

SpeedStream®
2602
2-port DSL/Cable Router

User Guide

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Congratulations on your purchase of the SpeedStream 2602 DSL/Cable Router. Siemens is proud to provide you with a powerful yet simple communication device for connecting your local area network (LAN) to the Internet.

About the SpeedStream 2602

The SpeedStream 2602 provides Internet access to multiple users by sharing a single-user account. The most outstanding feature of the SpeedStream 2602 is the dual-port WAN interface which allows you to connect to an xDSL or cable modem. The SpeedStream 2602 provides extensive firewall protection and Virtual Private Network (VPN) services.

The new SpeedStream 2602 technology provides many cost-effective functions and management benefits. It is simple to configure, and can be up and running in minutes.

Features and Benefits

- Internet connection to xDSL or cable modem via 10 Mbps WAN port.
- Local network connection via 10/100 Mbps Ethernet ports.
- DHCP for dynamic IP configuration, and DNS for domain name mapping.
- Firewall with client privileges, hacker prevention, and NAT.
- Network Address Translation, or NAT, for multi-user access with a single-user account, and virtual server functionality providing protected access to Internet services such as Web, FTP, mail and Telnet.
- Virtual Private Network using PPTP, L2TP or IPsec.
- User-definable application-sensing tunnel that supports applications requiring multiple connections.
- Easy setup through a Web browser on any operating system that supports TCP/IP.
- Compatibility with all popular Internet applications.

Applications

The SpeedStream 2602 by Siemens provides many advanced features and functionality:

- **LAN Access** – The SpeedStream 2602 provides connectivity to 10/100 Mbps devices, making it easy to create a network in small offices or homes.
- **Internet Access** – This device supports Internet access through an xDS or cable connection. Since many DSL providers use PPPoE to establish communications with end users, the SpeedStream 2602 includes a built-in PPPoE client, eliminating the need to install this service on your computer.
- **Shared IP Address** – The SpeedStream 2602 provides Internet access for up to 253 users with 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** – Virtual Server allows Internet users to access Web, FTP, and other servers on your LAN from remote locations.
- **User-Definable Application-Sensing Tunnel** – You can define special applications that require multiple connections such as Internet gaming, video conferencing, and Internet telephony. The SpeedStream 2602 will then sense the application type and open a multi-port tunnel for it.
- **DMZ Host Support** – The SpeedStream 2602 allows a networked computer to be fully exposed to the Internet. This function is used when the special application-sensing tunnel feature is insufficient to allow an application to function correctly.
- **Security** – The SpeedStream 2602 supports security features that can deny Internet access to specified users, or filter all requests for specific services the administrator does not want to serve. The SpeedStream 2602's firewall can also block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding.
- **Virtual Private Network** – The SpeedStream 2602 supports three of the most commonly used VPN protocols: PPTP, L2TP and IPSec. These protocols allow remote users to establish a secure connection to their corporate network. If your service provider supports VPNs, any of these protocols can be used to create an authenticated and encrypted tunnel for passing secure data over the Internet. The VPN protocols supported by the SpeedStream 2602 are briefly described below:
 - **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.
 - **Layer Two Tunneling Protocol** includes most of the features provided by PPTP, but has less overhead and is more suited for managed networks.
 - **IP Security** provides IP network-layer encryption and can support large encryption networks, such as the Internet, by using digital certificates for device authentication.

CHAPTER 2

INSTALLING THE SPEEDSTREAM 2602

Before installing the SpeedStream 2602 DSL/Cable Router, verify that you have all the items listed under “Package Contents,” and that you have all the necessary cabling. If any of the items are missing or damaged, contact Technical Support (see Appendix A, “Troubleshooting”). After installing the SpeedStream 2602, refer to the subsequent chapters for additional instructions:

- Chapter 3, “Configuring the SpeedStream 2602” to configure the router settings.
- Chapter 4, “Installing and Configuring TCP/IP” to install and configure the TCP/IP protocol on network computers.

Package Contents

- SpeedStream 2602 DSL/Cable Router
- Power adapter (5V, 2.4A)
- Installation CD (contains User Guide, other files and documents)
- Quick Start Guide
- Safety and Certifications Declarations
- Extended Warranty and Registration Card

Description of Hardware

You can connect the SpeedStream 2602 DSL/Cable Router to the Internet or to a remote site using its RJ-45 WAN port. You can connect it directly to your computer or to a local area network using either of the two Fast Ethernet LAN ports.

Access speed to the Internet depends on your service type. Full-rate ADSL provides up to 8 Mbps downstream and 640 Mbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 Kbps upstream. Cable modems can provide up to 36 Mbps downstream and 2 Mbps upstream.

You should note that the actual rate provided by specific service providers may vary dramatically from these upper limits. Although access speed to the Internet is determined by the service and type of modem connected to your SpeedStream 2602, data passing between devices connected to your local area network can run up to 100 Mbps over the Fast Ethernet ports.

The SpeedStream 2602 provides an LED display on the front panel for system power and port indicators, simplifying installation and network troubleshooting. It also provides two RJ-45 LAN ports on the front panel and one RJ-45 WAN port on the rear panel:

- (2) RJ-45 LAN ports for connection to a 10BASE-T/100BASE-TX Ethernet Local Area Network (LAN). These ports can auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X, allowing these ports to be connected to any network device with straight-through cable. The ports can be connected directly to a computer or to a server equipped with an Ethernet network interface card, or to a networking device such as an Ethernet hub or switch.
- (1) RJ-45 WAN port for connection to an xDSL or cable modem. This port is fixed at 10 Mbps full-

duplex and only supports MDI-X pin signals. Consequently, you will have to use either a straight-through or crossover cable, depending on the port type used with the modem.

