BUFFALO™

AirStation

WMR-300 User Manual

www.buffalotech.com

35020008-01

Contents

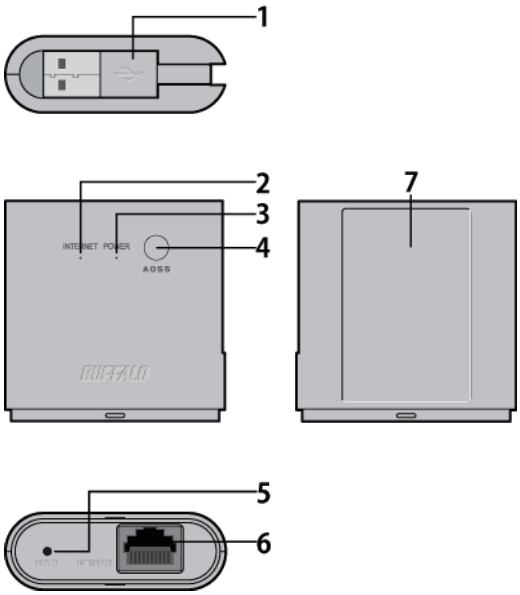
Chapter 1 - Product Overview

Package Contents

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

- AirStation.....1
- Case.....1
- Ethernet Cable.....1
- Quick Setup Guide.....1
- Warranty Statement.....1

Diagrams and Layout



1 USB Cable
You can connect this cable to your PC or USB devices to supply the power.

2 Internet Access LED (Green)
On:
Router functionality is enabled and you can connect to the Internet.
Blinking:
Router functionality is enabled but you cannot connect to the Internet.
Off:

Router functionality is disabled.

3 Power LED (Green or Red)

On (Green):
Power is on and wireless LAN is enabled.
Blinking (Green):
Internal system is booting.
Double blinks (Green):
AirStation is waiting for an AOSS or WPS security key.
Slow blinks (Green):
Power is on but wireless LAN is disabled.
Continuously blinking (Red):
AOSS/WPS error; failed to exchange security keys.
Blinking (Red):
You can see the status as below:

Blinking	Status	Meaning
Double*	Flash ROM error	Cannot read or write on the flash memory.
Triple*	Wired LAN error	Wired LAN controller has crashed.
4 times*	Wireless LAN error	Wireless LAN controller has crashed.
5 times	IP address setting error	Cannot communicate because WAN-side and LAN-side IP addresses are same. Change LAN-side IP address of the AirStation.
Continuously**	Updating firmware Backing up or initializing settings	Updating firmware. Backing up or initializing settings.

Notes:
* Reconnect USB cable. If it blinks again, please contact your vender.
** Do not disconnect USB cable while continuously blinking (red).

4 AOSS Button

To initiate AOSS, hold down this button until the wireless LED flashes (about 1 second). Then, push or click the AOSS button on your wireless client device to complete the connection. Both devices must be powered on for this to work.

5 Reset Button

To reset all settings, hold down this button until the Buffalo LED turns red (about 3 seconds). The power must be on for this to work.

6 Internet Port

10 Mbps and 100 Mbps connections are supported.

7 Factory Default Label

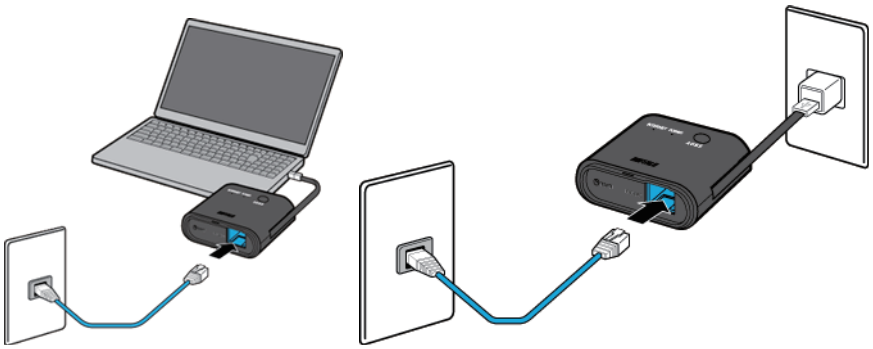
Displays AirStation's SSID, encryption key, PIN and MAC address.

Chapter 2 - Installation

Initial Setup

To configure your AirStation, follow the procedure below.

1 Connect the LAN cable to the AirStation and LAN port in the hotel, then turn the power on. The AirStation power can be supplied from an USB port on your PC or from an outlet with an USB power adapter.



2 Connect your PC or smartphone to the AirStation wirelessly.

3 Open a browser and connect to the Internet.

Note: You may need to register information to connect to the Internet depending on the hotel. For more information, please contact a staff in the hotel.

Chapter 3 - Configuration

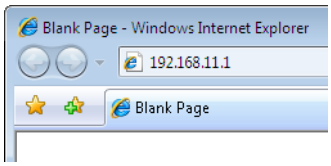
Configuration of the AirStation is done from Settings, the web-based configuration GUI.

Accessing Settings

To configure the AirStation's settings manually, log in to Settings as shown below.

1 Open a browser.

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



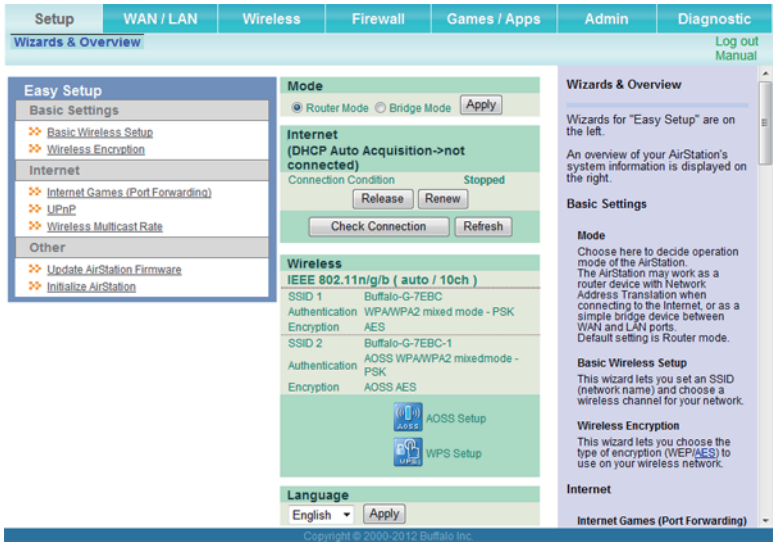
Notes:

- The AirStation's default LAN-side IP address is 192.168.11.1.
- 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, then click *OK*.

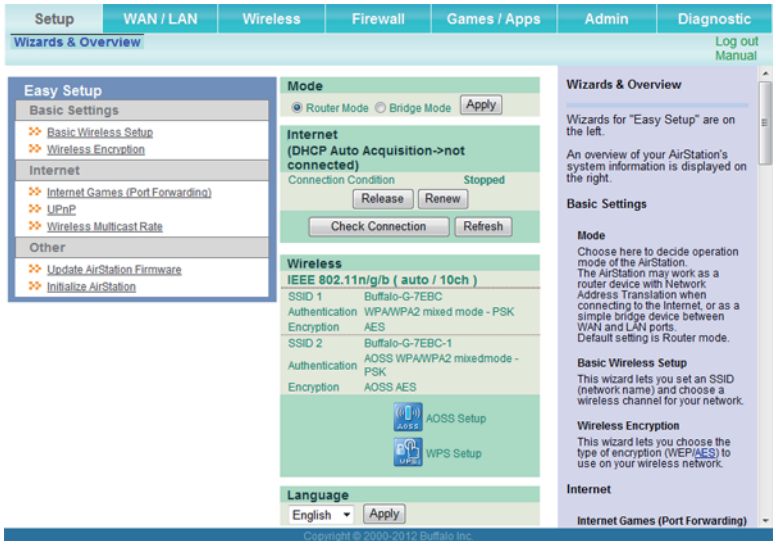
Note: If you forget your password, hold down the reset button to initialize all settings. Note that all other settings will also revert to their default values.

4 This is Settings, where most AirStation settings can be configured.
Help is always displayed on the right side of each screen. Refer to the help screens for more information on using Settings.



Setup

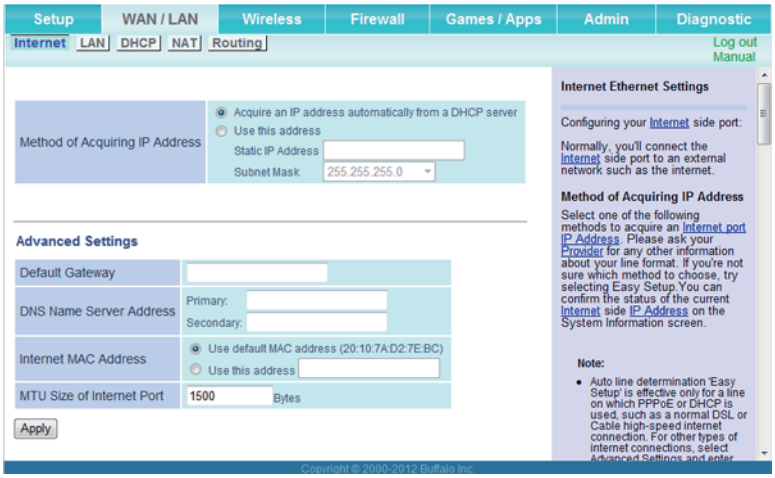
Setup is the home page of Settings. You can verify settings and the status of the AirStation here.



