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Barricade™ N  
Draft 11n Wireless 3G Broadband Router  
802.11b/g/n Wireless AP/Router

**SMCWBR14-3GN**



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**Manual abstract:**

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*A. is firmware-limited to channels 1 through 11. 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. Following three 3G cards have passed co-located EMC / RF exposure test with this device and can be used with this device. Other 3G cards may or may not comply with FCC rules, please consult the manufacturer before purchase. vii Modulation Technology GSM GSM/UMTS GSM Interface HSDPA USB Modem (3G Card) 3G Card 3G Card Brand Name HUAWEI Sony Ericsson Band Luxe Model Name E220 MD300 C100S FCC ID QJSE220 PY7F3232021 UZI-C100 EC Conformance*

*Declaration Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards: · · EN 60950-1: 2001 Safety of Information Technology Equipment EN 50392: 2004 Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz 300 GHz) EN 300 328 V1.6.1 (2004-11) 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 301 489-17 V1.2.1 (2002-08) and EN 301 489-1 V1.5.1 (2004-11) 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.*

*viii This device is intended for use in the following European Community and EFTA countries: Czech Estonian Eesti English Käesolevaga kinnitab SMC seadme Radio LAN device vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. Hereby, SMC, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. SMC vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. Hierbij verklaart SMC dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Par la présente SMC déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE Härmed intygar SMC att denna Radio LAN device står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. Undertegnede SMC erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF Hiermit erklært SMC, dass sich dieser/diese/dieses Radio LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi) smc radio LAN device 1999/5/ Alulõtt, SMC nyilatkozom, hogy a Radio LAN device megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak. Con la presente SMC dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altrimplici pressing its WPS button. For more detailed configuration, the unit can also be set up through its easy-to-use web interface. The wireless AP/Router supports a wireless 3G Modem for primary and secondary (backup) WAN connectivity through its 3G Modem USB Port. Package Checklist The wireless AP/Router package includes: · 802.*

*11b/g/n wireless AP/Router (SMCWBR14-3GN) · RJ-45 Category 5 network cable · AC power adapter · Quick Installation Guide · User Guide CD Inform your dealer if there are any incorrect, missing or damaged parts. If possible, retain the carton, including the original packing materials. Use them again to repack the product in case there is a need to return it. 1-1 1 Introduction Hardware Description Power Socket Security Slot Reset Button Ethernet WAN RJ-45 Port 3G Modem USB Port Ethernet LAN RJ-45 Ports Figure 1-1. Rear Panel 1-2 Hardware Description 1 Antennas 3G Button WPS Button WLAN Button Figure 1-2. Front Panel AP/Router Mode Switch Figure 1-3. Bottom Panel 1-3 1 Introduction LED Indicators The wireless AP/Router includes nine status LED indicators, as described in the following figure and table. LAN Link/Activity WAN Link/Activity Power 802.11n Link/Activity WPS Link/Activity 3G USB Link Figure 1-4. LED Indicators LED POWER WAN Status On Green On/Flashing Green Off LAN (4 LEDs) On/Flashing Green Off WLAN On/Flashing Green Off WPS Description Indicates that the system is working normally. Indicates a valid link on the WAN Ethernet port. Flashing indicates network activity. The Ethernet port has no valid link. Indicates a valid link on the LAN Ethernet port.*



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Flashing indicates network activity.

The Ethernet port has no valid link. Indicates the 802.11n radio is enabled. Flashing indicates wireless network activity. Indicates the 802.11n radio is disabled. On (for 10 seconds) Indicates the WPS authentication of a device has been successfully completed. Fast Flashing Green Indicates the WPS authentication of a client device is in progress. Slow Flashing Green Indicates the WPS authentication of a device did not complete after 120 (for 10 seconds)\* seconds. Off Indicates that WPS is not in progress. 1-4 Hardware Description LED Status Fast Flashing Green\* Ultra Fast Flashing Green\*\* Ultra Fast Flashing Green and OFF cycle every 5 seconds\*\* Off Description Indicates a connection through the attached 3G/3.5G USB modem. Indicates that the PIN code has failed. Indicates that 3G usage is already over the ISP supplied limit. Indicates that 3G usage is already over the user defined pre-warning limit.

1 3G USB Link On Slow Flashing Green Indicates that the 3G/3.5G USB modem is in the process of connecting. Indicates that there is no connection or no attached 3G/3.5G device. \*Slow flashing is an on-off cycle of once every 2 seconds. The flashing lasts for 10 seconds then stops. \*\*Fast flashing: on-off cycle of once of every 0.5 seconds \*\*\*Ultra Fast flashing: on-off cycle of once of every 0.2 seconds Ethernet RJ-45 Ports The wireless AP/Router has the following RJ-45 ports: · The four RJ-45 LAN ports are for connections to PCs or to a 10/100 Mbps. · The RJ-45 WAN port is for connection to a DSL or cable modem, or to a LAN or other device that provides your Internet access.

All RJ-45 ports auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X. Automatic MDI/MDI-X support enables you to use straight-through cables for all network connections to PCs, switches, or hubs. 3G Modem USB Port The 3G Modem USB Port supports connection to a wireless cellular 3G or 3.5G modem for broadband internet access. 3G Button The 3G button provides an easy way to connect to a 3G or 3.5G Internet service. For information on the 3G start mode, See "3G" on page 5-11. Power Socket The wireless AP/Router does not have a power switch. It is powered on when connected to the AC power adapter, and the power adapter is connected to a power source. The power adapter automatically adjusts to any voltage between 100-240 volts at 50 or 60 Hz.

