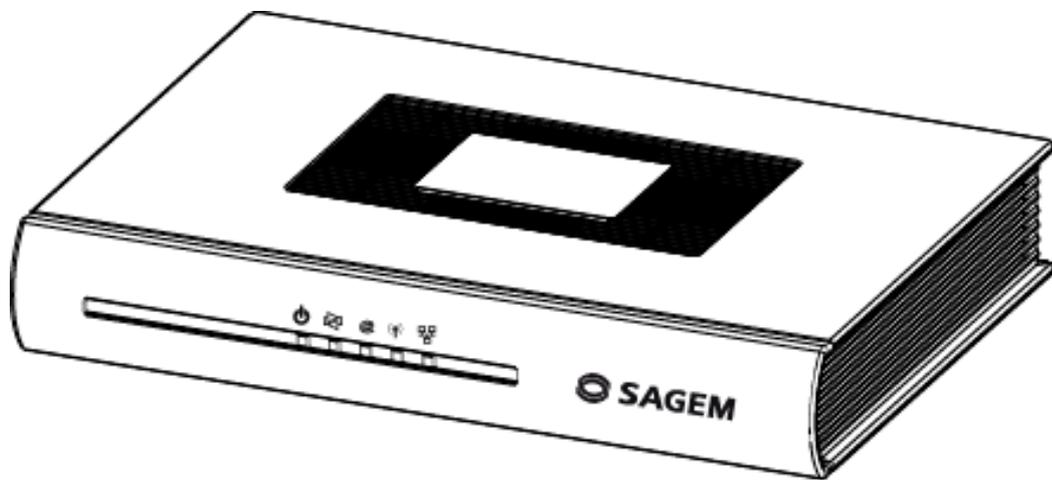


# SAGEM F@st™ 240x SAGEM F@st™ 244x



## Reference Manual

288 097 371-02

Edition of January 2007





**Sagem Communication** assiduously monitors technical developments and is constantly seeking to improve its products in order to let its clients take full advantage of them. It therefore reserves the right to modify its documentation accordingly without notice.

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The purpose of the present reference manual is to give users the functions for operating and managing the equipment. The only access level required (**Administrator**) is protected by a password and allows one to access these functions in read and write mode for all the user and network parameters (Login: admin; password: admin).



Configuration of the router by HTTP is described in detail (cf. section 5).

For better legibility of the reference manual, the term "router" will be used throughout the document to designate SAGEM F@st™ 2400, SAGEM F@st™ 2404, SAGEM F@st™ 2440 and SAGEM F@st™ 2444 equipment.

## Convention of symbols used in this manual



Warns you not to do an action, or commit a serious omission.



Gives you important information which you must take into account

# How should the document be used?

The present reference manual is organised into sections and annexes. These sections and annexes cover the following subjects.

<b>Section 1</b>	Presentation of SAGEM F@st™ 240x and 244x equipment
<b>Section 2</b>	Presentation of SAGEM F@st™ 240x and 244x equipment
<b>Section 3</b>	Presentation of SAGEM F@st™ 2400/2440 equipment
<b>Section 4</b>	Presentation of SAGEM F@st™ 2404/2444 equipment
<b>Section 5</b>	Configuration of network parameters
<b>Section 6</b>	Configuration of the residential platform by HTTP
<b>Section 7</b>	Description of Internet access service
<b>Section 8</b>	Description of TV over ADSL service
<b>Section 9</b>	Updating the application
<b>Annex A</b>	Troubleshooting
<b>Annex B</b>	CE compliance declaration
<b>Annex C</b>	Environment
<b>Annex D</b>	Technical Characteristics
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# 1. Introduction

This section covers	➤ presentation of the SAGEM F@st™ 240x and SAGEM F@st™ 244x ranges	§ 1.1
	➤ composition of the packaging	§ 1.2
	➤ required hardware and software	§ 1.3

## 1.1 Presentation

The present reference manual is dedicated to the SAGEM F@st™ 240x and SAGEM F@st™ 244x product ranges. These products are routers which give users, via an ADSL/ADSL2/ ADSL2+ network, broadband Internet access from their computer or their games console by various Ethernet (10 or 100 BASE-T), USB or Wi-Fi (IEEE 802.11g) interfaces.

Using these wire interfaces, this router enables you both to surf the Internet and to watch television. It also lets you telephone over the Internet from an IP SIP telephone linked by Wi-Fi to your router.



SAGEM F@st™ 240x and SAGEM F@st™ 244x products adapt the ADSL function respectively for POTS (UIT G.992.1/3/5 - Annex A) and for ISDN (UIT G.992.1/3/5 - Annex B).

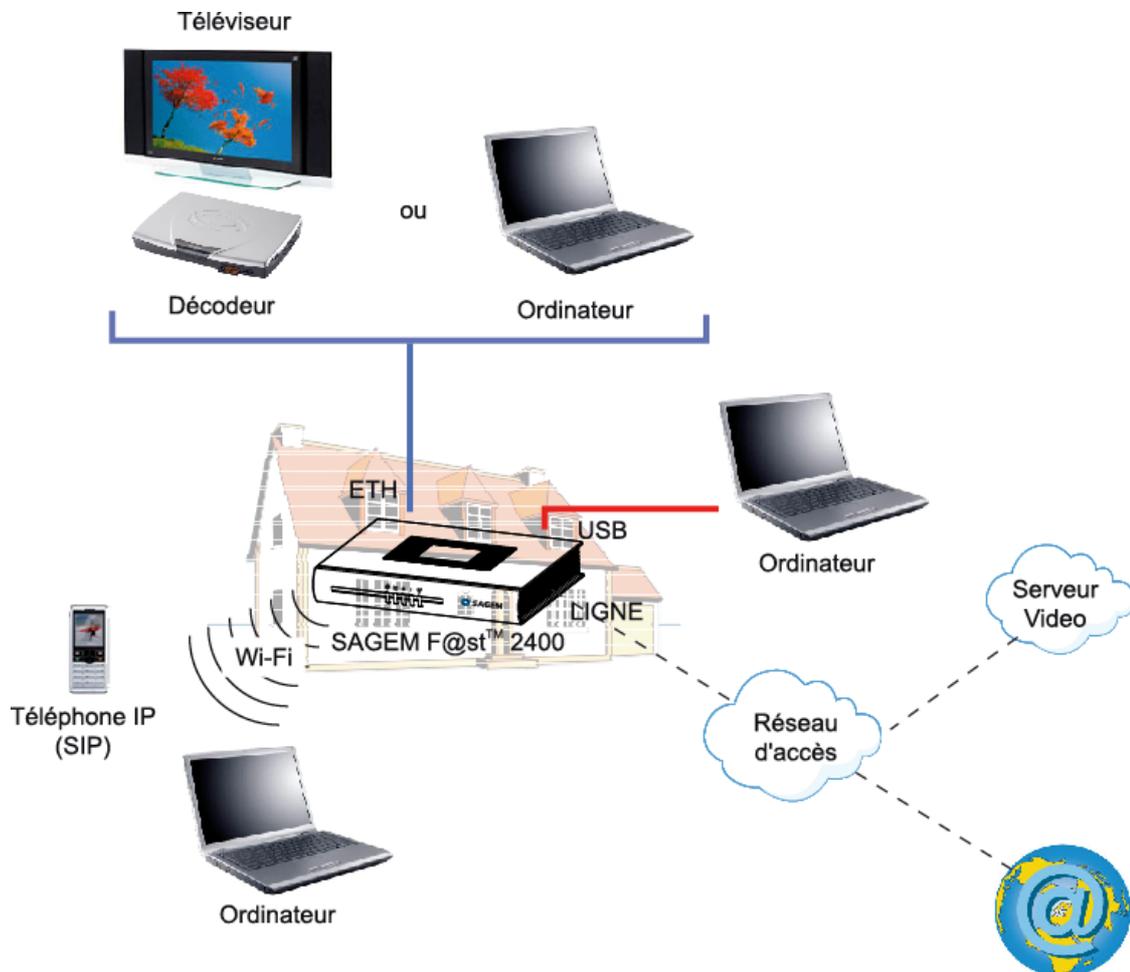


Figure 1.1 - Supervising your router

The SAGEM F@st™ 240x and SAGEM F@st™ 244x router product ranges contain the four items of equipment, the main features of which are shown in the table below:

	SAGEM F@st™ 240x	SAGEM F@st™ 240x	SAGEM F@st™ 240x	SAGEM F@st™ 240x
ADSL on POTS (IUT 992.1 Annex A)	X		X	
ADSL on POTS (IUT 992.1 Annex A)		X		X
10/100B-T ports	1	1	4	4
USB port	1	1	0	0

Its principal characteristics and functions are as follows:

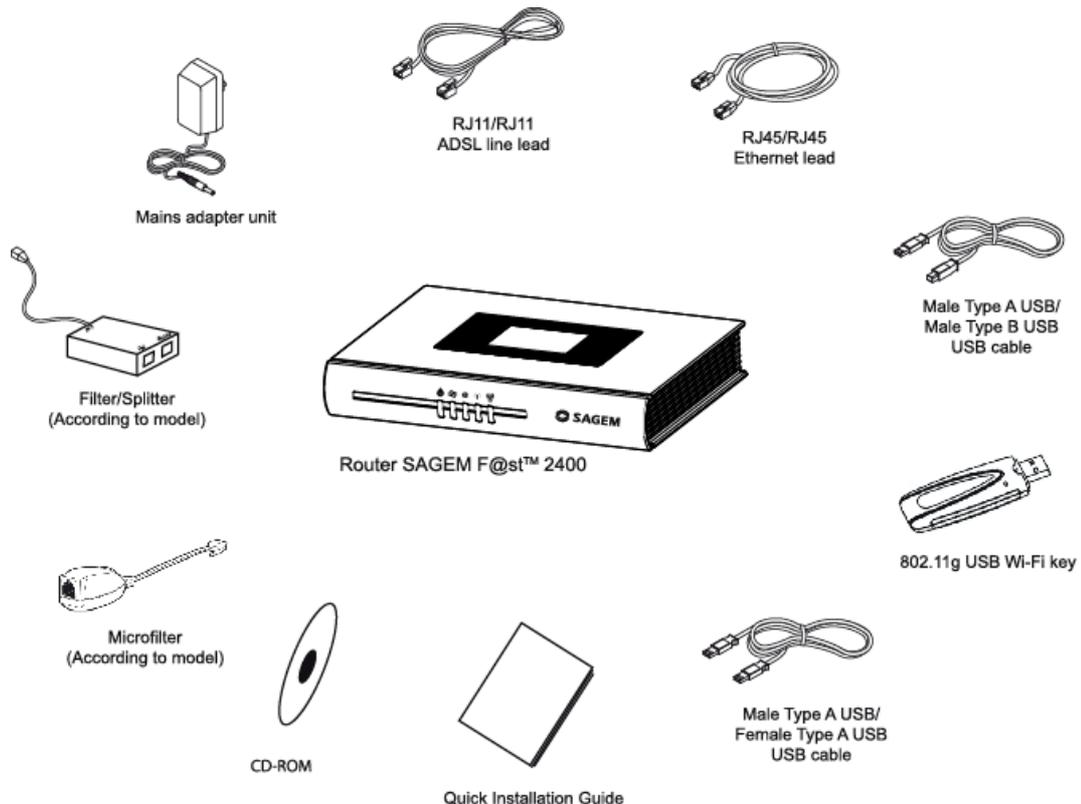
- High-performance secure Bridge/Router with ADSL/ADSL2/ADSL2+ interface,
- User access:
  - 1 to 4 x 10/100BT Ethernet port(s),
  - 1 USB1.1 Slave port,
  - 1 Wi-Fi port (802.11b/g) by mini-PCI,
- DHCP Client/Server/Relay,
- Server/DNS Relay,
- FTP Client/Server,
- TFTP Client/Server,
- HTTP Client/Server,
- NAT/PAT router - FTP Compatibility, IRC, Net2Phone, Netbios, DNS, Netmeeting, SIP, VPN passthrough (IPSec, IKE, PPTP, L2TP), CUSeeMe, RealAudio, Microsoft IM and others,
- Firewall,
- Spanning tree,
- HTTP server for easy configuration,
- Manual update of the application version locally.

### 1.2 Composition of router pack

The router is supplied in a pack the composition of which changes according to the type of equipment (SAGEM F@st™ 2400, SAGEM F@st™ 2440, SAGEM F@st™ 2404 or SAGEM F@st™ 2444):

As an example, please find below the "pack" chosen for the SAGEM F@st™ 2400 router, i.e.:

- 1 SAGEM F@st™ 2400,
- 1 mains adapter unit,
- 1 ADSL RJ11/RJ11 FDT line cord (length = 3 m),
- 1 Ethernet RJ45/RJ45 linking cord (length = 1.75 m),
- 1 USB Type A male/Type B male cable (length = 1.5 m),
- 1 USB Wi-Fi key,
- 1 USB Type A male/Type A female cable (SAGEM F@st™ 2400),
- 1 Quick Installation Guide,
- 1 Installation CD-ROM,
- microfilter(s) (optional),
- 1 filter/splitter (optional),.



The CD ROM contains:

- the application for installing the USB interface.
- the present Reference Manual (SAGEM F@st™ 24xx) in PDF format file.
- the CE declaration of the chosen router.



**Incomplete or damaged supply.** If on its receipt the equipment is damaged or incomplete, contact the Supplier of your router.

### 1.3 Minimum prerequisite

---

Using a router requires at minimum:

- a computer equipped:
  - with a Wi-Fi 802.11b/g interface,
  - or
  - a type A USB interface
  - or
  - an Ethernet interface (10BASE-T or 10/100BASE-T),
- a WEB browser (Internet Explorer version 5 or higher recommended).

The minimum configuration of your computer must be:

- for Windows: Pentium II, 400 MHz, RAM: 128 MB,
- for MacOS: Power PC G3, 233 MHz, RAM: 128 MB,
- a monitor of minimum resolution: 1024 x 768.

If you wish to use the Wi-Fi function (standard IEEE 802.11b/g), you must acquire the Wi-Fi Standard pack (see annex G for use of Wi-Fi).



Before installing the router, we advise you to uninstall any modem or other router (for example, an ADSL router).



## 2. Description and connection of router

This section covers	➤ the description of your router	§ 2.1
	➤ connecting the ports of your router	§ 2.2
	➤ connecting to a power socket	§ 2.2.1
	➤ connecting the line cable	§ 2.2.2
	➤ connecting your computer	§ 2.2.3
	➤ the TV connection	§ 2.2.4
	➤ installation instructions	§ 2.3

### 2.1 Description

---

Figure 2.1 gives an overview of a router (SAGEM F@st™ 240x or SAGEM F@st™ 244x).



**Figure 2.1 - Overview of case**

This case consists principally of a lid and a base in which a printed circuit equipped with electronic components is located.

The components of the base are different depending on the equipment (SAGEM F@st™ 24x0 or SAGEM F@st™ 24x4)(cf.§ 2.1.1)

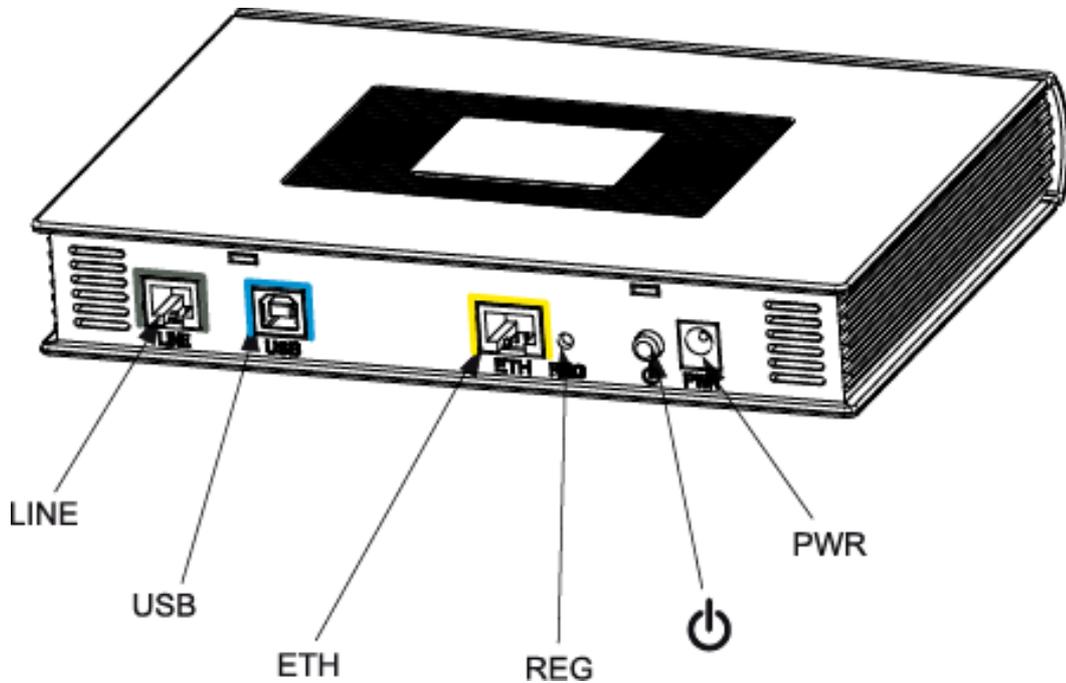
The front face of the lid has five display LEDs (cf.§ 2.1.2).

The base has the LEDs ideograms, SAGEM's mark and logo or the operator's marking as well.

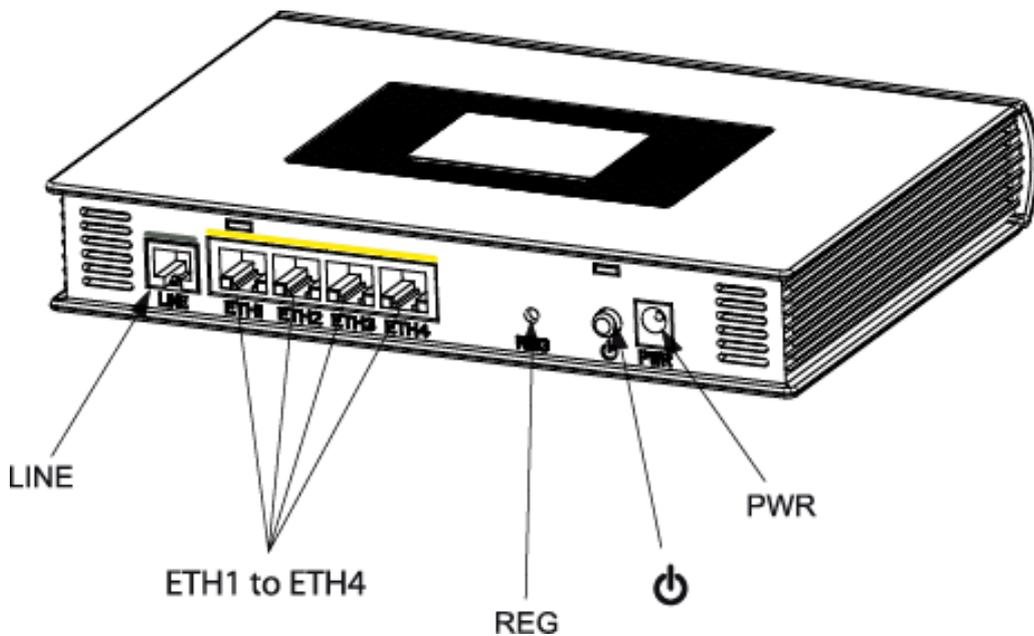
Below the base a label is glued on which the product's identification code, the series number and a barcode are shown.

### 2.1.1 Connectors

SAGEM F@st™ 2400 and SAGEM F@st™ 2440



SAGEM F@st™ 2404 and SAGEM F@st™ 2444



## 2 - Description and connection of router

### Common to all routers

Marking	Meaning
<b>LINE</b>	RJ11 connector - 6 pts. This connector is identified on the base by a grey frame (SAGEM F@st™ 2400/2440) or a grey line (SAGEM F@st™ 2404/2444). It is used for the connection to an ADSL line (WAN interface).
<b>REG</b>	This button allows the router to be reset to the factory configuration (see § A.7). <b>Note:</b> It is set back relative to the other elements to prevent an accidental loss of configuration.
	On/Off switch.
<b>PWR</b>	Miniature jack fixed connector. This connector enables the router to be supplied with direct current from a mains adapter unit.

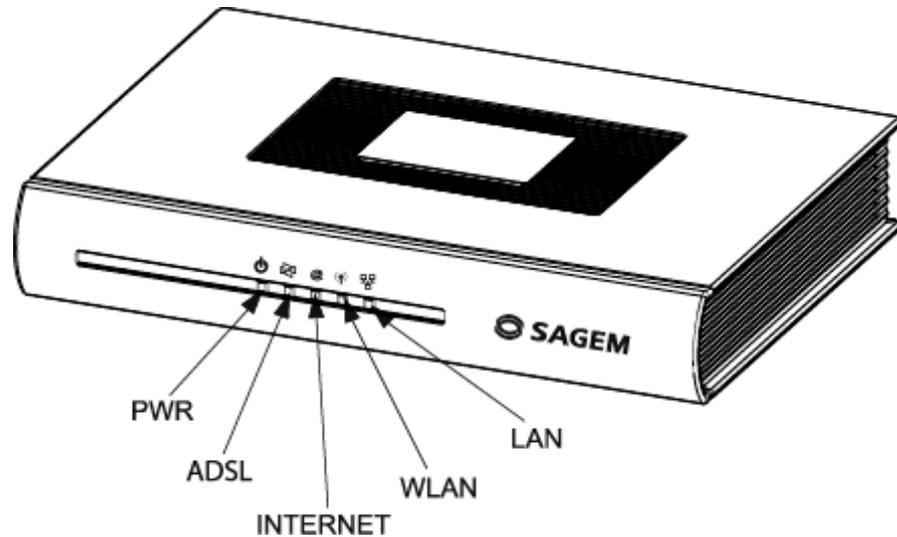
### SAGEM F@st™ 2400 and SAGEM F@st™ 2440

<b>USB</b>	This connector is identified on the base by a blue frame. It is used <b>only</b> for connection to a computer (USB interface).
<b>ETH</b>	RJ45 connector - 8 pts (10/100BASE-T Ethernet Interface). This connector is identified on the base by a yellow frame. It is used for connection to a computer or a television set (via a TV/Video Decoder).

### SAGEM F@st™ 2404 and SAGEM F@st™ 2444

<b>ETH1 to ETH4</b>	RJ45 connectors - 8 pts (10/100BASE-T Ethernet Interface). These connectors are identified on the base by a yellow line. They are used for connection to a computer or a television set (via a TV/Video Decoder).
---------------------	--

## 2.1.2 LEDs



The different LEDs of the figure below are described in the following table:

### Common to all routers

Marking	Abbreviation	Meaning
	<b>PWR</b>	<b>Alarm LED</b> (Green/Red bicolour LED): <ul style="list-style-type: none"> <li>• <b>lits green</b> if power is present,</li> <li>• <b>lits red</b> in the case of failure detected at the time of starting,</li> <li>• goes <b>out</b> if there is no power.</li> </ul>
	<b>ADSL</b>	<b>Green ADSL LED:</b> <ul style="list-style-type: none"> <li>• <b>blinks slowly</b> when the ADSL is not detected,</li> <li>• <b>blinks quickly</b> when the ADSL line is being synchronised,</li> <li>• stays <b>lit</b> when the ADSL line is detected.</li> </ul>
	<b>Internet</b>	<b>Internet connection LED</b> (Green/Red bicolour LED): <ul style="list-style-type: none"> <li>• remains <b>lit</b> when the "PPP" connection is established or when the router is in "Bridge" mode,</li> <li>• <b>lits green</b> when the "PPP" connection is established,</li> <li>• <b>lits red</b> when the "PPP" connection is not established,</li> <li>• <b>blinks</b> when traffic is detected on the WAN interface.</li> </ul>
	<b>WLAN</b>	<b>Green ADSL LED:</b> This LED indicates activation/deactivation of Wi-Fi mode. <ul style="list-style-type: none"> <li>• This LED is <b>off</b> when the "Wi-Fi" interface is deactivated.</li> <li>• This LED <b>blinks</b> in the presence of traffic on the WLAN interface.</li> <li>• This LED is <b>lit</b> when the "Wi-Fi" interface is activated.</li> </ul>

## 2 - Description and connection of router

### SAGEM F@st™ 2400 and SAGEM F@st™ 2440

Marking	Abbreviation	Meaning
	<b>LAN</b>	<b>Green local network (LAN) LED:</b> This LED indicates data traffic between the router and the different USB and Ethernet (ETH) interfaces. <ul style="list-style-type: none"><li>• This LED is <b>off</b> if no interface (Ethernet or USB) is detected.</li><li>• This LED <b>blinks</b> when traffic is detected on one of the interfaces.</li><li>• This LED is <b>lit</b> when an Ethernet or USB interface is detected and if no traffic is detected.</li></ul>

### SAGEM F@st™ 2404 and SAGEM F@st™ 2444

Marking	Abbreviation	Meaning
	<b>LAN</b>	<b>Green local network (LAN) LED:</b> This LED indicates data traffic between the router and the different USB and Ethernet (ETH) interfaces. <ul style="list-style-type: none"><li>• This LED is <b>off</b> if no Ethernet interface (ETH1, ETH2, ETH3 or ETH4) is detected.</li><li>• This LED <b>blinks</b> when traffic is detected on one of the interfaces.</li><li>• This LED is <b>lit</b> if at least one Ethernet interface (ETH1, ETH2, ETH3 or ETH4) is detected and if no traffic is detected.</li></ul>

## 2.2 Connecting the ports of your router

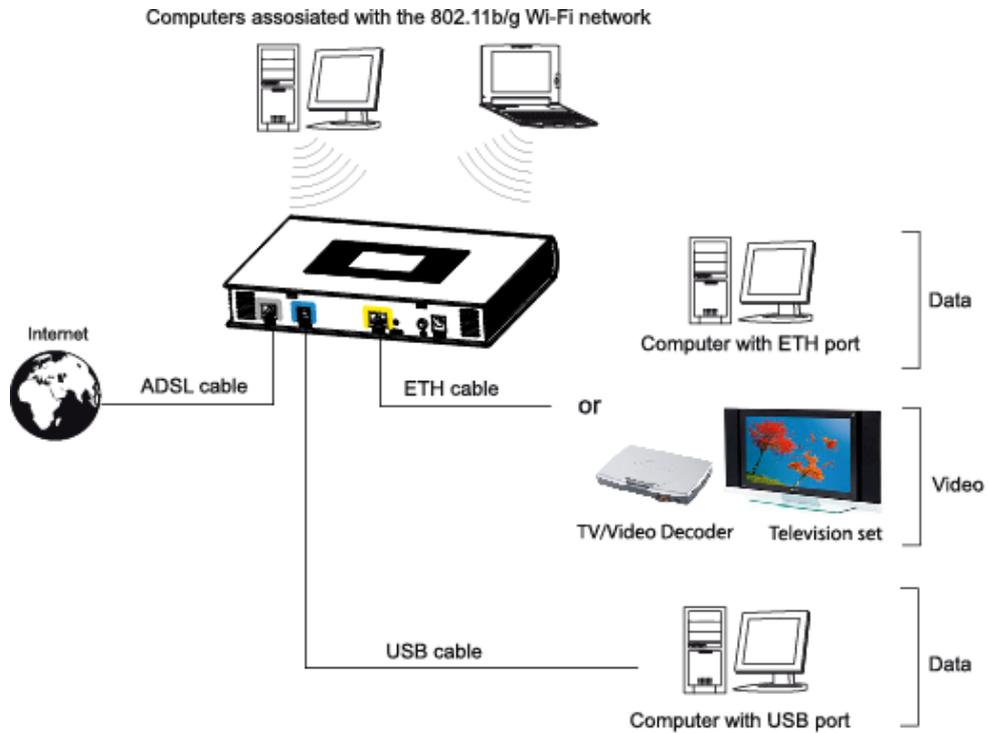


Figure 2.2 - Interconnection of ports of SAGEM F@st™ 2400 et 2440

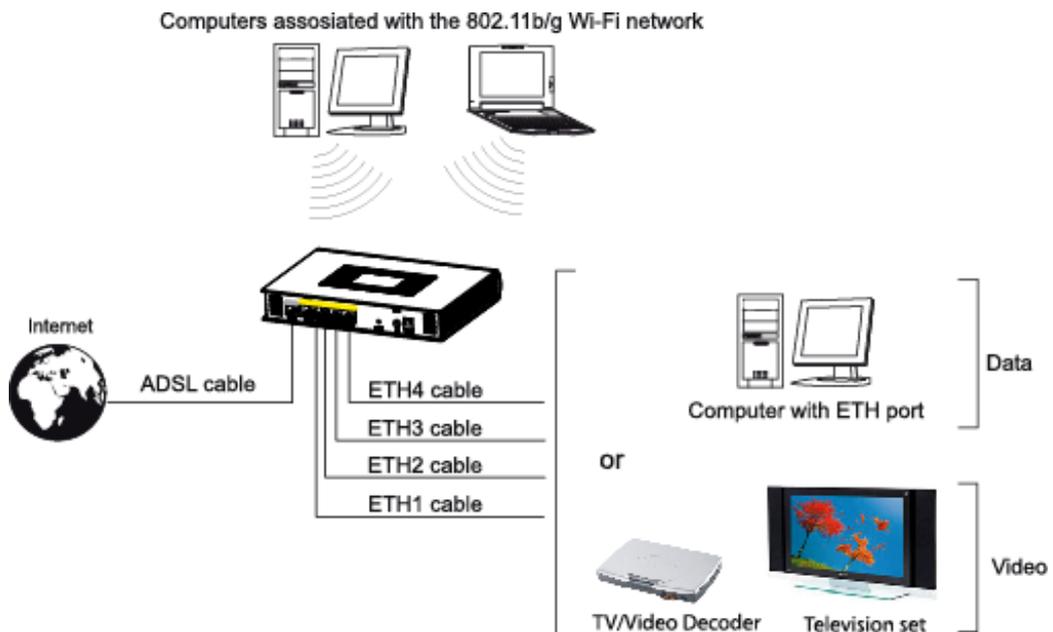
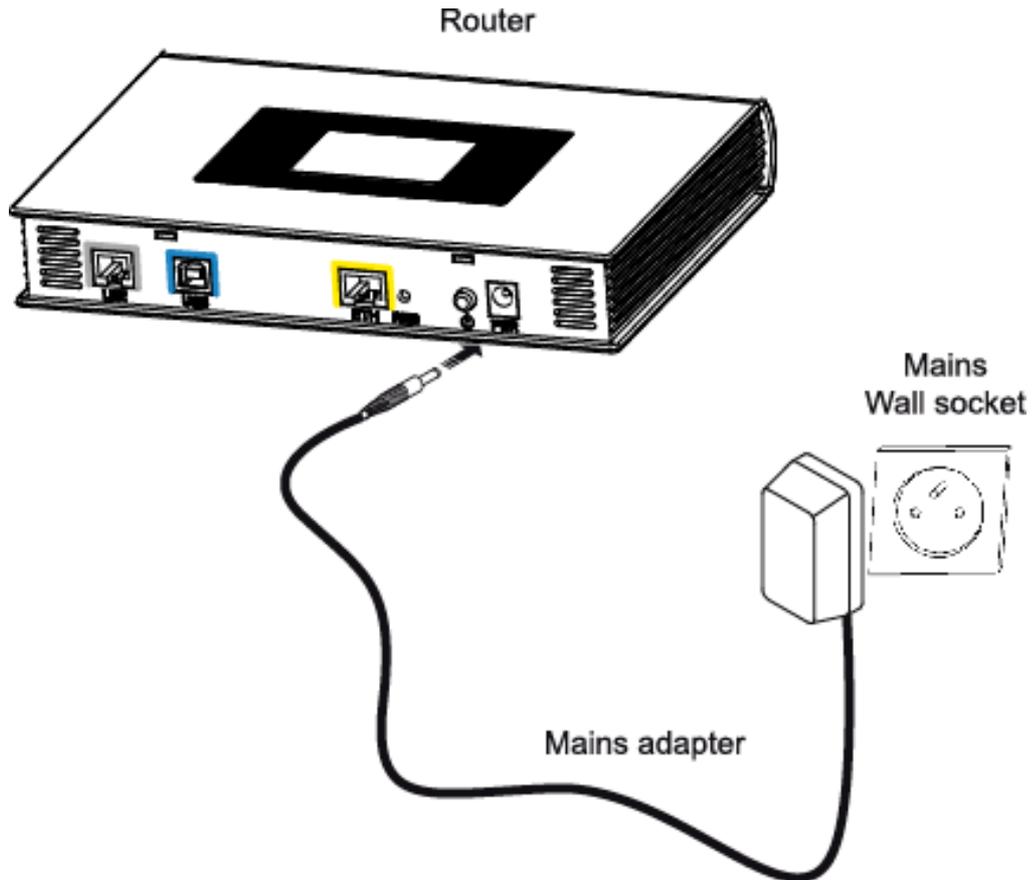


Figure 2.3 - Interconnection of ports of SAGEM F@st™ 2404 et 2444

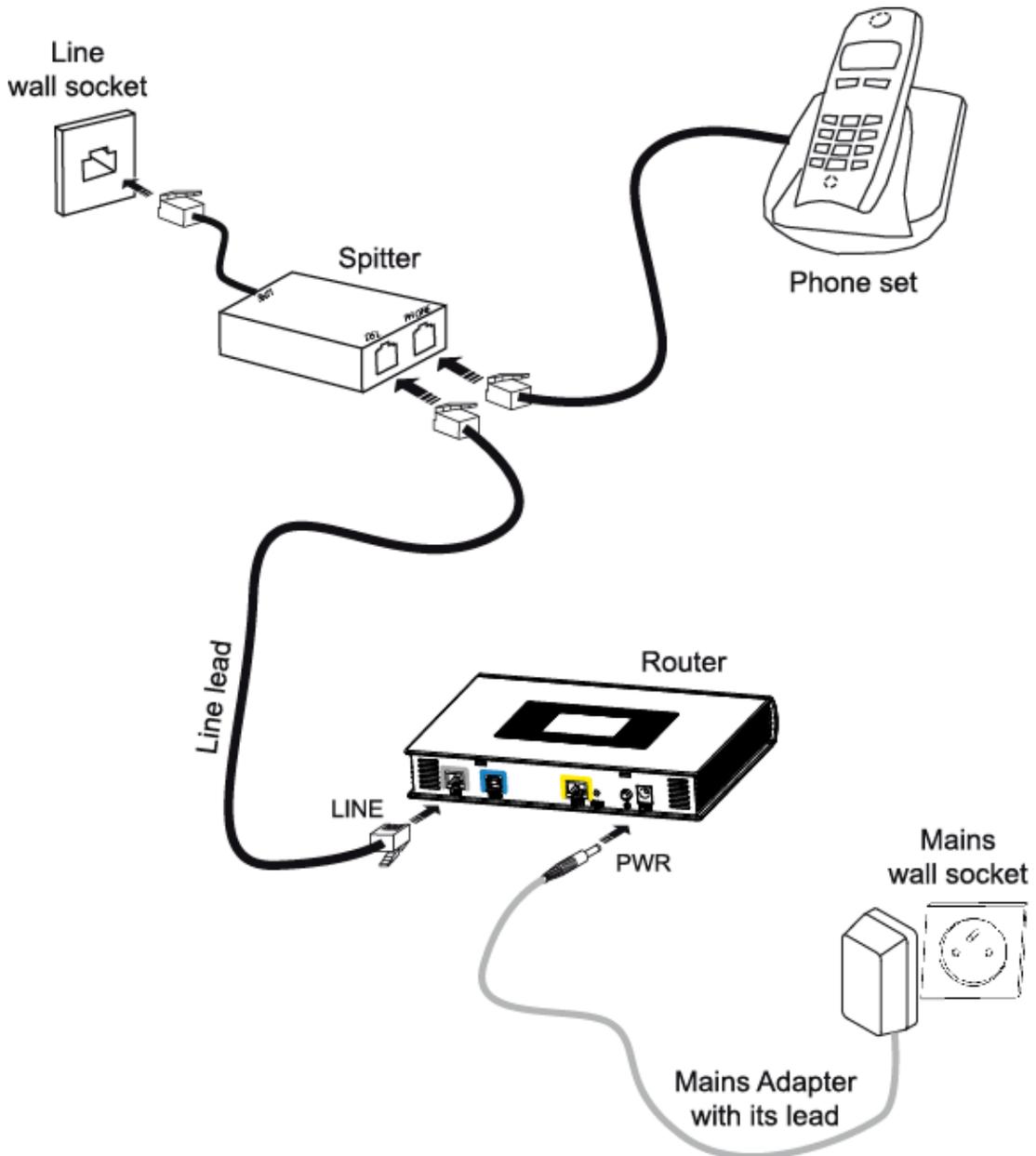
### 2.2.1 Connecting to a power socket

- First connect the end of the mains cord, supplied with the equipment, to the **PWR** base of your router.
- Connect the mains adapter to a nearby mains wall socket.
- Set the "On/Off" switch to On.



## 2.2.2 Connection of the ADSL cable to the router

- Connect an end of the supplied grey RJ11/RJ11 cable to the **LINE** fixed connector of your router.
- Connect the other end of this cable to the connector marked **ADSL** on the micro-filter connected to the RJ11 telephone wall socket of your home.



### 2.2.3 Connecting to your computer

Three connections may have to be made:

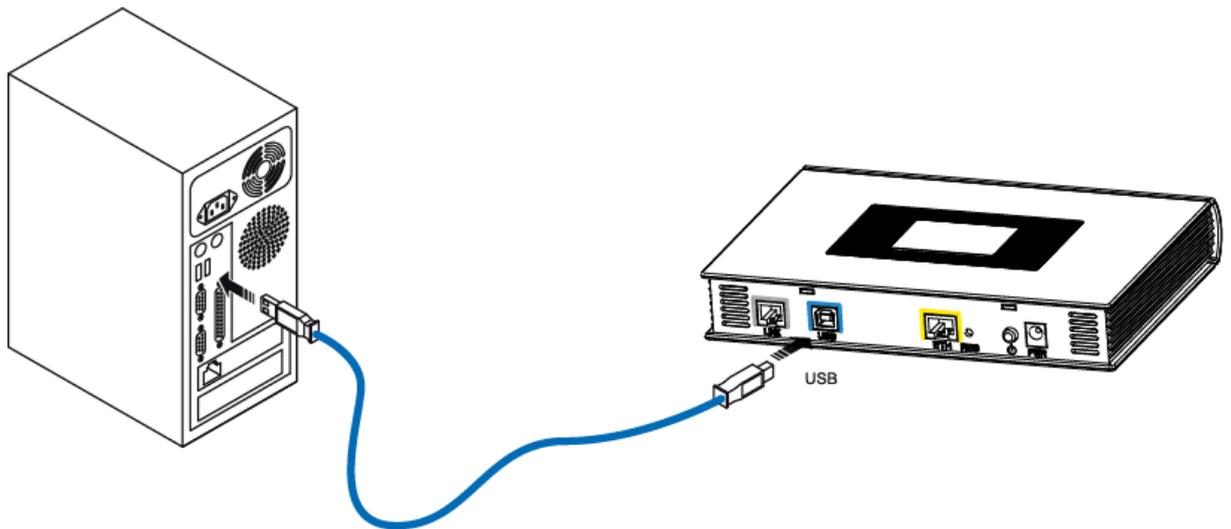
- Connection of the USB interface of your router to your computer.
- Connection of the Ethernet interface of your router to your computer.
- Connection of the WLAN (Wi-Fi) interface to your computer.

#### 2.2.3.1 Connection of the USB interface of your router to your computer



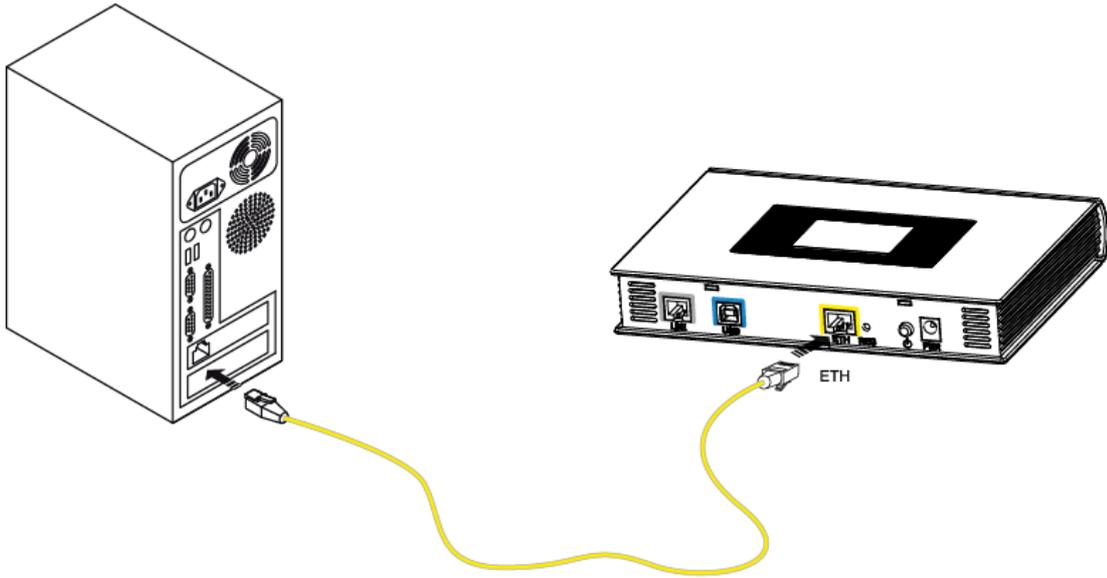
This connection is made **in all cases after installing the drivers** of the USB interface (see section 3).

- Connect the end of the blue **USB** cable fitted with a type B connector (square fixed connector) to the fixed connector marked USB of your router,
- Connect the other end of the cable fitted with a type A connector (rectangular fixed connector) to your computer.



### 2.2.3.2 Connecting the Ethernet interface of your router to your computer

- Connect the end of the yellow Ethernet cable (RJ45/RJ45) supplied in the pack to the Ethernet fixed connector (either marked **ETH** in the case of the SAGEM F@st™2400, or marked **ETH1**, **ETH2**, **ETH3** or **ETH4** in the case of the SAGEM F@st™ 2404 and SAGEM F@st™ 2444) of your router,
- Connect the other end of the cable to your computer.



### 2.2.3.3 Connecting the Wi-Fi interface of your router to your computer

Wireless linking enables the router to be connected to your computer.

To make this connection you must have a Wi-Fi pack (option). This pack comprises the following elements:

- 1 Wi-Fi 188470912 key (Dongle) in an anti-static plastic bag,
- 1 USB adapter cord for Dongle,
- 1 CD-ROM.

