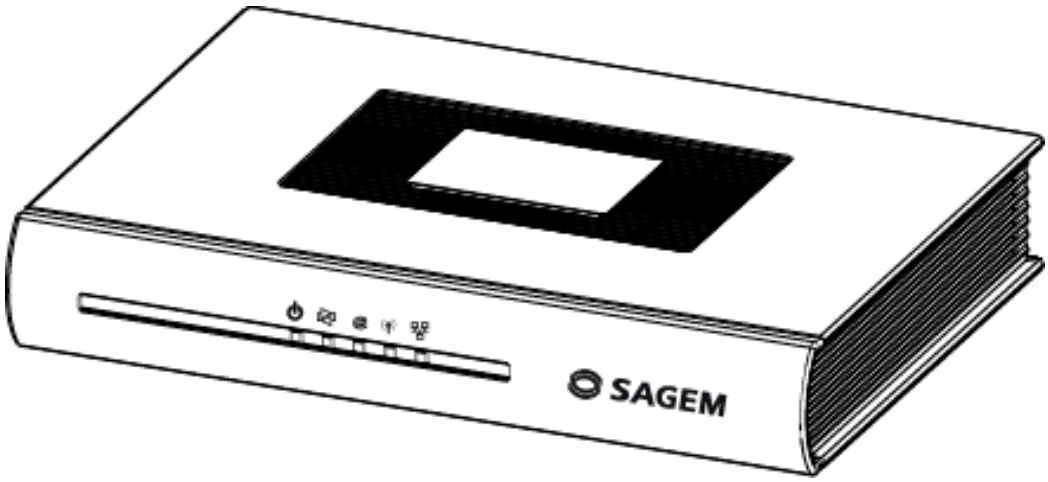
SAGEM F@st™ 240x
SAGEM F@st™ 244x



Reference Manual

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SAGEM

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.

All brands mentioned in this guide are registered by their respective owners:

- **SAGEM F@st™** is a registered brand of **Sagem Communication**.
- **SAGEM F@st™** is a registered brand of **Sagem Communication**.
- **Windows™** and **Internet Explorer™** are registered brands of Microsoft Corporation.
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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.

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

Contents

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).

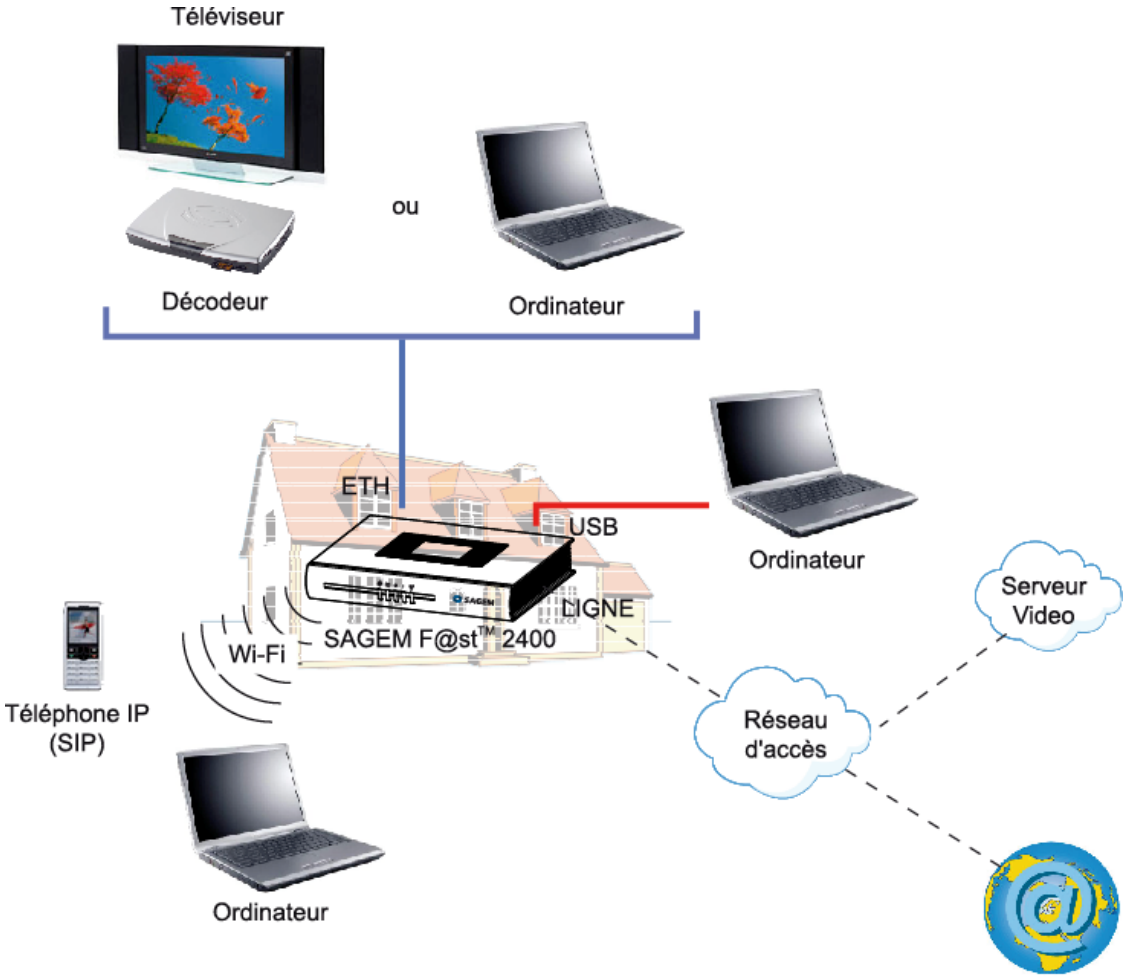


Figure 1.1 - Supervising your router

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:

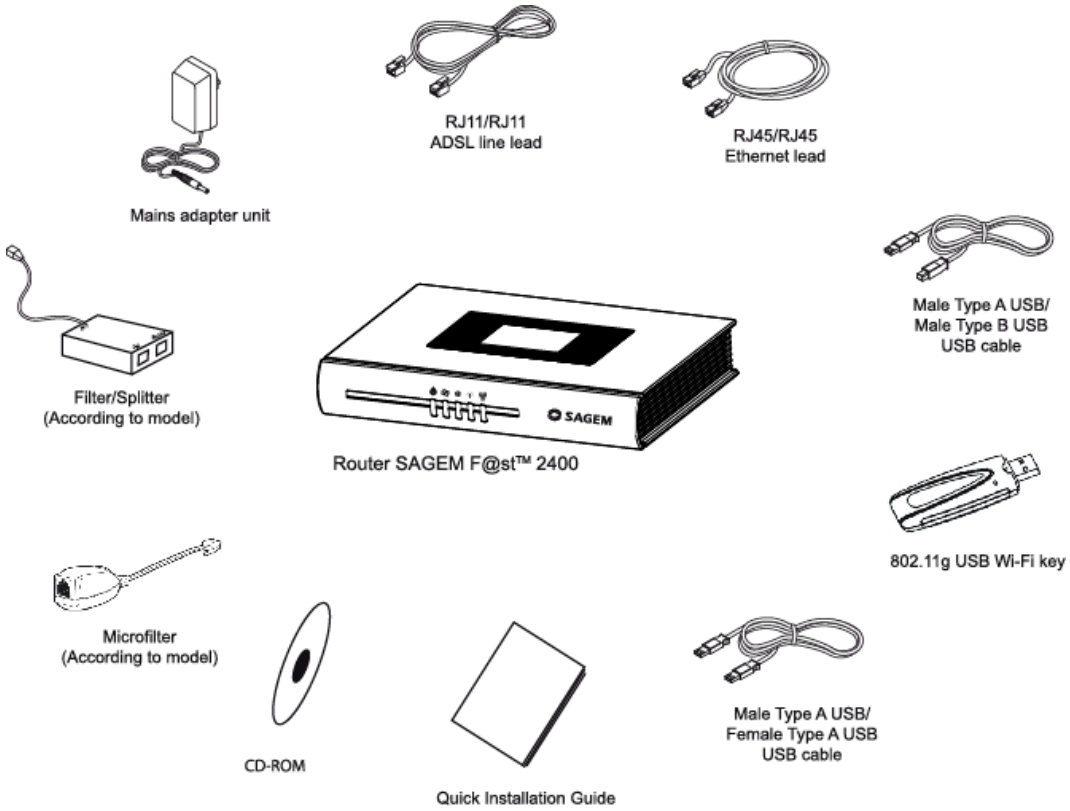
- High-performance secure Bridge/Router with ADSL/ADSL2/ADSL2+ interface,
- User access:
  - 1 to 4 x 10/100BT Ethernet port(s),
  - 1 USB1.1 Slave port,
  - 1 Wi-Fi port (802.11b/g) by mini-PCI,
- DHCP Client/Server/Relay,
- Server/DNS Relay,
- FTP Client/Server,
- TFTP Client/Server,
- HTTP Client/Server,
- 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).

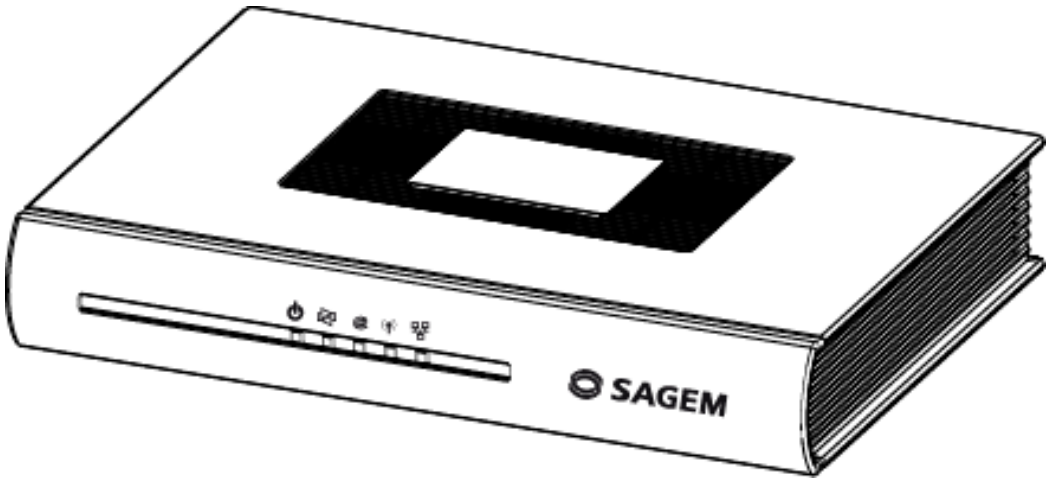


Figure 2.1 - Overview of case

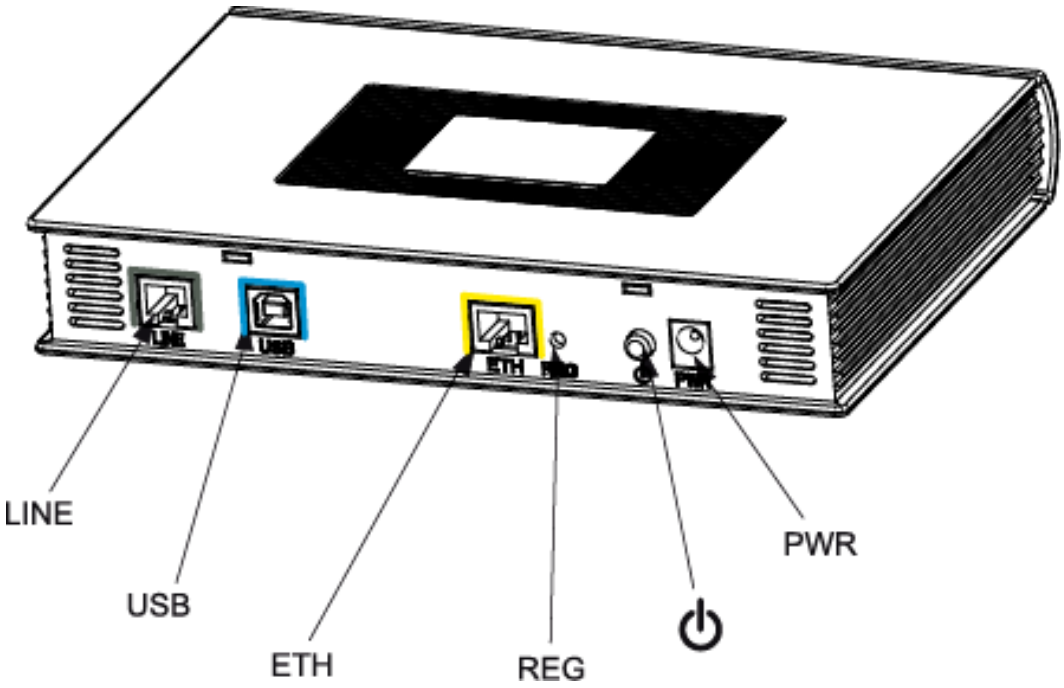
This case consists principally of a lid and a base in which a printed circuit equipped with electronic components is located.

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.

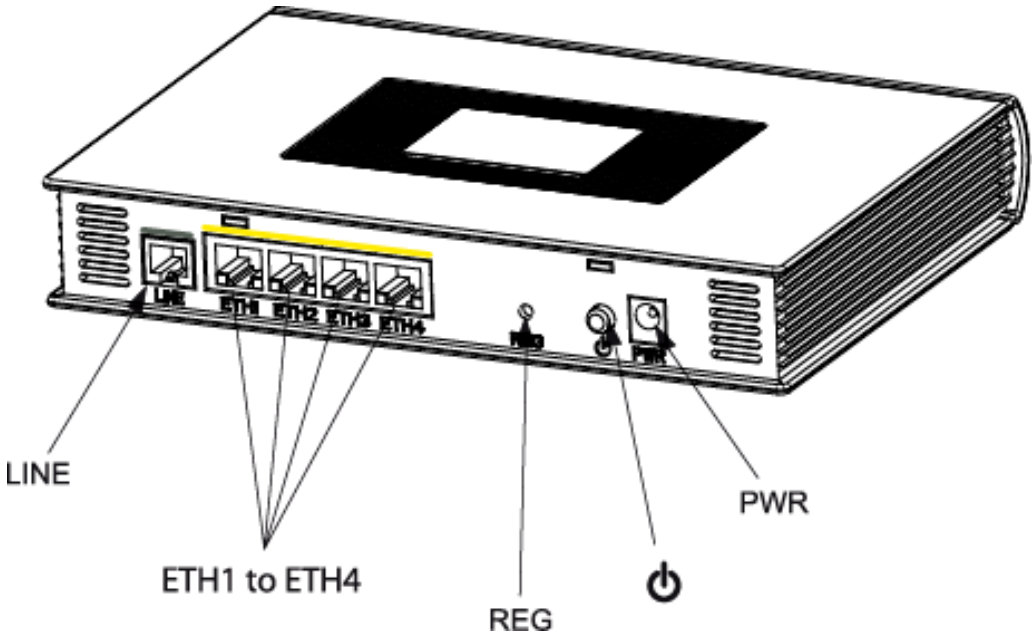
Below the base a label is glued on which the product's identification code, the series number and a barcode are shown.

2.1.1 Connectors

SAGEM F@st™ 2400 and SAGEM F@st™ 2440



SAGEM F@st™ 2404 and SAGEM F@st™ 2444



Common to all routers

Marking	Meaning
LINE	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).
REG	This button allows the router to be reset to the factory configuration (see § A.7). **Note:** It is set back relative to the other elements to prevent an accidental loss of configuration.
	On/Off switch.
PWR	Miniature jack fixed connector. This connector enables the router to be supplied with direct current from a mains adapter unit.

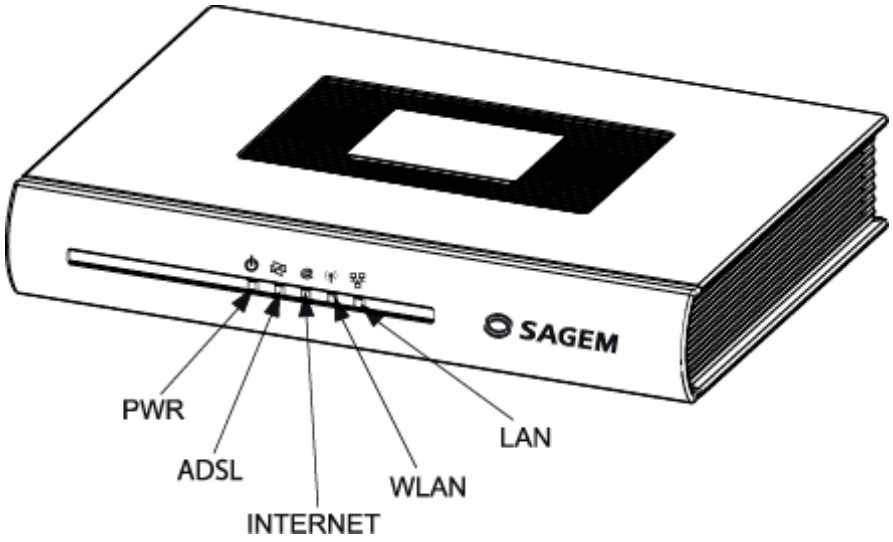
SAGEM F@st™ 2400 and SAGEM F@st™ 2440

USB	This connector is identified on the base by a blue frame. It is used **only** for connection to a computer (USB interface).
ETH	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

ETH1 to ETH4	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
⏻	**PWR**	**Alarm LED** (Green/Red bicolour LED): • **lits green** if power is present, • **lits red** in the case of failure detected at the time of starting, • goes **out** if there is no power.
	ADSL	**Green ADSL LED**: • **blinks slowly** when the ADSL is not detected, • **blinks quickly** when the ADSL line is being synchronised, • stays **lit** when the ADSL line is detected.
@	**Internet**	**Internet connection LED** (Green/Red bicolour LED): • remains **lit** when the "PPP" connection is established or when the router is in "Bridge" mode, • **lits green** when the "PPP" connection is established, • **lits red** when the "PPP" connection is not established, • **blinks** when traffic is detected on the WAN interface.
	WLAN	**Green ADSL LED**: This LED indicates activation/deactivation of Wi-Fi mode. • This LED is **off** when the "Wi-Fi" interface is deactivated. • This LED **blinks** in the presence of traffic on the WLAN interface. • This LED is **lit** when the "Wi-Fi" interface is activated.

SAGEM F@st™ 2400 and SAGEM F@st™ 2440

Marking	Abbreviation	Meaning
	LAN	**Green local network (LAN) LED**: This LED indicates data traffic between the router and the different USB and Ethernet (ETH) interfaces. • This LED is **off** if no interface (Ethernet or USB) is detected. • This LED **blinks** when traffic is detected on one of the interfaces. • This LED is **lit** when an Ethernet or USB interface is detected and if no traffic is detected.

SAGEM F@st™ 2404 and SAGEM F@st™ 2444

Marking	Abbreviation	Meaning
	LAN	**Green local network (LAN) LED**: This LED indicates data traffic between the router and the different USB and Ethernet (ETH) interfaces. • This LED is **off** if no Ethernet interface (ETH1, ETH2, ETH3 or ETH4) is detected. • This LED **blinks** when traffic is detected on one of the interfaces. • This LED is **lit** if at least one Ethernet interface (ETH1, ETH2, ETH3 or ETH4) is detected and if no traffic is detected.

2.2 Connecting the ports of your router

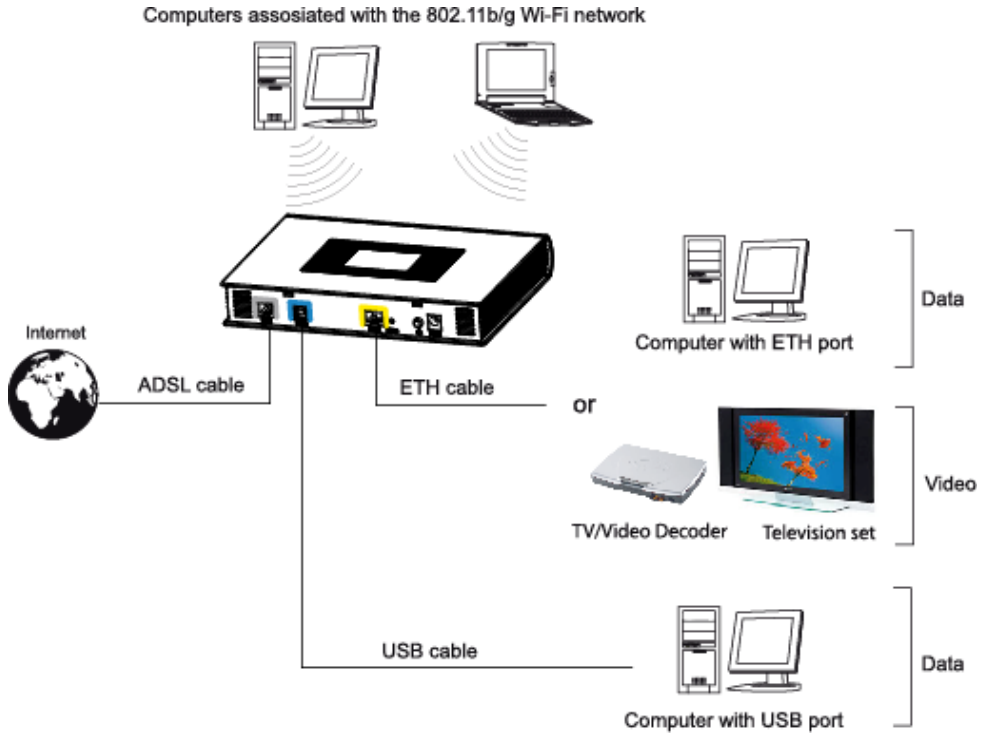


Figure 2.2 - Interconnection of ports of SAGEM F@st™ 2400 et 2440

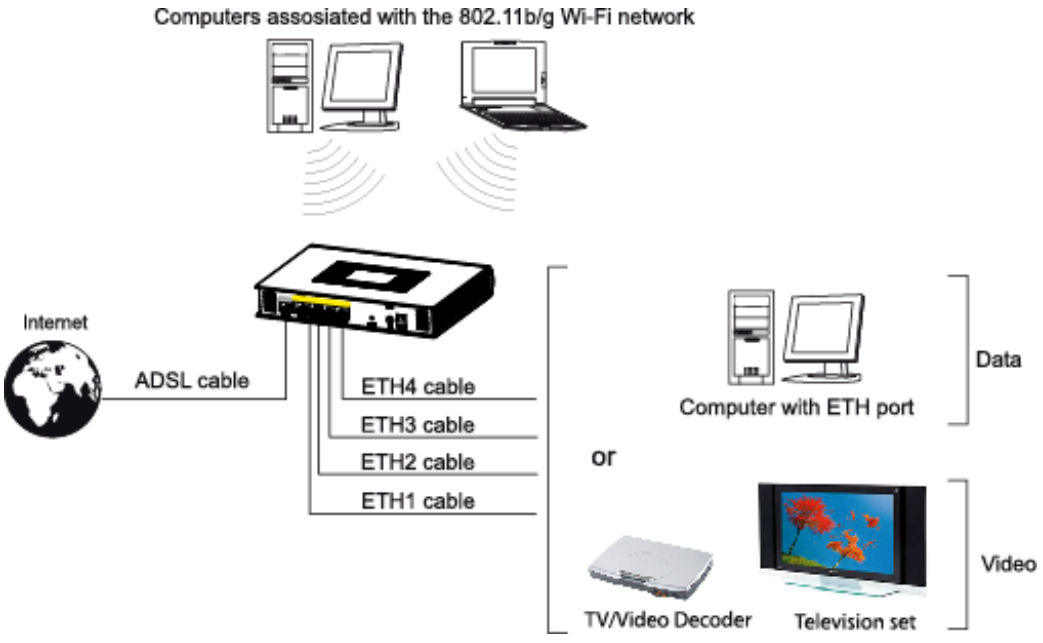
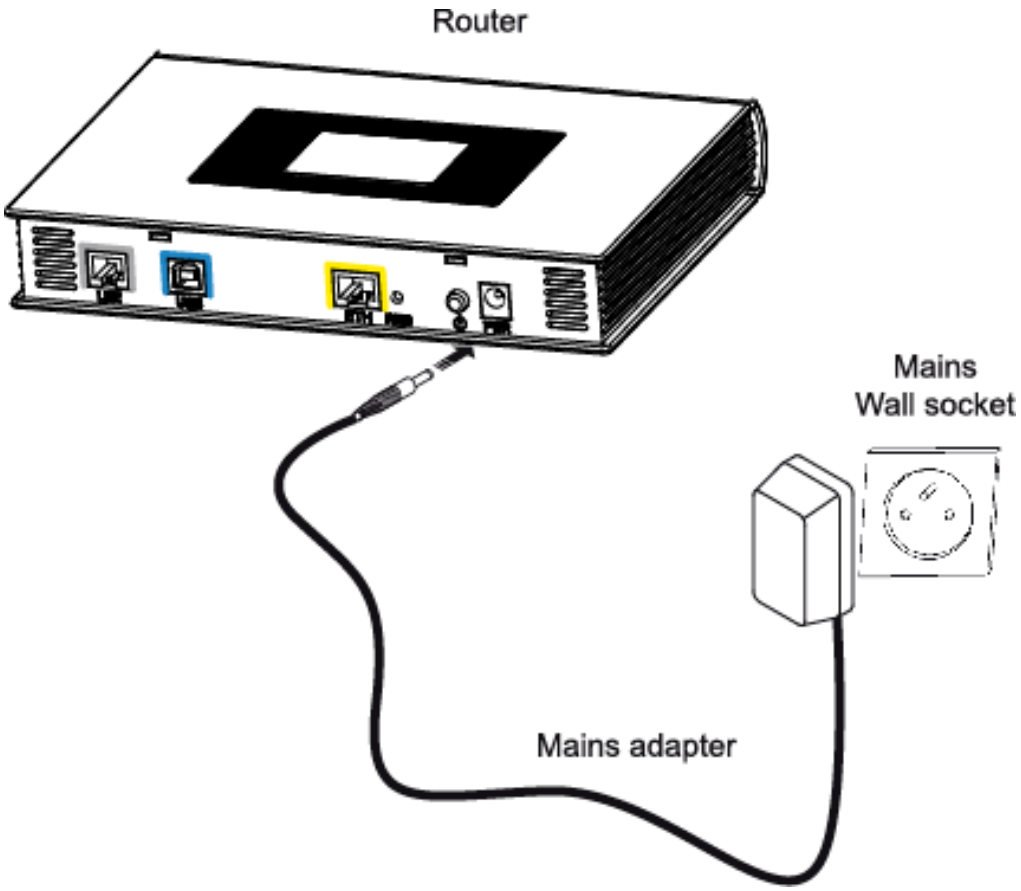


Figure 2.3 - Interconnection of ports of SAGEM F@st™ 2404 et 2444

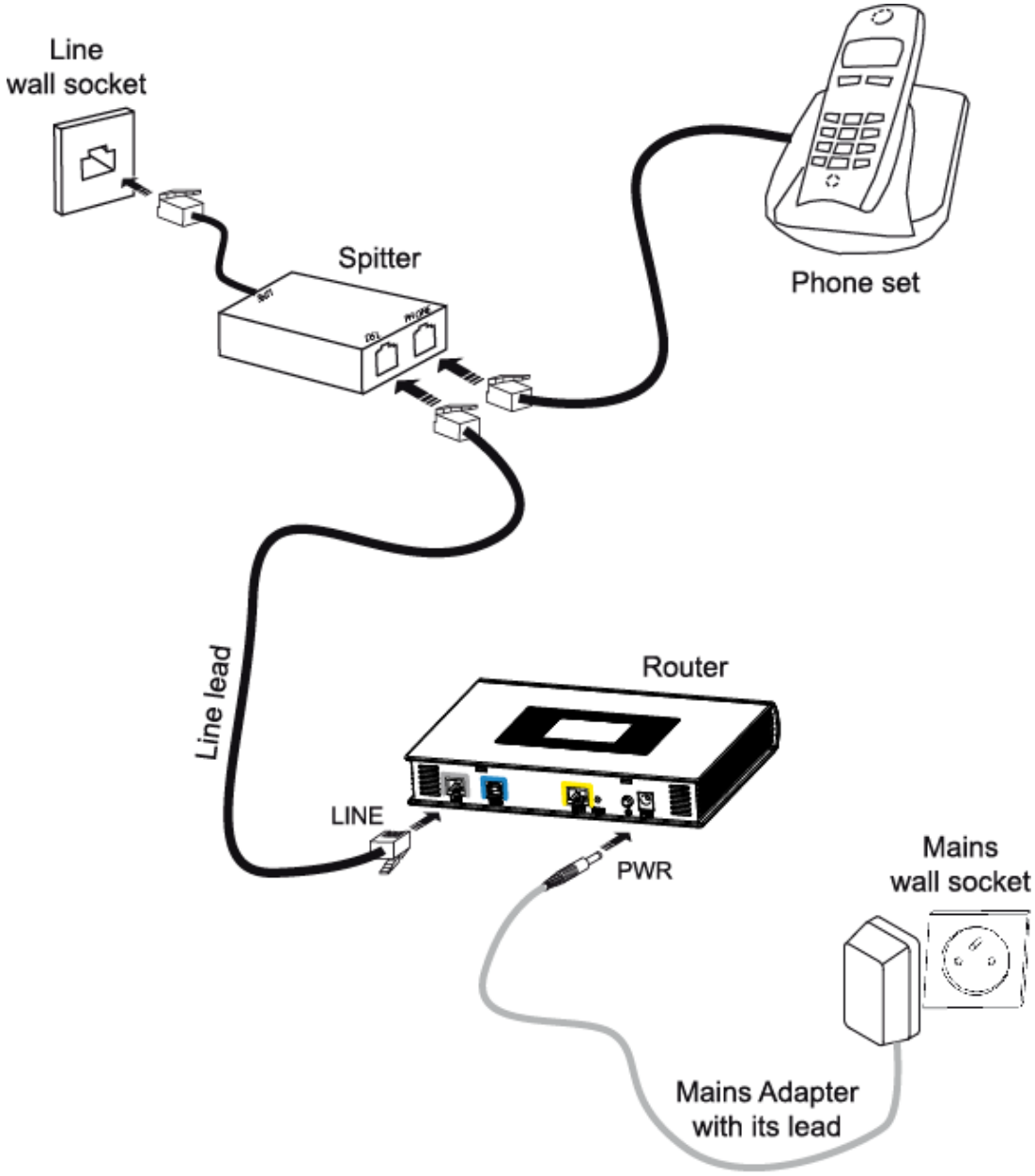
2.2.1 Connecting to a power socket

- 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

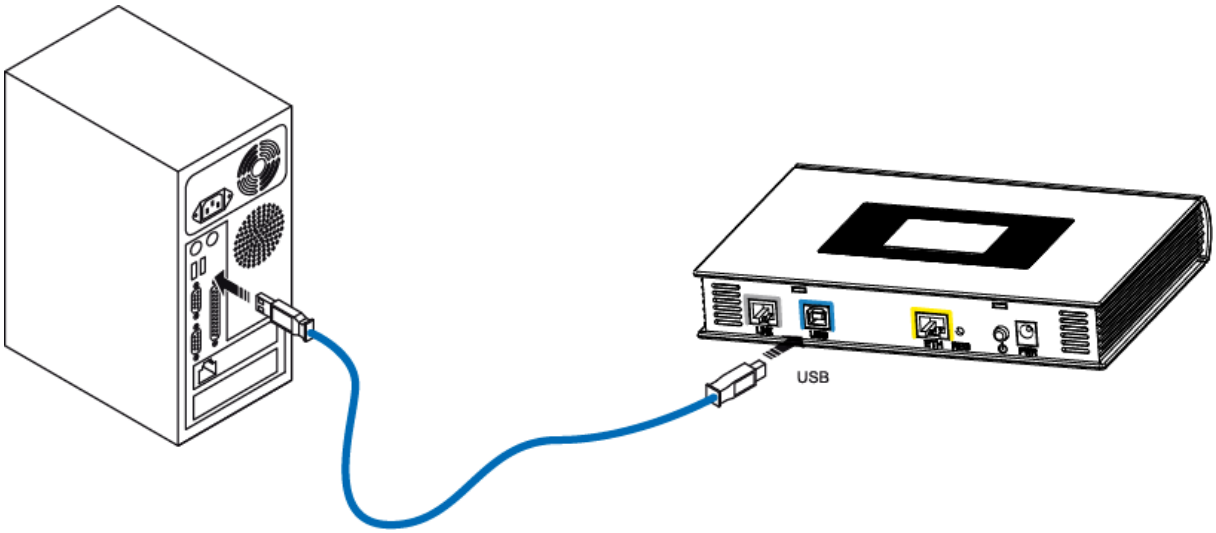
Three connections may have to be made:

- 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

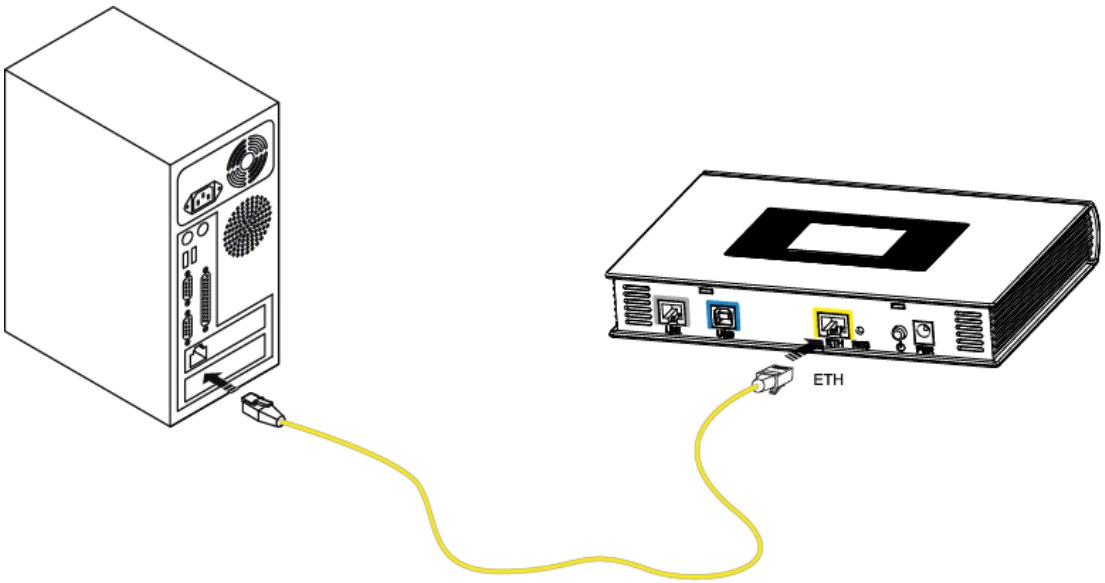
This connection is made **in all cases after installing the drivers** of the USB interface (see section 3).