Parameter	Meaning
WAN / LAN	Displays the configuration screen for Internet-side and LAN-side settings.
Wireless	Displays the configuration screen for wireless settings.
Firewall	Displays the configuration screen for the firewall.
Games/Apps	Displays the configuration screen to open ports for games and applications.
Admin	Displays the configuration screen for administration settings.
Diagnostic	Displays the status of the AirStation.
Easy Setup	Enables you to easily configure the AirStation's network settings automatically.
Mode	This indicates the operation mode of the AirStation.
Internet	Displays Internet-side system information for the AirStation.
Check Connection	Click to check if the AirStation is connected to the Internet properly.
Refresh	Click to refresh the current screen.
Wireless	Displays the current wireless settings.
AOSS Setup	Click to display the AOSS configuration screen.
WPS Setup	Click to display the WPS configuration screen.
Language	Enables you to select the language you use.
Log Out	Log out of Settings. If the AirStation does not communicate for 5 minutes, it will log out automatically.

Internet (Router Mode only)

Configure the Internet-side port.



Parameter	Meaning
Method of Acquiring IP Address	Specify how the WAN-side IP address is obtained.
Default Gateway	Configure an IP address for the default gateway.
DNS Name Server Address	Specify an IP address for the DNS server.
Internet MAC Address	You may use the default MAC address or specify one manually. **Note:** Configuring an improper MAC address may make the AirStation unusable. Do not change the MAC address unless you know what you're doing!
MTU Size of Internet Port	Configure the MTU value of the Internet port. Values of 578 to 1500 bytes may be entered.

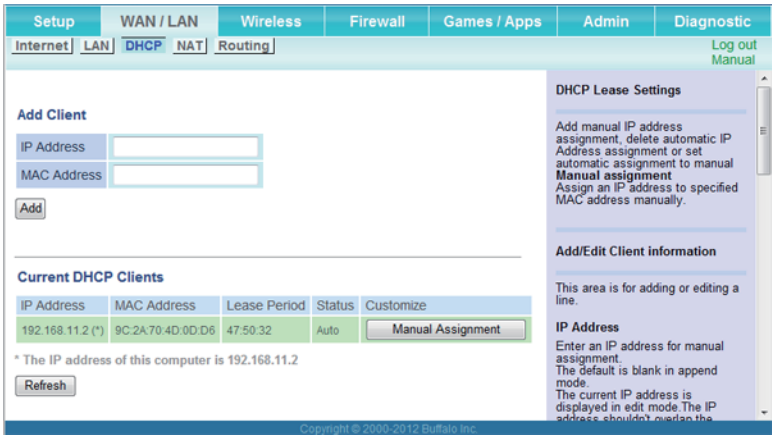
LAN

Configure LAN-side and DHCP Server settings.

Parameter	Meaning
LAN-side IP Address	By default, the LAN-side IP address is 192.168.11.1 with subnet mask 255.255.255.0. You may change it here.
DHCP Server	Enable or disable the DHCP server, which assigns LAN-side 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 1-256 may be entered.
Advanced Settings	Check *Display* to display DHCP server advanced settings options.
Lease Period	Set the effective period of an IP address assigned by the DHCP server. Up to 999 hours may be entered.
Default Gateway	Set the default gateway IP address for the DHCP server to issue to clients.
DNS Servers	Set the DNS server IP address for the DHCP server to issue to clients.
WINS Server	Set the WINS server IP address for the DHCP server to issue to clients.
Domain Name	Set the domain name for the DHCP server to issue to clients. You may enter up to 64 alphanumerical characters, hyphens, and periods.

DHCP (Router Mode only)

Configure DHCP exceptions.



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 of the client.
Current DHCP Clients	Displays information for current leases. An IP address which is leased automatically can be changed to manual leasing by clicking *Manual Assignment*.

NAT (Router Mode only)

Configure network address translation settings. This enables LAN-side devices to communicate with the Internet.

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

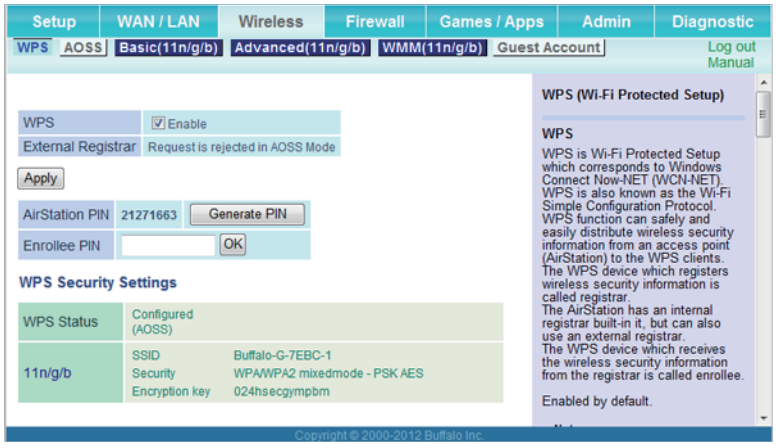
Routing

Configure the AirStation's IP communication route.

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.

WPS

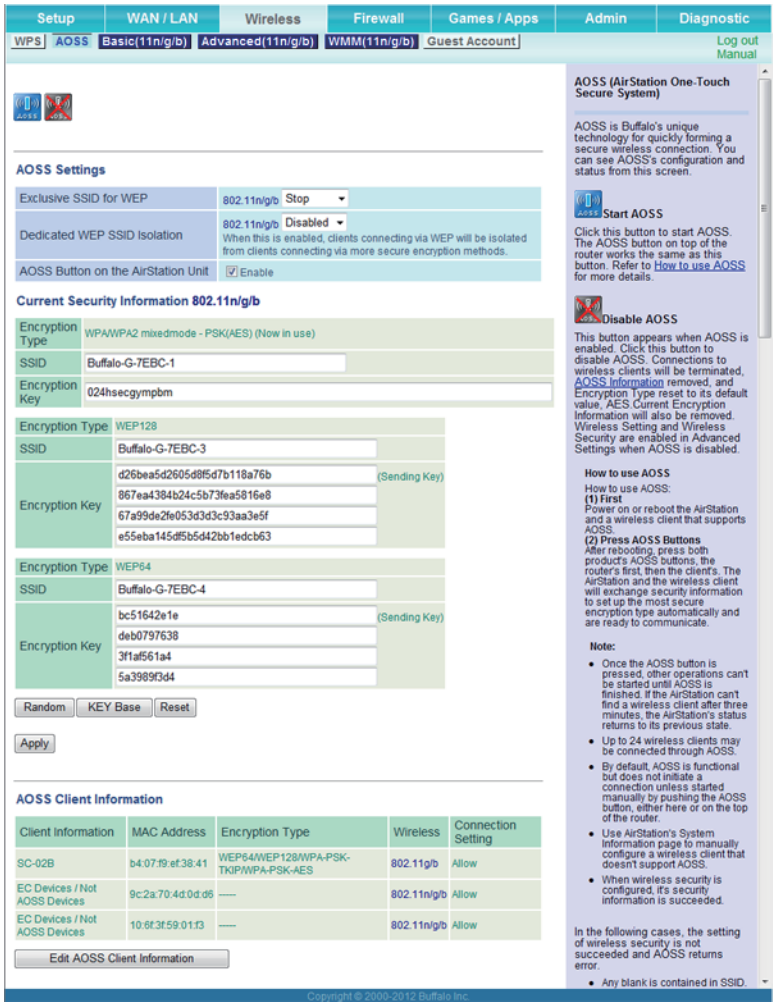
WPS status and settings.



Parameter	Meaning
WPS	Enable to use WPS automatic configuration.
External Registrar	Enable to accept configure requests from other WPS devices. **Note:** 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

AOSS status and settings.

