

Note that the sections highlighted in the index have been removed to keep the file size below 4Mb. These pages deal with the configuration of the DSL and wired ethernet internets. No information relating to the wireless interface were contained in the deleted pages.

**030-300452 Rev. A BellSouthVersaLinkGateway
3/6/06 – Draft 5**

Draft 4 updates section 3.1, FCC Compliance Note.

Draft 5 updates the text in Figure 1 and Table 2 for snap-in wireless antenna



WESTELL
VERSALINK™ GATEWAY (MODEL 327W)

USER GUIDE

DRAFT 5



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1. PRODUCT DESCRIPTION

Westell's VersaLink™ Gateway adds reliable, high-speed, Internet access to your existing home or office phone line. Your DSL connection ends the hassles of dial-up modems and busy signals. Installation is easy ... no tools ... no headaches. Simply plug the VersaLink™ Gateway into the 10/100 Base-T port of your PC, apply power, perform the simple software configuration, and connect your DSL phone line to the VersaLink™ Gateway.

This modem is capable of data rates hundreds of times faster than a traditional analog modem. But unlike analog modems, Westell's VersaLink™ Gateway allows you to use the same phone line for simultaneous voice/fax communications and high-speed Internet access, eliminating the need for dedicated phone lines for voice and data needs. The Plug and Play feature means that no user configuration is required.

NOTE: Hereafter, the Westell VersaLink™ Gateway will be referred to as the "VersaLink" or the "Modem."

2. SAFETY INSTRUCTIONS

- Never install any telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.



WARNING



Risk of electric shock. Voltages up to 140 Vdc (with reference to ground) may be present on telecommunications circuits.

3. REGULATORY INFORMATION

This section details the FCC, compliance registration, and Canada certification notice for the VersaLink™ Gateway.

3.1 FCC Compliance Note

(FCC ID: CH8D90327W30-XX)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communication Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to a different circuit 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.

WARNING: While this device is in operation, a separation distance of at least 20 cm (8 inches) must be maintained between the radiating antenna and users exposed to the transmitter in order to meet the FCC RF exposure guidelines. Making changes to the antenna or the device is not permitted. Doing so may result in the installed system exceeding RF exposure requirements. This device must not be co-located or operated in conjunction with any other antenna or radio transmitter. Installers and end users must follow the installation instructions provided in this guide.

Modifications made to the product, unless expressly approved by Westell Inc., could void the user's rights to operate the equipment.

PART 68 - COMPLIANCE REGISTRATION

This equipment (Model 327W) complies with Part 68 of the ACTA rules and the requirements adopted by the ACTA. A label on the bottom of this equipment contains, among other information, the Ringer Equivalence Number (REN) and the product identifier. For products approved after July 23, 2001 the product identifier is in the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). The REN is used to determine the number of devices that may be connected to a telephone line. For earlier products, the REN is separately shown on the label. If requested, this number must be provided to the telephone company.

Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.



This equipment is designated to connect to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. An ACTA compliant telephone cord and modular plug is provided with the equipment. See the Installation Information section of this User Guide for details.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable ACTA 968-A rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instruction for details.

If this terminal equipment (Model 327W) causes harm to the telephone network, the telephone company may request you to disconnect the equipment until the problem is resolved. The telephone company will notify you in advance if temporary discontinuance of service is required. If advance notification is not practical, the telephone company will notify you as soon as possible. You will be advised of your right to file a complaint with the ACTA if you believe such action is necessary. If you experience trouble with this equipment (Model 327W), do not try to repair the equipment yourself. The equipment cannot be repaired in the field. Contact the BellSouth help desk at 1-888-321-2DSL (2375) for instructions on product return.

The telephone company may make changes to their facilities, equipment, operations, or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make the modifications necessary to maintain uninterrupted service.

If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment (Model 327W) does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection of this equipment to party line service is subject to state tariffs.

3.2 Canada Certification Notice

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operations and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The department does not guarantee that the equipment will operate to the user's satisfaction.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specification. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specification were met. It does not imply that Industry Canada approved the equipment. The Ringer Equivalence Number (REN) is 0.0. The Ringer Equivalence Number that is assigned to each piece of terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local Telecommunication Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Connection to a party line service is subject to state tariffs. Contact the state public utility commission, public service commission, or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment (Model 327W) does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

If you experience trouble with this equipment (Model 327W), do not try to repair the equipment yourself. The equipment cannot be repaired in the field and must be returned to the manufacturer. Repairs to certified equipment should be coordinated by a representative, and designated by the supplier. Contact Westell Technical Support at telephone no. (630) 375-4500 for instructions on product return.

The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal, metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.



CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

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4. SYSTEM REQUIREMENTS

The following system specifications are required for optimum performance of the VersaLink™ Gateway via 10/100 Base-T and Wireless installation.

CONNECTION TYPE	MINIMUM SYSTEM REQUIREMENTS
<p>ETHERNET 1 (E1)</p>	<ul style="list-style-type: none"> • Pentium® or equivalent class machines • Microsoft® Windows® (98 SE, ME, 2000, NT 4.0, or XP) Macintosh® OS X, or Linux installed • 64 MB RAM (128 MB recommended) • 10 MB of free hard drive space • TCP/IP Protocol stack installed • 10/100 Base-T Network Interface Card (NIC) • Computer Operating System CD-ROM on hand
<p>ETHERNET (E2, E3, E4)</p>	<ul style="list-style-type: none"> • Pentium® or equivalent class machines • Microsoft® Windows® (98 SE, ME, 2000, NT 4.0, or XP) Macintosh® OS X, or Linux installed • 64 MB RAM (128 MB recommended) • 10 MB of free hard drive space • TCP/IP Protocol stack installed • 10/100 Base-T Network Interface Card (NIC) • Computer Operating System CD-ROM on hand
<p>WIRELESS IEEE 802.11g</p>	<ul style="list-style-type: none"> • Pentium® or equivalent class machines • Microsoft® Windows® (98 SE, ME, 2000, or XP) or Macintosh® OS X installed • Computer Operating System CD-ROM on hand • Internet Explorer 4.x or Netscape Navigator 4.x or higher • 64 MB RAM (128 MB recommended) • 10 MB of free hard drive space • An available IEEE 802.11b/g/g+ PC adapter

5. HARDWARE FEATURES

This section explains LED states and descriptions, rear panel features, and pinout descriptions of your modem

5.1 LED Indicators

The LED indicators are used to verify the unit's operation and status. LED states are described in Table 1.

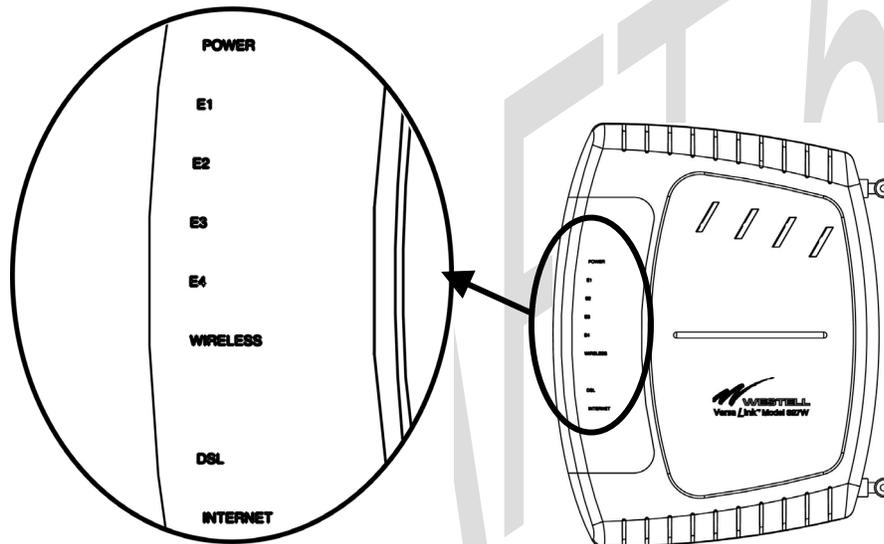


Table 1. LED States and Descriptions

LED	State	Description
POWER	Solid Green	Power ON
	No Light	Power OFF
	Flashing Red	POST (power on self test) failure (not bootable), device malfunction, or the modem is in safe boot mode. Note: All other LEDs shall flash Green when the Power LED flashes Red
ETHERNET (E1, E2, E3, E4)	Solid Green	Powered device connected to the associated port (includes devices with wake-on-lan capability where a slight voltage is supplied to an Ethernet connection)
	Flashing Green	LAN activity present (traffic in either direction) or when modem is in safe boot mode
	No Light	Modem power OFF, no cable or no powered device is connected to the associated port
WIRELESS	Solid Green	Link established.
	Flashing Green	Wireless LAN activity is present (traffic in either direction)
	No Light	Modem power is OFF or No Link established.
DSL	Solid Green	DSL good sync or when modem is in safe boot mode
	Flashing Green	DSL attempting sync
	No Light	Modem power Off or No Link



