

SAGEM F@st™ 1500 SAGEM F@st™ 1500WG



Reference Manual

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Warning



Warning icon, used in this guide.



Information icon, used in this guide.

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1. Introduction

This chapter covers	➤ an overview of the SAGEM F@st™ 1500 router	Section 1.1
	➤ the Features and Benefits	Section 1.2
	➤ the Applications of the SAGEM F@st™ 1500 router	Section 1.3
	➤ the composition of the supply	Section 1.4
	➤ the IT prerequisites	Section 1.5

1 - Introduction

Congratulations on your purchase of the SAGEM F@st™ 1500WG IEEE 802.11g ADSL Router, hereafter referred to as the “ SAGEM F@st™ 1500WG ADSL Router”. We are proud to provide you with a powerful yet simple communication device for connecting your local area network (LAN) to the Internet. For those who want to surf the Internet in the most secure way, this router provides a convenient and powerful solution.

1.1 About the SAGEM F@st™ 1500WG ADSL Router

The ADSL Router provides Internet access to multiple users by sharing a single-user account. Support is provided for both wired and wireless devices. New technology provides wireless security via Wired Equivalent Privacy (WEP) encryption and MAC address filtering. It is simple to configure and can be up and running in minutes.

1.2 Features and Benefits

- Internet connection to an ADSL modem via an RJ-11 ADSL port.
- Local network connection via four 10/100 Mbps Ethernet ports.
- On-board IEEE 802.11g wireless network adapter.
- DHCP for dynamic IP configuration, and DNS for domain name mapping.
- Firewall with Stateful Packet Inspection, client privileges, intrusion detection, and NAT.
- NAT also enables multi-user Internet access via a single user account, and virtual server functionality (providing protected access to Internet services such as web, FTP, e-mail, and Telnet).
- VPN pass-through (IPSec-ESP Tunnel mode, L2TP, PPTP).
- User-definable application sensing tunnel supports applications requiring multiple connections.
- Easy setup through a web browser on any operating system that supports TCP/IP.
- Compatible with all popular Internet applications.
- QoS for outbound traffic classification and bandwidth configuration based on Diffserv.
- Dynamic DNS for mapping a static Domain Name to a dynamic IP address.
- SIP Pass-through.

1.3 Applications

Many advanced networking features are provided by the SAGEM F@st™ 1500WG ADSL Router:

• Wireless and Wired LAN

The SAGEM F@st™ 1500WG ADSL Router provides connectivity to 10/100 Mbps devices, and wireless IEEE 802.11g compatible devices, making it easy to create a network in small offices or homes.

• Internet Access

This device supports Internet access through an ADSL connection. Since many DSL providers use PPPoE or PPPoA to establish communications with end users, the SAGEM F@st™ 1500WG ADSL Router includes built-in clients for these protocols, eliminating the need to install these services on your computer.

• Shared IP Address

The SAGEM F@st™ 1500WG ADSL Router provides Internet access for up to 253 users via a single shared IP address. Using only one ISP account, multiple users on your network can browse the web at the same time.

• Virtual Server

If you have a fixed IP address, you can set the SAGEM F@st™ 1500WG ADSL Router to act as a virtual host for network address translation. Remote users access various services at your site using a constant IP address. Then, depending on the requested service (or port number), the SAGEM F@st™ 1500WG ADSL Router can route the request to the appropriate server (at another internal IP address). This secures your network from direct attack by hackers, and provides more flexible management by allowing you to change internal IP addresses without affecting outside access to your network.

• DMZ Host Support

Allows a networked computer to be fully exposed to the Internet. This function is used when NAT and firewall security prevent an Internet application from functioning correctly.

• Security

The SAGEM F@st™ 1500WG ADSL Router supports security features that deny Internet access to specified users, or filter all requests for specific services that the administrator does not want to serve. The SAGEM F@st™ 1500WG ADSL Router's firewall also blocks 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. WEP (Wired Equivalent Privacy), SSID, and MAC filtering provide security over the wireless network.

• Virtual Private Network (VPN)

The SAGEM F@st™ 1500WG ADSL Router 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, then these protocols can be used to create an authenticated and encrypted tunnel for passing secure data over the Internet (i.e., a traditionally shared data network).

The VPN protocols supported by the SAGEM F@st™ 1500WG ADSL Router 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.
- L2TP merges the best features of PPTP and L2F - Like PPTP, L2TP requires that the ISP's routers support the protocol.
- IP Security - Provides IP network-layer encryption. IPSec can support large encryption networks (such as the Internet) by using digital certificates for device authentication.

1.4 Composition of the supply

The SAGEM F@st™ 1500 is supplied in a package with:

➤ one SAGEM F@st™ 1500 router

or

➤ one SAGEM F@st™ 1500WG router

➤ one mains adapter unit

➤ one RJ11/RJ11 lead (length = 3 m)

➤ one crossed RJ45/RJ45 Ethernet lead (length = 1.8 m)

➤ one CD-ROM

➤ ADSL filters (optional)

➤ wireless accessories (optional)

Note: This list is by no means exhaustive; the package may also include safety instructions and other documents.

The CD ROM contains:

- the software for installing the four Ethernet and wireless interfaces.
- the SAGEM F@st™ 1500 User Guide in pdf file format.
- the Acrobat® Reader™ software for reading pdf files.

Incomplete or damaged supply

If the equipment is received damaged or incomplete, contact the supplier of your SAGEM F@st™ 1500 router.

1.5 Prerequisites

To use the SAGEM F@st™ 1500, you must have:

- a line supporting ADSL transmission.
- a subscription to a service provider (for the Internet connection).
- terminals with a TCP/IP protocol stack,
 - an Ethernet 10BASE-T or 10/100BASE-T interface,or
 - a wireless interface (IEEE 802.11b/g).

and, for the SAGEM F@st™ 1500's HTTP/HTML configuration:

- a WEB browser (Internet Explorer, version 5 or above).
- a monitor with a minimum resolution of 1024 x 728 pixels.



Before installing the SAGEM F@st™ 1500 router, we would advise you to uninstall any other modem or ADSL router.

2. Description and Physical installation

This chapter covers	➤ a description of the SAGEM F@st™ 1500	Section 2.1
	➤ how to install the SAGEM F@st™ 1500	Section 2.2
	➤ how to connect the ports of the SAGEM F@st™ 1500	Section 2.3
	➤ how to power up the SAGEM F@st™ 1500	Section 2.4

2 - Description and physical installation

Before installing the SAGEM F@st™ 1500 ADSL Router, verify that you have all the items listed under the Package Contents list (see § 1.4). If any of the items are missing or damaged, contact your local distributor.

Also be sure that you have all the necessary cabling before installing the SAGEM F@st™ 1500 ADSL Router. After installing the ADSL Router, refer to “Configuring the SAGEM F@st™ 1500 ADSL Router” on chapter 4.

2.1 Hardware Description

The SAGEM F@st™ 1500 ADSL Router contains an integrated ADSL modem and connects to the Internet or to a remote site using its RJ-11 WAN port. It can be connected directly to your PC or to a local area network using any of the four 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 kbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 kbps upstream. However, you should note that the actual rate provided by specific service providers may vary dramatically from these upper limits.

Data passing between devices connected to your local area network can run at up to 100 Mbps over the Fast Ethernet ports and 54 Mbps over the built-in wireless network adapter.

The SAGEM F@st™ 1500 ADSL Router includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. It also provides the following ports on the rear panel.

2.1.1 Front panel



Figure 2.1 - Front Panel

From left to right, this comprises eight green supervisory LEDs, followed by the SAGEM logo, the meaning of which is given in the table below:

LED	Status	Description
PWR	On	The SAGEM F@st™ 1500 ADSL Router is receiving power. Normal operation.
	Off	Power off or failure.
ADSL	On	ADSL connection is functioning correctly.
	Flashing	The SAGEM F@st™ 1500 ADSL Router is establishing an ADSL link.
	Off	ADSL connection is not established.
WLAN	Flashing	The indicated ADSL port is sending or receiving data.
ALM	On	PPP is not established.
	Off	PPP has been established.
ETHERNET (4 LEDs)	On	Ethernet connection is established.
	Flashing	The indicated LAN port is sending or receiving data.
	Off	There is no LAN connection on the port.

2.1.2 Rear panel

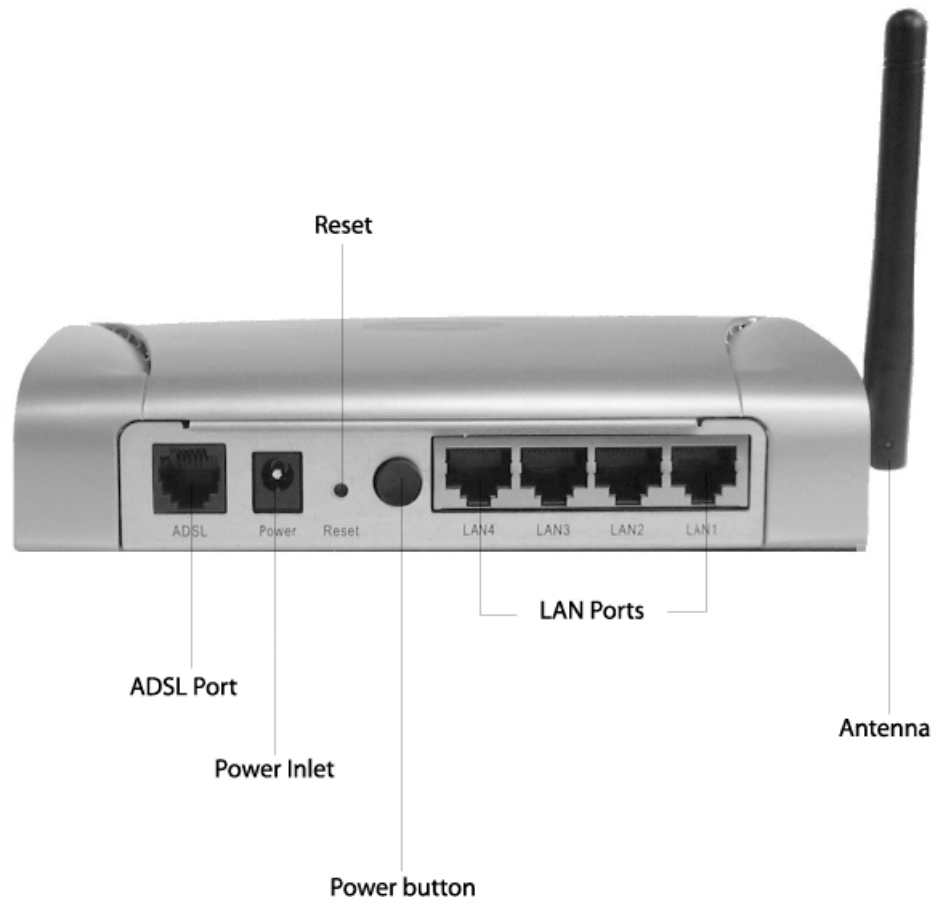


Figure 2.2 - Rear Panel

Ports / Button	Description
ADSL	WAN port (RJ-11). Connect your ADSL line to this port.
Power	Connect the included power adapter to this inlet. Warning: Using the wrong type of power adapter may damage the SAGEM F@st™ 1500 ADSL Router.
Reset	Use this button to reset the power and restore the default factory settings. To reset without losing configuration settings, see “Reset” on chapter 4.
I/O	On/Off switch for secondary power from the mains adapter block
LAN4	Fast Ethernet ports (RJ-45). Connect devices on your local area network to these ports (i.e., a PC, hub, or switch).
LAN3	
LAN2	
LAN1	
	Directable antenna (180° rotation), not removable (only for the SAGEM F@st™ 1500WG).

2.2 Physical Installation

2.2.1 Installation instructions

Environment

- The SAGEM F@st™ 1500 must be installed and used inside a building.
- The room temperature must not exceed 45°C.
- The SAGEM F@st™ 1500 must be placed on a desktop.
- The SAGEM F@st™ 1500 must not be exposed to strong sunlight or excessive heat.
- The SAGEM F@st™ 1500 must not be placed in an environment subject to significant steam condensation.
- The SAGEM F@st™ 1500 must not be exposed to splashed water.
- The SAGEM F@st™ 1500 casing must not be covered.
- The SAGEM F@st™ 1500WG and its peripheral devices must not be used for outdoor transmissions.

Power supply source

- The SAGEM F@st™ 1500's mains adapter block must not be covered.
- The SAGEM F@st™ 1500 router is supplied with its own power supply adapter. It must not be used with any other adapter.
- This Class II adapter does not need to be earthed. The connection to the electrical network must comply with the information on its label.
- Use a readily accessible mains outlet near to the router. The power supply lead is 2 m long.
- Arrange the power supply lead to avoid any accidental disconnection of the power supply to the router.
- The SAGEM F@st™ 1500 is designed for connection to a TT or TN system power supply network.
- The SAGEM F@st™ 1500 is not designed for connection to an IT system electrical installation (power supply with separate neutral).
- Protection against short circuits and leaks between phase, neutral and earth must be provided by the building's electrical installation. The power circuit for this equipment must be fitted with 16 A overcurrent protection and differential protection.
- The mains connection must be via a readily accessible, switched wall socket.

Maintenance

- The casing must not be opened. This must be done only by personnel qualified and approved by your supplier.
- Do not use liquid or aerosol cleaning agents.
- Never open the mains adapter block; this can expose you to mortal danger.

2.2.2 Desktop Installation

- place the SAGEM F@st™ 1500 on its plastic stand fitted with four non-slip rubber feet.
- make sure that the various leads pass correctly through the cable guide to avoid any risk of tension or of dropping the unit.

2.3 Settings and Connecting

2.3.1 ISP settings

Please collect the following information from your ISP before setting up the SAGEM F@st™ 1500 ADSL Router:

- ISP account user name and password,
- Protocol, encapsulation and VPI/VCI circuit numbers,
- DNS server address,
- IP address, subnet mask and default gateway (for fixed IP users only).

2.3.2 Install the SAGEM F@st™ 1500 ADSL Router

The SAGEM F@st™ 1500 ADSL Router can be positioned 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 SAGEM F@st™ 1500 ADSL Router away from any heating devices.
- Do not place the SAGEM F@st™ 1500 ADSL Router in a dusty or wet environment.

You should also remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the SAGEM F@st™ 1500 ADSL Router.

2.3.3 Connect the ADSL Line

Connect the supplied RJ-11 cable from the ADSL Microfilter/Splitter to the ADSL port on your SAGEM F@st™ 1500 Router. When inserting an ADSL RJ-11 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

2.3.4 Phone Line Configuration

Installing a Full-Rate Connection

If you are using a full-rate (G.dmt) connection, your service provider will attach the outside ADSL line to a data/voice splitter. In this case you can connect your phones and computer directly to the splitter as shown below:

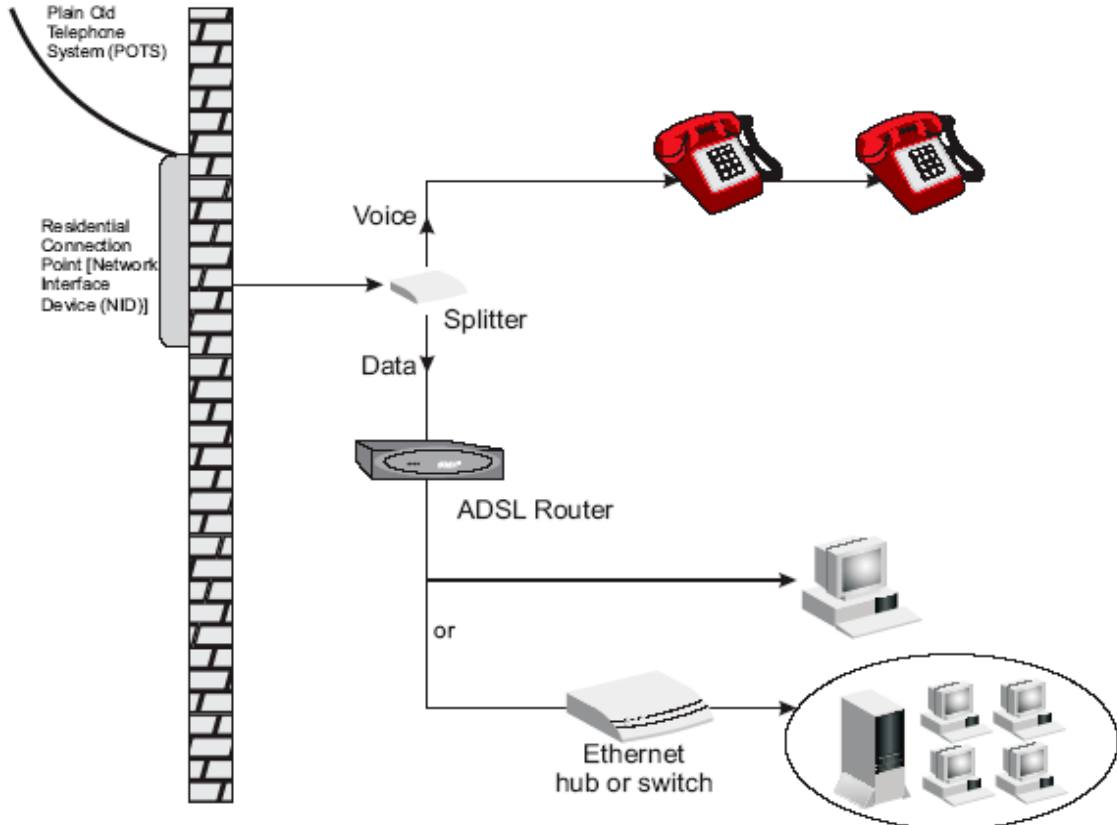


Figure 2.3 - Installing with a Splitter

Installing a Splitterless Connection

If you are using a splitterless (G.lite) connection, then your service provider will attach the outside ADSL line directly to your phone system.

In this case you can connect your phones and computer directly to the incoming ADSL line, but you will have to add low-pass filters to your phones as shown below:

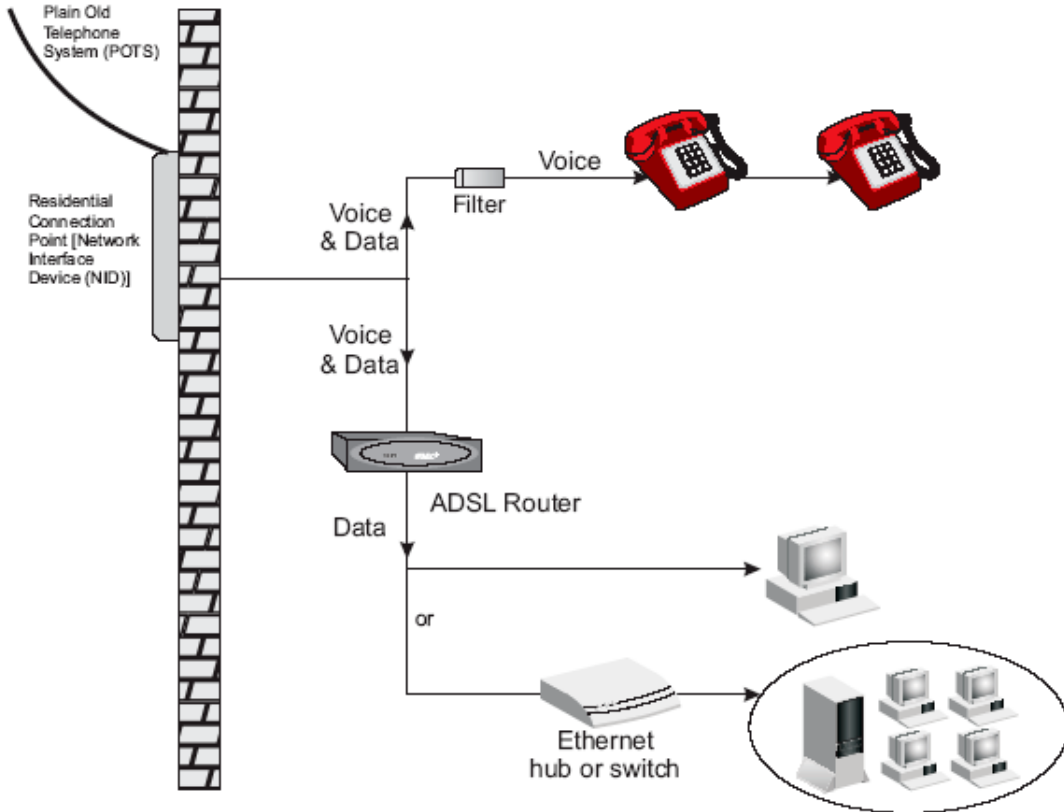


Figure 2.4 - Installing without a splitter

2.3.5 Attach to Your Network Using Ethernet Cabling

The four LAN ports on the SAGEM F@st™ 1500 ADSL Router auto-negotiate the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, as well as the transmission mode to half duplex or full duplex. Use RJ-45 cables to connect any of the four LAN ports on the SAGEM F@st™ 1500 ADSL Router to an Ethernet adapter on your PC. Otherwise, cascade any of the LAN ports on the SAGEM F@st™ 1500 ADSL Router to an Ethernet hub or switch, and then connect your PC or other network equipment to the hub or switch. When inserting an RJ-45 connector, be sure the tab on the connector clicks into position to ensure that it is properly seated.



Do not plug a phone jack connector into an RJ-45 port. This may damage the SAGEM F@st™ 1500 ADSL Router.



Use 100-ohm shielded or unshielded twisted-pair cable with RJ-45 connectors for all Ethernet ports. Use Category 3, 4, or 5 for connections that operate at 10 Mbps, and Category 5 for connections that operate at 100 Mbps.



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

2.3.6 Connect the Power Adapter

Plug the power adapter into the power socket on the rear of the SAGEM F@st™ 1500 ADSL Router, and the other end into a power outlet.

Check the power indicator on the front panel is lit. If the power indicator is not lit, refer to "Troubleshooting" on Appendix A.

In case of a power input failure, the SAGEM F@st™ 1500 ADSL Router will automatically restart and begin to operate once the input power is restored.

2.4 Powering up the SAGEM F@st™ 1500 ADSL router

- Check that the SAGEM F@st™ 1500 router is connected correctly to the electrical power supply network (see section 2.3.2).
- Set the **I/O** switch to **I** (bottom position).

Initially, the **PWR** LED and all the **ETHERNET** LEDs will come on. After a certain period, only the **PWR** LED will remain lit, the extreme right **ETHERNET** LED is slowly blinking, the **ALM** LED will come on and the **WLAN** LED (only for the SAGEM F@st™ 1500WG) will then come on if the wireless module is installed and active, and finally the **ADSL** LED will start blinking.

3. Configuring Client Computer

This chapter covers	➤ the TCP/IP Configuration	Section 3.1
	➤ the configuration of your Windows computer	Section 3.2
	➤ the configuration of your Mac computer	Section 3.3

3 - Configuring Client Computer

After completing hardware setup by connecting all your network devices, you need to configure your computer to connect to the SAGEM F@st™ 1500 ADSL Router.

See:

PC

Windows 98/Me	on sub-section 3.2.1
Windows NT 4.0	on sub-section 3.2.2
Windows 2000	on sub-section 3.2.3
Windows XP	sub-section 3.2.4

Mac

Mac OS 10.2	on sub-section 3.3
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Configuring Your Macintosh Computer™ depending on your operating system.

3.1 TCP/IP Configuration

To access the Internet through the SAGEM F@st™ 1500 ADSL Router, you must configure the network settings of the computers on your LAN to use the same IP subnet as the SAGEM F@st™ 1500 ADSL Router. The default IP settings for the SAGEM F@st™ 1500 ADSL Router are:

IP Address	:	192.168.2.1
Subnet Mask	:	255.255.255.0



These settings can be changed to fit your network requirements, but you must first configure at least one computer to access the SAGEM F@st™ 1500 ADSL Router's web configuration interface in order to make the required changes. (See "Configuring the SAGEM F@st™ 1500 ADSL Router" on chapter 4 for instruction on configuring the SAGEM F@st™ 1500 ADSL Router).

3.2 Configuring your Windows computer

3.2.1 On Windows 98 / Me

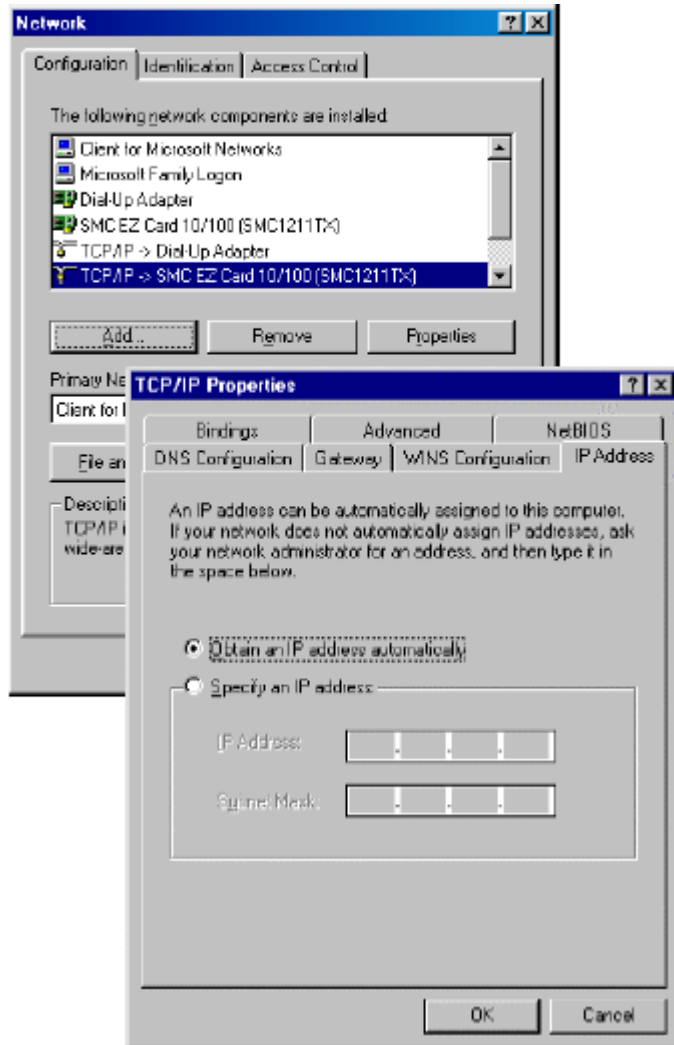
You may find that the instructions in this section do not exactly match your version of Windows. This is because these steps and screen shots were created from Windows 98. **Windows Millennium Edition is similar, but not identical, to Windows 98.**

- 1) On the Windows desktop, click Start/Settings/Control Panel.
- 2) In Control Panel, double-click the Network icon.

