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User Manual for Professional Firmware

WHR-HP-G300N

AirStation NFINITI HighPower Router and Access point

WHR-HP-GN

AirStation Wireless N Technology HighPower Router and Access point



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1. Introduction

1.1. Welcome

This AirStation wireless router comes with two different firmware packages. You may use either the dd-wrt-based Professional firmware or the simple User-friendly firmware. By default, the Professional firmware is installed.

1.2. Device Configuration

From the factory, the router is configured as a network bridge. That means that all network interfaces can communicate with each other using this default bridge. The router is ready to use with a few simple adjustments.

1.2.1. Factory Settings

Because all interfaces are attached to the bridge by default, they all have the same IP configuration:

IP address	192.168.11.1
Subnet Mask	255.255.255.0
DHCP server	enabled
DHCP-Range	192.168.11.2 - 66

The Wireless LAN interface is activated by default with a SSID generated from the device's MAC address. For security, unused interfaces should be disabled. Wireless LAN interfaces that are not disabled should be configured with secure encryption (WPA2 or WPA is recommended) and a secure password.

1.2.2. Initial Operation

Connect your computer to the router with an Ethernet LAN cable and power the router on. It will take about 30 seconds to boot. You can then access it via telnet or web browser at the IP address 192.168.11.1. The DHCP server in the router is enabled by default. If your PC's Ethernet is configured for DHCP it should receive an IP address from the router's DHCP server. If not, please configure the Ethernet interface with an address from the 192.168.11.x subnet.

Because all relevant settings can be made using the web interface, this manual refers to configuration via the web GUI only.

2. Configuration via the Web Interface

The router contains an integrated web server that provides an easy to use web interface. It allows configuration, administration, and status checking in a simple but effective way.

When accessing the web GUI for the first time, change the default username and password. By default, the router's status page can be accessed without authentication, but this can be disabled.

The web interface was successfully tested on the following browsers:

- Internet Explorer 7.x and newer versions
- Firefox 2.x and newer versions
- Safari 2.x und newer versions

2.1. Preparation

Connect your PC to the router and power the router on as described in 1.4.2. After the router has loaded its operating system, you can communicate with it via your LAN network interface.

The easiest way to test if your PC can communicate with the router is to ping 192.168.11.1.

2.2. Web Interface Access

Open a browser window. Enter the address http://192.168.11.1 into the address bar. The status page will be displayed.

When you click on a tab, the login window will pop up. Enter the username and password you previously set.

Authentifizierung erforderlich		
?	http://192.168.1.1 verlangt einen Benutzernamen und ein Passwort. Ausgabe der Website: "DD-WRT"	
Benutzername:		
Passwort:		
	OK Abbrechen	

2.3. Web Interface Structure



2.3.1. Setup

2.3.1.1. Basic Configuration

Setup Assistant

The setup assistant provides a step-by-step interface for basic router configuration. This configures most common settings automatically.

WAN Setup

Here you'll find the most important settings to configure your internet access and WAN port. DHCP is enabled by default, but you can also use PPPOE, PPTP, L2TP, static IP, or HeartBeat Signal. If you don't use a password to log in to your ISP, you may need to enter "0000" for the password. Also, for some ISPs you should not enter the service name, as it will prevent establishing the connection. If you experience connection problems, then leave the service name empty.

WAN Connection Type	Description
Disabled	The WAN port is disabled.
Static IP	A static IP address will be used - enter the IP address, subnet mask, gateway, and server manually.
Automatic Configuration - DHCP	The router obtains its WAN-side IP address from a DHCP server.
PPPOE	Configure as PPPoE-client. For VDSL, check the "VDSL-Tagging" box.
PPTP	Establishes connection via PPTP.
L2TP	Establishes connection via L2TP.
HeartBeat Signal	If you use a HeartBeat connection, consult your ISP for setup information. HeartBeat Signal is used only in Australia.
3G/UMTS [WZR-HP- G300NH only]	Configures Internet Access via 3G/UMTS. Enable USB in the "Services" section and attach a 3g/UMTS USB stick to the router.

Network Setup

Network Setup configures the router's basic settings to match the local network. By default these settings are valid for all network ports except the WAN because they are all attached to the default bridge. If ports are disassociated from the bridge they will have different settings.

2.3.1.2. Dynamic DNS (DynDNS or DDNS)

Dynamic DNS allows the assignment of a DNS record to a dynamically assigned WAN-side IP address. A DynDNS client updates DNS records when your WAN-side IP address changes.

The router's firmware offers presets for the most common DynDNS services plus an option to define individual settings.

DynDNS Service	Description
Disabled	Default, no DynDNS
DynDNS.org	
freedns.afraid.org	
ZoneEdit.com	
No-IP.com	
3322.org	
easyDNS.com	
TZO.com	
DynSIP.org	
Custom	Individual DynDNS service configuration

2.3.1.3. MAC Address Cloning

MAC address cloning lets you assign a different MAC address to the router than the one encoded in the hardware.

2.3.1.4. Advanced Routing

Operating Mode

The default operating mode of the router is *Gateway*. Other routing protocols are available.

Modus	Description
Gateway	Gateway (default)
BGP	BGP Routing
Rip2 Router	Rip2 Routing
Router	Router

Static Routing

The Static Routing section lets you add static routes. The input parameters are equivalent to the parameters of the Linux command "route".

2.3.1.5. Networking

The Networking section allows detailed network configuration.

VLAN Tagging Use this option to configure VLAN tagging.

Bridging

By default, one bridge (br0) is defined and active. In this section you can define additional bridges and change the interface assignment according to your requirements.

Bonding

Bonding offers the ability to "bond" interfaces together. Bonding can be used to enhance throughput or provide failover capabilities.

Port Setup The port setup section allows further configuration of the routers network interfaces. Network interfaces can be separated from the bridge and it is possible to assign separate network settings for each interface. If an interface is separated from the bridge, add routing rules to allow communication between the interface and the bridge or other unbridged interfaces.

DHCPD Besides the default DHCP server, you can define additional DHCP servers.

2.3.1.6. EoIP Tunnel [WZR-HP-G300-NH only]

EoIP (Ethernet over IP) tunnels can transport Ethernet data packages via a tunnel over existing IP connections. You can define up to 10 tunnels that can also be bonded.

2.3.2. Wireless

2.3.2.1. Basic Settings

Each Wireless LAN interface has its own section in the wireless basic settings screen. The wireless interfaces are labelled ath0 and ath0.1 - ath0.4 depending on the number of radios installed. To correctly identify the antenna connectors, please compare the MAC addresses printed on the enclosure with the addresses displayed in the web interface.

Wireless Mode This parameter is used to define the operating mode of the Wireless LAN interface. You can select among the following modes:

Modus	Description
АР	WLAN Access Point mode (default)
Client	WLAN Client mode
Client-Bridge	Client-Bridge mode allows connecting to another Wireless LAN access point and establishing a network bridge with that access point
AdHoc	AdHoc operating mode, required for building mesh networks
WDS Station	WDS Station is the client in a WDS-AP <-> WDS station bridge. This is a special wireless networking mode that offers better flexibility and security than the classical MAC address based WDS.
WDS AP	WDS AP is the AP side for WDS AP <-> WDS Station. A WDS AP allows connections from WDS Stations and Wireless Clients.

Wireless Network Mode Defines the IEEE802.11 networking mode.

Mode	Description
Disabled	Interface is disabled
Mixed	2.4 GHz 802.11b / 802.11g / 802.11n mixed mode
B-Only	2.4 GHz 802.11b mode (802.11g and 802.11n devices cannot connect)
G-Only	2.4 GHz 802.11g mode (802.11b, and 802.11n devices cannot connect)
BG-Mixed	2.4 GHz 802.11b & 802.11g mixed mode (802.11n devices cannot connect)
NG-Mixed	2.4 GHz 802.11n & 802.11g mixed mode (802.11b devices cannot connect)
N-Only (2.4 GHz)	2.4 GHZ 802.11n mode (802.11a, 802.11b, and 802.11g devices cannot connect)

Channel Width

Some wireless network modes support wireless channel widths besides the standard 20 MHz. 802.11g & 802.11n offer the option to use 40 MHz channels for enhanced throughput. Both the AP and the client must support 40 MHz channels to use them.

Wireless Channel (AP only)

Set the desired wireless channel, or let the router choose a free channel automatically. If the router is in classic WDS (MAC address based) mode, then the wireless channel must be selected manually.

Wireless Network Name (SSID)

The name of the wireless network the radio transmits or connects to (depending on the wireless mode)

Wireless SSID Broadcast (AP only)

The name of the wireless network (SSID) may be broadcasted or not. This does not prevent the network from being detected by a wireless network sniffer; it just hides the name.

Advanced Settings

Check this box to get access to advanced wireless settings. These advanced parameters should be only modified by experienced users.

2.3.2.2. Wireless Security

Because wireless data packets can easily be sniffed, wireless connections require a greater level of security to ensure that data cannot be read by unauthorized users.

Security Mode

Mode	Description
Disabled	No encryption set (not recommended!)

WPA Personal	WPA encryption with a passphrase (text password)
WPA Enterprise (AP only)	WPA encryption with Radius Client authentication according to 802.1x
WPA2 Personal	WPA2 encryption with a passphrase (text password)
WPA2 Enterprise (AP only)	WPA2 encryption with Radius Client authentication according to 802.1x
WPA2 Personal Mixed	WPA & WPA2 encryption in WPA/WPA2 mixed mode with a passphrase (text password)
WPA2 Enterprise Mixed (AP only)	WPA & WPA2 encryption in WPA/WPA2 mixed with Radius Client authentication according to 802.1x
RADIUS	
WEP	WEP 64 Bit / 128 Bit encryption (insecure; not recommended!)
802.1x (Client only)	Client side mode to connect to AP's working with WPA Enterprise Modes via RADIUS authentication

When using WEP encryption (not recommended), the user can choose between 64 bit and 128 bit keys. Keys can be entered as passphrases that are used to generate the Hex keys. Theoretically 128 bit keys offer a higher level of security but because of design flaws, that's not the case in actual use.

Key length	Description
64 Bit (10 Hexadecimal characters)	Standard
128 Bit (26 Hexadecimal characters)	

With WPA or WPA2 encryption, there are several encryption algorithms to choose from. AES is more secure but TKIP is more widely supported. There is also a TKIP + AES setting, but that does not offer more security than TKIP.

Algorithm	Description
TKIP	TKIP encryption, supported by most clients devices
AES	AES encryption offers a better level of security but might not be supported by a number of client devices and requires less cpu processing power.
TKIP + AES	Mixed mode - offers best compatibility but doesn't work in all environments

If RADIUS security is used, the MAC address format has to be set accordingly.

RADIUS MAC format options	Description
aabbcc-ddeeff	Standard
aabbccddeeff	
aa:bb:cc:dd:ee:ff	
aa-bb-cc-dd-ee-ff	

2.3.2.3. AOSS

AOSS (AirStation Onetouch Secure Setup) is Buffalo Technology's system to automatically connect wireless clients to an access point. AOSS can only be used in AP mode.

Enable AOSS Enables the AOSS Service. When disabled AOSS cannot be used.

Start AOSS Negotiation To initiate the AOSS process you can either click the AOSS button in the GUI or hold down the AOSS button on the front of the router for 3 seconds.

Security Modes You may choose which security modes are offered in the AOSS negotiation process. The use of WEP in general is not recommended due to security concerns.

2.3.2.4. MAC Filter

The MAC Filter defines a list of client MAC addresses that are allowed to connect wirelessly. MAC addresses that aren't on the list aren't allowed to connect.

2.3.2.5. WDS

Wireless Distribution System (WDS) is a special access point mode that allows the connection of several access points to form a combined network. Such a network can be used to extend wireless network coverage.

The MAC addresses of the access points nearest to the current access point are entered as WDS nodes. Avoid creating "double" connections, i.e. A <-> B + A <-> B <-> C. These modes are available to connect WDS nodes:

WDS Client Mode	Description
disabled	Standard
Point-to-Point	Commonly used mode
LAN	

If WDS is enabled, then WDS NAT modes are also available.

WDS NAT Mode	Description
WLAN -> WDS	Standard
WDS -> WLAN	

2.3.3. Services

2.3.3.1. Services

The services section allows the configuration of basic service settings. Telnet and SSH can be configured this way. Remote access options are configured in the *Administration* section.

Available DHCP Server Domains	Description
WAN	Standard
LAN / WLAN	

Rflow / MACupd Interface Options	Description
LAN & WLAN	Standard
LAN	
WLAN	

2.3.3.2. FreeRadius [WZR-HP-G300NH only]

Certain applications (for example, Chillispot hotspot software) benefit from a RADIUS server for management of user credentials and settings.

Server Certificate This section contains the parameters to generate the RADIUS server certificate. The certificate needs to be generated before clients can be configured to connect to the RADIUS server.

Certificate Status Displays the server certificate creation status.

Settings Choose the port that the RADIUS server uses for client communication. The default port is 1812.

Clients This section is used to define RADIUS clients (required for HotSpot usage).

Users Lists the users defined in the RADIUS servers. Allows creation and modification of accounts.

2.3.3.3. PPPoE Server

Some applications require a PPPoE server on the router, which can be configured here. The PPPoE server is disabled by default.

2.3.3.4. VPN

The router can also be configured as VPN server or VPN client.

PPTP

When defining the PPTP server's IP range, avoid overlap with the range of IP addresses handed out by DHCP if DHCP is enabled. The IP range is defined using the following syntax:

xxx.xxx.<start-ip>-<end-ip>

for example

192.168.1.20-30

Enter client login data follows:

<username> * <password> *

for example

testuser * test *

The encryption options can be set as follows

PPTP server type	Settings
DD-WRT Router	mppe required (Standard)
Windows PPTP Server	<pre>mppe required,no40,no56,stateless or mppe required,no40,no56,stateful</pre>

OpenVPN [WZR-HP-G300NH only]

OpenVPN is a powerful and flexible VPN solution. OpenVPN security is based on certificates that cannot created on the router itself. Please refer to OpenVPN's online documentation for instructions on creating certificates and configuring OpenVPN.

2.3.3.5. USB [WZR-HP-G300NH only]

The router's USB port can be used for several purposes. Here the basic and advanced USB parameters are defined. Besides enabling USB and defining the USB hardware standard to use you can also define if printer and storage support for USB shall be enabled.

2.3.3.6. NAS [WZR-HP-G300NH only]

If USB hard drive support is enabled, you can start the integrated ProFTPd server to share data on an attached hard disk via FTP.

The User/Password data are entered as follows:

<username> * <password> *

for example

testuser * test *

Be careful enabling anonymous login. If anonymous login is enabled, everybody accessing your network has permission to read and write data.

2.3.3.7. Hotspot

Most hotspot software requires a server to store user settings and login information. Please note that Sputnik is a commercial hotspot service that requires an agreement with Sputnik for usage.

2.3.3.8. Milkfish SIP Router [WZR-HP-G300NH only]

This package is an implementation of the Milkfish SIP router.

2.3.3.9. My Ad Network

Allows the creation of an AnchorFree Hotspot that can be used to create revenue via AnchorFree.

2.3.4. Security

2.3.4.1. Firewall

Aside from enabling and disabling the firewall, you can also set additional filters, block certain network requests for the WAN interface, and manage logs.

