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You can read the recommendations in the user guide, the technical guide or the installation guide for GIGABYTE GN-BR33V. You'll find the answers to all your questions on the GIGABYTE GN-BR33V in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

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User guide GIGABYTE GN-BR33V
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AirCruiser Extreme N Router
GN-BR33V-RH

User's Guide

Apr 2009 - Revision 1.0



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1 In speci. It is simpler, and eliminates the possibility of error due to improperly setup wireless connection. Step 1 Turn off all the hardware devices in your network, including the ADSL/Cable modem by unplugging their power supply. Connect the Ethernet cable of your ADSL/Cable modem to the WAN port of the GN-BR33V-RH. Step 2 8 GN-BR33V-RH 2.

4GHz AirCruiser Extreme N Wireless Router Step 3 Connect one end of an Ethernet cable (provided) to a LAN port in the side panel of the GN-BR33V-RH and the other end to the 10/100 Ethernet port of you WAN gateway, and DSN information. This information is provided by your ISP. D. After signing in to your ISP, the router will restart and the web based configuration utility will restart again automatically. You will be presented with the GIGABYTE Wireless Router Main Page shown below.

Your GN-BR33V-RH High-speed wireless router is now fully installed, and you are able to wirelessly share network resources, retrieve emails, download large files, conduct a video conference, and distribute or display digital photos, videos or MP3 files. 12 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Chapter 6 Advanced Setup Overview This chapter explains the Advanced Setup options available for the GN-BR33V-RH. The Advanced Setup Screens offer LAN and WLAN Network Configuration, Static Routing Table, Virtual Server, Firewall Rules, DNS Configuration, and URL Blocking. The Advanced Setup screens are available from the links on the Main menu. The Status Page On the Status page the router's current connection and configuration information is displayed for the following; LAN Ethernet, WAN Ethernet, ARP Table, DHCP Lease Table, Routing Table, UPnP Port Mapping Table. LAN IP 1 Address Displays the primary IP address being used by the Local (LAN) port of the Router. The default is 192.168.1.

254 13 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router LAN Netmask 1 Displays the IP Subnet Mask being used by the Local (LAN) port of the router. Default is 255.255.255.0 Displays the alternate IP address being used by the Local (LAN) port of the Router Displays the alternate IP Subnet Mask being used by the alternate Local (LAN) port of the router. Identifies if the Router's built-in DHCP server is active for the LAN attached devices. The starting IP number in the range possible IP addresses issued by the DHCP server The last IP number in the range possible IP addresses issued by the DHCP server LAN IP 2 Address LAN Netmask 2 LAN DHCP Status LAN DHCP Start IP LAN DHCP End IP The LAN Ethernet Status Tab On the LAN Ethernet Status the Router displays the Ethernet Status of the current LAN current connection. MAC This field displays the MAC address of the portable AP as seen on your wireless network. MTU This specifies the maximum size of the packet permitted for Internet transmission.

Rx packets The number of data packets received by the AP. Tx packets The number of data packets transmitted by the AP. Rx bytes The current bandwidth (receive) on the LAN port. Tx bytes The current bandwidth (transmit) on the LAN port. The WAN Ethernet Status button MAC The field displays the MAC address used by the WAN port of the AP.

MTU The maximum size of the packet sent from your computer to 14 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router the Internet. Rx packets The number of received packets of this port after resetting or manually initial. Tx packets The number of transmitted packets of this port after resetting or manually initial. Rx bytes The current bandwidth (receive) on the WAN port.

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If a host does not use a given address for some period of time, that IP address can then be assigned to another machine. When assignments are made or changed, the DHCP server must update the information in the DNS server. The GN-BR33V-RH DHCP Lease Table displays the associated IP/MAC assignment and Time To Lease. IP Address MAC Address DHCP assigned IP address on WLAN MAC address of the device with the assigned IP. TTL The time to live (TTL) in seconds that a resolver will use data received from a nameserver before it will ask for the same data again. Routing Table Tab To determine the best path to a distant network, the GN-BR33V-RH uses RIP to always select the path that has the least number of hops. Each router that data must traverse is considered to be one hop. The routing table in a router using RIP contains an entry for every known destination network. The Routing Table displays the GN-BR33V-RH RIP routing details. Destination The IP address of the destination network address Netmask The subnet of that destination IP address 16 GN-BR33V-RH 2.

