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User manual SMC WBR14S-N3
User guide SMC WBR14S-N3
Operating instructions SMC WBR14S-N3
Instructions for use SMC WBR14S-N3
Instruction manual SMC WBR14S-N3



Barricade™ N
Draft 11n Wireless Broadband Router

SMCWBR14S-N3



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Manual abstract:

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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 and your body. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. IEEE 802.

11b, 802.11g or 802.11n operation of this product in the U.S.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. vi 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: 2006 Safety of Information Technology Equipment EN 50385: 2002 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 300328 V1.

7.1 (2006) Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive EN 301 489-1 V1.8.1 (2008-04) and EN 301 489-17 V1.3.2 (2008-4) 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 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. 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. vii Finnish Suomi Dutch Nederlands French Français Swedish Svenska Danish Dansk German Deutsch 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 erklärt 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". (BMW) 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 altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.



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Greek Hungarian Magyar Italian Italiano Latvian Latviski Lithuanian Maltese Malti Spanish Español Por medio de la presente SMC declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE viii Polish Polski Portuguese Português Slovak Slovensky Slovenian Slovensko SMC declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

NCC Statement ix **About This Guide Purpose** This guide details the hardware features of the wireless AP/Router, including its physical and performance-related characteristics, and how to install the device and use its configuration software. **Audience** This guide is for PC users with a working knowledge of computers. You should be familiar with Windows operating system concepts. **Conventions** The following conventions are used throughout this guide to show information: **Note:** Emphasizes important information or calls your attention to related features or instructions. **Caution:** Alerts you to a potential hazard that could cause loss of data, or damage the system or equipment. **Warning:** Alerts you to a potential hazard that could cause personal injury. **Related Publications** The following publication gives basic information on how to install and use the wireless AP/Router. **Quick Installation Guide** Also, as part of the wireless AP/Router's software, there is online help that describes all configuration related features. **Revision History** This section summarizes the changes in each revision of this guide. **September 2009 Revision** This is the first revision of this guide.

This guide is valid for software release v1.0.1.0. x **Table of Contents** Chapter 1: Introduction Package Checklist Hardware Description Antennas LED Indicators Ethernet RJ-45 Ports Power Socket Reset Button WPS Button Hardware Installation Chapter 2: Installation Gateway Mode Bridge Mode Chapter 3: Network Planning Internet Gateway Router LAN Access Point Wireless Bridge Chapter 4: Initial Configuration Using the Setup Wizard DHCP Static IP PPPoE L2TP PPTP Chapter 5: System Configuration Operation Mode configuration Network Settings WAN Setting DHCP Static IP PPPoE 1-1 1-1 1-2 1-2 1-3 1-4 1-4 1-4 1-4 1-5 2-1 2-1 2-2 3-1 3-1 3-2 3-3 4-1 4-2 4-3 4-4 4-5 4-6 4-7 5-1 5-4 5-4 5-4 5-5 5-6 5-7 xi **Contents** L2TP PPTP LAN Setting Advanced Routing QoS Setting ALG Wireless Settings Basic Settings Advanced Wireless Settings WLAN Security Wi-Fi Protected Setup (WPS) Station List Firewall MAC/IP/Port Filtering Virtual Server Settings (Port Forwarding) DMZ System Security Content Filtering Administration Settings System Management Upgrade Firmware Configuration Settings System Status Statistics DHCP Clients System Log Reboot Appendix A: Troubleshooting Appendix B: Specifications Appendix C: License Information The GNU General Public License Glossary Index 5-8 5-9 5-11 5-13 5-15 5-16 5-16 5-17 5-23 5-28 5-35 5-37 5-37 5-38 5-40 5-41 5-42 5-43 5-44 5-44 5-47 5-48 5-49 5-51 5-52 5-52 5-53 A-1 B-1 C-1 C-1 xii **Chapter 1: Introduction** The SMCWBR14S-N3 wireless AP/Router is an IEEE 802.11n wireless gateway router that connects your Internet access device (cable or ADSL modem) to your PC or local area network, or to its own secure wireless network. The wireless AP/Router can be automatically configured with other Wi-Fi Protected Setup (WPS) devices by simply pressing its WPS button. For more detailed configuration, the unit can also be set up through its easy-to-use web interface. **Package Checklist** The wireless AP/Router package includes: · 802.11b/g/n wireless AP/Router (SMCWBR14S-N3) · RJ-45 Category 5 network cable · AC power adapter · Quick Installation Guide · EZ Installation and Documentation CD · Warranty Information Card 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 Antennas Reset Button WPS Button Ethernet WAN RJ-45 Port Ethernet LAN RJ-45 Ports Power Socket Figure 1-1. **Rear Panel Antennas** The access point includes integrated MIMO antennas for wireless communications. A MIMO antenna system uses two or more identical antennas to receive and transmit signals, helping to increase data throughput and range.