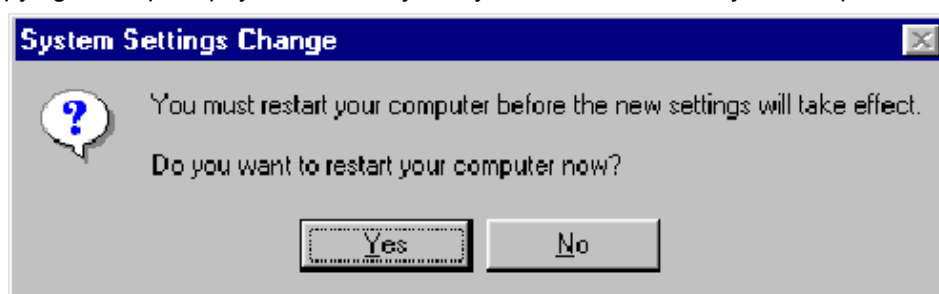


- 3) In the Network window, under the Configuration tab, double-click the TCP/IP item listed for your network card.
- 4) In the **TCP/IP** window, select the IP Address tab. If **"Obtain an IP address automatically"** is already selected, your computer is already configured for DHCP. If not, select this option.

3 - Configuring Client Computer



- 5) Windows may need your **Windows 95/98/Me** CD to copy some files. After it finishes copying, it will prompt you to restart your system. Click Yes and your computer will restart.




TCP/IP Configuration Setting

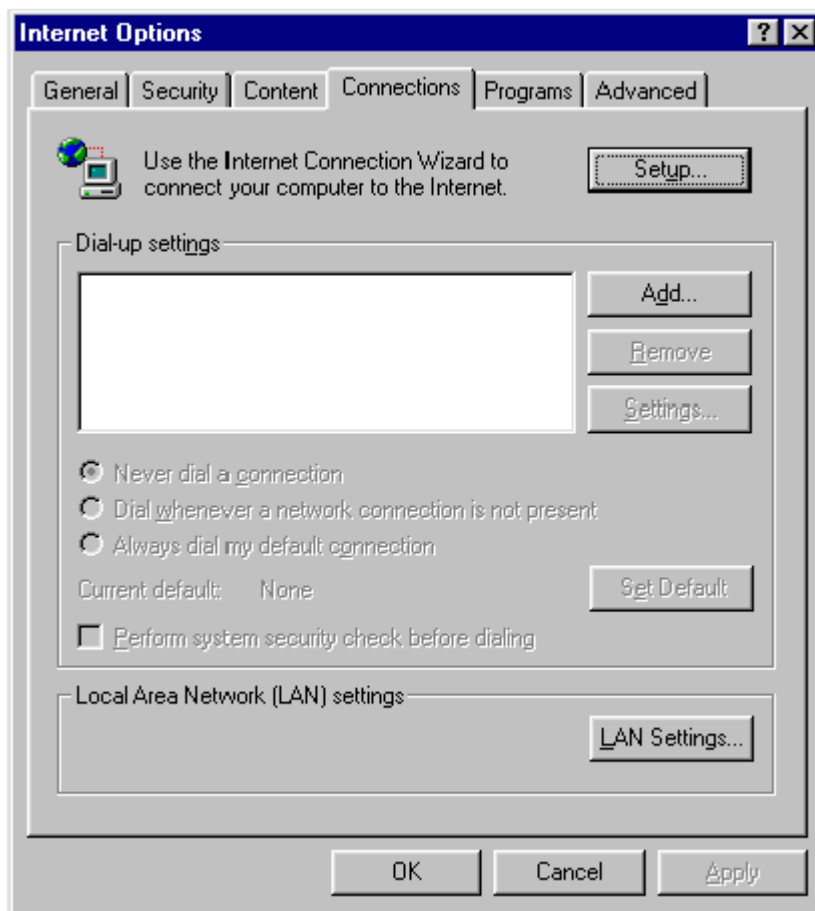
Primary DNS Server _____
Secondary DNS Server _____
Default Gateway _____
Host Name _____

Disable HTTP Proxy

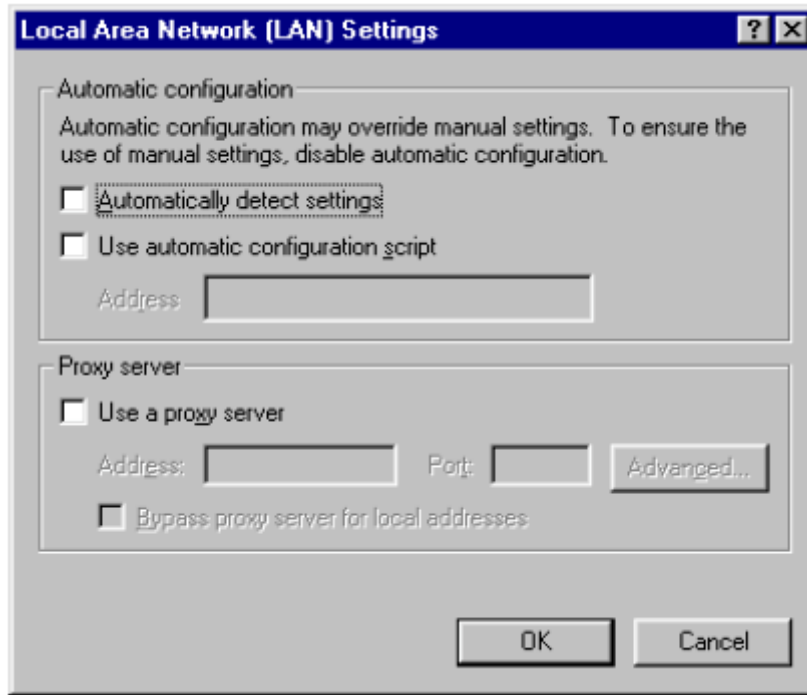
You need to verify that the “HTTP Proxy” feature of your web browser is disabled. This is so that your browser can view the SAGEM F@st™ 1500 ADSL Router’s HTML configuration pages. The following steps are for Internet Explorer.

Internet Explorer

- 1) Open Internet Explorer.
- 2) Click the **Stop** button , then click **Tools/Internet Options**.
- 3) In the **Internet Options** window, click the **Connections** tab. Next, click the **LAN Settings...** button.
- 4) Clear all the check boxes.
- 5) Click **OK**, and then click **OK** again to close the **Internet Options** window.



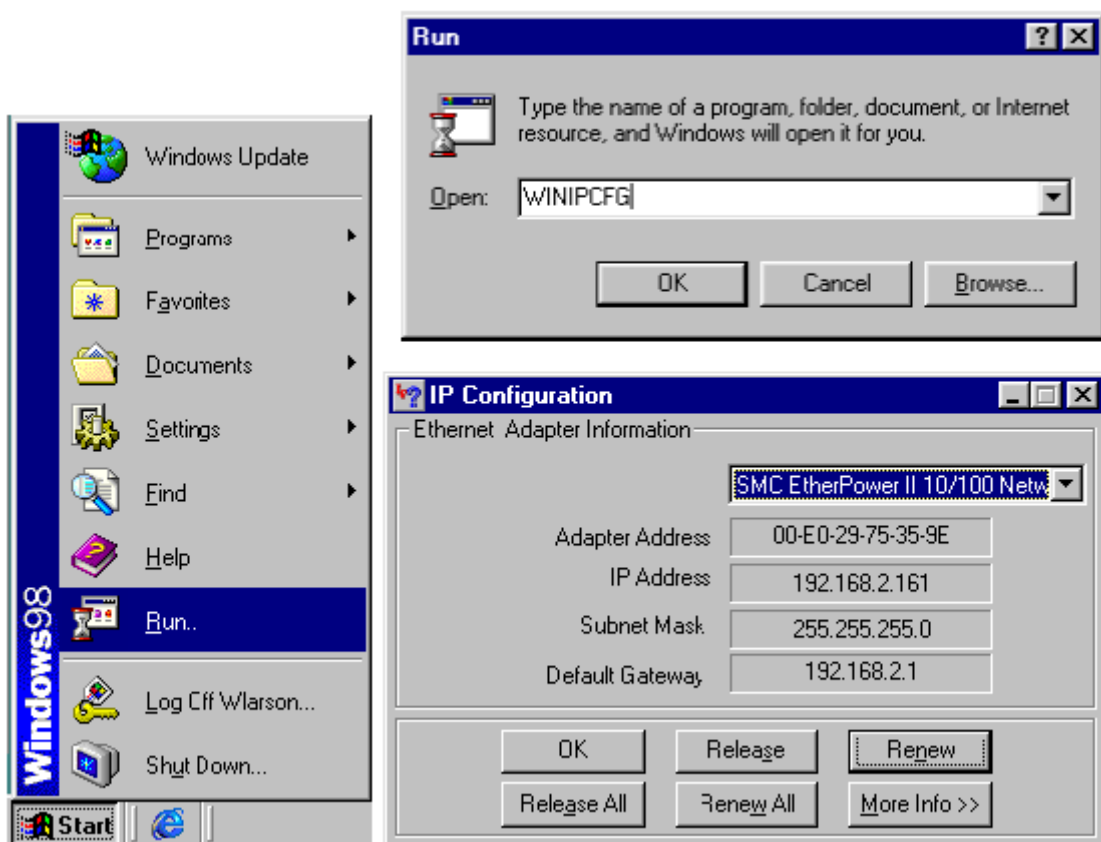
3 - Configuring Client Computer



Obtain IP Settings from SAGEM F@st™ 1500 ADSL Router

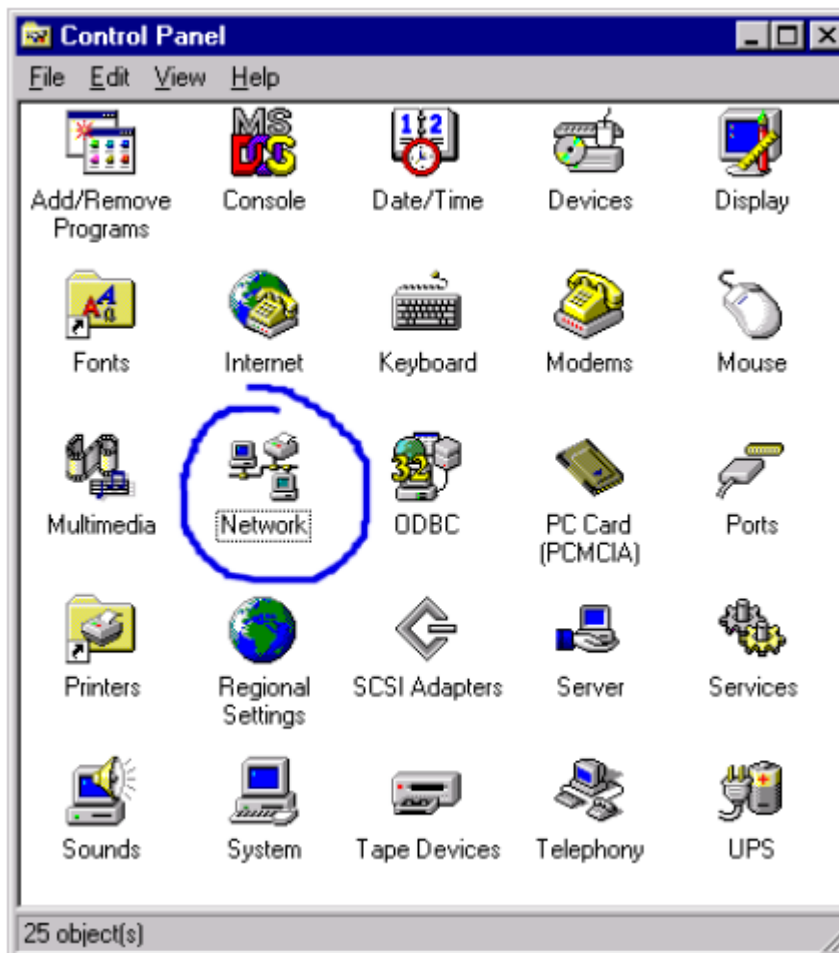
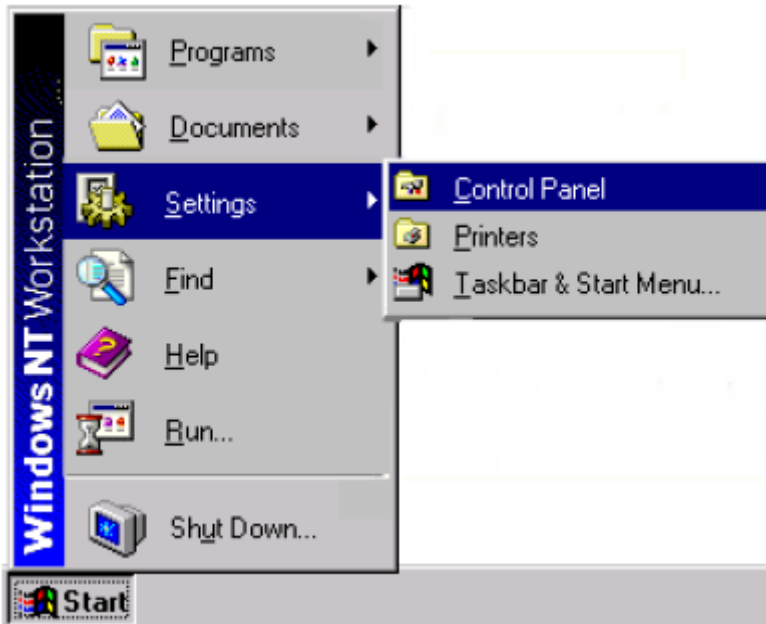
Now that you have configured your computer to connect to your SAGEM F@st™ 1500 ADSL Router, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your SAGEM F@st™ 1500 ADSL Router, you can also verify that you have configured your computer correctly.

- 1) On the Windows desktop, click **Start/Run...**
- 2) Type "**WINIPCFG**" and click **OK**. It may take a second or two for the IP Configuration window to appear.
- 3) In the IP Configuration window, select your network card from the drop-down menu. Click **Release** and then click **Renew**. Verify that your IP address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that your SAGEM F@st™ 1500 ADSL Router is functioning. Click **OK** to close the IP Configuration window.

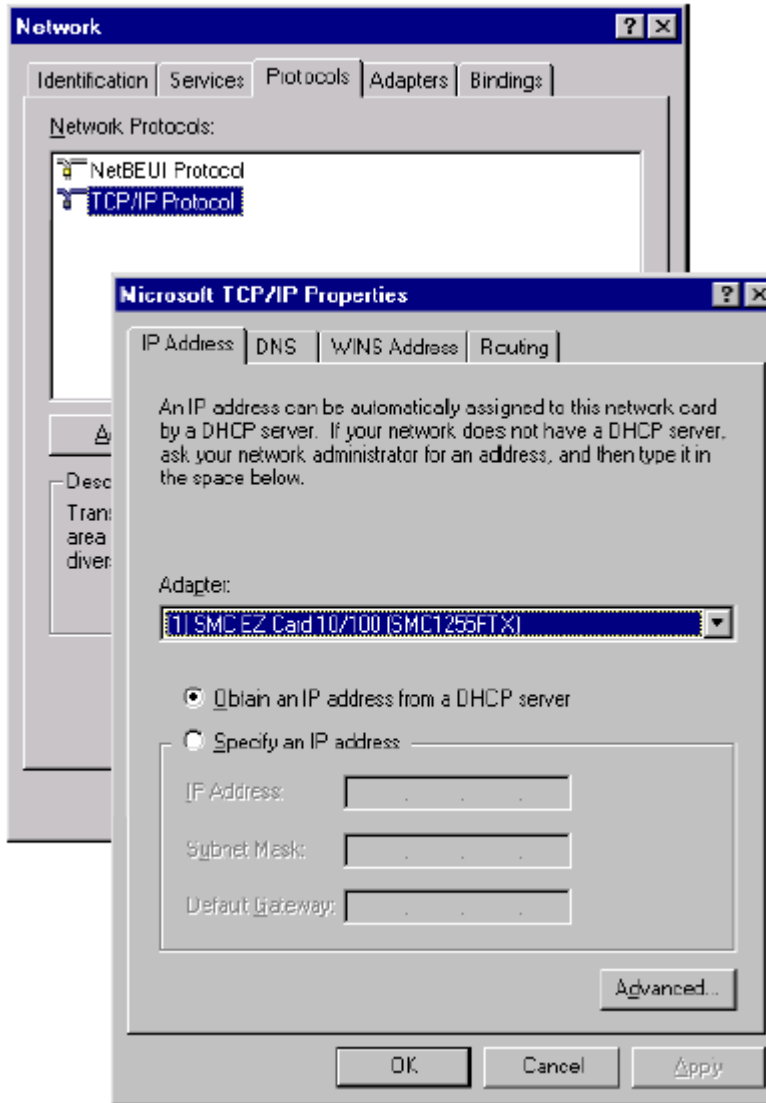


3.2.2 On Windows NT 4.0

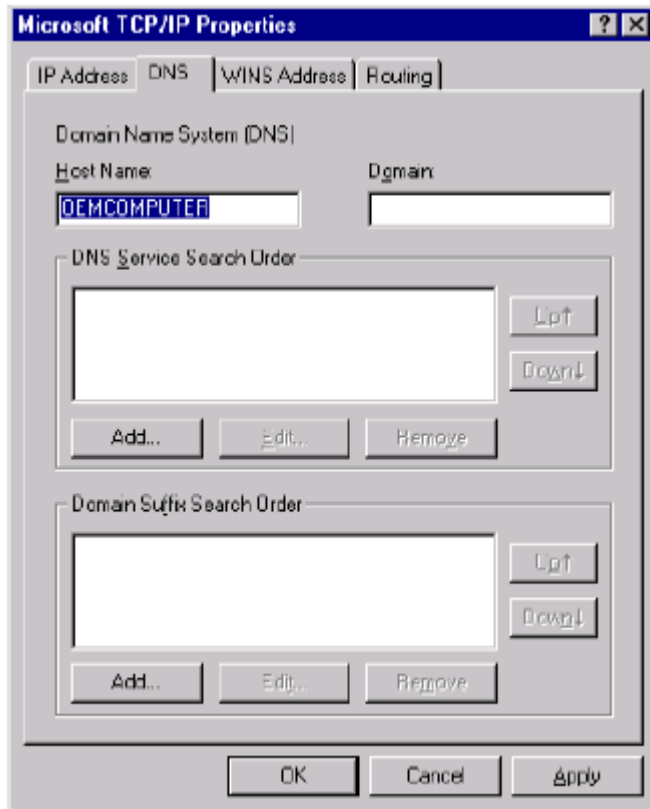
- 1) On the Windows desktop, click **Start/Settings/Control Panel**.



- 2) Double-click the **Network** icon.
- 3) In the Network window, select the Protocols tab. Double-click **TCP/IP Protocol**.
- 4) When the Microsoft TCP/IP Properties window open, select the **IP Address** tab.
- 5) In the Adapter drop-down list, be sure your Ethernet adapter is selected.
- 6) If “**Obtain an IP address automatically**” is already selected, your computer is already configured for DHCP. If not, select this option and click “**Apply**.”
- 7) Click the **DNS** tab to see the primary and secondary DNS servers. Record these values, and then click “**Remove**.” Click “**Apply**”, and then “**OK**.”



3 - Configuring Client Computer



- 8) Windows may copy some files, and will then prompt you to restart your system. Click **Yes** and your computer will shut down and restart.

TCP/IP Configuration Setting

Primary DNS Server _____ . _____ . _____ . _____
Secondary DNS Server _____ . _____ . _____ . _____
Default Gateway _____ . _____ . _____ . _____
Host Name _____ . _____ . _____ . _____

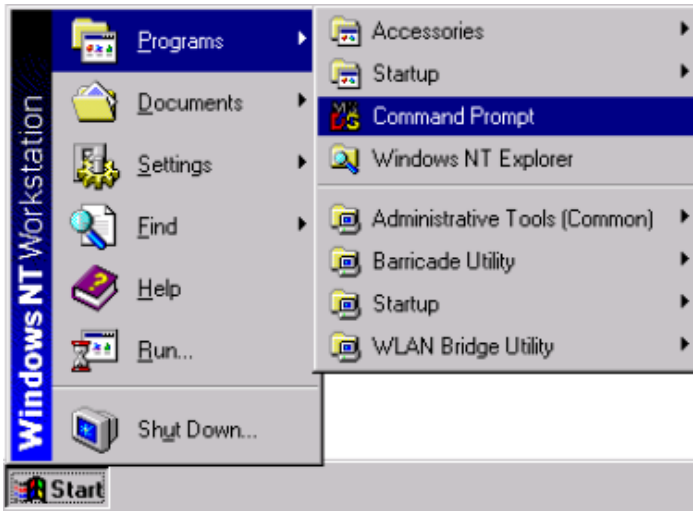
Disable HTTP Proxy

You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the SAGEM F@st™ 1500 ADSL Router's HTML configuration pages. (refer to Internet Explorer on § 3.2.1).

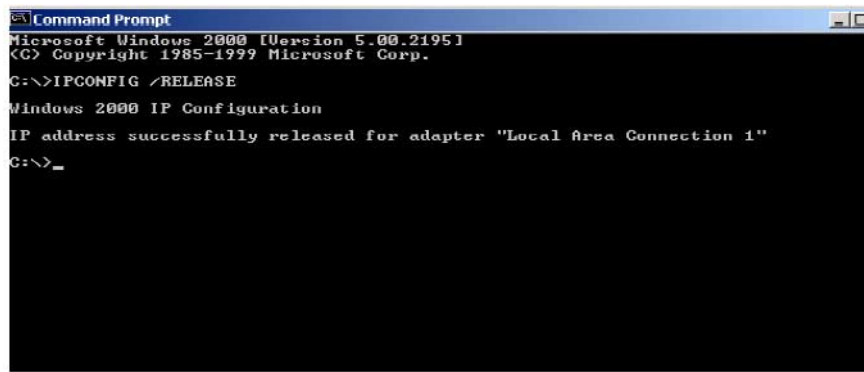
Obtain IP Settings from SAGEM F@st™ 1500 ADSL Router

Now that you have configured your computer to connect to your SAGEM F@st™ 1500 ADSL Router, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your SAGEM F@st™ 1500 ADSL Router, you can also verify that you have configured your computer correctly.

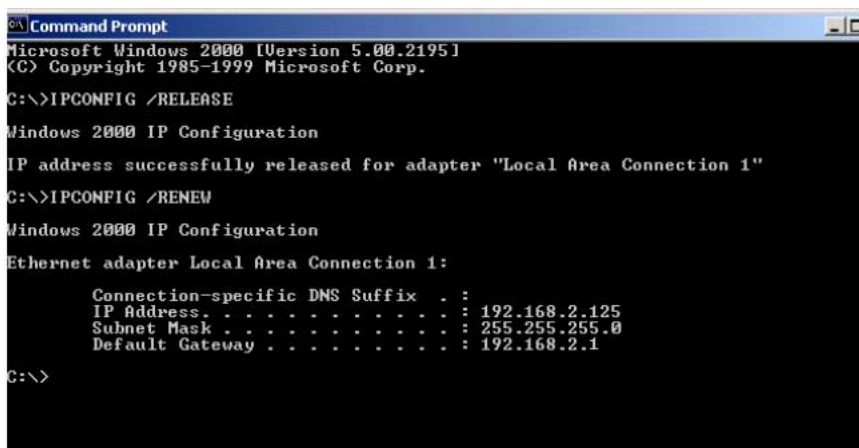
- 1) On the Windows desktop, click **Start/Programs/ Command Prompt**.



- 2) In the Command Prompt window, type "**IPCONFIG /RELEASE**" and press the **ENTER** key.



- 3) Type "**IPCONFIG /RENEW**" and press the **ENTER** key. Verify that your IP Address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that your SAGEM F@st™ 1500 ADSL Router is functioning.