4GHz AirCruiser Extreme N Wireless Router Gateway of the destination IP address Metric Hop count to the destination network Interface Type of interface used UPnP Port Mapping Table The UPnP specification is based on TCP/IP and Internet protocols that let devices communicate with each other - UPnP technology doesn't rely on specific device drivers, using instead these standard protocols. UPnP devices can automatically configure network addressing, announce their presence on a network subnet, and permit the exchange of device and service descriptions. The UPnP Port Mapping Table displays the GN-BR33V-RH port mapping and UPnP packet request details. No. Status Client IP The event number Current status of the UPnP port (enable/disable) The IP address of the client utilizing the port Protocol IP protocol (UDP/TCP) External Port Internal Port The external port mapping The Internal port mapping Remote Host IP The IP of the remote host (if applicable) Lease Time Create Time Description Length of time the port may be utilized for UPnP Time the port was established for UPnP UPnP process 17 GN-BR33V-RH 2.

4GHz AirCruiser Extreme N Wireless Router The Network Configuration Screen The Network Configuration screen consists of three areas: LAN Configuration, WAN Configuration and WAN settings. The LAN Configuration Tab LAN Configuration Allows you to modify the LAN parameters, and if you want to enable DHCP automatic IP address assignments, you can enable it here, and specify a Start and End address for the IP range.



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DHCP Option The DHCP server "leases" out address for specific times (Time To Live) to the various hosts. If a host does not use a given address for some period of time, that IP address can then be assigned to another machine. When assignments are made or changed, the DHCP server must update the information in the DNS server.

The AirCruiser G DHCP Lease Table displays the associated IP/MAC assignment and Time To Lease. **Force IP-MAC Mapping** Allows you to manually assign a specific IP address to a specific network device (MAC address) on the network. This will be updated in the ARP table automatically. 18 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The WAN Configuration Tab The GN-BR33V-RH has many advanced WAN configuration features. As a special redundant feature, you can configure up to 4 WAN connections and each may have its own connection type (PPPoE, PPPoE Unnumber, Dynamic IP address, Static IP address) and other properties. The device can automatically attempt to connect to these in order if your primary connection fails. Click the Edit button to the right of the ISP that you wish to modify. A screen will appear allowing you to change the Internet connection type. (see below) Click the Next button to continue with modifications.

19 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Depending on the WAN type you select, the corresponding WAN setup screen will appear next. **WAN Configuration Tab – Dynamic IP Address** Your Internet Service Provider will supply you with the following account information you will need: 20 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router •••••ISP Name Host Name Gateway DNS1 and DNS2 Address DNS Domain Name Enter the information provided by your ISP in the spaces provided. **MTU (Maximum Transmission Unit)** The largest packet unit is sent from your computer to the network. Any message larger than MTU will be divided into smaller packets before being sent. You should keep the default setting (1500). Setting MTU size is largely a process of trial-and-error: If you suspect your MTU setting is causing a connection problem, start with the maximum value of 1500, and then reduce the size down to 1400 until the problem goes away. **NAT Setup** The Network Address Translation (NAT) is a standard that allows multiple computers on a private network to share a single IP address. **Universal Plug and Play (UPnP)** is a technology based on Internet standards and technologies, such as TCP/IP, HTTP, and XML, that allows devices on a network to automatically connect with other devices.

UPnP Delete Time Select the duration that UPnP will be active. Since allowing this may present a security risk, the default setting is 0. If the WAN IP address and LAN IP address obtained from DHCP server are from the same subnet, the LAN IP address will automatically change to another subnet and reboot the router. 21 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router **WAN Configuration Tab – PPPoE** Your Internet Service Provider will supply you with the following account information you will need: •••••ISP Name User ID/Password Service Name AC Name DNS1 and DNS2 Address DNS Domain Name Enter the information provided by your ISP in the fields provided.

Authentication Type Select one of the following authentication settings: Auto, CHAP or PAP. The default setting is "Auto" (automatic authentication). **Challenge Handshake Authentication Protocol (CHAP)** is the most common authentication method using PPP dialup method. With CHAP, the server will send a challenging signal to a remote Router, which will send back an encryption key. **Password Authentication Protocol (PAP)** is a simple PPP authentication protocol allowing a Router to send a simple user ID and password to another Router for authentication.