INTERNET	Solid Green	IP is connected (the device has a WAN IP address from IPCP or DHCP and DSL is up, or a static IP address is configured, PPP negotiation has successfully completed [if used] and DSL is up and no traffic is detected).
	Flashing Green	IP connected and IP Traffic is passing through the device (in either direction)
	Red	If the IP or PPPoE session is dropped due to an idle timeout, the light will remain green if an ADSL connection is still present. If the session is dropped for any other reason, the light is turned off. The light will turn red when it attempts to reconnect and DHCP or PPPoE and fails.
		Modem attempted to become IP connected and failed (no DHCP response, no PPPoE response, PPPoE authentication failed, no IP address from IPCP, etc.)
No Light	Modem power off, modem in bridge mode or ADSL connection not present.	

Note: Safe Boot is reflected when the POWER and INTERNET LED's are both red and all other LEDs are off.

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5.2 Rear Panel Features

The following items are located on the rear panel of the modem. See Figure 1. Tables 2 through 5 list the connector types and pinout designations.

- 2 Wireless IEEE 802.11b/g SMA connector and antenna
- DSL Connector (RJ-11)
- Reset Button
- 4 Ethernet Connectors (RJ-45)
- Power Connector (barrel)
- On/Off Switch

Figure 1. VersaLink Gateway Rear Panel

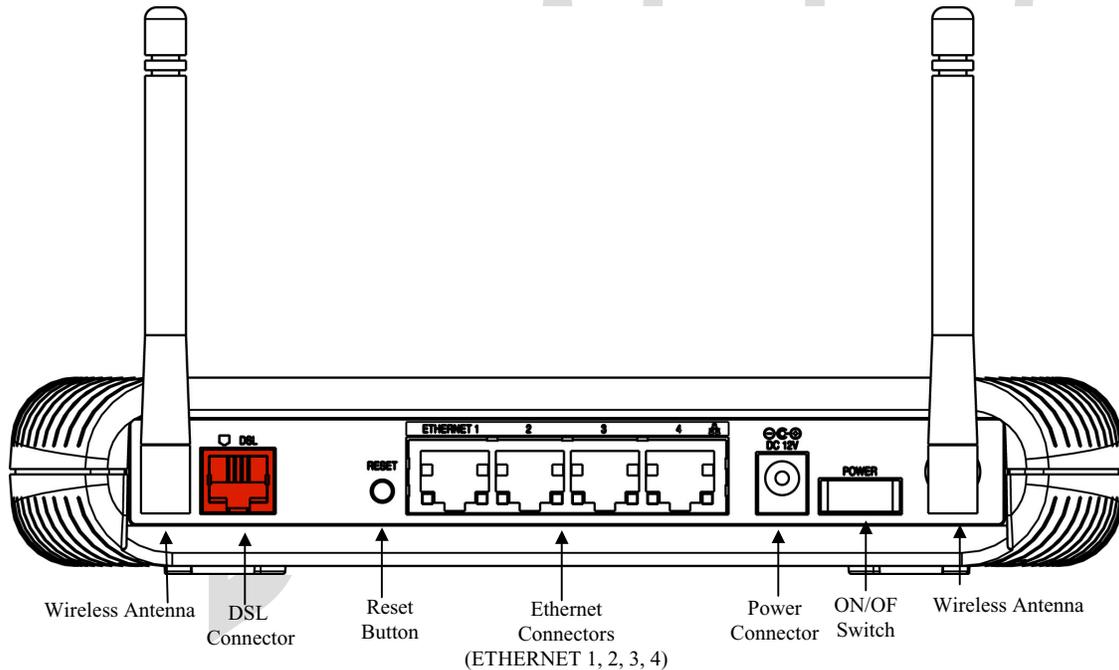


Table 2. Connector Descriptions

SYMBOL	NAME	TYPE	FUNCTION
	DSL LINE	RJ-11	Connects to an ADSL-equipped telephone jack or DSL connection of a POTS splitter.
	ETHERNET	RJ-45	10/100 Base-T Ethernet Connection to PC or Hub.
	POWER	Barrel connector	Connection to DC (12V) Power Connector .
Wireless	ANTENNA	Snap-in, non-user replaceable antenna	Connects to wireless IEEE 802.11b/g/g+ device.

Table 3. DSL Pinouts

Pinout	Description
1, 2, 5, 6	Not Used
3	DSL Tip
4	DSL Ring

Table 4. Ethernet Pinouts

Pinout	Description
1	Rx+
2	Rx-
3	Tx+
4,5,7,8	Not Used
6	Tx-

6. CUSTOMER INFORMATION

To browse the Internet using your VersaLink™ Gateway, you must (1) set up your customer information, (2) confirm your DSL sync, and (3) establish a PPP session with BellSouth. Refer to the Internet service provider's installation manual to install the software required for your Internet connection.

NOTE: Internet service provider subscriber software and connection requirements may vary. Consult BellSouth for installation instructions. If you have trouble with your connection, refer to section 16, Appendix A: Troubleshooting Connection Failures, for details.

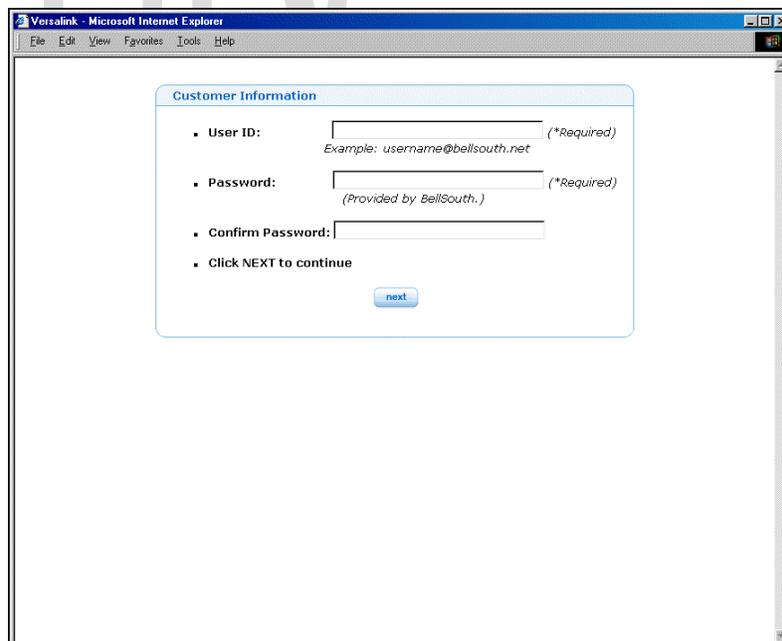
6.1 Confirming Your DSL Sync

You must have active DSL service before your modem can synchronize with your ISP's equipment. To determine if your modem has a DSL sync, confirm that the DSL LED on the front of the modem is solid green. Solid green indicates that you have established a DSL sync. For additional details on the modem's LED states, refer to section 5 (Hardware Features).

