SAGEM F@stTM 1500 SAGEM F@stTM 1500WG



Reference Manual

288 053 220-03

August 2004 Issue



SAGEM sA closely follows all technological changes and is continually striving to improve its products for the benefit of its customers. It therefore reserves the right to change its documentation accordingly without notice.

All the trade marks mentioned in this guide are registered by their respective owners:

- SAGEM F@st[™] is a registered trade mark of SAGEM sA.
- Windows[™] is a registered trade mark of Microsoft Corporation.
- Internet Explorer is a registered trade mark of Microsoft Corporation.

Warning



Warning icon, used in this guide.

Information icon, used in this guide.

Contents

| | Pages |
|--|---|
| Contents | 0-1 to 0-4 |
| 1. Introduction | 1-1 |
| 1.1About the SAGEM F@st [™] 1500WG ADSL Router | 1-2 |
| 1.2Features and Benefits | 1-2 |
| 1.3Applications | 1-2 |
| 1.4Composition of the supply | 1-4 |
| 1.5Prerequisites | 1-5 |
| 2. Description and Physical installation | 2-1 |
| 2.1Hardware Description 2.1.1 Front panel 2.1.2 Rear panel | 2-2 2-3 2-4 |
| 2.2Physical Installation2.2.1 Installation instructions2.2.2 Desktop Installation | 2-5 2-5 2-6 |
| 2.3Settings and Connecting 2.3.1 ISP settings 2.3.2 Install the SAGEM F@st[™] 1500 ADSL Router 2.3.3 Connect the ADSL Line 2.3.4 Phone Line Configuration 2.3.5 Attach to Your Network Using Ethernet Cabling 2.3.6 Connect the Power Adapter | 2-7 2-7 2-7 2-7 2-8 2-10 2-10 |
| 2.4Powering up the SAGEM F@st™ 1500 ADSL router | 2-11 |
| 3. Configuring Client Computer | 3-1 |
| 3.1TCP/IP Configuration | 3-2 |
| 3.2Configuring your Windows computer 3.2.1 On Windows 98 / Me 3.2.2 On Windows NT 4.0 3.2.3 On Windows 2000 3.2.4 On Windows XP 3.3Configuring your Mac computer | 3-3 3-3 3-8 3-12 3-16 3-20 |
| | • =• |

| 4. Confi | guring the SAGEM F@ | st™ 1500 ADSL router | 4-1 |
|-------------------|---|----------------------|---------------------|
| 4.1STATU | JS | | 4-4 |
| 4.2"SETU | P WIZARD" menu | | 4-6 |
| | PPP Setting | | 4-6 |
| | Channel and SSID | | 4-7 |
| 4.2.3 | | | 4-8 |
| 4.2.4 | Access Control | | 4-9 |
| 4.3SYSTE | | | 4-10 |
| | Time Settings | | 4-10 |
| | Password Settings | | 4-11 |
| | Configuration tools Firmware Upgrade | | 4-12 4-13 |
| 4.3.4 | Reset | | 4-13 |
| | | | |
| 4.4"WAN | ATM PVC | | 4-14 4-15 |
| | Clone MAC | | 4-13 |
| 4.5LAN | | | 4-18 |
| 4.5.1 | DNS | | 4-19 |
| - | - | | |
| 4.6Wirele | | | 4-20 |
| 4.6.1 | Channel and SSID | | 4-21 |
| | Access Control Security | | 4-22 4-23 |
| | WEP | | 4-23 |
| | WPA | | 4-25 |
| 4.6.6 | 802.1X | | 4-26 |
| 4.7NAT | | | 4-28 |
| | Address Mapping | | 4-29 |
| | Virtual Server | | 4-30 |
| 4.7.3 | Special Application | | 4-31 |
| 4.7.4 | NAT Mapping Table | | 4-32 |
| 4.8Firewa | ll | | 4-33 |
| 4.8.1 | Access Control | | 4-34 |
| 4.8.2 | MAC Filter | | 4-36 |
| 4.8.3 | URL Blocking | | 4-37 |
| 4.8.4 | Schedule Rule | | 4-38 |
| 4.8.5 4.8.6 | Intrusion Detection DMZ | | 4-39 4-43 |
| 400 | | | |
| 4.9Route 4.9.1 | Static Route | | 4-44 4-44 |
| 4.9.1 | RIP | | 4-44 |
| 4.9.3 | Routing Table | | 4-47 |
| 4.10 Qo | S | | 4-48 |
| | Traffic Mapping | | 4-50 |
| | Traffic statistics | | 4-52 |
| | | | |

| 4.11 Advanced 4.11.1 ADSL 4.11.2 Remote Management 4.11.3 SNMP 4.11.4 UPnP | 4-53 4-53 4-56 4-57 4-58 |
|--|---|
| 4.12 Finding the MAC address of a Network Card | 4-59 |
| A. Appendix A - Troubleshooting | A-1 |
| B. Appendix B - Safety warnings | B-1 |
| B.1 Safety warnings B.1.1 Safety levels on the mains adapter unit B.1.2 Safety levels on the SAGEM F@st™ 1500 unit | B-2 B-2 B-2 |
| B.2 CE declaration of conformity | B-3 |
| C. Appendix C - CABLES | C-1 |
| C.1Ethernet cableC.1.1SpecificationsC.1.2Wiring ConventionsC.1.3RJ-45 Port ConnectionC.1.4Pin Assignments | C-2 C-2 C-2 C-2 C-3 |
| C.2 ADSL Cable C.2.1 Specifications C.2.2 Wiring Conventions | C-4 C-5 |
| D. Appendix D - Technical specifications | D-1 |
| D.1 Mechanical Characteristics - Displays | D-2 |
| D.2 Electrical Characteristics | D-2 |
| D.3 Soft Component Features | D-3 |
| D.4 Radio Features | D-4 |
| D.5 Environmental characteristics | D-6 |
| E. Appendix E - Default configuration | E-1 |
| E.1 Default user name and password | E-2 |
| E.2 Default configuration on the local area network side | E-2 |
| E.3 Default configuration on the wide area network side | E-2 |

List of figures

Figure 2.1 - Front Panel Figure 2.2 - Rear Panel Figure 2.3 - Installing with a Splitter Figure 2.4 - Installing without a splitter

Figure C.1 - RJ-45 Ethernet Connector Pin Numbers Figure C.2 - RJ-11 Connector Pin Numbers Figure C.3 - RJ-11 Pinouts

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 TM 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.

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@stTM 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 (ETH) interfaces.
- the SAGEM F@st™ 1500 User Guide in pdf file format.
- the Acrobat® Reader™ software for reading pdf files.

| Incomplete or | If the equipment is received damaged or incomplete, contact the |
|----------------|---|
| damaged supply | 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.

1 - Introduction

2. Description and Physical installation

| This chapter covers | ۶ | a description of the SAGEM F@st [™] 1500 | Section 2.1 |
|---------------------|---|--|-------------|
| | ٨ | how to install the SAGEM F@st [™] 1500 | Section 2.2 |
| | ٨ | how to connect the ports of the SAGEM F@st [™] 1500 | Section 2.3 |
| | A | 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

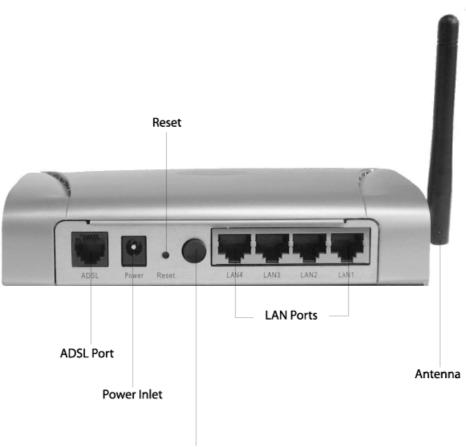


Figure 2.1 - Front Panel

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 TM 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 | On | Ethernet connection is established. |
| (4 LEDs) | Flashing | The indicated LAN port is sending or receiving data. |
| | Off | There is no LAN connection on the port. |

2.1.2 Rear panel



Power button

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/0 | On/Off switch for secondary power from the mains adapter block |
| LAN4 | Fast Ethernet ports (RJ-45). Connect devices on your local area |
| LAN3 | network to these ports (i.e., a PC, hub, or switch). |
| 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 SAGEM F@stTM 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:

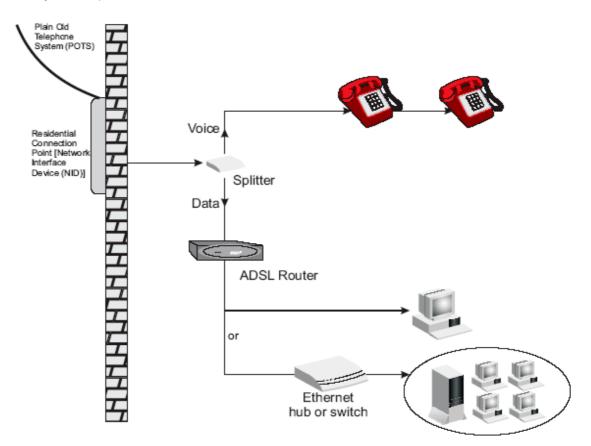


Figure 2.3 - Installing with a Splitter

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:

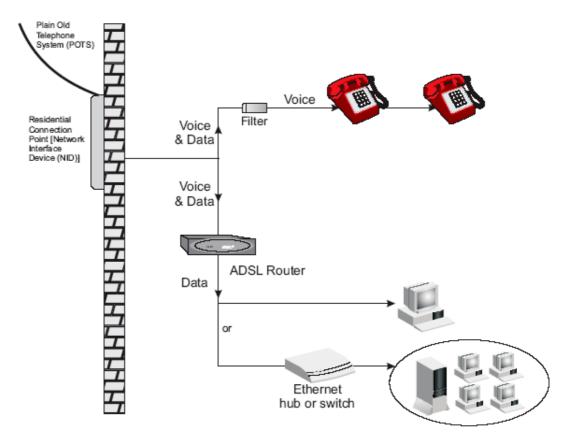


Figure 2.4 - Installing without a splitter

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 to the 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@stTM 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 Appendice 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 | \triangleright | 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 |

After completing hardware setup by connecting all your network devices, you need to configure your computer to connect to the SAGEM F@stTM 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 |

Мас

Mac OS 10.2 on sub-section 3.3



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@stTM 1500 ADSL Router's web configuration interface in order to make the required changes. (See "Configuring the SAGEM F@stTM 1500 ADSL Router" on chapter 4 for instruction on configuring the SAGEM F@stTM 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.



- 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.

| Notwork | ? × | |
|---------------|--|---------------------|
| Configuration | Identification Access Control | |
| | | |
| | ng network components are installed | |
| | or Microsoft Networks | |
| 📲 Dial-Up | | |
| | Z Card 10/100 (SMC1211T%) | |
| | P → Dial-Up Adapter P → SMC EZ Card 10/100 (SMC1211TX) | |
| 1 100110 | | |
| Бр | Remove Properties | |
| Primaty Ne | TCP/IP Properties | ?× |
| Cliant for I | Bindings Advanced Net | BIDS 1 |
| File an | | IP Address |
| - Descripti | | |
| TCP/IP (| An IP address can be automatically assigned to this con If your network does not automatically assign IP addres | nputer. sea, ask |
| wide-are | your network administrator for an address, and then type the space below. | eitin |
| | e a space baddy. | |
| | | |
| | Ottain an IP address automatically | |
| _ | Specify an IP address | |
| | IF Address: | |
| | | |
| | Sgimei Mask: | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | 0K | Cancel |
| | | |

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 **(2)**, then click **Tools/Interne** 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.

| Internet Options | × |
|--|---|
| General Security Content Connections Programs Advanced | |
| Use the Internet Connection Wizard to Connect your computer to the Internet. | |
| Dial-up settings | |
| Add | |
| <u>R</u> emove | |
| Settings | |
| Never dial a connection Dial whenever a network connection is not present Always dial my default connection Current default None Set Default | |
| Perform system security check before dialing | |
| Local Area Network (LAN) settings | |
| OK Cancel Apply | |

| Local Area Network (LAN) Settings | ? × |
|---|-----|
| Automatic configuration | |
| Automatic configuration may override manual settings. To ensure t use of manual settings, disable automatic configuration. | he |
| Automatically detect settings | |
| Use automatic configuration script | |
| Address | |
| Proxy server | |
| Use a proxy server | |
| Address: Port: Advange | d |
| Bypass proxy server for local addresses | |
| | |
| OK Can | cel |

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.

