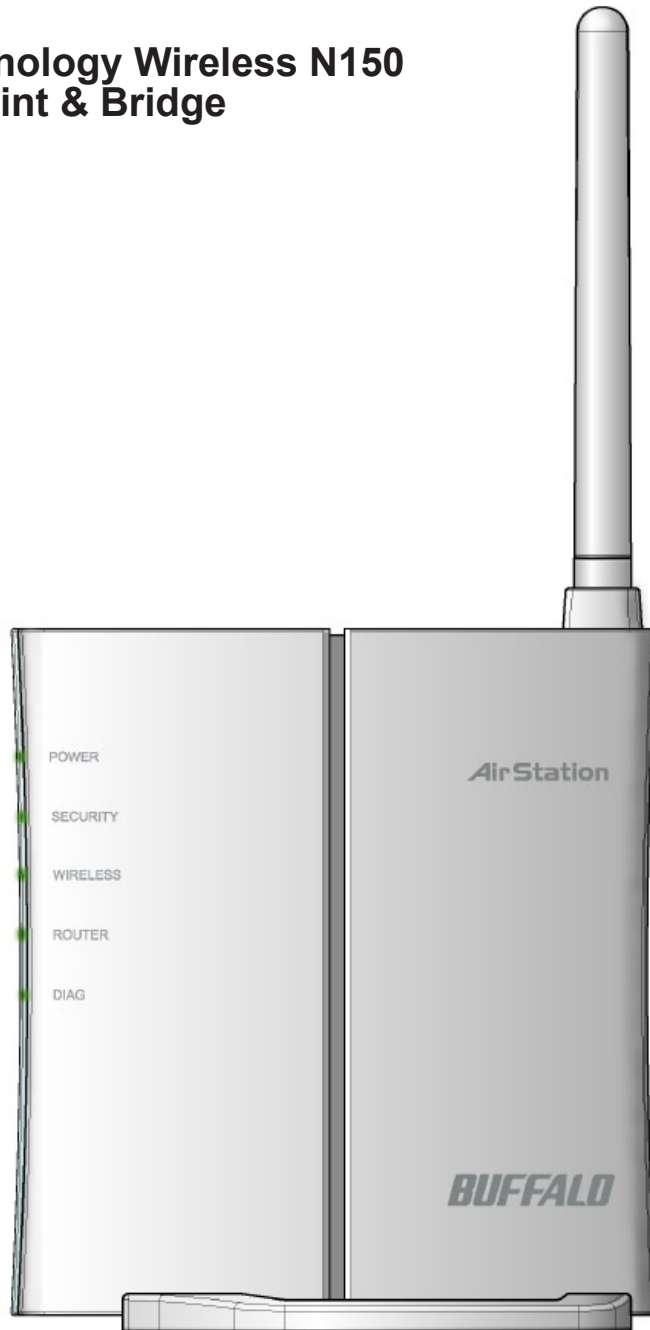


User Manual

WCR-GN

**AirStation N Technology Wireless N150
Router Access Point & Bridge**



www.buffalotech.com

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Chapter 1

Product Overview

Features

Supports IEEE802.11n and IEEE802.11b/g

With support for Wireless-N, Wireless-G, and Wireless-B standards, the AirStation can transfer data to and from all standard 2.4 GHz wireless clients. (WCR-GN is compatible with some Wireless-N features.)

Dual speed mode

Dual speed mode makes wireless transmission faster by using 2 channels, allowing 150Mbps data transmission.

Support AOSS and WPS

Both AOSS (AirStation One-touch Secure System) and WPS (Wi-Fi Protected Setup) are supported. These automatic connection standards make connection with compatible wireless devices easier.

Security Features

The AirStation is equipped with following security features:

- AOSS
- WPS
- WPA-PSK (TKIP/AES)
- WPA2-PSK(TKIP/AES)
- WPA/WPA2 mixed PSK
- WEP(128/64bit)
- Privacy Separator
- MAC address access restriction
- Deny Any Connection/SSID stealth feature
- Setting screen with password
- Firewall feature with easy rules

Automatic Channel Selection

Monitors wireless interference and automatically assigns the clearest, best channel.

Roaming

You can use multiple AirStations to cover a large area. Wireless clients can automatically switch AirStations for the best signal.

Initialization

To restore settings back to the factory defaults, hold down the Reset button on the bottom of the unit.

Browser Based Administration

This unit can be easily configured from a web browser on your computer.

Auto Mode (Router/Bridge Automatic Recognition)

Auto mode detects whether your network has a router or not and automatically switches to the appropriate router or bridge mode. You can also manually switch between modes. (See page 10).

Air Navigator CD Requirements

The AirStation wireless router and access point works with most wired and wireless devices. The automatic installation program on the CD requires Windows 7, Vista or XP to run. Client Manager software is included for Windows Vista and XP. The use of other operating systems may require that the AirStation be manually configured from a browser window.

150 Mbps High Speed Mode

150 Mbps is for WCR-GN when using Wireless-N mode. It represents actual wireless data speeds, including overhead. Because the overhead is not available for user data transfer, usable wireless throughput will be substantially slower.

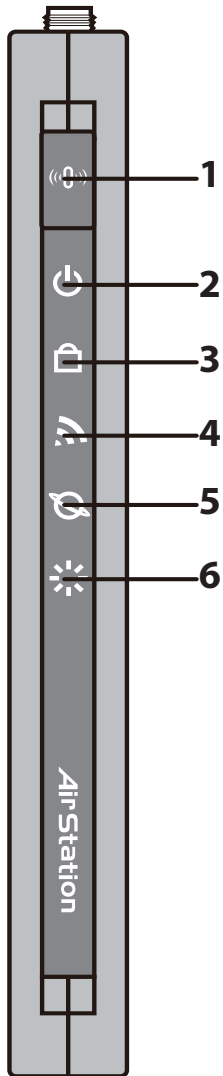
Package Contents

Following items are included in your AirStation. If any of the items are missing, please contact your vender.

- Main unit.....1
- AC adapter.....1
- LAN cable.....1
- Air Navigator CD.....1
- Quick Setup Guide.....1

Hardware Overview

Front Panel LED's



1 AOSS Button

Hold down this button until the Security LED flashes (approx. 1 second), while the unit's power is on, initiates AOSS/WPS mode, allowing the unit to exchange security keys with AOSS or WPS compatible devices.

2 POWER LED (Green)

On: The AC adapter is connected
Off: The AC adapter is not connected

3 SECURITY LED (Amber)

Indicates security status.

Off: Encryption is not set
On: Encryption has been set

Double blink: The unit is waiting for an AOSS or WPS security key

Blinking: AOSS/WPS error; failed to exchange security keys

Note: When the Security LED is lit, an encryption key has been set. You can verify that the encryption key has been set in the web configuration screen on page 40.

4 WIRELESS LED (Green)

Indicates wireless LAN status.

Blinking: Wireless LAN is transmitting

On: Wireless LAN is connected but not active

5 ROUTER LED (Green)

On: Router functionality is enabled

Blinking: Router functionality is disabled

6 DIAG LED (Red)

This indicates the status of this unit depending on the number of blinks per cycle.

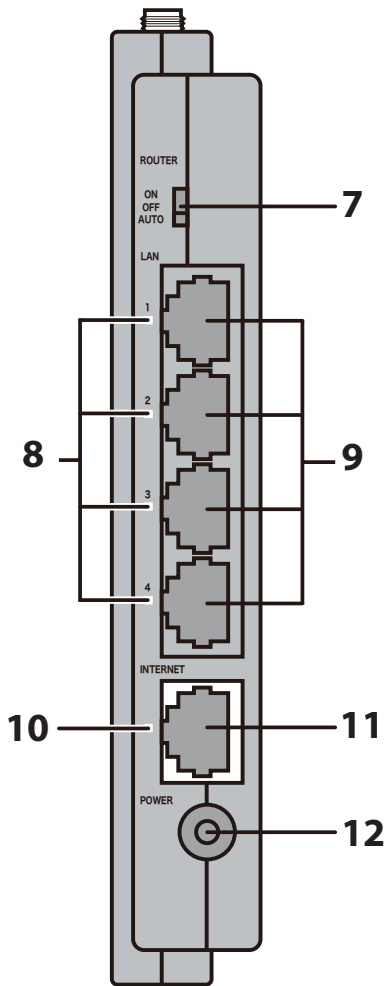
Note: When the unit is first turned on or restarted, the Diag LED will blink for almost a minute during boot. This is normal.

Diag LED status	Meaning	Status
2 blinks * ¹	Flash ROM error	Cannot read or write to the flash memory.
3 blinks * ¹	Ethernet (wired) LAN error	Ethernet LAN controller is malfunctioning.
4 blinks * ¹	Wireless LAN error	Wireless LAN controller is malfunctioning.
5 blinks	IP address setting error	Because the network addresses of both the Internet port (WAN port) and the LAN port are the same, it is not possible to establish communication. Change the LAN side IP address of this unit.
Continuously blinking * ²	Updating the firmware Saving settings Initializing settings	Updating the firmware. Saving the settings. Initializing the settings.

*1 Unplug the AC adapter from the wall socket, wait for a few seconds, and then plug it again. If the light still flashes, please contact technical support.

*2 Never unplug the AC adapter while the Diag LED is blinking continuously.

Back Panel



7 ROUTER Switch

Switches router mode between enabled, disabled, and auto.

On: Router functionality is enabled (router mode).

Off: Router functionality is disabled (bridge/AP mode).

Auto: This switches between modes automatically based on whether or not another router is detected on the Internet port. The default setting for this switch is Auto.

8 LAN LED (Green)

On: An Ethernet device is connected.

Flashing: An Ethernet device is communicating.

9 LAN Port

Connect your computer, hub, or other Ethernet devices to these ports. This switching hub supports 10Mbps and 100Mbps connections.

10 INTERNET LED (Green)

On: The Internet port is connected.

Flashing: The Internet port is transmitting data.

