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SMC® Networks | **USER GUIDE**

Barricade™ N
150 Mbps 4-Port Wireless Broadband Router

SMCWBR14S-N4

Manual abstract:

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This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures: Reorient or relocate the receiving antenna Increase the separation between the equipment and receiver Connect the equipment into an outlet on a circuit different from that to which the receiver is connected Consult the dealer or an experienced radio/TV technician for help This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IEEE 802.11b or 802.11g operation of this product in the U.S.A.

is firmware-limited to channels 1 through 11. 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 20 cm between the radiator and your body. 5 COMPLIANCES IC STATEMENT This Class B digital apparatus complies with Canadian ICES-003. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Cet appareil numérique de la classe B conforme á la norme NMB-003 du Canada. The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology. IMPORTANT NOTE: IC RADIATION EXPOSURE STATEMENT: This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

TAIWAN NCC 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 (IEC 60950-1) - Product Safety EN 55022/24 - ITE EMC EN 301 489-1-17 - RF EMC EN 300 328 - 802.11 b/g/n 6 COMPLIANCES This device is intended for use in the following European Community and EFTA countries: Austria Denmark Greece Latvia Norway Slovenia Belgium Estonia Hungary Lithuania Poland Spain Bulgaria Finland Iceland Luxembourg Portugal Sweden Cyprus France Ireland Malta Romania Switzerland Czech Republic Germany Italy Netherlands Slovakia United Kingdom NOTE: The user must use the configuration utility provided with this product to ensure the channels of operation are in conformance with the spectrum usage rules for European Community countries as described below. This device will automatically limit the allowable channels determined by the current country of operation. Incorrectly entering the country of operation may result in illegal operation and may cause harmful interference to other systems. The user is obligated to ensure the device is operating according to the channel limitations, indoor/outdoor restrictions and license requirements for each European Community country as described in this document. DECLARATION OF CONFORMITY IN LANGUAGES OF THE EUROPEAN COMMUNITY Czech Cesky Estonian Eesti English Finnish Suomi Dutch Nederlands Manufacturer tímto prohlasuje, ze tento Radio LAN device je ve shod se základními pozadavky a dalsími píslusnými ustanoveními smrnice 1999/5/ES. Käesolevaga kinnitab Manufacturer seadme Radio LAN device vastavust direktiivi 1999/ 5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. Hereby, Manufacturer, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. Valmistaja Manufacturer vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Hierbij verklaart Manufacturer dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Bij deze Manufacturer dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC. French Français Swedish Svenska Danish Dansk Par la présente Manufacturer 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 Manufacturer att denna Radio LAN device står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. Undertegnede Manufacturer erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF 7 COMPLIANCES German Deutsch Hiermit erklärt Manufacturer, 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) Hiermit erklärt Manufacturer die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien) Greek Hungarian Magyar Italian Italiano Latvian Latviski Lithuanian Lietuvi Maltese Malti Spanish Español Polish Polski Portuguese Português Slovak Slovensky Slovenian Slovensko Manufacturer radio LAN device 1999/5/.
Alulírott, Manufacturer nyilatkozom, hogy a Radio LAN device megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak. Con la presente Manufacturer dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. Ar so Manufacturer deklar, ka Radio LAN device atbilst Direktvas 1999/5/EK btiskajm prasbm un citiem ar to saisttajiem noteikumiem. Siuo Manufacturer deklaruoja, kad sis Radio LAN device atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. Hawnhekk, Manufacturer, jiddikjara li dan Radio LAN device jikkonforma mal-tiijiet essenzjali u ma provvedimenti orajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Por medio de la presente Manufacturer declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE Niniejszym Manufacturer owiadcza, e Radio LAN device jest zgodny z zasadniczymi wymogami oraz pozostalymi stosownymi postanowieniami Dyrektywy 1999/5/EC. Manufacturer declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. Manufacturer týmto vyhlasuje, ze Radio LAN device spa základné poziadavky a vsetky príslusné ustanovenia Smernice 1999/5/ES. Manufacturer izjavlja, da je ta radio LAN device v skladu z bistvenimi zahtevami in ostalimi relevantnimi dolocili direktive 1999/5/ES. 8 COMPLIANCES 9 ABOUT THIS GUIDE PURPOSE This guide gives specific information on how to install the Wireless Broadband Router and its physical and performance related characteristics. It also gives information on how to operate and use the management functions of the Wireless Broadband Router. AUDIENCE This guide is for users with a basic 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 As part of the Wireless Broadband Router's software, there is an online web-based help that describes all management 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. 