

Click *Browse* to select your firmware update file. Then, click the *Firmware Update* button to update firmware.

Firmware Update may take several minutes to complete. Do not power down the router until Firmware Update is finished and the diag light on the front of the router has stopped blinking.

When available, updated firmware may be downloaded from www.buffalotech.com.

The screenshot shows the Buffalo AirStation web interface. The browser title is "AirStation Settings - Mozilla Firefox" and the address bar shows "http://192.168.11.1/cgi-1". The page header includes the Buffalo AirStation logo and navigation buttons for HOME and LOGOUT. A sidebar on the left contains menu items: WAN Config, LAN Config, Network Config, Wireless Config, Admin Config, Diagnostic, System Info, Log Info, Packet Info, Client Monitor, and Ping Test. The main content area is titled "System Information" and contains a table of system details.

System Information	
Model	WHR-G54S Ver.1.20
AirStation Name	AP0000B970048
Operation Mode	Router Mode
	Method of Acquiring IP Address
WAN	
Wired Link	Disconnected
IP Address	192.168.11.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
MAC Address	00:0D:0B:87:00:48
LAN	
Wireless Status	Enabled
SSID	0000B970048
Encryption Mode	Not Configured
Wireless Channel	5Channel (Auto)
125* High Speed Mode	Enabled
MAC Address	00:0D:0B:87:00:48

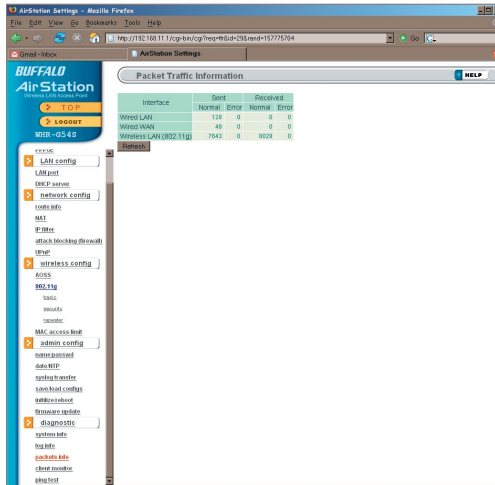
Display Current Status

The System Information page lists all the setup information for your AirStation. It can be very handy for setting up clients that don't support AOSS.

The screenshot shows the Buffalo AirStation Settings interface. The main content area is titled "Log Information" and includes a "Log Information" section with a "Save to file (logfile.log)" button. Below this is a table of log entries.

Date/Time	Type	Log Content
2004/09/30 09:06:25	DHCPFS	sending ACK to 192.168.11.2
2004/09/30 09:06:25	DHCPFS	Request comes from 192.168.11.2
2004/09/30 09:06:25	DHCPFS	sending OFFER of 192.168.11.2 to 192.168.11.2
2004/09/30 09:06:25	DHCPFS	Request comes from 192.168.11.2
2004/09/30 09:06:11	NAT	ip_nat_rule: ruleid=0
2004/09/30 09:06:11	NAT	ip_nat_rule: ruleid=0
2004/09/30 09:06:09	DHCPFS	max_lease value (256) not same, setting to 64 instead
2004/09/30 09:06:09	DHCPFS	dhcpd (v1.3.0) is started
2004/09/30 09:06:06	WIRELESS	wifi: 11g: Associated User : 0007-80a2c7f
2004/09/30 09:06:04	WIRELESS	wifi: Channel Select 7
2004/09/30 09:06:01	WIRELESS	wifi: Run up interface up!
2004/09/30 09:06:01	NAT	ip_nat_flushing
2004/09/30 09:06:01	NAT	ip_conntrack version 2.1.123 (backlogs, 9824 max): 344 bytes per conntrack
2004/09/30 09:06:01	PPPOE	PPP BSD Compression module registered
2004/09/30 09:06:01	PPPOE	PPP BSD Compression module registered
2004/09/30 09:06:01	PPPOE	PPP generic driver version 2.4.2
2004/09/30 09:06:01	BOOT	WAN-G44

Here you can choose what information gets logged and see recent log entries.

