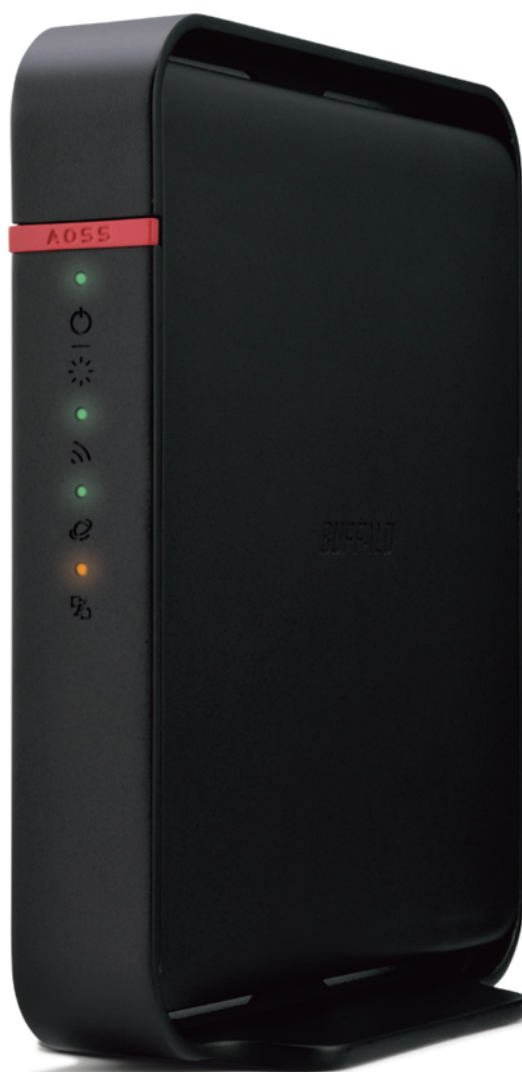


AirStation

WHR-300HP2 User Manual



www.buffalotech.com

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Chapter 1 - Product Overview

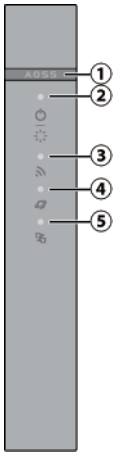
Package Contents

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

| | |
|----------------------------|---|
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Diagrams and Layout

Front Panel



1

AOSS Button

To initiate AOSS, hold down this button until the wireless LED flashes (about 3 seconds). 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.

2 Power / Diag LED (Green or Red)

On (Green):

Power is on.

Blinking (Green):

Booting.

Off:

Power is off.

2 blinks (Red):**

Flash ROM error.

3 blinks (Red):**

Wired LAN error.

4 blinks (Red):**

Wireless LAN error.

5 blinks (Red)*:**

IP address setting error.

Continuously blinking*:

Updating firmware, saving settings or initializing settings.

* Do not unplug the AC adapter while the LED is blinking continuously.

** Turn off AirStation first, wait for a few seconds, then turn it back on.

*** Cannot communicate because WAN-side and LAN-side IP addresses are same. Change LAN-side IP address of the AirStation.

3 Wireless LED (Green or Amber)

On:

Wireless LAN is enabled or transmitting.

Double blinks:

AirStation is waiting for an AOSS or WPS security key.

Continuously blinking:

AOSS/WPS error; failed to exchange security keys.

Off:

Wireless LAN is disabled.

Note: The wireless LED will be green if security is enabled or amber if it is disabled.

4 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 (the AirStation is in the bridge mode).

5 Router LED (Green or Amber)

On (Green):

Mode switch is in the "Router" position.

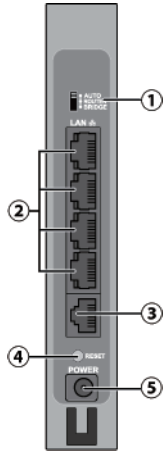
On (Amber):

Mode switch is in the "Auto" position.

Off:

Mode switch is in the "Bridge" position.

Back Panel



- 1** Mode Switch
This switch changes between router mode and bridge (access point) mode. Auto mode will enable or disable router functionality automatically.
- 2** LAN Port
Connect your computer, hub, or other Ethernet devices to these ports. This switching hub supports 10 Mbps and 100 Mbps connections.
- 3** Internet Port
10 Mbps and 100 Mbps connections are supported.
Note: In bridge (access point) mode, the Internet port becomes a regular LAN port, for a total of 5 usable LAN ports.
- 4** Reset Button
To reset all settings, hold down this button until the power/diag LED turns red (about 3 seconds). The power must be on for this to work.
- 5** DC Connector
Connect the included AC adapter here.

Bottom



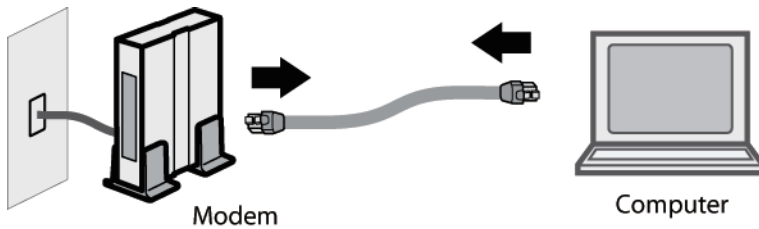
- 1** Setup Card Slot
This is the slot where the AirStation setup card is stored. The initial settings for the username, password, SSID, and encryption type are provided on the card.

Chapter 2 - Installation

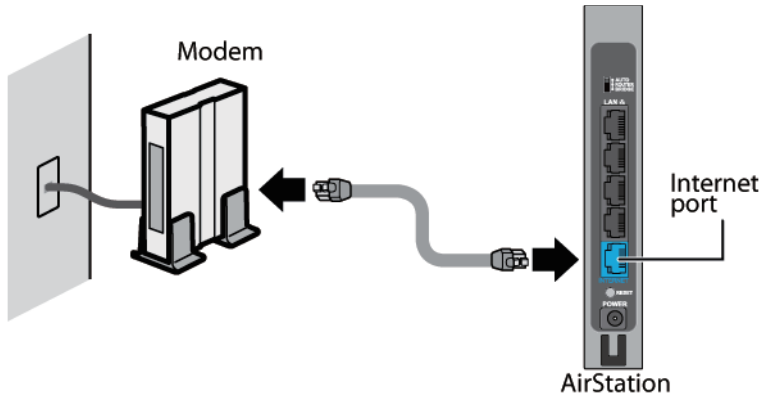
Initial Setup

To configure your AirStation, follow the procedure below.

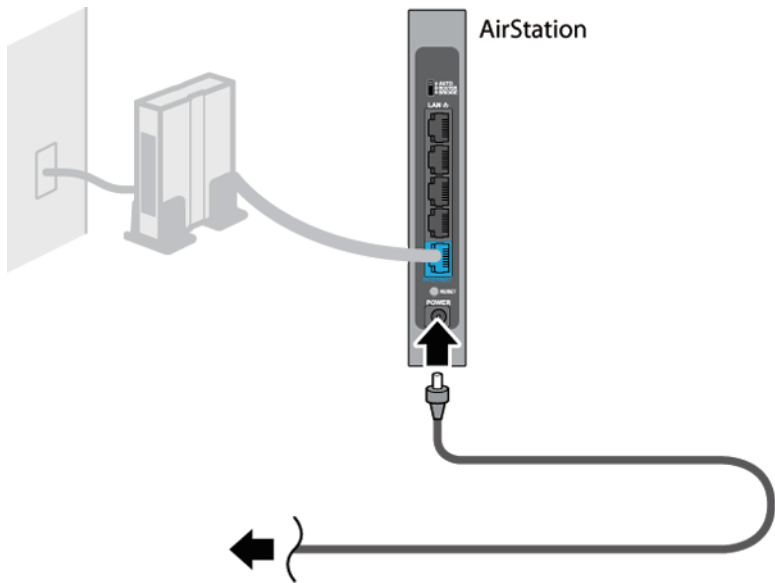
- 1** Verify that you can connect to the Internet without the AirStation, then turn off your modem and computer.
- 2** Unplug the LAN cable which connects your computer and modem.



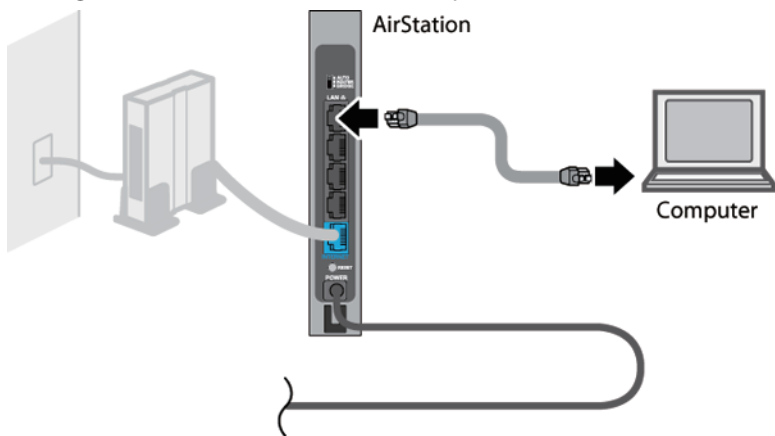
- 3** Confirm that the mode switch is in the "Auto" position. Plug one end of the LAN cable into your modem and the other end to the AirStation's Internet (WAN) port. Turn on the modem.