The antennas transmit the outgoing signal as a toroidal sphere (doughnut shaped), with the coverage extending most in a direction perpendicular to the antenna. The antenna should be adjusted to an angle that provides the appropriate coverage for the service area. 1-2 **Hardware Description** 1 **LED Indicators** The wireless AP/Router includes eight status LED indicators, as described in the following figure and table. **Power** 802.11n **Link/Activity** WPS **Authentication** WAN **Link/Activity** LAN **Link/Activity** Figure 1-2.

LED Indicators **LED POWER** WLAN **Status** On Blue On Blue **Blinking Blue** Off WPS On **Description** Indicates that the system is working normally. Indicates the 802.11n radio is enabled. Indicates the AP/Router has an established connection and is transmitting on a wall or wood surface The access point should be mounted only to a wall or wood surface that is at least 1/2-inch plywood or its equivalent. · For wall or wood surface mounting, use a cross-head screwdriver and the 20-mm M4 tap screws (not included). Or, drill two holes and insert two hooks. · Mount the access point to the screws or hooks. **Note:** Mount the router with the front panel facing upward so that the status LED indicators are clearly visible. 1-5 1 **Introduction** 1-6 **Chapter 2: Installation** The wireless AP/Router has two basic operating modes that can be set through the web-based management interface. For information on setting the mode suitable for your network environment, see "Operation Mode configuration" on page 5-4.

· **Gateway Mode** -- A 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. · **Bridge Mode** -- An access point mode that extends a wired LAN to wireless clients. In addition to these basic operating modes, the 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 Gateway Mode and Bridge Mode operation. **Gateway Mode** In its default Gateway Mode, the wireless AP/Router forwards traffic between an Internet connected cable or ADSL modem, and wired or wireless PCs or notebooks.



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The basic connections are illustrated in the figure below.

4. Set up wireless devices 1. Connect WAN port to cable/DSL modem Internet Notebook PC 3. Connect AC power Cable/DSL Modem adapter to power source 2. Connect LAN port to PC Figure 2-1.

Gateway Mode Connection 2-1 2 1. 2. Installation To connect the wireless AP/Router in Gateway 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 1-3. 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. Bridge Mode In Bridge 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 Bridge 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: Bridge Mode is not the factory default mode and must be manually set using the web management interface.

2-2 Bridge Mode 2 3. Set up wireless devices Notebook PC 2. Connect AC power 1. Connect LAN and WAN ports to an Ethernet LAN switch or PCs adapter to power source Figure 2-2. Bridge Mode Connection To connect the wireless AP/Router for use as an access point, follow these steps: 1. 2.

Using Ethernet cable 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. 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 1-3.

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 Gateway 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.

Internet Service Provider Cable/DSL Modem IS from ned assign .x) (IP 68.2 WAN 92.

1 (IP: 1 LAN P) Wireless AP/Router Notebook PC (IP: 192.168.2.x) LAN Switch Server (IP: 192.168.2.x) Desktop PC (IP: 192.168.2.x) 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), static IP for connection, L2TP and PPTP to an Internet service provider (ISP) through a cable or DSL modem. 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 Bridge 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. Server (IP: 192.

168.2.x) Desktop PC (IP: 192.168.2.x) LAN Switch Notebook PC (IP: 192.168.2.x) SSID 2 (private) Wireless AP/Router SSID 1 (public) Notebook PC (IP: 192.168.