10 CONTENTS WARRANTY AND PRODUCT REGISTRATION COMPLIANCES ABOUT THIS GUIDE CONTENTS FIGURES TABLES 4 5 10 11 16 19 SECTION I GETTING STARTED 1 INTRODUCTION Key Hardware Features Description of Capabilities Applications Package Contents Hardware Description LED Indicators Ethernet WAN Port Ethernet LAN Ports Power Connector Reset Button WPS Button 20 21 21 21 22 23 23 25 26 26 26 27 27 2 NETWORK PLANNING Internet Gateway Router LAN Access Point Wireless Bridge 29 29 30 31 3 INSTALLING THE GATEWAY ROUTER System Requirements 33 33 11 CONTENTS Location Selection Mounting on a Wall Mounting on a Horizontal Surface Gateway Mode Connections Bridge Mode Connections 33 34 35 35 36 4 INITIAL CONFIGURATION ISP Settings Connecting to the Login Page Home Page and Main Menu Common Web Page Buttons Setup Wizard Step 1 - Language Selection Step 2 - SNTP Settings Step 3 - WAN Settings - DHCP Step 3 - WAN Settings - Static IP Step 3 - WAN Settings - PPPoE Step 3 - WAN Settings - PPTP Step 4 - Wireless Security Completion 38 38 38 39 40 40 40 41 42 43 44 45 46 47 SECTION II WEB CONFIGURATION 5 OPERATION MODE Logging In Operation Mode 49 51 52 54 6 INTERNET SETTINGS WAN Setting DHCP Static IP PPPoE PPTP LAN Setting Advanced Routing Advanced Routing Settings Routing Table 55 55 55 57 58 59 61 63 63 64 12 CONTENTS Dynamic Route 65 7 WIRELESS CONFIGURATION Basic Settings WLAN Security Wired Equivalent Privacy (WEP) WPA Pre-Shared Key WPA Enterprise Mode IEEE 802.1X and RADIUS Advanced Settings Wireless Network HT Physical Mode Settings Advanced Wireless Wi-Fi Multimedia Multicast-to-Unicast Converter Wireless Distribution System (WDS) Wi-Fi Protected Setup (WPS) Station List 67 67 69 70 71 72 74 76 76 77 79 81 83 84 88 90 8 FIREWALL CONFIGURATION MAC/IP/Port Fi The Barricade Wireless Broadband Router (SMCWBR14S-N4) supports routing from an Internet Service Provider (ISP) connection (DSL or cable modem) to a local network. It is simple to configure and can be up and running in minutes. KEY HARDWARE FEATURES The following table describes the main hardware features of the Gateway Router. Table 1: Key Hardware Features Feature WAN Port 4 LAN Ports WPS Button Reset Button LEDs Mounting Options Description One 100BASE-TX RJ-45 port for connecting to the Internet. Four 100BASE-TX RJ-45 ports for local network connections.
To set up a secure connection to a wireless device. For resetting the unit and restoring factory defaults. Provides LED indicators for Power, WAN port, and LAN ports status. Can be mounted on any horizontal surface such as a desktop or shelf, or on a wall using two screws. DESCRIPTION OF CAPABILITIES Internet connection through an RJ-45 WAN port.
Local network connection through four 10/100 Mbps Ethernet ports. DHCP for dynamic IP configuration. Firewall with Stateful Packet Inspection, client privileges, intrusion detection, and NAT. NAT also enables multi-user Internet access via a single user account, and virtual server functionality (providing protected access to Internet services such as Web, FTP, e-mail, and Telnet). VPN pass-through (PPTP).
User-definable application sensing tunnel supports applications requiring multiple connections. 21 CHAPTER 1 | Introduction Description of Capabilities Easy setup through a Web browser on any operating system that supports TCP/IP. Compatible with all popular Internet applications. In addition, the Gateway Router offers full network management capabilities through an easy-to-configure web interface. APPLICATIONS Many advanced networking features are provided by the Barricade: Wired LAN -- The Barricade provides connectivity to wired 10/100 Mbps devices, making it easy to create a network in small offices or homes.

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Internet Access -- This device supports Internet access through a WAN connection. Since many DSL providers use PPPoE to establish communications with end users, the Barricade includes built-in clients for these protocols, eliminating the need to install these services on your computer. Shared IP Address -- The Barricade provides Internet access for up to 253 users via a single shared IP address. Using only one ISP account, multiple users on your network can browse the Web at the same time. Virtual Server -- If you have a fixed IP address, you can set the Barricade to act as a virtual host for network address translation.