#### Inserting a USB Wi-Fi key in your computer

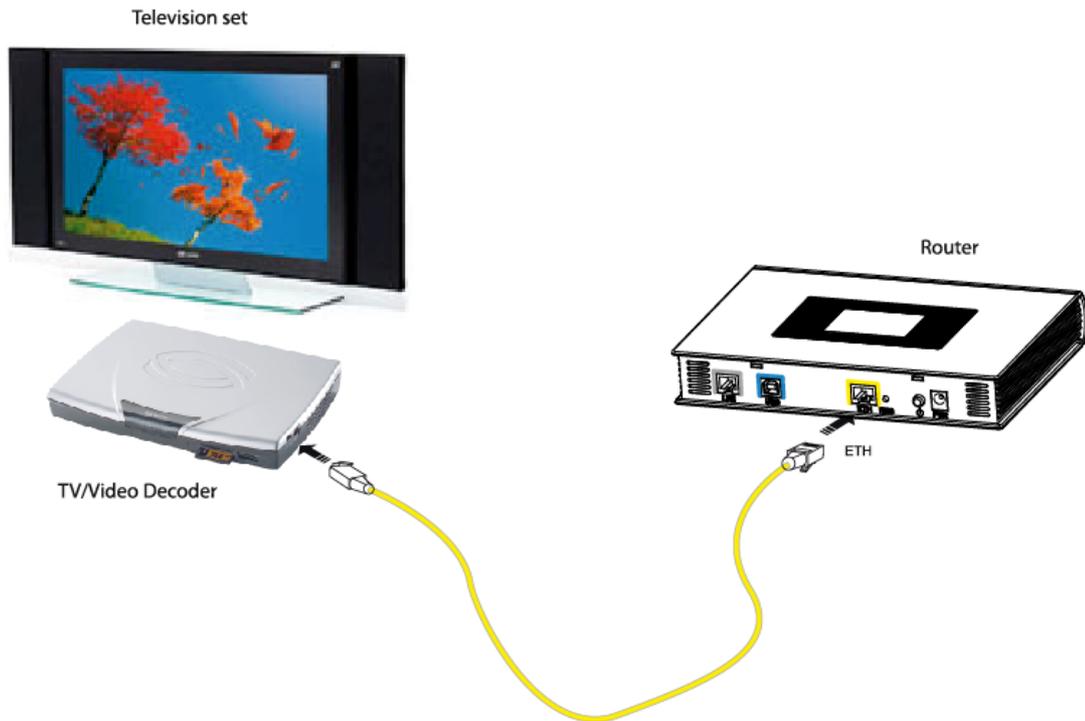
This key is **connected** to your computer **only during installation** of the Wi-Fi drivers (standard 802.11b/g)(see § 3.1.1).



You can also use the wifi adapter incorporated in your computer.

## 2.2.4 Connecting the Ethernet interface of your router to your TV decoder

- Connect the end of the yellow Ethernet cable (RJ45/RJ45) supplied in the pack to the Ethernet fixed connector (either marked **ETH** in the case of the SAGEM F@st™2400, or marked **ETH1**, **ETH2**, **ETH3** or **ETH4** in the case of the SAGEM F@st™ 2404 and SAGEM F@st™ 2444) of your router
- Connect the other end of the cable to a TV decoder.



**Note:** For connection to the decoder, refer to the manufacturer's documentation.

### 2.3 Installation instructions

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#### Environment

- The router must be installed and used inside a building.
- The ambient temperature must not exceed 45°C.
- The router must not be exposed to direct strong sunlight nor to an intense heat source.
- The router must not be placed in an environment subject to vapour condensation.
- The router must not be exposed to water projections.
- The router unit must not be covered.

#### Power source

- Use a network socket with easy access, which is close to the equipment. The power cord is 2 m in length.
- Arrange the power cord so as to prevent any accidental power cutoff of the router.
- The router is designed to be connected to a TT or TN type power network.
- The router is not designed to be connected to an electrical installation with an IT type diagram (neutral connected to earth through an impedance).
- Protection against short circuits and inter-phase leakages, neutral and earth must be made by the building's electrical installation. The power circuit of this equipment must be fitted with a 16 A protection against power surges, and with a differential protection.

#### Maintenance

- It is prohibited to open the case. Only qualified personnel approved by your supplier may do so.
- Do not use liquid or spray cleaning agents.

### 3. Installing and configuring the SAGEM F@st™ 2400/2440 router

This section covers	➤ installing your Router with the Wi-Fi USB adapter.	§ 3.1.1
	➤ installing your Router with the integrated Wi-Fi component of your computer.	§ 3.1.2
	➤ installing your Router with the network card of your computer (Ethernet).	§ 3.2
	➤ installing your Router in the USB port of your computer.	§ 3.3
	➤ installing an additional computer.	§ 3.4

### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

Your router can be installed and configured with the following interfaces:

- Wi-Fi (cf. § 3.1),
- Ethernet (ETH)(cf. § 3.2),
- USB (cf. § 3.3).



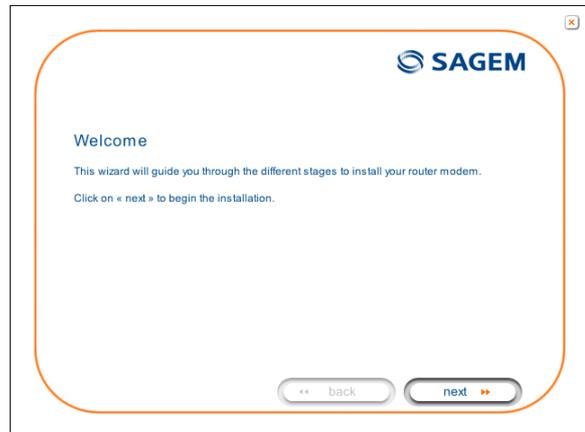
Before installing your SAGEM F@st™ SAGEM F@st™ 2400/2440 router, we recommend you uninstall every ADSL router.



The **installation** procedure described below was undertaken in **Windows® XP**. Installation in other Windows operating systems® (98, ME and 2000) can be slightly different.

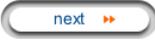
- 1 Insert the CD-ROM in the appropriate driver of your computer; the screen opposite is displayed.

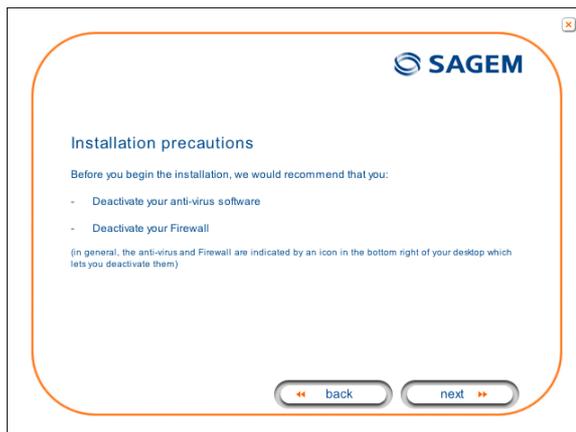
Click the  button to start the installation.



**Observation:** If this screen does not appear: Select, in the menu **Start**, the command **Execute**, then enter:  
<letter of CD-ROM drive> :\autorun.exe (for example, e:\autorun.exe)  
then click **OK**.

- 2 The screen opposite appears.  
Carry out the operations described on the screen.

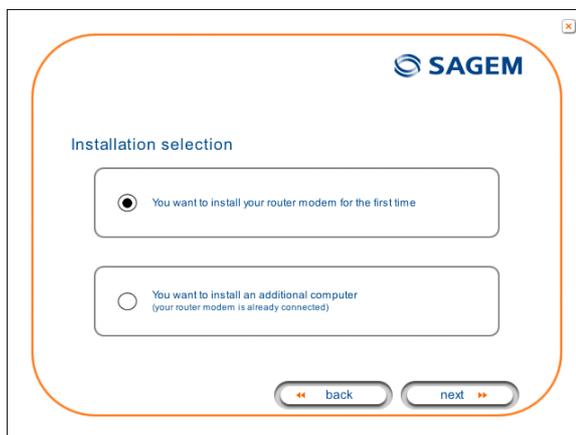
Click button  to continue the installation.



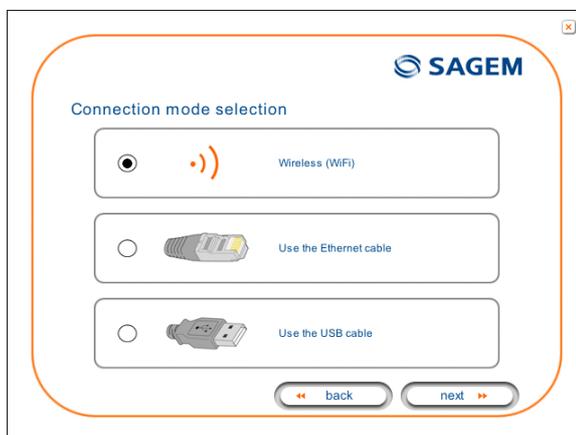
- 3 A screen enabling the type of installation to the chosen (first installation or installation of an additional computer) appears.  
For a first installation, we recommend that you check the



button then click on  to continue the installation.



- 4 The screen opposite appears.  
This screen enables you to choose to which interface (Wi-Fi, Ethernet or USB) you wish to connect your router to your computer.  
Select the interface required and then click the  button to continue the installation.



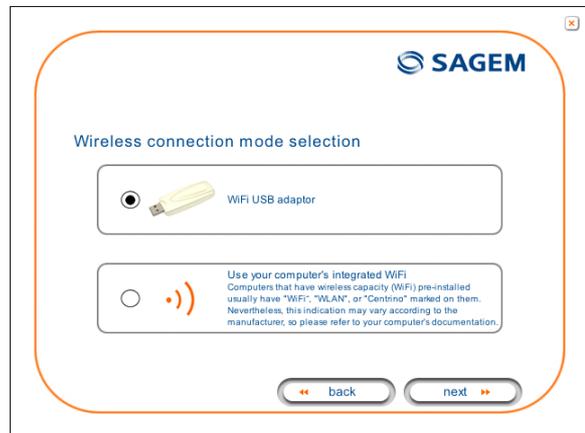
**The installation of your router using different interfaces is described in detail below in the order displayed on the previous screen (choice of connection mode).**

## 3.1 Installation by Wi-Fi interface

- 1 You have selected the **wireless** (Wi-Fi) interface; the screen opposite appears.

This screen enables the wireless connection mode (Wi-Fi) to be chosen. You are offered two connection modes:

- either by using a Wi-Fi USB adapter (key) connected to your computer,
- or by using the integrated Wi-Fi interface of your computer.



### 3.1.1 Wi-Fi USB adapter

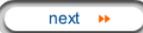


During installation you must not connect your USB Wi-Fi key before you are asked for it (see stage 5a).



The installation manages the SAGEM brand USB Wi-Fi adapters model XG 760N (supplied in the pack). The driver of this key is contained on the CD-ROM.

If you wish to use another key, you will be asked to install the driver of this key during the installation.

You have selected the Wi-Fi USB adapter by clicking the  button ; you have then clicked the  button to continue the installation.

- 2a The screen opposite appears.

Make the electrical connection as described on the screen.

Click the  button to continue the installation.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 3a** The screen opposite appears.  
Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



Whatever your choice, you must make the electrical connection and the connection to the ADSL line.

- 4a** The screen opposite appears and asks you to wait.



- 5a** The screen opposite appears.  
Connect your **USB Wi-Fi adapter XG - 760N** (supplied in the pack) to an available corresponding fixed connector on your computer following the illustration given on the screen.



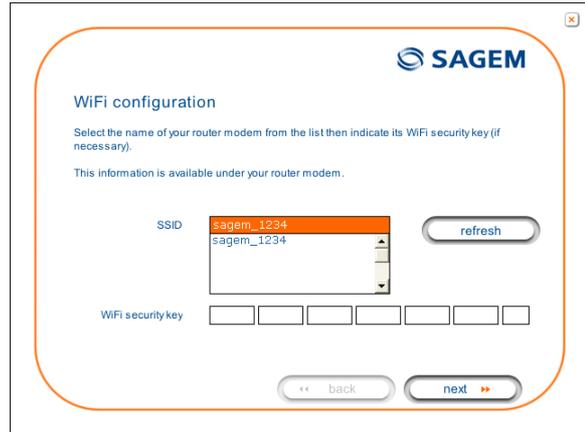
As soon as the key is connected "Please wait" is displayed on the screen, asking you to wait while the driver of your USB Wi-Fi XG - 760N key is installed.

### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

**6a** The screen opposite then appears, asking you to configure the Wi-Fi interface. To do this:

- Select in the scrollbox the name of the router (SSID indicated on the label glued on to the box) with which you wish to associate your computer.  
In the contrary case, click button , then select from the scrollbox.
- Enter the 26-character WEP key (128 bit encryption) indicated on the label glued on to the box.

Click the  button to continue the installation.



**7a** The screen opposite appears.

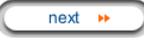
Please wait during the diagnostics of the connection to the Router via the **Wi-Fi** USB adapter.



**8a** The screen opposite appears.

Enter the **connection identifier** followed by the **connection password**.

The latter are available from your subscription confirmation letter.

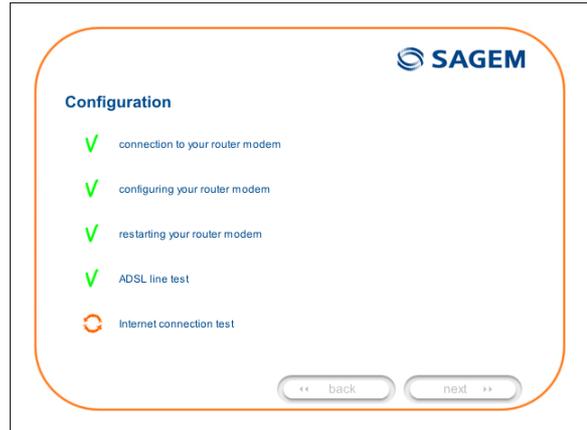
Click the  button to continue the installation.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

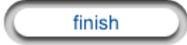
- 9a** The screen opposite appears and asks you to wait during the successive diagnostics.

The rotating orange arrows are replaced by a green check mark after each successful test.



- 10a** The screen opposite appears.

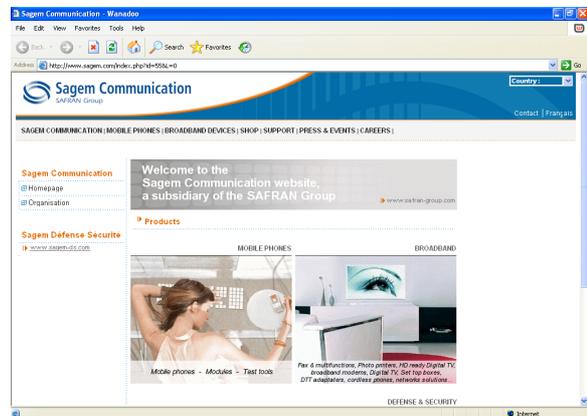
The installation has been correctly accomplished; your router is operational.

Click the  button to close the window.



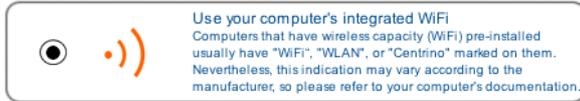
- 11a** The "SAGEM" welcome screen appears.

**You can now use your Internet access.**



#### 3.1.2 Integrated Wi-Fi interface of your computer

You have chosen to use the integrated Wi-Fi of your computer by clicking the



button ; you have then clicked the

 button to continue the installation.

**2b** The screen opposite appears.

Make the electrical connection as described on the screen.

Click the  button to continue the installation.



**3b** The screen opposite appears.

Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



Whatever your choice, you must make the electrical connection and the connection to the ADSL line.

- 4b** The screen opposite appears and asks you to wait.



- 5b** The screen opposite appears.  
Activate the Wi-Fi function of your computer by following the instructions shown on the screen.

Click the  button to continue the installation.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 6b The screen opposite appears and asks you to wait.



- 7b The screen opposite appears.  
Please wait during the diagnostics of the connection to the Router via the integrated Wi-Fi interface of your computer.



- 8b The screen opposite appears.  
Enter the **connection identifier** followed by the **connection password**.  
The latter are available from your subscription confirmation letter.

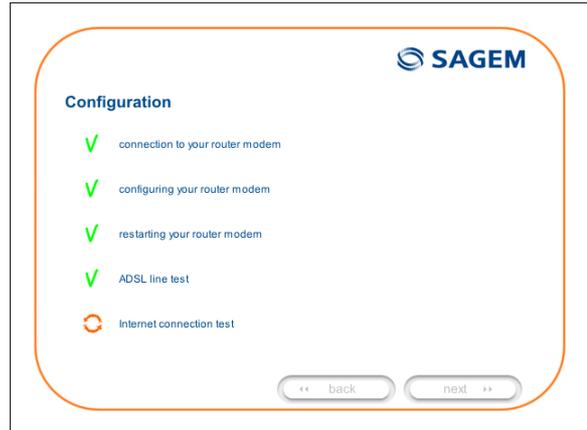
Click the  button to continue the installation.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 9b** The screen opposite appears and asks you to wait during the successive diagnostics.

The rotating orange arrows are replaced by a green check mark after each successful test.



- 10b** The screen opposite appears.

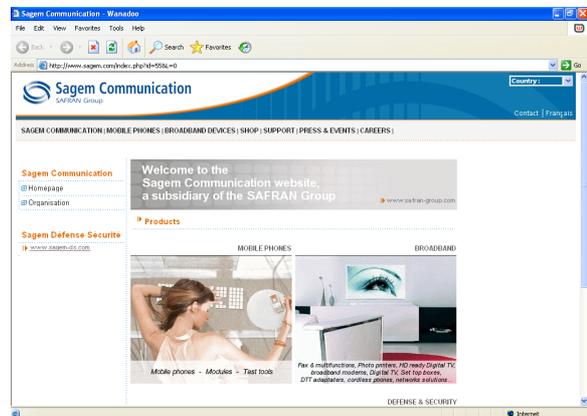
The installation has been correctly accomplished; your router is operational.

Click the  button to close the window.



- 11b** The "SAGEM" welcome screen appears.

**You can now use your Internet access.**



## 3.2 Installing and configuring your Router with the network card of your computer (Ethernet)

The Ethernet fixed connector marked **ETH** of the SAGEM F@st™ 2400/2440 is designed for connecting your computers or wired Ethernet network equipment. It supports 10 Mbit/s and 100 Mbit/s transmission rates in Half or Full Duplex mode on a category 5 double twisted pair cable.

This port is a RJ45 connector with wiring of the self-detecting MDI or MDI-x type.

With this port, you can connect using a straight or crossed Ethernet cord:

- either directly to a computer equipped with a 10/100BASE-T Ethernet network,
- or to an Ethernet local network connected to a network concentrator (HUB or Switch).



The **installation** procedure described below was undertaken in **Windows® XP**. Installation in other Windows operating systems® (98, ME and 2000) can be slightly different.

- 1 You have selected the **Ethernet** interface; the screen opposite appears.

Make the electrical connection as described on the screen.

Click the  button to continue the installation.



- 2 The screen opposite appears.

Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 3 Connect the Ethernet cable as described on the screen.

Click the  button to continue the installation.



- 4 The screen opposite appears and asks you to wait.



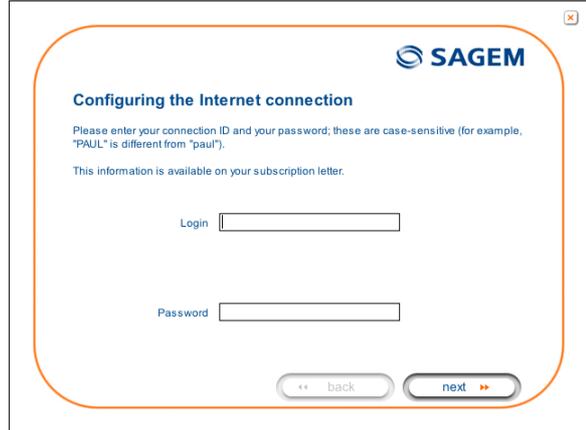
- 5 The screen opposite appears.  
Please wait during the diagnostics of the connection to the Router via an Ethernet cable.



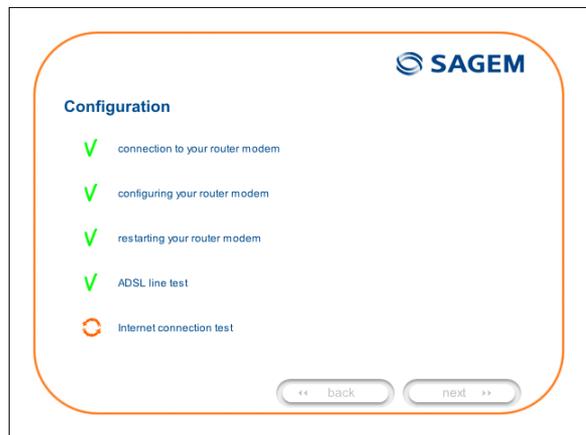
### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 6 The screen opposite appears.  
Enter the **connection identifier** followed by the **connection password**.  
The latter are available from your subscription confirmation letter.

Click the  button to continue the installation.



- 7 The screen opposite appears and asks you to wait during the successive diagnostics.  
The rotating orange arrows are replaced by a green check mark after each successful test.



- 8 The screen opposite appears.  
The installation has been correctly accomplished; your router is operational.

Click the  button to close the window.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 9 The "SAGEM" welcome screen appears.

**You can now use your Internet access.**



## 3.3 Installing and configuring your Router in the USB port of your computer

The **USB** port of the SAGEM F@st™ 2400/2440 is of the USB 1.1 type allowing a maximum transmission rate of 12 Mbit/s.

With this port, you can connect directly to a computer located at a type A USB input, using a USB cord (supplied with the equipment).



The USB interface must **in all cases** be **installed before** the **USB connector is connected**.



The **installation** procedure described below was undertaken in **Windows® XP**. Installation in other Windows operating systems® (98, ME and 2000) can be slightly different.

- 1 You have selected the **USB** interface; the screen opposite appears.

Make the electrical connection as described on the screen.

Click the  button to continue the installation.



- 2 The screen opposite appears.

Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 3 Connect the USB cable as described on the screen.

Click the  button to continue the installation.



- 4 The screen opposite appears and asks you to wait.



- 5 The screen opposite appears.  
Please wait during the diagnostics of the connection to the Router via a USB cable.



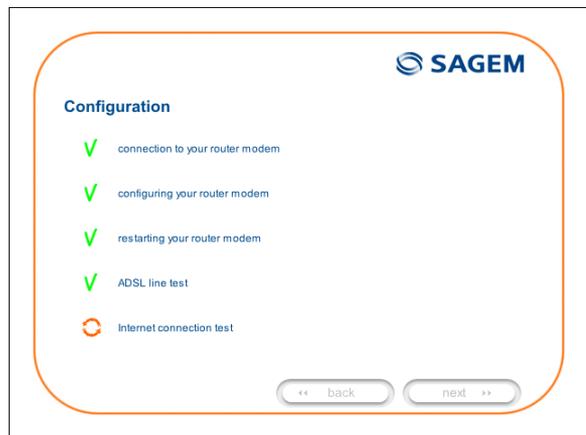
### 3 - Installing and configuring the SAGEM F@st™ 2400/2440 router

- 6 The screen opposite appears.  
Enter the **connection identifier** followed by the **connection password**.  
The latter are available from your subscription confirmation letter.

Click the  button to continue the installation.



- 7 The screen opposite appears and asks you to wait during the successive diagnostics.  
The rotating orange arrows are replaced by a green check mark after each successful test.



- 8 The screen opposite appears.  
The installation has been correctly accomplished; your router is operational.

Click the  button to close the window.



- 9 The "SAGEM" welcome screen appears.

**You can now use your Internet access.**



If you wish to install your router with another interface, we must imperatively that you **uninstall** your router.

To do this:

Select **Start /All programs/SAGEM F@st™ 2400/Uninstall**



If you wish to install your router with another interface, you must imperatively **uninstall** your router.

To do this:

Select **Start/All programs/SAGEM F@st™ 2400/Uninstall**

Cliquez sur le bouton

## 3.4 Installing and configuring an additional computer

You have chosen to install an additional computer by clicking the



button ; you have then clicked the



button to continue the installation.

### 1 The screen opposite appears.

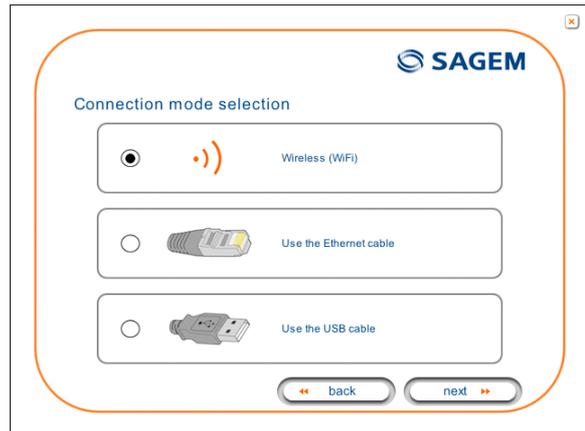
This screen enables you to choose to which interface (Wi-Fi, Ethernet or USB) you wish to connect your router to your computer.

Click "Wi-Fi" to install your router on the Wi-Fi interface (cf. § 3.1),

Click "Use the Ethernet cable" (cf. § 3.2),

Click "Use the Ethernet cable" (cf. § 3.3),

and then click the  button to continue the installation.



The stages concerning:

- The electrical connection and connection to the ADSL line of the router,
- Together with configuration of the router (connection identifier, connection password, etc.).

are no longer to be accomplished when installing an additional computer, whatever the interface (Wi-Fi, Ethernet or USB).

## 4. Installing and configuring the SAGEM F@st™ 2404/2444 router

This section covers	➤ installing your Router with the Wi-Fi USB adapter.	§ 4.1.1
	➤ installing your Router with the integrated Wi-Fi component of your computer.	§ 4.1.2
	➤ installing your Router with the network card of your computer (Ethernet).	§ 4.2
	➤ installing an additional computer.	§ 4.3

## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

Your router can be installed and configured with the following interfaces:

- Wi-Fi (cf. § 4.1),
- Ethernet (ETH)(cf. § 4.2).



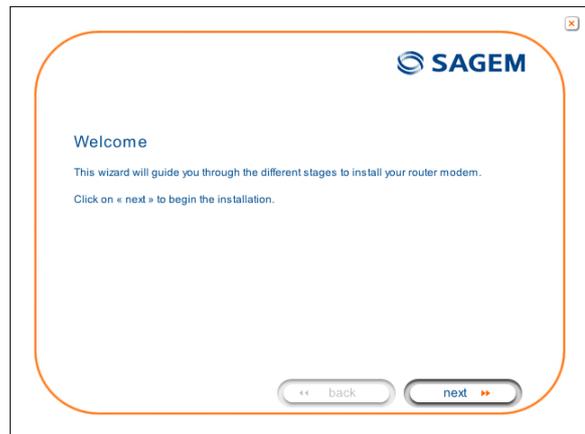
Before installing your SAGEM F@st™ 2404/2444 router, we recommend you uninstall every ADSL router.



The **installation** procedure described below was undertaken in **Windows® XP**. Installation in other Windows operating systems® (98, ME and 2000) can be slightly different.

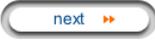
- 1 Insert the CD-ROM in the appropriate driver of your computer; the screen opposite is displayed.

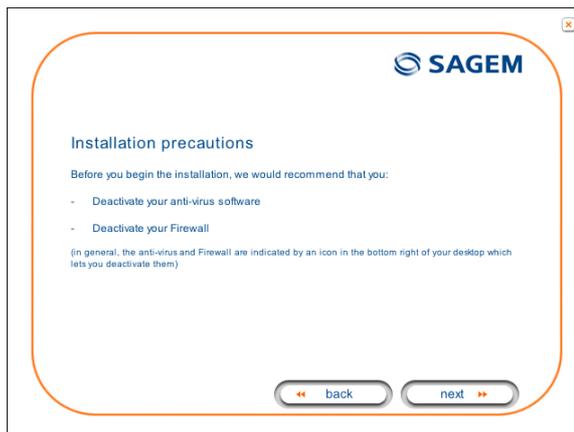
Click the  button to start the installation.



**Observation:** If this screen does not appear: Select, in the menu **Start**, the command **Execute**, then enter:  
<letter of CD-ROM drive> :\autorun.exe (for example, e:\autorun.exe)  
then click **OK**.

- 2 The screen opposite appears.  
Carry out the operations described on the screen.

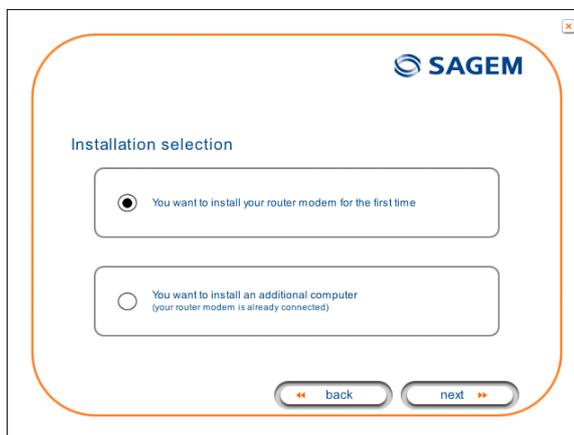
Click the  button to continue the installation.



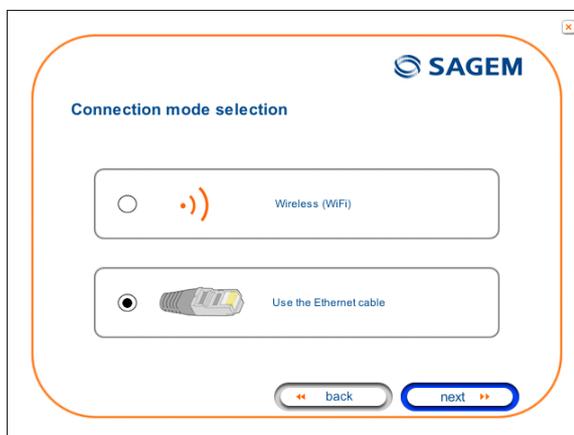
- 3 A screen enabling the type of installation to the chosen (first installation or installation of an additional computer) appears.  
For a first installation, we recommend that you check the button



then click the  button to continue the installation.



- 4 The screen opposite appears.  
This screen enables you to choose to which interface (Wi-Fi or Ethernet) you wish to connect your router to your computer.  
Select the interface required and then click the  button to continue the installation.



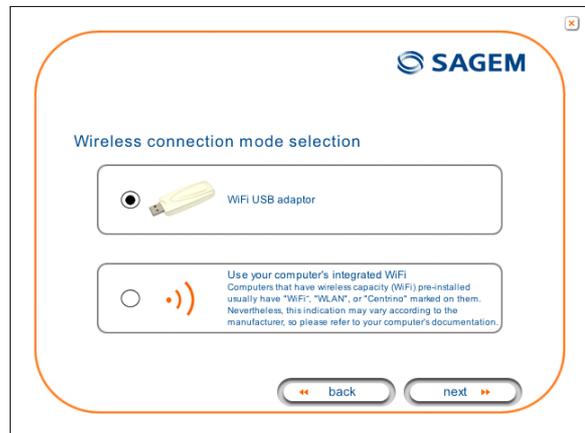
The installation of your router using different interfaces is described in detail below in the order displayed on the previous screen (choice of connection mode).

### 4.1 Installation by Wi-Fi interface

- 1 You have selected the **wireless** (Wi-Fi) interface; the screen opposite appears.

This screen enables the wireless connection mode (Wi-Fi) to be chosen. You are offered two connection modes:

- either by using a Wi-Fi USB adapter (key) connected to your computer,
- or by using the integrated Wi-Fi interface of your computer.



#### 4.1.1 Wi-Fi USB adapter

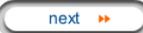


During installation you must not connect your USB Wi-Fi key before you are asked for it (see stage 5a).



The installation manages the SAGEM brand USB Wi-Fi adapters model XG 760N (supplied in the pack). The driver of this key is contained on the CD-ROM.

If you wish to use another key, you will be asked to install the driver of this key during the installation.

You have selected the Wi-Fi USB adapter by clicking the  button ; you have then clicked the  button to continue the installation.

- 2a The screen opposite appears.

Make the electrical connection as described on the screen.

Click the  button to continue the installation.



## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

**3a** The screen opposite appears.

Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



Whatever your choice, you must make the electrical connection and the connection to the ADSL line.

**4a** The screen opposite appears and asks you to wait.



**5a** The screen opposite appears.

Connect your **USB Wi-Fi adapter XG - 760N** (supplied in the pack) to an available corresponding fixed connector on your computer following the illustration given on the screen.



As soon as the key is connected "Please wait" is displayed on the screen, asking you to wait while the driver of your USB Wi-Fi XG - 760N key is installed.

## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

**6a** The screen opposite then appears, asking you to configure the Wi-Fi interface. To accomplish this,

- Select in the scrollbox the name of the router (SSID indicated on the label glued on to the box) with which you wish to associate your computer.

In the contrary case, click

button , then select from the scrollbox.

- Enter the 26-character WEP key (128 bit encryption) indicated on the label glued on to the box.

Click the  button to continue the installation.



The screenshot shows the 'WiFi configuration' screen. At the top right is the SAGEM logo. Below it, the title 'WiFi configuration' is followed by instructions: 'Select the name of your router modem from the list then indicate its WiFi security key (if necessary). This information is available under your router modem.' There is a scrollable list for 'SSID' with two entries: 'sagem\_1234' (highlighted) and 'sagem\_1234+'. To the right of the list is a 'refresh' button. Below the list is a 'WiFi security key' field consisting of six empty boxes. At the bottom are 'back' and 'next' buttons.

**7a** The screen opposite appears.

Please wait during the diagnostics of the connection to the Router via the **Wi-Fi** USB adapter.



The screenshot shows the 'Detection' screen. At the top right is the SAGEM logo. Below it, the title 'Detection' is followed by a progress indicator and the text 'dongle configuration'. At the bottom are 'back' and 'next' buttons.

**8a** The screen opposite appears.

Enter the **connection identifier** followed by the **connection password**.

The latter are available from your subscription confirmation letter.

Click the  button to continue the installation.

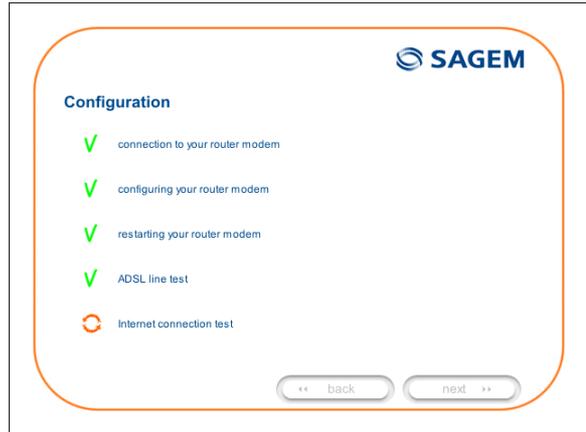


The screenshot shows the 'Configuring the Internet connection' screen. At the top right is the SAGEM logo. Below it, the title 'Configuring the Internet connection' is followed by instructions: 'Please enter your connection ID and your password; these are case-sensitive (for example, "PAUL" is different from "paul"). This information is available on your subscription letter.' There are two input fields: 'Login' and 'Password'. At the bottom are 'back' and 'next' buttons.

## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

- 9a** The screen opposite appears and asks you to wait during the successive diagnostics.

The rotating orange arrows are replaced by a green check mark after each successful test.



- 10a** The screen opposite appears.

The installation has been correctly accomplished; your router is operational.

Click the  button to close the window.



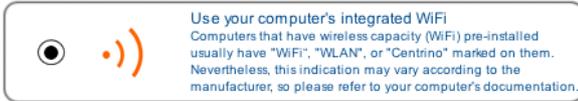
- 11a** The "SAGEM" welcome screen appears.

**You can now use your Internet access.**

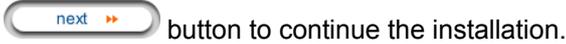


### 4.1.2 Integrated Wi-Fi interface of your computer

You have chosen to use the integrated Wi-Fi of your computer by clicking the



button ; you have then clicked the



**2b** The screen opposite appears.  
Make the electrical connection as described on the screen.

Click the  button to continue the installation.



**3b** The screen opposite appears.  
Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



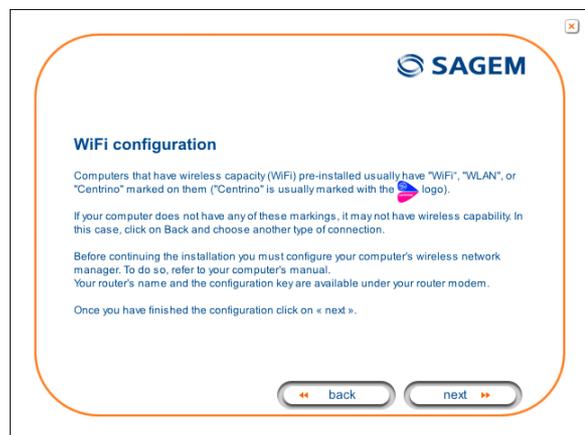
Whatever your choice, you must make the electrical connection and the connection to the ADSL line.

- 4b** The screen opposite appears and asks you to wait.



- 5b** The screen opposite appears.  
Activate the Wi-Fi function of your computer by following the instructions shown on the screen.

Click the  button to continue the installation.



## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

- 6b The screen opposite appears and asks you to wait.



- 7b The screen opposite appears.  
Please wait during the diagnostics of the connection to the Router via the integrated Wi-Fi interface of your computer.



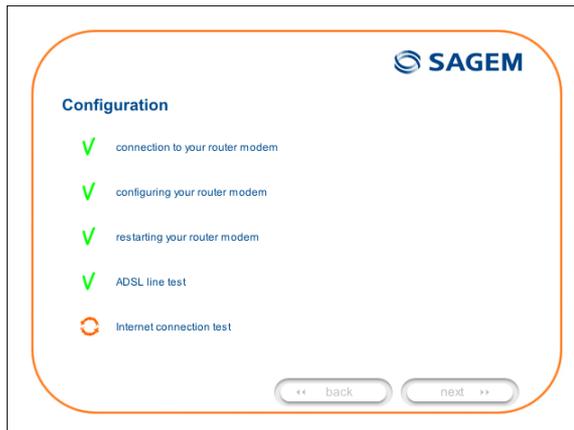
- 8b The screen opposite appears.  
Enter the **connection identifier** followed by the **connection password**.  
The latter are available from your subscription confirmation letter.

Click the  button to continue the installation.



- 9b** The screen opposite appears and asks you to wait during the successive diagnostics.

The rotating orange arrows are replaced by a green check mark after each successful test.



- 10b** The screen opposite appears.

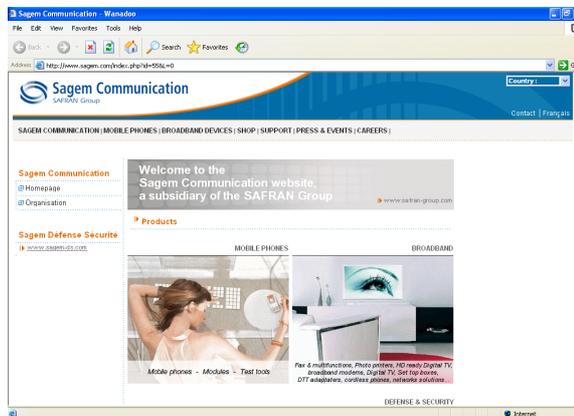
The installation has been correctly accomplished; your router is operational.

Click the  button to close the window.



- 11b** The "SAGEM" welcome screen appears.

**You can now use your Internet access.**



### 4.2 Installing and configuring your Router with the network card of your computer (Ethernet)

The Ethernet fixed connector marked **ETH** of the SAGEM F@st™ 2404/2444 is designed for connecting your computers or wired Ethernet network equipment. It supports 10 Mbit/s and 100 Mbit/s transmission rates in Half or Full Duplex mode on a category 5 double twisted pair cable.

This port is a RJ45 connector with wiring of the self-detecting MDI or MDI-x type.

With this port, you can connect using a straight or crossed Ethernet cord:

- either directly to a computer equipped with a 10/100BASE-T Ethernet network,
- or to an Ethernet local network connected to a network concentrator (HUB or Switch).



The **installation** procedure described below was undertaken in **Windows® XP**. Installation in other Windows operating systems® (98, ME and 2000) can be slightly different.

- 1 You have selected the **Ethernet** interface; the screen opposite appears.

Make the electrical connection as described on the screen.

Click the  button to continue the installation.



- 2 The screen opposite appears.

Make the connection of the ADSL line as described on the screen.

Click the  button to continue the installation.



## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

- 3 Connect the Ethernet cable as described on the screen.

**Note:** The Ethernet cable can be connected to any Ethernet port (ETH1 to ETH4).

Click the  button to continue the installation.



- 4 The screen opposite appears and asks you to wait.



- 5 The screen opposite appears.  
Please wait during the diagnostics of the connection to the Router via an Ethernet cable.



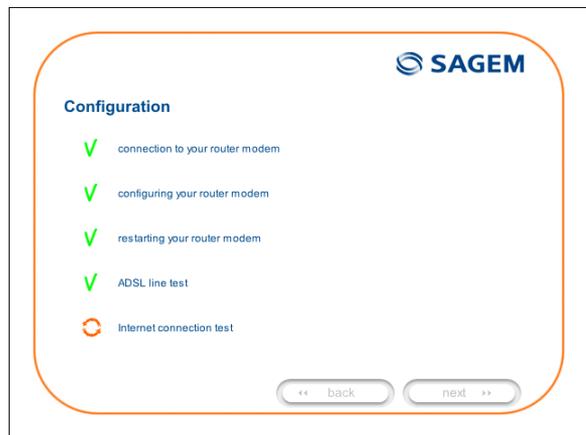
## 4 - Installing and configuring the SAGEM F@st™ 2404/2444 router

- 6 The screen opposite appears.  
Enter the **connection identifier**  
followed by the **connection password**.  
The latter are available from your  
subscription confirmation letter.

Click the  button to  
continue the installation.



- 7 The screen opposite appears and asks  
you to wait during the successive  
diagnostics.  
The rotating orange arrows are  
replaced by a green check mark after  
each successful test.



- 8 The screen opposite appears.  
The installation has been correctly  
accomplished; your router is  
operational.

Click the  button to  
close the window.



- 9 The "SAGEM" welcome screen appears.

**You can now use your Internet access.**



If you wish to install your router with another interface, you must imperatively **uninstall** your router.

To do this:

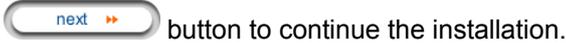
Select **Start/All programs/SAGEM F@st™ 2404/Uninstall**

### 4.3 Installing and configuring an additional computer

You have chosen to install an additional computer by clicking the



button ; you have then clicked the



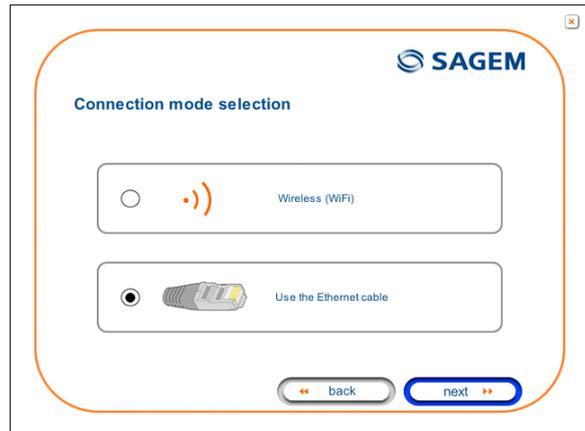
**1** The screen opposite appears.

This screen enables you to choose to which interface (Wi-Fi or Ethernet) you wish to connect your router to your computer.

Click "Wi-Fi" to install your router on the Wi-Fi interface (cf. § 4.1),

Click "Use the Ethernet cable" (cf. § 4.2).

and then click the  button to continue the installation.



The stages concerning:

- The electrical connection and connection to the ADSL line of the router,
- Together with configuration of the router (connection identifier, connection password, etc.).

are no longer to be accomplished when installing an additional computer, whatever the interface (Wi-Fi or Ethernet).

## 5. Configuration of network parameters

This section covers	➤ configuring as a DHCP client	Page 5-3
	➤ reading data of the DHCP server	Page 5-4
	➤ reading data of the DHCP client	Page 5-6

## 5 - Configuration of network parameters

The aim of this section is:

- 1) to configure your computer so that it is able to communicate with your router.
- 2) and to display the "Networks" parameters of your router.

Your router implements the DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) server, relay and client functions in accordance with RFC 2131 and RFC 3132, whereas the computer connected directly to the router or via a local network by its LAN interface implements only the DHCP client function.