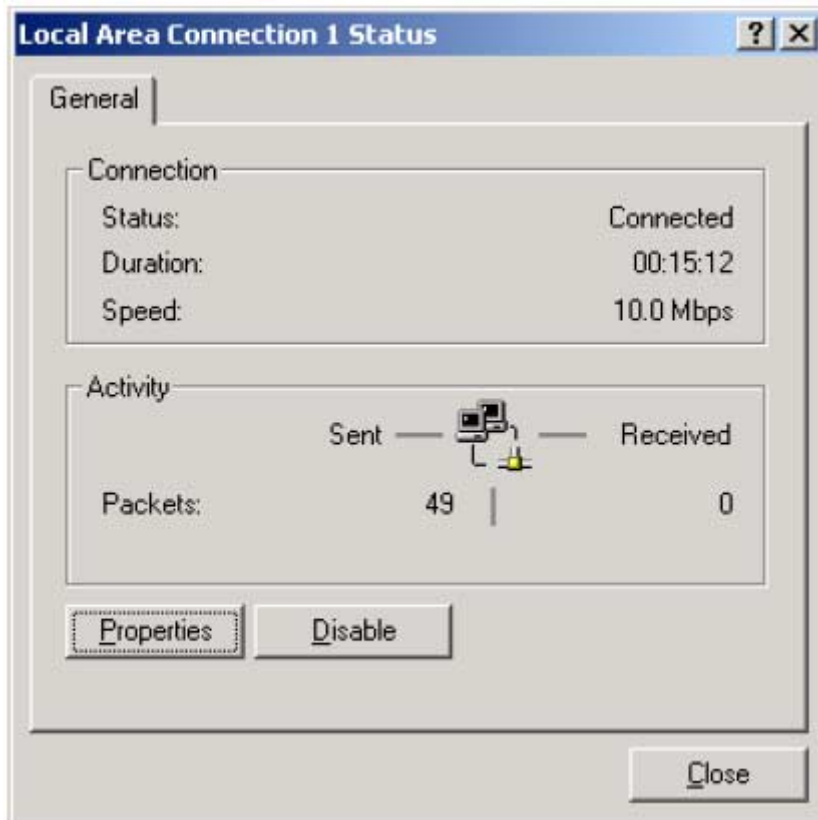


- 4) Type "**EXIT**" and press the **ENTER** key to close the Command Prompt window.

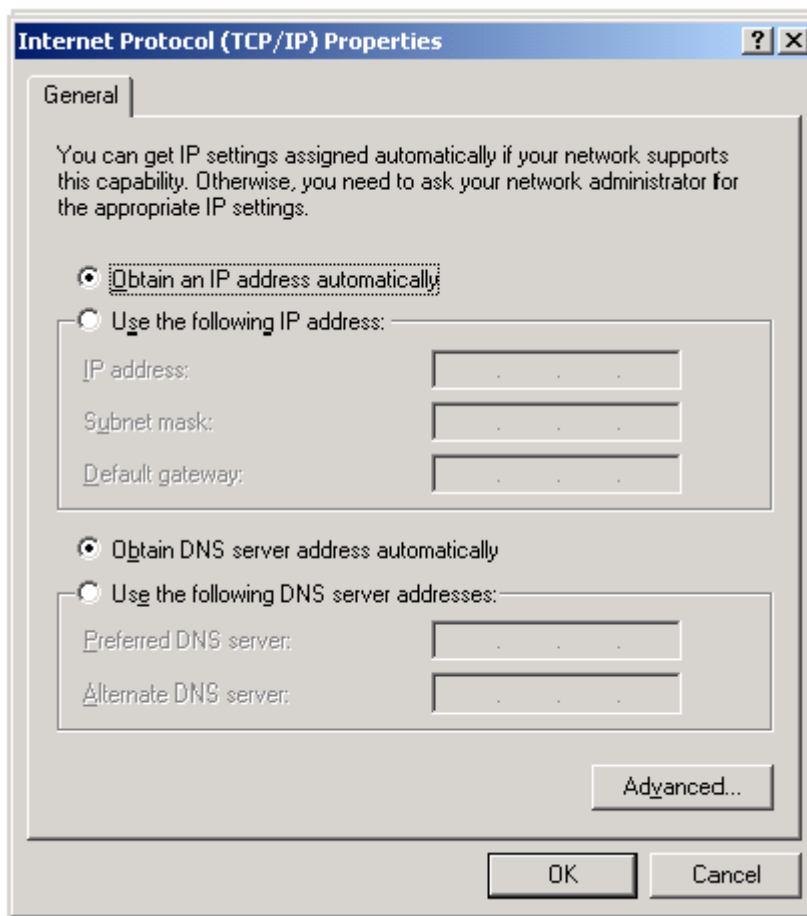
Your computer is now configured to connect to the SAGEM F@st™ 1500 ADSL Router.

3.2.3 On Windows 2000

- 1) On the Windows desktop, click **Start/Settings/Network** and **Dial-Up Connections**.
- 2) Click the icon that corresponds to the connection to your SAGEM F@st™ 1500 ADSL Router.
- 3) The connection status screen will open. Click **Properties**.



- 4) Double-click **Internet Protocol (TCP/IP)**.



- 5) If “**Obtain an IP address automatically**” and “**Obtain DNS server address automatically**” are already selected, your computer is already configured for DHCP. If not, select this option.

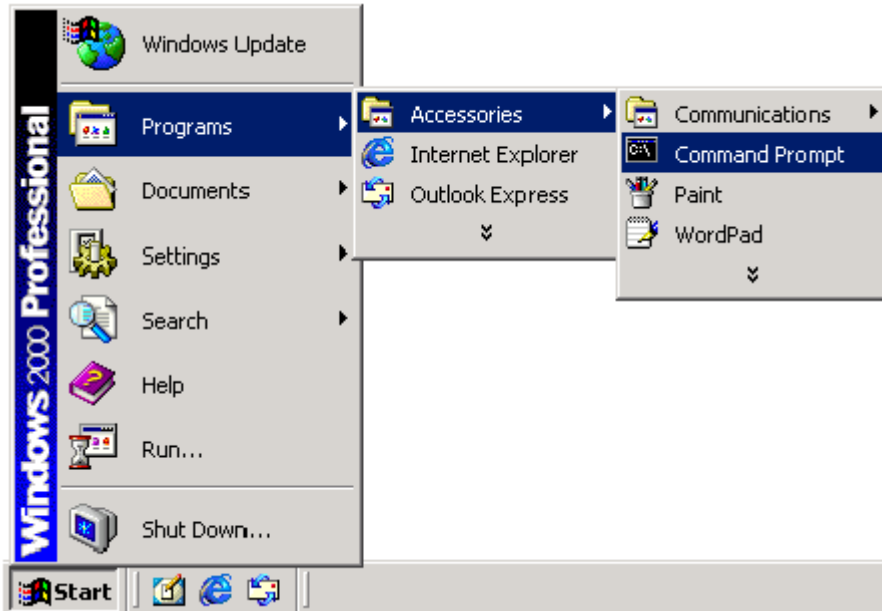
Disable HTTP Proxy

You need to verify that the “HTTP Proxy” feature of your web browser is disabled. This is so that your browser can view the SAGEM F@st™ 1500 ADSL Router’s HTML configuration pages. (refer to Internet Explorer on § 3.2.1).

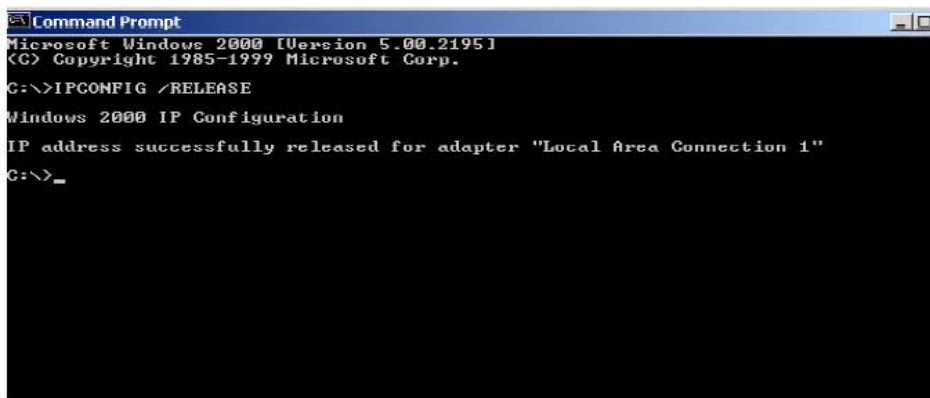
Obtain IP Settings from SAGEM F@st™ 1500 ADSL Router

Now that you have configured your computer to connect to your SAGEM F@st™ 1500 ADSL Router, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from SAGEM F@st™ 1500 ADSL Router, you can verify that you have configured your computer correctly.

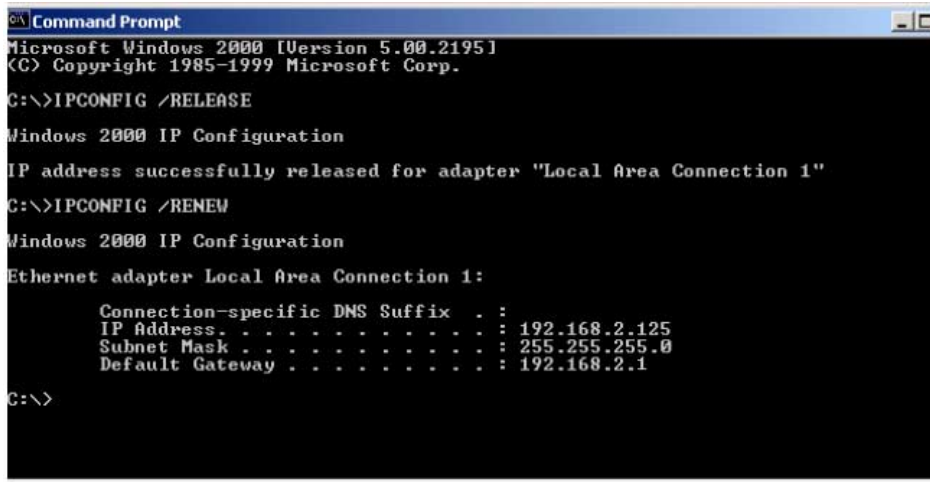
- 1) On the Windows desktop, click **Start/Programs/Accessories/Command Prompt**.



- 2) In the Command Prompt window, type "**IPCONFIG/RELEASE**" and press the **ENTER** key.

A screenshot of a Windows 2000 Command Prompt window. The window title is 'Command Prompt'. The text inside the window reads: Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.
C:\>IPCONFIG /RELEASE
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 1"
C:\>_

- 3) Type "**IPCONFIG /RENEW**" and press the **ENTER** key. Verify that your IP Address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that your SAGEM F@st™ 1500 ADSL Router is functioning.



```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>IPCONFIG /RELEASE

Windows 2000 IP Configuration

IP address successfully released for adapter "Local Area Connection 1"

C:\>IPCONFIG /RENEW

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 1:

    Connection-specific DNS Suffix  . :
    IP Address . . . . . : 192.168.2.125
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.1

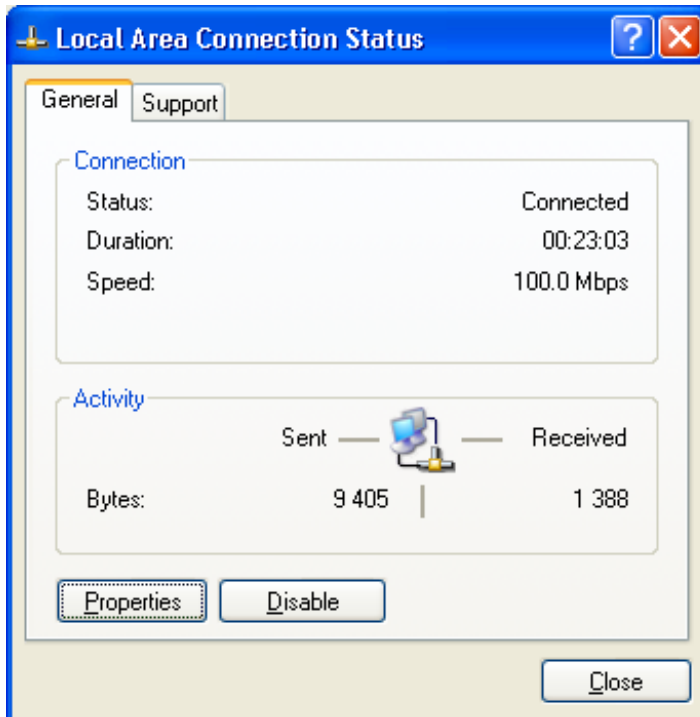
C:\>
```

- 4) Type "**EXIT**" and press the **ENTER** key to close the Command Prompt window.

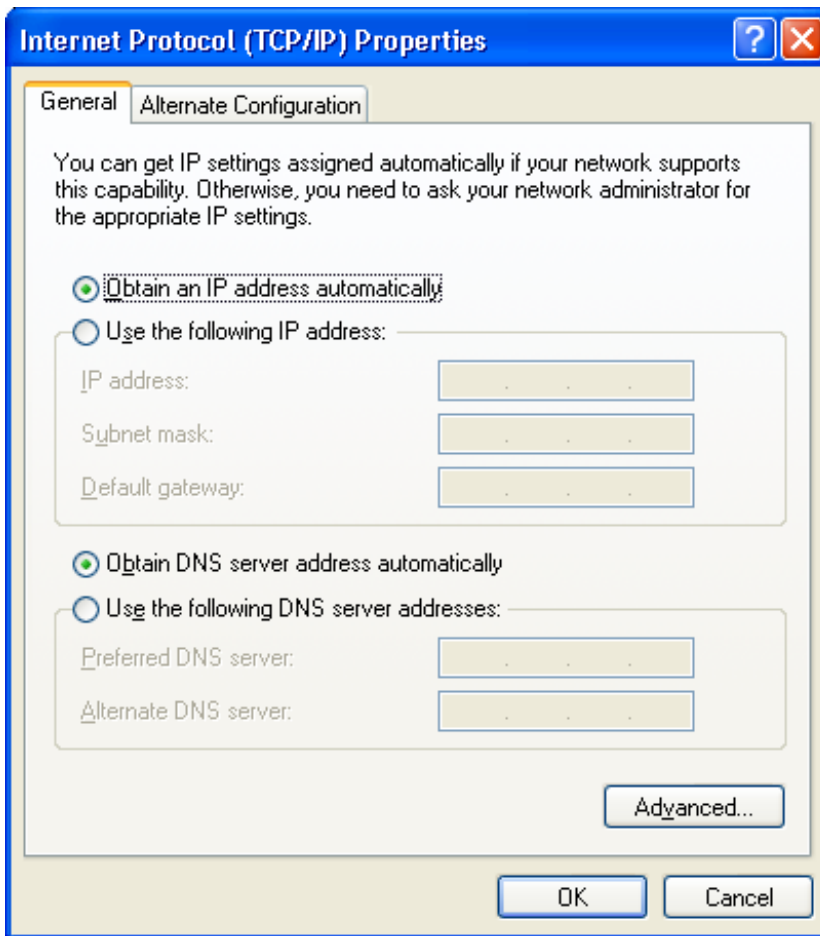
Your computer is now configured to connect to the SAGEM F@st™ 1500 ADSL Router.

3.2.4 On Windows XP

- 1) On the Windows desktop, click **Start/Control Panel**.
- 2) In the Control Panel window, click **Network and Internet Connections**.
- 3) The Network Connections window will open. Double-click the connection for this device.
- 4) On the connection status screen, click **Properties**.



- 5) Double-click **Internet Protocol (TCP/IP)**.



- 6) If “**Obtain an IP address automatically**” and “**Obtain DNS server address automatically**” are already selected, your computer is already configured for DHCP. If not, select this option.

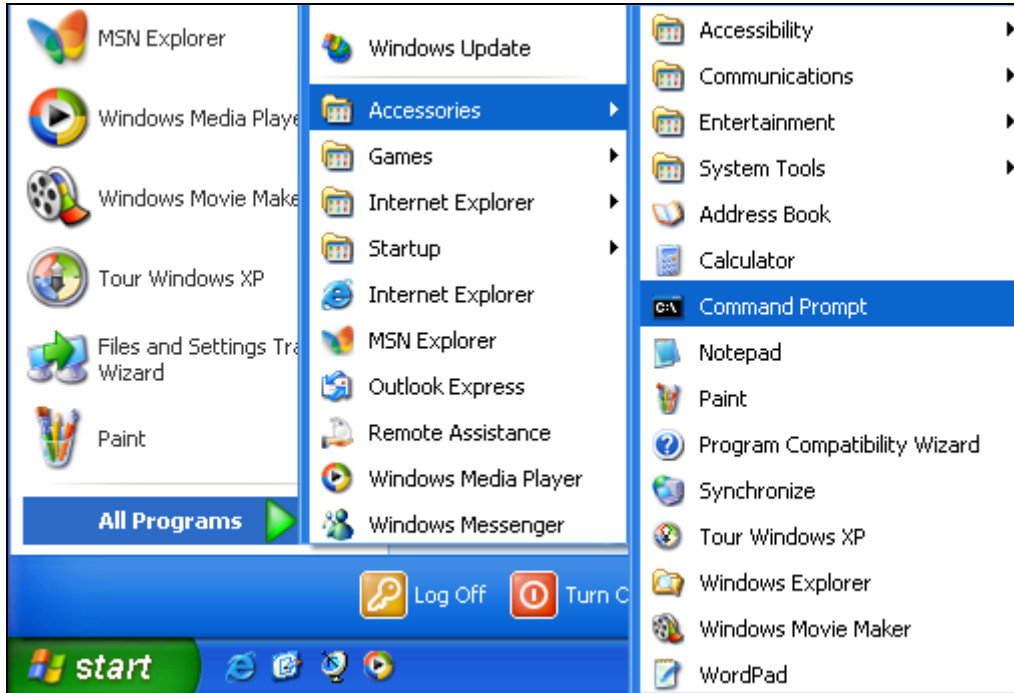
Disable HTTP Proxy

You need to verify that the “HTTP Proxy” feature of your web browser is disabled. This is so that your browser can view the SAGEM F@st™ 1500 ADSL Router’s HTML configuration pages. (refer to Internet Explorer on § 3.2.1).

Obtain IP Settings from Sagem F@st1500 ADSL Router

Now that you have configured your computer to connect to your SAGEM F@st™ 1500 ADSL Router, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from SAGEM F@st™ 1500 ADSL Router, you can verify that you have configured your computer correctly.

- 1) On the Windows desktop, click **Start/All Programs/Accessories/ Command Prompt**.



- 2) In the Command Prompt window, type "**IPCONFIG/RELEASE**" and press the **ENTER** key.

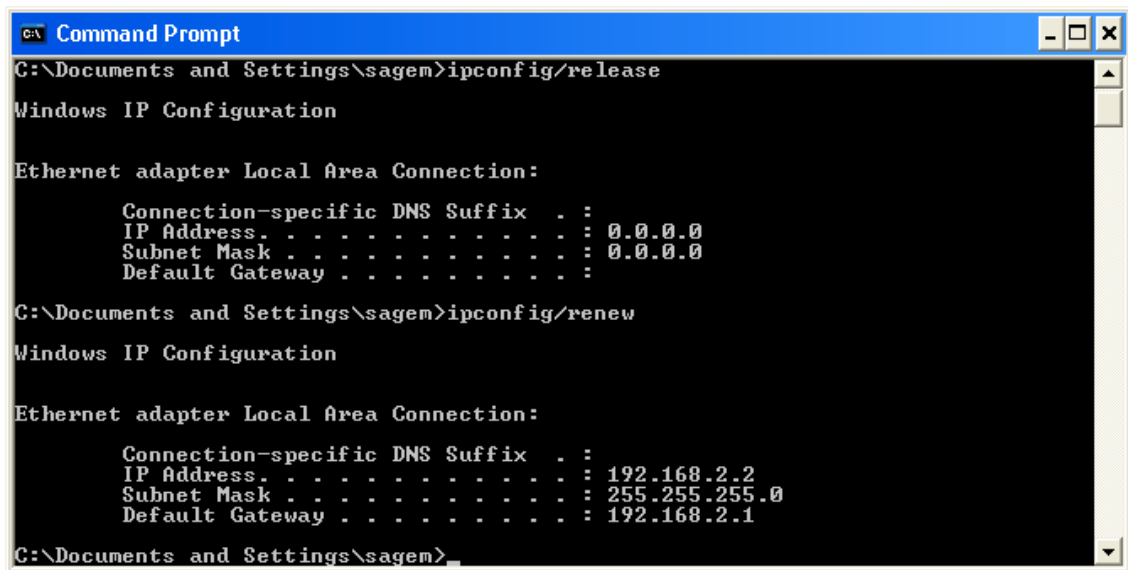
```
C:\Documents and Settings\sagem>ipconfig/release
Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . : 

C:\Documents and Settings\sagem>
```

- 3) Type "**IPCONFIG /RENEW**" and press the ENTER key. Verify that your IP Address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that your SAGEM F@st™ 1500 ADSL Router is functioning. Type "**EXIT**" and press the ENTER key to close the Command Prompt window.



```
C:\Documents and Settings\sagem>ipconfig/release
Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . : 

C:\Documents and Settings\sagem>ipconfig/renew
Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 192.168.2.2
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.1

C:\Documents and Settings\sagem>
```

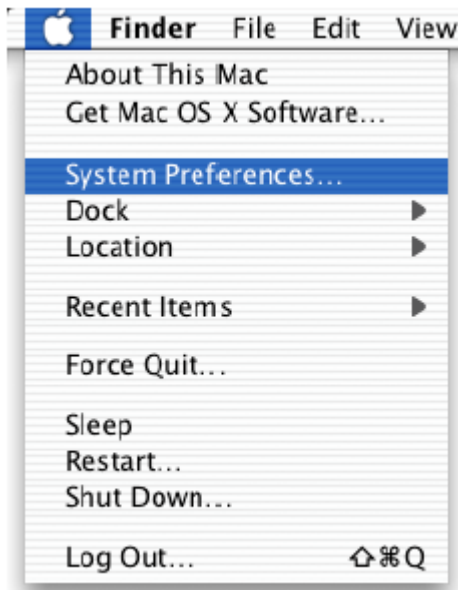
Your computer is now configured to connect to the SAGEM F@st™ 1500 ADSL Router.

3.3 Configuring your Mac computer

You may find that the instructions here do not exactly match your operating system. This is because these steps and screenshots were created using Mac OS 10.2. Mac OS 7.x and above are similar, but may not be identical to Mac OS 10.2.

Follow these instructions:

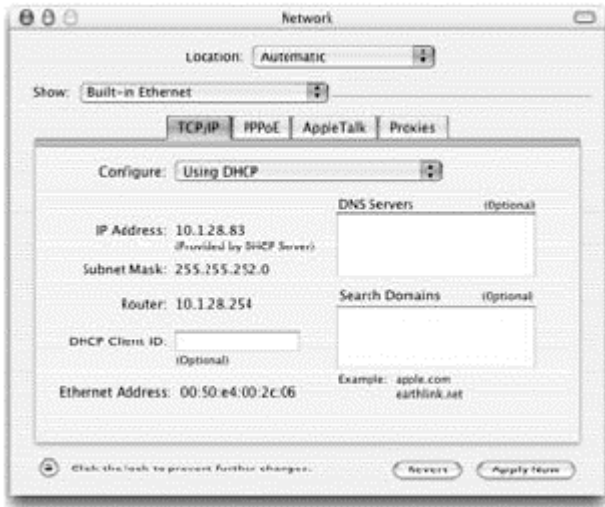
- 1) Pull down the Apple Menu . Click **System Preferences**.



- 2) Double-click the **Network** icon in the **Systems Preferences** window.



- 3) If “Using DHCP Server” is already selected in the Configure field, your computer is already configured for DHCP. If not, select this Option.



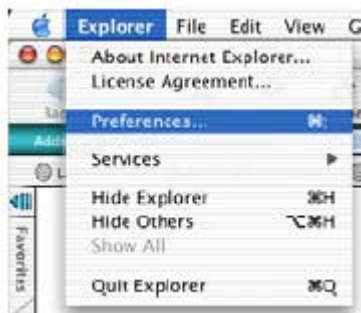
- 4) Your new settings are shown on the TCP/IP tab. Verify that your IP Address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that your SAGEM F@st™ 1500 ADSL Router is functioning.
- 5) Close the Network window. Now your computer is configured to connect to the SAGEM F@st™ 1500 ADSL Router.

Disable HTTP Proxy

You need to verify that the “HTTP Proxy” feature of your web browser is disabled. This is so that your browser can view the SAGEM F@st™ 1500 ADSL Router’s HTML configuration pages. The following steps are for Internet Explorer.

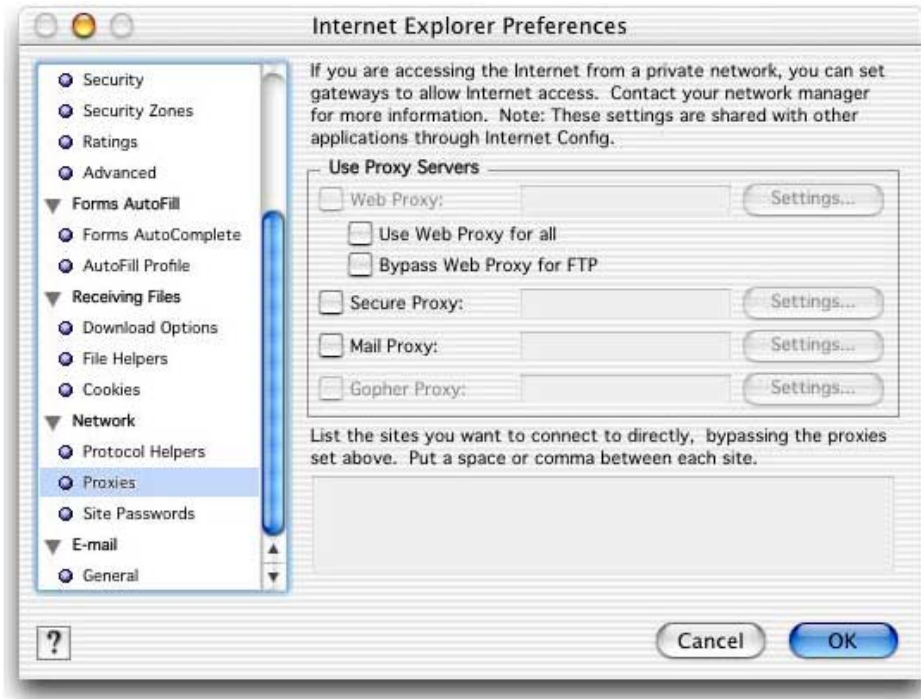
Internet Explorer

- 1) Open Internet Explorer and click the **Stop** button. Click **Explorer/Preferences**.