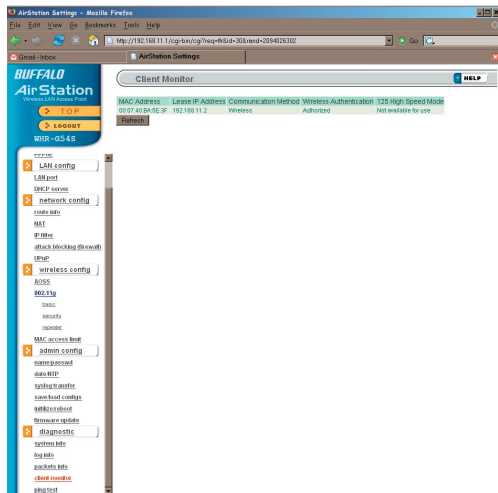


The screenshot shows the Buffalo AirStation Settings web interface. The browser address bar displays the URL: `http://192.168.11.1/cgi-bin/cgi-bin?view=6&id=2&read=15775704`. The page title is "AirStation Settings". The main content area is titled "Packet Traffic Information" and contains a table with the following data:

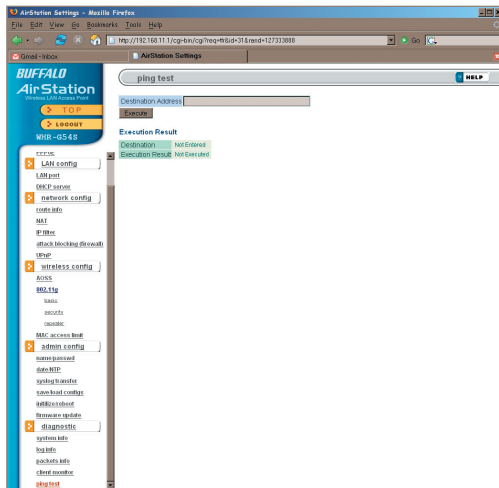
Interface	Sent		Received	
	Normal	Error	Normal	Error
Wired LAN	128	0	0	0
Wired WAN	48	0	0	0
Wireless LAN (802.11g)	7643	0	8029	0

The left sidebar contains a navigation menu with the following items: `LAN config`, `LAN port`, `DHCP server`, `network config`, `status info`, `NAT`, `IP filter`, `attach blocking (firewall)`, `usage`, `wireless config`, `ACSS`, `802.11g`, `radio`, `security`, `MAC access limit`, `admin config`, `www password`, `data NTP`, `system password`, `system config`, `wireless about`, `firmware update`, `diagnostic`, `system info`, `log info`, `system info`, `clear monitor`, and `usage test`.

Here, you can see the packets and errors for each of your networks.



Client Monitor shows you a list of all clients currently connected to the wireless network.



To perform a *Ping* test, enter a target (such as *192.168.11.2* or *www.buffalotech.com*) and click *Execute*.

Successful pings return “64 bytes from . . .” messages. If the ping returns “Connection failed” or other errors, something is preventing you from communicating successfully with your target.

Add an AirStation without changing your existing LAN configuration

1. Set the AirStation into Access Point Mode by moving the switch on the bottom from *AUTO* to *BRI*.
2. Connect one of the AirStation's LAN ports to an existing router or switch on your network. Nothing should be plugged into the WAN port.
3. Open LAN Settings - LAN Port Settings and configure the following settings:
 - IP Address =[192.168.11.1] (Specify an unused network address from the existing LAN.)
 - Subnet Mask=[255.255.255.0] (Use the same Subnet Mask as the existing LAN.)
 - DHCP Server Function=[Disable]
4. Restart PC.



The WHR-HP-G54's external antenna will usually give the best performance if oriented to point straight up. If your AirStation is resting on its side, use the antenna's swivel and twist function to orient it pointed upward.

In some environments it's desirable to further increase range by installing an external, higher-gain antenna. External antennas come in all shapes and sizes. Antennas also come with different connectors. The WHR-HP-G54 has an *RP-SMA* connector on it. If your antenna has a different kind of connector, you'll need an adaptor.