On receipt of a DHCP query from your computer (see ) , whether or not it is connected to your router, the latter responds by indicating:

- an address from the range defined in the configuration,
- the sub-network mask,
- the default gateway (address of your router),
- the address of the gateway as DNS server. The "DNS Relay" function is activated automatically.



The configured range of IP addresses must be the same in the sub-network as in the LAN interface.



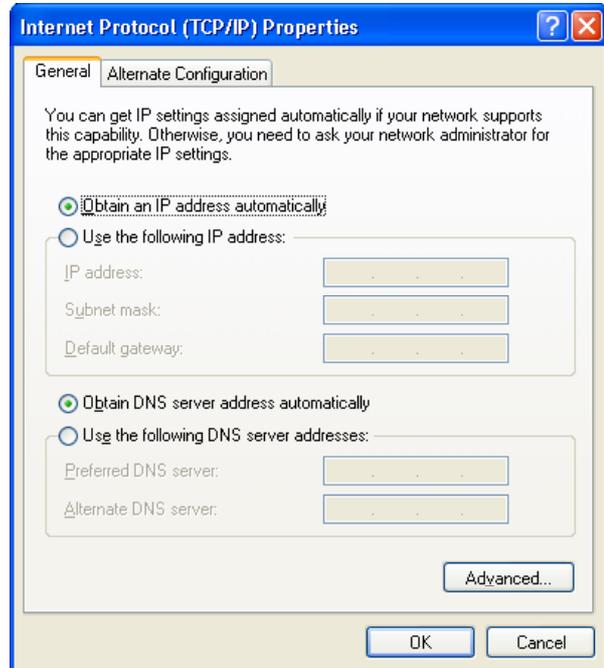
**It is imperative** that your computer is configured as a DHCP client or that it has a fixed IP address in the configuration range defined by the DHCP server.

Configuration as a DHCP client is the more commonly used solution.

## 1) Configuring as a DHCP client

### In Windows XP

- click **Start/Control Panel/Network Connections**.
- right-click the appropriate network, and then select **Properties**; the **Local Area Connection Properties** appears.
- select the protocol TCP/IP of the network card, and then click the **Properties** button; the screen **Internet Protocol (TCP/IP) Properties** appears.
- select the general tab, then the case **"Obtain an IP address automatically"** and the case **"Obtain the addresses of the DNS servers automatically"**.
- click the **OK** button to confirm your choice.



## 2) Data of the DHCP server

To obtain this data:

- Open your browser and then enter **http://myrouter** or **http://192.168.1.1** (default IP address of the router) to access the welcome screen,
- Click the "LAN" menu of the heading **Advanced Setup**; the following screen appears:

The screenshot displays the SAGEM router's web interface for LAN configuration. At the top right, there are status indicators for ADSL (green light) and Internet (green light), along with download and upload speeds (19996 kbps down, 1060 kbps up) and buttons for 'refresh' and 'reboot'. The left sidebar contains a navigation menu with 'LAN' highlighted. The main content area is titled 'Local Area Network (LAN) Setup' and includes a descriptive paragraph. Below this, there are input fields for IP Address (192.168.1.1) and Subnet Mask (255.255.255.0). There are two checkboxes: 'Enable UPnP' (checked) and 'Enable IGMP Snooping' (unchecked). Underneath, there are radio buttons for 'Disable DHCP Server' and 'Enable DHCP Server' (selected). Below these are three input fields: 'Start IP Address' (192.168.1.2), 'End IP Address' (192.168.1.254), and 'Leased Time (hour):' (24). At the bottom, there is a checkbox for 'Configure the second IP Address and Subnet Mask for LAN interface' which is unchecked. Two buttons, 'Save' and 'Save/Reboot', are located at the bottom center. A small image of the router is shown in the bottom right corner. The footer contains the SAGEM logo and the copyright notice: '© 2005 SAGEM Corporation. All rights reserved.'

## 5 - Configuration of network parameters

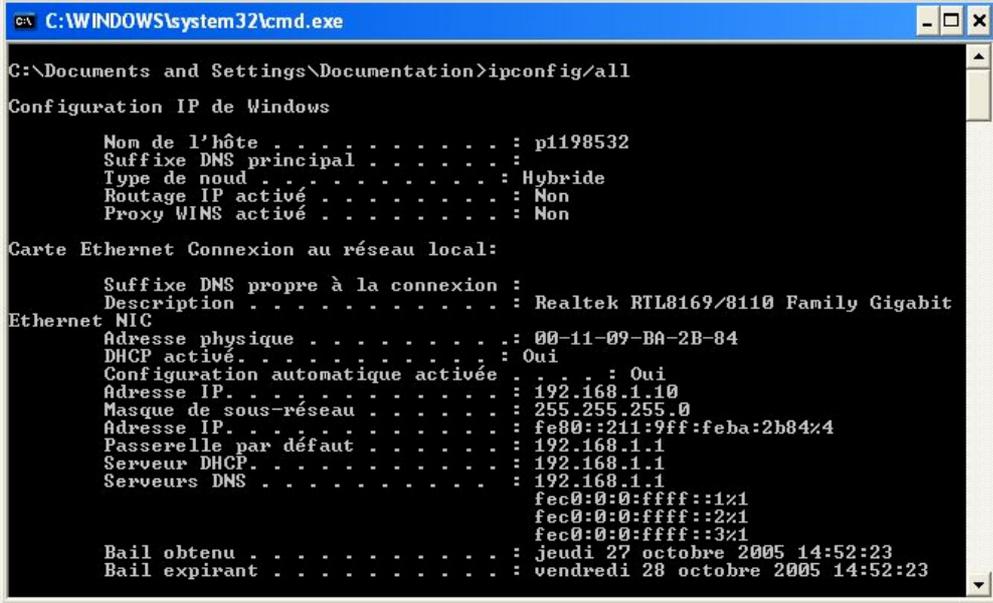
Field	Meaning	Display
<b>IP Address</b>	Displays the sub-network address	192.168.1.1
<b>Subnet Mask</b>	Displays the sub-network mask of the IP network.	255.255.255.0
<b>Start IP Address</b>	Displays the first address attributed by the DHCP server. <b>Note :</b> This IP address must belong to the same sub-network as that of the local network.	192.168.1.2
<b>End IP Address</b>	Displays the last address attributed by the DHCP server. <b>Note :</b> This IP address must belong to the same sub-network as that of the local network.	192.168.1.254
<b>Leased Time (hour)</b>	Displays the period for obtaining (in hours) an IP address for a terminal.	24

### 3) Data of the DHCP client

To obtain this data:

*In Windows XP, 2000 and Me*

- Click the **Start** button, select **Execute**, enter **cmd** and then click **OK**; the command prompt screen appears. Enter **ipconfig /all** (or **ipconfig/all**) then confirm by pressing **Enter**.



```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Documentation>ipconfig/all

Configuration IP de Windows

    Nom de l'hôte . . . . . : p1198532
    Suffixe DNS principal . . . . . :
    Type de noud . . . . . : Hybride
    Routage IP activé . . . . . : Non
    Proxy WINS activé . . . . . : Non

Carte Ethernet Connexion au réseau local:
    Suffixe DNS propre à la connexion :
    Description . . . . . : Realtek RTL8169/8110 Family Gigabit
Ethernet NIC
    Adresse physique . . . . . : 00-11-09-BA-2B-84
    DHCP activé . . . . . : Oui
    Configuration automatique activée . . . . . : Oui
    Adresse IP . . . . . : 192.168.1.10
    Masque de sous-réseau . . . . . : 255.255.255.0
    Adresse IP . . . . . : fe80::211:9ff:feba:2b84%4
    Passerelle par défaut . . . . . : 192.168.1.1
    Serveur DHCP . . . . . : 192.168.1.1
    Serveurs DNS . . . . . : 192.168.1.1
                             fec0:0:0:fff::1%1
                             fec0:0:0:fff::2%1
                             fec0:0:0:fff::3%1
    Bail obtenu . . . . . : jeudi 27 octobre 2005 14:52:23
    Bail expirant . . . . . : vendredi 28 octobre 2005 14:52:23
```

## 6. Information / Configuration

This section covers	➤ Accessing the welcome screen	§ 6.1
	➤ Recommendations for using the configuration screens	§ 6.2
	➤ The ADSL connection status	§.6.3
	➤ Indications displayed on the display frame located in the HTTP configurer window	§ 6.4
	➤ The " <b>Status</b> " section	§ 6.5
	➤ The " <b>Internet Connection</b> " section	§ 6.6
	➤ The " <b>Wireless</b> " section	§ 6.7
	➤ The " <b>NAT</b> " section	§ 6.8
	➤ The " <b>Advanced Setup</b> " section	§ 6.9
	➤ The " <b>Advanced Status</b> " section	§ 6.10
	➤ The " <b>Management</b> " section	§ 6.11

## 6.1 Accessing the welcome screen



To access this screen, you must have configured the one of your computer's interfaces using the installation CD-ROM provided with your router:

- SAGEM F@st™ 2400/2440 see chapter 3.
- SAGEM F@st™ 2404/2444 see chapter 4.

If you are using your computer's Ethernet card to configure your router, connect it to the Ethernet port whose socket is marked **ETH** (yellow box).

Your router is then configured using a simple Web browser (e.g. Internet Explorer).



The router's DHCP server function is activated by default with an address range defined as indicated in §.6.9.2.



This chapter details the **Machine Man Interface (MMI)** of a router SAGEM F@st™ 2404/2444 which has four Ethernet interfaces.  
In the case of a router SAGEM F@st™ 2400/2440 which has an additional interface USB, this difference will be mentioned in the circumstance.

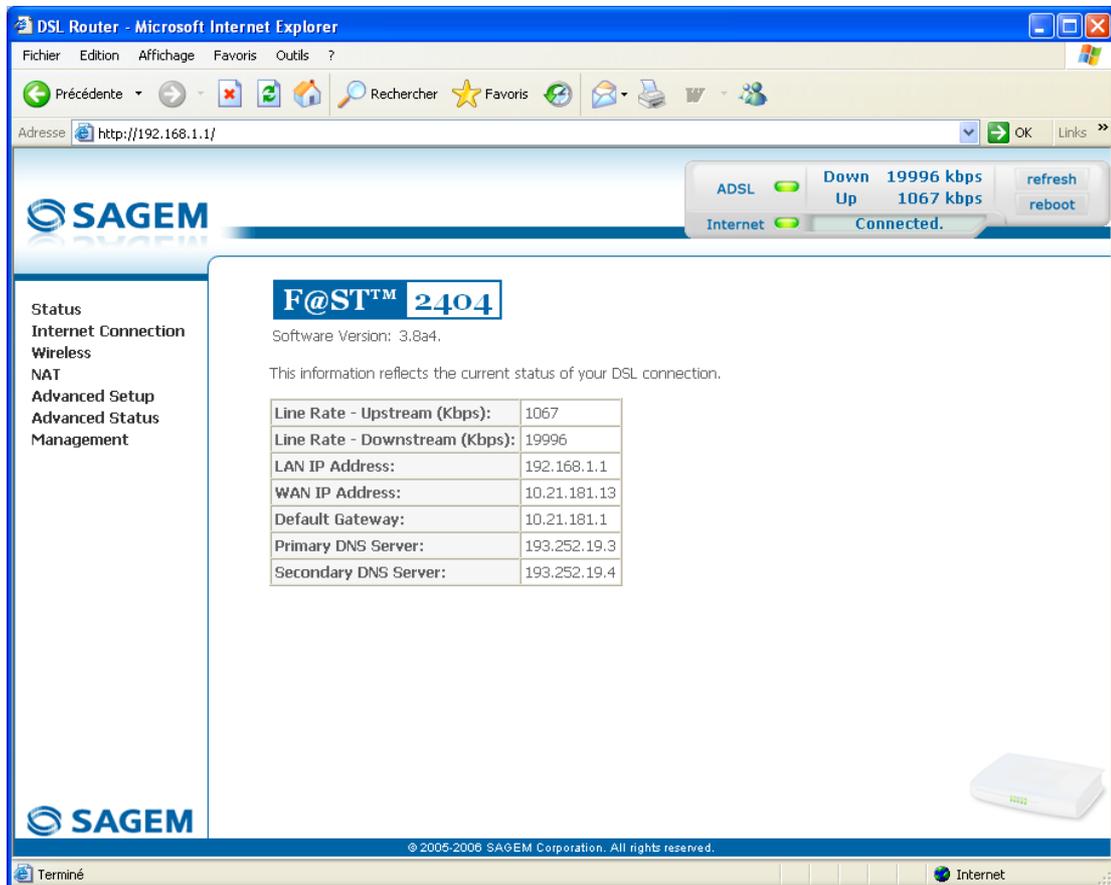
To access the configurer, proceed as follows:

- 1 In the **Start** menu, select **All Programs / SAGEM F@st 2404**, then left click on  **Configuration**.
- 2 The following screen asks you to connect.  
Enter **admin** by default in the "Username" field.  
Enter **admin** by default in the "Password" field.  
Then click on **OK** to confirm.  
**Note:** The equipment's IP address (192.168.1.1) appears in the bar at the top of the screen.



- 3 Your computer's Web browser opens and displays the router's welcome screen. The equipment's name is displayed in title (SAGEM F@st™ 2400 or SAGEM F@st™ 2404).

**Equipment configuration sections appear in the left hand area in the welcome screen.**



This screen displays:

- ☞ in the centre, an area which shows the current ADSL connection status (cf. § 6.3).
- ☞ in the top right, a display box which lets you know the status of the ADSL line, lets you refresh the window displayed and restart your router at any time (cf. § 6.4).
- ☞ to the left, a list of 7 sections (cf. § 6.5 to 6.11) made up of menus and sub-menus. These let you view and configure your router's parameters.

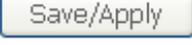


You can modify the password to access your router's configurator to optimise the safety of your network.

## 6.2 Recommendations

---

The meaning of the main buttons most commonly present in all the configuration windows is provided in the table below.

	Click on this button to add a new window to fill in the fields used to add an object.
	Click on this button to return to the previous screen.
	Click on this button to close the active window and return to the main screen.
	Click on this button to display a new window to modify the fields that can be accessed for a previously selected object.
	Click on this button to display the next screen.
	Click on this button to remove a selected object from a list. <b>Note:</b> You must check the "Remove" box to delete this object.
	Click on this button to save the entry in the router's non-volatile (flash) memory. <b>Note:</b> This value will only be taken into account when you restart your router.
	Click on this button to save the entry in the router's non-volatile (flash) memory. <b>Note:</b> This value will be taken into account immediately without you having to restart your router.
	Click on this button to save the entry in the router's non-volatile (flash) memory then restart your computer.

## Basic principles

- 1) To make this guide easier to read and understand, it does not state that each time you enter information into a screen you must click on **Save** or **Save/Apply** or **Save/Reboot** (except, of course, if this is necessary).
- 2) When you select a section, the screen for the first menu in the section is displayed. In the same way, when you select a menu, the screen for the first sub-menu is displayed.
- 3) All the fields in the different screens are explained in a table.

## 6.3 ADSL connection status

Refer to § 6.5.1 - Status/Summary.

## 6.4 Display frame



This supervision box is displayed permanently at the top right of each HTTP configurer window.

The different objects it contains are explained below.

### LEDs

	<b>Green</b>	Synchronised ADSL line		
	<b>Yellow</b>	ADSL line synchronising		
	<b>Red</b>	ADSL line not connected		
	<b>Green</b>	<b>Connected</b>	Public address (WAN) distributed to the router.	
	<b>Yellow</b>	<b>Waiting for ISP</b>	ADSL line synchronising or public address (WAN) not distributed to the router	
	<b>Off</b>	<b>ADSL Down</b>	Public address (WAN) not distributed to the router, or ADSL line not synchronised.	
		<b>Not configured</b>	No VC (Virtual Channel) configured	
		<b>Router Rebooting</b>	Router restarted	
	<b>Red</b>	<b>Access denied</b>	Wrong Login and/or Password	

### Transmission rates

	Displays the nominal down line transmission rate
	Displays the nominal up line transmission rate

### Buttons

	Allows data displayed on the screen to be refreshed
	Allows your router to be started

## 6.5 Status

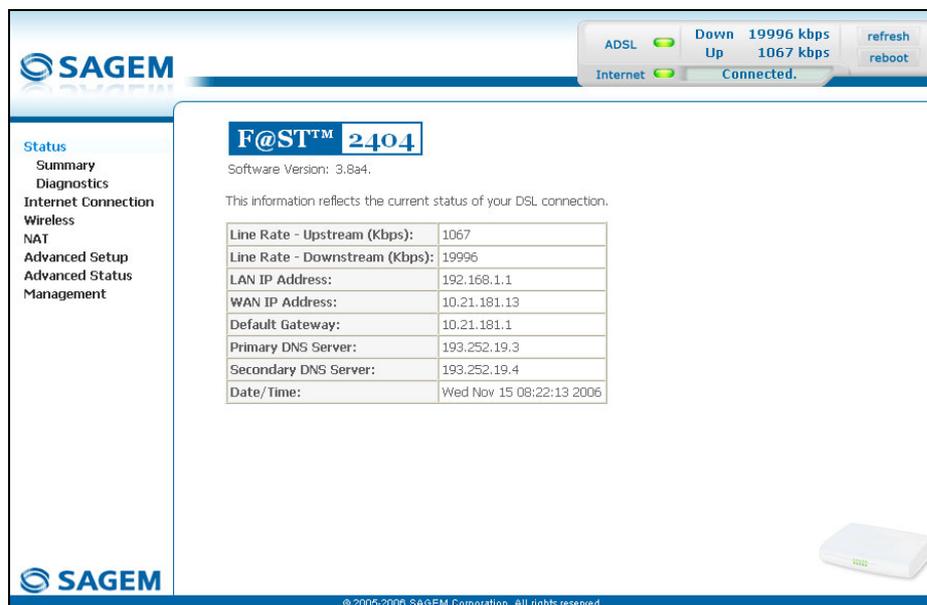
Clicking on this heading displays the following menus:

- Summary (cf. 6.5.1),
- Diagnostics (cf. 6.5.2).

### 6.5.1 Summary

**Object:** This menu lets you display the current status of your Internet connection.

- Select the **Summary** menu in the **Status** section; the following screen opens:



This screen also appears in the welcome screen (see § 6.1).

The following table provides the meaning of the different fields which are displayed.

Field	Meaning
<b>Software Version</b>	Software version currently installed.
<b>Line Rate - Upstream (kbps)</b>	Nominal up line rate
<b>Line Rate - Downstream (kbps)</b>	Nominal down line rate
<b>LAN IP Address</b>	Local network IP address (LAN)
<b>WAN IP Address</b>	Remote network IP address (WAN)
<b>Default Gateway</b>	Default gateway address
<b>Primary DNS Server</b>	Primary DNS server address
<b>Secondary DNS Server</b>	Secondary DNS server address
<b>Date / Time</b>	Date and Time (see Note)

**Note:** This field only appears if in the "**Management / Internet Time**" menu (see § 6.11.4), the "**Automatically synchronize with Internet time servers**" box is checked.

## 6.5.2 Diagnostics

**Object:** This menu is used to display all the tests performed on the connections made from your router to your Internet Service Provider (ISP). These tests concern:

- the connection to your local network (LAN),
- the connection to your "DSL Service Provider",
- Connection to your "Internet Service Provider".



A hypertext link (help) enables the user to access context-related help. This help gives an explanation concerning the state of the connection (**PASS** in green, **DOWN** in orange and **FAIL** in red) and supplies the appropriate troubleshooting procedures.

The ADSL line translates the three statuses detailed in the table below.

State	Colour	Meaning
<b>PASS</b>	<b>Green</b>	Indicates that the test was completed successfully.
<b>DOWN</b>	<b>Orange</b>	Indicates that an interface (ETH, USB or Wi-Fi) has not been detected. <b>Note:</b> The USB interface exclusively concerns SAGEM F@st™ 2400/2440 router.
<b>FAIL</b>	<b>Red</b>	Indicates that the test has failed, or that it is impossible to start a command.



If a test displays a "FAIL" state, click on "Help" and then the button "Rerun Diagnostic Tests" at the bottom of the "Help" page, to check that the test has been conclusive. If the test still displays "FAIL", you must follow the troubleshooting procedure displayed on this page.

## 6 - Information / Configuration

- Select the **Diagnostics** menu in the **Status** section; the following screen opens:

The screenshot shows the SAGEM web interface. At the top right, there are status indicators for ADSL (green light) and Internet (green light). The ADSL status shows 'Down 19996 kbps' and 'Up 1067 kbps'. The Internet status shows 'Connected.'. There are 'refresh' and 'reboot' buttons next to the ADSL status.

The main content area is titled 'pppoa\_8\_35\_1 Diagnostics'. It contains the following text: 'Your modem is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.'

The tests are organized into three sections:

- Test the connection to your local network**
  - Test your ENET(1-4) Connection: **PASS** [Help](#)
  - Test your USB Connection: **DOWN** [Help](#)
  - Test your Wireless Connection: **PASS** [Help](#)
- Test the connection to your DSL service provider**
  - Test ADSL Synchronization: **PASS** [Help](#)
  - Test ATM OAM F5 segment ping: **FAIL** [Help](#)
  - Test ATM OAM F5 end-to-end ping: **PASS** [Help](#)
- Test the connection to your Internet service provider**
  - Test PPP server session: **PASS** [Help](#)
  - Test authentication with ISP: **PASS** [Help](#)
  - Test the assigned IP address: **PASS** [Help](#)
  - Ping default gateway: **PASS** [Help](#)
  - Ping primary Domain Name Server: **PASS** [Help](#)

At the bottom of the test results, there are two buttons: 'Rerun Diagnostic Tests' and 'Test With OAM F4'. A small image of a SAGEM modem is visible in the bottom right corner of the page.

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## 6.6 Internet Connection

**Object:** This menu lets you enter your connection ID and your connection password.

- Select the **Internet Connection** heading to display the following connection configuration screen:

Field	Action	Default:
<b>PPP Username</b>	Enter your connection ID. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>
<b>PPP Password</b>	Enter your connection password. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>



If the message "**There is no ppp connection**" appears, this means that the remote network (WAN) parameters have not been filled in (cf. § - 6.9.1 - Advanced Setup / WAN).

## 6.7 Wireless

**Object:** This menu lets you configure all the basic and advanced parameters of a wireless network, and to activate this network.

This section contains the following five menus:

- Basic (cf. § 6.7.1),
- Security (cf. § 6.7.2),
- MAC Filter (cf. § 6.7.3),
- Advanced (cf. § 6.7.4),
- Quality of Service (cf. § 6.7.5).



The **Security**, **MAC Filter**, **Advanced** and **Quality of Service** menus are used to configure the advanced parameters in the **Wireless** section. These menus are only displayed if, in the **Basic** menu the **"Enable Advanced Wireless Configuration"** box is checked (not checked by default).

**These menus must only be used by experienced users.**

### 6.7.1 Basic

- Select the **Basic** menu in the **Wireless** section to display the following wireless network configuration screen:

The screenshot shows the Sagem web interface for wireless configuration. At the top, there are status indicators for ADSL (green) and Internet (green), along with download and upload speeds (19996 kbps and 1052 kbps respectively) and buttons for refresh and reboot. The main content area is titled 'Wireless -- Basic' and contains the following elements:

- A descriptive paragraph: "This page allows you to configure basic features of the wireless LAN interface. You can enable or disable the wireless LAN interface, hide the network from active scans, set the wireless network name (also known as SSID) and restrict the channel set based on country requirements. Click 'Apply' to configure the basic wireless options."
- Checkboxes:  Enable Wireless,  Hide Access Point.
- Fields: SSID: Sagem, Country: FRANCE (dropdown), BSSID: 00:19:4B:04:6C:4A, Channel: Auto (dropdown).
- Section: Quick -- Wireless -- Security -- Configuration.
- Field: Network Authentication: NO (dropdown).
- Checkboxes:  Enable Advanced Wireless Configuration,  Enable Guest SSID.
- Field: Guest SSID: Guest.
- Button: Save/Apply.

A small image of a white wireless router is visible in the bottom right corner of the configuration area. The footer of the page includes the Sagem logo and the copyright notice: © 2005-2006 SAGEM Corporation. All rights reserved.

## 6.7.1.1 Wireless - Basic

Field	Action/Meaning	Default:
<b>Enable Wireless</b>	Check the appropriate box to activate the wireless network (Wi-Fi). <b>Note:</b> The "Wi-Fi" LED which lights up steady on the front of the router shows that the wireless network (Wi-Fi) is activated.	<b>Box checked</b>
<b>Hide Access Point</b>	Check the appropriate box to mask the broadcast of the SSID and prevent any Wi-Fi connection on your router. <b>Note:</b> When this box is checked, the router's SSID is absent from the Wi-Fi adaptor user's own list of monitored sites (Access Point).	<b>Box not checked</b>
<b>SSID</b>	Enter your router's SSID. <b>Note:</b> This indicated on the label stuck to the box.	<b>Sagem</b>
<b>Country</b>	Select the country of your choice from the scroll down list.	<b>FRANCE</b>
<b>BSSID</b>	This is the MAC address of the router's Wi-Fi interface (Access Point). In the "Structure" mode, this address identifies a cell (BSS in English <b>B</b> asic <b>S</b> ervice <b>S</b> et). This cell is a set formed by the access point and the stations located in its coverage area. <b>Non modifiable</b>	–
<b>Channel</b>	This is the radio channel used by the router and its Wi-Fi clients to communicate with each other. This channel must be the same for the router and all its Wi-Fi clients. Select the <b>channel</b> you want from the scroll down list (auto, channels 1 to 13). <b>Note:</b> Channel 11 corresponds to frequency 2462 MHz. <b>Note:</b> If you select "Auto", the Wi-Fi equipment will select the access point channel (router) which will emit the strongest signal. You will find an identical "Channel" field in the "Advanced" menu of this same section. Any modifications are carried over from one field to another. Conform to the CE Declaration of conformity / Radio rules list in appendix B to paragraph B.2.	<b>Auto</b>

**6.7.1.2 Quick Wireless - Security - Configuration**

Field	Action/Meaning	Default:
<b>Network Authentication</b>	From the scroll down list, select the security adapted to your router's wireless network. The list suggests the following choices: <ul style="list-style-type: none"> <li>• <b>NO</b> : There is no protection for the wireless network,</li> <li>• <b>WEP</b> : Activation of WEP (<b>W</b>ired <b>E</b>quivalent <b>P</b>rivacy) encryption</li> <li>• <b>WPA-PSK</b> : Activation of the WPA (<b>W</b>ireless <b>P</b>rotected <b>A</b>ccess)</li> <li>• <b>WPA2-PSK</b> : Activation of the WPA2 (<b>W</b>ireless <b>P</b>rotected <b>A</b>ccess)</li> <li>• <b>Other</b> (see § 6.7.2.1).</li> </ul>	<b>NO</b>

**Note:** The router may or may not be secured, at the request of the customer. This level of security is indicated on the label pasted to the box.

This choice will modify the Wireless configuration screen.

**WEP**

- Select the "WEP" encryption mode from the scroll down list; the following screen appears:

The screenshot shows the SAGEM router's web interface. At the top, there are status indicators for ADSL and Internet, showing a download speed of 19996 kbps and an upload speed of 1052 kbps. The main content area is titled 'Wireless -- Security -- Configuration'. Under 'Network Authentication', 'WEP' is selected. Under 'Encryption Strength', '128-bit' is selected. There is a 'Generate Keys' button next to the 'Key Phrase' field. Below this, there are four fields for 'Network Key 1' through 'Network Key 4', with '1' selected in the first dropdown. At the bottom, there are checkboxes for 'Enable Advanced Wireless Configuration' (checked) and 'Enable Guest SSID' (unchecked), and a 'Guest SSID' field containing 'Guest'. A 'Save/Apply' button is at the bottom right.

Field	Action/Meaning	Default:
<b>Encryption Strength</b>	Select <b>64-bit</b> or <b>128-bit</b> for an encryption at 64 bits or 128 bits respectively.	<b>128-bit</b>
<b>Key phrase</b>	Enter a phrase that consists of up to 15 alphanumeric characters then click the <b>Generate Keys</b> button.	<b>Empty</b>
<b>Current network key</b>	Select a key from the four suggested. The emission key is used to encrypt the data sent by your computer.	<b>1</b>
<b>Network key x (1 to 4)</b>	The WEP key is customised for your router. You may modify the keys by entering them directly into the boxes. The characters are "0" to "9" and "A" to "F".	<b>Empty</b>



Store the key phrase and the keys in a safe location.

Do not write them in a file on your computer.

## 6 - Information / Configuration

You may automatically generate encryption keys or manually enter the keys.



The "Key phrase" can consist of up to 15 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 the WEP key protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network (LAN) or over Internet (WAN) using Internet Explorer 5.0 or above.

### **WPA-PSK**

See § 6.7.2.1 - WPA-PSK

### **WPA2-PSK**

See § 6.7.2.1 - WPA2-PSK

### **Other**

See § 6.7.2.1.

## **Advanced Wireless**

Field	Meaning	Default
<b>Enable advanced Wireless Configuration</b>	<b>Check the appropriate box to be able to display the Security, MAC Filter, Advanced and Quality of Service menus in the "Wireless" section.</b> <b>Note:</b> If you check this box, the "Enable Guest SSID" and "Guest SSID" fields appear.	<b>Box not checked</b>
<b>Enable Guest SSID</b>	Check the appropriate box to activate the "Guest SSID".	<b>Box not checked</b>
<b>Guest SSID</b>	Enter a name for the "Guest SSID".	<b>Guest</b>

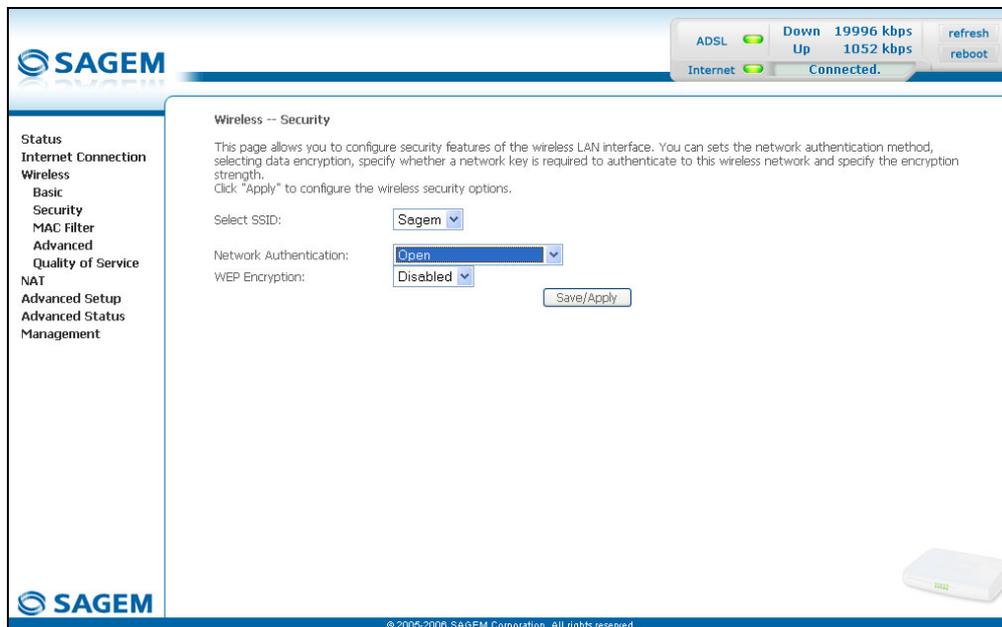
## 6.7.2 Security

**Object:** The purpose of this menu is to secure your wireless network (Wi-Fi). All types of ingenious solutions have been deployed to combat attacks from hackers. Encryption modes have been implemented to secure your wireless network. Among these, two are commonly used:

- WEP (**W**ired **E**quivalent **P**rotocol),
- WPA (**W**i-Fi **P**rotected **A**ccess) and its derivatives (WPA-PSK, WPA2 etc.).

The WPA encryption mode is the most robust and the best adapted to correctly securing your wireless network.

- Select the **Security** menu in the **Wireless** section to display the following screen:



**SAGEM**

ADSL  Down 19996 kbps Up 1052 kbps refresh  
Internet  Connected. reboot

**Wireless -- Security**

This page allows you to configure security features of the wireless LAN interface. You can sets the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength.  
Click "Apply" to configure the wireless security options.

Select SSID:

Network Authentication:

WEP Encryption:

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Field	Meaning	Default
<b>Select SSID</b>	Select the "SSID" of your choice from the scroll down list (sagem or Guest).	<b>sagem</b>
<b>Network Authentication</b>	<p>From the scroll down list, select the security adapted to your router's wireless network. The list suggests the following choices:</p> <ul style="list-style-type: none"> <li>• <b>Open</b> : There is no protection for the wireless network (Open System).</li> <li>• <b>Shared</b> :</li> <li>• <b>802.1x</b> : Activation of the 802.1x standard,</li> <li>• <b>WPA</b> : Activation of <b>WPA (Wireless Protected Access)</b>,</li> <li>• <b>WPA-PSK</b> : Activation of <b>WPA-PSK</b>,</li> <li>• <b>WPA2</b> : Activation of <b>WPA2</b>,</li> <li>• <b>WPA2-PSK</b> : Activation of <b>WPA2-PSK</b>,</li> <li>• <b>Mixed WPA2/WPA</b> : Activation of <b>Mixed WPA2/WPA</b>,</li> <li>• <b>Mixed WPA2/WPA-PSK</b> : Activation of <b>Mixed WPA2/WPA-PSK</b>,</li> </ul> <p>This choice will modify the Wireless configuration screen.</p>	<b>Open</b>
<b>WEP Encryption</b>	<p>Select from the scroll down list:</p> <ul style="list-style-type: none"> <li>• <b>Disabled</b> to not use WEP encryption.</li> <li>• <b>Enabled</b> to use WE encryption (see § 6.7.1.2 - WEP).</li> </ul>	<b>Disabled</b>

### 6.7.2.1 Network Authentication



The scroll down list in the "Network Authentication" field shows 9 possible authentication types:

- Open,
- Shared,
- 802.1x,
- WPA,
- WPA-PSK,
- WPA2,
- WPA2-PSK,
- Mixed WPA2/WPA,
- Mixed WPA2/WPA-PSK.

A different screen appears for each authentication type.

#### Open

**Object:** The "Open System" authentication enables all users of the Wi-Fi network to authenticate themselves with the router. No restrictions concerning security are demanded.

In this authentication mode, only the WEP key may be used to encrypt data.

The screenshot displays the Sagem router's web interface for configuring wireless security. At the top right, there are status indicators for ADSL (On) and Internet (Connected), along with download and upload speeds (19996 kbps and 1052 kbps respectively) and buttons for refresh and reboot. The main content area is titled "Wireless -- Security" and contains the following elements:

- Select SSID:** A dropdown menu showing "Sagem".
- Network Authentication:** A dropdown menu with "Open" selected. The menu options are: Open, Shared, 802.1X, WPA, WPA-PSK, WPA2, WPA2-PSK, Mixed WPA2/WPA, and Mixed WPA2/WPA-PSK.
- WEP Encryption:** A field for entering a WEP key.
- Buttons:** "Save/Apply" and "Apply" buttons.

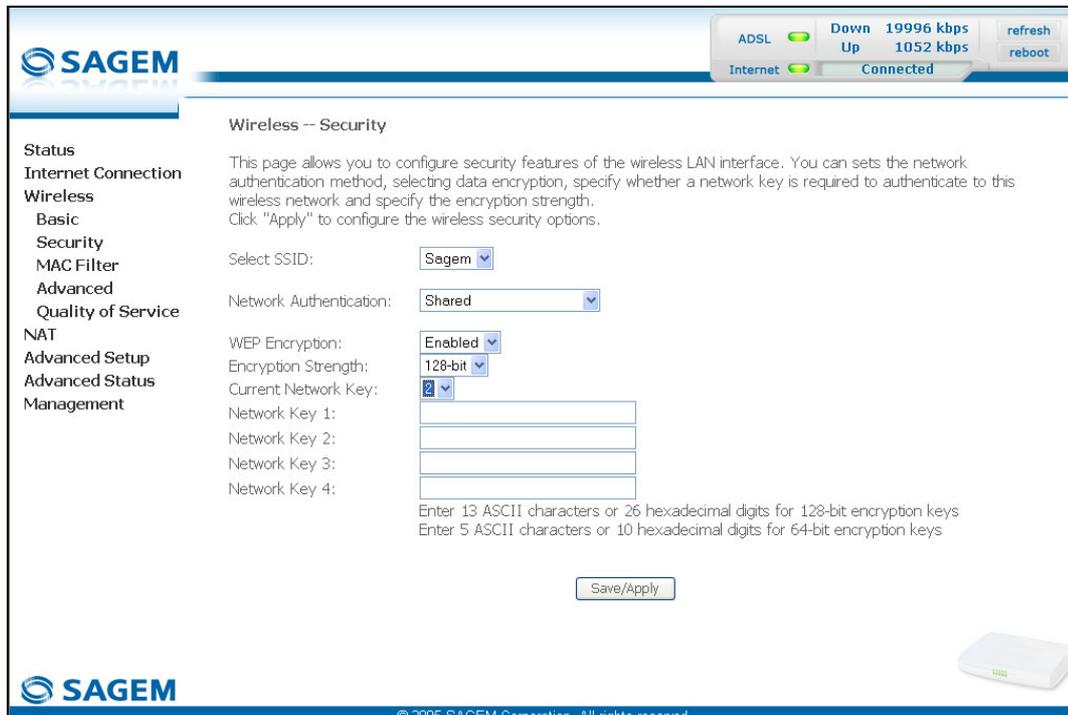
The left sidebar contains navigation links: Status, Internet Connection, Wireless (Basic, Security, MAC Filter, Advanced, Quality of Service), NAT, Advanced Setup, Advanced Status, and Management. The Sagem logo is visible in the bottom left corner, and a small image of the router is in the bottom right corner. The footer contains the copyright notice: © 2004-2006 SAGEM Corporation. All rights reserved.

**Shared**

**Object:** This level of security enables users of the Wi-Fi network to be authenticated using their SSID or their WEP key.

In this authentication mode, the WEP key is used to encrypt data.

- Select the "Shared" security from the scroll down list; the following screen appears:



Field	Action	Default
<b>WEP Encryption</b>	<b>Note:</b> This field is always active (Enabled).	<b>Enabled (non modifiable)</b>
<b>Encryption Strength</b>	See § 6.7.1.2 - WEP.	<b>128-bit</b>
<b>Key Phrase</b>	See § 6.7.1.2 - WEP.	<b>Empty</b>
<b>Current Network Key</b>	See § 6.7.1.2 - WEP.	<b>2</b>
<b>Network Key x (1 to 4)</b>	See § 6.7.1.2 - WEP.	<b>Empty</b>

## 802.1x

**Object:** The "802.1x" standard is based on the EAP protocol (Extensible Authentication Protocol). This enables users of the Wi-Fi network to be authenticated using a "RADIUS" authentication server (Remote Authentication Dial-in User Service).

In this case, the WEP key is used exclusively for data encryption.

- Select the security according to the "802.1x" protocol from the scroll down list; the following screen appears:

Field	Action	Default
<b>RADIUS Server IP Address</b>	Enter the IP address of the "RADIUS" authentication server.	<b>0.0.0.0</b>
<b>RADIUS Port</b>	Enter the port used for the "RADIUS" authentication server.	<b>1812</b>
<b>RADIUS Key</b>	Enter the secret key shared between the authentication server and its clients	–
<b>WEP Encryption</b>	<b>Note:</b> This field is always active (Enabled).	<b>Enabled</b>
<b>Encryption Strength</b>	See § 6.7.1.2 - WEP.	<b>128-bit</b>
<b>Key Phrase</b>	See § 6.7.1.2 - WEP.	<b>Empty</b>
<b>Current Network Key</b>	Select key 2 or 3 (see § 6.7.1.2 - WEP).	<b>2</b>

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Field	Action		Default
<b>Network Key x (1 to 4)</b>	<b>1</b>	This field is empty or displays the key value entered earlier (greyed out)	<b>Non modifiable</b>
	<b>2</b>	Enter the encryption on the key you selected in the "Current Key" (see § 6.7.1.2- WEP).	
	<b>3</b>	Enter the encryption on the key you selected in the "Current Key" (see § 6.7.1.2- WEP).	
	<b>4</b>	This field is empty or displays the key value entered earlier (greyed out)	<b>Non modifiable</b>

## WPA

**Object:** This encryption mode applies the functionalities of the WPA protocol and requires the use of a "RADIUS" authentication server.

- Select the "WPA" security from the scroll down list; the following screen appears:

Field	Action	Default
<b>WPA Group Rekey Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	<b>0</b>
<b>RADIUS Server IP Address</b>	Enter the IP address of the "RADIUS" authentication server.	<b>0.0.0.0</b>
<b>RADIUS Port</b>	Enter the port used by the "RADIUS" authentication server.	<b>1812</b>
<b>RADIUS Key</b>	Enter the secret key shared between the authentication server and its clients	<b>-</b>
<b>WPA encryption</b>	Select the WPA encryption required from the scroll down list: <ul style="list-style-type: none"> <li>TKIP (Temporal Key Integration Protocol),</li> <li>AES (Advanced Encryption Standard),</li> <li>TKIP+ AES.</li> </ul>	<b>TKIP</b>

## 6 - Information / Configuration

Field	Action	Default
WEP encryption	Select from the scroll down list: <ul style="list-style-type: none"><li>• <b>Disabled</b> to use WPA encryption only.</li><li>• <b>Enabled</b> to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).</li></ul>	<b>Disabled</b>

## WPA-PSK

**Object:** This encryption mode applies the functionalities of the WPA protocol with a pre-shared key, but does not require an authentication server. The key is regenerated after a period which can be configured (**WPA Group Rekey Interval**).

- Select the "WPA-PSK" security from the scroll down list; the following screen appears:

Field	Action	Default
<b>WPA Pre-Shared Key</b>	Enter the secret shared key. This may contain 8 to 63 ASCII characters or 64 hexadecimal symbols (256 bits).  Click on the "Save/Apply" button to validate the entry.  <b>Note:</b> You may display your secret phrase by clicking on " <a href="#">Click here to display</a> ".	<b>Empty</b>
<b>WPA Group Rekey Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	<b>0</b>
<b>WPA encryption</b>	Select the WPA encryption required from the scroll down list: <ul style="list-style-type: none"> <li>TKIP,</li> <li>AES,</li> <li>TKIP+ AES.</li> </ul>	<b>TKIP</b>

## 6 - Information / Configuration

Field	Action	Default
WEP encryption	Select from the scroll down list: <ul style="list-style-type: none"><li>• <b>Disabled</b> to use WPA encryption only.</li><li>• <b>Enabled</b> to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).</li></ul>	<b>Disabled</b>

## WPA2

**Object:** This encryption mode applies the functionalities of the WPA2 protocol and requires the use of a "RADIUS" authentication server.

- Select the "WPA2" security from the scroll down list; the following screen appears:

**SAGEM**

ADSL  Down 19996 kbps Up 1052 kbps refresh reboot  
Internet  Connected.

**Wireless -- Security**

This page allows you to configure security features of the wireless LAN interface. You can set the network authentication method, selecting data encryption, specify whether a network key is required to authenticate to this wireless network and specify the encryption strength. Click "Apply" to configure the wireless security options.