6.2 Setting Up Customer Information

After installing the VersaLink™ Gateway, bring up your Web browser and type **http://launchmodem/** in your browser's address bar. Next, press 'Enter' on your keyboard. The following **Customer Information** page will be displayed. This page allows you to enter the appropriate information needed for your BellSouth Internet connection.

NOTE: The Email Address, DSL Phone Number and Password are required information for your Internet connection. You must enter this information in the fields provided to proceed with the installation. Contact the BellSouth help desk at 1-888-321-2DSL (2375) if you need assistance with your customer information settings.



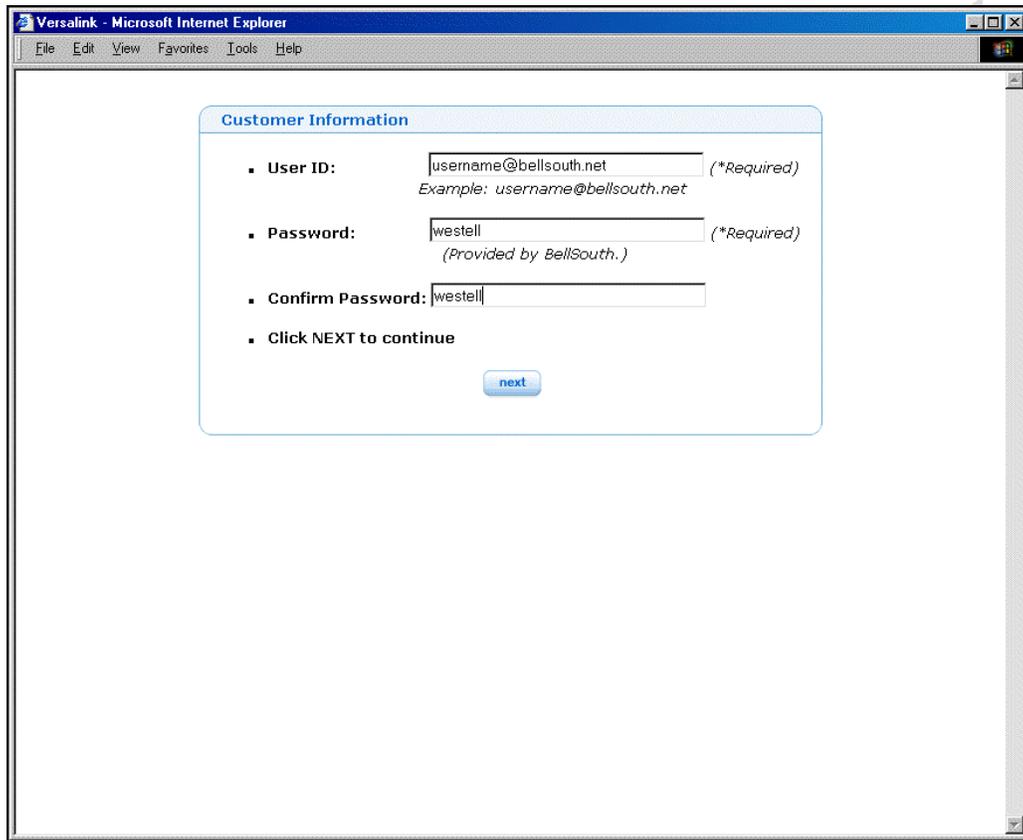
The screenshot shows a Microsoft Internet Explorer window titled "Versalink - Microsoft Internet Explorer". The browser's address bar is empty. The main content area displays a "Customer Information" form with the following fields and instructions:

- User ID:** (*Required)
Example: username@bellsouth.net
- Password:** (*Required)
(Provided by BellSouth.)
- Confirm Password:**
- Click NEXT to continue**

A blue "next" button is located at the bottom of the form.

Customer Information	
User ID	If applicable and different from your email address.
Password	Provided by BellSouth.
Confirm Password	Provided by BellSouth.

Enter the appropriate values in the **Customer Information** page, and then click **next** to continue.



Versalink - Microsoft Internet Explorer

File Edit View Favorites Tools Help

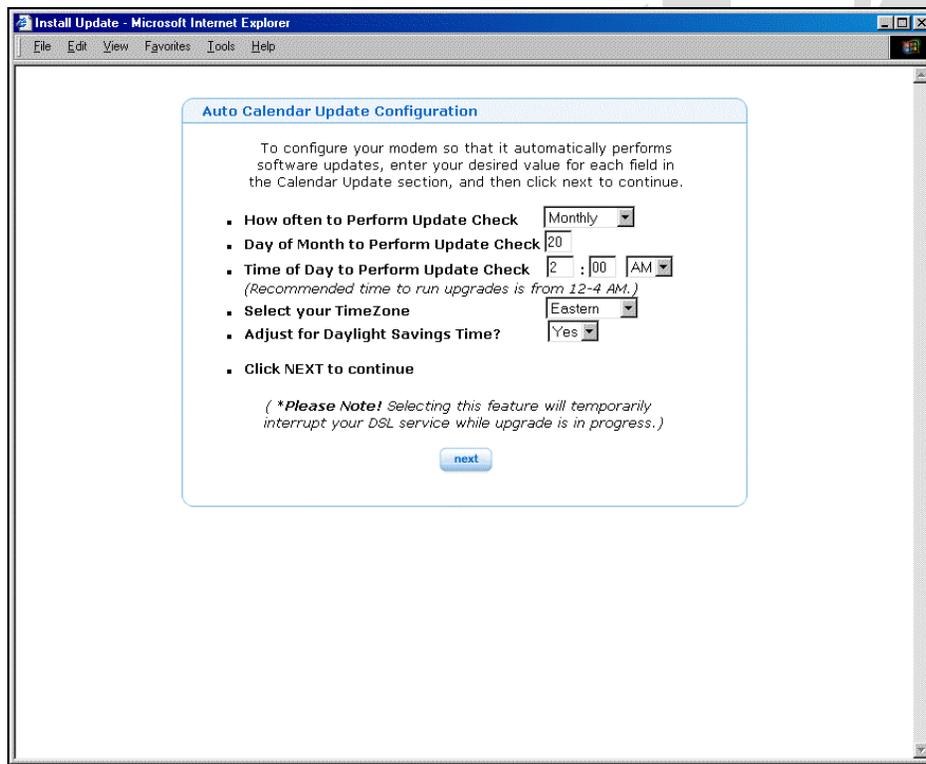
Customer Information

- **User ID:** (*Required)
Example: username@bellsouth.net
- **Password:** (*Required)
(Provided by BellSouth.)
- **Confirm Password:**
- Click **NEXT** to continue

After you have entered the appropriate values in the **Customer Information** page and clicked **next**, the following **Auto Calendar Update Configuration** page will be displayed. The **Auto Calendar Update Configuration** page enables you to configure your modem to automatically perform software updates when updates are available for your modem. If you change any settings in the modem web pages, you must click **save** to allow the settings to take effect.

Enter your desired values in the **Auto Calendar Update Configuration** page, and then click **save**. Click **Back** to return to the **Home Summary** page.

NOTE: You may also perform software updates via the **Update Modem** submenu at the **Auto Calendar Configuration** page. This feature will temporarily interrupt your DSL service while a software upgrade is in progress.