- 4** Turn on the AirStation and wait one minute.



- 5** If using a wired LAN, connect the AirStation LAN port and computer using a LAN cable. If using a wireless LAN, connect the computer to the wireless LAN as described in Chapter 4.



- 6** Once your computer has booted, the AirStation's LEDs should be lit as described below:
Power/Diag: Green LED on.
Wireless: Green LED on.
Router: Amber LED on.
For LED locations, refer to chapter 1.

Note: If the router LED is not lit, set the mode switch to "Router".

- 7** Launch a web browser. If the home screen 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*. Step through the wizard to complete setup.

You've completed the initial setup of your AirStation. Refer to Chapter 3 for advanced settings.

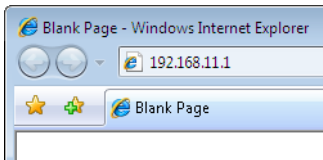
Chapter 3 - Configuration

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.

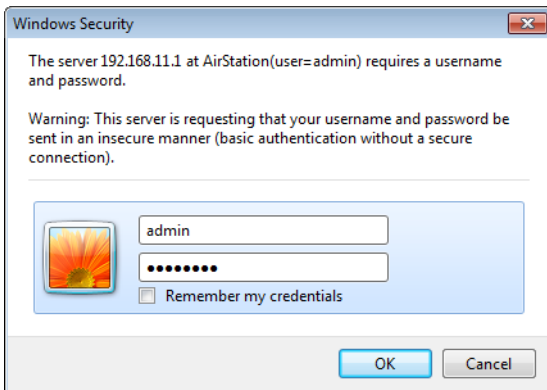
- 1 Open a browser.
- 2 Enter the AirStation's LAN-side IP address in the address field and press the enter key.



Notes:

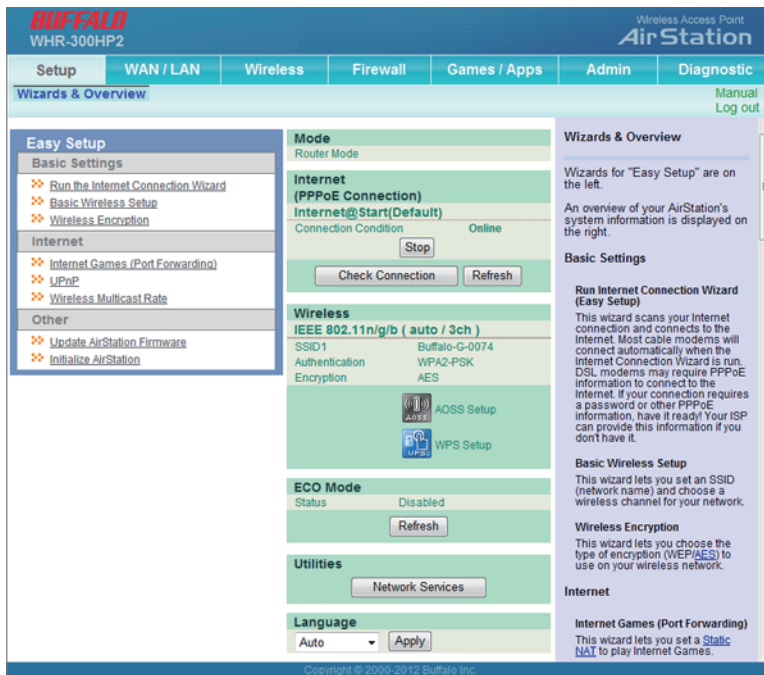
- The AirStation's default LAN-side IP address depends on the mode.
In router mode: 192.168.11.1
In bridge (access point) mode: 192.168.11.100
If the mode switch is set to Auto and the AirStation is in bridge (access point) mode, the AirStation's IP address is assigned by an external DHCP server.
- If 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, then click OK.



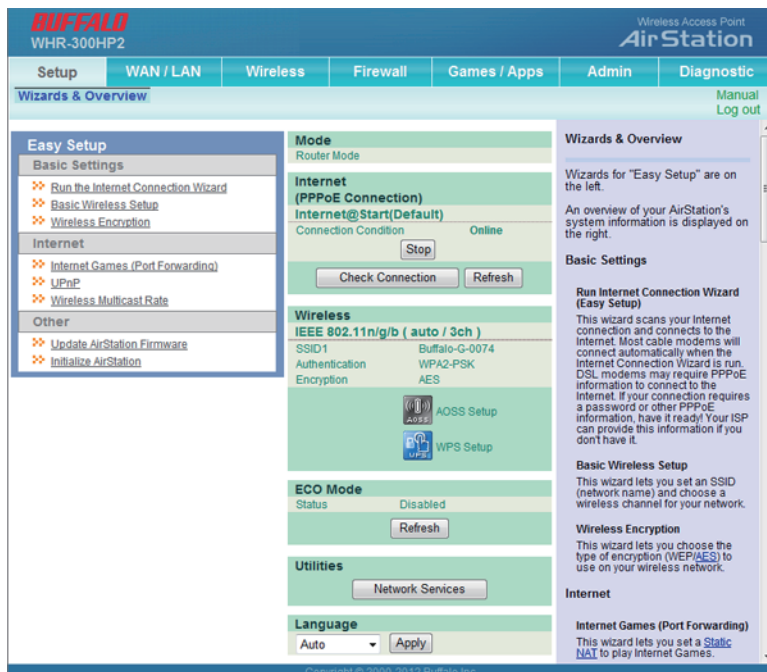
Note: If you forget your password, hold down the reset button to initialize all settings. Note that all other settings will also revert to their default values.

- 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.



| | |
|-------------------------|--|
| WAN / LAN | Displays the configuration screen for the Internet port and LAN ports. |
| 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 WAN-side system information for the AirStation. |
| Check Connection | Click to check if the AirStation is connected to the Internet properly. |
| Status | 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. |
| eco Mode | This indicates the operating status of eco Mode. |
| Network Services | Displays the list of the network devices for which information is provided from the network on the LAN-side. |
| 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

Configure the WAN-side port (“Internet port”) here. This function is only available when the AirStation is in router mode.

The screenshot shows the 'Internet Ethernet Settings' page. The 'Method of Acquiring IP Address' section has four radio button options: 'Perform Easy Setup (Internet Connection Wizard)' (selected), 'Acquire an IP address automatically from a DHCP server', 'Use PPPoE Client', and 'Use this address'. The 'Advanced Settings' section includes fields for 'Default Gateway', 'DNS Name Server Address' (Primary and Secondary), 'Internet MAC Address' (with radio buttons for 'Use default MAC address (20:10:7A:D2:7E:94)' and 'Use this address'), and 'MTU Size of Internet Port' (set to 1500 Bytes). A 'Note' section at the bottom right states: 'Auto line determination 'Easy Setup' is effective only for a line on which PPPoE or DHCP is used, such as a normal DSL or Cable high-speed internet'.

| | |
|---------------------------------------|---|
| 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. |

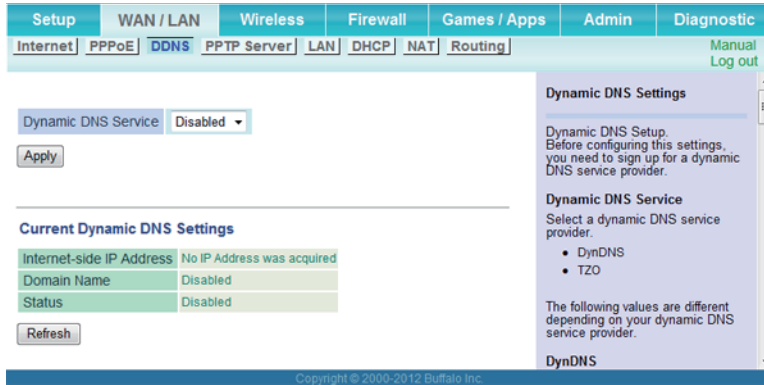
PPPoE

Configure PPPoE settings here. This function is only available when the AirStation is in router mode.

| | |
|--------------------------------|--|
| Name of Connection | Enter the name to identify the connected destination. You may enter up to 32 alphanumeric characters and symbols. |
| Username | Enter the username specified by your ISP for PPPoE certification. You may enter up to 64 alphanumeric characters and symbols. |
| Password | Enter the password specified by your ISP for PPPoE certification. You may enter up to 64 alphanumeric characters and symbols. |
| Service Name | Fill in this field only if your ISP specifies a service name. Leave blank otherwise. You may enter up to 64 alphanumeric characters and symbols. |
| PPPoE Static IP | Check to use a static IP address. |
| PPPoE IP Address | Enter an IP address if you check <i>PPPoE Static IP</i> . |
| PPPoE DNS | Enter the DNS address. |
| Connection Type | Specifies the timing for the AirStation to connect to your ISP. |
| Automatic Disconnection | Set time to disconnect after communication is stopped when the connection method is set to <i>Connection on demand</i> or <i>Manual</i> . You can enter up to 1440 minutes. |
| Authentication | Configure an authorization method with an ISP. |
| MTU Size | Configure the MTU size for PPPoE. Values of 578 to 1492 bytes may be entered. |
| MRU Size | Configure MRU (maximum receive unit) for PPPoE. Values of 578 to 1492 may be entered. |
| Keepalive | If keepalive is enabled, then the AirStation will issue an LCP echo request once a minute in order to maintain the connection with the PPPoE. If the server does not respond for more than 6 minutes, the line is recognized as disconnected and the AirStation will terminate the connection. |