PAP has been defined in RFC1334. 22 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router **Connection Automatic** When the GN-BR33V-RH is powered on, it automatically establishes a connection with the network. If the link becomes disconnected for any reason, the GN-BR33V-RH will re-connect automatically. **Manual** When you click "connection", the system will establish a connection to the network. If the link becomes disconnected for any reason, the GN-BR33V-RH will not re-connect automatically. **Dial on Demand Enable** When there is no Internet activity for a period, the WAN connection will automatically end. If a browser is launched again, the GN-BR33V-RH will automatically connect to Internet. When there is no Internet activity for a period, the WAN connection will automatically end. If a browser is launched again, the GN-BR33V-RH will not automatically connect to Internet.

Disable WAN Configuration Tab – Static IP Address Your Internet Service Provider will supply you with the following account information you will need: •••••ISP Name WAN IP Address WAN Subnet Mask WAN Gateway Manual DNS1 and DNS2 DNS Domain Name 23 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router This information is all provided by your ISP. In the event that your ISP has assigned you several Static IP addresses, you will only need to one. **WAN Configuration Tab - PPPoE Unnumber** PPPoE Unnumbered is a PPPoE service provided by some ISPs. The GN-BR33V-RH supports services that provide multiple global IP addresses. When using PPPoE Unnumbered, you can have up to 16 Global IP address depending upon your ISP's service policy. Among these Global IP addresses, one is used as Router's WAN IP address and the others can be used by the downstream clients of the Router. Your Internet Service Provider will supply you with the following account information you will need: •••••••ISP Name User ID/Password Service Name AC Name Manual DNS1 and DNS2 DNS Domain Name WAN IP Address WAN Subnet Mask Enter the information provided by your ISP for each of your Global IP's, then click next to proceed to enter additional IP's. 24 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The WAN Settings Tab - **WAN Multi-Session Select** The WAN Session Select Tab displays the settings of the Main Session.

Select a WAN connection type for the Main Session from the drop-down menu. In the event the Main Session can successfully establish a connection with your ISP. 25 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The VLAN Configuration Tap Allowed to setup 4 VLAN Group. Port 0~3 4 ports 10/100 Ethernet SSIDA~D BSSID 1~4 for wireless connection.

26 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The Traffic Control Tab The primary function of Traffic control is to control the incoming and outgoing traffic from the Internet across the WAN for VLAN (GROUP 1~4). Upload max rate Download max rate Determine the maximum rate for uploading data. Determine the maximum rate for downloading data. Click Submit to process the request.



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Please note that the configuration speed is still limited to real connection speed. For example, the connection speed is 2Mbps, the configuration could be less or equal to 2Mbps. It is useless to configure a speed that is faster than real connection speed. 27 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The Wireless Configuration Screen The Wireless Configuration screen allows you to configure the Router's WLAN function. The 802.11ng Tab Region Indicates the geographical region you are in. Verify that the region indicated is correct. If not, please contact your local distributor or dealer immediately. Channel Width Selecting channel width by clicking the drop-down list.

Option 20Mhz indicates supporting 20MHz channel bandwidth. Option Auto 20MHz/40MHz supports auto channel switching, and supports up to 40MHz, offering more faster speed. Channel The channel may be manually changed (if there are other wireless networks operating in your area) by selecting a channel from the drop-down list. QOS Select the QOS type from drop-down list. Multiple BSSID Select the BSSID type from drop-down list. 28 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router SSID The SSID (Service Set Identifier) is the name of your wireless network. The SSID is up to 32 ASCII characters in length and case sensitive (i.e. Letters in upper case "A-Z" and lower case "a-z" are unique). The default SSID is "GIGABYTE". To change the SSID, type in the SSID you want to use in the SSID field and click Submit. If you make a change to the SSID, any wireless devices on your network must also be reconfigured to connect to the new network name. Hidden SSID For security purposes, you may choose to hide your network's SSID by selecting enable from the drop-down list. This will prevent computers scanning for the presence of wireless networks to detect your network name.

The default setting is disable. Authentication Type Select an authentication type from the drop-down list. The default setting is Open System. Open System: The sender and the receiver do NOT share a secret key. Each party generates its own key-pair and asks the receiver to accept a randomly generated key. Once accepted, this key will only be used for a short period of time. Afterwards, a new key will be generated and agreed upon. Shared Key: Authentication is based upon a secret key shared by both the sender and the receiver. If Shared Key is selected, you cannot choose the WEP disable option. WPA Pre-shared key: The WPA Pre-shared Key authentication standard uses a password or "key" between 8 and 32 characters. This encryption key is changed after every dialog box using the Temporary Key Integrity Protocol (TKIP), which allows users to change keys based on dialog box and automatically synchronize keys between devices on the network. The TKIP encryption algorithm is stricter than the one used by WEP but is based on the same standard. WPA: The 802.1x authentication protocol, allows users to authenticate wireless network access through a RADIUS Server and is a required by WPA standard. If no RADIUS Server exists in your network environment, you still can use WPA through the use of WPA Pre-shared Key.