Select SSID:

Network Authentication:

WPA2 Preauthentication:

Network Re-auth Interval:

WPA Group Rekey Interval:

RADIUS Server IP Address:

RADIUS Port:

RADIUS Key:

WPA Encryption:

WEP Encryption:

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## 6 - Information / Configuration

Field	Action	Default
<b>WPA2 Preauthentication-</b>	Select from the scroll down list: <ul style="list-style-type: none"> <li>• <b>Disabled</b> to deactivate the WPA2 pre-authentication,</li> <li>• <b>Enabled</b> to activate the WPA2 pre-authentication,</li> </ul>	<b>Disabled</b>
<b>Network Re-auth Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be certified.	<b>36000</b>
<b>WPA Group Rekey Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	<b>0</b>
<b>RADIUS Server IP Address</b>	Enter the IP address of the "RADIUS" authentication server.	<b>0.0.0.0</b>
<b>RADIUS Port</b>	Enter the port used by the "RADIUS" authentication server.	<b>1812</b>
<b>RADIUS Key</b>	Enter the secret key shared between the authentication server and its clients.	<b>-</b>
<b>WPA encryption</b>	Select the WPA encryption required from the scroll down list: <ul style="list-style-type: none"> <li>• TKIP,</li> <li>• AES,</li> <li>• TKIP+ AES.</li> </ul>	<b>AES</b>
<b>WEP encryption</b>	Select from the scroll down list: <ul style="list-style-type: none"> <li>• <b>Disabled</b> to use WPA encryption only.</li> <li>• <b>Enabled</b> to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).</li> </ul>	<b>Disabled</b>

## WPA2-PSK

**Object:** This encryption mode uses the WPA2 protocol with a pre-shared key, but does not require an authentication server. The key is regenerated after a period which can be configured (**WPA Group Rekey Interval**).

- Select the "WPA2-PSK" security from the scroll down list; the following screen appears:

Field	Action	Default
<b>WPA Pre-Shared Key</b>	Enter a secret phrase. This may contain 8 to 63 ASCII characters or 64 hexadecimal symbols (256 bits).  Click on the "Save/Apply" button to validate the entry.  <b>Note:</b> You may display your secret phrase by clicking on " <a href="#">Click here to display</a> ".	<b>Empty</b>
<b>WPA Group Rekey Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	<b>0</b>
<b>WPA encryption</b>	Select the WPA encryption required from the scroll down list: <ul style="list-style-type: none"> <li>• TKIP,</li> <li>• AES,</li> <li>• TKIP+ AES.</li> </ul>	<b>AES</b>

## 6 - Information / Configuration

Field	Action	Default
WEP encryption	Select from the scroll down list: <ul style="list-style-type: none"><li>• <b>Disabled</b> to use WPA encryption only.</li><li>• <b>Enabled</b> to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).</li></ul>	<b>Disabled</b>

## Mixed WPA2/WPA

**Object:** This encryption mode applies the functionalities of the WPA2 and WPA protocols. It needs a "RADIUS" authentication server.

- Select the "Mixed WPA2/WPA" security from the scroll down list; the following screen appears:

Field	Action	Default
<b>WPA2 Preauthentication-</b>	Select from the scroll down list: <ul style="list-style-type: none"> <li>• <b>Disabled</b> to deactivate the WPA2 pre-certification,</li> <li>• <b>Enabled</b> to activate the WPA2 pre-certification,</li> </ul>	<b>Disabled</b>
<b>Network Re-auth Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be certified.	<b>36000</b>
<b>WPA Group Rekey Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	<b>0</b>
<b>RADIUS Server IP Address</b>	Enter the IP address of the "RADIUS" authentication server.	<b>0.0.0.0</b>
<b>RADIUS Port</b>	Enter the port used by the "RADIUS" authentication server.	<b>1812</b>
<b>RADIUS Key</b>	Enter the secret key shared between the authentication server and its clients	<b>-</b>

## 6 - Information / Configuration

Field	Action	Default
<b>WPA encryption</b>	Select the WPA encryption required from the scroll down list: <ul style="list-style-type: none"><li>• TKIP,</li><li>• AES,</li><li>• TKIP+ AES.</li></ul>	<b>TKIP+AES</b>
<b>WEP Encryption</b>	Select from the scroll down list: <ul style="list-style-type: none"><li>• <b>Disabled</b> to not use WEP encryption.</li><li>• <b>Enabled</b> to use WE encryption (see § 6.7.1.2 - WEP).</li></ul>	<b>Disabled</b>

## Mixed WPA2/WPA-PSK

**Object:** This encryption mode applies the functionalities of the WPA2-PSK and WPA-PSK protocols. It does not need a "RADIUS" authentication server.

- Select the "Mixed WPA2 /WPA-PSK" security from the scroll down list; the following screen appears:

Field	Action	Default
<b>WPA Pre-Shared Key</b>	<p>Enter a secret phrase. This may contain 8 to 63 ASCII characters or 64 hexadecimal symbols (256 bits).</p> <p>Click on the "Save/Apply" button to validate the entry.</p> <p><b>Note:</b> You may display your secret phrase by clicking on "<a href="#">Click here to display</a>".</p>	<b>Empty</b>

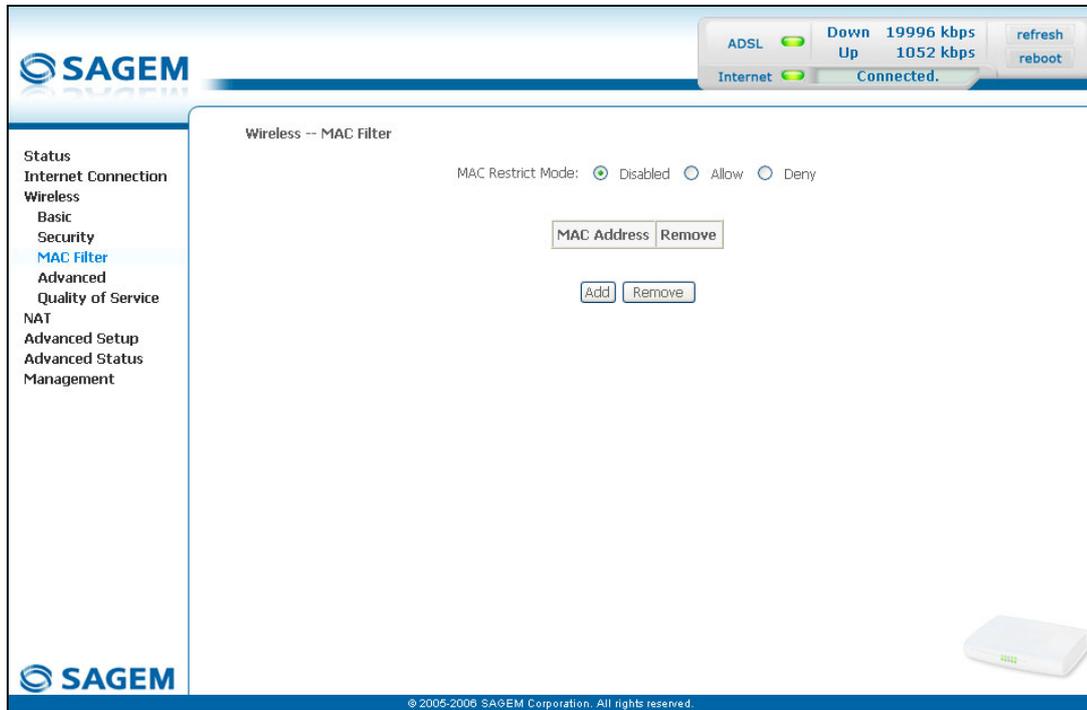
## 6 - Information / Configuration

Field	Action	Default
<b>WPA Group Rekey Interval</b>	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	<b>0</b>
<b>WPA encryption</b>	Select the WPA encryption required from the scroll down list: <ul style="list-style-type: none"><li>• TKIP,</li><li>• AES,</li><li>• TKIP+ AES.</li></ul>	<b>TKIP+ AES</b>
<b>WEP Encryption</b>	Select from the scroll down list: <ul style="list-style-type: none"><li>• <b>Disabled</b> to not use WEP encryption.</li><li>• <b>Enabled</b> to use WE encryption (see § 6.7.1.2 - WEP).</li></ul>	<b>Disabled</b>

### 6.7.3 MAC Filter

**Object:** The "MAC Filter" function is used to limit the number of computers which can access your wireless network.

- Select the **MAC Filter** menu in the **Wireless** section to display the following screen:



Field	Meaning	Default
<b>MAC Restrict Mode</b>	Select the command by checking the appropriate box:  <b>Disabled</b> : Deactivates the MAC filtering,  <b>Allow</b> : Enables computers whose MAC address is in the list to use your wireless network,  <b>Denied</b> : Refuses computers whose MAC address is in the list to use your wireless network.	<b>Disabled</b>

## Add

- Click on the **Add** button to add a MAC address to be filtered (address of a computer authorised to connect to a wireless network).



## 6.7.4 Advanced

**Object:** This menu is used to configure the essential parameters of your wireless network (WLAN) 802.11 and configure certain security parameters.

- Select the **Advanced** menu in the **Wireless** section to display the following screen:

**SAGEM** ADSL  Down 19996 kbps Up 1064 kbps refresh reboot  
Internet  Connected

### Wireless – Advanced

This page allows you to configure advanced features of the wireless LAN interface. You can select a particular channel on which to operate, force the transmission rate to a particular speed, set the fragmentation threshold, set the RTS threshold, set the wakeup interval for clients in power-save mode, set the beacon interval for the access point, set XPress mode and set whether short or long preambles are used. Click "Apply" to configure the advanced wireless options.

AP Isolation:	<input type="text" value="Off"/>	
Band:	<input type="text" value="2.4GHz - 802.11g"/>	
Channel:	<input type="text" value="11"/>	Current: 11
Rate:	<input type="text" value="Auto"/>	
Multicast Rate:	<input type="text" value="Auto"/>	
Basic Rate:	<input type="text" value="Default"/>	
Fragmentation Threshold:	<input type="text" value="2346"/>	
RTS Threshold:	<input type="text" value="2347"/>	
DTIM Interval:	<input type="text" value="1"/>	
Beacon Interval:	<input type="text" value="100"/>	
XPress™ Technology:	<input type="text" value="Disabled"/>	
54g™ Mode:	<input type="text" value="54g Auto"/>	
54g Protection:	<input type="text" value="Auto"/>	
Regulatory Mode:	<input type="text" value="Disabled"/>	
Pre-Network Radar Check:	<input type="text" value="60"/>	
In-Network Radar Check:	<input type="text" value="60"/>	
TPC Mitigation(db):	<input type="text" value="0(off)"/>	
Afterburner Technology:	<input type="text" value="Disabled"/>	
Transmit Power:	<input type="text" value="100%"/>	

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The table below indicates in more detail how to access your Wi-Fi port (or Access Point).

**Nevertheless, it is best to leave the default values for easier usage.**

Field	Meaning	Default
<b>AP Isolation</b>	Select from the scroll down list: <b>Off</b> : to not isolate the Access Point i.e. authorise machines connected to the router to communicate with each other. <b>On</b> : to isolate the Access point, i.e. prohibit machines connected to the router to communicate with each other.	<b>Off</b>
<b>Band</b>	Select the 2.4 GHz band for the IEEE 802.11g standard.	<b>2.4GHz-802.11g</b>
<b>Channel</b>	See Wireless/Basic § 6.7.1.1.	<b>11</b>
<b>Rate</b>	In the scroll down list, select the transmission rate at which the information (data or video) will be transmitted or received on your wireless network (Auto, 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 or 54 Mbps). <b>Note:</b> If you select "Auto", the information will be transmitted at an optimised rate which takes account of the transmission constraints.	<b>Auto</b>
<b>Multicast Rate</b>	From scroll down list, select the transmission rate at which the "Multicast" packets are transmitted (Auto, 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 or 54 Mbps). <b>Note:</b> If you select "Auto", the information will be transmitted at an optimised rate which takes account of the transmission constraints.  Video conferencing and teleconferencing are "Multicast" applications.	<b>Auto</b>
<b>Basic Rate</b>	From the scroll down list, select the basic rate at which the information will be transmitted or received over your wireless network (Default, All, 1 & 2 Mbps or 1 & 2 & 5.5 & 6 & 11 & 12 & 24 Mbps).	<b>Default</b>
<b>Fragmentation Threshold</b>	This packet fragmentation mechanism is used to limit errors and repetitions.  It is recommended not to reduce the packet size too much to avoid reducing the bandwidth.  Enter a threshold value, expressed in bytes, between 256 and 2347.	<b>2346</b>

Field	Meaning	Default
<b>RTS Threshold</b>	The RTS/CTS protocol ( <b>R</b> quest <b>T</b> o <b>S</b> end / <b>C</b> lear <b>T</b> o <b>S</b> end) is used to reduce the probability of collisions between stations.  <b>Note:</b> As packet size is set by default to 2346, the RTS/CTS protocol is inhibited as its value is set by default to 2347.  Enter a threshold value, expressed in bytes, between 1 and 2347.	<b>2347</b>
<b>DTIM Interval</b>	The DTIM counting area ( <b>D</b> elivery <b>T</b> raffic <b>I</b> ndication <b>M</b> essage) enables Wi-Fi clients to listen to broadcast and multicast messages saved in your router's "Buffer" memory.  Enter an interval value, expressed in seconds, between 1 and 255.	<b>1</b>
<b>Beacon Interval</b>	Enter a time interval value between two beacon signals which shows the activity of the wireless network.  This interval value, expressed in ms (milliseconds) is between 1 and 1000.	<b>100</b>
<b>XPress™ Technology</b>	From the scroll down list, select <b>Enabled</b> to apply the "XPress™" technology or <b>Disabled</b> to not apply it.	<b>Disabled</b>
<b>54g™ Mode</b>	In the scroll down list, select (54g Auto, 54g Performance, 54g LRS or 802.11b Only)	<b>54g Auto</b>
<b>54g Protection</b>	Select <b>Auto</b> to improve the quality in the mixed 802.11 environments (g and b for example) or <b>Off</b> to improve the quality only on the 802.11g environments but degrade it on other environments (802.11b for example).	<b>Auto</b>
<b>Regulatory Mode</b>	In the scroll down list, select the particular IEEE802.11 standard to which you want your network to conform (Disabled, 802.11h or 802.11d).  <b>802.11h</b> Conformity with European regulations in terms of frequency and energy saving.  <b>802.11d</b> Internationalisation.	<b>Disabled</b>

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Field	Meaning	Default
<b>Pre-Network Radar Check</b> <sup>1</sup>	If 802.11 h is selected enter here the duration of the radar detection sweep when the AP (Access Point) starts up.	<b>60</b>
<b>In-Network Radar Check</b> <sup>1</sup>	If 802.11 h is selected, enter here the duration of the radar detection sweep during transmission.	<b>60</b>
<b>TPC Mitigation (db)</b> <sup>1</sup>	If 802.11 h is selected, select in the scroll down list an attenuation value (0(Off), 2, 3 or 4), expressed in dB, of the TPC (Transmit Power Control).	<b>0(Off)</b>
<b>Afterburner Technology</b>	From the scroll down list, select <b>Enabled</b> to apply the "Afterburner" technology or <b>Disabled</b> to not apply it.  This technology tends to increase the transmission return.  <b>Note:</b> This field may be greyed out (non modifiable) if you select <b>Enabled</b> in the "WMM (Wifi MultiMedia)" field in the Wireless/Quality of Service menu.	<b>Disabled</b>
<b>Preamble Type</b>	<b>Note:</b> This field only appears if you selected "802.11b only" (only the wireless network with a maximum theoretical transmission rate of 11 Mbps) in the <b>54g™ Mode</b> field.  In the IEEE 802.11 standard, the "preamble" is used to synchronise the Emitter and Receiver correctly. The "long preamble" is generally commonly used. For reasons of bandwidth gain, this standard proposes reducing the length of the "preamble".  In the scroll down list, select <b>long</b> to keep a 128 bit "preamble" or <b>short</b> to reduce it to 56 bits.	<b>long</b>
<b>Transmit Power</b>	If 802.11 h is selected, in the scroll down list select the cyclical emission ratio (20%, 40 %, 60 %, 80 % or 100 %) at which you want to transmit.  <b>Note:</b> The power rate will be selected according to your environment.	<b>100%</b>

<sup>1</sup> This field is active if the "802.11h" option was selected in the "Regulatory Mode" field.

## 6.7.5 Quality of Service

**Object:** The Wi-Fi quality of service for your router conforms to the WMM (**Wifi MultiMedia**) specification. This standard improves the performances of Wi-Fi links by acting on the data flows (packet size, bit rates, etc.) and the length of queues while respecting bandwidth requirements (managed by the router).

- Select the **Quality of Service** menu in the **Wireless** section to display the following screen:

The screenshot displays the SAGEM router's configuration interface. At the top, there are status indicators for ADSL (green light) and Internet (green light), along with download and upload speeds (19996 kbps down, 1064 kbps up) and buttons for 'refresh' and 'reboot'. The main navigation menu on the left includes: Status, Internet Connection, Wireless (selected), Basic, Security, MAC Filter, Advanced, Quality of Service (highlighted), NAT, Advanced Setup, Advanced Status, and Management. The 'WMM(Wi-Fi Multimedia) Settings' section shows two dropdown menus: 'WMM(Wi-Fi Multimedia):' set to 'Disabled' and 'WMM No Acknowledgement:' set to 'Disabled'. A 'Save/Apply WME Settings' button is located below these settings. The SAGEM logo and copyright notice '© 2005 SAGEM Corporation. All rights reserved.' are visible at the bottom.

Field	Meaning	Default
<b>WMM (Wi-Fi Multimedia)</b>	In the scroll down list, select the activation ( <b>Enabled</b> ) or deactivation ( <b>Disabled</b> ) of the WMM support.	<b>Disabled</b>
<b>WMM No Acknowledgement</b>	<p><b>Note:</b> The scroll down list may only be operational if the "WMM (Wi-Fi Multimedia)" field is activated.</p> <p>In the scroll down list, select <b>Enabled</b> or <b>Disabled</b> to permit or prohibit a more effective bit rate of the data flow with, on the other hand, a higher error rate.</p>	<b>Greyed out</b>

The following screen appears as soon as you activate "WMM".

The screenshot shows the SAGEM router's configuration interface. At the top right, there are status indicators for ADSL (Down 19996 kbps, Up 1079 kbps) and Internet (Connected), along with 'refresh' and 'reboot' buttons. The left sidebar contains a navigation menu with options: Status, Internet Connection, Wireless (Basic, Security, MAC Filter, Advanced, Quality of Service), NAT, Advanced Setup, Advanced Status, and Management. The main content area is titled 'WMM(Wi-Fi Multimedia) Settings'. It shows 'WMM(Wi-Fi Multimedia):' set to 'Enabled' and 'WMM No Acknowledgement:' set to 'Disabled'. Below this is the 'Wireless QoS Classes' section, which includes a table for 'TRAFFIC CLASSIFICATION RULES' and buttons for 'Add QoS Entry' and 'Save/Apply WME Settings'. The table has columns for Class Name, Priority, Protocol, Source Addr./Mask, Source Port, Dest. Addr./Mask, and Dest. Port. A small image of the router is visible in the bottom right corner of the page.

**Add**

- Click on the **Add QoS Entry** button to add a Wi-Fi Quality of Service (wifi QoS) rule; the following screen appears.

The screenshot shows the 'Add/Edit Wireless Quality of Service Rule' configuration page. It features the same top status bar and left sidebar as the previous screen. The main content area explains that a rule consists of a class name and at least one condition. It includes a text input field for 'Traffic Class Name:'. Below that is the 'Assign Wireless Priority' section with a dropdown menu for 'Wireless Transmit Priority:' set to '0 - WMM Best Effort (default)'. The 'Specify Traffic Classification Rules' section contains several input fields: 'Protocol:' (dropdown), 'Source IP Address:', 'Source Subnet Mask:', 'UDP/TCP Source Port (port or port:port):', 'Destination IP Address:', 'Destination Subnet Mask:', and 'UDP/TCP Destination Port (port or port:port):'. A 'Save/Apply' button is located at the bottom center. A small image of the router is visible in the bottom right corner of the page.

Field	Action	Default
<b>Traffic Class Name</b>	Enter a name for the traffic class you want to create.	<b>Empty</b>
<b>Wireless Transmit Priority</b>	In the scroll down list, select the priority you want to allocate to the traffic class you selected (see table below).	<b>0 - WMM Best Effort (default)</b>
<b>Protocol</b>	Select the appropriate protocol from the scroll down list (TCP/UDP, TCP, UDP, ICMP).	<b>Empty</b>
<b>Source IP Address</b>	Enter a Source IP address (LAN).	<b>Empty</b>
<b>Source Subnet Mask</b>	Enter a sub-net mask associated with the "Source" IP address.	<b>Empty</b>
<b>UDP/TCP Source Port (port or port:port)</b>	Enter a "Source" port or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.	<b>Empty</b>
<b>Destination IP Address</b>	Enter a "Destination" IP address (WAN).	<b>Empty</b>
<b>Destination Subnet Mask</b>	Enter a sub-net mask associated with the "Destination" IP address.	<b>Empty</b>
<b>UDP/TCP Destination Port (port or port:port)</b>	Enter a "Destination" port or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.	<b>Empty</b>

Transmission priority	Meaning
<b>0 - WMM Best Effort (default)</b>	This is the lowest priority. This provides no guarantee of data transmission.
<b>1 - WMM Background</b>	These are intermediate priorities. These provide routing without too much data flow loss.
<b>2 - WMM Background</b>	
<b>3 - WMM Best Effort</b>	This priority provides no guarantee of data transmission.
<b>4 - WMM Video priority</b>	These are intermediate priorities. They provide a correct routing for "Video".
<b>5 - WMM Video priority</b>	
<b>6 - WMM Voice priority</b>	These are higher priorities. They provide complete routing for voice
<b>7 - WMM Voice priority</b>	

Click on the  button to save the parameters.

## 6.8 NAT

**Object:** NAT is a configurable IP address translation function which will be applied to the interfaces of your router which you will have activated for this function. Several translation function configurations, the NAT actions, can be configured and may be activated as indicated in the 6.8.1 - **Add** paragraph.

This section contains the following four menus:

- Port forwarding (cf. § 6.8.1),
- Port Triggering (cf. § 6.8.2),
- DMZ Host (cf. § 6.8.3),
- ALG (cf. § 6.8.4).

### 6.8.1 Port forwarding

**Object:** This menu is used to route directly to the External Ports the incoming data from a Service server (such as, for example, FTP Server, SNMP, TFTP etc.) of the remote network (WAN) to computers on the local network (LAN) via the Internal Ports.

- Select the **Port forwarding** menu in the **NAT** section to display the following screen:

NAT -- Virtual Servers Setup

Virtual Server allows you to direct incoming traffic from WAN side (identified by Protocol and External port) to the Internal server with private IP address on the LAN side. The Internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum 32 entries can be configured.

Server Name	External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End	Server IP Address	Remove
-------------	---------------------	-------------------	----------	---------------------	-------------------	-------------------	--------



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Field	Meaning
<b>Server Name</b>	
<b>Select a Service</b>	Service available over Internet (such as, for example FTP Server, SNMP, TFTP etc.).
<b>Custom Server</b>	Name you want to allocate to a local server.
<b>External Port Start</b>	Internal start port (WAN side).
<b>External Port End</b>	Internal end port (WAN side).
<b>Protocol</b>	Transport protocol (TCP, UDP or TCP/UDP).
<b>Internal Port Start</b>	Internal start port (LAN side).
<b>Internal Port End</b>	This internal end port (LAN side) is associated with the external end port (WAN) side. <b>Note:</b> This cannot be modified.
<b>Server IP Address</b>	Computer address delivered by your router's DHCP server.

### Add

- Click on the **Add** button; the following screen appears:

NAT -- Virtual Servers

Select the service name, and enter the server IP address and click "Save/Apply" to forward IP packets for this service to the specified server. **NOTE: The "Internal Port End" cannot be changed. It is the same as "External Port End" normally and will be the same as the "Internal Port Start" or "External Port End" if either one is modified.**  
Remaining number of entries that can be configured:32

Server Name:  
 Select a Service:   
 Custom Server:

Server IP Address:

External Port Start	External Port End	Protocol	Internal Port Start	Internal Port End
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	TCP <input type="button" value="v"/>	<input type="text"/>	<input type="text"/>



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Proceed as follows:

- Check the **"Select a Service"** box, then select the service of your choice from the scroll down list, for example "SNMP".

The **"External Port Start"**, **"External Port End"**, **"Internal Port Start"**, **"Internal Port End"** and **Protocol** fields (transport protocol associated with this service) are automatically filled in the table.

**Note:** You may complete the table by adding other ports associated with a protocol.

or

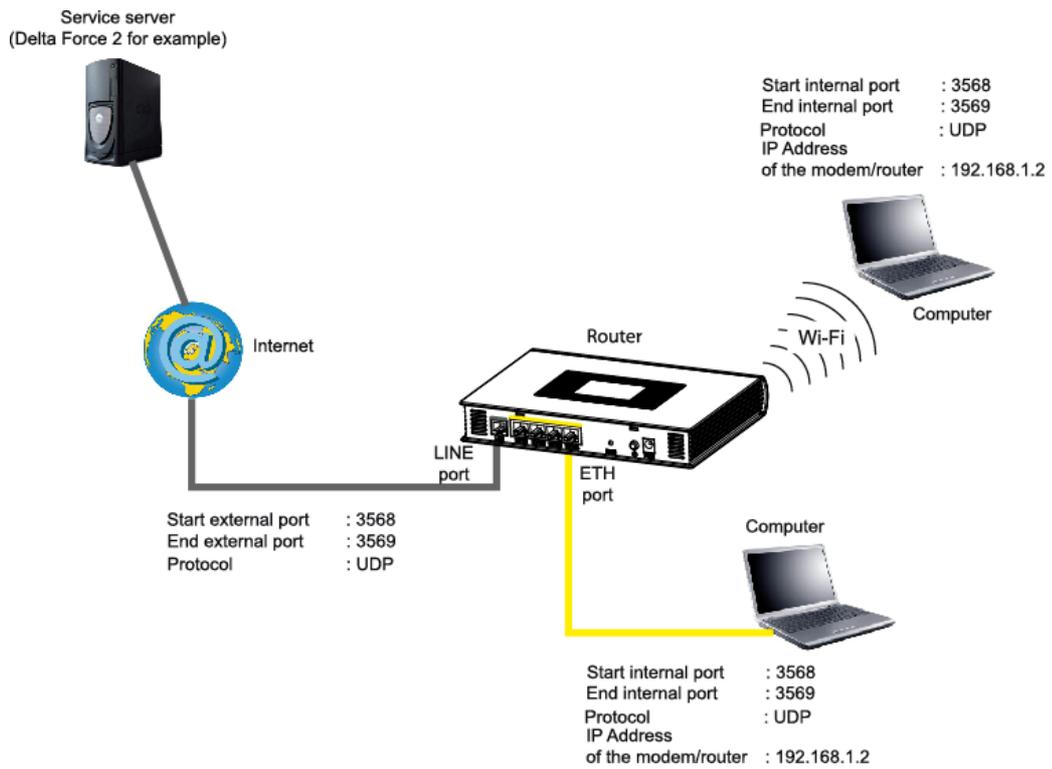
- Check the **"Custom Server"** box, enter the name of the server you want to connect to, then:
  - Complete the ID Host of your computer's IP address (this is attributed by your router's DHCP server).
  - Fill in the **"External Port Start"**, **"External Port End"**, **"Internal Port Start"**, **"Internal Port End"** and **"Protocol"** fields.

### A few rules for entering values:

- **When you want to select a single port, the start port ("External Port Start" or "Internal Port Start") and the end port ("External Port End" or "Internal Port End") must be identical.**
- **When you want to select a range of ports, the start port number must be lower than the end port number.**
- **You must always start entering with the "External Port Start" and "External Port End" ports,**
- **When you allocate a number to an "External Port Start", the same number is automatically allocated to the "Internal Port Start" and identically for "External Port End",**

## 6 - Information / Configuration

The following diagram contains an example:



The "Delta Force 2" service is available on your computer via the external ports 3568 and 3569 (WAN side) and via the internal ports 3568 and 3569 (LAN side).

## 6.8.2 Port Triggering

**Object:** The purpose of this menu is to open dynamically the firewall ports (open ports) via "Trigger Ports" when an application (such as games or video) opens a connection via the transport layer (TCP or UDP).

- Select the **Port Triggering** menu in the **NAT** section to display the following screen:

**SAGEM** ADSL  Down 19996 kbps Up 1056 kbps refresh reboot  
Internet  Connected

**NAT -- Port Triggering Setup**

Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 'Triggering Ports'. The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 'Open Ports'. A maximum 32 entries can be configured.

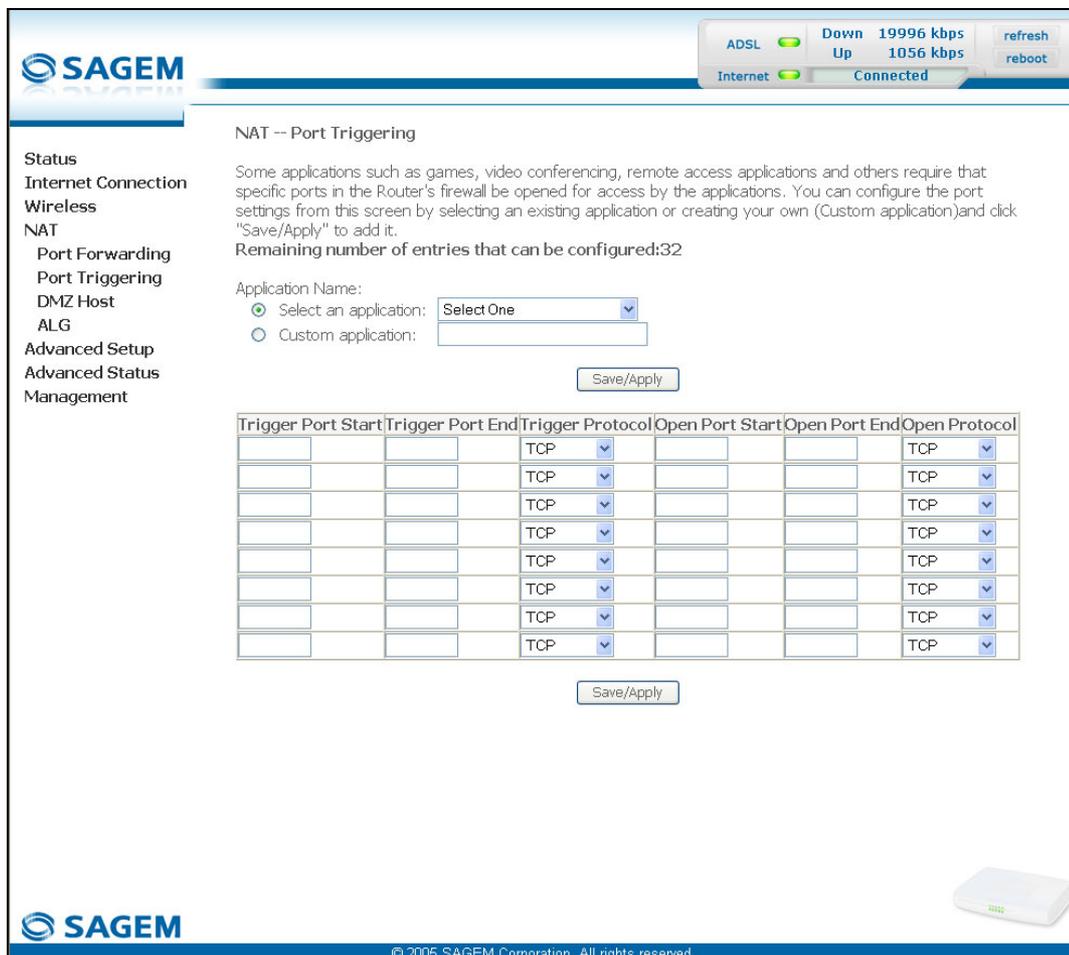
Application	Trigger		Open		Remove	
	Name	Protocol	Port Range	Port Range		
			Start	End	Start	End

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Field	Meaning
<b>Application</b> <b>Name</b>	Application name
<b>Trigger</b> <b>Protocol</b>	Transport protocol (TCP, UDP or TCP/UDP).
<b>Port Range</b>	A port range contains a Start port and an End port. <b>Note:</b> A single port is characterised by an identical start port and end port.
<b>Open</b> <b>Protocol</b>	Transport protocol (TCP, UDP or TCP/UDP).
<b>Port Range</b>	A port range contains a Start port and an End port. <b>Note:</b> A single port is characterised by an identical start port and end port.

**Add**

- Click on the **Add** button; the following screen appears:



To configure "Trigger Port" and "Open Port", proceed as follows:

- Check the "Select an application" box, then select the service of your choice from the scroll down list, for example "Aim Talk".

The "Trigger Port Start", "Trigger Port End", "Trigger Port Start", "Trigger Port End" and **Protocol** fields (transport protocol associated with this service) are automatically filled in the table.

**Note:** You may complete the table by adding other ports associated with a protocol.

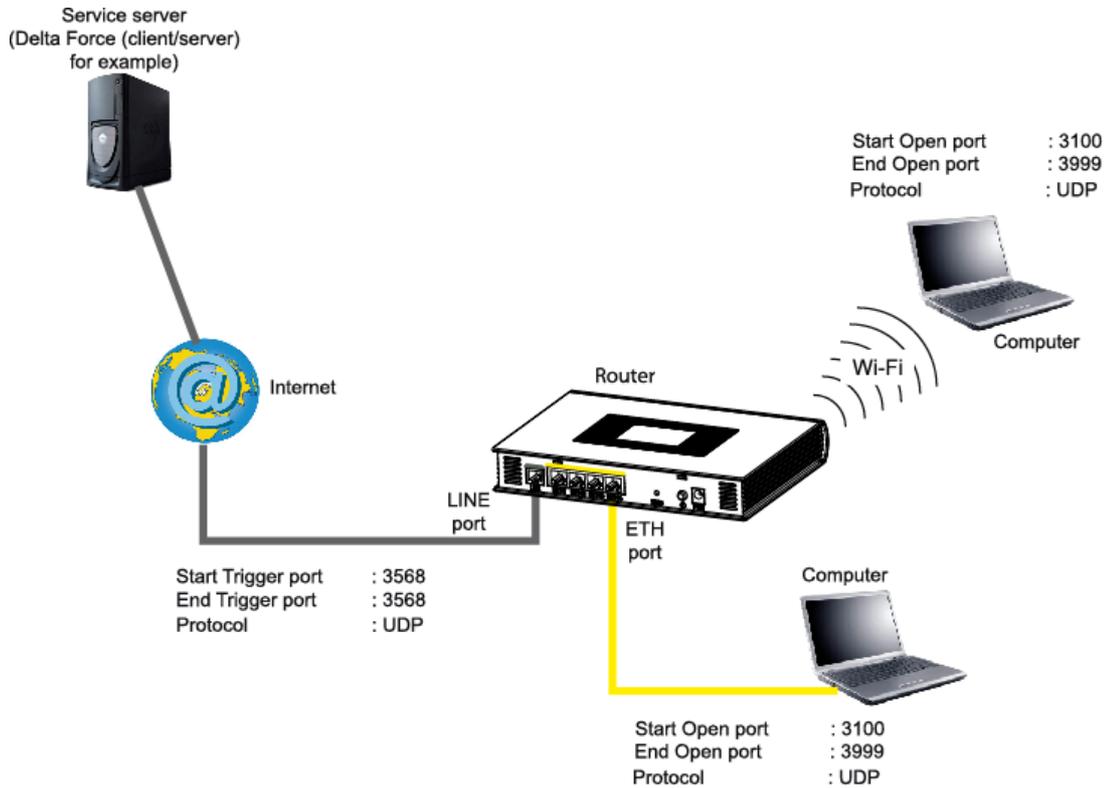
or

- Check the "Custom Server" box then enter the name of the server you want to connect to, then:
  - Complete the ID Host of your computer's IP address (this is attributed by your router's DHCP server).
  - Fill in the "Trigger Port Start", "Trigger Port End", "Trigger Port Start", "Trigger Port End" and "Protocol" fields.

**A few rules for entering values:**

- When you want to select a single port, the start port ("Trigger Port Start" or "Open Port Start") and the end port ("Trigger Port End" or "Open Port End") must be identical.
- When you want to select a range of ports, the start port number must be lower than the end port number.

The following diagram contains an example:



Using the "Trigger" 3568 port (WAN side), the "Delta Force" service server triggers the opening of port range 3100 to 3999 for your computer to access this service.

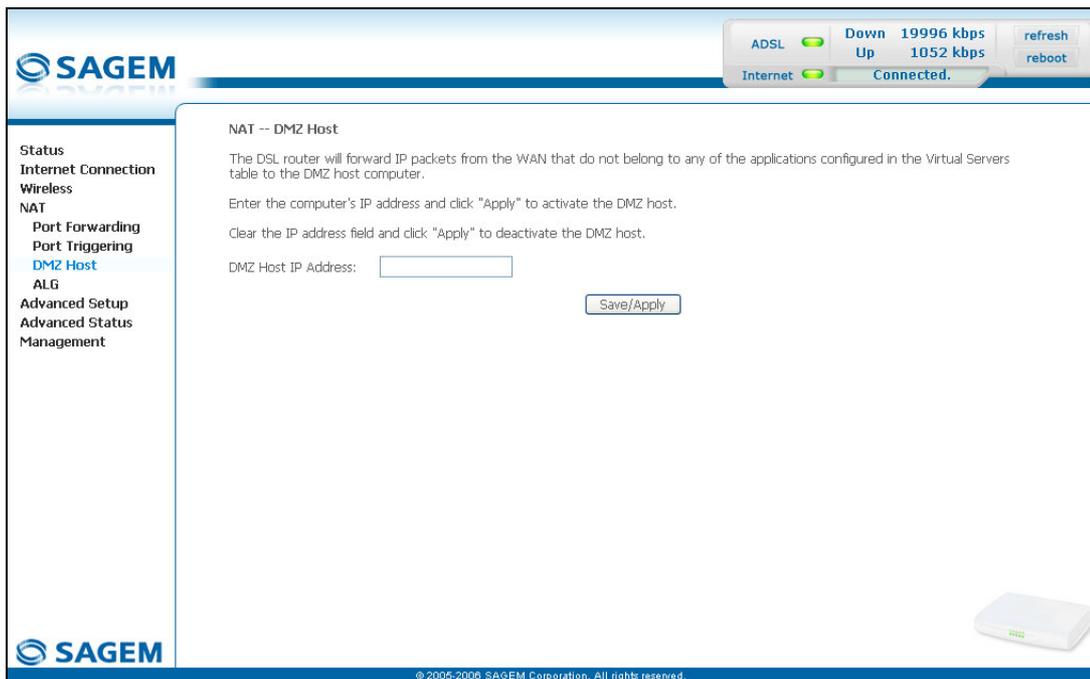
### 6.8.3 DMZ Host

**Object:** This "DMZ" (DeMilitarized Zone) lets you access the server you selected directly via the Internet without going through the "Firewall".



**Caution, this process presents an intrusion risk. It is therefore vital that you take precautions so that no connections may be initiated to the private network.**

- Select the **DMZ Host** menu in the **NAT** section to display the following screen:



Field	Action	Default
DMZ Host IP Address	<p>Enter the IP address of a server to activate the "DMZ" and therefore access it directly from the Internet.</p> <p>To deactivate the "DMZ" zone, erase the address entered in the field.</p> <p><b>Note:</b> Click on the <b>Save/Apply</b> button to take account of the address or its erasure.</p>	Empty

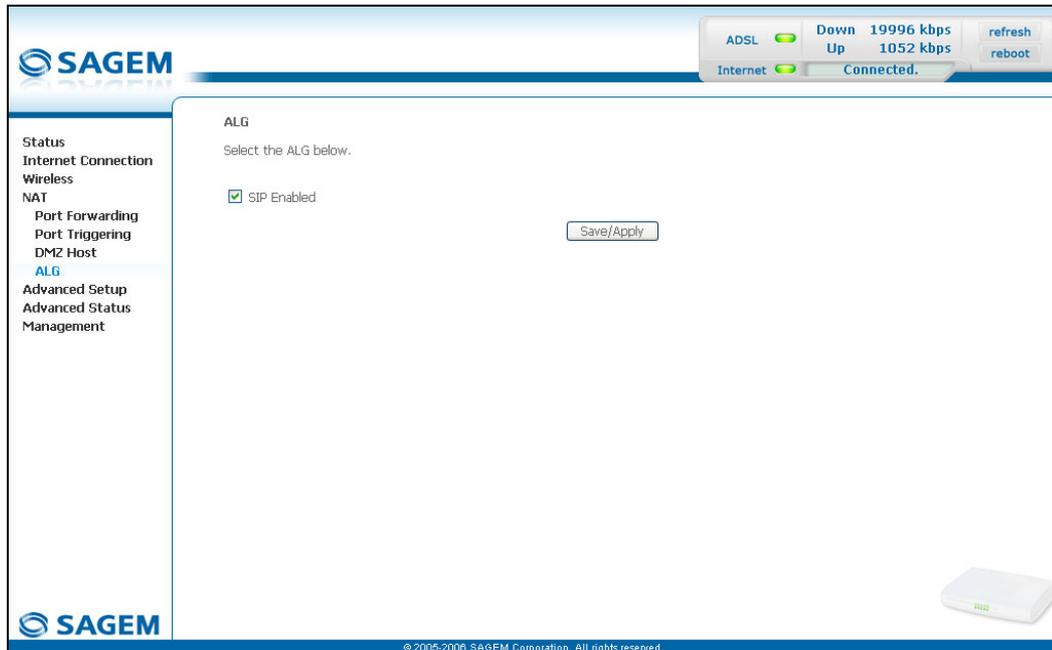


The "DMZ" zone is deactivated by default.

## 6.8.4 ALG

**Object:** The ALG (**A**pplication **L**ayer **G**ateway) service is used to take charge of the SIP protocol via the Wi-Fi or Ethernet interfaces in the telephony over IP (VoIP) context.

- Select the **ALG** menu in the **NAT** section to display the following screen:



Field	Meaning	Default
<b>SIP Enabled</b>	Check the box to permit telephoning in VoIP via the Wi-Fi or Ethernet interfaces using the SIP protocol.	<b>Checked</b>

## 6.9 Advanced Setup

**Object:** This menu is used to configure the specific parameters for your router.



**This menu must only be used by experienced users.**

This section contains the following nine menus:

- WAN (cf. § 6.9.1),
- LAN (cf. § 6.9.2),
- Security (cf. § 6.9.3),
- Quality of Service (cf. § 6.9.4)(see note),
- Routing (cf. § 6.9.5),
- DNS (cf. § 6.9.6),
- DSL (cf. § 6.9.7),
- Port Mapping (cf. § 6.9.8),
- Certificate (cf. § 6.9.9).

**Note:** This menu only appears if you checked the "Enable Quality Of Service" box in the WAN interface configuration screen (cf. Advanced Setup/WAN - § 5.9.1/Add).

### 6.9.1 WAN

**Object:** This menu is associated with the remote network. It is used to display the list of all the configured PVCs, to add PVCs or remove them.

- Select the **WAN** menu in the **Advanced Setup** section to display the following screen:

The screenshot displays the 'Wide Area Network (WAN) Setup' page. At the top right, there are status indicators for ADSL (Down 19996 kbps, Up 1064 kbps) and Internet (Connected), along with 'refresh' and 'reboot' buttons. The main content area includes a table of WAN interfaces and 'Add', 'Remove', and 'Save/Reboot' buttons.

VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	VlanId	State	Remove	Edit
8/35	1	UBR	pppoe_8_35_1	ppp_8_35_1	PPPoE	Disabled	Disabled	N/A	Enabled	<input type="checkbox"/>	<input type="button" value="Edit"/>

Below the table are buttons for 'Add', 'Remove', and 'Save/Reboot'. The left sidebar contains a navigation menu with 'Advanced Setup' highlighted. The SAGEM logo is visible in the top left and bottom left corners, and a small router icon is in the bottom right corner.