11 INTERNET Port

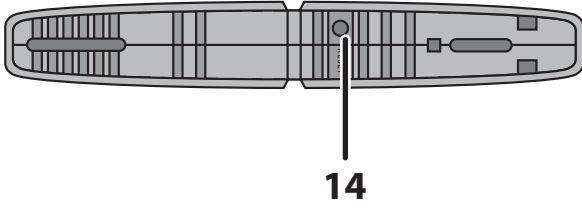
10Mbps and 100Mbps connections are supported.

Note: In bridge/AP mode (router switch off), the Internet port becomes a regular LAN port, for a total of 5 usable LAN ports.

12 DC Connector

Connect the included AC adapter.

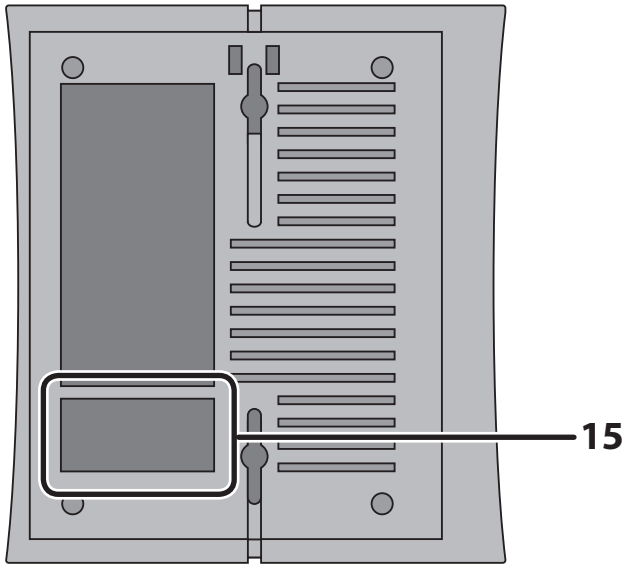
Bottom



14 RESET Button

Holding this button until the Diag LED comes on, while the unit's power is on, will initialize its settings.

Right Side



Note: The right side of the unit may become hot. Please be careful not to place anything next to it that could be damaged by heat.

15 Factory Default Settings

This sticker shows the default information of AirStation's SSID, encryption key, and WPS PIN. Encryption key is blank if encryption is not enabled in default settings.

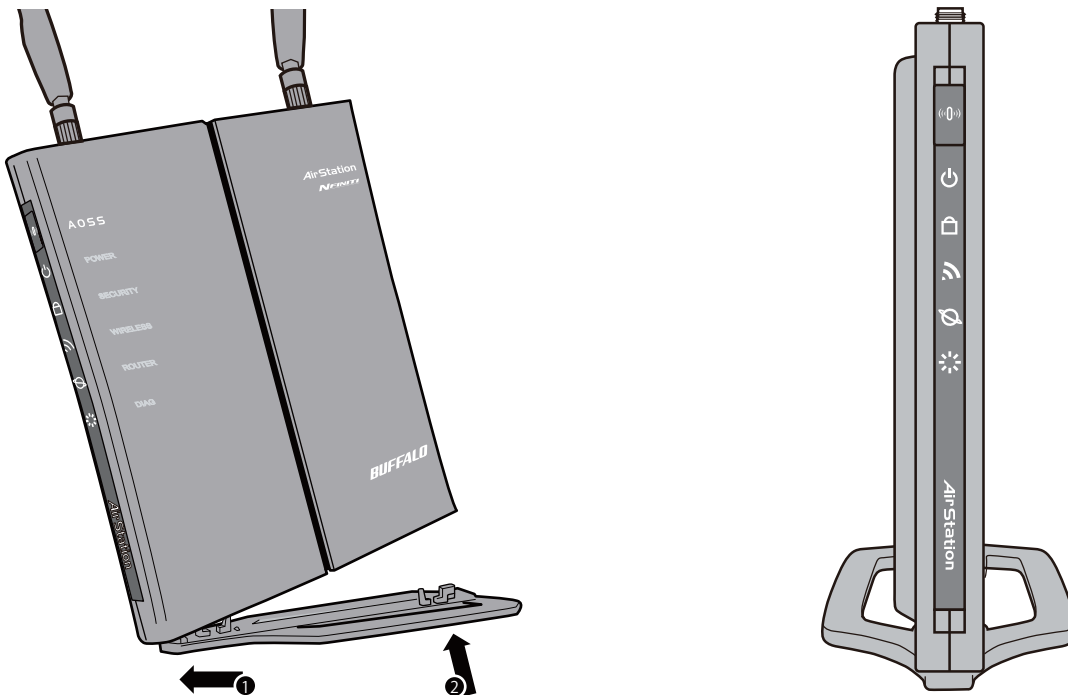
Chapter 2

Placing Your AirStation

Note all the illustrations refer to WCR-GN.

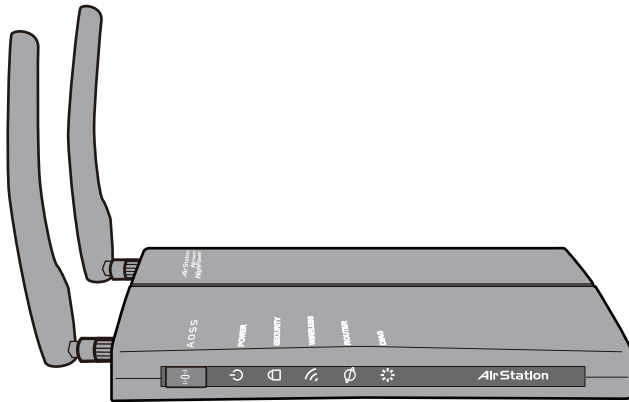
Vertical Placement

To place unit vertically, refer to the following figure to place the vertical/wall-mounting stand.



Horizontal Placement

Place the unit horizontally as the figure below.



Chapter 3

Installation

CD Setup

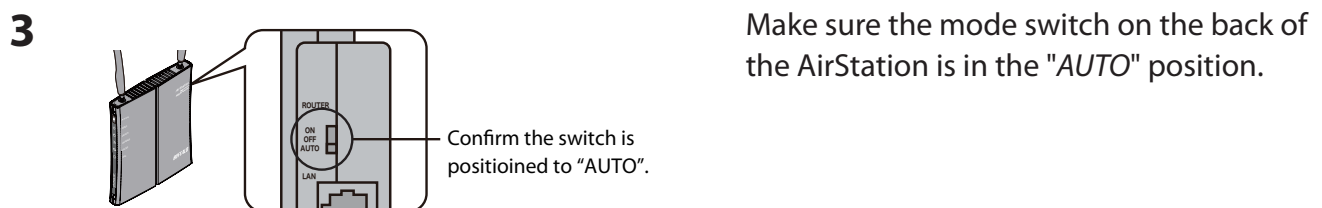
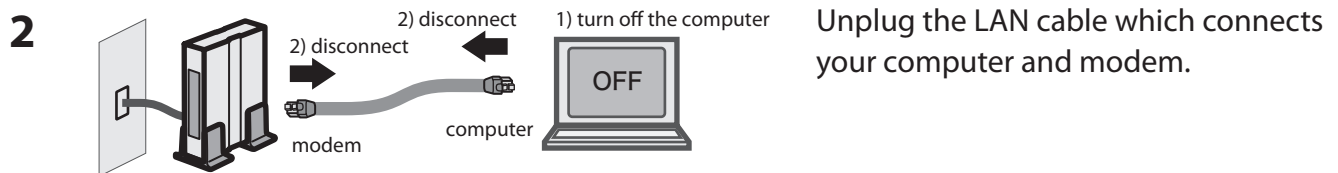
You can set up this unit with the included software CD. Insert the CD into your PC and follow the instructions on the screen.

* CD Setup is supported for Windows 7/Vista/XP only.

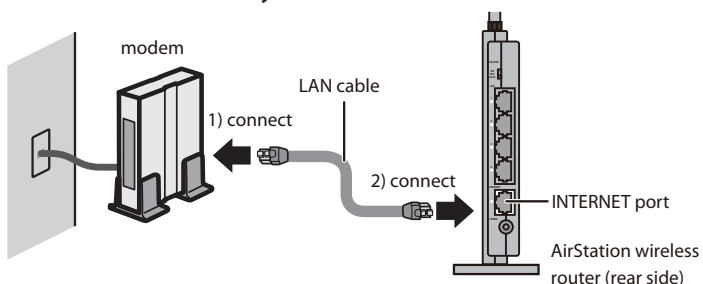
Manual Setup

To configure your AirStation manually, follow the procedure below.

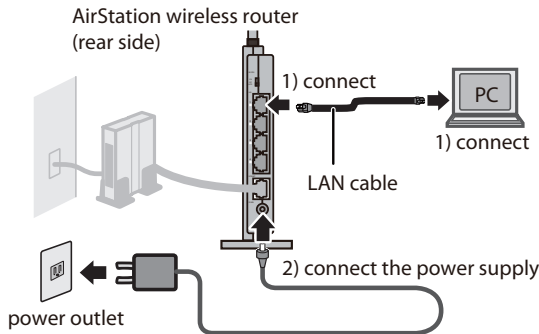
1 Turn off your computer and modem.



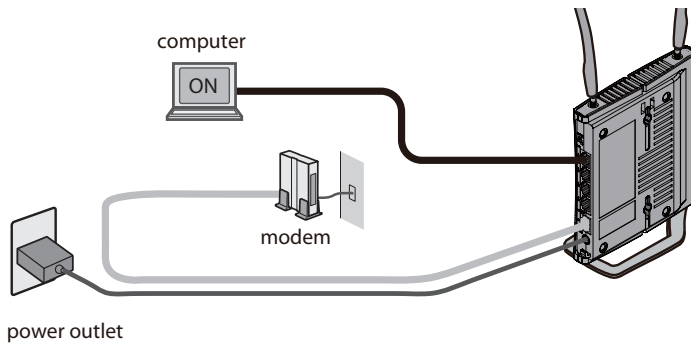
4 Plug one end of the LAN cable into your modem and the other side to the Internet port of the AirStation. Turn on your modem.



- 5 Connect your computer to one of the AirStation's LAN ports with the LAN cable. Turn on the AirStation, wait one minute, and then turn on your computer.



