BUFFALO

User Manual for User-friendly Firmware

WHR-300HP

AirStation NFINITI HighPower Router and AccessPoint

www.buffalotech.com

35012720-01

Contents

Chapter 1 - Introduction

Professional or User-friendly?

This AirStation wireless router comes with two different firmware packages. You may use either the dd-wrt-based professional firmware or the simple user-friendly firmware. By default, the professional firmware is preinstalled. Turn to page 19 for instructions on switching between the two firmware packages.

Note : Most of this manual documents the User-friendly firmware. For more information on the dd-wrt-based Professional firmware, consult the help files in its web-based configuration interface or go to ***www.dd-wrt.com/wiki***.

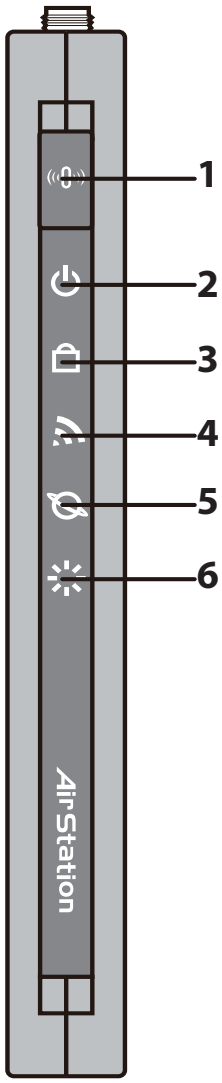
Package Contents

The following items are included with your AirStation. If any of the items are missing, please contact your vender.

- Main unit.....1
- Detachable antennas 2
- AC adapter.....1
- Stand for vertical/wall-mounting.....1
- Screws for wall-mounting.....2
- LAN cable.....1
- AirStation Utility CD.....1
- Quick Setup Guide.....1
- Setup Card.....1

Hardware Overview

Front Panel LED's



1 AOSS Button
Hold down this button until the Security LED flashes (approximately 1 second) to initiate AOSS or WPS mode, allowing the unit to exchange security keys with other AOSS or WPS compatible devices. Power must be on for this to work.

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. Wireless clients will need the same key to connect.

4 Wireless LED (Green)
Indicates wireless LAN status
Blinking: Wireless LAN is transmitting
On: Wireless LAN is enabled but not active
Off: Wireless LAN is disabled

5 Router LED (Green)
On: Router functionality is enabled
Off: Router functionality is disabled

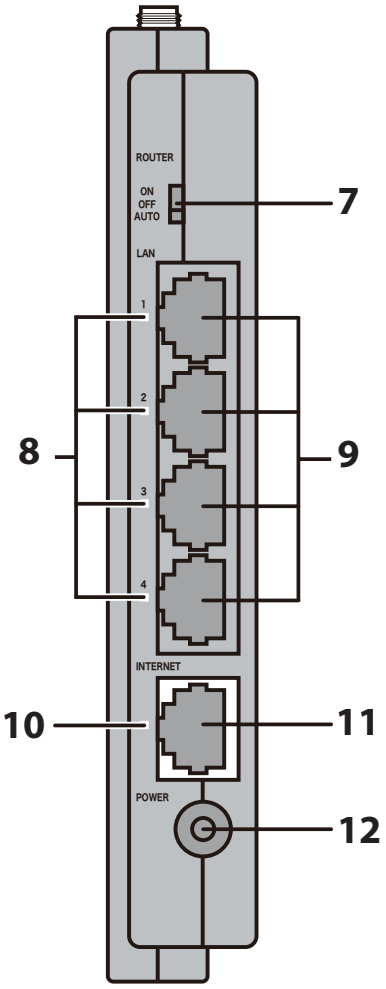
6 Diag LED (Red)
This indicates the status of the unit by the number of blinks per cycle.
Note: When the unit is first turned on or restarted, the Diag LED will blink for almost a minute during boot. This is normal.

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 is enabled (router mode).
Off: Router 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 10 Mbps and 100 Mbps connections.

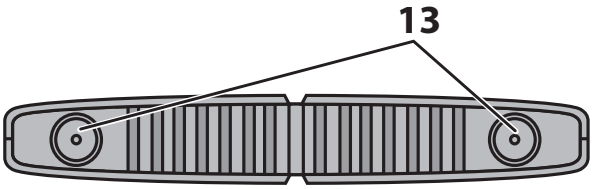
10 Internet LED (Green)

On: The Internet (WAN) port is connected.
Flashing: The Internet port is transmitting data.

11 Internet Port Connect your cable or DSL modem to this port. 10 Mbps and 100 Mbps connections are supported. In bridge/AP mode (router switch off), the Internet port becomes a regular LAN port, for a total of 5 usable LAN ports.

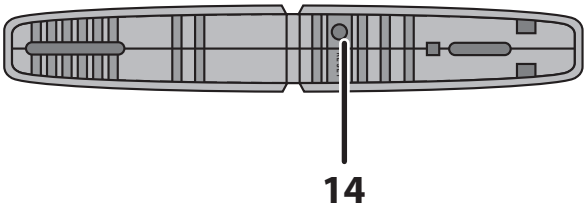
12 DC Connector Connect the included AC adapter.

Top



13 Antenna connector Screw on the antennas here.

Bottom

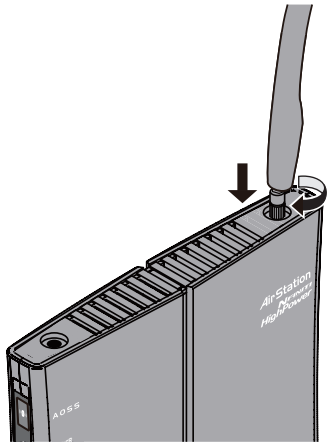


14 Reset Button Hold in this button until the Diag LED comes on to initialize the AirStation's settings. Power must be on for this to work.

Chapter 2 - Placing Your AirStation

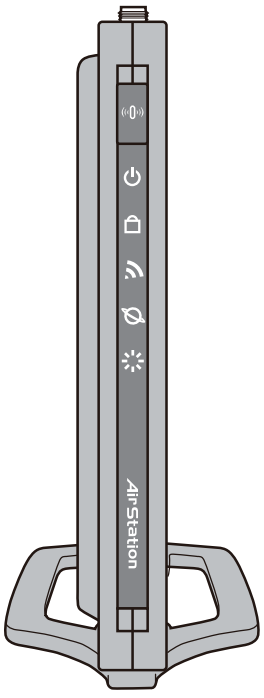
Antenna Placement

The antennas are included in the package. Screw the antennas clockwise to install.



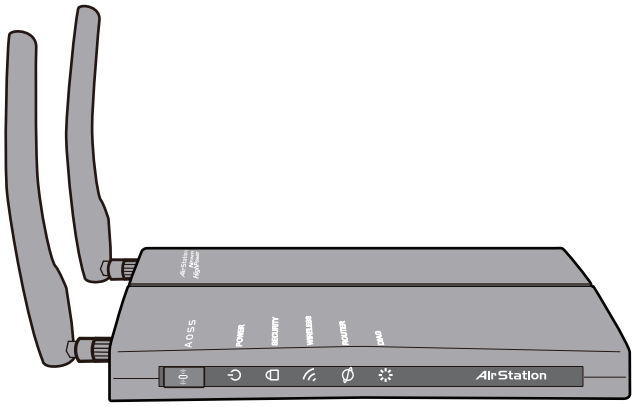
Vertical Placement

To stand the AirStation vertically, attach the base as shown.



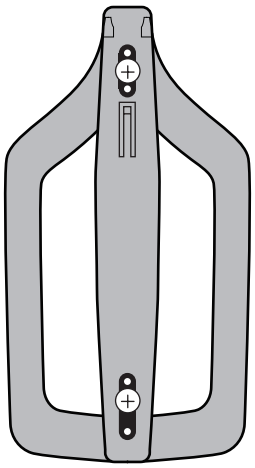
Horizontal Placement

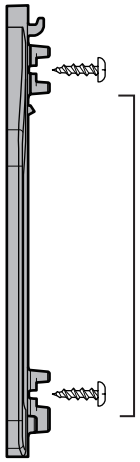
To place the unit horizontally, adjust the antennas as shown.



Wall Mounting

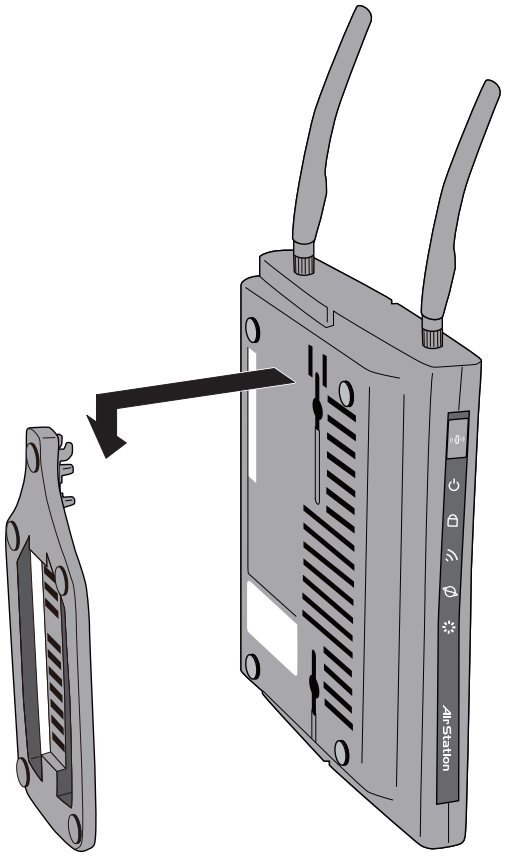
1





To wall-mount, attach the stand with screws as shown.

2



Place the center of the AirStation on the center of the stand and slide downward to lock in place.

Chapter 3 - Installation

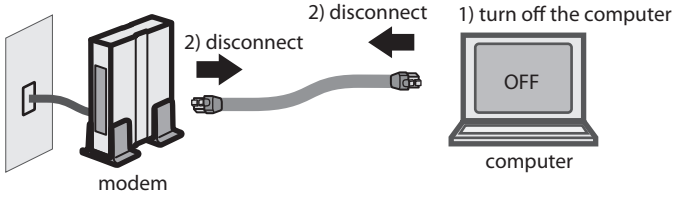
Initial Setup

Using AirStation as a Router or an Access Point

To use the AirStation as a router or an access point, configure as below.

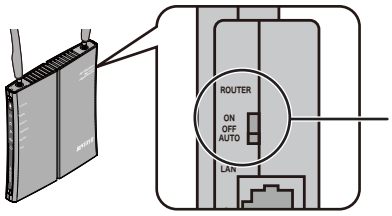
1 Turn off your computer and modem.

2



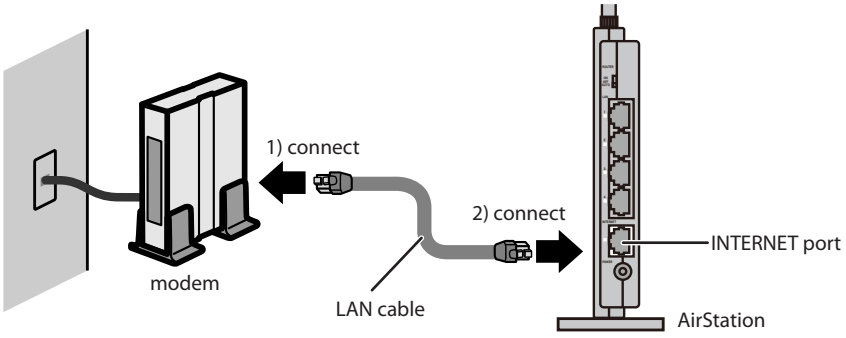
Unplug the LAN cable that connects your computer and modem.

3

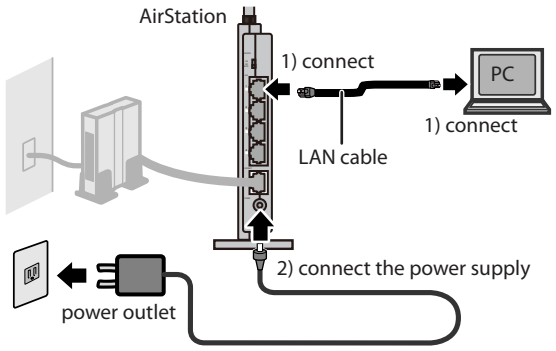


Make sure the mode switch on the back of the AirStation is in the auto position.

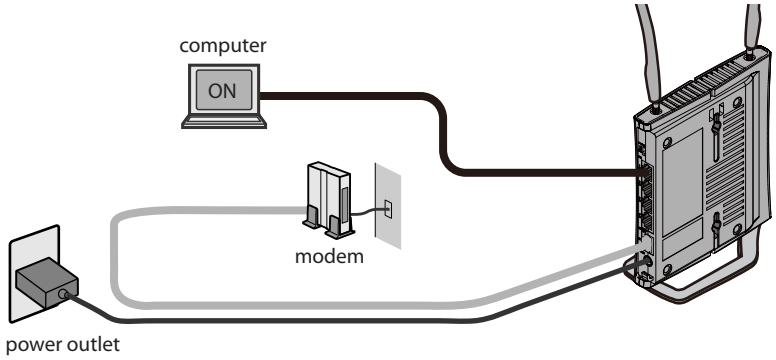
4 Connect one end of the LAN cable to the modem, and connect the other end to the Internet port of the AirStation. Turn on your modem.



5 Connect the AirStation's LAN port to your computer with another LAN cable. Turn on the AirStation, wait 60 seconds, and then turn on your computer.



6 Confirm that the devices are connected correctly as shown below.



7 After the computer has booted, the LEDs on the AirStation should be in the following condition:

Power	Green LED on
Wireless	Green LED on or blinking
Router	Green LED on or off depending on your network
Diag	Off
LAN	Green LED on or blinking
Internet	Green LED on or blinking

Refer to pages page 5 and page 7 for LED locations and other details.

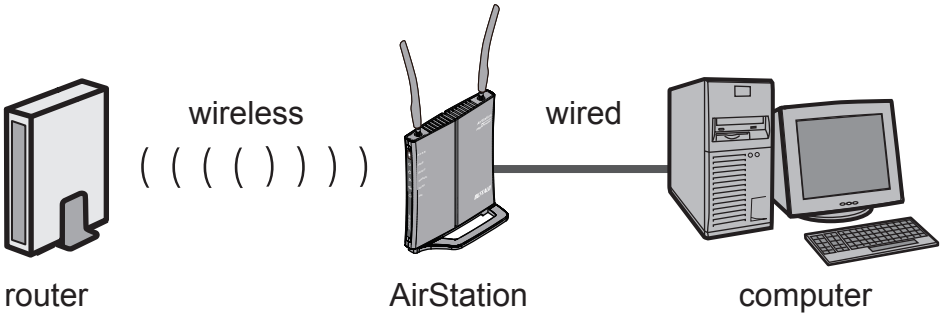
8 Launch a web browser. If the home page is displayed, setup is complete. If username and password fields are displayed, enter "admin" for the username and "password" for the password, then click [OK]. Follow the instructions on the screen to complete setup.

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

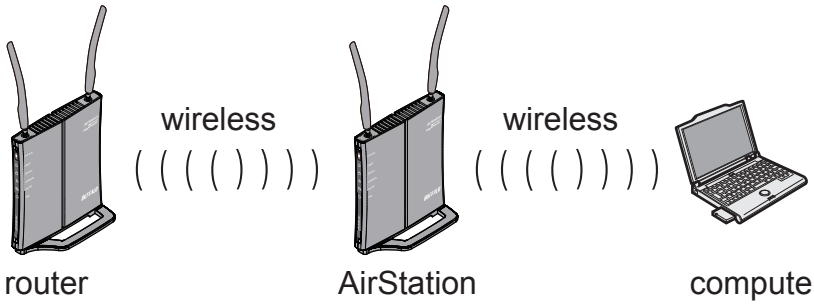
Using AirStation as an Ethernet Converter or a Repeater

To use the AirStation as an Ethernet converter or a repeater, follow the directions below.

Using as an Ethernet Converter:



Using as a repeater:



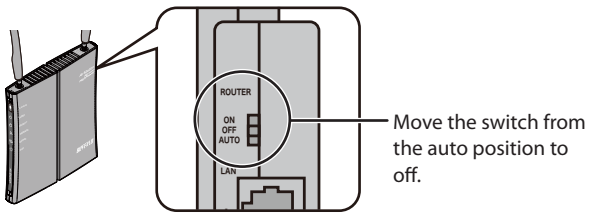
This section describes manual configuration. You can also use AOSS or WPS for automatic configuration.

1 Set your computer's IP address settings as follows (Appendix C).

IP Address	192.168.11.80
Subnet mask	255.255.255.0
Default gateway	192.168.11.1
Preferred DNS server	192.168.11.1
Alternate DNS server	blank

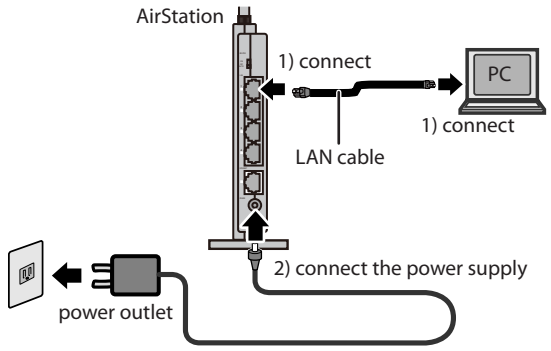
2 Shut down your computer.

3

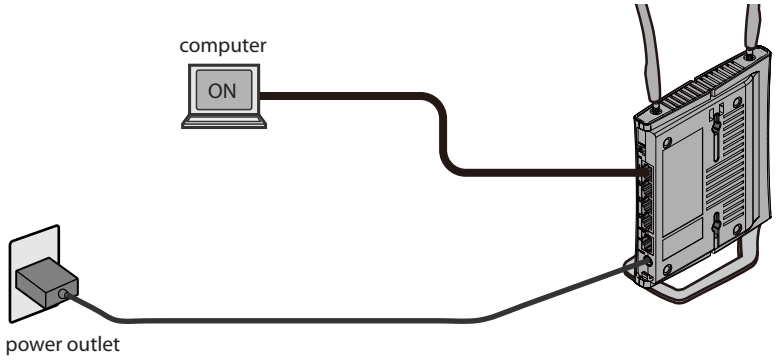


Move the switch from the auto position to off.

4 Connect the AirStation's LAN port to your computer with another LAN cable. Turn on the AirStation, wait 60 seconds, and then turn on your computer.



5 Confirm that the devices are connected correctly as shown below.



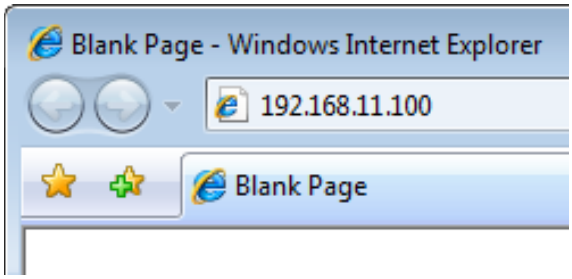
6 After the computer has booted, the LEDs on the AirStation should be in the following condition:

Power	Green LED on
Wireless	Green LED on or blinking
Router	Off
Diag	Off
LAN	Green LED on or blinking

Refer to pages page 5 and page 7 for LED locations and other details.