Field	Meaning
VPI/VCI	PVC identifier to configure.
Con. ID	Connection Identification. This is used to identify the different PPP connections which belong to the same PVC. To do so, you need only increment the "VC number" in the "Service" field when adding a new "PVC".
Category	ATM type of service
Service	Name of the ATM service. This name is made up as follows: Protocol_VPI_VCI_Index For example: pppoe_0_35_1.
Interface	Name, allocated automatically, associated with the service name (for example, ATM interface "ppp_0_35_1" associated with the ATM service pppoe_0_35_1).
Protocol	Data flow encapsulation mode.
Igmp	Status (Enabled or Disabled) of the IGMP function. (see Note).
QoS	Status (Enabled or Disabled) of the Quality of Service (QoS).
VlanId	VLAN (Virtual LAN) identification.
State	Status (Enabled or Disabled) of the WAN interface.

**Note:** This function enables the distribution of Multicast datagrams over the local network (LAN) and interaction between the router and the local network hosts.

## Add

- Click on the **Add** button to display the following screen:

The screenshot shows the SAGEM router configuration interface. At the top, there is a status bar with the SAGEM logo and connection information: ADSL (Down 1996 kbps, Up 1064 kbps), Internet (Connected), and buttons for refresh and reboot. A navigation menu on the left includes: Status, Internet Connection, Wireless, NAT, Advanced Setup, WAN, LAN, Security, Routing, DNS, DSL, Port Mapping, Certificate, Advanced Status, and Management. The main content area is titled "ATM PVC Configuration" and contains the following text: "This screen allows you to configure an ATM PVC identifier (VPI and VCI) and select a service category. Otherwise choose an existing interface by selecting the checkbox to enable it." Below this text are input fields for VPI (range [0-255], value 0) and VCI (range [32-65535], value 35). A dropdown menu for "Service Category" is set to "UBR Without PCR". There is a section for "Enable Quality Of Service" with explanatory text: "Enabling packet level QoS for a PVC improves performance for selected classes of applications. QoS cannot be set for CBR and Realtime VBR. QoS consumes system resources; therefore the number of PVCs will be reduced. Use Advanced Setup/Quality of Service to assign priorities for the applications." Below this is a checkbox labeled "Enable Quality Of Service" which is currently unchecked. At the bottom of the screen, there are "Back" and "Next" buttons and a small image of the router. The footer contains the SAGEM logo and the copyright notice: "© 2005 SAGEM Corporation. All rights reserved."

**ATM PVC Configuration**

<b>Field</b>	<b>Action</b>	<b>Default</b>
<b>VPI</b>	Enter a VPI value <sup>2</sup> between 0 and 255.	<b>0</b>
<b>VCI</b>	Enter a VPI value <sup>2</sup> between 32 and 65535.	<b>35</b>
<b>Service Category</b>	Select the type of service adapter to the traffic from the scroll down list: UBR without PCR : <b>Unspecified Bit Rate</b> UBR with PCR : <b>Unspecified Bit Rate</b> CBR : <b>Constant Bit Rate</b> Non Realtime VBR : <b>Variable Bit Rate</b> Realtime VBR : <b>Variable Bit Rate</b>	<b>UBR without PCR</b>
<b>Peak Cell Rate</b> <sup>3</sup>	Enter a maximum number of cells transmitted per second, between 1 and 2491.	<b>0</b>
<b>Sustainable Cell Rate</b> <sup>4</sup>	Enter an average number of cells transmitted per second.  <b>Note:</b> This number must be lower than the <b>Peak Cell Rate (PCR)</b> .	<b>0</b>
<b>Maximum Burst Size</b> <sup>4</sup>	Enter the maximum number of cells emitted in burst (value between 1 and 1000 000).	<b>0</b>

**Enable Quality Of Service**

<b>Field</b>	<b>Action</b>	<b>Default</b>
<b>Enable Quality Of Service</b>	Check the box to activate the quality of service and display the new "Quality of Service" menu in the <b>Advanced Setup</b> section.	<b>Not checked</b>

<sup>2</sup> This value is delivered to you by your **Internet Service Provider (ISP)**.

<sup>3</sup> This field only appears when the "UBR with PCR", "CBR", "Non Realtime VBR" or "Realtime VBR" type of service is selected.

<sup>4</sup> This file only appears when the "Non Realtime VBR" or "Realtime VBR" type of service is selected.

- Click on the **Next** button to continue configuring the remote network (WAN) and display the following screen:

Depending on the type of network protocol selected, the encapsulation modes suggested in the scroll down list in the appropriate field are different.

In addition, the "Enable 802.q" field only appears when the PPPoE, MER or Bridging protocol types are selected.



Therefore, and to provide more clarity, a summary table will be presented below for each type of protocol.

#### **PPP over ATM (PPPoA)**

Field	Action	Default
<b>Encapsulation Mode</b>	Select the encapsulation of your choice from the scroll down list. <ul style="list-style-type: none"> <li>VC/MUX,</li> <li>LLC/ENCAPSULATION.</li> </ul>	<b>VC/MUX</b>

## 6 - Information / Configuration

### PPP over Ethernet (PPPoE)

Field	Action	Default
<b>Encapsulation Mode</b>	Select the encapsulation of your choice from the scroll down list. <ul style="list-style-type: none"><li>• LLC/SNAP-BRIDGING,</li><li>• VC/MUX.</li></ul>	<b>LLC/SNAP-BRIDGING</b>
<b>Enable 802.1q</b>	Check the box to activate the "802.1q" protocol which enables the identification of a VLAN.	–
<b>VLAN ID [0 - 4095]<sup>5</sup></b>	Enter a value between 0 and 4095.	<b>Empty</b>

### MAC Encapsulation Routing (MER)

Field	Action	Default
<b>Encapsulation Mode</b>	Select the encapsulation of your choice from the scroll down list. <ul style="list-style-type: none"><li>• LLC/SNAP-BRIDGING,</li><li>• VC/MUX.</li></ul>	<b>LLC/SNAP-BRIDGING</b>
<b>Enable 802.1q</b>	Check the box to activate the "802.1q" protocol which enables the identification of a VLAN.	–
<b>VLAN ID [0 - 4095]<sup>5</sup></b>	Enter a value between 0 and 4095.	<b>Empty</b>

### IP over ATM (IPoA)

Field	Action	Default
<b>Encapsulation Mode</b>	Select the encapsulation of your choice from the scroll down list. <ul style="list-style-type: none"><li>• LLC/SNAP-ROUTING,</li><li>• VC/MUX.</li></ul>	<b>LLC/SNAP-ROUTING</b>

### Bridging

Field	Action	Default
<b>Encapsulation Mode</b>	Select the encapsulation of your choice from the scroll down list. <ul style="list-style-type: none"><li>• LLC/SNAP-BRIDGING,</li><li>• VC/MUX.</li></ul>	<b>LLC/SNAP-BRIDGING</b>
<b>Enable 802.1q</b>	Check the box to activate the "802.1q" protocol which enables the identification of a VLAN.	–
<b>VLAN ID [0 - 4095]<sup>5</sup></b>	Enter a value between 0 and 4095.	<b>Empty</b>

<sup>5</sup> This field only appears when the "Enable 802.1q" field is activated (box checked).

- Click on the **Next** button to continue configuring the remote network (WAN).



Depending on the type of network protocol (PPPoA, PPPoE, MER, IPoA or Bridging) selected earlier, the content of the following WAN interface configuration screens differs.

Therefore, and for more clarity, each type of protocol will be dealt with separately (screens + associated summary tables) below.

**PPP over ATM (PPPoA)**

Field	Action	Default
<b>PPP Username</b>	Enter your connection ID. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>
<b>PPP Password</b>	Enter your connection password. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>
<b>Authentication Method</b>	Select the authentication method of your choice from the scroll down list: <ul style="list-style-type: none"> <li>• AUTO,</li> <li>• PAP,</li> <li>• CHAP,</li> <li>• MSCHAP.</li> </ul>	<b>AUTO</b>
<b>Dial on demand (with idle timeout timer)</b>	Check the box to connect to Internet only for "Traffic" on the ADSL line.	<b>Not checked</b>
<b>Inactivity Timeout (minutes) [1-4320]:</b> <sup>6</sup>	Enter a value expressed in minutes between 1 and 4320 (i.e. 72 hours).	<b>0</b>

<sup>6</sup> This field only appears when the "Dial on demand (with idle timeout timer)" field is activated (box checked).

## 6 - Information / Configuration

Field	Action	Default
<b>PPP IP extension</b>	Check the box to allocate your computer the public address obtained from the DHCP server of your Internet Service Provider (ISP). Therefore, your router will act as a bridge between the server and your computer.	<b>Not checked</b>
<b>Use Static IP Address</b>	Check the box to use the static IP address.	<b>Not checked</b>
<b>IP Address:<sup>7</sup></b>	Enter the static IP address	<b>0.0.0.0</b>
<b>Configure PPP MTU</b>	Enter an MTU ( <b>Maximum Transfer Unit</b> ) value between 38 and 1492 (see Note).	<b>1492</b>
<b>Enable PPP Debug mode</b>	Check the box to use the PPP Debug mode.  In the event of connection failure, this option will enable you to trace a possible problem in the SYSLOG file.	<b>Box Not checked</b>

**Note:** The MTU specifies the maximum size of the data used for packets expressed as a number of bytes.

- Click on the **Next** button to continue configuring the remote network (WAN) in PPPoA mode.

The screenshot displays the SAGEM router's configuration web interface. At the top, the SAGEM logo is on the left, and status indicators for ADSL and Internet are on the right. The ADSL status shows 'Down 19996 kbps' and 'Up 1064 kbps' with a 'refresh' button. The Internet status shows 'Connected' with a 'reboot' button. A navigation menu on the left lists various settings: Status, Internet Connection, Wireless, NAT, Advanced Setup (WAN, LAN), Security, Routing, DNS, DSL, Port Mapping, Certificate, Advanced Status, and Management. The main content area is titled 'Enable IGMP Multicast, and WAN Service'. It contains two checkboxes: 'Enable IGMP Multicast' (unchecked) and 'Enable WAN Service' (checked). Below these is a text input field for 'Service Name' containing the value 'pppoe0\_35\_1'. At the bottom of the main area are 'Back' and 'Next' buttons. A small image of the router is in the bottom right corner. The footer contains the SAGEM logo and the copyright notice '© 2005 SAGEM Corporation. All rights reserved.'

<sup>7</sup> This field only appears when the "Use Static IP Address" field is activated (box checked).

Field	Action	Default
<b>Enable IGMP Multicast</b>	Check the box to activate the IGMP function.	<b>Not checked</b>
<b>Enable WAN</b>	Check the box to activate the remote network service (WAN).	<b>Checked</b>
<b>Service</b>	Displays the name of the service being configured. This name, which is allocated automatically, is made up as follows: Protocol_VPI_VCI_Index  For example: pppoa_0_35_1.  <b>Note:</b> You may enter another service name.	pppoa_0_35_1

- Click on the **Next** button to continue configuring the remote network (WAN) in PPPoA mode.

**SAGEM**

ADSL  Down 19996 kbps  
Up 1064 kbps refresh  
reboot

Internet  Connected

### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	PPPoA
Service Name:	pppoa_0_35_1
Service Category:	UBR
IP Address:	Automatically Assigned
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

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## 6 - Information / Configuration

Field	Action
VPI/VCI	Displays the VPI/VCI specific to the "PPPoA" connection
Connection Type	Displays the "PPPoA" protocol
Service Name	Displays the name of the service: pppoa_0_35_1
Service Category	Displays the type of service adapted to the traffic required.
IP Address	Indicates that the IP address is allocated automatically: <b>Automatically Assigned</b>
Service State	Displays the status of the service: <b>Enabled</b>
NAT	Displays the status of the NAT: <b>Enabled</b>
Firewall	Displays the status of the firewall: <b>Enabled</b>
IGMP Multicast	Displays the status of the IGMP function: <b>Disabled</b>
Quality of Service	Displays the status of the quality of service: <b>Disabled</b>

- click on the  button to save the WAN interface configuration.

## PPP over Ethernet (PPPoE)

Field	Action	Default
<b>PPP Username</b>	Enter your connection ID. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>
<b>PPP Password</b>	Enter your connection password. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>
<b>PPPoE Service Name</b>	Enter the name of the PPPoE service. This information is provided to you by your Internet Service Provider (ISP).	<b>Empty</b>
<b>Authentication Method</b>	Select the authentication method of your choice from the scroll down list: <ul style="list-style-type: none"> <li>• AUTO,</li> <li>• PAP,</li> <li>• CHAP,</li> <li>• MSCHAP.</li> </ul>	<b>AUTO</b>
<b>Dial on demand (with idle timeout timer)</b>	Check the box to only connect to the Internet on "Traffic".	<b>-</b>
<b>Inactivity Timeout (minutes) [1-4320]:<sup>6</sup></b>	Enter the inactivity time. This value expressed in minutes is between 1 and 4320 (i.e. 72 hours).  If there is no traffic for a certain period of time, the PPPoE session is interrupted.	<b>0</b>

## 6 - Information / Configuration

Field	Action	Default
<b>PPP IP extension</b>	Check the box to allocate your computer the public address obtained from the DHCP server of your Internet Service Provider (ISP). Therefore, your router will act as a bridge between the server and your computer.	–
<b>Use Static IP Address</b>	Check the box to use the static IP address.	–
<b>IP Address:<sup>7</sup></b>	Enter the static IP address.	<b>0.0.0.0</b>
<b>Configure PPP MTU</b>	Enter an MTU ( <b>Maximum Transfer Unit</b> ) value. This value, expressed in bytes, is between 38 and 1492 (see Note).	<b>1492</b>
<b>Enable PPP Debug mode</b>	Check the box to use the PPP Debug mode.  In the event of connection failure, this option will enable you to trace a possible problem in the SYSLOG file.	<b>Box Not checked</b>

**Note:** The MTU specifies the maximum size of the data used (IP packets) expressed as a number of bytes.

- Click on the **Next** button to continue configuring the remote network (WAN) in PPPoE mode.

The screenshot displays the SAGEM router's configuration web interface. At the top, there is a status bar showing 'ADSL' and 'Internet' both with green indicator lights. To the right, it displays 'Down 19996 kbps' and 'Up 1064 kbps' with 'refresh' and 'reboot' buttons. Below this, a 'Connected' status is shown. The main configuration area is titled 'Enable IGMP Multicast, and WAN Service'. It contains two checkboxes: 'Enable IGMP Multicast' (unchecked) and 'Enable WAN Service' (checked). A text input field for 'Service Name' contains the value 'pppoe\_0\_35\_1'. At the bottom of the configuration area, there are 'Back' and 'Next' buttons. On the left side, a vertical navigation menu lists various settings: Status, Internet Connection, Wireless, NAT, Advanced Setup (with WAN selected), LAN, Security, Routing, DNS, DSL, Port Mapping, Certificate, Advanced Status, and Management. The SAGEM logo is visible in the bottom left corner, and a small image of the router is in the bottom right corner. A copyright notice '© 2005 SAGEM Corporation. All rights reserved.' is at the very bottom.

Field	Action	Default
<b>Enable IGMP Multicast</b>	Check the box to activate the IGMP function.	<b>Not checked</b>
<b>Enable WAN Service</b>	Check the box to activate the WAN service.	<b>Checked</b>
<b>Service</b>	Displays the name of the service being configured. This name, which is allocated automatically, is made up as follows: Protocol_VPI_VCI_Index  For example: pppoe_0_35_1.  <b>Note:</b> You may enter another service name.	pppoe_0_35_1

Click on the **Next** button to continue configuring the remote network (WAN) in PPPoE mode.

The screenshot shows the SAGEM router's configuration page for WAN Setup - Summary. The interface includes a status bar at the top with ADSL and Internet connection indicators, showing a download speed of 19996 kbps and an upload speed of 1064 kbps. The main content area displays a summary table of WAN settings, including VPI/VCI (0/35), Connection Type (PPPoE), Service Name (pppoe\_0\_35\_1), Service Category (UBR), IP Address (Automatically Assigned), Service State (Enabled), NAT (Enabled), Firewall (Enabled), IGMP Multicast (Disabled), and Quality Of Service (Disabled). Below the table, there are instructions to click 'Save' to save settings and 'Back' to make modifications, along with a note that a reboot is required to activate the WAN interface. The SAGEM logo and a small image of the router are also visible.

WAN Setup - Summary	
VPI / VCI:	0 / 35
Connection Type:	PPPoE
Service Name:	pppoe_0_35_1
Service Category:	UBR
IP Address:	Automatically Assigned
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

Back Save

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## 6 - Information / Configuration

Field	Action
<b>VPI/VCI</b>	Displays the VPI/VCI specific to the "PPPoE" connection
<b>Connection Type</b>	Displays the "PPPoE" protocol
<b>Service Name</b>	Displays the name of the service: pppoe_0_35_1
<b>Service Category</b>	Displays the type of service adapted to the traffic required.
<b>IP Address</b>	Indicates that the IP address is allocated automatically: <b>Automatically Assigned</b>
<b>Service State</b>	Displays the status of the service: <b>Enabled</b>
<b>NAT</b>	Displays the status of the NAT: <b>Enabled</b>
<b>Firewall</b>	Displays the status of the firewall: <b>Enabled</b>
<b>IGMP Multicast</b>	Displays the status of the IGMP function: <b>Disabled</b>
<b>Quality of Service</b>	Displays the status of the quality of service: <b>Disabled</b>

## MAC Encapsulation Routing (MER)

**SAGEM**

ADSL Down 19996 kbps Up 1056 kbps refresh reboot  
Internet Connected

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.  
Notice: DHCP can be enabled for PVC in MER mode or IP over Ethernet as WAN interface if "Obtain an IP address automatically" is chosen. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from DHCP or other WAN connection.  
If you configure static default gateway over this PVC in MER mode, you must enter the IP address of the remote gateway in the "Use IP address". The "Use WAN interface" is optional.

Obtain an IP address automatically  
 Use the following IP address:  
 WAN IP Address:   
 WAN Subnet Mask:

Obtain default gateway automatically  
 Use the following default gateway:  
 Use IP Address:   
 Use WAN Interface: mer\_0\_35/nas\_0\_35

Obtain DNS server addresses automatically  
 Use the following DNS server addresses:  
 Primary DNS server:   
 Secondary DNS server:

Back Next

**SAGEM**

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Field	Action	Default
<b>Obtain an IP address automatically</b>	Check the box to obtain an IP address automatically by your router's DHCP server. <b>Note:</b> This box is not checked if a VCC has been created.	<b>Box checked</b>
<b>Use the following IP address:</b>	If you check this box, you must enter a static IP address and the dedicated subnet mask.	–
<b>WAN IP Address<sup>8</sup></b>	Enter the static IP address.	<b>0.0.0.0</b>
<b>WAN Subnet Mask:<sup>8</sup></b>	Enter a subnet mask.	<b>0.0.0.0</b>
<b>Obtain default gateway automatically</b>	Check the box to obtain the gateway IP address automatically by your router's DHCP server.	<b>Box checked</b>
<b>Use the following default gateway:</b>	If you check this box, you must enter the default gateway address.	–
<b>Use IP Address<sup>9</sup></b>	Enter the default gateway address.	–
<b>Use WAN Interface:<sup>9</sup></b>	Select the WAN interface of your choice from the scroll down list (optional)	–

<sup>8</sup> This field only appears when the "Use the following IP address:" field is activated (box checked).

<sup>9</sup> This field only appears when the "Use the following default gateway:" field is activated (box checked).

## 6 - Information / Configuration

Field	Action	Default
<b>Obtain DNS server addresses automatically</b>	Check the box to obtain DNS server Addresses automatically.	<b>Box checked</b>
<b>Use the following DNS server addresses:</b>	If you check this box, you must enter DNS server addresses.	–
<b>Primary DNS server</b> <sup>10</sup>	Enter a primary server DNS Address.	–
<b>Secondary DNS server</b> <sup>10</sup>	Enter a secondary server DNS Address.	–

<sup>10</sup> This field only appears when the "Use the following DNS server addresses:" field is activated (box checked).

- Click on the **Next** button to continue configuring the remote network (WAN) in MER mode.

The screenshot displays the SAGEM web interface for configuring Network Address Translation (NAT) settings. At the top, there is a status bar showing ADSL and Internet connection status with speed indicators (Down: 19996 kbps, Up: 1064 kbps) and buttons for refresh and reboot. The left sidebar contains a navigation menu with options: Status, Internet Connection, Wireless, NAT, Advanced Setup, WAN, LAN, Security, Routing, DNS, DSL, Port Mapping, Certificate, Advanced Status, and Management. The main content area is titled 'Network Address Translation Settings' and includes a descriptive paragraph about NAT. Below this, there are four settings: 'Enable NAT' (checked), 'Enable Firewall' (checked), 'Enable IGMP Multicast, and WAN Service' (with sub-options 'Enable IGMP Multicast' unchecked and 'Enable WAN Service' checked), and a 'Service Name' field containing 'mer\_0\_35\_1'. At the bottom of the settings area are 'Back' and 'Next' buttons. The SAGEM logo and copyright notice '© 2005 SAGEM Corporation. All rights reserved.' are at the very bottom.

Field	Action	Default
<b>Enable NAT</b>	Check the box to activate the NAT function.	<b>Checked</b>
<b>Enable Firewall</b>	Check the box to activate the firewall service.	<b>Checked</b>
<b>Enable IGMP Multicast</b>	Check the box to activate the IGMP function.	<b>Not checked</b>
<b>Enable WAN Service</b>	Check the box to activate the WAN service.	<b>Checked</b>
<b>Service</b>	Displays the name of the service being configured. This name, which is allocated automatically, is made up as follows: Protocol_VPI_VCI_Index For example: mer_0_35_1. <b>Note:</b> You may enter another service name.	mer_0_35_1

## 6 - Information / Configuration

- Click on the **Next** button to continue configuring the remote network (WAN) in MER mode.

**SAGEM**

ADSL Down 19996 kbps  
Up 1064 kbps refresh  
Internet Connected reboot

### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	MER
Service Name:	mer_0_35_1
Service Category:	UBR
IP Address:	Automatically Assigned
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

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Field	Action
<b>VPI/VCI</b>	Displays the VPI/VCI specific to the "MER" connection
<b>Connection Type</b>	Displays the "MER" protocol
<b>Service Name</b>	Displays the name of the service: mer_0_35_1
<b>Service Category</b>	Displays the type of service adapted to the traffic required.
<b>IP Address</b>	Indicates that the IP address is allocated automatically: <b>Automatically Assigned</b>
<b>Service State</b>	Displays the status of the service: <b>Enabled</b>
<b>NAT</b>	Displays the status of the NAT: <b>Enabled</b>
<b>Firewall</b>	Displays the status of the firewall: <b>Enabled</b>
<b>IGMP Multicast</b>	Displays the status of the IGMP function: <b>Disabled</b>
<b>Quality of Service</b>	Displays the status of the quality of service: <b>Disabled</b>

## IP over ATM (IPoA)

**SAGEM**

ADSL Down 19996 kbps  
Up 1064 kbps refresh  
Internet Connected reboot

**WAN IP Settings**

Enter information provided to you by your ISP to configure the WAN IP settings.

Notice: DHCP is not supported in IPoA mode. Changing the default gateway or the DNS effects the whole system. Configuring them with static values will disable the automatic assignment from other WAN connection.

WAN IP Address:

WAN Subnet Mask:

Use the following default gateway:

Use IP Address:

Use WAN Interface:

Use the following DNS server addresses:

Primary DNS server:

Secondary DNS server:

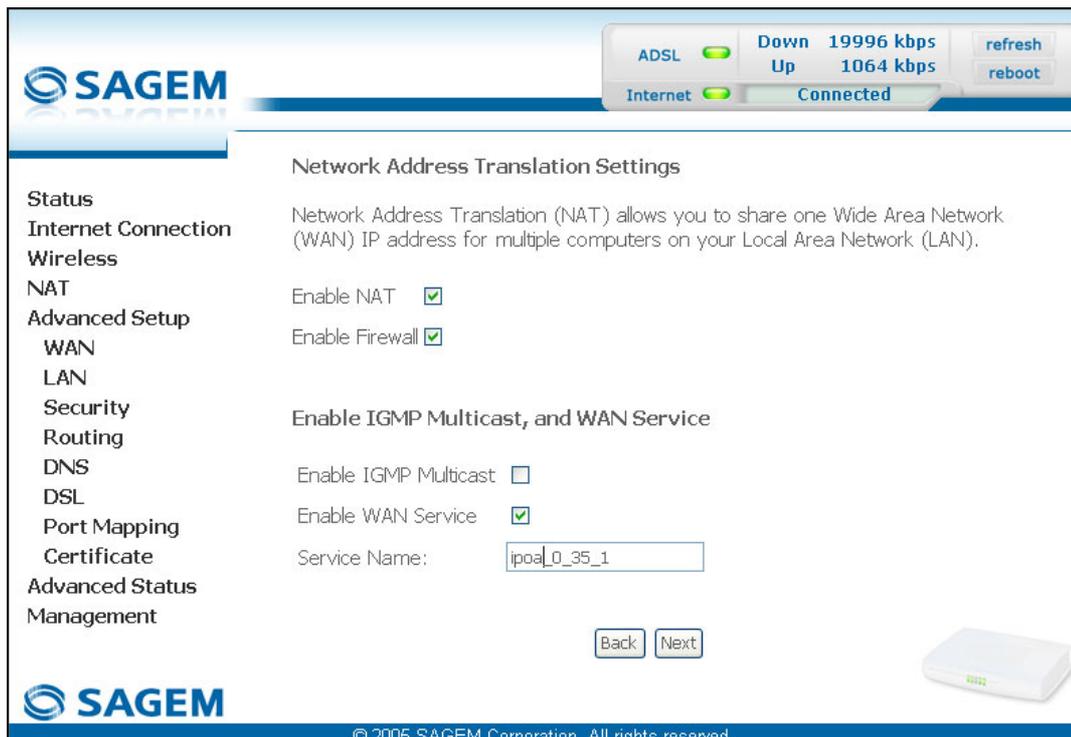
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Field	Action	Default
<b>WAN IP Address</b> <sup>8</sup>	Enter the static IP address.	<b>0.0.0.0</b>
<b>WAN Subnet Mask</b> <sup>8</sup>	Enter a subnet mask.	<b>0.0.0.0</b>
<b>Use the following default gateway:</b>	If you check this box, you must enter a default gateway address.	–
<b>Use IP Address</b> <sup>9</sup>	Enter the default gateway address.	–
<b>Use WAN Interface</b> <sup>9</sup>	Select the WAN interface of your choice from the scroll down list (optional)	–
<b>Obtain DNS server addresses automatically</b>	Check the box to obtain DNS server addresses automatically.	<b>Box checked</b>
<b>Use the following DNS server addresses:</b>	If you check this box, you must enter DNS server addresses.	–
<b>Primary DNS server</b> <sup>10</sup>	Enter a primary server DNS Address.	–
<b>Secondary DNS server</b> <sup>10</sup>	Enter a secondary server DNS Address.	–

## 6 - Information / Configuration

- Click on the **Next** button to continue configuring the remote network (WAN) in IPoA mode.



**SAGEM**

ADSL  Down 19996 kbps  
Up 1064 kbps refresh  
Internet  Connected reboot

**Network Address Translation Settings**

Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN).

Enable NAT

Enable Firewall

Enable IGMP Multicast, and WAN Service

Enable IGMP Multicast

Enable WAN Service

Service Name:

Back Next

**SAGEM**

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Field	Action	Default
<b>Enable NAT</b>	Check the box to activate the NAT function.	<b>Box checked</b>
<b>Enable Firewall</b>	Check the box to activate the firewall service.	<b>Box checked</b>
<b>Enable IGMP Multicast</b>	Check the box to activate the IGMP function.	<b>Box not checked</b>
<b>Enable WAN Service</b>	Check the box to activate the WAN service.	<b>Box checked</b>
<b>Service</b>	Displays the name of the service being configured. This name, which is allocated automatically, is made up as follows: Protocol_VPI_VCI_Index For example: ipoa_0_35_1. <b>Note:</b> You may enter another service name.	ipoa_0_35_1

- Click on the **Next** button to continue configuring the remote network (WAN) in IPoA mode.

**SAGEM**

ADSL  Down 19996 kbps  
Up 1064 kbps refresh  
Internet  Connected reboot

### WAN Setup - Summary

Make sure that the settings below match the settings provided by your ISP.

VPI / VCI:	0 / 35
Connection Type:	IPoA
Service Name:	ipoa_0_35_1
Service Category:	UBR
IP Address:	192.168.1.10
Service State:	Enabled
NAT:	Enabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Disabled

Click "Save" to save these settings. Click "Back" to make any modifications.  
NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.

**SAGEM**

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Field	Action
<b>VPI/VCI</b>	Displays the VPI/VCI specific to the "IPoA" connection
<b>Connection Type</b>	Displays the "IPoA" protocol
<b>Service Name</b>	Displays the name of the service: ipoa_0_35_1
<b>Service Category</b>	Displays the type of service adapted to the traffic required.
<b>IP Address</b>	Displays the IP address entered: 192.168.1.10
<b>Service State</b>	Displays the status of the service: <b>Enabled</b>
<b>NAT</b>	Displays the status of the NAT: <b>Enabled</b>
<b>Firewall</b>	Displays the status of the firewall: <b>Enabled</b>
<b>IGMP Multicast</b>	Displays the status of the IGMP function: <b>Disabled</b>
<b>Quality of Service</b>	Displays the status of the quality of service: <b>Disabled</b>

**Bridging**

Field	Action	Default
<b>Enable Bridge service</b>	Check the box to activate the "Bridge" service.	<b>Box checked</b>
<b>Service Name</b>	Displays the name of the service being configured. This name, which is allocated automatically, is made up as follows: Protocol_VPI_VCI_Index (For example: br_8_35_1. <b>Note:</b> You may enter another service name.	–
<b>Enable IPTV</b>	Check the box to be able to enter another IP address of the external network of the "Set Top Box" connected virtually to this "PVC".	–
<b>IPTV Name</b>	This field only appears if the <b>Enable IPTV</b> box in the previous field is checked. Enter the IP address of the external network of the "Set Top Box" connected virtually to this "PVC".	–

WAN Setup - Summary																					
<b>Status</b>	Make sure that the settings below match the settings provided by your ISP.																				
<b>Internet Connection</b>																					
<b>Wireless</b>																					
<b>NAT</b>																					
<b>Advanced Setup</b>																					
<b>WAN</b>																					
<b>LAN</b>																					
<b>Security</b>																					
<b>Routing</b>																					
<b>DNS</b>																					
<b>DSL</b>																					
<b>Port Mapping</b>																					
<b>Certificate</b>																					
<b>Advanced Status</b>																					
<b>Management</b>																					
	<table border="1"> <tr> <td>VPI / VCI:</td> <td>0 / 35</td> </tr> <tr> <td>Connection Type:</td> <td>Bridge</td> </tr> <tr> <td>Service Name:</td> <td>br_0_35_1</td> </tr> <tr> <td>Service Category:</td> <td>UBR</td> </tr> <tr> <td>IP Address:</td> <td>Not Applicable</td> </tr> <tr> <td>Service State:</td> <td>Enabled</td> </tr> <tr> <td>NAT:</td> <td>Enabled</td> </tr> <tr> <td>Firewall:</td> <td>Enabled</td> </tr> <tr> <td>IGMP Multicast:</td> <td>Not Applicable</td> </tr> <tr> <td>Quality Of Service:</td> <td>Disabled</td> </tr> </table>	VPI / VCI:	0 / 35	Connection Type:	Bridge	Service Name:	br_0_35_1	Service Category:	UBR	IP Address:	Not Applicable	Service State:	Enabled	NAT:	Enabled	Firewall:	Enabled	IGMP Multicast:	Not Applicable	Quality Of Service:	Disabled
VPI / VCI:	0 / 35																				
Connection Type:	Bridge																				
Service Name:	br_0_35_1																				
Service Category:	UBR																				
IP Address:	Not Applicable																				
Service State:	Enabled																				
NAT:	Enabled																				
Firewall:	Enabled																				
IGMP Multicast:	Not Applicable																				
Quality Of Service:	Disabled																				
	<p>Click "Save" to save these settings. Click "Back" to make any modifications.            NOTE: You need to reboot to activate this WAN interface and further configure services over this interface.</p>																				
	<p style="text-align: right;"> <input type="button" value="Back"/> <input type="button" value="Save"/> </p>																				
																					
																					
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Field	Action
<b>VPI/VCI</b>	Displays the VPI/VCI specific to the "Bridge" connection
<b>Connection Type</b>	Displays the "Bridge" protocol
<b>Service Name</b>	Displays the name of the service: br_0_35_1
<b>Service Category</b>	Displays the type of service adapted to the traffic required
<b>IP Address</b>	In the "Bridge" connection, this field is: <b>Not Applicable</b>
<b>Service State</b>	Displays the status of the service: <b>Enabled</b>
<b>NAT</b>	Displays the status of the NAT: <b>Disabled</b>
<b>Firewall</b>	Displays the status of the firewall: <b>Disabled</b>
<b>IGMP Multicast</b>	In the "Bridge" connection, this field is: <b>Not Applicable</b>
<b>Quality of Service</b>	Displays the status of the quality of service: <b>Disabled</b>

- click on the  button to save the WAN interface configuration.

## 6.9.2 LAN

**Object:** This is used to configure the IP parameters for the local network (LAN).

- Select the **LAN** menu in the **Advanced Setup** section to display the following screen:

Field	Action	Default
<b>IP Address</b>	Enter the address of your local network	<b>192.168.1.1</b>
<b>Subnet Mask</b>	Enter your network's subnet mask.	<b>255.255.255.0</b>
<b>Enable UPnP</b>	Check the box to activate the "UpnP" function. <b>Note:</b> This function lets you automatically: <ul style="list-style-type: none"> <li>• join a network dynamically,</li> <li>• obtain an IP address.</li> </ul>	<b>Box checked</b>
<b>Enable IGMP Snooping</b>	Check this box to activate the IGMP (Internet Group Management Protocol) protocol. This lets you manage the declarations of belonging to one or more groups with Multicast routers.	<b>Box not checked</b>

Field	Action	Default
<b>Standard Mode</b>	Check the box if you wish the IGMP snooping runs in normal mode (transparency with IGMP frames).	<b>Box checked</b>
<b>Blocking Mode</b>	Check the box if you wish the IGMP snooping runs in blocking mode (interception and removal of IGMP frames).	<b>Box not checked</b>
<b>Disable DHCP</b>	Check this box to not activate your router's DHCP server.  <b>Note:</b> You must configure your computer with the parameters appropriate to your local network (IP address, subnet mask and default gateway) as well as enter the primary and secondary DNS server addresses.	<b>Box not checked</b>
<b>Enable DHCP</b>	Check this box to activate your router's DHCP server.  <b>Note:</b> You must configure your computer as DHCP client and DNS client (or enter the primary and secondary DNS server addresses).	<b>Box checked</b>
<b>Start IP Address</b>	Enter the first address attributed by your router's DHCP server.	<b>192.168.1.2</b>
<b>End IP Address<sup>11</sup></b>	Enter the last address attributed by your router's DHCP server.	<b>192.168.1.254</b>
<b>Lease Time (hour)<sup>11</sup></b>	Enter an unavailability time for each address attributed expressed in hours.	<b>24</b>
<b>Configure the second IP Address and Subnet Mask for LAN interface</b>	Check the box to configure the IP parameters (IP address, subnet mask) of a second address for the local network (LAN).	<b>Box not checked</b>
<b>IP Address<sup>12</sup></b>	Enter a second address for your local network (LAN).	–
<b>Subnet Mask<sup>12</sup></b>	Enter a subnet mask for the second address for your local network (LAN).	–

<sup>11</sup> This field only appears when the "Enable DHCP" field is activated (box checked).

<sup>12</sup> This field only appears when the "Configure the second IP Address and Subnet Mask for LAN interface" field is activated (box checked).

### 6.9.3 Security

This menu contains 2 sub-menus:

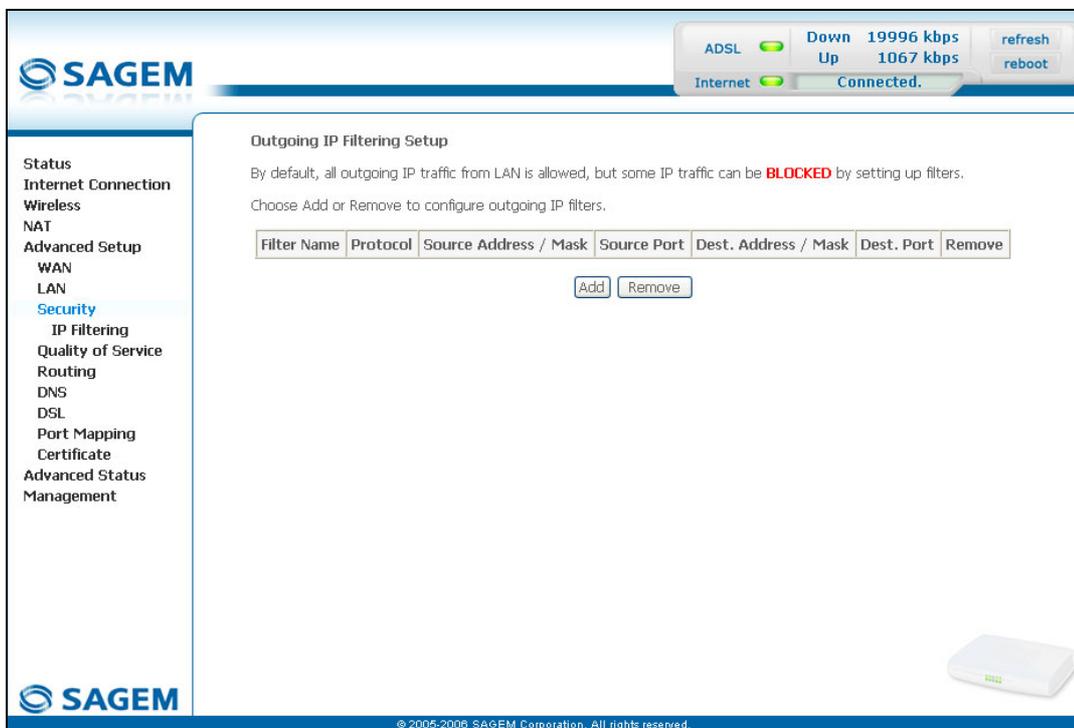
- Outgoing (cf. § 6.9.3.1),
- Incoming (cf. § 6.9.3.2).

#### 6.9.3.1 Outgoing

**Object:** This menu is used to create outgoing IP filters to refuse data from the LAN to the WAN and list the existing outgoing IP filters.

By default, all the outgoing data is accepted.

- Select the **Outgoing** sub-menu in the **Security** menu in the **Advanced Setup** section to display the following screen:



Field	Meaning
<b>Filter Name</b>	Name of the filter.
<b>Protocol</b>	Transport protocol.
<b>Source Address / Mask</b>	Source IP address / Subnet mask.
<b>Source Port</b>	Source port
<b>Dest. Address / Mask</b>	Destination IP address / Subnet mask.
<b>Dest. Port</b>	Destination port.

## Add

- Click on the **Add** button to display the following screen:

The screenshot shows the SAGEM web interface for configuring an outgoing IP filter. The top status bar indicates ADSL is connected with a download speed of 19996 kbps and an upload speed of 1067 kbps. The left sidebar lists various configuration options, with 'IP Filtering' selected. The main content area is titled 'Add IP Filter -- Outgoing' and contains a form with the following fields:

- Filter Name:
- Protocol:
- Source IP address:
- Source Subnet Mask:
- Source Port (port or port:port):
- Destination IP address:
- Destination Subnet Mask:
- Destination Port (port or port:port):

A 'Save/Apply' button is located at the bottom of the form area. The SAGEM logo is visible in the top left and bottom left corners of the interface.

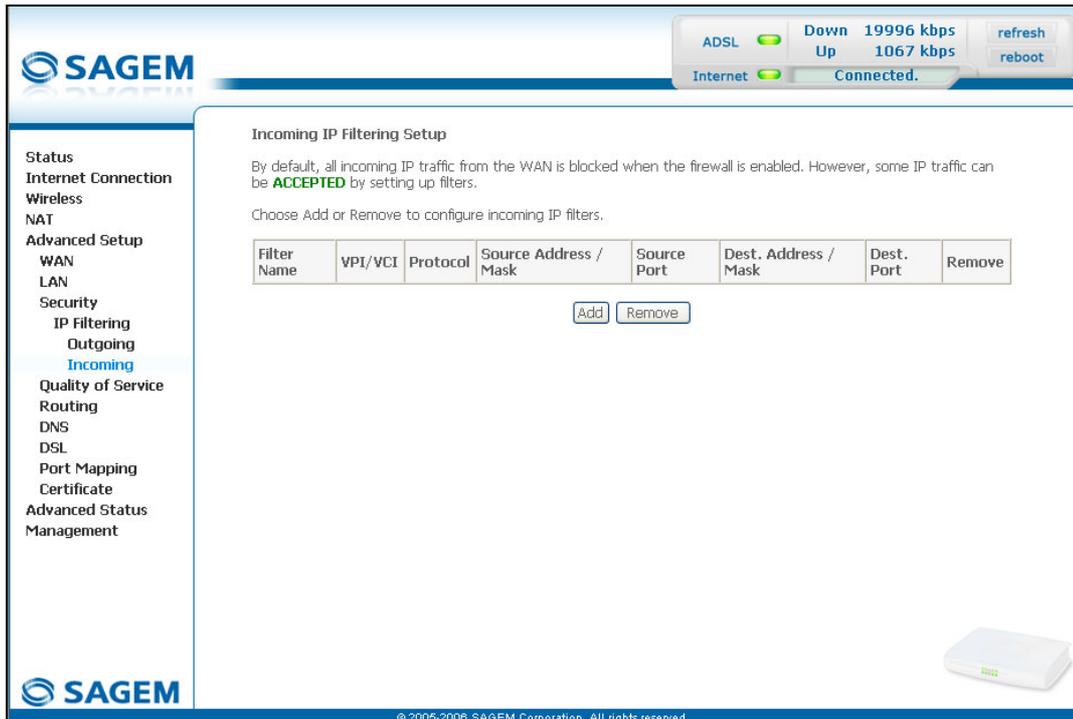
Field	Action
<b>Filter Name</b>	Enter a representative name for the filter.
<b>Protocol</b>	Select the dedicated protocol from the scroll down list (TCP/UDP, TCP, UDP, ICMP).
<b>Source IP Address</b>	Enter the Source IP address (LAN).
<b>Source Subnet Mask</b>	Subnet mask.
<b>Source Port (port or port:port)</b>	Enter a "Source" port (LAN) or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.
<b>Dest. IP Address</b>	Enter the Destination IP address (WAN).
<b>Dest. Subnet Mask</b>	Subnet mask.
<b>Dest. Port (port or port:port)</b>	Enter a "destination" port (WAN) or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.

### 6.9.3.2 Incoming

**Object:** This menu is used to create incoming IP filters to refuse data from the WAN to the LAN and list the existing incoming IP filters.

By default, all the incoming data is refused when the Firewall is activated.

- Select the **Incoming** sub-menu in the **Security** menu in the **Advanced Setup** section to display the following screen:



## Add

- Click on the **Add** button to display the following screen:

The screenshot shows the SAGEM web interface for configuring an incoming IP filter. The top status bar indicates ADSL is connected with a download speed of 19996 kbps and an upload speed of 1067 kbps. The left navigation menu includes options like Status, Internet Connection, Wireless, NAT, Advanced Setup, WAN, LAN, Security, IP Filtering (Outgoing, Incoming), Quality of Service, Routing, DNS, DSL, Port Mapping, Certificate, Advanced Status, and Management. The main configuration area is titled 'Add IP Filter -- Incoming' and contains the following fields:

- Filter Name: [Text input field]
- Protocol: [Dropdown menu]
- Source IP address: [Text input field]
- Source Subnet Mask: [Text input field]
- Source Port (port or port:port): [Text input field]
- Destination IP address: [Text input field]
- Destination Subnet Mask: [Text input field]
- Destination Port (port or port:port): [Text input field]

Below the fields, there is a section for 'WAN Interfaces (Configured in Routing mode and with firewall enabled only)' with a checkbox for 'Select All' and a checked checkbox for 'pppoe\_8\_35\_1/ppp\_8\_36\_1'. A 'Save/Apply' button is located at the bottom of the configuration area.