WEP Key The GN-BR33V-RH supports two WEP standards: 64-bit,128-bit. Select either 64-bits or 128-bits from the drop-down list activate WEP encryption. The 64-bits encryption uses 40 bits as a secret key, (user-defined) and the remaining 24 bits are reserved. The 128-bits encryption uses 104 bits as a secret key, (user-defined) and the remaining 24 bits are reserved. 29 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router WPA Re-key Enabling the requirement for WPA rekeying of a Passphrase for increased security. Default is disable. WEP Re-key Timer Specify time (in minutes) for expiration of the current WPA Key. WPA PSK Passphrase The Passphrase must be between 8 and 64 characters. WPA PSK Re-key A user without a RADIUS server, may specify generating a new WPA PSK key more frequently than each time he connects to the network.

WPA PSK Re-key Timer Specify time (in minutes) for expiration of the current WPA PSK key The MAC Access Control Tab The MAC Access Control screen allows you to specify the Media Access Controller (MAC) address of up to 32 devices on your network. Only those devices listed in the table will have access to transmit data through the GN-BR33V-RH. In this way, even if someone manages to obtain all the information necessary to connect to your network, if their MAC address is not permitted, they still cannot connect. Keep in mind, however that MAC addresses can be spoofed, so it is not a panacea but rather another component of your existing security process. Enable the feature, then key in the MAC addresses to be allowed.

Enter the MAC in the form separated by colon. The 30 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router default setting is Disable. The Radius Server Configuration Tab Your GN-BR33V-RH supports 802.1x and RADIUS Server authentication. RADIUS provides a centralized, server-based authentication of client access to the network. RADIUS Server IP RADIUS Server Port Shared Secret Assign an IP address for the RADIUS Server. Enter a value within the range 1-65536 for the port. Enter a password up to 256 characters (uppercase "A-Z", lowercase "a-z" or numeric "0-9") in length. Disable or enable Rekey function. Rekey 31 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The WDS Tab Wireless Distribution System (WDS) technology enables several access points to increase the coverage of a wireless network. Although enterprises or home users can reduce most wiring problems by using access points that support WDS, they still need cables to connect external ISP. To use WDS, please make sure: 9 All routers/AP's participating in the WDS must use the same RF Channel 9 DHCP (if used) must only be enabled on the bridge Router and not on the node AP's. Example: Suppose Router1 is connected to the DSL modem, and uses DHCP to dish out IP's to your WLAN.

To use Router1 to bridge to a remote AP, key in AP's Wireless MAC Address in Router1's WDS configuration list and select "enable" then press Submit. In AP's LAN settings, disable DHCP and assure the AP uses the same RF Channel as the Router1. You should now be able to connect to Router1 through AP. Note that bridging between different vendors wireless gear is not guaranteed. Your GN-BR33V-RH may only create a WDS environment with other Gigabyte Routers or GIGABYTE Access Points. 32 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The WPS Tab The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. Gigabyte STA supports the configuration and setup using a PIN configuration method or a PBC configuration method through an internal or external Registrar. Function Support Select either enable or disable WPS function support.



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Determine the function support, then click the "Save Setting" tab to save the configuration.

This item provide function for user to Create a New PIN or Reset to Default PIN. The user is required to enter an 8-digit PIN Code into Registrar. When an STA is the Enrollee, you can click "Renew" to re-generate a new PIN Code. AP's PIN Code Connect Mode 33 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The Static Routing Table Screen The Static Routing Table displays the GN-BR33V-RH routing settings.

To add or modify, enter a value into the field and click the Submit button. Destination IP Enter the Destination IP address that will be assigned to a specific network or host. Netmask Enter the netmask associated with the Destination IP. Gateway Enter an IP address that will be assigned to the interface connecting to subnets. Metric The "Metric" value is a number between 1 and 15 that represents the number of Routers between your network and the destination.