Remote users access various services at your site using a constant IP address. Then, depending on the requested service (or port number), the Barricade can route the request to the appropriate server (at another internal IP address). This secures your network from direct attack by hackers, and provides more flexible management by allowing you to change internal IP addresses without affecting outside access to your network. DMZ Host Support -- Allows a networked computer to be fully exposed to the Internet. This function is used when NAT and firewall security prevent an Internet application from functioning correctly. Security -- The Barricade supports security features that deny Internet access to specified users, or filter all requests for specific services the administrator does not want to serve. WPA (Wi-Fi Protected Access) and MAC filtering provide security over the wireless network. Virtual Private Network (VPN) -- The Barricade supports one of the most commonly used VPN protocols PPTP. This protocol allows remote users to establish a secure connection to their corporate network. If your service provider supports VPNs, then these protocols can be used to create an authenticated and encrypted tunnel for passing secure data over the Internet (i.

e., a traditionally shared data network). The VPN protocols supported by the Barricade are briefly described below. 22 CHAPTER 1 | Introduction Package Contents Point-to-Point Tunneling Protocol -- Provides a secure tunnel for remote client access to a PPTP security gateway. PPTP includes provisions for call origination and flow control required by ISPs.

PACKAGE CONTENTS The Barricade Wireless Broadband Router package includes: Barricade Wireless Broadband Router RJ-45 Category 5 network cable AC power adapter Quick Installation Guide EZ Installation & Documentation 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. HARDWARE DESCRIPTION The Barricade Wireless Broadband Router, from herein refered to as Gateway Router, connects to the Internet using its RJ-45 WAN port. It connects directly to your PC or to a local area network using its RJ-45 Fast Ethernet LAN ports.

The Gateway Router includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. 23 CHAPTER 1 | Introduction Hardware Description Figure 1: Top Panel LED Indicators 24 CHAPTER 1 | Introduction Hardware Description Figure 2: Rear Panel WPS Button DC Power Socket RJ-45 LAN Ports Reset Button RJ-45 WAN Port LED INDICATORS The Wireless Broadband Router includes seven status LED indicators, as described in the following figure and table. Figure 3: LEDs Power WLAN WPS WAN LAN 1~4 25 CHAPTER 1 | Introduction Hardware Description Table 2: LED Behavior LED Power Status On Blue Off WLAN On/Blinking Blue Description The unit is receiving power and is operating normally. There is no power currently being supplied to the unit. The 802.11n radio is enabled and transmitting or receiving data through wireless links. The 802.11n radio is disabled. WPS authentication is in progress. WPS authentication is not in progress.

The Ethernet WAN port is aquiring an IP address. The Ethernet WAN port is connected and is transmitting/receiving data. The Ethernet WAN port is disconnected or has malfunctioned. The Ethernet LAN port is connected to a PC or server. The Ethernet port is connected and is transmitting/receiving data. The Ethernet port is disconnected or has malfunctioned. Off WPS Blinking Off WAN On Blue Blinking Off LAN1~LAN4 On Blue Blinking Off ETHERNET WAN PORT A 100BASE-TX RJ-45 port that can be attached to an Internet access device, such as a DSL or Cable modem. ETHERNET LAN The Wireless Broadband Router has four 100BASE-TX RJ-45 ports that can PORTS be attached directly to 10BASE-T/100BASE-TX LAN segments. These port support automatic MDI/MDI-X operation, so you can use straight-through cables for all network connections to PCs, switches, or hubs. POWER CONNECTOR The Wireless Broadband Router must be powered with its supplied power adapter.

Failure to do so results in voiding of any warranty supplied with the product. The power adapter automatically adjusts to any voltage between 100~240 volts at 50 or 60 Hz, and supplies 5 volts DC power to the unit. No voltage range settings are required. 26 CHAPTER 1 | Introduction Hardware Description RESET BUTTON This button is used to restore the factory default configuration. If you hold down the button for 5 seconds or more, any configuration changes you may have made are removed, and the factory default configuration is restored to the Gateway Router.

WPS BUTTON Press to automatically configure the Wireless Broadband Router with other WPS devices in the WLAN. 27 CHAPTER 1 | Introduction Hardware Description 28 2 NETWORK PLANNING The Wireless Broadband 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 up to four wired LANs. This chapter explains some of the basic features of the Wireless Broadband Router and shows some network topology examples in which the device is implemented.

INTERNET GATEWAY ROUTER The Wireless Broadband 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 Broadband Router either through a wired connection to a LAN port, or though the device's own wireless network. The Wireless Broadband 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.

29 CHAPTER 2 | Network Planning LAN Access Point Figure 4: Operating as an Internet Gateway Router Internet Service Provider Cable/DSL Modem ISP) Wireless AP/Router from ned ssig) (IP a 8.2.x 2.16 WAN P: 19 (I LAN Notebook PC (IP: 192.168.