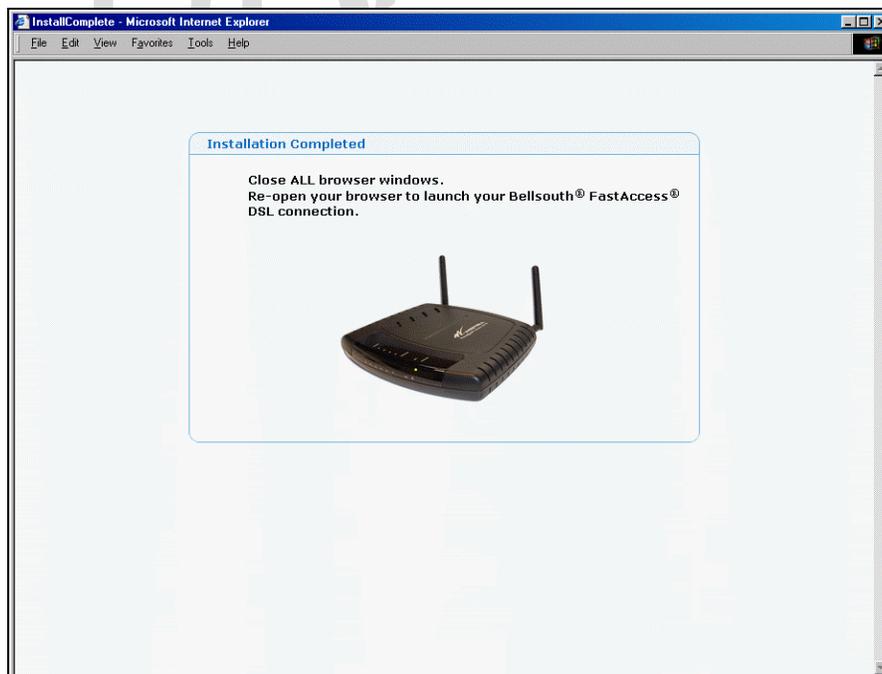
Auto Calendar Update Configuration	
To configure your modem so that it automatically performs software updates, enter your desired value for each field in the Calendar Update section, and then click next to continue.	
How Often to Perform Update Check	Factory Default = Monthly The interval that you want the modem to automatically perform a software update if an update is available for your modem. Possible responses are: Disable - If selected, the modem will not automatically perform a software update because Calendar Update is turn off. Bi-Weekly – If selected the software update will occur every two weeks if an update is available for your modem. Monthly – If selected the software update will occur once a month if an update is available for your modem.
Day of Month to Perform Update Check	Factory Default = Any value from 1 through 28 The Day of Month that you want to the modem to perform the update if

	<p>an update is available for your modem. Possible responses are: 1 through 28 (Note: If you enter a value lower than 1 or higher than 28, an error message will appear when you click save.)</p>
Time of Day to Perform Update Check	<p>Factory Default = 2:00 A.M. You may choose your desired setting (A.M. or P.M.). However, the recommended time to perform your software update is 12-4:00 A.M. due to network traffic.</p>
Select your Time Zone	<p>Factory Default = Eastern The Time Zone of your area. Possible responses are: Greenwich, Atlantic, Eastern, Central, Mountain, Pacific</p>
Adjust for Daylight Savings Time?	<p>Factory Default = Yes If 'No' is selected, the update will not adjust for Daylight Savings Time.</p>

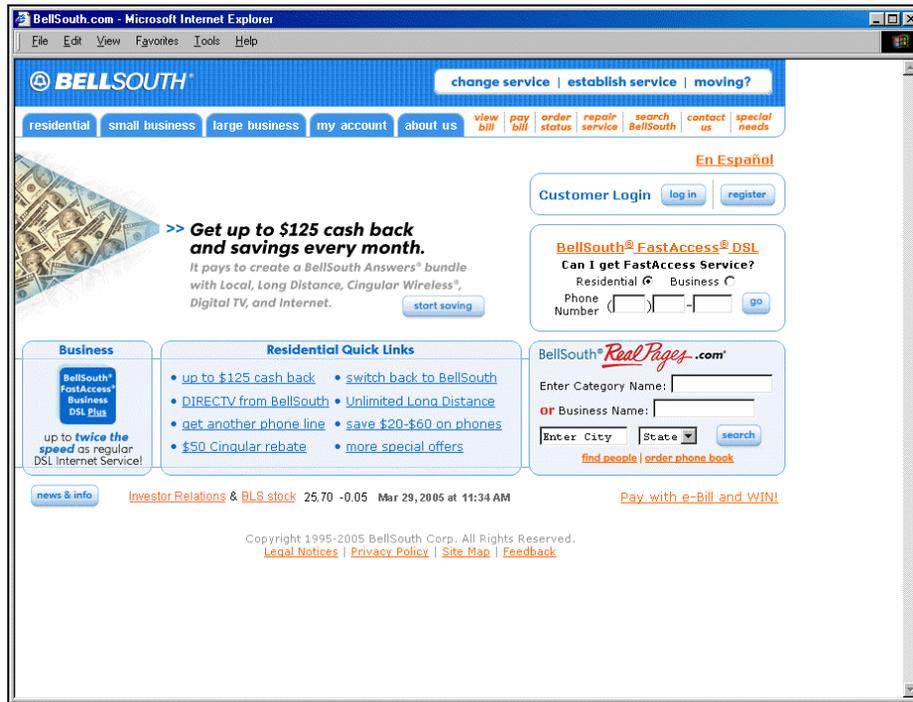
6.3 Establishing Your PPP Session

After you click **save** in the **Auto Calendar Update Configuration** page, the following **Installation Completed** page will be displayed. Confirm that the modem's **Internet LED** is solid green. If the **Internet LED** is solid green, this indicates that you have established a PPP session with BellSouth and you may now browse the Internet. Close all browser windows, and then re-open your browser to launch your BellSouth® FastAccess® DSL connection.

NOTE: If your modem attempts to connect to the Internet and the connection fails, the **Internet LED** on the modem will light red and then return to the off state. Check your hardware components to ensure that all cables are properly connected (see section 5, Table 1. LED States and Descriptions, for details on the modem's LEDs). Next, go to section 16, Appendix A: Troubleshooting Connection Failures, to troubleshoot the problem and establish a connection. If problems persist, contact the BellSouth help desk at 1-888-321-2DSL (2375) for further instructions. Please do not proceed with the modem's configuration until you have confirmed that the **Internet LED** is solid green.



For example, after you have confirmed that the **Internet** LED on your modem is solid green, type **http://www.bellsouth.com** in your browser's address bar and press "Enter" on your keyboard. The BellSouth® home page will be displayed. Please note that the actual web page might differ from the page displayed in this document.

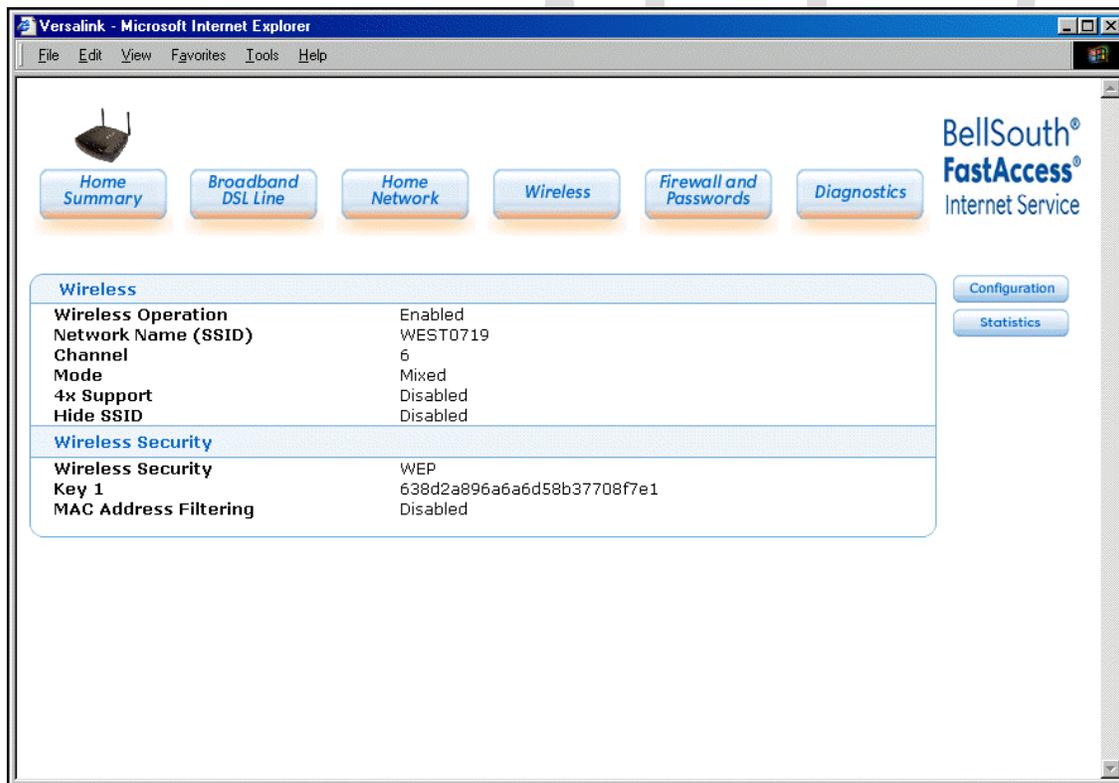


When you are ready to access the modem's web pages, proceed to section 8 (Configuring VersaLink) for instructions.