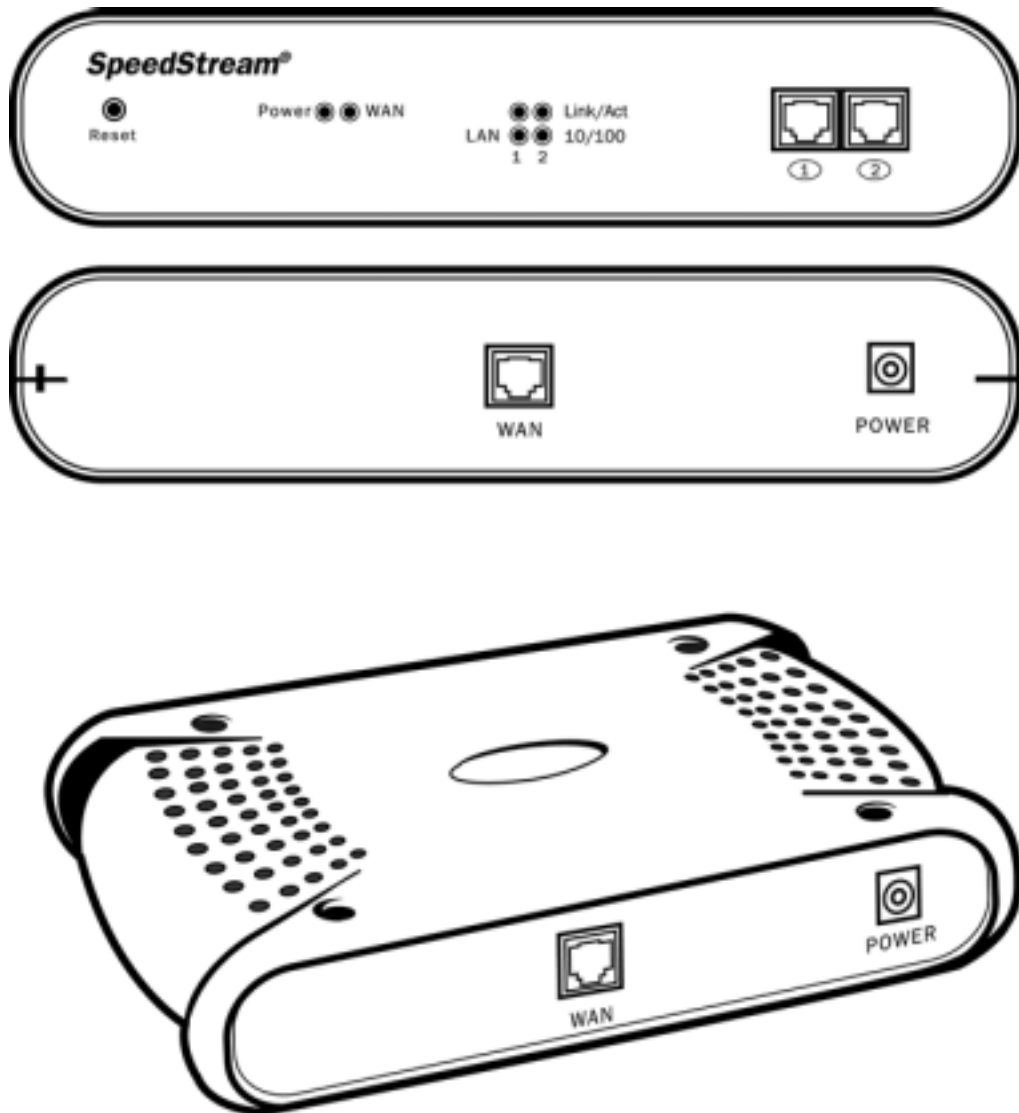


Figure 2-1. SpeedStream 2602 DSL/Cable Router

Item	Description
Reset Button	Resets the power and restores the default factory settings.
LEDs	Power, WAN and LAN port status indicators.
LAN Ports	Fast Ethernet ports (RJ-45). Connect devices on your local area network to these ports (such as a computer, hub or switch).
WAN Port	WAN port (RJ-45) to connect your xDSL/cable modem or Ethernet router.
Power Inlet	Connector for the included power adapter. Caution: The included power adapter is DC 5V/2.4A. Using the wrong type of power adapter may cause damage.

Table 2-1. SpeedStream 2602 Unit Components

System Requirements

You must have access to a network that meets the following minimum requirements:

- Internet access from your local telephone company or Internet Service Provider (ISP) using an xDSL or cable modem.
- A computer using a fixed IP address or dynamic IP address assignment via DHCP, as well as a Gateway server address and DNS server address from your service provider.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter.
- TCP/IP network protocol installed on each computer that needs to access the Internet.
- A Java-enabled Web browser (such as Microsoft Internet Explorer 4.0 or above, or Netscape Communicator 4.0 or above) installed on your host computer.

Hardware Installation

Before Starting

Please collect the following information from your ISP before setting up the SpeedStream 2602:

- An ISP account which includes ISP user name and password.
- IP address for your ISP's Gateway Server and Domain Name Server.
- ISP authentication type or script (if not PAP/CHAP).
- IP Address and Subnet mask (for fixed IP users only).

You can position the SpeedStream 2602 at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however, comply with the following guidelines:

- Keep the SpeedStream 2602 away from any heating devices.
- Do not place the SpeedStream 2602 in a dusty or wet environment.

Installation Procedure

1. **Power off all equipment.** Before installing the SpeedStream 2602, *turn off the power* on your computer and DSL/cable modem. You can leave the modem connected to its phone line or cable outlet.
2. **Connect the LAN.** Connect the SpeedStream 2602 LAN port to your computer, or to a hub or switch. Run Ethernet cable from one of the LAN ports on the SpeedStream 2602 to your computer's network

adapter or to another network device.

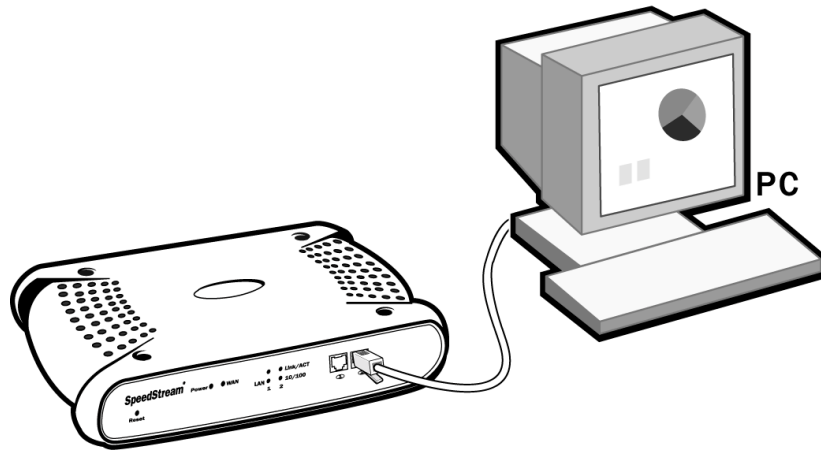


Figure 2-2. LAN Connections

Caution:

Do not plug a phone jack connector into any RJ-45 port. This may damage the SpeedStream 2602. Instead, use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

The two LAN ports on the SpeedStream 2602 can auto-negotiate the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, and can negotiate the transmission mode to half-duplex or full-duplex. The LAN ports also support auto-configuration for pin signals (auto-MDI/MDI-X), allowing you to use straight-through cable to connect the SpeedStream 2602 to any network device. (See Appendix B, “Cables” for details on wiring.)

Use twisted-pair cable to connect either of the two LAN ports on the SpeedStream 2602 to an Ethernet adapter on your computer. You can also cascade the LAN ports on the SpeedStream 2602 to an Ethernet hub or switch, and then connect your computer or other network equipment to the hub or switch. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure proper seating.

Note:

Make sure each twisted-pair cable does not exceed 100 meters (328 feet).

3. **Connect the WAN.** Use an Ethernet cable to connect the SpeedStream 2602 to a cable or xDSL modem or Ethernet router.