7 Launch a web browser.

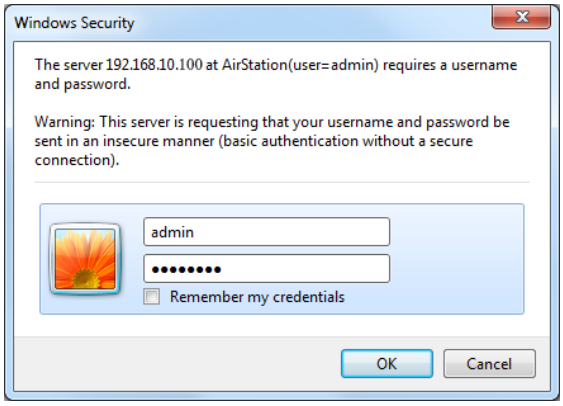
8



Enter the LAN IP address of the AirStation in the address field, then press the Enter key.

Notes:
- The default IP address of the AirStation is 192.168.11.100 in access point mode.
- If you have changed the IP address of the AirStation, enter that IP address.

9

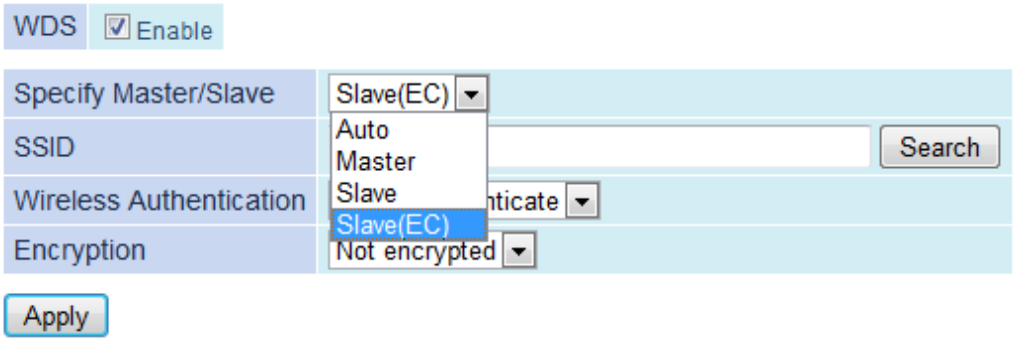


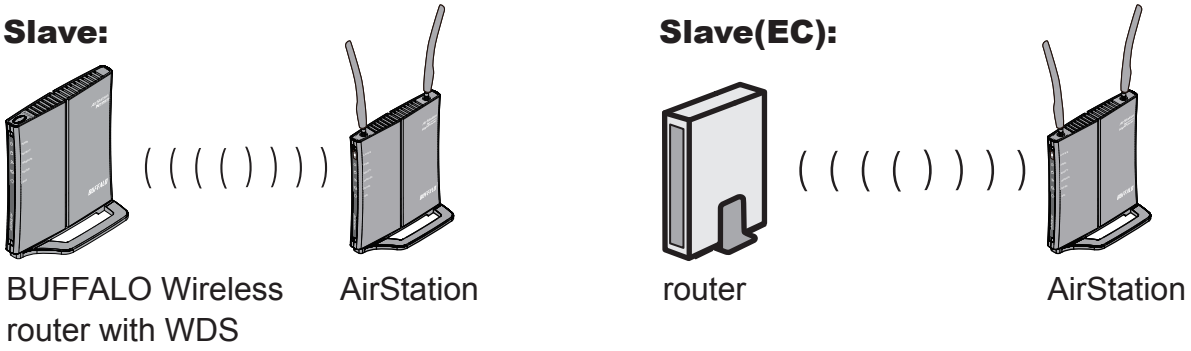
Enter "admin" for the username and "password" for the password and click [OK].

Note: If you forget your password, hold down the reset button (page 8) to initialize all settings. Note that all other settings will also revert to their default values.

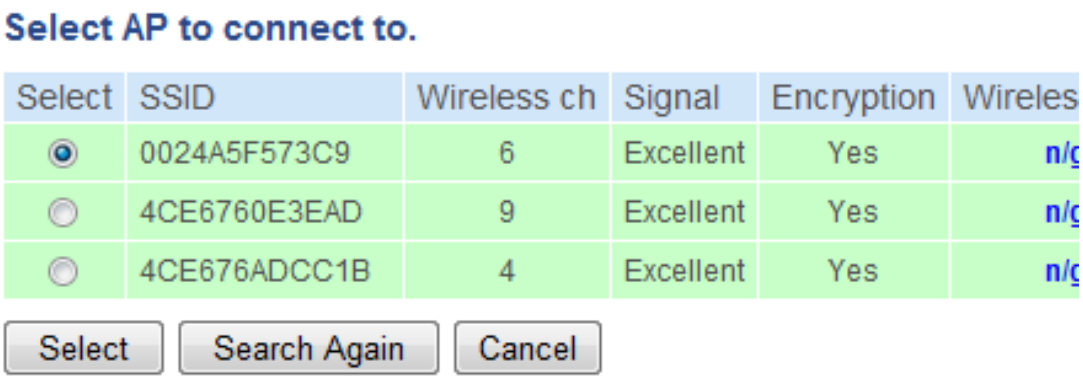
10 Click [Wireless] > [WDS].

11 If the device you connect supports WDS such as the WHR-300HP, WZR-300HP and WZR-600DHP, select [Slave] from the [Specify Master/Slave] menu and click [Search].
If the device you connect doesn't support WDS, select [Slave(EC)] from the [Specify Master/Slave] menu and click [Search].

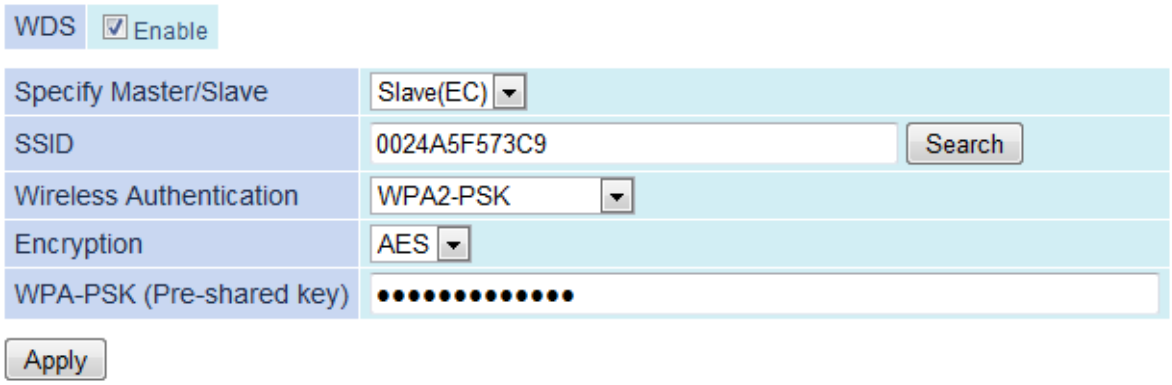




12 Once the list of the access points is displayed, select the access point you are going to connect to, then click [Select].
If the access point you are going to connect to is not displayed, click [Search Again].



13 Enter the encryption settings and password ("key") for the access point you are connecting to, then click [Apply].



14 Change your computer's IP address settings back to their former values.

ex) IP Address — Obtain an IP address automatically
DNS server — Obtain DNS server address automatically

Note: If using the AirStation as a repeater, unplug the LAN cable from your computer. You're now connected to the AirStation wirelessly.

15 Launch a web browser. If your home page is displayed, setup is complete.

Changing Firmware

To change between the professional firmware (dd-wrt) and the user-friendly firmware, follow the steps below.

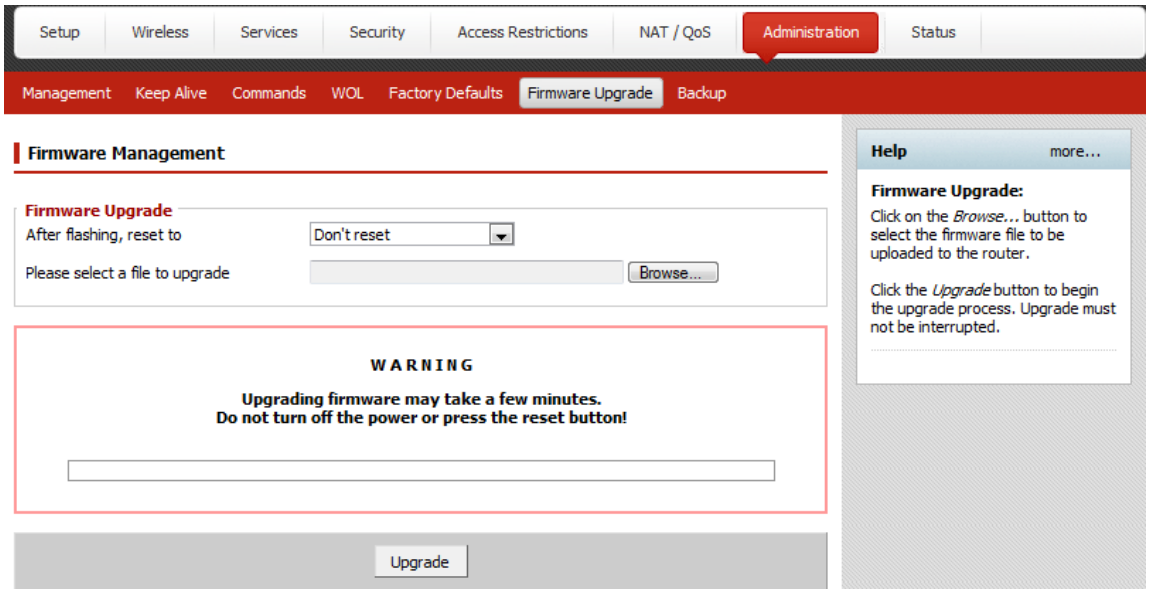
1 Open the configuration Interface of the AirStation.

2 To replace the professional firmware with the user-friendly firmware, click [Administration] > [Firmware Upgrade].
To replace the user-friendly firmware with the professional firmware, go to [Easy Setup] and click [Update AirStation Firmware].

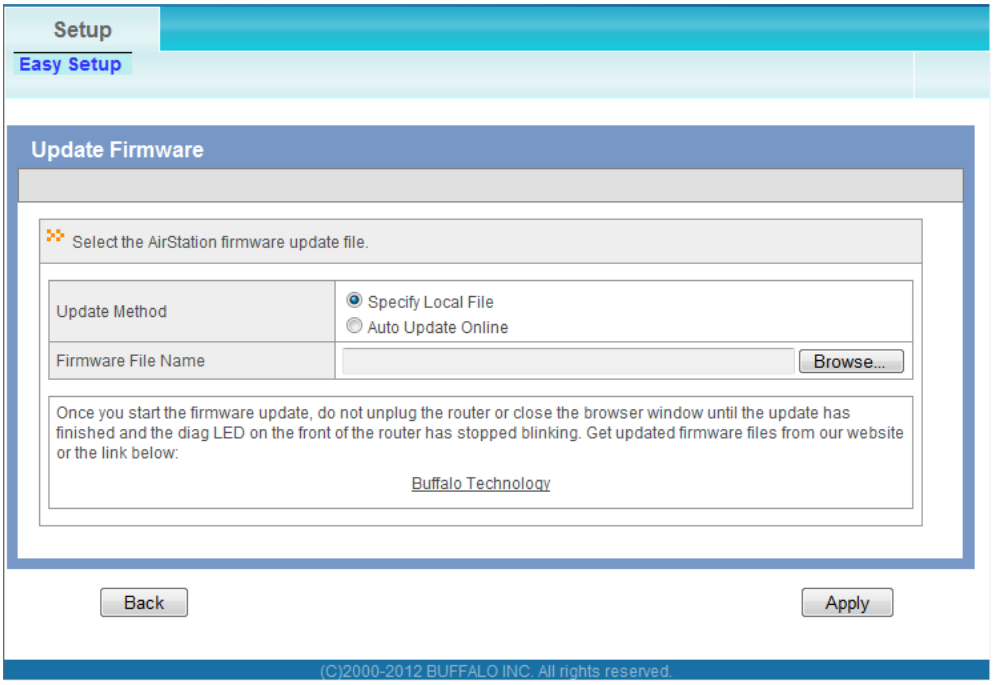
3 Click [Browse...] to select the firmware file, and click [Upgrade] or [Apply].

Note: The firmware files are contained in the "Firmware" folder of the utility CD.

Professional firmware (dd-wrt) update screen:



User-friendly firmware update screen:



Chapter 4 - Configuration

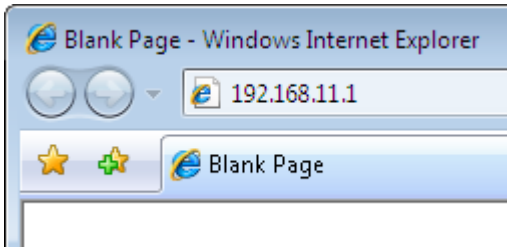
The web-based configuration interface lets you change AirStation settings. Don't change these settings unless you know what you're doing.

Accessing the Web-based Configuration Interface

To configure the AirStation's advanced settings manually, log in to the web-based configuration interface as shown below.

1 Launch a web browser.

2



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

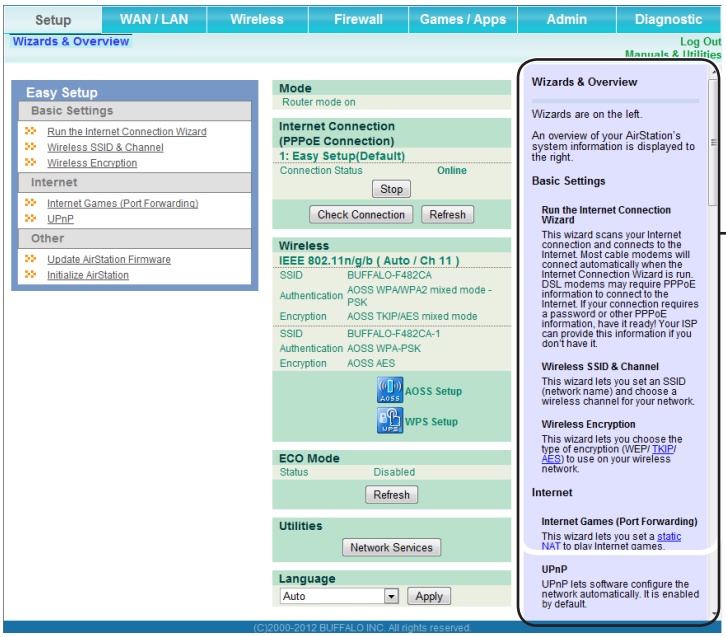
Note:
- The AirStation's default LAN-side IP address depends on the position of the mode switch.
  In router mode: 192.168.11.1
  In bridge mode: 192.168.11.100
  If the router switch is set to auto and the unit is in bridge mode, then the AirStation's IP address was assigned by an external DHCP server.
- If you changed the IP address of the AirStation, then use the new IP address.

3

Enter "admin" for the username and "password" for the password and click [OK].

Note: If you forget your password, hold down the reset button (page 8) to initialize all settings. Note that all other settings will also revert to their default values.

4



The configuration interface is displayed.

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

Configuration Menu (Router Mode)

In router mode, the AirStation's web-based configuration interface has the following menu screens. See the pages listed at right for more information about a menu screen.

Main screen	Descriptions	Page
WAN/LAN		
Internet	Configure Internet side port and settings	page 29
PPPoE	PPPoE settings (DSL login)	page 30
DDNS	DNS settings	page 33
VPN Server	VPN server settings	page 35
LAN	LAN side port and DHCP server configuration	page 37
DHCP	DHCP lease settings	page 39
NAT	Network address translation settings, used to connect LAN side devices to the Internet	page 40
Routing	Configure the IP communication route that the AirStation uses	page 41
Wireless		
WPS	WPS settings and status	page 42
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
WDS	Configure communication among AirStation	page 50
AOSS	AOSS (AirStation One-touch Secure System) settings and status	page 52
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port	page 54
Firewall		
Firewall	Protect your computer from outside intruders	page 55
IP Filter	Edit IP filters which relates to the packets passing through the LAN side and the Internet side	page 57
VPN Passthrough	Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough	page 58

Games/Apps		
Port Forwarding	Configure port translation and exceptions for games and other programs	page 59
DMZ	Configure a destination to transfer communication packets without a LAN side destination.	page 60
UPnP	Configure UPnP (Universal Plug and Play)	page 61
QoS	Configure priority for packets that require a certain data flow	page 62
Admin		
Name	Configure the AirStation's name	page 63
Password	Configure the AirStation's login password for access to configuration utilities	page 64
Time/Date	Configure the AirStation's internal clock	page 65
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	page 66
ECO	Configure the AirStation's ECO Mode.	page 67
Access	Configure access restrictions to the AirStation's configuration utilities	page 69
Log	Configure a syslog server to manage the AirStation's logs	page 70
Save/Restore	Save or restore the AirStation's configuration from a configuration file	page 71
Initialize/Restart	Initialize the AirStation or reboot it	page 72
Update	Update the AirStation's firmware	page 73
Diagnostic		
System Info	View current system information for the AirStation	page 74
Logs	Check the AirStation's logs	page 76
Packet Info	View all packets transferred by the AirStation	page 77
Client Monitor	View all devices currently connected to the AirStation	page 78
Ping	Test the AirStation's connection to other devices on the network	page 79
Logout		
Click this to log out of the AirStation's web-based configuration interface.		
Manuals & Utilities		
Click this to display download pages for Manuals and Utilities.		

Configuration Menu (Bridge Mode)

In bridge mode, the AirStation's web-based configuration interface has the following menu screens. See the pages listed at right for more information about a menu screen.

Main screen	Descriptions	Page
LAN Config		
LAN	Configure LAN side ports and devices	page 37
Routing	Configure the IP communication route that the AirStation uses	page 41
Wireless		
WPS	WPS settings and status	page 42
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
WDS	Configure communication among AirStation	page 50
AOSS	AOSS (AirStation One-touch Secure System) settings and status	page 52
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port	page 54
Admin		
Name	Configure the AirStation's name	page 63
Password	Configure the AirStation's login password for access to configuration utilities	page 64
Time/Date	Configure the AirStation's internal clock	page 65
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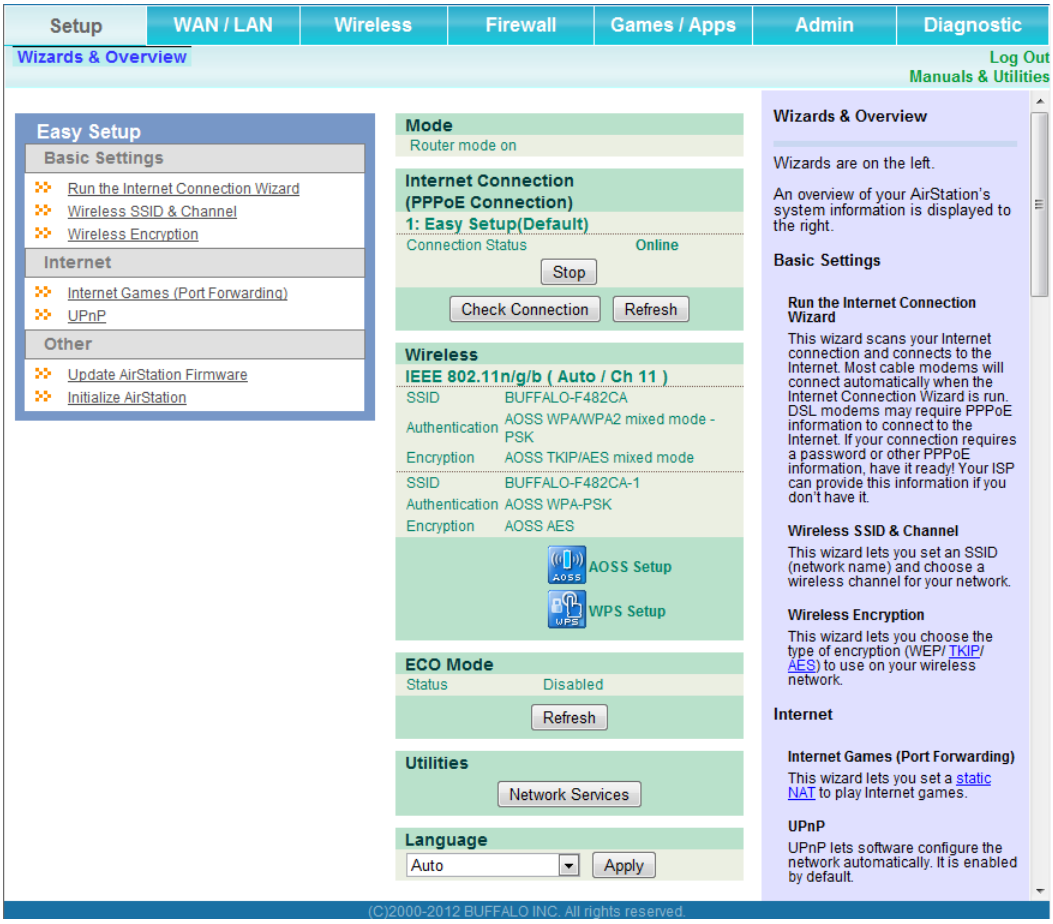
Save/Restore	Save or restore the AirStation's configuration from a configuration file	page 71
Initialize/Restart	Initialize the AirStation or reboot it	page 72
Update	Update the AirStation's firmware	page 73
Diagnostic		
System Info	View current system information for the AirStation	page 74

Logs	Check the AirStation's logs	page 76
Packet Info	View all packets transferred by the AirStation	page 77
Client Monitor	View all devices currently connected to the AirStation	page 78
Ping	Test the AirStation's connection to other devices on the network	page 79
Logout		
Click this to log out of the AirStation's web-based configuration interface.		
Manuals & Utilities		
Click this to display download pages for Manuals and Utilities.		