2.x) Figure 3-2. Operating as an Access Point 3-2 Wireless Bridge 3 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. Internet Service Provider WDS Child WDS Parent WDS Link Cable/DSL Modem WAN m ISP) o (IP fr .x) LAN 92.

168.2 (IP: 1 Wireless AP/Router (Gateway Mode) Wireless AP/Router (Bridge Mode) LAN Switch Server (IP: 192.168.2.x) Desktop PC (IP: 192.168.2.x) Desktop PC (IP: 192.168.2.

x) Figure 3-3. Operating as a Wireless Bridge 3-3 3 Network Planning 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.



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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. 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 "smcadmin", then click OK.

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 "Administrator Settings" on page 5-45. 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. Operation Mode Configuration Select the operation mode required for the network environment. Click "Next" to continue the setup. 2. Figure 4-2. Setup Wizard - Operation Mode 3. Time Zone Settings Select a time zone according to where the device is operated. Click Next after completing the setup. Figure 4-3.

Setup Wizard - Time Zone Settings 4-2 Using the Setup Wizard 4. 4 WAN Configuration Specifies the Internet connection parameters for the wireless AP/Router's WAN port. Click Next after completing the setup. WAN Connection Type -- 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 (ADSL), L2TP and PPTP. Each option changes the parameters displayed below it. (Default: DHCP) 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 4-4.

Setup Wizard - WAN DHCP · Hostname The hostname of the DHCP client. · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) 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. 4-3 4 Initial Configuration Static IP Configures a static IP for the WAN port. Figure 4-5. 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. · 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 · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) PPPoE Enable the wireless AP/Router IP address to be assigned automatically from an Internet service provider (ISP) through an xDSL modem using Point-to-Point Protocol over Ethernet (PPPoE). Figure 4-6. Setup Wizard - WAN PPPoE · PPPoE Username Sets the PPPoE user name for the WAN port. (Default: pppoe_user; Range: 1~32 characters) · PPPoE Password Sets a PPPoE password for the WAN port. (Default: pppoe_password; Range: 1~32 characters) · Verify Password Prompts you to re-enter your chosen password. · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) 4-5 4 Initial Configuration L2TP Enables the Layer Two Tunneling Protocol (L2TP) for implementing virtual private networks. The service is provided in many European countries. Figure 4-7. Setup Wizard - WAN L2TP · Server IP Sets the L2TP server IP Address.

(Default: l2tp_server; Range: 1~32 characters) · Username Sets the L2TP user name for the WAN port. (Default: l2tp_user; Range: 1~32 characters) · Password Sets a L2TP password for the WAN port.



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(Default: l2tp_password; Range: 1~32 characters) · Verify Password Prompts you to re-enter your chosen password. · Address Mode Sets a L2TP network mode. (Default: Static) · 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.) 4-6 Using the Setup Wizard · 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 · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) PPTP Enables the Point-to-Point Tunneling Protocol (PPTP) for implementing virtual private networks. The service is provided in many European countries. Figure 4-8. Setup Wizard - WAN PPTP · Server IP Sets the PPTP server IP Address. (Default: pptp_server) · Username Sets the PPTP user name for the WAN port. (Default: pptp_user; Range: 1~32 characters) 4-7 4 Initial Configuration · Password Sets a PPTP password for the WAN port. (Default: pptp_password; Range: 1~32 characters) · Verify Password Prompts you to re-enter your chosen password. · Address Mode Sets a PPTP network mode. (Default: Static) · 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. · MAC Clone Mode 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 "Fill My MAC" (Default: Disable)

5. Basic Wireless Settings Configures the SSID and sets the wireless security policy. Click Apply after completing the setup. Figure 4-9. Setup Wizard - Basic Wireless Settings · Network Name (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"; Range: 1-32 characters) · Security Policy Configures the security mode used by clients. See "WLAN Security" on page 5-28. 4-8 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. 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. 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 "smcadmin," then click OK. 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 "Administrator Settings" on page 5-45 Figure 5-1. Login Page 5-1 5 System Configuration The System Information page displays the System, Internet Configuration, and Local Network Settings.