DDNS

Configure dynamic DNS settings here. Many settings are only available when the appropriate dynamic DNS service is enabled. This function is only available when the AirStation is in router mode.



| | |
|---------------------------------|---|
| Dynamic DNS Service | Select a provider (DynDNS or TZO) for dynamic DNS. |
| Username | Enter the dynamic DNS username. You may enter up to 64 alphanumeric characters and symbols. |
| Password | Enter the dynamic DNS password. You may enter up to 64 alphanumeric characters and symbols. |
| Hostname | Enter the dynamic DNS hostname. You may enter up to 255 alphanumeric characters, hyphens, and periods. |
| Email Address | Enter the email address which is registered to the dynamic DNS service. You may enter up to 64 alphanumeric characters and symbols. |
| TZO Key | Enter the TZO Key which is registered to the dynamic DNS service. You may enter up to 64 alphanumeric characters and symbols. |
| Domain Name | Enter the domain name which is registered to the dynamic DNS service. You may enter up to 255 alphanumeric characters, hyphens, and periods. |
| IP Address Update Period | Specifies the period to notify the dynamic DNS service provider of the current IP address. For DynDNS, set it between 0 and 35 days. For TZO, set it between 0 and 99 days. If 0 (zero) days 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. |

PPTP Server

Configure the PPTP server here. This function is only available when the AirStation is in router mode.

| | |
|-------------------------------|--|
| Auto Input | Click to generate a random IP address. |
| LAN-side IP Address | Set a LAN-side IP address and subnet mask. |
| DHCP Server Function | Enable or disable the DHCP server, which assigns IP addresses automatically. |
| DHCP IP Address Pool | Configure the range of IP addresses to be assigned by the DHCP server and IP addresses to be excluded from that range. Values from 1-256 may be entered. |
| PPTP Server Function | Enable to use a PPTP server. |
| Authentication 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 | Choose the IP address for the DNS server. |
| WINS Server IP Address | Choose the IP address for the WINS server. |
| MTU/MRU value | The MTU/MRU value is used by PPTP. Values from 578 to 1500 are supported. |
| Edit PPTP User List | Click to edit user information. |

| | |
|--------------------------|---|
| Add new user | <p>Click <i>Edit PPTP User List</i> to display.</p> <p>Username Enter the username to connect to the PPTP server. You may enter up to 16 alphanumerical characters and symbols.</p> <p>Password Enter the password to connect to the PPTP server. You may enter up to 16 alphanumerical characters and symbols.</p> |
| Advanced Settings | <p>Click <i>Edit PPTP User List</i> to display.</p> <p>Method of Acquiring IP Address Select the method to be used to assign the IP address for the PPTP client.</p> |
| PPTP User List | Displays the PPTP connection user information. |

LAN

Configure LAN-side and DHCP Server settings here.

The screenshot shows the LAN configuration page with the following settings:

- LAN-side IP Address:** IP Address: 192.168.11.1, Subnet Mask: 255.255.255.0
- DHCP Server:** Enable
- DHCP IP Address Pool:** 192.168.11.2 for up to 64 Address
- DHCP Server Settings:** Display

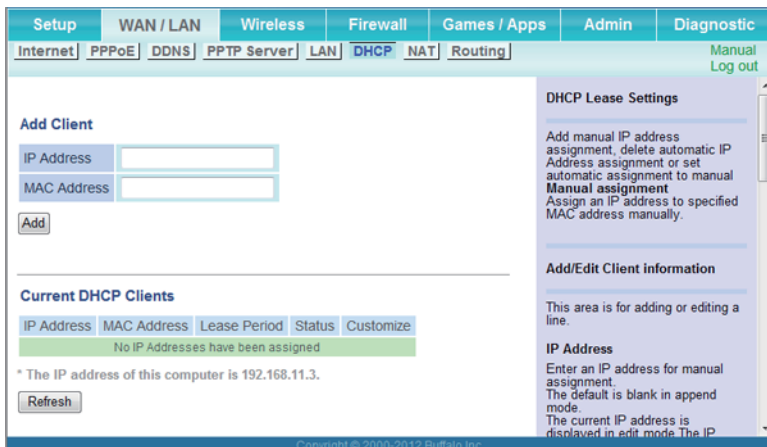
Additional information from the screenshot:

- LAN-Side Ethernet Settings:** Configure the AirStation's LAN IP Address, Subnet Mask, and local DHCP Server settings here. Unless you're a networking expert, the default settings are recommended.
- Note:** If you have an existing LAN, the AirStation's configuration must be changed to connect to it. Please refer to here to set up your AirStation on an existing network.
- LAN-side IP Address:** Configure the AirStation's LAN IP Address. The default is 192.168.11.1. If you want to

| | |
|-----------------------------|--|
| 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 <i>Display</i> 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

Configure DHCP settings here. This function is only available when the AirStation is in router mode.



| | |
|-----------------------------|--|
| 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 <i>Manual Assignment</i> . |

NAT

Configure network address translation settings here. This enables LAN-side devices to communicate with the Internet. This function is only available when the AirStation is in router mode.



| | |
|--------------------------------------|--|
| 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 here.

| | |
|----------------------------|---|
| Destination Address | Adds a destination IP address and subnet mask to the routing table. |
| Gateway | Adds a gateway address to the 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 is a system for configuring your wireless network automatically. If your wireless devices support WPS, you may connect them by pushing buttons on the devices or by entering a PIN from one device into another.



| | |
|---------------------------|--|
| 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 <i>Generate PIN</i> 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 <i>OK</i> . |
| WPS Status | Displays "configured" if all available wireless bands are configured. Displays "unconfigured" if at least one wireless band is unconfigured. |

AOSS

AOSS is a system for configuring your wireless network automatically. If your wireless devices support AOSS, you may connect them by pushing buttons on the devices or in their software.

| | |
|---|--|
|  | <p>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.</p> |
|  | <p>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.</p> |
| <p>Exclusive SSID for WEP</p> | <p>You may allow a separate SSID specifically for WEP connections. If "Disabled" is selected, then clients will not be able to connect with WEP.</p> |
| <p>Dedicated WEP SSID isolation</p> | <p>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. All connected devices will be able to communicate with the Internet.</p> |
| <p>AOSS Button on the AirStation Unit</p> | <p>Uncheck to disable the physical AOSS button on the AirStation.</p> |
| <p>Current Security Information</p> | <p>Displays the encryption type, SSID, and encryption key configured by AOSS.</p> |
| <p>Random</p> | <p>Click to enter random values for SSID, encryption key, and other settings.</p> |

| | |
|--------------------------------|---|
| 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 here.

The screenshot shows the 'Basic Wireless Setting (11n/a/g/b)' configuration page. The 'Wireless' section is checked 'Enable'. 'Wireless Channel' is set to 'Auto Channel'. 'High Speed Mode' is set to '20 MHz'. 'Broadcast SSID' is checked 'Allow'. 'SSID1' is checked 'Use' with 'WPA2-PSK' authentication and 'AES' encryption. 'SSID2' is unchecked 'Use'. 'SSID Isolation' is unchecked for both SSID1 and SSID2. The 'Key Renewal Interval' is set to 60 minutes. An 'Apply' button is at the bottom left. The right side of the page contains explanatory text for 'Wireless', 'Wireless Channel', and 'High Speed Mode'.

| | |
|-------------------------|--|
| Wireless | 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) for wireless connections. When "Auto Channel" is selected, the AirStation will automatically use the best available channel. |
| High Speed Mode | High speed mode uses triple 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. |
| Broadcast SSID | If <i>Allow</i> is checked, then the AirStation will respond to SSID searches from wireless devices by broadcasting its SSID. If <i>Allow</i> is unchecked, then the AirStation ignores SSID searches from wireless devices. |
| SSID 1 | The multi-security SSID1 can use no authentication, WPA-PSK, WPA2-PSK, or WPA/WPA2 mixed mode - PSK for wireless security. |
| SSID 2 | The multi-security SSID2 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 | <p>You may use any of the following types of encryption:</p> <p>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. <i>No encryption</i> can be selected only when <i>No authentication</i> is selected for wireless authentication.</p> <p>WEP WEP is a common encryption method supported by most devices. WEP can only be selected when wireless authentication is set to <i>No authentication</i>. 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.</p> <p>AES AES is very secure encryption method that is recommended for most users. Use a pre-shared key to communicate with a wireless device. AES can be selected when WPA-PSK or WPA2-PSK is selected for wireless authentication.</p> |
| 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. |
| Key Renewal Interval | Set the update interval for the encryption key between 0 and 1440 (minutes). |
| 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). |