- 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.

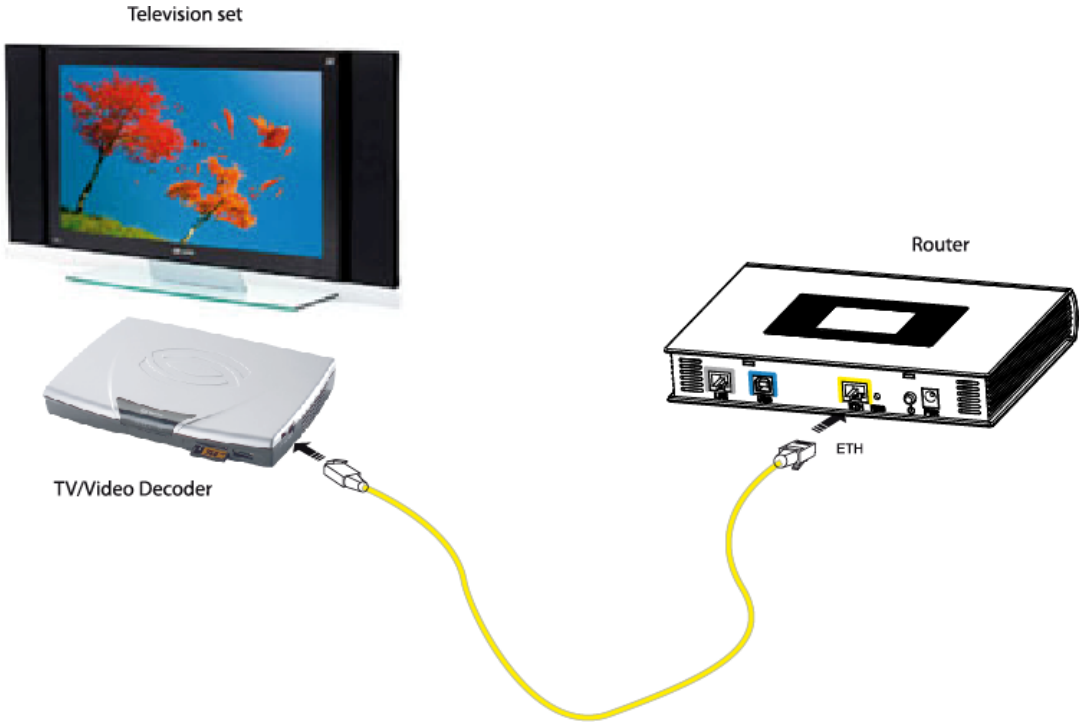
Inserting a USB Wi-Fi key in your computer

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

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:

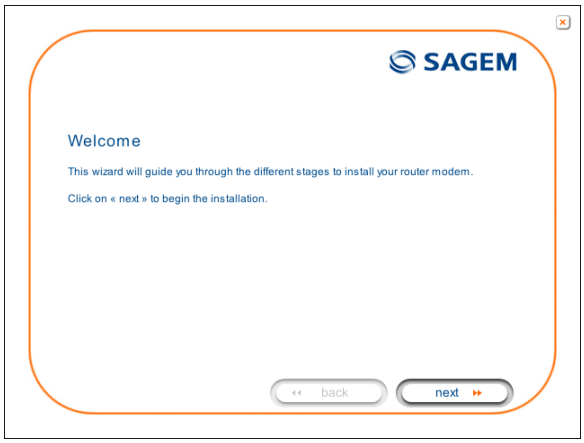
- Wi-Fi (cf. § 3.1),
- Ethernet (ETH)(cf. § 3.2),
- USB (cf. § 3.3).

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 next 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**.

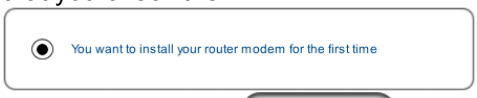
2 The screen opposite appears.

Carry out the operations described on the screen.

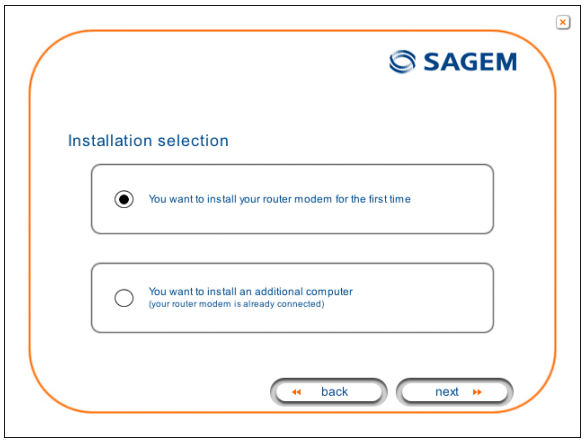
Click button next to continue the installation.

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



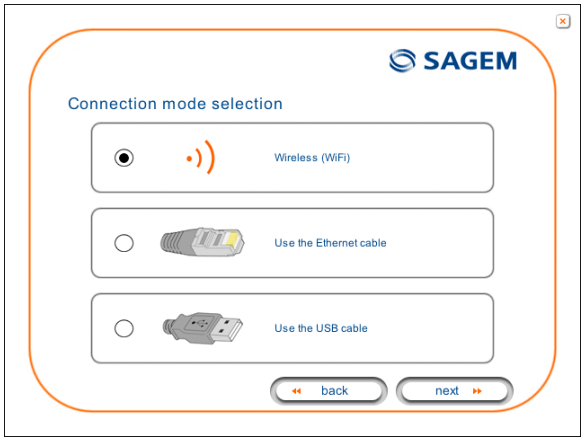
button then click on next to continue the installation.



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 next button to continue the installation.



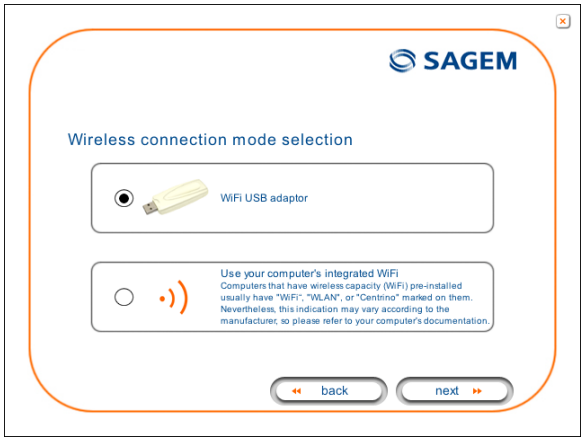
The installation of your router using different interfaces is described in detail below in the order displayed on the previous screen (choice of connection mode).

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 next button to continue the installation.

2a The screen opposite appears.

Make the electrical connection as described on the screen.

Click the next button to continue the installation.

3a The screen opposite appears.

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

Click the next 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.

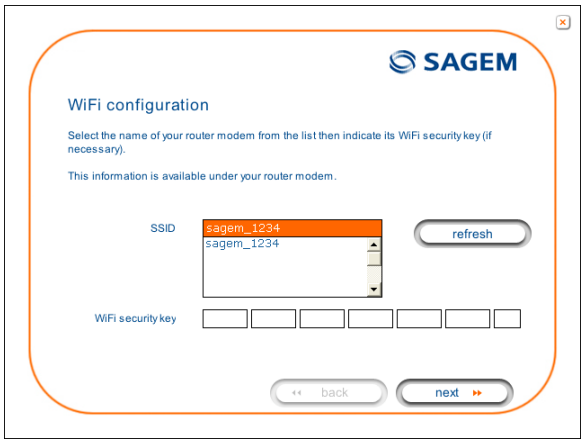
Connect your **USB Wi-Fi adapter XG - 760N** (supplied in the pack) to an available corresponding fixed connector on your computer following the illustration given on the screen.

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.

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 refresh, 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 next button to continue the installation.



7a The screen opposite appears.

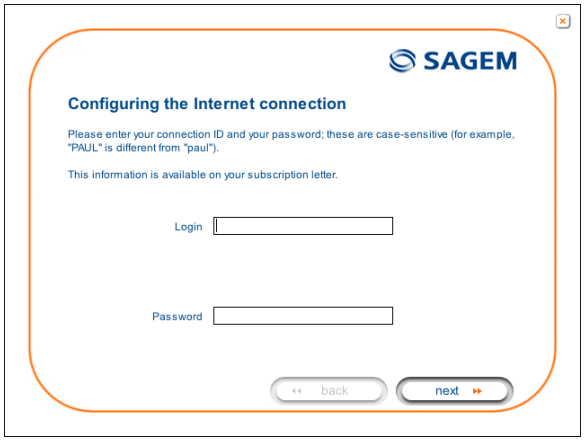
Please wait during the diagnostics of the connection to the Router via the **Wi-Fi** USB adapter.

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 next button to continue the installation.



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.

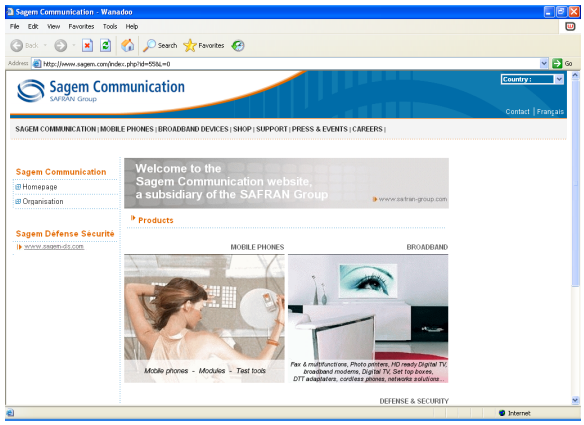
10a The screen opposite appears.

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

Click the finish button to close the window.

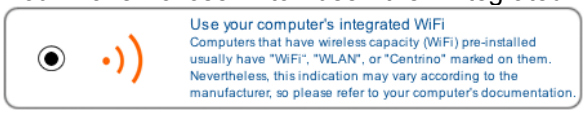
11a The "SAGEM" welcome screen appears.

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.

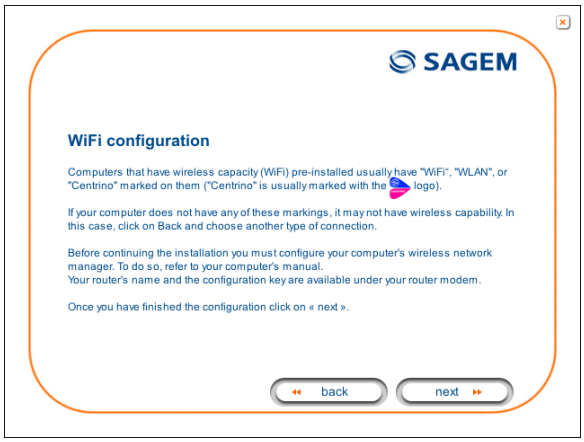
Whatever your choice, you must make the electrical connection and the connection to the ADSL line.

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 next button to continue the installation.



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

7b The screen opposite appears.

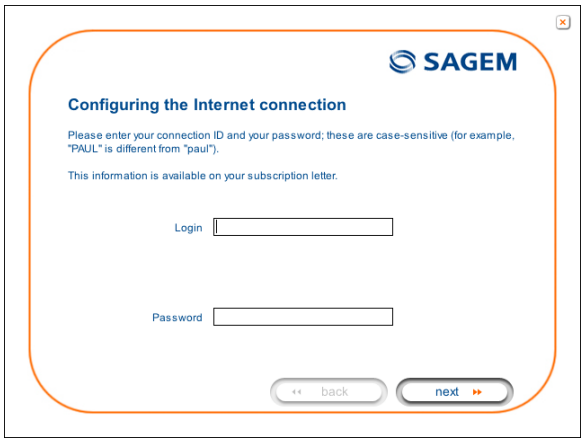
Please wait during the diagnostics of the connection to the Router via the integrated Wi-Fi interface of your computer.

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 next 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.

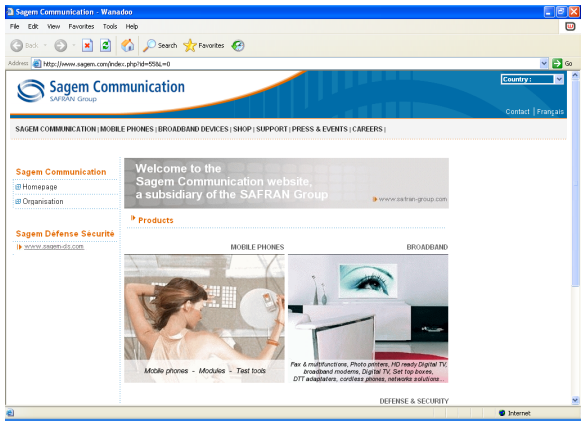
10b The screen opposite appears.

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

Click the finish 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 next button to continue the installation.

2 The screen opposite appears.

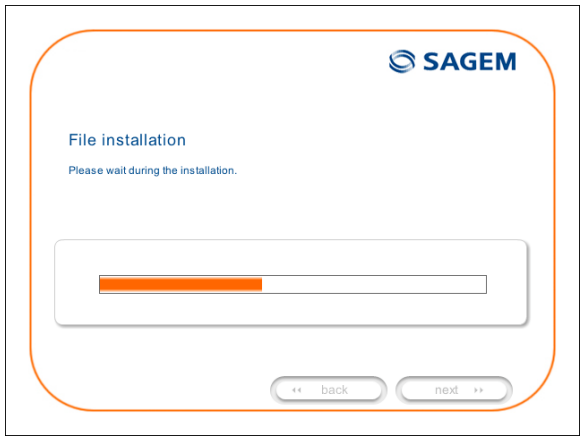
Make the connection of the ADSL line as described on the screen.

Click the next button to continue the installation.

3 Connect the Ethernet cable as described on the screen.

Click the next button to continue the installation.

4 The screen opposite appears and asks you to wait.



5 The screen opposite appears.

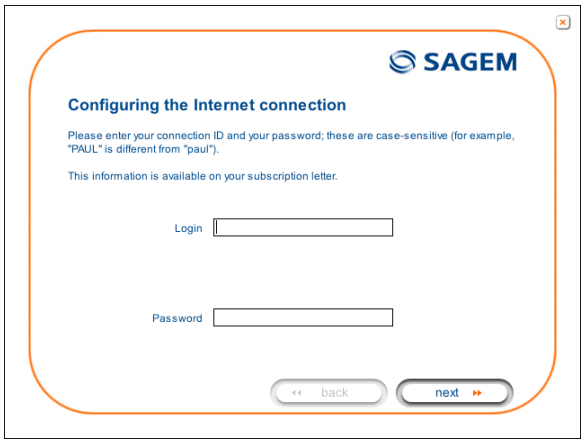
Please wait during the diagnostics of the connection to the Router via an Ethernet cable.

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 next 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.

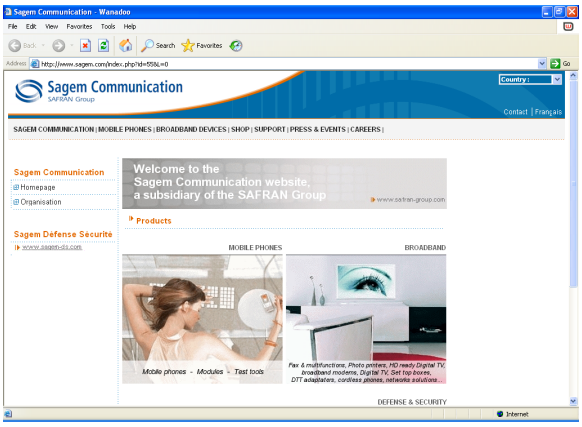
8 The screen opposite appears.

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

Click the finish button to close the window.

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 next button to continue the installation.

2 The screen opposite appears.

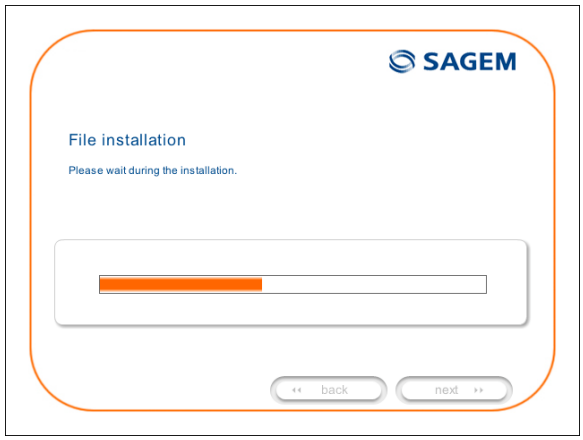
Make the connection of the ADSL line as described on the screen.

Click the next button to continue the installation.

3 Connect the USB cable as described on the screen.

Click the next button to continue the installation.

4 The screen opposite appears and asks you to wait.



5 The screen opposite appears.

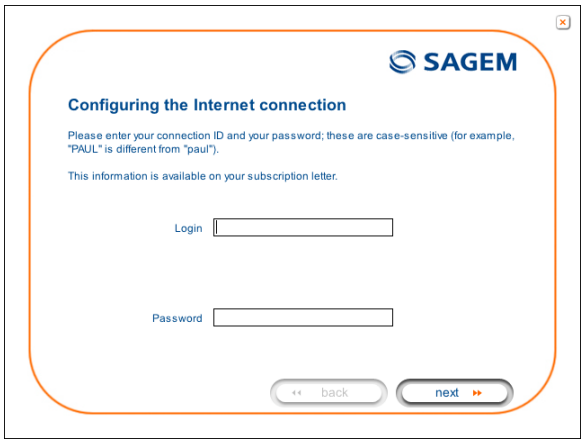
Please wait during the diagnostics of the connection to the Router via a USB cable.

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 next 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.

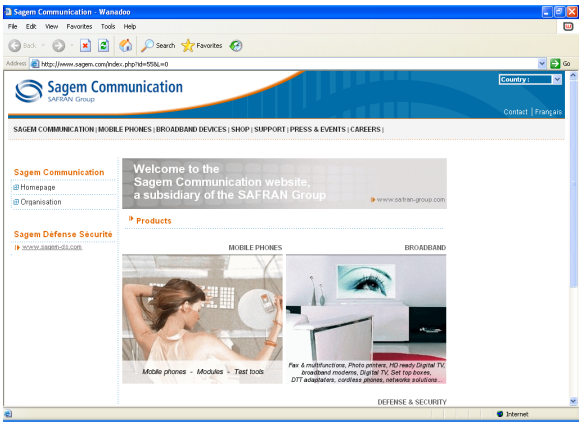
8 The screen opposite appears.

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

Click the finish 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.

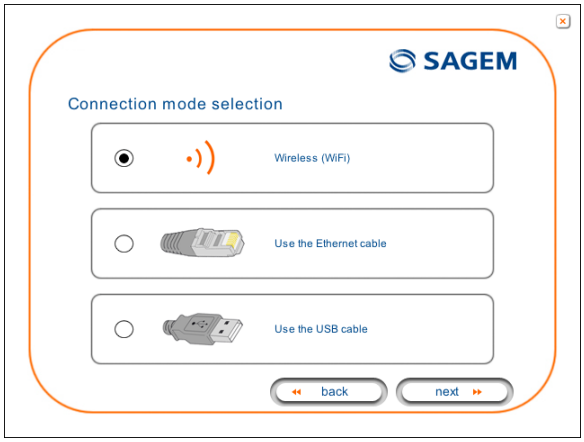
Click "Wi-Fi" to install your router on the Wi-Fi interface (cf.§ 3.1),

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:

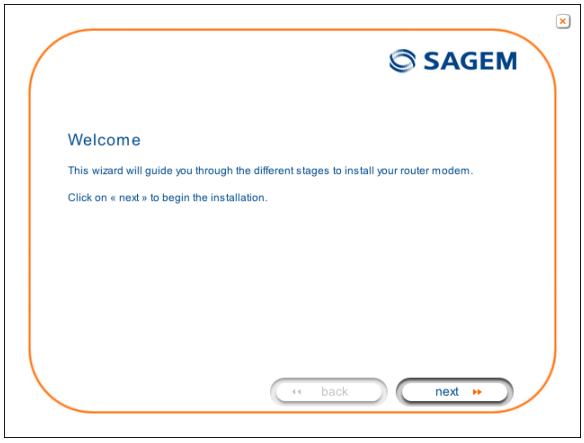
- Wi-Fi (cf. § 4.1),
- Ethernet (ETH)(cf. § 4.2).

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 next 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.

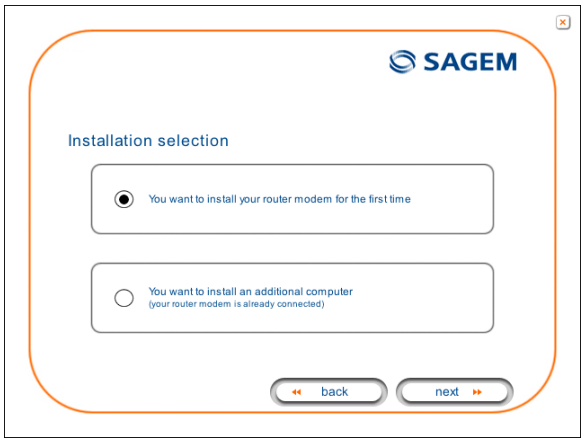
Carry out the operations described on the screen.

Click the next 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

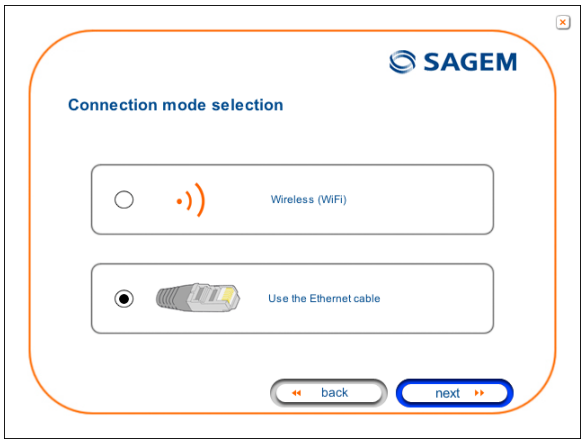
then click the next button to continue the installation.



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 next button to continue the installation.



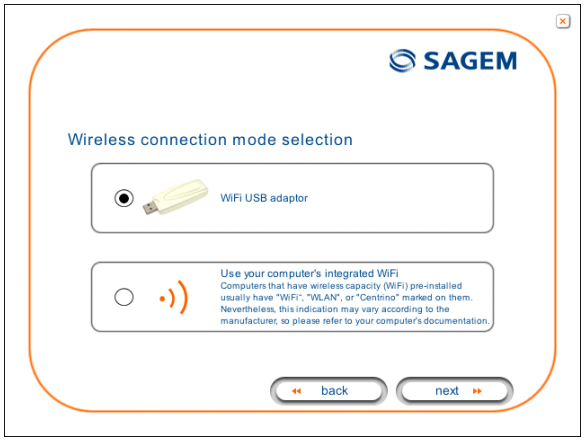
The installation of your router using different interfaces is described in detail below in the order displayed on the previous screen (choice of connection mode).

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.

3a The screen opposite appears.

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

Click the next 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.

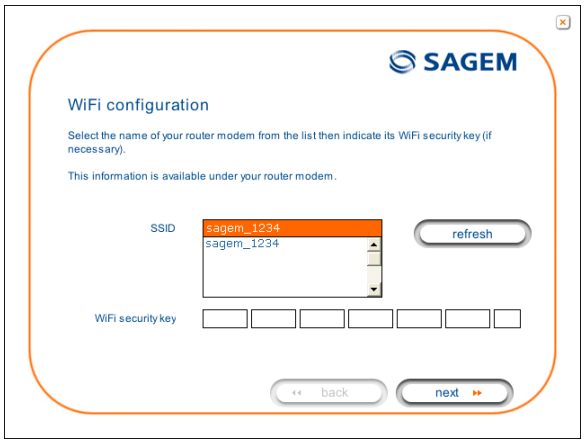
Connect your **USB Wi-Fi adapter XG - 760N** (supplied in the pack) to an available corresponding fixed connector on your computer following the illustration given on the screen.

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.

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 refresh, 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 next button to continue the installation.



7a The screen opposite appears.

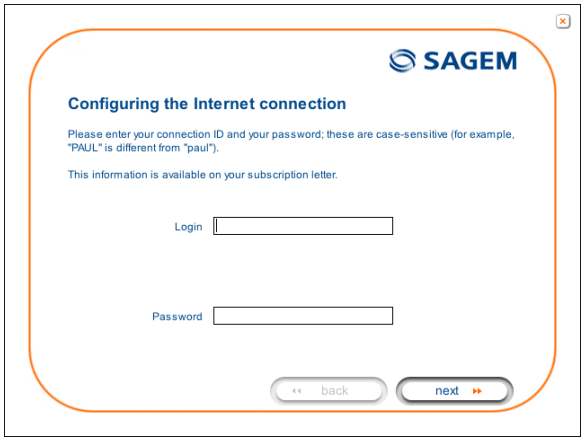
Please wait during the diagnostics of the connection to the Router via the **Wi-Fi** USB adapter.

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 next button to continue the installation.



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.

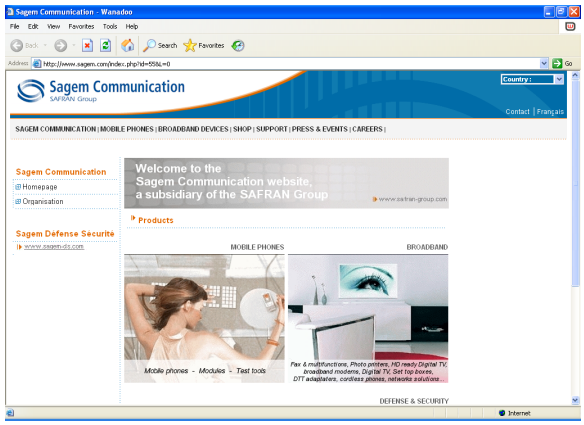
10a The screen opposite appears.

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

Click the finish button to close the window.

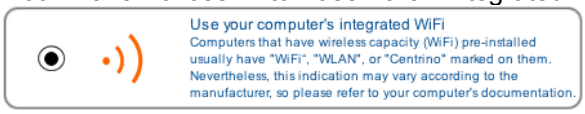
11a The "SAGEM" welcome screen appears.

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

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.

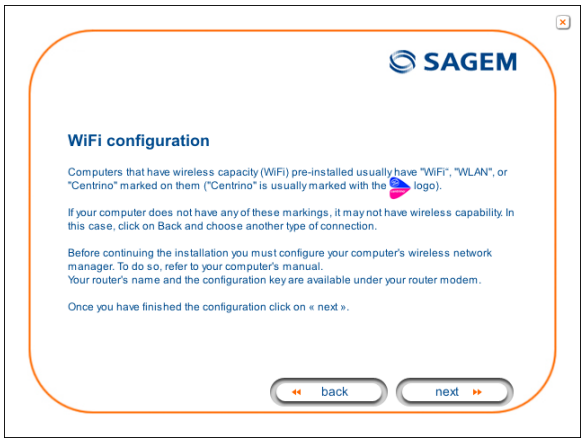
Whatever your choice, you must make the electrical connection and the connection to the ADSL line.

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 next button to continue the installation.



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

7b The screen opposite appears.

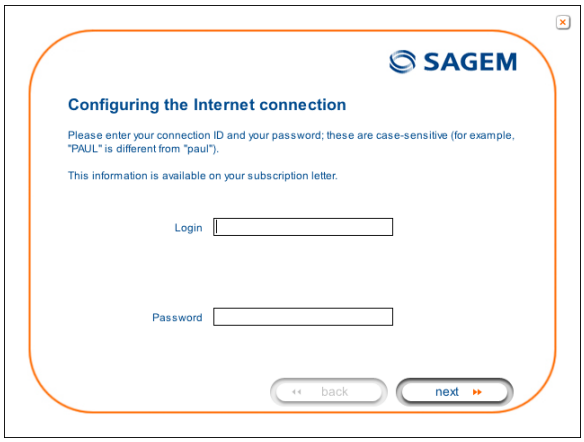
Please wait during the diagnostics of the connection to the Router via the integrated Wi-Fi interface of your computer.

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 next 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.

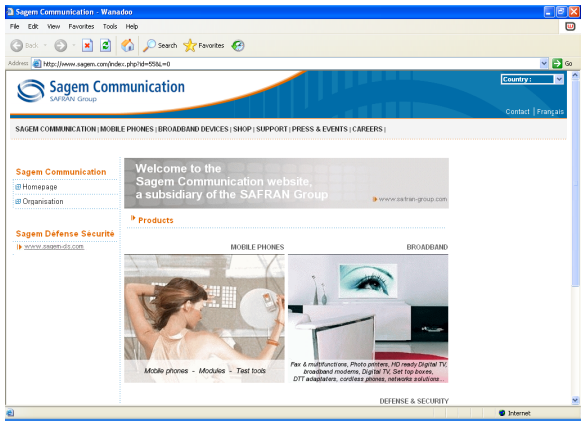
10b The screen opposite appears.

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

Click the finish 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.

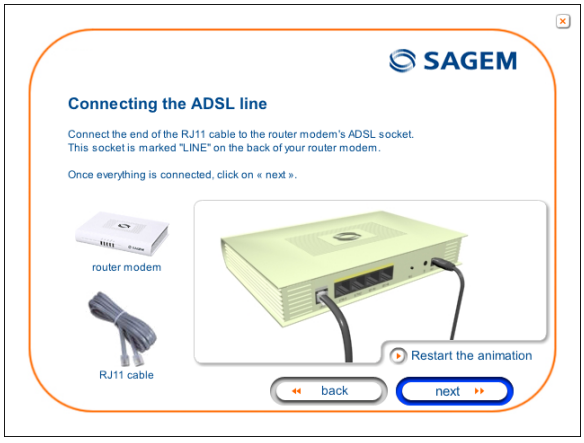
Make the electrical connection as described on the screen.

Click the next button to continue the installation.

2 The screen opposite appears.

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

Click the next button to continue the installation.

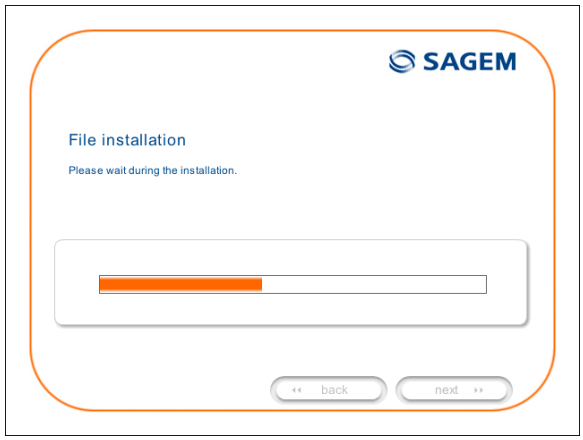


3 Connect the Ethernet cable as described on the screen.

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

Click the next button to continue the installation.