2.x) LAN Switch Server (IP: 192.168.2.x) Desktop PC (IP: 192.168.2.x) 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. LAN ACCESS POINT The Wireless Broadband Router can provide an access point service for an existing wired LAN, creating a wireless extension to the local network.

The Wireless Broadband 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. 30 CHAPTER 2 | Network Planning Wireless Bridge Figure 5: Operating as an Access Point Server (IP: 192.

168.2.x) Desktop PC (IP: 192.168.2.

x) LAN Switch Notebook PC (IP: 192.168.2.x) Wireless AP/Router WIRELESS BRIDGE The IEEE 802.11 standard defines a Wireless Distribution System (WDS) for bridge connections between access points. The Wireless Broadband Router can use WDS to forward traffic on links between units. Up to four WDS links can be specified for the Wireless Broadband Router. The WDS feature enables two basic functions to be configured in the wireless network. Either a repeater function that extends the range of the wireless network, or a bridge function that connects a remote LAN segment to an Internet connection. Figure 6: Operating as a Wireless Bridge Internet Service Provider Cable/DSL Modem WDS Link Gateway Router (Gateway Mode) Gateway Router (Bridge Mode) Desktop PCs Desktop PCs 31 CHAPTER 2 | Network Planning Wireless Bridge Figure 7: Operating as a Wireless Repeater Internet Service Provider Cable/DSL Modem Gateway Router (Gateway Mode) WDS Link Gateway Router (Bridge Mode) Notebook PC Notebook PC 32 3 INSTALLING THE GATEWAY ROUTER The Wireless Broadband 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" on page 54. 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 wirelessclients. In addition to these basic operating modes, the wireless interface supports a Wireless Distribution System (WDS) link to another Wireless Broadband Router. These advanced configurations are not described in this section. See "Network Planning" on page 29 for more information. In a basic configuration, how the Wireless Broadband Router is connected depends on the operating mode. The sections in this chapter describe connections for basic Gateway Mode and Bridge Mode operation.

SYSTEM REQUIREMENTS You must meet the following minimum requirements: An Internet access device (DSL or Cable modem) with an Ethernet port connection. An up-to-date web browser: Internet Explorer 6.0 or above or Mozilla Firefox 2.0 or above. LOCATION SELECTION The Wireless Broadband Router can be mounted on any horizontal surface, or on a wall.

The following sections describe the mounting options. 33 CHAPTER 3 | Installing the Gateway Router Mounting on a Wall MOUNTING ON A WALL The Wireless Broadband Router should be mounted only to a wall or wood surface that is at least 1/2-inch plywood or its equivalent. To mount the unit on a wall, always use its wall-mounting bracket. The unit must be mounted with the RJ-45 cable connector oriented upwards to ensure proper operation. Figure 8: Wall Mounting Mounting Slots To mount on a wall, follow the instructions below.

1. Mark the position of the two screw holes on the wall. For concrete or brick walls, you will need to drill holes and insert wall plugs for the screws. 2. Insert the included screws into the holes, leaving about 0.08~0.12 inches (2-3 mm) clearance from the wall. 3. Line up the two mounting points on the unit with the screws in the wall, then slide the unit down onto the screws until it is in a secured position. 34 CHAPTER 3 | Installing the Gateway Router Mounting on a Horizontal Surface MOUNTING ON A HORIZONTAL SURFACE To keep the Wireless Broadband Router from sliding on the surface, the Wireless Broadband Router has four rubber feet on the bottom of the unit.

It is recommended to select an uncluttered area on a sturdy surface, such as a desktop or table. The unit can also be protected by securing all attached cables to a table leg or other nearby fixed structure. GATEWAY MODE CONNECTIONS In its default Gateway Mode, the Wireless Broadband 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 9: Gateway Mode Connection 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 To connect the Wireless Broadband Router in Gateway Mode for use as an Internet gateway, follow these steps: 1. Connect an Ethernet cable from the Wireless Broadband Router's WAN port to your Internet connected cable or ADSL modem. 2. Connect an Ethernet cable from the Wireless Broadband Router's LAN ports to your PCs. Alternatively, you can connect to a workgroup switch to support more wired users. The Wireless Broadband Router can support up to 253 wired and wireless users. 3. Power on the Wireless Broadband Router by connecting the AC power adapter and plugging it into a power source. 35 CHAPTER 3 | Installing the Gateway Router Bridge Mode Connections CAUTION: Use ONLY the power adapter supplied with the Wireless Broadband Router. Otherwise, the product may be damaged. When you power on the Wireless Broadband Router, verify that the Power LED turns on and that the other LED indicators start functioning as described under see "LED Indicators" on page 25.

4.