- 6 Confirm the devices are connected correctly as the below diagram shows.



- 7 Wait for a while, and then make sure that the AirStation's LEDs are lit as described below:

POWER	Green light is on
SECURITY	Amber light is on
WIRELESS	Green light is on or blinking
ROUTER	Green light is on or off depending on your network
DIAG	Off
LAN	Green light is on or blinking
INTERNET	Green light is on or blinking

※ Refer to page 8 and 10 for LED locations and other details.

- 8 Launch a web browser. If the "home" setup screen is displayed, setup is complete. If a user name and password screen is displayed, enter "root" (in lower case) for the user name, leave the password blank, and click "OK". Follow the instructions on the screen to complete setup.

You've completed initial setup of your AirStation. Refer to Chapter 4 for advanced settings.

Chapter 4

Configuration

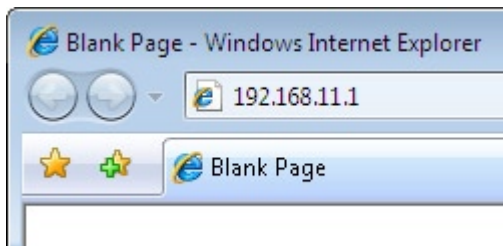
This chapter explains the advanced settings for the AirStation. To change advanced settings, use the AirStation's web-based configuration utility.

How to Access the Web-Based Configuration Utility

To display the configuration of the AirStation, follow the procedure below.

1 Launch a web browser.

2



Enter the router's LAN-side IP address in the address field, and press the "Enter" key.

- Note:
- The AirStation's default LAN-side IP address depends on the position of the mode switch.
In router mode: 192.168.11.1
In bridge mode: 192.168.11.100(*)
Note: If the router switch is set to "AUTO" and the unit is working in bridge mode, an IP address is assigned to this unit from a DHCP server.
 - If you change the IP address of this unit, use the new IP address.

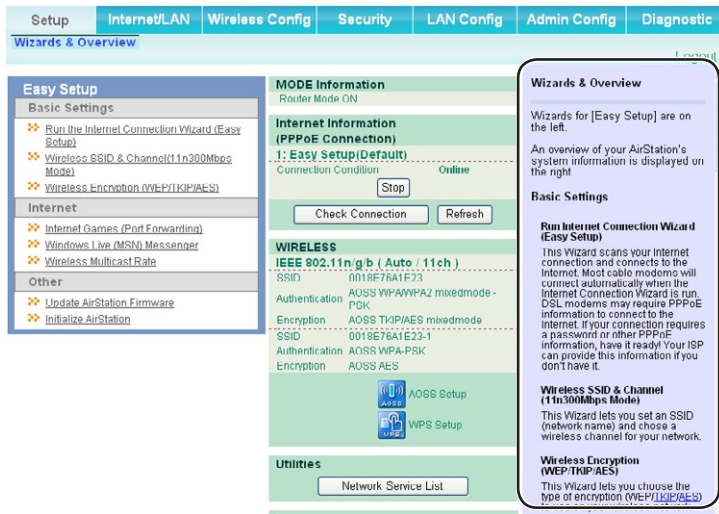
3



When this screen appears, enter "root" (in lower case) for the user name and the password that you set during initial setup. Click "OK".

- Note:
- By default, the password is blank (not set).
 - If you forget your password, hold down the Reset button (page 11) to initialize all settings. The password will then be blank. Note that all other settings will also revert to their default values.

4



The configuration screen is displayed.

Help is always displayed on the right side of the configuration screen. Refer to the Help screens for more information on each page in the web-based configuration screens.

Configuration Menu (Router Mode)

The menu structure for the AirStation in router mode is the following. Please refer to the pages listed at right for explanations of each item.

Main screen	Descriptions	Page
Internet/LAN		
Internet	Configure Internet side port and settings	Page 26
PPPoE	PPPoE settings (DSL login)	Page 27
DDNS	DNS settings	Page 30
VPN Server	VPN server settings	Page 32
LAN	LAN side port and DHCP server configuration	Page 34
DHCP Lease	DHCP lease settings	Page 36
NAT	Network address translation settings, used to connect LAN side devices to the Internet	Page 37
Route	Configure the IP communication route that the AirStation uses	Page 38
Wireless Config		
WPS	WPS settings and status	Page 39
AOSS	AOSS (AirStation One-touch Secure System) settings and status	Page 40
Basic	Configure basic wireless settings	Page 42
Advanced	Configure advanced wireless settings	Page 46
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia)	Page 47
MAC Filter	Limit access to specific devices	Page 49
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port	Page 50
Security		
Firewall	Protect your computer from outside intruders	Page 51
IP Filter	Edit IP filters which relates to the packets passing through the LAN side and the Internet side	Page 53
VPN Pass Through	Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough	Page 54

LAN Config		
Port Forwarding	Configure port translation and exceptions for games and other programs	Page 55
DMZ	Configure a destination to transfer communication packets without a LAN side destination.	Page 56
UPnP	Configure UPnP (Universal Plug and Play)	Page 57
QoS	Configure priority for packets that require a certain data flow	Page 58
Admin Config		
Name	Configure the AirStation's name	Page 59
Password	Configure the AirStation's login password for access to configuration screens	Page 60
Time/Date	Configure the AirStation's internal clock	Page 61
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	Page 62
Access	Configure access restrictions to the AirStation's configuration screens	Page 63
Log	Configure a syslog server to manage the AirStation's logs	Page 64
Save/Restore	Save or restore the AirStation's configuration from a configuration file	page 65
Initialize/Restart	Initialize the AirStation or reboot it	Page 66
Update	Update the AirStation's firmware	Page 67
Diagnostic		
System Info	View current system information for the AirStation	Page 68
Logs	Check the AirStation's logs	Page 70
Packet Info	View all packets transferred by the AirStation	Page 71
Client Monitor	View all devices currently connected to the AirStation	Page 72
Ping	Test the AirStation's connection to other devices on the network	Page 73
Logout		
Click this to log out of the AirStation's configuration screens		

Configuration Menu (Bridge Mode)

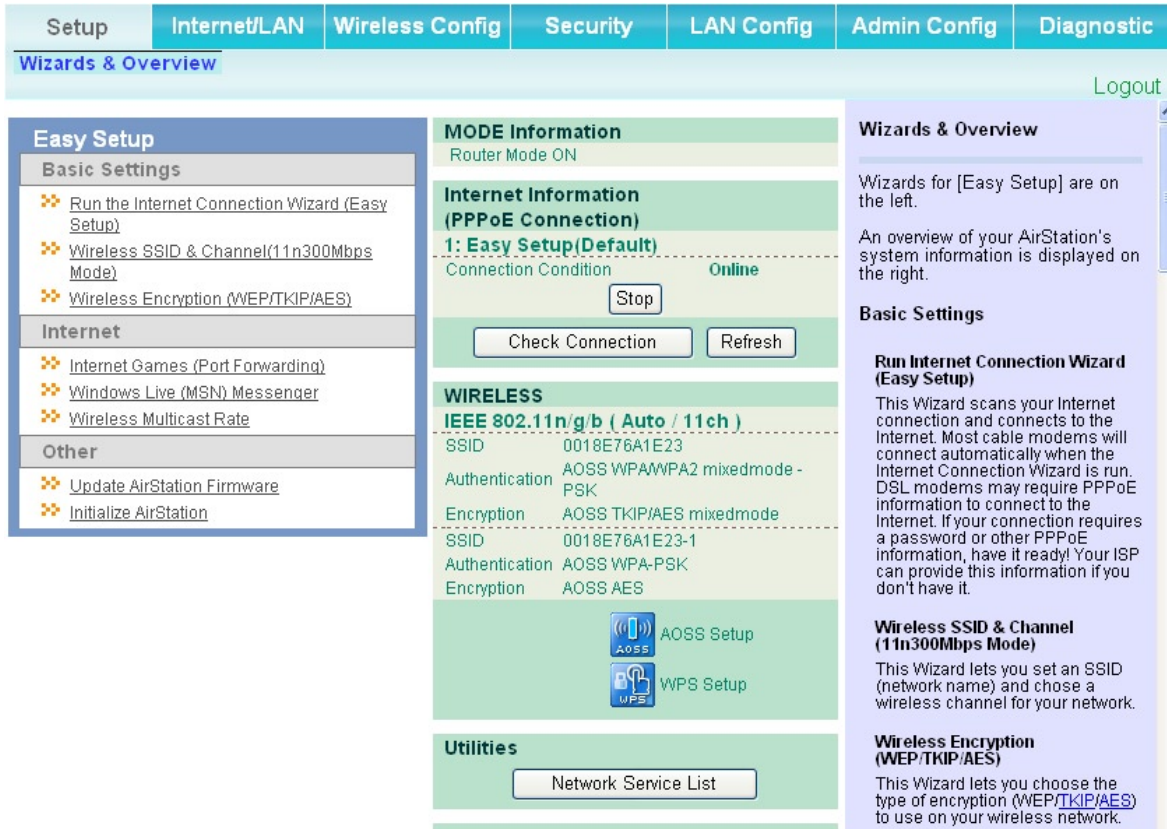
The menu structure during a bridge mode is the following. Please refer to respective page for explanations regarding to each item.

Main screen	Descriptions	Page
LAN Config		
LAN	Configure LAN side ports and devices	Page 34
Route	Configure the IP communication route that the AirStation uses	Page 38
Wireless Config		
WPS	WPS settings and status	Page 39
AOSS	AOSS (AirStation One-touch Secure System) settings and status	Page 40
Basic	Configure basic wireless settings	Page 43
Advanced	Configure advanced wireless settings	Page 46
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia)	Page 47
MAC Filter	Limit access to specific devices	Page 49
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port	Page 50
Admin Config		
Name	Configure the AirStation's name	Page 59
Password	Configure the AirStation's login password for access to configuration screens	Page 60
Time/Date	Configure the AirStation's internal clock	Page 61
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	Page 62
Access	Configure access restrictions to the AirStation's configuration screens	Page 63
Log	Configure a syslog server to manage the AirStation's logs	Page 64
Save/Restore	Save or restore the AirStation's configuration from a configuration file	page 65
Initialize/Restart	Initialize the AirStation or reboot it	Page 66
Update	Update the AirStation's firmware	Page 67
Diagnostic		
System Info	View current system information for the AirStation	Page 68
Logs	Check the AirStation's logs	Page 70

Packet Info	View all packets transferred by the AirStation	Page 71
Client Monitor	View all devices currently connected to the AirStation	Page 72
Ping	Test the AirStation's connection to other devices on the network	Page 73
Logout		
Click this to log out of the AirStation's configuration screens		

Setup

The home page of the configuration screen. You can verify settings and the status of the AirStation here.