4 The screen opposite appears and asks you to wait.



5 The screen opposite appears.

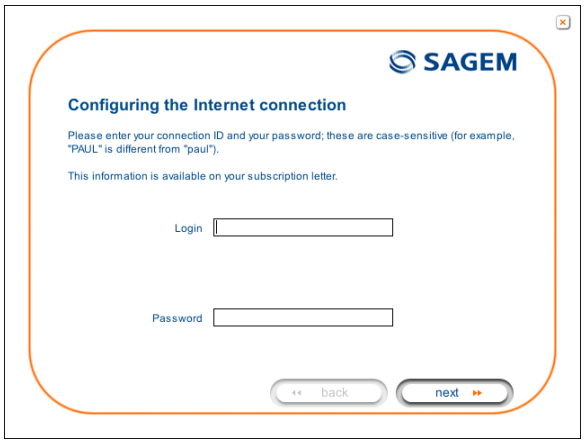
Please wait during the diagnostics of the connection to the Router via an Ethernet cable.

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 next 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.

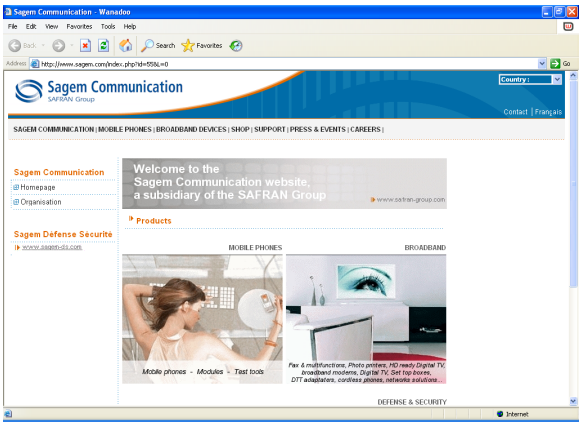
8 The screen opposite appears.

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

Click the finish 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

button to continue the installation.

1 The screen opposite appears.

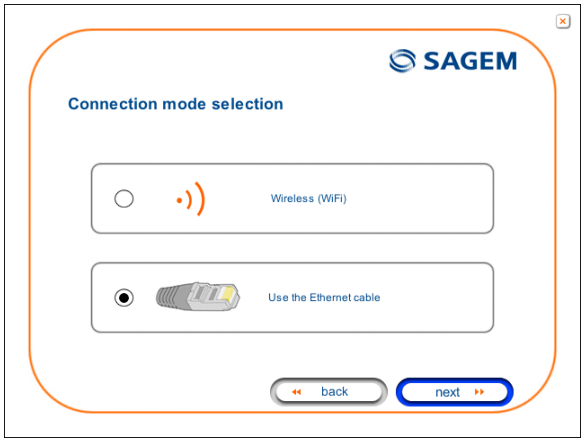
This screen enables you to choose to which interface (Wi-Fi or Ethernet) you wish to connect your router to your computer.

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.

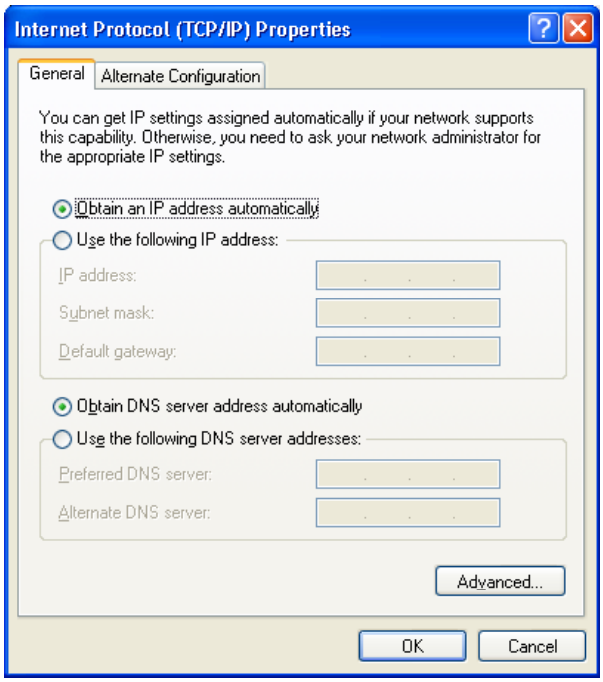
It is imperative that your computer is configured as a DHCP client or that it has a fixed IP address in the configuration range defined by the DHCP server.

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

1) Configuring as a DHCP client

In Windows XP

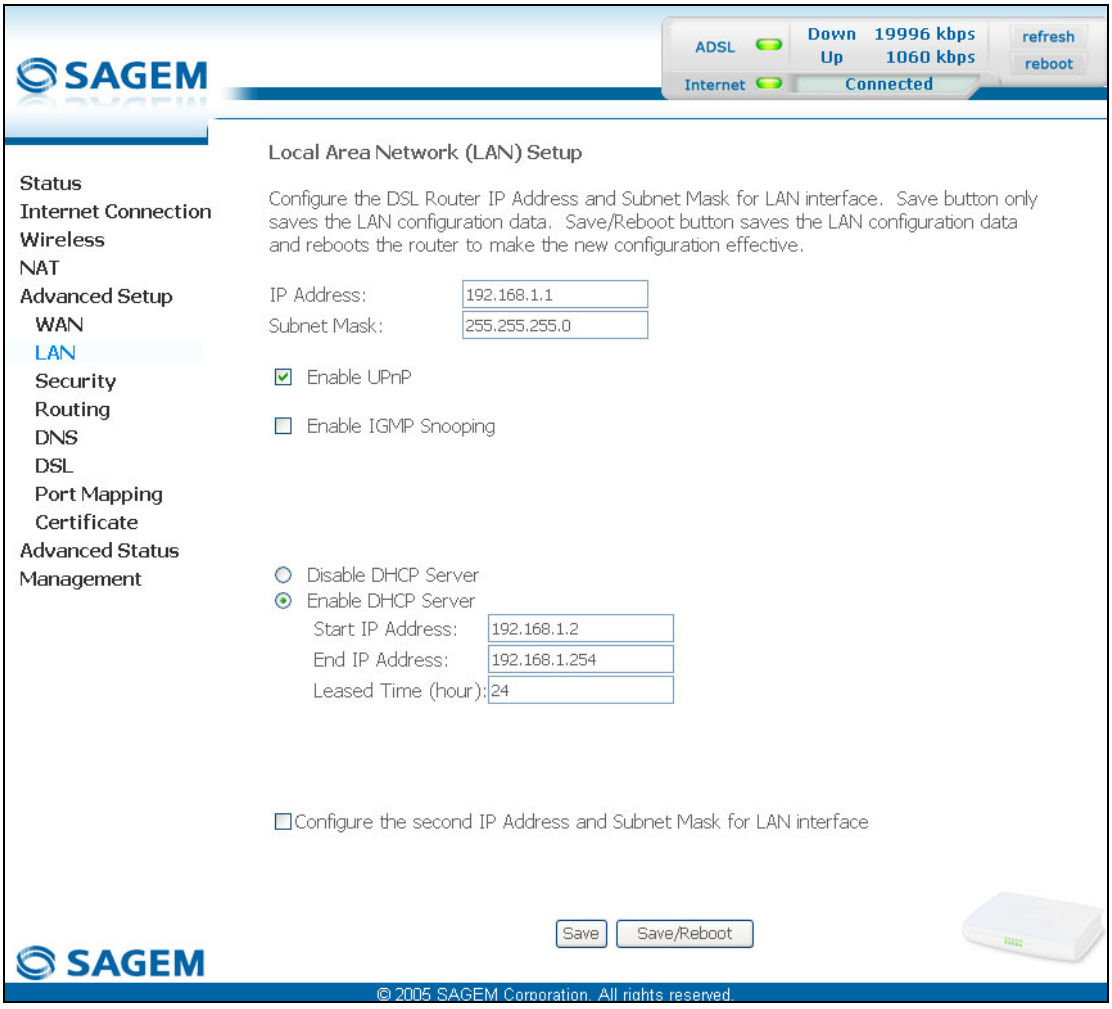
- click **Start/Control Panel/Network Connections**.
- right-click the appropriate network, and then select **Properties**; the **Local Area Connection Properties** appears.
- select the protocol TCP/IP of the network card, and then click the **Properties** button; the screen **Internet Protocol (TCP/IP) 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:



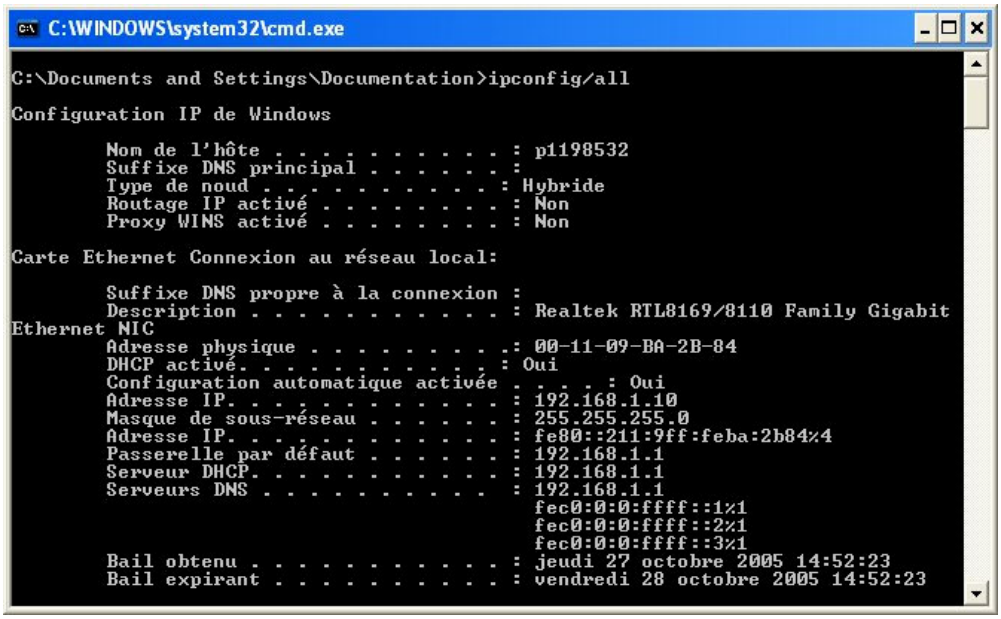
Field	Meaning	Display
IP Address	Displays the sub-network address	192.168.1.1
Subnet Mask	Displays the sub-network mask of the IP network.	255.255.255.0
Start IP Address	Displays the first address attributed by the DHCP server. **Note :** This IP address must belong to the same sub-network as that of the local network.	192.168.1.2
End IP Address	Displays the last address attributed by the DHCP server. **Note :** This IP address must belong to the same sub-network as that of the local network.	192.168.1.254
Leased Time (hour)	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**.



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 "**Status**" section	§ 6.5
	➢ The "**Internet Connection**" section	§ 6.6
	➢ The "**Wireless**" section	§ 6.7
	➢ The "**NAT**" section	§ 6.8
	➢ The "**Advanced Setup**" section	§ 6.9
	➢ The "**Advanced Status**" section	§ 6.10
	➢ The "**Management**" 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 **M**achine **M**an **I**nterface (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 .

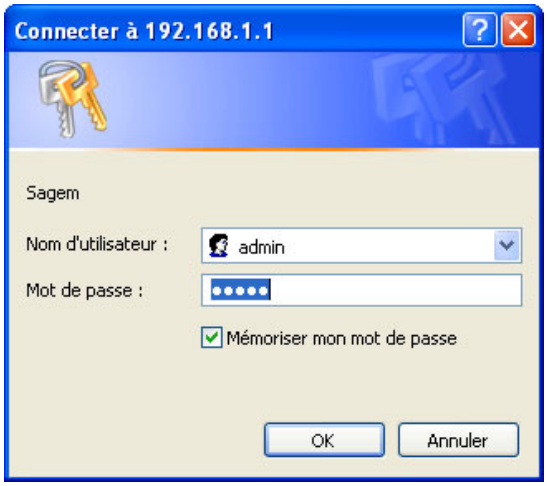
2 The following screen asks you to connect.

Enter **admin** by default in the "Username" field.

Enter **admin** by default in the "Password" field.

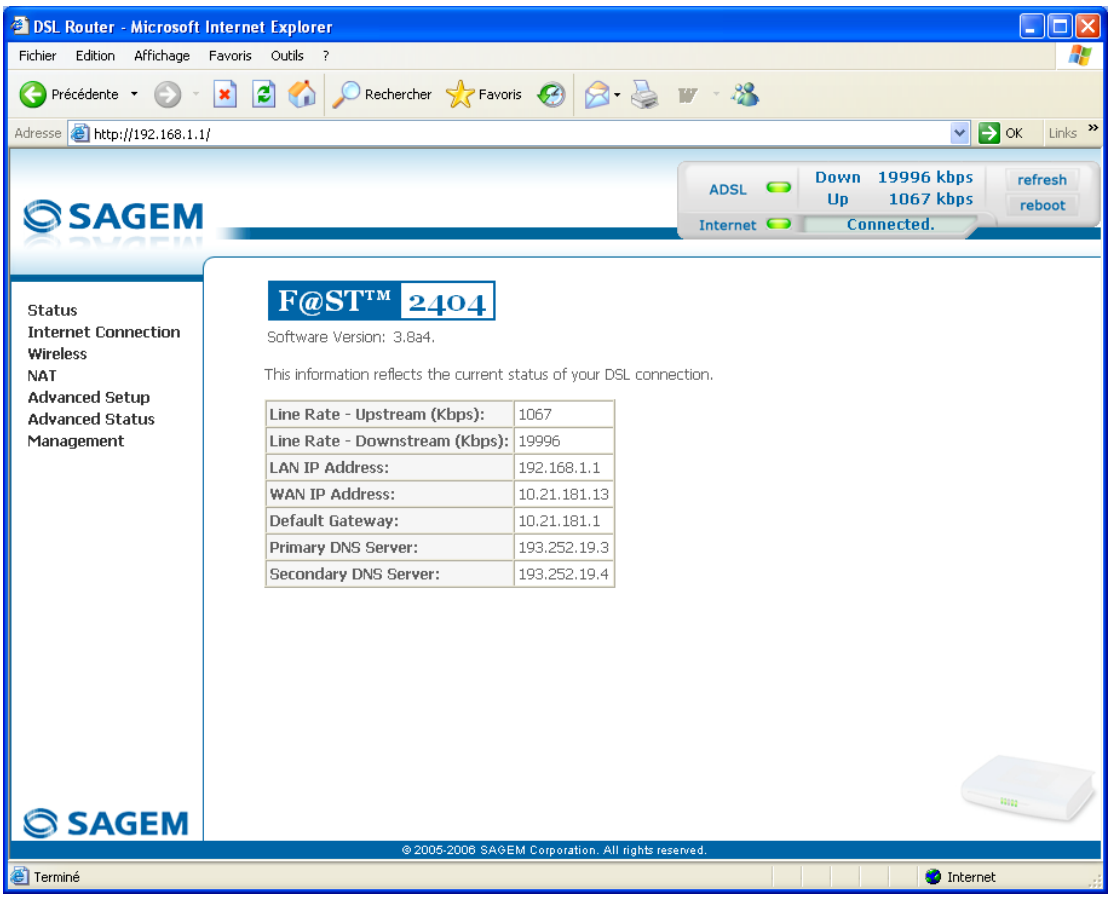
Then click on **OK** to confirm.

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 configurer 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.

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

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

Transmission rates

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

6.5 Status

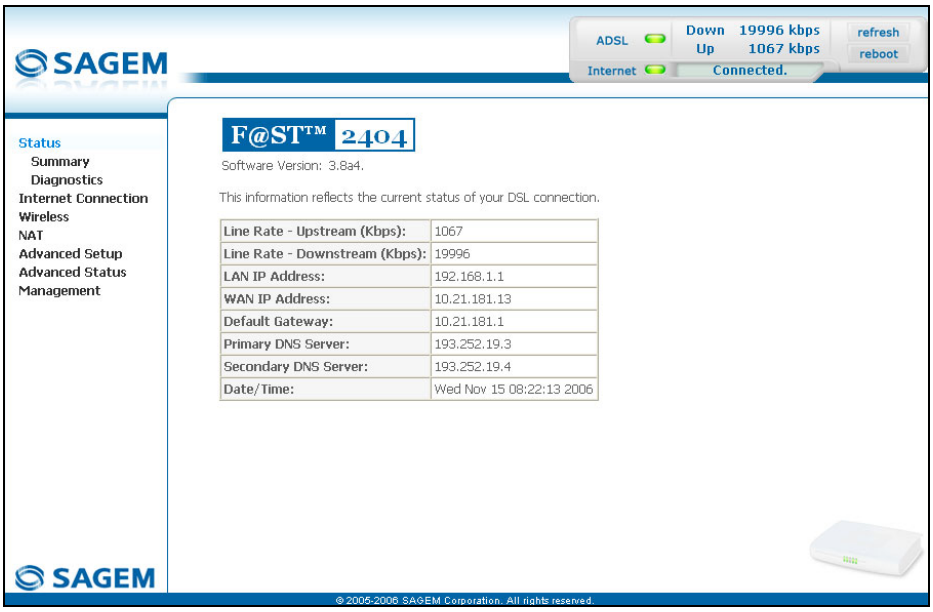
Clicking on this heading displays the following menus:

- 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
Software Version	Software version currently installed.
Line Rate - Upstream (kbps)	Nominal up line rate
Line Rate - Downstream (kbps)	Nominal down line rate
LAN IP Address	Local network IP address (LAN)
WAN IP Address	Remote network IP address (WAN)
Default Gateway	Default gateway address
Primary DNS Server	Primary DNS server address
Secondary DNS Server	Secondary DNS server address
Date / Time	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 **I**nternet **S**ervice **P**rovider (ISP). These tests concern:

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

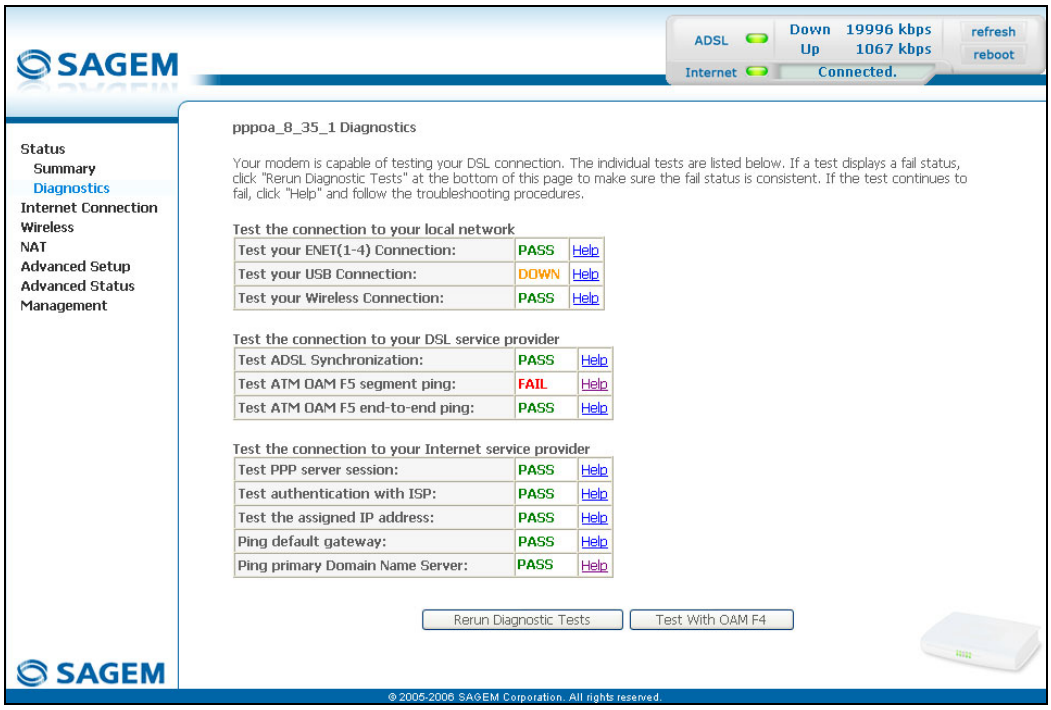
A hypertext link (help) enables the user to access context-related help. This help gives an explanation concerning the state of the connection (**PASS** in green, **DOWN** in orange and **FAIL** in red) and supplies the appropriate troubleshooting procedures.

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

State	Colour	Meaning
PASS	**Green**	Indicates that the test was completed successfully.
DOWN	**Orange**	Indicates that an interface (ETH, USB or Wi-Fi) has not been detected. **Note:** The USB interface exclusively concerns SAGEM F@st™ 2400/2440 router.
FAIL	**Red**	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.

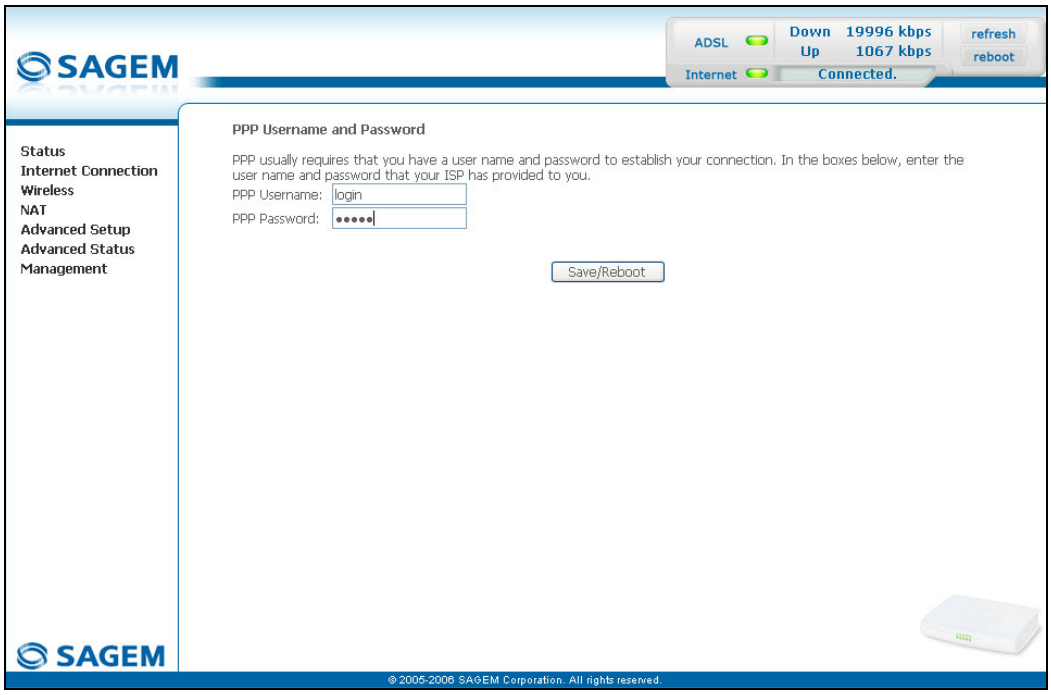
- Select the **Diagnostics** menu in the **Status** section; the following screen opens:



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:
PPP Username	Enter your connection ID. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**
PPP Password	Enter your connection password. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**

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:

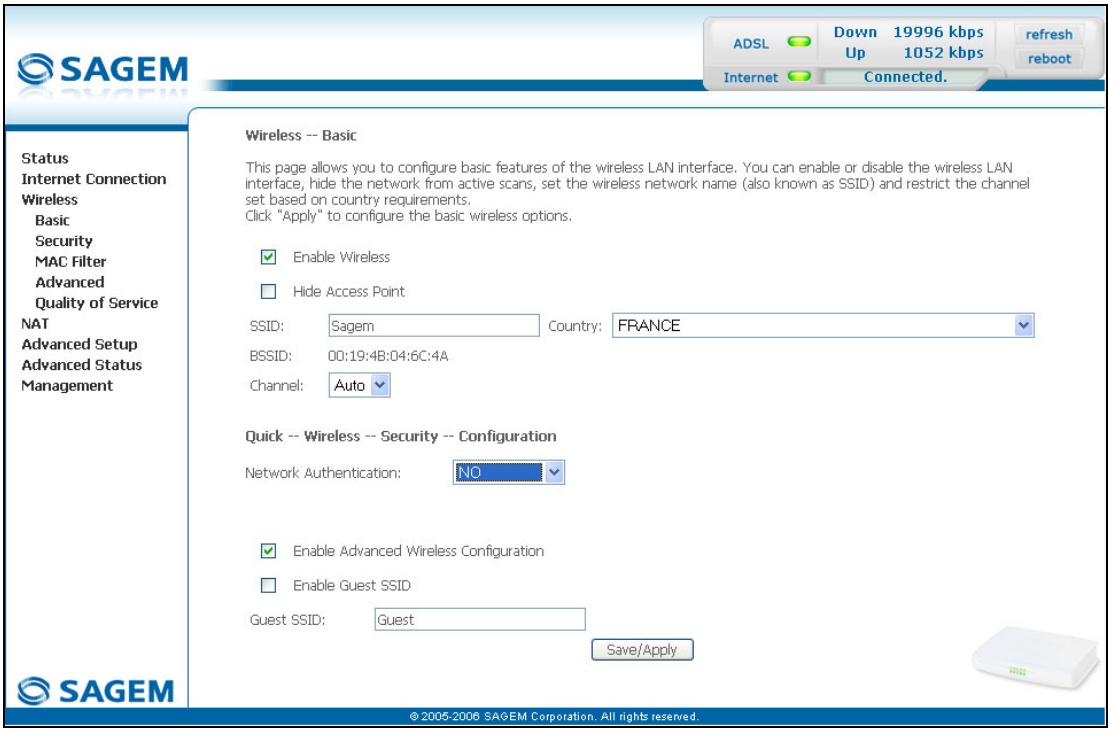
- Basic (cf. § 6.7.1),
- Security (cf. § 6.7.2),
- MAC Filter (cf. § 6.7.3),
- Advanced (cf. § 6.7.4),
- Quality of Service (cf. § 6.7.5).

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:



6.7.1.1 Wireless - Basic

Field	Action/Meaning	Default:
Enable Wireless	Check the appropriate box to activate the wireless network (Wi-Fi). **Note:** The "**Wi-Fi**" LED which lights up steady on the front of the router shows that the wireless network (Wi-Fi) is activated.	**Box checked**
Hide Access Point	Check the appropriate box to mask the broadcast of the SSID and prevent any Wi-Fi connection on your router. **Note:** 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).	**Box not checked**
SSID	Enter your router's SSID. **Note:** This indicated on the label stuck to the box.	**Sagem**
Country	Select the country of your choice from the scroll down list.	**FRANCE**
BSSID	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**asic **S**ervice **S**et). This cell is a set formed by the access point and the stations located in its coverage area. **Non modifiable**	**–**
Channel	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 **channel** you want from the scroll down list (auto, channels 1 to 13). **Note:** Channel 11 corresponds to frequency 2462 MHz. **Note:** 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.	**Auto**

6.7.1.2 Quick Wireless - Security - Configuration

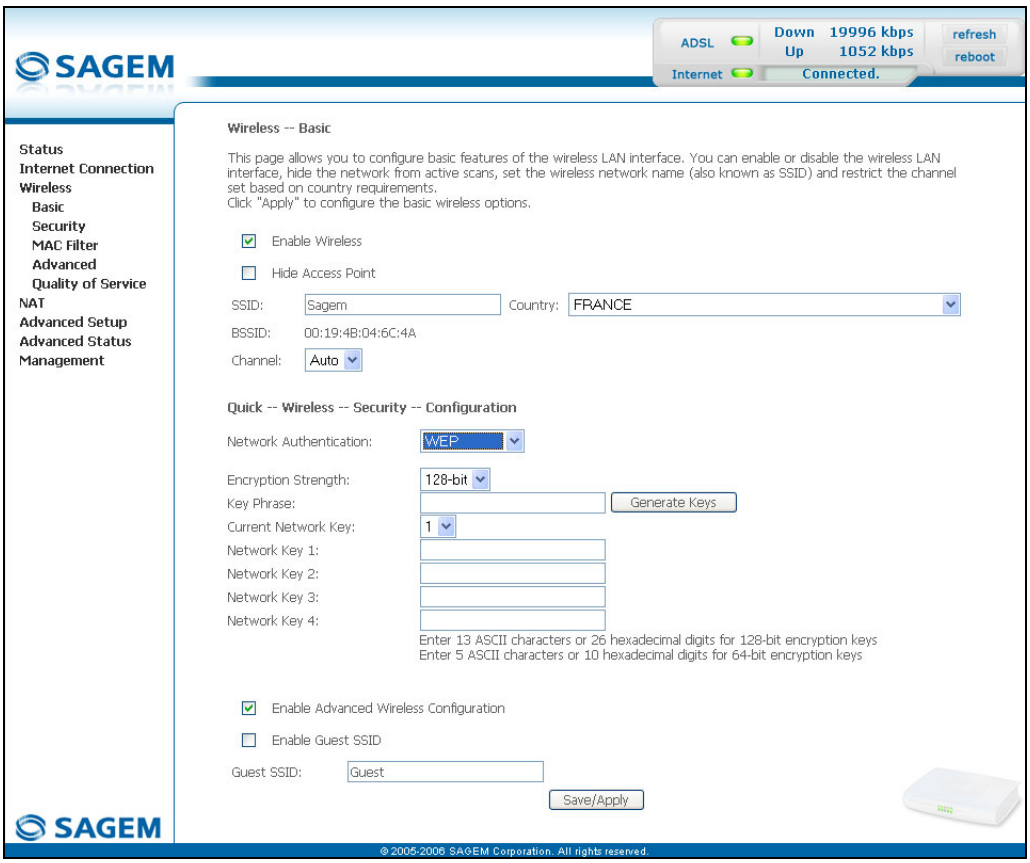
Field	Action/Meaning	Default:
Network Authentication	From the scroll down list, select the security adapted to your router's wireless network. The list suggests the following choices: • **NO** : There is no protection for the wireless network, • **WEP** : Activation of WEP (**W**ired **E**quivalent **P**rivacy) encryption • **WPA-PSK** : Activation of the WPA (**W**ireless **P**rotected **A**ccess) • **WPA2-PSK** : Activation of the WPA2 (**W**ireless **P**rotected **A**ccess) • **Other** (see § 6.7.2.1).	**NO**

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:



Field	Action/Meaning	Default:
Encryption Strength	Select **64-bit** or **128-bit** for an encryption at 64 bits or 128 bits respectively.	**128-bit**
Key phrase	Enter a phrase that consists of up to 15 alphanumeric characters then click the **Generate Keys** button.	**Empty**
Current network key	Select a key from the four suggested. The emission key is used to encrypt the data sent by your computer.	**1**
Network key x (1 to 4)	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".	**Empty**

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

Do not write them in a file on your computer.