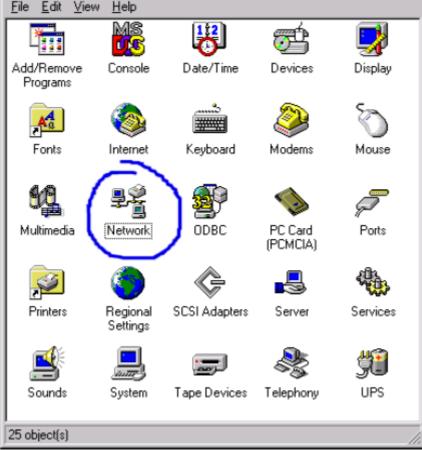
- 1) On the Windows desktop, click Start/Run...
- 2) Type "WINIPCFG" and click OK. It may take a second or two for the IP Configuration window to appear.
- 3) In the IP Configuration window, select your network card from the drop-down menu. Click Release and then click Renew. Verify that your IP address 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.

| | | | | F | ?un | | | | | ? × |
|-----------|----------|--------------------|---|---|---------------|---|--------|-----------------|-------------------|-----------------|
| | - | Windows Update | | | Dpen: | Type the name resource, and V | | | | t, or Internet |
| | . | <u>P</u> rograms | • | | <u>o</u> pon. | Junuara | | | | |
| | * | F <u>a</u> vorites | • | | | | OK | Ca | ancel | Browse |
| | | <u>D</u> ocuments | • | | un e | e | | | | |
| | - | <u>S</u> ettings | • | | • | <mark>figuration</mark> Adapter Informat | ion — | | | |
| | | <u>F</u> ind | • | | | | | SMC Ethe | erPower II 10/ | 100 Netw 💌 |
| | 2 | <u>H</u> elp | | | | Adapter Ad | | 00-E0 |)-29-75-35-9E | |
| m | ~ | <u> </u> | | | | IP Ad | ldress | 192 | 2.168.2.161 | |
| õš | 2 | <u>B</u> un., | | | | Subnet I | Mask | 255 | 6.255.255.0 | |
| Vindows98 | | Log Cff Wlarson | | | | Default Gate | eway | 19 | 92.168.2.1 | |
| Š | • | Sh <u>u</u> t Down | | | | OK | _ | elease | Re <u>n</u> ew | |
| | Start | 🏉 | | | _ | Rele <u>a</u> se All | 1e | ne <u>w</u> All | <u>M</u> ore Info | <u>>></u> |

3.2.2 On Windows NT 4.0

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





SAGEM F@st™ 1500 Reference Manual - 288053220-03

- 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**.

| Network | <u>?</u> × |
|-----------------------|--|
| Identificatio | n Service: Plotocols Adapters Binding: |
| <u>N</u> etwork | Protocols: |
| TCP | EUI Protocol |
| | licrosoft TCP/IP Properties |
| | IP Address DNS WINS Address Routing |
| Desc Tran: area | An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below. |
| diver | Adapte: |
| | 11 SMC EZ Caid 10/100 (SMC1256FT X) |
| | Obtain an IP address from a DHCP server |
| | |
| | [F Address: |
| _ | Sybnet Mask: |
| | Default <u>B</u> ateway: |
| | A <u>d</u> vanced |
| | OK Cancel Apply |

| Microsoft TCP/IP Properties | ? × |
|--|------------------------|
| IP Address DNS WINS Address Routing | |
| Domain Name System (DNS) Host Name: Domain: | |
| DNS Service Search Order | |
| | Lp† Do <u>w</u> ni |
| Add Edit Hemoge | |
| Domain Suffix Search Order | |
| | Lig† Dow <u>n</u> ‡ |
| Add Edij Remove | |
| OK Cancel | Apply |

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 | · |

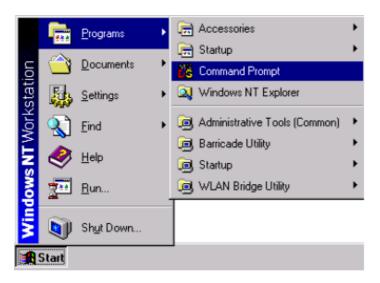
Disable HTTP Proxy

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@stTM 1500 ADSL Router's HTML configuration pages. (refer to Internet Explorer on § 3.2.1).

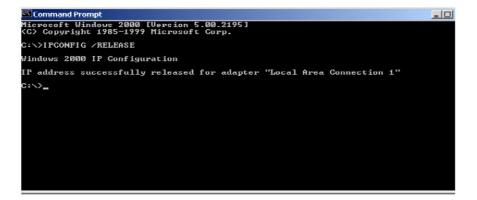
Obtain IP Settings from SAGEM F@st[™] 1500 ADSL Router

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**.
- 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**.

| eneral | | | |
|----------------------|------------------|--------------|--------|
| - Connection | | | |
| Status: | | Connecte | d |
| Duration: | | 00:15:1 | |
| Speed: | | 10.0 Mbp | os |
| Activity Packets: | Sent — 🛛 🖁 49 | Pa — Receive | d O |
| Properties D | isable | | |
| | | Ci | ose |

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

| Internet Protocol (TCP/IP) Prope | erties ?X |
|---|---|
| General | |
| | automatically if your network supports d to ask your network administrator for |
| Obtain an IP address automa | itically |
| C Use the following IP address: | |
| [P address: | |
| S <u>u</u> bnet mask: | · · · |
| Default gateway: | |
| Obtain DNS server address a | automaticallu |
| $\neg \bigcirc$ Use the following DNS serve | |
| Preferred DNS server: | |
| <u>A</u> lternate DNS server: | · · · |
| | Ad <u>v</u> anced |
| | OK Cancel |

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.

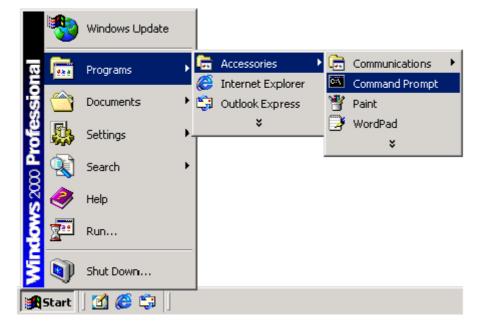
Disable HTTP Proxy

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@stTM 1500 ADSL Router's HTML configuration pages. (refer to Internet Explorer on § 3.2.1).

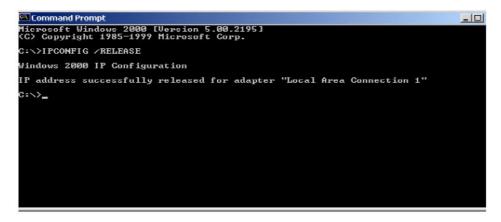
Obtain IP Settings from SAGEM F@st[™] 1500 ADSL Router

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.



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.

3.2.4 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**.

| 🕹 Local Area Con | nection Status | ? 🛛 |
|------------------|----------------|---------------|
| General Support | | |
| Connection | | |
| Status: | | Connected |
| Duration: | | 00:23:03 |
| Speed: | | 100.0 Mbps |
| Activity | Sent — 剩 - | - Received |
| Bytes: | 9 405 | 1 388 |
| Properties | Disable | <u>C</u> lose |

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

| Internet Protocol (TCP/IP) Prope | rties 🛛 🛛 🔀 |
|---|-------------------|
| General Alternate Configuration | |
| You can get IP settings assigned auton this capability. Otherwise, you need to a the appropriate IP settings. | |
| Obtain an IP address automatical | y. |
| Use the following IP address: — | |
| IP address: | |
| S <u>u</u> bnet mask: | |
| Default gateway: | |
| ⊙ 0 <u>b</u> tain DNS server address autor | natically |
| OUse the following DNS server add | Iresses: |
| Preferred DNS server: | · · · · · · · · · |
| Alternate DNS server: | |
| | Ad <u>v</u> anced |
| | OK Cancel |

 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@stTM 1500 ADSL Router's HTML configuration pages. (refer to Internet Explorer on § 3.2.1).

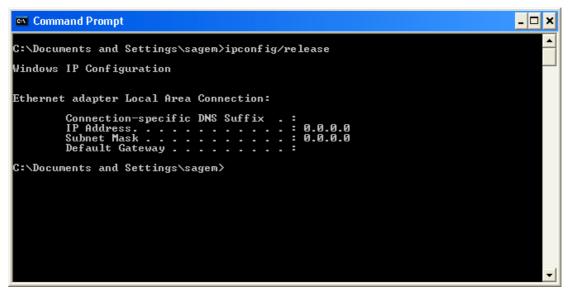
Obtain IP Settings from Sagem F@st1500 ADSL Router

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.

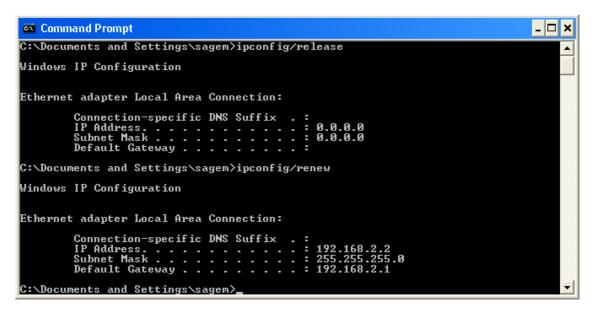
1) On the Windows desktop, click Start/All Programs/Accessories/ Command Prompt.



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



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.



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 S. Click System Preferences. About This Mac Get Mac OS X Software... System Preferences... Dock Location Recent Items Force Quit... Sleep Restart... Shut Down... Log Out... ☆ #Q
- 2) Double-click the Network icon in the Systems Preferences window.

| 000 | | S | stem Prefere | nces | | C |
|--------------|-----------|-------------|--------------------|-------------|--------------|----------------|
| Personal | | | | | | |
| 9 | | E New | 3 | | 1 | C |
| Desktop | Dock | General | International | Login Items | My Account | Screen Effects |
| Hardware | | | | | | (Leona |
| 0 | 6 | | Ŷ | (× | 0 | ٩ |
| CDs & DVDs | ColorSync | Displays | Energy Saver | Keyboard | Mouse | Sound |
| Internet & I | Network | | | | | |
| | | 0 | 1 | | | |
| Internet | Network | QuickTime | Sharing | | | |
| System | | | | | | |
| 11 | 9 | A | (0) | 8 | 2 | |
| Accounts | Classic | Date & Time | Software Update | 5peech | Startup Disk | Universal |

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

| 0.0 | | Location: Autematic | | |
|---------|-------------------|---------------------------------------|-------------------------------------|----------|
| Show: (| Built-in Ether | net 🚺 |) | |
| _ |] | TCP/IP PPOE AP | pleTalk Proxies | |
| | Configure: | Using DHCP | | |
| | | | DNS Servers (Option | na) |
| | IP Address: | 10.128.83 Provided by SHCP Servers | | |
| | Subnet Mask: | 255.255.252.0 | | |
| | Router: | 10.1.28.254 | Search Domains (Option | uit. |
| DH | C# Client ID. | [] | | |
| | | (Optional) | | |
| Ethe | rnet Address | 00:50:e4:00:2c:06 | Example: apple.com earthlink.set | |
| | | | | |
| (ع) ei | alcalia loak ao j | recent further charges. | (heren) (App | ly teurs |

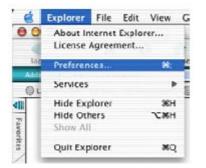
- 4) Your new settings are shown on the TCP/IP tab. Verify that your IP Address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your SAGEM F@st[™] 1500 ADSL Router is functioning.
- Close the Network window. Now your computer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

| Security Security Zones Ratings | If you are accessing the Internet from gateways to allow Internet access. for more information. Note: These applications through Internet Config | Contact your network manager settings are shared with other |
|---|---|---|
| Advanced | Use Proxy Servers | |
| ▼ Forms AutoFill | Web Proxy: | Settings) |
| Forms AutoComplete | Use Web Proxy for all | |
| AutoFill Profile | Bypass Web Proxy for FTP | |
| Receiving Files | Secure Proxy: | (Settings) |
| Download Options File Helpers | Mail Proxy: | Settings |
| O Cookies | Gopher Proxy: | Settings |
| Network Protocol Helpers | List the sites you want to connect set above. Put a space or comma | |
| • Proxies | | |
| Site Passwords E-mail | | |
| General | | |
| • General | | Cancel OK |

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 |



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: <u>http://192.168.2.1</u>.

| SAGEM | |
|-------|---|
| | Login Screen Password: |
| | |
| | Please enter correct password for Administrator Access. Thank you. |
| | We suggest that you use Internet Explorer 5.5 or above at a minimum of 1024x768 resolution. |
| | Copyright © 2004 SAGEM SA., All rights reserved. |
| | |

No Password needed, just click "LOGIN".

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 modification 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 you want to configure your modem by clicking the appropriate flag (French or english).

4.1 STATUS

The Status page displays 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 to a file by clicking the button and choosing a location.