- 2) In the Internet Explorer Preferences window, under Network, select **Proxies**.
- 3) Uncheck all check boxes and click **OK**.

3 - Configuring Client Computer



4. Configuring the SAGEM F@st™ 1500 ADSL router

This chapter covers	➤ The SETUP WIZARD menu	Section 4.2
	➤ The ADVANCED menu	Section 4.11
	➤ Finding the MAC address of a Network Card	Section 4.12

4 - Configuring the SAGEM F@st™ 1500 ADSL router



After you have configured TCP/IP on a client computer, you can configure the SAGEM @st™ 1500 ADSL Router using Internet Explorer 5.0 or above.

To access the SAGEM F@st™ 1500 ADSL Router's management interface, enter the default IP address of the SAGEM F@st™ 1500 ADSL Router in your web browser: <http://192.168.2.1>. Validate by pressing **Enter**.

The home page will be displayed in the Web browser.

Nota: This home differs depending on the model:

- SAGEM F@st™ 1500,
- SAGEM F@st™ 1500WG.

SAGEM F@st™ 1500

The "Information" page can be accessed from the home page.

It takes the user to the different menus of the HTTP configurator.

STATUS

Refresh

ADSL

Status	Operation Mode	Up Stream	Down Stream
DOWN	MULTIMODE	0 Kb	0 Kb

WAN

VC	Status	Connect	VCC	Protocol	Username	Public IP
1	DOWN	Connect	8/35/VC MUX	PPPoA		---/---

LAN / Wireless

IP Address	Subnet Mask	DHCP Server	Wireless	Channel	UPnP
192.168.2.1	255.255.255.0	Enabled	Enabled	6	Enabled

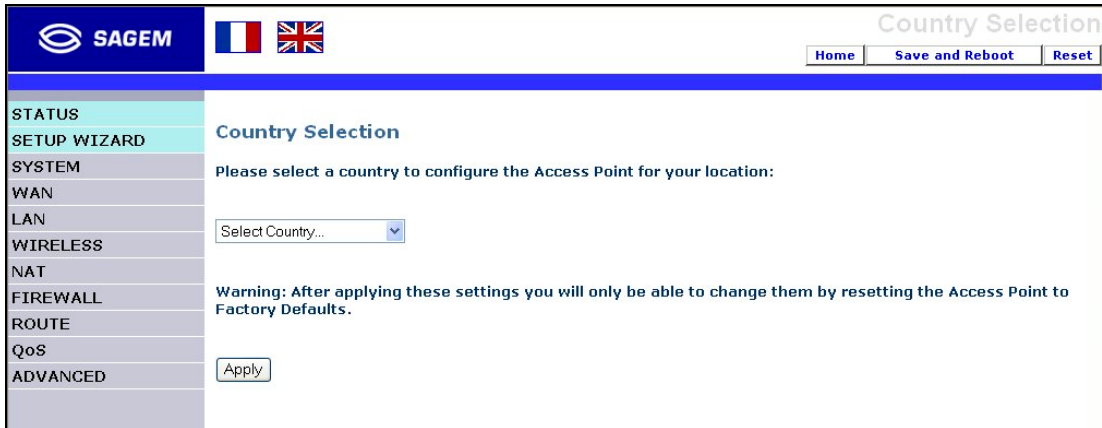
Additional information

Runtime Code Version:	F@st 1500WG Ver. 2.08.d (Jan 28 2005 12:07:45)
Boot Code Version:	0.62
ADSL Modem Code Version:	03.00.14.247A
Serial Num:	A413034036
Hardware Version:	01
LAN MAC Address:	00-60-4C-3A-30-00
Wireless MAC Address:	00-60-4C-3A-30-02
WAN MAC Address:	00-60-4C-3A-30-01
Numbers of DHCP Clients:	1

SAGEM F@st™ 1500WG

The “Select your country” page can be accessed from the home page.

It enables the user to choose a country for Wi-Fi area.



The screenshot shows the SAGEM F@st™ 1500WG web interface. At the top left is the SAGEM logo. To its right are the flags of France and the United Kingdom. In the top right corner, the text "Country Selection" is displayed, along with three buttons: "Home", "Save and Reboot", and "Reset". On the left side, there is a vertical menu with the following items: STATUS, SETUP WIZARD (highlighted), SYSTEM, WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled "Country Selection" and contains the text "Please select a country to configure the Access Point for your location:". Below this text is a dropdown menu labeled "Select Country...". A warning message follows: "Warning: After applying these settings you will only be able to change them by resetting the Access Point to Factory Defaults." At the bottom of the main content area is an "Apply" button.



To access the various menus of the HTTP configurator, it is imperative to validate the country chosen by clicking on the Apply button.



The choice of country determines the range of channels that you can use in Wi-Fi mode.

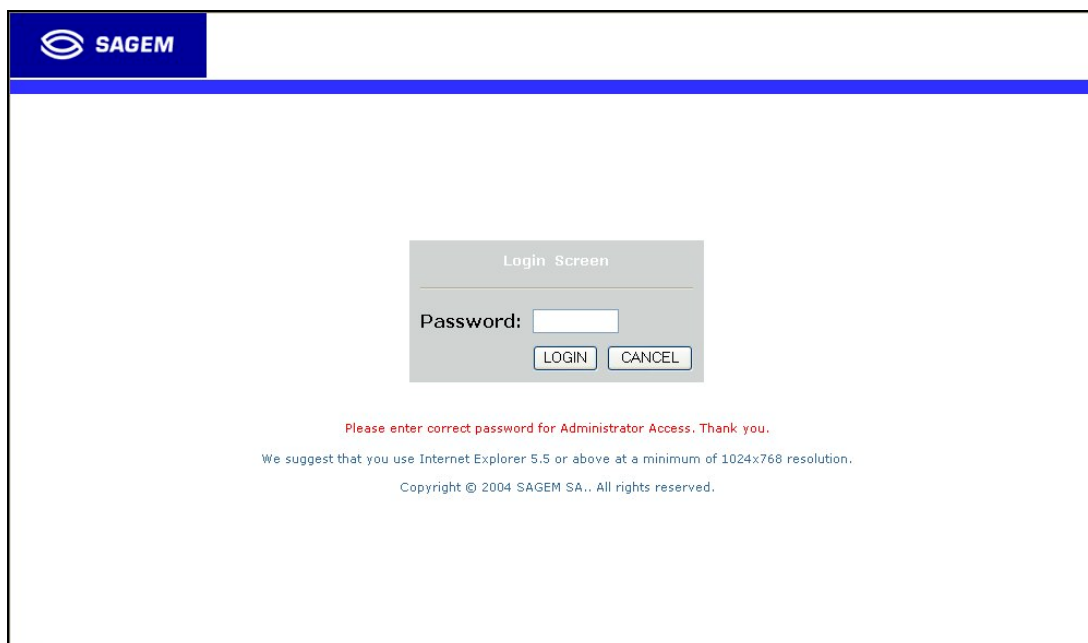
4 - Configuring the SAGEM F@st™ 1500 ADSL router

By default, no password is required to access the home page screen.

However, a password can be created on your modem/router through the Password Setting (see subsection 4.3.2) under « SYSTEM » menu.

If a password is created, the login screen below is displayed.

Enter this password and then click on the **LOGIN** button to access the HTTP configurator.



You can now configure the modem/router.

Navigating the Management Interface

The SAGEM F@st™ 1500 ADSL Router's management interface consists of a **Setup Wizard** and an **Advanced Setup** section.

Setup Wizard: Use the Setup Wizard if you want to quickly set up the SAGEM F@st™ 1500 ADSL Router. Go to "SETUP WIZARD" on section 4.2

Advanced Setup: Advanced Setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, virtual server setup, virtual DMZ host, as well as other functions. Go to "Advanced Setup" on section 4.11.



You can also display router information on section 4.1.

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, click the “**SAVE SETTINGS**” or “**NEXT**” button at the bottom of the page to enable the new setting.



To ensure proper screen refresh after a command entry, be sure that Internet Explorer 5.0 is configured as follows:

Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for “Check for newer versions of stored pages” should be “Every visit to the page”.

Some new settings require a “**Save & Reboot**” process to store the modifications in the flush memory. You can click the “**Save & Reboot**” button at the top of page.

This section on the left of the Home screen contains the following menus:

- **STATUS** (see section 4.1),
- **SETUP WIZARD** (see section 4.2),
- **SYSTEM** (see section 4.3),
- **WAN** (see section 4.4),
- **LAN** (see section 4.5),
- **WIRELESS** (see section 4.6),
- **NAT** (see section 4.7),
- **FIREWALL** (see section 4.8),
- **ROUTE** (see section 4.9),
- **QoS** (see section 4.10),
- **ADVANCED** (see section 4.11).




On the Home screen, you can choose the language in which the HTTP pages will be displayed by clicking the appropriate flag (French or English).

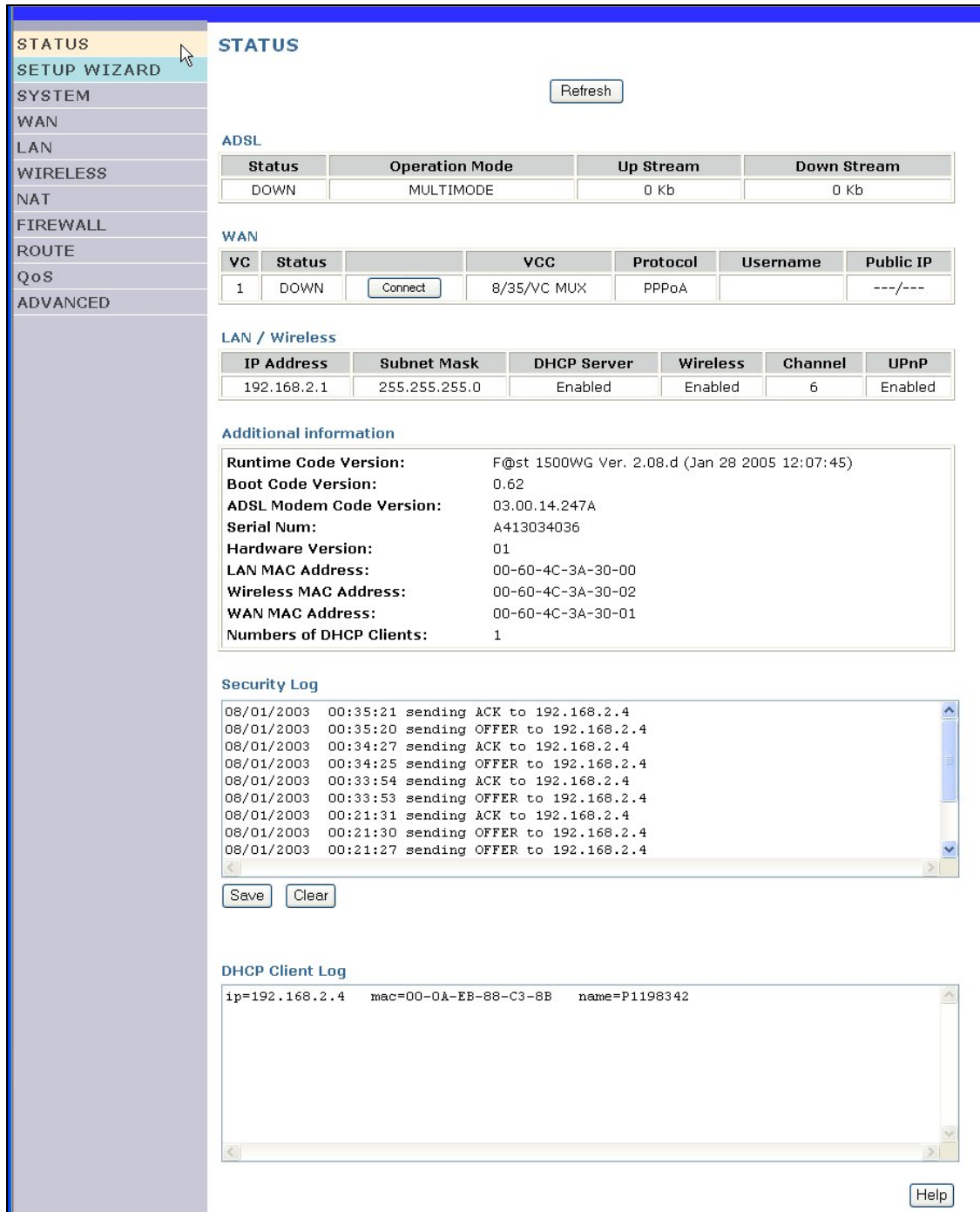
By default, the language in use is English.

4.1 STATUS

The Status page displays ADSL/WAN/LAN connection status, firmware, and hardware version numbers, illegal attempts to access your network, as well as information on DHCP clients

connected to your network. The security log may be saved within a file by clicking the  button and choosing a location on your computer.

Scroll down to view more information on the **STATUS** page.



STATUS

ADSL

Status	Operation Mode	Up Stream	Down Stream
DOWN	MULTIMODE	0 Kb	0 Kb

WAN

VC	Status	VCC	Protocol	Username	Public IP
1	DOWN <input type="button" value="Connect"/>	8/35/VC MUX	PPPoA		---/---

LAN / Wireless

IP Address	Subnet Mask	DHCP Server	Wireless	Channel	UPnP
192.168.2.1	255.255.255.0	Enabled	Enabled	6	Enabled

Additional information

Runtime Code Version: F@st 1500WG Ver. 2.08.d (Jan 28 2005 12:07:45)
 Boot Code Version: 0.62
 ADSL Modem Code Version: 03.00.14.247A
 Serial Num: A413034036
 Hardware Version: 01
 LAN MAC Address: 00-60-4C-3A-30-00
 Wireless MAC Address: 00-60-4C-3A-30-02
 WAN MAC Address: 00-60-4C-3A-30-01
 Numbers of DHCP Clients: 1

Security Log

```
08/01/2003 00:35:21 sending ACK to 192.168.2.4
08/01/2003 00:35:20 sending OFFER to 192.168.2.4
08/01/2003 00:34:27 sending ACK to 192.168.2.4
08/01/2003 00:34:25 sending OFFER to 192.168.2.4
08/01/2003 00:33:54 sending ACK to 192.168.2.4
08/01/2003 00:33:53 sending OFFER to 192.168.2.4
08/01/2003 00:21:31 sending ACK to 192.168.2.4
08/01/2003 00:21:30 sending OFFER to 192.168.2.4
08/01/2003 00:21:27 sending OFFER to 192.168.2.4
```

DHCP Client Log

```
ip=192.168.2.4 mac=00-0A-EB-88-C3-8B name=P1198342
```

The following items are included on the Status page:

Item	Description
ADSL	Displays ADSL link parameters and connection status.
WAN	<p>Displays your VC settings and its status.</p> <p>Displays WAN connection type and status</p> <p>Click on the <input type="button" value="Connect"/> button to establish the VC's connection, click on the Disconnect button to stop it.</p>
LAN / Wireless	Displays system IP settings, as well as DHCP Server, UPnP, and Wireless status.
Additional Information	Displays the number of DHCP clients, the firmware versions, the physical MAC address for each media interface, and for the SAGEM F@st™ 1500 ADSL Router, as well as the hardware version and serial number.
Security Log	<p>Displays events exchanged on your WAN network with the remote equipment.</p> <p>Click <input type="button" value="Save"/> button saves all the displayed events from the Security Log window within a file on your PC.</p> <p>Click <input type="button" value="Clear"/> button deletes all the events from the Security Log.</p>
DHCP Client Log	Displays information on DHCP clients on your network.

<input type="button" value="Refresh"/>	In the top of the screen, click on this button to refresh the status and the Security Log.
--	--

4.2 "SETUP WIZARD" menu

In this menu is included the following sub-menus:

- PPP setting (see section 4.2.1),
- Channel and SSID (see section 4.2.2),
- WEP (see section 4.2.3),
- Access control (see section 4.2.4).

4.2.1 PPP Setting

The screenshot shows the SAGEM SETUP WIZARD interface. At the top, there is a blue header with the SAGEM logo, flags for France and the UK, and the text 'SETUP WIZARD'. Below the header are buttons for 'Home', 'Reset', and 'Logout'. On the left, a sidebar lists four menu items: '1. PPP settings', '2. Channel and SSID', '3. WEP', and '4. Access control'. The main content area is titled '1. PPP settings' and contains the instruction: 'Please enter your PPP account information provided by your service provider.' Below this instruction are three input fields: 'Username' with the value 'username', 'Password' with masked characters '•••••', and 'Confirm Password' with masked characters '•••••'. A 'Next' button is located at the bottom right of the form.

Enter the PPPoA (Point-to-Point Protocol over ATM) settings provided by your ISP.

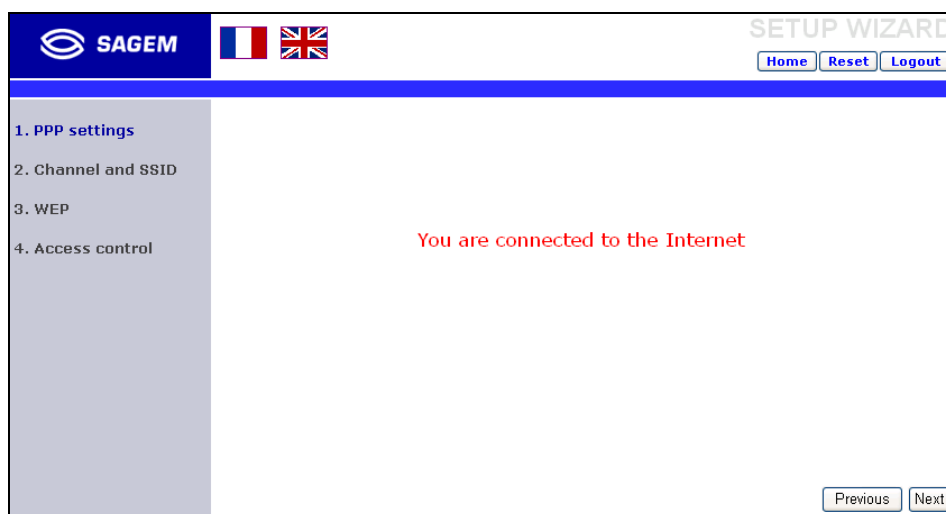
Parameter	Description
Username	Enter the ISP assigned user name
Password	Enter your password
Confirm Password	Confirm your password

This will automatically configure the SAGEM F@st™ 1500 ADSL Router with the correct Protocol, Encapsulation and VPI/VCI settings for your ISP.

Click "Next", the router will try to connect to the Internet.

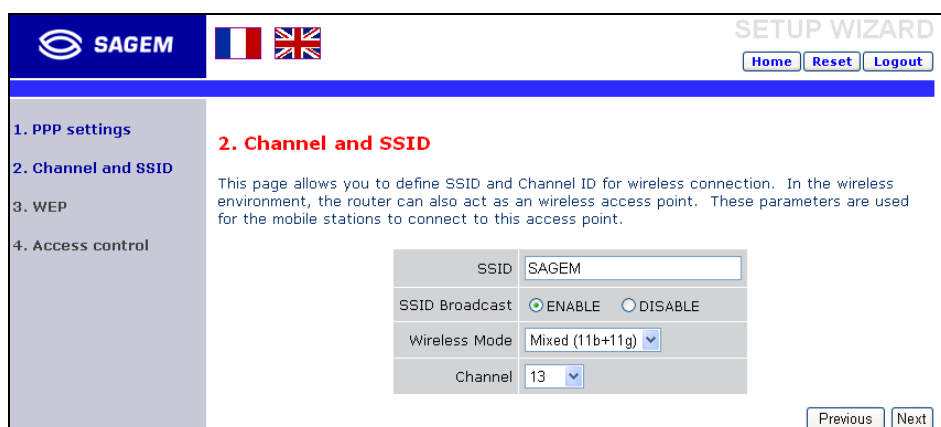
The screenshot shows the SAGEM SETUP WIZARD interface during the connection phase. The header and sidebar are the same as in the previous screenshot. The main content area displays the text 'Connecting to Internet, Please wait...' in red.

Once the ADSL Router has been connected to the Internet, you get the following message:



4.2.2 Channel and SSID

Now, you can start the wireless configuration.



You must specify a common radio channel and SSID (Service Set ID) to be used by the SAGEM F@st™ 1500 ADSL Router and all of its wireless clients. Be sure you configure all of its clients to the same values.

Parameter	Description
ESSID	Extended Service Set ID. The ESSID must be the same on the SAGEM F@st™ 1500 ADSL Router and all of its wireless clients.
ESSID Broadcast	Enable or disable the broadcasting of the SSID.
Wireless Mode	This device supports both 802.11g and 802.11b wireless networks. Make your selection depending on the type of wireless network that you have.
Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel number must be the same on the ADSL Router and all of its wireless clients.

4.2.3 WEP

To make your wireless network safe, you should turn on the security function.

Parameter	Description
WEP module function	Select Disable or Enable key to use or not WEP module function. Remark: It is advised to select the Enable key.
WEP Mode	Select 64 bit or 128 bit key to use for encryption.
Key Entry Method	Select Hex or ASCII key to use a Key Entry Method (Hexadecimal or ASCII).

To validate the WEP security protection, you should to set the same parameters for the SAGEM F@st™ 1500 ADSL Router and all your wireless clients.

You may automatically generate encryption keys or manually enter the keys. To generate the key automatically with passphrase, check the Passphrase box, enter a string of characters. Select the default key from the drop down menu. Click "**Next**".



The passphrase can consist of up to 32 alphanumeric characters. To manually configure the encryption key, enter five hexadecimal pairs of digits for each 64-bit key, or enter 13 pairs for the single 128-bit key (A hexadecimal digit is a number or letter in the range 0-9 or A-F.). Note that WEP protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

4.2.4 Access Control

Access Control allows users to define the outgoing traffic permitted or not-permitted through the Wi-Fi interface. The default is to permit all outgoing traffic.

The following items are on the Access Control screen:

- Click **Yes** to turn on the filtering function, or **No** to disable this function.

If you have enabled this function, you can enter the client MAC addresses that you want to filter.



You can give up to 32 client stations.

4. Access control

For a more secure Wireless network you can specify that only certain Wireless PCs can connect to the Access Point. Up to 8 MAC addresses can be added to the MAC Filtering Table. When enabled, all registered MAC addresses are controlled by the Access Rule.

- Enable MAC Filtering : Yes No
- Access Rule for registered MAC address : Allow Deny
- MAC Filtering Table (up to 8 stations)

ID	MAC Address
1	00 : 00 : 00 : 00 : 00 : 00
2	00 : 00 : 00 : 00 : 00 : 00
3	00 : 00 : 00 : 00 : 00 : 00
4	00 : 00 : 00 : 00 : 00 : 00
5	00 : 00 : 00 : 00 : 00 : 00
6	00 : 00 : 00 : 00 : 00 : 00
7	00 : 00 : 00 : 00 : 00 : 00
8	00 : 00 : 00 : 00 : 00 : 00

Add currently associated MAC stations

Previous Finish

Once you have done your settings, click “Finish” to save these settings and quit the Setup Wizard.

Your SAGEM F@st™ 1500 ADSL Router is now set up. Go to “Troubleshooting” on Appendice A, if you cannot make a connection to the Internet.

4.3 SYSTEM

In this menu is included the following sub-menus:

- Time setting (see section 4.3.1),
- Password setting and SSID (see section 4.3.2),
- Configuration tools (see section 4.3.3),
- Firware upgrade (see section 4.3.4),
- Reset (see section 4.3.5).

4.3.1 Time Settings

Select your local time zone from the drop down list. This information is used for log entries and client filtering.

The screenshot displays the 'Time Settings' configuration page. On the left is a vertical navigation menu with the following items: STATUS, SETUP WIZARD, SYSTEM, Time Settings (selected), Password Settings, Configuration Tools, Firmware Upgrade, Reset, WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'Time Settings' and contains the following sections:

- Set Time Zone:** A dropdown menu showing '(GMT+01:00)Brussels, Copenhagen, Paris, Vilnius'. Below it is the instruction: 'Use this setting to insure the time-based client filtering feature and system log entries are based on the correct localized time.'
- Configure Time Server (NTP):** A section with the instruction: 'You can automatically maintain the system time on your ADSL router by synchronizing with a public time server over the Internet.'
- Enable Automatic Time Server Maintenance:** A checkbox that is checked.
- Primary Server:** A dropdown menu showing '129.132.2.21 - Europe'.
- Secondary Server:** A dropdown menu showing '130.149.17.8 - Europe'.

At the bottom right of the page are buttons for 'Help', 'Apply', and 'Cancel'. At the top right of the page are buttons for 'Home', 'Save and Reboot', 'Reset', and 'Logout'.

For accurate timing of log entries and system events, you need to set the time zone. Select your time zone from the drop down list. If you want to automatically synchronize the SAGEM F@st™ 1500 ADSL Router with a public time server, check the box to Enable Automatic Time Server Maintenance. Select the desired servers from the drop down menu.

4.3.2 Password Settings

Use this page to change the password for accessing the management interface of the SAGEM F@st™ 1500 ADSL Router. Passwords can contain from 3 to 12 alphanumeric characters and are case sensitive.