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

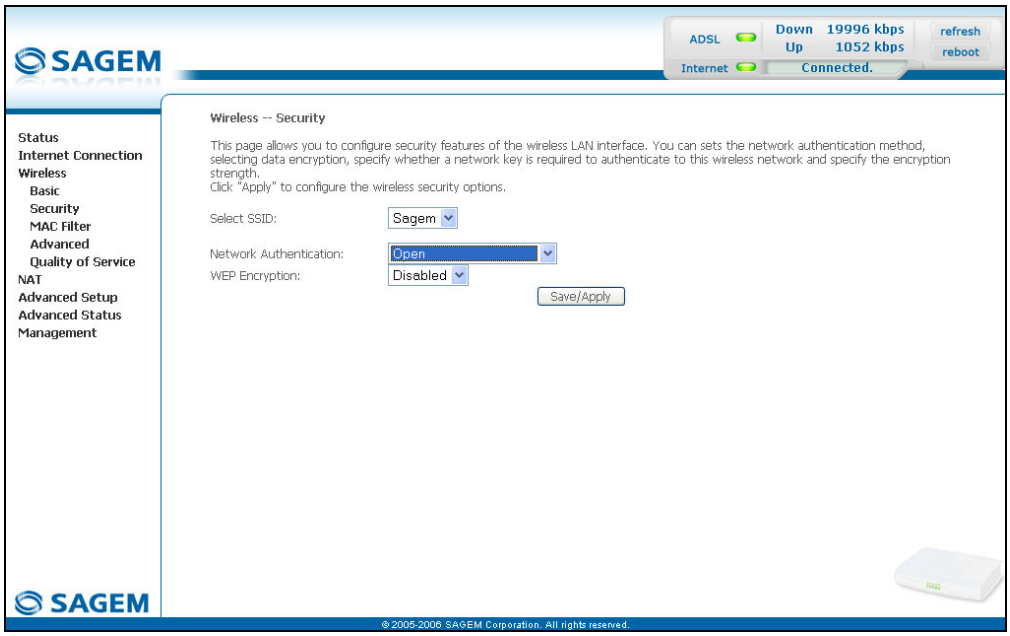
6.7.2 Security

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:



Field	Meaning	Default
Select SSID	Select the "SSID" of your choice from the scroll down list (sagem or Guest).	**sagem**
Network Authentication	From the scroll down list, select the security adapted to your router's wireless network. The list suggests the following choices: • **Open** : There is no protection for the wireless network (Open System). • **Shared** : • **802.1x** : Activation of the 802.1x standard, • **WPA** : Activation of **WPA** (**W**ireless **P**rotected **A**ccess), • **WPA-PSK** : Activation of **WPA-PSK**, • **WPA2** : Activation of **WPA2**, • **WPA2-PSK** : Activation of **WPA2-PSK**, • **Mixed WPA2/WPA** : Activation of **Mixed WPA2/WPA**, • **Mixed WPA2/WPA-PSK** : Activation of **Mixed WPA2/WPA-PSK**, This choice will modify the Wireless configuration screen.	**Open**
WEP Encryption	Select from the scroll down list: • **Disabled** to not use WEP encryption. • **Enabled** to use WE encryption (see § 6.7.1.2 - WEP).	**Disabled**

6.7.2.1 Network Authentication

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

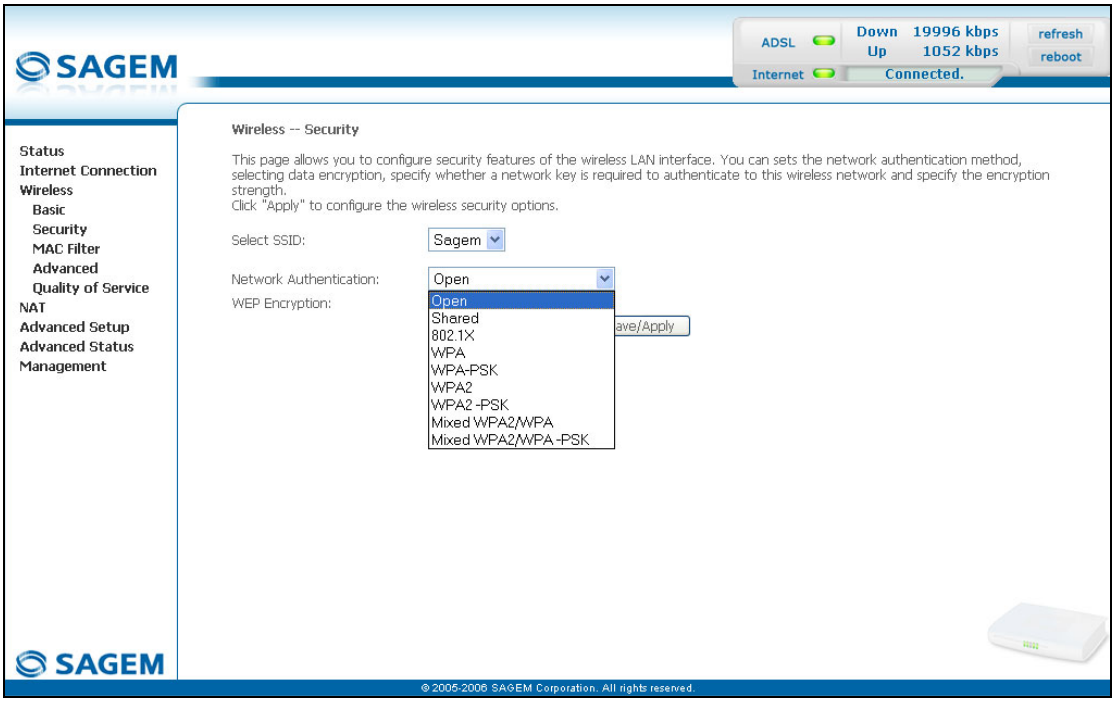
- Open,
- Shared,
- 80.2.1x,
- WPA,
- WPA-PSK,
- WPA2,
- WPA2-PSK,
- Mixed WPA2/WPA,
- Mixed WPA2/WPA-PSK.

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.

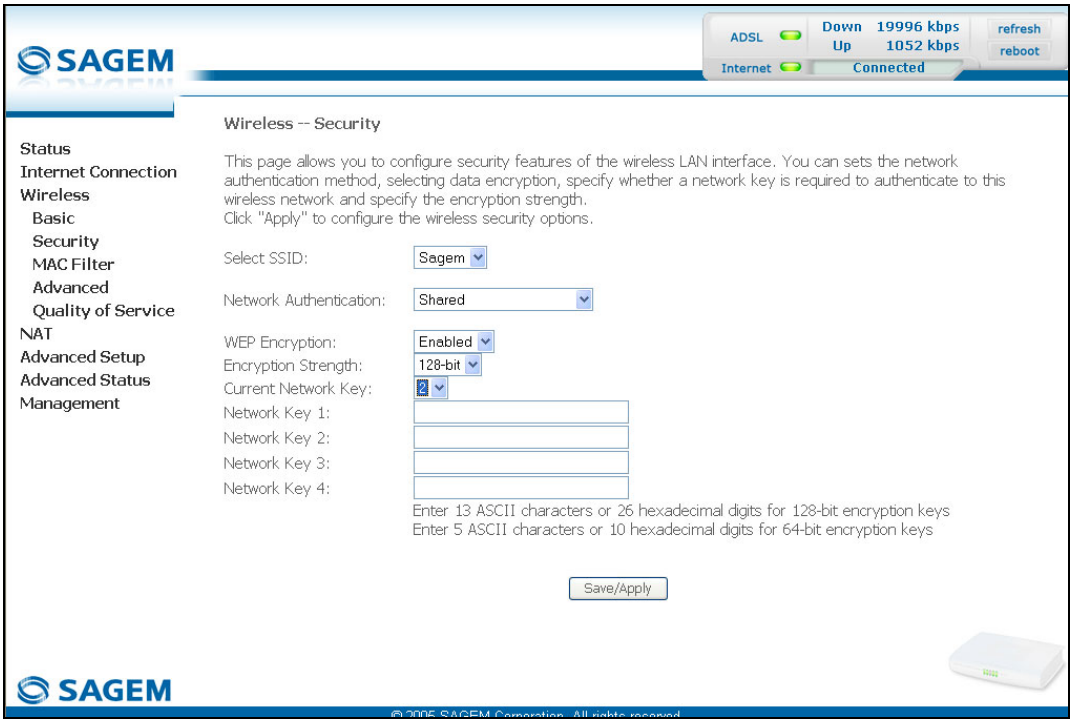


Shared

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:



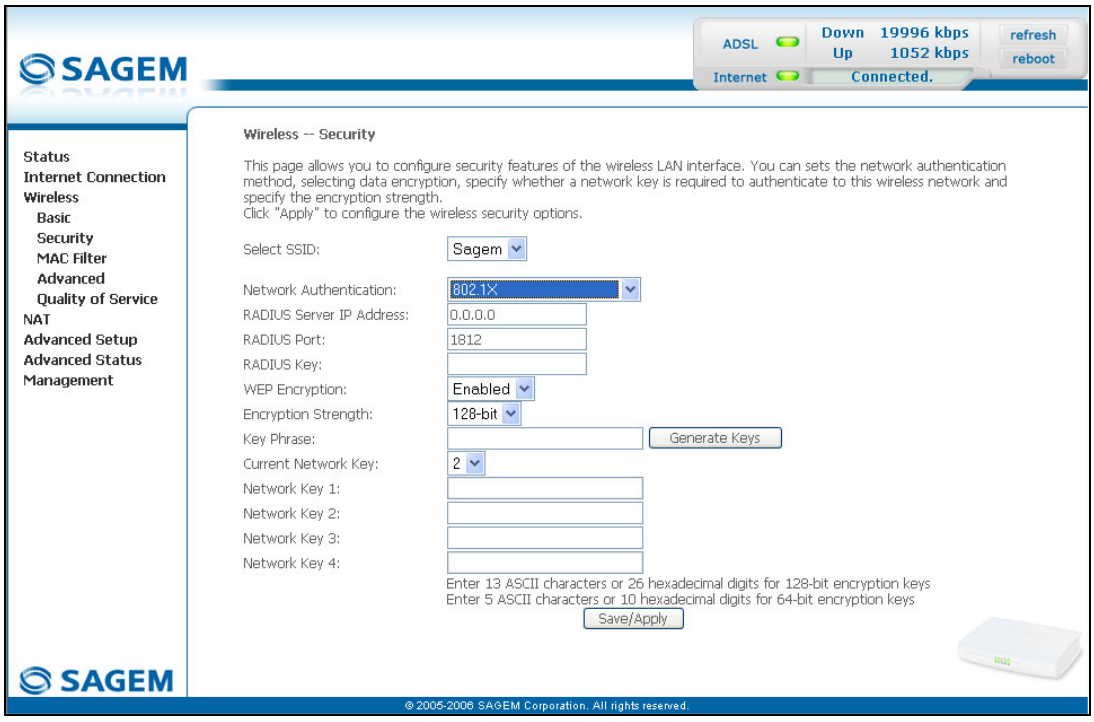
Field	Action	Default
WEP Encryption	**Note:** This field is always active (Enabled).	**Enabled (non modifiable)**
Encryption Strength	See § 6.7.1.2 - WEP.	**128-bit**
Key Phrase	See § 6.7.1.2 - WEP.	**Empty**
Current Network Key	See § 6.7.1.2 - WEP.	**2**
Network Key x (1 to 4)	See § 6.7.1.2 - WEP.	**Empty**

802.1x

Object: The "802.1x" standard is based on the EAP protocol (**E**xtensible **A**uthentication **P**rotocol). This enables users of the Wi-Fi network to be authenticated using a "RADIUS" authentication server (**R**emote **A**uthentication **D**ial-**i**n **U**ser **S**ervice).

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:



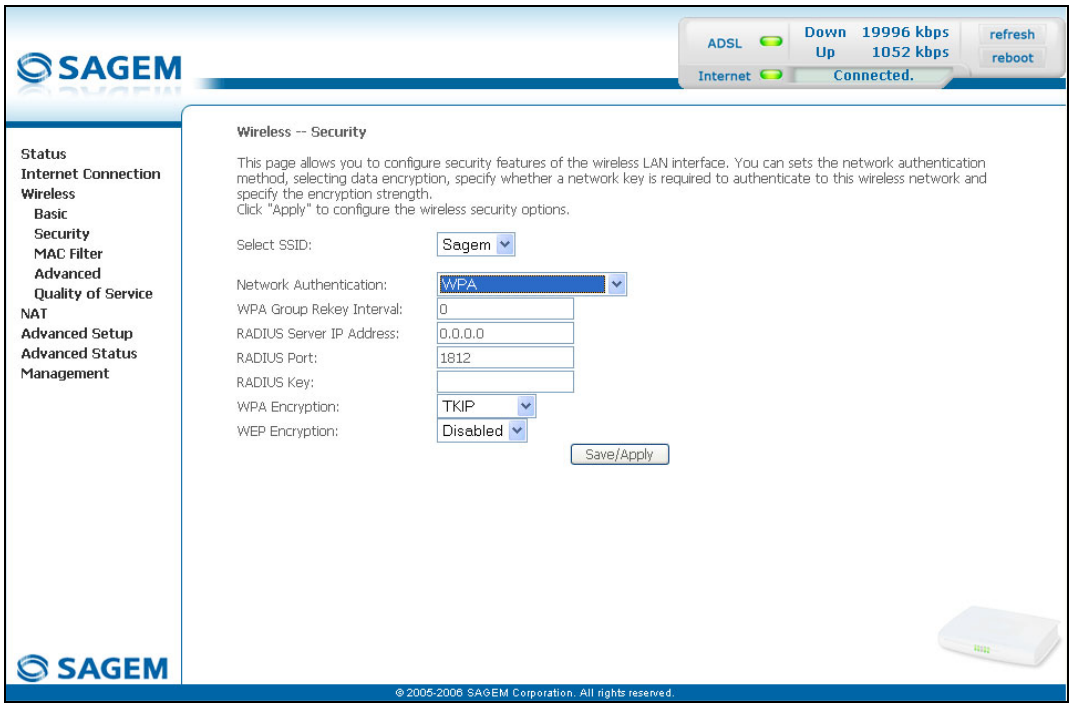
Field	Action	Default
RADIUS Server IP Address	Enter the IP address of the "RADIUS" authentication server.	**0.0.0.0**
RADIUS Port	Enter the port used for the "RADIUS" authentication server.	**1812**
RADIUS Key	Enter the secret key shared between the authentication server and its clients	**–**
WEP Encryption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

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

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:



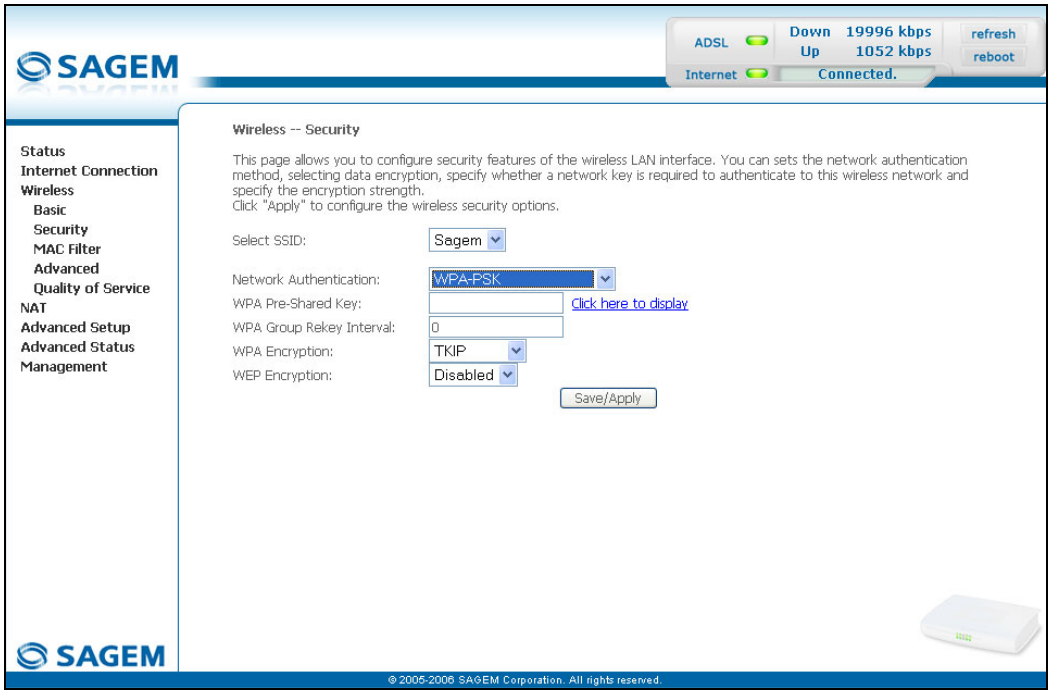
Field	Action	Default
WPA Group Rekey Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	**0**
RADIUS Server IP Address	Enter the IP address of the "RADIUS" authentication server.	**0.0.0.0**
RADIUS Port	Enter the port used by the "RADIUS" authentication server.	**1812**
RADIUS Key	Enter the secret key shared between the authentication server and its clients	**–**
WPA encryption	Select the WPA encryption required from the scroll down list: • TKIP (**T**emporal **K**ey **I**ntegration **P**rotocol), • AES (**A**dvanced **E**ncryption **S**tandard), • TKIP+ AES.	**TKIP**

Field	Action	Default
WEP encryption	Select from the scroll down list: • **Disabled** to use WPA encryption only. • **Enabled** to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).	**Disabled**

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:



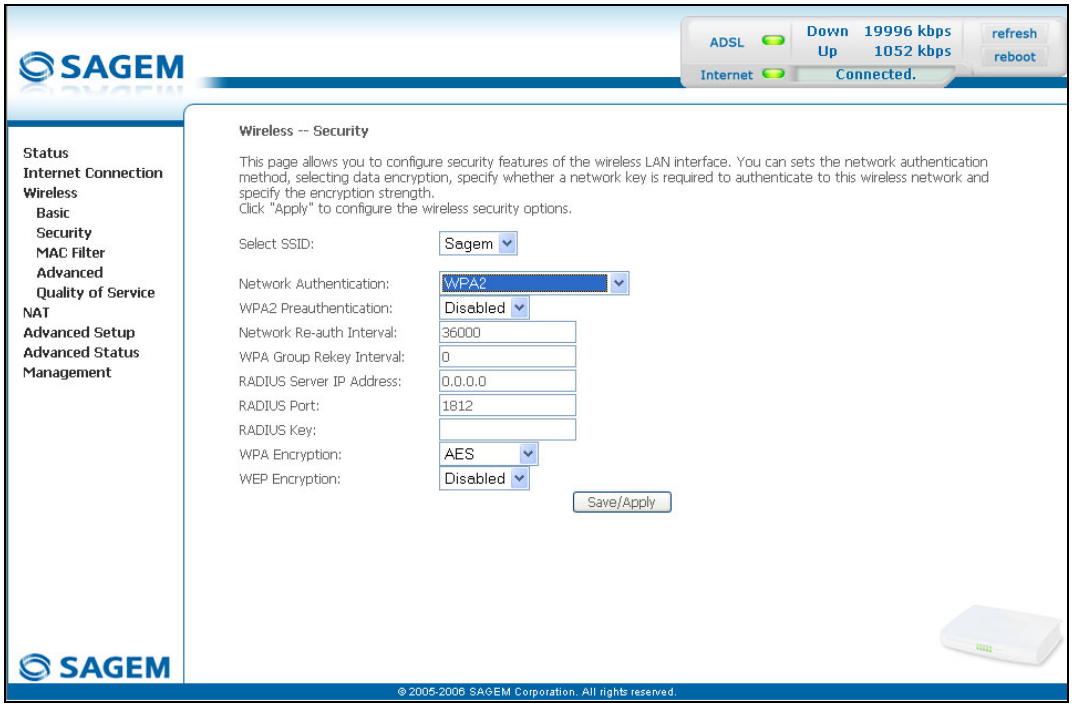
Field	Action	Default
WPA Pre-Shared Key	Enter the secret shared key. This may contain 8 to 63 ASCII characters or 64 hexadecimal symbols (256 bits). Click on the "Save/Apply" button to validate the entry. **Note:** You may display your secret phrase by clicking on "**Click here to display**".	**Empty**
WPA Group Rekey Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	**0**
WPA encryption	Select the WPA encryption required from the scroll down list: • TKIP, • AES, • TKIP+ AES.	**TKIP**

Field	Action	Default
WEP encryption	Select from the scroll down list: • **Disabled** to use WPA encryption only. • **Enabled** to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).	**Disabled**

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:

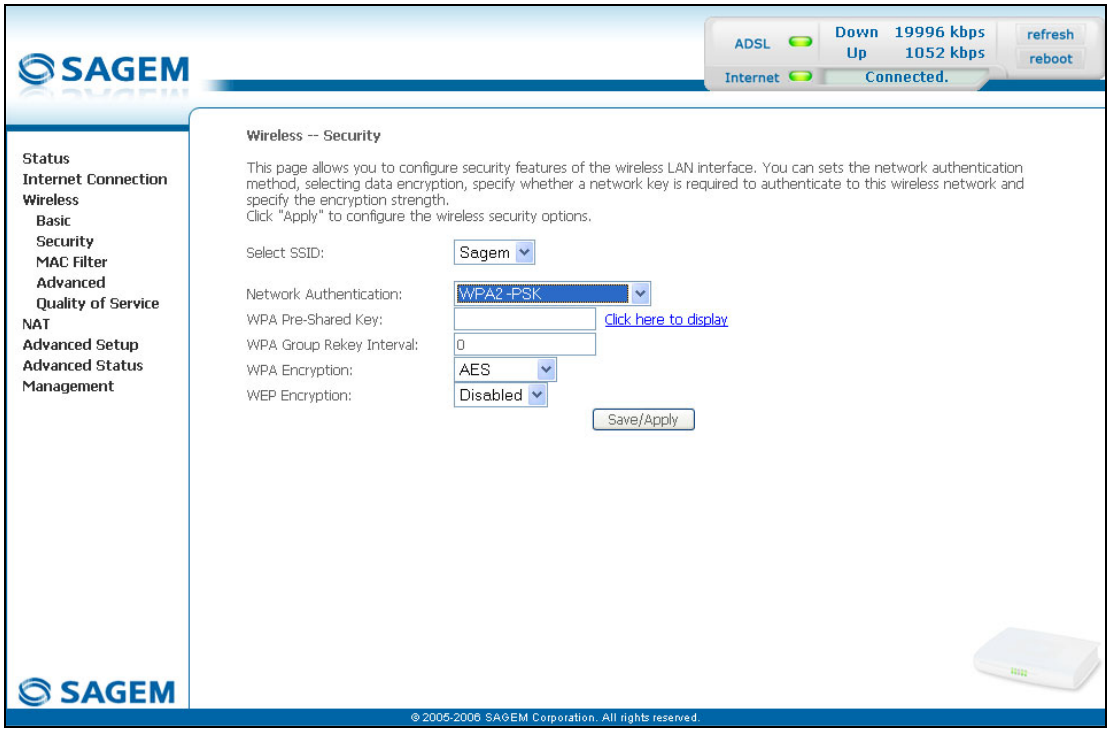


Field	Action	Default
WPA2 Preauthentication-	Select from the scroll down list: • **Disabled** to deactivate the WPA2 pre-authentication, • **Enabled** to activate the WPA2 pre-authentication,	**Disabled**
Network Re-auth Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be certified.	**36000**
WPA Group Rekey Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	**0**
RADIUS Server IP Address	Enter the IP address of the "RADIUS" authentication server.	**0.0.0.0**
RADIUS Port	Enter the port used by the "RADIUS" authentication server.	**1812**
RADIUS Key	Enter the secret key shared between the authentication server and its clients.	**_**
WPA encryption	Select the WPA encryption required from the scroll down list: • TKIP, • AES, • TKIP+ AES.	**AES**
WEP encryption	Select from the scroll down list: • **Disabled** to use WPA encryption only. • **Enabled** to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).	**Disabled**

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:



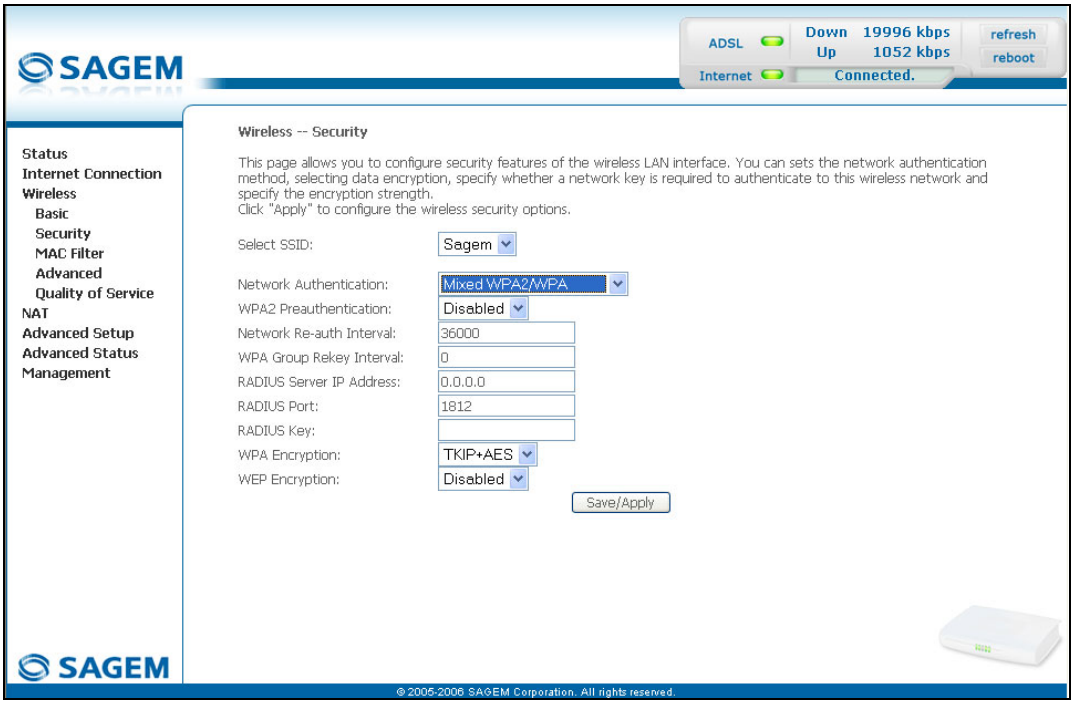
Field	Action	Default
WPA Pre-Shared Key	Enter a secret phrase. This may contain 8 to 63 ASCII characters or 64 hexadecimal symbols (256 bits). Click on the "Save/Apply" button to validate the entry. **Note:** You may display your secret phrase by clicking on "**Click here to display**".	**Empty**
WPA Group Rekay Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	**0**
WPA encryption	Select the WPA encryption required from the scroll down list: • TKIP, • AES, • TKIP+ AES.	**AES**

Field	Action	Default
WEP encryption	Select from the scroll down list: • **Disabled** to use WPA encryption only. • **Enabled** to use both WPA and WEP encryption (see § 6.7.1.2 - WEP).	**Disabled**

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:



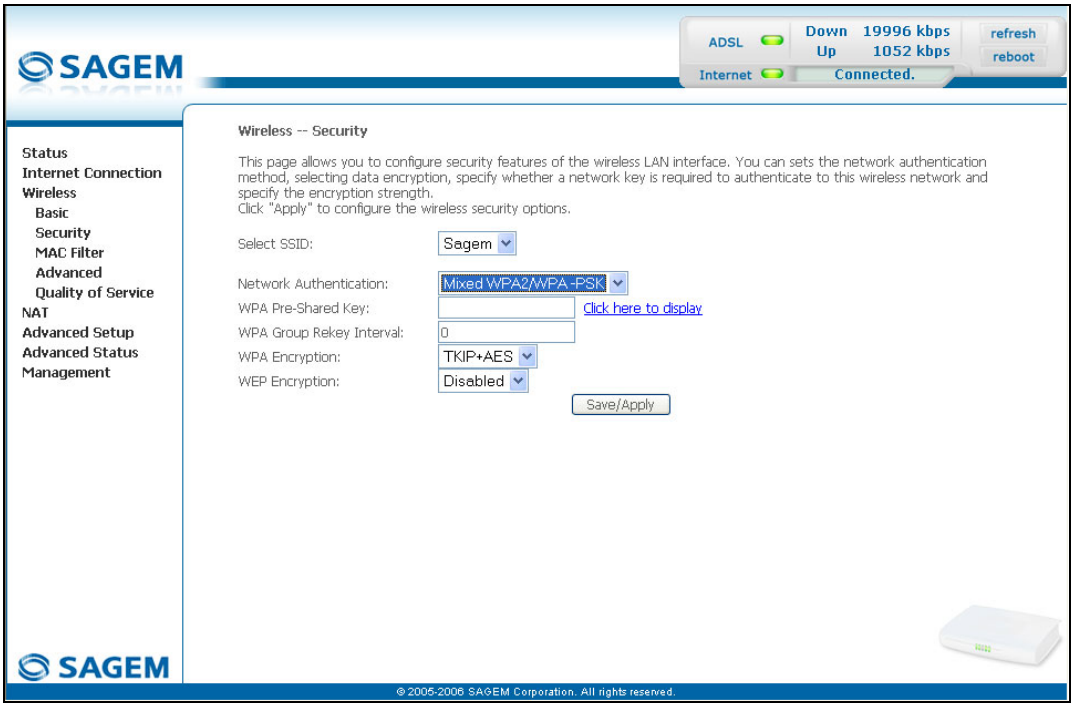
Field	Action	Default
WPA2 Preauthentication-	Select from the scroll down list: • **Disabled** to deactivate the WPA2 pre-certification, • **Enabled** to activate the WPA2 pre-certification,	**Disabled**
Network Re-auth Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be certified.	**36000**
WPA Group Rekey Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	**0**
RADIUS Server IP Address	Enter the IP address of the "RADIUS" authentication server.	**0.0.0.0**
RADIUS Port	Enter the port used by the "RADIUS" authentication server.	**1812**
RADIUS Key	Enter the secret key shared between the authentication server and its clients	**–**

Field	Action	Default
WPA encryption	Select the WPA encryption required from the scroll down list: • TKIP, • AES, • TKIP+ AES.	**TKIP+AES**
WEP Encryption	Select from the scroll down list: • **Disabled** to not use WEP encryption. • **Enabled** to use WE encryption (see § 6.7.1.2 - WEP).	**Disabled**

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:



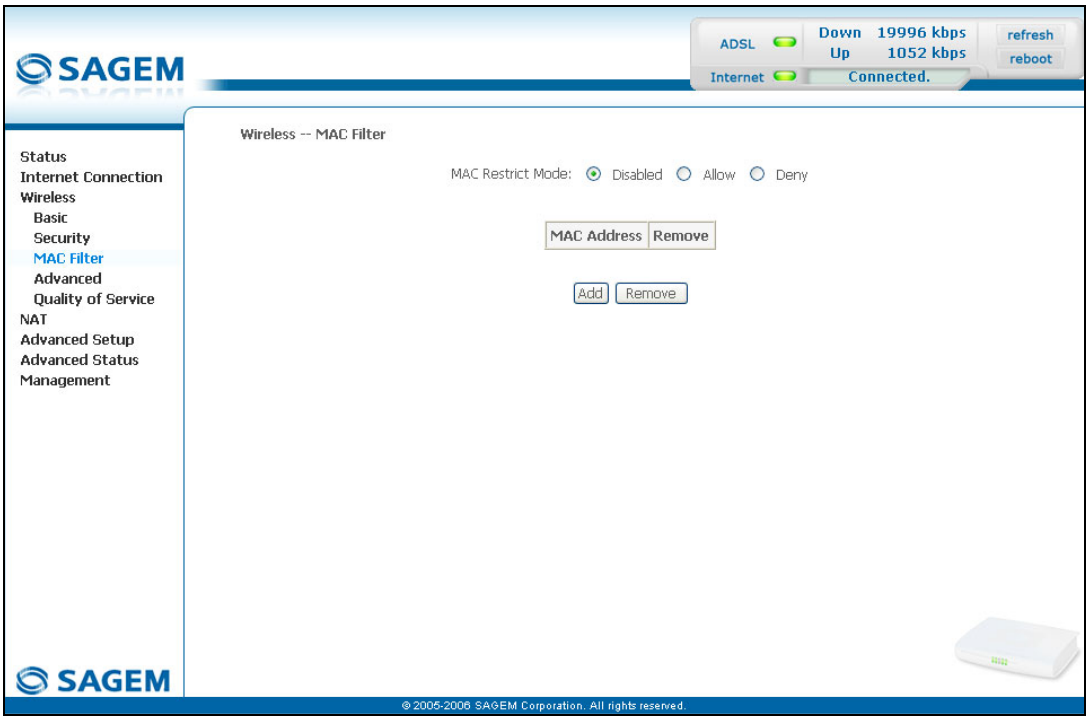
Field	Action	Default
WPA Pre-Shared Key	Enter a secret phrase. This may contain 8 to 63 ASCII characters or 64 hexadecimal symbols (256 bits). Click on the "Save/Apply" button to validate the entry. **Note:** You may display your secret phrase by clicking on "**Click here to display**".	**Empty**

Field	Action	Default
WPA Group Rekey Interval	Enter a value, expressed in seconds, which determines the period after which the WPA key will be regenerated (Renewing) in broadcast / multicast (LAN broadcast).	**0**
WPA encryption	Select the WPA encryption required from the scroll down list: • TKIP, • AES, • TKIP+ AES.	**TKIP+ AES**
WEP Encryption	Select from the scroll down list: • **Disabled** to not use WEP encryption. • **Enabled** to use WE encryption (see § 6.7.1.2 - WEP).	**Disabled**

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
MAC Restrict Mode	Select the command by checking the appropriate box: **Disabled** : Deactivates the MAC filtering, **Allow** : Enables computers whose MAC address is in the list to use your wireless network, **Denied** : Refuses computers whose MAC address is in the list to use your wireless network.	**Disabled**

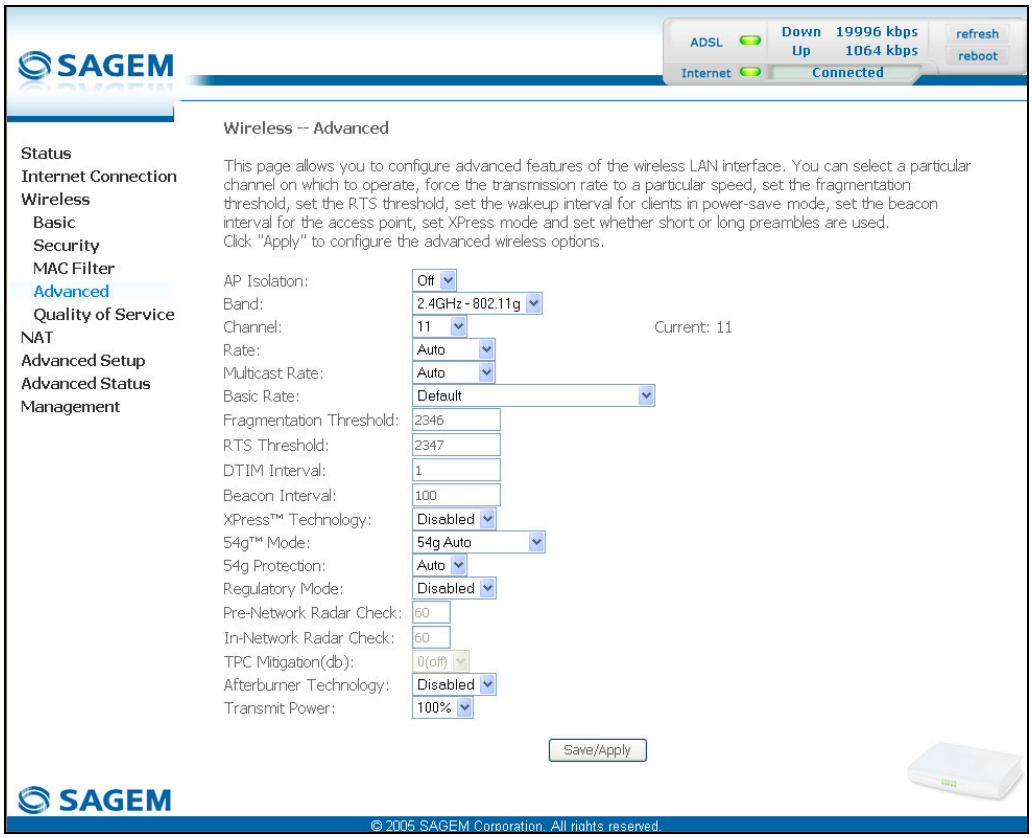
Add

- 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:



The table below indicates in more detail how to access your Wi-Fi port (or **A**ccess **P**oint).