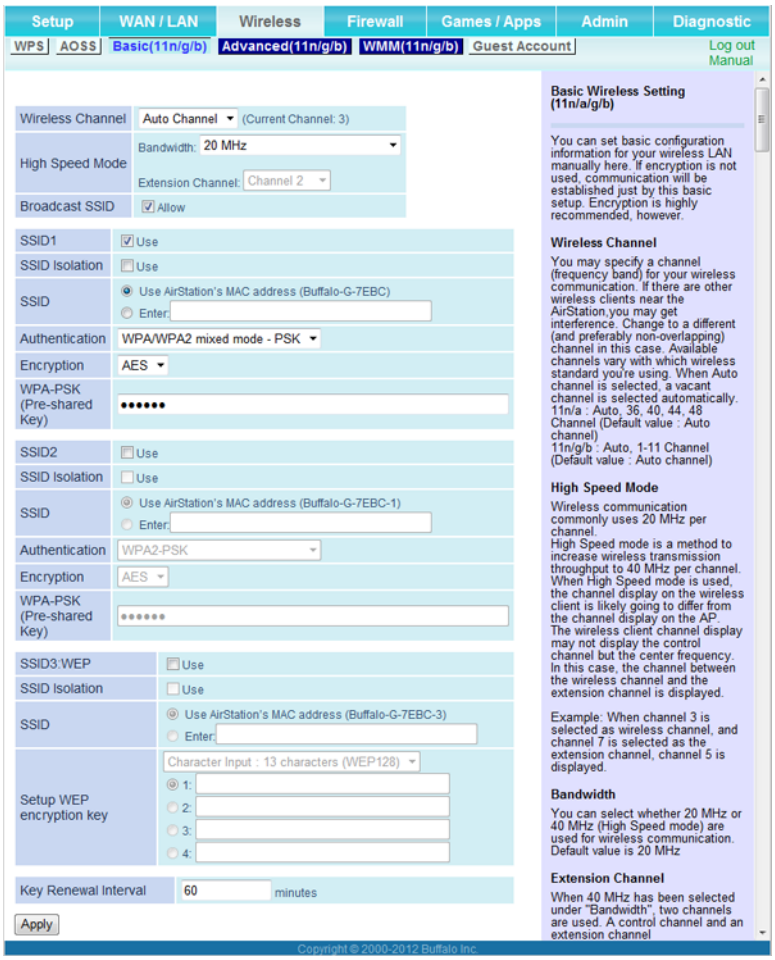


Parameter	Meaning
	Initiates AOSS automatic wireless configuration. Click this, then press or click the AOSS button on your AOSS-compatible wireless client. Repeat for additional AOSS clients.
	Click this button to disconnect AOSS connections. **Note:** If AOSS connections are disconnected, the SSID and encryption keys will be restored to their last settings from before AOSS was used.
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.
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	Uncheck to disable the physical AOSS button on the AirStation.
Current Encryption Information	Displays the encryption type, SSID, and encryption key configured by AOSS.

Parameter	Meaning
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	Displays AOSS clients connected to the AirStation and information of the devices which are wirelessly communicated.

Basic

Configure basic wireless settings from here.



Parameter	Meaning
Wireless Channel	Sets a channel (a range of frequencies) for wireless connections. When "Auto Channel" is selected, the AirStation will automatically use the best available channel.
High Speed Mode	High-speed mode uses double the normal frequency range, 40 MHz instead of 20 MHz. In uncongested areas this can increase performance. To use high speed mode, set the bandwidth to 40 MHz.

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 ignores SSID searches from wireless devices.
SSID 1	The multi-security SSID 1 can use no authentication, WPA-PSK, WPA2-PSK, or WPA/WPA2-mixed mode - PSK for wireless security.
SSID 2	The multi-security SSID 2 can use no authentication, WPA-PSK, WPA2-PSK, or WPA/WPA2-mixed mode - PSK for wireless security.
SSID 3	The multi-security SSID 3 can use the WEP for wireless security.
SSID Isolation	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 characters.
Authentication	Specifies the authentication method used when connecting to a wireless device.
Encryption	You may use any of the following types of encryption: **No encryption** Data is transmitted without encryption. With this setting, anyone within range can connect to your wireless network and might be able to access data on the network. Not recommended for anyone with private data that needs to be kept secure. *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. WEP can only be selected when wireless authentication is set to *No authentication*. Note that WEP's encryption is weak, and networks protected with WEP are not much more secure than those with no encryption at all. Not recommended for anyone with private data that needs to be kept secure. **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.
WPA-PSK (Pre-Shared Key)	A pre-shared key or passphrase is the password for your wireless connections. There are two different formats for a pre-shared key. Use 8 to 63 alphanumeric characters (case-sensitive) for an ASCII passphrase, or use 64 alphanumeric characters (0 to 9 and a to f, not case-sensitive) for a hexadecimal passphrase.
Setup WEP encryption key	A WEP encryption key (passphrase) may have any of four different formats. An ASCII passphrase may use either 5 or 13 alphanumeric characters (case-sensitive). A hexadecimal passphrase may use either 10 or 26 alphanumeric characters (0 to 9 and a to f, not case-sensitive).
Key Renewal Interval	Set the update interval for the encryption key between 0 and 1440 (minutes).

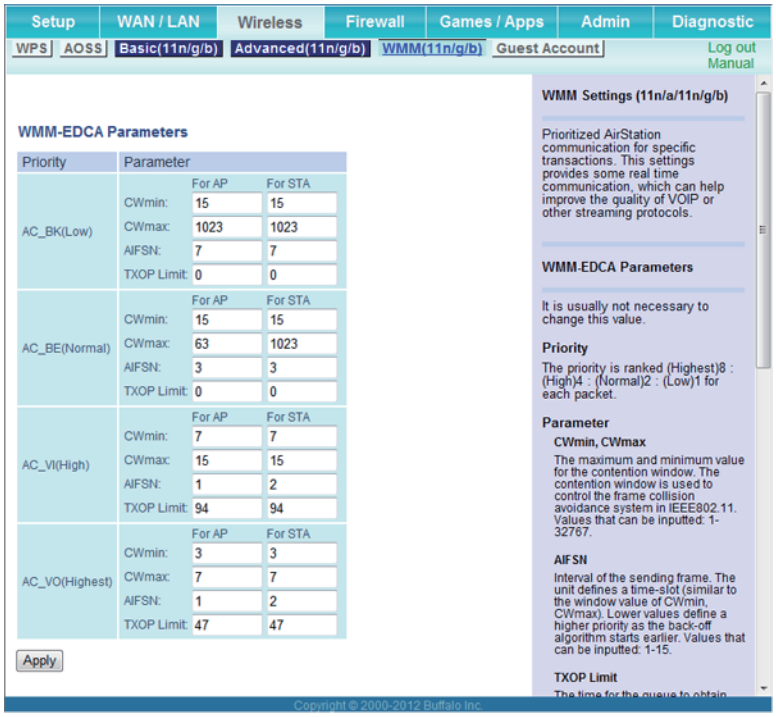
Advanced

Configure advanced wireless settings.

Parameter	Meaning
Multicast Rate	Set the communication speed of multi-cast packets.
DTIM Period	Set the beacon responding interval (1 -255) for which the AirStation responds to a wireless device. This setting is effective only when power management is enabled for the wireless device.
Wireless Client Isolation	If enabled, the wireless client isolation 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

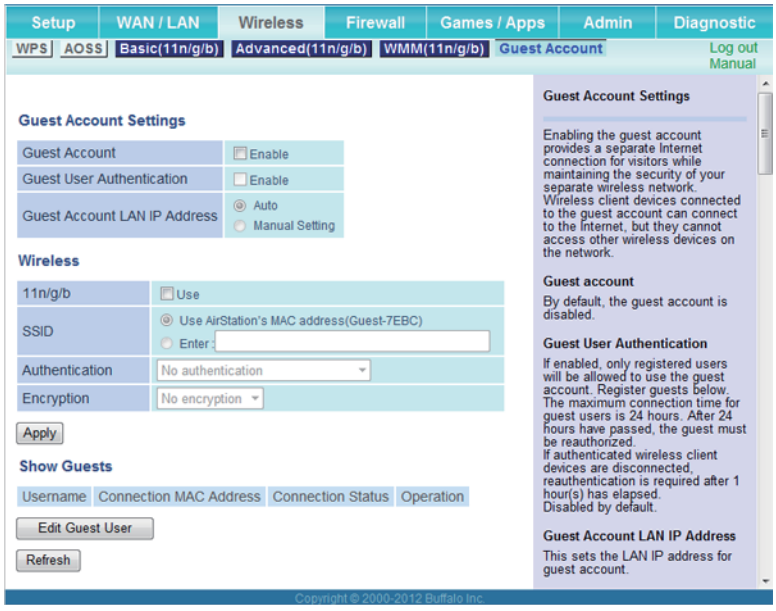
Set priorities for specific communications.



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 IEEE 802.11, 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 queue may interfere with other packet transmissions. If TXOP limit is set to 0 (zero), only one frame can be sent per right to send.

Guest Account

Configure the AirStation's guest account.



Parameter	Meaning
Guest Account	This sets whether the guest account is enabled.
Guest User Authentication	This sets whether authentication is performed for users who use the guest account.
Guest Account LAN IP Address	This sets the LAN-side IP address for the guest account.
Guest Account DHCP Server	This sets whether IP addresses are automatically assigned for devices connected to the guest account.
11n/g/b	This sets 11n/g/b for the guest account.
SSID	This sets the SSID for the guest account.
Authentication	This sets whether wireless authentication is performed for the guest account.
Encryption	This sets the wireless encryption system for the guest account.
WPA-PSK (Pre-shared Key)	This sets the wireless encryption key for the guest account.
Edit Guest User	Click to register a user who is using the guest account.
Username	This sets the name of the user using the guest account.
Password	This sets the password of the user using the guest account.