Scroll down to view more information on the STATUS page.

| | | | | | | | | | ST | ATUS |
|--------------|---|--|---|------------|-------------------------------|--|-------------|--------------------------|----------------|--------|
| SAGEM | | | | | | Home | Save an | d Reboot | Reset | Logout |
| | | | | | | | | | | |
| STATUS | STATUS | | | | | | | | | |
| SETUP WIZARD | | | | | | | | | | |
| SYSTEM | You can use the Status and hardware version nu | | | | | | | | | |
| WAN | DHCP client PCs currently | | | | | - - | | | | |
| LAN | ADSL | | | | | | | | | |
| WIRELESS | ADSL: Physical Down | | | | | | | | | |
| NAT | Line Status: QUIET1 Up Stream: O (Kbps.) | | | | | | | | | |
| FIREWALL | Down Stream: 0 (Kbps. |) | | | | | | | | |
| ROUTE | WAN | | | | | | | | | |
| QoS | VC | VPI | VCI | Encapsulat | tion | | Protocol | Link Sta | atus | |
| ADVANCED | 1 Connect | | 35 | VC MUX | | | PPPoA | Down | | _ |
| | IP Address: 192.168.2.: Subnet Mask: 255.25.: DHCP Server: Enabled Vireless: Enabled UPnP: Disabled Wireless: Enabled (char INFORMATION Numbers of DHCP Clients Runtime Code Version: 1 Boot Code Version: 0.6 ADSL Modem Code Versi LAN MAC Address: 00-6 Wireless MAC Address: 00-6 Hardware Version: 01 Serial Num: A41303403 Serial Num: A41303403 View any attempts that access to your network. 08/01/2003 04:44:00 08/01/2003 04:66:15 08/01/2003 03:50:15 08/01/2003 03:50:15 08/01/2003 03:50:15 08/01/2003 03:50:16 08/01/2003 03:50:16 08/01/2003 03:50:16 08/01/2003 03:50:16 08/01/2003 03:50:16 08/01/2003 03:50:16 08/01/2003 03:50:16 08/01/2003 03:50:16 | 255.0 nnel: 6) 3: 3 2.04 (Jul 2 2 on: 03.0(0-4C-3A-(00-60-4C- 30-60 | 0.12.0 30-00 -3A-30 -30-01 | le to gain | linked to ip=192 ip=192 | ormation the ro .168.2 .168.2 | n on LAN DH | -08-C7-25- -60-B3-25- | -AB -62 -53 | telp |

The following items are included on the Status page:

the Security Log.

| ltem | Description |
|-----------------|---|
| INTERNET | Displays WAN connection type and status. Click the Connect button to connect to your ISP. |
| vc | Displays your VC settings and its status. Click on the Connect button to establish the VC's connection, click on the Disconnect button to stop it. |
| GATEWAY | Displays system IP settings, as well as DHCP Server and Firewall status. |
| INFORMATION | Displays the number of attached 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 | Displays illegal attempts to access your network. Save Click on this button to save the security log file. Clear Click on this button to delete the access log. Refresh Click on this button to refresh the screen. |
| DHCP Client Log | Displays information on DHCP clients on your network. |
| | |
| Clear | In the Security Log field, click on this button to clear all the events from the Security Log. |
| Refresh | In the Security Log field, click on this button to refresh all the events from |

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

| SAGEM | | WIZARD |
|-------------------------------|--|-------------|
| | Home | eset Logout |
| 1. PPP settings | 1. PPP settings | |
| 2. Channel and SSID 3. WEP | Please enter your PPP account information provided by your service provider. | |
| 4. Access control | Username username | |
| | Password ••••• | |
| | Confirm Password | |
| | | Next |

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.

| SAGEM | |
|---|-------------------------------------|
| 1. PPP settings 2. Channel and SSID 3. WEP 4. Access control | Connecting to Internet, Please wait |

SAGEM END Next

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.

| SAGEM | SETUP WIZARD |
|--|---|
| 1. PPP settings 2. Channel and SSID 3. WEP | 2. Channel and SSID 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. |
| 4. Access control | SSIDSAGEMSSID BroadcastImage: Comparison of the second |
| | Previous Next |

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.

| SAGEM | SETUP WIZAR |
|--|--|
| | Home Reset Logou |
| 1. PPP settings | 3. WEP |
| 2. Channel and SSID 3. WEP 4. Access control | WEP is the basic mechanism to transmit your data securely over the wireless network. Matching encryption keys must be setup on your router and wireless client devices to use WEP. Enable or disable WEP module function : ③ Disable ① Enable |
| | WEP Mode O 64-bit O 128-bit |
| | Key Entry Method O Hex O ASCII |
| | Static WEP Key Setting 10/26 hex digits for 64-WEP/128-WEP |
| | Default Key ID 1 💌 |
| | Passphrase |
| | Key 1 0101010101 |
| | кеу 2 0202020202 |
| | кеу з 0303030303 |
| | Key 4 0404040404 |
| | Clear |
| | Previous Next |

| 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.

| SAGEM | SETUP WIZARD |
|--|--|
| 1. PPP settings 2. Channel and SSID | 4. Access control |
| 3. WEP 4. Access control | addresses can be added to the MAC Filtering Table. When enabled, all registered MAC addresses are controlled by the Access Rule. Enable MAC Filtering: O Yes O No Access Rule for registered MAC address : O Allow O Deny |
| | • MAC Filtering Table (up to 8 stations) |
| | ID MAC Address 1 00 : 00 : 00 : 00 : 00 |
| | 2 00 : 00 : 00 : 00 3 00 : 00 : 00 : 00 : 00 |
| | 4 00 : 00 : 00 : 00 5 00 : 00 : 00 : 00 : 00 |
| | 6 00 : 00 : 00 : 00 7 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:

- \succ 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.

| SAGEM | Time Settings | |
|-----------------------|---|--|
| | | |
| STATUS | Time Settings | |
| SETUP WIZARD | | |
| SYSTEM | Set Time Zone: | |
| » Time Settings | Use this setting to insure the time-based client filtering feature and system log entries are based on the correct localized time. | |
| » Password Settings | | |
| » Configuration Tools | (GMT+01:00)Brussels, Copenhagen, Paris, Vilnius | |
| » Firmware Upgrade | Configure Time Server (NTP): | |
| » Reset | | |
| WAN | You can automatically maintain the system time on your ADSL router by synchronizing with a public time server over the Internet. | |
| LAN | | |
| WIRELESS | ☑ Enable Automatic Time Server Maintenance | |
| NAT | | |
| FIREWALL | When you enable this option you will need to configure two different time servers, use the options below to set the primary and secondary | |
| ROUTE | NTP servers in your area: | |
| QoS | Primary Server: 129132.21-Europe | |
| ADVANCED | Secondary Server: 130.149.17.8 - Europe | |
| | Help Apply Cancel | |

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.

| SAGEM | Password Settings Home Save and Reboot Reset Logout |
|------------------------------|---|
| STATUS | Password Settings |
| SETUP WIZARD | Set a password to restrict management access to the router. If you want to manage the router from a remote location (outside of the |
| SYSTEM | set a password to restrict management access to 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. You can do this in the Advanced - Remote Management menu. |
| » Time Settings | |
| » Password Settings | . Current Password : |
| » <u>Configuration Tools</u> | (Idle Time =0: NO Time Out) |
| » Firmware Upgrade | New Password: |
| » Reset | |
| WAN | Re-Enter Password for Verification: |
| LAN | |
| WIRELESS | |
| NAT | |
| FIREWALL | Help Apply Cancel |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | |

i

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.

| SAGEM | Configuration Tools |
|--|--|
| STATUS SETUP WIZARD SYSTEM > Time Settings > Password Settings > Configuration Tools > Firmware Upgrade > Reset WAN LAN URELESS NAT FIREWALL ROUTE QoS ADVANCED | Configuration Tools Use the "Backup" tool to save the router's current configuration to a file named backup.bin" on your PC. You can then use the "Restore" tool to restore the saved configuration to the router. Alternatively, you can use the "Restore to Factory Defaults" tool to force the router to perform a power reset and restore the original factory settings. |

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.

| SAGEM | Firmware Upgrade |
|---|--|
| STATUS SETUP WIZARD | Firmware Upgrade This tool allows you to upgrade the router firmware using a file provided by us. You can download the latest firmware from |
| SYSTEM » Time Settings » Password Settings » Configuration Tools » Firmware Upgrade | 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. Firmware File Parcourir |
| »Reset WAN LAN WIRELESS NAT | Help (Apply) Cancel |
| FIREWALL ROUTE QoS ADVANCED | |

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.

| SAGEM | Reset |
|-----------------------|--|
| | Home Reset Logout |
| | |
| STATUS | Reset |
| SETUP WIZARD | |
| SYSTEM | 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 |
| » Time Settings | when the power light stops blinking. |
| » Password Settings | |
| » Configuration Tools | Help Apply Cancel |
| » Firmware Upgrade | |
| » Reset | |
| WAN | |
| LAN | |
| WIRELESS | |
| NAT | |
| FIREWALL | |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | |

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).

| SAGEM | | | WAN Home Reset Logout |
|---------------------|----------------|---|--------------------------|
| | | | |
| STATUS | WAN | | |
| SETUP WIZARD | - | han an a | |
| SYSTEM | The router can | be connected to your service provider in any of the following ways: | |
| WAN | ATM PVC | To configure ATM VC parameters | |
| »VC1 | Clone MAC | To configure WAN Interface MAC Address | |
| » VC2 » VC3 | | | |
| » VC3 | | | |
| » VC4 | | | |
| » VC5 | | | |
| » VC6 » VC7 | | | |
| » VC7 | | | |
| » VC8 | | | |
| » Clone MAC Address | | | |
| LAN | | | |
| WIRELESS | | | |
| NAT | | | |
| FIREWALL | | | |
| ROUTE | | | |
| QoS | | | |
| ADVANCED | | | |

4.4.1 ATM PVC

Enter ATM (Asynchronous Transfer Mode) function parameters here.

| SAGEM | | | | ATM Interface |
|---------------------|--------------------|------------------|------|------------------------------|
| | | | Home | Save and Reboot Reset Logout |
| | | | | |
| STATUS | ATM Interface | | | |
| SETUP WIZARD | | | | |
| SYSTEM | | ATM1 | | |
| WAN | Protocol | PPPoA 🔽 | | |
| »VC1 | VPI/VCI | 8 / 35 | | |
| » VC2 » VC3 | Encapsulation | VC MUX 🔽 | | |
| » VC3 | QoS Class | UBR V | | |
| » VC4 | PCR/SCR/MBS | 4000 / 4000 / 10 | | |
| » VC5 » VC6 | IP assigned by ISP | Yes V | | |
| » VC6 | | | | |
| » VC7 | IP Address | 0.0.0.0 | | |
| » VC8 | Subnet Mask | 0.0.0 | | |
| » Clone MAC Address | Connect Type | Always Connected | | |
| LAN | Idle Time (Minute) | 20 | | |
| WIRELESS | | | | |
| NAT | Username | sagem | | |
| FIREWALL | Password | •• | | |
| ROUTE | Confirm Password | •• | | |
| QoS | мти | 1500 | | |
| ADVANCED | | | | |
| | | | | |
| | | | | Help Apply Cancel |

| Parameter | | Description | | | |
|---------------|--------------------|--|--|--|--|
| Protocol | • 1483 Bridging | | Disables the ATM mode. | | |
| | | | 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 Rou | ting | Use 1483 Routing protocol. | | |
| | • PPPoE | | Point-to-Point over Ethernet. | | |
| | MAC Enc Routing | apsulated | MAC Encapsulated Routing | | |
| VPI/VCI | | Identifier (VPI) and Virtual Circuit Identifier (VCI).Each connection must have a of VPI/VCI settings. | | | |
| Encapsulation | Specifies h | ow 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 protocol running over one virtual circuit (using slightly more overhead). | | | |
| QoS | • CBR | Constant Bit Rate | e. It is used for voice application. | | |
| | • VBR | Variable Bit Rate. It is used for video application. | | | |
| | • UBR | U nspecified B it R ate. It is used in Best Effort for IP and Ethernet (for Data Application) | | | |
| PCR/SCR/MBS | • PCR | Peak Cell Rate. | | | |
| | • SCR | Sustainable Cell | Rate. | | |
| | • MBS | Maximum Burst Size. | | | |