No voltage range settings are required. 1-5 1 Introduction Reset Button The Reset button can be used to restart the wireless AP/Router or restore the factory default configuration. If you press the button for less than 5 seconds, the wireless AP/Router will restart. If you press and hold down the button for 5 seconds or more, any configuration changes you may have made are removed and the wireless AP/Router is restored to its factory default configuration. WPS Button Use the WPS button on the wireless AP/Router to automatically connect devices to the network. Within two minutes, press the physical or virtual button on a single wireless client device to enable it to join the WLAN. The WPS configuration process may be initiated on any device. Only one client device can connect with the wireless AP/Router after the WPS button is pressed. There is no restriction to the order in which buttons are pressed. Note: Any WPS-compatible devices could unintentionally join the WLAN if they are within range during the two-minute set up period after the WPS button is pressed.

Note that only one device at a time can join the network when using the WPS button. 1-6 Chapter 2: Installation The wireless AP/Router has two basic operating modes that can be set through the switch on the bottom panel of the device: · Router Mode -- Normal gateway mode that connects a wired LAN and wireless clients to an Internet access device, such as a cable or DSL modem. This is the factory set default mode. · AP Mode -- An access point mode that extends a wired LAN to wireless clients. In addition to these basic operating modes, each wireless interface supports a Wireless Distribution System (WDS) link to another wireless AP/Router. These advanced configurations are not described in this section. See "Network Planning" on page 3-1 for more information. In a basic configuration, how the wireless AP/Router is connected depends on the operating mode. The following sections describe connections for basic Router Mode and AP Mode operation. Router Mode In its default Router Mode, the wireless AP/Router forwards traffic between an Internet connected cable or ADSL modem, and wired or wireless PCs or notebooks.

The basic connections are illustrated in the figure below. Figure 2-1. Router Mode Connection 2-1 2 1. 2. Installation To connect the wireless AP/Router in Router Mode for use as an Internet gateway, follow these steps: Connect an Ethernet cable from the wireless AP/Router's WAN port to your Internet connected cable or ADSL modem. Connect an Ethernet cable from the wireless AP/Router's LAN port to your PC. Alternatively, you can connect to a workgroup switch to support multiple users. The wireless AP/Router can support up to 253 wired and wireless users. Power on the wireless AP/Router by connecting the AC power adapter and plugging it into a power source. 3. Caution: Use ONLY the power adapter supplied with the wireless AP/Router. Otherwise, the product may be damaged. When you power on the wireless AP/Router, verify that the Power LED turns on and that the other LED indicators start functioning as described under "LED Indicators" on page 1-4. 4. Set up wireless devices by pressing the WPS button on the wireless AP/Router or by using the web interface. See "Initial Configuration" on page 4-1 for more information on accessing the web interface. AP Mode In AP Mode, the wireless AP/Router operates as a wireless access point, extending a local wired network to associated wireless clients (PCs or notebooks with wireless capability). From any nearby location, you can then make a wireless connection to the wireless AP/Router and access the wired network resources, including local servers and the Internet. In AP Mode, the wireless AP/Router does not support gateway functions on its WAN port. Both the LAN port and the WAN ports can be connected to a local Ethernet LAN.

Note: AP Mode is not the factory default mode and must be manually set using the AP/Router mode switch in the bottom of the unit. If the unit is already powered on, switching the mode causes it to reboot. 2-2 AP Mode 2 Figure 2-2. AP Mode Connection To connect the wireless AP/Router for use as an access point, follow these steps: 1. 2. Using Ethernet cables, connect the wireless AP/Router's LAN and WAN ports to PCs or a LAN switch. Power on the wireless AP/Router by connecting the AC power adapter and plugging it into a power source. Caution: Use ONLY the power adapter supplied with the wireless AP/Router.

Note: AP Mode is not the factory default mode and must be manually set using the AP/Router mode switch in the bottom of the unit. If the unit is already powered on, switching the mode causes it to reboot. 2-2 AP Mode 2 Figure 2-2. AP Mode Connection To connect the wireless AP/Router for use as an access point, follow these steps: 1. 2. Using Ethernet cables, connect the wireless AP/Router's LAN and WAN ports to PCs or a LAN switch. Power on the wireless AP/Router by connecting the AC power adapter and plugging it into a power source. Caution: Use ONLY the power adapter supplied with the wireless AP/Router.

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Otherwise, the product may be damaged. When you power on the wireless AP/Router, verify that the Power LED turns on and that the other LED indicators start functioning as described under "LED Indicators" on page 1-4.

3. Set up wireless devices by pressing the WPS button on the wireless AP/Router or by using the web interface. See "Initial Configuration" on page 4-1 for more information on accessing the web interface. 2-3 2 Installation 2-4 Chapter 3: Network Planning The wireless AP/Router is designed to be very flexible in its deployment options. It can be used as an Internet gateway for a small network, or as an access point to extend an existing wired network to support wireless users.

It also supports use as a wireless bridge to connect two wired LANs. This chapter explains some of the basic features of the wireless AP/Router and shows some network topology examples in which the device is implemented. Internet Gateway Router The wireless AP/Router can connect directly to a cable or DSL modem to provide an Internet connection for multiple users through a single service provider account. Users connect to the wireless AP/Router either through a wired connection to a LAN port, or through the device's own wireless network. The wireless AP/Router functions as an Internet gateway when set to Router Mode.

An Internet gateway employs several functions that essentially create two separate Internet Protocol (IP) subnetworks; a private internal network with wired and wireless users, and a public external network that connects to the Internet. Network traffic is forwarded, or routed, between the two subnetworks. Figure 3-1. Operating as an Internet Gateway Router 3-1 3 Network Planning The private local network, connected to the LAN port or wireless interface, provides a Dynamic Host Configuration Protocol (DHCP) server for allocating IP addresses to local PCs and wireless clients, and Network Address Translation (NAT) for mapping the multiple "internal" IP addresses to one "external" IP address. The public external network, connected to the WAN port, supports DHCP client, Point-to-Point Protocol over Ethernet (PPPoE) and static IP for connection to an Internet service provider (ISP) through a cable or DSL modem. The 3G Modem link can provide a backup Internet connection with automatic failover and fallback to the primary WAN connection. LAN Access Point The wireless AP/Router can provide an access point service for an existing wired LAN, creating a wireless extension to the local network. The wireless AP/Router functions as purely an access point when set to AP Mode. When used in this mode, there are no gateway functions between the WAN port and the LAN and wireless interface. A Wi-Fi wireless network is defined by its Service Set Identifier (SSID) or network name.