12. WIRELESS

If you click on **Wireless** at the main menu, the following page will be displayed. This page enables you to set up the wireless network settings of your modem. To configure the wireless settings for VersaLink, click on the **Configuration** button at the right of the page.

IMPORTANT: If you are connecting to the modem via a wireless network adapter, the service set ID (SSID) must be the same for both the Westell modem and your PC's wireless network adapter. The default Network Name (SSID) for the modem is the serial number of the unit located below the bar code on the bottom of the unit and also on the Westell shipping carton. (The SSID displayed in the following page is WEST0719; however, your SSID might differ from the SSID displayed in this page.) To communicate with the modem, the PC's wireless network adapter must be configured with the SSID and pre-defined WEP Key 1 before you begin the modem's Customer Information setup and configuration procedures. Locate and run the utility software provided with your PC's Wireless network adapter and enter the SSID value. Later, for privacy, you should change the **Network Name (SSID)** value in the **Wireless** page to your desired value.



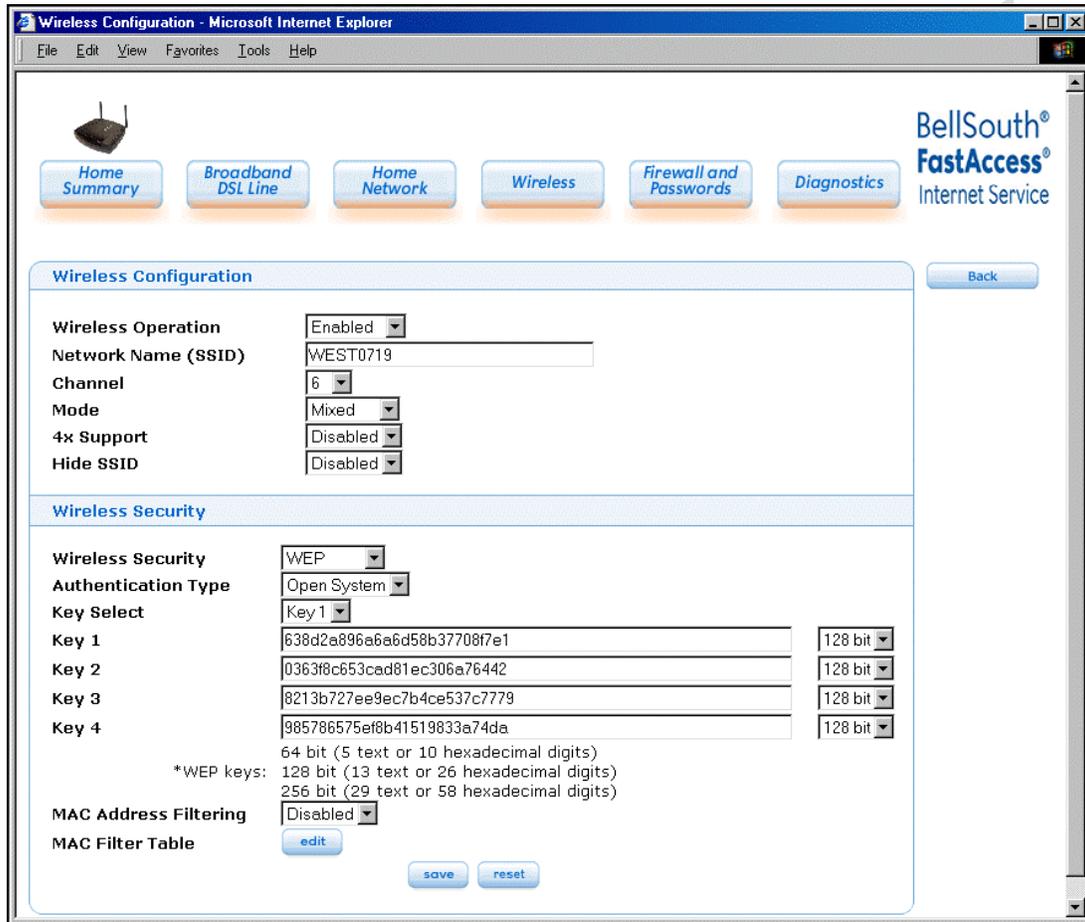
Wireless	
Wireless Operation	Factory Default = Enable Displays the current setting of the modem's wireless operation.
Network Name (SSID)	This string, (32 characters or less) is the name associated with the modem. To connect to the modem, the SSID on a station card must match the SSID on the modem. (Note: If the SSID on a modem is hidden, at the station card you must manually type the SSID of the modem to which you are trying to connect.)
Channel	Factory Default = 6 The modem transmits and receives data on this channel. Station cards do not have to



	be set to the same channel as the AP; the station cards scan all channels and look for the modem with the correct SSID.
Mode	<p>Factory Default = Mixed This setting allows station to communicate with the modem. Possible responses: Mixed: Station using 802.11b or 802.11g cards can communicate with the modem using both 11b and 11g rates. 11b only: Stations using 802.11b or 802.11g cards can communicate with the modem using only 11b rates. 11g only: Only stations using 802.11g cards can communicate with the modem.</p>
4x Support	<p>Factory Default = Disable If enabled, 4X support provides additional algorithms for increased throughput with station cards that support 4x.</p>
Hide SSID	<p>Factory Default = Disable If Enabled, the modem will not broadcast the SSID. Stations must configure the SSID to match the Network Name (SSID) in order to connect to the modem.</p>
Wireless Security	
Wireless Security	<p>Factory Default=WEP Possible Responses: Disabled: No security is used. WPA-PSK: WPA encryption methods are used to encrypt and secure the connection and the data being sent to and from the modem. WEP: WEP encryption used to secure the data being sent to and from the modem; when WEP is enabled, the risk of someone nearby accessing the modem is minimized.</p>
Key n (where n is 1 - 4 for WEP and is blank for WPA-PSK)	<p>Factory Default = Key 1 This information will only be displayed if Security is Enabled. This is the key that is being used for the security mode selected above.</p>
MAC Address Filtering	<p>Factory Default = Disable If Enabled, only the stations in the MAC Filter Table can connect to the modem.</p>