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

| 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 mo | | | | |
| | Auto - Triggered by traffic Your router only connect to WAN when traffic is on (autor mode). | | | | |
| | •Manual - Start in Disconnected When your router start, this is disconnected to WAN mode). | | | | |
| | Manual - Start in Disconnected When your router start, this is connected to WAN (Manumode). | | | | |
| | • 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 t connection will be terminated. | 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 usernan | ne that you entered during the SETUP WIZARD menu | | | |
| Password | In the field it appears the Passwo | rd 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 | | | | |
| Confirm Password | In the field it appears the Confirm Password that you entered during the SETUP WIZARD menu | | | | |
| ΜΤυ | Specifies the maximum size of the payload data in IP packets as a number of bytes (1500 in general) | | | | |

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.

| SAGEM | Clone MAC Address |
|---------------------|--|
| SAGEINI | Home Save and Reboot Reset Logout |
| | |
| STATUS | Clone MAC Address |
| SETUP WIZARD | |
| SYSTEM | 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. |
| WAN | |
| » VC1 | WAN Interface MAC Address: |
| » VC2 | O Use the Gateway's default MAC address 00:60:4C:3A:30:01 |
| » VC3 | |
| » VC4 | Use this PC's MAC address 00:08:C7:25:AB:6B |
| » VC5 | Enter a new MAC address manually: |
| » VC6 » VC7 | 00 : 08 : C7 : 25 : AB : 6B |
| » VC8 | |
| » Clone MAC Address | Help Apply Cancel |
| LAN | |
| WIRELESS | |
| NAT | |
| FIREWALL | |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | |

4.5 LAN

Use the LAN menu to configure the LAN IP address and to enable the DHCP server for dynamic client address allocation.

| SAGEM | | | | | | LAN |
|--------------|--|--------------------------|-------------------------|------------------------|------------|--------|
| | | | Home | Save and Reboot | Reset | Logout |
| | | | | | | |
| STATUS | LAN | | | | | |
| SETUP WIZARD | You can enable DHCP to dynamically allocate IP address | as to your client BCs or | configure filtering fur | ctions based on specif | ic clients | or |
| SYSTEM | protocols. The router must have an IP address for the lo | | configure intening fur | ctions based on specin | ic clients | 01 |
| WAN | | | | | | |
| LAN | LAN IP | | | | | |
| » DNS | | | | | | |
| WIRELESS | | | | | | |
| NAT | IP Address | 19216821 | | | | |
| FIREWALL | IF Add(655 | 132.100.2.1 | | | | |
| ROUTE | IP Subnet Mask | 255.255.255.0 | | | | |
| QoS | DHCP Server | ⊙ Enabled ○ Disabled | | | | |
| ADVANCED | | | | | | |
| | Lease Time | Two Days 💌 | | | | |
| | IP Address Pool | | | - | | |
| | I Address Foor | | | | | |
| | Start IP | 192.168.2.2 | | | | |
| | End IP | 192.168.2.254 | | | | |
| | Domain Name | | | | | |
| | | | | | | |
| | | | | Help A | pply Ca | ancel |

| 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. |
| | 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. |
| 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. |



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

In this menu is included the following sub-menu:

➢ DNS (see section 4.5.1).

4.5.1 DNS

Domain Name Servers (DNS) are used to map a domain name (e.g., <u>www.sagem.com</u>) 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".

| SAGEM | DN Home Save and Reboot Reset Logout |
|--------------|---|
| | |
| 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. Most ISPs provide a DNS |
| WAN | server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the |
| LAN | 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. |
| » DNS | |
| WIRELESS | |
| NAT | Domain Name Server (DNS) Address |
| FIREWALL | Secondary DNS Address (optional) |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | [Help] [Apply] [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**".

| SAGEM | WIRELESS |
|--------------------|--|
| | |
| STATUS | WIRELESS |
| SETUP WIZARD | The gateway can be quickly configured as an wireless access point for roaming clients by setting the service set identifier (SSID) and |
| SYSTEM | channel number. It also supports data encryption and client filtering. |
| WAN | |
| LAN | Enable or disable Wireless module function : ③ Enable |
| WIRELESS | |
| » Channel and SSID | Help Apply Cancel |
| » Access control | |
| » Security | |
| » WEP | |
| » WPA | |
| » 802.1X | |
| NAT | |
| FIREWALL | |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | |

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),
- \blacktriangleright 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.

| SAGEM | | | | Home | Cha Save and Rebo | nnel and ot Reset | d SSID Logout |
|-------------------------|------------------|--|--------------------|------|----------------------|----------------------|------------------|
| | | | | | | | |
| STATUS | Channel and SSID | | | | | | |
| SETUP WIZARD | | | | | | | |
| SYSTEM | | fine SSID and Channel ID for wir se parameters are used for the | | | | an also act as | an |
| WAN | | | | | | | |
| LAN | | SSID | SAGEM | | | | |
| WIRELESS | | 0070 0 1 | | | | | |
| » Channel and SSID | | SSID Broadcast | ● ENABLE ○ DISABLE | | | | |
| » <u>Access control</u> | | Wireless Mode | Mixed (11b+11g) 🔽 | | | | |
| » Security | | Channel | Auto 🗸 | | | | |
| » WEP | | Charmer | Auto | | | | |
| » WPA | | | | | | | |
| » 802.1X | | | | | He | p Apply C | ancel |
| NAT | | | | | | | |
| FIREWALL | | | | | | | |
| ROUTE | | | | | | | |
| QoS | | | | | | | |
| ADVANCED | | | | | | | |

| 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:

| SAGEM | | | | | | | | | | ess C | |
|------------------|---|--|-------|--------|--------|-------|---------|-------|-------------------|-----------|--------|
| | | | | | | ŀ | lome | | Save and Reboot | Reset | Logou |
| | | | | | | | | | | | |
| STATUS | Access Control | | | | | | | | | | |
| SETUP WIZARD | For a more secure Wireless | s network you can specif | y tha | t or | ily ce | ertai | in Wir | eless | PCs can connect t | to the Ac | cess |
| SYSTEM | Point. Up to 32 MAC addre | 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. | | | | | | | | | |
| VAN | addresses are controlled b | y the access Rule. | | | | | | | | | |
| AN VIRELESS | • Enable MAC Filterin | . Enable MAC Filtering : ○Yes ④No | | | | | | | | | |
| Channel and SSID | Anna Pula farma | Access Bule for registered MAC address :Alleu@Deeu | | | | | | | | | |
| Access control | • Access Rule for registered MAC address : ○ Allow ③ Deny | | | | | | | | | | |
| Security | MAC Filtering Table | e (up to 32 stations) | | | | | | | | | |
| WEP | ID | | MAC | ۰ ۵ ri | ldres: | < | | | | | |
| WPA 802.1X | 1 | 00 : 00 : | 00 | - | 00 |].[| 00 | : 00 | | | |
| NAT | 2 | | 00 | - | 00 |].[| | : 00 | - | | |
| IREWALL | | | | _ | | | | | _ | | |
| OUTE | 3 | | 00 | | 00 |]:[| | : 00 | | | |
| 205 | 4 | | 00 | - | 00 | | | : 00 | | | |
| ADVANCED | 5 | | 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 | 1. | 00 | 1.[| | : 00 | _ | | |
| | 12 | | 00 | - | 00 |] [| _ | : 00 | | | |
| | 13 | | 00 | - | 00 |].[| _ | : 00 | _ | | |
| | 14 | | 00 | _ | 00 |] : [| | : 00 | - | | |
| | | | | | | | | - | _ | | |
| | 15 | | 00 | | 00 |]:[| | : 00 | _ | | |
| | 16 | | 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 | 1. | 00 |] [| | : 00 | | | |
| | 24 | | 00 | - | 00 | 1.[| _ | : 00 | | | |
| | 25 | | 00 | | 00 |] : [| | : 00 | | | |
| | 26 | | 00 | | 00 |] [| | : 00 | | | |
| | 20 | | 00 | - | 00 |] [| | : 00 | | | |
| | | | | - | | | _ | | | | |
| | 28 | | 00 | - | 00 |]:[| _ | : 00 | | | |
| | 29 | | 00 | _ | 00 |]:[| | : 00 | | | |
| | 30 | | 00 | | 00 | | | : 00 | | | |
| | 31 | 00 : 00 : | 00 | _ | 00 | | | : 00 | | | |
| | 32 | 00 : 00 : | 00 | : | 00 |] : [| 00 | : 00 | | | |
| | | Add currently | asso | ciate | ed M4 | AC st | tations | ; | | | |
| | | | | | | | | | | | |
| | | | | | | | | | Help / | Apply 0 | 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.

| SAGEM | |
|--------------------|--|
| SAGEM | Home Save and Reboot Reset Logout |
| | |
| STATUS | Security |
| SETUP WIZARD | |
| SYSTEM | 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. |
| WAN | |
| LAN | Allowed Client Type: No WEP, No WPA |
| WIRELESS | |
| » Channel and SSID | |
| » Access control | Help Apply Cancel |
| » Security | |
| » WEP | |
| » WPA | |
| » 802.1X | |
| NAT | |
| FIREWALL | |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | |

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.

| SAGEM | | | | Home | Save and Reboot | Reset | WEP |
|--|--|----------------------------|-------------------------------------|--------------|-------------------------|------------|-------|
| | | | | | | | |
| STATUS | WEP | | | | | | ^ |
| SETUP WIZARD | | | | | | | |
| SYSTEM | WEP is the basic mechanism to transm router and wireless client devices to us | | securely over the wireless network. | Matching enc | ryption keys must be se | etup on yo | our |
| WAN | | | | | | | |
| LAN | WEP Mode | 📀 64-bit | 🔿 128-bit | | | | |
| WIRELESS | Key Entry Method | • Hex | OASCII | | | | |
| » Channel and SSID » Access control | Key Provisioning | Static | ODynamic | | | | |
| » Security | Key Herbiering | Ostatio | Obynamie | | | | |
| » WEP | Static WEP Key Setting | | | | | | |
| » WPA | Static wep key setting | | | | | | |
| » 802.1X | 10/26 hex digits for 64-WEP/128-WEP | | | | | | |
| NAT | | | | | | | = |
| FIREWALL ROUTE | Default Key ID | | | | | | |
| QoS | Passphrase | | (1~32 charac | cters) | | | |
| ADVANCED | Key 1 | 0101010101 | | | | | |
| | | | | | | | |
| | Key 2 | 0202020202 | | | | | |
| | Кеу З | 0303030303 | | | | | |
| | Key 4 | 0404040404 | | | | | |
| | | Clear | | | | | |
| | | | | | | | |
| | | | | | Help , | Apply Ci | ancel |
| | | | | | | | * |

| 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 InternetSAGEM @st[™] 1500 ADSL Router using Internet Explorer 5.0 or above.

4.6.5 WPA

Wi-Fi **P**rotected **A**ccess (**WPA**) combines **T**emporal **K**ey Integrity **P**rotocol (**TKIP**) and 802.1x mechanisms. It provides dynamic key encryption and 802.1x authentication service.

| SAGEM | | Home Save and Reboot Reset Logout |
|--------------------------------|--|-----------------------------------|
| STATUS | WPA | |
| SETUP WIZARD | WPA | |
| | WPA is a security enhancement that strongly increases the level of data protection and | |
| SYSTEM | authentication and encryption methods must be setup on your router and wireless client | devices to use WPA. |
| WAN | | |
| LAN | Cypher suite TKIP 💌 | |
| WIRELESS | Authentication 0802.1X OPre-shared Key | |
| » Channel and SSID | | |
| » Access control » Security | Pre-shared key type OPassphrase (8~63 characters) OHex (64 digits) | |
| » WEP | | |
| » WPA | Pre-shared Key | |
| » 802.1X | • Per 86400 Seconds | |
| NAT | Group Key Re_Keying Oper 1000 K Packets | |
| FIREWALL | ODisable | |
| ROUTE | | |
| QoS | | Help Apply Cancel |
| ADVANCED | | |
| | | |

| 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. | | | | |
| •802.1X: for the enterprise network v | | 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.

| SAGEM | 802.1X |
|--------------------------------|--|
| SAGEIWI | Home Save and Reboot Reset Logout |
| | |
| STATUS | 802.1X |
| SETUP WIZARD | This page allows you to set the 802.1X, a method for performing authentication to wireless connection. These parameters are used for |
| SYSTEM | this access point to connect to the Authentication Server. |
| WAN | |
| LAN | 802.1X Authentication 🔿 Enable 💿 Disable |
| WIRELESS | Session Idle Timeout 300 Seconds (0 for no timeout checking) |
| » Channel and SSID | Session Idle Timeout 300 Seconds (0 for no timeout checking) |
| » Access control » Security | Re-Authentication Period 3600 Seconds (0 for no re-authentication) |
| » WEP | Quiet Period 60 Seconds after authentication failed |
| » WPA | |
| » 802.1X | Server Type RADIUS |
| NAT | RADIUS Server Parameters |
| FIREWALL | |
| ROUTE | Server IP 192 , 168 , 2 , 1 |
| QoS | Server Port 1812 |
| ADVANCED | Server Port 1812 |
| | Secret Key |
| | NAS-ID |
| | |
| | |
| | Help Apply 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 Paran | neters | | | | |
| 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.