Wireless clients that want to connect to a network must set their SSID to the same SSID of the network service. The wireless AP/Router supports two separate wireless interfaces, that is two SSIDs or Virtual Access Points (VAPs). The two VAP interfaces can be configured separately to support different security settings or other wireless functions. Figure 3-2. Operating as an Access Point 3-2 Wireless Client 3 Wireless Client The wireless AP/Router can operate as a wireless client on one VAP interface, which enables a connection to another Wi-Fi network. When the wireless client option is enabled as a WAN connection, the client VAP interface functions as an external gateway WAN port. When the wireless client option is enabled as a LAN connection, the other VAP interface and LAN ports all function as the local network within the same IP subnet. Figure 3-3. Operating with a Wireless Client WAN Connection 3-3 3 Network Planning Wireless Bridge The IEEE 802.11 standard defines a Wireless Distribution System (WDS) for bridge connections between access points. The wireless AP/Router can use WDS to forward traffic on links between units. A single WDS bridge link can be specified for the WLAN1 interface. One end of a link must be configured as the "WDS Parent" and the other as the "WDS Child." Note: The network domain of WDS child has to be the same as WDS parent. Figure 3-4.

Operating as a Wireless Bridge 3-4 Chapter 4: Initial Configuration The wireless AP/Router offers a user-friendly web-based management interface for the configuration of all the unit's features. Any PC directly attached to the unit can access the management interface using a web browser, such as Internet Explorer (version 6.0 or above). This chapter describes the wireless AP/Router's configurable features, all of which may be accessed through the web interface. Note: Before accessing the web interface, first set the device to Router or AP Mode using the switch on the bottom panel.

Note that the unit reboots when the operating mode is changed. It is recommended to make initial configuration changes by connecting a PC directly to one of the wireless AP/Router's LAN ports. The wireless AP/Router has a default IP address of 192.168.2.1 and a subnet mask of 255.255.255.0. If your PC is set to "Obtain an IP address automatically" (that is, set as a DHCP client), you can connect immediately to the web interface.

Otherwise, you must set your PC IP address to be on the same subnet as the wireless AP/Router (that is, the PC and wireless AP/Router addresses must both start 192.168.2.x). To access the configuration menu, follow these steps: 1. 2. Use your web browser to connect to the management interface using the default IP address of 192.168.2.1.

Log into the wireless AP/Router management interface by entering the default username "admin" and password also "smcadmin", then click Login. Note: It is strongly recommended to change the default user name and password the first time you access the web interface. For information on changing user names and passwords, See "Admin Accounts and Remote Administration" on page 5-60. Figure 4-1. Login Page 4-1 4 Initial Configuration Using the Setup Wizard There are only a few basic steps you need to set up the wireless AP/Router and provide a connection for network access for other wireless stations.

The Setup Wizard takes you through configuration procedures for the general network settings. Follow these steps: 1. Launch the Setup Wizard Click "Setup Wizard" on the left side of the screen to enter the setup wizard page. Click Next to begin the setup. Figure 4-2.

Setup Wizard 2. Date/Time Configuration Select a time zone according to where the device is operated. Click Next after completing the setup. Figure 4-3. Setup Wizard - Date/Time 4-2 Using the Setup Wizard 3. 4 WAN Configuration Specifies the Internet connection parameters for the wireless AP/Router's WAN port. Click Next after completing the setup. The interface provides the facility for Dual WAN connections for purposes of backing up the main internet connection.



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Figure 4-4. Setup Wizard - WAN Configuration The displayed items on this page are described in the sections that follow: WAN Connection -- By default, the access point WAN port is configured with DHCP enabled.

After you have network access to the access point, you can use the web browser interface to modify the initial IP configuration, if needed. The options are Static IP, DHCP, PPPoE, 3G, PPTP, L2TP, Bigpond and WiFi. Each option changes the parameters displayed below it. (Default: DHCP) Backup WAN -- A backup failsafe connection for the WAN port (Dual WAN.) Options are determined by the WAN Connection selected. Backup WAN and WAN Connection parameters are identical for each of their eight equivalent modes: Static IP, DHCP, PPPoE, 3G, PPTP, L2TP, Bigpond and WiFi. (Default: None) · WAN detect IP address: IP address used to detect if the primary WAN connection is on or off. · Backup WAN detect IP address: IP address used to detect if the backup WAN connection is on or off. · ICMP detect timeout: Set the ICMP (Ping) time out. · Main WAN Fallback: When the Backup WAN is enabled, Main WAN Fallback can be enabled to periodically search the primary WAN port for recovery of the lost connection.

If connection is re-established the connection switches back to the primary WAN connection. (Default: Disabled) Note: When 3G is selected as the primary WAN Connection the Backup WAN must be a DSL/Cable connection. 4-3 4 Initial Configuration Common Settings The common settings for each WAN Connection mode are identical and are described in the section below. Figure 4-5. Common Settings WAN Ethernet MAC -- Some ISPs limit Internet connections to a specified MAC address of one PC.

This setting allows you to manually change the MAC address of the wireless AP/Router's WAN interface to match the PC's MAC address provided to your ISP for registration. You can enter the registered MAC address manually by typing it in the boxes provided. Otherwise, connect only the PC with the registered MAC address to the wireless AP/Router, then click the "MAC Clone." (Default: Original MAC) Note: If you are unsure of the PC MAC address originally registered by your ISP, call your ISP and request to register a new MAC address for your account. Register the default MAC address of the wireless AP/Router.