Setup

This is the home page of the configuration interface. You can verify settings and the status of the AirStation here.



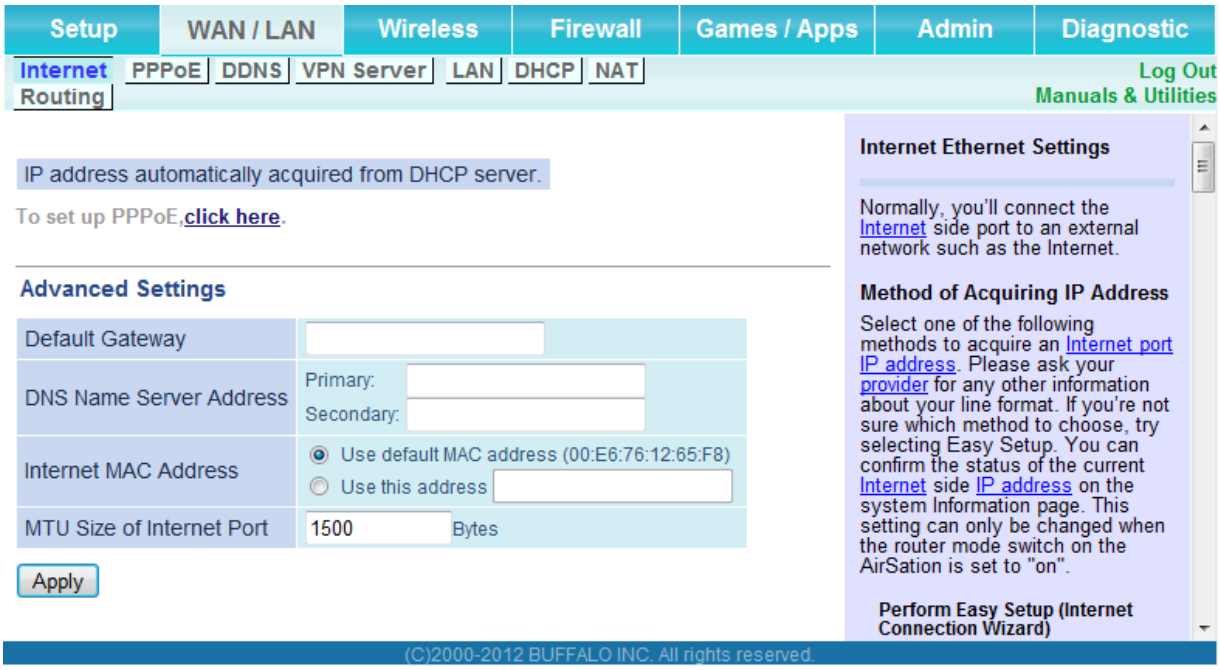
Parameter	Meaning
WAN/LAN	Configure WAN side network settings.
Wireless	Configure wireless settings.
Firewall	Configure security settings.
Games/Apps	Open ports for games and applications.
Admin	Open the Admin configuration screen.
Diagnostic	Gives information and tools for troubleshooting the network.

Parameter	Meaning
Easy Setup	Automatically configures the AirStation's internet connection.
Internet Connection	Displays the current internet connection.
Check Connection	Checks if the AirStation is connected to the Internet properly.
Refresh	Click to refresh the display.
Wireless	Displays current wireless settings.
AOSS Setup	Click to display the AOSS configuration screen.
WPS Setup	Click to display the WPS configuration screen.
ECO Mode	This indicates the operating status of ECO Mode.
Network Services	Shows a list of network services.
Language	Select the language you use.
Logout	Log out of the AirStation's web-based configuration interface. After 5 minutes of inactivity, the AirStation will log off automatically.
Manuals & Utilities	Click to display download pages for Manuals and Utilities.

WAN/LAN

Internet

The screen to configure a port of the Internet side.



Parameter	Meaning
Method of Acquiring IP Address	Specifies how the current WAN-side IP address was obtained.
Default Gateway	Specify an IP address for the default gateway.
DNS Name Server Address	Specify an IP address for 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	Values between 578 to 1500 bytes may be entered.

PPPoE

The screen to configure PPPoE settings.

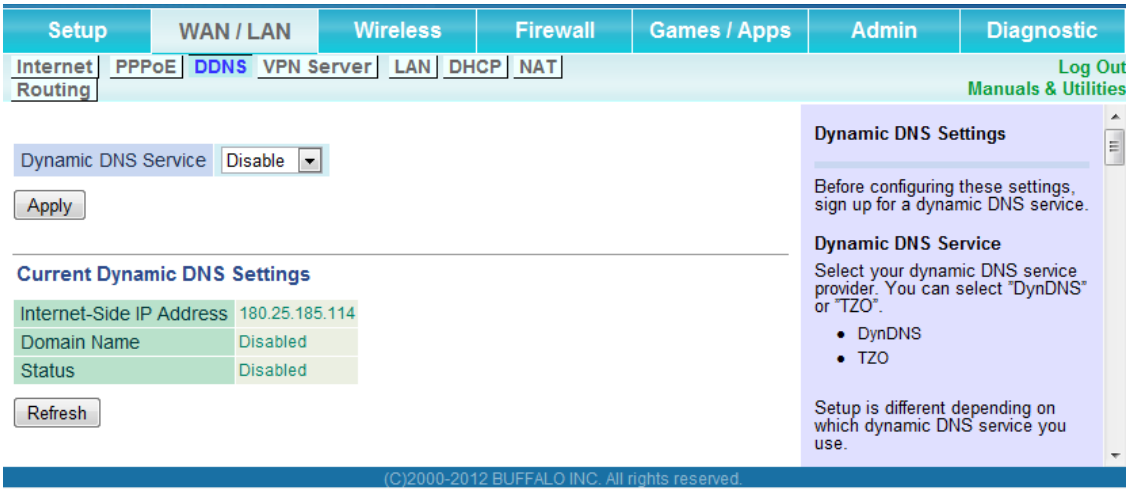
Parameter	Meaning
Default PPPoE Connection	If you have registered multiple connection destinations in PPPoE Connection List, connection destinations selected here have priority. You need to configure the route to which PPPoE is connected to if you don't use the default setting.
IP Unnumbered PPPoE Connection	Select the destination from the PPPoE Connection List which is used when specifying [Use IP Unnumbered] in Method of Acquiring IP Address (page 29).
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.	Click [Edit Connection List] to display. **Name of Connection** Enter a name to identify the connection. You may enter up to 32 alphanumerical characters and symbols. **Username** Enter the username specified by your provider for PPPoE. You may enter up to 64 alphanumerical characters and symbols. **Password** Enter the password specified by your provider for PPPoE. You may enter up to 64 alphanumerical characters and symbols. **Service Name** Fill in this field only when your provider specifies a Service Name. Leave blank otherwise. You may enter up to 64 alphanumerical characters and symbols. **Connection Type** Specifies the timing for the AirStation to connect to your provider. **Automatic Disconnection** Set time to disconnect after communication is stopped when the connection method is set to [Connection on Demand] or [Manual]. You can enter up to 1440 minutes. **Authorization** Configure an authorization method with a provider. **MTU Size** Configure the MTU value between 578 and 1492 bytes. **MRU Size** Configure the MRU (Maximum Receive Unit) value between 578 and 1492 bytes. **Keep Alive** If Keep Alive is enabled, the AirStation issues LCP echo requests to maintain the connection with the PPPoE server once a minute. If the server does not respond after 6 minutes, then the line is considered disconnected and the AirStation will terminate the connection. If your PPPoE connection is often disconnected, disable Keep Alive.
Preferred Connections	Displays connections that you've added to the preferred connection list.

Parameter	Meaning
Edit Preferred Connections	Click this button to display the screen to edit the settings of connection destination route
Preferred PPPoE Connection	This is displayed when clicking [Edit Preferred Connections]. **Name** This will be the name of the connection in the PPPoE connection list. **Destination Address** The AirStation will always use this connection to send data to this address. **Source Address** The AirStation will always use this connection to receive data from this address.

DDNS

Configure Dynamic DNS settings.

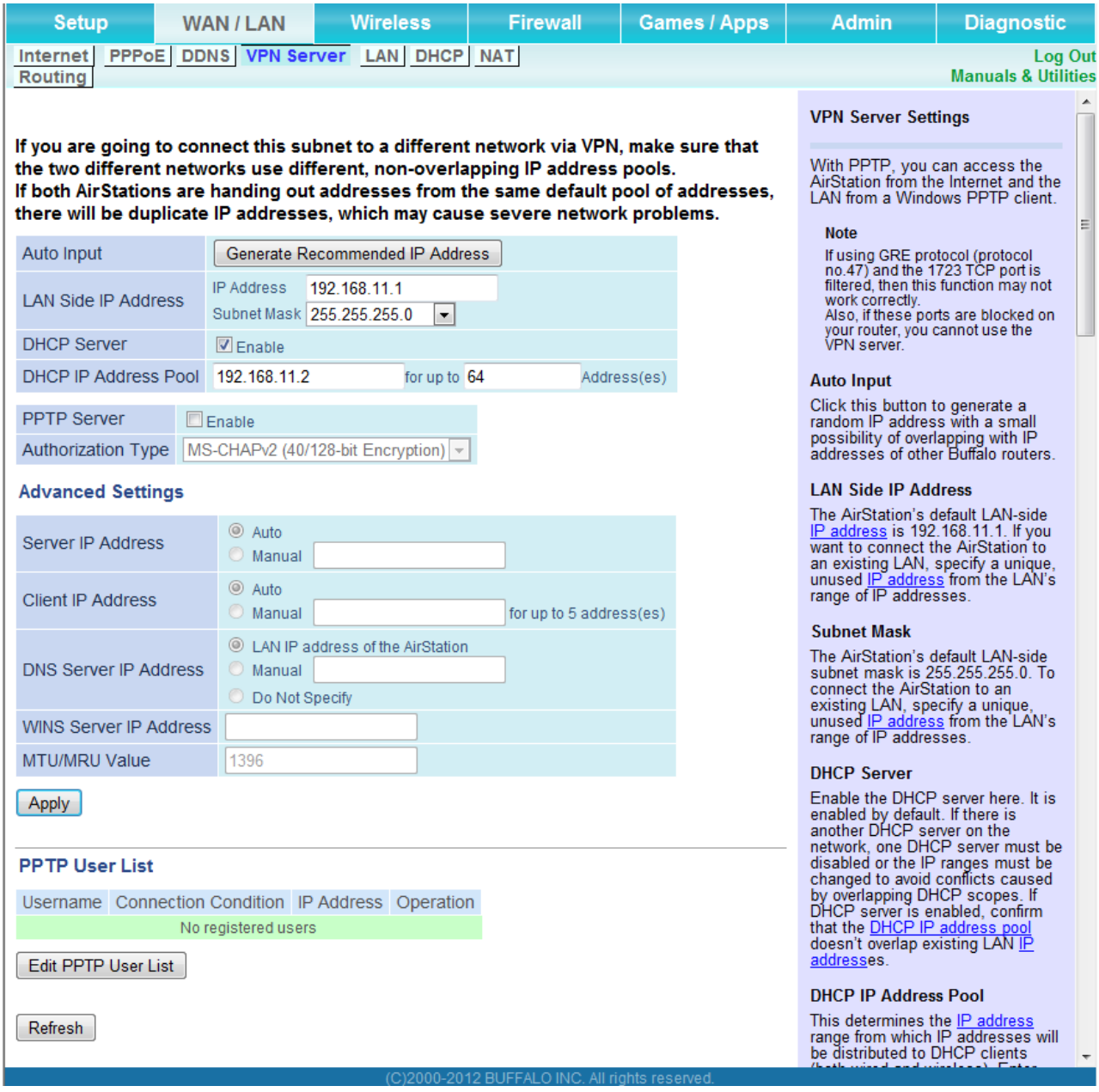


Parameter	Meaning
Dynamic DNS Service	Select a provider (DynDNS or TZO) for dynamic DNS.
Username Only when DynDNS is selected	Enter the username for the dynamic DNS service. You may enter up to 64 alphanumerical characters and symbols.
Password Only when DynDNS is selected	Enter the password for the dynamic DNS service. You may enter up to 64 alphanumerical characters and symbols.
Hostname Only when DynDNS is selected	Enter the hostname for the dynamic DNS service. You may enter up to 255 alphanumerical 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 alphanumerical 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 alphanumerical characters and symbols.
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.

Parameter	Meaning
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	Displays the status of the dynamic DNS service.

VPN Server

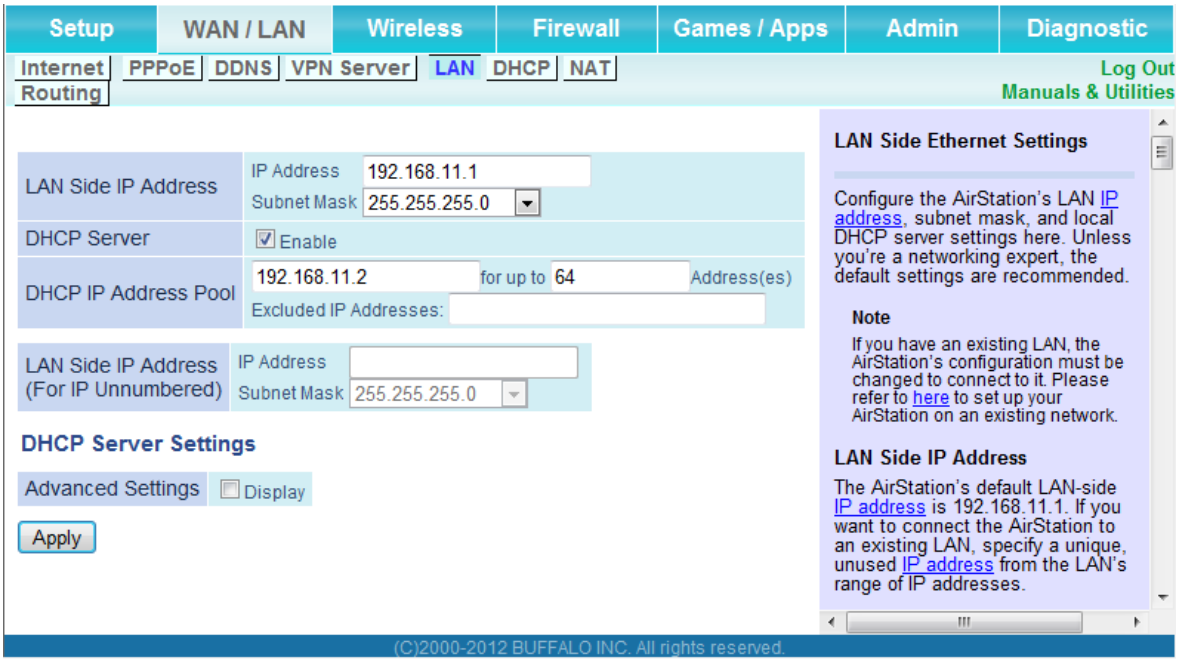
Configure a VPN server.



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	If enabled, the DHCP server will assign LAN-side IP addresses automatically.
DHCP IP Address Pool	You may choose the range of IP addresses assigned by the DHCP server and select IP addresses to be excluded from that range. Values from 1-256 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 DNS server to issue to clients.
WINS Server IP Address	Set the WINS server IP address for the WINS server to issue to clients.
MTU/MRU Value	Configure MTU (Maximum Transmission Unit) / MRU (Maximum Receive Unit) between 578 and 1500 which is used during transmission on PPTP.
Edit PPTP User List	Click to edit user information.
Add new user	Click [Edit PPTP User List] to display.
Advanced Settings	**Username** Enter the username 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

Configure LAN-side IP address settings.

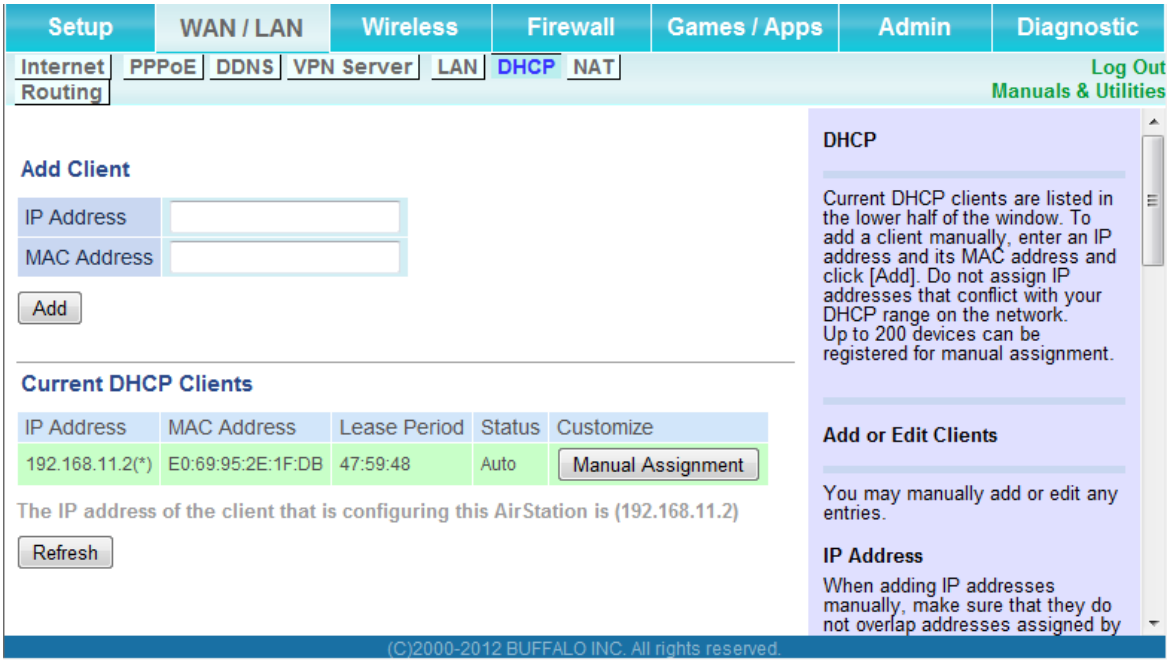


Parameter	Meaning
LAN Side IP Address	Set a LAN side IP address and subnet mask.
DHCP Server Router Mode only	Enable or disable the DHCP server, which assigns IP addresses automatically.
DHCP IP Address Pool Router Mode only	Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 1-256 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 DNS 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 64 alphanumerical 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

Configure DHCP leases.