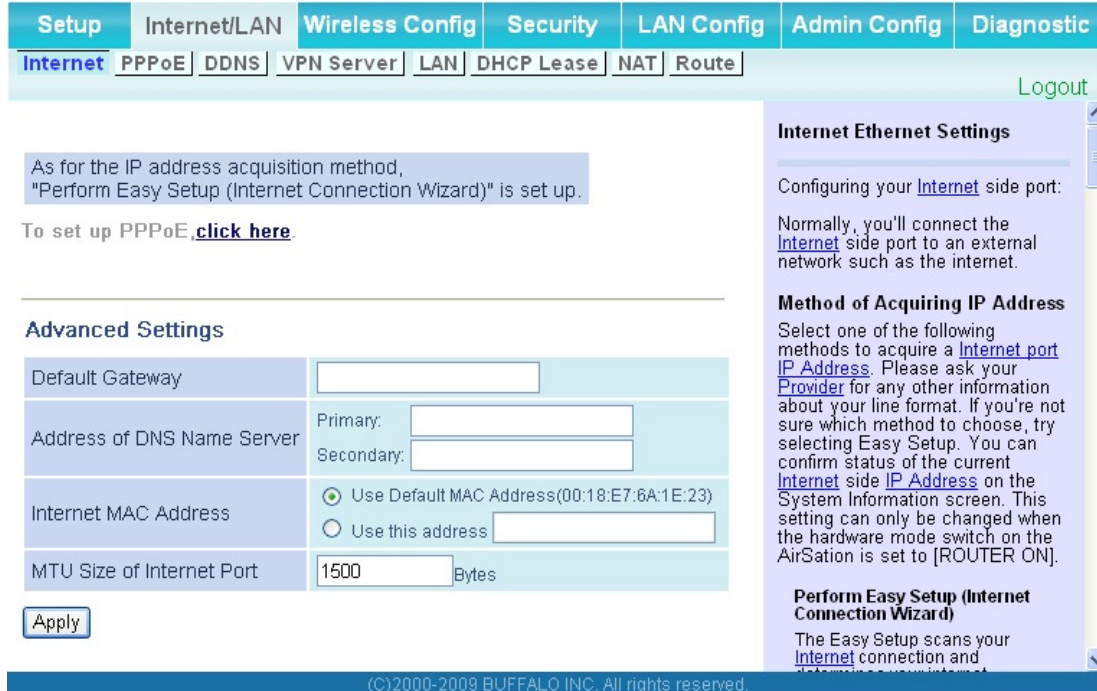
Parameter	Meaning
Internet/LAN (LAN Config)	Displays the configuration screen for the Internet port and LAN ports.
Wireless Config	Click this button to display the configuration screen for wireless settings.
Security	Click this button to display the configuration screen for security.
LAN Config	Click this button to display the configuration screen to open ports for games and applications.

Parameter	Meaning
Admin Config	Click this button to display the configuration screen which is related to the administration of the AirStation.
Diagnostic	Click this button to display the status of the AirStation.
Easy Setup	Enable you to configure the AirStation easily such as an encryption method of the wireless signal or changing a wireless channel.
Internet Information	Displays the current information where the AirStation is connected on the Internet side.
Check Connection	Clicking this button to check if the AirStation is connected to the Internet properly.
Refresh	Clicking this button to refresh the screen which is currently displayed.
WIRELESS	Displays the current wireless settings.
AOSS	Click this button to display the AOSS configuration screen.
WPS	Click this button to display the WPS configuration screen.
Network Service List	Displays the list of the network devices for which information is provided from the network on the LAN-side.
Language	Enable you to select the language you use.
Logout	Logout from the configuration screen of the AirStation. If the AirStation does not communicate for 5 minutes, it will logout automatically.

Internet/LAN (LAN Config)

Internet (Router Mode only)

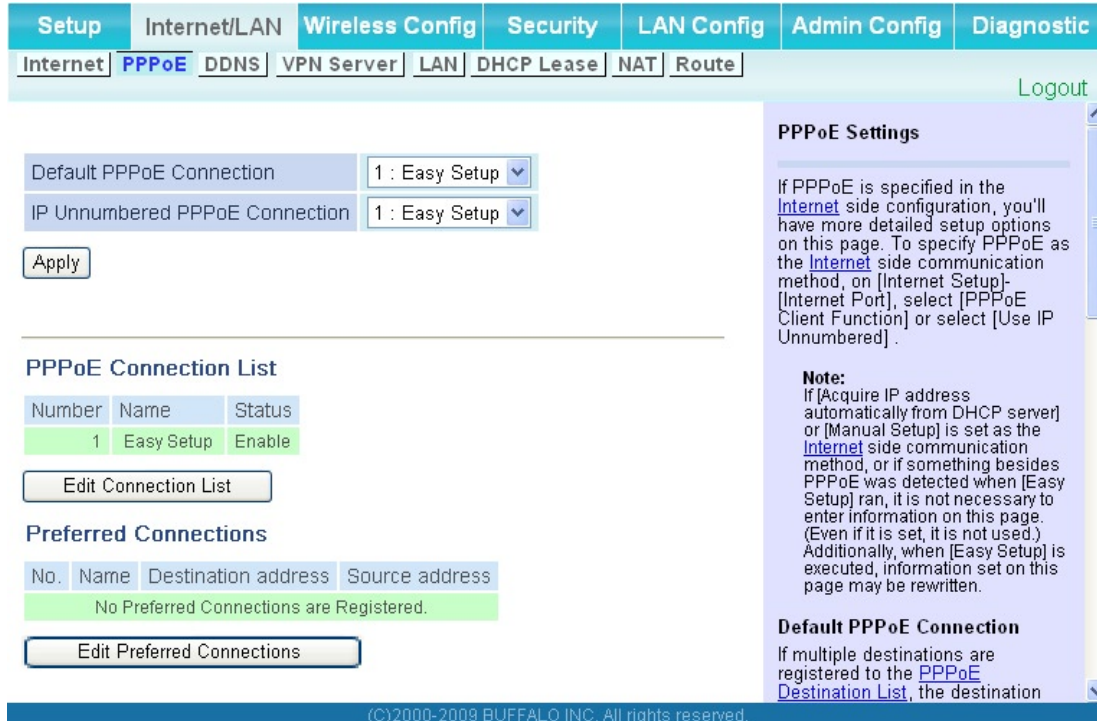
The screen to configure a port of the Internet side.



Parameter	Meaning
Method of Acquiring IP Address	Specify how the Internet side IP address is obtained.
Default Gateway	Configure an IP address for the default gateway.
Address of DNS Name Server	Specify an IP address of the DNS server.
Internet MAC Address	Configure the Internet side MAC address. Note: Configuring an improper MAC address may make the AirStation unusable. Change this setting at your own risk.
MTU size of Internet Port	Configure the MTU value of the Internet port from the range of 578 to 1500 bytes.

PPPoE (Router Mode only)

The screen to configure PPPoE settings.



Parameter	Meaning
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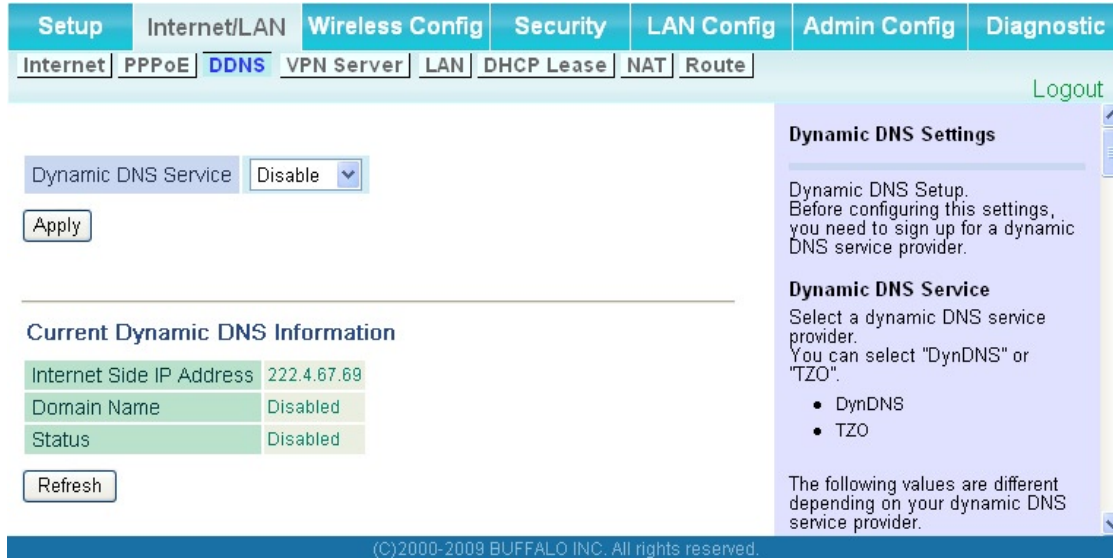
Default PPPoE Connection	If you have registered multiple connection destinations in PPPoE Connection List, connection destination selected here have priority. You need to configure the route to which PPPoE is connected to if you don't use the default setting.
IP Unnumbered PPPoE Connection	Select the destination from the PPPoE Connection List which is used when specifying "Use IP Unnumbered" in Method of Acquiring IP Address (page 26).
PPPoE Connection List	Edit PPPoE destination. You can register up to 5 sessions.
"Edit Connection List"	Click this button to display the screen to edit the settings of destination.