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

Field	Meaning	Default
AP Isolation	Select from the scroll down list: **Off** : to not isolate the **A**ccess **P**oint i.e. authorise machines connected to the router to communicate with each other. **On** : to isolate the Access point, i.e. prohibit machines connected to the router to communicate with each other.	**Off**
Band	Select the 2.4 GHz band for the IEEE 802.11g standard.	**2.4GHz-802.11g**
Channel	See Wireless/Basic § 6.7.1.1.	**11**
Rate	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). **Note:** If you select "Auto", the information will be transmitted at an optimised rate which takes account of the transmission constraints.	**Auto**
Multicast Rate	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). **Note:** 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.	**Auto**
Basic Rate	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).	**Default**
Fragmentation Threshold	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.	**2346**

Field	Meaning	Default
RTS Threshold	The RTS/CTS protocol (**R**equest **T**o **S**end / **C**lear **T**o **S**end) is used to reduce the probability of collisions between stations. **Note:** 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.	**2347**
DTIM Interval	The DTIM counting area (**D**elivery **T**raffic **I**ndication **M**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.	**1**
Beacon Interval	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.	**100**
XPress™ Technology	From the scroll down list, select **Enabled** to apply the "XPress™" technology or **Disabled** to not apply it.	**Disabled**
54g™ Mode	In the scroll down list, select (54g Auto, 54g Performance, 54g LRS or 802.11b Only)	**54g Auto**
54g Protection	Select **Auto** to improve the quality in the mixed 802.11 environments (g and b for example) or **Off** to improve the quality only on the 802.11g environments but degrade it on other environments (802.11b for example).	**Auto**
Regulatory Mode	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). **802.11h** Conformity with European regulations in terms of frequency and energy saving. **802.11d** Internationalisation.	**Disabled**

Field	Meaning	Default
Pre-Network Radar Check[1]	If 802.11 h is selected enter here the duration of the radar detection sweep when the AP (**A**ccess **P**oint) starts up.	**60**
In-Network Radar Check[1]	If 802.11 h is selected, enter here the duration of the radar detection sweep during transmission.	**60**
TPC Mitigation (db)[1]	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 (**T**ransmit **P**ower **C**ontrol).	**0(Off)**
Afterburner Technology	From the scroll down list, select **Enabled** to apply the "Afterburner" technology or **Disabled** to not apply it. This technology tends to increase the transmission return. **Note:** This field may be greyed out (non modifiable) if you select **Enabled** in the "WMM (**W**ifi **M**ulti**M**edia)" field in the Wireless/Quality of Service menu.	**Disabled**
Preamble Type	**Note:** 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 **54g™ Mode** 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 **long** to keep a 128 bit "preamble" or **short** to reduce it to 56 bits.	**long**
Transmit Power	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. **Note:** The power rate will be selected according to your environment.	**100%**

[1] This field is active if the "802.11h" option was selected in the "Regulatory Mode" field.

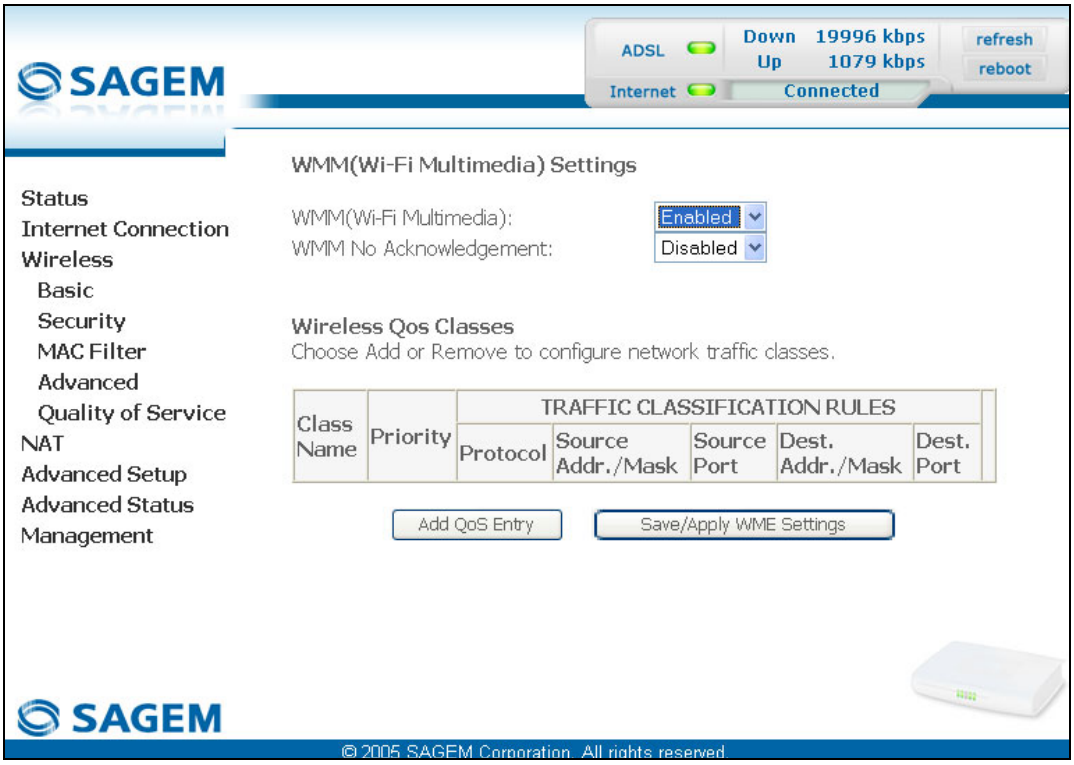
6.7.5 Quality of Service

Object: The Wi-Fi quality of service for your router conforms to the WMM (**W**ifi **M**ulti**M**edia) 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:

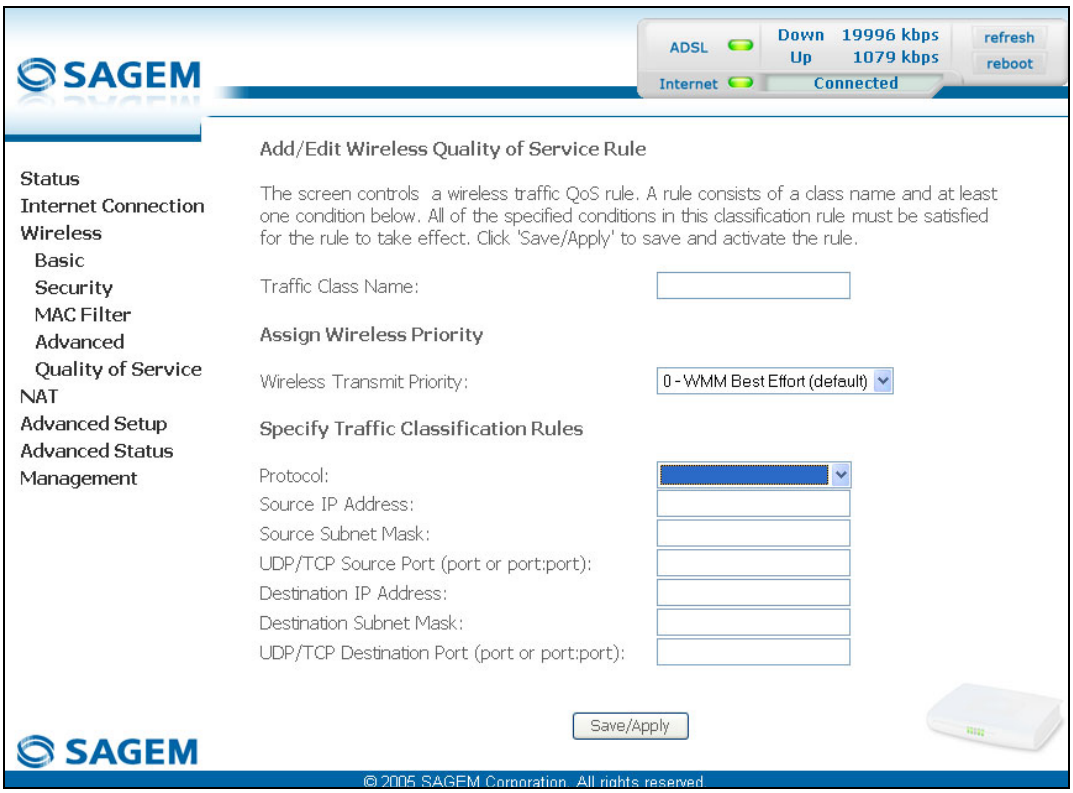
Field	Meaning	Default
WMM (Wi-Fi Multimedia)	In the scroll down list, select the activation (**Enabled**) or deactivation (**Disabled**) of the WMM support.	**Disabled**
WMM No Acknowledgement	**Note:** The scroll down list may only be operational if the "WMM (Wi-Fi Multimedia)" field is activated. In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

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



Add

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



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

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

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.

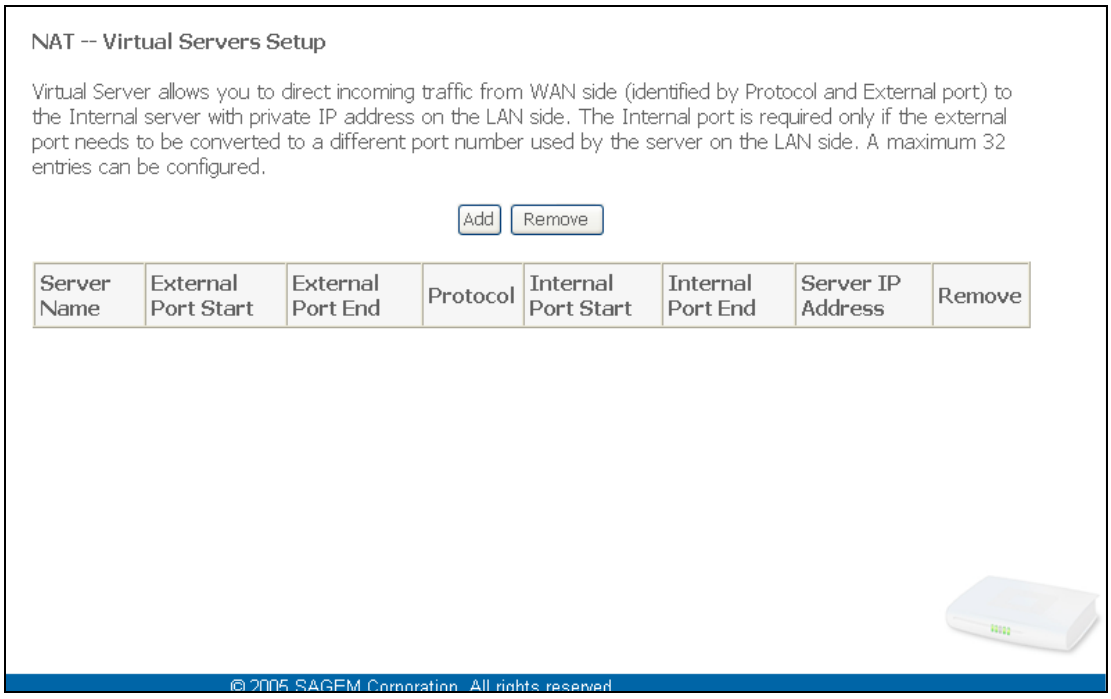
This section contains the following four menus:

- 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.

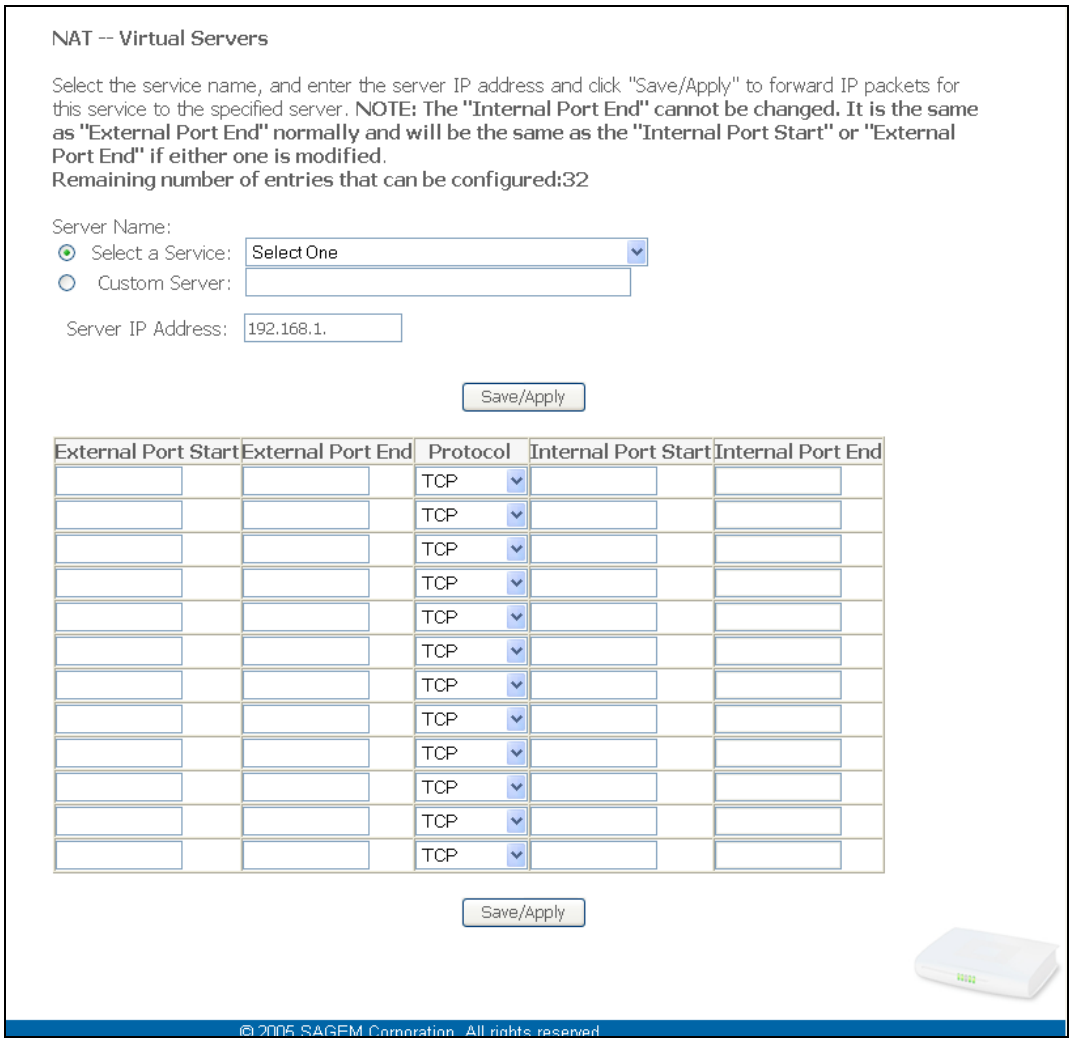
- Select the **Port forwarding** menu in the **NAT** section to display the following screen:



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

Add

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



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.

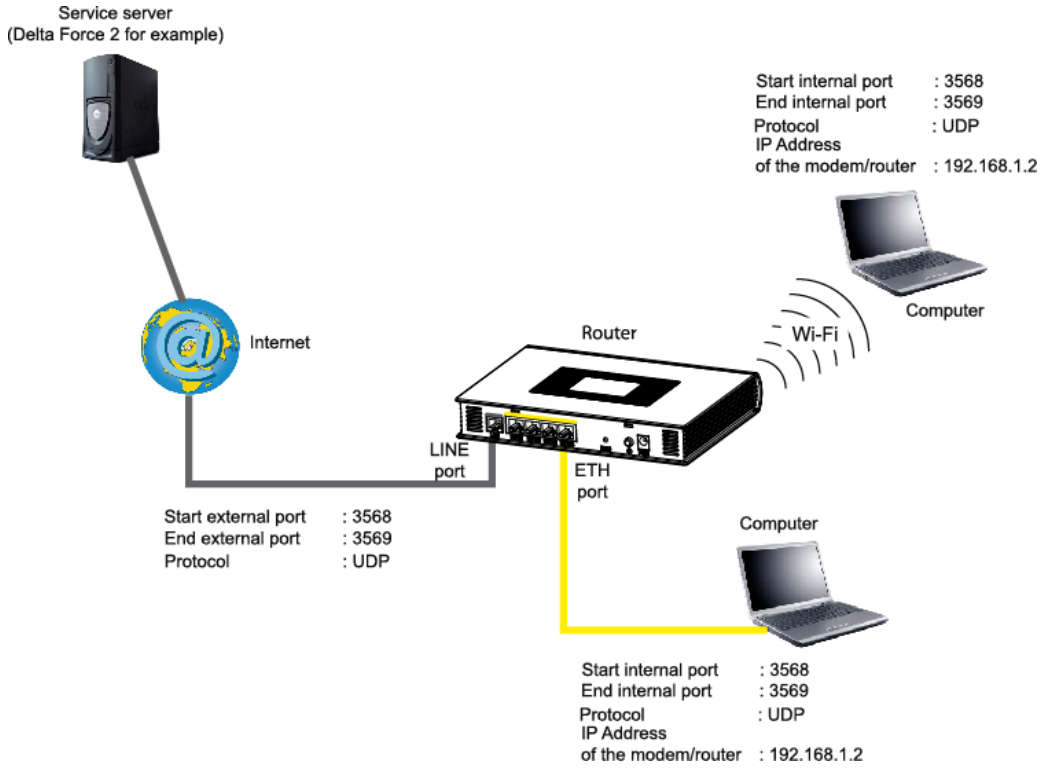
or

- 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",**

The following diagram contains an example:

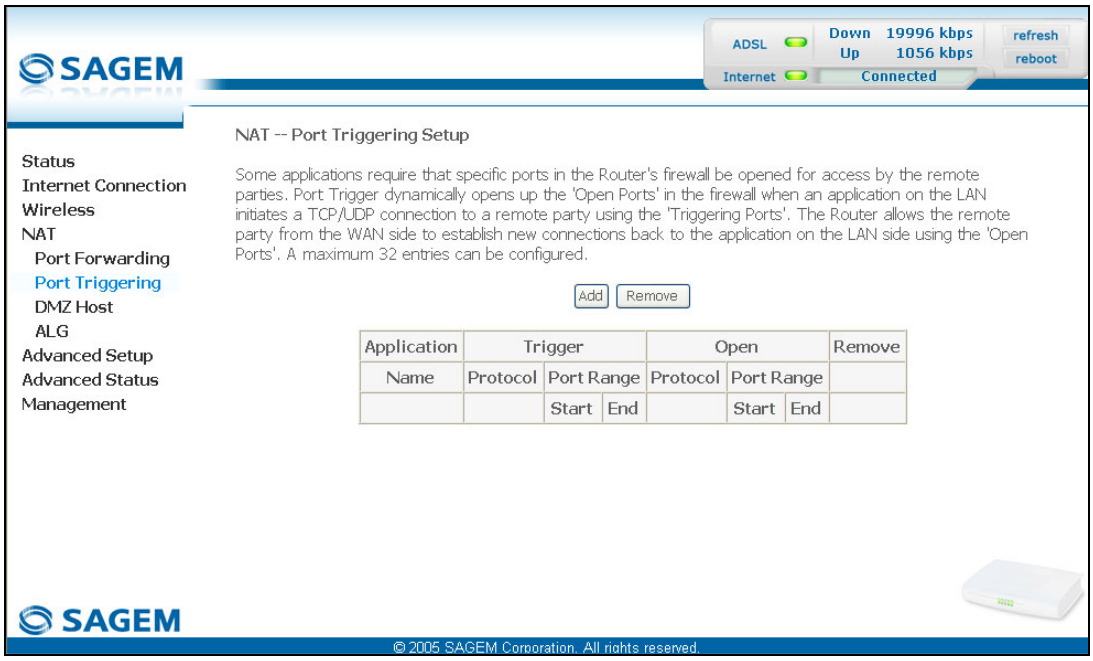


The "Delta Force 2" service is available on your computer via the external ports 3568 and 3569 (WAN side) and via the internal ports 3568 and 3569 (LAN side).

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).

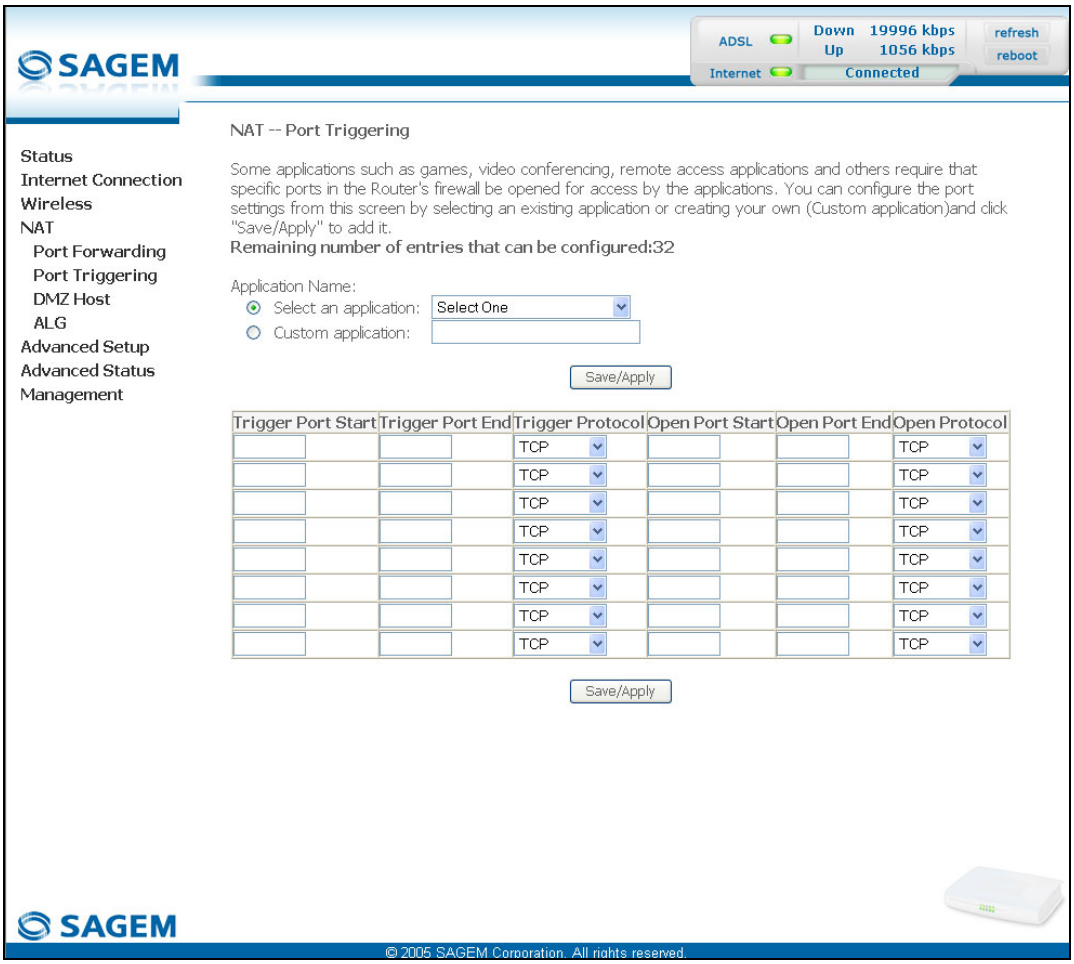
- Select the **Port Triggering** menu in the **NAT** section to display the following screen:



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

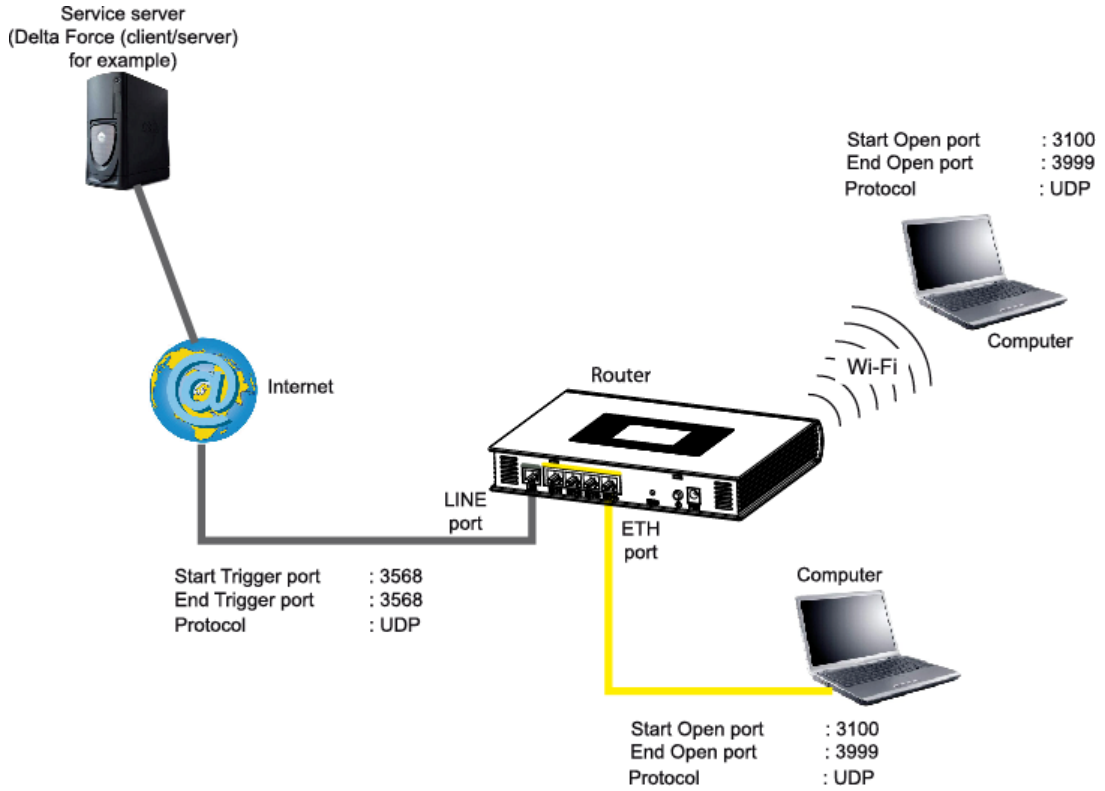
➢ Check the "**Custom Server**" box then enter the name of the server you want to connect to, then:

- 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:



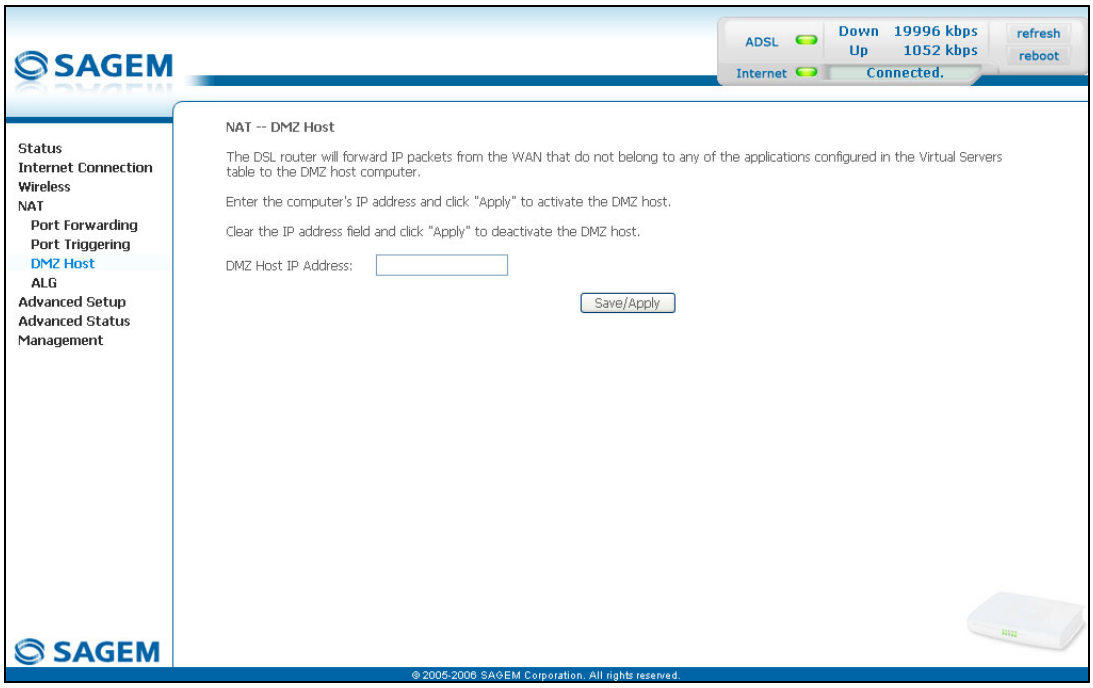
Using the "Trigger" 3568 port (WAN side), the "Delta Force" service server triggers the opening of port range 3100 to 3999 for your computer to access this service.