Advanced

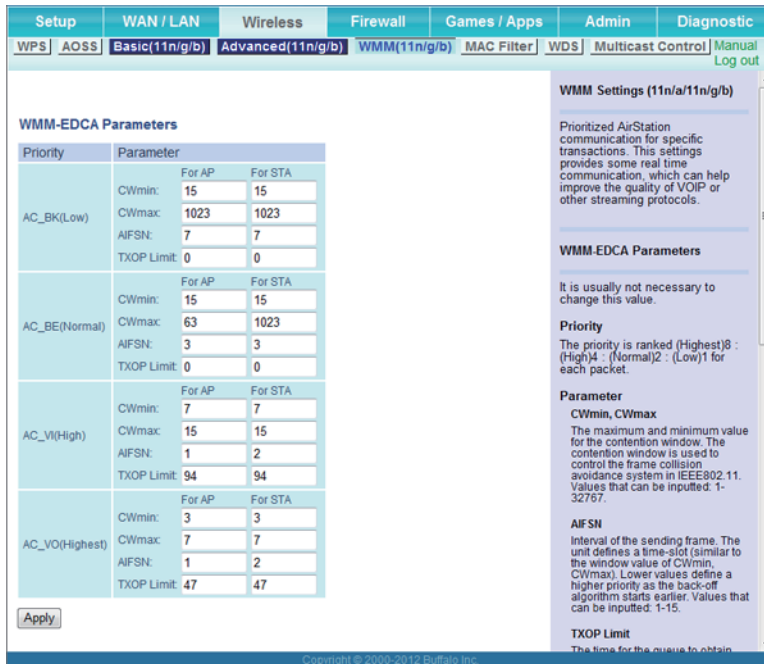
Configure advanced wireless settings here.



| | |
|----------------------------------|--|
| 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 here.



| | |
|----------------------------|--|
| WMM-EDCA Parameters | <p>You don't usually need to change these settings. Using the default settings is recommended.</p> <p>Priority</p> <p>The following priorities may be applied to individual transmission packets: (Highest) 8, (High) 4, (Normal) 2, and (Low) 1. From the queue, these packets are processed in order of priority.</p> <p>CWmin, CWmax</p> <p>The maximum and minimum value of the contention window. The contention window is used in the frame collision avoidance structure performed in IEEE 802.11, and generally, the smaller the value in the window, the higher the probability that the queue obtains the right to send.</p> <p>AIFSN</p> <p>The interval to send frames. The unit of the AIFSN is a slot, just as the window defined by CWmin and CWmax is. The smaller the interval of sending frames, the faster the algorithm can restart. As a result, the priority of the queue is higher.</p> <p>TXOP Limit</p> <p>The period of time that the queue can use after obtaining the right to send. The unit is 32 ms. The longer this time, the more frames can be sent per right to send. However, the 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.</p> |
|----------------------------|--|

MAC Filter

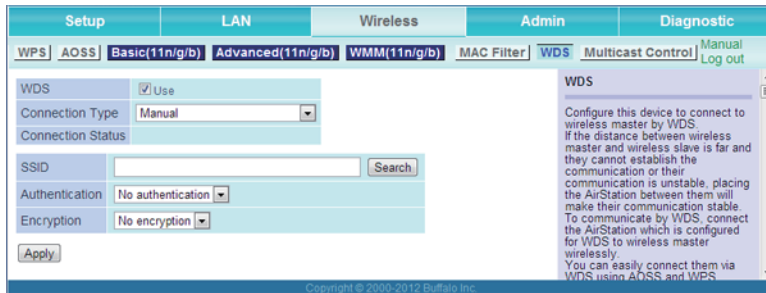
MAC filtering lets you restrict access your network. Only specific wireless devices will be able to connect.



| | |
|----------------------------------|---|
| 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 | Adds a wireless device to the list of permitted devices. |
| Enter MAC Addresses | Enter a MAC address of a wireless device to permit to connect to the AirStation. Click <i>Register</i> to add that MAC address to the list. |
| List of Connected Clients | Display the list of all MAC addresses of wireless devices connected to the AirStation. |

WDS

Configure WDS here. This function is only available when the AirStation is in bridge mode.



| | |
|--------------------------|--|
| WDS | If enabled, the AirStation can connect to the wireless master by WDS. Disabled by default. |
| Connection Type | Select the connection method to connect to the master. You may use AOSS or WPS to connect push-button style, or specify an SSID to configure manually. |
| Connection Status | Displays the connection status with the master. |
| SSID | Specify an SSID to connect to the master manually. |
| Search | Click this button to search for a master. |
| Authentication | Specify the type of authentication used to connect to the master. |
| Encryption | Specify the type of encryption used to connect to the master. |

Multicast Control

Configure restrictions on unnecessary multicast packets sent to the wireless LAN port here.

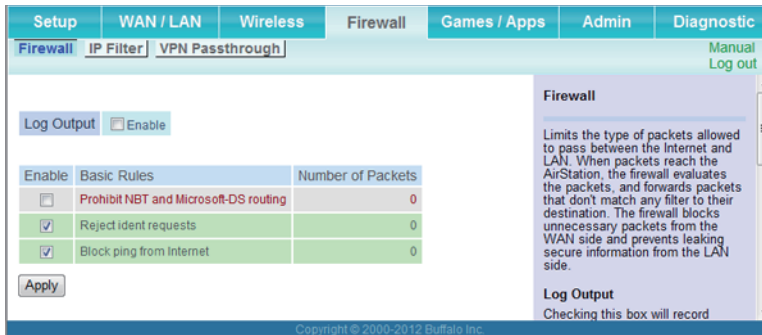


| | |
|-----------------------------|---|
| Snooping | If enabled, snooping supervises multicast administrative packets such as IGMP and restricts unnecessary multicast transfers to wired or wireless ports. |
| Multicast Aging Time | Set the time to hold the data from multicast snooping in the range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

Firewall

Firewall

Configure the AirStation's firewall here. This function is only available when the AirStation is in router mode.



| | |
|--------------------|--|
| Log Output | Enable to output a log of firewall activity. |
| Basic Rules | <p>Enable to use any of the quick filters. Preconfigured quick filters include:</p> <p>Prohibit NBT and Microsoft-DS routing</p> <p>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 <i>Use PPPoE Client</i> from the method of acquiring IP address, or if Easy Setup identified a PPPoE connection during setup.</p> <p>Reject ident requests</p> <p>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.</p> <p>Block ping from Internet</p> <p>If this is enabled, the AirStation will not respond to pings from the WAN side. You can configure this with PPPoE if you select <i>Use PPPoE Client</i> from the method of acquiring IP address, or if Easy Setup identified a PPPoE connection during setup.</p> |

IP Filter

Edit IP filters here. This function is only available when the AirStation is in router mode.

| | |
|-------------------|--|
| Log Output | If enabled, IP filter activity is saved to a log. |
| Action | 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 | Displays the list of IP filters which have been registered. |

VPN Passthrough

Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough here. This function is only available when the AirStation is in router mode.



| | |
|--------------------------|--|
| IPv6 Passthrough | Enable to use IPv6 passthrough for address translation. |
| PPPoE Passthrough | Enable to use PPPoE bridging. PPPoE bridging lets you automatically obtain an IP address from your provider for your LAN-side computer using the PPPoE protocol because PPPoE packets can pass between the Internet and LAN. |
| PPTP Passthrough | Enable to use PPTP passthrough for address translation. |

Port Forwarding

Configure port translation here. This function is only available when the AirStation is in router mode.

The screenshot shows the 'Port Forwarding' configuration page. At the top, there are navigation tabs: Setup, WAN / LAN, Wireless, Firewall, Games / Apps, Admin, and Diagnostic. Under 'Games / Apps', there are sub-tabs: Port Forwarding, DMZ, UPnP, and QoS. The 'Port Forwarding' sub-tab is active. On the right, there are links for 'Manual' and 'Log out'.

The main content area is titled 'Forward a Port'. It contains the following fields:

- Group:** A dropdown menu set to 'New Group' and a text input for 'Group Name'.
- Internet-side IP Address:** A dropdown menu set to 'AirStation's Internet-side IP Address' and a text input for 'Manual IP Address'.
- Protocol:** Radio buttons for 'All', 'ICMP', 'Manual', and 'TCP/UDP'. The 'TCP/UDP' option is selected. Below it, there is a dropdown for 'Set TCP port manually' and a 'Specification Method' link.
- LAN-side IP Address:** A text input containing '192.168.11.3'.
- LAN-side Port:** A text input for 'TCP/UDP Port'.

Below these fields is an 'Add' button. Underneath is a table titled 'Forwarded Ports' with columns: Group, Internet-side IP Address, LAN-side IP Address, Protocol, LAN-side Port, and Customize. The table is currently empty, and a message below it says 'Port forwarding has not been configured yet.'

On the right side, there is a help section titled 'Port Forwarding' with the following text:

Some games and applications require port forwarding. This page lets you set port forwarding rules. Up to 32 rules can be registered.

Forward a Port

You can add a new port to forward or edit an existing entry.

Group

You can give a name (group name) to a rule group and manage them together. You can turn a group of rules on or off. You can also edit or delete individual rules. When making rules, you can select a group from the drop-down or add a new group by entering a name into the 'New Group' field. Group name may have up to 16 alphanumeric characters.

Note:

If the Group Name is left blank, a name in the form of 'Group*Number' (for example, Group02) is given automatically.