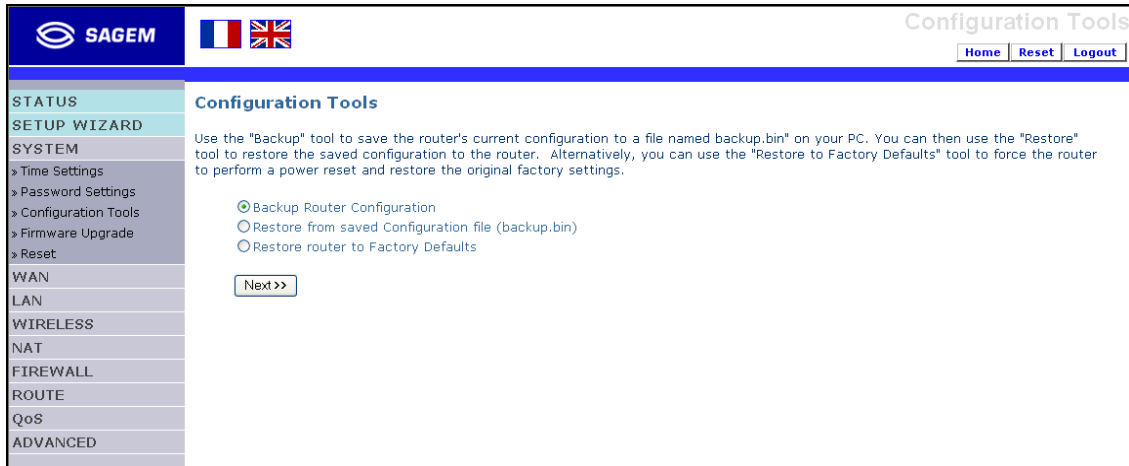


If you lost the password, or you cannot gain access to the user interface, press the blue reset button on the rear panel, holding it down for at least five seconds to restore the factory defaults. The default password is “**empty**”.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform system logout, and you have to log in again to access the management interface. The default timeout is fixed to 10 minutes.

4.3.3 Configuration tools

Use the Tools menu to backup the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the SAGEM F@st™ 1500 ADSL Router.



Choose a function and click Next:

- Backup allows you to save the SAGEM F@st™ 1500 ADSL Router's configuration to a file.
- Restore can be used to restore the saved backup configuration file
- Restore to Factory Defaults resets the SAGEM F@st™ 1500 ADSL Router to the original settings.

You will be asked to confirm your decision.

4.3.4 Firmware Upgrade

Use this screen to update the firmware or user interface to the latest versions. Download the upgrade file from the Sagem web site, and save it to your hard drive. In the Upgrade Target field, choose Firmware. Then click **“Browse...”** to look for the downloaded file. Click **“Apply”**.

Check the Status page Information section to confirm that the upgrade process was successful.

The screenshot shows the SAGEM web interface for the Firmware Upgrade page. The top navigation bar includes the SAGEM logo, flags for France and the UK, and links for Home, Reset, and Logout. The left sidebar contains a menu with options: STATUS, SETUP WIZARD, SYSTEM (with sub-options: Time Settings, Password Settings, Configuration Tools, Firmware Upgrade, Reset), WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'Firmware Upgrade' and contains the following text: 'This tool allows you to upgrade the router firmware using a file provided by us. You can download the latest firmware from <http://www.sagem.com>. Enter the path and name, or browse to the location, of the upgrade file then click the Apply button. You will be prompted to confirm the upgrade to complete the process.' Below this text is a 'Firmware File' input field followed by a 'Parcourir...' button. At the bottom right of the main content area are 'Help', 'Apply', and 'Cancel' buttons.

4.3.5 Reset

Click **“REBOOT ROUTER”** to reset the SAGEM F@st™ 1500 ADSL Router. The reset will be completed when the power LED stops blinking.

The screenshot shows the SAGEM web interface for the Reset page. The top navigation bar includes the SAGEM logo, flags for France and the UK, and links for Home, Reset, and Logout. The left sidebar contains a menu with options: STATUS, SETUP WIZARD, SYSTEM (with sub-options: Time Settings, Password Settings, Configuration Tools, Firmware Upgrade, Reset), WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'Reset' and contains the following text: 'In the event that the system stops responding correctly or in some way stops functioning, you can perform a reset. Your settings will not be changed. To perform the reset, click on the Apply button below. You will be asked to confirm your decision. The reset will be complete when the power light stops blinking.' Below this text are 'Help', 'Apply', and 'Cancel' buttons.

If you perform a reset from this page, the configurations will not be changed back to the factory default settings.



If you use the Reset button on the front panel, the SAGEM F@st™ 1500 ADSL Router performs a power reset. If the button is depressed for over five seconds, all the LEDs will be lighted and the factory settings will be restored.

4.4 "WAN" menu

Specify the WAN connection parameters provided by your Internet Service Provider (ISP).

The SAGEM F@st™ 1500 ADSL Router can be connected to your ISP in one of the following ways:

- ATM PVC (see section 4.4.1),
- Clone MAC (see section 4.4.2).

The screenshot displays the WAN configuration interface. At the top left is the SAGEM logo and flags for France and the UK. At the top right are 'Home', 'Reset', and 'Logout' buttons. The left sidebar contains a menu with the following items: STATUS, SETUP WIZARD, SYSTEM, WAN, > VC1, > VC2, > VC3, > VC4, > VC5, > VC6, > VC7, > VC8, > Clone MAC Address, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'WAN' and contains the text: 'The router can be connected to your service provider in any of the following ways:'. Below this text are two options: 'ATM PVC' with the description 'To configure ATM VC parameters' and 'Clone MAC' with the description 'To configure WAN Interface MAC Address'.

4.4.1 ATM PVC

Enter ATM (Asynchronous Transfer Mode) function parameters here.

The screenshot shows the 'ATM Interface' configuration page for the SAGEM F@st 1500 ADSL router. The page is titled 'ATM Interface' and includes a navigation menu with 'Home', 'Save and Reboot', 'Reset', and 'Logout'. The left sidebar contains a menu with 'STATUS', 'SETUP WIZARD', 'SYSTEM', 'WAN', 'VC1-VC8', 'Clone MAC Address', 'LAN', 'WIRELESS', 'NAT', 'FIREWALL', 'ROUTE', 'QoS', and 'ADVANCED'. The main content area is titled 'ATM Interface' and contains a table of configuration parameters for the 'ATM1' interface. The parameters are: Protocol (PPPoA), VPI/VCI (8/35), Encapsulation (VCMUX), QoS Class (UBR), PCR/SCR/MBS (4000/4000/10), IP assigned by ISP (Yes), IP Address (0.0.0.0), Subnet Mask (0.0.0.0), Connect Type (Always Connected), Idle Time (Minute) (20), Username (sagem), Password (masked), Confirm Password (masked), and MTU (1500). There are 'Help', 'Apply', and 'Cancel' buttons at the bottom right.

Parameter	Description	
Protocol	• Disable	Disables the ATM mode.
	• 1483 Bridging	Bridging: Bridging is a standardized layer 2 technology. It is typically used in corporate networks to extend the physical reach of a single LAN segment and increase the number of stations on a LAN without compromising performance. Bridged data is encapsulated using the RFC1483 protocol to enable data transport.
	• PPPoA:	Point-to-Point over ATM
	• 1483 Routing	Use 1483 Routing protocol.
	• PPPoE	Point-to-Point over Ethernet.
	• MAC Encapsulated Routing	MAC Encapsulated Routing
VPI / VCI	Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI). Each connection must have a unique pair of VPI/VCI settings.	
Encapsulation	Specifies how to handle multiple protocols at the ATM transport layer.	
	• VC-MUX	Point-to-Point Protocol over ATM Virtual Circuit Multiplexer (null encapsulation) allows only one protocol running per virtual circuit with less overhead.
	• LLC	Point-to-Point Protocol over ATM Logical Link Control (LLC) allows multiple protocols running over one virtual circuit (using slightly more overhead).

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QoS Class	• CBR	Constant Bit Rate . It is used for voice application.
	• VBR	Variable Bit Rate . It is used for video application.
	• UBR	Unspecified Bit Rate . It is used in Best Effort for IP and Ethernet (for Data Application)
PCR/SCR/MBS	• PCR	Peak Cell Rate , defined in number of cells / second.
	• SCR	Sustainable Cell Rate , defined in number of cells / second..
	• MBS	Maximum Burst Size , defined in number of cells / second..
IP assigned by ISP	Click Yes or No to assign or no IP address to your ISP	
IP Address	IP address of the ATM interface.	
Subnet Mask	Subnet mask of the ATM interface.	
Connect Type	• Always connected	Your router is always connected to the WAN (automatic mode).
	• Auto - Triggered by traffic	Your router only connect to WAN when traffic is on (automatic mode).
	• Manual - Start in Disconnected	When your router start, this is disconnected to WAN (Manual mode).
	• Manual - Start in Disconnected	When your router start, this is connected to WAN (Manual mode).
	• Manual - Start in Last State	When your router start, this connect to WAN in last stated (Manual mode).
Idle Time (Minute)	Enter the maximum idle time for the Internet connection. After this time has been exceeded the connection will be terminated.	
Username	In the field it appears the username that you entered during the SETUP WIZARD menu	
Password	In the field it appears the Password that you entered during the SETUP WIZARD menu	
Confirm Password	In the field it appears the Confirm Password that you entered during the SETUP WIZARD menu	
MTU	Specifies the maximum size of the payload data in IP packets as a number of bytes (default value is 1400).	

The following parameters only appear in "**Routed**" mode that you can select in the "Protocol" field:

Default Gateway	Default gateway of the ATM interface.
DHCP Client	Check this box if your ISP assigns an IP to clients using DHCP.

4.4.2 Clone MAC

Some ISPs require you to register your MAC address with them. If this is the case, the MAC address of the SAGEM F@st™ 1500 ADSL Router must be changed to the MAC address that you have registered with your ISP.

The screenshot shows the router's web interface for configuring the Clone MAC Address. The page title is "Clone MAC Address" and it includes navigation links for Home, Save and Reboot, Reset, and Logout. A sidebar on the left lists various configuration sections: STATUS, SETUP WIZARD, SYSTEM, WAN, VC1-VC8, Clone MAC Address, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled "Clone MAC Address" and contains the following text: "Some ISPs require you to register your MAC address with them. If you have done this, the MAC address of the Gateway must be changed to the MAC address that you supplied to your ISP." Below this text, there is a section for "WAN Interface MAC Address:" with three radio button options: "Use the Gateway's default MAC address 00:60:4C:3A:30:01" (which is selected), "Use this PC's MAC address 00:08:C7:25:AB:6B", and "Enter a new MAC address manually:". The manual entry option includes a form with six input fields containing the values 00, 08, C7, 25, AB, and 6B. At the bottom right of the form are buttons for Help, Apply, and Cancel.

4.5 LAN

Use the LAN menu to to:

- define the port-based VLAN belonging of the physical ports ie VLAN Binding.
- configure the LAN IP address and to enable the DHCP server for dynamic client address allocation.

The screenshot shows the configuration page for the LAN section of the SAGEM F@st 1500 ADSL router. The left sidebar contains a menu with options: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN (selected), > VLAN, > DNS, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'LAN' and includes a descriptive paragraph: 'You can enable DHCP to dynamically allocate IP addresses to your client PCs, or configure filtering functions based on specific clients or protocols. The router must have an IP address for the local network.' Below this, the 'LAN IP' section contains three input fields: 'IP Address' (192.168.2.1), 'IP Subnet Mask' (255.255.255.0), and 'DHCP Server' (radio buttons for 'Enabled' and 'Disabled', with 'Enabled' selected). The 'VLAN Binding' section features five dropdown menus for LAN1, LAN2, LAN3, LAN4, and WLAN, all set to 'Default'. Below these is a 'Lease Time' dropdown menu set to 'Two Days'. The 'IP Address Pool' section includes three input fields: 'Start IP' (192.168.2.2), 'End IP' (192.168.2.254), and 'Domain Name'. At the bottom right, there are 'Help', 'Apply', and 'Cancel' buttons.

Parameter	Description
LAN IP	
IP Address	The IP address of the SAGEM F@st™ 1500 ADSL Router.
IP Subnet Mask	The subnet mask of the network.
DHCP Server	The SAGEM F@st™ 1500 ADSL Router comes with the DHCP function. To dynamically assign an IP address to client PCs, enable this function.
VLAN Binding	
LAN1 to LAN4 / WLAN	Each LAN or Wireless LAN port can be bound to any configured VLAN profile. Per default, the LAN and WLAN ports are bound to a default VLAN
Lease Time	Set the IP lease time. For home networks this may be set to Forever, which means there is no time limit on the IP address lease.

Parameter	Description
IP Address Pool	
Start IP	Specify the start IP address of the DHCP pool. Do not include the gateway address of the SAGEM F@st™ 1500 ADSL Router in the client address pool. If you change the pool range, make sure the first three octets match the gateway's IP address, i.e., 192.168.2.xxx
End IP	Specify the end IP address of the DHCP pool.
Domain Name	If your network uses a domain name, enter it here. Otherwise, leave this field blank.

Modify all parameters on the screen, then click on "**Apply**".



Remember to configure your client PCs for dynamic address allocation (See section 3.1 for details).

In this menu is included the following sub-menus:

- VLAN (see section 4.5.1),
- DNS (see section 4.5.2).

4.5.1 VLAN

The VLAN menu allows the users to create a new VLAN entry and to configure its profile parameters. To create a new VLAN profile, simply click the «**Add VLAN**» hyperlink. The «**Edit**» and «**Delete**» buttons at the end of each VLAN profile entry allow users to modify and delete the specific VLAN profile respectively.

Note that there is no «**Delete**» button for the default VLAN profile that cannot be deleted

The default VLAN is created per default and mapped to all LAN and WLAN ports.

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Edit

Click on the **Edit** button in the configure field allows to display VLAN profile and modify its parameters.

The screenshot shows the 'VLAN Parameters' configuration page. On the left is a navigation menu with options: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, > VLAN, > DNS, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main area is titled 'VLAN Parameters' and contains the instruction 'Enter parameters of the profile to define a VLAN.' Below this is a form with the following fields:

Description	Default
IP Address	192 . 168 . 2 . 1
Subnet Mask	255 . 255 . 255 . 0
NAT Domain	<input checked="" type="radio"/> Private <input type="radio"/> Public
IGMP Snooping	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
IGMP Querier	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled

At the bottom right of the form are three buttons: HELP, SAVE SETTINGS, and CANCEL.

Enter parameters of the profile to define a VLAN, then click on the **SAVE SETTING** button to take into account the entered parameters.

Add VLAN

Click on Add VLAN allows to create a new VLAN entry.

This screenshot is identical to the one above, showing the 'VLAN Parameters' configuration page. The main difference is in the IP Address and Subnet Mask fields, which are set to 0 . 0 . 0 . 0 and 255 . 255 . 255 . 0 respectively. The rest of the form and navigation menu are the same.

Enter parameters of the profile to define a VLAN, then click on the **SAVE SETTING** button to take into account the entered parameters.

When you have created a VLAN profile, another **Delete** button appears in the Configure field and allows you to modify profile parameters or delete a VLAN profile.

4.5.2 DNS

Domain Name Servers (DNS) are used to map a domain name (e.g., www.sagem.com) with the IP address (e.g., **212.234.211.50**). Your ISP should provide the IP address of one or more Domain Name Servers.

Enter those addresses on this page, and click **Apply**.

STATUS	DNS				
SETUP WIZARD					
SYSTEM	A Domain Name Server (DNS) is an index of IP addresses and Web addresses. If you type a Web address into your browser, such as www.sagem.com , a DNS server will find that name in its index and find the matching IP address: xxx.xxx.xxx.xxx. Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP's are also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP address here.				
WAN					
LAN					
» VLAN					
» DNS					
WIRELESS					
NAT					
FIREWALL					
ROUTE					
QoS					
ADVANCED					
	<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Domain Name Server (DNS) Address</td> <td><input type="text"/></td> </tr> <tr> <td>Secondary DNS Address (optional)</td> <td><input type="text"/></td> </tr> </table>	Domain Name Server (DNS) Address	<input type="text"/>	Secondary DNS Address (optional)	<input type="text"/>
Domain Name Server (DNS) Address	<input type="text"/>				
Secondary DNS Address (optional)	<input type="text"/>				
	<input type="button" value="Help"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/>				

4.6 Wireless

The SAGEM F@st™ 1500 ADSL Router also operates as a wireless access point, allowing wireless computers to communicate with each other. To configure this function, all you need to do is enable the wireless function, define the radio channel, the domain identifier, and the security options. Check **Enable** and click "**Apply**".



In this menu is included the following sub-menus:

- Channel and SSID (see section 4.6.1),
- Access control (see section 4.6.2),
- Security (see section 4.6.3),
- WEP (see section 4.6.4),
- WPA setting (see section 4.6.5),
- 802.x (see section 4.6.6).

4.6.1 Channel and SSID

You must specify a common radio channel and SSID (Service Set ID) to be used by the SAGEM F@st™ 1500 ADSL Router and all of its wireless clients. Be sure you configure all of its clients to the same values.

The screenshot shows the 'Channel and SSID' configuration page in the SAGEM F@st™ 1500 ADSL Router web interface. The page title is 'Channel and SSID'. The navigation menu on the left includes: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS (with sub-items: Channel and SSID, Access control, Security, WEP, WPA, 802.1X), NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area has a header 'Channel and SSID' and a description: 'This page allows you to define SSID and Channel ID for wireless connection. In the wireless environment, the router can also act as an wireless access point. These parameters are used for the mobile stations to connect to this access point.' The configuration fields are: SSID (text input: SAGEM), SSID Broadcast (radio buttons: ENABLE selected, DISABLE), Wireless Mode (dropdown: Mixed (11b+11g)), and Channel (dropdown: Auto). There are 'Help', 'Apply', and 'Cancel' buttons at the bottom right.

Parameter	Description
SSID	Service Set ID. The ESSID must be the same on the SAGEM F@st™ 1500 ADSL Router and all of its wireless clients.
SSID Broadcast	Enable or disable the broadcasting of the SSID.
Wireless Mode	This device supports both 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have.
Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel number must be the same on the ADSL Router and all of its wireless clients.

4.6.2 Access Control

Access Control allows users to define the outgoing traffic permitted or not-permitted through the Wi-Fi interface. The default is to permit all outgoing traffic.

The following items are on the Access Control screen:

Access Control

For a more secure Wireless network you can specify that only certain Wireless PCs can connect to the Access Point. Up to 32 MAC addresses can be added to the MAC Filtering Table. When enabled, all registered MAC addresses are controlled by the Access Rule.

- Enable MAC Filtering : Yes No
- Access Rule for registered MAC address : Allow Deny
- MAC Filtering Table (up to 32 stations)

ID	MAC Address
1	00 : 00 : 00 : 00 : 00 : 00
2	00 : 00 : 00 : 00 : 00 : 00
3	00 : 00 : 00 : 00 : 00 : 00
4	00 : 00 : 00 : 00 : 00 : 00
5	00 : 00 : 00 : 00 : 00 : 00
6	00 : 00 : 00 : 00 : 00 : 00
7	00 : 00 : 00 : 00 : 00 : 00
8	00 : 00 : 00 : 00 : 00 : 00
9	00 : 00 : 00 : 00 : 00 : 00
10	00 : 00 : 00 : 00 : 00 : 00
11	00 : 00 : 00 : 00 : 00 : 00
12	00 : 00 : 00 : 00 : 00 : 00
13	00 : 00 : 00 : 00 : 00 : 00
14	00 : 00 : 00 : 00 : 00 : 00
15	00 : 00 : 00 : 00 : 00 : 00
16	00 : 00 : 00 : 00 : 00 : 00
17	00 : 00 : 00 : 00 : 00 : 00
18	00 : 00 : 00 : 00 : 00 : 00
19	00 : 00 : 00 : 00 : 00 : 00
20	00 : 00 : 00 : 00 : 00 : 00
21	00 : 00 : 00 : 00 : 00 : 00
22	00 : 00 : 00 : 00 : 00 : 00
23	00 : 00 : 00 : 00 : 00 : 00
24	00 : 00 : 00 : 00 : 00 : 00
25	00 : 00 : 00 : 00 : 00 : 00
26	00 : 00 : 00 : 00 : 00 : 00
27	00 : 00 : 00 : 00 : 00 : 00
28	00 : 00 : 00 : 00 : 00 : 00
29	00 : 00 : 00 : 00 : 00 : 00
30	00 : 00 : 00 : 00 : 00 : 00
31	00 : 00 : 00 : 00 : 00 : 00
32	00 : 00 : 00 : 00 : 00 : 00

Add currently associated MAC stations

Help Apply Cancel

Click **Yes** to turn on the filtering function, or **No** to disable this function.



If you have enabled this function, you can enter the client MAC addresses that you want to filter. (You can give up to 32 client stations).

4.6.3 Security

To make your wireless network safe, you should turn on the security function. The SAGEM F@st™ 1500 ADSL Router supports WEP (Wired Equivalent Privacy), WPA (Wi-Fi Protected), and 802.1x security mechanisms.

The screenshot displays the web interface of the SAGEM F@st™ 1500 ADSL Router. The top navigation bar includes the SAGEM logo, flags for France and the UK, and buttons for Home, Save and Reboot, Reset, and Logout. The left sidebar contains a menu with the following items: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS (with sub-items: Channel and SSID, Access control, Security, WEP, WPA, 802.1X), NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled "Security" and contains the following text: "The router can transmit your data securely over the wireless network. Matching security mechanisms must be setup on your router and wireless client devices. You can choose the allowed security mechanisms in this page and configure them in the sub-pages." Below this text is a dropdown menu labeled "Allowed Client Type:" with the selected option "No WEP, No WPA". At the bottom of the configuration area are buttons for Help, Apply, and Cancel.

4.6.4 WEP

If you want to use WEP to protect your wireless network, you need to set the same parameters for the SAGEM F@st™ 1500 ADSL Router and all your wireless clients.

The screenshot shows the SAGEM F@st™ 1500 ADSL Router web interface. The top navigation bar includes 'Home', 'Save and Reboot', 'Reset', and 'Logout'. The left sidebar lists various configuration sections: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, Channel and SSID, Access control, Security, WEP, WPA, 802.1X, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'WEP' and contains the following configuration options:

- WEP Mode: 64-bit 128-bit
- Key Entry Method: Hex ASCII
- Key Provisioning: Static Dynamic

Below these options is the 'Static WEP Key Setting' section, which includes a note: '10/26 hex digits for 64-WEP/128-WEP'. The configuration fields are:

- Default Key ID: 1 (dropdown menu)
- Passphrase: (checkbox) [text input] (1~32 characters)
- Key 1: 0101010101 [text input]
- Key 2: 0202020202 [text input]
- Key 3: 0303030303 [text input]
- Key 4: 0404040404 [text input]
- Clear: [button]

At the bottom right of the configuration area are buttons for 'Help', 'Apply', and 'Cancel'.

Parameter	Description
WEP Mode Key Provisioning	Select 64 bit or 128 bit key to use for encryption.
	Select Static if there is only one fixed key for encryption. If you want to select Dynamic, you would need to enable 802.1x function first.

You may automatically generate encryption keys or manually enter the keys. To generate the key automatically with passphrase, check the Passphrase box, enter a string of characters. Select the default key from the drop down menu. Click **“Apply”**.



The passphrase can consist of up to 32 alphanumeric characters. To manually configure the encryption key, enter five hexadecimal pairs of digits for each 64-bit key, or enter 13 pairs for the single 128-bit key (A hexadecimal digit is a number or letter in the range 0-9 or A-F). Note that WEP protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet SAGEM F@st™ 1500 ADSL Router using Internet Explorer 5.0 or above.

4.6.5 WPA

Wi-Fi Protected Access (**WPA**) combines Temporal Key Integrity Protocol (**TKIP**) and 802.1x mechanisms. It provides dynamic key encryption and 802.1x authentication service.

Parameter	Description
Cypher suite	The security mechanism used in WPA for encryption.
Authentication	Choose 802.1X or Pre-shared Key to use as the authentication method.
	<ul style="list-style-type: none"> •802.1X: for the enterprise network with a RADIUS server. •Pre-shared key for the SOHO network environment without an authentication server.
Pre-shared key type	Select the key type to be used in the Pre-shared Key.
Pre-shared Key	Type in the key here.
Group Key Re-Keying	The period of renewing broadcast/multicast key.

4.6.6 802.1X

If 802.1X is used in your network, then you should enable this function for the SAGEM F@st™ 1500 ADSL Router.

The screenshot displays the SAGEM F@st™ 1500 ADSL router's web interface. The top navigation bar includes the SAGEM logo, flags for France and the UK, and a breadcrumb trail: Home > Save and Reboot > Reset > Logout. The page title is "802.1X".

The left sidebar contains a menu with the following items: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS (with sub-items: Channel and SSID, Access control, Security, WEP, WPA, 802.1X), NAT, FIREWALL, ROUTE, QoS, and ADVANCED.

The main content area is titled "802.1X" and contains the following text: "This page allows you to set the 802.1X, a method for performing authentication to wireless connection. These parameters are used for this access point to connect to the Authentication Server."