Field	Action
<b>Filter Name</b>	Enter a representative name for the filter.
<b>Protocol</b>	Select the dedicated protocol from the scroll down list (TCP/UDP, TCP, UDP, ICMP).
<b>Source IP Address</b>	Enter the Source IP address (WAN).
<b>Source Subnet Mask</b>	Subnet mask.
<b>Source Port (port or port:port)</b>	Enter a "Source" port (WAN) or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.
<b>Dest. IP Address</b>	Enter the destination IP address (LAN).
<b>Dest. Subnet Mask</b>	Subnet mask.
<b>Dest. Port (port or port:port)</b>	Enter a "destination" port (LAN) or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.

**WAN interfaces**

<b>Field</b>	<b>Action</b>	<b>Default</b>
<b>Select all</b>	Check the box to select all WAN interfaces. <b>Note:</b> Checking out the box, you do not select any interface and you also check out the <b>pppoe_8_35_1/ ppp_8_35_1</b> box.	<b>Box checked</b>
<b>pppoe_8_35_1/ ppp_8_35_1</b>	Check the box to select the displayed interface.	<b>Box checked</b>

## 6.9.4 Quality of Service

**Object:** This menu is used to allocated different types of traffic queues with different priorities in order to improve the traffic flow. To do this, the quality of service (QoS) provides the following three services: Classification (set-1, set-2), Marking (TOS, DSCP) and queues (Queuing).

The quality of service is only significant if all the traffic (data, video) is greater than the up rate of the ADSL line.

- Select the **Quality of Service** menu in the **Advanced Setup** section to display the following screen:

Quality of Service Setup

Choose Add or Remove to configure network traffic classes.

MARK				TRAFFIC CLASSIFICATION RULES													
				SET-1												SET-2	
Class Name	Priority	IP Precedence	IP Type of Service	WAN 802.1P	Lan Port	Protocol	Source Addr./Mask	Source Port	Dest. Addr./Mask	Dest. Port	IP Precedence	IP Type of Service	802.1P	Remove			

Differentiated Service Configuration

MARK				TRAFFIC CLASSIFICATION RULES											
Class Name	Priority	DSCP Mark	Lan Port	Protocol	Source Addr./Mask	Source Port	Dest. Addr./Mask	Dest. Port	Source MAC Addr./Mask	Destination MAC Addr./Mask	DSCP	802.1P	Enable/Disable	Remove	

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Quality of Service Setup

Field		State
<b>Class Name</b>		Name of the service class.
<b>MARK</b>	<b>Priority</b>	ATM priority.
	<b>IP Precedence</b>	IP priority.
	<b>IP Type of service</b>	TOS (Type Of Service)
	<b>WAN 802.1P</b>	Priority field 802.1P.
<b>TRAFFIC CLASSIFICATION RULES</b>		
<b>SET-1</b>	<b>LAN port</b>	Nature of the LAN port.
	<b>Protocol</b>	Protocol used.
	<b>Source Addr./Mask</b>	"Source" address (your computer, for example) and associated subnet mask.
	<b>Source Port</b>	"Source" port.
	<b>Dest. Addr./Mask</b>	"Destination" address (a machine on the Internet, for example) and associated subnet mask.
	<b>Dest. Port</b>	"Destination" port.
<b>SET-2</b>	<b>802.1P</b>	Priority field 802.1P.

## Differentiated Service Configuration

<b>MARK</b>	<b>Priority</b>	ATM priority.
	<b>DSCP Mark</b>	DSCP priority.
<b>TRAFFIC CLASSIFICATION RULES</b>	<b>LAN port</b>	Nature of the LAN port.
	<b>Protocol</b>	Protocol used.
	<b>Source Addr./Mask</b>	"Source" IP address (your computer, for example) and associated subnet mask.
	<b>Source Port</b>	"Source" port.
	<b>Dest. Addr./Mask</b>	"Destination" IP address (a machine on the Internet, for example) and associated subnet mask.
	<b>Dest. Port</b>	"Destination" port.
	<b>Source MAC Addr./Mask</b>	"Source" MAC address (your computer, for example) and associated subnet mask.
	<b>Destination MAC Addr./Mask</b>	"Destination" MAC address (a machine on the Internet, for example) and associated subnet mask.
	<b>DSCP</b>	DSCP
	<b>802.1P</b>	Priority field 802.1P.

6.9.4.1 Add

- Click on the **Add** button to display the following screen:

**SAGEM**

ADSL ● Down 19996 kbps Up 1067 kbps refresh reboot  
Internet ● Connected.

**Add Network Traffic Class Rule**

The screen creates a traffic class rule to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the rule.

Traffic Class Name:

Enable Differentiated Service Configuration

**Assign ATM Priority and/or IP Precedence and/or Type Of Service for the class**  
If non-blank value is selected for 'Mark IP Precedence' and/or 'Mark IP Type Of Service', the corresponding TOS byte in the IP header of the upstream packet is overwritten by the selected value.

**Note: If Differentiated Service Configuration checkbox is selected, you will only need to assign ATM priority. IP Precedence will not be used for classification. IP TOS byte will be used for DSCP mark.**

Assign ATM Transmit Priority:

Mark IP Precedence:

Mark IP Type Of Service:

Mark 802.1p if 802.1q is enabled on WAN:

**Specify Traffic Classification Rules**  
Enter the following conditions either for IP level, SET-1, or for IEEE 802.1p, SET-2.

**SET-1**

Physical LAN Port:

Protocol:

Source IP Address:

Source Subnet Mask:

UDP/TCP Source Port (port or port:port):

Destination IP Address:

Destination Subnet Mask:

UDP/TCP Destination Port (port or port:port):

IP Precedence:

IP Type Of Service:

**SET-2**

802.1p Priority:

**SAGEM**

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This screen displays the TOS Marking service ("Enable Differentiated Service Configuration" box not checked).

## Type Of Service (TOS)

**Object:** This service allows to assign a type of service IP to PVC (TOS: Type Of Service). The value assigned to a TOS IP corresponds to a value of priority queue.

Field	Action
<b>Traffic Class Name</b>	Enter a name for the traffic class you want to create.
<b>Assign ATM Transmit Priority</b>	Select from the scroll down list: Blank : No priority, Low : "Low" emission priority, Medium : "Medium" emission priority, High : "High" emission priority. <b>Note :</b> A high priority leads to low packet loss.
<b>Mark IP Precedence</b>	Select the priority you will allocated to "IP Precedence" from the scroll down list: Blank : No priority, 0 to 7 : Priority (coded over 3 bits) from the lowest to the highest.
<b>Mark IP Type Of Service</b>	Select the type of service (TOS) to be allocated (4-bit coding) from the scroll down list. Normal Service : 0000 Minimize Cost : 0001 Maximize Reliability : 0010 Maximize Throughput : 0100 Minimize Delay : 1000
<b>Mark 802.1p if 802.1q is enabled on WAN</b>	Select a priority value between 0 and 7 from the scroll down list. <b>Note:</b> The "Enable 802.1q" box is only present in "Bridging" mode. This condition is transparent for the other modes.

	<b>Field</b>	<b>Action</b>
<b>SET-1</b>	<b>Physical LAN Port</b>	Select the interface of your choice (ENET, USB, Wireless or Wireless_Guest) from the scroll down list.
	<b>Protocol</b>	Select the protocol of your choice from the scroll down list (TCP/UDP, TCP, UDP or ICMP).
	<b>Source IP Address</b>	Enter a "Source" IP address.
	<b>Source Subnet Mask</b>	Enter a "Source" subnet mask.
	<b>UDP/TCP source Port (port or port:port)</b>	Enter a "Source" port or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.
	<b>Destination IP Address</b>	Enter a "Destination" IP address.
	<b>Destination Subnet Mask</b>	Enter a "Destination" subnet mask.
	<b>UDP/TCP Destination Port (port or port:port)</b>	Enter a "Destination" port or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.
	<b>IP Precedence</b>	Select the priority you will allocated to "IP Precedence" from the scroll down list:  Blank : No priority, 0 to 7 : Priority (coded over 3 bits) from the lowest to the highest.
	<b>IP Type Of Service</b>	Select the type of service (TOS) to be allocated (4-bit coding) from the scroll down list.  Normal Service : 0000 Minimize Cost : 0001 Maximize Reliability : 0010 Maximize Throughput : 0100 Minimize Delay : 1000
	<b>Differentiated Services Code Point (DSCP)</b>	Select the DSCP desired from the scroll down list.
<b>SET-2</b>	<b>802.1p Priority</b>	Select a priority value between 0 and 7 from the scroll down list.

## Differentiated Service Configuration

- Check the "Enable Differentiated Service Configuration" to display the following screen:

**Object:** This service allows to assign one DSCP (Differentiated Services Code Point) to PVC. The value assigned to a DSCP corresponds to a value of queue of priority. The More DSCP value is large, the more priority of the queue is high.

Field	Action
<b>Traffic Class Name</b>	Enter a name for the traffic class you want to create.
<b>Assign ATM Transmit Priority</b>	Select from the scroll down list: Blank : No priority, Low : "Low" emission priority, Medium : "Medium" emission priority, High : "High" emission priority. <b>Note :</b> A high priority leads to low packet loss.
<b>Assign Differentiated Services Code Point (DSCP) Mark</b>	Select a appropriate priority value from the scroll down list. <b>Note :</b> The default value is "000000".

## 6 - Information / Configuration

Field		Action
<b>Mark 802.1p if 802.1q is enabled on WAN</b>		Select a priority value between 0 and 7 from the scroll down list. <b>Note:</b> The "Enable 802.1q" box is only present in "Bridging" mode. This condition is transparent for the other modes.
<b>SET-1</b>	<b>Physical LAN Port</b>	Select the interface of your choice (ENET, USB, Wireless or Wireless_Guest) from the scroll down list.
	<b>Protocol</b>	Select the protocol of your choice from the scroll down list (TCP/UDP, TCP, UDP or ICMP).
	<b>Source IP Address</b>	Enter a "Source" IP address.
	<b>Source Subnet Mask</b>	Enter a "Source" subnet mask.
	<b>UDP/TCP source Port (port or port:port)</b>	Enter a "Source" port or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.
	<b>Destination IP Address</b>	Enter a "Destination" IP address.
	<b>Destination Subnet Mask</b>	Enter a "Destination" subnet mask.
	<b>UDP/TCP Destination Port (port or port:port)</b>	Enter a "Destination" port or range of ports. <b>Note:</b> For one port, for example, enter 80. For a range of ports, enter 80:90.
	<b>Source MAC Address</b>	Enter a "Source" MAC address.
	<b>Source MAC Mask</b>	Enter a "Source" MAC mask.
	<b>Destination MAC Address</b>	Enter a "Destination" MAC address.
	<b>Destination MAC Mask</b>	Enter a "Destination" MAC mask.
<b>SET-2</b>	<b>802.1p Priority</b>	Select a priority value between 0 and 7 from the scroll down list.

## 6.9.5 Routing

This menu contains 3 sub-menus:

- Default Gateway (cf. § 6.9.5.1),
- Static Route (cf. § 6.9.5.2),
- RIP (cf. § 6.9.5.3).

### 6.9.5.1 Default Gateway

**Object:** This menu is used either to allocate dynamically a default gateway address to the router from a PVC or to enter an address or choose an interface.

- Select the **Default Gateway** sub-menu in the **Routing** menu in the **Advanced Setup** section to display the following screen:

The screenshot shows the SAGEM router configuration page for the Default Gateway. The interface includes a status bar at the top right showing ADSL and Internet connections, and a left sidebar with navigation options. The main content area is titled "Routing -- Default Gateway" and contains the following information:

- Status:** ADSL (Down 1216 kbps, Up 160 kbps), Internet (Connected).
- Enable Automatic Assigned Default Gateway:**
- Use Default Gateway IP Address:**  (Value: 193.253.160.3)
- Use Interface:**  (Value: pppoe\_8\_35\_1/ppp\_8\_35\_1)
- Save/Apply** button.

NOTE: If changing the Automatic Assigned Default Gateway from unselected to selected, You must reboot the router to get the automatic assigned default gateway.

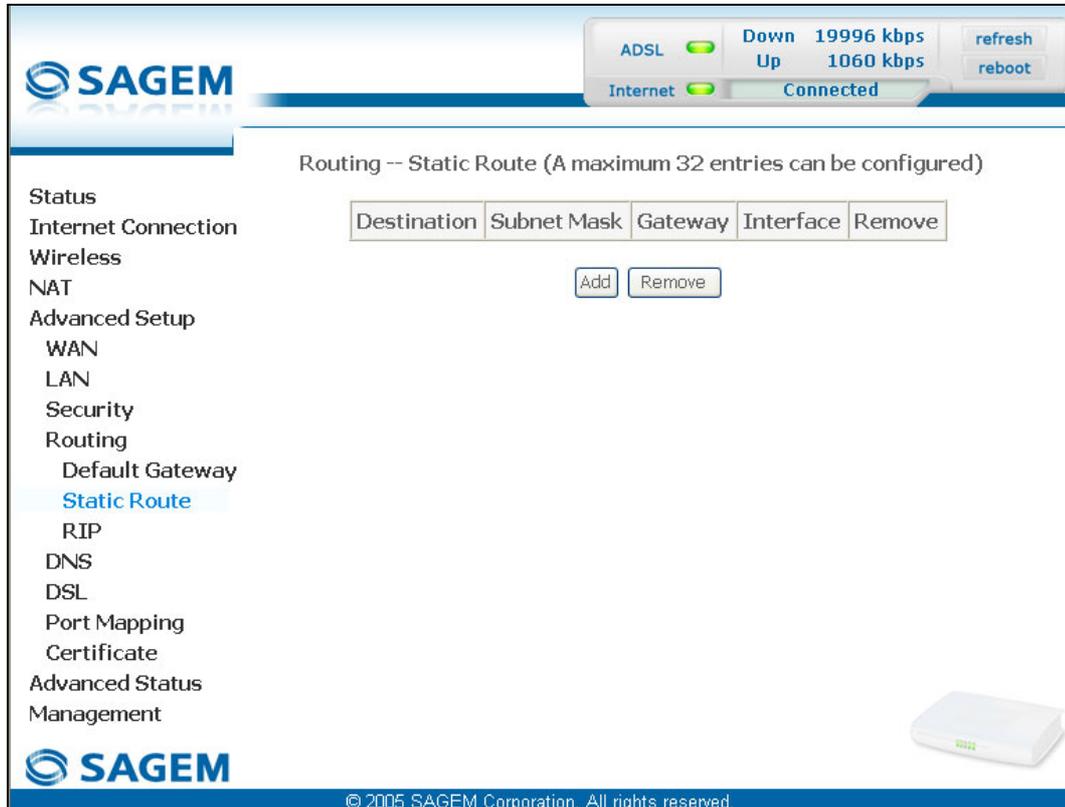
Field	Action	Default
<b>EnableAutomatic Assigned Default Gateway</b>	Check the box to allocate automatically a default gateway for your router.	<b>Box checked</b>
<b>Use Default Gateway IP Address</b> <sup>13</sup>	Check the box to use a default address.	<b>Box checked</b> <b>Not empty</b>
<b>Use Interface</b> <sup>13</sup>	Select the interface you want to use from the scroll down list (pppoe_8_35_1 for example).	<b>Box not checked</b> <b>Interface used</b>

<sup>13</sup> this field only appears when the "Enable Automatic Assigned Default Gateway" field is deactivated (box not checked).

6.9.5.2 Static Route

**Object:** This menu is used to add a static route.

- Select the **Static Route** sub-menu in the **Routing** menu in the **Advanced Setup** section to display the following screen:



Field	Meaning
<b>Destination</b>	Remote network IP address
<b>Subnet Mask</b>	Remote subnet mask
<b>Gateway</b>	Default gateway of the remote network
<b>Interface</b>	Remote network interface

## Add

- Click on the **Add** button to display the following screen:

**SAGEM**

ADSL Down 19996 kbps Up 1056 kbps refresh reboot  
Internet Connected.

**Routing -- Static Route Add**

Enter the destination network address, subnet mask, gateway AND/OR available WAN interface then click "Save/Apply" to add the entry to the routing table.

Destination Network Address:

Subnet Mask:

Use Gateway IP Address

Use Interface

**SAGEM**

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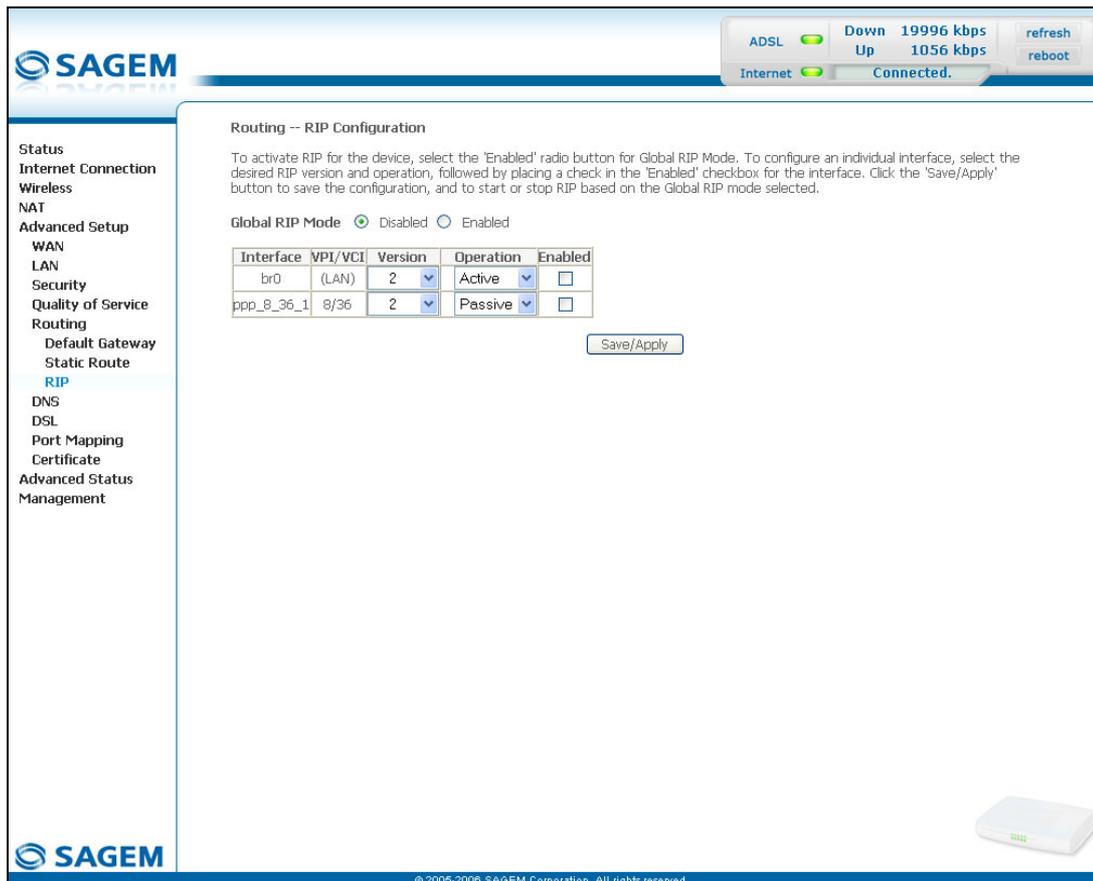
Field	Action	Default
<b>Destination Network Address</b>	Enter the IP address of the remote network.	<b>Empty</b>
<b>Subnet Mask</b>	Enter the remote subnet mask.	<b>Empty</b>
<b>Use Gateway IP Address</b>	Check the appropriate box then enter the IP address of the gateway.	<b>Box not checked</b> <b>Empty</b>
<b>Use Interface</b>	Select the interface you want to use from the scroll down list (pppoe_8_35_1 for example).	<b>Box checked</b> <b>Interface used</b>

6.9.5.3 RIP

**Object:** The "RIP" protocol (**R**outing **I**nformation **P**rotocol) lets you tell routers the distance (number of hops) which separates them.

This protocol only takes account of the distance between two machines in terms of hops.

- Select the **RIP** sub-menu in the **Routing** menu in the **Advanced Setup** section to display the following screen:



Field	Action/Meaning	Default
<b>Global RIP Mode</b>	Check the appropriate box to activate (Enabled) or deactivate (Disabled) the RIP function (Routing Information Protocol).	<b>Disabled</b>
<b>Interface</b>	Created or native interface.	<b>Br0</b>
<b>VPI/VCI</b>	VPI/VCI associated with the interface.	<b>(LAN)</b>
<b>Version</b>	Select the RIP version of your choice from the scroll down list. <ul style="list-style-type: none"> <li>• <b>1</b> for RIP1,</li> <li>• <b>2</b> for RIP2.</li> </ul>	<b>2</b>

Field	Action/Meaning	Default
<b>Operation</b>	In the scroll down list, select <b>Active</b> to transmit the routing information to the other routers and receive it from them or <b>Passive</b> to listen to the <b>RIP</b> broadcasts and update its routing table, but not indicate its own routes (silent mode).	<b>Active</b>
<b>Enabled</b>	Check the box to activate the "RIP" function on the interface you want (LAN or WAN for example).	<b>Box not checked</b>

## 6.9.6 DNS

**Object:** This menu enables the automatic resolution of domain names by polling remote servers.

- Select the **DNS** menu in the **Advanced Setup** section to display the following screen:

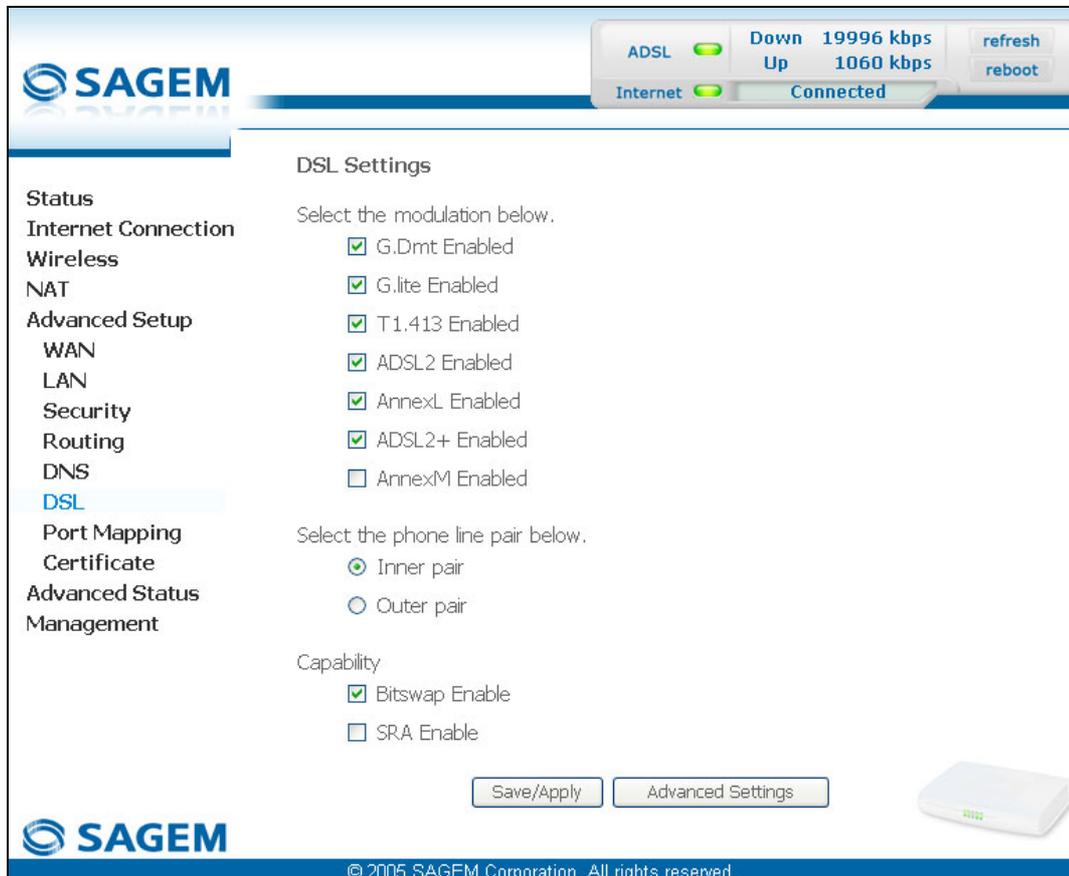
Field	Action	Default
<b>Enable Automatic Assigned DNS</b>	Check the appropriate box to allocate a domain name address.	<b>Box checked</b>
<b>Primary DNS server</b> <sup>14</sup>	Enter a primary DNS server address.	—
<b>Secondary DNS server</b> <sup>14</sup>	Enter a secondary DNS server address.	—

<sup>14</sup> This field only appears when the "Enable Automatic Assigned DNS" field is deactivated (box not checked).

## 6.9.7 DSL

**Object:** The purpose of this menu is to parameter your ADSL line.

- Select the **DSL** menu in the **Advanced Setup** section to display the following screen:



**SAGEM**

ADSL  Down 19996 kbps  
Up 1060 kbps refresh  
Internet  Connected reboot

**DSL Settings**

Select the modulation below.

G.Dmt Enabled  
 G.lite Enabled  
 T1.413 Enabled  
 ADSL2 Enabled  
 AnnexL Enabled  
 ADSL2+ Enabled  
 AnnexM Enabled

Select the phone line pair below.

Inner pair  
 Outer pair

Capability

Bitswap Enable  
 SRA Enable

Save/Apply Advanced Settings

**SAGEM**

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### Modulation

Field	Default
G.Dmt Enabled	Box checked
G.lite Enabled	Box checked
T1.413 Enabled	Box checked
ADSL2 Enabled	Box checked
AnnexL Enabled	Box checked
ADSL2+ Enabled	Box checked
AnnexM Enabled	Box not checked

Check the boxes according to the characteristics of your line.

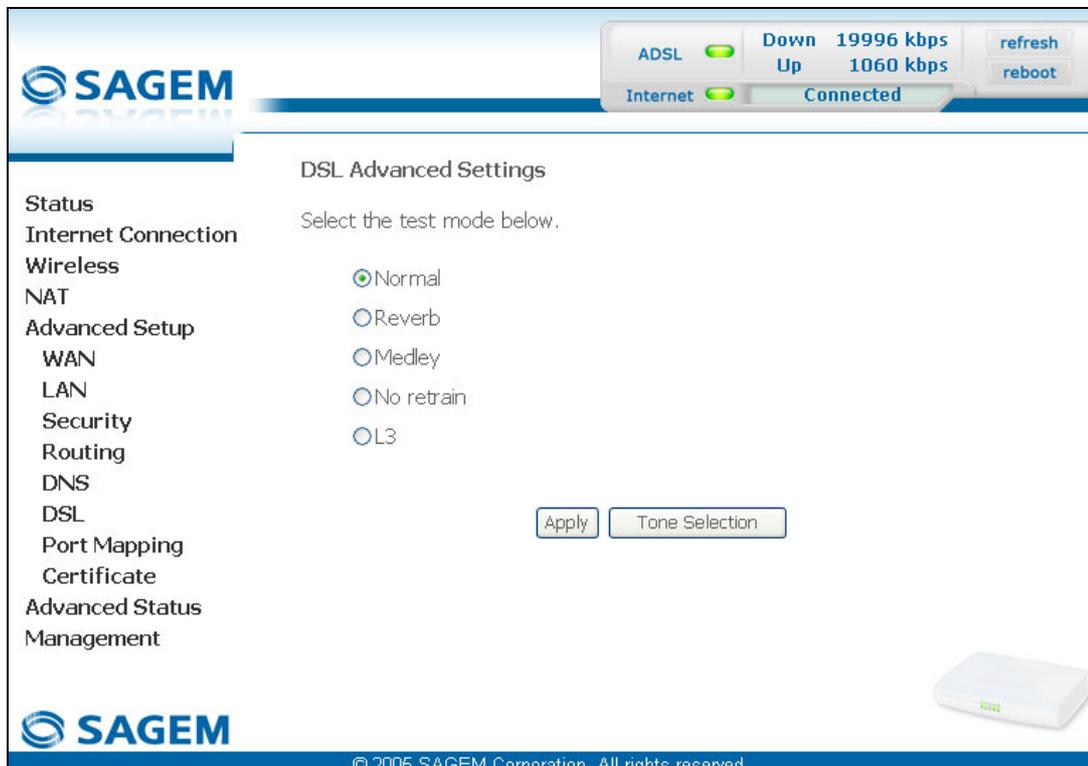
**Phone line pair**

Field	Default
Inner pair	Selected box
Outer pair	Box not selected

**Capability**

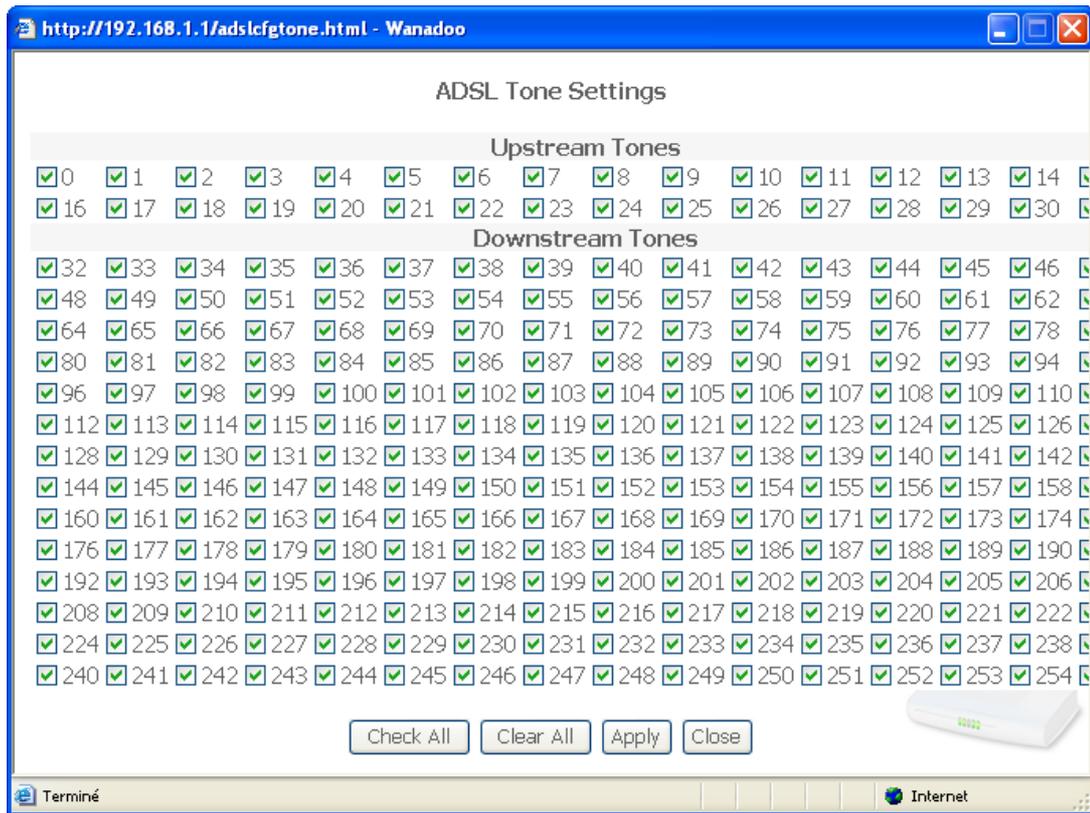
Field	Default
Bitswap Enable	Box checked
SRA Enable	Box not checked

- Click on the **Advanced Settings** button to display the following screen:



Field	Default
Normal	Selected box
Reverb	Box not selected
Medley	Box not selected
No retrain	Box not selected
L3	Box not selected

- Click on the **Tone Selection** button to display the following screen:



**Note:** There are 32 ascending tones and 224 descending tones.

- Click on the **Check All** button to select all the tones or the **Clear All** button to select none of them.



All the tones are selected by default.

To select a tone, simply check the associated box.

To not select a tone, simply leave its associated box empty.

## 6.9.8 Port Mapping

**Object:** This menu is used to host a service (Video, Data, SIP) on an interface (USB, ETH or Wi-Fi) of your router.

- Select the **Port Mapping** menu in the **Advanced Setup** section to display the following screen:



Field	Meaning	Default
Enable virtual ports on	<p><b>This field only appears in the case of SAGEM F@st™ 2404 or SAGEM F@st™ 2444 equipment.</b></p> <p>If the box is not checked, the Ethernet 1 to 4 (ENET (1-4)) ports are gathered and seen like only one virtual port.</p> <p>When the box is checked, these ports are independently seen but a fall of the performances of the transfers between ports is noted.</p>	Box not checked

Field	Meaning
Group Name	Group name (see "Information" icon).
Interfaces	Lists all your router's interfaces. <b>Note:</b> Only the "nas_8_50" interface is not resident on the router. It corresponds to a "Bridge" ATM interface.



By default, all the interfaces are dedicated to data and are associated with the first VC (Virtual Channel) existing or created.

### Add

- Click on the **Add** button to display the following screen:

**SAGEM** ADSL Down 19996 kbps Up 1056 kbps Internet Connected. refresh reboot

**Port Mapping Configuration**

To create a new mapping group:

1. Enter the Group name and select interfaces from the available interface list and add it to the grouped interface list using the arrow buttons to create the required mapping of the ports. The group name must be unique.
2. If you like to automatically add LAN clients to a PVC in the new group add the DHCP vendor ID string. By configuring a DHCP vendor ID string any DHCP client request with the specified vendor ID (DHCP option 60) will be denied an IP address from the local DHCP server.  
**Note that these clients may obtain public IP addresses**
3. Click Save/Apply button to make the changes effective immediately

**Note that the selected interfaces will be removed from their existing groups and added to the new group.**

**IMPORTANT** If a vendor ID is configured for a specific client device, please REBOOT the client device attached to the modem to allow it to obtain an appropriate IP address.

Group Name:

Grouped Interfaces:

Available Interfaces: ENET(1-4), nas\_8\_50, USB, Wireless, Wireless\_Gues

Automatically Add Clients With the following DHCP Vendor IDs:

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Field	Meaning	Default
<b>Group Name</b>	Enter a name which represents the service you want to associate with a desired interface (for example "video_eth" if you want to associate the TV over UP service with the interface (Ethernet)).	-
<b>Grouped Interfaces</b>	Displays the interfaces associated with a service you selected in the "Available Interfaces" area then transferred with the  button.	-
<b>Available Interfaces</b>	Lists all your router's interfaces. <b>Note:</b> Only the "nas_8_50" interface is not resident on the router. It corresponds to a "Bridge" ATM interface.	-

	Used to transfer the interfaces selected in the " <b>Available Interfaces</b> " area to the " <b>Grouped Interfaces</b> " area.
	Used to transfer the interfaces selected in the " <b>Grouped Interfaces</b> " area to the " <b>Available Interfaces</b> " area.

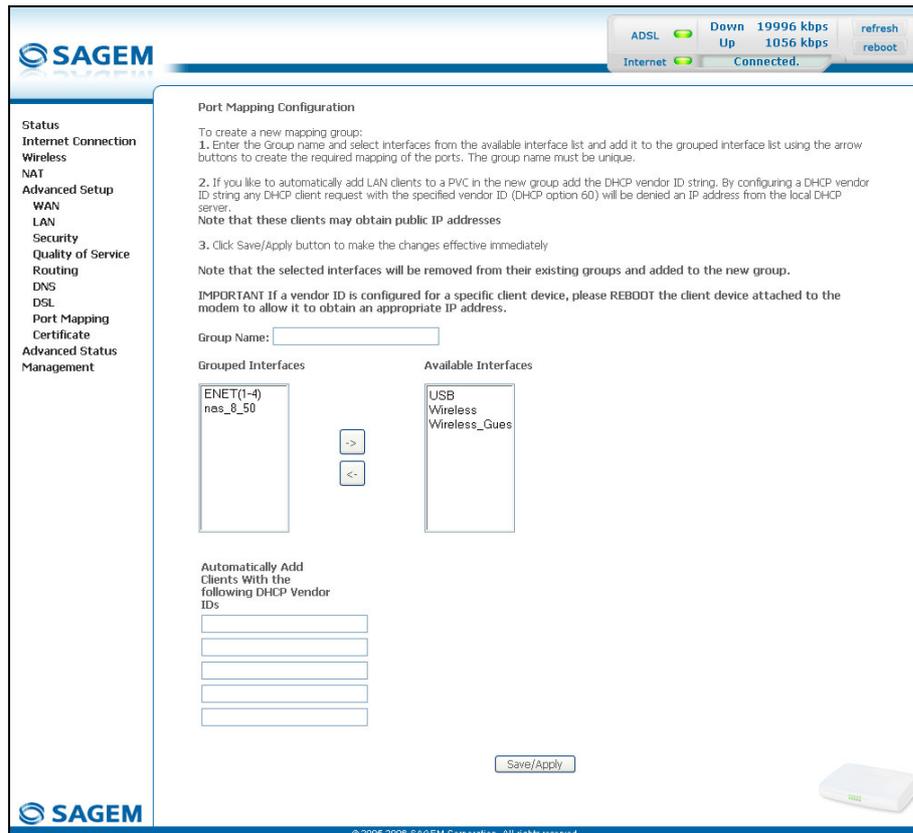
Field	Meaning
<b>Automatically Add Clients with the DHCP Vendor IDs</b>	This functionality allows to recognize the equipment connected to a port and to automatically affect this port to it. To do that, the router receives from this equipment (for example a decoder TV) a DHCP request which contains a client specific identification (Vendor ID). <b>Note:</b> As soon as this assignment is carried out, it becomes permanent.

### Example

If you want to associate the "Video" service with the Ethernet interface:

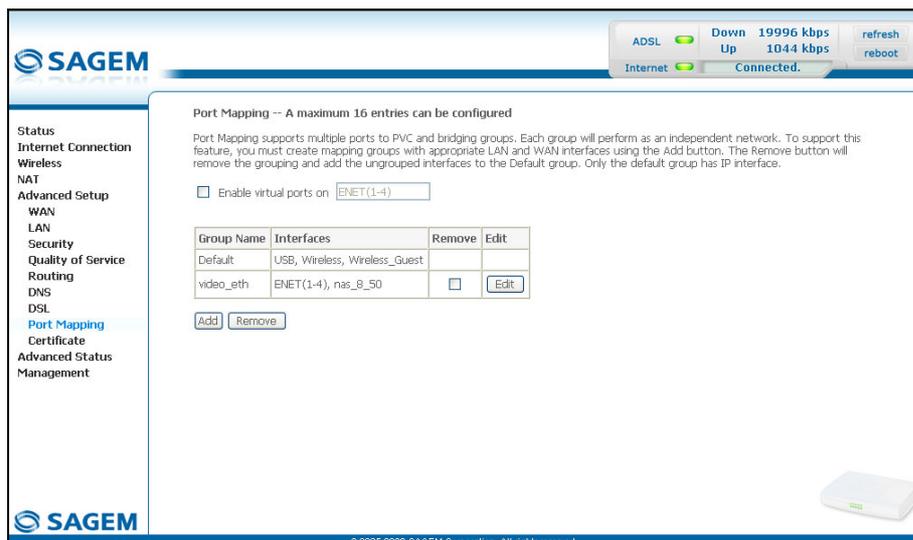
- in the "Group Name" area enter a representative name such as "video\_eth".
- in the "Available Interfaces" area select **ENET(1-4)** for the Ethernet interface.
- then click on the  button to transfer this interface to the "Grouped Interfaces" area.
- in the "Available Interfaces" area select the ATM **nas\_8\_50** interface associated with the ATM "br\_8\_50" service ("Bridge" protocol) created earlier using the Advanced Setup / WAN) menu.
- then click on the  button to transfer this interface to the "**Grouped Interfaces**" area.

The following screen shows the operations which have been carried out.



**Note:** You are recommended to associate the "Bridge" protocol with the "Video" service.

- click on the  button to save the addition. The following screen displays all the entries which have been configured.

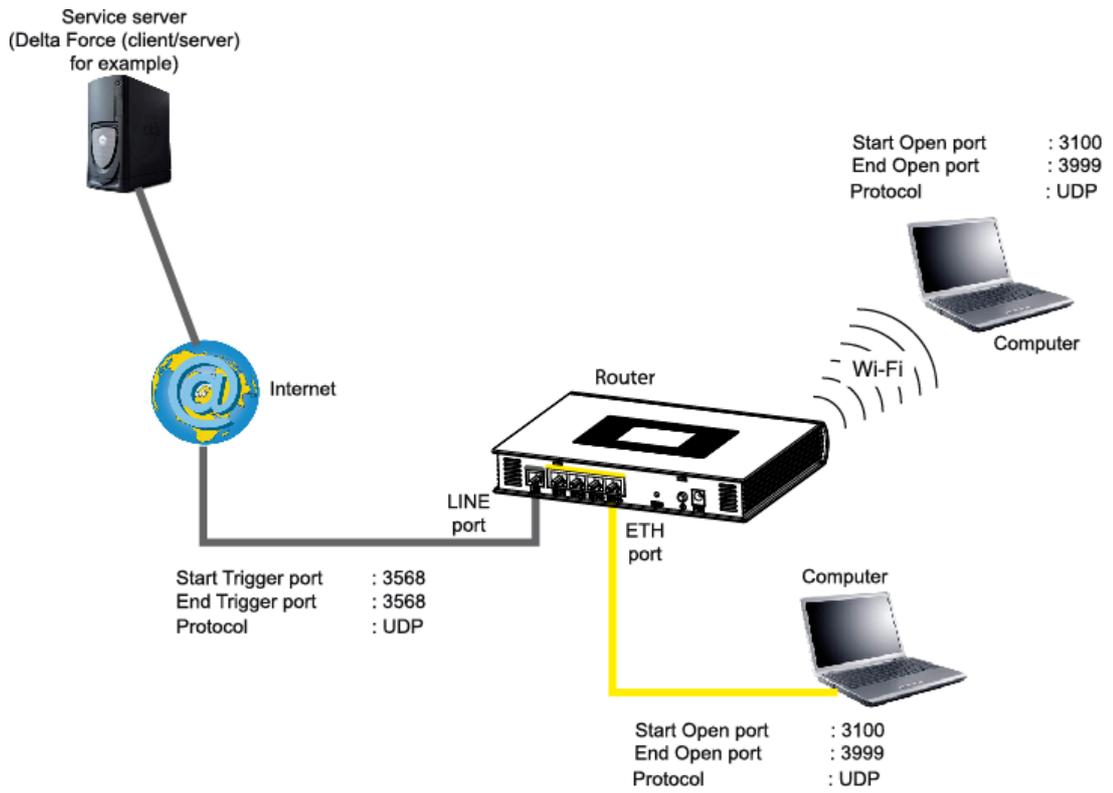


This screen indicates that:

- the **Default** "Group Name" associates the "Data" service with the USB, Wireless (Wi-Fi) interface by default.
- the dedicated ATM interface **nas\_8\_50** and the Ethernet interface **ENET(1-4)** are associated with the "Video" service.

## 6 - Information / Configuration

To enable you to understand better, the following diagram shows the path of the "Video" and "Data" flows.



## 6.9.9 Certificate

This menu contains 2 sub-menus:

- Local (cf. § 6.9.9.1),
- Trusted CA (cf. § 6.9.9.2).