Internet-side IP Address

Specify the IP address to forward ports from. Although you can normally enter an IP address, you

| | |
|---------------------------------|--|
| Group | Specify a group name for a new rule to belong to. Select <i>New Group</i> 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

Configure a destination for packets that don't have a LAN-side destination here. This function is only available when the AirStation is in router mode.



| | |
|--------------------------|--|
| IP Address of DMZ | Enter the IP address of a network device that will receive rejected packets. This device will be accessible from outside the firewall. Note: RIP protocol packets (UDP port number 520) will not be forwarded. |
|--------------------------|--|

UPnP

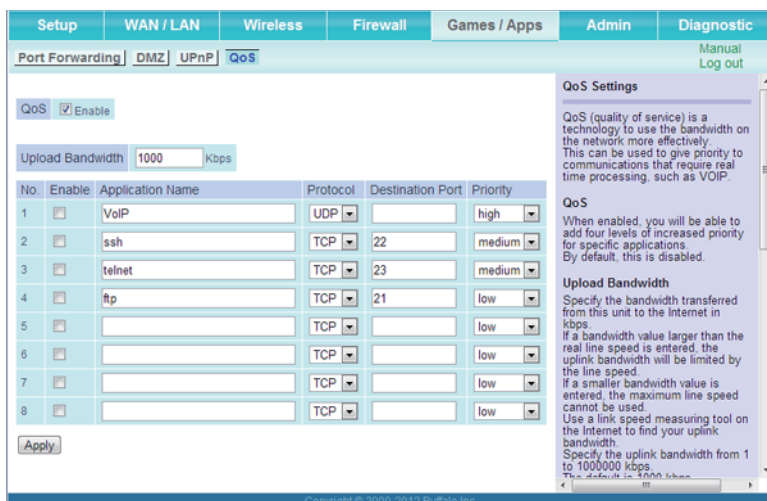
Configure UPnP (Universal Plug and Play) here. This function is only available when the AirStation is in router mode.



| | |
|-------------|---|
| UPnP | Enable or disable Universal Plug and Play (UPnP) functionality. |
|-------------|---|

QoS

Configure the priority of packets sent to the Internet here. This function is only available when the AirStation is in router mode.



| | |
|-------------------------|--|
| QoS | Check to enable QoS. |
| Upload Bandwidth | Specify the upstream bandwidth in kbps from the AirStation to the Internet side. Set the actual value for the upstream bandwidth. |
| Enable | Enable or disable this entry. |
| Application Name | Enter an application name. Names may use up to 32 alphanumeric characters, double or single tick marks ("), quotation marks ("), and semicolons (;). |
| Protocol | Select either TCP or UDP. |
| Destination Port | Specify a destination port from 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 basic AirStation settings here.

Setup | WAN / LAN | Wireless | Firewall | Games / Apps | Admin | Diagnostic

Name | Password | Time and Date | NTP | eco | Access | Syslog Settings | Save/Restore | Manual Log out

Initialize/Restart | Update

AirStation Name: AP20107AD27E94

Network Services Enable

Apply

AirStation Name

AirStation Name

Assign a name to the AirStation.

The AirStation name may include up to 64 alphanumeric characters and hyphens (-), but the first and last characters should not be

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| | |
|-------------------------|--|
| 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 password to log in to the AirStation's configuration screen here.

Setup | WAN / LAN | Wireless | Firewall | Games / Apps | Admin | Diagnostic

Name | Password | Time and Date | NTP | eco | Access | Syslog Settings | Save/Restore | Manual Log out

Initialize/Restart | Update

Admin Name: admin (fixed)

Admin Password: (Confirm)

Apply

Administrator Password Settings

Admin Name

The admin username cannot be changed.

Admin Password

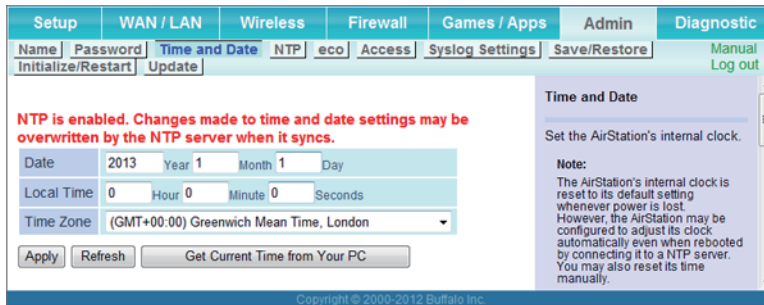
Configure the administrator password

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| | |
|-----------------------|---|
| 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 and Date

Configure the AirStation's internal clock here.



| | |
|-------------------|---|
| 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

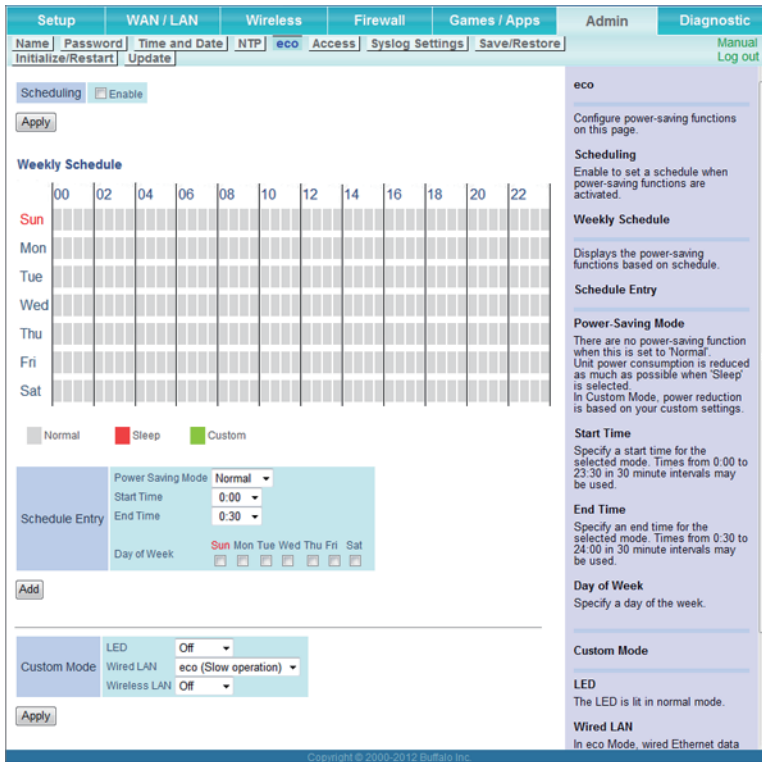
Configure an NTP server to automatically synchronize the AirStation's internal clock here.



| | |
|------------------------|---|
| 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 (-), underscores (_), and periods (.) 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. |

eco

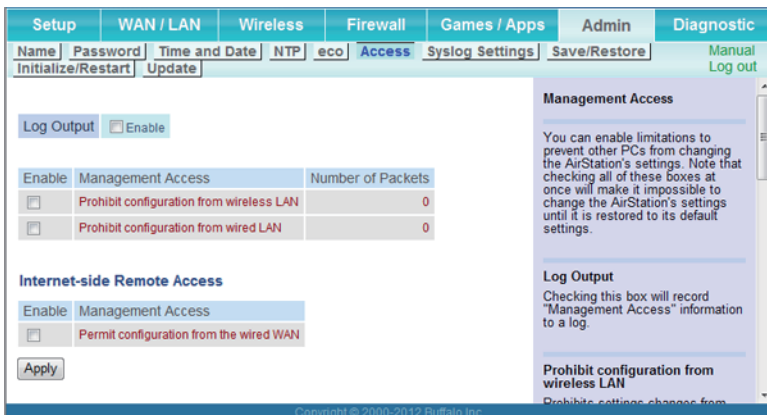
Configure eco Mode here.



| | |
|------------------------|---|
| 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 custom mode is chosen, configure it below. |
| Custom Mode | Individual power saving elements may be configured for custom mode. |

Access

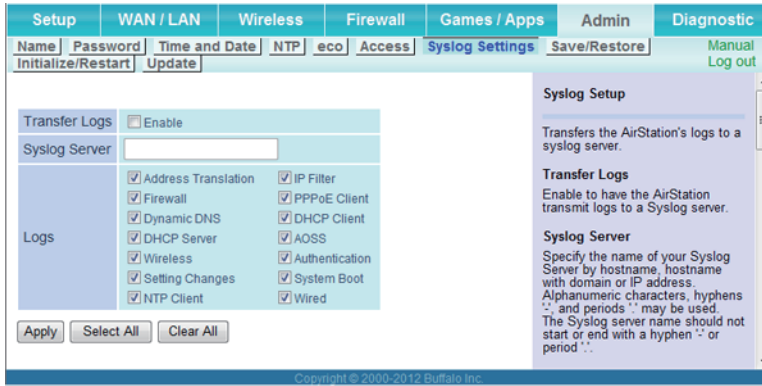
Restrict access to Settings here.



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

Syslog Settings

Transfer the AirStation's logs to a syslog server here.



| | |
|----------------------|---|
| 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.



| | |
|-------------------------|---|
| Back Up Settings | Clicking <i>Back Up</i> will save the current configuration of the AirStation to a file. If the <i>Encrypt the configuration file with a password</i> 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 <i>Choose File</i> , navigating to the configuration file, and then clicking <i>Restore</i> . If the configuration file was password protected, check <i>Open file with password</i> , enter the password, and click <i>Restore</i> . |

Initialize/Restart

Initialize or restart the AirStation.



| | |
|-------------------|---|
| Restart | Click <i>Restart Now</i> to restart the AirStation. |
| Initialize | Click <i>Initialize Now</i> to initialize and restart the AirStation. |

Update

Update the AirStation's firmware.