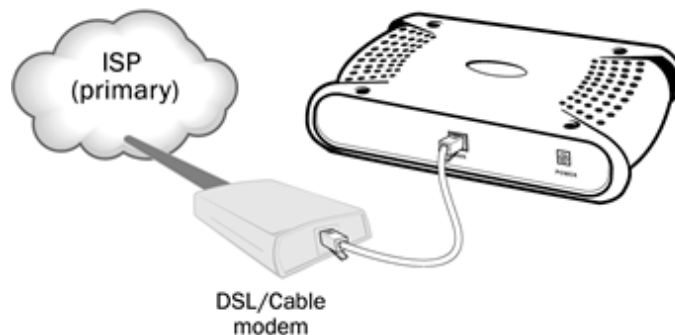


Figure 2-3. WAN Connection

Use unshielded or shielded twisted-pair Ethernet cable with RJ-45 plugs to connect the broadband modem directly to the WAN port on the SpeedStream 2602. Use either straight-through or crossover cable depending on the port type provided by the modem (see Appendix B, “Cables”).

4. **Connect the power adapter and power up the router, modem and network computers.** Plug the power adapter into the power socket on the SpeedStream 2602, and plug the other end into a power outlet. Check the Power indicator on the front panel to be sure it is on. If the Power indicator does not light up, refer to Appendix A, “Troubleshooting.”
5. **Verify the port status.** Confirm that all connections are successful by checking the power and port status indicators as shown in the following table.

LED	Ports	Color	Condition	Status
Power	n/a	Green	On	SpeedStream 2602 is receiving power.
WAN	n/a	Green	On	The WAN port has established a valid network connection.
			Flashing	The WAN port is transmitting or receiving traffic.
LAN				
- Link/Act	1-2	Green	On	The indicated LAN port has established a valid network connection.
			Flashing	The indicated LAN port is transmitting or receiving traffic.
- 10/100	1-2	Amber	On	The indicated LAN port is operating at 100 Mbps.
			Flashing	The indicated LAN port is operating at 10 Mbps.

Table 2-2. LED Status Indicators

6. **Configure the SpeedStream 2602.** Configure the SpeedStream 2602 as detailed in Chapter 3, “Configuring the SpeedStream 2602.”
7. **Configure TCP/IP.** Configure the TCP/IP protocol on your network computers as detailed in Chapter 4, “Configuring Client TCP/IP.” If TCP/IP is not on your system, this chapter also includes installation instructions.
8. **Reboot the computer when prompted.**

CHAPTER 3

CONFIGURING THE SPEEDSTREAM 2602

Before you can configure the SpeedStream 2602 DSL/Cable Router, the TCP/IP protocol must be installed on all computers on your network. If you need to install TCP/IP, refer to Chapter 4, “Installing and Configuring TCP/IP.”

After TCP/IP is installed and configured on your network computers, you can configure the SpeedStream 2602 from any Java-supported Web browser, including Internet Explorer or Netscape Navigator, versions 4.0 or above. The management interface allows you to configure settings for the router, view status, update firmware, and access the many features of this unit.

Web Browser Management Interface

To access the SpeedStream 2602 management interface:

1. Open your Web browser and enter the SpeedStream IP address **http://192.168.254.254** in the browser **Address** box. The SpeedStream 2602 will automatically switch to port 88 for management access.
2. On the Login Screen, enter **admin** in the **Password** box; then click **Login** to display the Status screen of the management interface.



Figure 3-1. Login Screen

Navigating the Management Interface

Using the management interface, you can define system parameters, manage and control the SpeedStream 2602 and its ports, or monitor network conditions. The management interface includes five menus:

- **Status** – View the WAN/LAN connection status, firmware and hardware version numbers, any illegal attempts to access your network, and information on all DHCP clients connected to your network.
- **Simple Setup** – Restrict management access based on a specific password, set the local time zone for log entries and client filtering, and configure the WAN settings.
- **Advanced Setup** – Configure LAN settings, firewall protection, virtual server, special applications, client filtering, and various other settings.
- **Tools** – Reset the SpeedStream 2602, restore the factory settings, or upgrade on-board firmware.

- **Help** – View descriptions of menu items, troubleshooting tips, glossary of terms, and contact information for SpeedStream support, driver updates, Web site, and FTP site.

Menu Selections

The following table briefly describes the selections available from the management interface:

Menu Item	Description
Status	Displays general connection, firmware and hardware information.
Internet	Displays WAN connection type and status.
Gateway	Displays system IP settings, as well as DHCP, NAT, Firewall and Printer status.
Information	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.
Security Log	Displays any illegal attempts to access your network.
DHCP Client Log	Displays information on all DHCP clients attached to your network.
Simple Setup	Configures TCP/IP settings and client services.
Change Password	Sets/changes the password for administrator access.
Set Time Zone	Sets the local time zone.
WAN	Specifies the Internet connection type: Dynamic IP Address, Static IP Address, or PPPoE.
Advanced Setup	Configures a variety of packet filtering and specialized functions.
LAN	Sets the TCP/IP configuration for the SpeedStream 2602 LAN interface and all DHCP clients.
Firewall	Enables hacker attack monitoring and logging to block IP Spoofing, Land Attack, Pin of Death, IP with Zero Length, Smurf Attack, UDP Port Loopback, Snork Attack, TCP Null Scan, TCP SYN Flooding, and others.
Virtual Server	Allows remote users accessing services such as Web or FTP at your local site via public IP addresses to be automatically redirected to local servers configured with private IP addresses.
Special Applications	Provides for applications requiring multiple connections, such as Internet gaming or conferencing, by opening ports for inbound traffic.
Client Filtering	Allows you to filter Internet access for local clients based on IP addresses, application types (i.e., HTTP port), and time of day.
Misc	Specifies administrator time-out, PING discard from WAN side, remote management for administrator, and virtual DMZ host.
Tools	Contains options to reset the system, restore configuration settings, or update system firmware.
Change Password	Sets/changes the password for administrator access.
Set Time Zone	Sets the local time zone.
Reset Router	Reboots the system and retains all of your configuration settings.
Restore Factory Settings	Restores all your configuration settings and restores the factory defaults.
Update Firmware	Upgrades the system with firmware obtained from the SpeedStream Web site.
Help	Contains product support and contact information, troubleshooting suggestions, and glossary of terms.

Table 3-1. Management Interface Main Menu

Configuration Changes

Configurable parameters are available by means of dialog boxes or drop-down lists. After you change a configuration, be sure to click the **Enter** button at the bottom of the page to confirm the new setting.

To ensure proper screen refresh after a command entry, configure Internet Explorer 5.0 as follows (other

browsers or later browser versions may vary somewhat):

1. From the browser menu bar, click **Tools**.
2. On the **Tools** menu, click **Internet Options**.
3. On the **Internet Options** menu, click the **General** tab.
4. In the **General** box, select **Temporary Internet Files**.
5. In the **Settings**, box, select **Every visit to the page** to check for newer versions of stored pages each time you connect to the server.