12.1 Configuration

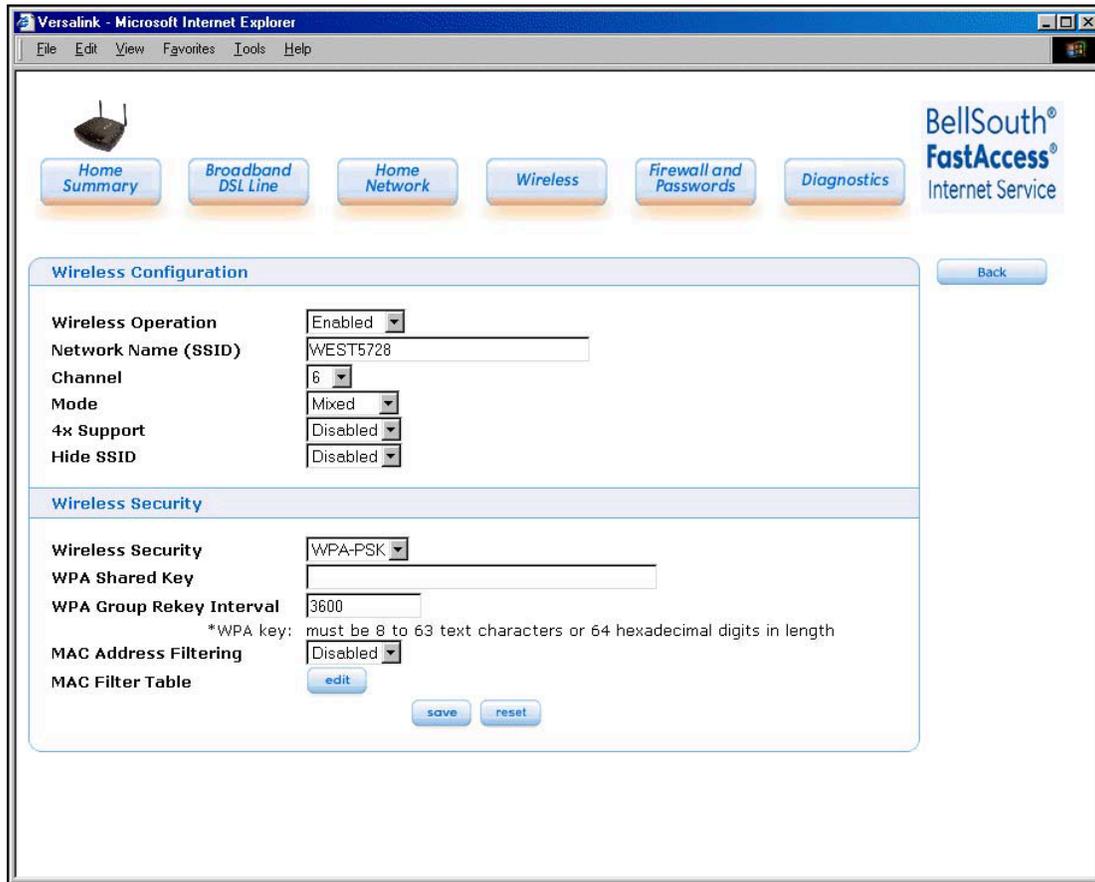
If you click the **Configuration** button at the **Wireless** page, the following page will be displayed. Enter the desired values in the fields provided, and then click **save** to allow the settings to take effect. To edit the **MAC Filter Table**, click the **edit** button. To reset this page to the previously saved settings, click **reset**.



Wireless Configuration	
Wireless Operation	Factory Default = Enabled. Displays the current setting of the modem's wireless operation.
Network Name (SSID)	This string, (32 characters or less) is the name associated with the modem. To connect to the modem, the SSID on a station card must match the SSID on the modem. (Note: If the SSID on a modem is hidden, at the station card you must manually type the SSID of the modem to which you are trying to connect.)
Channel	Factory Default = 6 The modem transmits and receives data on this channel. Station cards no dot have to be set to the same channel as the modem; the station cards scan all channels and look for the modem with the correct SSID.



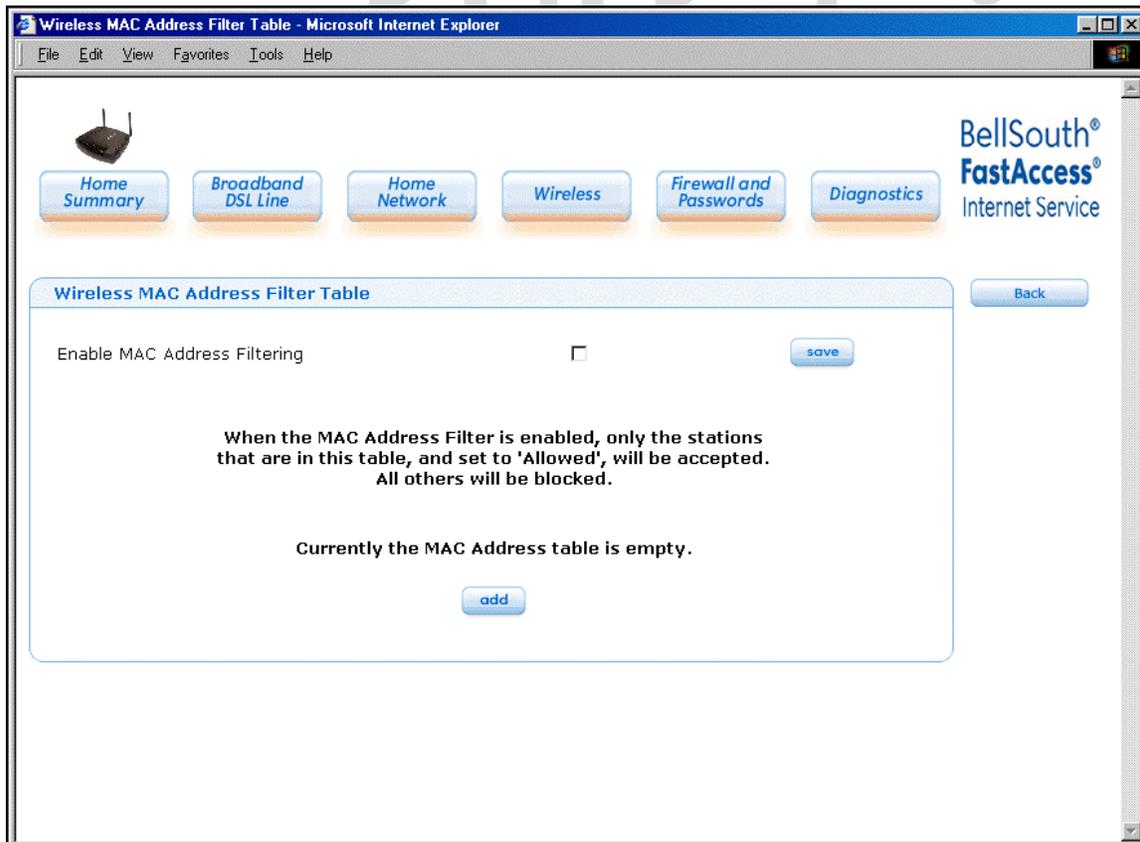
Mode	<p>Factory Default = Mixed This setting allows station to communicate with the modem. Possible responses are: Mixed: Station using 802.11b or 802.11g cards can communicate with the modem using both 11b and 11g rates. 11b only: Stations using 802.11b or 802.11g cards can communicate with the modem using only 11b rates. 11g only: Only stations using 802.11g cards can communicate with the modem.</p>
4x Support	<p>Factory Default = Disable If enabled, 4X support provides additional algorithms for increased throughput with station cards that support 4x.</p>
Hide SSID	<p>Factory Default = Disable If Enabled, the modem will not broadcast the SSID. Stations must configure the SSID to match the Network Name (SSID) in order to connect to the modem.</p>
Wireless Security (if WEP is used)	
Wireless Security	<p>Factory Default=WEP Possible Responses: Disabled: No security is used. WPA-PSK: WPA encryption methods are used to encrypt and secure the connection and the data being sent to and from the modem. WEP: WEP encryption used to secure the data being sent to and from the modem; when WEP is enabled, the risk of someone nearby accessing the modem is minimized.</p>
Authentication Type	<p>Factory Default = Open System Possible responses: Open System: Open System authentication is the default selection. WEP encryption is not used for association. Shared Key: WEP encryption is used for the association process and only stations having the correct key can connect to the modem.</p>
Key Select	<p>Factory Default = 1 Select Key 1 to Key 4 as the WEP key to be used. The key position must be the same in both the modem and the station.</p>
Key n (where n is 1 - 4 for WEP and is blank for WPA-PSK)	<p>The WEP key is treated as either text or hexadecimal (hex) characters. The number of characters is based on the key size selected. The key size 64 bit is either 5 text or 10 hex characters, 128 bit is either 13 text or 26 hex characters, and 256 bit is either 29 text or 58 hex characters. Hexadecimal characters are 0-9 and A-F (or a-f). This key must be the same in both the modem and the station. Some station cards use a "Pass Phrase." This is not the same as "text" and should not be used.</p>
MAC Address Filtering	<p>Factory Default = Disabled If Enabled, only the stations in the MAC Filter table can connect to the modem.</p>
MAC Filter Table	<p>This table enables you to add, edit or delete MAC addresses of stations that are allowed to communicate with the modem.</p>