· Original MAC Specifies a preset MAC address to uniquely identify the unit. · Manual Setting Configures a specific MAC address to use for the WAN connection. · Set DNS Server Allows manual or automatic selection of DNS servers. · Primary DNS Server: The IP address of the Primary Domain Name Server on the network. A DNS maps numerical IP addresses to domain names and can be used to identify network hosts by familiar names instead of the IP addresses. If you have one or more DNS servers located on the local network, type the IP addresses in the text fields provided. Otherwise, leave the addresses as all zeros (0.0.0.0).

· Secondary DNS Server: The IP address of the Secondary Domain Name Server on the network. 4-4 Using the Setup Wizard 4 Static IP Configures a static IP for the WAN port. Figure 4-6. Setup Wizard - WAN Static IP · IP Address: The IP address of the wireless AP/Router. Valid IP addresses consist of four decimal numbers, 0 to 255, separated by periods. · Subnet Mask: The mask that identifies the host address bits used for routing to specific subnets. · Default Gateway: The IP address of the gateway router for the wireless AP/ Router, which is used if the requested destination address is not on the local subnet. 4-5 4 Initial Configuration DHCP Enables Dynamic Host Configuration Protocol (DHCP) for the WAN port. This setting allows the wireless AP/Router to automatically obtain an IP address from a DHCP server normally operated by the Internet Service Provider (ISP). Figure 4-7.

Setup Wizard - WAN DHCP 4-6 Using the Setup Wizard 4 PPPoE Enable the wireless AP/Router IP address to be assigned automatically from an Internet service provider (ISP) through an ADSL modem using Point-to-Point Protocol over Ethernet (PPPoE). Figure 4-8. Setup Wizard - WAN PPPoE · PPPoE Network Mode: Sets a PPPoE network mode. (Default: DHCP) · PPPoE IP Address: Sets the static IP address. (Default: 0.0.0.0, available when PPPoE Network Mode is set to static IP.) · PPPoE Username: Sets the PPPoE user name for the WAN port. (Default: PPPOE\_USERNAME; Range: 1~32 characters) · PPPoE Password: Sets a PPPoE password for the WAN port.

(Default: PPPOE\_PASSWORD; Range: 1~32 characters) 4-7 4 3G Initial Configuration Enables a 3G/3.5G wide-area wireless cellular link on the WAN port using an optional USB modem. Note: To use this option you need to first connect a 3G/3.5G USB modem to the USB port on the back of the unit and have registered an account with a cellular operator. The following example shows the WAN function enabled with 3G. An authenticated 3G connection displays the message "Authenticated successfully" beneath the PIN code if the 3G Modem PIN code have been authenticated successfully. Figure 4-9. Setup Wizard - WAN 3G Authenticated 4-8 Using the Setup Wizard The following cautionary message will appear each time you save your settings. 4 Figure 4-10. Setup Wizard - WAN 3G PIN Code Warning An unauthenticated connection will display the message "Not dial yet" beneath the PIN code, as shown in the following example.

Figure 4-11. Setup Wizard - WAN 3G Unauthenticated · Pin Code Protect: Enables the use of a PIN code (personal identification number) to encrypt access to the wireless 3G connection. Some service providers do not require PIN code authentication. If a PIN code is not required for your 3G/3.5G modem, disable this function. (Default: Enabled) Specifies a PIN code number that corresponds with that set on your 3G/3.5G USB modem and displays the status of the 3G connection. · Not dial yet: Indicates that the 3G is not dialed and PIN is not authenticated yet. · Authenticated successfully: Indicates that the 3G connection has authenticated successfully. 4-9 4 Initial Configuration · Dial Code: A dialled access code that connects the USB device to the service provider.

· APN Service: The name that uniquely identifies the cellular operator, access point name (APN). · 3G Username: The username of the account registered with the service provider. · 3G Password: The password of the account registered with the service provider. · Connect Type: Selects the connection type as Keep Alive or Auto Connect. (Default: Auto Connect) · 3G Max Idle Time: The maximum length of inactive time the unit will stay connected to the 3G service provider before disconnecting.

This feature only works when Connect Type is set to "Auto-Connect." (Default: 300 seconds) · Budget Control: You can set a monthly limit on time or the total data.



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For more details, please refer to the following table. Figure 4-12. 3G Budget Control · Budget Criterion: - By Time: Specify the amount of time (in hours) that can be used per month.

- By Data: Specify how much Download/Upload data (in MBytes) can be transmitted per month. 4-10 Using the Setup Wizard 4 · Budget Policy: Enable or disable the action "Drop Current Cellular connection" or "Disallow New Cellular connection" if over budget. - Trigger by Limit Budget: - By Time: Set the specified percentage of time limit. - By Data: Set the specified percentage of data limit. - Action if Over Budget: Send an e-mail alert at the specified interval in minutes. The wireless AP/Router can use SMTP (Simple Mail Transfer Protocol) to send email messages when triggered by the specified budget policy limits. - SMTP Authentication: Specifies the user name and password for authentication or login to the SMTP server. (Options: Plain, Login, or disabled.) - Mail Server: URL of the SMTP mail server that will send the alert messages. - Mail Sender: Specifies an e-mail address on the SMTP server that can send alert messages.

- Mail Recipient: The e-mail address of the recipient of the alert messages. · Budget Counter: Select the date on which the AP/Router resets the budget every month. PPTP Enables the Point-to-Point Tunneling Protocol (PPTP) for implementing virtual private networks. The service is provided in many European countries. Figure 4-13. Setup Wizard - WAN PPTP 4-11 4 Initial Configuration · PPTP Network Mode: Sets a PPTP network mode. (Default: DHCP) · IP Address: Sets the static IP address. (Default: 0.0.0.0, available when PPTP Network Mode is set to static IP.) · Subnet Mask: Sets the static IP subnet mask. (Default: 255.255.255.

0, available when PPTP Network Mode is set to static IP.) · Default Gateway: The IP address of the gateway router for the wireless AP/ Router, which is used if the requested destination address is not on the local subnet. · PPTP Username: Sets the PPTP user name for the WAN port. (Default: PPTP\_USERNAME; Range: 1~32 characters) · PPTP Password: Sets a PPTP password for the WAN port. (Default: PPTP\_PASSWORD; Range: 1~32 characters) L2TP Enables the Layer Two Tunneling Protocol (L2TP) for implementing virtual private networks.