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

System Info

View system information for the AirStation.

| Model | WHR-300HP2 Ver.1.00(R6.99/B3.00) |
|-----------------------------|---|
| AirStation Name | AP20107AD27E94 |
| Hardware Mode Switch Status | Router Mode |
| Mode | Router mode |
| Internet | Method of Acquiring IP Address Wired Disconnected |
| LAN | Static IP Address 192.168.11.1 Subnet Mask 255.255.255.0 DHCP Server Enabled MAC Address 20.10.7A.D2.7E.94 |
| Wireless(802.11n/g/b) | Wireless Status Enabled SSID1 Buffalo-G-7E94 Authentication WPA2-PSK Encryption AES Broadcast SSID Enabled Wireless Client Isolation Disabled Wireless Channel 9(Auto) High Speed Mode 20 MHz MAC Address 20.10.7A.D2.7E.94 |
| WDS | Connection Status Disabled |
| eco Mode | Status Scheduling Disabled |

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System Information
Displays the AirStation's main settings.

Model
Displays the model name and firmware version of the AirStation.

AirStation Name
Displays the AirStation's hostname.

Hardware Mode Switch Status
Displays the status of the Router Mode switch.

Mode
Displays the current mode of operation.

Internet
AirStation's [Internet port](#) side information.

Method of Acquiring IP Address
Acquiring an Internet IP address.

Name of the Connection
The name of the PPPoE connection specified in the configuration.

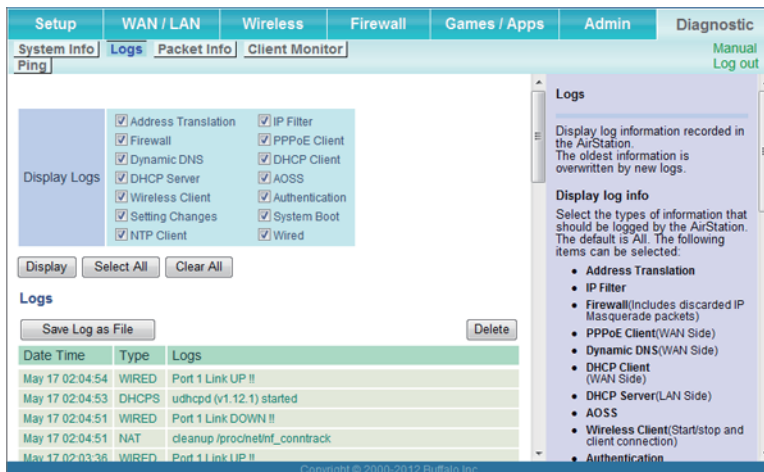
Connection Status
Displays the current WAN-side status.

Operational Mode
The Operational Mode will show if any DHCP or PPPoE configuration is active. If DHCP is in use, the following commands can be executed.

| | |
|------------------------------------|---|
| Model | Displays the product name of the AirStation and the firmware version. |
| AirStation Name | Displays the name of the AirStation. |
| Hardware Mode Switch Status | Displays the status of the AirStation's mode switch. |
| Mode | Displays the AirStation's current operational mode. |
| Internet | DDisplays the status of the WAN port. |
| LAN | Displays the status of the LAN port. |
| Wireless | Displays the wireless status. |
| WDS | Displays the connection status of WDS. |
| eco Mode | This indicates the operating status of eco Mode. |

Logs

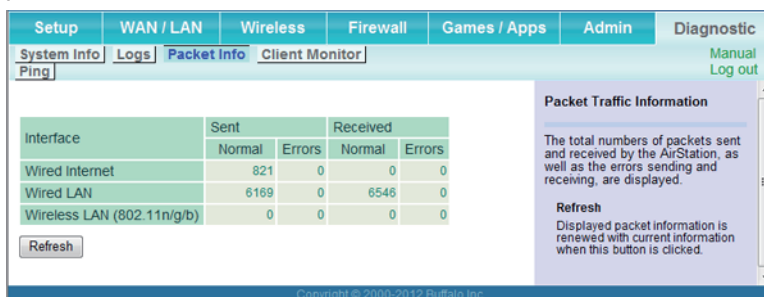
The AirStation's logs are recorded here.



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

Packet Info

View packet transfer information.



| | |
|-----------------|--|
| 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.

| Interface | Sent | | Received | |
|----------------------------|--------|--------|----------|--------|
| | Normal | Errors | Normal | Errors |
| Wired Internet | 821 | 0 | 0 | 0 |
| Wired LAN | 6169 | 0 | 6546 | 0 |
| Wireless LAN (802.11n/g/b) | 0 | 0 | 0 | 0 |

| | |
|-----------------------|---|
| 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.

Destination Address

Result

Destination: Not entered
Result: Not executed

Ping

A Ping test can be performed from the AirStation. With a ping test, you can determine whether the AirStation can communicate with a specific network device.

Destination Address
Enter the network IP address that you want to ping, e.g. 192.168.11.3 or www.buffalotech.com.

| | |
|----------------------------|---|
| Destination Address | Enter the IP address or hostname of the device that you are testing communication with, then click <i>Execute</i> . 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.



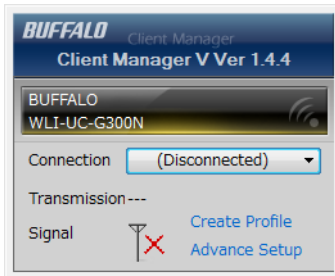
AOSS (AirStation One-Touch Secure System) is technology developed by Buffalo Technology. WPS was created by the Wi-Fi alliance.

- 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.

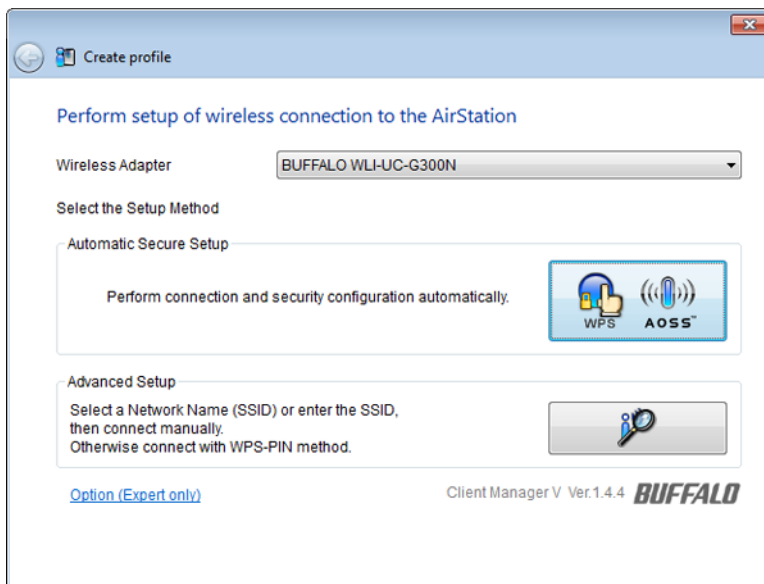
Windows 8, Windows 7 or Windows Vista (Client Manager V)

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*.



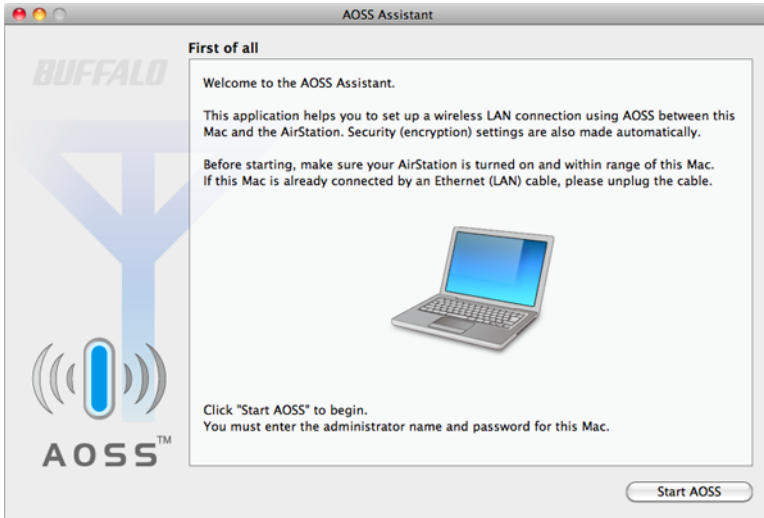
It will take several seconds for your wireless connection to be configured. When the wireless LED on the front of the AirStation stops flashing and glows steadily, the connection is ready to use.

Mac OS (AOSS Assistant)

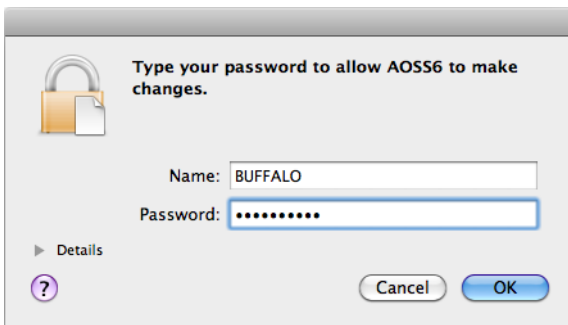
If you are using Mac OS X 10.8, 10.7, 10.6, 10.5 or 10.4, use AOSS Assistant to connect wirelessly with AOSS.

- 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.

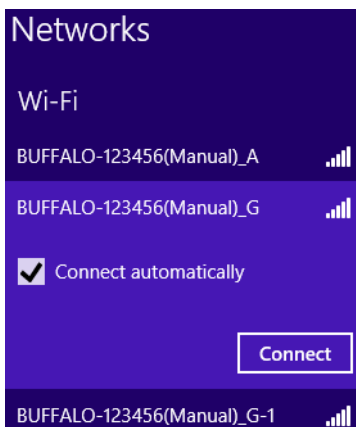
Manual Setup

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.