Parameter	Meaning
PPPoE Connection No.*-Add	<p>This is displayed when clicking "<i>Edit Connection List</i>".</p> <p>Name of Connection Enter the name to identify the connected destination. You may enter up to 32 alphanumeric characters and symbols.</p> <p>User Name Set the user name which is specified by your provider, used for a PPPoE certification. You may enter up to 32 alphanumeric characters and symbols.</p> <p>Password Set the password specified by your provider for PPPoE certification. You may enter up to 32 alphanumeric characters and symbols.</p> <p>Service Name Fill in this field only when your provider specifies a Service Name. Leave blank otherwise. You may enter up to 32 alphanumeric characters and symbols.</p> <p>Connection Type Specifies the timing for the AirStation to connect to your provider.</p> <p>Automatic disconnection Set time to disconnect after communication is stopped when the connection method is set to "<i>Connect on Demand</i>" or "<i>Manual</i>". You can enter up to 1440 minutes.</p> <p>Authorization Configure an authorization method with a provider.</p> <p>MTU Size Configure MTU value in the range of 578 to 1492, which is used for communication on PPPoE.</p> <p>MRU Size Configure MRU (Maximum Receive Unit) value in the range of 578 to 1492, which is used for communication on PPPoE.</p>
Preferred Connections	Displays information you have set regarding to the connection destination route.
[Edit Preferred Connections]	Click this button to display the screen to edit the settings of connection destination route.

Parameter	Meaning
PPPoE Connection No. *-Add	Keep Alive When enabling Keep Alive, the AirStation issues LCP echo request in order to maintain the connection with the PPPoE server once a minute. If the server does not respond more than 6 minutes the line is recognized as disconnected and the AirStation will terminate the connection. If a PPPoE connection is often disconnected, the server may not reply to Keep Alive. Set this to "Disable."
Preferred PPPoE Connection -Add	<p>This is displayed when clicking "<i>Edit Preferred Connections</i>".</p> Name The name of destination to connect by PPPoE if " <i>Destination address</i> " and " <i>Source address</i> " of the communication match. Select the destination registered to PPPoE Connection List. Destination address Destination address to communicate. When communicating to this destination address, the AirStation will communicate with " <i>Name of Connection</i> ." Source address Source address to communicate. When communicating from this source address, the AirStation will communicate with " <i>Name of Connection</i> ."

DDNS (Router Mode only)

The screen to configure Dynamic DNS settings.



Parameter	Meaning
Dynamic DNS Service	Select a provider (DynDNS or TZO) for Dynamic DNS.
User Name * Only when DynDNS is selected	Enter the user name which is registered to the Dynamic DNS service. You may enter up to 64 alphanumeric characters and symbols.
Password * Only when DynDNS is selected	Enter the user name which is registered to the Dynamic DNS service. You may enter up to 64 alphanumeric characters and symbols.
Host Name * Only when DynDNS is selected	Enter the host name which is registered to the Dynamic DNS service. You may enter up to 255 alphanumeric characters, hyphens, and periods.
Email Address * Only when selecting TZO	Enter the email address which is registered to the Dynamic DNS service. You may enter up to 64 alphanumeric characters and symbols.
TZO Key * Only when selecting TZO	Enter the TZO Key which is registered to the Dynamic DNS service. You may enter up to 64 alphanumeric characters and symbols.

Parameter	Meaning
Domain Name * Only when selecting TZO	Enter the domain name which is registered to the Dynamic DNS service. You may enter up to 255 alphanumerical characters, hyphens, and periods.
IP Address Update Period	Specifies the period to notify the dynamic DNS service provider of the current IP address. When DynDNS is selected, set it between 0 and 35 days. When TZO is selected, set it between 0 and 99 days. If 0 (zero) day is set, no periodic update is performed.
Internet Side IP Address	The WAN-side IP address of the AirStation's Internet port. This address is sent to the dynamic DNS service provider.
Domain Name	The domain name assigned by the dynamic DNS Service provider. The AirStation can be accessed from the Internet using this domain name.
Status	Display the status of dynamic DNS service.

VPN server (Router Mode Only)

Configure the VPN server.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Internet	PPPoE	DDNS	VPN Server	LAN	DHCP Lease	NAT	Route

Logout

**The LAN side IP address is set to 192.168.11.1.
Therefore, a PC connected to BUFFALO's router may be unable to access to the PC on the LAN.
The LAN side IP address and DHCP IP address pool should be changed.**

Auto Input	Generate Recommended IP Address	
LAN Side IP Address	IP Address	192.168.11.1
	Subnet Mask	255.255.255.0
DHCP Server Function	<input checked="" type="checkbox"/> Enable	
DHCP IP Address Pool	192.168.11.2	for up to 64 Address(es)
PPTP Server Function	<input type="checkbox"/> Enable	
Authorization Type	MS-CHAPv2 (40/128-bit Encryption)	

[Advanced Settings]

Server IP Address	<input checked="" type="radio"/> Auto	<input type="radio"/> Manual	<input type="text"/>
Client IP Address	<input checked="" type="radio"/> Auto	<input type="radio"/> Manual	<input type="text"/> for up to 5 address(es)
DNS Server IP Address	<input checked="" type="radio"/> LAN IP address of the AirStation	<input type="radio"/> Manual	<input type="text"/>
	<input type="radio"/> Manual	<input type="text"/>	
	<input type="radio"/> Do Not Specify		
WINS Server IP Address	<input type="text"/>		
MTU/MRU value	1396		

PPTP User List

User Name	Connection Condition	IP Address	Operation
No registered users			

VPN Server Settings

By using the PPTP server function it is possible to access the AirStation from the Internet and the LAN from a Windows PPTP client.

Note
If using GRE protocol (protocol no.47) and no.1732 TCP port filtering, then this function may not work correctly.
Also, be aware that if a router on the Internet side has these protocols blocked, then this function cannot be used.

Auto Input
Click this button to generate a random IP address with a small possibility of overlapping with IP addresses of other Buffalo routers.

LAN Side IP Address
Configure the AirStation's LAN IP Address. The default is 192.168.11.1. If you want to connect the AirStation to an existing LAN, specify a unique, unused IP Address from the LAN's range of IP addresses.

Subnet Mask
Select the AirStation's LAN side Subnet Mask. The default is 255.255.255.0. If you want to connect the AirStation to an existing LAN, specify the Subnet Mask the LAN uses.

DHCP Server Function
Enable the DHCP Server here. The default is enabled. If there is another DHCP server on the network, one DHCP server must be disabled or the IP ranges must be changed to avoid conflicts caused by overlapping DHCP scopes. If DHCP Server is enabled, confirm DHCP IP Address Pool doesn't overlap existing IP Addresses in the LAN segment.

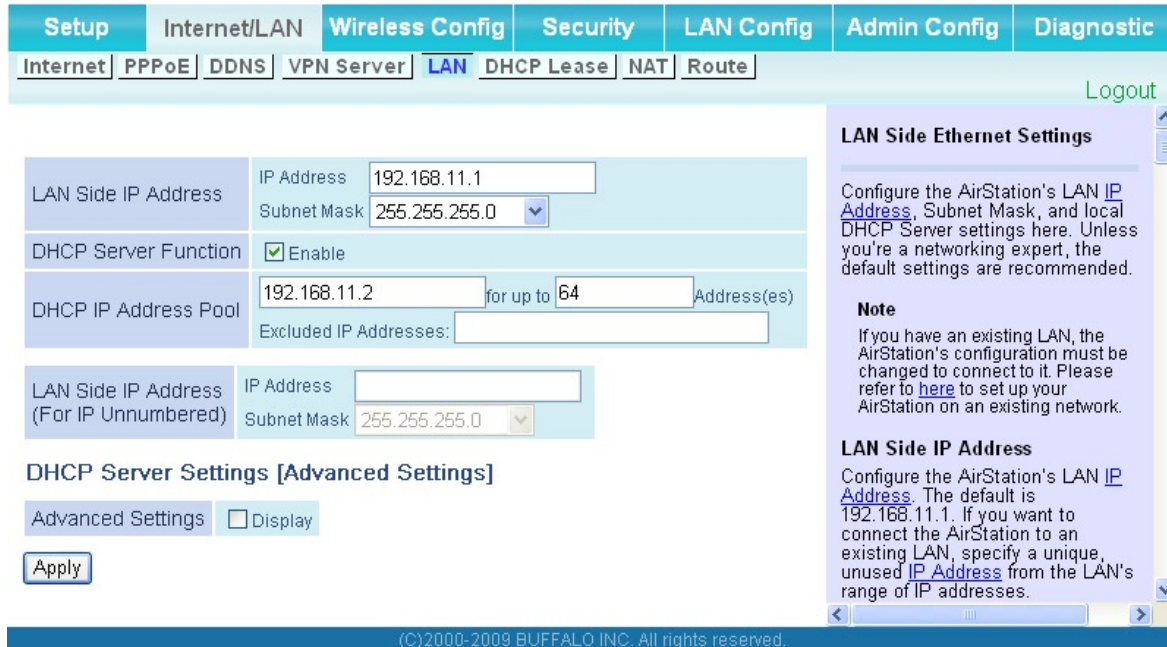
DHCP IP Address Pool
This determines the IP Address range from which IP addresses will be distributed to DHCP clients (both wired and wireless). Enter the starting IP address and the number of addresses to be

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Parameter	Meaning
Auto Input	Click to generate a random IP address.
LAN Side IP Address	Set a LAN side IP address and subnet mask.
DHCP Server	Enable or disable the DHCP server, which assigns IP addresses automatically.
DHCP IP Address Pool	Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 0-253 may be entered.
PPTP Server	Enable to use a PPTP server.
Authorization Type	Select the authentication method for PPTP connection.
Server IP Address	Select the server IP address.
Client IP Address	Select the IP address range.
DNS Server IP Address	Set the DNS server IP address for the DHCP server to issue to clients.
WINS Server IP Address	Set the WINS server IP address for the DHCP server to issue to clients.
[Edit User Information]	Click to edit user information.
User Name	Enter the user name to connect to the PPTP server. You may enter up to 16 alphanumerical characters and symbols.
Password	Enter the password to connect to the PPTP server. You may enter up to 16 alphanumerical characters and symbols.
Method of Acquiring IP Address	Select the method to be used to assign the IP address is assigned to the PPTP client.
PPTP User List	Displays the PPTP connection user information.