Set up wireless devices by pressing the WPS button on the Wireless Broadband Router or by using the web interface. See "Initial Configuration" on page 38 for more information on accessing the web interface. BRIDGE MODE CONNECTIONS In Bridge Mode, the Wireless Broadband 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 Broadband Router and access the wired network resources, including local servers and the Internet. In Bridge Mode, the Wireless Broadband 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. Figure 10: Bridge Mode Connection 4. 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 3. Connect LAN port to PC To connect the Wireless Broadband Router for use as an access point, follow these steps: 36 CHAPTER 3 | Installing the Gateway Router Bridge Mode Connections 1. Using Ethernet cable connect the Wireless Broadband Router's LAN and WAN ports to PCs or a LAN switch. 2. Power on the Wireless Broadband Router by connecting the AC power adapter and plugging it into a power source. CAUTION: Use ONLY the power adapter supplied with the Wireless Broadband Router. Otherwise, the product may be damaged. When you power on the Wireless Broadband Router, verify that the Power LED turns on and that the other LED indicators start functioning as described under "LED Indicators" on page 25. 3. Connect an Ethernet cable from the Wireless Broadband Router's LAN ports to your PCs. Alternatively, you can connect to a workgroup switch to support more wired users. The Wireless Broadband Router can support up to 253 wired and wireless users 4. Set up wireless devices by pressing the WPS button on the Wireless Broadband Router or by using the web interface. See "Initial Configuration" on page 38 for more information on accessing the web interface. 37 4 INITIAL CONFIGURATION The Wireless Broadband 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). ISP SETTINGS If you are not sure of your connection method, please contact your Internet Service Provider. There are several connection types to choose from: Static IP, DHCP (cable connection), PPPoE (DSL connection), and PPTP. NOTE: If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

CONNECTING TO THE LOGIN PAGE It is recommended to make initial configuration changes by connecting a PC directly to one of the Wireless Broadband Router's LAN ports. The Wireless Broadband Router has a default IP address of 192.168.2.1 and a subnet mask of 255.255.255.0. You must set your PC IP address to be on the same subnet as the Gateway Router (that is, the PC and Gateway Router addresses must both start 192.168.

2.x). To access the Wireless Broadband Router's management interface, follow these steps: 1. Use your web browser to connect to the management interface using the default IP address of 192.168.2.1. 2. Log into the interface by entering the default username "admin" and password "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 "System Management" on page 100. 38 CHAPTER 4 | Initial Configuration Home Page and Main Menu Figure 11: Login Page HOME PAGE AND MAIN MENU After logging in to the web interface, the Home page displays. The Home page shows the main menu and the method to access the Setup Wizard. Figure 12: Home Page 39 CHAPTER 4 | Initial Configuration Common Web Page Buttons COMMON WEB PAGE BUTTONS The list below describes the common buttons found on most web management pages: Apply Applies the new parameters and saves them to memory. Also displays a screen to inform you when it has taken affect.

Clicking 'Apply' returns to the home page. Cancel Cancels the newly entered settings and restores the previous settings. Next Proceeds to the next step. Back Returns to the previous screen. SETUP WIZARD The Wizard is designed to help you configure the basic settings required to get the the Wireless Broadband Router up and running.

There are only a few basic steps you need to set up the the Wireless Broadband Router and provide a connection. Follow these steps: STEP 1 - LANGUAGE Select between English or Traditional Chinese. Click Next to proceed to the SELECTION next step of the wizard. Figure 13: Wizard Step 1 - Language Selection The following items are displayed on the first page of the Setup Wizard: Select Language -- Toggles between English or Traditional Chinese as the interface language. Next -- Proceeds to the next step. 40 CHAPTER 4 | Initial Configuration Setup Wizard STEP 2 - SNTP The Step 2 page of the Wizard configures time zone and SNTP settings. SETTINGS Select a time zone according to where the device is operated. Click Next after completing the setup. Figure 14: Wizard Step 2 - Time and SNTP Settings The following items are displayed on this page: Current Time -- Receives a time and date stamp from an SNTP server. Time Zone -- Select the time zone that is applicable to your region.

SNTP Server -- Enter the address of an SNTP server to receive time updates. SNTP synchronization (hours) -- Specify the interval between SNTP server updates. 41 CHAPTER 4 | Initial Configuration Setup Wizard STEP 3 - WAN The Step 3 page of the Wizard specifies the Internet connection SETTINGS - DHCP parameters for the Wireless Broadband Router's WAN port. Click Next after completing the setup. By default, the access point WAN port is configured with DHCP enabled. The options are Static IP, DHCP (cable modem), PPPoE (ADSL), and PPTP. Each option changes the parameters that are displayed on the page. Figure 15: Wizard Step 3 - WAN Settings - DHCP The following items are displayed on this page: WAN Connection Type -- Select the connection type for the WAN port from the drop down list. (Default: DHCP) Hostname -- Specifies the host name of the DHCP client. (Default: SMCWBR14S-N4) Primary DNS Server -- The IP address of the Primary Domain Name Server.