View Network and Device Status

From the Status screen, you can view WAN and LAN connection status, firmware and hardware version numbers, any illegal attempts to access your network, and information on all DHCP clients connected to your network.

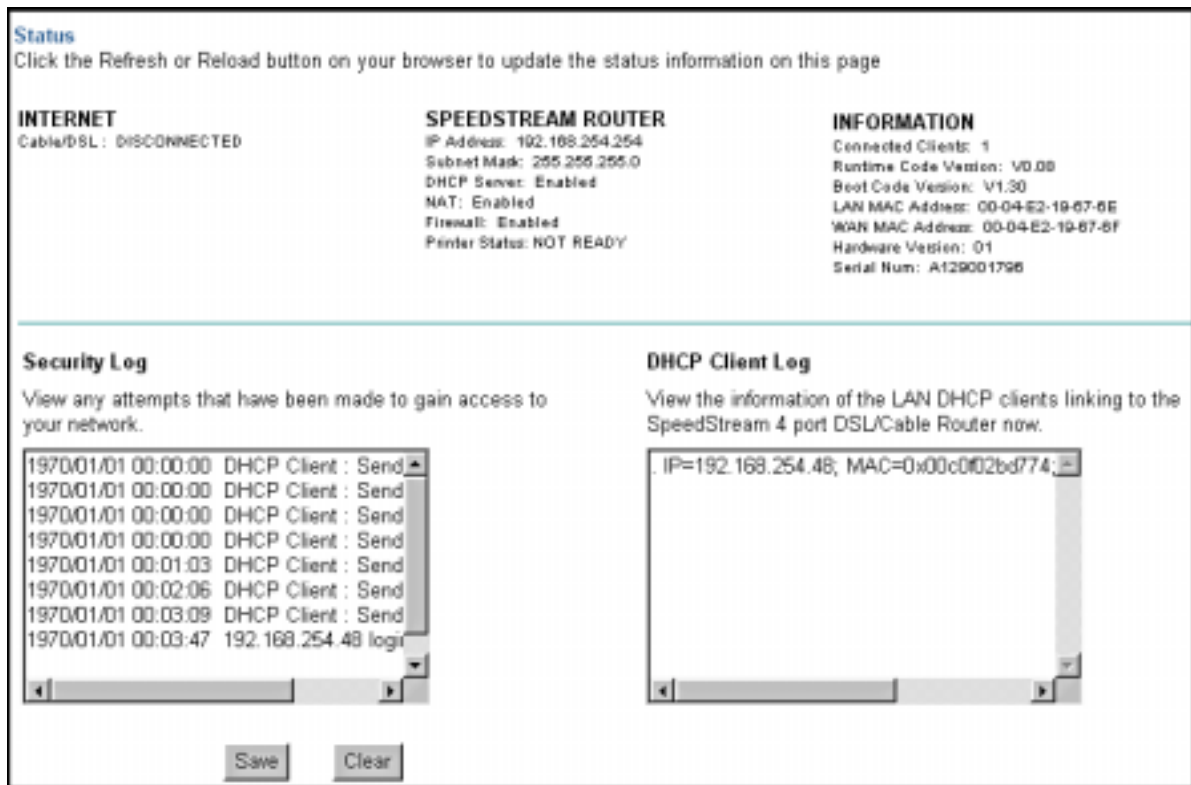


Figure 3-2. Main/Status

Field	Description
Internet	Displays WAN connection type and status.
Gateway	Displays system IP settings, as well as DHCP, NAT, Firewall and Printer status.
Information	Displays the number of attached clients, firmware versions, physical MAC address for each media interface, and hardware version and serial number.
Security Log	Displays any illegal attempts to access your network.
DHCP Client Log	Displays information on all DHCP clients on your network.

Table 3-2. Status Menu Options

Simple Setup Procedures

The management interface will guide you through sequence of steps required to configure the SpeedStream 2602 for use with an ISDN TA or 56k, cable or DSL modem. As you click **Enter** on each screen to accept the settings you enter, the next screen in sequence will display. You can, of course, jump from one topic to another by simply clicking that topic in the main menu.

- **Change Password** – Set or change the administrator password.
- **Set Time Zone** – Select the local time zone.
- **WAN** – Specify the WAN connection type required by your Internet Service Provider (ISP).

Set or Change a Password

From the Simple Setup | Change Password screen, you can set a new password or change an existing password to restrict management access. Passwords can consist of 3 to 12 alphanumeric characters and are not case-sensitive.

Although any user can access the Status and Help menus, the Setup and Tools configuration options are permission-based and require a password. The default password is **admin**. To ensure system security, it is recommended that you assign your Administrator a unique password as soon as possible.

Note:

If your password is lost or you cannot gain access to the management interface, restore the factory defaults. Press and hold the **Reset** button for at least five seconds.

1. On the main menu, click **Simple Setup**.
2. On the **Simple Setup** menu, click **Change Password**.
3. On the Change Password screen, enter the current password in the first text box; then enter the new password in the next two text boxes.
4. Click **Enter** to save the settings and continue.

Set the Time Zone

The time zone setting is used for log entries and client filtering.

1. On the main menu, click **Simple Setup**.
2. On the **Simple Setup** menu, click **Set Time Zone**.
3. On the Set Time Zone screen, select the correct time zone in the drop-down list box.
4. Click **Enter** to save the setting and continue.

Configure the WAN Connection

You must specify the WAN connection type required by your Internet Service Provider (ISP):

- **Dynamic IP Address** - The IP address is obtained automatically.
- **Static IP Address** - Your ISP has assigned you a static (or fixed) IP address.
- **PPP over Ethernet** - Some ISPs require PPPoE to connect to their services.

To begin configuring your WAN connection:

1. From the main menu, click **Simple Setup**; then click **WAN**.
2. On the Simple Setup | WAN screen, click to select the correct connection type: Dynamic IP Address (DHCP), Static IP Address (Fixed), or PPP over Ethernet (PPPoE).
3. Click **More Configuration** to provide the detailed configuration parameters for that type, as detailed in the next sections.

Dynamic IP Address (DHCP)

If you selected **Dynamic IP Address** as your WAN connection type, the Simple Setup | WAN | DHCP screen displays when you click **More Configuration**.

1. In the **Host Name** box, enter the host name. Host names are primarily used by cable modem service providers and may not be required by your ISP.
2. To automatically enter the MAC (hardware) address of the Ethernet card provided and installed by your ISP, click **Clone MAC Address**. You can also manually enter the MAC address. Use this address when registering for Internet service, and do not change it unless required by your ISP.
3. Click **Enter** to accept the settings and continue.

Static IP Address (Fixed IP)

If your selected **Static IP Address** as your WAN connection type, the Simple Setup | WAN | Fixed IP screen displays when you click **More Configuration**.

1. In the **IP address assigned by your ISP** boxes, enter your IP address.
2. In the **Subnet Mask** boxes, enter the subnet mask for the SpeedStream 2602: **255.255.255.0**
3. In the **ISP Gateway Address** boxes, enter the gateway address of your ISP.