2.3.4.2. VPN Pass-through

VPN settings effect how the firewall handles IPSec, PPTP, and L2TP connections. By default, pass-through is enabled. Please note that disabling pass-through will usually prevent you from establishing VPN connections from computers located in your local network to VPN servers on the internet.

2.3.5. Access Restrictions

2.3.5.1. WAN Access

The WAN access settings allow the definition of time and service related access rules.

2.3.6. NAT / QoS

2.3.6.1. Port Forwarding

Port forwarding allows the assigning of WAN ports to specific internal IP addresses and matching ports. Bidirectional external traffic can be

forwarded to specific internal devices and computers. Each port forwarding entry defines a source port and a target IP address.

Before adding or removing a port forwarding entry, save all changed settings. Any changes not saved will be lost when a port forwarding entry is added or deleted.

2.3.6.2. Port Range Forwarding

Port range forwarding works similarly to port forwarding. Unlike port forwarding, instead of a single port, a range of ports is forwarded to the same range of ports at the internal target IP address.

2.3.6.3. Port Triggering

Port triggering is a kind of port range forwarding where outgoing traffic on specific ports enables previously defined port forwards for the activating device. This temporarily opens required ports when specific applications are opened on computers on the LAN. This offers a greater level of security than port forwarding or port range forwarding because the ports are only opened when needed.

2.3.6.4. UPnP

UPnP allows UPnP capable applications and devices to open and close required ports automatically as needed. This is simple to use and does not require further configuration steps.

2.3.6.5. DMZ

A DMZ computer is a special computer in the internal network that gets all incoming traffic forwarded. The task of that computer is managing this traffic. When the DMZ feature is activated the internal firewall is activated. This can pose a security issue if not handled with care. Furthermore, several services of the router, that have to be accessible from the WAN side, will not work because the associated traffic is forwarded to the DMZ computer.

2.3.6.6. QoS

QoS (Quality of Service) is a procedure to prioritise network traffic by application. Specific services can be assigned specific bandwidth.

Aside from upstream and downstream bandwidth, you can define settings for specific services and IP and MAC address ranges.

2.3.7. Administration

2.3.7.1. Management

The Management section contains settings for remotely accessing the router and other basic settings that are usually not changed. The settings for the language used in the Web GUI are also located here. You may choose between Chinese (simplified & traditional), Dutch, French, German, Hungarian, Italian, Japanese, Polish, Portuguese, Slovenian, Spanish, and Swedish. The default setting is English. Before using Telnet or SSH, activate the associated service(s) in this section.

2.3.7.2. Keep Alive

Keep-Alive lets you configure monitoring options that automatically reboot the router if a service malfunction causes it to fail to respond.

2.3.7.3. Commands

Entering Linux commands is one of the most powerful ways to access the router's functionality. This enables you to access services and configure options that are not accessible via the Web GUI. Using shell commands can lead to unexpected results. Use them with utmost care.

Aside from executing the shell commands directly you can also save custom start up and firewall scripts.

2.3.7.4. WOL

With Wake-on-LAN, you can send special data packets to compatable devices on your LAN, causing them to exit sleep mode.

WOL data packets can be triggered manually or scheduled automatically.

2.3.7.5. Factory Defaults

With this feature you can reset the router's settings to factory defaults. After a reset, the router will restart.

2.3.7.6. Firmware Upgrade

The firmware upgrade option can be used to install a different firmware version. When doing this you can choose if the router's settings will be restored to factory defaults or kept.

2.3.7.7. Backup

You can use this feature to store your current configuration into a backup file, or to restore from a previously stored configuration. This also makes it simple to set up a number of routers with the exact same configuration.

2.3.8. Status

2.3.8.1. Router

The status screen displays information about the router, such as cpu load, memory consumption, and currently active IP connections. Status is updated automatically.

2.3.8.2. WAN

If the WAN interface is enabled, this screen displays WAN settings and throughput statistics.

2.3.8.3. LAN

Here you can find LAN-related information like active clients and DHCP clients.

2.3.8.4. Wireless

The wireless LAN status screen displays the current wireless LAN interface configuration, wireless LAN clients (in AP modes), and access points (in client modes). If there's more than one wireless LAN interface, you can switch between them via the interface pull down menu.

2.3.8.5. Bandwidth

Bandwidth monitoring displays real time diagrams for incoming and outgoing traffic for each network interface.

2.3.8.6. SysInfo

The SysInfo screen combines the most important information of the other status pages. By default, the SysInfo page can be accessed from LAN devices without authentication. That can be changed in the *Management* section of the *Administration* area.

3. Use Cases

The following use cases relate to the most commonly used router configurations. The related router configuration is explained step by step.

3.1. Access Point

Access Point (AP, sometimes also called "Infrastructure Mode") is the mode where the router is also the central wireless hub that connects to the LAN and provides access to wireless devices. These wireless clients of the AP can communicate with each other and with wired devices on the network such as the Internet.



Connect your computer to the router as described in 2.1. and access the web interface according to 2.2.

3.1.1. Access Point with NAT / DHCP

Setup -> Basic Setup

- WAN Setup
 - o In "Connection Type", choose the type of WAN connection you want to use and complete the related settings.
- Network Setup
 - o Enter the desired LAN IP address for the router into "Router IP".
 - o Set "DHCP Type" to "DHCP Server" (this is the default).
 - o "Enable" DHCP Server (this is the default).
 - o Adjust the DHCP address range to match your requirements.
- Time Settings o Choose your time zone.
- Click "Save".

Wireless -> Basic Settings

- Enter your country in "Regulatory Domain"
- In the "Antenna Gain" field, please enter the gain of the antenna on your router. The firmware will adjust the transmit power accordingly to meet regulatory requirements. Please keep in mind that very long cables can dampen the HF signal thus reducing the usable antenna gain.
- Configure "Wireless Mode" to "AP"
- Set your desired wireless mode in "Wireless Network Mode". Please note that mixed modes will lead to reduced performance because of maintaining compatibility.
- Enter a name for your wireless network into "Wireless Network Name (SSID)"
- Click "Save"

Wireless -> Wireless Security

- Choose and configure a security mode. Please note that WEP is insecure and should only be used if no other option is available.
- Click "Apply Settings"

You can now connect the router to the Internet and your local network. After you successfully connect wireless devices, they will then be displayed on the "SysInfo" and "WLAN Status" pages.

3.1.1. Access Point attached to a network / Internet gateway

Setup -> Basic Setup

- WAN Setup
 - o For "Connection Type", choose "Disabled".
- Network Setup
 - o Enter the desired LAN-side IP address for the router into "Router IP".
 - o Set the "DHCP Type" to "DHCP Server" (this is the default).
 - o "Disable" "DHCP Server".
- Time Settings
 - o Choose your time zone.
- Click "Save".

Wireless -> Basic Settings

- Enter your country in "Regulatory Domain"
- In the "Antenna Gain" field, please enter the gain of the antenna on your router. The firmware will adjust the transmit power accordingly to meet regulatory requirements. Please keep in mind that very long cables can dampen the HF signal thus reducing the usable antenna gain.
- Configure "Wireless Mode" to "AP"
- Choose a wireless mode in "Wireless Network Mode". Please note that mixed modes will lead to reduced performance because of maintaining compatibility.

- Enter a name for your wireless network into "Wireless Network Name (SSID)".
- Click "Save".

Wireless -> Wireless Security

- Choose and configure your desired security mode. Please note that WEP is insecure and should only be used if no other option is available.
- Click "Apply Settings"

You can now connect the router to the Internet and your local network. If you're running a DHCP server in your LAN, connected wireless devices will get their IP addresses from the server.

3.2. Wireless Client

The router can be also used as a wireless LAN client. This can be useful if you want to connect devices to your wireless LAN that do not have a wireless LAN interface. In this configuration, the wireless LAN interface acts as a wireless client. Attached wired Ethernet devices can also access the WAN through the wireless connection.



Setup -> Basic Setup

- WAN Setup
 - o Set "Connection Type" to "DHCP" to have the AirStation get its IP address from a DHCP server, or to a "Static IP" if no DHCP server is available.
- Network Setup
 - o Enter the desired LAN-side IP address for the router in "Router IP".
 - o Set the "DHCP Type" to "DHCP Server" (this is the default setting).
 - o "Enable" "DHCP Server" (this is the default setting).
 - o Adjust the DHCP address range to match your requirements.

- Time Settings o Choose your time zone.
- Click "Save".

Wireless -> Basic Settings

- Enter your country in "Regulatory Domain"
- In the "Antenna Gain" field, please enter the gain of your AirStation's antenna. The firmware will adjust the transmit power automatically to meet regulatory requirements. Please note that the use of a long extension cable for your antenna will reduce the usable antenna gain.
- Configure "Wireless Mode" to "Client".
- Configure "Wireless Network Mode" to match the capabilities of the access point you want to connect to.
- Enter the network name (SSID) of the AP you want to connect to into "Wireless Network Name (SSID)".
- Click "Save".

Wireless -> Wireless Security

- Configure the security mode to match the security settings of the access point you want to connect to.
- Click "Apply Settings".

After the router reboots, please confirm that it has connected to the access point. If there is a DHCP server available on the access point side, and the router is configured to request an IP address, then it should receive an IP address for its WAN-side interface.

You can now either connect wired clients to the access point or configure another wireless network interface as an access point to grant access to wireless clients.

3.3. Wireless Client Bridge

A wireless client bridge offers the ability to transparently integrate the router's LAN into a different LAN that another access point is connected to. Clients connected to such a router can access devices in both LANs and vice versa. In that configuration the router's WAN interface is disabled.



Setup -> Basic Setup

- WAN Setup
 - o Choose "Disabled" for "Connection Type" (this will be set automatically).
- Network Setup
 - o Enter the desired LAN-side IP address for the router into "Router IP".
 - o "Disable" "DHCP Server".
- Time Settings o Choose your time zone.
- Click "Save".

Wireless -> Basic Settings

- Enter your country in "Regulatory Domain".
- In the "Antenna Gain" field, please enter the gain of your AirStation's antenna. The firmware will adjust the transmit power automatically to meet regulatory requirements. Please note that the use of a long extension cable for your antenna will reduce the usable antenna gain.
- Configure "Wireless Mode" to "Client Bridge".
- Set "Wireless Network Mode" to match the access point you want to connect to.
- Enter the network name (SSID) of the AP you want to connect to.
- Click "Save".

Wireless -> Wireless Security

- Configure security to match the security settings of the access point you want to connect to.
- Click "Apply Settings".

After the router reboots, please confirm that it has connected to the access point. If there is a DHCP server available on the access point

side, a pc in the router's LAN configured to request an address from DHCP should receive an IP address.

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User Manual for User-friendly Firmware

WHR-HP-G300N

AirStation NFINITI HighPower Router and AccessPoint

WHR-HP-GN

AirStation Wireless N Technology HighPower Router and Access point



www.buffalotech.com

35011344 ver.01

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Chapter 1 Introduction

Installing Your AirStation

To install your AirStation, insert the software CD from your package into your computer and follow the directions on the screen. For more infomation about installation, turn to chapter 3 of this manual.

Professional or User-friendly?

This AirStation wireless router comes with two different firmware packages. You may use either the dd-wrt-based Professional firmware or the simple User-friendly firmware. By default, the Professional firmware is installed. Turn to page 23 for instructions on switching between the two firmware packages.

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

Features

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

With support for Wireless-N, Wireless-G, and Wireless-B standards, the AirStations can transfer data to and from all standard 2.4 GHz wireless clients. The WHR-HP-GN is a single stream, single antenna version, while the WHR-HP-G300N is a dual stream, dual antenna version, with faster Wireless-N performance.

Dual speed mode

Dual speed mode makes wireless transmission faster by using 2 channels, allowing 300Mbps transmission.

Support for AOSS and WPS

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

The AirStations are equipped with the following security features:

- AOSS
- WPS
- WPA-PSK (TKIP/AES)
- WPA2-PSK(TKIP/AES)
- WPA/WPA2 mixed PSK
- WEP(128/64bit)
- Privacy Separator
- MAC filtering
- Stealth SSID
- Firewall with easy rules

Automatic Channel Selection

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

Roaming

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

Initialization

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

Browser Based Administration

These units can be easily configured from a password-protected web page though a browser on your computer.

Auto Mode (Router/Bridge Automatic Recognition)

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

Air Navigator CD Requirements

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

300/150 Mbps High Speed Mode

With Wireless-N connections, 300 Mbps is the maximum link speed for the WHR-HP-G300N and 150 Mbps is the maximum link speed for the WHR-HP-GN. The speeds are for the total wireless data transferred including overhead. Because the overhead is not available for transfer of user data, the wireless throughput usable by the user will be substantially slower.

Package Contents

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

1
2 for G300N / 1 for GN
1
1
2
1
1
1

Hardware Overview

Front Panel LED's



1 AOSS Button

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

2 Power LED (Green)

On:	The AC adapter is connected
0.00	

Off: The AC adapter is not connected

3 Security LED (Amber)

Indicates security status.

Off: Encryption is not set

On: Encryption has been set

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

Blinking: AOSS/WPS error; failed to exchange security keys Note: When the Security LED is lit, an encryption key has been set. Wireless clients will need the same key to connect.

4 Wireless LED (Green)

Indicates wireless LAN status.

Blinking: Wireless LAN is transmitting

On: Wireless LAN is connected but not active

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

6 DIAG LED (Red)

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

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

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

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

Back Panel



7 Router Switch

Switches router mode between enabled, disabled, and auto.

- On: Router is enabled (router mode).
- Off: Router is disabled (bridge/AP mode).
- Auto: This switches between modes automatically based on whether or not another router is detected on the Internet port. The default setting for this switch is Auto.

8 LAN LED (Green)

On: An Ethernet device is connected. Flashing: An Ethernet device is communicating.

9 LAN Port

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

10 Internet LED (Green)

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

11 Internet Port

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

12 DC Connector Connect the included AC adapter.

Тор



13 Antenna connector Screw on the antenna(s) here.

Bottom



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

Right Side



15 Factory Default Settings

This sticker shows the AirStation's default SSID, encryption key, and WPS PIN.

Chapter 2 Placing Your AirStation

Note: Illustrations show the WHR-HP-G300N. The WHR-HP-GN is similar.

Antenna Placement

The antenna(s) are included in the package. The WHR-HP-G300N has two antennas; the WHR-HP-GN has one. Screw the antenna(s) clockwise to install.



Vertical Placement

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



Horizontal Placement

To place the unit horizontally, adjust the antenna(s) as shown.



Wall-Mounting



Chapter 3 Installation

Automatic Setup

The AirNavigator CD can step you through installing your AirStation. Insert it into your Windows 7, Vista, or Windows XP PC and follow the instructions on the screen. If your computer uses a different operating system, use manual setup instead.

Manual Setup

Using AirStation As A Router or An Access Point

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

1 Turn off your computer and modem.



Unplug the LAN cable that connects your computer and modem.

Make sure the mode switch on the back of the AirStation is in the [AUTO] position.

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



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



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



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

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

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

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

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

Using AirStation As An Ethernet Converter or A Repeater

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

Using as an Ethernet Converter:



In this section, manual configuration is described. However, you can also use AOSS/WPS to configure it.