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 Clients	Displays information for current leases. An IP address which is leased automatically can be changed to be leased manually by clicking [Manual Assignment].

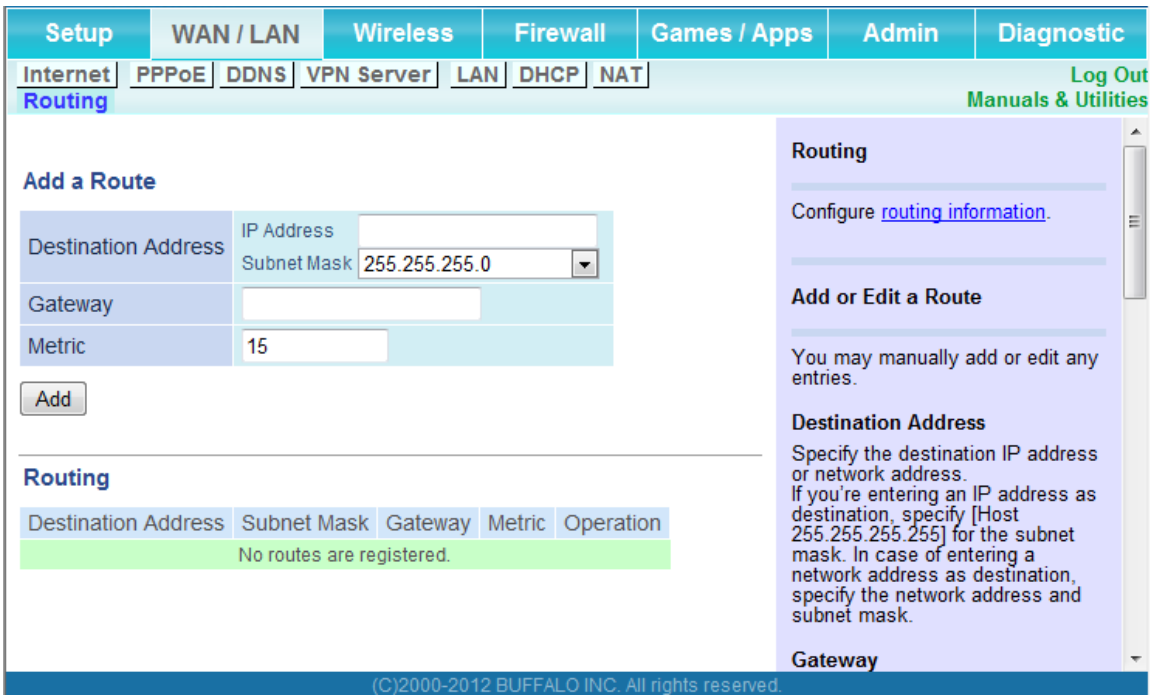
NAT

NAT (network address translation) allows your private LAN side network devices to communicate with 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) from address translation.

Routing

Configure the AirStation's IP communication routes.

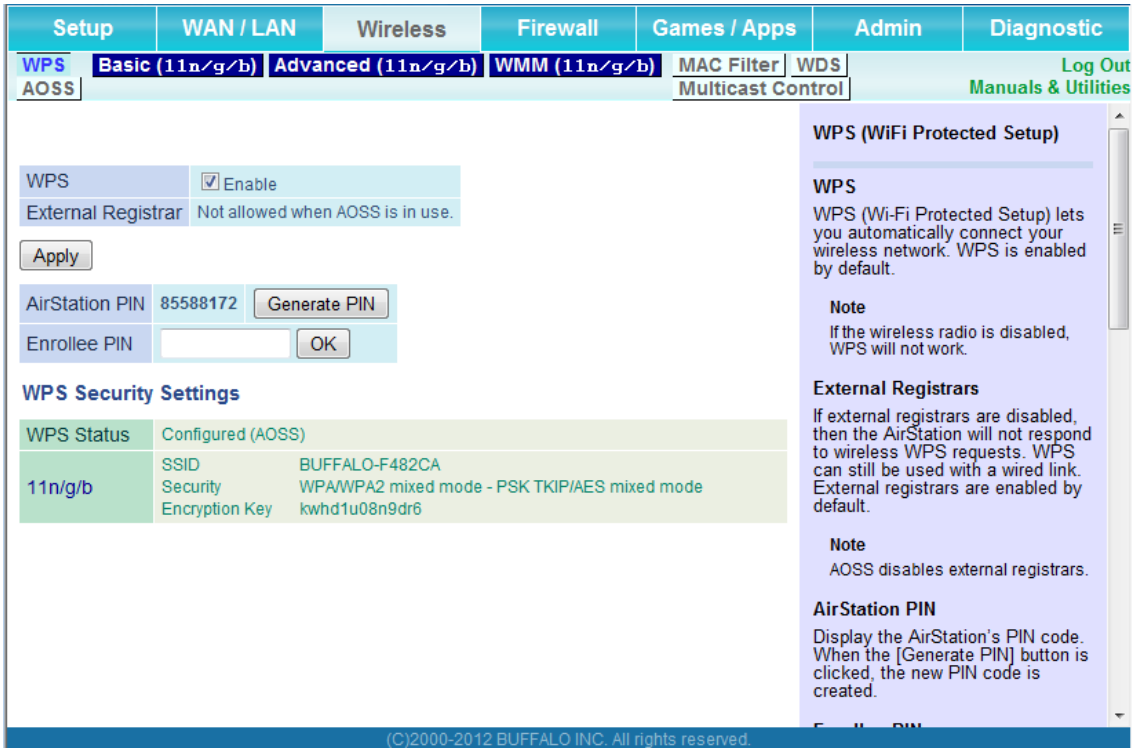


Parameter	Meaning
Destination Address	Adds a destination IP address and subnet mask to a routing table.
Gateway	Adds a gateway address to a routing table.
Metric	The metric is the maximum number of router hops a packet may take on the way to its destination address. Values between 1 and 15 may be entered.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

Wireless

WPS

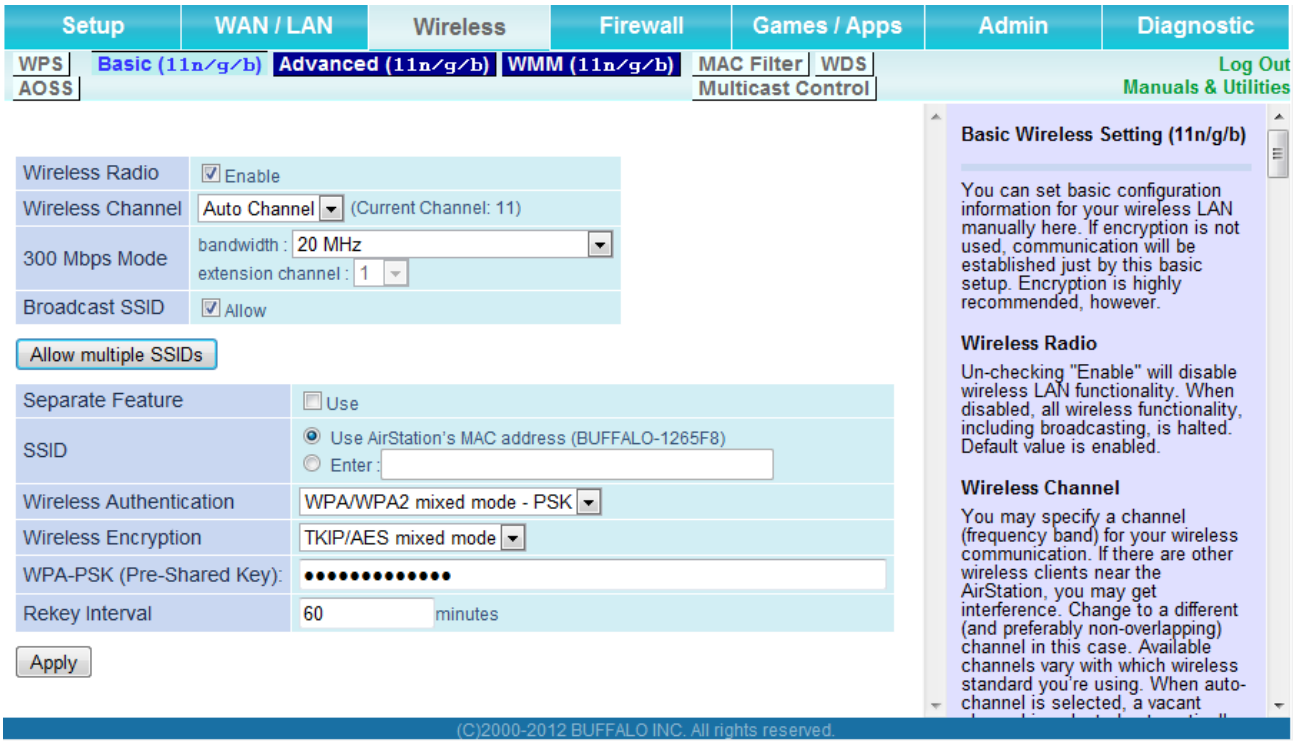
Configure WPS settings.



Parameter	Meaning
WPS	Enable to use WPS automatic configuration.
External Registrar	Enable to accept 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.

Basic

Configure basic wireless settings.



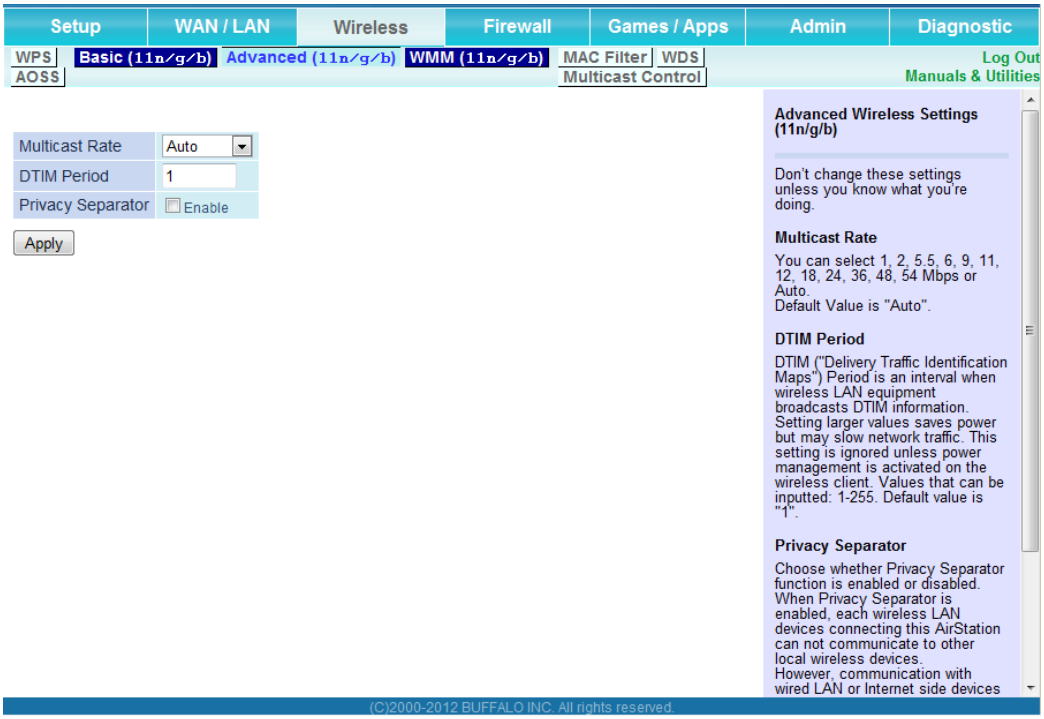
Parameter	Meaning
Wireless Radio	Determines whether to allow wireless communication. If this is unchecked, then no wireless connections will be allowed.
Wireless Channel	Sets a channel (a range of frequencies) used for wireless connections. Channels 1-11 are available. If auto-channel selected, the AirStation will automatically use the best available channel.
300 Mbps Mode	300 Mbps mode uses twice the normal frequency range, 40 MHz instead of 20 MHz. In uncongested areas this can increase performance. To use 300 Mbps mode, set the bandwidth to 40 MHz and choose an extension channel. Note: If auto-channel is selected, 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.
Allow multiple SSIDs Use Single SSID	Clicking [Allow multiple SSIDs] will enable Multi Security, allowing the use of multiple SSIDs, each with different wireless security settings. Clicking [Use Single SSID] will disable Multi Security. The AirStation will then allow one SSID and one type of wireless security. Note: When using Multi Security, 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	When [Use] is checked, wireless devices connected to the AirStation can communicate only with the Internet side, not with each other.
SSID	SSIDs may contain 1-32 alphanumeric characters.
Wireless Authentication	Choose an authentication method for wireless connections.

Parameter	Meaning
Wireless Encryption	Select a type of data encryption for wireless communication from the following options: **No encryption** Data is transmitted without encryption. Avoid this option since any communication may be intercepted. [No encryption] can be selected only when [No authentication] is selected for wireless authentication. **WEP** WEP is a common encryption method supported by most devices. It uses an encryption key. WEP can only be selected when [No authentication] is selected for wireless authentication. **TKIP** TKIP is an encryption method which is more secure than WEP, but slower. TKIP can be selected only when WPA-PSK or WPA2-PSK is selected for wireless authentication. **AES** AES is more secure than TKIP, and faster. AES can be selected only when WPA-PSK or WPA2-PSK is selected for wireless authentication. **TKIP/AES mixed mode** TKIP/AES mixed mode allows both TKIP and AES authentication. TKIP/AES mixed mode can be selected only when WPA/WPA2 mixed mode - PSK is selected for wireless authentication.
WPA-PSK (Pre-Shared Key)	There are two different ways to enter pre-shared keys. Character keys may contain between 8 and 63 case-sensitive alphanumeric characters. Hexadecimal keys contain exactly 64 characters. Only 0 - 9 and a - f (not case-sensitive) should be used in hexadecimal keys.
Rekey Interval	The rekey interval determines how often an encryption key is updated. Values from 0 to 1440 minutes may be entered.
WEP encryption key	There are two different ways to enter WEP encryption keys. Character keys may contain either 5 or 13 case-sensitive alphanumeric characters. Hexadecimal keys may contain either 10 or 26 digits. Only 0 - 9 and a - f (not case-sensitive) should be used in hexadecimal keys.

Advanced

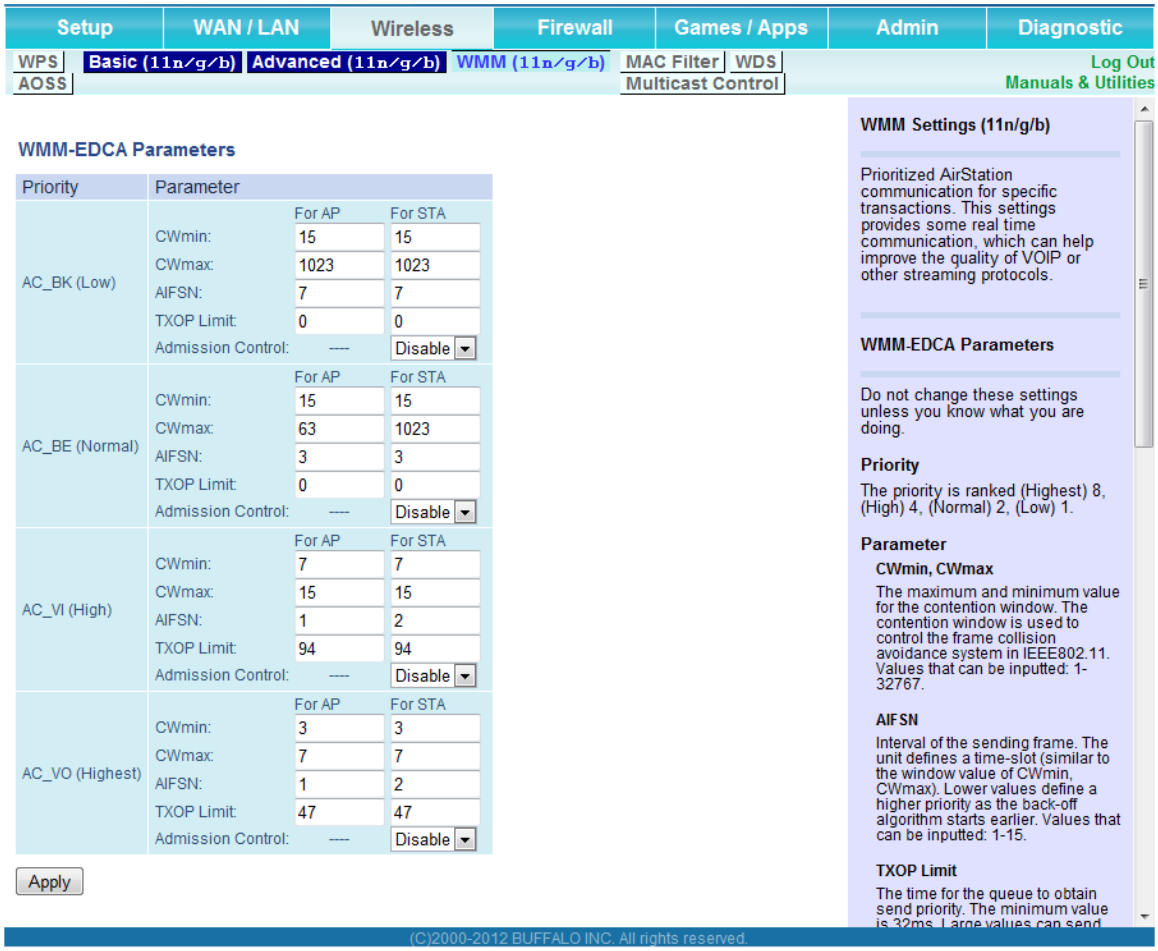
Don't change advanced wireless settings unless you know what you're doing.



Parameter	Meaning
Multicast Rate	Set the communication speed of multi-cast packets.
DTIM Period	Set the interval (1 -255) for the beacon to respond to a wireless device. This setting is only effective when power management is enabled on the 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

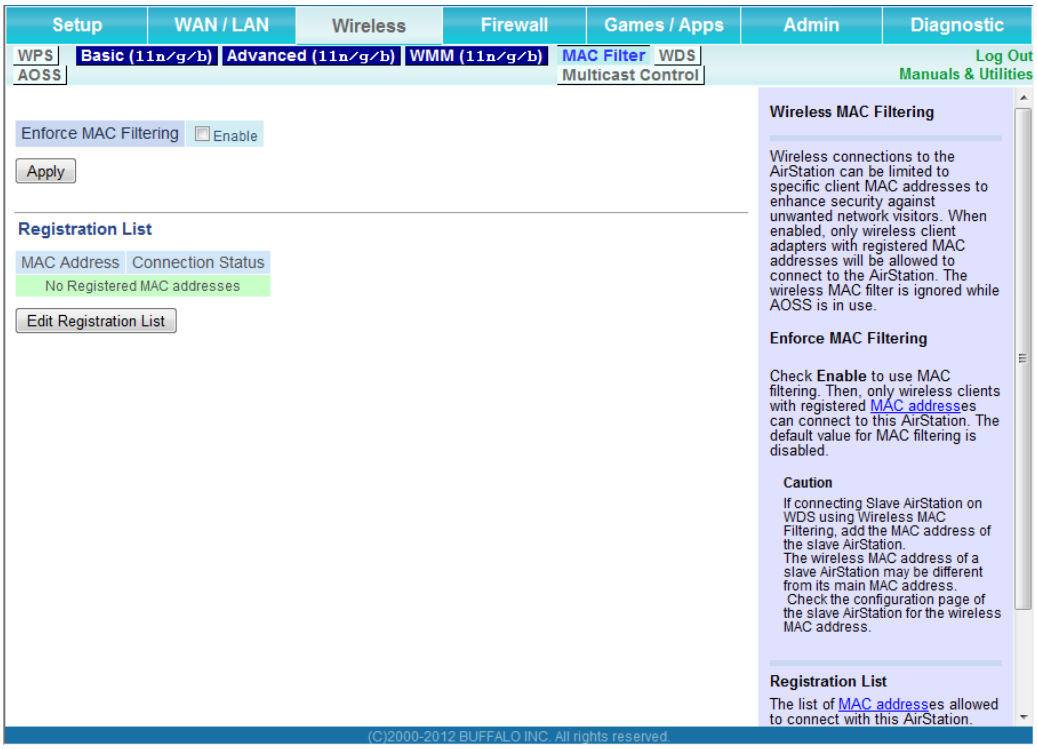
Configure QoS priorities here.