The service is provided in many European countries. Figure 4-14. Setup Wizard - WAN L2TP 4-12 Using the Setup Wizard · L2TP Network Mode: Sets a L2TP network mode. (Default: DHCP) · IP Address: Sets the static IP address. (Default: 0.0.0.0, available when L2TP Network Mode is set to static IP.) · Subnet Mask: Sets the static IP subnet mask. (Default: 255.

255.255.0, available when L2TP Network Mode is set to static IP.) · Default Gateway: The IP address of the gateway router for the wireless AP/ Router, which is used if the requested destination address is not on the local subnet. · L2TP Username: Sets the L2TP user name for the WAN port. (Default: L2TP\_USERNAME; Range: 1~32 characters) · L2TP Password: Sets a L2TP password for the WAN port. (Default: L2TP\_PASSWORD; Range: 1~32 characters) Bigpond Enables the settings of Telstra Bigpond network service in Australia. Figure 4-15. Setup Wizard - WAN Bigpond · Bigpond Username: Sets the Bigpond user name for the WAN port. (Default: BIGPOND\_USERNAME; Range: 1~32 characters) · Bigpond Password: Sets a Bigpond password for the WAN port.

(Default: BIGPOND\_USERNAME; Range: 1~32 characters) · Bigpond Authentication Server: Specifies a Bigpond authentication server. (Default: sm-server) 4-13 4 Initial Configuration WiFi Enables a WAN connection to a normal remote AP over a wireless 802.11b/g/n connection. For this WAN setting, the wireless AP/Router operates as a Wi-Fi client to the remote AP. Figure 4-16.

Setup Wizard - WAN WiFi · Wireless MTU: Sets the maximum packet size that the WAN port may transmit. The Maximum Transmission Unit (MTU) is expressed in bytes. (Default: 1460 bytes) · Wireless MRU: Sets the maximum packet size that the unit may receive from other units on the network and sends a message to inform them of the set threshold. Maximum Receive Unit (MRU) is expressed in bytes. (Default: 14602 bytes) Note: Only change the default MTU and MRU values if specifically instructed by the wireless service provider.

· Wireless Network Mode: Sets the wireless network mode to Static IP or DHCP. (Default: DHCP) Note: For detailed AP Client Setting information, see "AP Client Settings" on page 5-35. 4-14 Using the Setup Wizard 4. 4 WLAN Setting Enables the wireless interface, selects the operating channel and configures SSIDs for both VAPs. Click Next after completing the setup. Figure 4-17. Setup Wizard - WLAN Configuration The displayed items on this page can be described as follows: · WLAN Enables the communication for the VAP wireless interface. (Default: Enabled) · WLAN Mode Defines the radio mode for the VAP interface. See "WLAN Mode" on page 5-23 for more information. (Default: 802.

11b/g/n Mixed) · WLAN Frequency The radio channel that the wireless AP/Router uses to communicate with wireless clients. When multiple access points are deployed in the same area, set the channel on neighboring access points at least five channels apart to avoid interference with each other. For example, you can deploy up to three access points in the same area using channels 1, 6, 11. Note that wireless clients automatically set the channel to the same as that used by the wireless AP/ Router to which it is linked. Selecting Auto Select enables the wireless AP/Router to automatically select an unoccupied radio channel. (The supported channels are dependent on the country code setting.) · SSID Number Supported The number of wireless network interfaces (SSIDs) supported on the device. (Default: 1; Options: 1 or 2) · WLAN1 SSID / WLAN2 SSID The name of the wireless network service provided by the VAP. Clients that want to connect to the network must set their SSID to the same as that of the VAP interface. (Default: "SMC" for WLAN1; "SMC1" for WLAN2; Range: 1-32 characters) 4-15 4 5.

Initial Configuration WLAN1/WLAN2 Security -- Sets the wireless security encryption key for the wireless network. Figure 4-18. Setup Wizard - WLAN1 Security Authentication Mode Configures the authentication mode used by clients. See "Authentication Mode" on page 5-29 for more information. (WLAN1/WLAN2 Defaults: Open) 6.

Click Finish & Reboot after completing the configuration changes. Note that all configuration changes are not saved until the Setup Wizard is completed and the system has restarted. When the system restarts, a countdown window displays for 60 seconds. Figure 4-19. Implementing Wizard Settings 4-16 Chapter 5: System Configuration The wireless AP/Router offers a user-friendly web-based management interface for the configuration of all the unit's features.



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Any PC directly attached to the unit can access the management interface using a web browser, such as Internet Explorer (version 6.0 or above). This chapter describes the wireless AP/Router's configurable features, all of which may be accessed through the web interface. Note: Before accessing the web interface, first set the device to Router or AP Mode using the switch on the bottom panel. Note that the unit reboots when the operating mode is changed. It is recommended to make initial configuration changes by connecting a PC directly to one of the wireless AP/Router's LAN ports. The wireless AP/Router has a default IP address of 192.168.2.1 and a subnet mask of 255.

255.255.0. If your PC is set to "Obtain an IP address automatically" (that is, set as a DHCP client), you can connect immediately to the web interface. Otherwise, you must set your PC IP address to be on the same subnet as the wireless AP/Router (that is, the PC and wireless AP/Router addresses must both start 192.168.2.x). To access the configuration menu, follow these steps: 1. 2.

Use your web browser to connect to the management interface using the default IP address of 192.168.2.1. Log into the wireless AP/Router management interface by entering the default username "admin" and password also "smcadmin," then click Login.

Note: It is strongly recommended to change the default user name and password the first time you access the web interface. For information on changing user names and passwords, See "Admin Accounts and Remote Administration" on page 5-60 Figure 5-20. Login Page 5-1 5 System Configuration The System Information page displays the System, Management IP, WAN, LAN, WLAN, and WDS settings. Figure 5-21. System Information (Router mode) 5-2 5 The information in this chapter is organized to reflect the structure of the web management screens for easy reference.