Figure 5-2. System Information (Gateway Mode) 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 Gateway or Bridge Mode. 5-2 5 Table 5-1. Advanced Settings Menu System Mode Operation Mode Network Settings WAN LAN Advanced Routing QoS ALG Wireless Settings Basic Advanced Security WPS Station List Firewall MAC/IP/Port Filtering Virtual Server DMZ System Security Content Filtering Administration System Upgrade Firmware Configuration Status Statistics DHCP Clients System Log Reboot Configures administrator account, password, Date/Time, Dynamic DNS Settings and Green AP settings. Upgrades system software from a local file and enables provisioning updates Backups and restores the configuration data and restores the factory defaults Displays the current system status Displays packet statistics Displays the DHCP clients table Displays the system message log Reboots the wireless AP/Router Both Both Both Both Both Both Both Both Both Both Both Configures MAC/IP/Port filtering settings Configures Virtual Server (Port Forwarding) settings Configures the De-Militarized Zone settings Enables intrusion detection Configures content filtering settings Gateway Gateway Gateway Gateway Gateway Configures wireless transmission method, frequency and SSID Configures advanced wireless transmission values Configures radio security parameters for the VAP interface Configures WPS settings Displays the station list Both Both Both Both Both Configures settings for the wide area network Sets the unit's IP address and enables DNS Configures Static and Dynamic Routing settings Configures Quality of Service (QoS) for wireless traffic Enables the Application Layer Gateway (ALG) functions Gateway Gateway Gateway Gateway Gateway Gateway Sets the operating modes Both Description Mode Page 5-4 5-4 5-4 5-4 5-11 5-13 5-15 5-16 5-17 5-23 5-28 5-35 5-37 5-37 5-38 5-40 5-41 5-42 5-43 5-44 5-47 5-48 5-49 5-51 5-52 5-52 5-53 5-3 5 System Configuration Operation Mode configuration The Operation Mode Configuration pages allow you to setup the mode suitable for your network environment.



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Figure 5-3. System Information (Gateway Mode) · Bridge Mode An access point mode that extends a wired LAN to wireless clients.

· Gateway Mode A 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. Network Settings The Network Settings pages allow you to manage basic system configuration settings. Note: In Bridge mode, the wireless AP/Router's Network Settings options are significantly reduced. WAN Setting Specifies the Internet connection parameters.

Click on "Network Settings" followed by "WAN". WAN Connection Type -- 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 (ADSL), L2TP, and PPTP. Each option changes the parameters displayed below it.

(Default: DHCP). 5-4 Network Settings 5 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 5-4. WAN Setting - DHCP · Hostname (Optional) The hostname of the DHCP client. · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) 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.

5-5 5 System Configuration Static IP Configures a static IP for the WAN port. Figure 5-5. WAN Setting - 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. · 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. · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) 5-6 Network Settings 5 PPPoE Enable the wireless AP/Router IP address to be assigned automatically from an Internet service provider (ISP) through an xDSL modem using Point-to-Point Protocol over Ethernet (PPPoE).

Figure 5-6. WAN Setting - PPPoE · PPPoE Username Sets the PPPoE user name for the WAN port.

(Default: pppoe_user; Range: 1~64 characters) · PPPoE Password Sets a PPPoE password for the WAN port. (Default: pppoe_password; Range: 1~32 characters) · Verify Password Prompts you to re-enter your chosen password. · Operation Mode Selects the operation mode as Keep Alive, On Demand or Manual. (Default: Keep Alive) - Keep Alive Mode: The wireless AP/Router will periodically check your Internet connection and automatically re-establish your connection when disconnected. (Default: 60 seconds) - On Demand Mode: 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: 5 minutes) · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) 5-7 5 System Configuration L2TP Enables the Layer Two Tunneling Protocol (L2TP) for implementing virtual private networks.

The service is provided in many European countries. Figure 5-7. WAN Setting - L2TP · Server IP Sets the L2TP server IP Address. (Default: l2tp_server; Range: 1~32 characters) · Username Sets the L2TP user name for the WAN port. (Default: l2tp_user; Range: 1~64 characters) · Password Sets a L2TP password for the WAN port. (Default: l2tp_password; Range: 1~32 characters) · Verify Password Prompts you to re-enter your chosen password. · Address Mode Sets a L2TP network mode. (Default: Static) · 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. 5-8 Network Settings 5 · Operation Mode Selects the operation mode as Keep Alive, On Demand or Manual. (Default: Keep Alive) - Keep Alive Mode: The wireless AP/Router will periodically check your Internet connection and automatically re-establish your connection when disconnected.