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.

To specify a DNS server, type the IP addresses in the text field provided. Otherwise, leave the text field blank. Secondary DNS Server -- The IP address of the Secondary Domain Name Server. MAC Clone -- Some ISPs limit Internet connections to a specified MAC address of one PC, which is registered with the ISP. This setting allows you to manually change the MAC address of the Wireless Broadband 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 Broadband Router, then click the "Clone your PC's MAC Address". (Default: Disabled) 42 CHAPTER 4 | Initial Configuration Setup Wizard 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 Broadband Router.

STEP 3 - WAN Configures a static IP for the WAN port. SETTINGS - STATIC IP Figure 16: Wizard Step 3 - WAN Settings - Static IP The following items are displayed on this page: WAN Connection Type -- Select the connection type for the WAN port from the drop down list. (Default: DHCP) IP Address -- The IP address of the Wireless Broadband 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 Broadband 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. 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. To specify a DNS server, type the IP addresses in the text field provided. Otherwise, leave the text field blank.

Secondary DNS Server -- The IP address of the Secondary Domain Name Server. 43 CHAPTER 4 | Initial Configuration Setup Wizard MAC Clone -- Some ISPs limit Internet connections to a specified MAC address. This setting allows you to manually change the MAC address of the Wireless Broadband 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 Broadband Router, then click the "Clone your PC's MAC Address" (Default: Disable) STEP 3 - WAN Enable the Wireless Broadband Router IP address to be assigned SETTINGS - PPPOE automatically from an Internet service provider (ISP) through an ADSL modem using Point-to-Point Protocol over Ethernet (PPPoE). Figure 17: Wizard Step 3 - WAN Settings - PPPoE The following items are displayed on this page: User Name -- Sets the PPPoE user name for the WAN port. (Default: pppoe_user; Range: 1~32 characters) 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 -- Enables and configures the keep alive time and configures the on-demand idle time. MAC Clone -- 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 Broadband 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 44 CHAPTER 4 | Initial Configuration Setup Wizard address to the Wireless Broadband Router, then click the "Clone your PC's MAC Address" (Default: Disable) STEP 3 - WAN Enables the Point-to-Point Tunneling Protocol (PPTP) for implementing SETTINGS - PPTP virtual private networks. The service is provided in many European countries. Figure 18: Wizard Step 3 - WAN Settings - PPTP The following items are displayed on this page: Server IP -- Sets the PPTP server IP Address.

(Default: pptp_server) User Name -- Sets the PPTP user name for the WAN port. (Default: pptp_user; Range: 1~32 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: 255.255.255.0, available when PPTP Network Mode is set to static IP.) Default Gateway -- The IP address of a router that is used when the requested destination IP address is not on the local subnet.

45 CHAPTER 4 | Initial Configuration Setup Wizard Operation Mode -- Enables and configures the keep alive time. Primary DNS Server -- The IP address of the Primary Domain Name Server. 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. To specify a DNS server, type the IP addresses in the text field provided. Otherwise, leave the text field blank. Secondary DNS Server -- The IP address of the Secondary Domain Name Server. MAC Clone -- 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 Broadband 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 Broadband Router, then click the "Clone your PC's MAC Address" (Default: Disable) STEP 4 - WIRELESS The Step 4 page of the Wizard configures the wireless network name and SECURITY security options.

Figure 19: Wizard Step 4 - Wireless Security The following items are displayed on this page: Network Name (SSID) -- The name of the wireless network service provided by the Wireless Broadband Router. Clients that want to connect to the network must set their SSID to the same as that of the Wireless Broadband Router. (Default: "SMCWBR14S-N4_AP"; Range: 132 characters) 46 CHAPTER 4 | Initial Configuration Setup Wizard Broadcast Network Name (SSID) -- By default, the Wireless Broadband Router always broadcasts the SSID in its beacon signal. Disabling the SSID broadcast increases security of the network because wireless clients need to already know the SSID before attempting to connect.

(Default: Enabled) AP Isolation -- The Wireless Broadband Router will isolate communincation between all clients in order to protect them. Normally for users who are at hotspots. (Default: Disabled) BSSID -- The identifier (MAC address) of the Wireless Broadband Router in the Basic Service Set (BSS) network. Security Mode -- Specifies the security mode for the SSID. Select the security method and then configure the required parameters. For more information, see "WLAN Security" on page 69.