Guest User Settings

To enable guest users, configure the AirStation with the settings below, then click *Apply*.

Guest Account: Enabled

Guest User Authentication: Disabled

Guest Account LAN IP Address: Auto

SSID: Guest

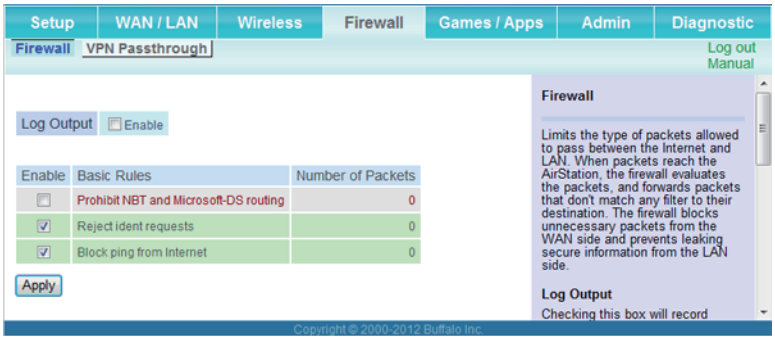
Authentication: No authentication

Encryption: No encryption

Notes:
Wireless clients connected to the guest SSID can connect to the Internet only. Communication with other devices on the LAN is not allowed.
To allow only registered guests to connect, enable guest user authentication, click *Edit Guest User*, and register the user.

Firewall (Router Mode only)

Configure the AirStation's 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** Enabling this blocks communication using these protocols from the WAN side to the LAN side or from the LAN side to the Internet. You can configure this with PPPoE if you select *Use PPPoE Client* or *Use IP Unnumbered* from the method of acquiring IP address, or if Easy Setup identified a PPPoE connection during setup. **Reject ident requests** Enabling this option will answer ident requests from the Internet side with corresponding rejection packets. Enable this option if you experienced slow transfer speeds for network applications such as mail, FTP or web browsing. If you have configured transfer of ident requests to the LAN side computer in the address translation settings (DMZ or TCP port 113), then 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 WAN side. You can configure this with PPPoE if you select *Use PPPoE Client* or *Use IP Unnumbered* from the method of acquiring IP address, or if Easy Setup identified a PPPoE connection during setup.

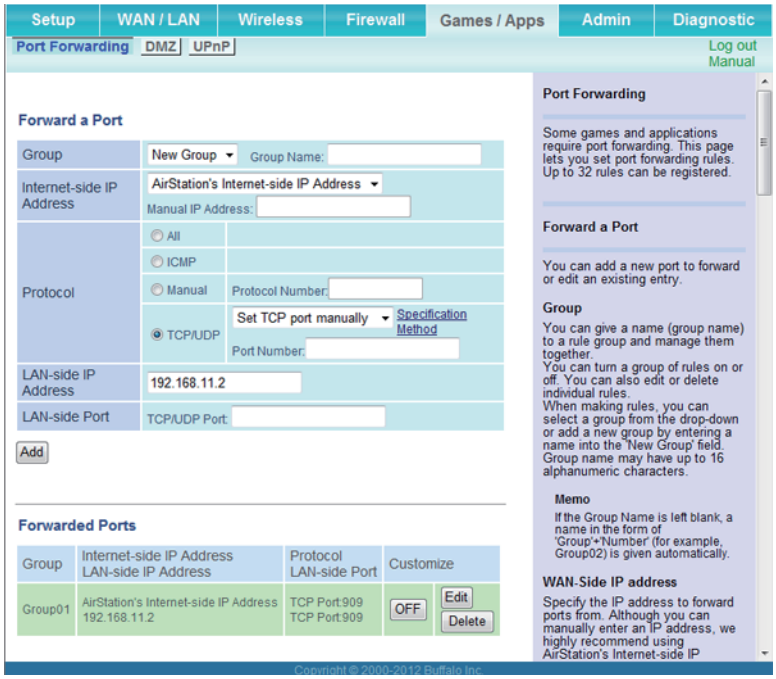
VPN Passthrough (Router Mode only)

Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough.

Parameter	Meaning
IPv6 Passthrough	Enable to use IPv6 passthrough for address translation.
PPTP Passthrough	Enable to use PPTP passthrough for address translation.

Port Forwarding (Router Mode only)

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 characters.
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.
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	Displays current entries in the port translation table.

DMZ (Router Mode only)

Configure a destination for packets that don't have 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 (Router Mode only)

Configure UPnP (universal plug and play).

Parameter	Meaning
UPnP	Enable or disable universal plug and play (UPnP) functionality.

Admin

Name

Configure AirStation name.

Parameter	Meaning
AirStation Name	Enter a name for the AirStation. Names may include up to 64 alphanumeric characters and hyphens (-).

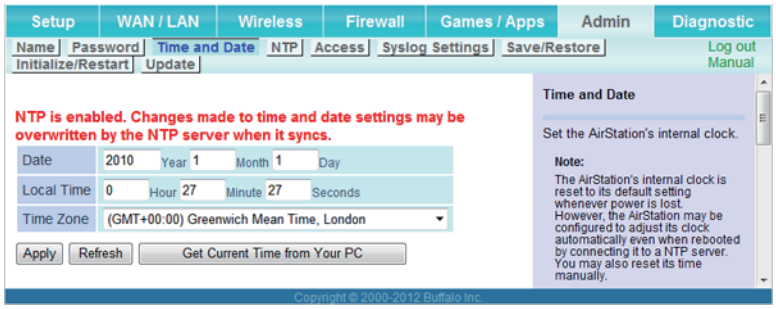
Password

Configure the password to log in Settings.

Parameter	Meaning
Admin Name	The name of the administrator account is “admin”.
Admin Password	The administrator password may contain up to 8 alphanumeric characters and underscores (_).

Time/Date

Configure the AirStation's internal clock.



Parameter	Meaning
Date	Configure the date of the AirStation's internal clock.
Local Time	Configure 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.

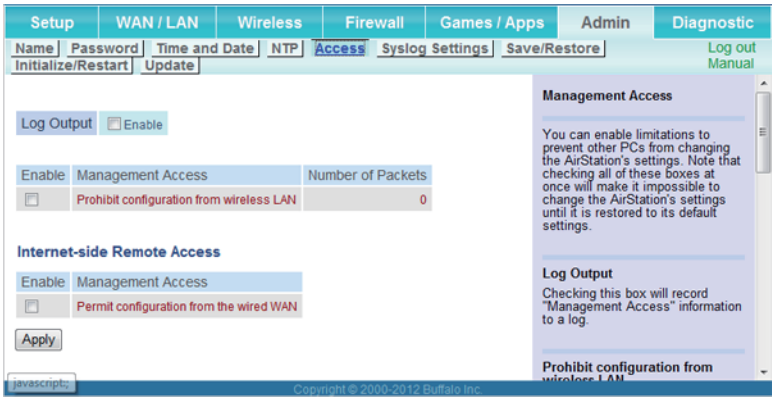
NTP

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

Parameter	Meaning
NTP	Enable to use an NTP server. Enabled by default.
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 underscores (_) may be used. The default is "time.nist.gov".
Update Interval	How often shall the AirStation check the NTP server for the correct time? Intervals of 1 - 24 hours may be set. The default is 24 hours.

Access

Restrict access to Settings.



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

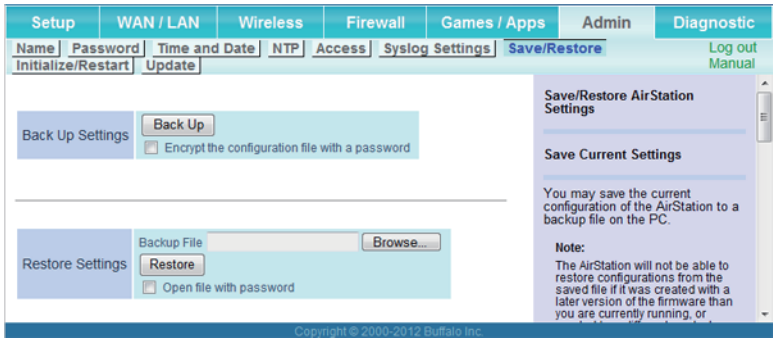
Syslog Settings

Transfer the AirStation's logs to a syslog server.

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 periods (.).
Logs	Choose which logs will be transferred to the syslog server.