To install a different antenna, unscrew the stock antenna from the RP-SMA connector on top of the AirStation, and screw on the connector or adaptor from your new antenna.



For more information, FAQ's, and updates, consult the AirStation website at <http://www.buffalotech.com>.

WHR-HP-G54 AirStation Specifications

Physical Specifications

Dimensions 1.1 x 5.1 x 5.7 in. (28 x 130 x 144mm)

Weight 9.8 oz. lb. (277g)

Temperature & Humidity

Operation 0° to 40° C

Maximum humidity 80%

Transit/Storage 0° to 40° C maximum humidity 80% (no condensation)

Power Characteristics

Transmit Mode 1.1A (Nominal),

Power Supply 5 V output; 100-240V AC Universal, 50/60 Hz

Power Consumption about 6.5 Watts (Max)

Regulatory Information

Wireless communication is often subject to local radio regulations. Although AirStation wireless networking products have been designed for operation in the license-free 2.4 GHz band, local radio regulations may impose limitations on the use of wireless communication equipment.

Network Compatability

IEEE802.11g/b Standard for Wireless LANs (125* High Speed Mode also Available.)
Wi-Fi (Wireless Fidelity) certified by the Wi-Fi Alliance.

Host Operating System

Microsoft Windows® 98SE/ME/NT4.0/2000/XP, Unix, Linux and MacOS
Media Access Protocol
Wired - CSMD/CD (Collision Detection)
Wireless - CSMD/CA (Collision Avoidance) with Acknowledgment (ACK)

Radio Characteristics

RF Frequency Band 2.4 GHz (2400-2483 MHz)

11 selectable channels (3 non-overlapping)

Modulation Technique Direct Sequence Spread Spectrum

- OFDM for High Transmit Rate
- DQPSK for Standard Transmit Rate
- DBPSK for Low Transmit Rate

Spreading 11-chip Barker Sequence

Nominal Output Power: 19dBm (802.11b), 16dBm (802.11g)

Transmit Rate:

High Speed 54 Mbps (125 Mbps in 125* High Speed Mode)

Medium Speed 36 Mbps (96 Mbps in 125* High Speed Mode)

Standard Speed 2 Mbps

Low Speed 1 Mbps

Open Office Environment

160 m (525 ft.)

270 m (885 ft.)

400 m (1300 ft.)

550 m (1750 ft.)

Semi-Open Office Environment

50 m (165 ft.)

70 m (230 ft.)

90 m (300 ft.)

115 m (375 ft.)

Closed Office

25 m (80 ft.)

35 m (115 ft.)

40 m (130 ft.)

50 m (165 ft.)

Receiver Sensitivity -83 dBm -87 dBm -91 dBm -94 dBm (depends on data rate)

Delay Spread (at FER of <1%) 65 ns 225 ns 400 ns 500 ns (depends on data rate)

- The range of wireless devices can be affected by metal surfaces, solid high-density materials and obstacles in the signal path.

Table “Radio Characteristics” lists the typical ranges when used indoors:

- In Open Office environments, clients can “see” each other, i.e. there are no physical obstructions between them.
- In Semi-open Office environments, work space is separated by room dividers; client cards are at desktop level.
- In Closed Office environments, workspace is separated by floor-to-ceiling brick walls.

Note: The range values listed in Table “Radio Characteristics” are typical distances as measured at Buffalo Technology AirStation laboratories. These values are provided for your guidance but may vary according to the actual radio conditions at the location where the AirStation product is installed.

AirStation IEEE 802.11 Channel Sets

The range of the wireless signal is related to the Transmit Rate of the wireless communication. Communications at a lower Transmit range may travel longer distances.

Center Channel ID FCC

1 2412 2 2417 3 2422 4 2427 5 2432 6 2437 7 2442 8 2447 9 2452 10 2457
11 2462 11 default channel

Common Problems

- Out of range, client cannot connect to the AirStation.
- Configuration mismatch, client cannot connect to the AirStation.
- Absence or conflict with the Client Driver.
- Conflict of another device with the AirStation hardware.