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

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

2 Shut down your computer.



Change the switch position from AUTO to OFF.

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



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



power outlet

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

POWER	Green light on
WIRELESS	Green light on or blinking
ROUTER	Off
DIAG	Off
LAN	Green light on or blinking

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

7 Launch a web browser.



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

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



8

Connect to 192.168.1	1.100 🔹 💽
	Ger
The server 192.168.1 and password.	1.100 at AirStation requires a username
Warning: This server i password be sent in a without a secure conr	is requesting that your username and an insecure manner (basic authentication nection).
<u>U</u> ser name:	🖸 root 🔹
Password:	•••••
	Remember my password
	OK Cancel

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

Notes: • By default, the password is blank (not set).

• If you forget your password, hold down the reset button (page 11) to initialize all settings. The password will then be blank. Note that all other settings will also revert to their default values.

10 Click [Wireless Config] > [WDS].



11 If the device you connect supports WDS such as WHR-G300N, WHR-HP-G300N and WZR-HP-G300NH, select [Slave] from [Specify Master/Slave] menu and click [Search]. If the device you connect doesn't support WDS, select [Slave(EC)] from [Specify Master/Slave] menu and click [Search].



12 Once the list of the access points is displayed, select the access point you are going to connect to, then click [Select].

If the access point you are going to connect to is not displayed, click [Search again].

Select	SSID	Wireless ch	Signal	Encryption	Wir m
۲	manual	8	Excellent	Yes	r
\odot	WAP-G	1	Week	Yes	n/
0	001D738C0054_3	3	Week	Yes	n/
Select	Search again Cancel				

Select AirStation (Master) to connect to.

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

Slave(EC) -
manual
WPA2-PSK -
AES -
•••••

Apply

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

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

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

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

Firmware Differences

You can choose between two different firmwares for your AirStation. By default, the Professional firmware (DD-WRT) is installed. If you prefer, you may install the User-friendly firmware instead. the two firmwares have slightly different features, as shown in the chart below.

Function	Professional firmware (DD-WRT)	User-friendly firmware
Router switch function	_	~
Default administrator name	root	root (fixed)
Default administrator password	admin	none
AOSS	✓	✓
WPS	—	✓
WDS	✓	✓

Changing Firmware

To change between the Professional firmware (DD-WRT) and the User-friendly firmware, follow the steps below.

1 Insert the AirNavigator CD into your computer. The setup wizard will automatically launch. Note: If the Setup Wizard does not launch, open the CD and double-click [ASSetWiz.exe] to launch manually.



Click [Change Firmware].



The procedure for wiring will be displayed. Step through the wizard to connect your AirStation.

When this screen is displayed, click [Change Firmware].

4

Start 5	🝎 Installation	Settings	Finish Finish
Change.	Firmware		
Currently, Professio Professional to User	nal Firmware (DD-WRT) ver Friendly version click "Char	rsion is running on the A Ige Firmware" button.	lirStation. To change fron
After clicking the bu launched to device v	ton, firmware file name wili seb UI. Paste file name to tes	l be copied to clipboard t box and next proceed	and browser will be with Firmware update.
	<u>Change</u>	<u>Firmware</u>	
7/	D:\Pmf	fesionalFirmware.bin	

5

Connect to 192.168.	11.1 🔹 💽
	E.
The server 192.168. and password.	.11.1 at AirStation requires a username
Warning: This server password be sent in without a secure cor	r is requesting that your username and an insecure manner (basic authentication nnection).
<u>U</u> ser name:	🖸 root 👻
Password:	•••••
	Remember my password
	OK Cancel

If requested, enter the AirStation's username and password.

Note: By default, the Professional firmware doesn't have a username and a password configured. Set them before you go to the next step. **6** When the following screen is displayed, make sure that the firmware file name is displayed, click [Update] or [Update Firmware], and follow the instructions on the screen.

Note: If the firmware name is not displayed on the screen, click [Browse...] and select the desired firmware. Firmware files are in the root directory on the AirNavigator CD.

Professional firmware (DD-WRT) update screen:

Setup	Wireless	Services	Securit	y Access F	Restrictions	NAT / QoS	Administration	Status	
Management	Keep Alive	Commands	WOL F	actory Defaults	Firmware Up	igrade Backup			
Firmware M	lanagement	t						Help	more
Firmware Up After flashing, Please select a	grade reset to a file to upgrad	[le [Don't reset			Browse		Firmware Upg Click on the Brow select the firmwa uploaded to the Click the Upgrad the upgrade pro- pot be interrunts	rade: ####################################
	[Upgrading Do not turn o	₩ A 9 firmware ff the pow	ARNING : may take a fe ver or press the	w minutes. • reset butto	n!		no. De interrupte	20.
			l	Jpgrade					

User-friendly firmware update screen:

Setup Internet/LAN Wireless	Config Security	LAN Config	Admin Config	Diagnostic
Name Password Time/Date NTP / Initialize/Restart Update	Access Log Save/Re	store	Firmware Update	Logout
Firmware Version WHR-HP-G300N Ver.1.61 Firmware File Name		Browse	Update the AirStatior Current Firmware	ı's firmware.
*Get updated firmware files from or Download :	ur website: <u>Service</u>		Displays the firmwa the AirStation. Firmware file name Use the browse but firmware file that wil the AirStation.	ton to find the lon to find the
(C)	2000-2009 BUFFALO INC. A	II rights reserved.	"Browse" hutton	~

About this User Manual

This user manual is primarily for AirStations with the User-friendly firmware. For more information on the Professional firmware (DD-WRT), refer to **www.dd-wrt.com/wiki**.

Chapter 4 Configuration

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

Accessing the Web-based Configuration Interface

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



2



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

Note: • The AirStation's default LAN-side IP address depends on the position of the mode switch. In router mode: 192.168.11.1

In bridge mode: 192.168.11.100

If the router switch is set to AUTO and the unit is in bridge mode, then the AirStation's IP address was assigned by an external DHCP server.

 $\cdot~$ If you changed the IP address of the AirStation, then use the new IP address.

Connect to 192.168.11.1 3 ? **X** The server 192.168.11.1 at AirStation requires a username and password. Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection). User name: 🕵 root • Password: Remember my password OK Cancel

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

Note: • By default, the password is blank (not set).

 If you forget your password, hold down the Reset button (page 11) to initialize all settings. The password will then be blank. Note that all other settings will also revert to their default values.



Note : This example, like others in this manual, shows the User-friendly firmware. The dd-wrt based Professional firmware is somewhat different. For more information on the Professional firmware, visit dd-wrt's website at **www.dd-wrt.com**.

Configuration Menu (Router Mode)

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

Main screen	Descriptions	Page
Internet/LAN		
Internet	Configure Internet side port and settings	Page 34
PPPoE	PPPoE settings (DSL login)	Page 35
DDNS	DNS settings	Page 38
VPN Server	VPN server settings	Page 40
LAN	LAN side port and DHCP server configuration	Page 42
DHCP Lease	DHCP lease settings	Page 44
NAT	Network address translation settings, used to connect LAN side devices to the Internet	Page 45
Route	Configure the IP communication route that the AirStation uses	Page 46
Wireless Config		
WPS	WPS settings and status	Page 47
AOSS	AOSS (AirStation One-touch Secure System) settings and status	Page 48
Basic	Configure basic wireless settings	Page 50
Advanced	Configure advanced wireless settings	Page 53
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia)	Page 54
MAC Filter	Limit access to specific devices	Page 56
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port	Page 57
WDS	Configure communication among AirStation	Page 58
Security		
Firewall	Protect your computer from outside intruders	Page 60
IP Filter	Edit IP filters which relates to the packets passing through the LAN side and the Internet side	Page 62
VPN Pass Through	Configure IPv6 passthrough, PPPoE passthrough, and PPTP passthrough	Page 63

LAN Config		
Port Forwarding	Configure port translation and exceptions for games and other programs	Page 64
DMZ	Configure a destination to transfer communication packets without a LAN side destination.	Page 65
UPnP	Configure UPnP (Universal Plug and Play)	Page 66
QoS	Configure priority for packets that require a certain data flow	Page 67
Admin Config		
Name	Configure the AirStation's name	Page 68
Password	Configure the AirStation's login password for access to configuration utilities	Page 69
Time/Date	Configure the AirStation's internal clock	Page 70
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	Page 71
Access	Configure access restrictions to the AirStation's configuration utilities	Page 72
Log	Configure a syslog server to manage the AirStation's logs	Page 73
Save/Restore	Save or restore the AirStation's configuration from a configuration file	Page 74
Initialize/Restart	Initialize the AirStation or reboot it	Page 75
Update	Update the AirStation's firmware	Page 76
Diagnostic		
System Info	View current system information for the AirStation	Page 77
Logs	Check the AirStation's logs	Page 79
Packet Info	View all packets transferred by the AirStation	Page 80
Client Monitor	View all devices currently connected to the AirStation	Page 81
Ping	Test the AirStation's connection to other devices on the network	Page 82
Logout		
Click this to log out	of the AirStation's web-based configuration interface	

Configuration Menu (Bridge Mode)

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

Main screen	Descriptions	Page
LAN Config		
LAN	Configure LAN side ports and devices	Page 42
Route	Configure the IP communication route that the AirStation uses	Page 46
Wireless Config		
WPS	WPS settings and status	Page 47
AOSS	AOSS (AirStation One-touch Secure System) settings and status	Page 48
Basic	Configure basic wireless settings	Page 50
Advanced	Configure advanced wireless settings	Page 53
WMM	Set priorities for Wireless Multimedia Extensions (Wi-Fi Multimedia)	Page 54
MAC Filter	Limit access to specific devices	Page 56
Multicast Control	Configure limits on sending unnecessary multicast packets to the wireless LAN port	Page 57
WDS	Configure communication among AirStation	Page 58
Admin Config		÷
Name	Configure the AirStation's name	Page 68
Password	Configure the AirStation's login password for access to configuration utilities	Page 69
Time/Date	Configure the AirStation's internal clock	Page 70
NTP	Configure the AirStation to synchronize with an NTP server to automatically set the AirStation's internal clock	Page 71
Access	Configure access restrictions to the AirStation's configuration utilities	Page 72
Log	Configure a syslog server to manage the AirStation's logs	Page 73
Save/Restore	Save or restore the AirStation's configuration from a configuration file	Page 74
Initialize/Restart	Initialize the AirStation or reboot it	Page 75
Update	Update the AirStation's firmware	Page 76
Diagnostic		
System Info	View current system information for the AirStation	Page 77

Logs	Check the AirStation's logs	Page 79			
Packet Info	View all packets transferred by the AirStation	Page 80			
Client Monitor	View all devices currently connected to the AirStation	Page 81			
Ping	Test the AirStation's connection to other devices on the network	Page 82			
Logout					
Click this to log out c	Click this to log out of the AirStation's web-based configuration interface.				

Setup

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

Setup Internet/LAN	Wireless C	Config	Security	LAN Config	Admin Config	Diagnostic
Wizards & Overview						Logout
Easy Setup Basic Settings Run the Internet Connection Wizar Setup) Wireless SSID & Channel(11n300 Mode) Wireless Encryption (WEP/TKIP/AI Internet Internet Internet Games (Port Forwarding) Windows Live (MSN) Messenger Wireless Multicast Rate Other Update AirStation Firmware Initialize AirStation	rd (Easy)Mbps ES)	MODE Router N Interne (PPPoE 1: Easy Connect UIRELI IEEE SC SSID Authentic Encryptic SSID Authentic	Information Mode ON et Information Connection Setup(Default) Ion Condition Stop Check Connection ESS 02.11n/g/b (Auto 0018E76A1E an AOSS WPAW PSK 0018E76A1E cation AOSS WPA-P on AOSS AES	Online Refresh / 11 ch) 23 PA2 mixedmode - ES mixedmode 23-1 BK	Wizards & Overvi Wizards for [Easy the left. An overview of your system information the right. Basic Settings Run Internet Com (Easy Setup) This Wizard scans connection and co internet. Most cab connect automatic internet Connectio DSL modems ma information to con Internet. If your coo a password or oth information, have can provide this in don't have if	ew Setup] are on AirStation's is displayed on ection Wizard syour Internet onnects to the le modems twill cally when the in Wizard is run, y require PPPOE intert the nection requires her PPPOE internet it ready! Your ISP iformation if you
		Utilities	s Network Service	vOSS Setup VPS Setup se List	Wireless SSID & ((11n300Mbps Mo This Wizard lets yr (network name) a wireless channel Wireless Encrypt (WEP/TKIP/AES) This Wizard lets yr type of encryption	Channel de) ou set an SSID nd chose a for your network. ion ou choose the (WEP/TKIP/AES) eless network
	(012)	Langua Auto	Age	ahts reserved	Internet	

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

Parameter	Meaning
Easy Setup	Automatically configures the AirStation's internet connection.
Internet Information	Displays the current internet connection.
Check Connection	Checks if the AirStation is connected to the Internet properly.
Refresh	Click to refresh the display.
WIRELESS	Displays current wireless settings.
AOSS	Click to display the AOSS configuration screen.
WPS	Click to display the WPS configuration screen.
Network Service List	Shows a list of network services.
Language	Select the language you use.
Logout	Log out of the AirStation's web-based configuration interface. After 5 minutes of inactivity, the AirStation will log off automatically.

Internet/LAN (LAN Config)

Internet (Router Mode only)

The screen to configure a port of the Internet side.

Setup Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Internet PPPoE DDNS VP	N Server LAN D	OHCP Lease N	AT Route		Loaout	
				Internet Ethernet Se	ettings	^
As for the IP address acquisition "Perform Easy Setup (Internet	on method, Connection Wizard))" is set up.		Configuring your <u>Inter</u>	net side port:	
To set up PPPoE, <u>click here</u> .	To set up PPPoE, <u>click here</u> .					
Advanced Settings				Method of Acquiring Select one of the follo methods to acquire a	g IP Address wing Internet port	
Default Gateway				IP Address. Please a Provider for any other	sk your information	
Address of DNS Name Server	Primary: Secondary:]	about your line format sure which method to selecting Easy Setup confirm status of the	t. If you're not choose, try . You can current	
Internet MAC Address	 Use Default MAC Use this address 	Address(00:18:E7	:6A:1E:23)	System Information s setting can only be cl the hardware mode sy	ess on the creen. This hanged when witch on the	
MTU Size of Internet Port	1500 Byte	s		AirSation is set to [Ri	UUTER UNJ.	
Apply				Perform Easy Setup Connection Wizard)	(Internet	
				The Easy Setup scar Internet connection a	ns your and	~

Parameter	Meaning
Method of Acquiring IP Address	Specifies how the current WAN side IP address was obtained.
Default Gateway	Specify an IP address for the default gateway.
Address of DNS Name Server	Specify an IP address for the DNS server.
Internet MAC Address	Configure the Internet side MAC address. Note: Configuring an improper MAC address may make the AirStation unusable. Change this setting at your own risk.
MTU size of Internet Port	Values between 578 to 1500 bytes may be entered.