LAN

The screen to configure a port of the LAN side.

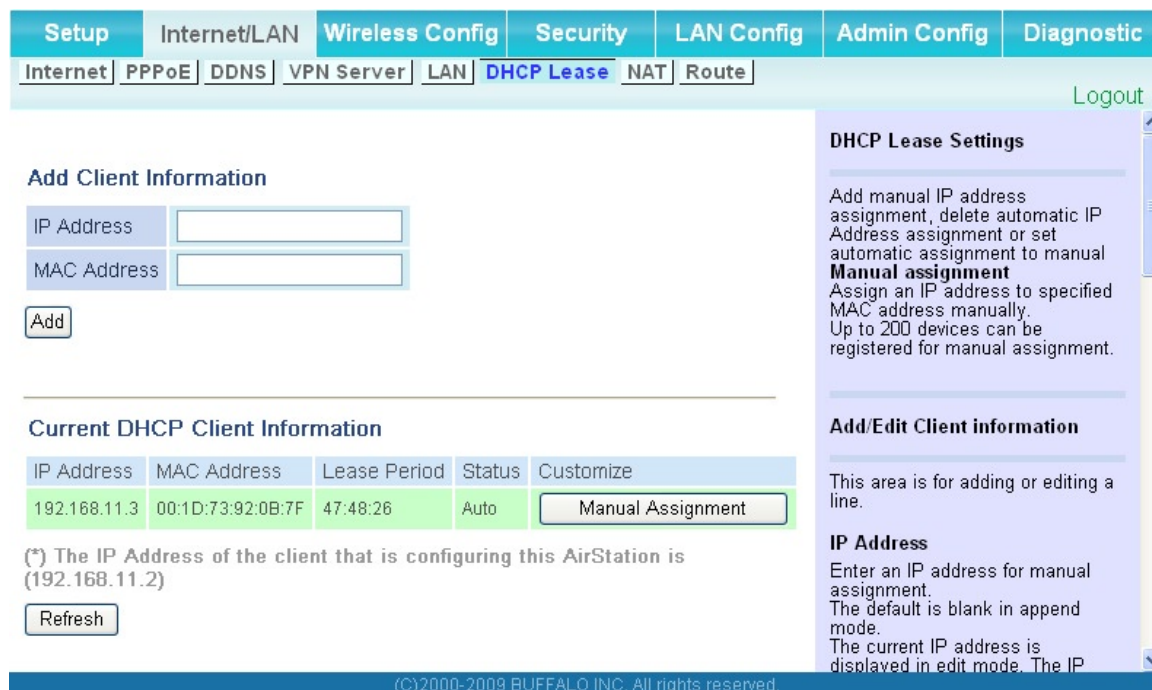


Parameter	Meaning
LAN Side IP Address	Set a LAN side IP address and subnet mask.
DHCP Server Function * Router Mode only	Enable or disable the DHCP server, which assigns IP addresses automatically.
DHCP IP Address Pool * Router Mode only	Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 0-253 may be entered.
LAN Side IP Address (For IP Unnumbered) * Router Mode only	Set a LAN side IP address for IP unnumbered. Note: A PC with a normal LAN side IP address and a PC with an LAN side IP address for IP Unnumbered cannot communicate each other.
Advanced Settings * Router Mode only	Select Display to display the advanced settings options for the DHCP server.
Lease Period * Router Mode only	Set the effective period of an IP address assigned by the DHCP server. Up to 999 hours may be entered.

Parameter	Meaning
Default Gateway * Router Mode only	Set the default gateway IP address for the DHCP server to issue to clients.
DNS Servers * Router Mode only	Set the dDNS server IP address for the DHCP server to issue to clients.
WINS Server * Router Mode only	Set the WINS server IP address for the DHCP server to issue to clients.
Domain Name * Router Mode only	Set the domain name for the DHCP server to issue to clients. You may enter up to 127 alphanumeric characters, hyphens, and periods.
Default Gateway * Bridge Mode only	Set the default gateway IP address.
DNS Server Address * Bridge Mode only	Set the DNS server IP address.

DHCP Lease (Router Mode only)

The screen to configure DHCP lease.



Parameter	Meaning
IP Address	Enter an IP address to lease manually. The IP address should be from the same subnet as the DHCP scope, but not be within the range that DHCP is assigning to other devices.
MAC Address	Enter the MAC address which identifies the client.
Current DHCP Client Information	Displays information for current leases. An IP address which is leased automatically can be changed to be leased manually by clicking "Manual Assignment".

NAT (Router Mode only)

The screen to configure settings relating to the network address translation function which is used to connect the LAN side to the Internet.



Parameter	Meaning
Address Translation	Enable to use Network Address Translation.
Log Output of Deleted Packets	Enable to log deleted packets (such as errors) during address translation.

Route

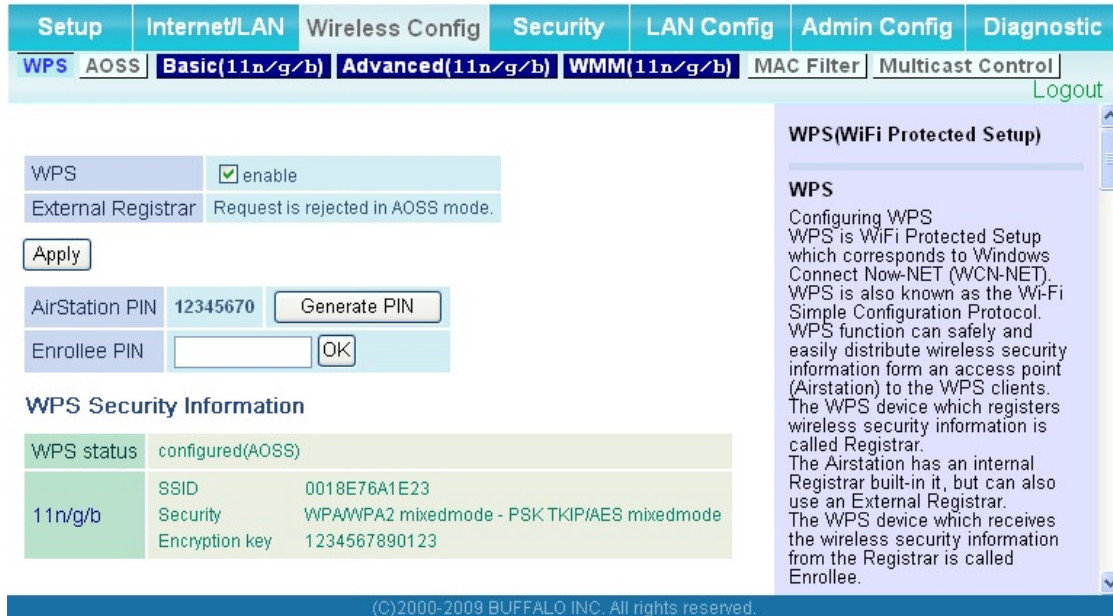
The screen to configure the communication IP route that the AirStation uses.

Parameter	Meaning
Destination Address	Adds a destination IP address and subnet mask to a routing table.
Gateway	Adds a gateway address to a routing table.
Metric	The metric is the maximum number of router hops a packet may take on the way to its destination address. Values between 1 and 15 may be entered. The default value is 15.
Routing Information	Manual entries will appear here after being added.

Wireless Config

WPS

The screen to see the detailed settings and status of WPS.



Setup Internet/LAN Wireless Config Security LAN Config Admin Config Diagnostic

WPS AOSS Basic(11n/g/b) Advanced(11n/g/b) WMM(11n/g/b) MAC Filter Multicast Control Logout

WPS enable

External Registrar Request is rejected in AOSS mode.

Apply

AirStation PIN 12345670 Generate PIN

Enrollee PIN OK

WPS Security Information

WPS status	configured(AOSS)	
11n/g/b	SSID	0018E76A1E23
	Security	WPAWPA2 mixedmode - PSK TKIP/AES mixedmode
	Encryption key	1234567890123

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Parameter

Meaning

WPS	Enable to use WPS automatic configuration.
External Registrar	Enable to accept the external configure requests from other WPS devices. Note: External configure requests will not be accepted if AOSS is in use.
AirStation PIN	Displays the PIN code of the AirStation. Clicking "Generate PIN" will generate a new PIN code. This code can be entered into other wireless devices that support WPS.
Enrollee PIN	Enter the PIN code for the other wireless device and click "OK".
WPS status	Displays "configured" if all available wireless bands are configured. Displays "unconfigured" if at least one wireless band is unconfigured.

AOSS

The screen to see the detailed settings and status of AOSS.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
WPS	AOSS	Basic(11n/g/b)	Advanced(11n/g/b)	WMM(11n/g/b)	MAC Filter	Multicast Control

[Logout](#)

AOSS Settings - Edit AOSS Client Information

Encryption Type of Exclusive SSID for WEP	802.11n/g/b	Stop
Encryption level expansion function	802.11n/g/b	Enabled
Dedicated WEP SSID isolation	802.11n/g/b	Disabled
When this function is enabled, clients c		
AOSS Button on the AirStation Unit	<input checked="" type="checkbox"/> Enable	

Current Encryption Information 802.11n/g/b

Encryption Type	WPA-PSK-AES (Now in use)		
SSID	<input type="text" value="0018E76A1E23-1"/>		
Encryption key	<input type="text" value="1234567890123"/>		
Encryption Type	WPAWPA2-PSK-mixed (Now in use)		
SSID	<input type="text" value="0018E76A1E23"/>		
Encryption key	<input type="text" value="1234567890123"/>		
Encryption Type	WEP128		
SSID	<input type="text" value="0018E76A1E23-3"/>		
Encryption key	<input type="text" value="1234567890123"/> (Sending Key)		
	<input type="text" value="1234567890123"/>		
	<input type="text" value="1234567890123"/>		
	<input type="text" value="1234567890123"/>		
Encryption Type	WEP64		
SSID	<input type="text" value="0018E76A1E23-4"/>		
Encryption key	<input type="text" value="12345"/> (Sending Key)		
	<input type="text" value="12345"/>		
	<input type="text" value="12345"/>		
	<input type="text" value="12345"/>		

AOSS Client Information

Client Information	MAC Address	Encryption Type	Wireless	Connector Setting
WLI-UC-G30xN	00:1D:73:92:0B:7F	WEP64/WEP128 WPA-PSK-TKIP/WPA-PSK-AES	802.11n/g/b	Allow

AOSS Ethernet Converter Information

Client Information	MAC Address	Encryption Type

AOSS (AirStation One-Touch Secure System)

AOSS is Buffalo's unique technology for quickly forming a secure wireless connection. You can see AOSS's configuration and status from this screen.