LED Activity

Monitoring LED activity helps identify problems.

- Power LED should be Green,
- Wireless LED should be Green if the line is active. If is it blinking Green, wireless communication is active.
- Ethernet LED should be Green (100Mbps) or Amber (10Mbps) while the communication is active.
- The Red Diag LED will flash during boot and firmware updates.

DIAG LED Activity

Unplug the power for three seconds. Plug the power back in to monitor the Diag LEDs during start-up.

DIAG LED Activity Table

DIAG LED Display	Time	Description/Action
Continuous Red	Starting	RAM Error Red flash, 2 times Starting Flash ROM Error
Red flash, 3 times	Starting	A problem on the wired LAN side
Red flash, 4 times	Starting	A problem on the wireless LAN side

LEDs Work But Client PC Cannot Connect to Network

If the LEDs indicate that the network is working properly (Power LED is on, Transmit/Receive LED blinks), check the TCP/IP settings of the network.

Changing Client TCP/IP Settings in Windows

Consult the LAN Administrator for correct TCP/IP settings.

To add or change TCP/IP Settings:

1. On the Windows task bar, click Start.
2. Select Settings, then Control Panel.
3. Double-click on the Network icon to view Network Properties.
4. From the list of installed components, verify the TCP/IP => wireless LAN adapter protocol is installed.

- If the wireless adapter protocol is not yet installed, click the *Add* button and select the TCP/IP protocol from the list. Refer to Windows Help for more information.
 - If the wireless adapter protocol is installed, select the protocol and click the *Properties* button. Verify that the parameters match the settings provided by your LAN Administrator. Make changes if necessary, and click OK.
5. If prompted, restart your computer.

Other Problems

Please refer to **www.buffalotech.com** for further reference materials.

Troubleshooting WDS

The most common issue with WDS installations is using the wrong MAC address. The proper MAC Address for the access points is the *Wireless MAC Address*. The best place to get this from *System Information* in the configuration tool.

Restrictions:

1. All wireless access points in the wireless bridge need to support WDS. At time of publication, only Buffalo G54 and Apple Airport Extreme access points support WDS.
2. No single access point can communicate with more than six other access points in the wireless bridge.

Good Practices:

1. Start the wireless bridge system with only two access points and then add more, one at a time.
2. Setup all access points in the wireless bridge in close proximity before deploying them to their final location.
3. Only one access point in the wireless bridge should be serving DHCP and routing services unless a routed wired network exists.

Setting up WDS; the long version:

1. It is recommended that all access points in the bridge are reset to their factory default settings. This is done by holding the INIT button on the rear of the access point down for 5-10 seconds.
2. Login to the first access point in the wireless bridge (this should be the DHCP server enabled access point if there is not already a routed wired network).
3. Click on the *Advanced* button.
4. The wireless settings page will appear. Select the proper settings for the wireless network. Record all settings on a piece of paper. All settings except for the SSID need to be identical amongst all access points in the bridge. If roaming is desired, then set the SSID settings identically as well. Press the *Set* button if any changes are made.

(NOTE: If the IP address was changed, then reconnecting to the access point for configuration will require accessing it via its new IP address in a web browser (e.g. http://NEW_IP_ADDRESS). Write down the new IP address carefully if you changed it, and put it in a safe place!
5. Click on the *LAN port* link on the left.
6. Check that the *LAN side IP address* values are correct for your network, or leave them at their defaults. Record the *LAN side IP address*. Press the *Set* button if any settings on this page have been set.
7. Click on the *Management* link on the left.
8. The System Information page will appear. In the Wireless section of the table record the MAC address (including the colons). Please make sure the MAC address is recorded from the Wireless section and not the other sections.