(Default: 60 seconds) - On Demand Mode: 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: 5 minutes) · MAC Clone Mode Some ISPs limit Internet connections to a specified MAC address of one PC.



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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 "Fill My MAC" (Default: Disable) PPTP Enables the Point-to-Point Tunneling Protocol (PPTP) for implementing virtual private networks. The service is provided in many European countries. Figure 5-8. WAN Setting - PPTP 5-9 5 System Configuration · Server IP Sets a PPTP server IP Address. (Default: pptp_server) · Username Sets the PPTP user name for the WAN port.

(Default: pptp_user; Range: 1~64 characters) · Password Sets a PPTP password for the WAN port. (Default: pptp_password; Range: 1~32 characters) · Verify Password Prompts you to re-enter your chosen password. · Address Mode Sets a PPTP network mode. (Default: Static) · 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: 255.255.0, 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. · Operation Mode Selects the operation mode as Keep Alive, On Demand or Manual.

(Default: Keep Alive) - Keep Alive Mode: The wireless AP/Router will periodically check your Internet connection and automatically re-establish your connection when disconnected. (Default: 60 seconds) - On Demand Mode: 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: 5 minutes) · MAC Clone Mode 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 "Fill My MAC" (Default: Disable) 5-10 Network Settings 5 LAN Setting The wireless AP/Router must have a valid IP address for management using a web browser and to support other features. The unit has a default IP address of 192.168.2.1. You can use this IP address or assign another address that is compatible with your existing local network. Click on "Network Settings" followed by "LAN." Figure 5-9. LAN Settings (Gateway Mode) 5-11 5 System Configuration · LAN IP Address Valid IP addresses consist of four decimal numbers, 0 to 255, separated by periods.

The default setting is 192.168.2.1. · Subnet Mask Indicate the local subnet mask. (Default: 255.255.255.0.) · MAC Address The shared physical layer address for the wireless AP/Router's LAN ports.

· DHCP Server Select this option to obtain the IP settings for the access point from a DHCP (Dynamic Host Configuration Protocol) server. The IP address, subnet mask, default gateway, and Domain Name Server (DNS) address are dynamically assigned to the access point by the network DHCP server. (Options: Enable/ Disable) · Start/End IP Address Specify the start and end IP addresses of a range that the DHCP server can allocate to DHCP clients. Note that the address pool range is always in the same subnet as the unit's IP setting. The maximum clients that the unit can support is 253.

· Primary DNS Server The IP address of Domain Name Servers 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. · Secondary DNS Server The IP address of the Secondary Domain Name Server on the network. · Default Gateway The default gateway is the IP address of the router for the wireless AP/Router, which is used if the requested destination address is not on the local subnet. · Lease Time Select a time limit for the use of an IP address from the IP pool.

When the time limit expires, the client has to request a new IP address. The lease time is expressed in seconds. (Default: 86400 seconds; Range: 60~864000 seconds) · Statically Assigned Up to three devices with specific MAC addresses can be assigned static IP addresses. That is, the DHCP server always assigns these devices the same IP addresses. · LLTD Link Layer Topology Discovery (LLTD) is a Microsoft proprietary discovery protocol which can be used for both wired and wireless networks. (Options: Disable/Enable, Default: Disable) · IGMP Proxy Enables IGMP proxy on the wireless AP/Router. (Options: Disable/ Enable, Default: Disable) · UPnP Allows the device to advertise its UPnP capabilities. (Default: Disable) · Router Advertisement Enables the sending and receiving of routing advertisements to discover the existence of neighboring routers. (Options: Disable/ Enable, Default: Disable) · PPPoE Relay When enabled, the wireless AP/Router will forward PPPoE messages to clients. Clients are then able to connect to the PPPoE service through the WAN port.