Note:

You may need a fixed address if you want to provide Internet services such as a Web server or FTP server. Most ISPs can provide you with a fixed address, most often for an additional monthly fee.

PPP over Ethernet (PPPoE)

If you selected **PPP over Ethernet** as your WAN connection type, the Simple Setup | WAN | PPPoE screen displays when you click **More Configuration**.

1. In the **User Name** box, enter the user name assigned by your ISP.
2. In the **Password** box, enter the password assigned by your ISP.
3. In the **Please retype your password** box, enter the same password.
4. In the **Service Name** box, enter the service name *if it is required by your ISP*.
5. Click **Enter** to accept the settings and continue.

Advanced Setup Procedures

After completing the **Simple Setup** menu options, you will next move to the **Advanced Setup** options. You may also go directly to any of these screens by clicking that option on the main menu.

The SpeedStream 2602 DSL/Cable Router supports advanced functions including hacker attack protection, virtual servers, special applications configuration, virtual server, client filtering, and remote management. We highly recommend you keep the default settings.

Configure LAN Gateway and DHCP Settings

From this screen, you can dynamically assign the IP addresses for client computers, enable the DHCP server, set the lease time, and specify the address range.

Note:

Remember to configure all of your client computers for dynamic address allocation.

Valid IP addresses consist of four numbers separated by periods. The first three fields are the network portion, and can be from 0–255, while the last field is the host portion and can be from 1 to 254. Remember not to include the gateway address of the SpeedStream 2602 in the client address pool.

Advanced Setup | LAN

IP address : 192 . 168 . 254 . 254

IP Subnet Mask : 255.255.255.0

DHCP Server : Enabled Disabled

Lease Time (sec) : Forever ▾

IP address pool

Start IP : 192 . 168 . 254 . 1

End IP : 192 . 168 . 254 . 253

Domain Name : @home

Click ENTER to save settings and continue. **ENTER**

Figure 3-1. Advanced Setup | LAN

Enable Firewall Protection

From the Advanced Setup | Firewall screen, you can enable the SpeedStream 2602 firewall to block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. The firewall does not significantly affect system performance, so we advise leaving it enabled to protect your network users.

Enable Virtual Server

From the Advanced Setup screen, you can enable Virtual Server. If you configure the SpeedStream 2602 as a virtual server, remote users accessing services such as Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. Depending on the requested service (TCP/UDP port number), the SpeedStream 2602 redirects the external service request to the appropriate server located at another internal IP address.

Port	Private IP	Private Port	Type	Public
1.	192.168.254.	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
2.	192.168.254.	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
19.	192.168.254.	<input type="text"/>	<input type="radio"/> TCP <input checked="" type="radio"/> UDP	<input type="text"/>
20.	192.168.254.	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>

Well known services

Click ENTER to save settings and continue.

Figure 3-2. Advanced Setup | Virtual Server

1. Specify the **Private IP**, **Private Port**, **Type**, and **Public Port** information.
2. Click **Enter** to save the settings and continue.

Automatically Entering Port Information

You can have the system automatically enter the most common application ports:

1. Scroll to the bottom of the Advanced Setup | Virtual Server screen.
2. In the **Well known services** box, select the desired service.
3. Click in the box to the right of **Copy to** and select the line number to which the system will enter that information.

- To enter that information in the Public Port boxes on the designated line, click **Copy to**.

Network Address Translation (NAT)

Network Address Translation, or NAT, is automatically enabled when you enable multi-user Internet access or enable the Virtual Server function. NAT provides multiple users with access to the Internet via a single user account, or maps the local address for an IP server (such as Web or FTP) to a public 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.

Configure Special Applications

Use the **Advanced Setup** menu to configure applications that require multiple connections, such as Internet games, video-conferencing, and Internet telephony. These applications may not work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional public ports to be opened for each application.

Figure 3-3. Advanced Setup | Special Applications

- In the **Trigger Port** box, specify the port normally associated with an application.
- Select **TCP** or **UDP** as the protocol type.
- In the **Public Port** box, enter the public ports associated with the trigger port to open them for inbound traffic.

Automatically Entering Port Information

You can have the system automatically enter the most common application ports:

- Scroll to the bottom of the Advanced Setup | Special Applications screen.
- In the **Popular applications** box, select the desired application.
- Click in the box to the right of **Copy to** and select the line number to which the system will enter that

information.

4. Click **Copy to** to enter that information in the **Public Port** boxes on the designated line.

If an application still cannot function correctly after enabling multiple ports via the Special Application screen, you may need to use the Virtual DMZ Host option to open the client computer for full Internet access. (Refer to the “Miscellaneous Services” section for instructions.)

Configure Client Filtering

You can filter Internet access for local clients based on IP address, application type (i.e., HTTP port), and time of day.

For example, the following screen indicates that clients in the address range 192.168.254.50 to 192.168.254.99 are permanently restricted from using FTP (port 21), while clients in the address range 192.168.254.110 to 192.168.254.119 are blocked from browsing the Internet from 8:00 a.m. to 5:00 p.m., Monday through Friday.

	IP	Port	Type	Block Time	Day	Time	Enabled
1.	192.168.254. [] ~ []	[] ~ []	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	[] ~ []	[] ~ []	<input type="checkbox"/>
2.	192.168.254. [] ~ []	[] ~ []	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	[] ~ []	[] ~ []	<input type="checkbox"/>
3.	192.168.254. [] ~ []	[] ~ []	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	[] ~ []	[] ~ []	<input type="checkbox"/>
4.	192.168.254. [] ~ []	[] ~ []	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	[] ~ []	[] ~ []	<input type="checkbox"/>
5.	192.168.254. [] ~ []	[] ~ []	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	[] ~ []	[] ~ []	<input type="checkbox"/>
6.	192.168.254. [] ~ []	[] ~ []	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	[] ~ []	[] ~ []	<input type="checkbox"/>

Click ENTER to save settings and continue.

Figure 3-4. Advanced Setup | Client Filtering

Configure Miscellaneous Features

From the Advanced Setup | Misc screen, you can configure these additional features:

- **Administrator Time-Out** – Specify the amount of time of inactivity before the SpeedStream 2602 automatically closes the Administrator session. To disable this function, enter **0**.
- **Discard PING from WAN side** – When this feature is enabled, hosts on the WAN cannot ping the SpeedStream 2602.
- **Remote Management** – By default, management access is only available to users on your local network. However, you can also manage the SpeedStream 2602 from a remote host by adding the IP address of an administrator.

Caution:

If you specify an IP address of 0.0.0.0, any host can manage the SpeedStream 2602.

- **IP Address of Virtual DMZ Host** – You may encounter a client PC that cannot properly run Internet applications from behind the NAT firewall or after configuring the Special Applications function. This feature allows you to open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ host.

Caution:

Adding a client to the DMZ (demilitarized zone) may expose your local network to a variety of security risks. *Use this option as a last resort only!*

System Tools

From the Tools screen, you can manage additional features and functions of the SpeedStream 2602.