The Configuration pages include the options in the table below. For details on configuration for each feature, see the corresponding page number. Note: The displayed pages and settings may differ depending on whether the unit is in Router or AP Mode. Table 5-1. Configuration Options Menu Network Settings Management IP WAN LAN QoS Wireless Settings Basic Setting Advanced Setting WLAN Security/ WDS/ ApClient WLAN MAC ACL WPS Routing Static Route Dynamic Route Multicast Routing Firewall NAT Packet Filter URL Filter Security Services DHCP UPnP DDNS System Log Setting Configures the DHCP server settings Enables UPnP Configures Dynamic DNS settings Enables system logs Router Router Router Both Configures NAT settings Configures WAN, LAN and MAC packet filtering Configures web site address filtering Enables intrusion detection Router Router Router Router Configures IP settings for routing of traffic through the AP/Router from another subnet Enables RIP protocols for the LAN and WAN ports. Enables multicast routing. Router Router Router Router Configures wireless transmission method, frequency and SSID Configures advanced wireless transmission values Configures radio security parameters for the VAP interface Configures MAC ACLs for the VAP interface Configures WPS settings Both Both Both Both Both Specifies an IP and subnet mask for management access Configures settings for the wide area network Sets the unit's IP address and enables DNS Configures Quality of Service (QoS) for wireless traffic AP Router Router Router Description Mode Page 5-4 5-4 5-5 5-19 5-20 5-22 5-23 5-25 5-27 5-37 5-39 5-41 5-41 5-42 5-43 5-44 5-44 5-48 5-50 5-51 5-52 5-52 5-54 5-55 5-56 5-3 5 System Configuration Table 5-1. Configuration Options Menu Date/Time Ping Test Management Admin Config Firmware Information System Information Routing Table Packet Statistics System Log 3G Access History Description Configures NTP settings Performs a loopback test on a specified IP address Enables remote administration and configures user accounts for control of the unit Backups and restores the configuration data and restores the factory defaults Upgrades system software from a local file and enables provisioning updates Displays the current system status Displays information on configured routes Displays received and sent packet statistics Displays the system message log Displays the 3G access history. Mode Both Both Both Both Both Page 5-57 5-59 5-60 5-60 5-62 5-63 5-63 Both Router Both Both Both 5-63 5-66 5-67 5-68 5-69 Network Settings The Network Settings pages allow you to manage basic system configuration settings. Note: In AP mode, the wireless AP/Router's Network Settings options are significantly reduced.

Management IP Assigns an IP address for connecting to the wireless AP/Router. Click on "Network Settings" followed by "Management IP." Figure 5-22. IP Settings (AP mode) 5-4 WAN Setting 5 - Management IP Address Specifies an IP address for management of the wireless AP/Router. Valid IP addresses consist of four decimal numbers, 0 to 255, separated by periods. (Default: 192.168.2.1.) - Subnet Mask Indicates the local subnet mask.

Select the desired mask from the drop down menu. (Default: 255.255.255.0) WAN Setting Specifies the Internet connection parameters.

Click on "Network Settings" followed by "WAN." WAN Connection By default, the access point WAN port is configured with DHCP enabled. After you have network access to the access point, you can use the web browser interface to modify the initial IP configuration, if needed. The options are Static IP, DHCP, PPPoE, 3G, PPTP, L2TP, Bigpond and WiFi. Each option changes the parameters below it.

(Default: DHCP) Backup WAN A backup failsafe connection for the WAN port (Dual WAN.) Options are determined by the WAN Connection selected.

Backup WAN and WAN Connection parameters are identical for each of their eight equivalent modes: Static IP, DHCP, PPPoE, 3G, PPTP, L2TP, Bigpond and WiFi. (Default: None) - Main WAN Fallback: When the Backup WAN is enabled, Main WAN Fallback can be enabled to periodically search the primary

WAN port for recovery of the lost connection. If connection is re-established the connection switches back to the primary WAN connection. (Default: Disabled) Note: When 3G is selected as the primary WAN Connection, the Backup WAN cannot be set to 3G also. 5-5 5 System Configuration Common

Settings Common Settings are the same for each WAN settings. This section describes the common parameters. Figure 5-23. WAN Common Settings (Router Mode) WAN Ethernet Speed -- Configures the WAN Ethernet connection speed.

(Default: Auto-Negotiated) · Auto-Negotiated Enables auto-negotiation. · 100Mbps, Full-Duplex Forces 100 Mbps full-duplex operation. · 100Mbps, Half-Duplex Forces 100 Mbps half-duplex operation. · 10Mbps, Full-Duplex Forces 10 Mbps full-duplex operation. · 10Mbps, Half-Duplex Forces 10 Mbps half-duplex operation.



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WAN Ethernet MAC -- Some ISPs limit Internet connections to a specified MAC address of one PC. This setting allows you to manually change the MAC address of the wireless AP/Router's WAN interface to match the PC's MAC address provided to your ISP for registration. You can enter the registered MAC address manually by typing it in the boxes provided. Otherwise, connect only the PC with the registered MAC address to the wireless AP/Router, then click the "MAC Clone." (Default: Original MAC) Note: If you are unsure of the PC MAC address originally registered by your ISP, call your ISP and request to register a new MAC address for your account.

Register the default MAC address of the wireless AP/Router. · Original MAC Specifies a preset MAC address to uniquely identify the unit. · Manual Setting Configures a specific MAC address to use for the WAN connection. · Ping from WAN Sends a ping from the wireless AP/Router to the WAN connection to test for connectivity. · Set DNS Server Allows manual or automatic selection of DNS servers.