(Options: Disable/Enable, Default: Disable) 5-12 Network Settings · DNS Proxy Enables DNS proxy on the LAN port. DNS Proxy receives DNS queries from the local network and forwards them to an Internet DNS server. (Default: Disable) 5 Advanced Routing Routing setup allows a manual method to set up routing between networks. The network administrator configures static routes by entering routes directly into the routing table. Static routing has the advantage of being predictable and easy to configure. Advanced Routing Settings This screen is used to manually configure static routes to other IP networks, subnetworks, or hosts. Click "Network Settings" followed by "Advanced Routing". (Maximum 32 entries are allowed.) Figure 5-10. Advanced Route (Gateway Mode) · Destination A destination network or specific host to which packets can be routed.

· Type Defines the type of destination. (Options: Host/Net, Default: Host) · Gateway The IP address of the router at the next hop to which matching frames are forwarded. · Interface The selected interface to which a static routing subnet is to be applied. · Comment Enters a useful comment to help identify this route. 5-13 5 System Configuration Routing Table This page displays the information necessary to forward a packet along the best path toward its destination.



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Each packet contains information about its origin and destination. When a packet is received, a network device examines the packet and matches it to the routing table entry providing the best match for its destination. The table then provides the device with instructions for sending the packet to the next hop on its route across the network. Note: The Routing Table is only available when the wireless AP/Router is set to Gateway Mode. Figure 5-11.

Routing Table (Gateway Mode) · Destination Displays all destination networks or specific hosts to which packets can be routed. · Netmask Displays the subnetwork associated with the destination. · Gateway Displays the IP address of the router at the next hop to which matching frames are forwarded. · Flags - Possible flags identify as below - 0: reject route - 1: route is up - 3: route is up, use gateway - 5: route is up, target is a host - 7: route is up, use gateway, target is a host · Metric A number used to indicate the cost of the route so that the best route, among potentially multiple routes to the same destination, can be selected. · Ref Number of references to this route. · Use Count of lookups for the route. · Interface Interface to which packets for this route will be sent. · Comment Displays a useful comment to identify the routing rules. 5-14 Network Settings Dynamic Route 5 The wireless AP/Router supports RIP 1 and RIP 2 dynamic routing protocol. Routing Information Protocol (RIP) is the most widely used method for dynamically maintaining routing tables.

RIP uses a distance vector-based approach to routing. Routes are chosen to minimize the distance vector, or hop count, which serves as a rough estimate of transmission cost. Each router broadcasts its advertisement every 30 seconds, together with any updates to its routing table. This allows all routers on the network to build consistent tables of next hop links which lead to relevant subnets. Figure 5-12. Dynamic Route (Gateway Mode) · RIP Enables or disable the RIP protocol for the WAN or LAN interface. (Options: Disable/v1/v2, Default: Disable) QoS Setting The QoS setting page is used to configure Quality of Service (QoS) for Traffic Prioritization and Bandwidth Management. Quality of Service (QoS) provides users the control over which type of outgoing data traffic is given priority by the router. The throughput rate of the upload data passed through the wireless AP/Router can be throttled. Click on "Network Settings" followed by "QoS".

Figure 5-13. QoS Settings (Gateway Mode) Bandwidth QoS Setting -- The maximum upload speed of the Internet connection on the WAN port. · Quality of Service Enables the QoS. (Default: Enable) · Upload Bandwidth Sets the maximum upload bandwidth. (Default: user defined) 5-15 5 System Configuration ALG The application gateway settings provide a filter for certain protocol data (such as FTP and SIP) to pass through the wireless AP/Router NAT and firewall restrictions.

Figure 5-14. ALG Settings · FTP Support Allows FTP packets to pass through the wireless AP/Router. · TFTP Support Allows TFTP packets to pass through the wireless AP/Router. · H.323 Support Allows H.

323 packets to pass through the wireless AP/Router to support audio, data and video conferencing for teleconferencing. · SIP Support Allows SIP packets to pass through the wireless AP/Router. Wireless Settings The IEEE 802.11n interfaces include configuration options for radio signal characteristics and wireless security features. The wireless AP/Router can operate in five modes, mixed 802.11b/g/n, mixed 802.11b/g, 802.11b only and 802.11g only. Also note that 802.