- **Change Password** – Set a new password or change the existing one.
- **Set Time Zone** – Choose the local time zone.
- **Reset Router** – Reboot the router and retain all your configuration settings.
- **Restore Factory Defaults** – Reboot the router, remove your configuration settings, and return them to the factory default settings.
- **Update Firmware** – Upgrade the router firmware by downloading from the SpeedStream Web site.
- **Backup Settings** – Save the settings to your computer hard drive.
- **Restore Settings** – Reinstate your most recently saved settings.

Set or Change a Password

From the Simple Setup | Change Password screen, you can set a new password or change an existing password to restrict management access. Passwords can consist of 3 to 12 alphanumeric characters and are not case-sensitive.

Although any user can access the **Status** and **Help** menus, the **Simple Setup**, **Advanced Setup**, and **Tools** configuration options are permission-based and require a password. The default password is **admin**. To ensure system security, it is recommended that you assign your Administrator a unique password as soon as possible.

Note:

If your password is lost or you cannot gain access to the management interface, restore the factory defaults. Press and hold the **Reset** button for at least five seconds.

1. On the main menu, click **Tools**.
2. On the **Tools** menu, click **Change Password**.
3. On the Change Password screen, enter the current password in the first text box; then enter the new password in the next two text boxes.
4. Click **Enter** to save settings and continue.

Set the Time Zone

The time zone setting is used for log entries and client filtering.

1. On the main menu, click **Tools**; then click **Set Time Zone**.
2. On the Tools | Set Time Zone screen, select the correct time zone.

Reset Router

On the **Tools** menu or screen, click **Reset Router** to reboot the router and retain all your configuration settings.

Restore Factory Defaults

On the **Tools** menu or screen, click **Restore Factory Defaults** to reboot the router, overwriting your configuration settings with those of the factory defaults.

Update Firmware

On the **Tools** menu or screen, click **Update Firmware** to download the newest version of the firmware from the SpeedStream support Web site. You will be directed to download the update file; then click **Enter** to install.

Backup Settings

On the Tools screen, click **Backup Settings** to save your configurations. The **File Download** dialog box displays. Select a location to which the system will download the config.bin file.

Restore Settings

On the Tools screen, click **Restore** to restore the last saved config.bin file.

CHAPTER 4 INSTALLING AND CONFIGURING TCP/IP

To access the Internet through the SpeedStream 2602 DSL/Cable Router, you must configure it and your network computers with same IP subnet. Manually configure the IP address for client computers or obtain it automatically from the SpeedStream 2602's DHCP service.

The default network settings for the SpeedStream 2602 are:

IP Address: 192.168.254.254
Subnet Mask: 255.255.255.0
Password: admin

You can change these settings to comply with your network requirements; however, you must first configure at least one computer to access the SpeedStream 2602 management interface.

Install the TCP/IP Protocol

If TCP/IP is not installed on your computer, follow these instructions:

1. Click **Start/Settings**; then click **Control Panel**.
2. Double-click **Network** to display the **Configuration** tab in the Network window.
3. Click **Add** to add a network component to your computer.
4. Double-click **Protocol** to add the TCP/IP protocol.

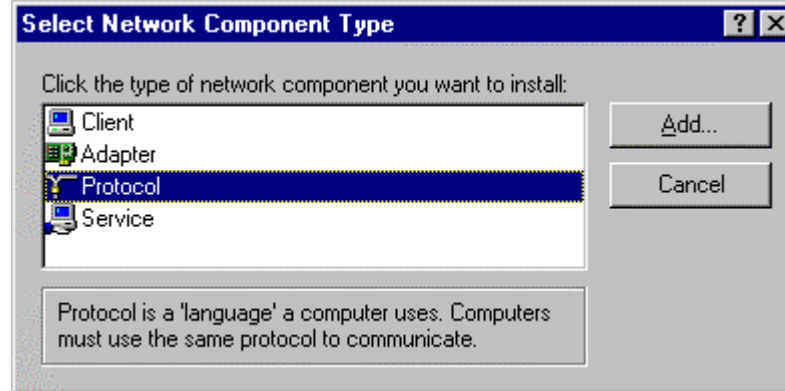


Figure 4-1. Select Network Component Type

5. In the manufacturers list, select **Microsoft**; then select **TCP/IP** in the Network Protocols list. Click **OK** to return to the Network window.

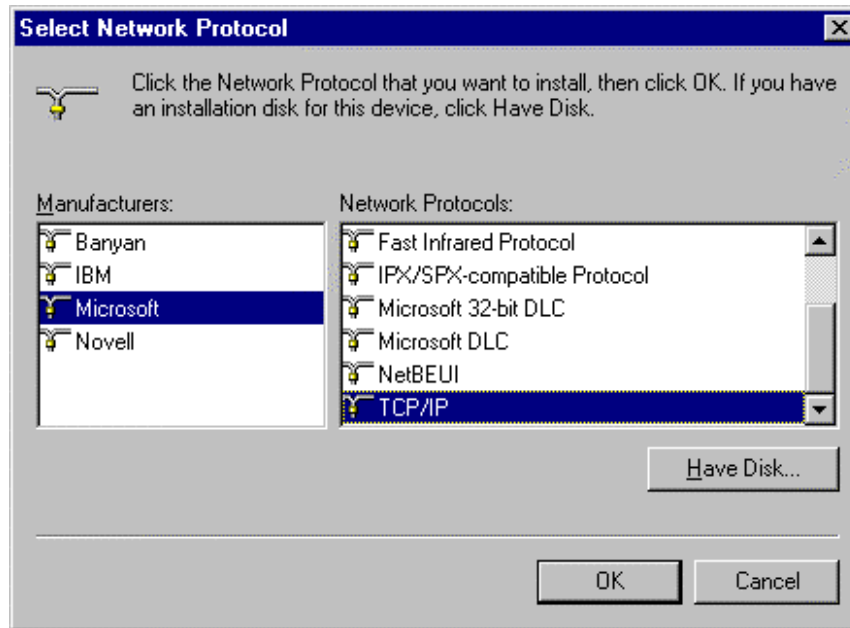


Figure 4-2. Select Network Protocol

6. The TCP/IP protocol will be listed in the Network window. Click **OK** to complete the install procedure, and restart your computer to enable the TCP/IP protocol.

Configure TCP/IP for the SpeedStream 2602

When TCP/IP is installed on your computer, follow these instructions to configure it for the SpeedStream 2602:

1. On the Windows taskbar, click **Start | Settings | Control Panel**.
2. Double-click the **Network** icon; then click the **Configuration** tab and select the TCP/IP for your network card.
3. Click the **Properties** button to enter the TCP/IP properties for the SpeedStream 2602. You can dynamically assign TCP/IP address settings to a client, or you can manually configure a client with address settings to meet your specific network requirements. (Note that the default IP address of the SpeedStream 2602 is 192.168.254.254.)