Generally, setting the Metric value as either 2 or 3 is sufficient for most applications. If this is a direct connection, please set the value to 1. The default setting is 1. 34 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The Virtual Server Screen The Virtual Server screen allows you to manage the virtual server settings of the GN-BR33V-RH. There are two virtual server options: 1. The router has only one IP address or, 2. The router has multiple IP addresses (8 or 16 in most instances). If you have only one IP address click on the PPPoE/DHCP/Static tab. If you have multiple IP addresses, click on the PPPoE Unnumber tab.

@@@You can do this using a Demilitarized Zone. @@Enter the IP Address of your computer (e.g. @@Note: DMZ servers pose a security risk.

@@@@@This feature is normally only found on enterprise class routers.

@@@@@Policy Select an accept or drop option. @@@@a. W->L: WAN to LAN, filtering incoming packets b. @@@@The default value of DNS relay is Enable. @@This gives Internet users the ability to connect with a virtual sever using a FQDN, rather than with an IP address.

Before using this feature, you must first register an account with the dynamic DNS service. (<http://www.dyndns.org>) Service Provider From this pull down menu, enter the DDNS service with which you have membership. This is the DDNS URL assigned by the DDNS service.

Enter the User Name for your DDNS account. Enter the Password for your DDNS account. If your dynamic DNS provider allows using wildcards in resolving your URL, you may select Enable to activate this function. Domain Name Login Name Password Wildcards 42 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The URL Blocking Configuration Screen The URL Blocking Configuration screen allows you to restrict access based upon specific web addresses and/or keywords.

To activate the URL Blocking feature: Keyword Enter the keyword or domain in the Keyword field that you wish to block. All URL's with those keywords in the DOMAIN name will now be blocked. 43 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The USB Screen Support one HDD or Flash Memory Storage device. The USB Storage Tab Related information on storage Description Format Type Status Total Size Free Size Unmount Device name for storage File system format of storage (FAT or EXT3) Mounted or Unmounted Capacity of storage device Remained capacity of storage device Unmounted storage device 44 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The USB Webcam Tab Setup account/password for watching Webcam (Only supporting UVC specification) Set up webcam Frame size Frame Rate adjust resolution frame per second (FPS) Connect with Webcam link for watching webcam Two methods for connection (port 8080) with webcam on WAN side: 1. WAN IP (ex: <http://XXX.XXX.XXX.XXX:8080/>) 2.

DDNS (ex: <http://XXXXXX.net:8080>) Please refer page 42 for setting up DDNS. 45 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The File Server Setting Screen The User Setting Tab Upto 8 account/password for accessing storage devices on Samba Server (Windows Network) or FTP Server (Only for UFT-8 file system format) User Name Setup account User Password Setup password Enable If enabled, user is allowed to access data on Samba Server or FTP Server. Allow Write If enabled, user is allowed to write data on FTP Server. 46 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The Basic Setting Tab Setup Samba Server (Windows Network) and FTP Server Setting of Samba Server/Windows Network Workgroup Name Server Name Name of connected group. Name of connected computer User is allowed to access Samba Server by Windows Network or searching Server Name. Setting of FTP Server Port: FTP Server port number 47 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The BitTorrent Screen The BitTorrent Settings Tab Setting for transfer speed of upload/download Upload Download Setup upload speed Setup download speed After connected with web management UI for BitTorrent, user is allowd to setup upto 16 BT seeds and maximum 4 accesses simultaneously.

Pinions dedicated to each BT seed: Start Pause Start this seed Pause this seed 48 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Update Tracker Update Tracker of this seed Stop Details Info Delete Stop this seed Showing information on this seed in details Showing information on this seed Delete this seed Invert Selection Select unselected opinions New Torrent Hide Active Show Active Hide Stopped Show Stopped Settings Summary Add Torrent Hiding BT seeds on access Showing BT seeds on access Hiding stopped BT seeds Showing stopped BT seeds Setup speed of upload/download (as well as default setting) Related information on BitTorrent Server 49 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Chapter 7 Using Management Tools Overview Management Tool Screens offer management of the Router itself, such as Firmware Updates, Initialization, and Password administration etc. The instructions in this chapter will help you how to use the management tools of the web-based utility to effectively manage your GN-BR33V-RH wireless broadband router. The PPP Monitor Screen The PPP Monitor screen displays the WAN (Internet) connection status.

Click the Disconnect button to end your current session. Click the Connect button to re-connect to the ISP. Manage Port Configuration Screen The Manage Port Configuration screen allows you to change the port on which the Router's configuration utility runs. The default is Port 80 but users can change this to any port they wish (like 8080, 8000 or else port). In this case, to access the Router configuration utility, you would type 50 GN-BR33V-RH 2.