Save/Restore

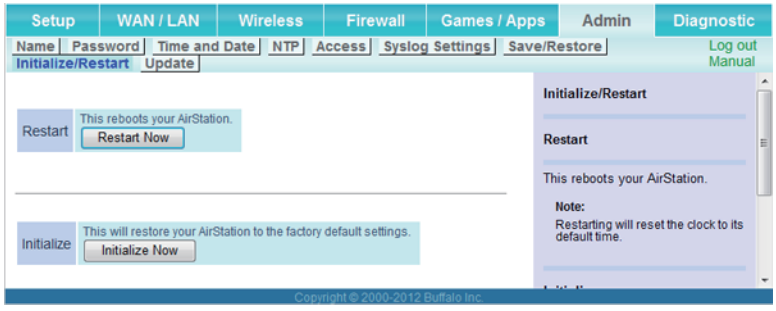
Save AirStation settings as a file and restore from them later.



Parameter	Meaning
Back Up Settings	Clicking *Back Up* 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 Settings	Restore the configuration of the AirStation from a saved configuration file by clicking *Browse...*, navigating to the configuration file, and clicking *Restore*. If the configuration file was password protected, then put a check next to *Open file with password*, enter the password, and click *Restore*.

Initialize/Restart

Initialize or restart the AirStation.



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

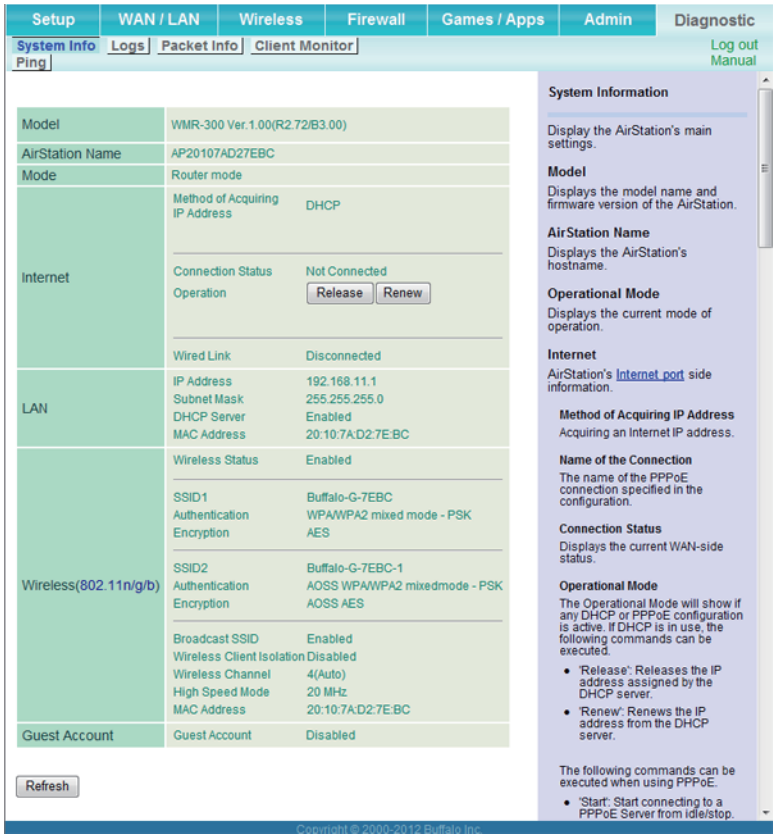
Update

Update the AirStation's firmware.

Parameter	Meaning
Firmware Version	Displays the current firmware version of the AirStation.
Update Method	*Select a file on your PC* updates from a firmware update file that you've downloaded to your computer. *Automatic update* will search the Internet for updated firmware and update your firmware automatically when new firmware is available.
Firmware File Name	Click *Browse...* to navigate to the firmware file on your computer if *Select a file on your PC* was selected. You don't need to specify the firmware location if you're using *Automatic update*. Click *Update Firmware* to update the firmware.

System Info

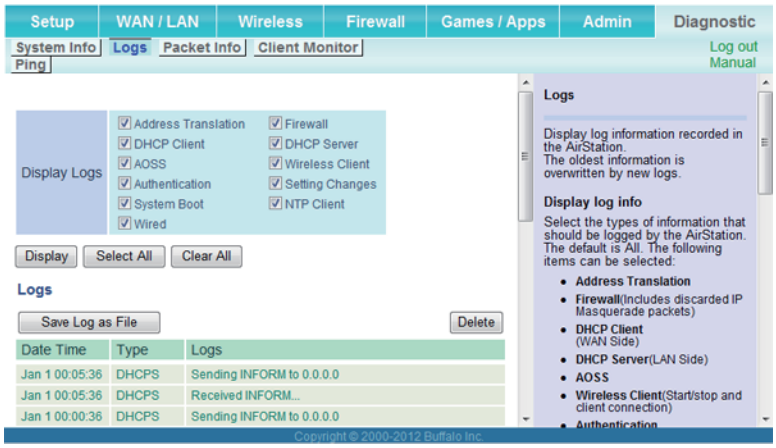
View system information for the AirStation.



Parameter	Meaning
Model	Displays the product name of the AirStation and the firmware version.
AirStation Name	Displays the name of the AirStation.
Mode	Displays the AirStation's current operational mode.
Internet	Displays the status of the Internet port.
LAN	Displays the status of the LAN port.
Wireless	Displays the wireless status.
Guest Account	Displays the status of the Guest Account.

Logs

The AirStation's logs are recorded here.



Parameter	Meaning
Display Logs	Choose the types of logs to display.
Logs	Displays the log information recorded in the AirStation.

Packet Info

View packet transfer information.

Parameter	Meaning
Sent	Displays the number of packets sent to the WAN, the LAN, and the wireless LAN.
Received	Displays the number of packets received from the WAN, the LAN, and the wireless LAN.

Client Monitor

This screen shows devices that are connected to the AirStation.

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 result will be displayed below.

Chapter 4 - Connect to a Wireless Network

Automatic Secure Setup (AOSS / WPS)

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

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

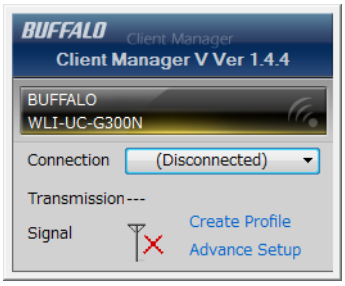
- Before using AOSS or WPS to connect the Buffalo wireless client to the computer, download Client Manager or AOSS Assistant from the Buffalo website and install it.
- Buffalo's Client Manager software can be used with the wireless LAN devices built into your computer. However, it is not guaranteed to work with all wireless LAN devices available.

Windows 8, Windows 7 or Windows Vista (Client Manager V)

If you are using Windows 8, Windows 7 or Windows Vista, use Client Manager V to connect wirelessly with AOSS or WPS.

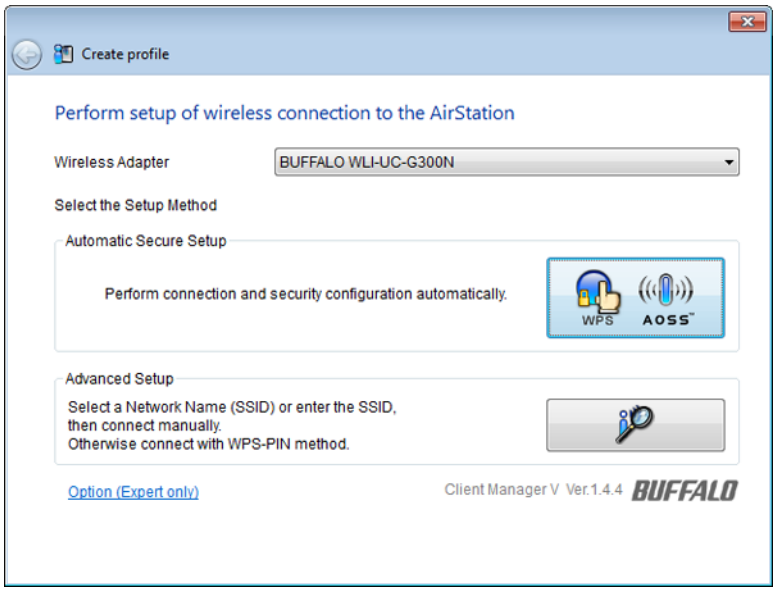
1 Launch Client Manager V.

2 Click *Create Profile*.



3 If the "User Account Control" screen opens, click *Yes* or *Continue*.

4 Click *WPS AOSS*.



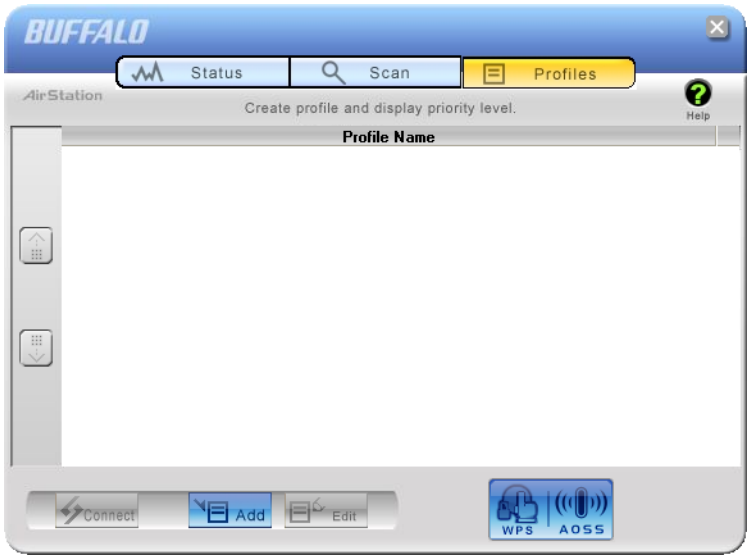
When the wireless LED on the front of the AirStation stops flashing and glows steadily, the connection is ready to use.