### 6.9.9.1 Local

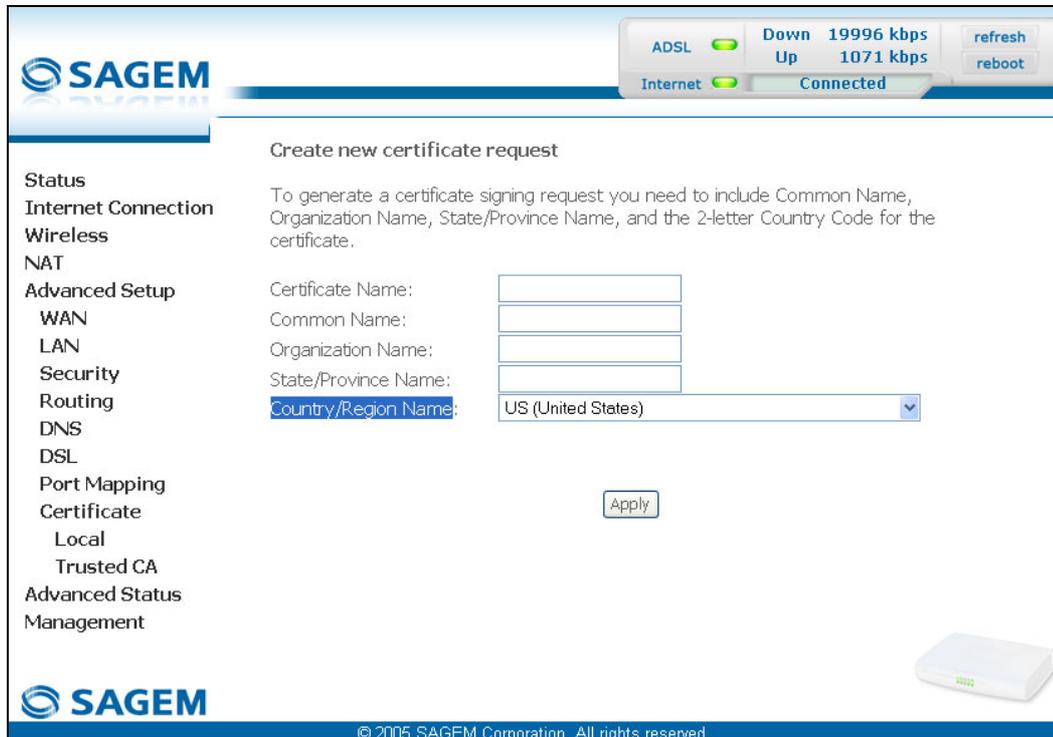
**Object:** This menu is used to manage your router's identity certificates. These certificates, which are used by TR-69 (in SSL mode), enable the mutual authentication of the CPE and the ACS.

- Select the **Local** sub-menu in the **Certificate** menu in the **Advanced Setup** section to display the following screen:

Field	Meaning
<b>Name</b>	Name of the certificate.
<b>In Use</b>	Indicates whether the certificate can be used or not.
<b>Subject</b>	Summarises the main characteristics of the certificate.
<b>Type</b>	Indicates the status of the certificate (e.g.: request).
<b>Action</b>	Select the action from the list: view, load signed certificate, remove.

### Create Certificate Request

- Click on the **Create Certificate Request** button to display the following screen:



Field	Action	Default
<b>Certificate Name</b>	Enter the name of the certificate	–
<b>Common Name</b>	Enter the name of the certificate's owner	–
<b>Organization Name</b>	Enter the name of the organisation which owns the certificate	–
<b>State/Province Name</b>	Enter the name of the state of province	–
<b>Country/Region Name</b>	Select the country from the scroll down list	–

## Import Certificate

- Click on the **Import Certificate** button to display the following screen:

**SAGEM**

ADSL  Down 19996 kbps Up 1071 kbps refresh reboot  
Internet  Connected

### Import certificate

Enter certificate name, paste certificate content and private key.

Certificate Name:

Certificate: 

```
-----BEGIN CERTIFICATE-----
<insert certificate here>
-----END CERTIFICATE-----
```

Private Key: 

```
-----BEGIN RSA PRIVATE KEY-----
<insert private key here>
-----END RSA PRIVATE KEY-----
```

Apply

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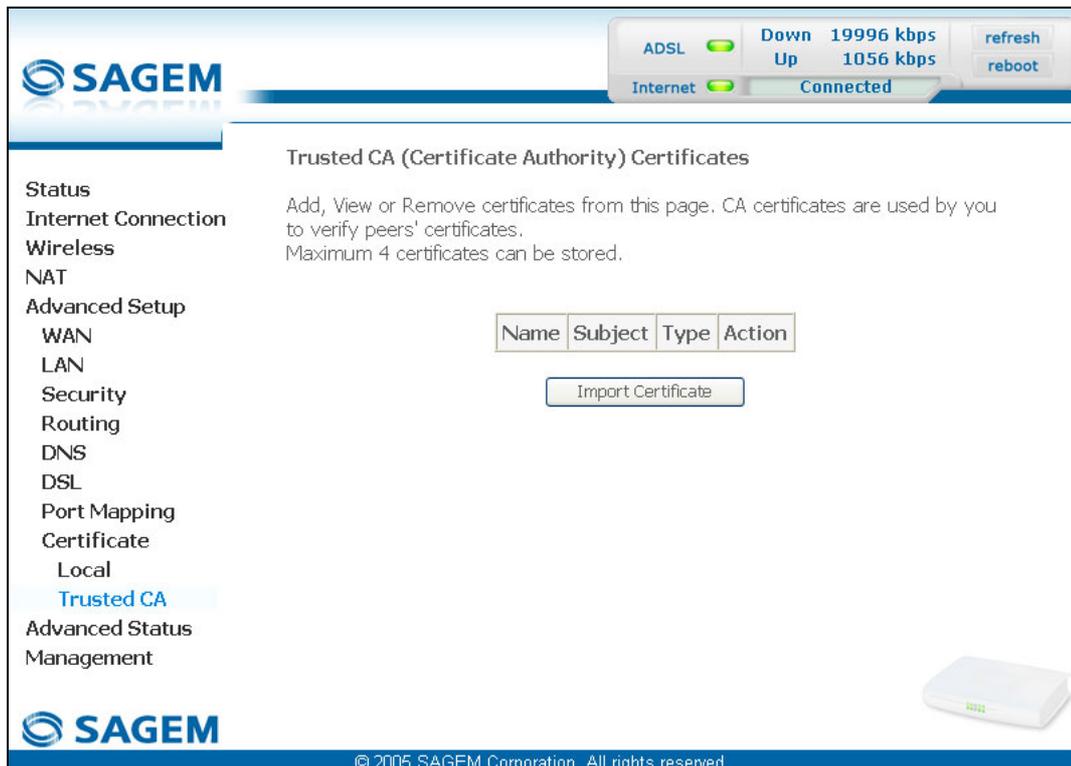
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Field	Action	Default
<b>Certificate Name</b>	Enter the name of the certificate	—
<b>Certificat</b>	Insert the certificate here	—
<b>Private key</b>	Insert the private key here	—

### 6.9.9.2 Trusted CA

**Object:** This menu is used to manage the identity certificates of the remote servers. These certificates, which are used by TR-69 (in SSL mode), enable the mutual authentication of the CPE and the ACS.

- Select the **Trusted** sub-menu in the **Certificate** menu in the **Advanced Setup** section to display the following screen:



## Import Certificate

- Click on the **Import Certificate** button to display the following screen:

Field	Action	Default
<b>Certificate Name</b>	Enter the name of the certificate to be imported	–
<b>Certificate</b>	Insert the certificate here	–

## 6.10 Advanced Status

**Object:** This heading is used to display the status of your router.

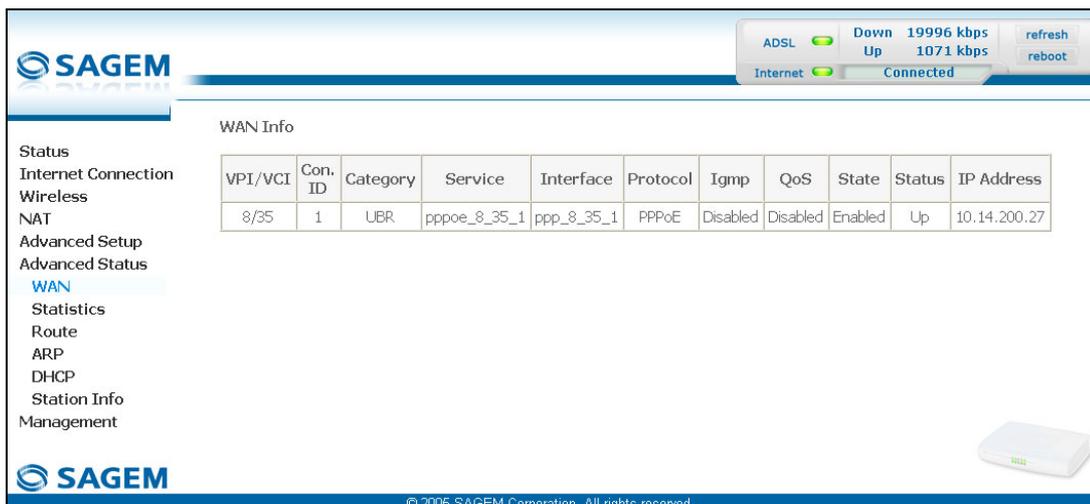
This section contains the following six menus:

- WAN (cf. § 6.10.1),
- Statistics (cf. § 6.10.2),
- Route (cf. § 6.10.3),
- ARP (cf. § 6.10.4),
- DHCP (cf. § 6.10.5),
- Station Info (cf. § 6.10.6).

### 6.10.1 WAN

**Object:** This menu is used to display all the parameters which concern the remote network.

- Select the **WAN** menu in the **Advanced Status** section to display the following screen:



The screenshot displays the SAGEM router's web interface. At the top right, there are status indicators for ADSL (green light) and Internet (green light), along with download and upload speeds (19996 kbps down, 1071 kbps up) and buttons for 'refresh' and 'reboot'. The main content area is titled 'WAN Info' and contains a table with the following data:

VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	State	Status	IP Address
8/35	1	UBR	pppoe_8_35_1	ppp_8_35_1	PPPoE	Disabled	Disabled	Enabled	Up	10.14.200.27

On the left side, there is a sidebar menu with the following items: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, **WAN** (highlighted), Statistics, Route, ARP, DHCP, Station Info, and Management. The SAGEM logo is visible in the top left and bottom left corners. A small image of the router is shown in the bottom right corner. The footer contains the copyright notice: © 2005 SAGEM Corporation. All rights reserved.

## 6.10.2 Statistics

**Object:** This menu is used to display all the router's statistics.

This menu contains the following four sub menus:

- LAN (cf. § 6.10.2.1),
- WAN (cf. § 6.10.2.2),
- ATM (cf. § 6.10.2.3),
- ADSL (cf. § 6.10.2.4).

### 6.10.2.1 LAN

**Object:** This menu is used to display all the parameters which concern the local network (LAN).

- Select the **LAN** sub menu in the **Statistics** menu in the **Advanced Status** section to display the following screen:

The screenshot shows the SAGEM router's web interface. At the top, there are status indicators for ADSL (Down 19996 kbps, Up 1071 kbps) and Internet (Connected). The main content area is titled 'Statistics -- LAN' and contains a table with the following data:

Interface	Received				Transmitted			
	Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
Ethernet	900115	7362	0	0	2836327	6855	0	0
USB	0	0	0	0	0	0	0	0
Wireless	335	3	232	0	51069	273	26	0

Below the table is a 'Reset Statistics' button. The left navigation menu includes: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, WAN, **Statistics**, LAN, WAN, ATM, ADSL, Route, ARP, DHCP, Station Info, and Management. The SAGEM logo is visible at the bottom left and right of the page.

- click on the  button to reset statistics.

### 6.10.2.2 WAN

**Object:** This menu is used to display all the parameters which concern the remote network (WAN).

- Select the **WAN** sub menu in the **Statistics** menu in the **Advanced Status** section to display the following screen:

ADSL  Down 19996 kbps  
Up 1071 kbps refresh  
reboot

Internet  Connected

**SAGEM**

Statistics -- WAN

Service	VPI/VCI	Protocol	Interface	Received				Transmitted			
				Bytes	Pkts	Errs	Drops	Bytes	Pkts	Errs	Drops
pppoe_8_35_1	8/35	PPPoE	ppp_8_35_1	447488	536	0	0	96440	1260	0	0

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- click on the  button to reset statistics.

## 6.10.2.3 ATM

**Object:** This menu is used to display all the ATM statistics of the line.

- Select the **ATM** sub menu in the **Statistics** menu in the **Advanced Status** section to display the following screen:

**SAGEM**

ADSL  Down 19996 kbps Up 1071 kbps refresh reboot  
Internet  Connected

Statistics -- ATM

ATM Interface Statistics

In Octets	Out Octets	In Errors	In Unknown	In Hec Errors	In Invalid Vpi Vci Errors	In Port Not Enable Errors	In PTI Errors	In Idle Cells	In Circuit Type Errors	In OAM RM CRC Errors	In GFC Errors
488112	178416	0	0	0	0	0	0	0	0	0	0

AAL5 Interface Statistics

In Octets	Out Octets	In Ucast Pkts	Out Ucast Pkts	In Errors	Out Errors	In Discards	Out Discards
488112	178416	665	1409	0	0	0	0

AAL5 VCC Statistics

VPI/VCI	CRC Errors	SAR Timeouts	Oversized SDUs	Short Packet Errors	Length Errors
8/35	0	0	0	0	0

Reset Statistics

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- click on the  button to reset statistics.

6.10.2.4 ADSL

**Object:** This menu is used to display all the ADSL statistics of the line.

- Select the **ADSL** sub menu in the **Statistics** menu in the **Advanced Status** section to display the following screen:

ADSL Down 19996 kbps Up 1056 kbps refresh reboot  
Internet Connected.

Statistics -- ADSL

Mode:	ADSL2+	
Line Coding:	Trellis On	
Status:	No Defect	
Link Power State:	LO	
	Downstream	Upstream
SNR Margin (dB):	15.5	6.6
Attenuation (dB):	1.5	0.0
Output Power (dBm):	0.0	12.8
Attainable Rate (Kbps):	28112	1168
Rate (Kbps):	19996	1056
MSGc (number of bytes in overhead channel message):	78	18
B (number of bytes in Mux Data Frame):	238	48
M (number of Mux Data Frames in FEC Data Frame):	1	4
T (Mux Data Frames over sync bytes):	2	2
R (number of check bytes in FEC Data Frame):	16	5
S (ratio of FEC over PMD Data Frame length):	0.3817	5.8764
L (number of bits in PMD Data Frame):	5345	275
D (interleaver depth):	64	8
Delay (msec):	6	11
Super Frames:	1940	1938
Super Frame Errors:	0	4294967264
RS Words:	325868	32946
RS Correctable Errors:	0	4294967260
RS Uncorrectable Errors:	0	N/A
HEC Errors:	0	4294967281
OCD Errors:	0	0
LCD Errors:	0	0
Total Cells:	4049136	876676
Data Cells:	413	2182
Bit Errors:	0	650
Total ES:	0	0
Total SES:	0	0
Total UAS:	16	71

ADSL BER Test Reset Statistics

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- click on the **Reset Statistics** button to reset statistics.

- Cliquez sur le bouton  pour afficher l'écran suivant :



- in the "Test Time (sec)" field, select the test time from the scroll down list.
- Click on the  button to run test.
- Click on the  button to shut window and return to the previous screen.

### 6.10.3 Route

**Object:** This menu is used to display all the information concerning your router's routing.

- Select the **Route** menu in the **Advanced Status** section to display the following screen:

ADSL Down 19996 kbps  
Up 1064 kbps refresh  
Internet Connected reboot

**SAGEM**

Status  
Internet Connection  
Wireless  
NAT  
Advanced Setup  
Advanced Status  
WAN  
Statistics  
**Route**  
ARP  
DHCP  
Station Info  
Management

Device Info -- Route

Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate  
D - dynamic (redirect), M - modified (redirect).

Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
10.14.200.1	0.0.0.0	255.255.255.255	UH	0	pppoe_8_35_1	ppp_8_35_1
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0
0.0.0.0	10.14.200.1	0.0.0.0	UG	0	pppoe_8_35_1	ppp_8_35_1

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## 6.10.4 ARP

**Object:** This menu is used to display all the information concerning address resolution (ARP: Address Resolution Protocol). This lets you find out the physical address of a computer's network card, corresponding to an IP address.

- Select the **ARP** menu in the **Advanced Status** section to display the following screen:

The screenshot shows the SAGEM web interface. At the top right, there are status indicators for ADSL (green light) and Internet (green light). The ADSL status shows 'Down 19996 kbps' and 'Up 1071 kbps'. The Internet status shows 'Connected'. There are 'refresh' and 'reboot' buttons. The left navigation menu includes: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, WAN, Statistics, Route, **ARP** (highlighted), DHCP, Station Info, and Management. The main content area is titled 'Device Info -- ARP' and contains a table with the following data:

IP address	Flags	HW Address	Device
192.168.1.2	Complete	00:11:09:BA:2B:84	br0

At the bottom of the interface, there is a SAGEM logo and the copyright notice: © 2005 SAGEM Corporation. All rights reserved.

### 6.10.5 DHCP

**Object:** This menu is used to display all the computers which obtained an IP address from the router's DHCP server.

- Select the **DHCP** menu in the **Advanced Status** section to display the following screen:

The screenshot displays the SAGEM router's web interface. At the top right, there are status indicators for ADSL (Down 19996 kbps, Up 1071 kbps) and Internet (Connected), along with 'refresh' and 'reboot' buttons. The main content area is titled 'Device Info -- DHCP Leases' and contains a table with the following data:

Hostname	MAC Address	IP Address	Expires In
p1198532	00:11:09:BA:2B:84	192.168.1.2	22 hours, 48 minutes, 6 seconds

The left sidebar contains a navigation menu with the following items: Status, Internet Connection, Wireless, NAT, Advanced Setup, **Advanced Status**, WAN, Statistics, Route, ARP, **DHCP**, Station Info, and Management. The SAGEM logo is visible in the top left and bottom left, and a small image of the router is in the bottom right. The footer contains the copyright notice: © 2005 SAGEM Corporation. All rights reserved.

## 6.10.6 Station Info

**Object:** This menu is used to display all the wireless stations certified, with their status.

- Select the **Station Info** menu in the **Advanced Status** section to display the following screen:

The screenshot displays the SAGEM router's web interface. At the top, there's a status bar showing 'ADSL' and 'Internet' both with green indicator lights. Next to them, it shows 'Down 19996 kbps' and 'Up 1071 kbps', and a 'Connected' status. There are 'refresh' and 'reboot' buttons. The main navigation menu on the left includes: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, WAN, Statistics, Route, ARP, DHCP, **Station Info** (highlighted), and Management. The main content area is titled 'Wireless -- Authenticated Stations' and contains the text: 'This page shows authenticated wireless stations and their status.' Below this is a table:

BSSID	Associated	Authorized
00:0E:35:CC:AF:D9	Yes	

Below the table is a 'Refresh' button. In the bottom right corner of the page, there is a small image of the SAGEM router. The footer contains the SAGEM logo and the text: '© 2005 SAGEM Corporation. All rights reserved.'

- Click on the  button to refresh screen.



Only appear the MAC addresses (BSSIDs) of the computers associated with the router and/or authorized by this one to use your wireless network (see § 6.7.3 - MAC Filter).

### 6.11 Management

---

**Object:** This menu lets you manage your router.

This section contains the following seven menus:

- Settings (cf. § 6.11.1),
- System Log (cf. § 6.11.2),
- TR-069 Client (cf. § 6.11.3),
- Internet Time (cf. § 6.11.4),
- Access Control (cf. § 6.11.5),
- Update Software (cf. § 6.11.6),
- Save/Reboot (cf. § 6.11.7).

#### 6.11.1 Settings

This menu contains the following three sub menus:

- Backup (cf. § 6.11.1.1),
- Update (cf. § 6.11.1.2),
- Restore Default (cf. § 6.11.1.3).

### 6.11.1.1 Backup

**Object:** This menu is used to backup the current configuration to a file with a .conf extension.



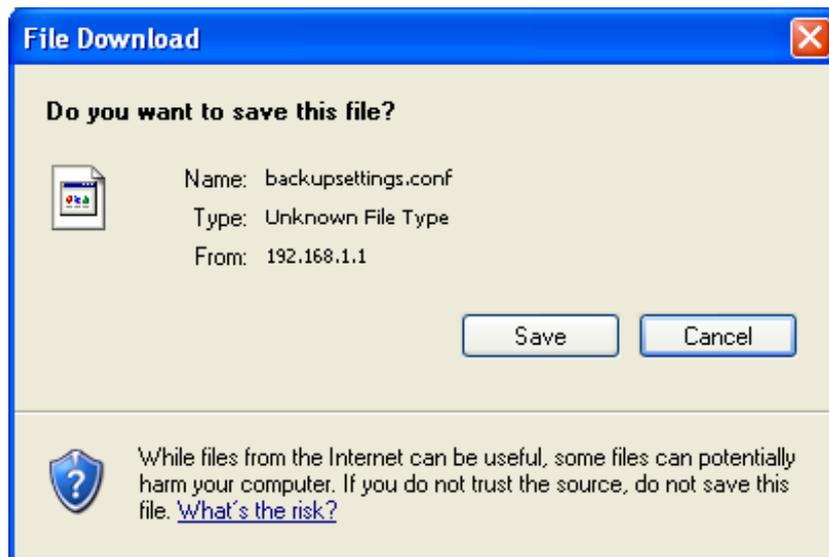
It is recommended to save the current configuration on your computer to a file

- Select the **Backup** sub menu in the **Settings** menu of the **Management** section to display the following screen:

The screenshot displays the SAGEM router's web management interface. At the top, there is a status bar showing 'ADSL' and 'Internet' with green indicators, and speed statistics: 'Down 19996 kbps' and 'Up 1071 kbps'. There are also 'refresh' and 'reboot' buttons. The main content area is titled 'Settings - Backup' and contains the text: 'Backup DSL router configurations. You may save your router configurations to a file on your PC.' Below this text is a 'Backup Settings' button. On the left side, there is a navigation menu with the following items: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, Management, Settings, **Backup** (highlighted), Update, Restore Default, System Log, TR-069 Client, Internet Time, Access Control, Update Software, and Save/Reboot. The footer of the page features the SAGEM logo and the text '© 2005 SAGEM Corporation. All rights reserved.'

## 6 - Information / Configuration

- Click on the **Backup Settings** button; the following screen appears:



- Click on the **Save** button to save the current configuration file, for example, on your computer.
- Select the directory where you want to save the "backupsettings.conf" configuration file.

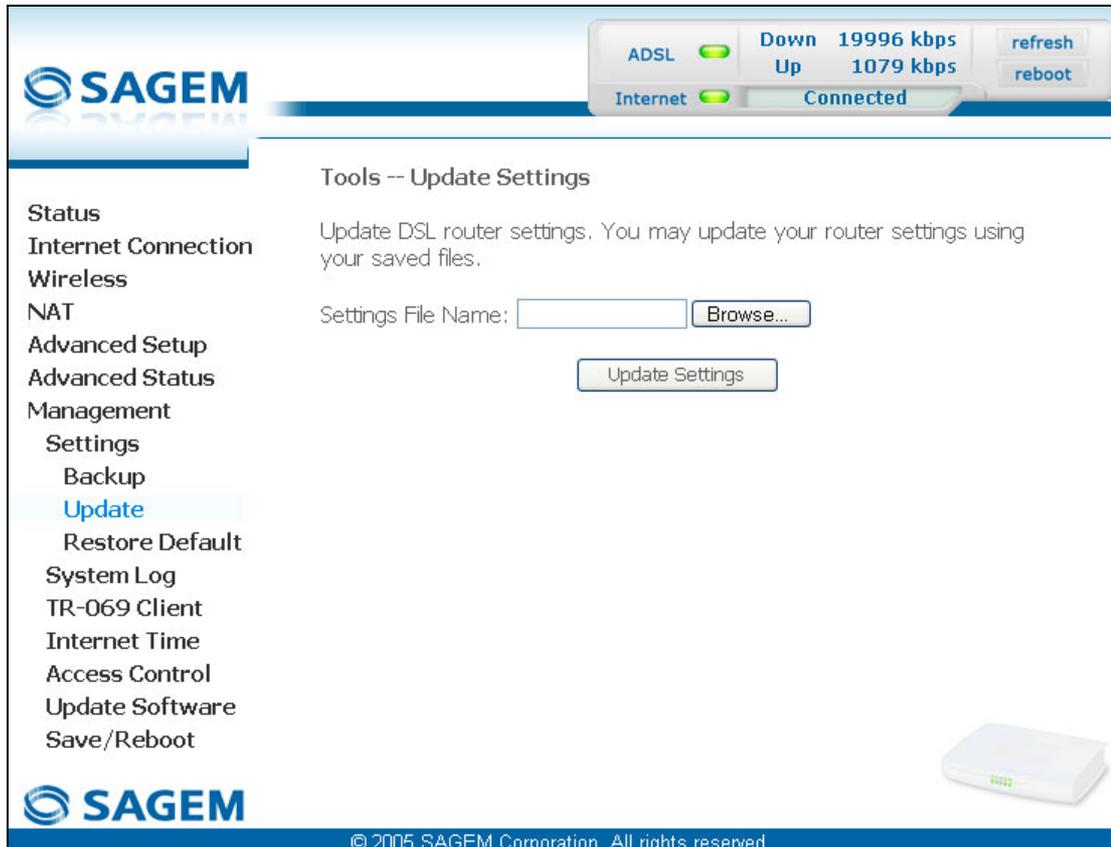


The process takes a few seconds.

### 6.11.1.2 Update

**Object:** This menu enables the router to recover a configuration which has already been saved to a file with a .conf extension.

- Select the **Update** sub menu in the **Settings** menu of the **Management** section to display the following screen:



Proceed as follows for your router configurer to display a configuration which has already been saved:

- Enter the path then the name of the configuration file,  
or
- Click on the **Browse** button and select the path then the configuration file,
- Select the configuration file then click on the **Update Settings** button to recover a configuration which has already been saved.



The process takes around 2 minutes.

### 6.11.1.3 Restore Default

**Object:** This menu is used to return to factory configuration.

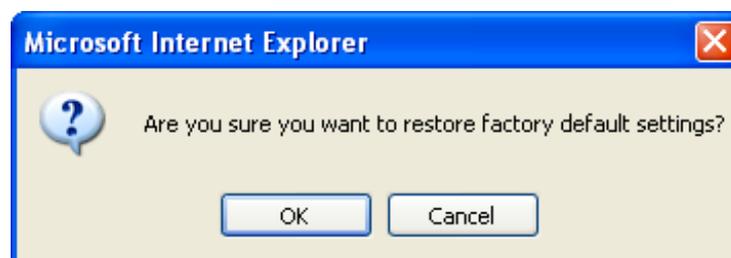


The existing configuration is completely overwritten.

- Select the **Restore Default** sub menu in the **Settings** menu of the **Management** section to display the following screen:



- Select the configuration file then click on the **Restore Default Settings** button and the following screen appears:



- Click on the **OK** button if you really want to return to the factory configuration.

A few moments after, the screen of the "Internet Connection" menu appears. Refer to paragraph 6.6.



All the LEDs go off except for the green "W" LED (WLAN) (if the wired network is activated); the green "P" LED (PWR) then all the LEDs and the process for returning to the factory configuration starts. It lasts for around 2 minutes.

## 6.11.2 System Log

**Object:** This menu is used to view and/or configure the events which occur on your router.

- Select the **System Log** menu in the **Management** section to display the following screen:

The screenshot displays the SAGEM router's web interface. At the top, there is a status bar showing 'ADSL' and 'Internet' with green indicator lights. The 'Internet' status is 'Connected', and the download speed is 'Down 19996 kbps' and the upload speed is 'Up 1071 kbps'. There are 'refresh' and 'reboot' buttons in the top right corner. The left sidebar contains a navigation menu with the following items: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, Management (highlighted), Settings, System Log (highlighted), TR-069 Client, Internet Time, Access Control, Update Software, and Save/Reboot. The main content area is titled 'System Log' and contains the following text: 'The System Log dialog allows you to view the System Log and configure the System Log options.' and 'Click "View System Log" to view the System Log.' and 'Click "Configure System Log" to configure the System Log options.' Below the text are two buttons: 'View System Log' and 'Configure System Log'. At the bottom right of the main content area, there is a small image of the SAGEM router. The footer of the page contains the SAGEM logo and the copyright notice: '© 2005 SAGEM Corporation. All rights reserved.'

### View System Log

- Click on the **View System Log** button to display the events with the severity you configured (see table in the next paragraph - "**Configure System Log**").

Date/Time	Facility	Severity	Message
Jan 1 00:00:27	daemon	crit	pppd[485]: PPP session established.
Jan 1 00:00:31	daemon	crit	pppd[485]: PPP LCP UP.
Jan 1 00:00:42	daemon	crit	pppd[485]: Received valid IP address from server. Connection UP.
Jan 1 00:00:47	daemon	err	user: tr69c: Unable to retrieve attributes in scratch PAD
Jan 1 00:00:47	daemon	err	user: Stored Parameter Attribute data is corrupt or missing
Jan 1 00:00:48	daemon	err	user: tr69c: Unable to read tr69c acs state data from scratch pad



- Click on the **Save** button to save all the events allocated to the severity you configured.

## Configure System Log

- Click on the **Configure System Log** button to configure the events which occur on your router.

The screenshot shows the SAGEM router's web interface. At the top, there is a status bar with the SAGEM logo on the left and connection information on the right: ADSL (green light), Down 19996 kbps, Up 1071 kbps, and Internet (green light) Connected. There are buttons for 'refresh' and 'reboot'.

The main content area is titled 'System Log -- Configuration'. It contains the following text:
 

If the log mode is enabled, the system will begin to log all the selected events. For the Log Level, all events above or equal to the selected level will be logged. For the Display Level, all logged events above or equal to the selected level will be displayed. If the selected mode is 'Remote' or 'Both,' events will be sent to the specified IP address and UDP port of the remote syslog server. If the selected mode is 'Local' or 'Both,' events will be recorded in the local memory.

Select the desired values and click 'Save/Apply' to configure the system log options.

Log:  Disable  Enable

Log Level:  (dropdown arrow)

Display Level:  (dropdown arrow)

Mode:  (dropdown arrow)

At the bottom center, there is a 'Save/Apply' button. In the bottom right corner, there is a small image of the SAGEM router.

The footer of the interface shows the SAGEM logo and the copyright notice: © 2005 SAGEM Corporation. All rights reserved.

## 6 - Information / Configuration

Field	Action	Default
<b>Log</b>	Select <b>Enable</b> to activate the saving of all the events to a log and display on screen or <b>Disable</b> to deactivate.	<b>Enable</b>
<b>Log Level</b>	<p>Select the appropriate severity from the scroll down list. All the events with this severity, or a higher severity, will be saved to your router's volatile "flash" memory.</p> <p>The severities are classified in decreasing order of importance.</p> <ul style="list-style-type: none"> <li>• Emergency,</li> <li>• Alert,</li> <li>• Critical,</li> <li>• Error,</li> <li>• Notice,</li> <li>• Informational,</li> <li>• Debugging.</li> </ul>	<b>Debugging</b>
<b>Display Level</b>	<p>Select the appropriate severity from the scroll down list. All the events with this severity, or a higher severity, can be viewed by pressing the "<b>View System Log</b>" button.</p> <p>The severities are classified in decreasing order of importance.</p> <ul style="list-style-type: none"> <li>• Emergency,</li> <li>• Alert,</li> <li>• Critical,</li> <li>• Error,</li> <li>• Notice,</li> <li>• Informational,</li> <li>• Debugging.</li> </ul>	<b>Error</b>

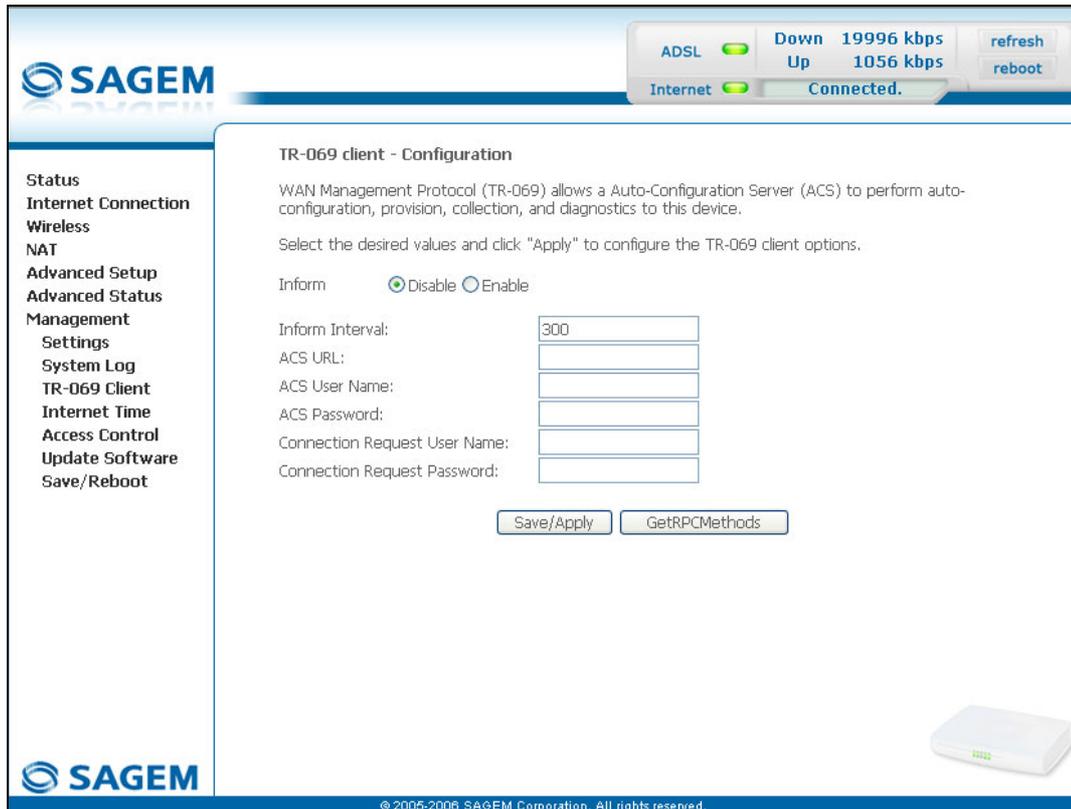
Field	Action	Default
<b>Mode</b>	Select the destination ID from the scroll down list: <ul style="list-style-type: none"> <li>• <b>Local</b>: All the events are returned to your router via a "Buffer" memory.</li> <li>• <b>Remote</b>: All the events are returned to the "Syslog" server.</li> <li>• <b>Both</b> : Both modes.</li> </ul>	<b>Local</b>
<b>Server IP Address</b> <sup>15</sup>	Enter the IP address of the "Syslog" address on which all the events will be saved.	<b>0.0.0.0</b>
<b>Server UDP Port</b> <sup>15</sup>	Enter the number of the port associated with the "Syslog" server.	<b>514</b>

<sup>15</sup> This field only appears when the mode selected is "Remote or "Both".

### 6.11.3 TR-069 Client

**Object:** The TR-069 protocol (WAN Management Protocol) is used, via a remote server (**Auto-Configuration Server (ACS)**) to auto configure your router, provide it with certain services and manage it by establishing "diagnostics".

- Select the **TR-069 Client** menu in the **Management** section to display the following screen:



Field	Action	Default
<b>Inform</b>	Check the <b>Enable</b> box to activate the "TR-069" or <b>Disable</b> to deactivate it.	<b>Disable</b>
<b>Inform Interval</b>	Enter a time interval between two pieces of information sent from the router to the ACS server. This interval is a value expressed in seconds.	<b>300</b>
<b>ACS URL</b>	Enter the URL or the IP address of the "ACS" server.	<b>Empty</b>
<b>ACS User Name</b>	Enter the name of the user of the "ACS" server.	<b>Empty</b>
<b>ACS Password</b>	Enter the "ACS" server password.	<b>Empty</b>

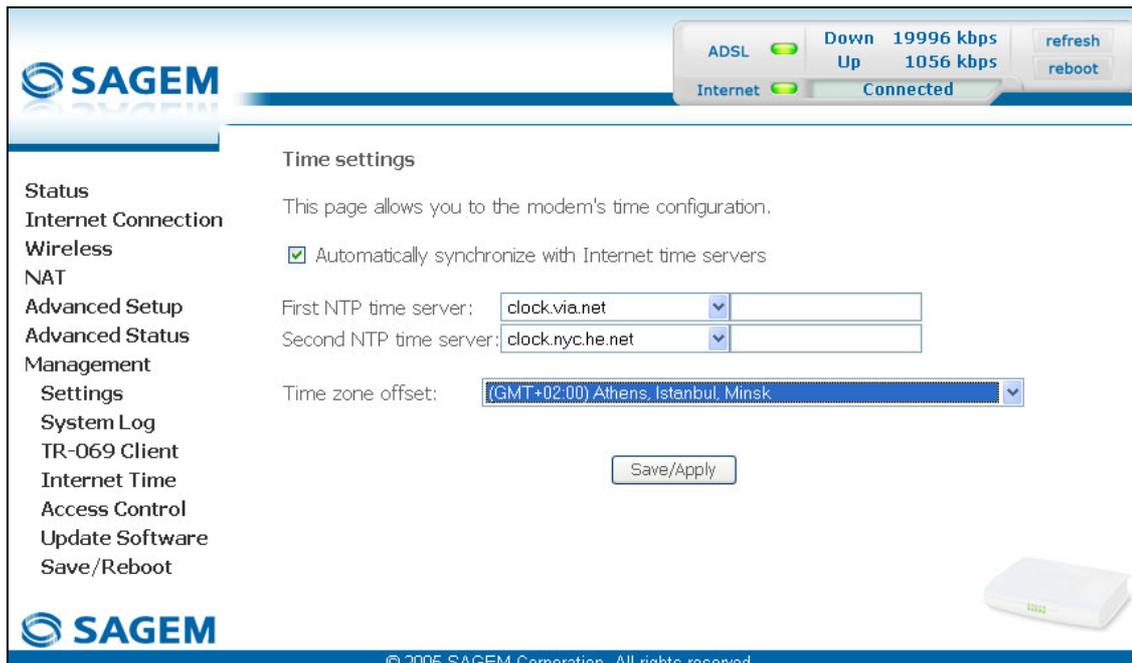
<b>Field</b>	<b>Action</b>	<b>Default</b>
<b>Connection Request User Name</b>	Enter the name of the user of your router.	<b>Empty</b>
<b>Connection Request Password</b>	Enter your password for your router.	<b>Empty</b>

- Click on the  button to launch the auto-configuration procedure of your router.

### 6.11.4 Internet Time

**Object:** This menu lets you display the date and time in the **Date / Time** field of your HTTP configurer:

- either the one delivered by your router. The date and time when the router starts are set to: "Jan 1 / 00:00:00" (i.e. 1<sup>st</sup> January at 0 am).
  - or the one delivered automatically by an Internet time server.
- Select the **Internet Time** menu in the **Management** section to display the following screen:



Field	Action	Default
<b>Automatically synchronize with Internet time servers</b>	<p>Do not check the box so that the <b>Date / Time</b> field (which appears, for example in the "Management/System Log" screens) displays the date and time delivered by your router,</p> <p>or</p> <p>Check the appropriate box so that the <b>Date / Time</b> field (which appears, for example, in the "Status/Summary" and "Management/System Log" screen) displays the date and time delivered by the NTP servers (<b>Network Time Protocol</b>) you selected. These servers display the date and time GMT (<b>Greenwich Mean Time</b>).</p> <p><b>Note:</b> For these events to be displayed and/or saved at an effective date and time, you should check this box.</p>	<b>Box not checked</b>

<b>Field</b>	<b>Action</b>	<b>Default</b>
<b>First NTP time server</b>	Select a first NTP server from the scroll down list.	<b>Clock.fmt.he.net</b>
<b>Second NTP time server</b>	Select a second NTP server from the scroll down list.	<b>None</b>
<b>Time zone offset</b>	In the scroll down list, select the appropriate correction (GMT+1 - Paris for example) to adjust the GMT time to that of the country where you live with the seasonal correction (Summer time or Winter time).	<b>(GMT-12:00) International Date Line West</b>

## 6.11.5 Access Control

This menu contains the following three sub menus:

- Services (cf. § 6.11.5.1),
- IP Address (cf. § 6.11.5.2),
- Passwords (cf. § 6.11.5.3).

### 6.11.5.1 Services

**Object:** this sub menu is used to activate or deactivate Services such as FTP, FTPP etc.

- Select the **Services** sub menu in the **Access Control** menu of the **Management** section to display the following screen:

**SAGEM**

ADSL  Down 19996 kbps Up 1071 kbps refresh  
 Internet  Connected reboot

### Access Control -- Services

A Service Control List ("SCL") enables or disables services from being used.

Services	LAN	WAN
FTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
HTTP	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
ICMP	Enable	<input type="checkbox"/> Enable
SSH	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable
TELNET	<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

Save/Apply

**SAGEM**

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The table displayed in the screen above indicates that the services listed such as FTP, HTTP, ICMP, SSH and TELNET are all activated ("Enable" box checked) on the local network (LAN) and deactivated ("Enable" box not checked) on the remote network (WAN).

Check the **Enable** box to activate the selected service on the local network (LAN) or on the remote network (WAN).

**Note:** The ICMP service is always activated on the local network (LAN) and may be activated or deactivated on the remote network (WAN).

## 6.11.5.2 IP Address

- Select the **IP Address** sub menu in the **Access Control** menu of the **Management** section to display the following screen:

The screenshot shows the SAGEM web interface. At the top, there's a status bar with 'ADSL' and 'Internet' indicators, both showing green lights. Next to them, it displays 'Down 19996 kbps' and 'Up 1071 kbps'. There are 'refresh' and 'reboot' buttons. The main content area is titled 'Access Control -- IP Address'. It contains a description: 'The IP Address Access Control mode, if enabled, permits access to local management services from IP addresses contained in the Access Control List. If the Access Control mode is disabled, the system will not validate IP addresses for incoming packets. The services are the system applications listed in the Service Control List'. Below this, there are radio buttons for 'Access Control Mode:  Disable  Enable'. There are also buttons for 'Add' and 'Remove' for IP addresses. A small image of a SAGEM router is visible in the bottom right corner of the interface.

Field	Action	Default
<b>Access Control Mode</b>	Select <b>Enable</b> to activate the access control mode or <b>Disable</b> to not activate it.	<b>Box not checked</b>

## Add

Click on the **Add** button to add an IP address.

The screenshot displays the SAGEM web management interface. At the top right, there is a status bar showing 'ADSL' with a green light and 'Internet' with a green light. Next to it, it displays 'Down 19996 kbps' and 'Up 1056 kbps', along with 'refresh' and 'reboot' buttons. The main content area is titled 'Access Control' and contains the instruction: 'Enter the IP address of the management station permitted to access the local management services, and click 'Save/Apply.''. Below this, there is an 'IP Address:' label followed by an empty text input field and a 'Save/Apply' button. A left sidebar lists various configuration options: Status, Internet Connection, Wireless, NAT, Advanced Setup, Advanced Status, Management, Settings, System Log, TR-069 Client, Internet Time, Access Control, Services, IP Addresses, Passwords, Update Software, and Save/Reboot. The SAGEM logo is present in the top left and bottom left, and a small image of a white device is in the bottom right. The footer contains the text '© 2005 SAGEM Corporation. All rights reserved.'

**Note:** From this address you may access the local management services when the access control is active.

## 6.11.5.3 Passwords

- Select the **Passwords** sub menu in the **Access Control** menu of the **Management** section to display the following screen:

The screenshot shows the SAGEM router's web interface. At the top, there's a status bar with 'ADSL' and 'Internet' indicators, both showing green lights. The ADSL status shows 'Down 19996 kbps' and 'Up 1071 kbps'. The Internet status shows 'Connected'. There are 'refresh' and 'reboot' buttons. The main content area is titled 'Access Control -- Passwords'. It explains that access is controlled through three user accounts: admin, support, and user. It provides details for each user: 'admin' has unrestricted access, 'support' is for ISP technicians, and 'user' is for configuration and updates. Below this, there's a note about password length (up to 16 characters) and a 'Save/Apply' button. A small image of the router is in the bottom right corner.