PPPoE (Router Mode only)

The screen to configure PPPoE settings.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Internet P	PPOE DDNS V	PN Server LAN D	HCP Lease	NAT Route		Lenet	
						Logout	
					PPPoE Settings		
Default PPP	oE Connection	1 : Easy Setu	ip 🔽		If PPPoF is specified	in the	
IP Unnumbe	red PPPoE Conn	ection 1 : Easy Setu	p 🗸		Internet side configura	ation, you'll	
					on this page. To spec	ify PPPoE as	
Арріу					method, on [Internet 3	Munication Setup]-	
					[Internet Port], select Client Function] or se	(PPPoE elect (Use IP	
					Unnumbered] .	·	
PPPoE Co	nnection List				Note:		
Number Na	ame Status				automatically from	ss DHCP server]	
1 Ea	asy Setup Enable				or (Manual Setup) is Internet side comm	s set as the junication	
Edit Conn	nection List				PPPoE was detected	thing besides ed when (Easy	
					Setup] ran, it is not enter information o	necessary to n this page.	
Preferred (Connections				(Even if it is set, it is Additionally, when f	s not used.) Easy Setup1 is	
No. Name	Destination add	ress Source address	5		executed, informati	on sét on this ten	
No Pre	eferred Connection:	s are Registered.					
Edit Dro	forred Connection				Default PPPoE Con	nection	
	serred connections	<u> </u>			registered to the PPF	s are PoE	
					Destination List, the	destination 🔉	1

Parameter	Meaning
Default PPPoE Connection	If you have registered multiple connection destinations in PPPoE Connection List, connection destinations selected here have priority. You need to configure the route to which PPPoE is connected to if you don't use the default setting.
IP Unnumbered PPPoE Connection	Select the destination from the PPPoE Connection List which is used when specifying [Use IP Unnumbered] in Method of Acquiring IP Address (page 34).
PPPoE Connection List	Edit PPPoE destination. You can register up to 5 sessions.
[Edit Connection List]	Click this button to display the screen to edit the settings of destination.

Parameter	Meaning				
PPPoE Connection No.*-Add	Click [Edit Connection List] to display. Name of Connection Enter a name to identify the connection. You may enter up to 32 alphanumerical characters and symbols.				
	User Name Enter the user name specified by your provider for PPPoE. You may enter up to 32 alphanumerical characters and symbols.				
	Password Enter the password specified by your provider for PPPoE. You may enter up to 32 alphanumerical characters and symbols.				
	Service Name Fill in this field only when your provider specifies a Service Name. Leave blank otherwise. You may enter up to 32 alphanumerical characters and symbols.				
	Connection Type Specifies the timing for the AirStation to connect to your provider.				
	Automatic disconnection Set time to disconnect after communication is stopped when the connection method is set to [Connect on Demand] or [Manual]. You can enter up to 1440 minutes.				
	Authorization Configure an authorization method with a provider.				
	MTU Size Configure the MTU value between 578 and 1492 bytes.				
	MRU Size Configure the MRU (Maximum Receive Unit) value between 578 and 1492 bytes.				
Preferred Connections	Displays connections that you've added to the preferred connection list.				
[Edit Preferred Connections]	Click this button to display the screen to edit the settings of connection destination route.				

Parameter	Meaning
PPPoE Connection No. *-Add	Keep Alive If Keep Alive is enabled, the AirStation issues LCP echo requests to maintain the connection with the PPPoE server once a minute. If the server does not respond after 6 minutes, then the line is considered disconnected and the AirStation will terminate the connection. If your PPPoE connection is often disconnected, disable Keep Alive.
Preferred PPPoE Connection -Add	This is displayed when clicking [Edit Preferred Connections].
	Name The name of destination to connect by PPPoE if [Destination address] and [Source address] of the communication match. Select the destination registered to PPPoE Connection List.
	Destination address Destination address to communicate. When communicating to this destination address, the AirStation will communicate with [Name of Connection].
	Source address Source address to communicate. When communicating from this source address, the AirStation will communicate with [Name of Connection].

DDNS (Router Mode only)

Configure Dynamic DNS settings.

Setup Internet/L/	AN Wireles	s Config	Security	LAN Config	Admin Config	Diagnostic	
Internet PPPoE DDNS VPN Server LAN DHCP Lease NAT Route							
					Dynamic DNS Setti	ngs	
Apply					Dynamic DNS Setup. Before configuring this settings, you need to sign up for a dynamic DNS service provider.		
Current Dynamic DNS	S Information				Dynamic DNS Servi Select a dynamic DN provider. You can select "DynE	i ce IS service DNS'' or	
Internet Side IP Address	222.4.67.69				"TZO".		
Domain Name	Disabled				DynDNS		
Status	Disabled				• 120		
Refresh					The following values a depending on your dy service provider.	are different mamic DNS	

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

Parameter	Meaning
IP Address Update Period	Specifies the period to notify the dynamic DNS service provider of the current IP address. When DynDNS is selected, set it between 0 and 35 days. When TZO is selected, set it between 0 and 99 days. If 0 (zero) day is set, no periodic update is performed.
Internet Side IP Address	The WAN-side IP address of the AirStation's Internet port. This address is sent to the dynamic DNS service provider.
Domain Name	The domain name assigned by the dynamic DNS Service provider. The AirStation can be accessed from the Internet using this domain name.
Status	Displays the status of dynamic DNS service.

VPN server (Router Mode Only)

Configure a VPN server.

Setup Int	ernet/LA	N Wire	ess Config	Security	LAN Config	Admin Config	Diagnostic
Internet PPPoE	DDNS	/PN Serve	LAN DH	CP Lease NAT	Route		Logout
The LAN side IP address is set to 192.168.11.1. VPN Server Settings Therefore, a PC connected to BUFFALO's router may be unable to access to the PC on the LAN. By using the PPTP server function it is possible to access the AirStation from the Internet and the LAN side IP address and DHCP IP address pool should be changed.						gs server function ess the Internet and the 's PPTP client.	
Auto Input		Genera	ate Recommen	ded IP Address		Note	
LAN Side IP Addre	IP Ad	ddress 19 net Mask 29	02.168.11.1 55.255.255.0	*		If using GRE proto no.47) and no.173: filtering, then this fi work correctly.	col (protocol 2 TCP port unction may not
DHCP Server Fun	ction 🔽 🛛	Enable				the Internet side ha	as these then this
DHCP IP Address	Pool 192	.168.11.2	for u	ıp to 64	Address(es)	function cannot be	used.
PPTP Server Fund	ction 📃 E	nable				Auto Input Click this button to	generate a
Authorization Type	e MS	-CHAPv2 (4	0/128-bit Encry	ption) 💙		random IP address possibility of overlap addresses of other I	with a small pping with IP Buffalo routers.
[Advanced Setti	ngs]					LAN Side IP Addre	ess
Server IP Address	() ()) Auto) Manual 🗌				Configure the AirSta <u>Address</u> . The defaul 192.168.11.1. If you connect the AirStat	ition's LAN <u>IP</u> t is want to ion to an
Client IP Address	() ()) Auto) Manual 🗌		for up to	5 address(es)	existing LAN, speci unused <u>IP Address</u> range of IP address	fy a unique, from the LAN's es.
DNS Server IP Adı	dress C) LAN IP add) Manual) Do Not Spi	dress of the AirS ecify	tation		Subnet Mask Select the AirStatio Subnet Mask. The o 255.255.255.0. If yo	n's LAN side Jefault is u want to
WINS Server IP Ad	ddress					connect the AirStati existing LAN, speci	ion to an fy the Subnet
MTU/MRU value	13	396				Mask the LAN uses	
Apply						Enable the DHCP S default is enabled. It another DHCP serve network, one DHCP disabled or the IP ra	Form ferver here. The f there is er on the server must be anges must be
PPTP User List						changed to avoid co by overlapping DHC	nflicts caused P scopes. If blod confirm
User Name Connection Condition IP Address Operation DHCP Server is enabled, common DHCP IP Address Pool doesn't Overlap existing IP Address es i the LAN segment.				oled, confirm P <u>ool</u> doesn't Addresses in			
Edit User Inform	nation					DHCP IP Address	Pool
Refresh						This determines the range from which IP be distributed to DH (both wired and wire the starting IP addre	IP Address addresses will ICP clients Iless). Enter ess and the
			(C)2000-2009	9 BUFFALO INC. All	rights reserved.		

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

Configure LAN-side IP address settings.

Setup Internet	t/LAN Wireless Config Securi	ty LAN Config	Admin Config	Diagnostic
Internet PPPoE DDI	NS VPN Server LAN DHCP Lease	NAT Route		Logout
			LAN Side Ethernet	Settings
LAN Side IP Address	IP Address 192.168.11.1 Subnet Mask 255.255.255.0		Configure the AirSta Address, Subnet Ma	tion's LAN IP isk, and local
DHCP Server Function	🗹 Enable		you're a networking	expert, the
DHCP IP Address Pool	192.168.11.2 for up to 64 Excluded IP Addresses:	Address(es)	Note If you have an existi	ng LAN, the
LAN Side IP Address IP Address AirStation's configuration must be changed to connect to it. Please refer to here to set up your AirStation on an existing network.				
DHCP Server Settin	LAN Side IP Addre	ss tion's LAN IP		
Advanced Settings]Display		Address. The default 192.168.11.1. If you connect the AirStati existing LAN, specif unused I <u>P Address</u> f range of IP addresse	t is want to on to an y a unique, rom the LAN's is.
			<	>

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

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

DHCP Lease (Router Mode only)

Configure DHCP leases.

Setup	Internet/LAN	Wireless Co	nfig	Security	LAN Config	Admin Config	Diagnostic	
Internet PPPoE DDNS VPN Server LAN DHCP Lease NAT Route								
DHCP Lease Settings								
Add Client Information						Add manual IP address		
IP Address						assignment, delete automatic IP Address assignment or set		
MAC Address					Manual assignmen	nt to manual It		
bbA					Assign an IP address to specified MAC address manually. Un to 200 devices can be			
						registered for manual assignment.		
Current DH	ICP Client Infor	mation				Add/Edit Client into	ormation	
IP Address	MAC Address	Lease Period	Status	Customize		This area is for addir	ng or editing a	
192.168.11.3	00:1D:73:92:0B:7F	47:48:26	Auto	Manual A	ssignment	line.		
(*) The IP Address of the client that is configuring this AirStation is								
(192.168.11.	2)					assignment.	for manual	
Refresh						mode.	in append	
						displayed in edit mo	ss is de. The IP 🛛 🗠	

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

NAT (Router Mode only)

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

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
Internet PP	POE DDNS VF	N Server LAN	DHCP Lease	NAT Route		Logout
N					Network Address Tr Settings	ranslation
Address Trai	nslation	🗹 Enable				
Log Output o	of Deleted Packets	6 🔲 Enable			Configure address tra	anslation to
Apply					Internet.	side to the
					Address Translatio	n 🗸 🗸
		(C)2000-200	9 BUFFALO INC. AI	l rights reserved.		

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

Route

Configure the AirStation's IP communication routes.

Internet PPPOE DDNS VPN Server LAN DHCP Lease NAT Route Logout Add Routing IP Address Subnet Mask 255.255.0 Configure Routing Information. Configure Routing Information. Add/Edit Routing Gateway Internet 15 This area is for adding or editing a line. Destination Address							
Add Routing Routing Information Destination Address Subnet Mask 255.255.0 Gateway Add/Edit Routing Metric 15	Internet PPPoE DDNS VPN Server LAN DHCP Lease NAT Route						
Destination Address IP Address Configure Routing Information. Subnet Mask 255.255.0 Image: Configure Routing Information. Gateway Image: Configure Routing Information. Metric 15	^						
Gateway Image: Constraint of the second se							
Add Destination Address Specify the destination IP address							
Routing Information Paddress as destination if address as destination and the section of the section of the section if address as destination and the section if address as destination and the section is address as destination and the section is address as destination and the section is address addre							
Destination Address Subnet Mask Gateway Metric Operation network address as destination, specify the network address and subnet mask. Routing Configuration is not Registered subnet mask. subnet mask. subnet mask.							
Gateway	~						

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

Wireless Config

WPS

Configure WPS settings.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
WPS AOSS B	asic(11n/g/b) Ac	vanced(11n/g/b)	WMM(11n/g/b)	MAC Filter Multi	cast Control WDS	Logout
					WPS(WiFi Prote	cted Setup)
WPS	🗹 enable				WPS	
External Registr	ar Request is rejected	d in AOSS mode.			Configuring WPS	tected Setur
Apply					which correspond	s to Windows
AirStation PIN	12345670 General	te PIN			WPS is also know Simple Configurat	vn as the Wi-Fi ion Protocol.
Enrollee PIN	OK				WPS function car easily distribute w	n safely and /ireless security
WPS Security	Information				(Airstation) to the The WPS device wireless security	WPS clients. which registers
WPS status	configured(AOSS)				called Registrar.	an internal
11n/g/b	SSID 001 Security WP Encryption key 123	8E76A1E23 AWPA2 mixedmode - PS 34567890123	K TKIP/AES mixedmod	e	Registrar built-in i use an External R The WPS device the wireless secu from the Registrar	t, but can also legistrar. which receives rity information r is called
					Enrollee. The default is Ena	ıble.
					Warning	
					When the wirele disabled, WPS d	ss radio is loes not work.
					External Registr	ar
		(C)2000-200	9 BUFFALO INC. All rid	hts reserved.	When WPS is us	ed configure- 🔛

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

AOSS

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

Setup Internet/LAN Wireles	s Config Security	LAN Config	Admin Config	Diagnostic
WPS AOSS Basic(11n/g/b) Advanced(l1n/g/b) WMM(11n/g/b)	MAC Filter Multic	cast Control WDS	
			~	Logout
			AOSS (AirStati Secure System	on One-Touch)
(A055) (A055)			AOSS is Buffalo technology for q secure wireless	's unique uickly forming a connection. You
AOSS Settings - Edit AOSS Client Inform	nation		can see AOSS's status from this	s configuration and screen.
Encryption Type of Excusive SSID for WEP 80	2.11n/g/b Stop 🔽		(([]))	
Encryption level expansion function 80	2.11n/g/b Enabled 💌		Click this button	SSJ button
Dedicated WEP SSID isolation 80	2.11n/g/b Disabled 💌 /hen this function is enabled, clients	connecting via WEP will	The AOSS butto router works the button. Refer to	on on top of the same as this How to use AOSS
AOSS Button on the AirStation Unit	Enable		for more details.	
Current Encryption Information 802.11n/	g/b		[Disable A	AOSS] button
Encryption Type WPA-PSK-AES (Now in use)			This button appe enabled. Click the disable AOSS	ears when AOSS is his button to Connections to
SSID 0018E76A1E23-1			AOSS Information	will be terminated,
Encryption key 1234567890123			Encryption Type value, AES. Cur Information will a	reset to its default rent Encryption also be removed
Encryption Type WPAWPA2-PSK-mixed (Now in use)			Wireless Setting Security are ena Settings when A	and Wireless ibled in Advanced SS is disabled.
SSID 0018E76A1E23			Note:	
Encryption 1234567890123			 Once the Alpressed, of be started. 	OSS button is ther operations can't until AOSS is
Encryption Type WEP128			finished. If t	the AirStation can't ess client after three
SSID 0018E76A1E23.3			minutes, th returns to it	e AirStation's status s previous state.
			 Up to 24 with the connect 	reless clients may
1234567890123	(Sending Key	0	 By default, a 	AOSS is functional
Encryption key 1234567890123			but does no	unless started
1234567890123		button, eith	er here or on the top	
1234307030123			 Use AirStat 	ion's System
Encryption Type WEP64			Information configure a	page to manually wireless client that
SSID 0018E76A1E23-4			ocesnitisu) VVhen wirel	oport AOSS. ess security is
12345	(Sending Key	0	configured, information	it's securitý is succeeded.
Encryption key				
12345			In the following of wireless secu	cases, the setting
12345			succeeded and	AOSS returns
Random KEY base Reset			 Any blank is WPA-PSK i 	s contained in SSID. s input with
Apply			'hexadecim • Any blank is PSK.	al 64 characters'. s contained in WPA-
AOSS Client Information			In the following of wireless secu	cases, the setting rity_is_not
Client Information MAC Address Encryption	n Type Wireless Ci	onnection Setting	succeeded and . new encryption	AOSS generates settings.
WLFUC-G30xN 00:1D:73:92:0B:7F WEP64/WEI	P128 KIPAVPA-PSK-AES 802.11n/g/b All	w	 Wireless A "WPA2-PSF 	uthentication is ≪',
Edit AOSS Client Information			If Wireless Auth	orization is
AOSS Ethernet Converter Information			"WPA/WPA2 m AOSS passes e	ixedmode - PSK" ncryption key to
Client Information MAC Address Encryption	Туре		WPA-PSK-TKIP initial level to W	and configures PA-PSK-TKIP.
<		>		~