Parameter	Meaning
WMM-EDCA Parameters	You don't usually need to change these settings. Using the default settings is recommended. **Priority** 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. **CWmin, CWmax** 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. **AIFSN** 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. **TXOP Limit** 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. **Admission Control** 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.

MAC Filter

This screen lets you restrict wireless access to wireless devices with specific MAC addresses.



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.

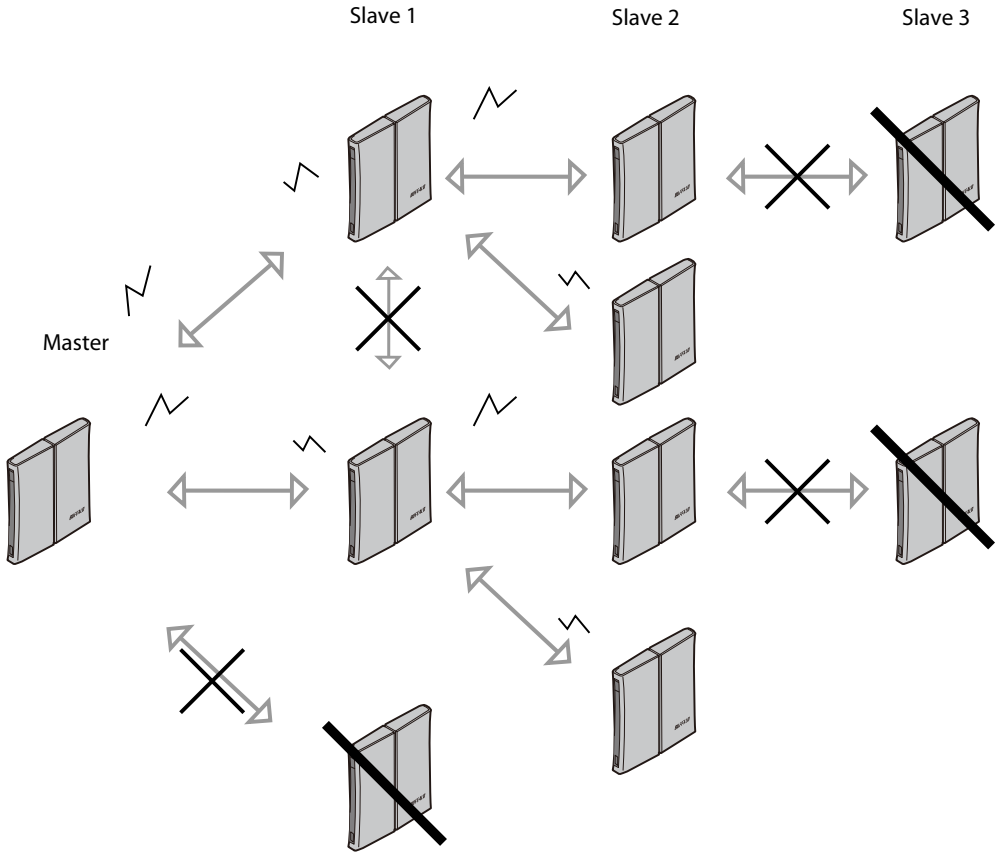
WDS

WDS bridging allows communication between AirStations.

Parameter	Meaning
WDS	Check to use WDS bridging.
Specify Master/Slave	Define this AirStation's role in a WDS bridge. **Master** This AirStation will the master in a WDS bridge. It will have the Internet connection, and other AirStations in the bridge will be connected through this AirStation. **Slave** Set AirStation as a slave. This can be connected with the AirStation which is set as a master by using WDS feature only if the Master AirStation supports WDS. **Slave (EC)** Set AirStation as a slave. This uses Ethernet Converter to connect with the AirStation which is set as a master, so it can be connected even though Master AirStation does not support WDS. **Auto** Automatically switches between Master and Slave modes depending on the surrounding network. If an AirStation works as a router, it will automatically be set as a master. If the AirStation works as a bridge and a DHCP server exists in the network, it will automatically be set as a master . If the AirStation works as a bridge and no DHCP server is available, it will automatically be set as a slave.

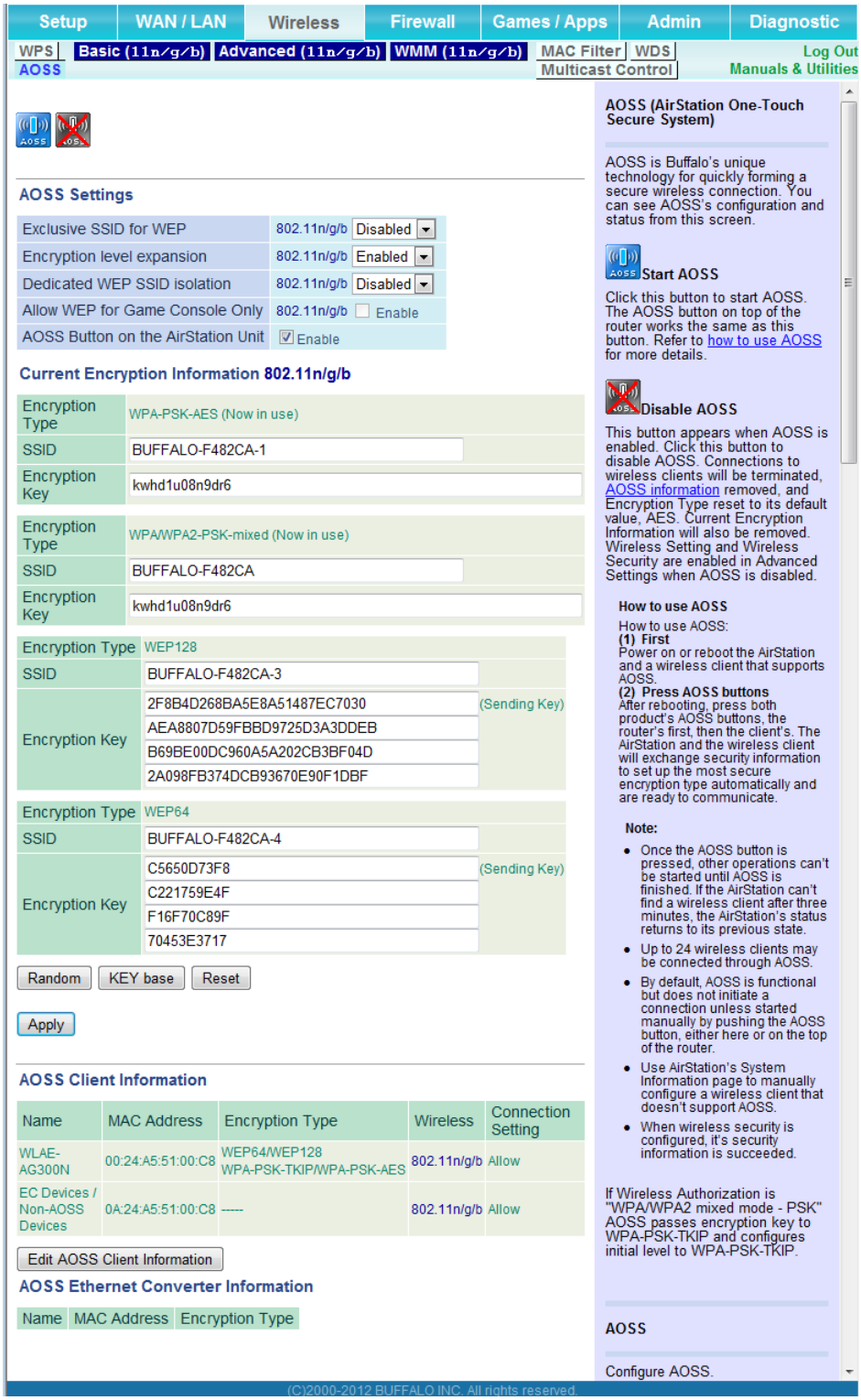
Parameter	Meaning
SSID	Configure the Master AirStation's SSID.
Search	Click to search for other AirStations' SSIDs.
Wireless Authentication	Configure authentication method for the master AirStation
Encryption for wireless	Choose encryption type for the master AirStation.
WPA-PSK (Pre-shared key)	Set the master AirStation's Encryption key.

Notes: Two AirStation can be connected per one master AirStation.
The slave AirStation is allowed to connect to another slave AirStation as lower slave AirStation.
The lower slave AirStation is not allowed to connect to another slave AirStation.
The slave AirStation is not allowed to communicate with the lower slave AirStation or client adapters when it is not connected to a master AirStation.



AOSS

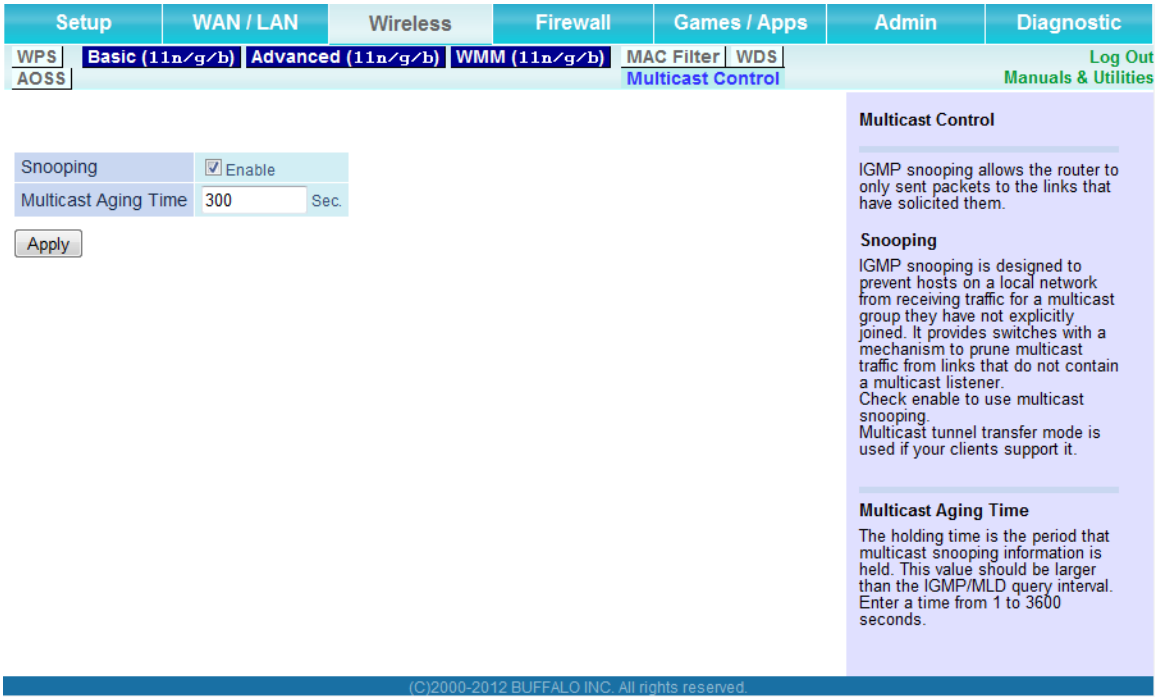
Configure and use AirStation One-touch Secure System (AOSS).



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 all AOSS connections. Note: If AOSS connections are disconnected, the SSID and encryption keys will be restored to their most recent settings before using AOSS.
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	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.
Allow WEP for Game Console Only	When enabled, the AirStation allows wireless devices to connect with 64-bit or 128-bit WEP.
AOSS Button on the AirStation Unit	Uncheck to disable the physical AOSS button on the AirStation.
Current Encryption Information AOSS Connection only	Displays the encryption type, SSID, and encryption key that AOSS has configured.
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 Setup Card.
Reset	Click to return the SSID, encryption key, and other wireless settings to their previous values.
AOSS Client Information AOSS Connection only	Displays basic information for AOSS clients connected to the AirStation.
AOSS Ethernet Converter Information AOSS Connection only	Displays basic information for Ethernet converters connected to the AirStation via AOSS.

Multicast Control

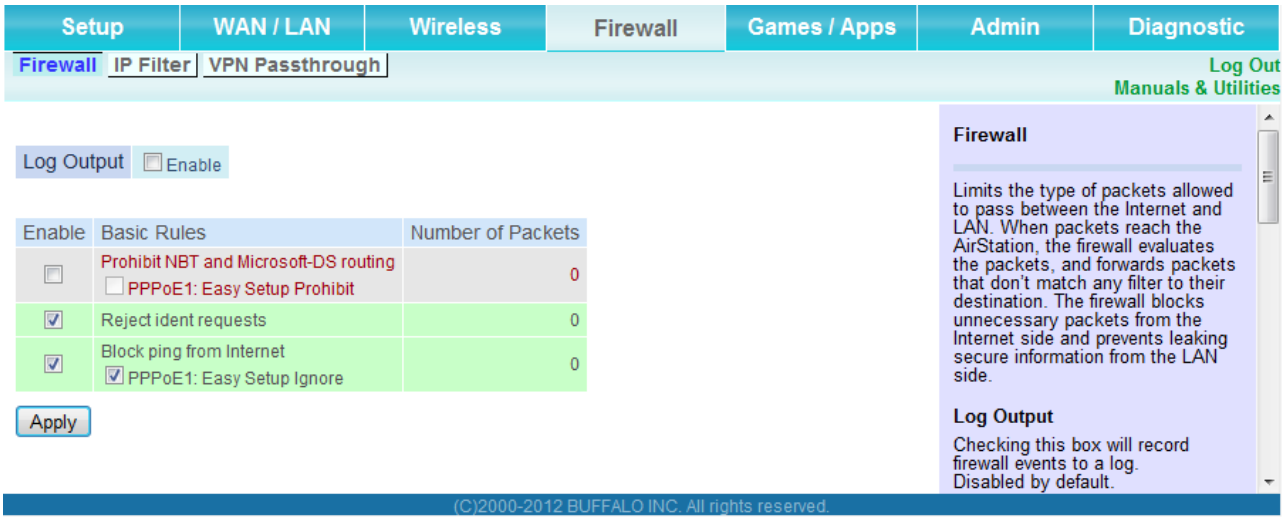
Restrict unnecessary multicast packets from wireless LAN ports.



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). Enter a value larger than the IGMP/MLD query interval.

Firewall

Firewall

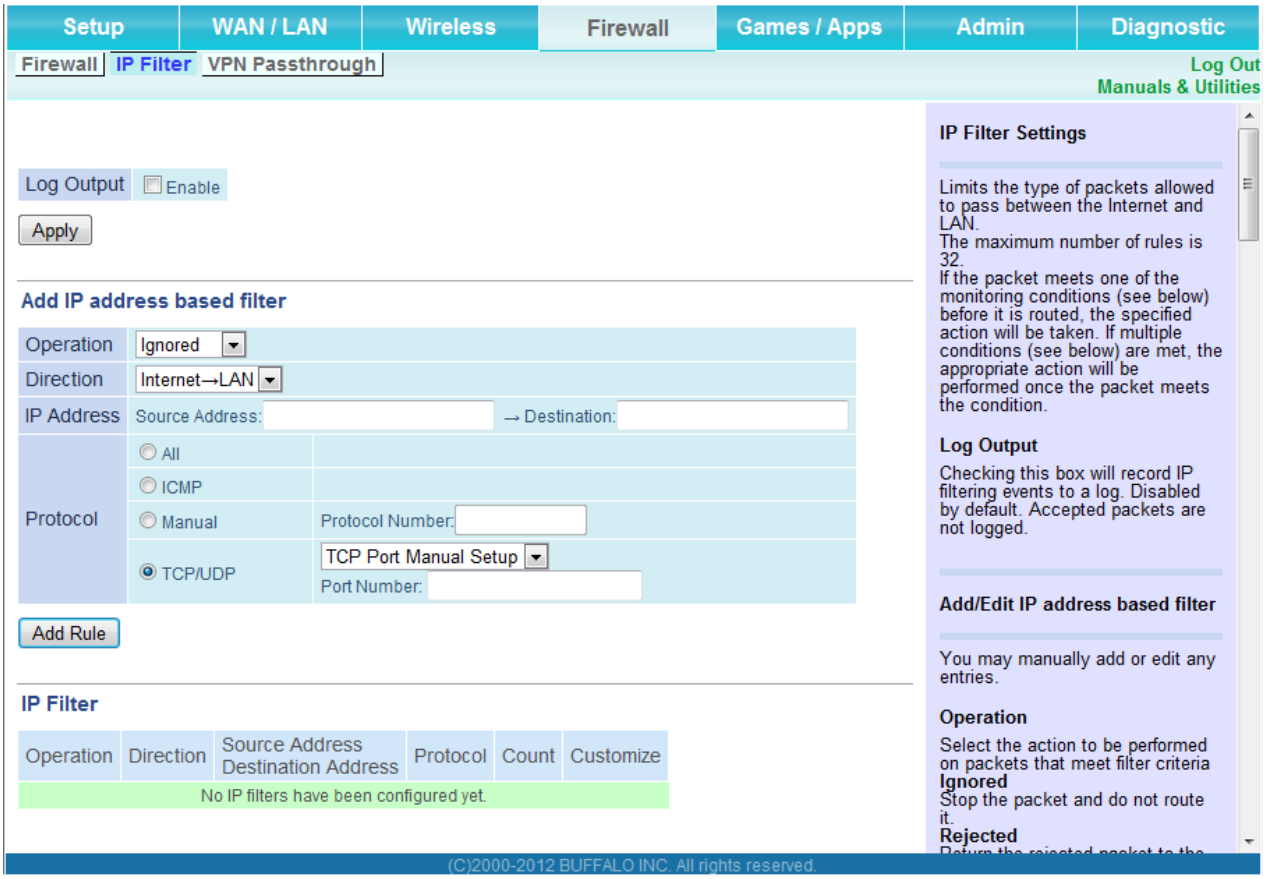


Parameter	Meaning
Log Output	Enable to output a log of firewall activity.
Basic Rules	Enable to use any of the quick filters. Preconfigured quick filters include: **Prohibit NBT and Microsoft-DS routing** When enabled, this prevents Microsoft networking from communicating between the LAN side and the WAN side. You can configure this with PPPoE if you select [Use PPPoE client] or [Use IP unnumbered] in Method of Acquiring IP address, or if Easy Setup identified a PPPoE connection during setup.

Parameter	Meaning
	Reject ident requests Enabling this option will answer IDENT requests from the Internet side with corresponding rejection packets. Enable this option if you experience slow transfer speeds for network applications such as email, ftp, or browsing. If you have configured transfer of IDENT requests to the LAN side in the address translation settings (DMZ or TCP port:113), that setting has higher priority, and overrides this setting. **Block ping from Internet** If this is enabled, the AirStation will not respond to pings from the Internet side. You can configure this with PPPoE if you select [Use PPPoE client] or [Use IP unnumbered] in Method of Acquiring IP address (page 29), or if Easy Setup identified a PPPoE connection during setup.