9. Logout of the access point by clicking on the *Logout* link on the left. Close the browser window.
10. Login to the second access point in the wireless bridge.
11. Click on the *Advanced Settings* tab.
12. The wireless settings page will appear. Select the proper settings for the wireless network. Refer to the settings recorded from the first access point. All settings except for the SSID need to be identical amongst all access points in the bridge. If roaming is desired, then set the SSID settings identically as well.
13. Click on the *LAN port* link on the left.
14. Make sure that the *LAN side IP address* setting is different than that of the first access point. The IP addresses cannot be the same, but they should be on the same network. It is recommended that the IP address of the second access point is one higher than that of the first access point. Thus, if access point one's address is 1.1.1.1, then access point two's address should be 1.1.1.2. If there is a *DHCP server function* setting on this page, then make sure to set it to *Disabled*. Press the *Apply* button when finished. If the IP address was changed, then reconnecting to the access point for configuration will require accessing it via its new IP address in a web browser (e.g. http://NEW_IP_ADDRESS).
15. Click on the *Wireless bridge (WDS)* link on the left.
16. Enable WDS and press the *Apply* button. If desired, move the switch on the bottom of the WHR-HP-G54 from AUTO to BRI to disable normal router functionality (optional).
17. Enter the Wireless MAC Address of the first access point (which was recorded on Step 8) into the field *MAC Address of AirStation (Wireless)* (include the colons). Press the *Add* button.
18. The Wireless MAC address inputted on the step above will appear in the *Connected AirStation* table. Confirm that enable is checked, and then press the *Apply* button.

19. At the top of the page, press the *Apply* button.
20. Once the router has rebooted, click on the *Management* tab on the left.
21. The System Information page will appear. In the Wireless section of the table record the MAC address (including the :’s). Please make sure the *Wireless* MAC address, and not the wired MAC address, is recorded.
22. Logout of the access point by clicking on *Logout* at the top of the page. Close the browser window.
23. Login to access point one again.
24. Click on the *Advanced Settings* tab.
25. Click on the *Wireless bridge (WDS)* link on the left.
26. Enable the WDS function and press the *Apply* button.
27. Enter the Wireless MAC Address of the first access point (recorded in Step 21) into the field that says *MAC Address of AirStation(Wireless)* (include the :’s). Press the *Add* button.
28. The Wireless MAC address inputted on the step above will appear in the *Connected AirStation* table. Please check that the checkbox by *enable* is checked, and then press the *Apply* button.
29. At the top of the page, press the *Apply* button.
30. Once the router has rebooted, click on the *Management* tab on the left.
31. Click on the *Ping Test* link on the left.
32. In the *Destination* field enter the IP address of the second access point and press the *OK* button.

- a. If the *Result* section of the table reports information like “1st: 64 bytes from IP_ADDRESS” then the WDS bridge is effectively working.
- b. If the *Result* section of the table reports “Destination Host Unreachable”, then an error has occurred during the setup.

WDS is a complicated bridging system with a lot of variables. If there are still problems with WDS configuration on the network, please contact Buffalo Tech Support (see pages 82 and 83).

10BaseT: 802.3 based Ethernet network that uses UTP (Unshielded twisted pair) cable and a star topology. 10 Mbps data transmission speed.

100BaseT: 802.3 based Ethernet network that uses UTP (Unshielded twisted pair) cable and a star topology. 100 Mbps data transmission speed.

1000BaseT: 802.3 based Ethernet network that uses UTP (Unshielded twisted pair) cable and a star topology. 1000 Mbps data transmission speed.

802.1x: The standard for wireless LAN authentication used between an AP and a client. 802.1x with EAP will initiate key handling.

Access Point: A hardware device that acts as a communication hub for *Clients* (users of wireless devices) to connect to a wired LAN.

Ad-Hoc Network: A network based on peer-to-peer communication rather than a router, switch, or hub.

Bandwidth: The transmission capacity of a computer or a communication channel, usually stated in Megabits per second (Mbps).

Bridge: A device which forwards traffic between network segments with a common network layer address, based on data link layer information.

Client: A PC, workstation, or other device that connects to a network wirelessly through an *Access Point*.

Cross-Over Cable: A UTP cable that has its transmit and receive pair crossed to allow communications between two devices.