Wireless Configuration	
Wireless Operation	Factory Default = Enabled. Displays the current setting of the modem's wireless operation.
Network Name (SSID)	This string, (32 characters or less) is the name associated with the modem. To connect to the modem, the SSID on a station card must match the SSID on the modem. (Note: If the SSID on a modem is hidden, at the station card you must manually type the SSID of the modem to which you are trying to connect.)
Channel	Factory Default = 6 The modem transmits and receives data on this channel. Station cards do not have to be set to the same channel as the modem; the station cards scan all channels and look for the modem with the correct SSID.
Mode	Factory Default = Mixed This setting allows station to communicate with the modem. Possible responses are: Mixed: Station using 802.11b or 802.11g cards can communicate with the modem using both 11b and 11g rates. 11b only: Stations using 802.11b or 802.11g cards can communicate with the modem using only 11b rates. 11g only: Only stations using 802.11g cards can communicate with the modem.
4x Support	Factory Default = Disable If enabled, 4X support provides additional algorithms for increased throughput with station cards that support 4x.
Hide SSID	Factory Default = Disable If Enabled, the modem will not broadcast the SSID. Stations must configure the SSID to

	match the Network Name (SSID) in order to connect to the modem.
Wireless Security (if WPA-PSK is used)	
Wireless Security	Factory Default=WEP Possible Responses: Disabled: No security is used. WPA-PSK: WPA encryption methods are used to encrypt and secure the connection and the data being sent to and from the modem. WEP: WEP encryption used to secure the data being sent to and from the modem; when WEP is enabled, the risk of someone nearby accessing the modem is minimized.
WPA Shared Key	This string (8 to 63 characters of 64 hex characters) is the key used for encrypting packets being sent to and from the modem. This key must be the same in both the modem and the station.
WPA Group Rekey Interval	Factory Default = 3600 The number of seconds between rekeying the WPA group key. A value of 0 means that rekeying is disabled. The Shared Key is the initial key and new keys are created and used, based on that key, at each Rekey Interval.

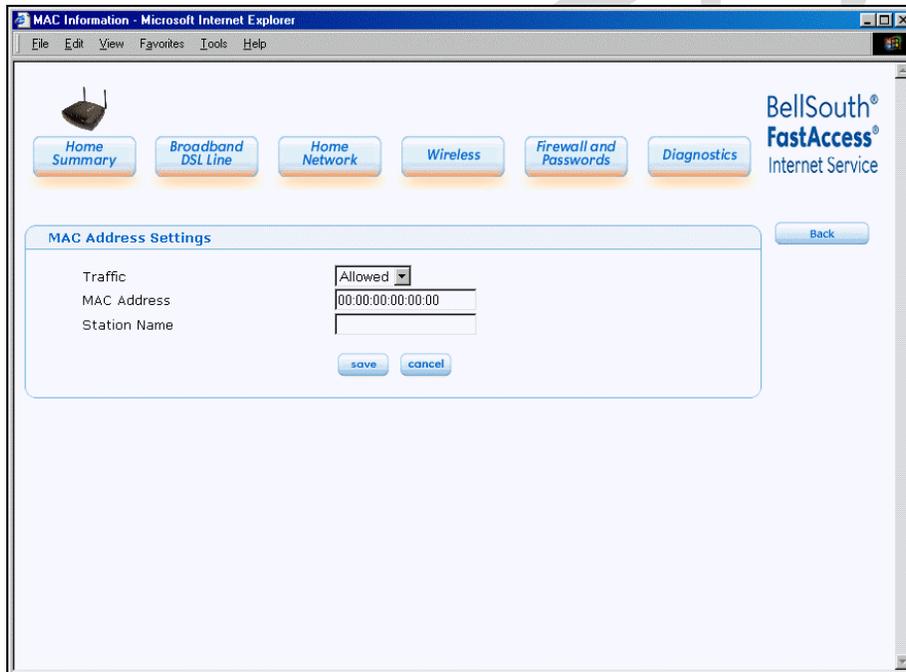
If you clicked **edit**, the following page will be displayed. Click the **add** button to add stations to the MAC Address table, and then click **save** to save the settings. To add more entries, click the **add** button. When you have finished adding entries, click the box adjacent **Enable MAC Address Filtering** (a check mark will appear in the box). Next, click **save** to save the settings.



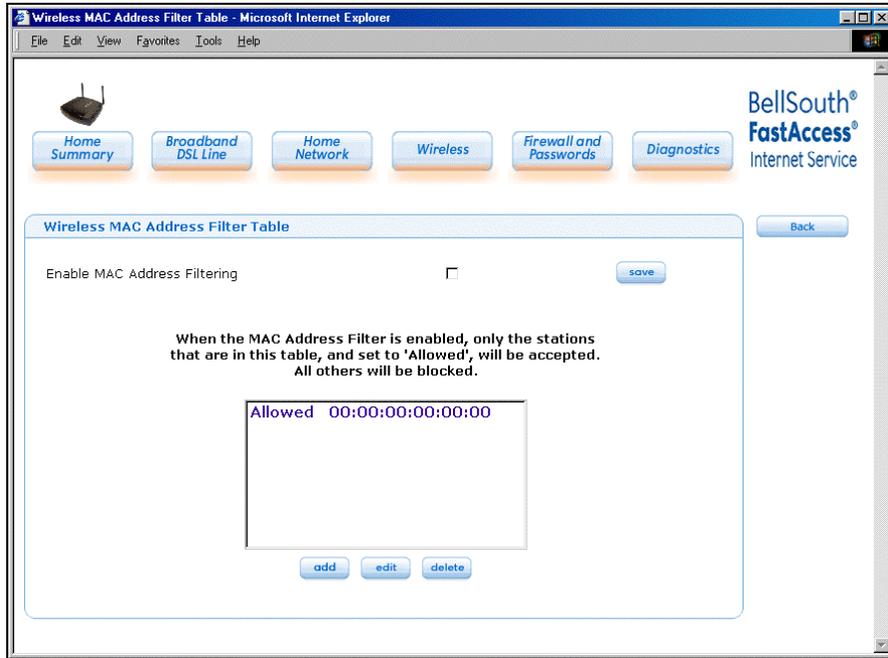
If you clicked **save** in the **Wireless Configuration** page, the following pop-up will be displayed. Click **OK** to continue.



If you clicked the **add** button in the **Wireless MAC Address Filter Table**, the following page will be displayed. After you have entered the desired MAC Address settings, click **save** to save your settings.