IP Filter

Create and edit IP filters.



Parameter	Meaning
Log Output	If enabled, IP filter activity is saved to a log.
Operation	Specify how to process target packets.
Direction	Specify the transmission direction of target packets.
IP Address	Specify the sender's IP address and receiver's IP address of the target packets.
Protocol	Select a protocol for target transmission packet.
IP Filter	Display the list of IP filters which have been registered.

VPN Passthrough

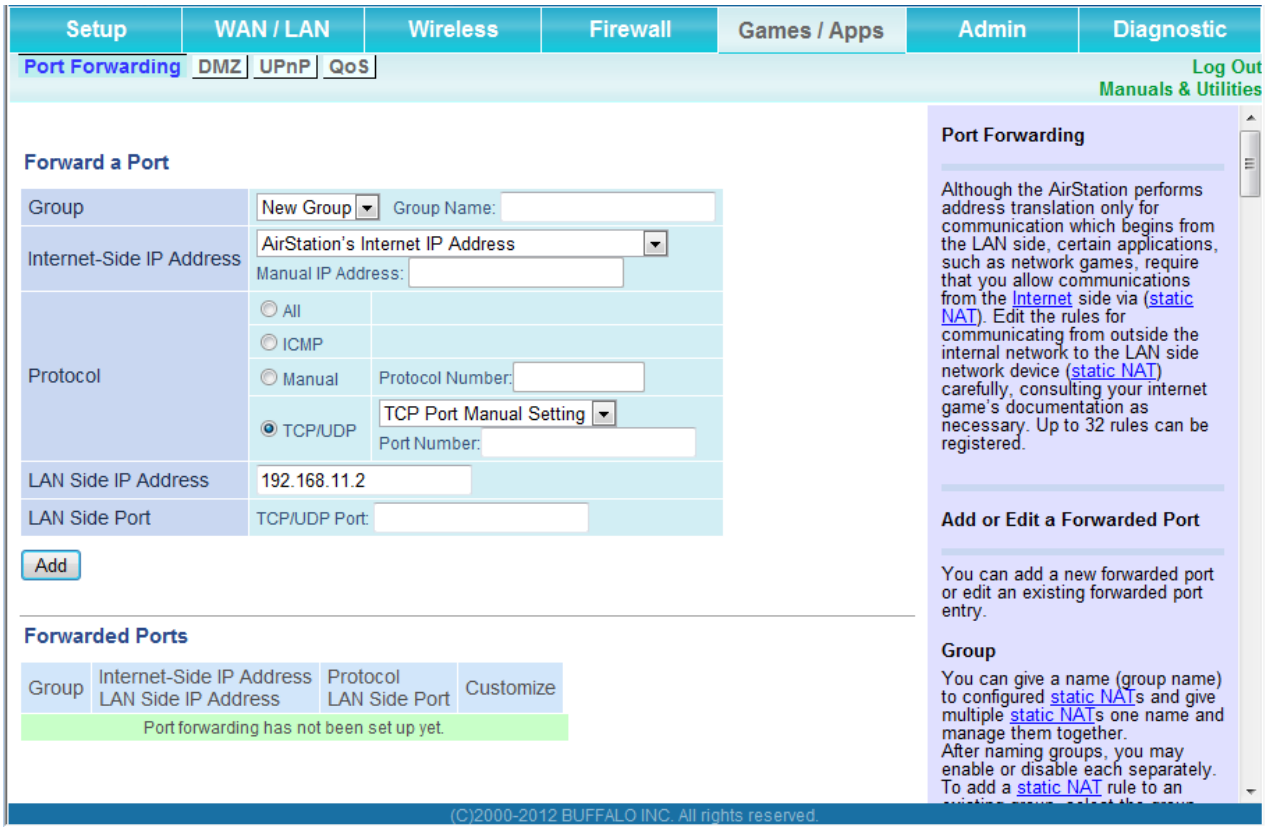
Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough.

Parameter	Meaning
IPv6 Passthrough	Enable to use IPv6 Passthrough for address translation.
PPPoE Passthrough	Enable to use PPPoE bridge. Using PPPoE bridge lets you automatically obtain an IP address from your provider using the PPPoE protocol from your computer connected to the LAN side because all PPPoE packets can pass through between the Internet and LAN.
PPTP Passthrough	Enable to use PPTP Passthrough for address translation.

Games/Apps

Port Forwarding

Configure port translation.

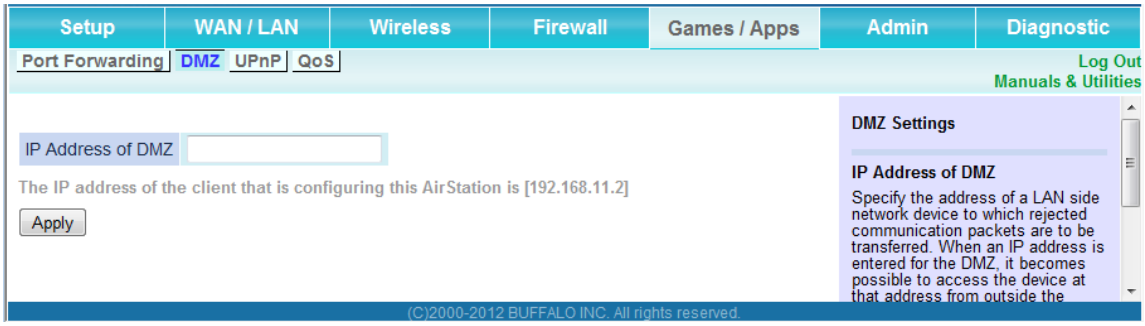


Parameter	Meaning
Group	Specify a group name for a new rule to belong to. Select [New Group] and enter the new group name in the Group Name field to create a new group. A group name can include up to 16 alphanumeric letters.
Internet-Side IP Address	Enter the Internet side IP address (before translation) for the port translation table entry.
Protocol	Select the Internet side protocol (before translation) for the port translation table entry.

Parameter	Meaning
LAN Side IP Address	Enter the LAN side IP address (after translation) for the port translation table entry.
LAN Side Port	Select the LAN side (after translation) port number (1 - 65535) for the port translation table entry.
Forwarded Ports	Shows current entries in the port translation table.

DMZ

Configure a destination to transfer communication packets without a LAN side destination.



Parameter	Meaning
IP Address of DMZ	Enter the IP address of the destination to which packets which are not routed by a port translation table are forwarded. Note: RIP protocol packets (UDP port number 520) will not be forwarded.

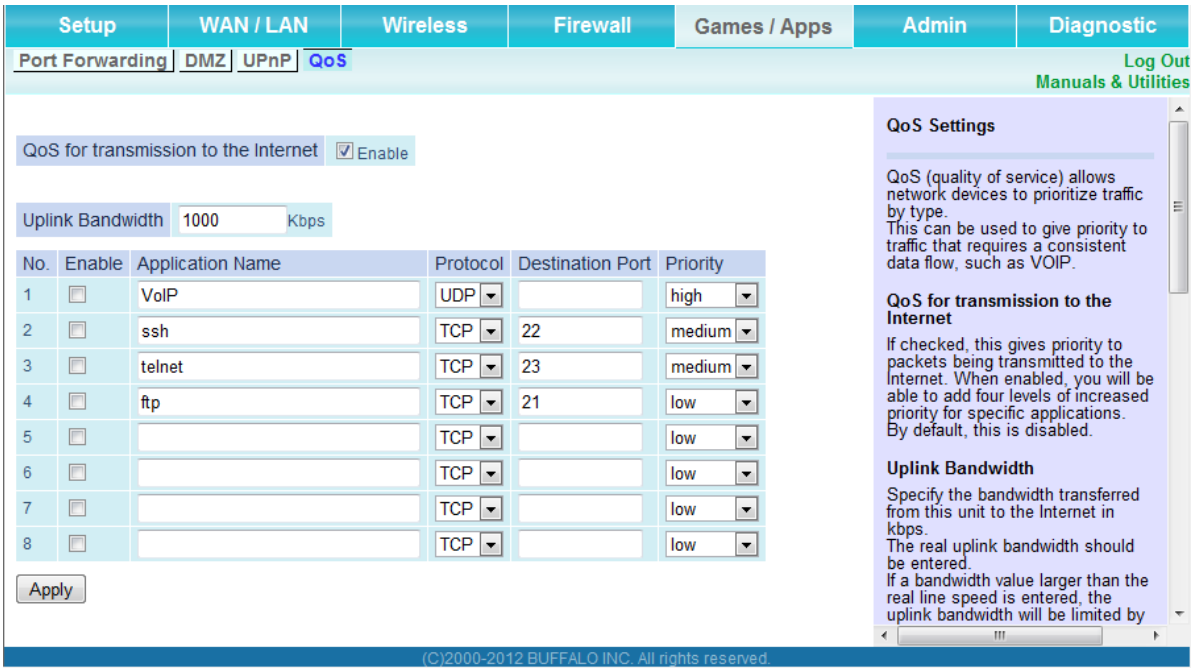
UPnP

Configure Universal Plug and Play.

Parameter	Meaning
UPnP	Enable or disable Universal Plug and Play (UPnP) functionality.

QoS

Configure the priority of packets sent to the Internet.



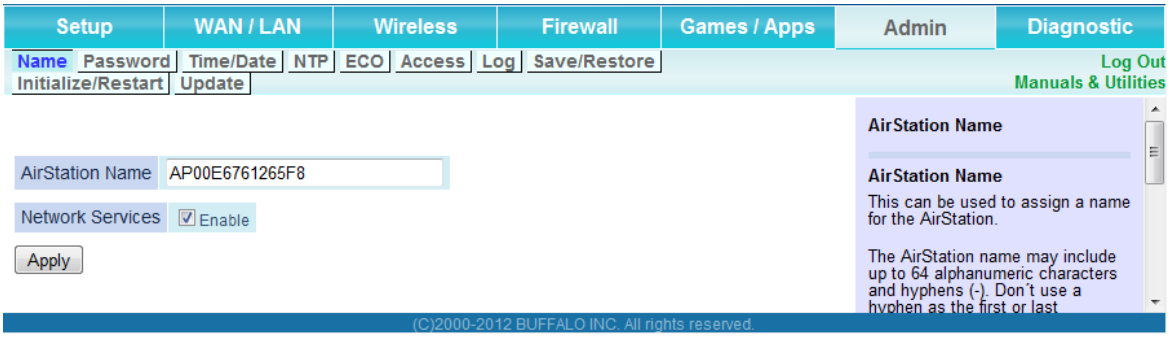
Parameter	Meaning
QoS for transmission to the Internet	Enable to give priority to specific types of Internet traffic.
Uplink Bandwidth	Specify the upstream bandwidth in kbps from the AirStation to the Internet side. Set the actual value for the upstream bandwidth.
Enable	Check to enable desired entries, then click [apply].
Application Name	Enter an application name. Names may use up to 32 alpha numerical characters, double or single tick marks ("'), quotation marks (“), and semicolons (;).
Protocol	Select either TCP or UDP.

Parameter	Meaning
Destination Port	Specify a destination port with the value of 1 - 65535. If this field is empty, a random port is selected.
Priority	Select high, medium or low. If packets do not qualify for classification as a type on the list, then their priority is treated as a level between medium and low.

Admin

Name

Configure the AirStation's name.



Parameter	Meaning
AirStation Name	Enter a name for the AirStation. Names may include up to 64 alphanumeric characters and hyphens (-).
Network Services	Enable or disable this to display the computers and devices on your network with their supported services.

Password

Configure the login password for the AirStation's configuration interface.

Parameter	Meaning
Administrator	"admin" is the configuration interface's username for login. This name is fixed.
Administrator Password	Enter a password for logging in to the AirStation's configuration interface. The password may contain up to 8 alphanumeric characters and underscores (_).

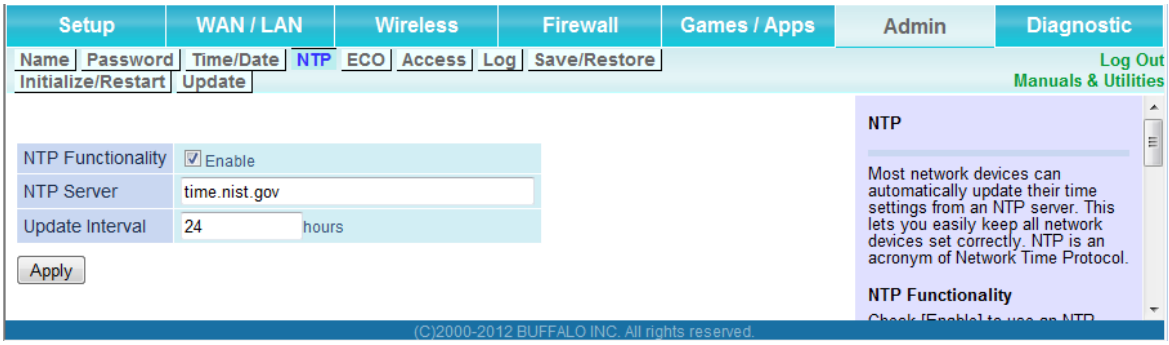
Time/Date

Configure the AirStation's internal clock.

Parameter	Meaning
Local Date	You may manually set the date of the AirStation's internal clock.
Local Time	You may manually set the time of the AirStation's internal clock.
Time Zone	Specify the time zone (offset of Greenwich Mean Time) of the AirStation's internal clock.

NTP

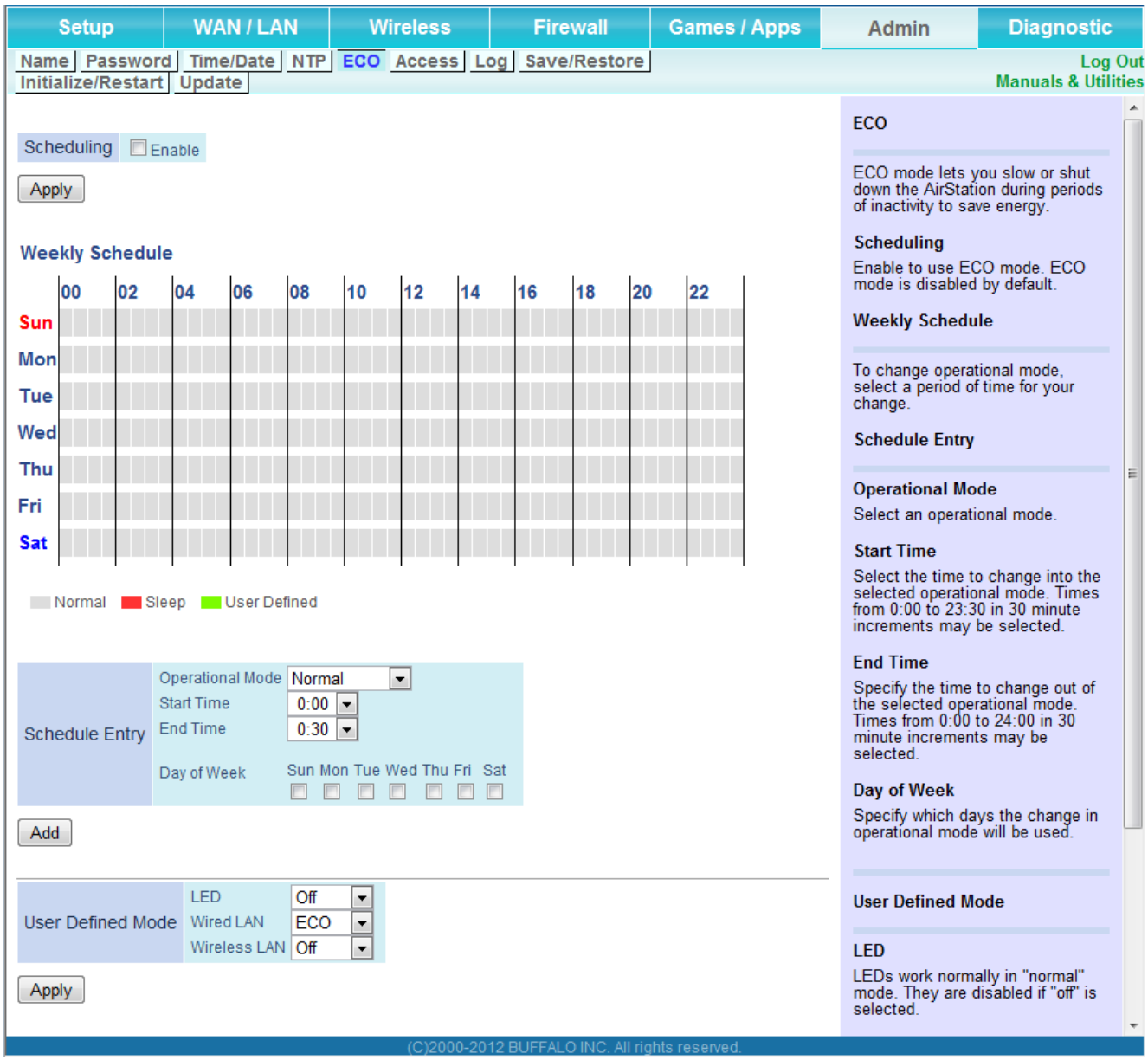
Configure the AirStation's internal clock to automatically synchronize with an NTP server.



Parameter	Meaning
NTP Functionality	Enable to use an NTP server to automatically set the AirStation's internal clock.
NTP Server	Enter the name of the NTP server as a hostname, hostname with domain name, or IP address. Up to 255 alphanumeric characters, hyphens (-), and periods (.) may be used.
Update Interval	How often should the AirStation submit a time request to the NTP server? Intervals of 1 - 24 hours may be set.

ECO

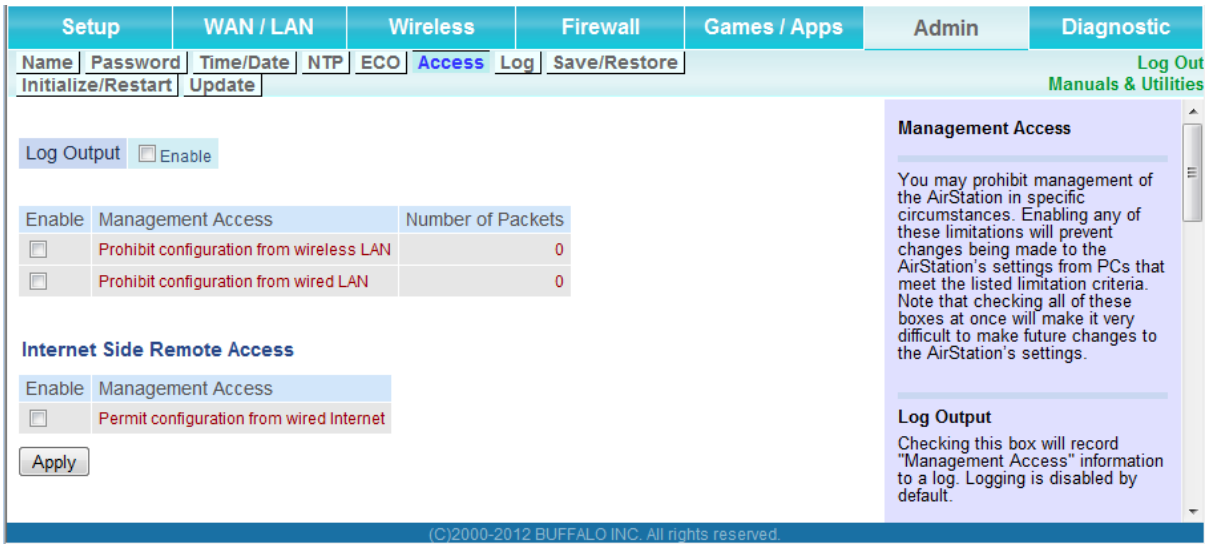
Configure Eco mode from this screen.