Default Gateway: The IP Address of either the nearest router or server for the LAN.

Destination Address: The address portion of a packet that identifies the intended recipient station.

DHCP (Dynamic Host Configuration Protocol): Based on BOOTP, it uses a pool of IP addresses, which it assigns to each device connected to it, and retrieves the address when the device becomes dormant for a period of time.

DNS (Domain Name System): System used to map readable machine names into IP addresses.

Driver: Software that interfaces a computer with a specific hardware device.

Dynamic IP Address: An IP address that is automatically assigned to a client station in a TCP/IP network, typically by a DHCP server.

Ethernet: The most widely used architecture for Local Area Networks (LANs). It is a shared-media network architecture. The IEEE 802.3 standard details its functionality.

Ethernet cable: A wire similar to telephone cable that carries signals between Ethernet devices. It is designed to connect a single device's NIC to a router, switch, or hub. See also *Crossover cable*.

File and Print Sharing: A Microsoft application that allows computers on a network to share files and printers.

Firmware: Computer programming instructions that are stored in a read-only memory unit rather than being implemented through software.

Frame: A fixed block of data, transmitted as a single entity. Also referred to as a packet.

Full-Duplex: To transmit on the same channel in both directions simultaneously.

Half-duplex: To transmit on the same channel in both directions, one direction at a time.

Hub: A device which allows connection of computers and other devices to form a LAN.

IEEE (Institute of Electrical and Electronics Engineers): The professional organization which promotes development of electronics technology.

IP (Internet Protocol) Address: A unique 32-binary-digit number that identifies each sender or receiver of information sent in packets.

Infrastructure: A wireless network or other small network in which the wireless network devices are made a part of the network through the Access Point.

ISP (Internet Service Provider): A company that provides access to the Internet and other related services.

IV (Initialization Vector): The header section of an encrypted message packet.

LAN (Local Area Network): A group of computers and peripheral devices connected to share resources.

LED (Light Emitting Diode): The lights on a hardware device representing the activity through the ports.

MAC (Medium Access Control) Address: The unique number that distinguishes every network interface card.

Mbps (Mega Bits Per Second): A measurement of millions of bits per second.

MDI/X (Media Dependent Interface/ Cross-over): Port on a network hub or switch that crosses the incoming transmit lines with the outgoing receive lines.

MHz (MegaHertz): One million cycles per second.

NAT (Network Address Translation): An internet standard that enables a LAN to use one set of IP addresses for internal traffic and a second set for external traffic.

NIC (Network Interface Card): An expansion card connected to a computer so the computer can be connected to a network.

Packet: A block of data that is transferred as a single unit, also called a frame or a block.

Packet Filtering: Discarding unwanted network traffic based on its originating address or its type.

PCI (Peripheral Component Interconnect): A bus that is connected directly to the CPU.

PCMCIA (Personal Computer Memory Card International Association) Card: Removable module that adds features to a portable computer.

Peer-to-peer: This simple network is formed by connecting computers directly, without use of routers or hubs. A *crossover cable* is plugged into an Ethernet port in each computer, connecting them directly.

Ping (Packet Internet Groper): An Internet utility used to determine whether a particular IP address is accessible.

Plug and Play: Hardware that, once physically installed, finishes its installation automatically and may immediately be used, as opposed to hardware that requires further manual configuration.

PoE (Power over Ethernet): A mechanism to send DC power to a device using a CAT5 Ethernet cable.

PPPoE (Point-to-Point Protocol over Ethernet): A specification for connecting users on an Ethernet line to the Internet through a common broadband medium.

Protocol: A standard way of exchanging information between computers.

RADIUS (Remote Authentication Dial In User Service): A server that issues authentication keys to clients.

RAM (Random Access Memory): Non-permanent memory.

Repeater Hub: A device that collects, strengthens and transmits information to all connected devices, allowing the network to be extended to accommodate additional workstations. See also *Bridge*.

RC4: The encryption algorithm used by WEP.

RJ-45 connector: An 8-pin connector used between a twisted pair cable and a data transmission device.