Windows XP (Client Manager 3)

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

1 Right-click the icon in the system tray and select *Profile*.

2 Click *WPS AOSS*.



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

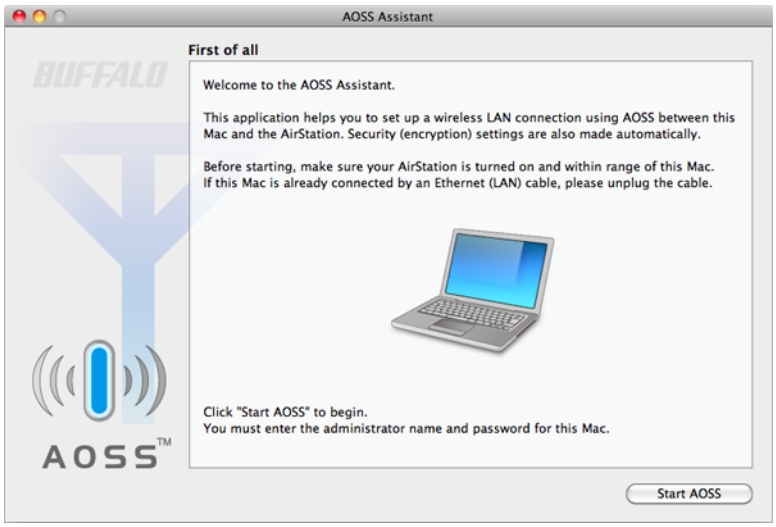
Mac OS (AOSS Assistant)

If you are using OS X 10.8, 10.7, 10.6, 10.5 or 10.4, use AOSS Assistant to connect wirelessly with AOSS.

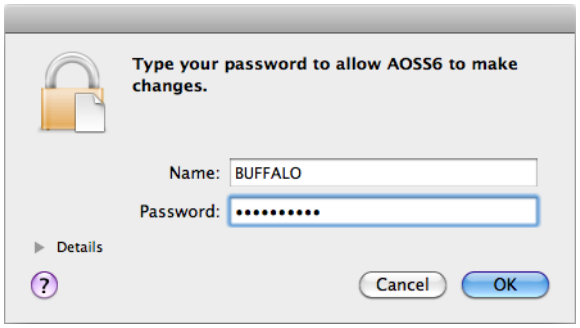
1 Download AOSS Assistant from Buffalo's website.

2 Open the AOSS Assistant software. Click *Agree* to proceed.

3 Click *Start AOSS*.



4 Enter the Mac's username and password and click *OK*.



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

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 or WPS. When instructed, hold down the AOSS button on the AirStation for 1 second.

When the wireless LED on the front of the AirStation stops flashing and glows steadily, the connection is ready to use.

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 the operating system. The procedure varies depending on which operating system you are using.

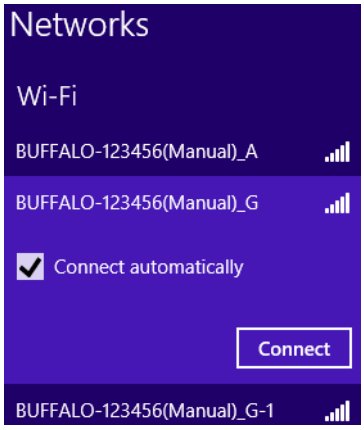
Windows 8 (WLAN AutoConfig)

With Windows 8, use WLAN AutoConfig to connect to the AirStation.

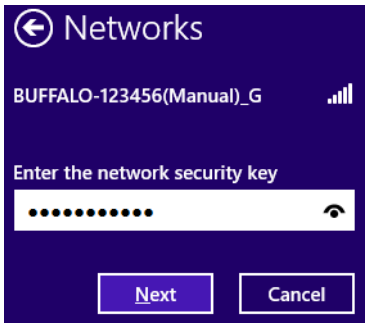
1 Switch Windows 8 to desktop mode.

2 Click the network icon  in the system tray.

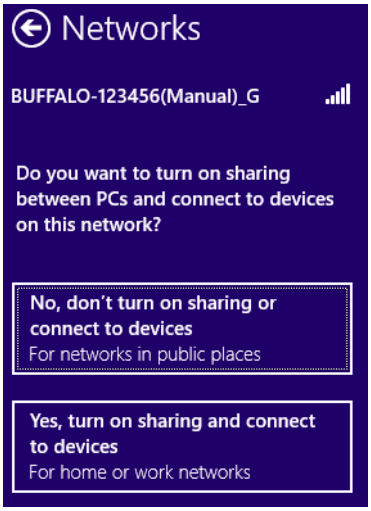
3 Select the target AirStation's name and click *Connect*. If you will be connecting to this device again, check *Connect automatically*.



4 Enter the encryption key and click *Next*.



5 Click *No, don't turn on sharing or connect to devices*.

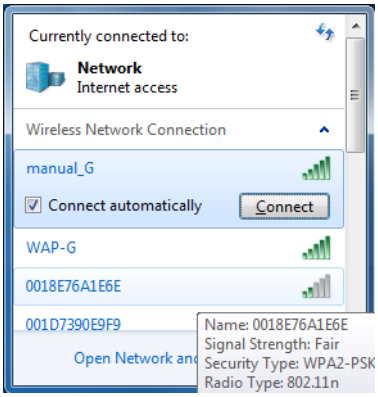


Windows 7 (WLAN AutoConfig)

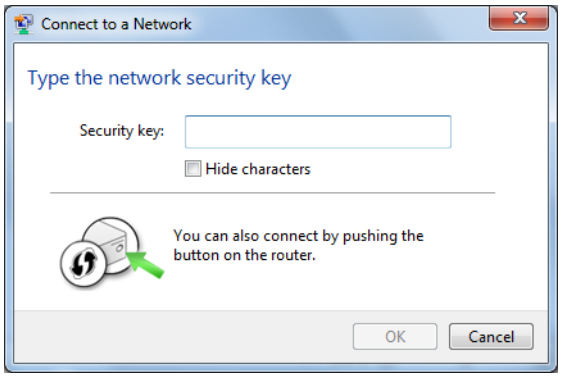
With Windows 7, use WLAN AutoConfig to connect to the AirStation.

1 Click the network icon  in the system tray.

2 Select the target AirStation 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*.



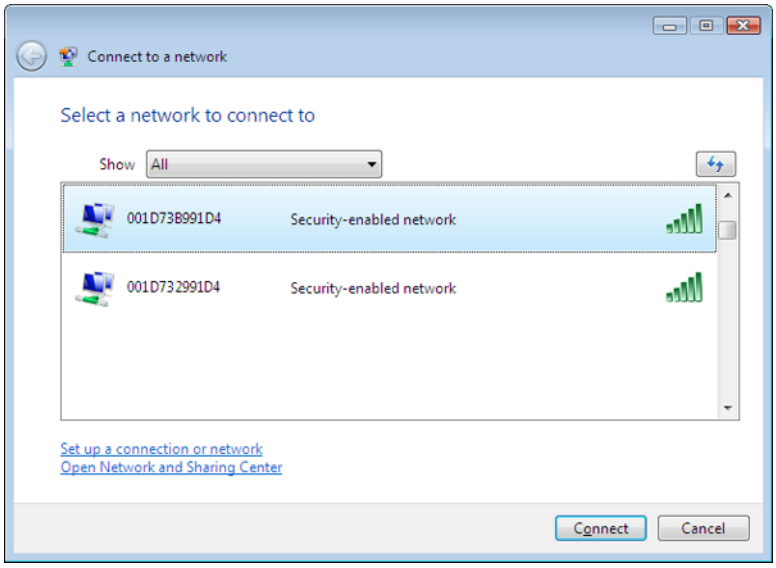
Windows Vista (WLAN AutoConfig)

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

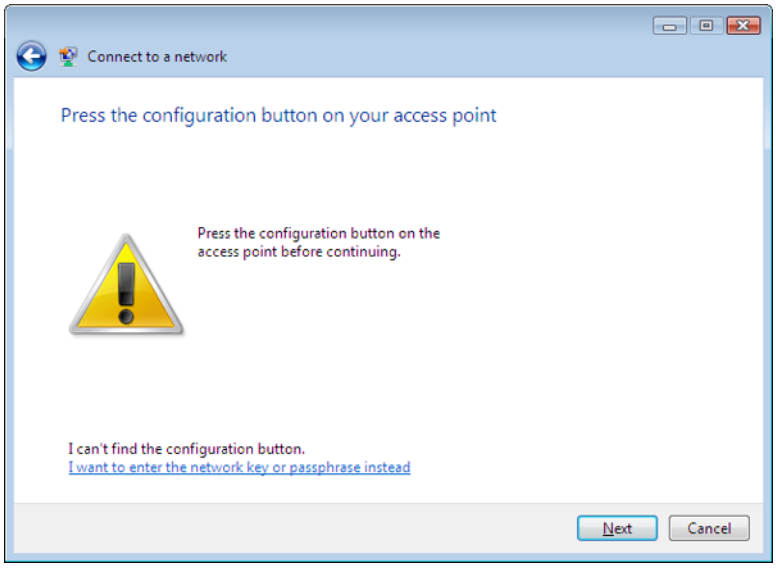
1 Right-click the wireless network icon  in the system tray.