The configuration fields are as follows:

802.1X Authentication	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Session Idle Timeout	300 Seconds (0 for no timeout checking)
Re-Authentication Period	3600 Seconds (0 for no re-authentication)
Quiet Period	60 Seconds after authentication failed
Server Type	RADIUS

RADIUS Server Parameters

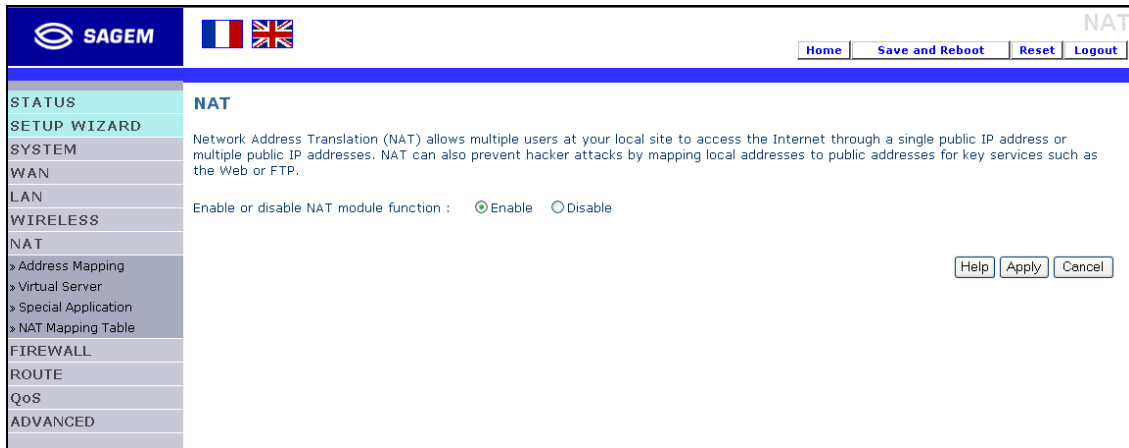
Server IP	192 . 168 . 2 . 1
Server Port	1812
Secret Key	
NAS-ID	

At the bottom right of the configuration area, there are three buttons: Help, Apply, and Cancel.

Parameter	Description
802.1X	
802.1X Authentication	Enable or disable this authentication function.
Session Idle timeout	Defines a maximum period of time for which the connection is maintained during inactivity.
Re-Authentication Period	Defines a maximum period of time for which the authentication server will dynamically re-assign a session key to a connected client.
Quiet Period	Defines a maximum period of time for which the SAGEM F@st™ 1500 ADSL Router will wait between failed authentications.
Server Type	Select TINY or RADIUS as the authentication server.
RADIUS Server Parameters	
Server IP	The IP address of your authentication server.
Server Port	The port used for the authentication service.
Secret Key	The secret key shared between the authentication server and its clients.
NAS-ID	Defines the request identifier of the Network Access Server.
TINY Server Users Profile (up to 10 users)	The Tiny Encryption Algorithm is used to encrypt the password with a randomly generated number sent by the server.
Index	Check the box of the user you wish to modify.
Username	Defines the user name of clients.
Password	Set the single-use password for the clients.
Re-Type Password	Confirm your password.
New	Create a new Tiny service account.
Clear	Clear the profile settings.

4.7 NAT

Network Address Translation allows multiple users to access the Internet sharing one public IP.



In this menu is included the following sub-menus:

- Address Mapping (see section 4.7.1),
- Virtual Server (see section 4.7.2),
- Special Application (see section 4.7.3),
- NAT Mapping Table (see section 4.7.4).

4.7.1 Address Mapping

This feature allows one or more public IP addresses to be shared by multiple internal users. This also hides the internal network for increased privacy and security. Enter the Public IP address you wish to share into the Global IP field. Enter a range of internal IPs that will share the global IP into the “from” field.

The screenshot shows the 'Address Mapping' configuration page in the SAGEM F@st 1500 ADSL router's web interface. The page title is 'Address Mapping' and it includes a navigation menu on the left with options like STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, NAT, Address Mapping, Virtual Server, Special Application, NAT Mapping Table, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'Address Mapping' and contains a description of Network Address Translation (NAT). Below the description is a list of 10 mapping entries, each with a 'Global IP' field, a description 'is transformed as multiple virtual IPs', and a 'from' field with a 'to' field. At the bottom right, there are buttons for 'Help', 'Apply', and 'Cancel'.

4.7.2 Virtual Server

If you configure the SAGEM F@st™ 1500 ADSL Router 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. In other words, depending on the requested service (TCP/UDP port number), the SAGEM F@st™ 1500 ADSL Router redirects the external service request to the appropriate server (located at another internal IP address).

Virtual Server

You can configure the router as a virtual server so that remote users accessing services such as the Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the router redirects the external service request to the appropriate server (located at another internal IP address). This tool can support both port ranges, multiple ports, and combinations of the two.

For example:

- Port Ranges: ex. 100-150
- Multiple Ports: ex. 25,110,80
- Combination: ex. 25-100,800

No.	LAN IP Address	Protocol Type	LAN Port	Public Port	Enable		
1		TCP			<input type="checkbox"/>	Add	Clean
2		TCP			<input type="checkbox"/>	Add	Clean
3		TCP			<input type="checkbox"/>	Add	Clean
4		TCP			<input type="checkbox"/>	Add	Clean
5		TCP			<input type="checkbox"/>	Add	Clean
6		TCP			<input type="checkbox"/>	Add	Clean
7		TCP			<input type="checkbox"/>	Add	Clean
8		TCP			<input type="checkbox"/>	Add	Clean
9		TCP			<input type="checkbox"/>	Add	Clean
10		TCP			<input type="checkbox"/>	Add	Clean
11		TCP			<input type="checkbox"/>	Add	Clean
12		TCP			<input type="checkbox"/>	Add	Clean
13		TCP			<input type="checkbox"/>	Add	Clean
14		TCP			<input type="checkbox"/>	Add	Clean
15		TCP			<input type="checkbox"/>	Add	Clean
16		TCP			<input type="checkbox"/>	Add	Clean
17		TCP			<input type="checkbox"/>	Add	Clean
18		TCP			<input type="checkbox"/>	Add	Clean
19		TCP			<input type="checkbox"/>	Add	Clean
20		TCP			<input type="checkbox"/>	Add	Clean

Help Cancel

For example, if you set Type/Public Port to TCP/80 (HTTP or web) and the Private IP/Port to 192.168.2.2/80, then all HTTP requests from outside users will be transferred to 192.168.2.2 on port 80. Therefore, by just entering the IP address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them. The more common TCP service ports include: HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110. A list of ports is maintained at the following link: <http://www.iana.org/assignments/port-numbers>.

4.7.3 Special Application

Special Application

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.
 Note: The range of the Trigger Ports is from 1 to 65535.

	Trigger Port	Trigger Type	Public Port	Public Type	Enabled
1.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
2.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
3.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
4.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
5.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
6.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
7.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
8.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
9.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
10.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>

Popular applications:

Some applications require multiple connections, such as Internet gaming, video-conferencing, and Internet telephony.

Special Application

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.
 Note: The range of the Trigger Ports is from 1 to 65535.

	Trigger Port	Trigger Type	Public Port	Public Type	Enabled
1.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
2.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
3.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
4.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
5.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
6.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
7.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
8.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
9.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>
10.	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	<input type="radio"/> TCP <input type="radio"/> UDP	<input type="checkbox"/>

Popular applications:

- Battlefield
- Dialpad
- ICU II
- MSN Gaming Zone
- PC-to-Phone
- Quick Time 4

These applications may not work when **Network Address Translation (NAT)** is enabled. If you need to run applications that require multiple connections, use these pages to specify the additional public ports to be opened for each application.

4.7.4 NAT Mapping Table

The screenshot shows the web interface for the NAT Mapping Table configuration on a SAGEM F@st 1500 ADSL router. The interface includes a top navigation bar with the SAGEM logo, language flags (French and UK), and links for Home, Reset, and Logout. A left sidebar contains a menu with categories like STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The NAT section is expanded to show sub-options: Address Mapping, Virtual Server, Special Application, and NAT Mapping Table. The main content area is titled 'NAT Mapping Table' and contains a description: 'NAT Mapping Table displays the current NAT address mappings.' Below this is a table header with columns: Index, Protocol, Local IP, Local Port, Pseudo IP, Pseudo Port, Peer IP, and Peer Port. There are 'Refresh' and 'Help' buttons on the page.

4.8 Firewall

The SAGEM F@st™ 1500 ADSL Router's firewall inspects packets at the application layer, maintains TCP and UDP session information including time-outs and the number of active sessions, and provides the ability to detect and prevent certain types of network attacks.



Network attacks that deny access to a network device are called **Denial-of-Service (DoS)** attacks. DoS attacks are aimed at devices and networks with a connection to the Internet. Their goal is not to steal information, but to disable a device or network so users no longer have access to network resources.

The SAGEM F@st™ 1500 ADSL Router protects against the following DoS attacks: 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. (See section 4.8.5 for details).

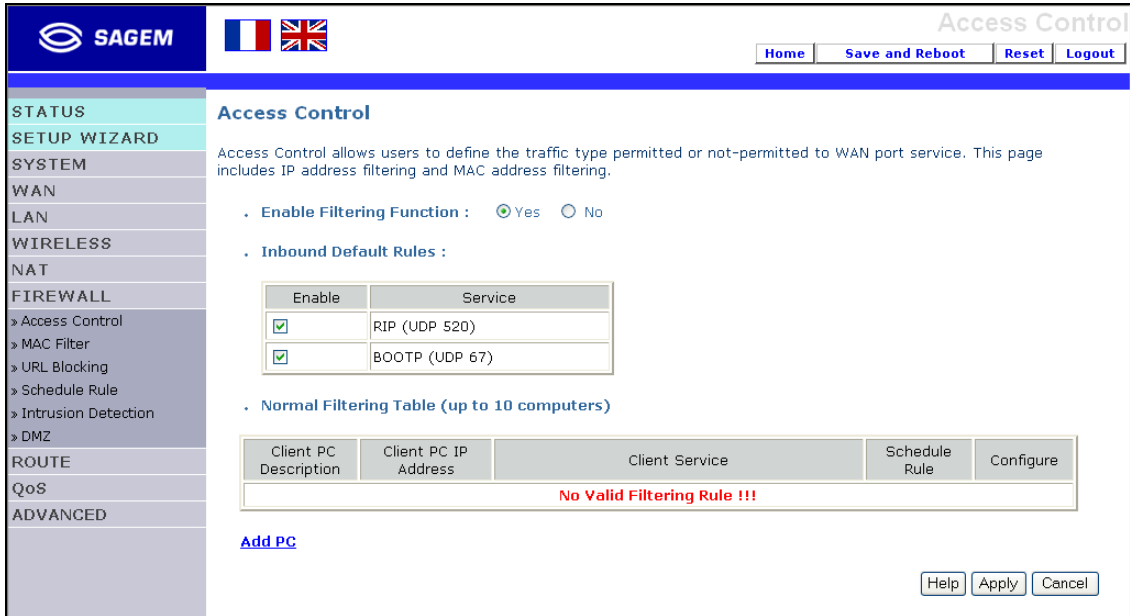
The firewall does not significantly affect system performance, so we advise leaving it enabled to protect your network. Select **Enable** and click the "**Apply**" to open the Firewall submenus.

In this menu is included the following sub-menus:

- Access Control (see section 4.8.1),
- MAC Filter (see section 4.8.2),
- URL Blocking (see section 4.8.3),
- Schedule Rule (see section 4.8.4),
- Intrusion Detection (see section 4.8.5),
- DMZ (see section 4.8.6).

4.8.1 Access Control

Access Control allows users to define the outgoing traffic permitted or not-permitted through the WAN interface. The default is to permit all outgoing traffic.



The following items are on the Access Control screen:

Parameter	Description
Enable Filtering Function	Click Yes to turn on the filtering function.
Normal Filtering Table	Displays the IP address (or an IP address range) filtering table.

To add the PC to the filtering table:

- 1) Click "**Add PC**" on the Access Control screen.
- 2) Define the appropriate settings for client PC services.
- 3) Click "**OK**" and then click "**SAVE SETTINGS**" to save your settings.

Access Control Add PC

Home Save and Reboot Reset Logout

STATUS

SETUP WIZARD

SYSTEM

WAN

LAN

WIRELESS

NAT

FIREWALL

» Access Control

» MAC Filter

» URL Blocking

» Schedule Rule

» Intrusion Detection

» DMZ

ROUTE

QoS

ADVANCED

Access Control Add PC

This page allows users to define service limitations of client PCs, including IP address, service type and scheduling rule criteria. For the URL blocking function, you need to configure the URL address first on the "URL Blocking Site" page. For the scheduling function, you also need to configure the schedule rule first on the "Schedule Rule" page.

· Client PC Description:

· Client PC IP Address: ~

· Client PC Service:

Service Name	Detail Description	Blocking
WWW	HTTP, TCP Port 80, 3128, 8000, 8001, 8080	<input type="checkbox"/>
WWW with URL Blocking	HTTP (Ref. URL Blocking Site Page)	<input type="checkbox"/>
E-mail Sending	SMTP, TCP Port 25	<input type="checkbox"/>
News Forums	NNTP, TCP Port 119	<input type="checkbox"/>
E-mail Receiving	POP3, TCP Port 110	<input type="checkbox"/>
Secure HTTP	HTTPS, TCP Port 443	<input type="checkbox"/>
File Transfer	FTP, TCP Port 21	<input type="checkbox"/>
Telnet Service	TCP Port 23	<input type="checkbox"/>
AIM	AOL Instant Messenger, TCP Port 5190	<input type="checkbox"/>
NetMeeting	H.323, TCP Port 1720, 1503	<input type="checkbox"/>
DNS	UDP Port 53	<input type="checkbox"/>
SNMP	UDP Port 161, 162	<input type="checkbox"/>
VPN-PPTP	TCP Port 1723	<input type="checkbox"/>
VPN-L2TP	UDP Port 1701	<input type="checkbox"/>
TCP	All TCP Port	<input type="checkbox"/>
UDP	All UDP Port	<input type="checkbox"/>

User Define Service

Protocol: TCP UDP

Port Range: ~ , ~ , ~ , ~ , ~

· Scheduling Rule (Ref. Schedule Rule Page): Always Blocking ▼

4.8.2 MAC Filter

The SAGEM F@st™ 1500 ADSL Router can also limit the access of hosts within the local area network (LAN). The MAC Filtering Table allows the SAGEM F@st™ 1500 ADSL Router to enter up to 32 MAC addresses that are not allowed access to the WAN port.

MAC Filter

This section helps provides MAC Filter configuration. When enabled, only MAC addresses configured will have access to your network. All other client devices will get denied access. This security feature can support up to 32 devices and applies to clients.

• MAC Address Control : Yes No

• MAC Filtering Table (up to 32 computers)

ID	MAC Address
1	[] : [] : [] : [] : [] : []
2	[] : [] : [] : [] : [] : []
3	[] : [] : [] : [] : [] : []
4	[] : [] : [] : [] : [] : []
5	[] : [] : [] : [] : [] : []
6	[] : [] : [] : [] : [] : []
7	[] : [] : [] : [] : [] : []
8	[] : [] : [] : [] : [] : []
9	[] : [] : [] : [] : [] : []
10	[] : [] : [] : [] : [] : []
11	[] : [] : [] : [] : [] : []
12	[] : [] : [] : [] : [] : []
13	[] : [] : [] : [] : [] : []
14	[] : [] : [] : [] : [] : []
15	[] : [] : [] : [] : [] : []
16	[] : [] : [] : [] : [] : []
17	[] : [] : [] : [] : [] : []
18	[] : [] : [] : [] : [] : []
19	[] : [] : [] : [] : [] : []
20	[] : [] : [] : [] : [] : []
21	[] : [] : [] : [] : [] : []
22	[] : [] : [] : [] : [] : []
23	[] : [] : [] : [] : [] : []
24	[] : [] : [] : [] : [] : []
25	[] : [] : [] : [] : [] : []
26	[] : [] : [] : [] : [] : []
27	[] : [] : [] : [] : [] : []
28	[] : [] : [] : [] : [] : []
29	[] : [] : [] : [] : [] : []
30	[] : [] : [] : [] : [] : []
31	[] : [] : [] : [] : [] : []
32	[] : [] : [] : [] : [] : []

DHCP Client List: ip=192.168.2.2 name=P1076997 COPY TO 1

Help Apply Cancel

Click **Yes** to enable, or **No** to disable this function.

Enter the MAC address in the space provided.

4.8.3 URL Blocking

The SAGEM F@st™ 1500 ADSL Router allows the user to block access to web sites from a particular PC by entering either a full URL address or just a keyword. This feature can be used to protect children from accessing violent or pornographic web sites.

The screenshot shows the 'URL Blocking' configuration page. The page title is 'URL Blocking' and it includes navigation buttons: Home, Save and Reboot, Reset, and Logout. The main content area is titled 'URL Blocking' and contains the following text: 'Disallowed Web Sites and Keywords. You can block access to certain Web sites from a particular PC by entering either a full URL address or just a keyword of the Web site. To specify the particular PC, go back to the "Access Control" page and check the box for "Http with URL Blocking" in the "Normal Filtering Table".'

Rule Number	URL / Keyword	Rule Number	URL / Keyword
Site 1	<input type="text"/>	Site 16	<input type="text"/>
Site 2	<input type="text"/>	Site 17	<input type="text"/>
Site 3	<input type="text"/>	Site 18	<input type="text"/>
Site 4	<input type="text"/>	Site 19	<input type="text"/>
Site 5	<input type="text"/>	Site 20	<input type="text"/>
Site 6	<input type="text"/>	Site 21	<input type="text"/>
Site 7	<input type="text"/>	Site 22	<input type="text"/>
Site 8	<input type="text"/>	Site 23	<input type="text"/>
Site 9	<input type="text"/>	Site 24	<input type="text"/>
Site 10	<input type="text"/>	Site 25	<input type="text"/>
Site 11	<input type="text"/>	Site 26	<input type="text"/>
Site 12	<input type="text"/>	Site 27	<input type="text"/>
Site 13	<input type="text"/>	Site 28	<input type="text"/>
Site 14	<input type="text"/>	Site 29	<input type="text"/>
Site 15	<input type="text"/>	Site 30	<input type="text"/>

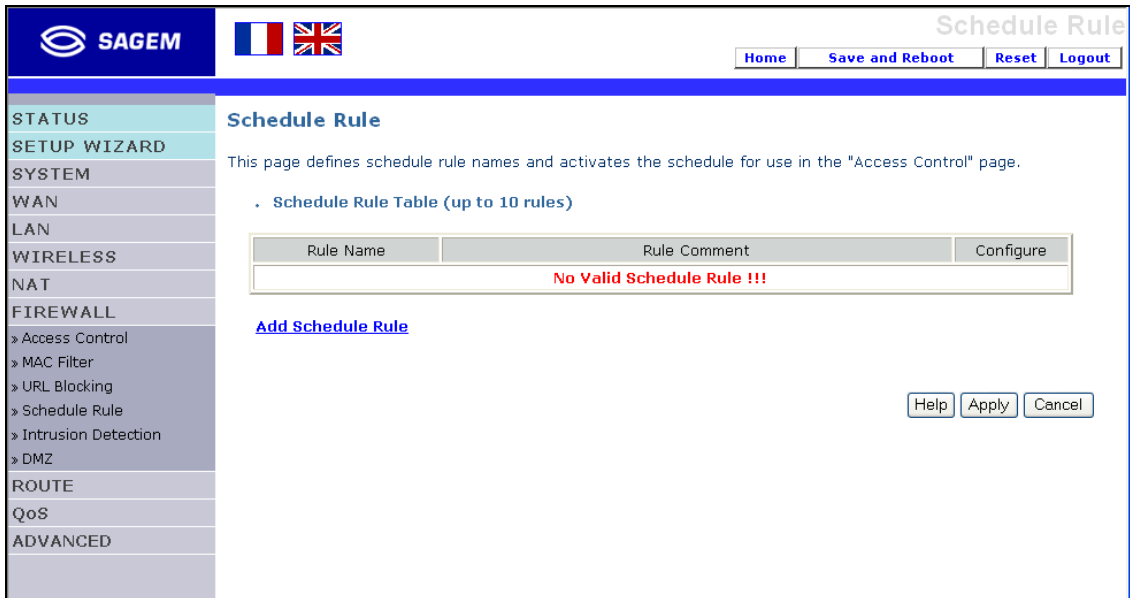
Buttons: Clear All, Help, Apply, Cancel



You can define up to 30 sites here.

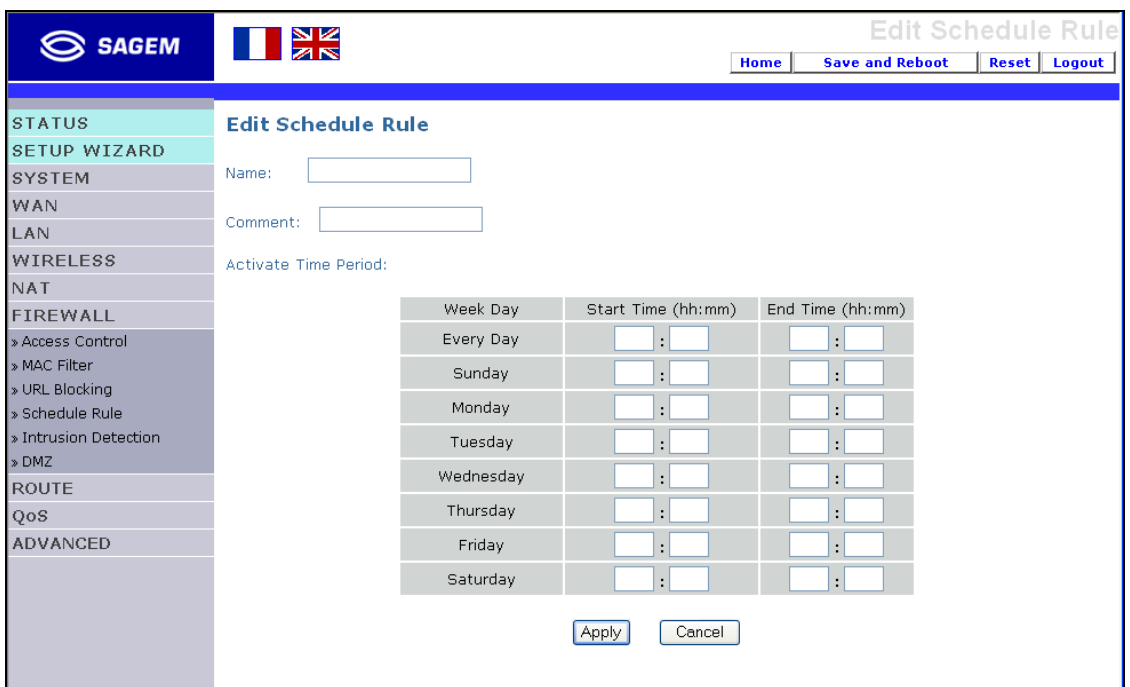
4.8.4 Schedule Rule

You may filter Internet access for local clients based on rules. Each access control rule may be activated at a scheduled time. Define the schedule on the Schedule Rule page, and apply the rule on the Access Control page.



Follow these steps to add a schedule rule:

- 1) Click **"Add Schedule Rule"**.
- 2) Define the appropriate settings for a schedule rule (as shown in this example).
- 3) Click **"OK"** and then click **"SAVE SETTINGS"** to save your settings.



4.8.5 Intrusion Detection

1) Intrusion Detection Feature



Stateful Packet Inspection (SPI) and Anti-DoS firewall protection (Default: Enabled) - The Intrusion Detection Feature of the SAGEM F@st™ 1500 ADSL Router limits access for incoming traffic at the WAN port. When the SPI feature is turned on, all incoming packets will be blocked except for those types marked in the Stateful Packet Inspection section.

RIP Defect (Default: Enabled) - If an RIP request packet is not acknowledged to by the router, it will stay in the input queue and not be released. Accumulated packets could cause the input queue to fill, causing severe problems for all protocols. Enabling this feature prevents the packets from accumulating.

Discard Ping to WAN (Default: Disabled) - Prevent a ping on the ADSL Router's WAN port from being routed to the network.

2) Stateful Packet Inspection

This is called a "stateful" packet inspection because it examines the contents of the packet to determine the state of the communications; i.e., it ensures that the stated destination computer has previously requested the current communication. This is a way of ensuring that all communications are initiated by the recipient computer and are taking place only with sources that are known and trusted from previous interactions. In addition to being more rigorous in their inspection of packets, stateful inspection firewalls also close off ports until connection to the specific port is requested.

Intrusion Detection
[Home](#) [Save and Reboot](#) [Reset](#) [Logout](#)

STATUS

SETUP WIZARD

SYSTEM

WAN

LAN

WIRELESS

NAT

FIREWALL

» Access Control

» MAC Filter

» URL Blocking

» Schedule Rule

» **Intrusion Detection**

» DMZ

ROUTE

QoS

ADVANCED

Intrusion Detection

When the SPI (Stateful Packet Inspection) firewall feature is enabled, all packets can be blocked. Stateful Packet Inspection (SPI) allows full support of different application types that are using dynamic port numbers. For the applications checked in the list below, the Device will support full operation as initiated from the local LAN.

The Device firewall can 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.

- Intrusion Detection Feature**

SPI and Anti-DoS firewall protection	<input checked="" type="checkbox"/>
RIP defect	<input type="checkbox"/>
Discard Ping To WAN	<input type="checkbox"/>
- Stateful Packet Inspection**

Packet Fragmentation	<input checked="" type="checkbox"/>
TCP Connection	<input checked="" type="checkbox"/>
UDP Session	<input checked="" type="checkbox"/>
FTP Service	<input checked="" type="checkbox"/>
H.323 Service	<input checked="" type="checkbox"/>
TFTP Service	<input checked="" type="checkbox"/>
- When hackers attempt to enter your network, we can alert you by e-mail**

Your E-mail Address :

SMTP Server Address :

POP3 Server Address :

User name :

Password :
- Connection Policy**

Fragmentation half-open wait: secs

TCP SYN wait: sec.

TCP FIN wait: sec.

TCP connection idle timeout: sec.