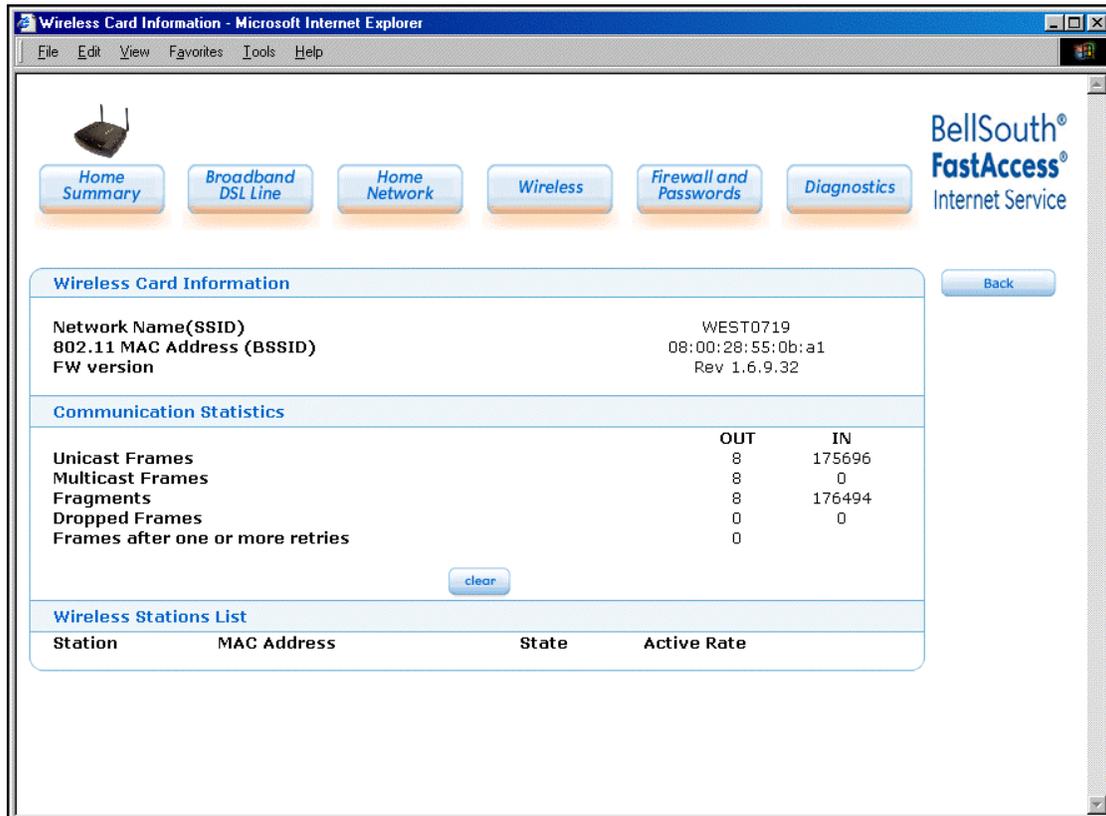


If you clicked **save**, the following page will be displayed. This page enables you to add, edit or delete stations at the MAC Address Filter table. After you have made the desired changes to this page, click the **save** button to allow the changes to take effect.



12.2 Statistics

If you click the **Statistics** button at the **Wireless** page, the following page will be displayed. This page provides information about your modem's wireless connection. To clear the statistics in this page, click on **clear**.



Wireless Card Information	
Network Name (SSID)	This string, (32 characters or less) is the name associated with the Access Point (AP). To connect to the AP, the Service Set ID (SSID) on a Station card must match the SSID on the AP.
802.11 MAC Address (BSSID)	This is the Media Access Controller address of the AP. It is used as the Basic Service Set Identifier (BSSID).
FW Version	This is the Network Interface Card Identifier. It uniquely identifies the hardware platform of the AP. This is used with other information to determine if the inserted card can be used as an AP, and if so, the version of AP firmware to be used. Not all makes of wireless station cards can be used as an AP.
Communication Statistics	
NOTE: Data preceded by OUT pertain to transmissions from the VersaLink to a station; VersaLink is the source. Data preceded by IN pertain to data received by VersaLink; VersaLink is the destination.	
OUT-Unicast Frames	The number of successfully transmitted frames whose destination address was a single station; not necessarily the same station, but to any single station as opposed to a transmission that multiple stations would receive-as in the case of broadcast message.
OUT-Multicast Frames	The number of successfully transmitted frames whose destination address

	was a multicast address (received by more than one station): not necessarily broadcast to all stations, but more than a single station. Broadcast messages are included in the count.
OUT-Fragments	The number of successful transmissions made. This will typically be greater than the sum of the Unicast and Multicast frames because large frames are broken into multiple transmissions. The number of fragments per frame is based on the Fragmentation Threshold setting (not user-configurable).
OUT-Dropped Frames, too many retries	The number of frames that did not transmit due to the short or long retry limit being reached because no acknowledgement or CTS was received.
OUT-Frames after one or more retries	The number of frames that successfully transmitted after more than one retry. Any fragment of a frame that required multiple retries would increment this counter for the whole frame.
IN-Unicast Frames	The number of successfully received frames whose destination address was a single location, not necessarily the same location, but to any single location as opposed to the broadcast address.
IN-Multicast Frames	The number of successfully received frames whose destination address was a multicast address. Broadcast messages are included in this count.
IN-Fragments	The number of fragments successfully received. This may not be equal to the sum of the Unicast and Multicast frames because large frames are broken into multiple transmissions. The number of fragments per frame is based on the Fragmentation Threshold setting (not user-configurable) on the source station.
IN-Dropped Frames	The number of frames that were not received by VersaLink due to the short or long retry limit being reached because no acknowledgement or CTS was received.
Wireless Stations List	
Station	This number indicates the order in which the stations are first accessed by VersaLink.
MAC Address	The Media Access Controller Address assigned to the station.
State	The current state of the negotiation between the station and VersaLink.
Active Rate	The current transmit and receive rate.

18. PRODUCT SPECIFICATIONS

DSL

- DSL Line Code: Discrete Multi-Tone (DMT)
- DSL Rates: 32 kbps to 8 Mbps downstream and 32 kbps to 800 Kbps upstream
- Power spectral density: -40 dBm/Hz
- DSL Impedance: 100 Ohms
- DSL Performance: Performance: per G.992.1, ANSI T1.413.

Protocol Features

- Bridge Encapsulation per RFC2684 (Formerly RFC1483)
- Logical Link Control/ Subnetwork Access Protocol (LLC/SNAP)
- Software Upgradeable
- PPPoE Support
- ATM SAR: Internal to Modem

System Requirements for 10/100 Base-T/Ethernet

- Pentium Class PC or above, Macintosh
- Microsoft Windows (98 SE, 2000, ME, NT 4.0, or XP), Linux, or MAC OS X installed
- Operating system CD
- Internet Explorer 4.x or Netscape Navigator 4.x or higher
- 64 MB RAM (128 MB recommended)
- Ethernet 10/100 Base-T interface
- 10 MB of free hard drive space
- TCP/IP Protocol Stack installed
- 10/100 Base-T Network Interface Card (NIC)

System Requirements for Wireless

- Pentium® or equivalent and above class machines
- Microsoft® Windows® (98 ME, 2000, or XP) or Macintosh® OS X installed
- Operating System CD on hand
- Internet Explorer 4.x or Netscape Navigator 4.x or higher
- 64 MB RAM (128 MB recommended)
- 10 MB of free hard drive space
- IEEE 802.11b/g+ PC adapter

LEDs

- Power
- E1, E2, E3, E4
- Wireless
- DSL
- Internet

Connectors

- DSL/LINE: 6-pin modular jack RJ-11
- Ethernet: 8-pin RJ-45 modular jack
- Power connector: 12V DC
- Wireless IEEE 802.11b/g SMA connector and antenna

Environmental

- Ambient Operating Temperature: +32 to +104°F (0 to +40°C)
- Relative Humidity: 5 to 95%, non-condensing

Power Supply/Consumption

- 120 VAC to 12V DC wall-mount power supply
- Less than 4 watts typical, from 120 VAC

Environmental

- Ambient Operating Temperature: +32 to +104°F (0 to +40°C)
- Relative Humidity: 5 to 95%, non-condensing

EMC/Safety/Regulatory Certifications

- EMC: FCC Part 15, Class B
- UL Standard 60950, 3rd Edition
- CAN/CSA Standard C22.2 No. 60950
- UL
- CSA
- ACTA 968-A
- Industry Canada CS03

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20. PUBLICATION INFORMATION

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