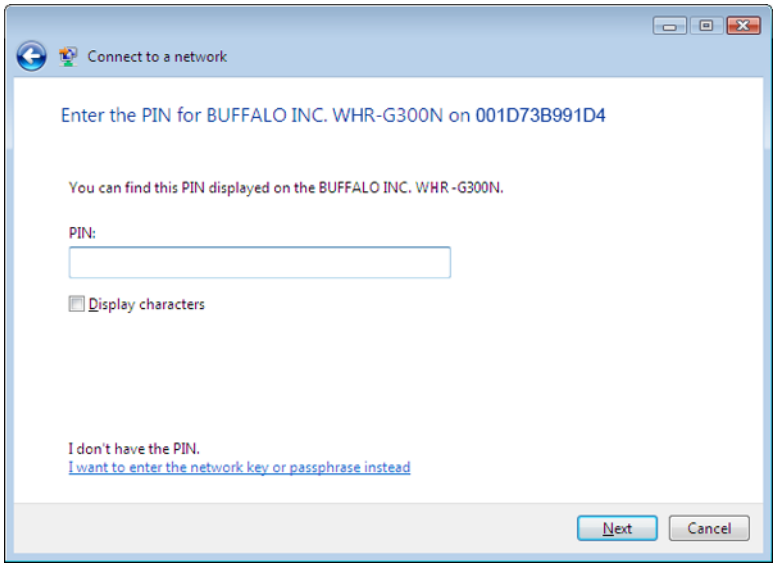
2 Click *Connect to a network*.

3 When this screen is displayed, select your network and click *Connect*.

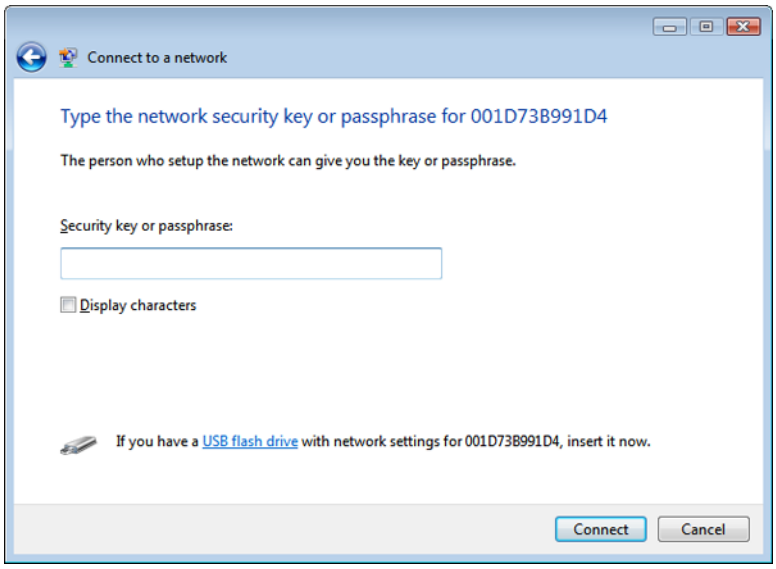


If the screen below is displayed, click *I want to enter the network key or passphrase instead*.
Otherwise,go to step 4.





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 on where you're using the AirStation.

Windows XP (Wireless Zero Configuration)

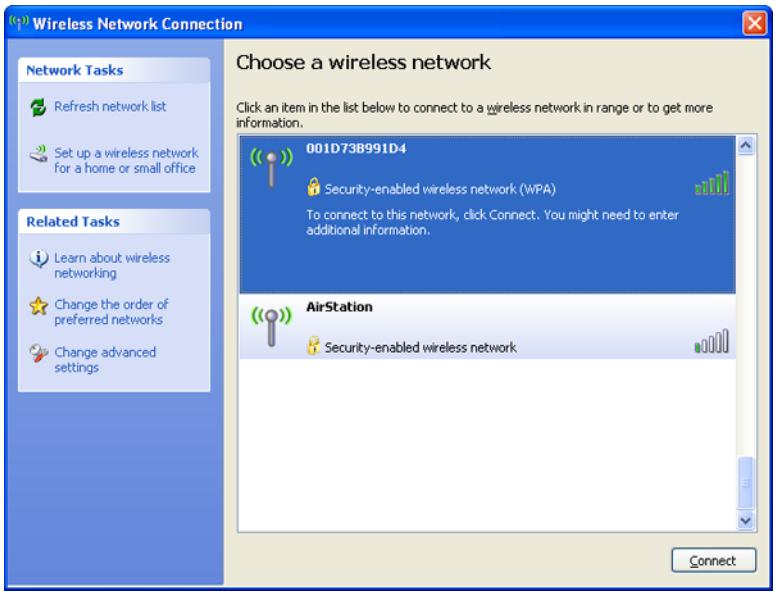
Windows XP includes Wireless Zero Config, a built-in utility to connect to your AirStation.

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

1 Right-click the image wireless network icon 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*.

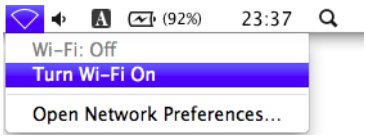
It will take several seconds for configuration to complete.

Mac OS (Wi-Fi)

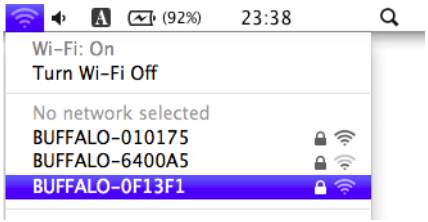
Use Wi-Fi on a Mac to connect to the AirStation.

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

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



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



3 Enter your encryption key in the password field, check *Remember this network*, and click *Join*.

It will take several seconds for configuration to complete.

Chapter 5 - Troubleshooting

Cannot Access Settings.

- See chapter 3 for instructions to open Settings.
- Enter the correct username and password to log in to Settings. 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 from DHCP".
- 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 (11n/g/b) - Buffalo-G-XXXX (the last 4 digits of the AirStation's MAC address).
  Encryption Type - WPA2 - PSK AES, or none.
  Encryption Key - Printed on the label.
  Note: For details, refer to the label.
- Place your AirStation and wireless devices 2 - 10 feet apart.
- Restart your AirStation.

Forgot 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.

With the AirStation powered on, hold down this button for 3 seconds to return it to factory default settings.

How to Configure TCP/IP

Windows 8

To configure TCP/IP in Windows 8, follow the procedure below.

1. Open *Control Panel*.
2. Click *Network and Internet*.
3. Click *Network and Sharing Center*.
4. Click *Change Adapter Settings* on the left side menu.
5. Right-click the network adapter, then click *Properties*.
6. If the "User Account Control" screen opens, click *Yes* or *Continue*.
7. Select *Internet Protocol Version 4 (TCP/IPv4)* then click *Properties*.
8. To have DHCP set your IP address settings automatically, check *Obtain an IP address automatically* and *Obtain DNS server address automatically*.
   Alternately, you can configure the settings manually. Example:
   If the router's IP address is 192.168.11.1,
   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
9. Click *OK*.

Windows 7

To configure TCP/IP in Windows 7, follow the procedure below.

1 Open *Control Panel*.

2 Click *Network and Sharing Center*.

3 Click *Change Adapter Settings* on the left side menu.

4 Right-click the network adapter, then click *Properties*.

5 If the "User Account Control" screen opens, click *Yes* or *Continue*.

6 Select *Internet Protocol Version 4 (TCP/IPv4)* then click *Properties*.

7 To have DHCP set your IP address settings automatically, check *Obtain an IP address automatically* and *Obtain DNS server address automatically*.
Alternately, you can configure the settings manually. Example:
If the router's IP address is 192.168.11.1,
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

8 Click *OK*.

Windows Vista

To configure TCP/IP in Windows Vista, follow the procedure below.

1 Open *Control Panel*.

2 Click *Network and Sharing Center*.

3 Click *Manage network connections* on the left side menu.

4 Right-click the network adapter, then click *Properties*.

5 If the "User Account Control" screen opens, click *Yes* or *Continue*.

6 Select *Internet Protocol Version 4 (TCP/IPv4)* then click *Properties*.

7 To have DHCP set your IP address settings automatically, check *Obtain an IP address automatically* and *Obtain DNS server address automatically*.
Alternately, you can configure the settings manually. Example:
If the router's IP address is 192.168.11.1,
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

8 Click *OK*.

Windows XP

To configure TCP/IP in Windows XP, follow the procedure below.