(Options: Disabled, Open, Shared, WEP-AUTO, WPA-PSK, WPA2-PSK, WPA-PSK_WPA2-PSK, WPA, WPA2, WPA1_WPA2, 802.1X; Default: Disabled) NOTE: To keep your wireless network protected and secure, you should implement the highest security possible. For small networks, it is recommended to select WPA2-PSK using AES encryption as the most secure option. However, if you have older wireless devices in the network that do not support AES encryption, select TKIP as the encryption algorithm. Access Policy -- The Wireless Broadband Router provides a MAC address filtering facility. The access policy can be set to allow or reject specific station MAC addresses. This feature can be used to connect known wireless devices that may not be able to support the configured security mode. Add a station MAC -- Enter the MAC address of the station that you want to filter. MAC addresses must be entered in the format xx:xx:xx:xx:xx:xx. COMPLETION After completion of the Wizard, the screen returns to the Home Page.

47 CHAPTER 4 | Initial Configuration Setup Wizard 48 SECTION II WEB CONFIGURATION This section provides details on configuring the Wireless Broadband Router using the web browser interface. This section includes these chapters: "Operation Mode" on page 51 "Internet Settings" on page 55 "Wireless Configuration" on page 67 "Firewall Configuration" on page 91 "Administration Settings" on page 99 49 SECTION | Web Configuration 50 5 OPERATION MODE The Wireless Broadband 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). The following sections are contained in this chapter: "Logging In" on page 52 "Operation Mode" on page 54 51 Logging In CHAPTER 5 | Operation Mode LOGGING IN It is recommended to make initial configuration changes by connecting a PC directly to one of the Wireless Broadband Router's LAN ports. The Wireless Broadband 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 Broadband Router (that is, the PC and Wireless Broadband Router addresses must both start 192.168.

2.x). To access the configuration menu, follow these steps: 1. Use your web browser to connect to the management interface using the default IP address of 192.168.

2.1. 2. Log into the Wireless Broadband Router management interface by entering the default user name "admin" and password "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 "Administration Settings" on page 99. Figure 20: Logging On 52 CHAPTER 5 | Operation Mode Logging In The home page displays the main menu items at the top of the screen and the Setup Wizard. See "Setup Wizard" on page 40. Figure 21: Home Page NOTE: The displayed pages and settings may differ depending on whether the unit is in Gateway or Bridge Mode. See "Operation Mode" on page 54.

53 CHAPTER 5 | Operation Mode Operation Mode OPERATION MODE The Operation Mode Configuration page allows you to set up the mode suitable for your network environment. Figure 22: Operation Mode (Gateway) Bridge Mode -- An access point mode that extends a wired LAN to wireless clients. Gateway 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. 54 6 INTERNET SETTINGS The Internet Settings pages allow you to manage basic system configuration settings. It includes the following sections: "WAN Setting" on page 55 "DHCP" on page 55 "Static IP" on page 57 "PPPoE" on page 58 "PPTP" on page 59 "LAN Setting" on page 61 "Advanced Routing" on page 63 NOTE: In Bridge mode, the Wireless Broadband Router's Internet Settings options are significantly reduced, with only LAN Settings and the Client List being available to the user. WAN SETTING The WAN Setting page specifies the Internet connection parameters. Click on "Internet 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 (cable modem), PPPoE (ADSL), 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 Broadband Router to automatically obtain an IP address from a DHCP server normally operated by the Internet Service Provider (ISP).

55 WAN Setting CHAPTER 6 | Internet Settings Figure 23: DHCP Configuration The following items are displayed on this page: Hostname (Optional) -- The hostname of the DHCP client. Primary DNS Server -- The IP address of the Primary Domain Name Server. 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. To specify a DNS server, type the IP addresses in the text field provided. Otherwise, leave the text field blank.