ROM (Read Only Memory): Memory hardware that allows fast access to permanently stored data but prevents addition to or modification of the data.

Router: A device in a network that handles message transfer between computers. Similar to a *hub*, but with added functionality and efficiency.

Roaming: The ability to use a wireless device while moving from one access point to another without losing the connection.

Server: Any computer that makes files or peripheral devices available to users of the network and has a resident Network OS.

SMTP (Simple Mail Transfer Protocol): The protocol used to define and deliver electronic mail (E-mail) from one location to another.

SNMP (Simple Network Management Protocol): An application layer protocol that outlines the formal structure for communication among network devices.

Static IP Address: A permanent IP address is assigned to a node in a TCP/IP network. Also known as global IP.

STP (Shielded Twisted Pair): Twisted Pair cable wrapped in a metal sheath to provide extra protection from external interfering signals.

Subnet Mask: An eight-byte address divided into 4 parts separated by periods.

TCP/IP (Transmission Control Protocol/Internet Protocol): Protocol used by computers when communicating across the Internet or Intranet.

TKIP (Temporal Key Integrity Protocol): An encryption method replacing WEP. TKIP uses random IV and frequent key exchanges.

Topology: The shape of a LAN (Local Area Network) or other communications system.

Twisted Pair: Cable that comprises 2 or more pair of insulated wires twisted together.

UDP (User Datagram Protocol): A communication method (protocol) that offers a limited amount of service when messages are exchanged between computers in a network. UDP is used as an alternative to TCP/IP.

Uplink: Link to the next level up in a communication hierarchy.

UTP (Unshielded Twisted Pair) cable: Two or more unshielded wires twisted together to form a cable.

WAN (Wide Area Network): A networking system covering a wide geographical area.

WEP (Wired Equivalent Privacy): A security protocol for wireless local area networks defined in the 802.11b standard, using a 64 bit or 128 bit key. WEP was designed to provide the same level of security as that of a wired LAN. However, it has been found that WEP is not as secure as once believed.

Web Browser: A software program that allows viewing of web pages.

Wi-Fi (Wireless Fidelity): An organization that tests and assures interoperability among WLAN devices.

Wire Speed: The maximum speed at which a given packet can be transferred using Ethernet and Fast Ethernet standard specifications.

WLAN (Wireless LAN): A LAN topology using wireless devices.

VPN (Virtual Private Network): A security method to connect remote LAN users to a corporate LAN system.

Notice

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 or more 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.

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. In accordance with FCC regulation, BUFFALO has limited the WHR-HP-G54 to operation on channels 1-11 by USA specific firmware.

FCC Warning

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

FCC RF Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for uncontrolled

equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65. This equipment should be installed and operated with at least 20cm and more between the radiator and person's body (excluding extremities: hands, wrists, feet and legs). This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this manual and of the computer manufacturer must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries intended for use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France (with Frequency channel restrictions), Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Norway, The Netherlands, Portugal, Spain, Sweden, Switzerland and United Kingdom. The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

EU Countries not intended for use

None.

Potential restrictive use

France: Only channels 10,11,12, and 13.

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

All expressed and implied warranties for the Buffalo Technology (Melco 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/(Melco 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/(Melco 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/(Melco Inc.) does not offer refunds for any product.

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GENERAL INQUIRIES

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8:30am-5:30pm CST

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sales@buffalotech.com

TECHNICAL SUPPORT

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

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GENERAL INQUIRIES

Email: sales@buffalo-technology.com

TECHNICAL SUPPORT

Technical Support in Europe is available between the hours of 9am-6pm (GMT) Monday to Thursday and 9am-4:30pm (GMT) Friday for this product. Customers in Europe can obtain Technical Support using the following information:

E-mail: helpdesk@buffalo-technology.ie | Web: www.buffalo-technology.com

* When operating in High-Speed Mode, this Wi-Fi device achieves an actual throughput of up to 34.1 Mbps, which is equivalent to the throughput of a system following 802.11g protocol and operating at a signaling rate of 125 Mbps.