6.8.3 DMZ Host

Object: This "DMZ" (**De**-**M**ilitarized **Z**one) 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:



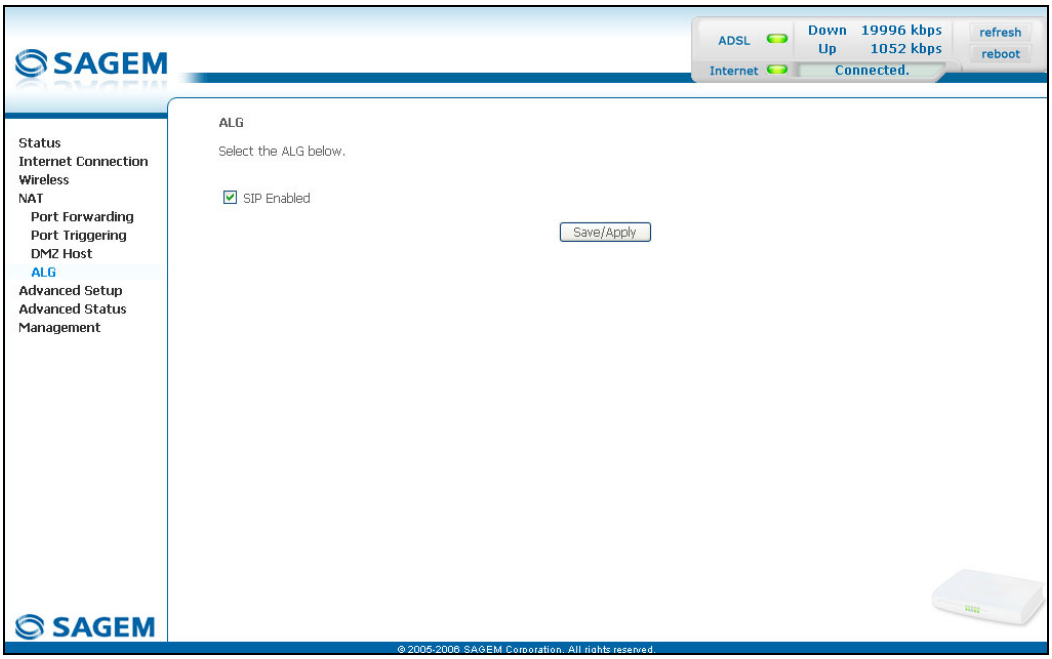
Field	Action	Default
DMZ Host IP Address	Enter the IP address of a server to activate the "DMZ" and therefore access it directly from the Internet. To deactivate the "DMZ" zone, erase the address entered in the field. **Note**: Click on the **Save/Apply** button to take account of the address or its erasure.	**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
SIP Enabled	Check the box to permit telephoning in VoIP via the Wi-Fi or Ethernet interfaces using the SIP protocol.	**Checked**

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:

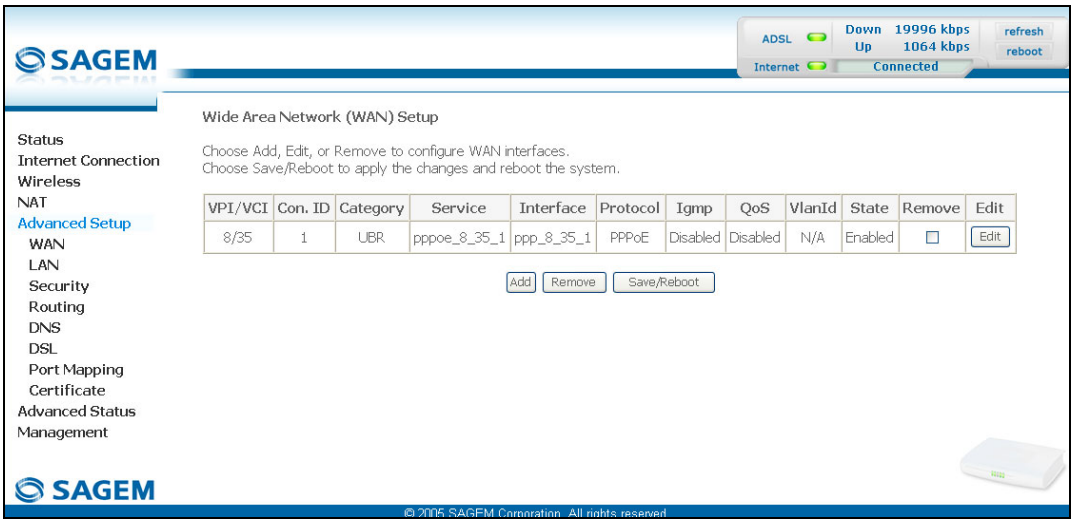
- WAN (cf. § 6.9.1),
- LAN (cf. § 6.9.2),
- Security (cf. § 6.9.3),
- Quality of Service (cf. § 6.9.4)(see note),
- Routing (cf. § 6.9.5),
- DNS (cf. § 6.9.6),
- DSL (cf. § 6.9.7),
- Port Mapping (cf. § 6.9.8),
- Certificate (cf. § 6.9.9).

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:

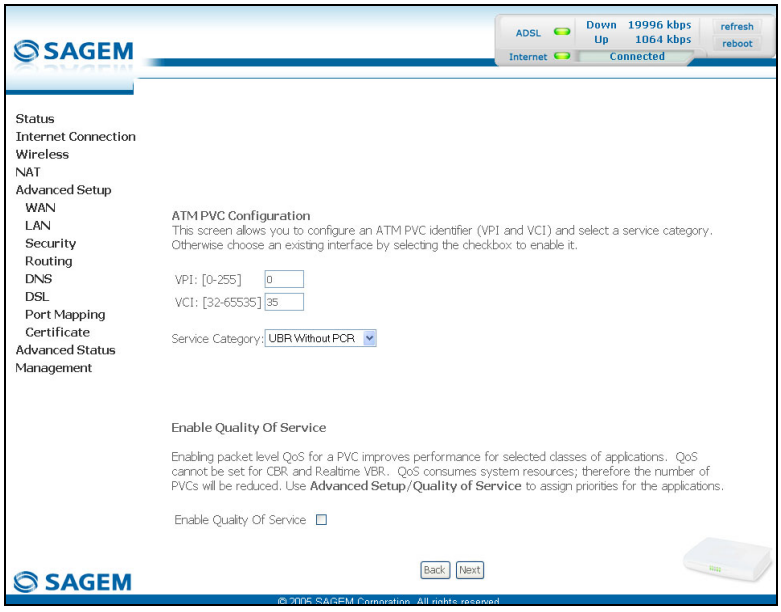


Field	Meaning
VPI/VCI	PVC identifier to configure.
Con. ID	Connection Identification. This is used to identify the different PPP connections which belong to the same PVC. To do so, you need only increment the "VC number" in the "Service" field when adding a new "PVC".
Category	ATM type of service
Service	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:



ATM PVC Configuration

Field	Action	Default
VPI	Enter a VPI value[2] between 0 and 255.	**0**
VCI	Enter a VPI value[2] between 32 and 65535.	**35**
Service Category	Select the type of service adapter to the traffic from the scroll down list: UBR without PCR : **U**nspecified **B**it **R**ate UBR with PCR : **U**nspecified **B**it **R**ate CBR : **C**onstant **B**it **R**ate Non Realtime VBR : **V**ariable **B**it **R**ate Realtime VBR : **V**ariable **B**it **R**ate	**UBR without PCR**
Peak Cell Rate[3]	Enter a maximum number of cells transmitted per second, between 1 and 2491.	**0**
Sustainable Cell Rate[4]	Enter an average number of cells transmitted per second. **Note:** This number must be lower than the **P**eak **C**ell **R**ate (PCR).	**0**
Maximum Burst Size[4]	Enter the maximum number of cells emitted in burst (value between 1 and 1000 000).	**0**

Enable Quality Of Service

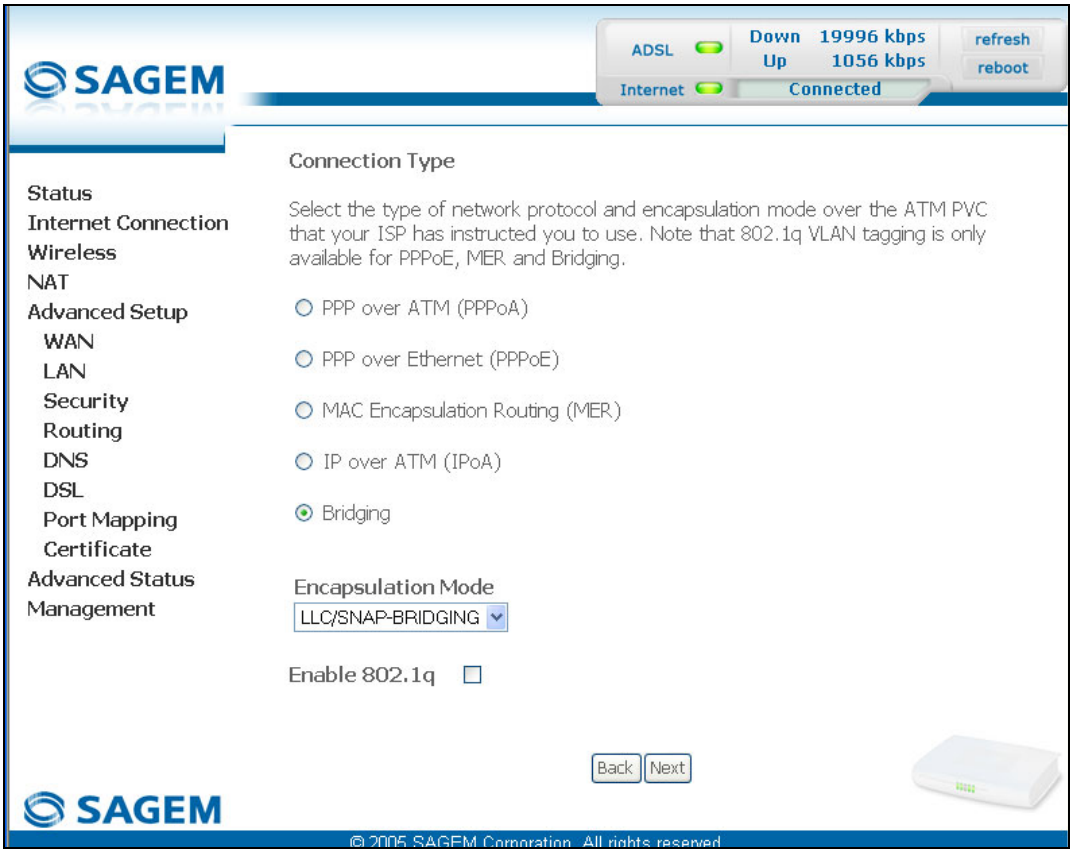
Field	Action	Default
Enable Quality Of Service	Check the box to activate the quality of service and display the new "Quality of Service" menu in the **Advanced Setup** section.	**Not checked**

[2] This value is delivered to you by your **I**nternet **S**ervice **P**rovider (ISP).

[3] This field only appears when the "UBR with PCR", "CBR", "Non Realtime VBR" or "Realtime VBR" type of service is selected.

[4] 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
Encapsulation Mode	Select the encapsulation of your choice from the scroll down list. • VC/MUX, • LLC/ENCAPSULATION.	**VC/MUX**

PPP over Ethernet (PPPoE)

Field	Action	Default
Encapsulation Mode	Select the encapsulation of your choice from the scroll down list. • LLC/SNAP-BRIDGING, • VC/MUX.	**LLC/SNAP-BRIDGING**
Enable 802.1q	Check the box to activate the "802.1q" protocol which enables the identification of a VLAN.	**–**
VLAN ID [0 - 4095][5]	Enter a value between 0 and 4095.	**Empty**

MAC Encapsulation Routing (MER)

Field	Action	Default
Encapsulation Mode	Select the encapsulation of your choice from the scroll down list. • LLC/SNAP-BRIDGING, • VC/MUX.	**LLC/SNAP-BRIDGING**
Enable 802.1q	Check the box to activate the "802.1q" protocol which enables the identification of a VLAN.	**–**
VLAN ID [0 - 4095][5]	Enter a value between 0 and 4095.	**Empty**

IP over ATM (IPoA)

Field	Action	Default
Encapsulation Mode	Select the encapsulation of your choice from the scroll down list. • LLC/SNAP-ROUTING, • VC/MUX.	**LLC/SNAP-ROUTING**

Bridging

Field	Action	Default
Encapsulation Mode	Select the encapsulation of your choice from the scroll down list. • LLC/SNAP-BRIDGING, • VC/MUX.	**LLC/SNAP-BRIDGING**
Enable 802.1q	Check the box to activate the "802.1q" protocol which enables the identification of a VLAN.	**–**
VLAN ID [0 - 4095][5]	Enter a value between 0 and 4095.	**Empty**

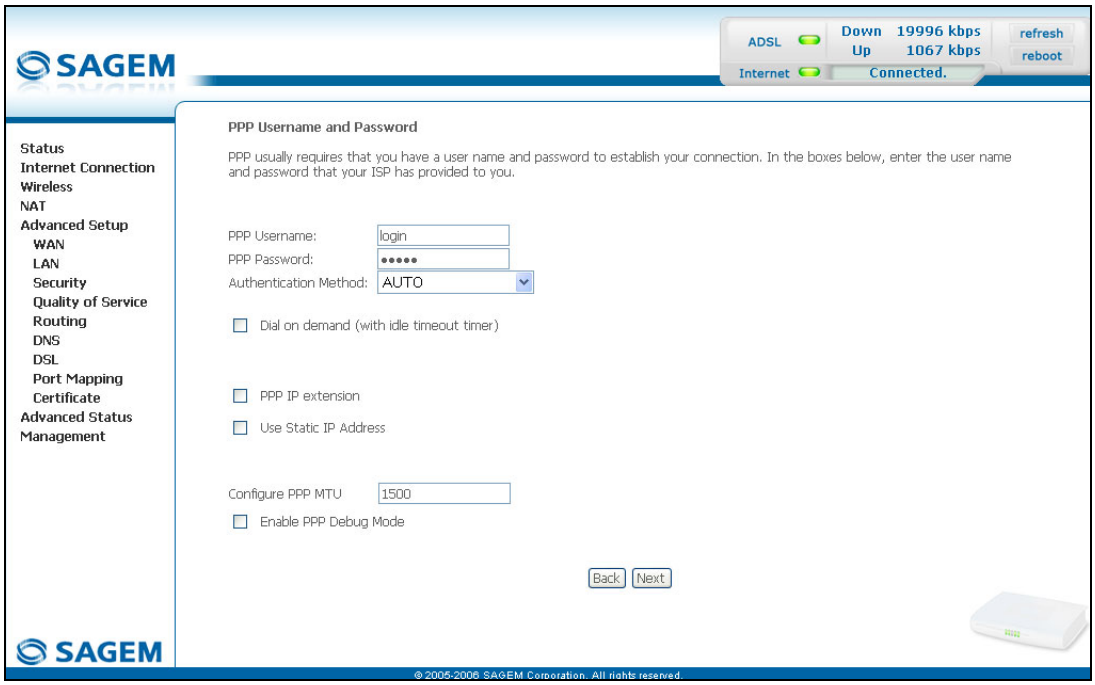
[5] This field only appears when the "Enable 802.1q" field is activated (box checked).

- 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
PPP Username	Enter your connection ID. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**
PPP Password	Enter your connection password. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**
Authentification Method	Select the authentication method of your choice from the scroll down list: • AUTO, • PAP, • CHAP, • MSCHAP.	**AUTO**
Dial on demand (with idle timeout timer)	Check the box to connect to Internet only for "Traffic" on the ADSL line.	**Not checked**
Inactivity Timeout (minutes) [1-4320]: [6]	Enter a value expressed in minutes between 1 and 4320 (i.e. 72 hours).	**0**

[6] This field only appears when the "Dial on demand (with idle timeout timer)" field is activated (box checked).

Field	Action	Default
PPP IP extension	Check the box to allocate your computer the public address obtained from the DHCP server of your **I**nternet **S**ervice **P**rovider (ISP). Therefore, your router will act as a bridge between the server and your computer.	**Not checked**
Use Static IP Address	Check the box to use the static IP address.	**Not checked**
IP Address:[7]	Enter the static IP address	**0.0.0.0**
Configure PPP MTU	Enter an MTU (**M**aximum **T**ransfer **U**nit) value between 38 and 1492 (see Note).	**1492**
Enable PPP Debug mode	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.	**Box Not checked**

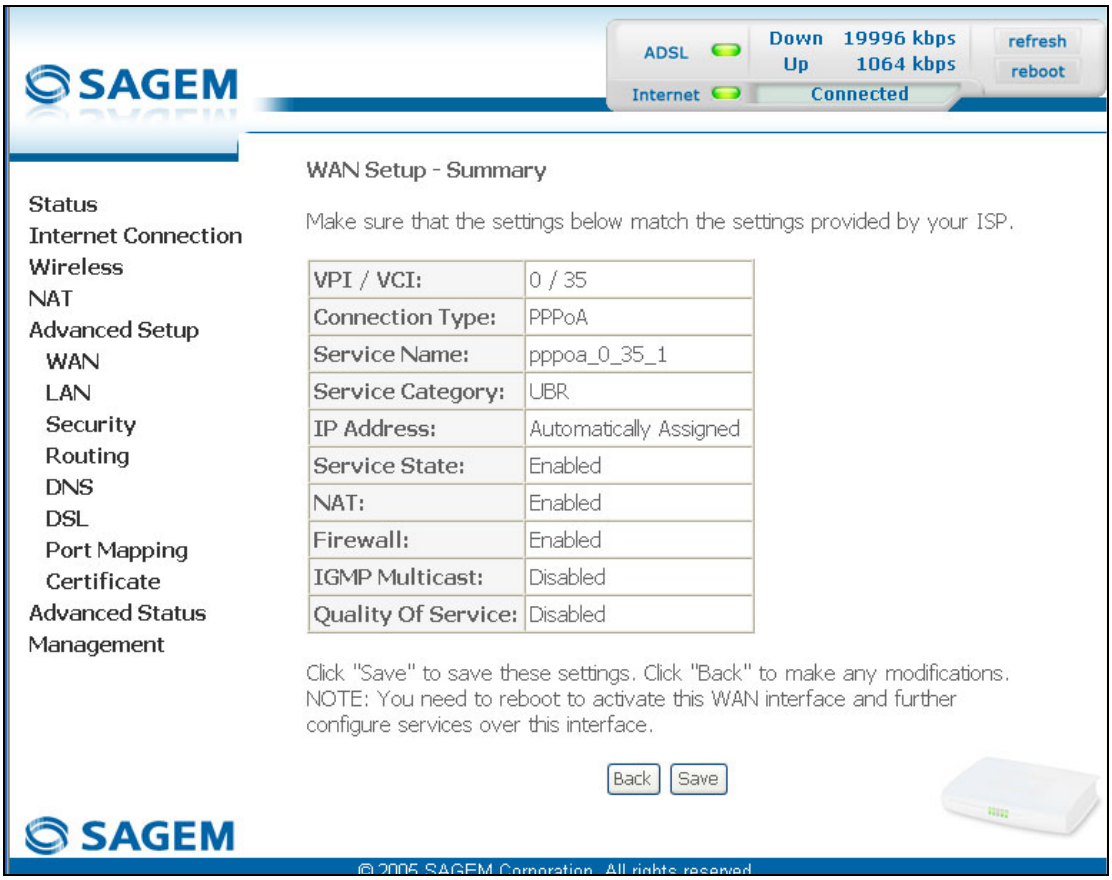
Note: The MTU specifies the maximum size of the data used for packets expressed as a number of bytes.

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

[7] This field only appears when the "Use Static IP Address" field is activated (box checked).

Field	Action	Default
Enable IGMP Multicast	Check the box to activate the IGMP function.	**Not checked**
Enable WAN	Check the box to activate the remote network service (WAN).	**Checked**
Service	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. **Note:** 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.

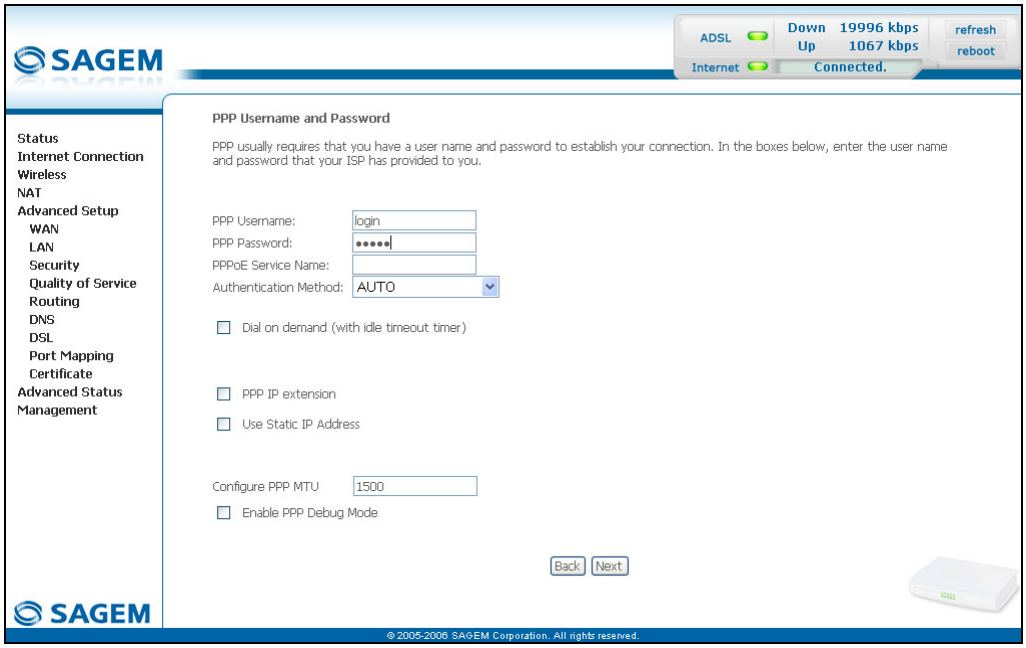


Field	Action
VPI/VCI	Displays the VPI/VCI specific to the "PPPoA" connection
Connection Type	Displays the "PPPoA" protocol
Service Name	Displays the name of the service: pppoa_0_35_1
Service Category	Displays the type of service adapted to the traffic required.
IP Address	Indicates that the IP address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

- click on the 

button to save the WAN interface configuration.

PPP over Ethernet (PPPoE)



Field	Action	Default
PPP Username	Enter your connection ID. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**
PPP Password	Enter your connection password. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**
PPPoE Service Name	Enter the name of the PPPoE service. This information is provided to you by your **I**nternet **S**ervice **P**rovider (ISP).	**Empty**
Authentification Method	Select the authentication method of your choice from the scroll down list: • AUTO, • PAP, • CHAP, • MSCHAP.	**AUTO**
Dial on demand (with idle timeout timer)	Check the box to only connect to the Internet on "Traffic".	**–**
Inactivity Timeout (minutes) [1-4320]:[6]	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.	**0**

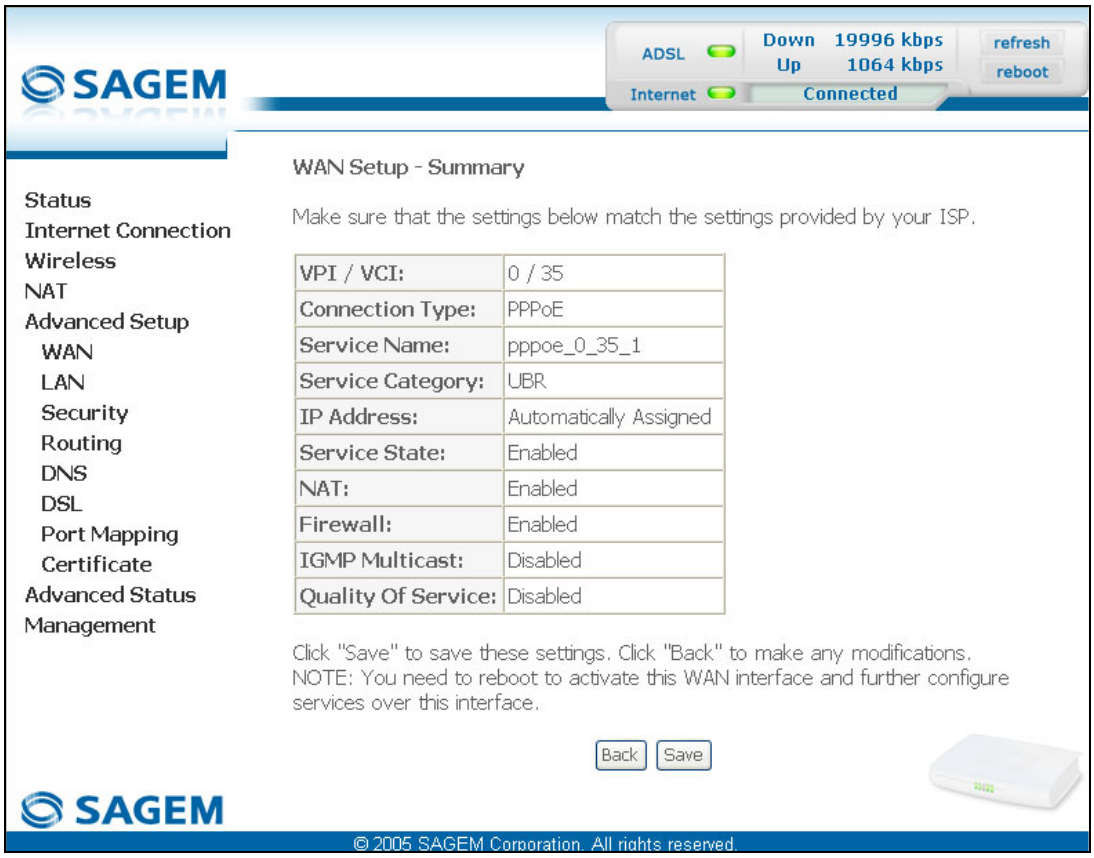
Field	Action	Default
PPP IP extension	Check the box to allocate your computer the public address obtained from the DHCP server of your **I**nternet **S**ervice **P**rovider (ISP). Therefore, your router will act as a bridge between the server and your computer.	–
Use Static IP Address	Check the box to use the static IP address.	–
IP Address:[7]	Enter the static IP address.	**0.0.0.0**
Configure PPP MTU	Enter an MTU (**M**aximum **T**ransfer **U**nit) value. This value, expressed in bytes, is between 38 and 1492 (see Note).	**1492**
Enable PPP Debug mode	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.	**Box Not checked**

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.

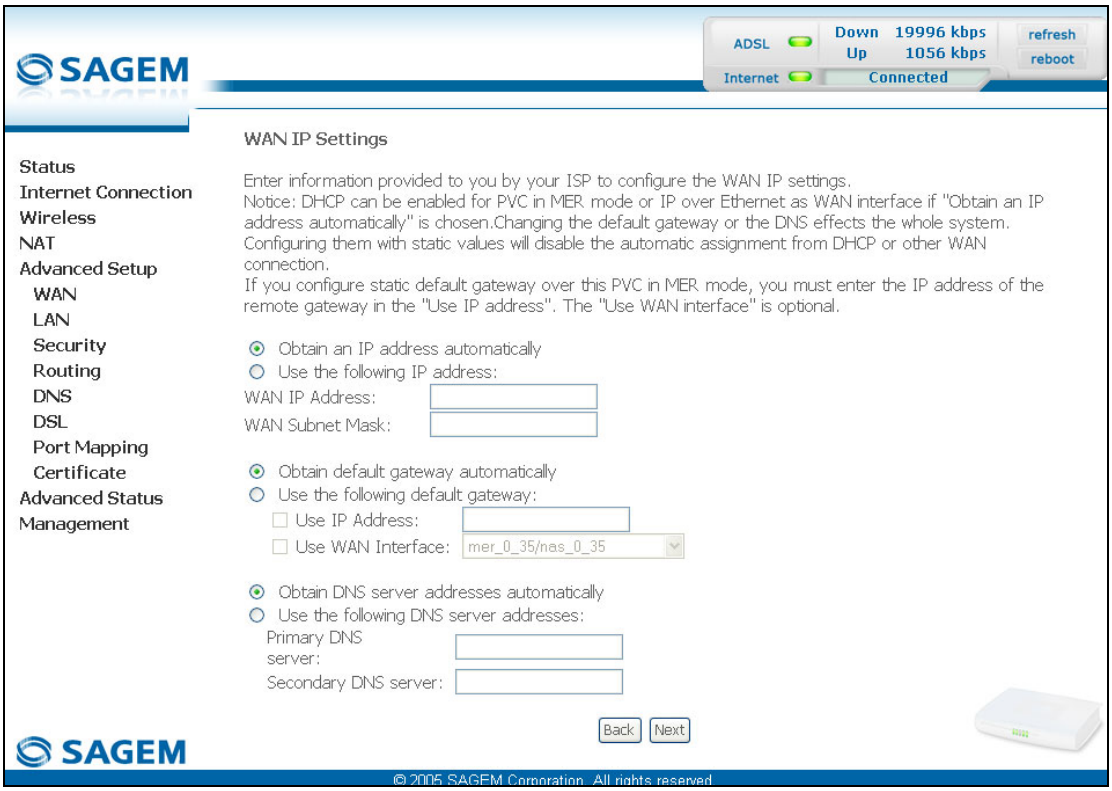
Field	Action	Default
Enable IGMP Multicast	Check the box to activate the IGMP function.	**Not checked**
Enable WAN Service	Check the box to activate the WAN service.	**Checked**
Service	Displays the name of the service being configured. This name, which is allocated automatically, is made up as follows: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



Field	Action
VPI/VCI	Displays the VPI/VCI specific to the "PPPoE" connection
Connection Type	Displays the "PPPoE" protocol
Service Name	Displays the name of the service: pppoe_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: **Automaticaly Assigned**
Service State	Displays the status of the service: **Enabled**
NAT	Displays the status of the NAT: **Enabled**
Firewall	Displays the status of the firewall: **Enabled**
IGMP Multicast	Displays the status of the IGMP function: **Disabled**
Quality of Service	Displays the status of the quality of service: **Disabled**

MAC Encapsulation Routing (MER)



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

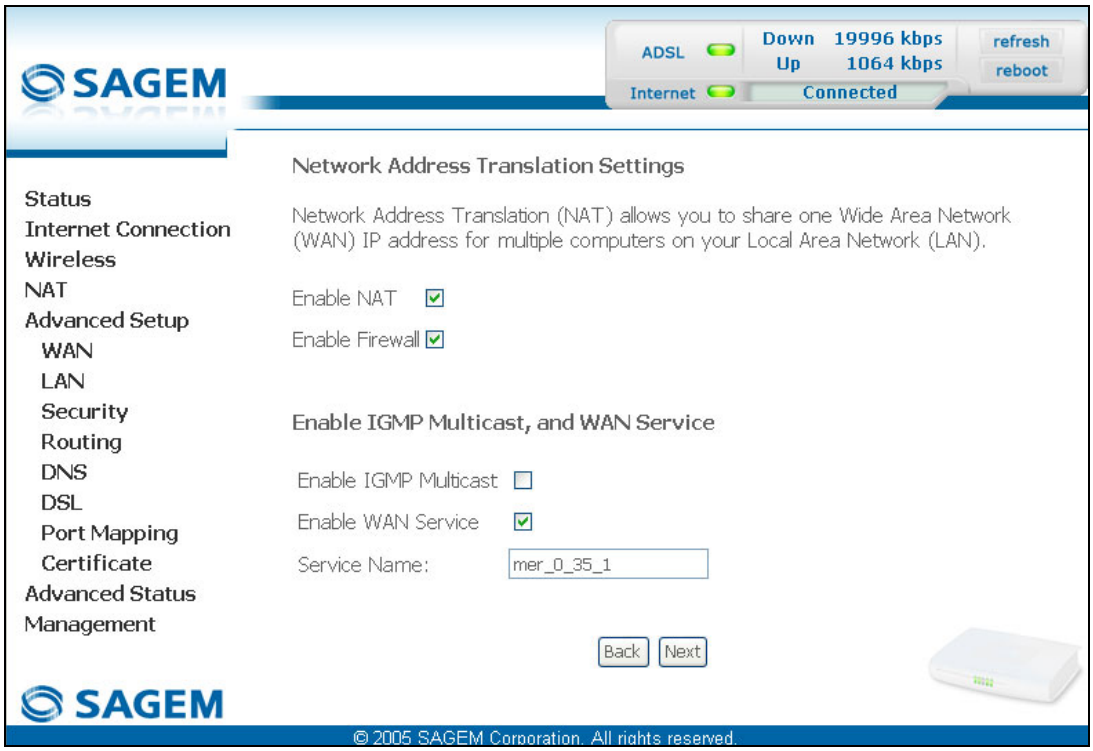
[8] This field only appears when the "Use the following IP address:" field is activated (box checked).

[9] This field only appears when the "Use the following default gateway:" field is activated (box checked).

Field	Action	Default
Obtain DNS server addresses automatically	Check the box to obtain DNS server Addresses automatically.	**Box checked**
Use the following DNS server addresses:	If you check this box, you must enter DNS server addresses.	_
Primary DNS server[10]	Enter a primary server DNS Address.	_
Secondary DNS server[10]	Enter a secondary server DNS Address.	_

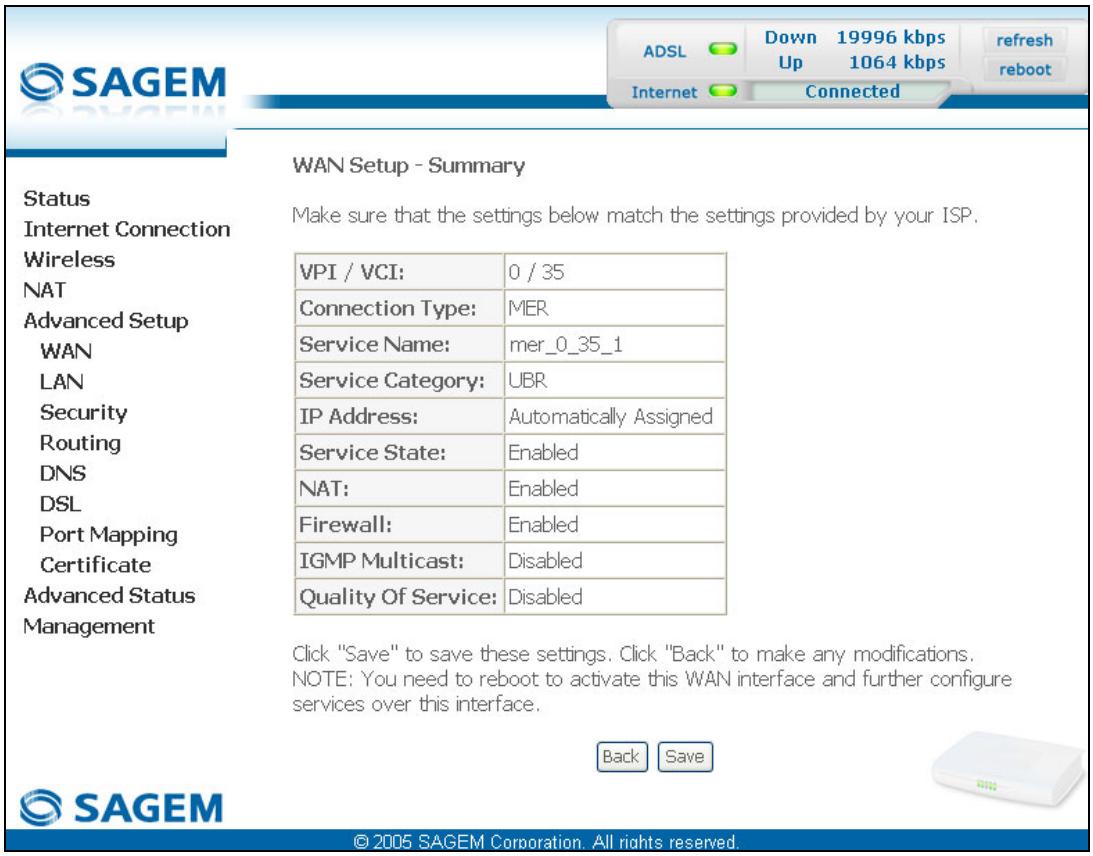
[10] This field only appears when the "Use the following DNS server addresses:" field is activated (box checked).