Parameter	Meaning
(((])) A055	Initiates AOSS automatic wireless configuration. Click this, then press or click the AOSS button on your AOSS-compatible wireless client. Repeat for additional AOSS clients.
	Click this button to disconnect all AOSS connections. Note: If AOSS connections are disconnected, the SSID and encryption keys will be restored to their most recent settings before using AOSS.
Encryption Type of Exclusive SSID for WEP	You may allow a separate SSID specifically for WEP connections. If [disabled] is selected, then clients will not be able to connect with WEP.
Encryption level expansion function	Expands security method from TKIP to WPA/WPA2-PSK-mixed mode.
Dedicated WEP SSID isolation	Set a separate SSID and network segment specifically for WEP connections. Devices connected with WEP will not be able to communicate with devices connected using AES/TKIP. All connected devices will be able to communicate with the internet.
AOSS Button on the AirStation Unit	Normally, pressing the physical AOSS button on the AirStation initiates AOSS. If this box is unchecked, it will not, and the button on this page will be the only way to initiate AOSS.
Current Encryption Information AOSS Connection only	Displays the encryption type, SSID, and encryption key that AOSS has configured.
[Random]	Click to enter random values for SSID, encryption key, and other settings.
[KEY base]	Click to return the SSID, encryption key, and other wireless settings to the values on the case sticker.
[Reset]	Click to return the SSID, encryption key, and other wireless settings to their previous values.
AOSS Client Information AOSS Connection only	Displays basic information for AOSS clients connected to the AirStation.
AOSS Ethernet Converter Information AOSS Connection only	Displays basic information for Ethernet converters connected to the AirStation via AOSS.

Basic

Configure basic wireless settings.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
WPS AOSS Basi	i¢(11n∕g∕b) A	dvanced(11n/g/b)	WMM(11n/g/b)	MAC Filter Multi	cast Control WDS	Logout
					Basic Wireless	Setting (11n/g/b)
Wireless Radio	🗹 Enable				You can set has	
Wireless Channel	Auto Channel 🗸	(Current Channel: 6)			information for y	our wireless LAN f encryption is not
300Mbps Mode	Band Width : 20 1 Extension Channe	ΛHz <mark>♀</mark> I: 1 <mark>♀</mark>			used, communio established just setup. Encryptio	cation will be by this basic on is highly powever
Broadcast SSID	🗹 Allow				Wireless Padie	10000001.
📔 Use Multi Secu	rity function				Un-checking "Er	, nable" will disable
Separate feature		se			disabled, all wire including broadd	nctionality, vynen eless functionality, :asting, is halted. enabled
SSID	⊙ (○ E	Ise AirStation's MAC addre	ess(0018E76A1E23)		Wireless Chan	nel
Wireless authentica	ation WP.	AVVPA2 mixedmode - P	SK 🗸		You may specif (frequency band	y a channel) for your wireless
Wireless encryption	n TKI	P/AES mixedmode 💌			wireless clients	If there are other near the
WPA-PSK (Pre-Sha	ared Key): 🛛 🐽				interference. Ch	ange to a different
Rekey interval :	60	minutes			channel in this of channels vary w	ase. Available
Арріу					standard you ['] re channel is selec channel is selec 11n/g/b : Auto, ' (Default value : /	using. When Auto ted, a vacant ted automatically. I-11 Channel Auto channel)

Parameter	Meaning
Wireless Radio	Determines whether or not to allow wireless communication. If this is unchecked, then no wireless connections will be allowed.
Wireless Channel	Sets a channel (a range of frequencies) used for wireless connections. Channels 1-11 are available. If Auto Channel selected, the AirStation will automatically use the best available channel.
300 Mbps Mode (WHR-HP-G300N) 150 Mbps Mode (WHR-HP-GN)	300/150 Mbps mode uses twice the normal frequency range, 40 MHz instead of 20 MHz. In uncongested areas this can increase performance. To use 300/150 Mbps mode, set the Bandwidth to 40 MHz and choose an Extension Channel. Note: If using Auto Channel for the wireless channel, then the Extension Channel is set automatically.

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

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

Advanced

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

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
WPS AOSS Ba	sic(11n/g/b) A	dvanced(11n/g/b)	WMM(11n/g/b)	MAC Filter Multio	cast Control WDS	Loqout
Multisent Data	De la ser				Advanced Wirel (11n/g/b)	ess Settings
DTIM Period	Auto				Specify Advanced Settings.	Wireless
Privacy Separato	r 🔲 Enable				Multicast Rate You can select 1, 12, 18, 24, 36, 48 Auto. Default Value is "/	2,5.5,6,9,11, ,54Mbps or Auto". ■
					DTIM Period DTIM ("Delivery Tr Maps") Period is wireless LAN equ broadcasts DTIM Setting larger valu but may slow net setting is ignored management is a wireless client. Vi inputted: 1-255. D	raffic Identification an interval when ipment information. les saves power work traffic. This unless power ctivated on the alues that can be efault value is
					Privacy Separat Choose whether F function is enable When Privacy Se enabled, each wir devices connectin	or Privacy Separator d or disabled. parator is eless LAN g this AirStation

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

WMM

Configure QoS priorities here.

Setup	Internet/LAN	Wirel	ess Config	Security	LAN Config	A	dmin Config	Diagnostic
WPS AOSS Basic(11n/g/b) Advanced(11n/g/b) WMM(11n/g/b) MAC Filter Multicast Control					Control WDS			
	Doromotoro					~		Logout
WMM Settings (11n/g/b)						1n/g/b)		
Priority	Parameter						Driaritized AirStati	-n
	C\A(min:	FOLAP 15	FORSTA				communication for	specific
	C\A/max	1023	1023				provides some rea	settings
AC_BK(Low)	AIESN:	7	7				communication, w improve the quality	hich can help / of VOIP or
	TXOP Limit	Ω	n				other streaming pr	otocols.
	Admission Control:		Disable 🗸					
		For AP	For STA				WMM-EDCA Para	meters
	CWmin:	15	15				WMM Settings (1	1n/g/b) 🔒
	CWmax:	63	1023					
AC_BE(Normal)	AIFSN:	3	3				Prioritized AirStati communication for	on specific
	TXOP Limit:	0	0				transactions. This provides some rea	settings
	Admission Control:		Disable 💌				communication, w	hich can help
		For AP	For STA				other streaming pr	otocols.
	CWmin:	7	7					
AC M/High)	CWmax	15	15				WMM-EDCA Para	meters
AC_VI(High)	AIFSN:	1	2					
	TXOP Limit:	94	94				It is usually not ne change this value.	cessary to
	Admission Control:		Disable 👻				Deiosite	
		For AP	For STA				The priority is rank	ed (Highest)8 :
	CWmin:	3	3				(High)4 : (Normal)2 each nacket	2 : (Low)1 for
AC VO(Highest)	CWmax	1	<u>/</u>				B A	
	AIFSN:	1	2				Parameter CWmin, CWmax	
	TXUP Limit:	4/	4/				The maximum ar	nd minimum value
Apply	Admission Control:		Uisable ¥			*	for the contention contention windo control the frame avoidance syster Values that can b 32767.	window. The w is used to collision n in IEEE802.11. e inputted: 1-

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

MAC Filter

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

Setup	Internet/LAN	Wireless Config	Security	LAN Co	nfig /	Admin Config	Diagnostic
WPS AOSS B	asic(11n/g/b) Ac	ivanced(11n/g/b)	WMM(11n/g/b)	MAC Filter	Multicas	st Control WDS	Logout
						Wireless MAC Fi	ltering
Enforce MAC Fil	tering 📃 Enable					Wireless connecti AirStation can be	ions to the limited to
Apply						specific client MA enhance security unwanted network enabled, only wire adapters with regi	C addresses to against visitors. When less client stered MAC
Registration Li	ist					addresses will be connect to the Air	allowed to Station. The
MAC Address (Connection Status					AOSS is in use.	r is ignored while
Edit Registrat	ion List					Enforce MAC Filt	tering
						Check Enable to filtering. Then, onl with registered M ₄ can connect to thi However, even if [I checked, MAC filt disabled if no MAJ configured. The de MAC filtering is di	use MAC y wireless clients <u>AC Address</u> es is AirStation. Enable] is ering remains <u>C Address</u> es are efault value for sabled.
						Registration List	
		(2)2020.000				The list of <u>MAC A</u> to connect with th sorted by <u>MAC A</u> status is also disr	ddresses allowed is AirStation, ddress. Current

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

Multicast Control

Restrict unnecessary multicast packets from wireless LAN ports.

Setup In	ternet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
WPS AOSS Basic	11n/g/b) Ad	wanced(11n∕g∕b)	WMM(11n/g/b)	MAC Filter Multi	cast Control WDS	Logout
					Multicast Contro	I
Snooping Multicast Aging Time	Enable	Ser			This setting contri packet transfer to port.	ols multicast wireless LAN
Apply					Snooping control packets li control unnecessa transfer to wired a Mark check box t multicast Snoopir "Wired port contro performed when b If your wireless cl multicast tunnel to this unit uses tunn automatically to t stream stability.	s multicast ce IGMP to my packet nd wireless port. o enable g feature. il is not ridge mode is on. ents supports ransfer mode, nel transfer mode ansfer multicast
					Multicast Aging Multicast Snoopir learning informatic configure the hold Enter bigger value IGMP/MLD query	Time g feature keeps in, This setting ing time. rather than rather than interval.

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

WDS

WDS bridging allows communication between AirStations.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
WPS AOSS B	asic(11n/g/b) Ad	vanced(11n/g/b)	WMM(11n/g/b)	MAC Filter Multi	cast Control WDS	Logout
WDS 🔽 Use					WDS	
Specify Master/S	Slave 🛛 Master 💌				Configure establis connection with a	h the wireless nother AirStation.
SSID			Search		If the communicat	ion between
Wireless authen	tication Do not auth	enticate 📉			cannot be establis because the dista	shed or constant nce between
Encryption for wi	ireless Not encrypt	ed 💙			those two are too AirStation betwee	far away, Install n Master and
Apply					Slave wireless dev WDS to solve the	vices by using se problems
		(C)2000-200	9 BUFFALO INC. All rig	hts reserved.	T I I I II	

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

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

Notes: A master AirStation can communicate with two slaves only.

A slave AirStation cannot communicate with any AirStation other than its master.



Security (Router Mode only)

Firewall (Router Mode only)

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic			
Firewa	Firewall IP Filter VPN Pass Through								
Firewall									
Log Output Enable Limits the type of packets allown to pass between the Internet and LAN. When packets reach the									
Enable	Basic Rules		er of Packets		the packets, and form	ards packets			
	Prohibit NBT and Micro	p Prohibit	0		that don't match any destination. The Firev	filter to their vall blocks			
	Reject IDENT Requests	3	0		Internet side and prev	ents leaking			
	Block Ping from Interne PPPoE1: Easy Setu	t p Ignore	0		secure information fro side.	om the LAN			
Apply Apply Log Output Checking this box will record Firewall information to a log. The default setting is disabled.									

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

Param	neter
-------	-------

Meaning

Reject IDENT Requests

Enabling this option will answer IDENT requests from the Internet side with corresponding rejection packets. Enable this option if you experience slow transfer speeds for network applications such as email, ftp, or browsing. If you have configured transfer of IDENT requests to the LAN side in the address translation settings (DMZ or TCP port:113), that setting has higher priority, and overrides this setting.

Block Ping from Internet

If this is enabled, the AirStation will not respond to pings from the Internet side. You can configure this with PPPoE if you select [Use PPPoE Client] or [Use IP Unnumbered] in Method of Acquiring IP address (page 34), or if Easy Setup identified a PPPoE connection during setup.

IP Filter (Router Mode only)

Create and edit IP filters.

Setup	Internet	LAN Wirele	ss Config	Secu	rity	LAN Config	1	Admin Config	Diagnostic	
Firewall IP	Filter VPN P	ass Through							Logout	
								IP Filter Settings	Logoul	^
Log Output	Enable							Limits the type of p to pass between th LAN. The maximum num 32. If the packet meets monitoring conditio before it is routed, action will be taker	ackets allowed ie Internet and ober of rules is sone of the ins (see below) the specified of fmultiple	
Add IP Add	Iress Based I	llter						conditions (see bel appropriate action	iow) are met, the will be	
Operation	Ignored 💌							performed once the the condition.	e packet meets	
Direction	Internet→LAN	~						Log Output		
Direction Internet→LAN ▼ Log Output IP Address Source Address: → Destination: Checking this box will record IP filtering information to a log. If Operation is Accepted, log output is disabled.										
	O All							Operation is Accep	oted, log output	
								The default is Disa	bled.	
Protocol	🔘 Manual	Protocol Num	ber:							
	⊙ TCP/UDP	TCP Port Ma Port Number:	nual Setting	Y Specifica	ion metho	od		Add/Edit IP Addre Filter	∍ss Based	
Add Rule					4			This area is for add line.	ling or editing a	
								Operation		
IP Filter Inf	formation							Select the action to on packets that. meet filter criteria lanored	o be performed	
Operation	Direction Sou	rce Address ination Address	Protocol C	Count Cus	tomize			Stop the packet ar it.	nd do not route	
Log Output Enable Apply Add IP Address Based Filter Operation Ignored Operation Intermet→LAN IP Address Source Address One Intermet→LAN IP Address Source Address Operation Intermet→LAN IP Address Source Address Operation IP CP Fort Manual Setting Source Address Protocol Operation IP Filter Information Operation Direction IP Filter Information Operation Direction Direction IP Filter Information Operation Direction Direction IP Filter Information Operation Direction Direction Direction IP Filter Information Operation Direction Direction										
								point of origin. Accepted		~

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

VPN Pass Through (Router Mode only)

Configure IPv6 pass through, PPPoE pass through, and PPTP pass through.