Dynamic IP Allocation via a DHCP Server

1. On the **IP Address** tab, select **Obtain an IP address automatically**.
2. Do not enter any values under the **Gateway** tab.
3. On the **DNS Configuration** tab, select **Disable DNS**. These settings will be automatically configured by the DHCP server.

4. Click **OK** and reboot your system to implement the changes.

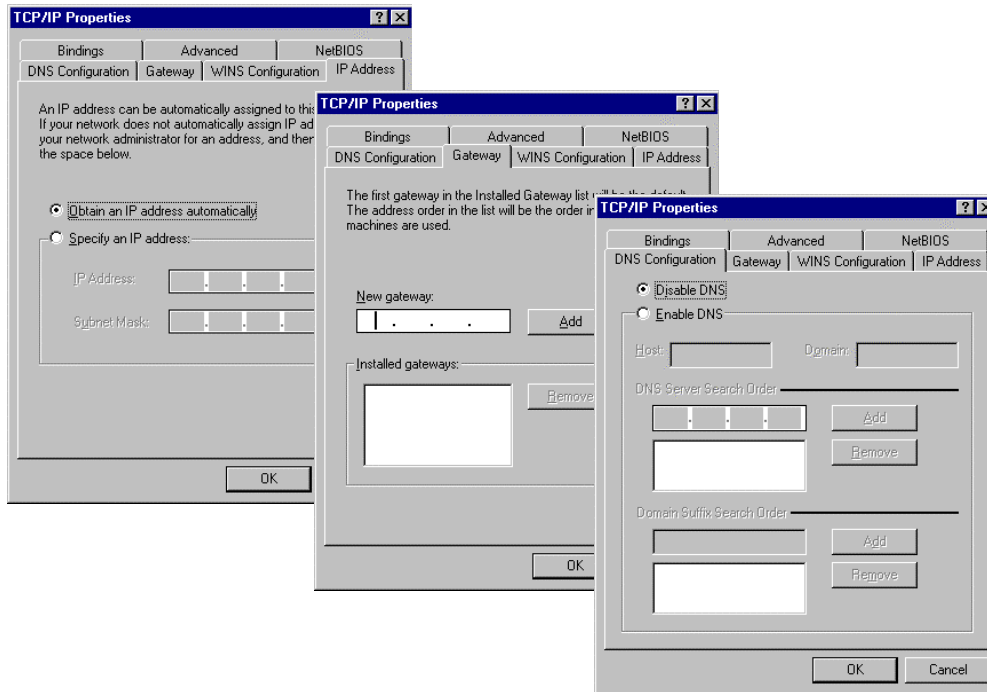


Figure 4-3. TCP/IP Properties Sheets

Manual IP Configuration

1. On the **IP Address** tab, select **Specify an IP address**. Select the IP address based on the default network **192.168.254.X**, where X is from 1 to 253. Enter **255.255.255.0** for the subnet mask.
2. On the **Gateway** tab, add the IP address of the SpeedStream 2602 (default address is 192.168.254.254) in the **New gateway** box; then click **Add**.
3. On the **DNS Configuration** tab, add the IP address for the SpeedStream 2602; then click **Add**. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the DNS Server Search Order field; then click **Add**.
4. After finishing TCP/IP setup, click **OK**; then reboot the computer. You can now set up other computers on the LAN according to the procedures described above.

TCP/IP Verification

After you install the TCP/IP communication protocol and configure an IP address in the same network with the SpeedStream 2602, you can use the *ping* command to verify that your computer is successfully connected to the SpeedStream 2602.

1. Open an MS-DOS window and type **ping 192.168.254.254**.

If the following message appears, a communication link between your computer and the SpeedStream 2602 was successfully established:

```
Pinging 192.168.254.254 with 32 bytes of data:
Reply from 192.168.254.254: bytes=32 time=2ms TTL=64
```


However, if the following message appears, there may be something wrong in your installation procedure:

```
Pinging 192.168.254.254 with 32 bytes of data:  
Request timed out.
```

2. If the request times out, confirm the following items in sequence:

- *Is the Ethernet cable correctly connected between the SpeedStream 2602 and your computer?*

The LAN LED on the SpeedStream 2602 and the Link LED of the network card on your computer must be on.

- *Is TCP/IP properly configured on your computer?*

If the IP address of the SpeedStream 2602 is 192.168.254.254, the IP address of your computer must be from 192.168.254.1 to 192.168.254.253, and the default gateway must be 192.168.254.1.

3. When you can successfully ping the SpeedStream 2602, you are ready to connect to the Internet!

CHAPTER 5

CONFIGURING PRINTER SERVICES

The SpeedStream 2602 printer server supports Windows 95/98/NT/2000/ME and Unix platforms. To configure print services for devices attached to the SpeedStream 2602:

1. Install the Port Monitor program from the SpeedStream 2602 CD-ROM.
2. Configure the SpeedStream 2602 printer server for your operating system.

Install the Printer Port Monitor (Windows 95/98/NT)

1. Insert the installation CD into your CD-ROM drive.
2. In the PrintSvr directory, run the **setup.exe** program. The SpeedStream 2602 Port Monitor installation program advises you to close all other Windows programs currently running on your computer.
3. Close any other Windows applications; then click **Next** to continue.
4. On the Select Components screen, click **Next** to accept the defaults.
5. On the Choose Destination Location screen, accept the default folder location or click **Browse** to navigate to a new location; then click **Next**. The setup program will install the programs into the specified folder.
6. Select the program folder to contain the Uninstall Port Monitor program icon; then click **Next**.
7. Enter the printer port name that will identify the port monitor in your system; then click **Next**.
8. When the setup program finishes installing the port monitor, select **Yes, I want to restart my computer now**; then click **OK**.
9. Reboot your computer; then add the SpeedStream 2602 print server to your system as described in the following section.

Configure the Print Server

After you install the Printer Port Monitor, locate the instructions below that are specific to your operating system (Windows 95/98/NT, 2000, ME; Unix).

Windows 95/98/NT

If you are using Windows 95/98, first install the Printer Port Monitor as described in the previous section; then add the SpeedStream 2602's print server to your operating system.

1. On the Windows 95/98 desktop, double-click **My Computer | Printers**; then double-click **Add Printer**.
2. In the Add Printer dialog box, click **Next**.

3. Click to add a **Local printer** or **Network printer**.
4. Specify the printer manufacturer and model.
5. Select the monitored port; then click **Configure Port**.
6. Enter the IP address of the SpeedStream 2602 (**192.168.254.254**); then click **OK**.
7. In the Add Printer Wizard dialog box, click **Next** to continue.
8. Follow the prompts to complete the SpeedStream 2602 print server installation. The printer type you specified will now be added to your **Printers** menu.

Windows 2000

1. In Windows 2000, click **My Computer/Printers**; then double-click **Add Printer**.
2. Select **Network printer**; then click **Next**.
3. Select **Connect to a printer on the Internet or on your intranet** and enter the IP address of the SpeedStream 2602 in the URL field; then click **Next**.
4. Specify the printer type attached to the SpeedStream 2602.
5. Follow the prompts to complete the printer installation. The printer type you specified will now be added to your **Printers** menu.