UDP session idle timeout: sec.

H.323 data channel idle timeout: sec.
- DoS Detect Criteria:**

Total incomplete TCP/UDP sessions HIGH: session

Total incomplete TCP/UDP sessions LOW: session

Incomplete TCP/UDP sessions (per min) HIGH: session

Incomplete TCP/UDP sessions (per min) LOW: session

Maximum incomplete TCP/UDP sessions number from same host:

Incomplete TCP/UDP sessions detect sensitive time period: msec.

Maximum half-open fragmentation packet number from same host:

Half-open fragmentation detect sensitive time period: msec.

Flooding cracker block time: sec.

When particular types of traffic are checked, only the particular type of traffic initiated from the internal LAN will be allowed. For example, if the user only checks “**FTP Service**” in the Stateful Packet Inspection section, all incoming traffic will be blocked except for FTP connections initiated from the local LAN.

Stateful Packet Inspection allows you to select different application types that are using dynamic port numbers. If you wish to use the **Stateful Packet Inspection (SPI)** to block packets, click on the Yes radio button in the “**Enable SPI and Anti-DoS firewall protection**” field and then check the inspection type that you need, such as Packet Fragmentation, TCP Connection, UDP Session, FTP Service, H.323 Service, or TFTP Service.

3) When hackers attempt to enter your network, we can alert you by e-mail

Enter your email address.

Specify your SMTP and POP3 servers, user name, and password.

4) Connection Policy

Enter the appropriate values for TCP/UDP sessions as described in the following table.

Parameter	Defaults	Description
Fragmentation half-open wait	10 sec	Configures the number of seconds that a packet state structure remains active. When the timeout value expires, the router drops the unassembled packet, freeing that structure for use by another packet.
TCP SYN wait	30 sec	Defines how long the software will wait for a TCP session to synchronize before dropping the session.
TCP FIN wait	5 sec	Specifies how long a TCP session will be maintained after the firewall detects a FIN packet.
TCP connection idle timeout	3600 seconds (1 hour)	The length of time for which a TCP session will be managed if there is no activity.
UDP session idle timeout	30 sec	The length of time for which a UDP session will be managed if there is no activity.
H.323 data channel idle timeout	180 sec	The length of time for which an H.323 session will be managed if there is no activity.

5) DoS Criteria and Port Scan Criteria

Set up DoS and port scan criteria in the spaces provided (as shown below).

Note: The firewall does not significantly affect system performance, so we advise enabling the prevention features to protect your network.

Parameter	Defaults	Description
Total incomplete TCP/UDP sessions HIGH	300 sessions	Defines the rate of new unestablished sessions that will cause the software to <i>start</i> deleting half-open sessions.
Total incomplete TCP/UDP sessions LOW	250 sessions	Defines the rate of new unestablished sessions that will cause the software to <i>stop</i> deleting halfopen sessions.
Incomplete TCP/UDP sessions (per min) HIGH	250 sessions	Maximum number of allowed incomplete TCP/UDP sessions per minute.
Incomplete TCP/UDP sessions (per min) LOW	200 sessions	Minimum number of allowed incomplete TCP/UDP sessions per minute.
Maximum incomplete TCP/UDP sessions number from same host	10	Maximum number of incomplete TCP/UDP sessions from the same host.
Incomplete TCP/UDP sessions detect sensitive time period	300 msec	Length of time before an incomplete TCP/UDP session is detected as incomplete.
Maximum half open fragmentation packet number from same host	30	Maximum number of half open fragmentation packets from the same host.
Half-open fragmentation detect sensitive time period	10000 msec	Length of time before a half-open fragmentation session is detected as half-open.
Flooding cracker block time	300 second	Length of time from detecting a flood attack to blocking the attack.

4.8.6 DMZ

If you have a client computer that cannot run an Internet application properly from behind the firewall, you can open the client up to unrestricted twoway Internet access. Enter the IP address of a **DMZ (DeMilitarized Zone)** host on this screen. Adding a client to the **DMZ** may expose your local network to a variety of security risks, so only use this option as a last resort.

The screenshot shows the DMZ configuration page in the SAGEM F@st 1500 ADSL router web interface. The page has a blue header with the SAGEM logo and flags for France and the UK. A navigation bar at the top right contains buttons for Home, Save and Reboot, Reset, and Logout. On the left, a vertical menu lists various configuration sections: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, NAT, FIREWALL (with sub-items like Access Control, MAC Filter, etc.), ROUTE, QoS, and ADVANCED. The main content area is titled 'DMZ' and contains the following text: 'If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a Virtual DMZ Host.' Below this, there is a radio button group for 'Enable DMZ:' with 'Yes' and 'No' options, where 'No' is selected. A paragraph explains: 'Multiple PCs can be exposed to the Internet for two-way communications e.g. Internet gaming, video conferencing, or VPN connections. To use the DMZ, you must set a static IP address for that PC.' The main configuration area features two columns: 'Public IP Address' and 'Client PC IP Address'. The 'Public IP Address' column has a list of 8 entries, with the first entry set to '0.0.0.0' and the others as empty text boxes. The 'Client PC IP Address' column has 8 corresponding empty text boxes. At the bottom right, there are three buttons: 'Help', 'Apply', and 'Cancel'.

4.9 Route

These pages define routing related parameters, including static routes and **RIP** (Routing Information Protocol) parameters.

In this menu is included the following sub-menus:



- Static Route (see section 4.9.1),
- RIP (see section 4.9.2),
- Routing Table (see section 4.9.3).

4.9.1 Static Route

Click **“Add”** to add a new static route to the list, or check the box of an already entered route and click **“Modify”**. Clicking **“Delete”** will remove an entry from the list.

Parameter	Description
Index	Check the box of the route you wish to delete or modify.
Network Address	Enter the IP address of the remote computer for which to set a static route.
Subnet Mask	Enter the subnet mask of the remote network for which to set a static route.
Gateway	Enter the WAN IP address of the gateway to the remote network.

4.9.2 RIP



RIP

[Home](#) | [Save and Reboot](#) | [Reset](#) | [Logout](#)

STATUS

SETUP WIZARD

SYSTEM

WAN

LAN

WIRELESS

NAT

FIREWALL

ROUTE

> Static Route

> RIP

> Routing Table

QoS

ADVANCED

RIP

Please enter the following configuration parameters:

- General RIP parameter:
 - RP mode: Disable Enable
 - Auto summary: Disable Enable
- Table of current interface RIP parameter:

Interface	Operation Mode	Version	Poison Reverse	Authentication Required	Authentication Code
LAN	Disable	1	Disable	None	
WLAN	Disable	1	Disable	None	
ATM1	Disable	1	Disable	None	
ATM2	Disable	1	Disable	None	
ATM3	Disable	1	Disable	None	
ATM4	Disable	1	Disable	None	
ATM5	Disable	1	Disable	None	
ATM6	Disable	1	Disable	None	
ATM7	Disable	1	Disable	None	
ATM8	Disable	1	Disable	None	
PPPoE1	Disable	1	Disable	None	
PPPoE2	Disable	1	Disable	None	
PPPoE3	Disable	1	Disable	None	
PPPoE4	Disable	1	Disable	None	
PPPoE5	Disable	1	Disable	None	
PPPoE6	Disable	1	Disable	None	
PPPoE7	Disable	1	Disable	None	
PPPoE8	Disable	1	Disable	None	

Parameter	Description
General RIP Parameters	
RIP mode	Globally enables or disables RIP.
Auto summary	If Auto summary is disabled, then RIP packets will include sub-network information from all subnetworks connected to the router. If enabled, this sub-network information will be summarized to one piece of information covering all subnetworks.
Table of current Interface RIP parameter	
Interface	The WAN interface to be configured.
Operation Mode	<ul style="list-style-type: none"> • Disable: RIP disabled on this interface. • Enable: RIP enabled on this interface. • Silent: Listens for route broadcasts and updates its route table. It does not participate in sending route broadcasts.
Version	Sets the RIP (Routing Information Protocol) version to use on this interface.
Poison Reverse	A method for preventing loops that would cause endless retransmission of data traffic.
Authentication Required	<ul style="list-style-type: none"> • None: No authentication. • Password: A password authentication key is included in the packet. If this does not match what is expected, the packet will be discarded. This method provides very little security as it is possible to learn the authentication key by watching RIP packets. • MD5: An algorithm that is used to verify data integrity through the creation of a 128-bit message digest from data input (which may be a message of any length) that is claimed to be as unique to that specific data as a fingerprint is to a specific individual.
Authentication Code	Password or MD5 Authentication key.

RIP sends routing-update messages at regular intervals and when the network topology changes. When a router receives a routing update that includes changes to an entry, it updates its routing table to reflect the new route. RIP routers maintain only the best route to a destination. After updating its routing table, the router immediately begins transmitting routing updates to inform other network routers of the change.

4.9.3 Routing Table

The screenshot shows the SAGEM F@st 1500 ADSL router's web interface. The top navigation bar includes the SAGEM logo, flags for France and the UK, and the title 'Routing Table' with 'Home', 'Reset', and 'Logout' buttons. The left sidebar contains a menu with options: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, and ADVANCED. The main content area is titled 'Routing Table' and contains the text: 'The content of run-time Routing Table:'. Below this is a table with columns: Flags, Network Address, Netmask, Gateway, Interface, and Metric. The table contains two rows of data. Below the table is a legend: 'Flags : C - directly connected, S - static, R - RIP, I - ICMP Redirect'. A 'Help' button is located at the bottom right of the content area.

Flags	Network Address	Netmask	Gateway	Interface	Metric
C	192.168.2.0	255.255.255.0	directly	LAN	---
C	127.0.0.1	255.255.255.255	directly	Loopback	---

Flags : C - directly connected, S - static, R - RIP, I - ICMP Redirect

Parameter	Description
Flags	Indicates the route status: C = Direct connection on the same subnet. S = Static route. R = RIP (Routing Information Protocol) assigned route. I = ICMP (Internet Control Message Protocol) Redirect route.
Network Address	Destination IP address.
Netmask	The subnetwork associated with the destination. This is a template that identifies the address bits in the destination address used for routing to specific subnets. Each bit that corresponds to a "1" is part of the subnet mask number; each bit that corresponds to "0" is part of the host number.
Gateway	The IP address of the router at the next hop to which frames are forwarded.
Interface	The local interface through which the next hop of this route is reached.
Metric	When a router receives a routing update that contains a new or changed destination network entry, the router adds 1 to the metric value indicated in the update and enters the network in the routing table.

4.10 QoS

The QoS function allows users to classify outbound traffic of applications and provides differentiated services (Diffserv) for different applications.

QoS Settings

The bandwidth gap between LAN and WAN may significantly degrade performance of critical network applications, such as VoIP, gaming, and VPN. This QoS function allows users to classify traffic of applications and provides them with differentiated services (Diffserv).

Enable or disable QoS module function : Enable Disable

Diffserv Forwarding Groups :

Below shows the Diffserv forwarding behaviors this router supports. User can further configure the bandwidth allocation of each forwarding behavior.

Name	Description	Priority	Bandwidth Allocation	
			Minimum	Allow More
BE	Best Effort forwarding	Lowest	25 %	<input checked="" type="checkbox"/>
AF1x	Assured Forwarding, provides delivery of packets in four independently forwarded AF classes. Within each AF class, an IP packet can be assigned one of three different levels of drop precedence.	Low ↑ ↓	0 %	<input checked="" type="checkbox"/>
AF2x			0 %	<input checked="" type="checkbox"/>
AF3x			0 %	<input checked="" type="checkbox"/>
AF4x			75 %	<input checked="" type="checkbox"/>
EF	Expedited Forwarding, is intended to provide low delay, low jitter and low loss delivery of packets.	Highest	0 %	<input checked="" type="checkbox"/>

Help Apply Cancel

The following items are on the "QoS Settings" screen:

Parameter	Description
Enable or disable QoS module function	Click Enable to activate QoS module function.
Diffserv Forwarding Groups	<p>Allow users to configure guaranteed bandwidth of each Forwarding Group (EF, AF4x to AF1x and BE). Please complete the Minimum Bandwidth Allocation field. The amount of guaranteed bandwidth for the Forwarding Groups must not be over 100%. The displayed values (25% and 75%) are only given as an example.</p> <p>Allow to limit whether or not the guaranteed bandwidth of each Forwarding Group by checking or not the "Allow More" box.</p>

In this menu are included the following sub-menus:


- **Traffic Mapping** (see section 4.10.1),
- **Traffic statistics** (see section 4.10.2).

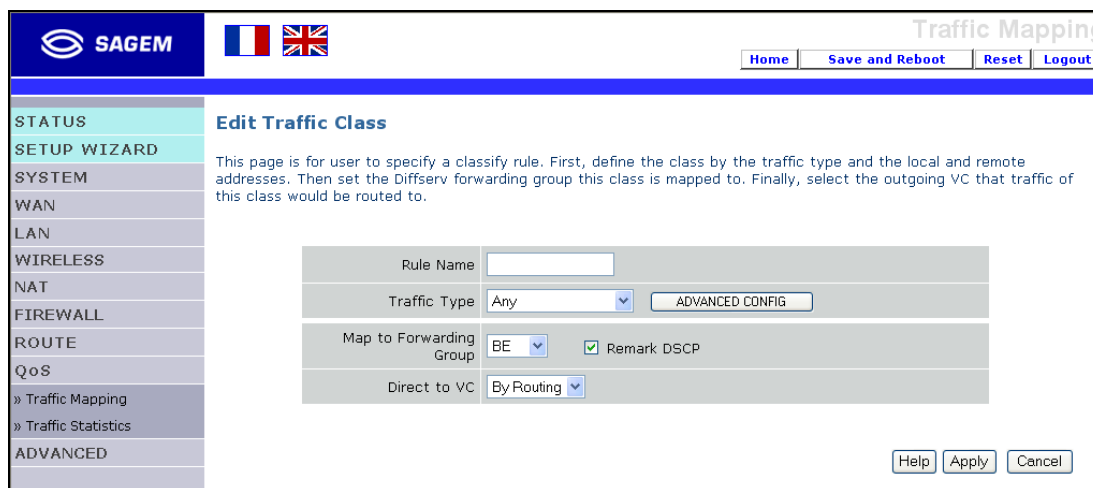
4.10.1 Traffic Mapping

In the «QoS» menu, select «Traffic Mapping», the following screen appears.




No traffic Mapping was defined.

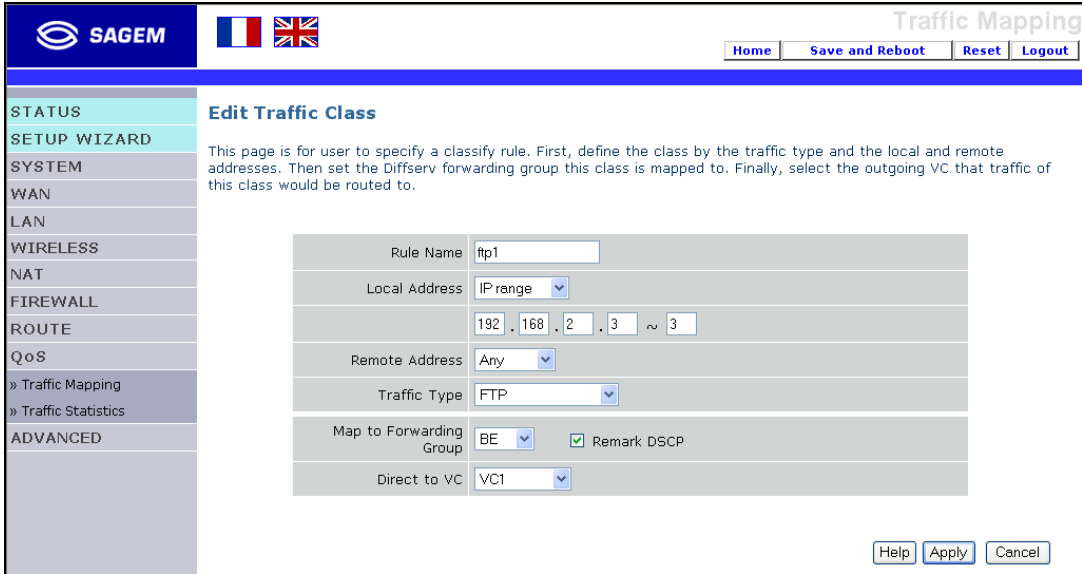
- Click on the  button to add a traffic class ; the following screen appears:



Parameter	Description
Rule Name	Enter a Rule Name.
Traffic Type	Select FTP , VoIP , E-MAIL , SNMP , TELNET , WWW , VPN , User define - TCP , User define - UDP or User define - IP ,
Map to forwarding Group	Select Forwarding Service from th lowest to the highest : BE (Best Effort), AF1x (Assured Forwarding), AF2x , AF3x , AF4x or EF (Expedited Forwarding).
Remark DSCP	Check the box to change the DSCP (Differentiated Service Code Point) field in the "IP header" of each outgoing frame.
Direct to VC	Select " By routing " or " VCx "

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- Click on the  button ; the following screen appears:



Almost fields have been filled, please set up these last ones:

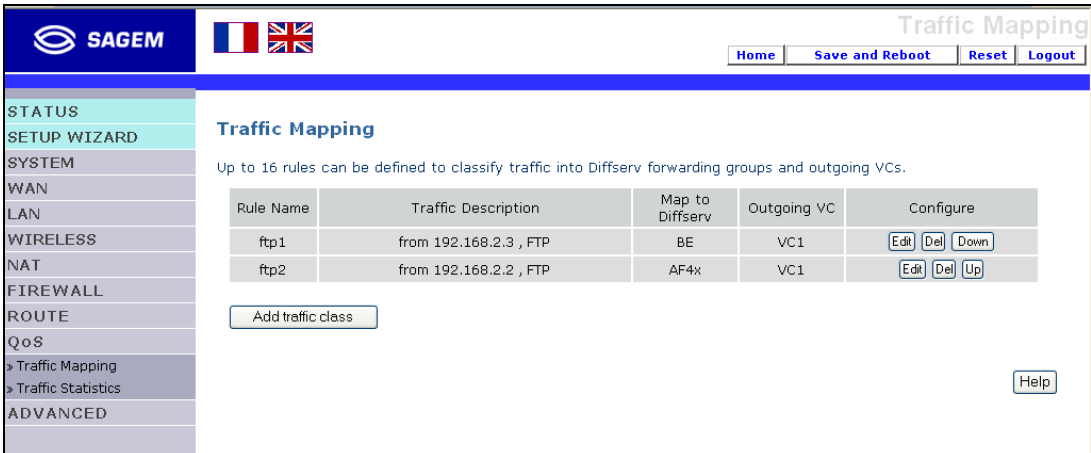
Parameter	Description
Local Address	Select Mac addr , IP range , This router or Any .
Remote Address	Select IP range or Any .



In the fields **Local Address** or **Remote Address**, if you choose **Mac addr**, **IP range**, an other screen appears and you may enter the Mac address or a IP address range (or the IP address) on the local or remote part.

For example, in the screen above IP range has been selected

After having entered several services classes, the following screen appears:



Rule Name	Traffic Description	Map to Diffserv	Outgoing VC	Configure
ftp1	from 192.168.2.3 , FTP	BE	VC1	Edit Del Down
ftp2	from 192.168.2.2 , FTP	AF4x	VC1	Edit Del Up



This button allows to modify all parameters of each traffic class.



This button allows to delete a traffic class.



This button allows to move up the matching priority of the selected rule.



This button allows to move down the matching priority of the selected rule.

4.10.2 Traffic statistics

In the «QoS» menu, select «Traffic Statistics», the following screen appears.

Traffic Statistics

This page shows the WAN outbound traffic statistics of all the Diffserv forwarding groups in the last 12 hours (automatically updated every 5 mins).

Forwarding Behavior	Average sent byte/sec			
	5 min	1 hour	6 hour	12 hour
BE	0	0	0	0
AF1x	0	0	0	0
AF2x	0	0	0	0
AF3x	0	0	0	0
AF4x	0	0	0	0
EF	0	0	0	0

Forwarding Behavior	Average dropped byte/sec			
	5 min	1 hour	6 hour	12 hour
BE	0	0	0	0
AF1x	0	0	0	0
AF2x	0	0	0	0
AF3x	0	0	0	0
AF4x	0	0	0	0
EF	0	0	0	0

Help Refresh



Click on this button to update the WAN outbound traffic screen.

4.11 Advanced

In this menu is included the following sub-menus:

- ADSL (see section 4.11.1),
- Remote Management (see section 4.11.2),
- SNMP (see section 4.11.3),
- UPnP (see section 4.11.4).
- DDNS (see section 4.11.5).

4.11.1 ADSL

ADSL

ADSL (Asymmetric Digital Subscriber Line) is designed to deliver more bandwidth downstream (from the central office to the customer site) than upstream. This section is used to display the ADSL operation type and its status.

Monitoring Index

The Status screen displays information on connection line status, data rate, operation data and defect indication, and statistics. Scroll down to view more information.

STATUS	ADSL
SETUP WIZARD	
SYSTEM	
WAN	
LAN	
WIRELESS	
NAT	
FIREWALL	
ROUTE	
QoS	
ADVANCED	
» ADSL	
» Remote Management	
» SNMP	
» UPnP	
» DDNS	

This page allows you to specify the ADSL standards to operate with. You may explicitly set a specific standard, or choose "Automatic" to automatically negotiate with remote DSLAM.

Operation Mode:

Monitoring Index:

- ADSL Status Information:
 - [Status](#)
 - [Data Rate Information](#)
 - [Defect/Failure Indication](#)
 - [Statistics](#)
- Status:

	Configured	Current
Line Status	---	QUIET1
Link Type	---	Interleaved Path

 - [\[Go Top\]](#)
- Data Rate:

Stream Type	Actual Data Rate
Up Stream	0 (Kbps.)
Down Stream	0 (Kbps.)

 - [\[Go Top\]](#)
- Operation Data / Defect Indication:

Operation Data	Upstream	Downstream
Noise Margin	0 dB	0 dB
Attenuation	0 dB	0 dB

Indicator Name	Near End Indicator	Far End Indicator
Fast Path FEC Correction	0	0
Interleaved Path FEC Correction	0	0
Fast Path CRC Error	0	0
Interleaved Path CRC Error	0	0
Loss of Signal Defect	0	---
Fast Path HEC Error	0	0
Interleaved Path HEC Error	0	0

 - [\[Go Top\]](#)
- Statistics:

Received Cells	0
Transmitted Cells	0

 - [\[Go Top\]](#)

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The following items are included on this information page:

Parameter	Description
Operation Mode	
	It allows to specify the ADSL standards to operate with. The following standards below are supported : <ul style="list-style-type: none"> ➤ Automatic ➤ T1.413 Issue 2 ➤ G.992.1 (G.DMT) ➤ G.992.2 (G.Lite) ➤ G.992.5 (ADSL 2+)
Status	
Line Status	Shows the current status of the ADSL line connection.
Link Type	Shows the current Link Type: Interleaved or Fast.
Data Rate	
Upstream	Maximum upstream data rate.
Downstream	Maximum downstream data rate.
Operation Data / Defect Indication	
Noise Margin	Maximum upstream and downstream noise margin.
Attenuation	Maximum reduction in the strength of the upstream and downstream signal.
Fast Path FEC Correction	
	There are two latency paths that may be used: fast and interleaved. For either path, a forward error correction (FEC) scheme is employed to ensure higher data integrity. For maximum noise immunity, an interleaver may be used to supplement FEC
Interleaved Path FEC Correction	
	An interleaver is basically a buffer used to introduce a delay, allowing for additional error correction techniques to handle noise. Interleaving slows the data flow and may not be optimal for real-time signals such as video transmission.
Fast Path CRC Error	
	The number of Fast Path Cyclic Redundancy Check errors.
Interleaved Path CRC Error	
	The number of Interleaved Path Cyclic Redundancy Check errors.
Loss of Signal Defect	
	Momentary signal discontinuities.
Fast Path HEC Error	
	Fast Path Header Error Concealment errors.
Interleaved Path HEC Error	
	Interleaved Path Header Error Concealment errors.
Statistics	
Received Cells	Number of cells received.
Transmitted Cells	Number of cells transmitted.

4.11.2 Remote Management

By default, management access is only available to users on your local network. However, you can also manage the SAGEM F@st™ 1500 ADSL Router from a remote host by entering the IP address of a remote computer on this screen. Check the Enabled check box, and enter the IP address of the Host Address and click “**Apply**”.

STATUS	Remote Management
SETUP WIZARD	Set the remote management of the router. If you want to manage the router from a remote location (outside of the local network), you must also specify the IP address of the remote PC.
SYSTEM	
WAN	
LAN	Enabled <input type="checkbox"/>
WIRELESS	Host Address <input type="text" value="0.0.0.0"/>
NAT	Subnet Mask <input type="text" value="255.255.255.0"/>
FIREWALL	Port Number <input type="text" value="8080"/>
ROUTE	
QoS	
ADVANCED	
> ADSL	
> Remote Management	
> SNMP	
> UPnP	
> DDNS	
	<input type="button" value="Help"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/>



If you check **Enabled** and specify an IP address of 0.0.0.0, any remote host can manage the SAGEM F@st™ 1500 ADSL Router.

For remote management via WAN IP address you need to connect by using default port 8080. Simply enter WAN IP address followed by :8080, for example, <http://212.120.68.20:8080>.

The Subnet Mask allows to limit IP source address to a range of sub-networks.

4.11.3 SNMP

Use the SNMP configuration screen to display and modify parameters for the Simple Network Management Protocol (SNMP).