| SAGEM | |
|-----------------------|---|
| SAGEIN | Home Save and Reboot Reset Logout |
| | |
| STATUS | NAT |
| SETUP WIZARD | And an a second star with the second star as a second star to be a second star to be started as the second started star |
| SYSTEM | Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single public IP address or multiple public IP addresses. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as |
| WAN | the Web or FTP. |
| LAN | Enable or disable NAT module function : ③Enable ①Disable |
| WIRELESS | Enable of disable NAT module function : Cenable O Disable |
| NAT | |
| » Address Mapping | Help Apply Cancel |
| » Virtual Server | |
| » Special Application | |
| » NAT Mapping Table | |
| FIREWALL | |
| ROUTE | |
| QoS | |
| ADVANCED | |
| | |

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.

| SAGEM | | | Address Mapping |
|---------------------------------------|--|---|------------------------------|
| SAGEIW | | Home | Save and Reboot Reset Logout |
| | | | |
| STATUS | Address Mapping | | |
| SETUP WIZARD | | ate local network to be mapped to one or more addresses used in the public, global Internet. This | |
| WAN | addresses required from the ISP and also maintains the privacy and s | acurity of the local network. We allow one or more than one public IP address to be mapped to a | Jool of local addresses. |
| LAN | Address Mapping | | |
| WIRELESS | 1. Global IP: is transformed as multiple virtual I | 25 | |
| NAT | from to | | |
| » Address Mapping » Virtual Server | | | |
| Special Application | 2. Global IP: is transformed as multiple virtual I | ⁰ 5 | |
| NAT Mapping Table | from to | | |
| FIREWALL ROUTE | 3. Global IP: is transformed as multiple virtual I | 2s | |
| QoS | from to | | |
| ADVANCED | 4. Global IP: is transformed as multiple virtual II | 26 | |
| | | ° | |
| | from to | | |
| | 5. Global IP: is transformed as multiple virtual I | 0g | |
| | from to | | |
| | 6. Global IP: is transformed as multiple virtual I | os | |
| | from to | | |
| | 7. Global IP: is transformed as multiple virtual I | 25 | |
| | from to | | |
| | 8. Global IP: is transformed as multiple virtual I | 24 | |
| | | °2 | |
| | from to | | |
| | 9. Global IP: is transformed as multiple virtual I | ^b s | |
| | from to | | |
| | 10. Global IP: is transformed as multiple virtual | IPs | |
| | from to | | |
| | | | |
| | | | Help Apply 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).

| SAGEM | | | | | | | Virtual Serv |
|---|--|----------------------------------|--|-------------------------------|---------------------------------|----------------------------|----------------------------|
| SAGEM | | | | | | Home | Save and Reboot Reset Logo |
| TATUS ETUP WIZARD YSTEM | Virtual Server | as a virtual server so that ren | note users accessing services su is, depending on the requested s | ich as the Web or FTP at : | your local site via public IP a | addresses can be automatic | ally redirected to local |
| AN AN | server (located at another in For example: | ternal IP address). This tool ca | an support both port ranges, mu | Itiple ports, and combination | ons of the two. | | |
| rIRELESS A T Address Mapping Airtual Server Special Application | Port Ranges: ex. 100-1 Multiple Ports: ex. 25,1 Combination: ex. 25-10 | 10,80 | | | | | |
| NAT Mapping Table | No. | LAN IP Address | Protocol Type | LAN Port | Public Port | Enable | |
| IREWALL | 1 | | TCP | | | | Add Clean |
| OUTE | 2 | | TCP 💌 | | | | Add Clean |
| oS DVANCED | 3 | | TCP 💌 | | | | Add Clean |
| DVANCED | 4 | | TCP V | | | | Add Clean |
| | 5 | | TCP 🔽 | | | | Add Clean |
| | 6 | | TCP 💌 | | | | Add Clean |
| | 7 | | TCP 🔽 | | | | Add Clean |
| | 8 | | TCP 🗸 | | | | Add Clean |
| | 9 | | TCP 🗸 | | | | Add Clean |
| | 10 | | TCP 💌 | | | | Add Clean |
| | 11 | | TCP 💙 | | | | Add Clean |
| | 12 | | TCP 💌 | | | | Add Clean |
| | 13 | | TCP | | | | Add Clean |
| | 14 | | TCP V | | | | Add Clean |
| | 15 | | TCP V | | | | Add Clean |
| | 16 | | TCP | | | | Add Clean |
| | 17 | | TCP V | | | | Add Clean |
| | 18 | | TCP V | | | | Add Clean |
| | 19 | | TCP V | | | | Add Clean |
| | | | | | | | |
| | 20 | | TCP V | | | | Add Clean Help Can |

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

| TATUS | Spec | ial Application | | | | |
|---|-------------------------|---|--|--|--|--|
| ETUP WIZARD YSTEM VAN | Some enable enter | applications require mult d. If you need to run ap the public ports associa | tiple connections, such as Interr pplications that require multiple c tted with the trigger port to oper er Ports is from 1 to 65535. | et gaming, video conferencing, Intarnet telephony and others. T ornections, specify the port normally associated with an applica them for inbound traffic. | hese applications cannot work when Network tion in the "Trigger Port" field, select the pro | : Address Translation (NAT) is tocol type as TCP or UDP, then |
| /IRELESS | | Trigger Port | Trigger Type | Public Port | Public Type | Enabled |
| I A T Address Mapping Virtual Server | 1. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| Special Application NAT Mapping Table IREWALL | 2. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| OUTE oS | з. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| DVANCED | 4. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 5. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 6. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 7. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 8. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 9. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 10. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | | Popular applications | -selectione - V COPY | то | | |

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

| SAGEM | | | | | | Special Application |
|--|--------------------------------|--|--|---|---|--|
| SAGEN | | | | | Home | Save and Reboot Reset Logo |
| TATUS EETUP WIZARD EYSTEM VAN | Some ap enabled enter th | . If you need to run ap the public ports associat | iple connections, such as Intern plications that require multiple c ed with the trigger port to open Ports is from 1 to 6555. | onnections, specify the port normally associated wi | and others. These applications cannot work when Netw th an application in the "Trigger Port" field, select the p | ork Address Translation (NAT) is rotocol type as TCP or UDP, then |
| AN /IRELESS | | Trigger Port | Trigger Type | Public Port | Public Type | Enabled |
| A T Address Mapping Virtual Server | 1. | | ⊙ TCP ○ UDP | | ⊙ tcp ⊖ udp | 0 |
| ipecial Application IAT Mapping Table REWALL | 2. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| DUTE | з. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| OVANCED | 4. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 5. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 6. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 7. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 8. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | 9. | | ⊙ TCP ○ UDP | | ⊙ tcp ⊖ udp | |
| | 10. | | ⊙ TCP ○ UDP | | ⊙ TCP ○ UDP | |
| | | Popular applications | -select one - COPY -select one - Bottle.net Dialpad ICU II MSN Gaming Zone | TO V | | Help Apply Cancel |
| | | | MSN Gaming Zone PC-to-Phone Quick Time 4 | | | |

These applications may not work when **N**etwork **A**ddress **T**ranslation (**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

| SAGEM | | ping Table Reset Logout |
|--|---|----------------------------|
| STATUS SETUP WIZARD SYSTEM WAN LAN WIRELESS NAT > Address Mapping > Virtual Server > Special Application > NAT Mapping Table FIREWALL ROUTE QoS ADVANCED | NAT Mapping Table NAT Mapping Table displays the current NAPT address mappings. Index Protocol Local IP Local Port Pseudo IP Pseudo Port Peer IP Peer Port Refresh | Help |

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.

| SAGEM | FIREWALL |
|-----------------------|---|
| | |
| STATUS | FIREWALL |
| SETUP WIZARD | |
| SYSTEM | The Device provides extensive firewall protection by restricting connection parameters to limit the risk of hacker attack, and defending against a wide array of common attacks. However, for applications that require unrestricted access to |
| WAN | the Internet, you can configure a specific client/server as a demilitarized zone (DMZ). |
| LAN | |
| WIRELESS | Enable or disable Firewall features : 💿 Enable 🔿 Disable |
| NAT | |
| FIREWALL | Help Apply Cancel |
| » Access Control | |
| » MAC Filter | |
| » URL Blocking | |
| » Schedule Rule | |
| » Intrusion Detection | |
| » DMZ | |
| ROUTE | |
| QoS | |
| ADVANCED | |

Network attacks that deny access to a network device are called **D**enial-**o**f-**S**ervice (**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.

| SAGEM | | | | | | Acc | cess Cor | ntrol |
|-----------------------|---|-------------------------|-----------------|---------------------|-----------------|-------------------|------------|-------|
| SAGEINI | | | | | Home Sa | ve and Reboot | Reset Lo | ogout |
| | | | | | | | | |
| STATUS | Access Contro | 4 | | | | | | |
| SETUP WIZARD | | | | | | | | |
| SYSTEM | Access Control allov includes IP address | | | permitted or not-pe | ermitted to WAN | l port service. 1 | This page | |
| WAN | | | | | | | | |
| LAN | Enable Filter | ing Function : | 💿 Yes \mid 🔘 No | | | | | |
| WIRELESS | . Inbound Defa | ault Rules : | | | | | | |
| NAT | | | | | | | | |
| FIREWALL | Enable | Serv | rice | | | | | |
| » Access Control | | RIP (UDP 520) | | | | | | |
| » MAC Filter | | BOOTP (UDP 67) | | | | | | |
| » URL Blocking | | | | | | | | |
| » Schedule Rule | . Normal Filter | ing Table (up to | 10 computers) | | | | | |
| » Intrusion Detection | | | , | | | | | |
| » DMZ ROUTE | Client PC | Client PC IP Address | | Client Service | | Schedule Rule | Configure | |
| QoS | Description | Address | No. No. | d Filtering Rule !! | | Rule | - | |
| ADVANCED | | | NU Vali | u Filtering Rule !! | • | | | |
| | Add PC | | | | | | | |
| | | | | | | | | |
| | | | | | | Help | Apply Canc | el |
| | | | | | | | | |

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.

| SAGEM | | | Access Cor | trol Add PC |
|-----------------------------------|---|---|----------------------------|---------------|
| | | Home | Save and Reboot | Reset Logout |
| | | | | |
| STATUS | Access Control Add PC | | | |
| SETUP WIZARD | This page allows users to define as | ervice limitations of client PCs, including | . ID address, service tu | |
| SYSTEM | scheduling rule criteria. For the UR | L blocking function, you need to config | jure the URL address firs | t on the "URL |
| WAN | Blocking Site" page. For the sched "Schedule Rule" page. | uling function, you also need to config | ure the schedule rule firs | st on the |
| LAN | Schedule kule page. | | | |
| WIRELESS | Client PC Description: | | | |
| NAT | | | | |
| FIREWALL | Client PC IP Address: | ~ | | |
| » Access Control | Client PC Service: | | | |
| » MAC Filter » URL Blocking | Service Name | Detail Description | | Blocking |
| » ORL BIOCKING » Schedule Rule | www | HTTP, TCP Port 80, 3128, 8000, 8 | 001, 8080 | |
| » Intrusion Detection | WWW with URL Blocking | HTTP (Ref. URL Blocking Site Page |) | |
| » DMZ | E-mail Sending | SMTP, TCP Port 25 | / | |
| ROUTE | News Forums | NNTP, TCP Port 119 | | |
| QoS | E-mail Receiving | POP3, TCP Port 110 | | |
| DVANCED | Secure HTTP | HTTPS, TCP Port 443 | | |
| | File Transfer | FTP, TCP Port 21 | | |
| | | | | |
| | Telnet Service | TCP Port 23 | | |
| | AIM | AOL Instant Messenger, TCP Port | 5190 | |
| | NetMeeting | H.323, TCP Port 1720, 1503 | | |
| | DNS | UDP Port 53 | | |
| | SNMP | UDP Port 161, 162 | | |
| | VPN-PPTP | TCP Port 1723 | | |
| | VPN-L2TP | UDP Port 1701 | | |
| | тср | All TCP Port | | |
| | UDP | All UDP Port | | |
| | User Define Service | | | |
| | Protocol: O TCP O UDP Port Range: 0 ~ 0 Clear | , 0 ~ 0 , 0 ~ 0 , | 0 ~ 0 , 0 | ~ 0 |
| | . Schedding Kure (Kel. SChe | OK Cancel | | |

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.