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



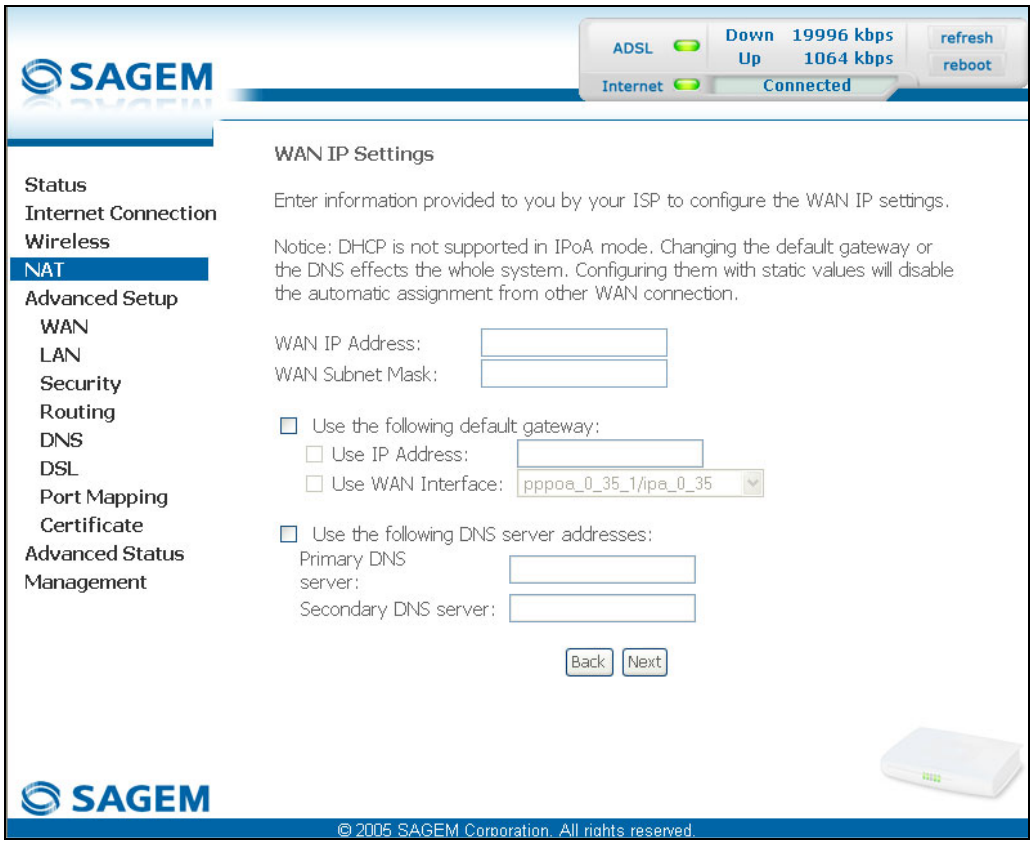
Field	Action	Default
Enable NAT	Check the box to activate the NAT function.	**Checked**
Enable Firewall	Check the box to activate the firewall service.	**Checked**
Enable IGMP Multicast	Check the box to activate the IGMP function.	**Not checked**
Enable WAN Service	Check the box to activate the WAN service.	**Checked**
Service	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. **Note:** You may enter another service name.	mer_0_35_1

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



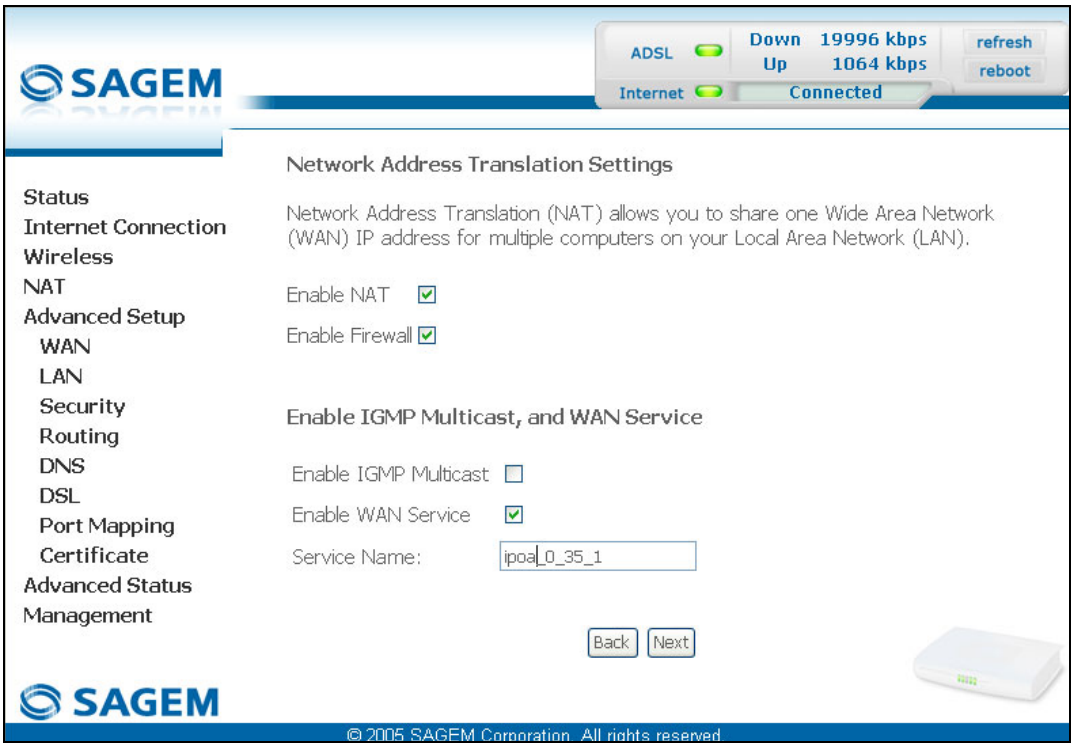
Field	Action
VPI/VCI	Displays the VPI/VCI specific to the "MER" connection
Connection Type	Displays the "MER" protocol
Service Name	Displays the name of the service: mer_0_35_1
Service Category	Displays the type of service adapted to the traffic required.
IP Address	Indicates that the IP address is allocated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

IP over ATM (IPoA)



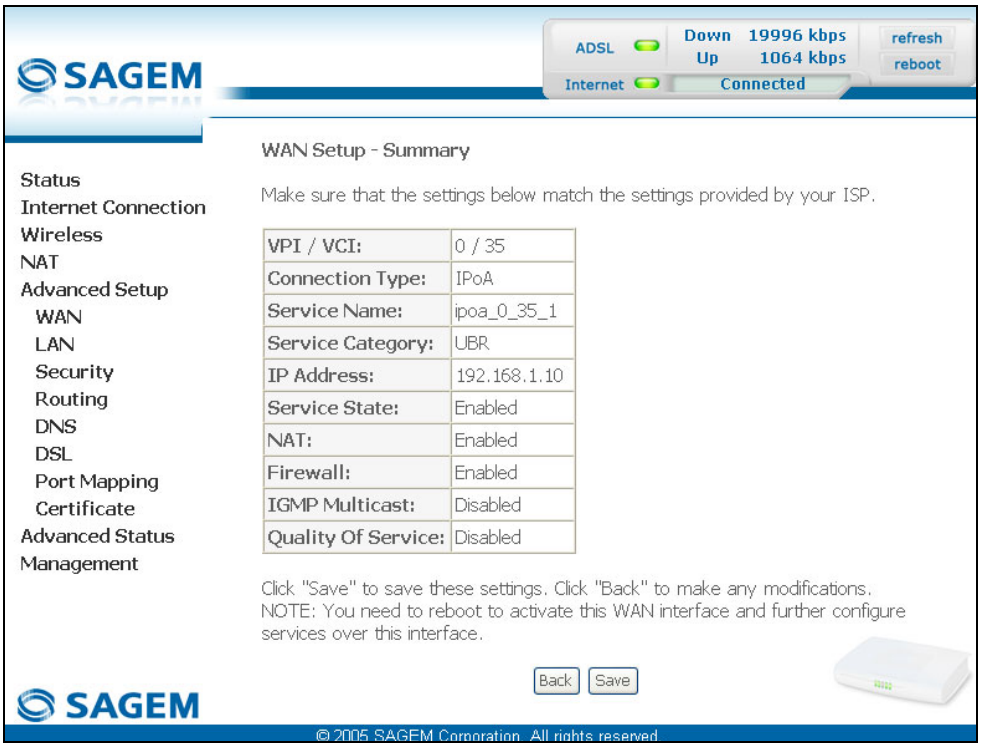
Field	Action	Default
WAN IP Address[8]	Enter the static IP address.	**0.0.0.0**
WAN Subnet Mask:[8]	Enter a subnet mask.	**0.0.0.0**
Use the following default gateway:	If you check this box, you must enter a default gateway address.	**–**
Use IP Address[9]	Enter the default gateway address.	**–**
Use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

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



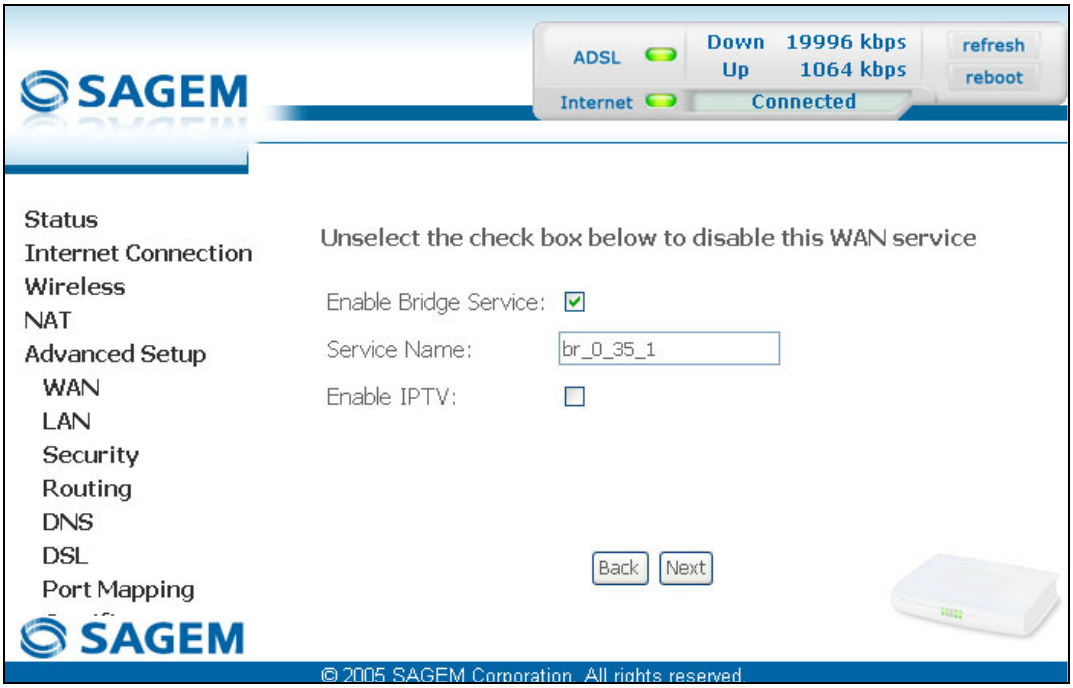
Field	Action	Default
Enable NAT	Check the box to activate the NAT function.	**Box checked**
Enable Firewall	Check the box to activate the firewall service.	**Box checked**
Enable IGMP Multicast	Check the box to activate the IGMP function.	**Box not checked**
Enable WAN Service	Check the box to activate the WAN service.	**Box checked**
Service	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. **Note:** 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.

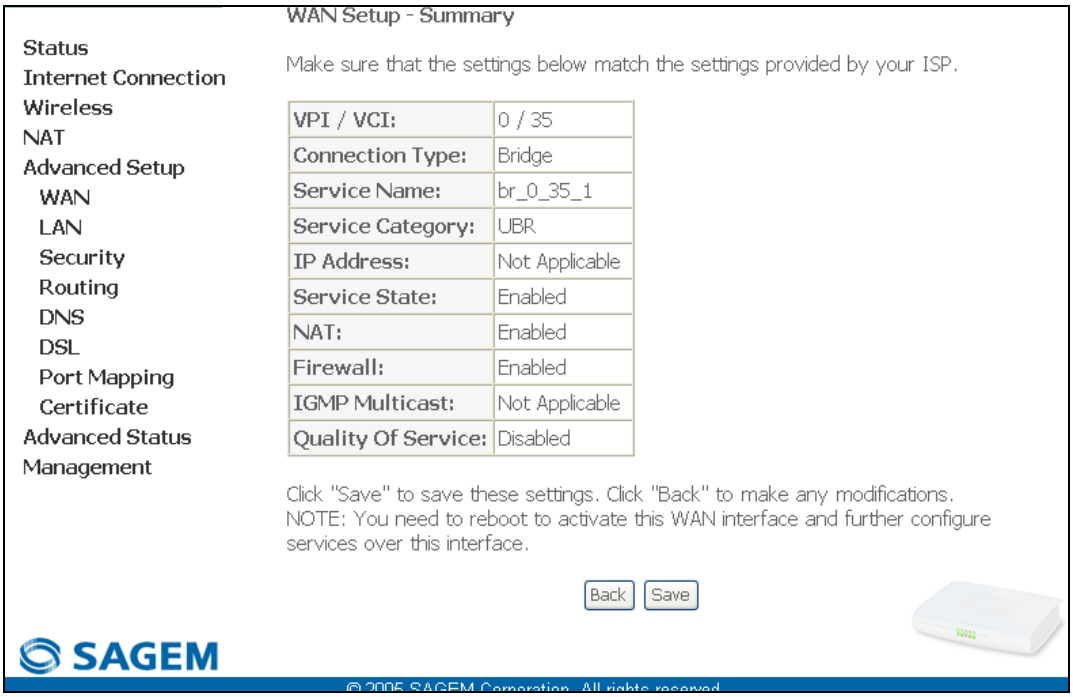


Field	Action
VPI/VCI	Displays the VPI/VCI specific to the "IPoA" connection
Connection Type	Displays the "IPoA" protocol
Service Name	Displays the name of the service: ipoa_0_35_1
Service Category	Displays the type of service adapted to the traffic required.
IP Address	Displays the IP address entered: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

Bridging



Field	Action	Default
Enable Bridge service	Check the box to activate the "Bridge" service.	**Box checked**
Service Name	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. **Note:** You may enter another service name.	–
Enable IPTV	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".	–
IPTV Name	This field only appears if the **Enable IPTV** 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".	–



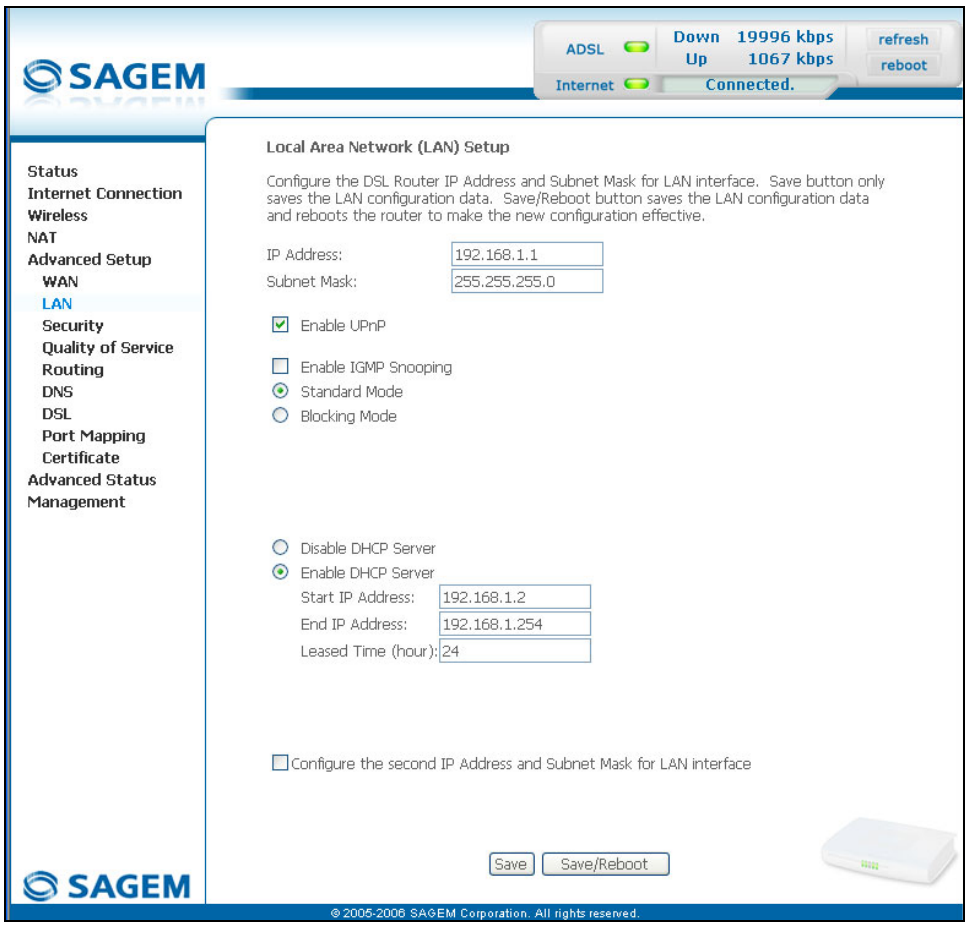
Field	Action
VPI/VCI	Displays the VPI/VCI specific to the "Bridge" connection
Connection Type	Displays the "Bridge" protocol
Service Name	Displays the name of the service: br_0_35_1
Service Category	Displays the type of service adapted to the traffic required
IP Address	In the "Bridge" connection, this field is: **Not Applicable**
Service State	Displays the status of the service: **Enabled**
NAT	Displays the status of the NAT: **Disabled**
Firewall	Displays the status of the firewall: **Disabled**
IGMP Multicast	In the "Bridge" connection, this field is: **Not Applicable**
Quality of Service	Displays the status of the quality of service: **Disabled**

- click on the Save 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
IP Address	Enter the address of your local network	**192.168.1.1**
Subnet Mask	Enter your network's subnet mask.	**255.255.255.0**
Enable UPnP	Check the box to activate the "UpnP" function. **Note:** This function lets you automatically: • join a network dynamically, • obtain an IP address.	**Box checked**
Enable IGMP Snooping	Check this box to activate the IGMP (**I**nternet **G**roup **M**anagement **P**rotocol) protocol. This lets you manage the declarations of belonging to one or more groups with Multicast routers.	**Box not checked**

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

[11] This field only appears when the "Enable DHCP" field is activated (box checked).

[12] 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:

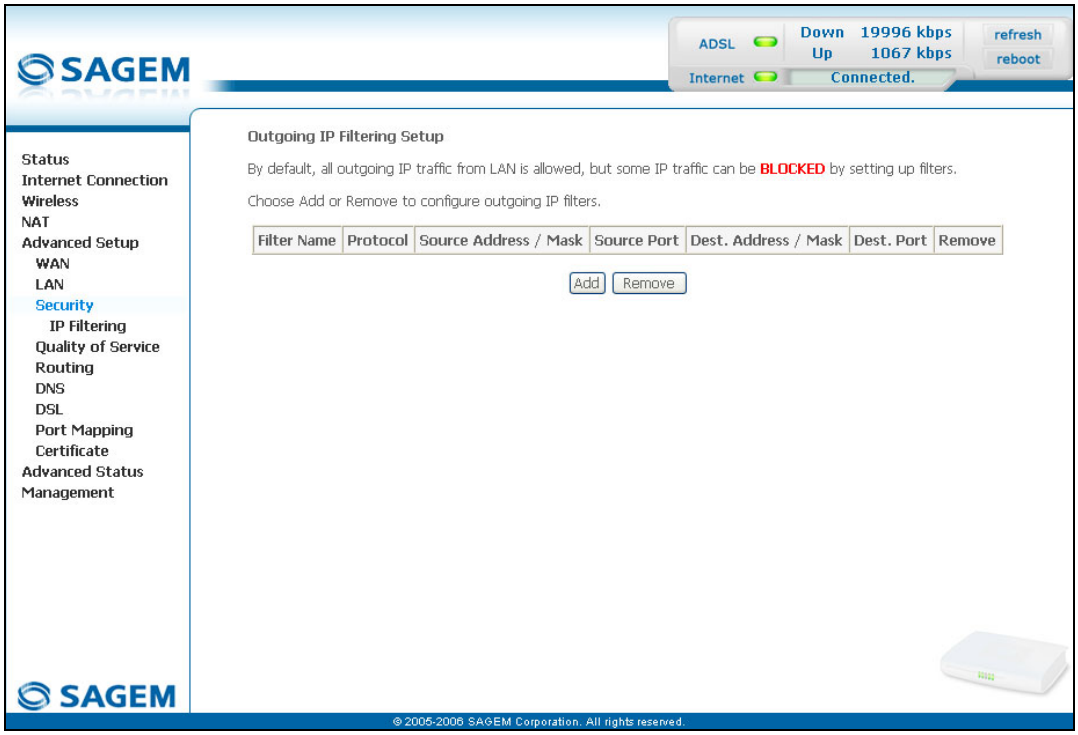
- Outgoing (cf. § 6.9.3.1),
- Incoming (cf. § 6.9.3.2).

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.

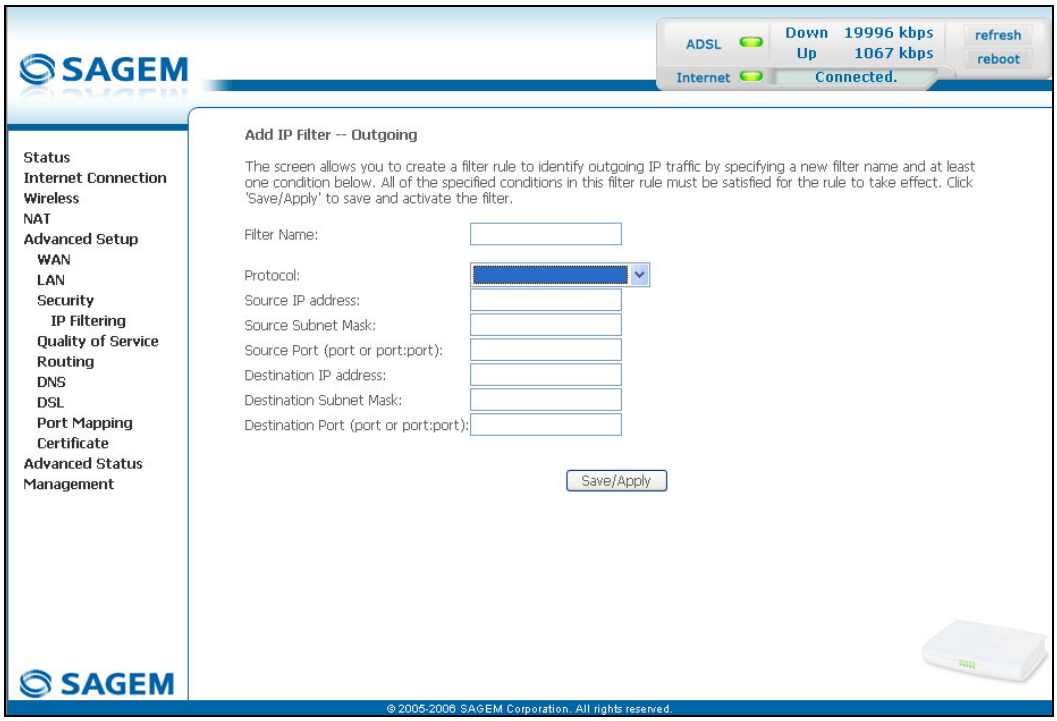
- Select the **Outgoing** sub-menu in the **Security** menu in the **Advanced Setup** section to display the following screen:



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

Add

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



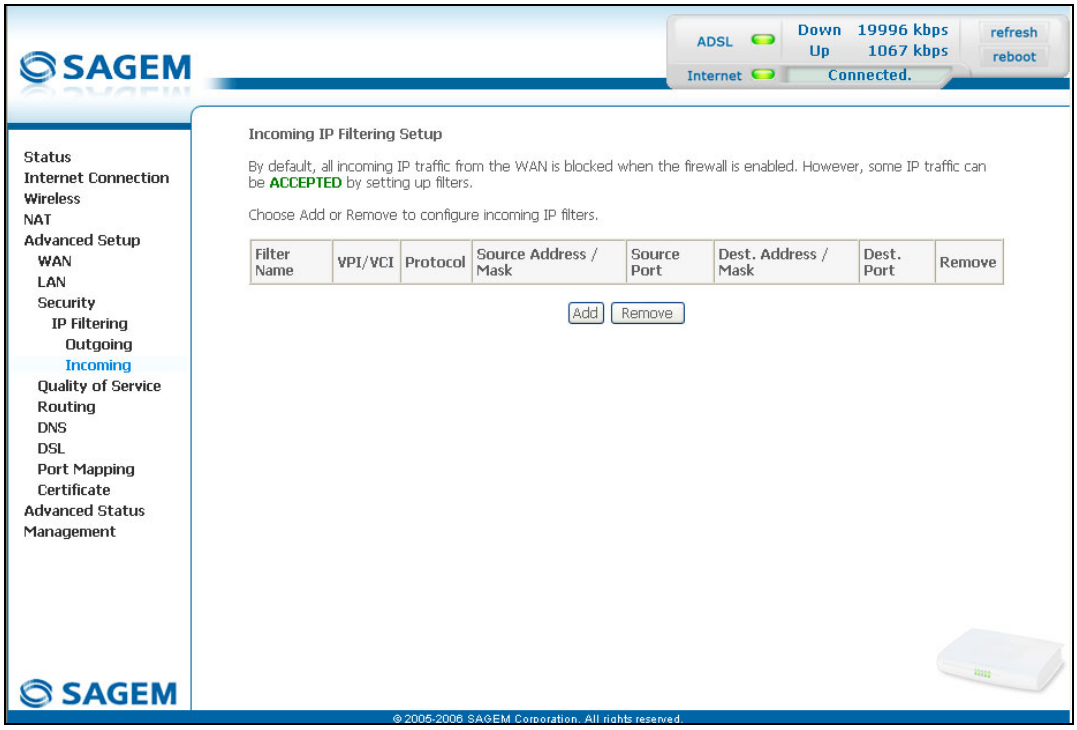
Field	Action
Filter Name	Enter a representative name for the filter.
Protocol	Select the dedicated protocol from the scroll down list (TCP/UDP, TCP, UDP, ICMP).
Source IP Address	Enter the Source IP address (LAN).
Source Subnet Mask	Subnet mask.
Source Port (port or port:port)	Enter a "Source" port (LAN)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

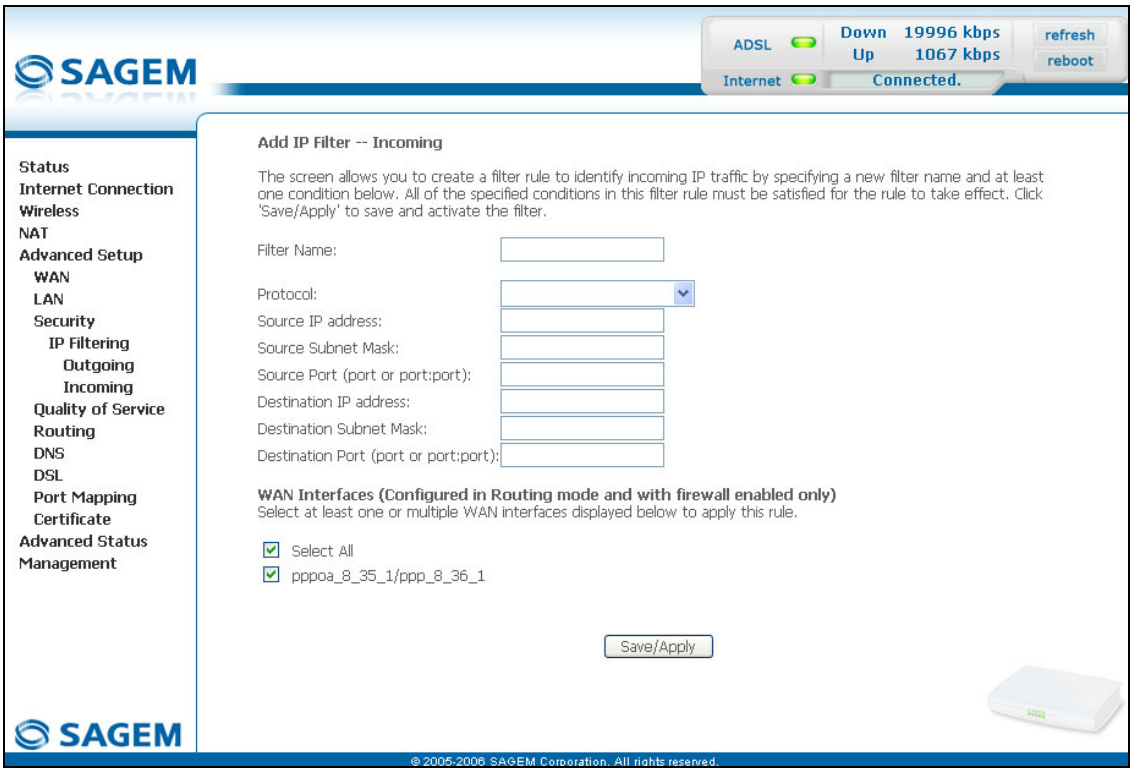
By default, all the incoming data is refused when the Firewall is activated.