11g is backward compatible with 802.11b, and 802.11n is backward compatible with both 802.11b/g at slower data transmit rates. Each radio supports two virtual access point (VAP) interfaces, referred to as WLAN1 and WLAN2. Each VAP functions as a separate access point, and can be configured with its own Service Set Identification (SSID) and security settings. However, most radio signal parameters apply to both VAP interfaces. The configuration options are nearly identical, and are therefore both covered in this section of the manual. 5-16 Wireless Settings Traffic to specific VAPs can be segregated based on user groups or application traffic. Both VAPs can have up to 64 wireless clients, whereby the clients associate with these VAPs the same as they would with a physical access point.

Note: The radio channel settings for the access point are limited by local regulations, which determine the number of channels that are available. See "Specifications" on page B-1 for additional information on the maximum number channels available. 5 Basic Settings The Basic Setting page allows you to enable the wireless interface, select which radio mode to use, choose the transmit frequency and configure SSIDs. Click on "Wireless Settings," followed by "Basic". Note: There are several variables to consider when selecting a radio mode that make it fully functional.

Simply selecting the mode you want is not enough to ensure full compatibility for that mode. Information on these variables may be found in the Advanced Setting section. Figure 5-15. Basic Wireless Settings · Radio On/Off Enables or Disable the radio. (Default: Enable) · Network Mode Defines the radio mode for the VAP interface.

(Default: 802.11b/g/n Mixed) Note: Enabling the wireless AP/Router to communicate with 802.11b/g clients in both 802.11b/g/n Mixed and 802.11n modes also requires that HT Operation in the 5-17 5 System Configuration Advanced Settings menu be set to Mixed. Setting HT Operation to Green Field is exclusive for 802.11n client communication only and prevents 802.11 b/g communication. - 802.11b/g Mixed: Both 802.

11b and 802.11g clients can communicate with the wireless AP/Router (up to 108 Mbps), but data transmission rates may be slowed to compensate for 802.11b clients. Any 802.11n clients will also be able to communicate with the wireless AP/Router, but they will be limited to 802.11g protocols and data transmission rates. - 802.11b only: All 802.11b, 802.11g, and 802.

11n clients will be able to communicate with the wireless AP/Router, but the 802.11g and 802.11n clients will be limited to 802.11b protocols and data transmission rates (up to 11 Mbps). - 802.

11g only: Both 802.11g and 802.11n clients will be able to communicate with the wireless AP/Router, but the 802.11n clients will be limited to 802.11g protocols and data transmission rates (up to 54 Mbps).

Any 802.11b clients will not be able to communicate with the wireless AP/Router. - 802.11b/g/n Mixed: All 802.11b/g/n clients can communicate with the wireless AP/Router (up to 300 Mbps), but data transmission rates may be slowed to compensate for 802.



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11b/g clients. · Network Name (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"; Range: 1-32 characters) - Multiple SSID The number of wireless network interfaces (SSIDs) supported on the device. · Broadcast Network Name (SSID) The wireless AP/Router will broadcast its SSID.

· AP Isolation The wireless AP/Router will isolate wireless clients in order to protect them. Normally for users who are at hotspots. · MBSSID AP Isolation The wireless AP/Router will isolate wireless clients from different SSID. · BSSID The identifier (MAC address) of a wireless AP/Router in a Basic Service Set (BSS) network. · 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 5-18 Wireless Settings 5 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. Wireless Distribution System (WDS) The WLAN1 radio interface can be configured to operate in a mode that allows it to forward traffic directly to other access point units.

To set up links between access point units, you must configure the Wireless Distribution System (WDS) forwarding table by specifying the wireless MAC address of all units to which you want to forward traffic. Traffic forwarded to WDS links is automatically converted to 802.11 four-address format frame. This uses the MAC addresses of the station and that of the AP connected to it on the transmitting LAN, and the MAC addresses of the AP functioning as a wireless repeater/bridge and that of the station connected to it on a neighboring LAN in the 802.11 frame header.

Ethernet traffic follows a three-address format that is reconstructed for WDS transmission. The wireless AP/Router will reconstruct the frame format upon receipt and transmission using the criteria of the receiving and forwarding port location and whether it is Ethernet or wireless in type. Note: The wireless AP/Router does not support the spanning tree algorithm. WDS links should be configured appropriately to avoid causing loops on the network. Up to four WDS links can be specified for each unit in the WDS network.