| 🚫 SAGEM | | | | | | | | | MAC Filte |
|------------------------------|--------------------|-------------------|--------------|---------|------|-------------|-----------|----------------------|---------------|
| SAGEW | | | | | | | Home | Save and Reboot | Reset Logout |
| | | | | | | | | | |
| TATUS | MAC Filter | | | | | | | | |
| ETUP WIZARD | This section helps | nrovides MAC P | ilter confic | uration | When | i enable | d. only M | C addresses configu | red will have |
| YSTEM | access to your ne | twork. All other | | | | | | security feature car | |
| VAN | 32 devices and ap | plies to clients. | | | | | | | |
| AN | . MAC Addre | ss Control : | O Yes |) No | | | | | |
| IRELESS | | | | | | | | | |
| AT | • MAC Filteri | ng Table (up to | 32 comp | uters) | | | | | |
| IREWALL | | ID | | | M | IAC Add | ress | | |
| Access Control MAC Filter | | 1 | : | | : | : | : | : | |
| JRL Blocking | | 2 | | | . [| | | | |
| Schedule Rule | | | | | | | | | |
| ntrusion Detection | | 3 | : | | : _ | _: | | _: | |
| DMZ | | 4 | | | : | _ : | : | : | |
| DUTE | | 5 | : | | : | : | | | |
| oS | | 6 | | | : | : | | | |
| DVANCED | | 7 | : | | : | : | | · · | |
| | | 8 | | | : [| - . | | | |
| | | 9 | | | | | : | | |
| | | 10 | | | | | | | |
| | | | | | : | | : | | |
| | | 11 | | | : | _ : | : | _: | |
| | | 12 | : | | : | : | : | | |
| | | 13 | : | | : | : | | : | |
| | | 14 | : | | | : | : | : | |
| | | 15 | | | | : | | : | |
| | | 16 | | | : [| - | • | | |
| | | 17 | | | | | | | |
| | | | | | | | | | |
| | | 18 | | | : | | : | _: | |
| | | 19 | | | • L_ | : | ! | | |
| | | 20 | : | | • | : | : | : | |
| | | 21 | : | | : | : | : | | |
| | | 22 | : | | : | : | | : | |
| | | 23 | | | | - - - | | | |
| | | 24 | | | | | | | |
| | | 25 | | | | | | | |
| | | | | | : | : [| | | |
| | | 26 | | 닏 | : _ | _: | | _: | |
| | | 27 | | | : | _ : | : | _: | |
| | | 28 | : | | : | : | | | |
| | | 29 | : | | : | : | • [| : | |
| | | 30 | : | | : | : | : | : | |
| | | 31 | <u> </u> | | . [| - - - | | | |
| | | 32 | | | | | | | |
| | | HCP Client List: | | | | | · | сору то 1 🗸 | |
| | | | | | | 10331 | - | | |

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.

| URL Blocking Disallowed Web Sites a | nd Keyv | | | Home | Save and Reboot | Reset | Logout |
|--|---|---|---|---|---|--|---|
| Disallowed Web Sites a | nd Keyv | | | | | | |
| Disallowed Web Sites a | nd Keyv | | | | | | |
| | nd Keyv | | | | | | |
| | na koyv | vords | | | | | |
| | | vorus. | | | | | |
| | | in Web sites from a partic | cular PC b | y enteri | ing either a full URL addre | ss or just | a |
| keyword of the web sit | е. | | | | | | |
| | | | introl" pag | e and o | check the box for "Http w | ith URL | |
| Blocking"in the "Normal | Filtering | j Table". | | | | | |
| Rule Nun | nber | URL / Keyword | Rule Nur | nber | URL / Keyword | | |
| Site | 1 | | Site | 16 | | | |
| Site | 2 | | Site | 17 | | | |
| Site | 3 | | Site | 18 | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Site | 7 | | Site : | 22 | | | |
| Site | 8 | | Site : | 23 | | | |
| Site | 9 | | Site : | 24 | | | |
| Site : | 10 | | Site : | 25 | | | |
| Site : | 11 | | Site : | 26 | | | |
| Site : | 12 | | Site : | 27 | | | |
| Site | 13 | | Site : | 28 | | | |
| | | | | | | | |
| | | | | | | | |
| Site : | 15 | | Site | 50 | | | |
| | | Cle | ar All | | | | |
| | | | | | Help A | Apply Ca | ancel |
| | | | | | | | |
| | | | | | | | |
| | keyword of the Web sit To specify the particula Blocking"in the "Normal Site Site Site Site Site Site Site Site | keyword of the Web site. To specify the particular PC, g | keyword of the Web site. To specify the particular PC, go back to the "Access Construction Table". Rule Number URL / Keyword Site 1 | Rule Number URL / Keyword Rule Num Site 1 Site 3 Site 3 Site 3 Site 3 Site 3 Site 4 Site 3 Site 3 Site 5 Site 3 Site 3 Site 6 Site 3 Site 3 Site 7 Site 3 Site 3 Site 7 Site 3 Site 3 Site 8 Site 3 Site 3 Site 9 Site 3 Site 3 Site 10 Site 3 Site 3 Site 11 Site 3 Site 3 Site 12 Site 3 Site 3 Site 13 Site 3 Site 3 | keyword of the Web site. To specify the particular PC, go back to the "Access Control" page and of Blocking"in the "Normal Filtering Table". Rule Number URL / Keyword Rule Number Site 1 Site 16 Site 17 Site 2 Site 17 Site 18 Site 3 Site 19 Site 19 Site 4 Site 20 Site 21 Site 6 Site 21 Site 22 Site 7 Site 23 Site 24 Site 9 Site 23 Site 24 Site 10 Site 25 Site 26 Site 11 Site 27 Site 28 Site 13 Site 29 Site 29 Site 14 Site 29 Site 30 | Rule Number URL / Keyword Rule Number URL / Keyword Site 1 | Number URL / Keyword Rule Number URL / Keyword Site 1 Site 16 Site 17 Site 3 Site 17 Site 13 Site 4 Site 19 Site 10 Site 7 Site 21 Site 21 Site 7 Site 22 Site 23 Site 8 Site 23 Site 24 Site 9 Site 25 Site 24 Site 10 Site 26 Site 26 Site 12 Site 12 Site 10 Site 13 Site 26 Site 21 Site 14 Site 23 Site 24 Site 15 Site 24 Site 24 Site 10 Site 25 Site 10 Site 12 Site 26 Site 10 Site 13 Site 28 Site 10 Site 14 Site 29 Site 24 Site 14 Site 29 Site 10 Site 15 Site 30 Site 30 |



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.

| | | | | S | chedule | e Rule |
|-----------------------|---|--------------------------------------|------------|----------------------|-----------|--------|
| SAGEM | | | Home | Save and Reboot | Reset | Logout |
| | | | | | | |
| STATUS | Schedule Rule | | | | | |
| SETUP WIZARD | | | | | | |
| SYSTEM | This page defines schedule ri | ule names and activates the schedule | for use in | n the "Access Contro | ol" page. | |
| WAN | Schedule Rule Table (| (up to 10 rules) | | | | |
| LAN | | | | | | _1 |
| WIRELESS | Rule Name | Rule Commer | nt | | Configure | |
| NAT | | No Valid Schedule Rule | e !!! | | | |
| FIREWALL | | | | | | |
| » Access Control | Add Schedule Rule | | | | | |
| » MAC Filter | | | | | | |
| » URL Blocking | | | | | | |
| » Schedule Rule | | | | Help | Apply Ca | incel |
| » Intrusion Detection | | | | | | |
| » DMZ | | | | | | |
| ROUTE | | | | | | |
| QoS | | | | | | |
| ADVANCED | | | | | | |
| | | | | | | |
| | | | | | | |

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.

| SAGEM | | | Edit Schedule | | | | |
|-----------------------|-----------------------|-----------|-------------------|-------|----------------|---------|--------|
| SAGEM | | | | Home | Save and Reboo | t Reset | Logout |
| | | | | | | | |
| STATUS | Edit Schedule R | ule | | | | | |
| SETUP WIZARD | | | | | | | |
| SYSTEM | Name: | | | | | | |
| WAN | | | | | | | |
| LAN | Comment: | | | | | | |
| WIRELESS | Activate Time Period: | | | | | | |
| NAT | | | | | | | |
| FIREWALL | | Week Day | Start Time (hh:mm |) End | Time (hh:mm) | | |
| » Access Control | | Every Day | | | : | | |
| » MAC Filter | | Sunday | | | · · | | |
| » URL Blocking | | Mondau | | | | | |
| » Schedule Rule | | Monday | | | | | |
| » Intrusion Detection | | Tuesday | | | : | | |
| » DMZ ROUTE | | Wednesday | : | | : | | |
| QoS | | Thursday | : | | : | | |
| ADVANCED | | Friday | : | | : | | |
| | | Saturday | : | | : | | |
| | | | Apply Cancel | | | | |

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.

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

| SAGEM | | Intrusion Detection |
|----------------------------------|---|---|
| | | Home Save and Reboot Reset Logout |
| | | |
| STATUS SETUP WIZARD | Intrusion Detection | |
| SYSTEM | When the SPI (Stateful Packet Inspection) firewall feature is er | abled, all nackets can be blocked. Stateful |
| WAN | Packet Inspection (SPI) allows full support of different application unders. For the applications checked in the list below, the De | on types that are using dynamic port |
| LAN | from the local LAN. | wice win support fun operation as initiated |
| WIRELESS | The Device firewall can block common hacker attacks, including | IP Spoofing, Land Attack, Ping of Death, IP |
| NAT | with zero length, Smurf Attack, UDP port loopback, Snork Attac | k, TCP null scan, and TCP SYN flooding. |
| FIREWALL | Intrusion Detection Feature | |
| » Access Control » MAC Filter | SPI and Anti-DoS firewall protection | |
| » URL Blocking | SPI and Anti-DoS firewall protection | _ |
| » Schedule Rule | Discard Ping To WAN | - |
| » Intrusion Detection | | |
| » DMZ | Stateful Packet Inspection | |
| ROUTE | Packet Fragmentation | |
| QoS ADVANCED | Packet Fragmentation | |
| | UDP Session | |
| | FTP Service | |
| | H.323 Service | |
| | TFTP Service | |
| | | |
| | When hackers attempt to enter your network, we can | n alert you by e-mail |
| | Your E-mail Address : | |
| | SMTP Server Address : | |
| | POP3 Server Address : | |
| | User name : | |
| | | |
| | Password : | |
| | Connection Policy | |
| | Fragmentation half-open wait: 10 secs | |
| | TCP SYN wait: 30 sec. | |
| | TCP FIN wait: 5 sec. | |
| | TCP connection idle timeout: 3600 sec. | |
| | UDP session idle timeout: 30 sec. | |
| | H.323 data channel idle timeout: 180 sec. | |
| | • DoS Detect Criteria: | |
| | Total incomplete TCP/UDP sessions HIGH: 300 | session |
| | Total incomplete TCP/UDP sessions LOW: 250 | session |
| | Incomplete TCP/UDP sessions (per min) HIGH: 250 | session |
| | Incomplete TCP/UDP sessions (per min) LOW: 200 | session |
| | Maximum incomplete TCP/UDP sessions number from same | host: 10 |
| | Incomplete TCP/UDP sessions detect sensitive time period | : 300 msec. |
| | Maximum half-open fragmentation packet number from sa | ne host: 30 |
| | Half-open fragmentation detect sensitive time period: 100 | 00 msec. |
| | Flooding cracker block time: 300 sec. | |
| | | Help Apply Cancel |

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** (**DeM**ilitarized **Z**one) 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.

| SAGEM | | DMZ Home Save and Reboot Reset Logout |
|-----------------------|---|--|
| 07.17110 | | |
| STATUS | DMZ | |
| SETUP WIZARD | If you have a local client PC that cannot run an Internet application pro | operly from behind the NAT firewall, then you can open the client up |
| SYSTEM | to unrestricted two-way Internet access by defining a Virtual DMZ Hos | |
| WAN | | |
| LAN | Enable DMZ: 🔿 Yes 💿 No | |
| WIRELESS | Multiple PCs can be exposed to the Internet for two-way communicatio | ns e.g. Internet gaming, video conferencing, or VPN connections. |
| NAT | To use the DMZ, you must set a static IP address for that PC. | |
| FIREWALL | | |
| » Access Control | Public IP Address | Client PC IP Address |
| » MAC Filter | 1. 0.0.0.0 | |
| » URL Blocking | 2. | |
| » Schedule Rule | 3. | |
| » Intrusion Detection | 5. | |
| » DMZ | 4. | |
| ROUTE | 5. | |
| QoS | 6. | |
| ADVANCED | | |
| | 7. | |
| | 8. | |
| | | |
| | | Help Apply Cancel |
| | | |