· Primary DNS Server: The IP address of the Primary Domain Name Server on the network. A DNS maps numerical IP addresses to domain names and can be used 5-6 WAN Setting 5 to identify network hosts by familiar names instead of the IP addresses. If you have one or more DNS servers located on the local network, type the IP addresses in the text fields provided. Otherwise, leave the addresses as all zeros (0.0.

0.0). · Secondary DNS Server: The IP address of the Secondary Domain Name Server on the network. DHCP DHCP (Dynamic Host Control Protocol) is set as default for the primary WAN connection. To enable DHCP for the Backup WAN you must select 3G as the primary WAN connection. Figure 5-24. WAN Settings for DHCP (Router mode) DHCP -- Enables DHCP for the WAN port. · DHCP MTU: Sets the maximum packet size that the WAN port may transmit. The Maximum Transmission Unit (MTU) is expressed in bytes. (Default:1500 bytes) · DHCP MRU: Sets the maximum packet size that the unit may receive from other units on the network and sends a message to inform them of the set threshold.

Maximum Receive Unit (MRU) is expressed in bytes. (Default: 1500 bytes) 5-7 5 System Configuration Static IP Configures the unit to use the same IP address each time it connects. Figure 5-25. WAN Settings for Static IP (Router mode) Static IP -- Configures a static IP for the WAN port. · Static IP MTU: Sets the maximum packet size that the WAN port may transmit. The Maximum Transmission Unit (MTU) is expressed in bytes. (Default:1500 bytes) · Static IP

MRU: Sets the maximum packet size that the unit may receive from other units on the network and sends a message to inform them of the set threshold.

Maximum Receive Unit (MRU) is expressed in bytes. (Default: 1500 bytes) · IP Address: Sets the static IP address as given by the PPTP service provider. (Default: 0.

0.0.0, available when PPTP Network Mode is set to static IP.) · Subnet Mask: Sets the static IP subnet mask. (Default: 255.

255.255.0, available when PPTP Network Mode is set to static IP.) · Default Gateway: The IP address of the gateway router for the wireless AP/ Router, which is used if the requested destination address is not on the local subnet. 5-8 WAN Setting · WAN IP Alias Adds more than one IP address to the network interface for multiple connectivity.

- Enable: Enables the specified IP address. - Add: Specifies a WAN IP alias. - Change: Changes the already specified IP alias. - Delete: Deletes the IP alias.

5 PPPoE Enable the wireless AP/Router IP address to be assigned automatically from an Internet service provider (ISP) through an ADSL modem using Point-to-Point Protocol over Ethernet (PPPoE). Figure 5-26. WAN Settings for PPPoE (Router mode) PPPoE -- Configures PPPoE. · PPPoE MTU: Sets the maximum packet size that the WAN port may transmit. The Maximum Transmission Unit (MTU) is expressed in bytes. (Default:1492 bytes) 5-9 5 System Configuration · PPPoE MRU: Sets the maximum packet size that the unit may receive from other units on the network and sends a message to inform them of the set threshold.

Maximum Receive Unit (MRU) is expressed in bytes. (Default: 1492 bytes) Note: Only change the default MTU and MRU values if specifically instructed by the PPPoE service provider. · PPPoE Network Mode: Sets the PPPoE network mode to Static IP or DHCP. (Default: DHCP) · IP Address: Sets the static IP address as given by the PPPoE service provider. (Default: 0.0.0.0, available when PPPoE Network Mode is set to static IP.) · PPPoE Service Name (Optional): The service name assigned for the PPPoE connection. The service name is normally optional, but may be required by some service providers. (Range: 1-32 alphanumeric characters) · PPPoE User Name: Sets the PPPoE username for the WAN port. (Default: PPPOE\_USERNAME; Range: 1~32

characters) · PPPoE Password: Sets a PPPoE password for the WAN port. (Default: PPPOE\_PASSWORD; Range: 1~32 characters) · Connect Type: Selects the connection type as Keep Alive or Auto Connect. (Default: Keep Alive) · PPPoE Max Idle Time: The maximum length of inactive time the unit will stay connected to the DSL service provider before disconnecting. This feature only works when Connect Type is set to "Auto-Connect."

(Default: 600 seconds) 5-10 WAN Setting 5 3G 3G technologies enable cellular network operators to offer users a wider range of more advanced services while achieving greater network capacity through improved spectral efficiency. Services include wide-area wireless voice telephony, video calls, and broadband wireless data, all in a mobile environment. To use the 3G option, you need to first connect a 3G/3.5G USB modem to the USB port on the back of the unit and have registered an account with a cellular operator. Figure 5-27.

WAN Settings for 3G (Router mode) 3G -- Enables a 3G/3.5G wide-area wireless cellular link on the USB port using an optional USB modem. · Start Mode: Select the 3G start mode. - Automatically: If 3G is selected as primary WAN, when you connect to the 3G modem, enter the PIN code, then the wireless router will connect to 3G Internet service automatically. 5-11 5 System Configuration - Manually: If the 3G start mode is set to "Manually", then you can only connect to the 3G Internet service by pressing the 3G button on the wireless AP/Router or by using the web interface. Figure 5-28. Manually Start 3G · Pin Code Protect: Enables the use of a PIN code (personal identification number) to encrypt access to the wireless 3G connection. Some service providers do not require PIN code authentication. If a PIN code is not required for your 3G/3.5G modem, disable this function.

(Default: Enabled) Specifies a PIN code number that corresponds with that set on your 3G/3.



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5G USB modem and displays the status of the 3G connection. - Not dial yet: Indicates that the 3G is not dialed and PIN is not authenticated yet. - Authenticated successfully: Indicates that the 3G connection has authenticated successfully. - Dial Code: A dialed access code that connects the USB device to the service provider. - APN Service: The name that uniquely identifies the cellular operator, access point name (APN). - 3G Username: The username of the account registered with the service provider. - 3G Password: The password of the account registered with the service provider. - Connect Type: Selects the connection type as Keep Alive or Auto Connect. (Default: Keep Alive) - 3G Max Idle Time: The maximum length of inactive time the unit will stay connected to the DSL service provider before disconnecting.