4GHz AirCruiser Extreme N Wireless Router <http://192.168.1.254:8080> The Reboot Screen The Reboot screen allows you to reboot the GN-BR33V-RH. You are also automatically brought to this screen after you confirm OK to any change of Router settings. 51 GN-BR33V-RH 2.



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A screen with the message *Setup Completed* appears. Click the *Reboot* button to restart your router so that the settings take effect 68 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router While the router is rebooting, the Router Restarting screen will display the time remaining. Once your router has successfully rebooted, it will load Router Welcome Screen. Setup is complete. 69 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Appendix C Configuring TCP/IP Settings Computers access the Internet using a protocol called TCP/IP (Transmission Control Protocol/ Internet Protocol). Each computer on your network must have TCP/IP installed and selected as its networking protocol. If a Network Interface Card (NIC) is already installed in your PC, then TCP/ IP is probably already installed as well. Please follow the steps in this chapter to assure the correct TCP/IP settings. For advanced users who know the TCP/IP settings are already correct, you may skip this section and proceed directly to Chapter 6 Advanced Setup. Enabling DHCP to Automatically Configure TCP/IP Settings Each PC using accessing the wireless router must be assigned specific information about itself and resources that are available on its network. The simplest way to configure this is to allow the PC to automatically assign the IP by using a DHCP server. Follow the steps below to allow windows to automatically assign IP numbers for you. Step 1 Click the Start button. Select Settings and then click the Control Panel icon. Step 2 Double-click the Network and Dial-up Connection icon.

70 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Step 3 Double-click the Local Area Connection icon, and then click the Properties button. Step 4 The Local Area Connection Properties window will appear. For the applicable Ethernet / wireless adapter, make sure that there is a check in the Internet Protocol (TCP/IP) checkbox, then double-click on "Internet Protocol (TCP/IP)" 71 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Step 5 Select both the Obtain IP address automatically and Obtain DNS server address automatically, options and then click OK. Continue clicking on the OK button to complete the PC configuration. Windows will now automatically assign IP numbers to computers connecting to your GN-BR33V-RH. 72 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Appendix D Troubleshooting Problem 1: Response: ••• Make sure that your Router uses DHCP, and make sure your PC's IP address is on the same subnet as the router. Check to see if your web browser is automatically detecting LAN settings. Try closing all web browsers and trying again. Cannot connect to the Router's Web-based Utility. Make sure that your Router uses DHCP, and make sure your PC's IP address is on the same subnet as the router. Step 1 Click the Start button. Select Run, then type "command". Press OK. Step 2 At the command prompt, type "ipconfig /release" and press the ENTER key. Step 3 At the next command prompt, type "ipconfig /renew" and press the ENTER key. 73 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router The default gateway represents the IP address of your GN-BR33V-RH, that is: 192.

168.1.254. All computers accessing this Router MUST be in the same subnet (192.168.1.x, where x is anything between 1 and 253) In the above example, the GN-BR33V-RH gateway shown above is 192.168.1.254, and the PC's IP address is 192.

168.1.2 Check to see if your web browser is automatically detecting LAN settings Step 1 Open Internet Explorer. From the menu select Tools and then click Internet Options. 74 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Step 2 From the Internet Options window, click the Connections tab, and then click the LAN Settings button (see figure below). Step 3 Now verify that none of the checkboxes have been ticked, and click on the OK button. Now you will be able to login to the Router and configure or change network settings. Problem 2: I can't connect to the Internet 75 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Response : •••• Check that the power cord is connected properly, and the router's power LED is lit green. Verify that all the TCP/IP configuration settings are correct. (Problem 1 above) Check that your ADSL/Cable Modem is operating normally, and/or you have ISP service available. Check that all network cabling is properly connected. Problem 3: When I Configure WDS bridging, my Wi-Fi Protected Access (WPA) security is cancelled. Wi-Fi Protected Access (WPA) and Wireless Distribution System (WDS) cannot be used at the same time.