Setup Internet/	LAN W	/ireless Config	Security	LAN Config	Admin Config	Diagnostic	
Firewall IP Filter V	Firewall IP Filter VPN Pass Through						
IDv6 Dace Through					Specify VPN Pass Th	nrough	
PPPoE Path Through	Enable	e			séttings. ID: C. Dava Thaonach	Ū -	
PPTP Pass Through	💌 Enable	e			Select whether to use	e IPv6 Pass-	
Apply					The default setting is	disabled.	
		(C)2000-2009 B	UFFALO INC. AI	l rights reserved.	Note:	•	~

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

LAN Config (Router Mode only)

Port Forwarding (Router Mode only)

Configure port translation.

Setup	Internet/	AN Wir	reless Config	Security	LAN Config	Admin Config	Diagnostic
Port Forwa	rding DMZ	UPnP Qo	oS				Logout
Add Port F	Forwarding					Port Forwarding S	ettings
Group		New Group	p 🔽 🛛 Group Nam	ie:		Address Translation communication whice	onlý for ch is started —
Internet Side IP Address AirStation's Internet IP Address Manual IP Address:						from the LAN side , applications, such a games, require that communications fro	certain s network you allow m the <u>Internet</u>
Protocol O All O ICMP O Manual Protocol Number: O Manual Setup Specification Method					pecification Method	(the Internet) side vi: Edit the rules for coi from outside the inte the LAN side networ <u>NAT</u>) carefully, cons internet game's doc necessary. Up to 32 registered.	a (<u>Static NAI</u>). mmunicating ernal network to rk device(<u>Static</u> sulting your umentation as trules can be
LAN Side IF	o Address	192.168.11	1.2			Add/Edit Port Forw	varding
LAN Side P	ort	TCP/UDP P	ort:			You can add new po	ort forwarding
Add						information and edit information.	existing
Port Forw Group	arding Regis ernet Side IP A N Side IP Add Port Forwardi	stration In Address Pr ress L4 ng has not be	formation rotocol AN Side Port cen set up yet	ustomize		You can give a nam to configured <u>Static</u> multiple <u>Static NATs</u> and manage them to By giving names to i can [Enable] or [Dis separately. To add a <u>Static NAT</u> avictice group color	e (group name) NATs and give s one name ogether. groups, you able) each rule to t the group
			/012000 2000		visibile ve e e u e d	from the drop-down choose [Add]. To make a new grou	box and

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

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

DMZ (Router Mode only)

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

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Port Forwarding DMZ UPnP QoS							
					DMZ Settings	Logour	
IP Address of DMZ IP Address of the client that is configuring this AirStation is Specify the address of a LAN side						of a LAN side	
[192.168.1 Apply	1.2]		3		network device to whi communication pack transferred. When an entered for the DMZ, possible to access th	ich rejected ets are to be IP address is it becomes ie device at	
		(0)2000-2000-		righte record	that address from out	iside trie	

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 Universal Plug and Play.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Port Forwarding DMZ UPnP QoS							
					UPnP Settings		
OPnP 🔽	Enable				Setting up the interne function of UPnP: On supports UPnP (Wind The AirStation is auto recognized on the LA	rt gateway a PC which dowsXP, etc.), omatically N as an ∽	
		(C)2000-2009 E	BUFFALO INC. AII	l rights reserved.			
Paramet	ter		Meaning				

UPnP

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

QoS (Router Mode only)

Configure the priority of packets sent to the Internet.

S	etup	Internet/LAN	Wireless Cor	nfig S	ecurity	LAN Conf	fig	Admin Config	Diagnostic	c
Port	Forward	ing DMZ UPnP	QoS						Logo	ut
_			_					QoS Setting	2030	^
QoS	for trans	mission to the Interr	iet 🕑 Enable					QoS is a technolog bandwidth on the ne	y to use the etwork more	
Uplo	iad bandv	vidth 1000	<bps< td=""><td></td><td></td><td></td><td></td><td>effectively. When two or more at the same time, t</td><td>packets arrive</td><td></td></bps<>					effectively. When two or more at the same time, t	packets arrive	
No.	Enable	application name		protocol	destination po	rt priority		higher priority is pro This can be used to	cessed first. give priority to	
1		VoIP		UDP 💌		high	*	time processing, su	ich as VOIP.	
2		ssh		TCP 💌	22	medium	~	QoS for transmiss	ion to the	
3		telnet		TCP 👻	23	medium	~	If checked, this give	s priority to	
4		ftp		TCP 💌	21	low	~	Internet. When enal	bled, you will be els of increased	
5				TCP 💌		low	*	priority for specific a By default, this is d	applications. isabled.	
6				TCP 💌		low	*	Uplink Bandwidth		
7				TCP 💌		low	~	Specify the bandwid from this unit to the	th transferred Internet in	
8				TCP 💌		low	~	kbps. The real uplink band	dwidth should	
Appl	у							If a bandwidth value real line speed is er	larger than the tered, the	
								unlink bondwidth wi	II he limited by	
			(C)2000	-2009 BUFI	FALO INC. All righ	ts reserved.				

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

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

Admin Config

Name

Configure the AirStation's name.

Setup Internet/LAN Wireless Config Security L	AN Config Admin Config Diagnostic					
Name Password Time/Date NTP Access Log Save/Restore Initialize/Restart Update Logout						
	AirStation Name					
AirStation Name AP0018E76A1E23	AirStation Name					
List Network Services Enable	This can be used to assign a specific descriptive name for the AirStation					
Apply	The AirStation name may be up to 64 alphanumeric characters in					

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

Password

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

Setup	Internet/LA	N Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Name Pas Initialize/Re	<mark>sword</mark> Time/I estart Update	Date NTP Access L	og Save/Re	store		Logout	
					AirStation Administ Password	rator	
Administrat	or Name ro	oot (fixed)					
Administrat	or Password				Administrator name	•	
, istrinition of	•••••••			n)	This is the user name used to log into the AirStation's configuration		
Apply					screens. It cannot be from 'root'.	changed	
					Administrator passv	vord 🗸	
		(C)2000-2009 E	UFFALO INC. All	rights reserved.			
Paramet	er	Ν	leaning				
Administr	ator Name	[r	oot] is the c	onfiguration	utility's user nar	ne for login. T	
		fi	xed.				

Administrator Password	Enter a password for logging in to the AirStation's configuration
	utility. The password may contain up to 8 alphanumeric characters and underscores (_).

Time/Date

Configure the AirStation's internal clock.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
Name Pas Initialize/Re	sword Time/Date	NTP Access	Log Save/Re	store		Logout
The NTD f	unction move how	e changed come	values		Time/Date	<u>^</u>
		ve changed some	values.		Set the AirStation's in	ternal clock.
Local Time	2009 Year 8	Month 25 Da	iy 		Note:	manuany.
Time Zone	(GMT-06:00)Cent	ral Standard Time: CS	onas T	*	The AirStation's inter reset to its default se	mal clock is etting
Apply Re	efresh Get	Current Time from you	ır PC		whenever power is in doesn't have a batte However, the AirStati configured to adjust automatically even w	ost because it /y. on may be its clock /hen rebooted
		(C)2000-2009	BUFFALO INC. All	rights reserved.	by connecting it to a	

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

NTP

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

Setup	Interr	net/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
Name Password Time/Date NTP Access Log Save/Restore Logout					Logout		
						NTP	^
NTP Function	nality	💌 Enable				lf an NTP server is co	nfigured the
NTP Server	NTP Server time.nist.gov					AirStation will access NTP server and adjus	the specified
Update Interval 24 hours				clock to conform with server's time. NTP is	the NTP an acronym		
Apply						of Network Time Prot server distributes acc network devices.	ocol. An ŃTP urate time to
						UTD F	~
			(C)2000-2009 I	BUFFAEO INC. AI	II rights reserved.		

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

Access

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

Setup	Internet/LAN Wireless Co	nfig Security	LAN Config	Admin Config	Diagnostic			
Name F Initialize	Name Password Time/Date NTP Access Log Save/Restore Initialize/Restart Update Logout							
Log Out	put Enable			Management Acces You may prohibit man the AirStation in spec	nagement of			
Enable	Management Access	Number of Packets		these limitations will prevent				
	Prohibit configuration from wireless LAN 0 AirStation's setting				from PCs that			
	Prohibit configuration from wired LAN	0		Note that checking all of these				
boxes at once will make it very difficult to make future changes to the AirStation's settings.								
Enable	able Management Access Log Output							
	Permit configuration from wired Internet Checking the				l record			
Apply				to a log. Logging is d default.	isabled by			
	(0) 2000		windste were enveral		~			

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

Log

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

Setup	Internet/LAN	Wireless Config	Secur	rity	LAN Config	Admin Config	Diagnostic	c
Name Pass Initialize/Re	Name Password Time/Date NTP Access Log Save/Restore Logout							
						Syslog Setup		^
Log Transfe	r 📃 Enable					Qualax transfers that	A in Chatian la	≡
Syslog Serv	er					log information to a s	AirStation's yslog server.	_
Transfer Lo	 Address Tra Firewall Dynamic DI DHCP Serv Wireless CI Setting Cha NTP Client 	anslation IP Filter PPPoE VS V DHCP of er AOSS lient Authent inges System V Wired L	Client Client ication Boot ink			Log Transfer Checking [Enable] wi AirStation to transmit information to a Syste default is disabled. Syslog Server Specify the name of y Server by host name, with domain or IP Add	ll instruct the log g server. The your Syslog host name dress.	
Apply Se	elect All Clear /	All				Alphanumeric charac '-' and dot '.' may be The Syslog Server Na start or end with a hy	ters, hyphen used. ıme can't phen '-' or dot	~

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

Save/Restore

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

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
Name Passw Initialize/Rest	vord Time/Date tart Update	NTP Access Log	Save/Restore			Logout
	Save				Save/Restore AirS Settings	Station
Save current	settings	t the configuration file with	n a password		Save Current Sett	ings
					Once you've got yo set up the way you may save the curre	ur AirStation want it, you nt configuration
Restore Confi	iguration from Back	Backup file		Browse	of the AirStation to that you're using for Note:	a file on the PC r configuration.
		Enter pass	word		The AirStation will restore configurati save file in the follo	not be able to ons from the owing 🛛 🗸 🗸
		(C)2000-2009	3 BUFFALO INC. All ri	ahts reserved.		

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

Initialize/Restart

Reboot or initialize the AirStation.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
Name Pas Initialize/Re	sword Time/Date	te NTP Access	Log Save/Re	store		Logout
					Initialize/Restart	^
Restart	nis reboots your AirSt Restart Now	ation.			Restart	
					This reboots your Air	Station.
					Settings affected:	_
Initialize	his will restore your A Initialize Now	irStation to the factory d	efault settings.		Restarting will reset default time.	the clock to
					Initializa	~
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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.

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
Name Pas Initialize/Re	sword Time/Da estart Update	te NTP Access	Log Save/Re	store	-	Logout	
					Initialize/Restart	<u>^</u>	
Restart	Restart Now	eboots your AirStation. start Now Initialize/Restart Restart This reboots your AirStation. Settings affected:					
					This reboots your AirStation.		
					Settings affected:		
Initialize This will restore your AirStation to the factory default settings.					Restarting will reset the clock to default time.		
					Initializa	*	
		(C)2000-2009	BUFFALO INC. All	rights reserved.			

Parameter	Meaning
Firmware Version	Displays the current firmware version of the AirStation.
Firmware File Name	Click [Browse] and navigate to a firmware update file. Click [Update Firmware].

Diagnostic

System Info

This screen displays the AirStation's system information.

Setup	Internet/L	AN Wireless Co	nfig Security	LAN Config	Admin Config	Diagnostic					
System Info Logs Packet Info Client Monitor Ping											
			System Information								
Model		WHR-HP-G300N Ver.1	.61 (R3.01/B1.00)	Display the AirStation's main settings.							
AirStation Name		AP0018E76A1E23									
Mode Switch Status		Automatic Mode		Model							
Operational Mode		Router Mode ON		Displays the model name and firmware version of the AirStation.							
		Method of Acquiring IP Address Auto Detect Mode - PPPoE			AirStation Name						
				Displays the AirStation's host name.							
		Name of Connection Connection Status	Easy Setup (Default C Online	Status of the hardware mode switch							
		Operation	ration Stop		Displays the status of the ROUTER switch.						
Internet		IP Address	P Address 222.4.67.69		Operational Mode						
		PPP Server IP 222.4./1.212 DNS1(Primary) 210.196.3.183 (Auto) DNS2(Secondary) 210.141.112.163 (Auto)		Displays the current mode of operation.							
		MTU Size 1454		Internet							
				AirStation's Internet port side information.							
		Wired Link 100Base-TX (Full-duplex)			Method of Acquiring IP Address						
		MAC Address 00:18:E7:6A:1E:23			Acquiring a Internet IP address.						
LAN		IP Address 192.168.11.1		Name of the Connection							
		Subnet Mask 255.255.255.0			The name of the PPPoE connection specified in the						
		MAC Address 00:18:E7:6A:1E:23		configuration.							
		Wireless Status	eless Status Enabled		Connection Status						
		SSID	0018E76A1E23		Displays the current status.	Internet side					
		Authentication WPAWPA2 mixedmode - PSK		Operational Mode							
	02.11n/g/b)	Encryption	TKIPIAES mixedmode		The Operational Mod	le will show if					
Wireless(80		Broadcast SSID	Enable		any DHCP or PPPoE configuration is active. If DHCP is in use, the						
		Privacy Separator	Disable		following commands executed.	s can be					
		Wireless Channel 300Mbps Mode	11 (Auto) 20 MHz		• [Release] : Relea	ases the IP					
		MAC Address	00:18:E7:6A:1E:23		address assigned by the DHCP Server.						
Refresh					 [Renew] : Renew address from the Server. 	rs the IP 9 DHCP					
Rencon					The following comm	ands can be					
		(C)2000-	2009 BUFFALO INC. AL	l rights reserved.	the long of the						
Parameter	Meaning										
--------------------	--										
Model	Displays the product name of the AirStation and the firmware version.										
AirStation Name	Displays the AirStation's Name.										
Mode Switch Status	Displays the status of the mode switch on the back of the AirStation.										
Operational Mode	Displays the current operational mode of the AirStation.										
Internet	Displays the information about the Internet port.										
LAN	Displays the information about the LAN port.										
Wireless	Displays the wireless status.										

Logs

Check the AirStation's logs.

Setup	nternet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic	
System Info	System Info Logs Packet Info Client Monitor Ping						
				^	Logs		
Display log ir	Address T Address T Firewall Dynamic D DHCP Ser Wireless C Setting Ch NTP Clien	ranslation ♥ IP Filte ♥ PPPot DNS ♥ DHCP ver ♥ AOSS Client ♥ Auther vanges ♥ Syster t ♥ Wired	er E Client Client ntication n Boot Link		Display log informatio the AirStation. The oldest informatio overwritten by new log Display log info Select the types of in should be logged by the The default is All. The	n recorded in n is gs. formation that he AirStation.	
Display S	Select All Clea	ar All			Address Transla	u. ntion	
Logs • IP Filter • Firewall(Includes discarded IP Masquerade packets) • PPPoE Client(Internet side)							
Date Time	Туре	Log Content			Dynamic DNS(In DUCD Client (int	ternet side)	
2009/08/25 23:	47:30 DHCPS	sending ACK to 19	2.168.11.3		DHCP Client (Inter- DHCP Server(LA	ernet side) N side)	
2009/08/25 23:	47:30 DHCPS	Request incoming	from pc-fujiwara(l	en:11) 🗸 🗸	AOSS	,	
<		(0) 2000 - 2000			 Wireless Client (client connection 	Start/stop and 🗸 🗸	

Parameter	Meaning
Display log info	Choose the types of log information to display.
Save to file	Saves selected logs to the file logfile.log.