[Start AOSS] button

Click this button to start AOSS. The AOSS button on top of the router works the same as this button. Refer to [How to use AOSS](#) for more details.

[Disable AOSS] button

This button appears when AOSS is enabled. Click this button to disable AOSS. Connections to wireless clients will be terminated, [AOSS Information](#) removed, and Encryption Type reset to its default value, AES. Current Encryption Information will also be removed. Wireless Setting and Wireless Security are enabled in Advanced Settings when AOSS is disabled.

How to use AOSS

How to use AOSS:

(1)First
Power on or reboot the AirStation and a wireless client that supports AOSS.

(2)Press AOSS buttons
After rebooting, press both product's AOSS buttons, the router's first, then the client's. The AirStation and the wireless client will exchange security information to set up the most secure encryption type automatically and are ready to communicate.

Note:



- Once the AOSS button is pressed, other operations can't be started until AOSS is finished. If the AirStation can't find a wireless client after three minutes, the AirStation's status returns to its previous state.
- Up to 24 wireless clients may be connected through AOSS.
- By default, AOSS is functional but does not initiate a connection unless started manually by pushing the AOSS button, either here or on the top of the router.
- Use AirStation's System Information page to manually configure a wireless client that doesn't support AOSS.
- When wireless security is configured, it's security information is succeeded.

In the following cases, the setting of wireless security is not succeeded and AOSS returns error.

- Any blank is contained in SSID.
- WPA-PSK is input with 'hexadecimal 64 characters'.
- Any blank is contained in WPA-PSK.

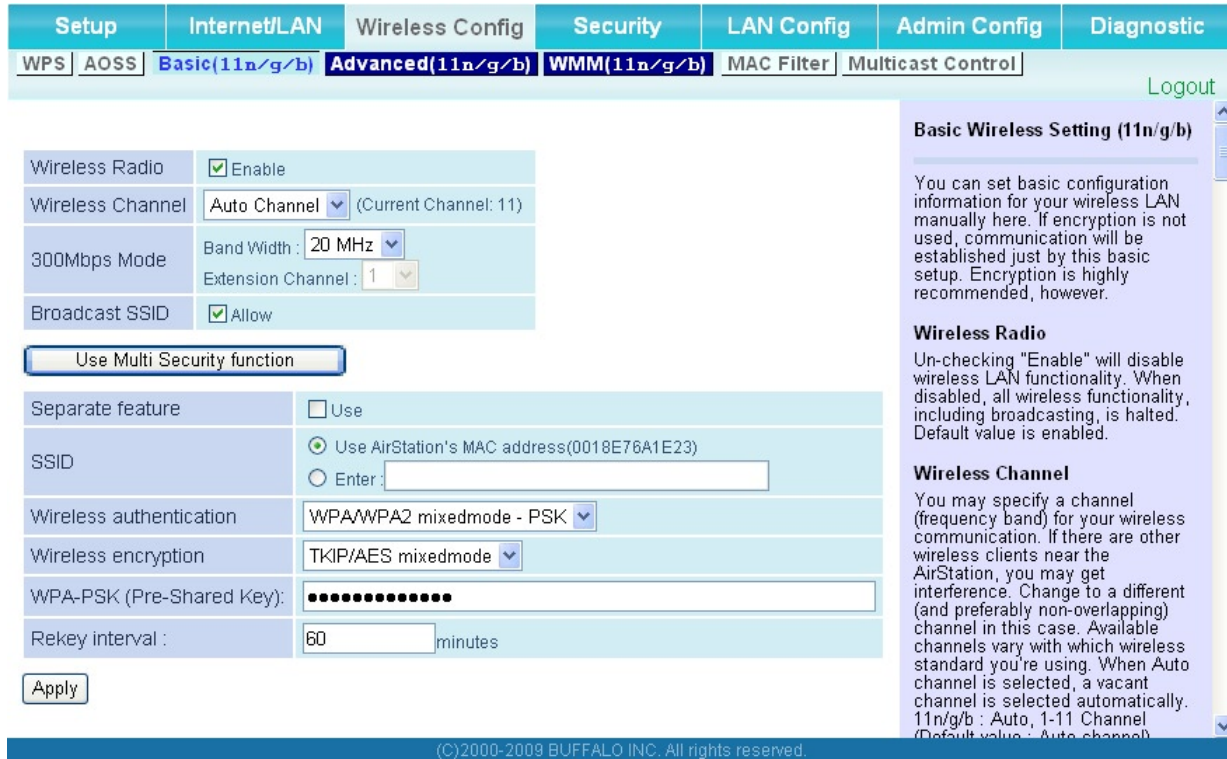
In the following cases, the setting of wireless security is not succeeded and AOSS generates new encryption settings.

- Wireless Authentication is "WPA2-PSK".

Parameter	Meaning
	Initiates AOSS automatic wireless configuration. Click this, then press or click the AOSS button on your AOSS-compatible wireless client. Repeat for additional AOSS clients.
	Click this button to disconnect AOSS connections. Note: If AOSS connections are disconnected, the SSID and encryption keys will be restored to their most recent settings before using AOSS.
Encryption Type of Exclusive SSID for WEP	You may allow a separate SSID specifically for WEP connections. If "disabled" is selected, then clients will not be able to connect with WEP.
Encryption level expansion function	Expands security method from TKIP to WPA/WPA2-PSK-mixed mode.
Dedicated WEP SSID isolation	Set a separate SSID and network segment specifically for WEP connections. Devices connected with WEP will not be able to communicate with devices connected using AES/TKIP. All connected devices will be able to communicate with the internet.
AOSS Button on the AirStation Unit	Determine whether configure AOSS or not when the physical AOSS button is pressed.
Current Encryption Information * AOSS Connection only	Displays the encryption type, SSID, an encryption key configured by AOSS.
[Random]	Click to enter random values for SSID, encryption key, and other settings.
[KEY base]	Click to return the SSID, encryption key, and other wireless settings to the values on the case sticker.
[Reset]	Click to return the SSID, encryption key, and other wireless settings to their previous values.
AOSS Client Information* * AOSS Connection only	Displays AOSS clients connected to the AirStation and information of the devices which are wirelessly communicated.
AOSS Ethernet Converter Information* * AOSS Connection only	Displays information about ethernet converters connected to the AirStation via AOSS.

Basic

The screen to configure a basic wireless settings.



Parameter	Meaning
Wireless Radio	Determines whether to allow wireless communication. If this is unchecked, then no wireless connections will be allowed.
Wireless Channel	Sets a channel (a range of frequencies) used for wireless connections. Available range of the channel is 1-11. With Auto Channel selected, the AirStation will automatically use the best available channel.
150Mbps Mode (WCR-GN)	150 Mbps mode uses twice the normal frequency range, 40 MHz instead of 20 MHz. In uncongested areas this can increase performance. To use 150 Mbps mode, set the Bandwidth to 40 MHz and choose an Extension Channel. Note: If using Auto Channel for the wireless channel, then the Extension Channel is set automatically.

Parameter	Meaning
Broadcast SSID	If "Allow" is checked, then the AirStation will respond to SSID searches from wireless devices by broadcasting its SSID. If "Allow" is unchecked, then the AirStation ignore SSID searches from wireless devices.
[Use Multi Security function] [Do not use Multi Security function]	Clicking "Use Multi Security function" will enable the Multi Security function, allowing the use of multiple SSIDs, each with different wireless security settings. Clicking "Do not use Multi Security function" will disable the Multi Security function. The AirStation will then allow one SSID and one type of wireless security. Note: When using Multi Security, you need to enable at least one of the following SSID1, SSID2, or SSID3.
SSID1	Multi Security SSID1 can use WPA-PSK-TKIP or WPA/WPA2-Mixed for wireless security.
SSID2	Multi Security SSID2 can use WPA-PSK-AES for wireless security.
SSID3	Multi Security SSID3 can use WEP for wireless security.
Separate feature	When "Enabled", wireless devices connected to the AirStation can communicate only with the Internet side, not with each other.
SSID	Set SSID using 1-32 alphanumeric character (s).
Wireless authentication	Specifies an authentication method used when connecting to a wireless device.

Parameter	Meaning
Wireless encryption	<p>Select a type of data encryption for wireless communication from the following options:</p> <p>No encryption Data is transmitted without encryption. Avoid this option since any communication may be intercepted. <i>"No encryption"</i> can be selected only when <i>"No authentication"</i> is selected for Wireless authentication.</p> <p>WEP WEP is a common encryption method supported by most devices. Use an encryption key to communicate with a wireless device. WEP can only be selected when <i>"No authentication"</i> is selected for Wireless authentication.</p> <p>TKIP TKIP is an encryption method which is more secure than WEP, but slower. Use an pre-shared-key to communicate with a wireless device. TKIP can be selected only when WPA-PSK or WPA2-PSK is selected for Wireless authentication.</p> <p>AES AES is more secure than TKIP, and faster. Use a pre-shared-key to communicate with a wireless device. AES can be selected only when WPA-PSK or WPA2-PSK is selected for Wireless authentication.</p> <p>TKIP/AES mixed mode TKIP/AES mixed mode allows both TKIP and AES authentication and communication. TKIP/AES mixed mode can be selected only when WPA/WPA2 mixed mode - PSK is selected for Wireless authentication.</p>
WPA-PSK (Pre-Shared Key)	<p>Enter a pre-shared key for use with wireless authentication.</p> <p>* Use 8 to 63 alphanumeric characters (case-sensitive) for a preshared key when you select character type as an input method. Enter 64 digits using 0 to 9 and a to f (not case-sensitive) when you select hexadecimal type as an input method.</p>
Rekey interval	<p>Set the interval between 0 and 1440 (minutes) to update a communication encryption key.</p>

Parameter	Meaning
Setup WEP encryption key	Enter an encryption key to encrypt wireless data. * Use 5 or 13 alphanumeric characters (case-sensitive) for an encryption key when you select character type as the input method. Enter 10 or 26 digits using 0 to 9 and a to f (not case-sensitive) when you select hexadecimal type as the input method.