Parameter	Meaning
Scheduling	Enable to schedule Eco Mode. If Eco Mode is enabled, AOSS will function only when the AirStation is in Normal operating mode.
Weekly Schedule	Graphically displays the configured schedule.
Schedule Entry	Configure operational mode for time periods in the weekly schedule. If User Defined mode is chosen, configure it below.
User Defined Mode	Individual power saving elements may be configured for User Defined mode.

Access

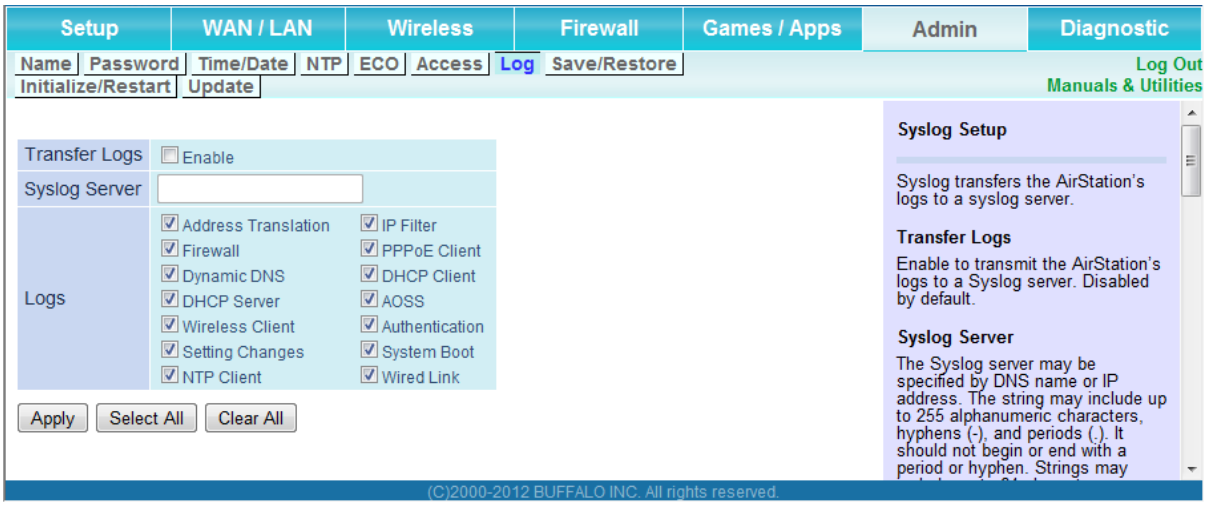
You may restrict access to the AirStation's settings screens.



Parameter	Meaning
Log Output	Enabling outputs a log of changes to access settings.
Prohibit configuration from wireless LAN	If enabled, prevents access to settings screens from wirelessly connected devices (only wired devices may configure).
Prohibit configuration from wired LAN	If enabled, prevents access to settings screens from wired devices (only wirelessly connected devices may configure).
Permit configuration from wired Internet	If enabled, allows access to settings screens from network devices on the Internet side.
Permitted IP Address	Displayed only if Internet side configuration is enabled. Enter the IP address of the device that is permitted to configure the AirStation remotely from the Internet side.
Permitted Port	Displayed only if Internet side configuration is enabled. Set a port number (1 - 65535) if configuring the AirStation from the Internet side.

Log

You may use a syslog server to manage the AirStation's logs.



Parameter	Meaning
Transfer Logs	Enable to send logs to a syslog server.
Syslog Server	Identify the syslog server by hostname, hostname with domain name, or IP address. You may enter up to 255 alphanumeric characters, hyphens (-), and underscores (_).
Logs	Choose which logs will be transferred to the syslog server.

Save/Restore

You may save your AirStation's settings as a file and restore settings from that file later.

Parameter	Meaning
Save Current Settings	Clicking [Save] will save the current configuration of the AirStation to a file. If the [Encrypt the configuration file with a password] option is checked, then the configuration file will be password protected with the password.
Restore Configuration from Backup File	Restore the configuration of the AirStation from a saved configuration file by clicking the [Browse...] button, navigating to the configuration file, and then clicking Restore. If the configuration file was password protected, then put a check next to [Enter password], enter the password, and click [Restore].

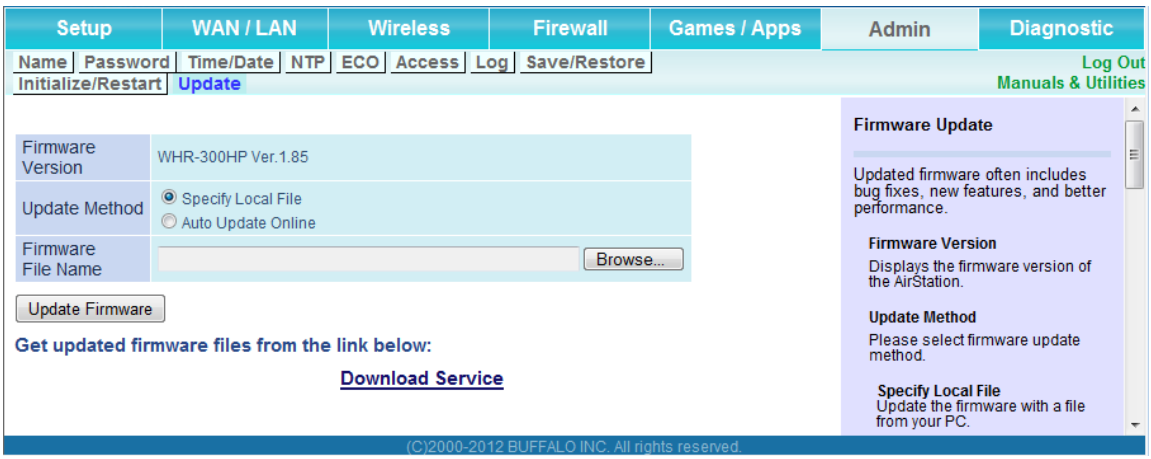
Initialize/Restart

Reboot or initialize the AirStation.

Parameter	Meaning
Restart	Click [Restart Now] to restart the AirStation.
Initialize	Click [Initialize Now] to initialize and restart the AirStation.

Update

Update the AirStation's firmware.



Parameter	Meaning
Firmware Version	Displays the current firmware version of the AirStation.
Update Method	**Specify Local File** Updates from a firmware file stored on your computer. **Auto Update Online** Automatically updates to the latest firmware available.
Firmware File Name	Click [Browse...] to navigate to the firmware file on your computer if [Specify Local File] was selected. You don't need to specify the firmware location if you're using [Auto Update Online]. Click [Update Firmware] to update the firmware.

Diagnostic

System Info

This screen displays the AirStation's system information.

Parameter	Meaning
Model	Displays the product name of the AirStation and the firmware version.
AirStation Name	Displays the AirStation's Name.
Mode Switch Status	Displays the status of the mode switch on the back of the AirStation.
Operational Mode	Displays the current operational mode of the AirStation.
Internet	Displays the information about the Internet port.
LAN	Displays the information about the LAN port.
Wireless	Displays the wireless status.
WDS	Displays the current WDS status.
ECO Mode	Displays the operating status of ECO Mode.

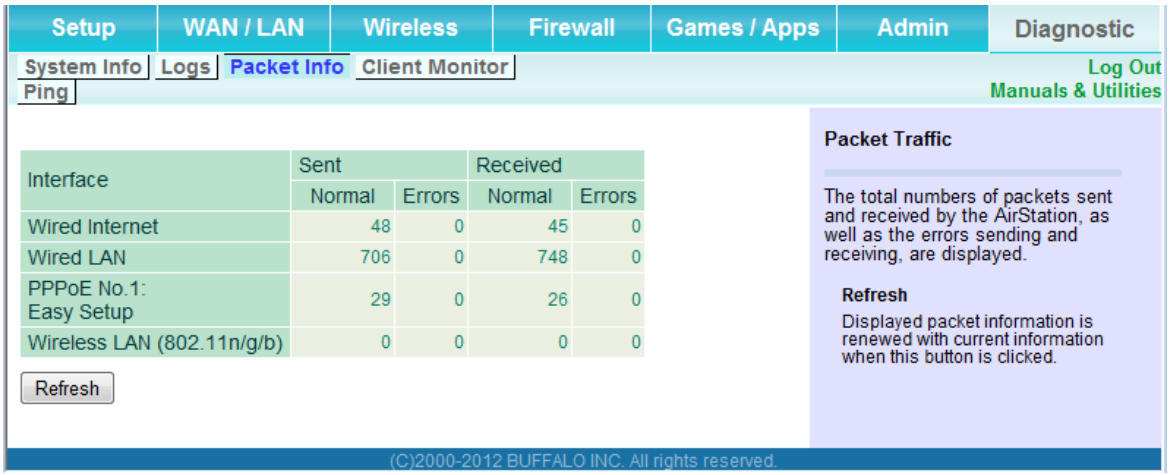
Logs

Check the AirStation's logs.

Parameter	Meaning
Display logs	Choose the logs to display.
Logs	Displays the logs.

Packet Info

Verify transferred packets.



Parameter	Meaning
Sent	Displays the number of packets sent to the Internet side of Ethernet, the LAN side of the Ethernet, and the LAN side of the wireless connection.
Received	Displays the number of packet received from the Internet side of Ethernet, the LAN side of the Ethernet, and the LAN side of the wireless connection.

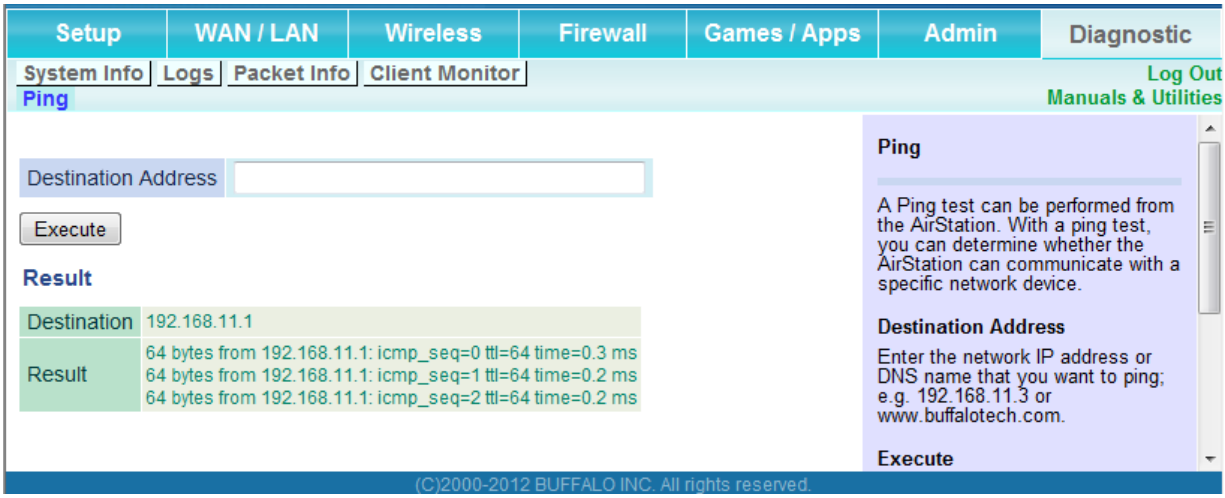
Client Monitor

This screen list connected devices.

Parameter	Meaning
Client Monitor	Displays information (MAC address, lease IP address, hostname, communication method, wireless authentication, and 802.11n) for devices that are connected to the AirStation.

Ping

A Ping test checks whether the AirStation can communicate with a specific network device.



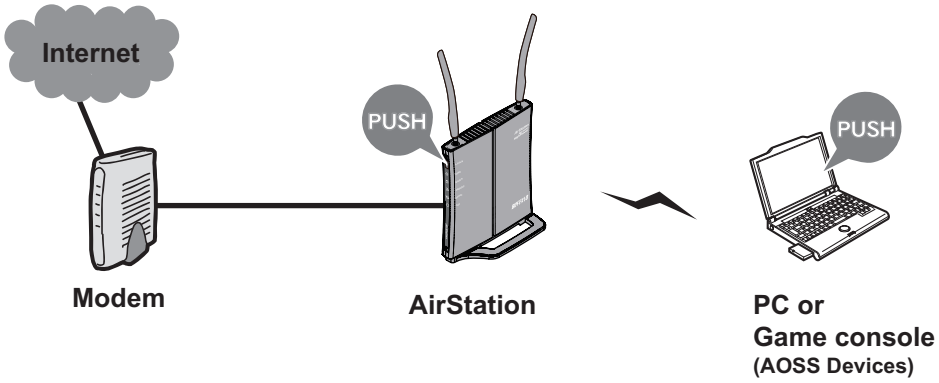
Parameter	Meaning
Destination Address	Enter the IP address or hostname of the device that you are testing communication with, then click [Execute]. The AirStation will attempt to communicate with that device and the result will be displayed in the [Result] field.

Chapter 5 - Connect to a Wireless Network

Automatic Secure Setup (AOSS/WPS)

AOSS and WPS are systems which enable you to automatically configure wireless LAN settings. Just pressing the buttons will connect wireless devices and complete security settings. Easily connect to any wireless devices, computers, or game machines which support AOSS or WPS.

AOSS (AirStation One-Touch Secure System) was developed by Buffalo Technology. WPS was created by the Wi-Fi Alliance.



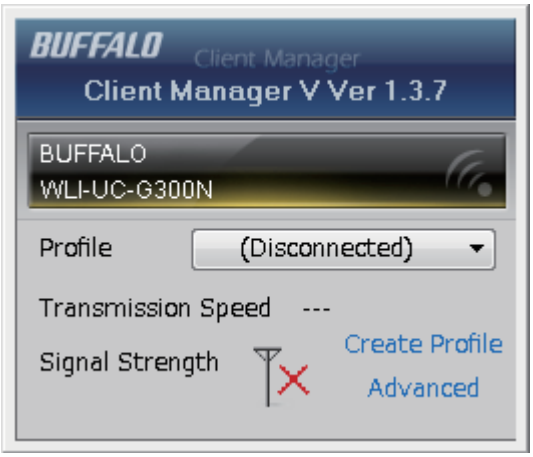
- Before using AOSS or WPS to connect to a Buffalo wireless client, install Client Manager software from the included utility CD. Consult your wireless client's documentation for more information.
- Buffalo's Client Manager software can be used with the wireless LAN devices built into your computer. However, it is not guaranteed to work with all wireless LAN devices available. Some wireless clients may require manual setup.

Windows 7/Vista (Client Manager V)

If you are using Windows 7 or Windows Vista, use the included Client Manager V software to connect wirelessly with AOSS/WPS.

1 Click [Start] > [All Programs] > [BUFFALO] > [AirStation Utility] > [Client Manager V].

2



Click [Create Profile].

3 If the User Account Control screen opens, click [Yes] or [Continue].

4

Click the [WPS AOSS] button.

Follow any instructions displayed on the screen. When the Security LED on the front of the AirStation stops flashing and is lit steadily, the connection is complete.

Windows XP (Client Manager 3)

If you are using Windows XP, use Client Manager 3 to connect wirelessly with AOSS/WPS.

1 Right click on the icon in the system tray, and select [Profile].

2

Click the [WPS AOSS] button.

Follow any instructions displayed on the screen. When the Security LED on the front of the AirStation stops flashing and is lit steadily, the connection is complete.

Mac OS X (AOSS Assistant)

If you are using Mac OS X 10.7 / 10.6 / 10.5 / 10.4, use the included AOSS Assistant software to connect wirelessly with AOSS.

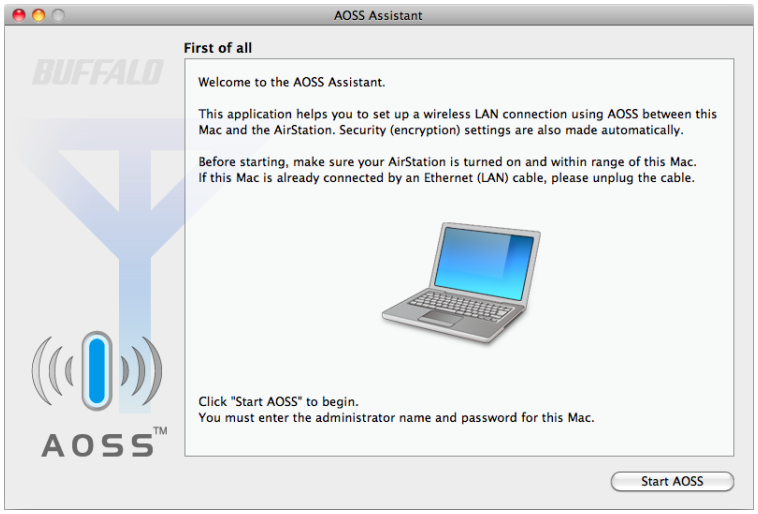
1 Load the utility CD in your Macintosh.

2 From the menu bar, click [Go] > [Computer].

3 Double-click the CD icon, and then double-click [AOSS Assistant] in the "Mac" folder.

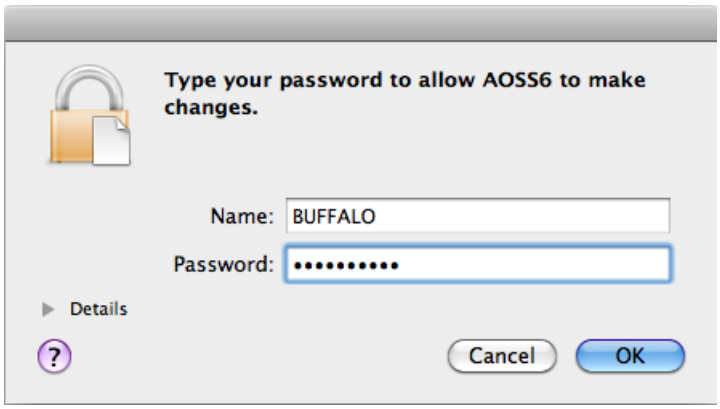
4 The software license screen is displayed. Click [Agree] to proceed.

5



Click [Start AOSS].

6



Enter the Mac's username and password and click [OK].

It will take several seconds for your wireless connection to be configured. When the Security LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Other Devices (e.g. Game Console)

If you are using a game machine which supports AOSS or WPS, refer to that device's manual to initiate AOSS/WPS. When instructed, hold down the AOSS button on the AirStation for 1 second.

When the Security LED on the front of the AirStation stop flashing and glows steadily, the connection is complete.

Manual Setup

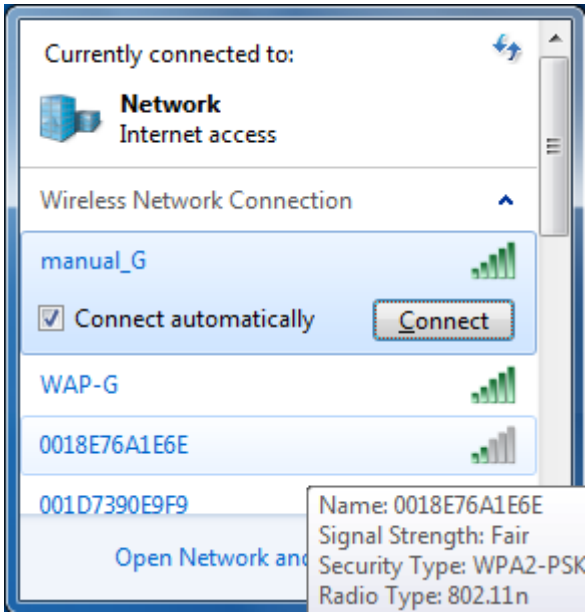
You can also connect to the AirStation without installing Client Manager V or Client Manager 3 by using the utility built-in to Windows. The procedure varies depending on which version of Windows you are using.