1. Open *Control Panel*.
2. Double-click *Network*.
3. Right-click the network adapter, then click *Properties*.
4. Select *Internet Protocol (TCP/IP)* then click *Properties*.
5. To have DHCP set your IP address settings automatically, check *Obtain an IP address automatically* and *Obtain DNS server address automatically*.
   Alternately, you can configure the settings manually. Example:
   If the router's IP address is 192.168.11.1,
   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
6. Click *OK*.

Mac OS

To configure TCP/IP in Mac OS, follow the procedure below.

1. Click *Apple menu* > *System Preferences*….
2. Click *Network*.
3. Click the network adapter.
4. To have DHCP set your IP address settings automatically, select *Using DHCP* in the "Configure IPv4" field.
   Alternately, you can configure the settings manually. Example:
   If the router's IP address is 192.168.11.1,
   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
5. Click *Apply*.

Other Tips

Issue:

I reset my wireless router to factory settings and forgot how to log in to Settings.

Answer:

Open your browser, enter 192.168.11.1 as the browser address, and hit the enter key. 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 Settings and navigate to *Internet Games (Port Forwarding)* on *Setup* page. 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 Settings and navigate to *Wireless Encryption* on *Setup* page. Buffalo recommends the use of WPA2-PSK AES for wireless encryption. The passphrase or 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 Settings and 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 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 Settings and navigate to *Basic Wireless Setup* on *Setup* page. Wireless channels from 1 - 11 may be selected. Try "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, press the router button on the AirStation to switch to router mode. The router LED on the AirStation turns on, and after about one minute, turn off the cable or DSL modem, AirStation, and your computer. Verify that the modem is connected to the Internet port on the AirStation with a Ethernet cable. 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 6 - Default Configuration Settings

Feature	Parameter	Default Setting
Internet	**Method of Acquiring IP Address**	Acquire an IP address automatically from a DHCP server
	Default Gateway	-
	DNS Name Server Address	-
	Internet MAC Address	Use default MAC address
	MTU Size of Internet Port	1500 Bytes
LAN	**LAN-side IP Address**	Router mode (Router On): 192.168.11.1 (255.255.255.0) Bridge mode (Router Off): 192.168.11.100 (255.255.255.0)
	DHCP Server	Enabled
	DHCP IP Address Pool	192.168.11.2 for up to 64 Addresses
	Lease Period	48 Hours
	Default Gateway	AirStation's IP address
	DNS Servers	AirStation's IP address
	WINS Server	Assigned IP address
	Domain Name	Assigned domain name
DHCP	**Current DHCP Clients**	-
NAT	**Address Translation**	Enabled
	Log Output of Deleted Packets	Disabled
Routing	**Routing**	No routes are registered.
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-G-XXXX (the last 4 digits of the AirStation's MAC address) **Security**: WPA2 - PSK AES **Encryption key**: Either a 8-digit random value or disabled. Printed on the setup card.
AOSS	**Exclusive SSID for WEP**	AOSS is not in use.
	Dedicated WEP SSID Isolation	Disabled
	AOSS Button on the AirStation Unit	Enabled

Feature	Parameter	Default Setting		
Basic	**Wireless Channel**	Auto Channel		
	High Speed Mode	Bandwidth: 20 MHz		
	Broadcast SSID	Allow		
	SSID1	Enabled		
	SSID Isolation	Disabled		
	SSID	Use AirStation's MAC address		
	Authentication	SSID1: WPA/WPA2 mixed mode - PSK SSID2: WPA2 - PSK		
	Encryption	AES		
	WPA-PSK (Pre-Shared Key)	An 8-digit random value (Printed on the factory default label.)		
	SSID2	Enabled		
	SSID3:WEP	Disabled		
	Rekey Interval	60 minutes		
Advanced	**Multicast Rate**	1 Mbps		
	DTIM Period	1		
	Wireless Client Isolation	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
	WMM-EDCA Parameters (Priority AC_BE (Normal))		**For AP**	**For STA**
		CWmin	15	15
		CWmax	63	1023
		AIFSN	3	3
		TXOP Limit	0	0
	WMM-EDCA Parameters (Priority AC_VI (High))		**For AP**	**For STA**
		CWmin	7	7
		CWmax	15	15
		AIFSN	1	2
		TXOP Limit	94	94
	WMM-EDCA Parameters (Priority AC_VO (Highest))		**For AP**	**For STA**
		CWmin	3	3
		CWmax	7	7
		AIFSN	1	2
		TXOP Limit	47	47
Guest Account	**Guest Account**	Disabled		
	Guest User Authorization	Disabled		
	Guest Account LAN IP Address	Auto		
	11n/g/b	Disabled		
	SSID	Use AirStation's MAC address		
	Authentication	No authentication		
	Encryption	No encryption		

Feature	Parameter	Default Setting
Firewall	**Log Output**	Disabled
	Basic Rules	Prohibit NBT and Microsoft-DS routing: Disabled Reject ident requests: Enabled Block ping from Internet: Enabled
VPN Passthrough	**IPv6 Passthrough**	Disabled
	PPTP Passthrough	Disabled
Port Forwarding	**Forwarded Ports**	Port forwarding has not been configured yet.
DMZ	**IP Address of DMZ**	-
UPnP	**UPnP**	Enabled
Name	**AirStation Name**	AP + AirStation's MAC Address
Password	**Admin Name**	admin (fixed)
	Admin Password	password
Time/Date	**Date**	2010 Year 1 Month 1 Day
	Local Time	0 Hour 0 Minute 0 Seconds
	Time Zone	(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 **Permit configuration from wired WAN**: Disabled
Syslog Settings	**Transfer Logs**	Disabled
	Syslog Server	-
	Logs	Address Translation, Firewall, DHCP Client, DHCP Server, AOSS, Wireless, Authentication, Setting Changes, System Boot, NTP Client and Wired
Update	**Update Method**	Select a file on your PC

Appendix A - Supplemental Information

Technical Specifications

Wireless LAN Interface	
Standard Compliance	IEEE 802.11n / IEEE 802.11g / IEEE 802.11b
Transmission Method	Direct Sequence Spread Spectrum (DSSS), OFDM, MIMO
Frequency Range	Available frequencies depend on the country of purchase.
Transmission Rate	**IEEE 802.11n 20 MHz BW <Long GI>:** 130/117/104/78/52/39/26/13 Mbps (2 stream) 65/58.5/52/39/26/19.5/13/6.5 Mbps (1 stream) **IEEE 802.11n 20 MHz BW <Short GI>:** 144.4/130/115.6/86.7/57.8/43.3/28.9/14.4 Mbps (2 stream) 72.2/65/57.8/43.3/28.9/21.7/14.4/7.2 Mbps (1 stream) **IEEE 802.11n 40 MHz BW <Long GI>:** 270/243/216/162/108/81/54/27 Mbps (2 stream) 135/121.5/108/81/54/40.5/27/13.5 Mbps (1 stream) **IEEE 802.11n 40 MHz BW <Short GI>:** 300/270/240/180/120/90/60/30 Mbps (2 stream) 150/135/120/90/60/45/30/15 Mbps (1 stream) **IEEE 802.11g:** 54/48/36/24/18/12/9/6 Mbps **IEEE 802.11b:** 11/5.5/2/1 Mbps
Access Mode	Infrastructure Mode
Security	AOSS, WPA/WPA2 mixed PSK, WPA2-PSK (AES), WPA-PSK (AES), 64-bit or 128-bit WEP
Wired Interface	
Standard Compliance	IEEE 802.3u (100BASE-TX) / IEEE 802.3 (10BASE-T)
Transmission Rate	10 / 100 Mbps
Transmission Encoding	100BASE-TX 4B5B/MLT-3, 10BASE-T Manchester Coding
Access Method	CSMA/CD
Speed and Flow Control	10 / 100 Mbps, Auto Sensing, Auto MDIX
Number of LAN Ports	1
Other	
Power Supply	5V
Power Consumption	About 2.5 W (Max)
Dimensions	58 x 58 x 20 mm (2.28 x 2.28 x 0.79 in.)
Weight	51 g (1.8 oz.)
Operating Environment	0 - 40° C (32 - 104° F), 10 - 85% (non-condensing)

Environmental Information

- The equipment that you have purchased has required the extraction and use of natural resources for its production.
- The equipment may contain hazardous substances that could impact health and the environment.
- In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems.
- The take-back systems will reuse or recycle most of the materials of your end life equipment in a sound way.
- The crossed-out wheeled bin symbol invites you to use those systems.

- If you need more information on collection, reuse, and recycling systems, please contact your local or regional waste administration.

GPL Information

The source code for Buffalo products that use GPL code is available at http://opensource.buffalo.jp/ .