Secondary DNS Server -- The IP address of the Secondary Domain Name Server. MAC Clone -- 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 Broadband 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 Broadband Router, then click the "Clone your PC's MAC Address" (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 Broadband Router. 56 CHAPTER 6 | Internet Settings WAN Setting STATIC IP Configures a static IP for the WAN port. Figure 24: Static IP Configuration IP Address -- The IP address of the Wireless Broadband 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 Broadband 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 -- 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 Broadband 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 57 WAN Setting CHAPTER 6 | Internet Settings provided. Otherwise, connect only the PC with the registered MAC address to the Wireless Broadband Router, then click the "Clone your PC's MAC Address" (Default: Disable) PPPOE Enables the Wireless Broadband 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 25: PPPoE Configuration PPPoE User Name -- 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. Operation Mode -- Selects the operation mode as Keep Alive, On Demand or Manual. (Default: Keep Alive) Keep Alive Mode: The Wireless Broadband Router will periodically check your Internet connection and automatically re-establish your connection when disconnected. (Default: 60 seconds) 58 CHAPTER 6 | Internet Settings WAN Setting On Demand Mode: The maximum length of inactive time the unit will stay connected to the DSL service provider before disconnecting. (Default: 5 minutes) MAC Clone -- 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 Broadband 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 Broadband Router, then click the "Clone your PC's MAC Address" (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 26: PPTP Configuration Server IP -- Sets a PPTP server IP Address. (Default: pptp_server) User Name -- Sets the PPTP user name for the WAN port. (Default: pptp_user; Range: 1~32 characters) 59 WAN Setting CHAPTER 6 | Internet Settings 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 Broadband Router, which is used if the requested destination address is not on the local subnet.
Operation Mode -- Selects the operation mode as Keep Alive, or Manual. (Default: Keep Alive) Keep Alive Mode: The Wireless Broadband Router will periodically check your Internet connection and automatically re-establish your connection when disconnected. (Default: 60 seconds) Manual Mode: The unit will remain connected to the Internet without disconnecting. Primary DNS Server -- The IP address of the Primary Domain Name Server. 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.
To specify a DNS server, type the IP addresses in the text field provided. Otherwise, leave the text field blank. Secondary DNS Server -- The IP address of the Secondary Domain Name Server. MAC Clone -- 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 Broadband 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 Broadband Router, then click the "Clone your PC's MAC Address" (Default: Disable) 60 CHAPTER 6 | Internet Settings LAN Setting LAN SETTING The Wireless Broadband 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 "Internet Settings" followed by "LAN." Figure 27: LAN 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.) 61 LAN Setting CHAPTER 6 | Internet Settings MAC Address -- The shared physical layer address for the Wireless Broadband Router's LAN ports. DHCP Server -- Enable this feature to assign IP settings to wired and wireless clients connected to the Gateway Router.
The IP address, subnet mask, default gateway, and Domain Name Server (DNS) address are dynamically assigned to clients. (Options: Enable, Disable; Default: Enable) 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 Broadband 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. (Options: Forever, Two weeks, One week, Two days, One day, Half day, Two hours, One hour, Half hour; Default: One week) 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: Enable) IGMP Proxy -- Enables IGMP proxy on the Wireless Broadband Router. (Options: Disable/Enable, Default: Disable) UPNP -- Allows the device to advertise its UPnP capabilities. (Default: Enable) 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 Broadband 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) 62 CHAPTER 6 | Internet Settings Advanced Routing 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: Enable) 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 This screen is used to manually configure static routes to other IP SETTINGS networks, subnetworks, or hosts. Click "Internet Settings" followed by "Advanced Routing". (Maximum 32 entries are allowed.) Figure 28: Advanced Routing (Gateway Mode) 63 CHAPTER 6 | Internet Settings Advanced Routing 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. ROUTING TABLE This page displays the information necessary to forward a packet along the best path toward its destination. 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 Broadband Router is set to 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 -- 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. 64 CHAPTER 6 | Internet Settings Advanced Routing 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. DYNAMIC ROUTE The Wireless Broadband 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. RIP -- Enables or disable the RIP protocol for the WAN or LAN interface. (Options: Disable/v1/v2, Default: Disable) 65 CHAPTER 6 | Internet Settings Advanced Routing 66 7 WIRELESS CONFIGURATION The wireless settings section displays configuration settings for the access point functionality of the Wireless Broadband Router. It includes the following sections: "Basic Settings" on page 67 "WLAN Security" on page 69 "Advanced Settings" on page 76 "Wireless Distribution System (WDS)" on page 84 "Wi-Fi Protected Setup (WPS)" on page 88 "Station List" on page 90 BASIC SETTINGS The IEEE 802.11n interface includes configuration options for radio signal characteristics and wireless security features. The Wireless Broadband Router's radio can operate in six modes, mixed 802.11b/g/n, mixed 802.11b/g, mixed 802.11g/n, 802.11n only, 802.

11b only, or 802.11g only. Note that 802.11g is backward compatible with 802.11b, and 802.

11n is backward compatible with 802.11b/g at slower data transmit rates. NOTE: The radio channel settings for the access point are limited by local regulations, which determine the number of channels that are available. The Basic Settings page allows you to configure the wireless network name (Service Set Identifier or SSID) and set the wireless security method. Click on "Wireless Settings," followed by "Basic.

" 67 CHAPTER 7 | Wireless Configuration Basic Settings Figure 29: Basic Settings The following items are displayed on this page: Network Name (SSID) -- The name of the wireless network service provided by the Wireless Broadband Router. Clients that want to connect to the network must set their SSID to the same as that of the Wireless Broadband Router.