The WDS link can be configured in the following combinations: 1. 2. 3. All units are configured as Gateway Mode Units can be configured as Gateway Mode and Bridge Mode combinations. (ex: 2 units for Gateway Mode and 2 units for Bridge Mode) All units are configured as Bridge Mode When both units are set to Gateway Mode, be sure to check these settings: · Be sure each unit is configured with a different LAN IP address. · Be sure that only one unit has Internet access on its WAN port. · Be sure the DHCP server is enabled only on one unit. If one unit is providing Internet access, enable the DHCP server on that unit. Note: WDS Settings only apply to WLAN1. WLAN2 is pre-configured to Bridge mode unless WLAN1 is configured to act as a bridge, in which case WLAN2 is disabled.

5-19 5 System Configuration Figure 5-16. WDS Settings WDS Setting -- Configures WDS related parameters. Up to four MAC addresses can be specified for each unit in the WDS network. WDS links may either be manually configured (Bridge and Repeater modes) or auto-discovered (Lazy mode). · WDS Mode Selects the WDS mode of WLAN1. (Options: Disable/Lazy/Bridge/ Repeater. Default: Disable) - Disable: WDS is disabled. - Lazy: Operates in an automatic mode that detects and learns WDS peer addresses from received WDS four-address format frame packets, without the need to configure a WDS MAC list entry. This feature allows the wireless AP/ Router to associate with other wireless AP/Routers in the network and use their WDS MAC list. In Lazy mode the wireless AP/Router sends a beacon.

- Bridge: Operates as a standard bridge that forwards traffic between WDS links (links that connect to other AP/wireless bridges, or units in Repeater or Lazy mode) and an Ethernet port. Only data destined for stations which are known to be on the peer Ethernet link, multicast data or data with unknown destinations, need to be forwarded through the WDS link. The Bridge mode does not transmit a beacon, unlike the other three modes. In this mode the wireless AP/Router may also function as a repeater. Note: Enabling "Bridge" mode disables WLAN2.

- Repeater: Operates as a wireless repeater, extending the range for remote wireless clients and connecting them to an AP connected to the wired network. WDS peers must be registered with the wireless AP/Router. Repeater mode also supports the dual capability of the VAP functioning as an AP. In this mode, traffic is not forwarded to the Ethernet port from the radio interface. In Repeater mode the wireless AP/Router transmits a beacon.

Note: WDS settings may only be configured for WLAN1, See "Wi-Fi Protected Setup (WPS)" on page 5-35. WLAN2 only operates as an access point service.

Note: Configuring WLAN1 to operate in WDS "Bridge" mode automatically disables WLAN2. 5-20 Wireless Settings HT Physical Mode Settings 5 Figure 5-17. HT Physical Mode Settings · HT Operation Mode Packets from 802.11n clients are referred to as High Throughput (HT) Greenfield packets, in other words packets that can be transmitted at rates of up to 300 Mbps assuming that HT Channel Bandwidth is set to 20/40Mhz, see HT Channel Bandwidth next page. Note: Some 802.11n wireless clients may be capable of transmission rates of up to 600 Mbps, however the wireless AP/Router will only be able to connect to them at a maximum transmission rate of 300 Mbps. 802.11b/g packets are referred to as non-HT packets, being transmitted at lower throughput rates.

HT mixed format frames contain a preamble compatible with the non-HT receivers. HT Greenfield frames do not contain a non-HT compatible part. Support for HT Greenfield format is optional. An HT station that does not support the reception of an HT Greenfield format frame must be able to detect that an HT Greenfield format frame is an HT transmission (as opposed to a non-HT transmission). In this case the receiver must decode the high throughput signal (HT-SIG) in the packet header and determine if the HT-SIG cyclic redundancy check (CRC) passes. (Default: Mixed) · HT Channel Bandwidth The wireless AP/Router provides a channel bandwidth of 40 MHz by default giving an 802.11g connection speed of 108 Mbps (sometimes referred to as Turbo Mode) and a 802.



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