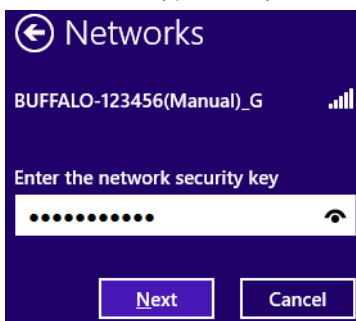
Windows 8 (WLAN AutoConfig)

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

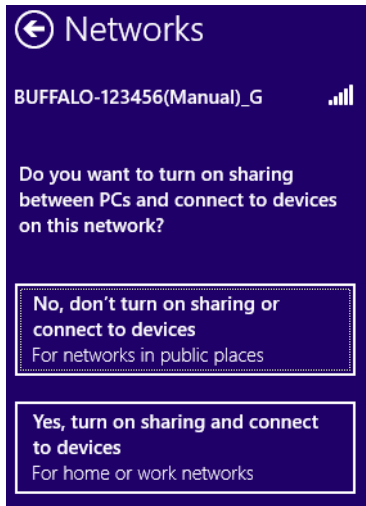
- 1 Switch Windows 8 to desktop mode.
- 2 Click the network icon  in the system tray.
- 3 Select the target AirStation's name and click *Connect*. If you will be connecting to this device again, check *Connect automatically*.



- 4 Enter the encryption key and click *Next*.




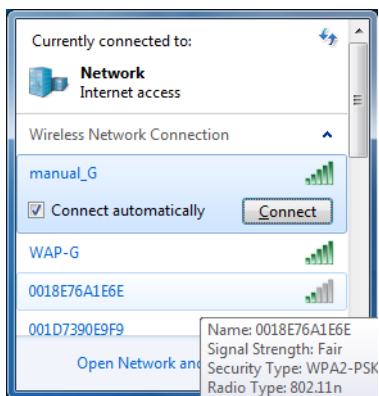
- 5 Click *No, don't turn on sharing or connect to devices*.



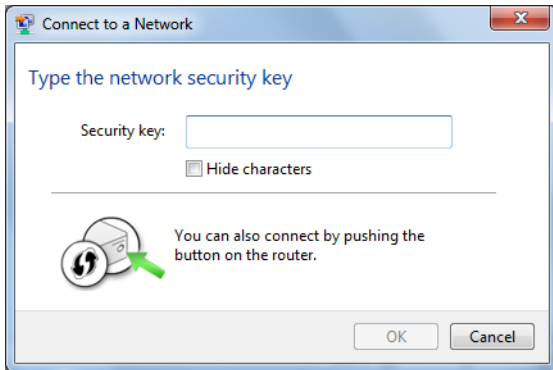
Windows 7 (WLAN AutoConfig)

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.




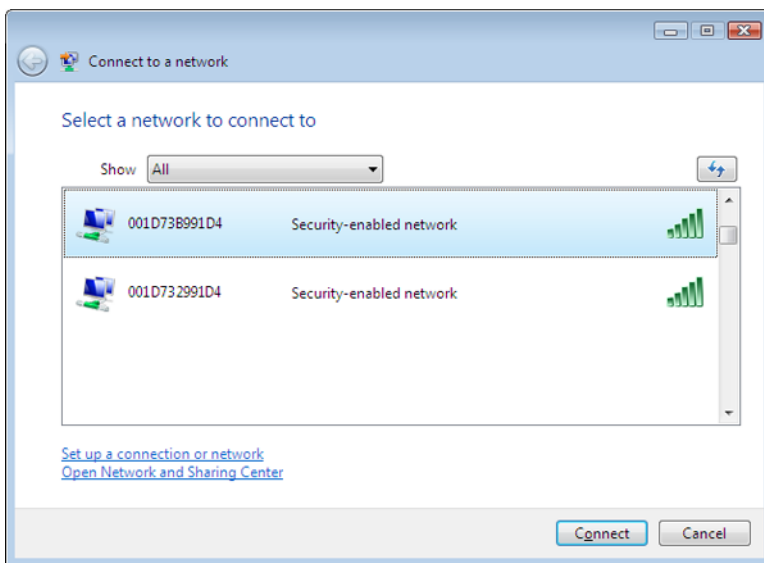
- 3 Enter the encryption key and click *OK*.



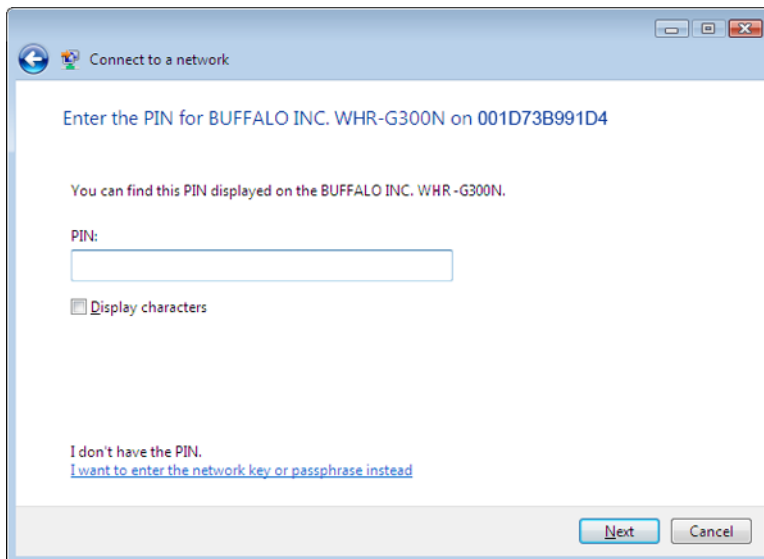
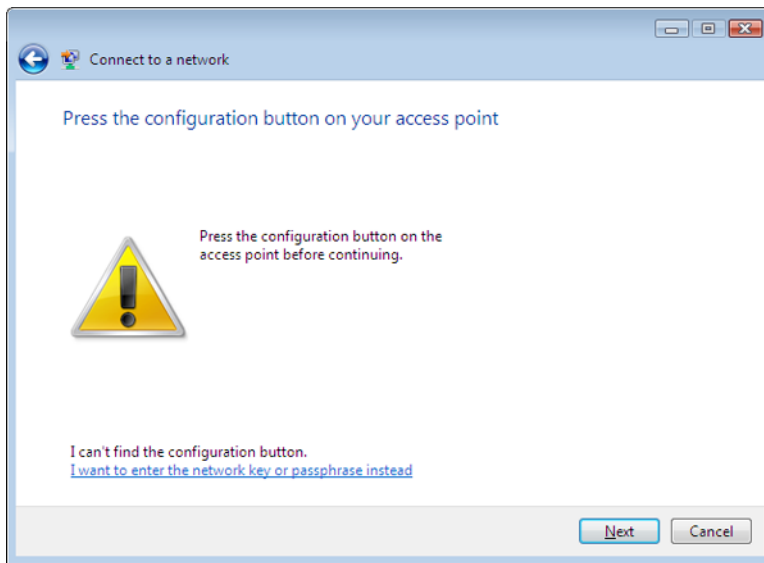
Windows Vista (WLAN AutoConfig)

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

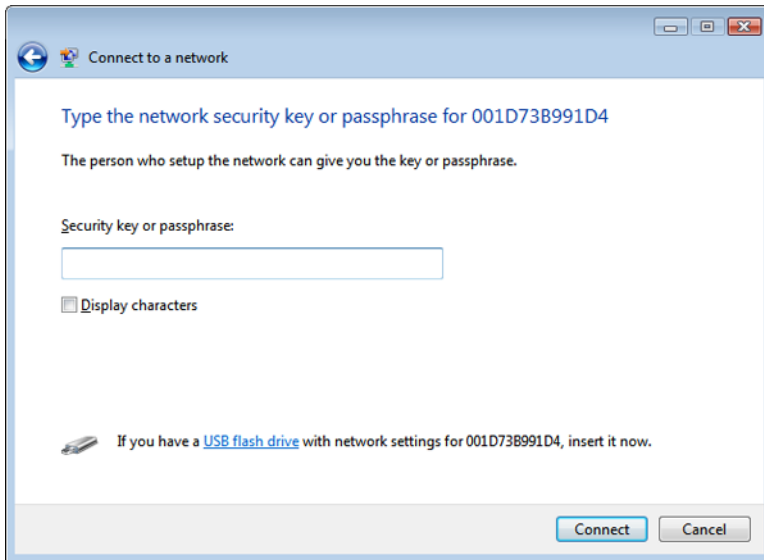
- 1 Right-click the wireless network icon  in the system tray.
- 2 Click *Connect to a network*.
- 3 When this screen is displayed, select your network and click *Connect*.



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.