If you need to secure a WDS network, use the Wireless Encryption Protocol (WEP) feature instead. If you must use WPA, connect your base stations to a wired local area network (LAN). Response: 76 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Appendix E Glossary ADSL Asymmetric digital subscriber line (ADSL) is a new modem technology that converts existing twisted-pair telephone lines into access paths for high-speed communication of various sorts. Auto-MDI/MDIX On a network hub or switch, an auto-MDI/MDIX port automatically senses if it needs to act as a MDI or MDIX port. The auto- MDI/MDIX capability eliminates the need for crossover cables. Auto-negotiate To automatically determine the correct setting. The term is often used with communications and networking DHCP The Dynamic Host Configuration Protocol (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP. DHCP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers. DMZ In computer networks, a DMZ (demilitarized zone) is a computer host or small network inserted as a "neutral zone" between a company's private network and the outside public network. It prevents outside users from getting direct access to a server that stores company data. Typically, the DMZ contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers. DNS The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate between domain names and IP addresses, and to control Internet email delivery. Most Internet services rely on DNS to work.

If DNS fails, web sites cannot be located and email delivery service will be suspended. Dynamic IP Address An IP address is automatically assigned to a user's AP in a TCP/IP network typically by a DHCP server. 77 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Firewall A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially intranets.



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All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria. Gateway A device, usually a Router, that connects hosts on a local network to other networks. IP Address Every PC on the Internet has a unique identifying number, called an IP Address. A typical IP address looks like this: 216.

27.61.137 IPsec IPsec stands for IP Security. It provides authentication and encryption over the Internet. It functions at Layer 3 and thus secures everything on the network.

It has become a standard protocol used for virtual private networks (VPNs). MAC Address On a local area network (LAN) or other network, the MAC (Media Access Control) address is your computer's unique hardware number. Usually written as: 01:23:45:67:89:ab MTU The size in bytes of the largest packet that can be sent or received. NAT A technique by which several hosts share a single IP address for accessing to the Internet. Ping (Packet Internet Groper) A utility to determine whether a specific IP address is accessible.

It works by sending a packet to the specified address and waiting for a reply. PING is used primarily to troubleshoot Internet connections. SSID SSID is the name representing the Router in WLAN. PPPoE Point-to-Point over Ethernet is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection. Router A device that forwards data packets along networks. A router is connected to at 78 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router least two networks, commonly two LANs or WANs or a LAN and its ISP network. Routers are located at gateways, the places where two or more networks connect. Subnet Mask A mask used to determine which subnet an IP address belongs to. An IP address has two components, the network address and the host address.

Subnetting enables the network administrator to further divide the host part of the address into two or more subnets. TCP/IP TCP/IP (Transmission Control Protocol/Internet Protocol), the suite of communications protocols used to connect hosts on the Internet. VPN Virtual private networks are secured private network connections, built on top of publicly accessible infrastructure, such as the Internet or the public telephone network. VPNs typically employ some combination of encryption, digital certificates, strong user authentication and access control to provide security to the traffic they carry. They usually provide connectivity to many machines behind a gateway or firewall. WAN Wide Area Network, a communication network that covers a relatively broad geographic area, consisting of two or more LANs. Broadband communication over the WAN is often through public networks such as the ADSL or Cable systems, or through leased lines or satellites. To simplify it, please image network as a WAN. WEP WEP (Wired Equivalent Privacy) is a data privacy mechanism based on a 64/128-bit shared key algorithm, as described in the IEEE 802.11 standard.

79 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Appendix F Specifications General Flash and SDRAM Standards Power Operating Range 4MB Flash and 32MB SDRAM IEEE 802.3 (10BaseT), IEEE 802.3u (100BaseTX), IEEE 802.11b/g/n (Wireless) External; 5V DC, 2A Wireless – Open space: 300m; Indoor: 100m 2412 ~ 2484 MHz (subject to local regulation) OFDM and DSSS 64QAM, 16QAM, QPSK, BPSK, DBPSK, DQPSK, CCK 300, 270, 243, 216, 162, 135, 121.

5, 108, 81, 54, 48, 36, 27, 24, 18, 13.5, 12, 11, 9, 6, 5.5, 2, 1 Mbps, auto fallback Legacy mode: 20dBm @11b, 17dBm @11g; HT20 mode: 17dBm @MCS7/15; HT40 mode: 17dBm @MCS7/15. Legacy mode: -90 dBm @11b, -74 dBm @11g; HT20 mode: -73 dBm @MCS7/15; HT40 mode: -68 dBm @MCS7/15. 2 external dipole antennas FCC part 15 (USA) CE (Europe) Operating: 0 ~ 55 degree C, Storage: -20 ~ 65 degree C 10% ~ 85% Non-condensing Yes 64/128 bit WEP; 802.