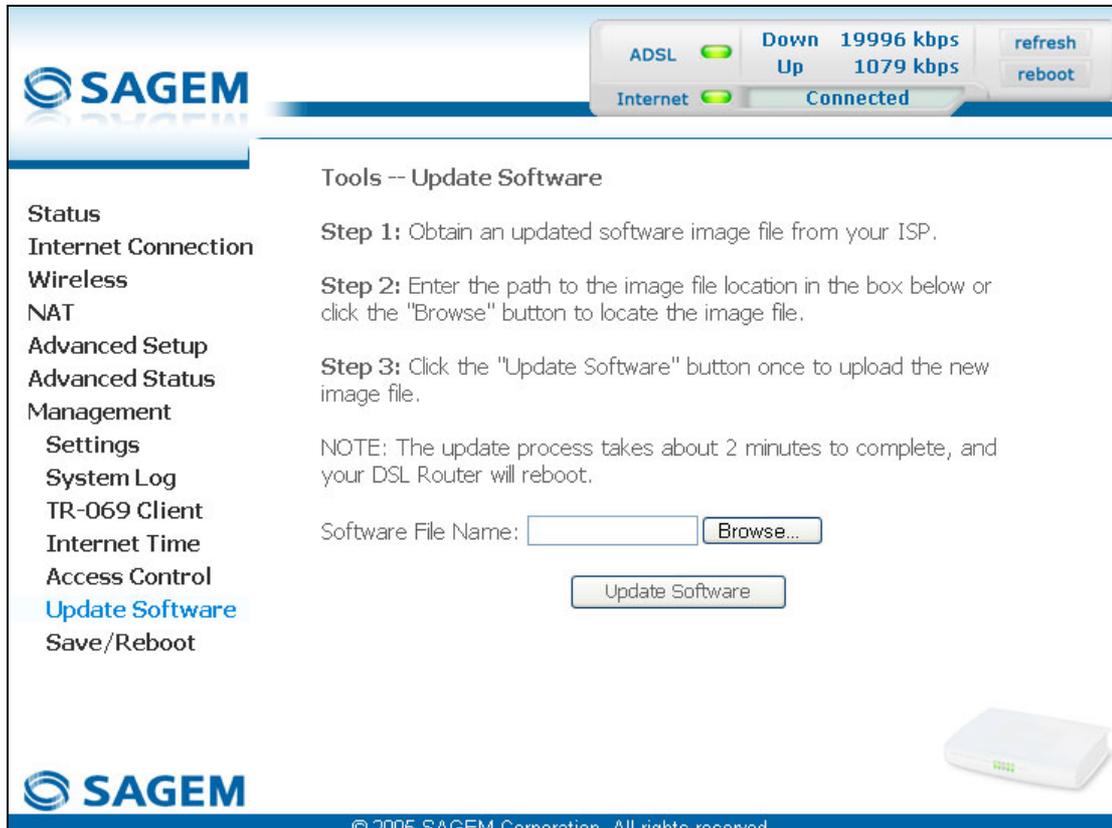
Field	Action
<b>User Name</b>	Select a user name from the scroll down list: <ul style="list-style-type: none"> <li>Admin,</li> <li>Support,</li> <li>User.</li> </ul> <p><b>Note:</b> This list has been established in increasing order of restriction.</p>
<b>Old Password</b>	Enter your old password
<b>New Password</b>	Enter your new password
<b>Confirm Password</b>	Confirm your new password

**Note:** The password is a string of a maximum of 16 alphanumerical characters.

### 6.11.6 Update Software

**Object:** This menu lets you update the latest version of the router software.

- Select the **Update Software** menu in the **Management** section to display the following screen:



Proceed as follows to update your router's software version:

- Enter the path then the name of the software version file,  
or
- Click on the **Browse** button and select the path then the software version file,
- Click on the **Update Software** button to update the software version.



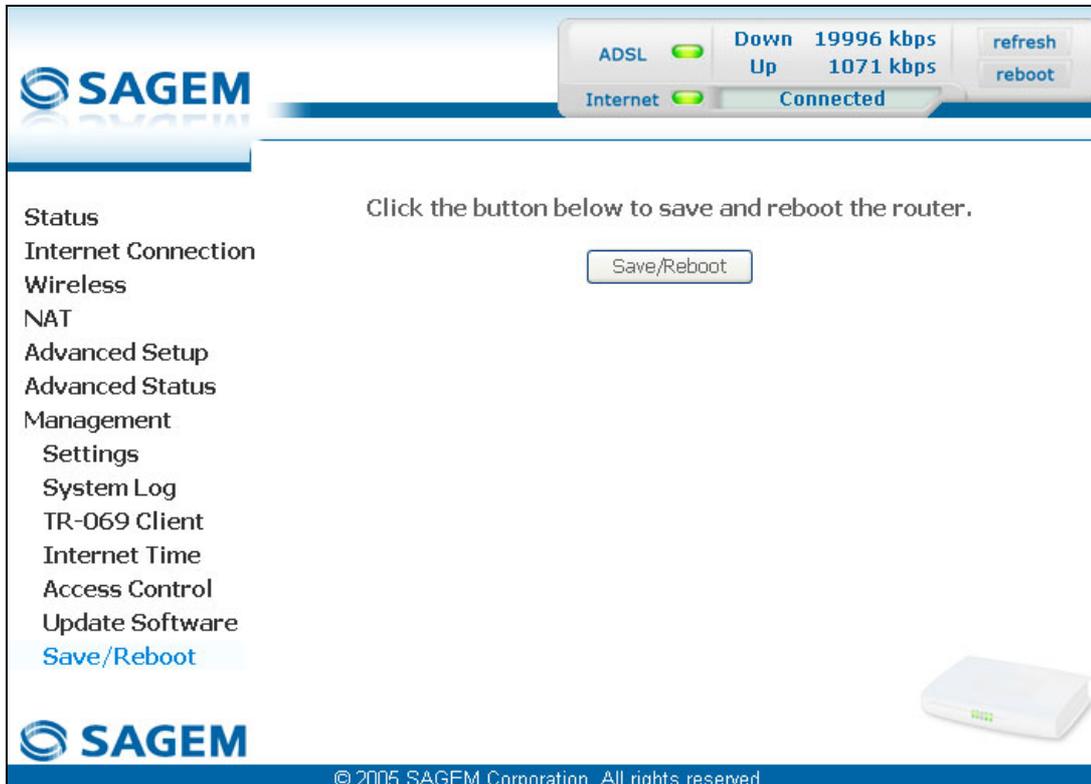
**The process takes around 2 minutes.**

**The application of a new software version for the router does not modify the current configuration at all.**

### 6.11.7 Save/Reboot

**Object:** This menu lets you save all the modifications made to the current configuration and restart the router with its new parameters.

- Select the **Save/Reboot** menu in the **Management** section to display the following screen:



Click on the **Save/Reboot** button to restart the router.



**The process takes around 1 minute.**

**A countdown is displayed to tell the user how long is left to wait.**



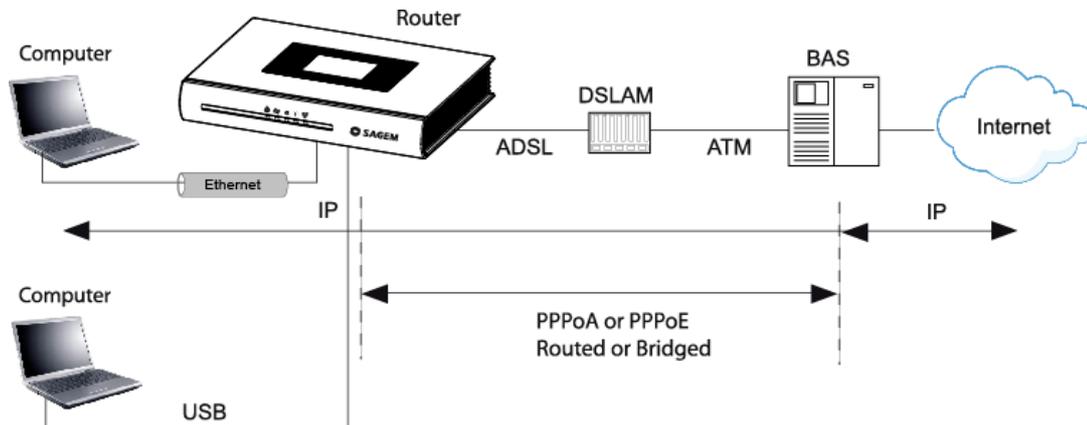
## 7. Internet access service

This section covers	➤ the introduction	§ 7.1
	➤ connecting to Internet access	§ 7.2

### 7.1 Introduction

The router has been designed to enable you to access the Internet as simply as possible. Most of the router's parameters are already set:

- It is configured by default as a DHCP server.
- It relays to the Internet DNS queries from the local network.



Using your installation CD-ROM you can quickly obtain Internet access.

Depending on your contract with your **Internet Service Provider (ISP)**, you can also have access to television on ADSL (see section 8).

The configuration parameters of your router are entered during installation (connection identifier, connection password). These parameters can also be entered or modified in the menu **Internet connection** of the HTTP configurator (PPP Username, PPP Password).

However, your computers (PC, Mac) must still be configured. To surf the Internet, your PC (or any other type of terminal) must also belong to the network. To do so it requires an address by which it can be identified. All these necessary parameters can be supplied automatically by the router if your **computers** are in **DHCP client** mode (default mode for PCs running Windows). Depending on the OS installed on your PC, it may be necessary to restart your PC (or other terminal) after configuring and restarting the router.

**Observation:** If the terminals are not DHCP clients, your local network then uses a static addressing plan. Check that:

- the router belongs to this addressing plan,
- the default gateway of the equipment in the local network matches the address of your router,
- the DNS addresses are correctly configured in each terminal. The router enables DNS queries to be relayed.

## 7.2 Connection for Internet access

---

When installation is complete the "SAGEM" welcome page appears.

**You can now surf the Internet.**



## 8. TV over ADSL service

This section covers	➤ the introduction	§ 8.1
	➤ access to the optional TV over ADSL service	§ 8.2

### 8.1 Introduction

Your router is compatible with TV over ADSL technology.

### 8.2 Access to the optional TV over ADSL service

To access this service, you must have:

- made the connection in accordance with section 2.2.4,
- necessarily taken a subscription with your **Internet Service Provider (ISP)**.
- configured one VC (**V**irtual **C**hannel) dedicated to video, and another VC dedicated to data (see screen below).

The screenshot displays the SAGEM router's configuration interface for Wide Area Network (WAN) Setup. The status bar at the top indicates ADSL is Down (8096 kbps) and Internet is Connected (800 kbps). The main content area shows a table of WAN interfaces:

VPI/VCI	Con. ID	Category	Service	Interface	Protocol	Igmp	QoS	Vlanid	State	Remove	Edit
8/37	1	UBR	pppoe_8_37_1	ppp_8_37_1	PPPoE	Disabled	Disabled	N/A	Enabled	<input type="checkbox"/>	Edit
8/50	1	UBR	br_8_50	nas_8_50	Bridge	N/A	Disabled	N/A	Enabled	<input type="checkbox"/>	Edit

Buttons for 'Add', 'Remove', and 'Save/Reboot' are located below the table. A sidebar on the left contains navigation links for Status, Internet Connection, Wireless, NAT, Advanced Setup, WAN, LAN, Security, Routing, DNS, DSL, Port Mapping, Certificate, and Advanced Status Management. A small image of the router is shown in the bottom right corner.

**Note:** In the example above, the ATM interface "ppp\_8\_37\_1" is dedicated to data and the ATM interface "nas\_8\_50\_1" is dedicated to video.

- configure "Port Mapping" in accordance with section 6.9.8.

## 9. Updating the application

This section covers	➤ updating the application version.	P8-2
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## 9 - Updating the application

The router's application version is updated by the HTTP configurator (download of a file without extension). Refer to § 6.11.6 of section 6 (Management/Update Software).



To check that the new version has been correctly downloaded, click the command **Status/Summary** at the top left of the welcome screen of the HTTP configurator.

## A. Annex A - Troubleshooting

This section covers	➤ checking the attribution of an IP address	§ A.1
	➤ Front Face LEDs	§ A.2
	➤ Supervision of your router	§ A.3
	➤ the "Diagnostics" tool	§ A.4
	➤ interpreting the lights.	§ A.5
	➤ reinitialising your router	§ A.6
	➤ resetting with the factory configuration.	§ A.7
	➤ no-connection mode.	§ A.8

## **A.1 Checking the attribution of an IP address**

---

### **A.1.1 In Windows**

#### **In Windows 98 and Me**

- Click button **Start**, select **Execute**, enter **winipcfg** and then click **OK**; the dedicated application appears.
- Check that the entry IP Address contains a value other than **0.0.0.0** (**192.168.1.10** for example, for interface ETH1).

#### **In Windows XP, 2000**

- Click button **Start**, select **Execute**, enter **cmd** and then click **OK**; the command prompt screen appears. Enter **ipconfig** and then confirm by pressing **Enter**.
- Check that the entry IP Address contains a value other than **0.0.0.0** (**192.168.1.10** for example, for interface ETH1).



If no address is displayed on the screen, enter **ipconfig /release** followed by **ipconfig /renew**.

### **A.1.2 On a Mac (for example MacOS X)**

- Click **Apple**, in the menu bar.
- Select **System Preferences**, and then click the **Network** icon.
- Check that the entry IP Address contains a value other than **0.0.0.0** (**192.168.1.10** for example, for interface ETH1).
- Check that the entry IP Address contains a value other than **0.0.0.0** (**192.168.1.10** for example, for interface ETH1).



If no address is displayed on screen, click button **Apply** for the computer to send a DHCP query to the router.



All the troubleshooting procedures described below are undertaken in **Windows® XP**. These procedures in other Windows operating systems® (98, ME and 2000) can be slightly different.

To help locate the fault, the user has the following sources:

- States of Front Face LEDs,
- Data accessible by the configurator by "DSL Router" onboard HTTP of your router:
  - supervision of the router,
  - "Diagnostics" tool.

## A.2 Front Face LEDs



When the router is switched on, the "⏻" green LED (PWR) lights.

If no connection is made the red "@ " LED (ALM) lights.

### SAGEM F@st™ 2400 and SAGEM F@st™ 2440

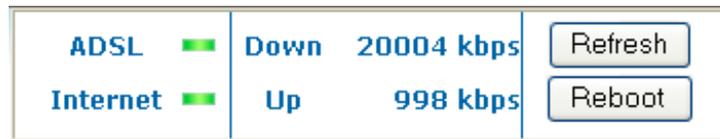
Status	Colour	⏻	📶	@	📶	🔌
Lit steady	Green	Power On	ADSL up	Public address available	Wi-Fi activated	USB or ETH link active
	Red	Failure detected at the time of starting	x	Public address not available or ADSL line not connected	x	x
Blinking	Green	x	x	At WAN traffic rate	At Wi-Fi traffic rate	At LAN traffic rate
Blinking quickly	Green	x	ADSL synchronisation training	x	x	x
Blinking slowly	Green	x	Line not detected	x		
Off	–	Power Off	x	Power not present or "Bridge" mode	Wi-Fi not activated	USB or ETH link inactive

### SAGEM F@st™ 2404 and SAGEM F@st™ 2444

Status	Colour	⏻	📶	@	📶	🔌
Lit steady	Green	Power On	ADSL up	Public address available	Wi-Fi activated	At least active link (ETH1, ETH2, ETH3 or ETH4)
	Red	Failure detected at the time of starting	x	Public address not available or ADSL line not connected	x	x
Blinking	Green	x	x	At WAN traffic rate	At Wi-Fi traffic rate	At LAN traffic rate
Blinking quickly	Green	x	ADSL synchronisation training	x	x	x
Blinking slowly	Green	x	Line not detected	x		
Off	–	Power Off	x	Power not present or "Bridge" mode	Wi-Fi not activated	No active ETH link (ETH1, ETH2, ETH3 or ETH4)

### A.3 Supervising your router

The supervision box is permanently displayed in a frame at the top right of each window of the configurator.



#### LEDs

ADSL 	<p><b>Green</b> : Synchronised ADSL line.</p> <p><b>Red</b> : ADSL line not connected.</p>
Internet 	<p><b>Green</b> : Public IP address (WAN) distributed to the router.</p> <p><b>Yellow</b> : Synchronised ADSL line.</p> <p><b>Red</b> : Public IP address (WAN) not distributed to the router, or ADSL line not connected.</p>

#### Transmission rate

Down	Displays the nominal down line transmission rate
Up	Displays the nominal up line transmission rate

#### Buttons

Refresh	Allows data displayed on the screen to be refreshed.
Reboot	Allows your router to be started.

## A.4 "Diagnostics" tool

To access this tool:

- open your browser and then, in the address bar, enter:
  - the following URL : <http://myrouter>,
  - or the following address : <http://192.168.1.1>.

a "Login" window appears; enter the login and password. Default:

- **admin** in the "User name" field,
- **admin** in the "Password" field.

You have access to the HTTP configurator of your router.

- select the heading "Diagnostics" in the suitable list to the left of each window; the following screen appears:

The screenshot shows a web interface titled 'pppoa\_8\_35\_1 Diagnostics'. It contains a paragraph of introductory text, followed by three sections of test results, each with a 'Test' button and a 'Test With OAM F4' button at the bottom.

**Test the connection to your local network**

Test your Ethernet Connection:	DOWN	Help
Test your USB Connection:	PASS	Help
Test your Wireless Connection:	PASS	Help

**Test the connection to your DSL service provider**

Test ADSL Synchronization:	PASS	Help
Test ATM OAM F5 segment ping:	FAIL	Help
Test ATM OAM F5 end-to-end ping:	PASS	Help

**Test the connection to your Internet service provider**

Test PPP server session:	PASS	Help
Test authentication with ISP:	PASS	Help
Test the assigned IP address:	PASS	Help
Ping default gateway:	PASS	Help
Ping primary Domain Name Server:	FAIL	Help

Buttons: Test, Test With OAM F4

The results of the tests made by the "DSL router" configurator on your modem/router are displayed in the "Diagnostics" window. These tests concern the connections to the LAN, to your DSL Service Provider and to your Internet Service Provider (ISP).



A hypertext link (help) enables the user to access context-related help. This help gives an explanation concerning the state of the connection (**PASS** in green, **DOWN** in orange and **FAIL** in red) and supplies the appropriate troubleshooting procedures.

**Note:** In the screen above, the "Test your USB connection" field only relates to SAGEM F@st™ 2400 and SAGEM F@st™ 2440 equipments.

### State of connection

State	Colour	Meaning
<b>PASS</b>	Green	Indicates that the test has completed successfully.
<b>DOWN</b>	Orange	Indicates that an interface (ETH, USB or Wi-Fi) has not been detected.
<b>FAIL</b>	Red	Indicates that the test has failed, or that it is impossible to start a command.  <b>Note:</b> Depending on the nature of the test, it is possible that operation of the router or access to the Internet may not be prejudiced. For example if you do a "Ping" either to an ATM OAM F5 segment or to a DNS primary address.



If a test displays a "FAIL" state, click on "Help" and then the button "Rerun Diagnostic Tests" at the bottom of the "Help" page, to check that the test has been conclusive. If the test still displays "FAIL", you must follow the troubleshooting procedure displayed on this page.

### IMPORTANT

If you experience difficulties connecting to the Internet, we recommend that you restart your router (cf.A.6) or possibly re-establish the factory configuration (cf. § A.7).

## **A.5 Interpreting the LEDs**

---

### **A.5.1 The "ADSL" LED blinks slowly**

- Check the connection of your ADSL filters. Each telephone socket of your installation which is used must be equipped with an ADSL filter.
- Check that the RJ11 type line cord delivered with your router is connected to one of your sockets. It is recommended that no telephone extension is used.
- Finally, check with your ISP on the availability of the ADSL service on your telephone line.

### **A.5.2 "Wi-Fi" LED off**

If this LED is off, this indicates that the WLAN interface of the router is not active. To activate the wireless network, check the box "Enable Wireless" in the "**Basic**" menu of the "**Wireless**" heading of the HTTP configurator (see § 6.7.1).

### **A.5.3 All LEDs are off**

- Check that the type of power available in your premises is compatible with the mains voltage required for powering your router.
- Check that the delivered power cord is properly connected at one end to the mains power network.
- Check that the power connector is inserted correctly in the corresponding connector (power) of the router.

## A.6 Reinitialising your router

---

To reinitialise your router, click button "Reboot" at the top right of the welcome page of your HTTP configurator. When you click this button all the LEDs go off, except for the green "W" LED (WLAN) (if the wireless network is activated); the green "P" LED (PWR) then lights, and the initialisation process starts. It lasts for around a minute.

**Note :** The green "A" (ADSL) and "L" (LAN) LEDs light if they are connected.  
The "@" LED (Internet) lights in green if "PPP" link is established.

## A.7 Re-establishing the factory configuration

---

To undertake the procedure, there are two possibilities:

### 1) Using the HTTP configurator

- In the welcome screen of your HTTP configurator, select the heading **Management** followed by the sub-menu **Restore Default** in the **Settings menu** (cf. § 6.11.1.3).

### 2) Using the "REG" button

- press the **REG** pushbutton for at least 15 seconds; all the LEDs go off except for the green "W" LED (WLAN) (if the wired network is activated); the green "P" LED (PWR) then all the LEDs and the process for returning to the factory configuration starts. It lasts for around 2 minutes.



This operation deletes the entire personalised configuration of your router: Password, Configuration, etc.



After a return to factory configuration, it is **necessary to install your router again** using the installation CD-ROM, or to enter again the ADSL connection data supplied by your Internet Service Provider (ISP) (cf. Internet Connection section - § 6.6).

## **A.8 Offline mode**

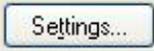
To start configuring the router in HTTP mode, the browser opens, the default IP address of the router's LAN interface appears in the browser's Address field **but the home screen does not appear**.

The screen opposite appears.

Click  .



The screen opposite appears.

Click  .



The screen opposite appears.

Select the Connections tabs and then the "Never dial a connection"<sup>1</sup>.

Click  to confirm your choice.



In the menu bar, select the "File" menu then deselect the "Work Offline" command.

Click **OK** in the browser's "Address" field to display the home screen.

<sup>1</sup> When the router is installed, this box is checked.



## B. Annex B - Warnings for safety

This section covers	➤ Warnings for safety	§ B.1
	➤ the CE conformity declaration	§ B.2

## **B.1 Warnings for safety**

---

The router is in compliance with standard EN 60950 Ed December 2001.  
The safety levels in the sense of this standard are as follows:

### **B.1.1 Safety levels in relation to the case**

<b>Connectors</b>	<b>Position</b>	<b>Safety level</b>
<b>LINE</b>	ADSL port	TNV3 <sup>1</sup>
<b>USB</b>	USB interface port	SELV <sup>2</sup>
<b>ETH or ETH1<sup>3</sup></b>	Ethernet port	SELV <sup>2</sup>
<b>ETH2<sup>3</sup></b>		SELV <sup>2</sup>
<b>ETH3<sup>3</sup></b>		SELV <sup>2</sup>
<b>ETH4<sup>3</sup></b>		SELV <sup>2</sup>
<b>PWR</b>	Primary power port	HPV <sup>4</sup>

---

<sup>1</sup>Level 3 Telecommunication Network Voltage

<sup>2</sup>Safety Extra Low Voltage Circuit

<sup>3</sup>Only for SAGEM F@st™ 2404 and 2444

<sup>4</sup>Hazardous Primary Voltage circuit

## **B.2 CE compliance declaration**

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Products bearing this symbol are in compliance with EMC regulations and the Low Voltage Directive published by the European Community Commission (CCE)

**Sagem communication** declares that the products SAGEM F@st™ 2400, SAGEM F@st™ 2404, SAGEM F@st™ 2440 and SAGEM F@st™ 2444 are in compliance with the requirements of European directives 1995/5/CE and with the essential requirements of directives 89/336/CEE of 03/05/1989 and 73/23/CEE of 19/02/1973, and that they efficiently use the spectrum attributed to terrestrial or space radio communications.

The CE conformity declaration of each SAGEM F@st™ 2400, SAGEM F@st™ 2404, SAGEM F@st™ 2440 and SAGEM F@st™ 2444 product is made in the context of the R&TTE directive.

This conformity is presumed through the complete compliance with European harmonised standards.

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

- In France for a maximum transmission power of 100 mW inside a building, channels 10 to 13 (band 2446.5 - 2483.5 MHz) are authorised throughout the country, and channels 1 to 13 (band 2400 - 2483.5 MHz) are authorised in 58 counties (ruling N° 02-1008 of the ART of 31/10/2002). The list of counties can be viewed on ART's website.

**Sagem communication** declines all liability if the regulations in force in the place of installation are not followed.

The CE conformity declaration of each SAGEM F@st™ 2400, SAGEM F@st™ 2404, SAGEM F@st™ 2440 or SAGEM F@st™ 2444 product is present in the form of a file with pdf extension in the CD-ROM delivered with the product.



## C. Annex C - Environment

This section covers	➤ directive E 2002/96/CE	§ C.1
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## C.1 Directive E 2002/96/CE

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### ENVIRONMENT

Preservation of the environment as part of a sustainable development logic is an essential concern of **Sagem Communication**.

**Sagem Communication**'s aim is to operate systems safeguarding the environment and consequently it has decided to integrate environmental performance considerations in the life cycle of its products, from manufacturing to commissioning, use and disposal.



#### PACKAGING

The presence of the logo (green dot) means that a contribution is paid to an approved national organization to improve packaging recovery and recycling infrastructures.

To facilitate recycling, please respect the sorting rules set up locally for this kind of waste.

#### BATTERIES

If your product contains batteries, they must be disposed of at appropriate collection points.



#### THE PRODUCT

The crossed-out waste bin marked on the product or its accessories means that the product belongs to the family of electrical and electronic equipment.

In this respect, the European regulations require you to dispose of it selectively:

- At sales points on purchasing similar equipment,
- At the collection points made available to you locally (drop-off center, selective collection, etc.).

In this way, you can participate in the re-use and upgrading of **Electrical Electronic Equipment Waste**, which can have an effect on the environment and health.

## D. Annex D - Technical Characteristics

This section covers	➤ mechanics and displays	§ D.1
	➤ the characteristics of the different interfaces	§ D.2
	➤ environmental characteristics	§ D.3
	➤ the application and the protocols	§ D.4

## D.1 Mechanics; Display

<b>Mechanical characteristics</b>	
Dimensions (mm)	• Width : 195 Dimensions (mm)
	• Depth : 138 mm
	• Thickness : 32 mm
Weight of router	: 330 g

<b>Display</b>		
<b>Marking</b>	<b>Abbreviation</b>	<b>Meaning</b>
	<b>PWR</b>	• <b>Green/Red Power LED</b>
	<b>ADSL</b>	• <b>Green ADSL LED</b>
	<b>Internet</b>	• <b>Green/Red Internet LED</b>
	<b>WLAN</b>	• <b>Green ADSL LED</b>
	<b>LAN</b>	• <b>Green local network (LAN) LED</b>

## D.2 Characteristics of the different interfaces

---

<b>Ethernet LAN interface</b>	
Transmission rate	<ul style="list-style-type: none"> <li>• 10 Mbit/s or 100 Mbit/s, self-configurable</li> <li>• Half/Full Duplex</li> </ul>
Standard	<ul style="list-style-type: none"> <li>• 802.3 mm</li> </ul>
Connection technology	<ul style="list-style-type: none"> <li>• RJ45 (1 connector for SAGEM F@st™24x0 or 4 connectors for SAGEM F@st™ 24xx)</li> <li>• Type MDI or MDI-x self-detecting port</li> <li>• Crossed or straight cord</li> </ul>

<b>ADSL/ADSL2/ADSL2+ interface</b>	
Transmission code	<ul style="list-style-type: none"> <li>• DMT</li> </ul>
Standards supported	<ul style="list-style-type: none"> <li>• High-performance secure Bridge/Router with ADSL/ADSL2/ADSL2+ interface,</li> <li>• G.994.1 (G.Handshake)</li> </ul>
Maximum upward transmission rate	<ul style="list-style-type: none"> <li>• 1.3 Mbit/s</li> </ul>
Maximum downward transmission rate	<ul style="list-style-type: none"> <li>• 24.5 Mbit/s</li> </ul>
Latency	<ul style="list-style-type: none"> <li>• Simple (Fast or Interlaced)</li> </ul>

## Annex D - Technical Characteristics

<b>USB Interface</b>	
Transmission rate	<ul style="list-style-type: none"> <li>1.5 Mbit/s to 12 Mbit/s</li> </ul>
Standard	<ul style="list-style-type: none"> <li>USB 1.1</li> </ul>
Data	<ul style="list-style-type: none"> <li>Asynchronous</li> </ul>
Transmission mode	<ul style="list-style-type: none"> <li>bidirectional</li> </ul>
Consumption	<ul style="list-style-type: none"> <li>none (only a voltage detection for the high-impedance port of a computer)</li> </ul>
Connection technology	<ul style="list-style-type: none"> <li>USB - Type B</li> </ul>

<b>Wireless Interface</b>	
Standard	<ul style="list-style-type: none"> <li><b>IEEE 802.11b DSSS</b></li> </ul>
Frequencies band	<ul style="list-style-type: none"> <li>2400 MHz to 2497 MHz (ISM band)</li> </ul>
Transmission rate	<ul style="list-style-type: none"> <li>1/2/5.5/11 Mbit/s</li> </ul>
Modulation method	<ul style="list-style-type: none"> <li>DBPSK, DQPSK, CCK</li> </ul>
Safety	<ul style="list-style-type: none"> <li>WEP 64 / 128 bits</li> </ul>
	<ul style="list-style-type: none"> <li>Filtering by list of MAC addresses</li> </ul>
	<ul style="list-style-type: none"> <li>WPA (encryption mode: TKIP or AES)</li> </ul>
Range	<ul style="list-style-type: none"> <li>Up to 300 m in free space</li> </ul>
	<ul style="list-style-type: none"> <li>10 to 100 m inside buildings</li> </ul>
Standard	<ul style="list-style-type: none"> <li><b>IEEE 802.11g DSSS</b></li> </ul>
Frequencies band	<ul style="list-style-type: none"> <li>2400 MHz to 2497 MHz (ISM band)</li> </ul>
Transmission rate	<ul style="list-style-type: none"> <li>6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbit/s</li> </ul>
Modulation method	<ul style="list-style-type: none"> <li>OFDM, CCK</li> </ul>
Safety	<ul style="list-style-type: none"> <li>WEP 64 / 128 bits</li> </ul>
	<ul style="list-style-type: none"> <li>Filtering by list of MAC addresses</li> </ul>
	<ul style="list-style-type: none"> <li>WPA (encryption mode: TKIP or AES)</li> </ul>
Range	<ul style="list-style-type: none"> <li>200 m in free space</li> </ul>
	<ul style="list-style-type: none"> <li>30 m inside buildings</li> </ul>

<b>Input/Output supply</b>	
Type	<ul style="list-style-type: none"> <li>Plug-in external adapter unit</li> </ul>
Class	<ul style="list-style-type: none"> <li>II</li> </ul>
Input	<ul style="list-style-type: none"> <li>198 to 253 VAC, 50/60 Hz, 0.4 A</li> </ul>
Output	<ul style="list-style-type: none"> <li>+12 VDC/650 mA</li> </ul>
Mains connection technology	<ul style="list-style-type: none"> <li>Europlug type C socket</li> </ul>

### D.3 Environmental characteristics

---

<b>Climatic and mechanical environment</b>	
Storage	<ul style="list-style-type: none"> <li>ETS 300 019-1-1 Category T1.2</li> </ul>
Transport	<ul style="list-style-type: none"> <li>ETS 300 019-1-2 Category T2.3</li> </ul>
Operation	<ul style="list-style-type: none"> <li>ETS 300 019-1-3 Category T3.2 Temperature: +5°C/+45°C</li> </ul>

<b>Electrical robustness</b>	
Standard	<ul style="list-style-type: none"> <li>UIT-T K21 Ed 2000 : basic level</li> </ul>

<b>Electromagnetic compatibility</b>	
Susceptibility/Emission	<ul style="list-style-type: none"> <li>EN 301 489-1 Ed . 2002</li> </ul>
	<ul style="list-style-type: none"> <li>EN 301 489-17 Ed . 2002</li> </ul>

<b>Radio part for ISM band at 2.4 GHz</b>	
Emission 802.11g/b	<ul style="list-style-type: none"> <li>ETR 300 328-2 Ed . July 2000</li> </ul>

**D.4 Application and protocols**

---

<b>IP characteristics</b>	
TCP-IP, UDP, ICMP, ARP	
DHCP Client/Server/Relay	
DNS Relay/Server	
FTP Client/Server	
TFTP Client/Server	
HTTP Client/Server	
Routing (LAN and WAN)	<ul style="list-style-type: none"> <li>• Static</li> </ul>
NAT/PAT	<ul style="list-style-type: none"> <li>• 8 maps maximum</li> </ul>

<b>Encapsulation protocols</b>	
PPP over ATM (PPPoA)	<ul style="list-style-type: none"> <li>• RFC 2384</li> </ul>
PPP over Ethernet (PPPoE)	<ul style="list-style-type: none"> <li>• RFC 2516</li> </ul>
Routed or Bridged	<ul style="list-style-type: none"> <li>• RFC 2684</li> </ul>

<b>Configuration</b>	
HTTP	<ul style="list-style-type: none"> <li>• LAN or WAN port (with specific option)</li> </ul>
Management	<ul style="list-style-type: none"> <li>• From ETH, USB and WAN (with specific option)</li> </ul>
Downloading of version	<ul style="list-style-type: none"> <li>• Client by http mode</li> </ul>

## E. Annex E - Default configuration

This section covers	➤ the default username and password	§ E.1
	➤ the default configuration for the local network (LAN)	§ E.2
	➤ the default configuration for the local wireless network (WLAN)	§ E.3
	➤ the default configuration for the remote network (WAN)	§ E.4



This section indicates the values of the default parameters of your router when it leaves the factory.

These default parameters can be modified by a particular preconfiguration of your router.

### E.1 Default username and password

---

The default access level is **Administrator**. Its associated "username" and "password" are:

Username	<b>admin</b>
Password	<b>admin</b>

### E.2 Default configuration for the local network(LAN)

---

The following table gives the values of the principal LAN parameters of your router (**ETH1, ETH2, ETH3, ETH4, USB**):

LAN characteristics	Value	State
ETH IP address	192.168.1.1	Internet and HTTP configurator access or to a TV decoder
ETH1 <sup>1</sup> IP address		
ETH2 <sup>1</sup> IP Address		
ETH3 <sup>1</sup> IP address		
ETH4 <sup>1</sup> IP Address		
USB IP address		Internet and HTTP configurator access
BROADCAST, ARP, MULTICAST		Activated
Router		The LAN traffic is routed to your ISP
NAT/PAT		Activated

---

<sup>1</sup>SAGEM F@st™ 2404 and SAGEM F@st™ 2444 (version 2)

### E.3 Default configuration for the local wireless network (WLAN)

The following table supplies the principal default WLAN parameters of your router.

#### Wi-Fi

Characteristics (Wi-Fi)	State/Value
IP address	192.168.1.1
Distribution of SSID	Authorised
SSID	<b>sagem_xxxx</b> Where xxxx are the last 4 values of the MAC address of the residential gateway.
Channel	11
WEP	Deactivated according to § 6.7.2

### E.4 Default configuration for the remote network (WAN)

Designation	Value
VPI	8
VCI	35
Linking protocol	PPPoA
	DNS relay
	DHCP server
ADSL/ADSL2/ADSL2+	Multimode



## F. Annex F - Glossary

# Glossary

ACL	<b>Access Configuration List</b>
ADSL	<b>Asynchronous Digital Subscriber Line</b>
AP	<b>Access Point</b>
ARP	<b>Address Resolution Protocol</b>
CC	<b>Continuity Check</b>
CCK	<b>Complimentary Code Keying</b>
CHAP	<b>Challenge Handshake Authentication Protocol</b>
CLI	<b>Command Line Interface</b>
CTS	<b>Clear To Send</b>
DBPSK	<b>Demodulator Baseband Phase Shift Keying</b>
DECT	<b>Digital Enhanced Cordless Telephone</b>
DHCP	<b>Dynamic Host Configuration Protocol</b>
DMT	<b>Discrete MultiTone</b>
DNS	<b>Domain Name Server</b>
DQPSK	<b>Differential Quadrature Phase Shift Keying</b>
DSSS	<b>Direct Sequence Spread Spectrum</b>
DTIM	<b>Delivery Traffic Indication Message</b>
DTMF	<b>Dual Tone Multi-Frequency</b>
ESSID	<b>Extended Service Set Identifier</b>
FAI	<b>Fournisseur d'Accès à Internet</b>
FHSS	<b>Frequency Hopping Spread Spectrum</b>
FTP	<b>File Transfert Protocol</b>
HTML	<b>Hyper Text Markup Language</b>
HTTP	<b>Hyper Text Transfer Protocol</b>
ICMP	<b>Internet Control Message Protocol</b>
IEEE	<b>Institute of Electrical and Electronics Engineers</b>
IEEE 802.11b/g	Specifications which use the MAC protocol suitable for the wireless local network (WLAN) in the 2.4 GHz band
IGMP	<b>Internet Group Membership Protocol</b>
IP	<b>Internet Protocol</b>
IPQoS	<b>Qualité IP</b>
ISDN	<b>Integrated Service Digital Network</b>
ISP	<b>Internet Service Provider</b>
LAN	<b>Local Area Network</b>
LCP	<b>Link Control Protocol</b>
LLC	<b>Logical Link Control (encapsulation avec en-tête)</b>
MAC	<b>Medium Access Control</b>
MDI	<b>Media Dependent Interface</b>

MER	<b>MAC Encapsulation Routing</b>
MTU	<b>Maximum Transfer Unit</b>
NAPT	<b>Network Address Port Translation</b>
NAT	<b>Network Address Translation</b>
OAM	<b>Operation, Administration and Maintenance</b>
PA	<b>Point d'Accès</b>
PAP	<b>Password Authentication Protocol</b>
PCI	<b>Peripheral Component Interconnect</b>
PCM	<b>Pulse Code Modulation</b>
PCMA	<b>Pulse Code Modulation Loi A</b>
PCMCIA	<b>Personal Computer Memory Card International Association</b>
PCMU	<b>Pulse Code Modulation Loi mu</b>
PID	<b>Protocol Identifier</b>
PING	<b>Packet InterNet Groper</b>
PLC	<b>Paquet Loss Concealment</b>
POP	<b>Point de Présence</b>
POTS	<b>Plain Old Telephone Service</b>
PSTN	<b>Public Switching Telephonic Network</b>
PPP	<b>Point to Point Protocol</b>
PPPoE	<b>PPP over Ethernet</b>
PVC	<b>Permanent Virtual Circuit</b>
QoS	<b>Quality of Service</b>
RADIUS	<b>Remote Authentication Dial-In User Service</b>
RFC	<b>Request For Comments</b>
RGW	<b>Residential GateWay (Passerelle Résidentielle)</b>
RNIS	<b>Réseau Numérique Intégration de Services</b>
RIP	<b>Routing Information Protocol</b>
RTCP	<b>Real Time Control Protocol</b>
RTP	<b>Real-time Transport Protocol</b>
SCR	<b>Sustained Cell Rate</b>
SMTp	<b>Simple Mail Transfer Protocol</b>
SIP	<b>Session Initiation Protocol</b>
SNDCP	<b>Sub Network Dependent Convergence Protocol</b>
SNAP	<b>SubNetwork Attachment Point</b>
SNMP	<b>Simple Network Management Protocol</b>
SSID	<b>Service Set Identifier</b>
STB	<b>Set Top Box</b>
TCP	<b>Transmission Control Protocol</b>
TELNET	<b>TELEcommunication NETWORK</b>
TFTP	<b>Trivial File Transfer Protocol</b>
UBR	<b>Unspecified Bit Rate</b>
UDP	<b>User Datagram Protocol</b>
URL	<b>Uniformed Resource Locator</b>
USB	<b>Universal Serial Bus</b>

## Annex F - Glossary

UTP	<b>Unshielded Twisted Pair</b>
VAD	<b>Voice Activity Detection</b>
VBR-nrt	<b>Variable Bit Rate - non real time</b>
VBR-rt	<b>Variable Bit Rate - real time</b>
VC	<b>Virtual Channel</b>
VCC	<b>Virtual Channel Connection</b>
VCI	<b>Virtual Channel Identifier</b>
VC MUX	<b>VC MultipleXing (encapsulation sans en-tête)</b>
VoIP	<b>Voice over IP (Voix sur IP)</b>
VP	<b>Virtual Path</b>
VPI	<b>Virtual Path Identifier</b>
VPN	<b>Virtual Private Network</b>
WAN	<b>Wide Area Network</b>
WEB	Meshed network of information servers
WEP	<b>Wired Equivalent Privacy</b>
WFQ	<b>Weighted Fair Queuing</b>
Wi-Fi	<b>Wireless Fidelity (réseau sans fil)</b>
WLAN	<b>Wireless Local Area Network</b>
WPA	<b>Wireless Protected Access</b>

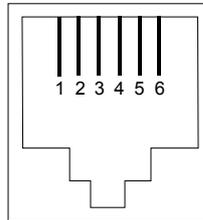
## G. Annex G - Connector Technology

This section covers	➤ pinouts of the " <b>LINE</b> " connector	§ G.1
	➤ pinouts of the " <b>PWR</b> " connector	§ G.2
	➤ pinouts of the " <b>ETH</b> ", " <b>ETH1</b> " to " <b>ETH4</b> " connectors	§ G.3
	➤ pinouts of the " <b>USB</b> " Connector	§ G.4

## **G.1 Pinouts of the "LINE" connector**

---

The equipment is connected to ADSL using a RJ11 fixed connector (6 contacts).



<b>Contact N°</b>	<b>Signal</b>	<b>Meaning</b>
3	LINE-A	Line A signal
4	LINE-B	Line B signal
1	NC	Not connected
2	NC	Not connected
5	NC	Not connected
6	NC	Not connected

## **G.2 Pinouts of the "ADSL" connector**

---

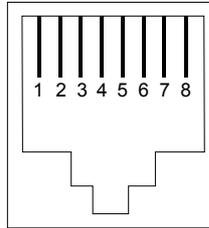
The mains unit is connected to the equipment using the miniature fixed connector of the case.



<b>Pin</b>	<b>Signal</b>	<b>Meaning</b>
Internal	+12 V	DC "+" connection
External	Earth	DC "-" connection

### G.3 Pinouts of the "ETH", "ETH1" to "ETH4" connectors

The Ethernet interface is connected to the equipment using a RJ45 fixed connector (8 contacts).



Contact N°	Signal	Meaning
1	TXD+	(+) Emission to terminal
2	TXD-	(-) Emission to terminal
3	RXD+	(+) Reception of terminal
4	NC	Not connected
5	NC	Not connected
6	RXD-	(-) Reception of terminal
7	NC	Not connected
8	NC	Not connected

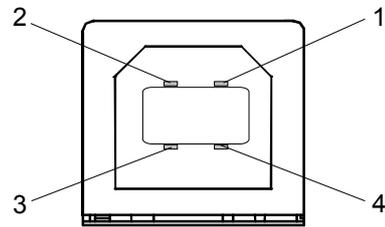


The Ethernet port is self-detecting. You can use either straight or crossed cables. An emission or reception signal is detected automatically.

## **G.4 Pinouts of the "ADSL" connector**

---

The "USB" interface is connected to the equipment using a type B female USB fixed connector.



<b>Contact N°</b>	<b>Signal</b>	<b>Meaning</b>
1	Vcc	PC power (+)
2	- Data	Subscriber line signal
3	+ Data	Subscriber line signal
4	Ground	Earth





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