STATUS | **SNMP**

SETUP WIZARD

SYSTEM

WAN

LAN

WIRELESS

NAT

FIREWALL

ROUTE

QoS

ADVANCED

- > ADSL
- > Remote Management
- > **SNMP**
- > UPnP
- > DDNS

In the context of SNMP, a relationship between an agent and a set of SNMP managers defines security characteristics. The community concept is a local one, defined at the agent. The agent establishes one community for each desired combination of authentication, access control, and proxy characteristics. Each community is given a unique (within this agent) community name, and the management stations within that community are provided with and must employ the community name in all get operations. The agent may establish a number of communities, with overlapping management station membership.

No.	Community	Access	Valid
1	public	Read	<input checked="" type="checkbox"/>
2	private	Write	<input type="checkbox"/>
3		Read	<input type="checkbox"/>
4		Read	<input type="checkbox"/>
5		Read	<input type="checkbox"/>

SNMP Trap

In the context of SNMP, an unsolicited message can be sent by an agent to management station. The purpose is to notify the management station of some unusual event.

No.	IP Address	Community	Version
1			Disabled
2			Disabled
3			Disabled
4			Disabled
5			Disabled

Help Apply Cancel

SNMP Setting

A computer attached to the network, called a **Network Management Station (NMS)**, can be used to access this information. Access rights to the agent are controlled by community strings. To communicate with the SAGEM F@st™ 1500 ADSL Router, the **NMS** must first submit a valid community string for authentication.

Parameter	Description
Community	A community name authorized for management access.
Access	Management access is restricted to Read Only (Read) or Read/Write (Write).
Valid	Enables/disables the entry.



Up to five community names may be entered.

SNMP Trap

Specify the IP address of the NMS to notify when a significant event is detected by the agent. When a trap condition occurs, the SNMP agent sends an SNMP trap message to any NMS specified as a trap receiver.

Parameter	Description
IP Address	Traps are sent to this address when errors or specific events occur on the network.
Community	A community string (password) specified for trap management. Enter a word, something other than public or private, to prevent unauthorized individuals from accessing information on your system.
Version	Sets the trap status to disabled, or enabled with V1 or V2c. The v2c protocol was proposed in late 1995 and includes enhancements to v1 that are universally accepted. These include a get-bulk command to reduce network management traffic when retrieving a sequence of MIB variables, and a more elaborate set of error codes for improved reporting to a Network Management Station.

4.11.4 UPnP

Click **Enable** to turn on the Universal Plug and Play function of the ADSL Router. This function allows the device to automatically:

- dynamically join a network,
- obtain an IP address.

The screenshot shows the SAGEM F@st™ 1500 ADSL router web interface. At the top, there is a SAGEM logo and flags for France and the UK. The main content area is titled 'UPnP' and contains the following information:

- STATUS:** UPnP
- SETUP WIZARD:** The Universal Plug and Play architecture offers pervasive peer-to-peer network connectivity of PCs of all form factors, intelligent appliances, and wireless devices. UPnP enables seamless proximity network in addition to control and data transfer among networked devices in the home, office and everywhere in between.
- Enable or disable UPnP module function:** Enable Disable
- Buttons: Help, Apply, Cancel

The left navigation menu includes: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, ADVANCED, > ADSL, > Remote Management, > SNMP, > UPnP, > DDNS.

4.11.5 DDNS

DDNS allows users to map a static Domain Name to Dynamic IP address.

Dynamic DNS is a service to allow users anywhere on the Internet to «find» your website(s) and/or mail server(s) with their constantly changing IP address.

The screenshot shows the 'DDNS (Dynamic DNS) Settings' page. On the left is a navigation menu with options: STATUS, SETUP WIZARD, SYSTEM, WAN, LAN, WIRELESS, NAT, FIREWALL, ROUTE, QoS, ADVANCED, > ADSL, > Remote Management, > SNMP, > UPnP, and > DDNS. The main content area has a title 'DDNS (Dynamic DNS) Settings' and a descriptive paragraph: 'DDNS allows users to map a static Domain Name to a dynamic IP address. However, You must get an account, password, and your static Domain Name from a DDNS service provider. This router supports DDNS services from www.dyndns.org and www.tzo.com.' Below this is a form with the following fields: 'Dynamic DNS' with radio buttons for 'Enable' and 'Disable' (where 'Disable' is selected); 'Provider' with a dropdown menu showing 'DynDNS.org'; 'Domain Name' with a text input field; 'Account / E-mail' with a text input field; and 'Password / Key' with a text input field. At the bottom right of the form are three buttons: 'Help', 'Apply', and 'Cancel'.

With DDNS enabled, you can host your own website, email server, FTP site and more at your own location even if you have a dynamic IP address.

Select Enable or Disable to respectively activate or deactivate DDNS (Dynamic DNS).

Scroll down to support DDNS services from www.DynDNS.org and www.TZO.com.

4.12 Finding the MAC address of a Network Card

Windows 98/ME

Click **Start/Run**. Type “winipcfg” and press “ENTER”.

The MAC address is in the “**Adapter Address**” section.

Windows NT4/2000/XP

Click **Start/Programs/Command Prompt**. Type “ipconfig /all” and press “ENTER”.

The MAC address is listed as the “Physical Address.”

Macintosh

Click **System Preferences/Network**.

The MAC address is listed as the “**Ethernet Address**” on the TCP/IP tab.

Linux

Run the command “/sbin/ifconfig.”

The MAC address is the value after the word “**HWaddr**.”

A. Appendix A - Troubleshooting

Appendix A - Troubleshooting

This section describes common problems you may encounter and possible solutions to them. The SAGEM F@st™ 1500 ADSL Router can be easily monitored through panel indicators to identify problems.

Troubleshooting Chart	
Symptom	Action
LED Indicators	
The PWR LED is Off .	<ul style="list-style-type: none"> • Check connections between the SAGEM F@st™ 1500 ADSL Router, 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. However, 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 Technical Support for assistance.
The ADSL LED is Off .	<ul style="list-style-type: none"> • Verify that the SAGEM F@st™ 1500 ADSL Router and attached device are powered on. • Be sure the cable is plugged into both the ADSL Router 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	
The user cannot ping the SAGEM F@st™ 1500 ADSL Router from the attached LAN.	<ul style="list-style-type: none"> • Verify that the IP addresses are properly configured. For most applications, you should use the ADSL Router's DHCP function to dynamically assign IP addresses to hosts on the attached LAN. However, if you manually configure 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 SAGEM F@st™ 1500 ADSL Router 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	
The user cannot connect using the web browser.	<ul style="list-style-type: none"> • Be sure to have configured the SAGEM F@st™ 1500 ADSL Router with a valid IP address, subnet mask, and default gateway. • Check that you have a valid network connection to the SAGEM F@st™ 1500 ADSL Router and that the port you are using has not been disabled. • Check the network cabling between the management station and the SAGEM F@st™ 1500 ADSL Router.
The user forgot or lost the password.	<ul style="list-style-type: none"> • Press the Reset button on the rear panel (holding it down for at least five seconds) to restore the factory defaults.

Troubleshooting Chart	
Symptom	Action
LED Indicators	
Wireless Problems	
A wireless PC cannot associate with the ADSL Router.	<ul style="list-style-type: none"> • Make sure the wireless PC has the same SSID settings as the SAGEM F@st™ 1500 ADSL Router. See “Channel and SSID” on section 4.6.1. • You need to have the same security settings on the clients and the SAGEM F@st™ 1500 ADSL Router. See “Security” on section 4.6.3.
The wireless network is often interrupted.	<ul style="list-style-type: none"> • Move your wireless PC closer to the SAGEM F@st™ 1500 ADSL Router to find a better signal. If the signal is still weak, change the angle of the antenna. • There may be interference, possibly caused by a microwave ovens or wireless phones. Change the location of the interference sources or of the ADSL Router. • Change the wireless channel on the SAGEM F@st™ 1500 ADSL Router. See “Channel and SSID” on section 4.6.1. • Check that the antenna, connectors, and cabling are firmly connected.
The SAGEM F@st™ 1500 ADSL Router cannot be detected by a wireless client.	<ul style="list-style-type: none"> • The distance between the SAGEM F@st™ 1500 ADSL Router and wireless PC is too great. • Make sure the wireless PC has the same SSID and security settings as the SAGEM F@st™ 1500 ADSL Router. See ADSL Router. See “Channel and SSID” on section 4.6.1 and “Security” on section 4.6.3.

B. Appendix B - Safety warnings

This chapter covers	➤ Safety warnings	Section B.1
	➤ CE declaration of conformity	Section B.2

B.1 Safety warnings

The SAGEM F@st™ 1500 product is compliant with EN 60950, April 2002 edition.
The safety levels in the sense of this standard are:

B.1.1 Safety levels on the mains adapter unit

Connectors	Function	Safety level
Two-pole mains AC connector	Primary power supply access	HPV ¹
Miniature DC socket	DC power supply port	SELV ²

B.1.2 Safety levels on the SAGEM F@st™ 1500 unit

Connectors	Function	Safety level
Power Inlet	DC power supply port	SELV
LAN Ports	10/100BASE-T Ethernet port	SELV
ADSL Port	ADSL line port	TNV3 ³

¹ Hazardous Primary Voltage circuit

² Safety Extra-Low Voltage circuit

³ Telecommunication Network Voltage level 3 circuit

B.2 CE declaration of conformity



Products bearing this symbol are compliant with the EMC regulations and the low voltage directive published by the European Commission.

SAGEM SA declares that the **SAGEM F@st™ 1500** product is compliant with the requirements of European Directives 1995/5/CE and the main requirements of directives 89/336/CEE dated 03/05/1989 and 73/23/CEE dated 19/02/1973, and that it effectively uses the spectrum assigned for terrestrial or space radio communications.

The CE declaration of conformity concerning the **SAGEM F@st™ 1500** is drawn up within the context of the R&TTE directive.

Conformity is presumed by full compliance with the harmonized European standards:

Safety

EN 60950	Ed: 04-2002
ITU-T K.21	

EMC

EN 301 489-1	Ed: V1.4.1 (2002)
EN 301 489-17	Ed: V1.2.1 (2002)
EN 55022	Ed: 09.1998 + A1 (2000) + A2 (2003)
EN 55024	Ed: 09.1998 + A1 (2001) + A2 (2003)
CISPR 22	Ed: 1997 + A1 (2000)
AS/NZS CISPR 22	Ed: 2002

Radio (specific to **SAGEM F@st 1500WG**)

EN 300 328-1	Ed 12-2001
EN 300 328-2	Ed 12-2001
EN 301 489-1	Ed 08-2002
EN 301 489-17	Ed 08-2002
SAR EN 50371	(Limits of human exposure to electromagnetic fields)

The radio frequency bands authorized for wireless transmission in IEEE 802.11b/g depend on national regulations. In most European countries, the authorized channels are channels 1 to 13 (2400 - 2483.5 MHz band):

- In France, for a maximum transmitted power of 100 mW within a building, channels 10 to 13 (2446.5 - 2483.5 MHz band) are authorized throughout the country and channels 1 to 13 (2400 - 2483.5 MHz band) are authorized in 58 departments (decision N° 02-1008 of ART dated 31/10/2002). The list of departments can be viewed on the ART WEB site.

Appendix B - Safety warnings

SAGEM SA cannot accept any liability if current regulations are not observed at the place of installation.

The CE declaration of conformity for the **SAGEM F@st™ 1500** is included in the form of a file with pdf extension in the product delivery CD-ROM.

C. Appendix C - CABLES

This chapter covers	➤ Ethernet cable	Section C.1
	➤ ADSL cable	Section C.2

C.1 Ethernet cable



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.

C.1.1 Specifications

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

C.1.2 Wiring Conventions

For Ethernet connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be red and the other, red with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable

Each wire pair must be attached to the RJ-45 connectors in a specific orientation. The following figure illustrates how the pins on an Ethernet RJ-45 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.

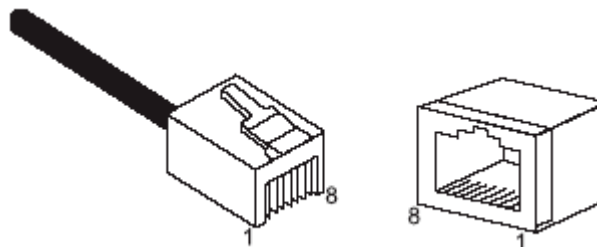


Figure C.1 - RJ-45 Ethernet Connector Pin Numbers

C.1.3 RJ-45 Port Connection

Use the straight-through CAT-5 Ethernet cable provided in the package to connect the Sagem F@st1500 ADSL Router to your PC. When connecting to other network devices such as an Ethernet switch, use the cable type shown in the following table.

Attached Device Port Type	Connecting Cable Type
MDI-X	Straight-through
MDI	Crossover

C.1.4 Pin Assignments

General

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 for receiving data.

RJ45 Pin Assignments	
Pin Number	Assignment1
1	Tx+
2	Tx-
3	Rx+
6	Rx-



The “+” and “-” signs represent the polarity of the wires that make up each wire pair.

Straight-Through Wiring

If the port on the attached device has internal crossover wiring (MDI-X), then use straight-through cable.

Straight Through Cable Pin Assignments	
End 1	End 2
1 (Tx+)	1 (Tx+)
2 (Tx-)	2 (Tx-)
3 (Rx+)	3 (Rx+)
6 (Rx-)	6 (Rx-)

Crossover Wiring

If the port on the attached device has straight-through wiring (MDI), use crossover cable.

Crossover Cable Pin Assignments	
End 1	End 2
1 (Tx+)	1 (Rx+)
2 (Tx-)	2 (Rx-)
3 (Rx+)	3 (Tx+)
6 (Rx-)	6 (Tx-)

C.2 ADSL Cable

Use standard telephone cable to connect the RJ-11 telephone wall outlet to the RJ-45 ADSL port on the Sagem F@st1500 ADSL Router.



DO NOT plug a phone jack connector into any RJ-45 port.

C.2.1 Specifications

Cable Types and Specifications		
Cable	Type	Connector
ADSL	Line Standard	Telephone cable RJ11

C.2.2 Wiring Conventions

For ADSL connections, a cable requires one pair of wires. Each wire is identified by different colors. For example, one wire might be red and the other, red with white stripes. Also, an RJ-11 connector must be attached to both ends of the cable.

Each wire pair must be attached to the RJ-11 connectors in a specific orientation. The following figure illustrates how the pins on the RJ-11 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.

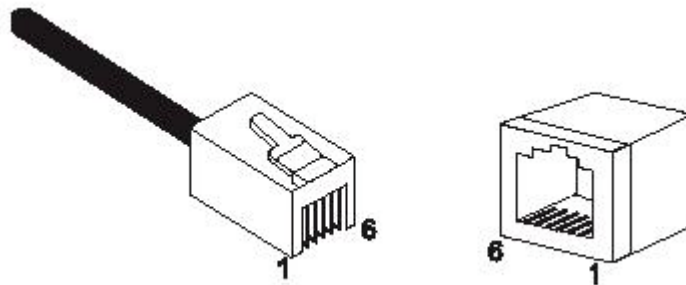


Figure C.2 - RJ-11 Connector Pin Numbers

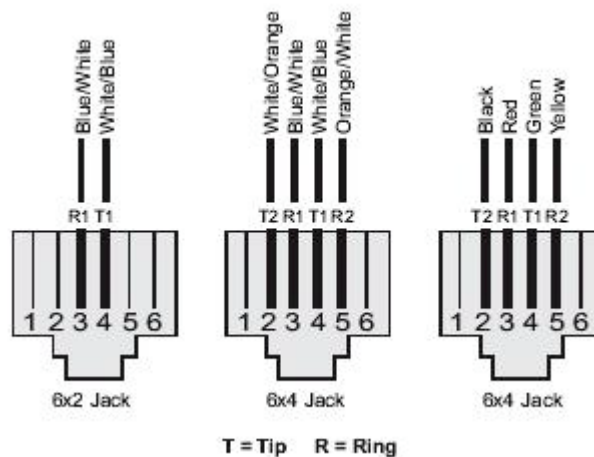


Figure C.3 - RJ-11 Pinouts

Pin	Signal Name	Wire Color
1	Not used	—
2	Line 2 Tip	Black or White/Orange
3	Line 1 Ring	Red or Blue/White
4	Line 1 Tip	Green or White/Blue
5	Line 2 Ring	Yellow or Orange/White
6	Not used	—

D. Appendix D - Technical specifications

This chapter covers	➤ the Mechanical Characteristics - Displays	Section D.1
	➤ the Electrical Characteristics	Section D.2
	➤ the Soft Component Features	Section D.3
	➤ the Radio Features	Section D.4
	➤ the Environmental characteristics	Section D.5

D.1 Mechanical Characteristics - Displays

Mechanical specifications	
Dimensions (mm)	• Height without antenna : 35 mm
	• Height with antenna : 100 mm
	• Depth with cable guide : 140 mm
	• Width of stand : 170 mm
Weight (without mains adapter)	• Unit with stand : 400 g
Weight (without mains adapter)	• Mains unit : 580 g
Installation	• Desktop

Displays	
1 LED	• Presence of power supply (PWR)
1 LED	• ADSL interface set up (ADSL)
1 LED	• WLAN 802.11b/g (WLAN)
1 LED	• Alarm Detection (ALM)
4 LEDs	• Ethernet activity (ETHERNET)

Ports	
• Four ports 10 / 100 bps - RJ45 (LAN1 to LAN4)	
• One port ADSL - RJ11 (ADSL)	
• One Type 2 Europlug socket (Power)	
• One external dipole antenna	

D.2 Electrical Characteristics

ADSL Features

Supports DMT line modulation,

Supports Annex A Full-Rate ADSL: up to 8 Mbps downstream, up to 1 Mbps upstream (G.992.1 & T1.413, Issue 2),

Supports G.Lite ADSL: up to 1.5 Mbps downstream, up to 512 Kbps upstream,

Supports Annex A ADSL 2+: up to 25 Mbps downstream, up to 2 Mbps upstream (G.992.5),

Dying GASP support.

Input Power

12 V / 1 A.

D.3 Soft Component Features

ATM Features

RFC1483 Encapsulation (IP, Bridging and encapsulated routing),
PPP over ATM (LLC &VC multiplexing) (RFC2364),
Classical IP (RFC1577),
Traffic shaping (UBR, CBR),
OAM F4/F5 support,
PPP over Ethernet Client.

Management Features

Firmware upgrade via web based management,
Web based management (configuration),
Power indicators,
Event and history logging,
Network ping.

Security Features

Password protected configuration access,
User authentication (PAP/CHAP) with PP,
Firewall NAT NAPT,
VPN pass through (IPSec-ESP Tunnel mode,L2TP, PPTP).

LAN Features

IEEE 802.1d (self-learning transparent Bridging),
DHCP Server,
DNS Proxy,
Static Routing, RIPv1 and RIP.
Dynamic DNS
VLAN binding

QoS Features

Diffserv (RFC 2475),
Diffserv PHBs : BE, AF1x, AF1x, AF1x, AF1x and EF,
Diffserv code point (DSC) remarking,
Layer 2/3 Multi-field Classification,
Application Layer Classification.

Voice Over IP Features

SIP Passthrough (RFC 3261)

Applications

Netmeeting, ICQ, Real Player, QuickTime, DialPad, PC Anywhere, Telnet, SMTP, NNTP.

D.4 Radio Features

Wireless RF module Frequency Band

802.11g Radio: 2.4GHz.

802.11b Radio: 2.4GHz.

USA - FCC

2412 to 2462 MHz (Ch1 to Ch11).

Canada - IC

2412 to 2462 MHz (Ch1 to Ch11).

Europe - ETSI

2412 to 2472 MHz (Ch1 to Ch13).

Spain

2457 to 2462 MHz (Ch10 et Ch11).

France

2457 to 2472 MHz (Ch10 to Ch13).

Japan - STD-T66/STD-33

2412 to 2484 MHz (Ch1 to Ch14).

Modulation Type

OFDM, CCK.

Operating Channels IEEE 802.11b compliant:

11 channels (US, Canada),
13 channels (ETSI),
2 Channels (Spain),
4 Channels (France),
14 channels (Japan).

Operating Channels IEEE 802.11g compliant:

13 channels (US, Canada, Europe, Japan).

RF Output Power Modulation Rate-Output Power (dBm)

802.11b - 1Mbps (16 dBm),
802.11b - 2Mbps (16 dBm),
802.11b - 5.5Mbps (16 dBm),
802.11b - 11Mbps (16 dBm).

Modulation Rate-Output Power (dBm)

802.11g - 6Mbps (15 dBm),
802.11g - 9Mbps (15 dBm),
802.11g - 12Mbps (15 dBm),
802.11g - 18Mbps (15 dBm),
802.11g- 24Mbps (15 dBm),
802.11g - 36Mbps (15 dBm),
802.11g- 48Mbps (15 dBm),
802.11g - 54Mbps (15 dBm).

Sensitivity Modulation Rate-Receiver 2.412 ~ 2.484 HGz Sensitivity (dBm)

802.11b - 1Mbps - (90 dBm),
802.11b - 2Mbps - (88 dBm),
802.11b - 5.5Mbps - (85 dBm),
802.11b- 11Mbps - (84 dBm).

Modulation Rate-Receiver Sensitivity Typical (dBm)

802.11g - 6Mbps - (88 dBm),
802.11g - 9Mbps - (87 dBm),
802.11g - 12Mbps - (84 dBm),
802.11g - 18Mbps - (82 dBm),
802.11g - 24Mbps - (79 dBm),
802.11g - 36Mbps - (75 dBm),
802.11g - 48Mbps - (68 dBm),
802.11g - 54Mbps - (68 dBm).

D.5 Environmental characteristics

SAGEM F@st™ 1500WG complies with the following standards:

Temperature: IEC 68-2-14

0 to 50 degrees C (Standard Operating),
-40 to 70 degrees C (Non-operation).

Humidity

10% to 90% (Non-condensing).

Vibration

IEC 68-2-36, IEC 68-2-6.

Shock

IEC 68-2-29.

Drop

IEC 68-2-32.

IEEE Standards

IEEE 802.3, 802.3u, 802.11g, 802.1d,
ITU G.dmt,
ITU G.Handshake,
ITU T.413 issue 2 - ADSL full rate.

Standards Conformance Electromagnetic Compatibility

CE, ETSI, R&TTE, FCC part 15 class B & FCC part 68, ETS 300 328,
ETS 300 826.

Safety

CSA/NRTL (UL1950, CSA 22.2.950) GS (EN60950), CB (IEC60950), ITU K21.

Internet Standards

RFC 826 ARP,
RFC 791 IP,
RFC 792 ICMP,
RFC 768 UDP,
RFC 793 TCP,
RFC 783 TFTP,
RFC 1483 AAL5 Encapsulation,
RFC 1661 PPP,
RFC 1866 HTML,
RFC 2068 HTTP,
RFC 2364 PPP over ATM.
RFC 3261 SIP Passthrough

E. Appendix E - Default configuration

This chapter covers	➤ the default user name and password for HTTP access	Section E.1
	➤ the default language for HTTP User Interface	Section E.2
	➤ the default configuration on the local area network side	Section E.3
	➤ the default configuration on the wide area network side	Section E.4
	➤ the default configuration for advanced functions	Section E.5



This section gives the default factory settings for the SAGEM F@st™ 1500. The SAGEM F@st™ 1500 is set to "Router" mode by default.

These default settings can be modified by a special pre-configuration of the SAGEM F@st™ 1500. This can be performed through CLI Telnet default commands.

E.1 Default user name and password for HTTP access

Password	Empty
----------	-------

E.2 Default language for HTTP User Interface

Language used to display HTTP pages: English

E.3 Default configuration on the local area network side

LAN characteristics	Function - Mode	State/Value
IP characteristics	IP address	192.168.2.1
	Mask	255.255.255.0
	BROADCAST, ARP, MULTICAST	Enabled
IP - SERVICES	RIP	Disabled
	DHCP server activated on the LAN	192.168.2.2 to 192.168.2.254
Default VLAN1 binding characteristics	VLAN1 binding	LAN1, LAN2, LAN3, LAN4, WLAN
Default VLAN1 profile characteristics	Description	Default
	IP address	192.168.2.1
	Subnet Mask	255.255.255.0
	NAT Domain	Private
	IGMP Snooping	Disabled
"Wireless" characteristics Only SAGEM F@st™ 1500WG	IGMP Querier	Disabled
	SSID broadcasting	Enabled
	ESSID	"SAGEM"
	Channel	6
	WEP	Disabled
Keys	64 bits / Hex / Key1 (01/01/01/01/01)	

E.4 Default configuration on the wide area network side

WAN characteristics	Function - Mode	State/Value
ATM characteristics	Protocol	PPPoA
	VPI	8
	VCI	35
	Encapsulation	VC MUX
	QoS Class	UBR
	PCR	4000 cells/s
	SCR	4000 cells/s
	MBS	10
	NAT	Enabled
	Default route	ADSL interface address
	DNS relay	Enabled
	Firewall	Enabled
	Intrusion detection	Disabled
OAM F4 and F5 (see Note)	Enabled	

Note: The OAM functions provided are as follows:

- Segment and end-to-end flow F4 and F5 management by VC.
- AIS/RDI functions.
- Response to loopback cells F4 or F5.
- Response to continuity check (CC) enable/disable cells.

PPP characteristics	IP address	Automatic negotiation
	MTU	1400
	Connect Type	Always Connected
Remote Management	Access	Disabled
ADSL characteristics	Maximum upstream rate	896 kbit/s
	Maximum downstream rate	8160 kbit/s
	Mode	Multimode
	Latency	Simple latency (fast or interleaved)

Note: The user can revert to the default configuration via the HTTP interface.

E.5 Default configuration for advanced functions

Advanced functions characteristics	Function - Mode	State/Value
	UPnP	Enabled
	DDNS	Disabled

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