Packet Info

Verify transferred packets.

```
Setup
                Internet/LAN Wireless Config
                                                                 Security
                                                                                   LAN Config
                                                                                                        Admin Config
                                                                                                                                Diagnostic
System Info Logs Packet Info Client Monitor Ping
                                                                                                                                      Logout
                                                                                                      Packet Traffic Information
                                     Sent
                                                             Received
                                                                                                     The total numbers of packets sent
and received by the AirStation, as
well as the errors sending and
receiving, are displayed.
 Interface
                                      Normal
                                                               Normal
                                                   Errors
                                                                           Errors
 Wired Internet
                                            3268
                                                          0
                                                                    5529
                                                                                  0
 Wired LAN
                                          10423
                                                          0
                                                                    6741
                                                                                  0
                                                                                                        [Refresh] button
 PPPoE No.1:
                                                                    5370
                                            3071
                                                          0
                                                                                  0
                                                                                                        Displayed packet information is 
renewed with current information 
when this button is clicked.
 Easy Setup
Wireless LAN (802.11n/g/b)
                                             392
                                                          0
                                                                     181
                                                                                  0
 Refresh
```

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

Client Monitor

This screen list connected devices.

Setup	Internet/LA	V Wirele	ss Config S	ecurity	LAN Config	Admin Config	Diagnostic
System Info	Logs Packe	t Info Clie	nt Monitor Pin	g			Logout
						Client Monitor	
MAC Address	s Lease IP Address	Hostname	Communication Method	Wireless Authenticat	802.11n	Displays the LAN sid	le clients
00:11:09:5C:86	:F1 -	-	Wired	-	-	AirStation.	sing the
00:1D:73:92:0B	07F 192.168.11.3	pc-fujiwara	Wireless	Authorized	Enable	The following informa	tion is
Refresh						displayed:	
						MAC address	~
		((C)2000-2009 BUFF	ALO INC. All rig	ghts reserved.	MAC address	oddrooo
		((C)2000-2009 BUFF	FALO INC, All rig	ghts reserved.	MAC address Shows alignt's MAC	oddroog
Paramete	r	((C)2000-2009 BUFF Mean	ALO INC. All rig	ghts reserved.	MAC address	oddrooo 🔽

Ping

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

Setup	Internet/LAN	Wireless Config	Security	LAN Config	Admin Config	Diagnostic
System Info	Logs Packet	Info Client Monito	Ping			Logout
					Ping	20gout
Destination Execute Result	Destination Address 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. Result Image: Specific network device.					
Destination	192.168.11.1				Destination Address	• • • • •
Result	64 bytes from 192. 64 bytes from 192. 64 bytes from 192.	168.11.1: icmp_seq=0 ttl 168.11.1: icmp_seq=1 ttl 168.11.1: icmp_seq=2 ttl	=64 time=0.4 ms =64 time=0.2 ms =64 time=0.2 ms		Enter the network IP : you want to ping; e.g. 192.168.11.3 or www.buffalotech.com.	address that
		(0) 2000 2000 1		Luimble venemical	Execute	~
		(C)2000-20091	BUFFALU INC. AI	r nynts reserved.		
Paramet	er	Ν	leaning			
Destinatio	on Address	E	nter an IP a	ddress or a ho	ost name for the	target device

[Execute]. The AirStation will attempt to communicate with that device and the result will be displayed in the [Result] field.

Note : Examples in this manual show the "User-friendly" firmware. The dd-wrt based Professional firmware is somewhat different. For more information on the Professional firmware, visit dd-wrt's website at **www.dd-wrt.com**.

Chapter 5 Connect to a Wireless Network

Automatic Secure Setup (AOSS/WPS)

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



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



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

Windows 7/Vista (Client Manager V)

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



3 When the message "A Program needs your permission to continue" appears, click [Yes] or [Continue].



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

1

Windows XP (Client Manager 3)

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

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

2 RUFFALD Create profile and display priority level. Profile Name Create profile Nam

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

Other Devices (e.g. Game Console)

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

When the Security LED stops blinking and is lit steadily, the connection is complete.

Manual Setup

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

Windows 7 (WLAN AutoConfig)

Currently connected to:

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



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





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😵 Connect to a Network	Enter the encryption key and click [OK].
Type the network security key	
Security key:	
Hide characters	
You can also connect by pushing the button on the router.	
OK Cancel	

Windows Vista (WLAN AutoConfig)

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

- 1 Right click on the wireless network icon in the system tray.
- 2 Click [Connect to a network].

3



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

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

🕒 👰 Connect to a ne	twork	
Press the config	guration button on your access point	
	Press the configuration button on the access point before continuing.	
I can't find the con I want to enter the	figuration button. network key or passphrase instead	Net Cancel
		<u>N</u> ext Cancel

G 🔮 Connect to a network	
Enter the PIN for BUFFALO INC.	
You can find this PIN displayed on the BUFFALO INC.	
PIN:	
Display characters	
I don't have the PIN.	
I want to enter the network key or passphrase instead	
	Next Cancel

4	🕒 🗣 Connect to a network	Enter the encryption key and click [Connect].
	Type the network security key or passphrase for 001D73B991D4 The person who setup the network can give you the key or passphrase.	
	Security key or passphrase:	
	Display characters	
	if you have a <u>USB flash drive</u> with network settings for 001D73B991D4, insert it now.	
	Connect Cancel	

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

Windows XP (Wireless Zero Configuration)

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

- Note: If Client Manager 3 is installed on your computer, Wireless Zero Configuration is disabled. Uninstall Client Manager 3 to use Wireless Zero Configuration, or just use Client Manager 3 to connect to the AirStation.
- 1 Right click on the wireless network icon 🛃 displayed in the system tray.
- 2 Click [View Available Wireless Networks].



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

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

Follow the instructions displayed on the screen to finish configuration.

Chapter 6 Troubleshooting

Cannot connect to the Internet over wired connection.

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

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

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

Cannot access the web-based configuration utility.

- See chapter 4 for instructions to open the AirStation's configuration utility.
- Enter the correct user name and password to login to the configuration screen. The factory defaults are [root] (in lower case) for the user name and a blank password (enter nothing). If you changed the password, enter the new password that you set.
- Verify that your web browser is not set to use proxies.
- Make sure that your computer is configured to [Obtain an IP Address Automatically] (see appendix C).
- Restart your AirStation.

Cannot connect to the network wirelessly.

•	Configure your wireles	s client with the same SSID, encryption type, and encryption key as set
	on the AirStation.	
	The factory defaults ar	e:
	SSID -	The AirStation's MAC address (printed on the label)
	Encryption Type -	WPA/WPA2 mixed mode - PSK (Connect with either WPA-PSK TKIP or WPA2-PSK AES).
	Encryption Key -	Printed on the label of the AirStation.

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

You 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. The factory defaults are:

SSID -	The AirStation's MAC address (printed on the label)
Encryption Type -	WPA/WPA2 mixed mode - PSK (Connect with either WPA-PSK TKIP or
	WPA2-PSK AES).
Encryption Key -	Printed on the label of the AirStation.

The link speed is slower than 300/150 Mbps (Maximum link speed is only 130/65Mbps).

By default, the AirStation's 300/150 Mbps mode is not enabled. You may enable it with the following procedure:

- 1. Open the configuration utility (chapter 4).
- 2. Click [Wireless SSID & Channel (11n 300(150)Mbps Mode)] in Easy Setup.
- 3. Change the value in [300(150) Mbps Mode] [Band Width] to 40 MHz and click [Apply].

If you still cannot connect at 300/150 Mbps, check the settings of your wireless client device.

Other Tips

Issue:

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

Answer:

Open your browser and enter 192.168.11.1 as the browser address and hit Enter. You will be prompted to log in. Enter the user name as root and the password box is left empty (no password). Click [OK] to complete the login and the option to reset your password will be available on the first page.

Issue:

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

Answer:

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

Issue:

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

Answer:

Log in to the configuration utility with your browser. Go to the Wireless Config tab and then select the Security tab. Buffalo recommends WPA for wireless encryption. The passphrase/key should be at least 8 characters in length.

Issue:

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

Answer:

Log in to the configuration utility. Go to the Wireless Config tab and then select the Basic tab if necessary. Find the settings area for SSID. Select the [Use] radio button and enter the name you wish to use for your network in the text field provided. Click [Apply] to save the settings. Once the wireless router has rebooted, you will need to manually select the new network name for all wireless devices and enter your encryption key if necessary.

Issue:

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

Answer:

There are many environmental factors that may cause this. First, ensure the issue is not range related by moving the wireless router and the client device closer together. If the the connection drops continue, continue, then range is probably not the issue.

Other 2.4 GHz devices such as microwaves, other wireless networks, and 2.4 GHz wireless phones may impact performance. Try a different wireless channel for your wireless router. Log in to the wireless router with your browser. Click on the Wireless Config tab and then the Basic tab. Wireless channels from 1 - 11 may be selected. Try the Auto-Channel option if available. Otherwise, manually select an alternate channel and click [Apply].

Issue:

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

Answer:

First, power off the Cable or DSL modem, the wireless router, and your computer. Move the router's mode switch to the ON position. Verify that the modem is connected to the wireless router with an Ethernet cable to the WAN port. Power on the modem and wait one minute. Power on the wireless router and wait another minute. Power on the computer. Open a browser on the computer and navigate to a familiar website to verify whether the Internet connection is functioning normally. If after these steps, an Internet connection is still unavailable, power off the Cable or DSL modem and computer again and directly connect your computer to the Cable or DSL modem with a cable between the computer and the port on the modem. Power on the modem and wait one minute. Power on the computer and the port on the modem.

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*

Appendix A Specifications

WHR-HP-G300N

Wireless LAN Interface		
Standard Compliance	IEEE802.11b / IEEE802.11g / IEEE802.11n	
Transmission Method	Direct Sequence Spread Spectrum (DSSS), OFDM, MIMO	
Frequency Range	2,412 - 2,462 MHz (Channels 1 - 11)	
Transmission Rate	802.11b/g: 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 1 Mbps 802.11n: 20 MHz Channel (LongGl) 130/117/104/78/52/39/26/13 Mbps (mcs15-8) (2 stream) 65/58.5/52/39/26/19.5/13/6.5 Mbps (mcs7-0) (1 stream) 40 MHz Channel (LongGl) 270.0/243.0/216.0/162.0/108.0/81.0/54.0/27.0 Mbps (mcs15-8) (2 streem) 135/121.5/108.0/81.0/54.0/40.5/27.0/13.5 Mbps(mcs7-0) (1 streem) (ShortGl) 300.0 Mbps (mcs15) (2 streem)	
Access Mada	150.0 Mbps (mcs7) (1 streem)	
Security	AOSS, WPA2-PSK (TKIP/AES), WPA/WPA2 mixed PSK, WPA-PSK (TKIP/AES), 128/64bit WEP, Mac Address Filter	
Wired LAN Interface		
Standard Compliance	IEEE802.3u (100BASE-TX), IEEE802.3 (10BASE-T)	
Transmission Rate	10 / 100 Mbps	
Transmission Encoding	100BASE-TX 4B5B/MLT-3, 10BASE-T Manchester Cording	
Access Method	CSMA/CD	
Speed and Flow Control	10/100, Auto Sensing, Auto MDIX	
Number of LAN Ports	4	
LAN Port Connector	RJ-45	
Other		
Power Supply	External AC 100-240 V Universal, 50/60 Hz	
Power Consumption	Approx. 5.7 W (Max)	
Dimensions	142 mm x 124 mm x 25 mm (5.6 x 4.9 x 1.0 in.)	
Weight	230 g (7.4 oz.) not included base	
Operating Environment	0-40 °C (32-104 °F) , 20-80 % (non-condensing)	

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WHR-HP-GN

Wireless LAN Interface	
Standard Compliance	IEEE802.11b / IEEE802.11g / IEEE802.11n specification
Transmission Method	Direct Sequence Spread Spectrum (DSSS), OFDM, SISO
Frequency Range	2,412 - 2,462 MHz (Channels 1 - 11)
Transmission Rate	802.11b/g: 54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 1 Mbps 802.11n: 20 MHz Channel (LongGl) 65/58.5/52/39/26/19.5/13/6.5 Mbps (mcs7-0) (1 streem) 40 MHz Channel (LongGl) 135.0/121.5/108.0/81.0/54.0/40.5/27.0/13.5 Mbps (mcs7-0) (1 streem) (ShortGl) 150.0 Mbps (mcs7) (1 streem)
Access Mode	Infrastructure Mode
Security	AOSS, WPA2-PSK (TKIP/AES), WPA/WPA2 mixed PSK, WPA-PSK (TKIP/AES), 128/64bit WEP, Mac Address Filter
Wired LAN Interface	
Standard Compliance	IEEE802.3u (100BASE-TX), IEEE802.3 (10BASE-T)
Transmission Rate	10 / 100 Mbps
Transmission Encoding	100BASE-TX 4B5B/MLT-3, 10BASE-T Manchester Cording
Access Method	CSMA/CD
Speed and Flow Control	10/100, Auto Sensing, Auto MDIX
Number of LAN Ports	4
LAN Port Connector	RJ-45
Other	
Power Supply	External AC 100-240 V Universal, 50/60 Hz
Power Consumption	Approx. 5.5 W (Max)
Dimensions	142 mm x 124 mm x 25 mm (5.6 x 4.9 x 1.0 in.)
Weight	210 g (6.8 oz.) not including base
Operating Environment	0 - 40° C (32 - 104° F) , 20 - 80% (non-condensing)

Appendix B Default Configuration Settings

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

Feature	Parameter	Default Setting	
	DHCP Server Function (Router Mode only)	Enabled	
	DHCP IP Address Pool (Router Mode only)	192.168.11.2 - 192.168.11.65	
	LAN Side IP Address (IP Unnumbered) (Router Mode only)	none	
	Lease Period (Router Mode only)	48 Hours	
	Default Gateway (Router Mode only)	AirStation's IP Address	
	DNS Servers (Router Mode only)	AirStation's IP Address	
	WINZ Server (Router Mode only)	Do Not Specify	
	Domain Name (Router Mode only)	Assigned Domain Name	
	Default Gateway (Bridge Mode only)	none	
	DNS Server Address (Bridge Mode only)	none	
DHCP Lease (Router Mode only)	Current DHCP Client Information	none	
NAT	Address Translation	Enabled	
(Router Mode only)	Log Output of Deleted Packets	Disabled	
Route	Routing Information	none	
WPS	WPS	Enabled	
	External Registrar	Enabled	
	AirStation PIN	An 8-digit random value (Printed on the label of the AirStation)	
	WPS Security Information	WPS status:configuredSSID:AirStation's MAC AddressSecurity:WPA/WPA2 mixedmode - PSKTKIP/AES mixedmodeEncryption key:A 13-digit random value	