4.9 Route

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

| | Static Route Home Save and Reboot Reset Logout |
|--|--|
| STATUS Static Route SETUP WIZARD Please enter the following configuration parameters: SYSTEM Index Network Address Subnet Mask Gateway Config WAN Index Network Address Subnet Mask Gateway Config LAN No Valid Static Route Entry !!! WIRELESS NAT FIREWALL Add > Static Route Add > RIP Add > Routing Table QoS QOS ADVANCED | ure Help Apply Cancel |

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.

| SAGEM | | Home | Save and Reboot | Static Reset | Route Logout |
|--|---|------|-----------------|-----------------|-----------------|
| STATUS SETUP WIZARD SYSTEM WAN LAN WIRELESS NAT FIREWALL ROUTE > Static Route > RIP > Routing Table | Static Route Please enter the following configuration parameters: Index Network Address Subnet Mask Gateway Configure 1 N/A | | Ныр | Apply) C | ancel |
| QoS ADVANCED | | | | | |

| 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

| SAGEM | | | | | | | | | | RIP |
|-------------------------|-------------------|------------------|------------|-------------------|----------------------------|------------------------|------|-----------------|---------|--------|
| SAGEM | | | | | | | Home | Save and Reboot | Reset | Logout |
| | | | | | | | | | | |
| STATUS | RIP | | | | | | | | | |
| SETUP WIZARD | Discourse the the | | | | | | | | | |
| SYSTEM | Please enter the | e tollowing cont | iguration | parameters: | | | | | | |
| WAN | | (P parameter: | | | | | | | | |
| LAN | | te: 💿 Disable 🤇 | | | | | | | | |
| WIRELESS | | ′V: ⊙Disable (| | | | | | | | |
| NAT | . Table of c | urrent interface | e kie para | imeter: | | | | | | |
| FIREWALL | Interface | Operation Mode | Version | Poison Reverse | Authentication Required | Authentication Code | | | | |
| ROUTE » Static Route | LAN | Disable 🔽 | 1 🗸 | Disable 🔽 | None 🔽 | | | | | |
| » RIP | WLAN | Disable 💙 | 1 🗸 | Disable 💌 | None 🗸 | | | | | |
| » Routing Table | ATM1 | Disable 🗸 | 1 🗸 | Disable 🗸 | None 🗸 | | | | | |
| QoS | ATM2 | Disable 🗸 | 1 🗸 | Disable 🗸 | None 🗸 | | | | | |
| ADVANCED | ATM3 | | 1 | Disable V | None V | | | | | |
| | | Disable 💙 | | | | | | | | |
| | 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 V | | | | | |
| | 111000 | Disquie | | | NUIR | | | | | |
| | | | | | | | | | | |
| | | | | | | | | Help . | Apply C | ancel |
| | | | | | | | | | | |
| | | | | | | | | | | |

| Parameter | Description | | | | |
|----------------------------|---|--|--|--|--|
| General RIP Parame | ters | | | | |
| 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 Inte | rface RIP parameter | | | | |
| Interface | The WAN interface to be configured. | | | | |
| Operation Mode | 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 (R outing Information P rotocol) version to use on this interface. | | | | |
| Poison Reverse | A method for preventing loops that would cause endless retransmission of data traffic. | | | | |
| Authentication Required | 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

| SAGEM | | | | | | |
|------------------------|---------------|------------------------|--|-----------|----------------------|--------|
| STATUS SETUP WIZARD | Routing T | able | | | | |
| SYSTEM | The content (| of run-time Routing Ta | able: | | | |
| WAN | Flags | Network Address | Netmask | Gateway | Interface | Metric |
| LAN | С | 192.168.2.0 | 255.255.255.0 | directly | LAN | |
| WIRELESS | C Elagori | 127.0.0.1 | 255.255.255.255 ted, S - static, R - RI | directly | Loopback Podiroct | |
| NAT | riags . | C anocity connect | iou, o biallo, k - ki | -ji iomer | Concot | |
| FIREWALL | | | | | | |
| ROUTE | | | | | | |
| » Static Route | | | | | | |
| » RIP | | | | | | |
| » Routing Table | | | | | | |
| QoS | | | | | | |
| ADVANCED | | | | | | |

| 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 traffic of applications and provides them differentiated services (Diffserv).

| SAGEM | | | | | | | QoS | |
|----------------------|---------|--|---|------------|------------------|-------------|--------|--|
| SAGEINI | | | | Home | Save and Reb | oot Reset | Logout | |
| | | | | | | | | |
| STATUS | QoS S | Settings | | | | | | |
| SETUP WIZARD | | | | | | | | |
| SYSTEM | | | ween LAN and WAN may sign uch as VoIP, gaming, and VPI | | | | cify | |
| WAN | | | nd provides them with differe | | | | sity | |
| LAN | | | | | | | | |
| WIRELESS | Enable | Enable or disable OoS module function : O Enable O Disable | | | | | | |
| NAT | LINGDIC | | | | | | | |
| FIREWALL | Diffser | Diffserv Forwarding Groups : | | | | | | |
| ROUTE | Below s | Below shows the Diffserv forwarding behaviors this router supports. User can further configure the | | | | | | |
| QoS | | | each forwarding behavior. | | /IDTH ALLOCATION | | | |
| » Traffic Mapping | | | | | | | | |
| » Traffic Statistics | | Name | Descri | ption | | Priority | | |
| ADVANCED | | BE | Best Effort forwarding | | | Lowest | | |
| | | AF1× | | | | Low | | |
| | | AF2x | Assured Forwarding, provi | | | ±== | | |
| | | AF3x | each AF class, an IP packet can be assigned one of | | Ļ | | | |
| | | AF4x | three different levels of drop precedence. High | | | | | |
| | | | Expedited Forwarding, is ir | atandad tu | - provide law | - | | |
| | | EF | delay, low jitter and low lo | | | Highest | | |
| | | | | | He | alp Apply C | ancel | |

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

| Parameter | Description |
|---------------------------------------|--|
| Enable or disable QoS module function | Click Enable to activate QoS module function. |
| BANDWIDTH ALLOCATION | To configure bandwidth Allocation. |

| Click | ANDWIDTH AL | LOCATION ; the followin | g screen | appears : | | |
|--|---|--|---------------------------|-----------------------|----------------------------|------------------|
| SAGEM | | | | Home Save | and Reboot Res | QoS et Logout |
| STATUS SETUP WIZARD SYSTEM WAN LAN WIRELESS NAT FIREWALL ROUTE QoS > Traffic Mapping | as VoIP, gaming, differentiated ser Enable or disabl Diffserv Forwar | ip between LAN and WAN may significantly and VPN. This QoS function allows users to vices (Diffserv). e QoS module function : ① Enable ling Groups : Diffserv forwarding behaviors this router st | o classify tra Disable | ffic of applications | and provides them v | with |
| » Traffic Statistics | Nar | e Description | Priority | Bandwidth Minimum | n Allocation Allow More | |
| ADVANCED | BE | Best Effort forwarding | Lowest | 25 % | | |
| | AF: AF2 AF3 | Assured Forwarding, provides deliven 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 | v Low ↓ High | 0% 0% 0% 75% | | |
| | Eł | Expedited Forwarding, is intended to provide low delay, low jitter and low loss delivery of packets. | Highest | 0_% | ✓ Help Apply | Cancel |

Allow users to configure guaranteed bandwidth of each Forwarding Group (EF, AF4x to AF1x and BE). The amount of guaranteed bandwidth for the Forwarding Groups must not be over 100%.

Allow to limit whether or not the guaranteed bandwidth of each Forwarding Group by checking or not the "Allow More" box

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

| SAGEM | | | | | Traffi | c Map | ping |
|----------------------|--------------|---|---------------|--------------|-----------|----------|-------|
| | | | Home | Save and | Reboot | Reset Lo | ogout |
| | | | | | | | |
| STATUS | | | | | | | |
| SETUP WIZARD | Traffic M | lapping | | | | | |
| SYSTEM | Up to 16 rul | es can be defined to classify traffic i | nto Diffserv | forwarding c | roups and | | |
| WAN | outgoing VC | s. | | | | | |
| LAN | Rule | Traffic Description | Map to | Outgoing | Cont | fiqure | |
| WIRELESS | Name | • | Diffserv | VC | | ngaro | |
| NAT | | No Traffic Mapping was define | ed, all traff | ic is mapped | to BE | | |
| FIREWALL | Add trat | fic class | | | | | |
| ROUTE | Addition | | | | | | |
| QoS | | | | | | | |
| » Traffic Mapping | | | | | | Hel | lp |
| » Traffic Statistics | | | | | | | |
| ADVANCED | | | | | | | |
| | | | | | | | |

No traffic Mapping was defined.

Add traffic class

• Click on the appears:

button to add a traffic class ; the following screen

| SAGEM | Traffic Mapping |
|----------------------|--|
| | Home Save and Reboot Reset Logout |
| | |
| STATUS | Edit Traffic Class |
| SETUP WIZARD | |
| SYSTEM | This page is for user to specify a classify rule. First, define the class by the traffic type and the local and remote addresses. Then set the Diffserv forwarding group this class is mapped to. Finally, select the outgoing VC that traffic of |
| WAN | this class would be routed to. |
| LAN | |
| WIRELESS | |
| NAT | Rule Name |
| FIREWALL | Traffic Type WILDCARD 🗸 ADVANCED CONFIG |
| ROUTE | Map to Forwarding |
| QoS | Group BE V Remark DSCP |
| » Traffic Mapping | Direct to VC By Routing 🗸 |
| » Traffic Statistics | |
| ADVANCED | |
| | Help Apply Cancel |

| 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 (Differenciated Service Code Point) field in the "IP header" of each outgoing frame. |
| Direct to VC | Select "By routing" or "VCx" |

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

| Click on the | ADV | ANCED CONFIG | button ; the following screen appears: |
|--|------------|----------------------------|--|
| SAGEM | | | Traffic Mapping Home Save and Reboot Reset Logout |
| STATUS SETUP WIZARD SYSTEM WAN LAN | addresses. | for user to specify a clas | ssify rule. First, define the class by the traffic type and the local and remote warding group this class is mapped to. Finally, select the outgoing VC that traffic of |
| WIRELESS NAT | | Rule Name | ftp1 |
| FIREWALL | | Local Address | IP range 💌 |
| ROUTE QoS | | | 192 . 168 . 2 . 3 ~ 3 |
| » Traffic Mapping | | Remote Address | WILDCARD V |
| » Traffic Statistics | | Traffic Type | FTP |
| ADVANGED | | Map to Forwarding Group | |
| | | Direct to VC | VC1 VC1 |
| | | | Help Apply Cancel |

Almost fields are been informed, please inform these last ones:

| Parameter | Description |
|----------------|--|
| Local Address | Select Mac addr, IP range, This router or ANY. |
| Remote Address | Select Mac addr, IP range, This router or ANY. |

ĺ

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:

| SAGEM | | | | | Traffic Ma | apping |
|----------------------|----------------|---|-----------------|----------------|--------------------|--------|
| S SAULIN | | | | Home Save | e and Reboot Reset | Logout |
| | | | | | | |
| STATUS | | | | | | |
| SETUP WIZARD | Traffic Ma | pping | | | | |
| SYSTEM | Up to 16 rules | can be defined to classify traffic into Diffser | rv forwarding g | roups and outq | oing VCs. | |
| WAN | | • | Map to | | - | |
| LAN | Rule Name | Traffic Description | Diffserv | Outgoing VC | Configure | |
| WIRELESS | ftp1 | from 192.168.2.3 , FTP | BE | VC1 | Edit Del Down | |
| NAT | ftp2 | from 192.168.2.2 , FTP | AF4x | VC1 | Edit Del Up | |
| FIREWALL | | | | | | |
| ROUTE | Add traffic | class | | | | |
| QoS | | | | | | |
| » Traffic Mapping | | | | | | |
| » Traffic Statistics | | | | | | Help |
| ADVANCED | | | | | | |
| | | | | | | |

| Edit | This button allows to modify all parameters of each traffic class. |
|------|---|
| Del | This button allows to delete a traffic class. |
| Up | This button allows to move up the matching priority of the selected rule. |
| Down | This button allows to move down the matching priority of the selected rule. |

4.10.2 Traffic statistics

| SAGEM | | Statistics |
|----------------------|--|--------------|
| SAGEINI | Home Save and Reboot | Reset Logout |
| | | |
| STATUS | Traffic Statistics | |
| SETUP WIZARD | Tanc Staustics | |
| SYSTEM | This page shows the WAN outbound traffic statistics of all the Diffserv forwarding groups in the last 12 hours (automatically update every 5 mins). | |
| WAN | Graph applet by GraphsCharts.com | |
| LAN | BE FAC | |
| WIRELESS | Out Bytes/sec • AF2x | |
| NAT | 40000 + | |
| FIREWALL | 30000 | |
| ROUTE | 20000 | |
| QoS | 10000 | |
| » Traffic Mapping | , | |
| » Traffic Statistics | 19:21 23:21 03:21 07:21 | |
| ADVANCED | Graph applet by GraphsChards.com | |
| | Otaping provide of Otaping name, comm PEF S0000 +AF1x AF2x +AF2x | |
| | 50000 + | |
| | 40000 | |
| | 30000 | |
| | 20000 | |
| | 10000 | |
| | 19:21 23:21 03:21 07:21 | |
| | 10.21 U1.21 U1.21 | |
| | | Help |
| | | |
| | | |

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).