1x, WPA, and WPA2 Dynamic, Static Routing with TCP/IP NAT, PPTP, PPPoE VPN Pass-Through (IPsec, L2TP) DHCP (Client & Server) WEB Configuration for network link Generic, Gigabyte, private labeling optional Power/Status LED x 1 WPS/RF LED x 1 LAN Port LED x 4 WAN Port LED x 1 238 g ± 5.0g 216.0 x 136.0 x 26.0 mm ± 0.5mm Wireless Frequency Band Modulation Technology Modulation Techniques Data Rates Output power Receive Sensitivity Antenna Regulatory and Environmental Compliance EMC certification Temperature Range Humidity Software Roaming Security Routing Protocols Management Utility Mechanical Packaging LED indicator Gross Weight Dimension 80 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Appendix G Warranty Limited Warranty Statement (1-Year Warranty) Thank you for purchasing the GIGABYTE Product. This limited warranty statement will provide you one year warranty starting from the purchase date. Of which if any defect is occurred due to accidents or any man-made factors, or any unauthorized torn-off or damage to GIGABYTE's sticker on the product, GIGABYTE Technology will not provide after-sale services, such as: z z z z z z z z Products are damaged due to any violation of instructions on user manual. Hardware is damaged due to inappropriate assembling.

Products are damaged due to the use of illegal accessory. Products are damaged due to parts disassembling without authorization. Products are damaged due to exceeding environment limits. Products are damaged due to unexpected external force. Products are damaged due to nature disasters. Products are copies or illegally smuggled goods. 81 GN-BR33V-RH 2.4GHz AirCruiser Extreme N Wireless Router Appendix H Regulatory Information CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures. FCC 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: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user authority to operate this equipment.



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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.

IMPORTANT NOTE: FCC Radiation Exposure Statement: This equipment complies with FCC 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. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Europe - Declaration of Conformity This device is a 2.4 GHz low power RF device intended for home and office use in EU and EFTA member states. In some EU / EFTA member states some restrictions may apply. Please contact local spectrum management authorities for further details before putting this device into operation. GIGA-BYTE Technology, Inc. declares that the product: Wireless Broadband Router Model Number: GN-BR33V-RH is in conformity with and in accordance with the European Directive of EMC, 89/336 EEC for the following sections: EN 61000-3-2, EN 61000-3-3, EN 55024, and EN 55022 Disturbances and Immunities GIGA-BYTE Technology, Inc. also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD Directive 73/23 EEC: EN 60950 Safety In accordance with R&TTE Directive 1995/5/EC, Part 17: Requirements for Operation in the European Community, GIGA-BYTE Technology, Inc declares the conformity of the above mentioned products for: 82 GN-BR33V-RH 2.

4GHz AirCruiser Extreme N Wireless Router EN 300 328-2 V1.2.1, ETSI EN 300 328-1 V1.3.1, EN 301 489-1, and EN 301 489-17 Technical Requirements for Radio Equipment Countries of Operation and Conditions of Use in the European Community The user should run the configuration utility program provided with this product to check the current channel of operation and confirm that the device is operating in conformance with the spectrum usage rules for European Community countries as described in this section. European standards dictate a maximum radiated transmit power of 100mW EIRP and a frequency range of 2.400 - 2.4835 Ghz. Operation using 2.4 GHz Channels in France 2.

4 GHz Bande: les canaux 10, 11, 12, 13 (2457, 2462, 2467, et 2472 MHz respectivement) sont complètement libres d'utilisation en France (en utilisation intérieur). Pour ce qui est des autres canaux, ils peuvent être soumis à autorisation selon le département. L'utilisation en extérieur est soumise à autorisation préalable et très restreint. Vous pouvez contacter l'Autorité de Régulation des Télécommunications (<http://www.art-telcom.fr>) pour de plus amples renseignements. Please check ART's web site for latest requirements for use of the 2.4GHz band in France: <http://www.art-telcom.fr/eng/index.htm>.

When operating in France, this device may be operated under the following conditions: Indoors only, using any channel in the 2.4465-2.4835 GHz band. Trademarks: GIGABYTE is a registered trademark of GIGA-BYTE Technology, Inc. Other trademarks or registered trademarks are the property of their respective manufacturers or owners. Copyright Statement: No part of this publication or documentation accompanying this Product may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaptation without permission from GIGABYTE/GIGA-BYTE Technology, Inc., as stipulated by the United States Copyright Act of 1976. Contents are subject to change without prior notice. Copyright© 2004 by GIGA-BYTE Technology, Inc.

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