This feature only works when Connect Type is set to "Auto-Connect." (Default: 300 seconds) 5-12 WAN Setting - Budget Control: You can set a monthly limit on time or the total data. For more details, please refer to the following table. - Budget Criterion: - By Time: Specify the amount of time (in hours) that can be used per month. - By Data: Specify how much Download/Upload data (in MBytes) can be transmitted per month.

5 - Budget Policy: Enable or disable the action "Drop Current Cellular connection" or "Disallow New Cellular connection" if over budget. - Trigger by Limit Budget: - By Time: Set the specified percentage of time limit. - By Data: Set the specified percentage of data limit. - Action if Over Budget: Send an e-mail alert at the specified interval in minutes. The wireless AP/Router can use SMTP (Simple Mail Transfer Protocol) to send email messages when triggered by the specified budget policy limits.

- SMTP Authentication: Specifies the user name and password for authentication or login to the SMTP server. (Options: Plain, Login, or disabled.) - Mail Server: URL of the SMTP mail server that will send the alert messages. - Mail Sender: Specifies an e-mail address on the SMTP server that can send alert messages. - Mail Recipient: The e-mail address of the recipient of the alert messages. - Budget Counter: Select the date on which the AP/Router resets the budget every month. 5-13 5 System Configuration PPTP Enable the Point-to-Point Tunneling Protocol (PPTP) for implementing virtual private networks. The service is provided in many European countries. Figure 5-29. WAN Settings for PPTP (Router mode) PPTP -- Enable the Point-to-Point Tunneling Protocol (PPTP) for implementing virtual private networks.

- PPTP MTU: Sets the maximum packet size that the WAN port may transmit. The Maximum Transmission Unit (MTU) is expressed in bytes. (Default: 1460 bytes) - PPTP MRU: Sets the maximum packet size that the unit may receive from other units on the network and sends a message to inform them of the set threshold. Maximum Receive Unit (MRU) is expressed in bytes. (Default: 1460 bytes) Note: Only change the default MTU and MRU values if specifically instructed by the PPTP service provider. - PPTP Network Mode: Sets the PPTP network mode to Static IP or DHCP. (Default: DHCP) 5-14 WAN Setting - PPTP Username: Sets the PPTP user name for the WAN port. (Default: PPTP\_USERNAME; Range: 1~32 characters) - PPTP Password: Sets a PPTP password for the WAN port. (Default: PPTP\_PASSWORD; Range: 1~32 characters) - PPTP Server: Configures the IP address of the PPTP server interface. (Default: 0.

0.0.0) 5 L2TP Enable the Layer Two Tunneling Protocol (L2TP) for implementing virtual private networks. The service is provided in many European countries. Figure 5-30.

WAN Settings for L2TP (Router mode) L2TP -- Enable the Layer Two Tunneling Protocol (L2TP). - L2TP MTU: Sets the maximum packet size that the WAN port may transmit. The Maximum Transmission Unit (MTU) is expressed in bytes. (Default: 1410 bytes) - L2TP MRU: Sets the maximum packet size that the unit may receive from other units on the network and sends a message to inform them of the set threshold. Maximum Receive Unit (MRU) is expressed in bytes.

(Default: 1410 bytes) 5-15 5 System Configuration - Only change the default MTU and MRU values if specifically instructed by the PPTP service provider. - L2TP Network Mode: Sets the L2TP IP address assignment to Static IP or DHCP. (Default: DHCP) - IP Address: Sets the static IP address as given by the L2TP service provider. (Default: 0.0.0.0, available when L2TP Network Mode is set to static IP.) - Subnet Mask: Sets the static IP subnet mask. (Default: 255.255.

255.0, available when L2TP Network Mode is set to static IP.) - Default Gateway: The IP address of the gateway router for the wireless AP/ Router, which is used if the requested destination address is not on the local subnet. - L2TP Username: Sets the L2TP user name for the WAN port. (Default: L2TP\_USERNAME; Range: 1~32 characters) - L2TP Password: Sets a L2TP password for the WAN port. (Default: L2TP\_PASSWORD; Range: 1~32 characters) - L2TP Max Idle Time: The maximum length of inactive time the unit will stay connected to the DSL service provider before disconnecting. (Default: 15 seconds; Range: 5 ~ 600 seconds) - L2TP Retry Time After Disconnect: Sets a L2TP retry time after the network is disconnected. (Default: 0 seconds; disabled) - L2TP Server: Configures the IP address of the L2TP server interface. (Default: 0.0.

0.0) 5-16 WAN Setting 5 Bigpond BigPond is an Australian Internet service provider, is a subsidiary of Telstra and owns a majority share of Internet access in Australia. Figure 5-31. WAN Settings for Bigpond (Router mode) Bigpond -- Enables the settings of Telstra Bigpond network service in Australia. - Bigpond Username: Sets the Bigpond user name for the WAN port.

(Default: BIGPOND\_USERNAME; Range: 1~32 characters) - Bigpond Password: Sets a Bigpond password for the WAN port. (Default: BIGPOND\_USERNAME; Range: 1~32 characters) - Bigpond Authentication Server: Specifies a Bigpond authentication server. (Default: sm-server) 5-17 5 System Configuration Wi-Fi Enables a WAN connection to a normal remote AP over a wireless 802.11b/g/n connection. For this WAN setting, the wireless AP/Router operates as a Wi-Fi client to the remote AP.

Figure 5-32. WAN Settings for Wi-Fi (Router mode) Wireless Client -- Enables the WLANI VAP to act as a wireless connection to the WAN. - Wireless MTU: Sets the maximum transmission units in bytes. (Default: 1460 bytes) - Wireless MRU: Sets the maximum receive units in bytes. (Default: 1460 bytes) - Wireless Network Mode: Sets the wireless network mode. (Default: DHCP) - Static IP: Select this option for a static manually configured IP address. - DHCP: Select this option to enable the client to obtain its IP address from a DHCP server.



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