4.11.1 ADSL

ADSL Status Information

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 its status.

Status

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

| | | | | | | | ADSL |
|---------------------|--|--|-----------------------|---------------------|-----------------|----------|--------|
| SAGEM | | | | Home | Save and Reboot | Reset | Logout |
| | | | | | | | |
| STATUS | ADGI | | | | | | |
| | ADSL | | | | | | |
| SETUP WIZARD | This page allows you to specify the ADSL standards to operate with. You may explicitly set a | | | | | | |
| SYSTEM | specific standard, o | specific standard, or choose "Automatic" to automatically negotiate with remote DSLAM. | | | | | |
| WAN | | | | | | | |
| LAN | Operation Mode: Autor | natic 🚩 | | | | | |
| WIRELESS | | | | | | | |
| NAT | Monitoring In | idex: | | | | | |
| FIREWALL | . ADSL Status | Information: | | | | | |
| ROUTE | • <u>Status</u> | Information. | | | | | |
| QoS | • Data Ra | ate Information | | | | | |
| - | <u>Defect</u> <u>Statisti</u> | <u>/Failure Indicat</u> ics | <u>tion</u> | | | | |
| ADVANCED | • <u>518656</u> | <u>US</u> | | | | | |
| » ADSL | . Status: | | | | | | |
| » Remote Management | | Configu | ired C | Current | | | |
| » SNMP | Line Status | | | QUIET1 | | | |
| » UPnP | Link Type | | Interl | eaved Path | | | |
| | • <u>[Go To</u> p | 쾨 | | | | | |
| | . Data Rate: | | | | | | |
| | | m Type | Actual Dat | ta Rate | | | |
| | | tream | 0 (Кbр | | | | |
| | Down | Stream | 0 (Кbр | os.) | | | |
| | <u>[Go Top</u> | <u>əl</u> | | | | | |
| | . Operation Da | ta / Defect Inc | dication: | | | | |
| | Operatio | | | Downstream | | | |
| | Noise M | | 0 dB | 0 dB | | | |
| | Attenu | ation | 0 dB | 0 dB | | | |
| | | | | | | | |
| | Indicat | tor Name | Near End Indicator | Far End Indicato | | | |
| | Fast Path F | EC Correction | 0 | 0 | | | |
| | | ed Path FEC rection | 0 | 0 | | | |
| | Fast Path | CRC Error | 0 | 0 | | | |
| | Interleaved # | Path CRC Error | 0 | 0 | | | |
| | | ignal Defect | 0 | | | | |
| | | HEC Error | 0 | 0 | | | |
| | | Path HEC Error | 0 | 0 | | | |
| | • <u>[Go To</u> j | 21 | | | | | |
| | . Statistics: | | | | | | |
| | Received Cells 0 | | | | | | |
| | Transmitted Cells 0 | | | | | | |
| | • [Go Top] | | | | | | |
| | | | | | | | |
| | | | | | Help 7 | Apply Re | fresh |
| | | | | | | | licon |
| | | | | | | | |

The following items are included on this information page:

| Parameter | Description |
|-------------------|--|
| Status | |
| | Shows the current status of the ADSL line connection. |
| Data Rate | |
| | Maximum upstream data rate. |
| Downstream | |
| Operation Data/D | |
| | |
| Noise Margin | Maximum upstream and downstream noise margin. |
| - | Maximum fluctuation in the output power. |
| | Maximum reduction in the strength of the upstream and downstream signal. |
| Fast Path FEC Co | |
| | 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 Er | ror |
| | 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 De | fect |
| | Momentary signal discontinuities. |
| Loss of Frame De | ifect |
| | Failures due to loss of frames. |
| Loss of Power De | ifect |
| | Failures due to loss of power. |
| Fast Path HEC Er | ror |
| | Fast Path Header Error Concealment errors. |
| Interleaved Path | HEC Error |
| | Interleaved Path Header Error Concealment errors. |
| Statistics | |
| | Superframes represent the highest level of data presentation. |
| | Each superframe contains regular ADSL frames, one of which is used to provide superframe synchronization, identifying the start of a superframe. Some of the remaining frames are also used for special functions.rs. |
| Received Superfr | ames Interleaved |
| | Number of interleaved superframes received. |
| Transmitted Supe | erframes Interleaved |
| | Number of interleaved superframes transmitted. |
| Received Superfr | |
| | Number of fast superframes received |
| Transmitted Supe | |
| | Number of fast superframes 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**".

| SAGEM | | | | lanagement |
|---------------------|--|------|-----------------|--------------|
| | | Home | Save and Reboot | Reset Logout |
| | | | | |
| STATUS | Remote Management | | | |
| SETUP WIZARD | | | | |
| SYSTEM | Set the remote management of the router. If you wa location (outside of the local network), you must also | | | |
| WAN | ······································ | , | | |
| LAN | Host Address Enabled | | | |
| WIRELESS | 0.0.0.0 | | | |
| NAT | | | | |
| FIREWALL | | | | |
| ROUTE | | | Help | pply Cancel |
| QoS | | | | |
| ADVANCED | | | | |
| » ADSL | | | | |
| » Remote Management | | | | |
| » SNMP | | | | |
| » UPnP | | | | |
| | | | | |



If you check Enable 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 using port 8080. Simply enter WAN IP address followed by :8080, for example,

212.120.68.20:8080.

4.11.3 SNMP

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

| SAGEM | | | | | | | | SNN | /IP |
|-------------------------------|---|-------------|----------------|-----------|--------------|------------|-----------|--------------|-----|
| | | | | H | lome S | ave and F | Reboot | Reset Logo | ut |
| | | | | | | | | | |
| STATUS | SNMP | | | | | | | | |
| SETUP WIZARD | | | | | | | | | |
| SYSTEM | In the context of SNM security characteristic | | | | | | | | |
| WAN | establishes one comm | unity for e | each desired c | ombinatio | on of auther | ntication, | access | control, and | |
| LAN | proxy characteristics. the management stati | | | | | | | | |
| WIRELESS | name in all get operati | | | tablish a | number of c | ommuniti | ies, with | overlapping | |
| NAT | management station m | iembersni | þ. | | | | | | |
| FIREWALL | | No. | Community | | Access | Valid | | | |
| ROUTE | | 1 | public | | Read 🗸 | | | | |
| QoS | | 1 | public | | | | | | |
| ADVANCED | | 2 | private | | Write 🔽 | | | | |
| » ADSL | | з | | | Read 🔽 | | | | |
| » Remote Management » SNMP | | | | | | _ | | | |
| » UPnP | | 4 | | | Read 🚩 | | | | |
| | | 5 | | | Read 💌 | | | | |
| | | | | | | | | | |
| | 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 Addre | SS | Commun | ity | Versio | on | | |
| | 1 | | | | | Disab | oled 🔽 | | |
| | 2 | | | | | Disab | oled 🔽 | | |
| | з | | | | | Disab | oled 🔽 | | |
| | 4 | | | | | Disat | oled 🔽 | | |
| | 5 | | | | | Disab | oled 🔽 | | |
| | | | | | | | | | |
| | | | | | | H | elp Apr | oly 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.

| SAGEM | UPnP Home Save and Reboot Reset Logout |
|--|--|
| STATUS SETUP WIZARD SYSTEM WAN LAN WIRELESS NAT FIREWALL ROUTE QoS ADVANCED » ADSL » Remote Management » SNMP » UPNP | UPnP 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 : O Enable O Disable Help Apply Cancel |

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

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

| Troubleshooting Chart | | | | | |
|---|---|--|--|--|--|
| Symptom | Action | | | | |
| LED Indicators | | | | | |
| The PWR LED is Off . | 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 . | 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 Pro | blems | | | | |
| The user cannot ping the SAGEM F@st [™] 1500 ADSL Router from the attached LAN. | Verify that the IP addresses are properly configured. For most applications, you should use the A DSL 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@stTM 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. | 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. | 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. | 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. | 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 | The distance between the SAGEM F@st[™] 1500 ADSL Router and wireless PC is too great. | |
| cannot be detected by a wireless client. | Make sure the wireless PC has the same SSID and security settings as the SAGEM F@stTM 1500 ADSL Router. See ADSL Router. See "Channel and SSID" on section 4.6.1 and "Security" on section 4.6.3. | |

Appendix A - Troubleshooting

B. Appendix B - Safety warnings

| This chapter covers | \triangleright | 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 SE | |
| LAN Ports | LAN Ports 10/100BASE-T Ethernet port SELV | |
| ADSL Port | SL 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@stTM 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 $F@st^{TM}$ 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 |
|----------|-------------|
| | |

EMC

| EN 55022 | Ed: 09.1998 |
|----------|-------------|
| EN 55024 | Ed: 09.1998 |

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.

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

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

Appendix B - Safety warnings

C. Appendix C - CABLES

| This chapter covers | \triangleright | Ethernet cable | Section C.1 |
|---------------------|------------------|----------------|-------------|
| | 4 | 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 | Туре | 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.

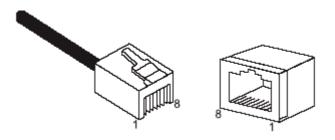


Figure C.1 - RJ-45 Ethernet Connector Pin Numbers

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 |

SAGEM F@st™ 1500 Reference Manual - 288053220-03

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.

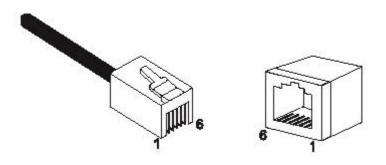


Figure C.2 - RJ-11 Connector Pin Numbers

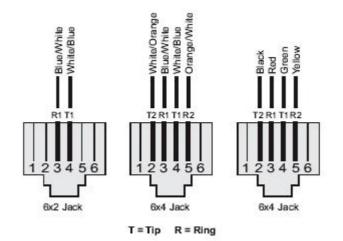


Figure C.3 - RJ-11 Pinouts

| 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 1Tip | Green or White/Blue |
| 5 | Line 2 Ring | Yellow or Orange/White |
| 6 | Not used | _ |

D. Appendix **D** - Technical specifications

| This chapter covers | ٨ | 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) |

| Po | Ports | | | |
|----|---|--|--|--|
| ٠ | Four ports 10 / 100 bps - RJ45 (LAN1 to LAN4) | | | |
| ٠ | One port ADSL - RJ11 (ADSL) | | | |
| ٠ | 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,

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.

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.

Applications

Netmeeting, ICQ, Real Player, QuickTime, DialPad, PC Anywhere, Telnet, SNTP, 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.

Appendix D - Specifications

E. Appendix E - Default configuration

| This chapter covers | the default user name and password | | Section E.1 |
|---------------------|---|---|-------------|
| | the default configuration on the local area network | | Section E.2 |
| | A | the default configuration on the wide area network side | Section E.3 |



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.

E.1 Default user name and password

Empty

Password

E.2 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 |
| "Wireless" characteristics | SSID broadcasting | Enabled |
| Only | ESSID | "SAGEM" |
| SAGEM F@st [™] 1500WG | Channel | 6 (when channels 1 to 13) |
| | | 10 (when channels 10 to 13) |
| | WEP | Enabled |
| | Keys | 64 bits / Hex / Key1 (01/01/01/01/01) |

E.3 Default configuration on the wide area network side

| WAN characteristics | Function - Mode | State/Value |
|---------------------|--------------------------|---------------------------------------|
| ATM characteristics | Protocol | IP/PPP/ATM |
| | VPI | 8 |
| | VCI | 35 |
| | Encapsulation | VC MUX |
| | CLASS | Traffic-type CBR PCR 800 000 bit/s |
| | 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 | 1500 |
| | PPP restart | Enabled |
| 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.

SAGEM SA Networks Division

Le Ponant de Paris - 27, rue Leblanc - 75512 PARIS CEDEX 15 - FRANCE Tél. : +33 1 40 70 63 63 - Fax : +33 1 40 70 66 40 http://www.sagem.com



SAGEM SA - Société anonyme à directoire et conseil de surveillance au capital de 36 405 229 € - Siège social : 27, rue Leblanc - 75512 PARIS CEDEX 15 - 562 082 909 R.C.S. PARIS