Appendix B Default Configuration Settings

Feature	Parameter	Default Setting		
AOSS	Encryption level expansion	Enabled		
	Dedicated WEP SSID isolation	Disabled		
	AOSS Button on the AirStation Unit	Enabled		
Basic	Wireless Radio	Enabled		
	Wireless Channel	Auto Channel		
	300(150)Mbps Mode	Band Width: 20 MHz Extension Channel: -		
	Broadcast SSID	Allow		
	Separate feature	not used		
	SSID	Configure AirStation's MAC address		
	Wireless authentication	WPA/WPA2 mixedmode-F	РSК	
	Wireless encryption	TKIP/AES mixedmode		
	WPA-PSK (Pre-Shared Key)	A 13-digit random value (Printed on the label of the AirStation)		
	Rekey interval	60 minutes		
Advanced	Multicast Rate	Auto		
	DTIM Period	1		
	Privacy Separator	Disable		
WMM	WMM-EDCA Parameters (Priority AC_BK (Low))		For AP	For STA
		CWmin	15	15
		CWmax	1023	1023
		AIFSN	7	7
		TXOP Limit	0	0
		Admission Control		Disable
	WMM-EDCA Parameters (Priority AC_BE (Normal))		For AP	For STA
		CWmin	15	15
		CWmax	63	1023
		AIFSN	3	3
		TXOP Limit	0	0
		Admission Control		Disable

Feature	Parameter	Default Setting		
	WMM-EDCA Parameters (Priority AC_VI (High))		For AP	For STA
		CWmin	7	7
		CWmax	15	15
		AIFSN	1	2
		TXOP Limit	94	94
		Admission Control		Disable
	WMM-EDCA Parameters		For AP	For STA
	(Priority AC_VO (Highest))	CWmin	3	3
		CWmax	7	7
		AIFSN	1	2
		TXOP Limit	47	47
		Admission Control		Disable
MAC Filter	Enforce MAC Filter	Disabled		
	Registration List	none		
Multicast	Snooping	Enabled		
Control	Multicast Aging Time	300 Sec.		
WDS	WDS	Use		
	Specify Master/Slave	Master		
Firewall	Log Output	Disabled		
(Router Mode only)	Basic Rules	Prohibit NBT and Microsoft-DS Routing Disabled		Disabled
		Reject IDENT Requests Disabled		Disabled
		Block Ping from Internet		Disabled
(Router Mode only)		Disabled		
	IP Filter Information	none		
Through	IPV6 Pass Inrougn	Disabled		
(Router Mode only)		Disabled		
	PPTP Pass Through	Enabled		
(Router Mode only)	Port Forwarding Registration Infor- mation	none		
DMZ (Router Mode only)	IP Address of DMZ	none		
UPnP (Router Mode only)	UPnP	Enabled		

Feature	Parameter	Default Setting	
QoS (Router Mode only)	QoS for transmission to the Internet	Disabled	
Name	AirStation Name	AP + AirStation's MAC Address	
	List Network Services	Enabled	
Password	Administrator Name	root (fixed)	
	Administrator Password	none	
Time/Date	Local Date	2010 Year 1 Month 1 Day	
	Local Time	0 Hour 0 Minute 0 Seconds	
	Time Zone	(GMT–06:00) Central Standard Time: CST or (GMT+00:00) Greenwich Mean Time,London	
NTP	NTP Functionality	Enabled	
	NTP Server	time.nist.gov	
	Update Interval	24 hours	
Access	Log Output	Disabled	
	Access Limits	Prohibit configuration from wireless LAN Disabled	
		Prohibit configuration from wired LAN Enabled	
		Permit configuration from WAN Enabled	
Log	Log Transfer	Disabled	
	Syslog Server	none	
	Transfer Logs	Router Mode: Address Translation, IP Filter, Firewall, PPPoE Cli- ent, Dynamic DNS, DHCP Client, DHCP Server, AOSS, Wireless Client, Authentication, Setting Changes, System Boot, NTP Client, and Wired Link	
		Bridge Mode: IP Filter, DHCP Client, AOSS, Wireless Client, Au- thentication, Setting Changes, System Boot, NTP Client, and Wired Link	

Appendix C TCP/IP Settings in Windows

Windows 7

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

- 1 Click [Start] > [Control Panel] > [Network and Internet].
- **2** Double click [Network and Sharing Center].
- **3** Click [Change Adapter Settings] on the left side menu.
- **4** Right click on [Local Area Connection], then click [Properties].
- 5 If the message "Windows needs your permission to continue" appears, click [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].

To set your IP address settings manually, enter values for each setting. Example:

If the AirStation's IP address is 192.168.11.1,IP address192.168.11.80Subnet mask255.255.255.0Default gateway192.168.11.1Preferred DNS server192.168.11.1Alternate DNS serverblank

8 Click [OK].

Windows Vista

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

- 1 Click [Start] > [Settings] > [Control Panel].
- **2** Double click [Network and Sharing Center].
- **3** Click [Manage network connections] on the left side menu.
- **4** Right click on [Local Area Connection], then click [Properties].
- 5 When the message "Windows needs your permission to continue" appears, click [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].

To set your IP address settings manually, enter values for each setting. Example:

If the AirStation's IP addre	ess 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 [Close].

Windows XP

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

- 1 Click [Start] > [Settings] > [Control Panel].
- **2** Double click [Network].
- **3** Right click on [Local Area Connection], 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].

To set your IP address settings manually, enter values for each setting. Example:

If the AirStation's IP address is 192.168.11.1,IP address192.168.11.80Subnet mask255.255.255.0Default gateway192.168.11.1Preferred DNS server192.168.11.1Alternate DNS serverblank

6 Click [Close].

Appendix D Restoring the Default Configuration



Hold down this button for 3 seconds. The AirStation will be initialized.

Appendix E Regulatory Compliance

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID:

WHR-HP-G300N:	FDI-09101621-0
WHR-HP-GN :	FDI-09101567-0

Important Note - FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for uncontrolled equipment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

European Union Notice:

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

• EN60950-1:

2006 Safety of Information Technology Equipment

• EN 50385: 2002

Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public

• EN 300 328 V1.7.1 (2006-10)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

• EN 301 489-1 V1.8.1 (2008-04)

Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

•EN 301 489-17 V1.3.2 (2008-04)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

€ 0560 ①

Česky[Czech]

Buffalo Technology Inc. tímto prohlašuje, že tento AirStation WHR-HP-GN/G300N je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk[Danish]

Undertegnede Buffalo Technology Inc. erklærer herved, at følgende udstyr AirStation WHR-HP-GN/G300N overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch[German]

Hiermit erklärt Buffalo Technology Inc. dass sich das Gerät AirStation WHR-HP-GN/G300N in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.

Eesti[Estonian]

Käesolevaga kinnitab Buffalo Technology Inc. seadme AirStation WHR-HP-GN/G300N vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

English

Hereby, Buffalo Technology Inc. declares that this AirStation WHR-HP-GN/G300N is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Español[Spanish]

Por medio de la presente Buffalo Technology Inc. declara que el AirStation WHR-HP-GN/G300N cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Ελληνική[Greek]

ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Buffalo Technology Inc. ΔΗΛΩΝΕΙ ΟΤΙ AirStation WHR-HP-GN/G300N ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.

Français[French]

Par la présente Buffalo Technology Inc. déclare que l'appareil AirStation WHR-HP-GN/G300N est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano[Italian]

Con la presente Buffalo Technology Inc. dichiara che questo AirStation WHR-HP-GN/G300N è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski[Latvian]

Ar šo Buffalo Technology Inc. deklarē, ka AirStation WHR-HP-GN/G300N atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lietuvių[Lithuanian]

Šiuo Buffalo Technology Inc. deklaruoja, kad šis AirStation WHR-HP-GN/G300N atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Nederlands[Dutch]

Hierbij verklaart Buffalo Technology Inc. dat het toestel AirStation WHR-HP-GN/G300N in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Malti[Maltese]

Hawnhekk, Buffalo Technology Inc., jiddikjara li dan AirStation WHR-HP-GN/G300N jikkonforma malħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

Magyar[Hungarian]

Alulírott, Buffalo Technology Inc. nyilatkozom, hogy a AirStation WHR-HP-GN/G300N megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.

Polski[Polish]

Niniejszym, Buffalo Technology Inc., deklaruję, że AirStation WHR-HP-GN/G300N spełnia wymagania zasadnicze oraz stosowne postanowienia zawarte Dyrektywie 1999/5/EC.

Português[Portuguese]

Buffalo Technology Inc. declara que este AirStation WHR-HP-GN/G300N está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Slovensko[Slovenian]

Buffalo Technology Inc. izjavlja, da je ta AirStation WHR-HP-GN/G300N v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

Slovensky[Slovak]

Buffalo Technology Inc. týmto vyhlasuje, že AirStation WHR-HP-GN/G300N spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi[Finnish]

Buffalo Technology Inc. vakuuttaa täten että AirStation WHR-HP-GN/G300N tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svensk[Swedish]

Härmed intygar Buffalo Technology Inc. att denna AirStation WHR-HP-GN/G300N står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Industry Canada statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device has been designed to operate with an antenna having a maximum gain of 2 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Industry Canada ID:

WHR-HP-G300N:6102A-025WHR-HP-GN:6102A-024

For Taiwan 警語

第十二條:

經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加 大功率或變更原設計之特性及功能。

第十四條:

低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用, 並改善至無干擾時方得繼續使用。前項合法通信,指依電信法規定作業之無線電通信。低功率 射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

CONDICIONES (Mexico)

PRIMERA

-El certificado provisional tiene vigencia de un año a partir de esta fecha y prodrá ser renovado hasta en dos ocasiones por el mismo período, para lo cual, previo a la fecha de vencimiento del Certificado deberá solicitar por escrito a esta Comisión su renovación. El Ceritificado definitivo tiene vigencia indefinida.

SEGUNDA

-El Certificado de Homologación, podrá ser cancelado a petición del solicitante a cuando la Comisión Federal de Telecomunicaciones así lo determine con fundamento en el Artículo 149 del Reglamento de Telecomunicaciones, o bien de acuerdo a lo señalado en el Capítulo Segundo de la Ley Federal de Procedimiento Administrativo.

TERCERA

-Los equipos amparados por este Certificado de Homologación deberán tener indicado en alguna parte visible, firmemente adherido, el númerode Certificado de Homologación correspondiente, así como la marca y modelo con la que se expide este Certificado.

CUARTA

-La Comisión Federal de Telecomunicación podrá requerir en cualquier momento a la empresa presentación de información ténica adicional, así como las muestras del equipo para realizar pruebas de comportamiento y verificar las caraterísticas del mismo.

QUINTA

-Cualquier modificación estructural o de configuración ténica deberá someterse a consideración de la Comisión, para que ésta determine si procede el otorgamiento de una ampliación del Certificado de Homologación o si requiere de un nuevo Certificado.

SEXTA

-El equipo que ampara el presente certificado deberá operar conforme a las regulaciones ténicas, reglas, reglamentos y otras disposiciones administrativas vigente o que llegara a emitir o adoptar la Comisión Federal de Telecomunicaciones y/o la Secretaría de Comunicaciones y Transportes.

SEPTIMA

-El equipo de radiocomunicación que ampara el presente certificado deberá operar de conformidad con el Reglamento de Radiocomunicaciones de la Unión Internacional de Telecomunicaciones y el Cuadro Nacional de Atribución de Frequencias México vigente.

OCTAVA

-Las antenas de las estaciones terrenas deberán cumplir con el patrón de radiación Recomendado por la Unión Internacional de Telecomunicaciones, Sector de Radio Frequencia UIT-R, en el casdo de sistemas de microondas las antenas de los mismos deberán cumplir con las recomendaciones del UIT-R, conforme a su banda de operación.

NOVENA

-La homologación de este equipo no implica la autorización para prestar servicios públicos de telecomunicaciones ni para establecer aplicaciones que obstruyan o invadan cualquier via general de comunicación.

DECIMA

- El inclumplimiento de las condiciones estipuladas en este Certificado será motivo de sanción con base a lo dispuesto en la Ley de Vías General de Comunicación, Ley Fedreal de Telecomunicación y en el Reglamento de Telecomunicaciones.
Appendix F 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 the collection, reuse and recycling systems, please contact your local or regional waste administration.

Appendix G GPL Information

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

Appendix H Warranty

Buffalo Technology (Buffalo Inc.) products come with a two-year limited warranty from the date of purchase. Buffalo Technology (Buffalo Inc.) warrants to the original purchaser the product; good operating condition for the warranty period. This warranty does not include non-Buffalo Technology (Buffalo Inc.) installed components. If the Buffalo product malfunctions during the warranty period, Buffalo Technology/(Buffalo Inc.) will, replace the unit, provided the unit has not been subjected to misuse, abuse, or non-Buffalo Technology/(Buffalo Inc.) authorized alteration, modifications or repair.

All expressed and implied warranties for the Buffalo Technology (Buffalo Inc) product line including, but not limited to, the warranties of merchantability and fitness of a particular purpose are limited in duration to the above period.

Under no circumstances shall Buffalo Technology (Buffalo Inc.) be liable in any way to the user for damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use of, or inability to use the Buffalo products.

In no event shall Buffalo Technology/(Buffalo Inc.) liability exceed the price paid for the product from direct, indirect, special, incidental, or consequential damages resulting from the use of the product, its accompanying software, or its documentation. Buffalo Technology (Buffalo Inc.) does not offer refunds for any product.

@ 2003-2010 Buffalo Technology (Buffalo, Inc.)

Appendix I Contact Information

North America

North American Technical Support by phone is available 24 hours a day, 7 days a week. (USA and Canada).

Toll-free: (866) 752-6210 | Email: info@buffalotech.com

Europe

Buffalo Technology provides technical support in English, German, French, Italian, and Spanish.

UK	0845 3511005
Austria	08101 0251552
Belgium	0787 99917
Denmark	70150919
Finland	010802812
France	0811 650220
Germany	01801 003757
Ireland	1890 719901
Italy	848 782113
Netherlands	09000401256
Norway	81000050
Spain	9018 10750
Sweden	0771404105
Switzerland	0848 560374
For all other regions please contact +353 61 704617	
www.buffalo-technology.com/contact	

Asia Pacific

Australia	TEL: 1300 761 310
	e-mail: buffalo_support@uniden.com.au
China	TEL: 86-800-820-8262
	e-mail: support@buffalo-china.com
Hong Kong	TEL: 852-2345-0005
	e-mail: support@hornington.com
India	TEL: 1-8004256210
	e-mail: csbuffalo@accelfrontline.in
Indonesia	TEL: 021-6231-2893
Malaysia	TEL: 03-5032-0138
	e-mail: buffalo@ecsm.com.my
Philippines	TEL: 2-688-3999
	e-mail: digisupport@msi-ecs.com.ph
Republic of Korea	TEL: 02-2057-2095
	e-mail: support@buffalotech.co.kr
Singapore	TEL: 65-6297-2085
	e-mail: buffalo@blumm.com
Taiwan	TEL: 0800-660-886
	e-mail: support@buffalo-tech.com.tw
Thailand	TEL: 02-716-6669
Other Areas	Please contact the shop or distributor where you purchased the unit, referring to the attached warranty card issued by the distributor.