Advanced

The screen to configure the advanced wireless settings.



Parameter	Meaning
Multicast Rate	Set the communication speed of multi-cast packets.
DTIM Period	Set the beacon responding interval (1 -255) which is notified to a wireless device. This setting is effective only when the power management feature is enabled on a wireless device.
Privacy Separator	If enabled, the Privacy Separator blocks communication between wireless devices connected to the AirStation. Wireless devices will be able to connect to the Internet but not with each other. Devices that are connected to the AirStation with wired connections will still be able to connect to wireless devices normally.

WMM

The screen to set the priorities for specific communications the AirStation performs.

Setup
Internet/LAN
Wireless Config
Security
LAN Config
Admin Config
Diagnostic

WPS
AOSS
Basic(11n/g/b)
Advanced(11n/g/b)
WMM(11n/g/b)
MAC Filter
Multicast Control
Logout

WMM-EDCA Parameters

Priority	Parameter	For AP	For STA
AC_BK(Low)	CWmin:	<input type="text" value="15"/>	<input type="text" value="15"/>
	CWmax:	<input type="text" value="1023"/>	<input type="text" value="1023"/>
	AIFSN:	<input type="text" value="7"/>	<input type="text" value="7"/>
	TXOP Limit:	<input type="text" value="0"/>	<input type="text" value="0"/>
	Admission Control:	----	Disable ▾
AC_BE(Normal)	CWmin:	<input type="text" value="15"/>	<input type="text" value="15"/>
	CWmax:	<input type="text" value="63"/>	<input type="text" value="1023"/>
	AIFSN:	<input type="text" value="3"/>	<input type="text" value="3"/>
	TXOP Limit:	<input type="text" value="0"/>	<input type="text" value="0"/>
	Admission Control:	----	Disable ▾
AC_VI(High)	CWmin:	<input type="text" value="7"/>	<input type="text" value="7"/>
	CWmax:	<input type="text" value="15"/>	<input type="text" value="15"/>
	AIFSN:	<input type="text" value="1"/>	<input type="text" value="2"/>
	TXOP Limit:	<input type="text" value="94"/>	<input type="text" value="94"/>
	Admission Control:	----	Disable ▾
AC_VO(Highest)	CWmin:	<input type="text" value="3"/>	<input type="text" value="3"/>
	CWmax:	<input type="text" value="7"/>	<input type="text" value="7"/>
	AIFSN:	<input type="text" value="1"/>	<input type="text" value="2"/>
	TXOP Limit:	<input type="text" value="47"/>	<input type="text" value="47"/>
	Admission Control:	----	Disable ▾

WMM Settings (11n/g/b)

Prioritized AirStation communication for specific transactions. This settings provides some real time communication, which can help improve the quality of VOIP or other streaming protocols.

WMM-EDCA Parameters

It is usually not necessary to change this value.

Priority
The priority is ranked (Highest)8 : (High)4 : (Normal)2 : (Low)1 for each packet.

Parameter

CWmin, CWmax
The maximum and minimum value for the contention window. The contention window is used to control the frame collision avoidance system in IEEE802.11. Values that can be inputted: 1-32767.

AIFSN
Interval of the sending frame. The unit defines a time-slot (similar to the window value of CWmin, CWmax). Lower values define a higher priority as the back-off algorithm starts earlier. Values that can be inputted: 1-15.

TXOP Limit
The time for the queue to obtain send priority. The minimum value is 32ms. Large values can send more frames at a time. However, latency may increase. Only one frame is transferred at the time when the TXOP Limit is 0.

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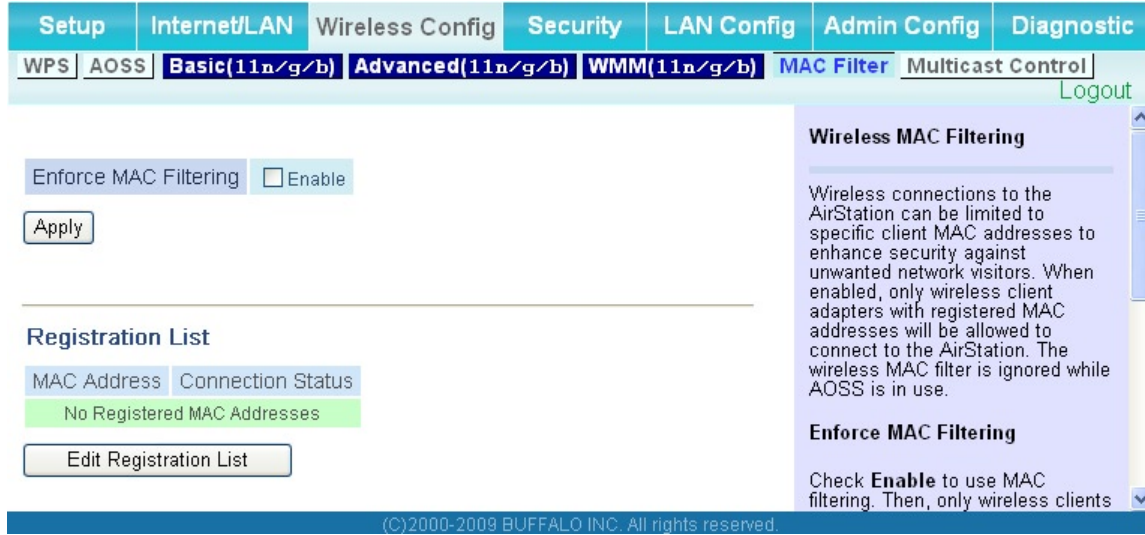
WCR-GN User Manual

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Parameter	Meaning
WMM-EDCA Parameters	<p>You don't usually need to change these settings. Using the default settings is recommended.</p> <p>Priority</p> <p>The following priorities may be applied to individual transmission packets: (Highest) 8, (High) 4, (Normal) 2, and (Low) 1. From the queue, these packets are processed in order of priority.</p> <p>CWmin, CWmax</p> <p>The maximum and minimum value of the contention window. The contention window is used in the frame collision avoidance structure performed in IEEE802.11, and generally the smaller the value in the window, the higher the probability that the queue obtains the right to send.</p> <p>AIFSN</p> <p>The interval to send frames. The unit of the AIFSN is a slot, just as the window defined by CWmin and CWmax is. The smaller the interval of sending frames, the faster the algorithm can restart. As a result, the priority of the queue is higher.</p> <p>TXOP Limit</p> <p>The period of time that the queue can use after obtaining the right to send. The unit is 32 ms. The longer this time, the more frames can be sent per right to send. However, the que may interfere with other packet transmissions. If TXOP Limit is set to 0 (zero), only one frame can be sent per right to send.</p> <p>Admission Control</p> <p>Restricts new frames from interfering with a previous queue. New packets are prioritized lower until a queue of them is collected. As the new queue accumulates more packets, its priority increases.</p>

MAC Filter

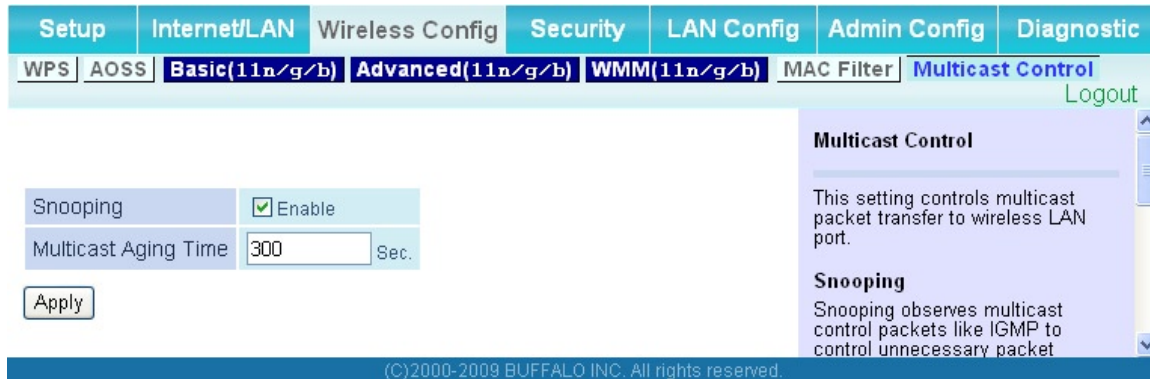
The screen to configure the access restrictions from wireless devices.



Parameter	Meaning
Enforce MAC Filtering	Enable to restrict wireless connections to devices with registered MAC addresses.
Registration List	Displays the MAC addresses of registered devices which are permitted to connect wirelessly.
[Edit Registration List]	Click this button to add a MAC address of a wireless device to the list of permitted devices.
MAC Addresses to be Registered	Enter a MAC address of a wireless device you permit to connect to the AirStation. Click "Register" to add that MAC address to the list.
List of all clients that are associated with this AirStation	Display the list of all MAC addresses of wireless devices connected to the AirStation.

Multicast Control

The screen to configure restrictions on unnecessary multicast packets sent to the wireless LAN port.



Parameter	Meaning
Snooping	If enabled, snooping supervises multicast administrative packets such as IGMP and restricts unnecessary multicast transfers to wired or wireless ports.
Multicast Aging Time	Set the time to hold the data from multicast snooping in the range of 1 to 3600 (seconds). You need to enter a value which is bigger than the interval of a IGMP/MLD query.