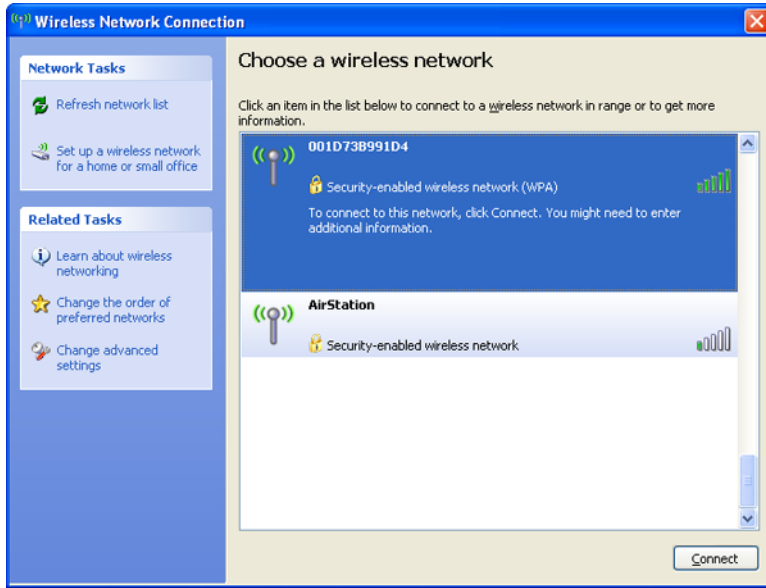
Windows XP (Wireless Zero Configuration)

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

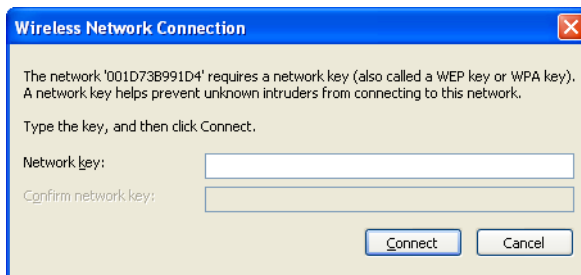
Note: If Client Manager 3 is installed on your computer, Wireless Zero Config is disabled. Uninstall Client Manager 3 to use Wireless Zero Config, or just use Client Manager 3 to connect to the AirStation.

- 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*.




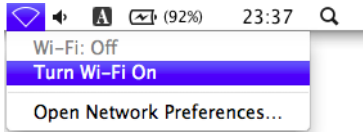
It will take several seconds for configuration to complete.

Mac OS (Wi-Fi)

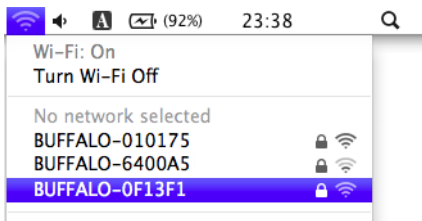
Use Wi-Fi on a Mac to connect to the AirStation.

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 Connect to the Internet Over a Wired Connection.

- Make sure that your AirStation is plugged in!
- Check that the status LEDs of your AirStation are lit as below:
Power/Diag: Green LED is on
Wireless: Green or amber LED is on
- Make sure that your computer is configured to “obtain an IP address automatically from DHCP”.
- Restart your AirStation.

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

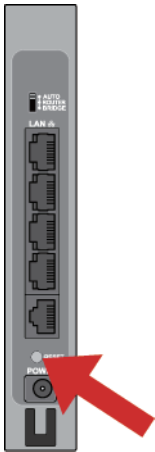
Encryption Key - Printed on the setup card.

Note: For details, refer to the setup card.

- Place your AirStation and wireless devices 2 - 10 feet apart.
- Restart your AirStation.

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/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 | Perform Easy Setup (Internet Connection Wizard) |
| | Default Gateway | - |
| | DNS Name Server Address | - |
| | Internet MAC Address | Use default MAC address |
| | MTU Size of Internet Port | 1500 Bytes |
| PPPoE | Connection Type | Continuous connection |
| | Automatic Disconnection | Disconnect Condition: When no packets are sent or received Disconnection Time: 5 Minutes |
| | Authentication | Automatic Authentication |
| | MTU Size | 1454 Bytes |
| | MRU Size | 1454 Bytes |
| | Keepalive | Enabled |
| DDNS | Dynamic DNS Service | Disabled |
| | Current Dynamic DNS Settings | - |
| PPTP Server | LAN-side IP Address | 192.168.11.1 (255.255.255.0) |
| | DHCP Server Function | Enabled |
| | DHCP IP Address Pool | 192.168.11.2 for up to 64 Address(es) |
| | PPTP Server Function | Disabled |
| | Authentication 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 | - |
| | MTU/MRU Value | 1396 |
| | PPTP User List | No registered users |
| 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) Bridge mode (when the mode switch is in the Auto position): Obtain automatically from DHCP server |
| | 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 |

| Feature | Parameter | Default Setting |
|----------------------|------------------------------------|---|
| LAN | 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 | <p>WPS status: configured</p> <p>SSID: Buffalo-G-XXXX (the last 4 digits of the AirStation's MAC address)</p> <p>Security: WPA2 - PSK AES</p> <p>Encryption key: The 8-digit random number printed on the setup card.</p> |
| AOSS | Exclusive SSID for WEP | AOSS is not in use. |
| | Dedicated WEP SSID isolation | Disabled |
| | AOSS Button on the AirStation Unit | Enabled |
| Basic | Wireless | Enabled |
| | Wireless Channel | Auto Channel |
| | High Speed Mode | Bandwidth: 20 MHz |
| | Broadcast SSID | Allow |
| | SSID1 | Enabled |
| | SSID Isolation | Not used |
| | SSID | Use AirStation's MAC address |
| | Authentication | WPA2 - PSK |
| | Encryption | AES |
| | WPA-PSK (Pre-Shared Key) | The 8-digit random number printed on the setup card. |
| | SSID2: WEP | Disabled |
| Key Renewal Interval | 60 minutes | |
| Advanced | Multicast Rate | 1 Mbps |
| | DTIM Period | 1 |
| | Wireless Client Isolation | Disabled |

| Feature | Parameter | Default Setting | | |
|-------------------|---|--|--------|---------|
| | | | For AP | For STA |
| WMM | WMM-EDCA Parameters (Priority AC_BK (Low)) | | | |
| | | CWmin | 15 | 15 |
| | | CWmax | 1023 | 1023 |
| | | AIFSN | 7 | 7 |
| | WMM-EDCA Parameters (Priority AC_BE (Normal)) | | | |
| | | CWmin | 15 | 15 |
| | | CWmax | 63 | 1023 |
| | | AIFSN | 3 | 3 |
| | WMM-EDCA Parameters (Priority AC_VI (High)) | | | |
| | | CWmin | 7 | 7 |
| | | CWmax | 15 | 15 |
| | | AIFSN | 1 | 2 |
| | WMM-EDCA Parameters (Priority AC_VO (Highest)) | | | |
| | | CWmin | 3 | 3 |
| | | CWmax | 7 | 7 |
| | | AIFSN | 1 | 2 |
| MAC Filter | Enforce MAC Filtering | Disabled | | |
| | Registration List | No registered MAC addresses | | |
| WDS | WDS | Disabled | | |
| Multicast Control | Snooping | Disabled | | |
| | Multicast Aging Time | 300 Sec. | | |
| Firewall | Log Output | Disabled | | |
| | Basic Rules | Prohibit NBT and Microsoft-DS routing: Disabled Reject ident requests: Enabled Block ping from Internet: Enabled | | |
| IP Filter | Log Output | Disabled | | |
| | IP Filter | No IP filters have been configured yet. | | |
| VPN Passthrough | IPv6 Passthrough | Disabled | | |
| | PPPoE Passthrough | Disabled | | |
| | PPTP Passthrough | Disabled | | |
| Port Forwarding | Forwarded Ports | Port forwarding has not been configured yet. | | |
| DMZ | IP Address of DMZ | - | | |
| UPnP | UPnP | Enabled | | |
| QoS | QoS | Disabled | | |
| Name | AirStation Name | AP + AirStation's MAC Address | | |
| | Network Services | Enabled | | |
| Password | Admin Name | admin (fixed) | | |
| | Admin Password | password | | |
| Time and Date | Local Date | 2010 Year 1 Month 1 Day | | |
| | Local Time | 0 Hour 0 Minute 0 Seconds | | |
| | Time Zone | (GMT+00:00) Greenwich Mean Time, London | | |

| Feature | Parameter | Default Setting |
|-----------------|-------------------|--|
| NTP | NTP | Enabled |
| | NTP Server | time.nist.gov |
| | Update Interval | 24 hours |
| eco | Scheduling | Disabled |
| | Schedule Entry | Power Saving Mode: Normal Start Time: 0:00 End Time: 0:30 Day of Week: none |
| | User Define Mode | LED: Off Wired LAN: eco (Slow operation) Wireless LAN: Off |
| Access | Log Output | Disabled |
| | Management Access | Prohibit configuration from wireless LAN: Disabled Prohibit configuration from wired LAN: Disabled Permit configuration from wired WAN: Disabled |
| Syslog Settings | Transfer Logs | Disabled |
| | Syslog Server | - |
| | Logs | Address Translation, IP Filter, Firewall, PPPoE Client, Dynamic DNS, 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 | <p>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)</p> <p>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)</p> <p>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)</p> <p>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)</p> <p>IEEE 802.11g: 54/48/36/24/18/12/9/6 Mbps</p> <p>IEEE 802.11b: 11/5.5/2/1 Mbps</p> |
| Access Mode | Infrastructure Mode |
| Security | AOSS, WPA/WPA2 mixed PSK, WPA2-PSK (AES), WPA-PSK (AES), 64-bit or 128-bit WEP, Mac Address Filter |
| Wired LAN 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 | 5 |
| Other | |
| Power Supply | External AC 100-240 V Universal, 50/60 Hz |
| Power Consumption | About 10.2 W (Max) |
| Dimensions | 55 x 130.5 x 159 mm (2.17 x 5.14 x 6.26 in.) |
| Weight | 265 g (9.3 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/>.