Windows ME

1. In Windows ME, click **My Computers/Printers**; then double-click **Add Printer**.
2. Select **Network printer**; then click **Next**.
3. Enter the IP address of the SpeedStream 2602; then click **Next**.
4. Specify the printer type attached to the SpeedStream 2602.
5. Follow the prompts to complete the printer installation. The printer type you specified will now be added to your **Printers** menu.

Unix Systems

Follow the traditional configuration procedure on Unix platforms to set up the SpeedStream 2602 print server. The printer name is “lp.”

Appendix A TROUBLESHOOTING

This section describes common problems you may encounter and their possible solutions. Use the panel indicators to monitor and identify problems with the SpeedStream 2602. If you cannot resolve any connection problems after checking the indicators, refer to the following table.

Symptom	Action
LED Indicators	
Power LED is Off	<ul style="list-style-type: none"> • External power supply has failed or is disconnected. • Check connections between the SpeedStream 2602, the external power supply, and the wall outlet. • If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. • If the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet. • If you still cannot isolate the problem, then the external power supply may be defective. In this case, contact Siemens Technical Support for assistance.
Link LED is Off	<ul style="list-style-type: none"> • Verify that the SpeedStream 2602 and attached devices are powered on. • Be sure the cable is plugged into both the SpeedStream 2602 and the corresponding device. • Verify that the proper cable type is used and that its length does not exceed the specified limits. • Be sure that the network interface on the attached device is configured for the proper communication speed and duplex mode. • Check the adapter on the attached device and cable connections for possible defects. Replace any defective adapter or cable if necessary.
Network Connection Problems	
Cannot ping the SpeedStream 2602 from the attached LAN, or the SpeedStream 2602 cannot ping any device on the attached LAN	<ul style="list-style-type: none"> • Verify that the IP addresses are properly configured. For most applications, you should use the SpeedStream 2602 DHCP function to dynamically assign IP addresses to any host on the attached LAN. However, if you manually configure any IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the SpeedStream 2602 and any attached LAN devices. • Be sure the device you want to ping (or from which you are pinging) has been configured for TCP/IP.
Management Problems	
Cannot connect using the Web browser	<ul style="list-style-type: none"> • Be sure you configured the SpeedStream 2602 with a valid IP address, subnet mask and default gateway. • Check that you have a valid network connection to the SpeedStream 2602 and that the port you are using has not been disabled. • Check the network cabling between the management station and the SpeedStream 2602.
Forgot or lost the password	<ul style="list-style-type: none"> • Press the Reset button on the front panel (holding it down for at least five seconds) to restore the factory defaults.

Table A-1. Troubleshooting Chart

Technical Support

Before contacting Technical Support, please refer to the previous Troubleshooting table. If you are still unable to resolve the problem, be prepared to provide the following information:

- Model number (SpeedStream 2602)
- Software version
- Date of purchase or installation
- Description of the problem

Technical Support for North America is available 24 hours a day, 7 days a week, by phone, email or online:

- Phone: 877-823-6722
- Email: support@speedstream.com
- Online: <http://www.speedstream.com>
- FTP: <ftp://ftp.speedstream.com>

Ethernet Cable

Cable Types and Specifications

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45

Table B-1. Cable Types and Specifications

Twisted-pair Cable

Caution: DO NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

For 10BASE-T/100BASE-TX connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by two different colors. An RJ-45 connector must be attached to both ends of the cable. Except for the WAN port, all RJ-45 ports on the SpeedStream 2602 support automatic MDI/MDI-X configuration, so you can use straight-through cable to attach the LAN ports to any network device. However, when connecting the WAN port to a broadband modem, you will need to use either straight-through or crossover cable, depending on the port type used on the modem.

The figure below illustrates how the pin numbering on the RJ-45 connector. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.

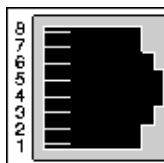


Figure B-1. RJ-45 Pin Numbering

RJ-45 Pin Numbering

Straight-Through Cable		Crossover Cable	
End 1	End 2	End 1	End 2
1 (TD+)	1 (TD+)	1 (TD+)	3 (RD+)
2 (TD-)	2 (TD-)	2 (TD-)	6 (RD-)
3 (RD+)	3 (RD+)	3 (RD+)	1 (TD+)
6 (RD-)	6 (RD-)	6 (RD-)	2 (TD-)
Pins 4, 5, 7 and 8 are not connected.		Pins 4, 5, 7 and 8 are not connected.	

Table B-2. RJ-45 Pin Numbering

RJ-45 Pin Assignments

All LAN ports on the SpeedStream 2602 support automatic MDI/MDI-X configuration. This means that the pin signals in use will depend on whether the LAN port is operating in MDI or MDI-X mode. The WAN port is configured only for MDI-X mode.

Pin	MDI Signal Name*	MDI-X Signal Name*
1	Transmit Data (TD+)	Receive Data (RD+)
2	Transmit Data (TD-)	Receive Data (RD-)
3	Receive Data (RD+)	Transmit Data (TD+)
6	Receive Data (RD-)	Transmit Data (RD-)
Pins 4, 5, 7 and 8 are not connected.		
* The “+” and “-” signs represent the polarity of the wires that make up each wire pair.		

Table B-3. RJ-45 Pin Assignments

APPENDIX C

Specifications

WAN Interface

10BASE-T, 1 RJ-45 port

LAN Interface

10BASE-T/100Base-TX
(2) RJ-45 ports

Management

Web management interface

Advanced Features

Dynamic IP Address Configuration – DHCP, DNS
Firewall – Client privileges, hacker prevention and logging, NAT
Virtual Private Network – PPTP, L2TP, IPSec

Internet Standards

ARP (RFC 826), IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), TCP (RFC 793), Telnet (RFC 854-859), MD5 (RFC 1321), BOOTP Extension (RFC 1497), PPP LCP Extension (RFC 1570), PPPoE (RFC 2516), NAT (RFC 1631), PPP (RFC 1661), HTML (RFC 1866), HTTP (RFC 1945), CHAP (RFC 1944), DHCP (RFC 2131), PPTP (RFC 2637)

Indicator Panel

LAN (Link, Activity), WAN (Link, Activity), Power

Dimensions

8 x 4.5 x 2 in. (203 x 114.3 x 50 mm.)

Weight

11.5 oz. (326 g)

Input Power

5V DC (2.4A)

Maximum Current

0.40A RMS max.@110V, 0.4A RMS max.@240V

Power Consumption

6.5 Watts max. @ 100-240 VAC

Heat Dissipation

144 BTU/hr max. @ 100-240 VAC

Temperature

Operating 32 to 104°F (0 to 40°C)
Storage -40 to 158°F (-40 to 70°C)

Humidity

5% to 95% (noncondensing)