Windows 7 (WLAN AutoConfig)

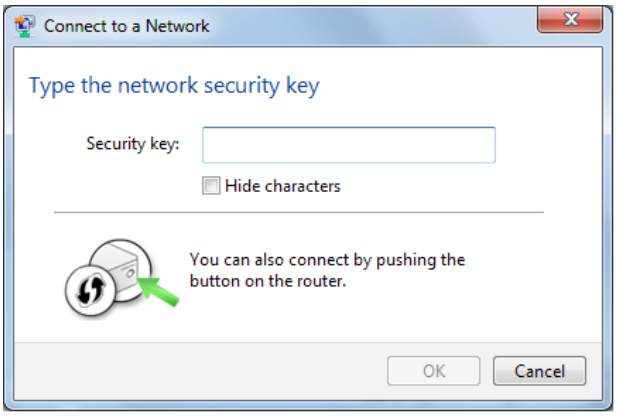
With Windows 7, use WLAN AutoConfig to connect to the AirStation.

1 Click on the network icon  in the system tray.

2



Select the target AirStation's name and click [Connect]. If you will be connecting to this device in the future, checking [Connect automatically] is recommended.

3 

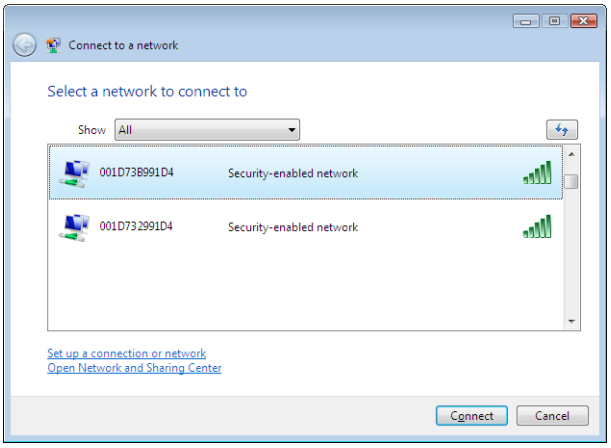
Enter the encryption key and click [OK].

Windows Vista (WLAN AutoConfig)

With Windows Vista, use WLAN AutoConfig to connect to the AirStation.

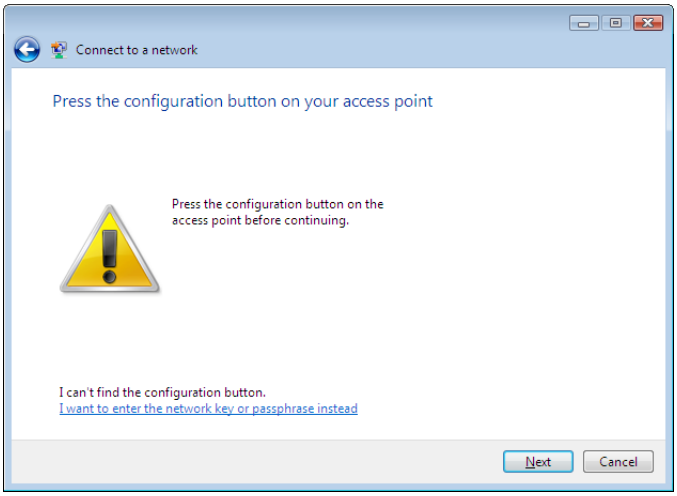
1 Right click on the wireless network icon  in the system tray.

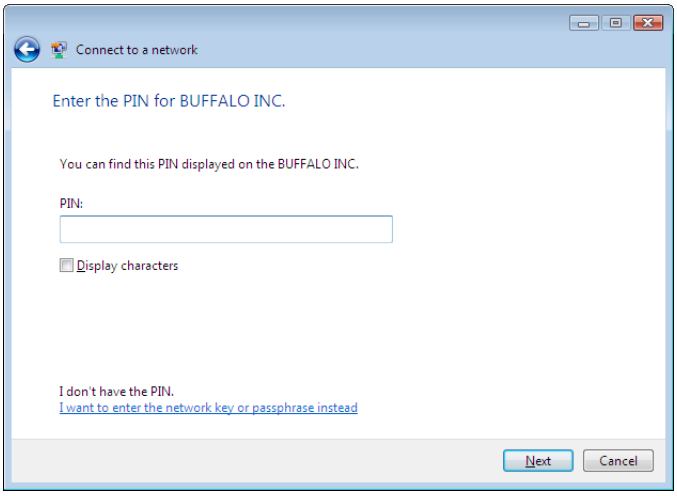
2 Click [Connect to a network].

3 

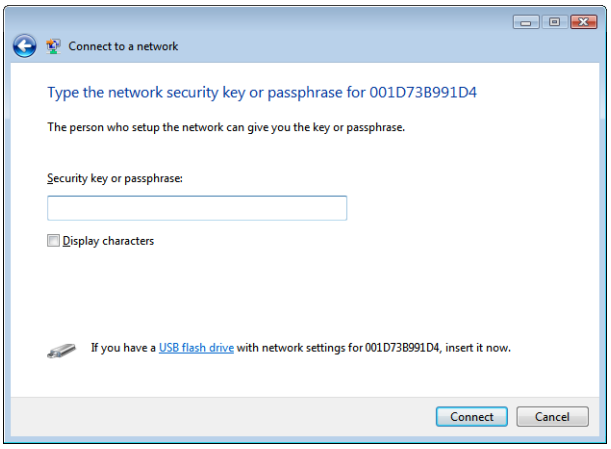
When the screen at left is displayed, select the network to connect to and click [Connect].

If the screen below is displayed, click [I want to enter the network key or passphrase instead]. Otherwise, go to step 4.





4



Enter the encryption key and click [Connect].

Step through the wizard to finish configuration. If the Set Network Location screen is displayed, select [Home], [Work], or [Public location] depending where you're using the AirStation.

Windows XP (Wireless Zero Configuration)

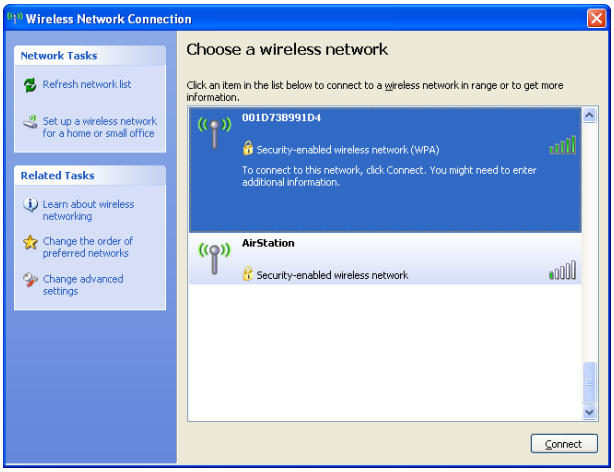
Windows XP includes a built-in utility to connect to your AirStation.

Note: If Client Manager 3 is installed on your computer, Wireless Zero Configuration is disabled. Uninstall Client Manager 3 to use Wireless Zero Configuration, or just use Client Manager 3 to connect to the AirStation.

1 Right click on the wireless network icon  displayed in the system tray.

2 Click [View Available Wireless Networks].

3



Select the network to connect to and click [Connect].

4

Enter the encryption key (twice) and click [Connect].

Follow the instructions displayed on the screen to finish configuration.

Mac OS X (Wi-Fi)

Use Wi-Fi on a Mac to connect to the AirStation.

Note: In Mac OS X 10.6 and earlier, "Wi-Fi" appears as "AirPort".

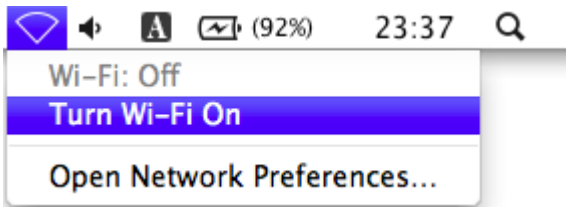
1

AirStation Setup Card
For Wi-Fi Access

SSID : BUFFALO-0F13F1
Key : 12345678
Security type : WPA2-PSK/WPA-PSK

Refer to the Setup Card. Make a note of the SSID and Key printed on the Setup Card.

2



Click the icon in the top section of the screen and select [Turn Wi-Fi On].

3

Find the SSID from step 1 on the list. Click it to highlight it.

4

Enter the KEY from step 1 into the Password entry box, check [Remember this network], and click [Join].

It will take several seconds for configuration to complete.

Chapter 6 - Troubleshooting

Cannot connect to the Internet over wired connection.

- Make sure that your AirStation is plugged in!
- Check that the status LEDs of your AirStation are lit as below:

Power	Green LED on
Wireless	Green LED on or flashing
Router	Green LED may be on or off depending on your network
Diag	off
LAN	Green LED on or flashing
Internet	Green LED on or flashing

- Make sure that your computer is set to obtain an IP address automatically (see appendix C).
- Restart your AirStation.

Cannot access the web-based configuration interface.

- See chapter 4 for instructions to open the AirStation's configuration interface.
- Enter the correct username and password to log in to the configuration interface. If you are using AirStation with factory default settings, enter "admin" for the username and "password" for the password.
- Verify that your web browser is not set to use proxies.
- Make sure that your computer is configured to obtain an IP address automatically (see appendix C).
- Restart your AirStation.

Cannot connect to the network wirelessly.

- Configure your wireless client with the same SSID, encryption type, and encryption key as set on the AirStation.
  The factory defaults are:

SSID -	BUFFALO-XXXXXX (the last 6 digits of the AirStation's MAC address)
Encryption Type -	WPA/WPA2 mixed mode - PSK (Connect with either WPA-PSK TKIP or WPA2-PSK AES).
Encryption Key -	Printed on the Setup Card.

  Note: For details, refer to the Setup Card.
- Place your AirStation and wireless devices 2 - 10 feet apart.
- Restart your AirStation.

You forgot the AirStation's SSID, Encryption Key, or Password.

Hold down the reset button on the base of your AirStation for 3 seconds to initialize its settings. All settings, including your password, SSID, and encryption key will be initialized to their defaults.

The link speed is slower than 300 Mbps (Maximum link speed is only 130 Mbps).

By default, the AirStation's 300 Mbps mode is not enabled. You may enable it with the following procedure:

1. Open the configuration utility (chapter 4).
2. Click [Wireless SSID & Channel] in Easy Setup.
3. Change the value in [300 Mbps Mode] - [Band Width] to 40 MHz and click [Apply].

If you still cannot connect at 300 Mbps, check the settings of your wireless client device.

Other Tips

Issue:

I reset my wireless router to factory settings and forgot how to log in to the configuration utility.

Answer:

Open your browser, enter 192.168.11.1 as the browser address, and hit Enter. You will be prompted to log in. Enter "admin" for the username and "password" for the password. Click [OK] to log in. The option to reset your password will be available on the first page.

Issue:

How do I forward ports on my wireless router for my gaming console?

Answer:

Log in to the router's configuration utility. From the home page, go to the Internet Games/Apps section. Enter the port that needs to be forwarded, and the IP address of the gaming console.

Issue:

How do I enable or modify security encryption settings on the wireless router?

Answer:

Log in to the configuration utility with your browser. Go to [Wireless] - [Basic]. Buffalo recommends WPA for wireless encryption. The passphrase/key should be at least 8 characters in length.

Issue:

How do I change my wireless router's broadcasted network name (SSID)?

Answer:

Log in to the wireless router with your browser. Navigate to [Wireless] - [Basic]. Find the SSID setting. Select [Use] and enter the new name for your network. Click [Apply]. Once the wireless router has rebooted, you will need reconnect any wireless clients to the AirStation using the new network name. The encryption key will still be the same.

Issue:

What can I do if my wireless connection drops randomly or seems slow?

Answer:

There are many environmental factors that may cause this. First, ensure the issue is not range related by moving the wireless router and the client device closer together. If the the connection drops continue, then range is probably not the issue.
Other 2.4 GHz devices such as microwaves, other wireless networks, and 2.4 GHz wireless phones may impact performance. Try a different wireless channel for your wireless router. Log in to the wireless router with your browser. Click on [Wireless] - [Basic]. Wireless channels from 1 - 11 may be selected. Try the Auto-Channel option if available. Otherwise, manually select an alternate channel and click [Apply].

Issue:

Though I am able to successfully make a connection with my wireless router, I am unable to access the Internet with my web browser.

Answer:

First, power off the Cable or DSL modem, the wireless router, and your computer. Move the router's mode switch to the ON position. Verify that the modem is connected to the wireless router with an Ethernet cable to the WAN port. Power on the modem and wait one minute. Power on the wireless router and wait another minute. Power on the computer. Open a browser on the computer and navigate to a familiar website to verify whether the Internet connection is functioning normally.
If after these steps, an Internet connection is still unavailable, power off the Cable or DSL modem and computer again and directly connect your computer to the Cable or DSL modem with a cable between the computer and the port on the modem. Power on the modem and wait one minute. Power on the computer and again check for an Internet connection.
If an Internet connection IS NOT available with a direct connection to the computer, please call the Internet Service Provider who installed the modem.
If an Internet connection IS available with a direct connection to the computer, please call our customer support.

Issue:

Where can I download the latest drivers, firmware and instructions for my Buffalo wireless products?

Answer:

The latest drivers and firmware are available online at
www.buffalotech.com

Chapter 7 - Default Configuration Settings

Feature	Parameter	Default Setting
Internet (Router Mode only)	Method of Acquiring IP Address	Easy Setup (Internet Connection Wizard)
	Default Gateway	None
	DNS Name Server Address	None
	Internet MAC Address	Use default MAC address
	MTU Size of Internet Port	1500 Bytes
PPPoE (Router Mode only)	Default PPPoE Connection	No Active Session
	IP Unnumbered PPPoE Connection	No Active Session
	PPPoE Connection List	None
	Preferred Connections	None
DDNS (Router Mode only)	Dynamic DNS Service	Disabled
	Current Dynamic DNS Settings	None
VPN Server (Router Mode only)	LAN Side IP Address	192.168.11.1(255.255.255.0)
	DHCP Server	Enabled
	DHCP IP Address Pool	192.168.11.2 for up to 64 Address(es)
	PPTP Server	Disabled
	Authorization Type	MS-CHAPv2 (40/128-bit Encryption)
	Server IP Address	Auto
	Client IP Address	Auto
	DNS Server IP Address	LAN IP address of the AirStation
	WINS Server IP Address	None
	MTU/MRU Value	1396
	PPTP User List	None
LAN	LAN Side IP Address	Router Mode: 192.168.11.1 (255.255.255.0) Bridge Mode (Router Switch off): 192.168.11.100 (255.255.255.0) Bridge Mode (Router Switch set to Auto): Obtain automatically from DHCP Server

Feature	Parameter	Default Setting
	DHCP Server (Router Mode only)	Enabled
	DHCP IP Address Pool (Router Mode only)	192.168.11.2 - 192.168.11.65
	LAN Side IP Address (IP Unnumbered) (Router Mode only)	None
	Lease Period (Router Mode only)	48 Hours
	Default Gateway (Router Mode only)	AirStation's IP Address
	DNS Servers (Router Mode only)	AirStation's IP Address
	WINS Server (Router Mode only)	Do Not Specify
	Domain Name (Router Mode only)	Assigned Domain Name
	Default Gateway (Bridge Mode only)	None
	DNS Server Address (Bridge Mode only)	None
DHCP (Router Mode only)	Current DHCP Clients	None
NAT (Router Mode only)	Address Translation	Enabled
	Log Output of Deleted Packets	Disabled
Routing	Routing	None
WPS	WPS	Enabled
	External Registrar	Enabled
	AirStation PIN	An 8-digit random value (Printed on the label of the AirStation)
	WPS Security Settings	WPS status: Configured SSID: BUFFALO-XXXXXX (the last 6 digits of the AirStation's MAC address) Security: WPA/WPA2 mixedmode - PSK TKIP/AES mixedmode Encryption key: An 8-digit random value (Printed on the Setup Card)

Feature	Parameter	Default Setting		
Basic	Wireless Radio	Enabled		
	Wireless Channel	Auto Channel		
	300 Mbps Mode	Band Width: 20 MHz Extension Channel: -		
	Broadcast SSID	Allowed		
	Separate feature	Not used		
	SSID	BUFFALO-XXXXXX		
	Wireless Authentication	WPA/WPA2 mixedmode - PSK		
	Wireless Encryption	TKIP/AES mixedmode		
	WPA-PSK (Pre-Shared Key)	An 8-digit random value (Printed on the Setup Card)		
	Rekey Interval	60 minutes		
Advanced	Multicast Rate	Auto		
	DTIM Period	1		
	Privacy Separator	Disabled		
WMM	WMM-EDCA Parameters (Priority AC_BK (Low))		For AP	For STA
		CWmin	15	15
		CWmax	1023	1023
		AIFSN	7	7
		TXOP Limit	0	0
		Admission Control	-----	Disabled
	WMM-EDCA Parameters (Priority AC_BE (Normal))		For AP	For STA
		CWmin	15	15
		CWmax	63	1023
		AIFSN	3	3
		TXOP Limit	0	0
		Admission Control	-----	Disabled

Feature	Parameter	Default Setting		
	WMM-EDCA Parameters (Priority AC_VI (High))		For AP	For STA
		CWmin	7	7
		CWmax	15	15
		AIFSN	1	2
		TXOP Limit	94	94
		Admission Control	-----	Disabled
	WMM-EDCA Parameters (Priority AC_VO (Highest))		For AP	For STA
		CWmin	3	3
		CWmax	7	7
		AIFSN	1	2
		TXOP Limit	47	47
		Admission Control	-----	Disabled
MAC Filter	Enforce MAC Filtering	Disabled		
	Registration List	None		
WDS	WDS	Enabled		
	Specify Master/Slave	Master		
AOSS	Exclusive SSID for WEP	None		
	Encryption level expansion	Enabled		
	Dedicated WEP SSID isolation	Disabled		
	Allow WEP for Game Console Only	Disabled		
	AOSS Button on the AirStation Unit	Enabled		
Multicast Control	Snooping	Enabled		
	Multicast Aging Time	300 Sec.		
Firewall (Router Mode only)	Log Output	Disabled		
	Basic Rules	Prohibit NBT and Microsoft-DS routing		Disabled
		Reject ident requests		Enabled
		Block ping from Internet		Enabled
IP Filter (Router Mode only)	Log Output	Disabled		
	IP Filter	None		
VPN Passthrough (Router Mode only)	IPv6 Passthrough	Disabled		
	PPPoE Passthrough	Disabled		
	PPTP Passthrough	Enabled		

Feature	Parameter	Default Setting
Port Forwarding (Router Mode only)	Forwarded Ports	None
DMZ (Router Mode only)	IP Address of DMZ	None
UPnP (Router Mode only)	UPnP	Enabled
QoS (Router Mode only)	QoS for transmission to the Internet	Disabled
Name	AirStation Name	AP + AirStation's MAC Address
	Network Services	Enabled
Password	Administrator	admin (fixed)
	Administrator Password	password
Time/Date	Local Date	2012 Year 1 Month 1 Day
	Local Time	0 Hour 0 Minute 0 Seconds
	Time Zone	(GMT−06:00) Central Standard Time: CST or (GMT+00:00) Greenwich Mean Time,London
NTP	NTP Functionality	Enabled
	NTP Server	time.nist.gov
	Update Interval	24 hours
Access	Log Output	Disabled
	Management Access	Prohibit configuration from wireless LAN Disabled Prohibit configuration from wired LAN Disabled Permit configuration from wired Internet Disabled
Log	Transfer Logs	Disabled
	Syslog Server	None
	Logs	Router Mode: Address Translation, IP Filter, Firewall, PPPoE Client, Dynamic DNS, DHCP Client, DHCP Server, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, and Wired Link Bridge Mode: IP Filter, DHCP Client, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, and Wired Link