- 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:



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

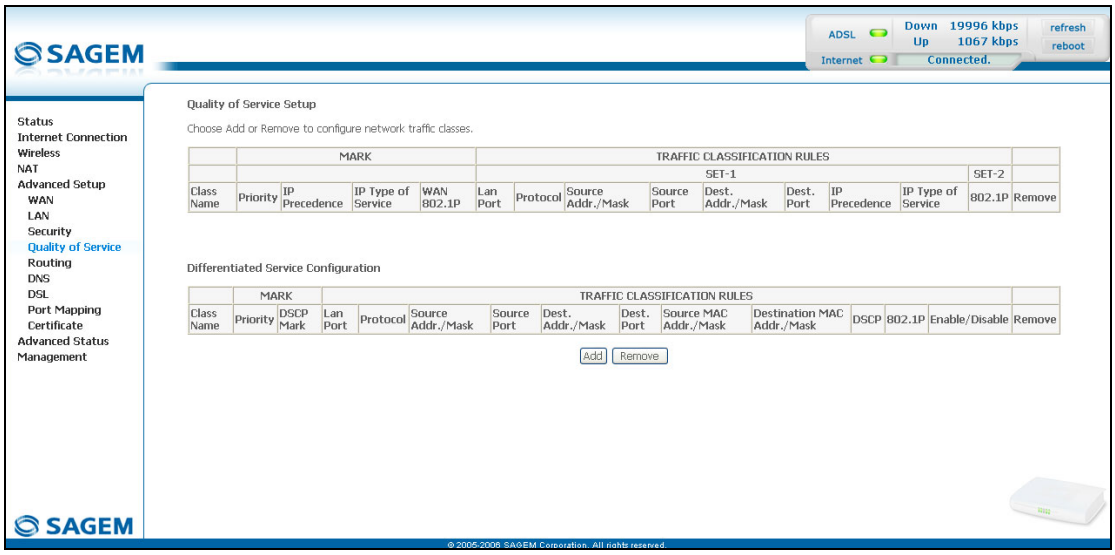
WAN interfaces

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

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

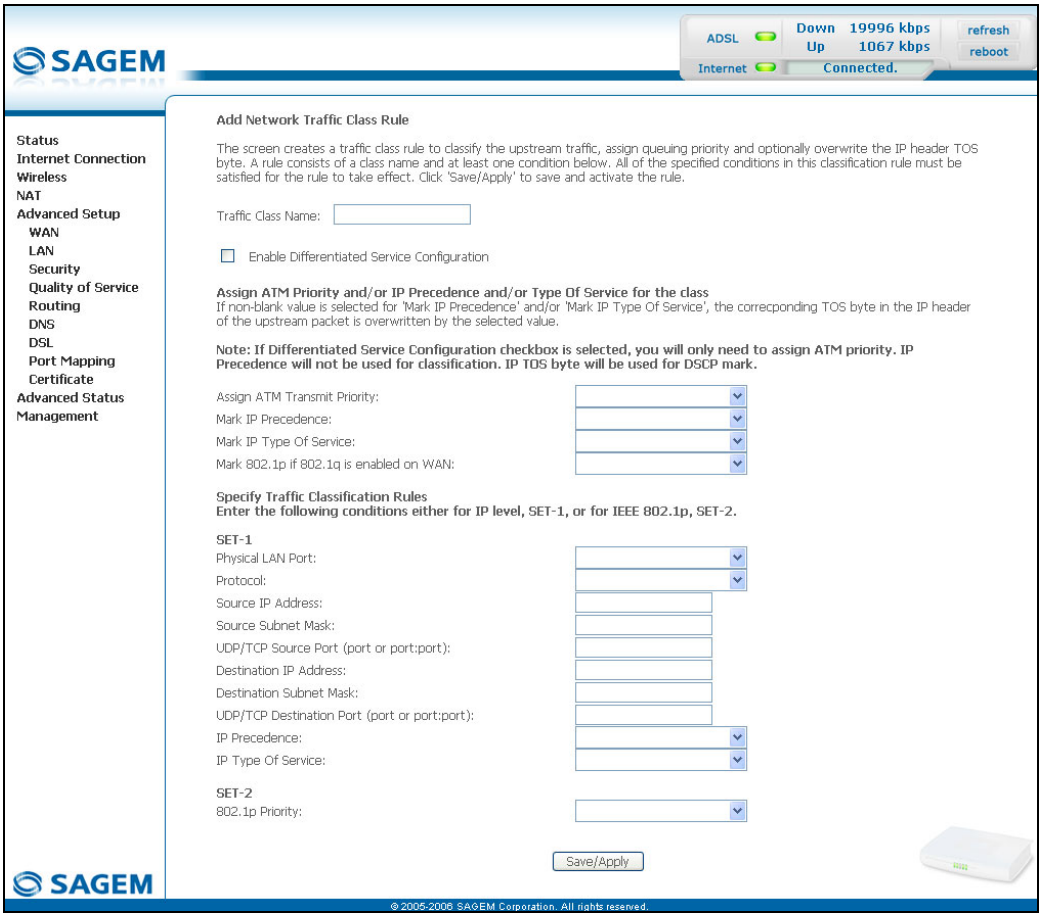
Field		State
Class Name		Name of the service class.
MARK		
	Priority	ATM priority.
	IP Precedence	IP priority.
	IP Type of service	TOS (Type Of Service)
	WAN 802.1P	Priority field 802.1P.
TRAFFIC CLASSIFICATION RULES		
SET-1	**LAN port**	Nature of the LAN port.
	Protocol	Protocol used.
	Source Addr./Mask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

Differentiated Service Configuration

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

6.9.4.1 Add

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



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

Type Of Service (TOS)

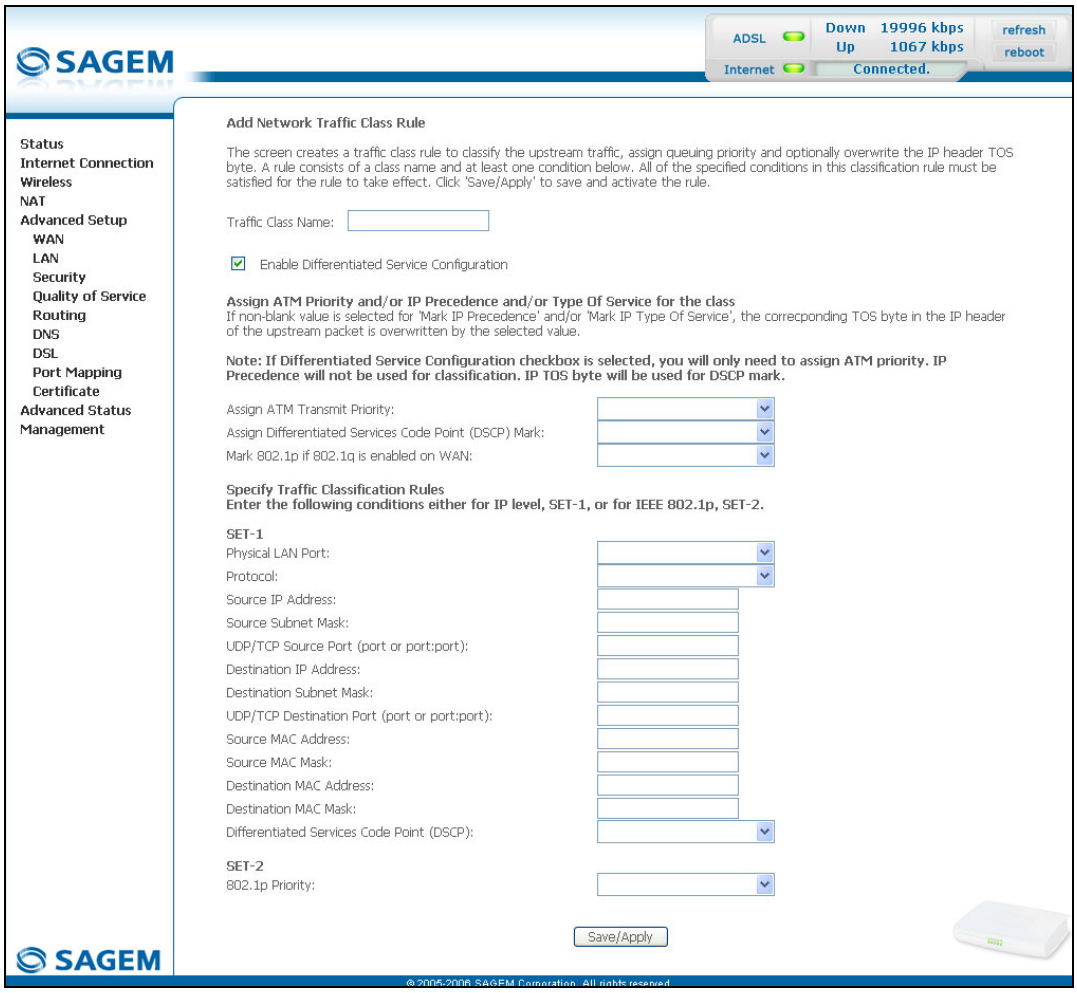
Object: This service allows to assign a type of service IP to PVC (TOS: **T**ype **O**f **S**ervice). The value assigned to a TOS IP corresponds to a value of priority queue.

Field	Action
Traffic Class Name	Enter a name for the traffic class you want to create.
Assign ATM Transmit Priority	Select from the scroll down list: Blank : No priority, Low : "Low" emission priority, Medium : "Medium" emission priority, High : "High" emission priority. **Note :** A high priority leads to low packet loss.
Mark IP Precedence	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.
Mark IP Type Of Service	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
Mark 802.1p if 802.1q is enabled on WAN	Select a priority value between 0 and 7 from the scroll down list. **Note:** The "Enable 802.1q" box is only present in "Bridging" mode. This condition is transparent for the other modes.

Field		Action
SET-1	**Physical LAN Port**	Select the interface of your choice (ENET, USB, Wireless or Wireless_Guest) from the scroll down list.
	Protocol	Select the protocol of your choice from the scroll down list (TCP/UDP, TCP, UDP or ICMP).
	Source IP Address	Enter a "Source" IP address.
	Source Subnet Mask	Enter a "Source" subnet mask.
	UDP/TCP source Port (port or port:port)	Enter a "Source" port or range of ports. **Note:** For one port, for example, enter 80. For a range of ports, enter 80:90.
	Destination IP Address	Enter a "Destination" IP address.
	Destination Subnet Mask	Enter a "Destination" subnet mask.
	UDP/TCP Destination Port (port or port:port)	Enter a "Destination" port or range of ports. **Note:** For one port, for example, enter 80. For a range of ports, enter 80:90.
	IP Precedence	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.
	IP Type Of Service	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
	Differentiated Services Code Point (DSCP)	Select the DSCP desirated from the scroll down list.
SET-2	**802.1p Priority**	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 (**D**ifferentiated **S**ervices **C**ode **P**oint) 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
Traffic Class Name	Enter a name for the traffic class you want to create.
Assign ATM Transmit Priority	Select from the scroll down list: Blank : No priority, Low : "Low" emission priority, Medium : "Medium" emission priority, High : "High" emission priority. **Note :** A high priority leads to low packet loss.
Assign Differentiated Servicess Code Point (DSCP) Mark	Select a appropriate priority value from the scroll down list. **Note :** The default value is "000000".

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

6.9.5 Routing

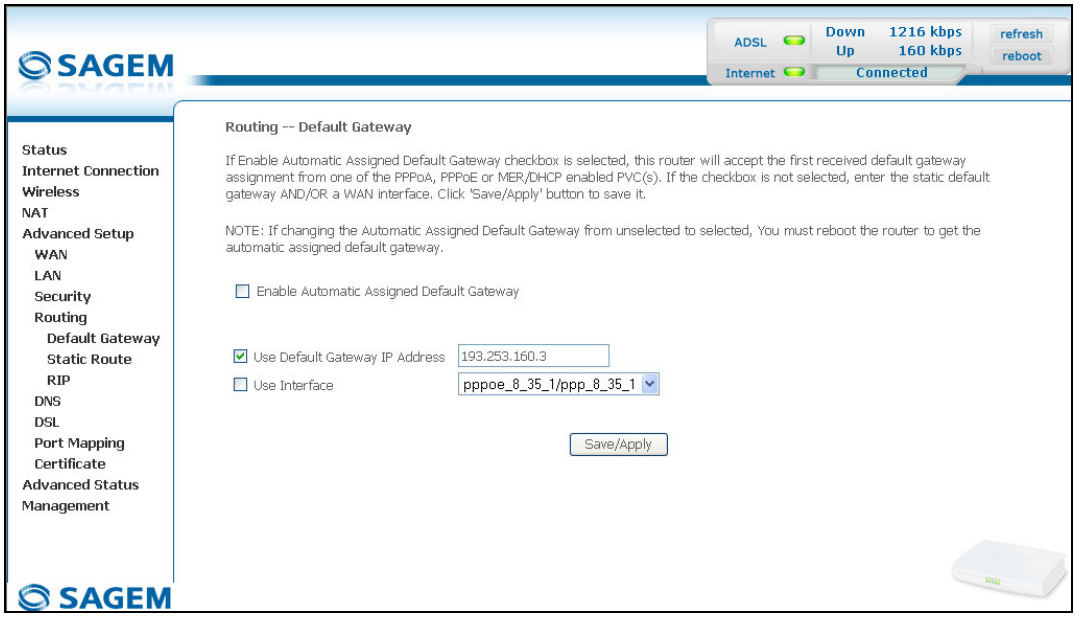
This menu contains 3 sub-menus:

- 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:



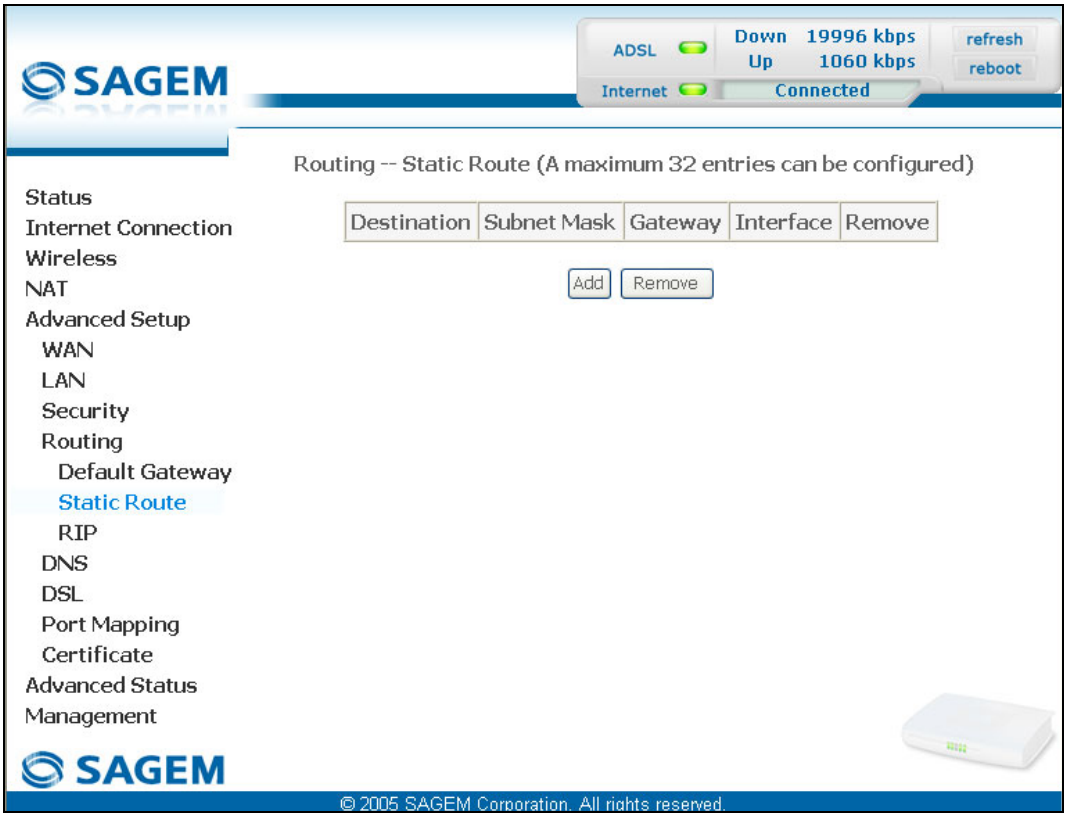
Field	Action	Default
EnableAutomatic Assigned Default Gateway	Check the box to allocate automatically a default gateway for your router.	**Box checked**
Use Default Gateway IP Address[13]	Check the box to use a default address.	**Box checked** **Not empty**
Use Interface[13]	Select the interface you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

[13] 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.

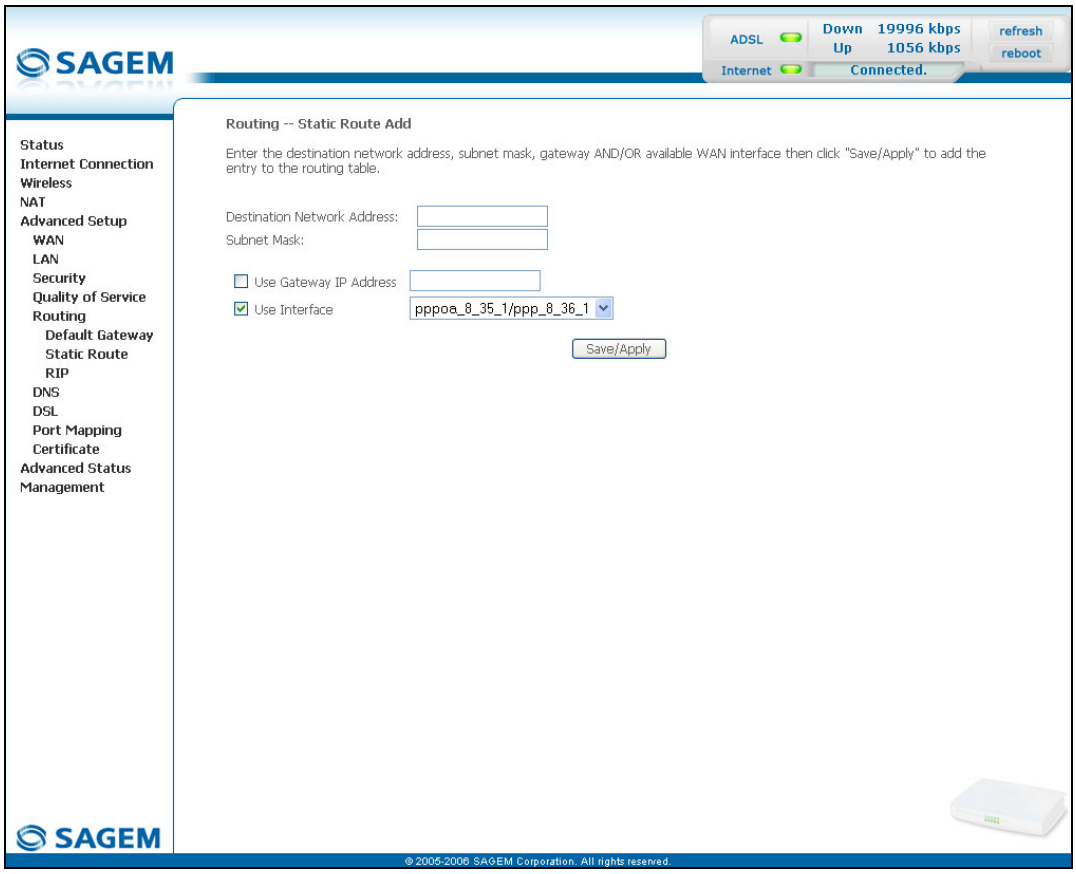
- Select the **Static Route** sub-menu in the **Routing** menu in the **Advanced Setup** section to display the following screen:



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

Add

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



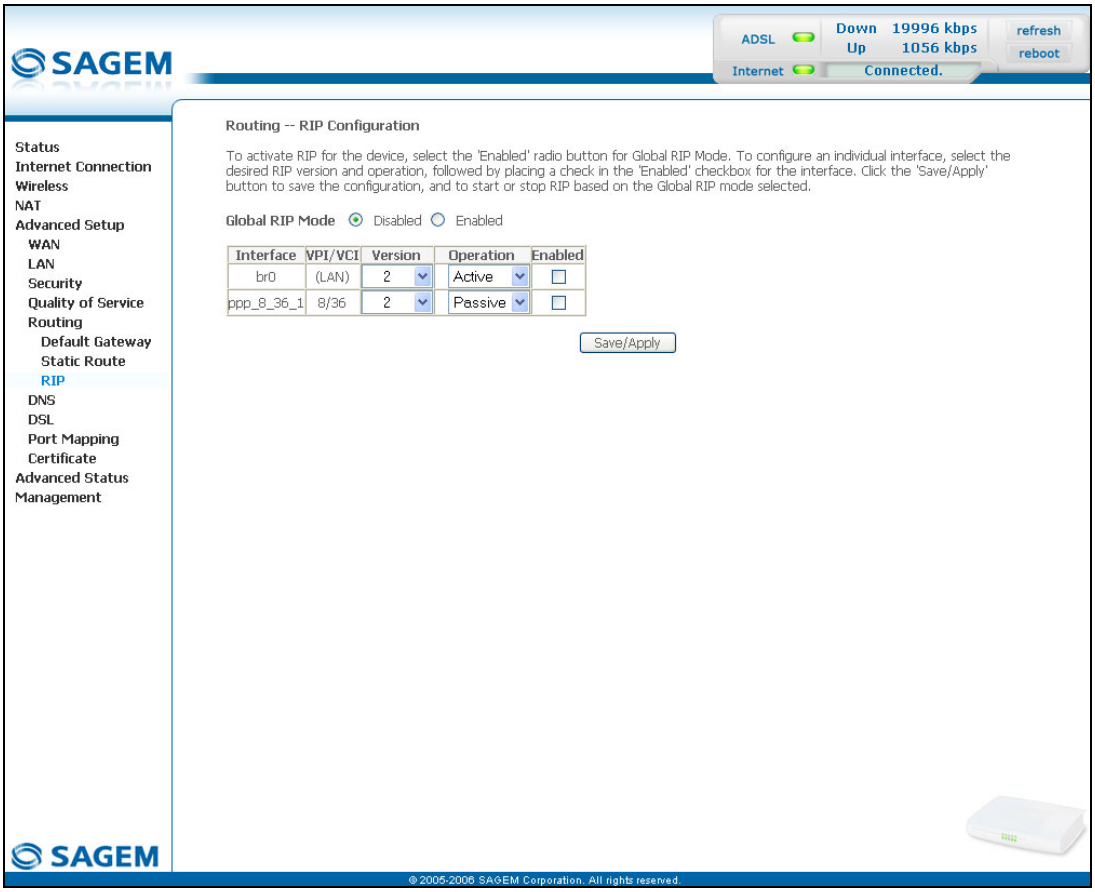
Field	Action	Default
Destination Network Address	Enter the IP address of the remote network.	**Empty**
Subnet Mask	Enter the remote subnet mask.	**Empty**
Use Gateway IP Address	Check the appropriate box then enter the IP address of the gateway.	**Box not checked** **Empty**
Use Interface	Select the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

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:



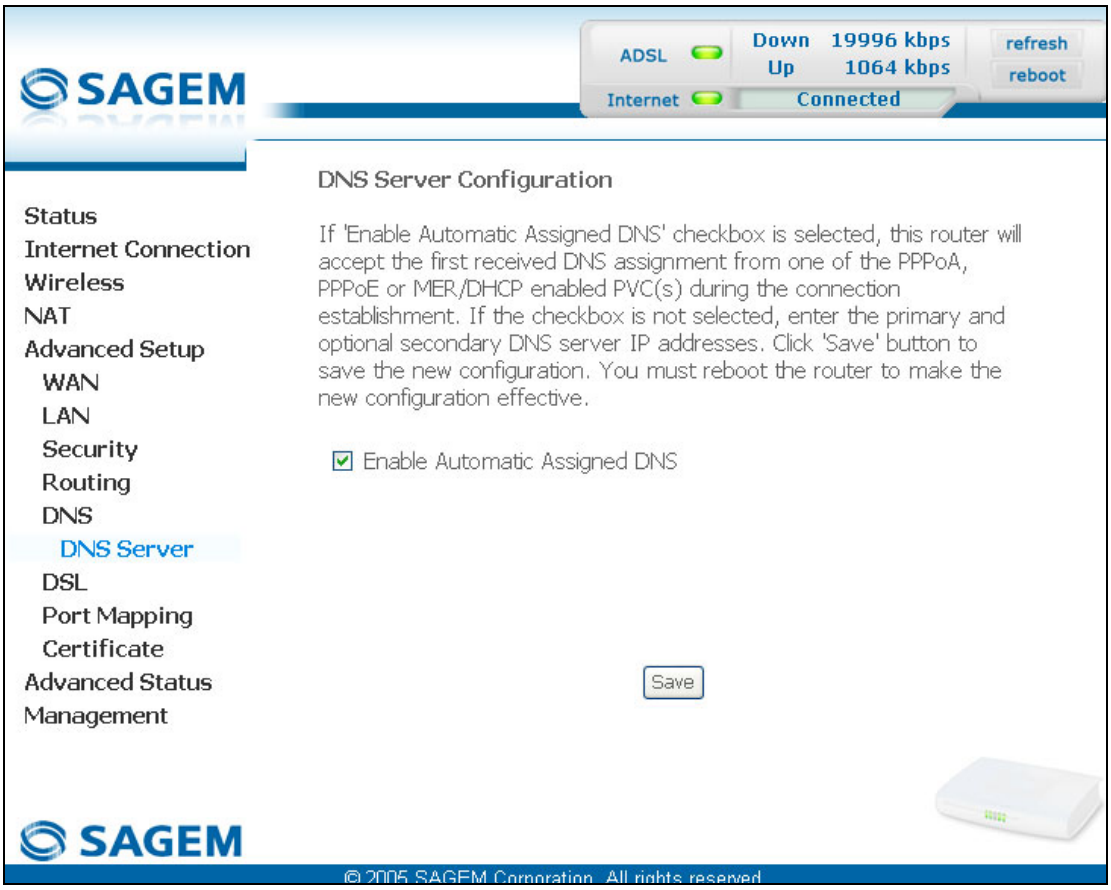
Field	Action/Meaning	Default
Global RIP Mode	Check the appropriate box to activate (Enabled) or deactivate (Disabled) the RIP function (**R**outing **I**nformation **P**rotocol).	**Disabled**
Interface	Created or native interface.	**Br0**
VPI/VCI	VPI/VCI associated with the interface.	**(LAN)**
Version	Select the RIP version of your choice from the scroll down list. • **1** for RIP1, • **2** for RIP2.	**2**

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

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
Enable Automatic Assigned DNS	Check the appropriate box to allocate a domain name address.	**Box checked**
Primary DNS server[14]	Enter a primary DNS server address.	_
Secondary DNS server[14]	Enter a secondary DNS server address.	_

[14] 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:

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.

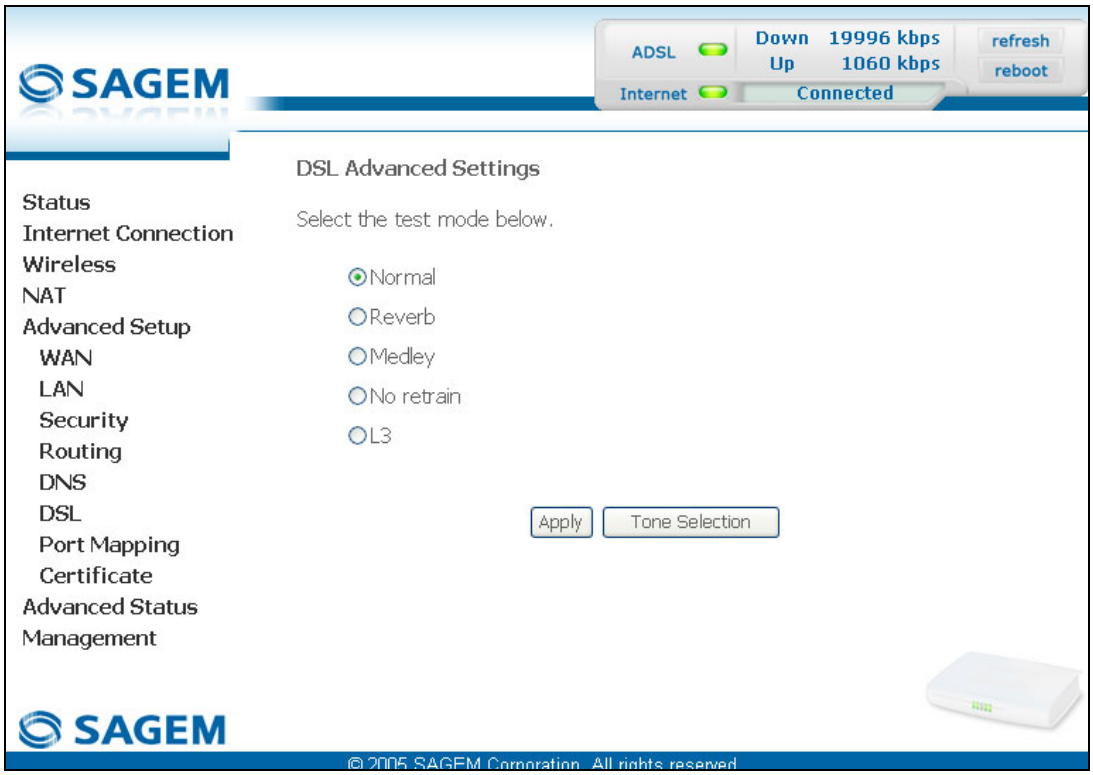
Phone line pair

Field	Default
Inner pair	Selected box
Outer pair	Box not selected

Capability

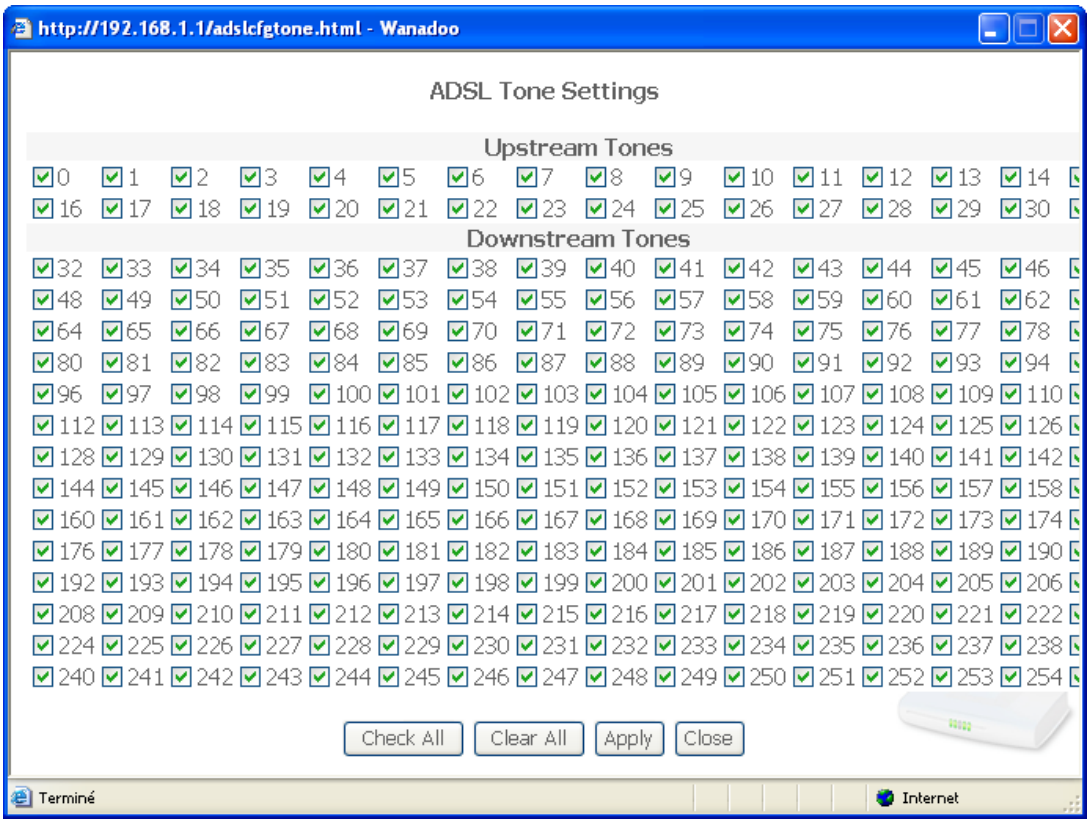
Field	Default
Bitswap Enable	Box checked
SRA Enable	Box not checked

- 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.

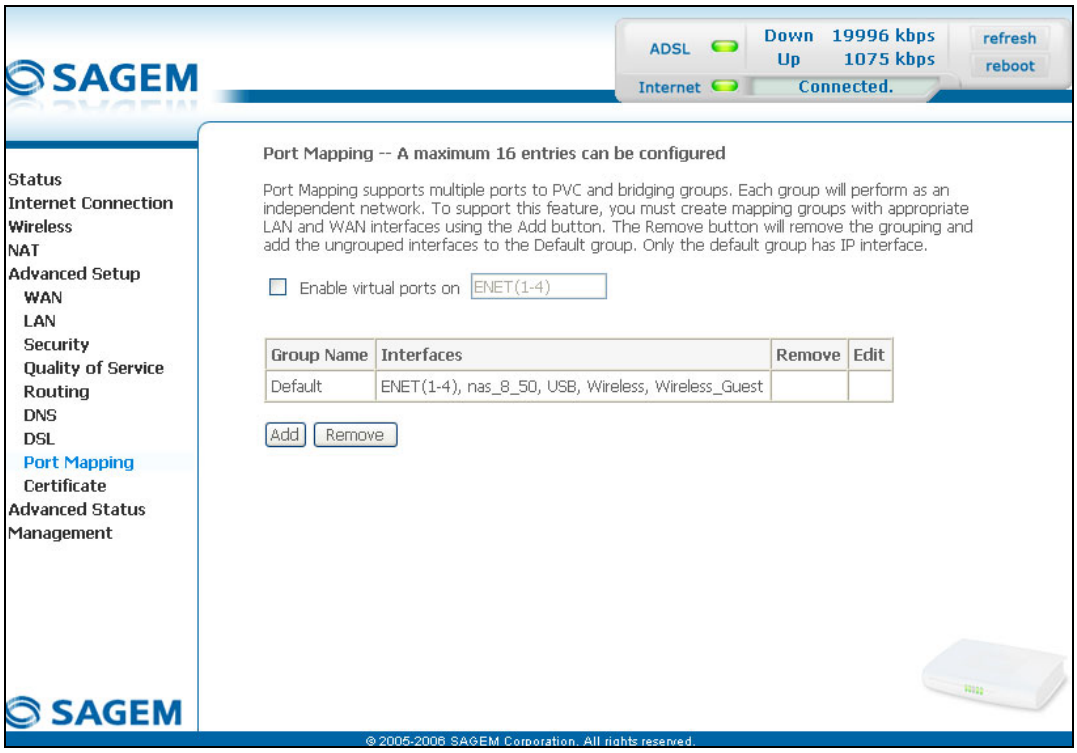
All the tones are selected by default.

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:



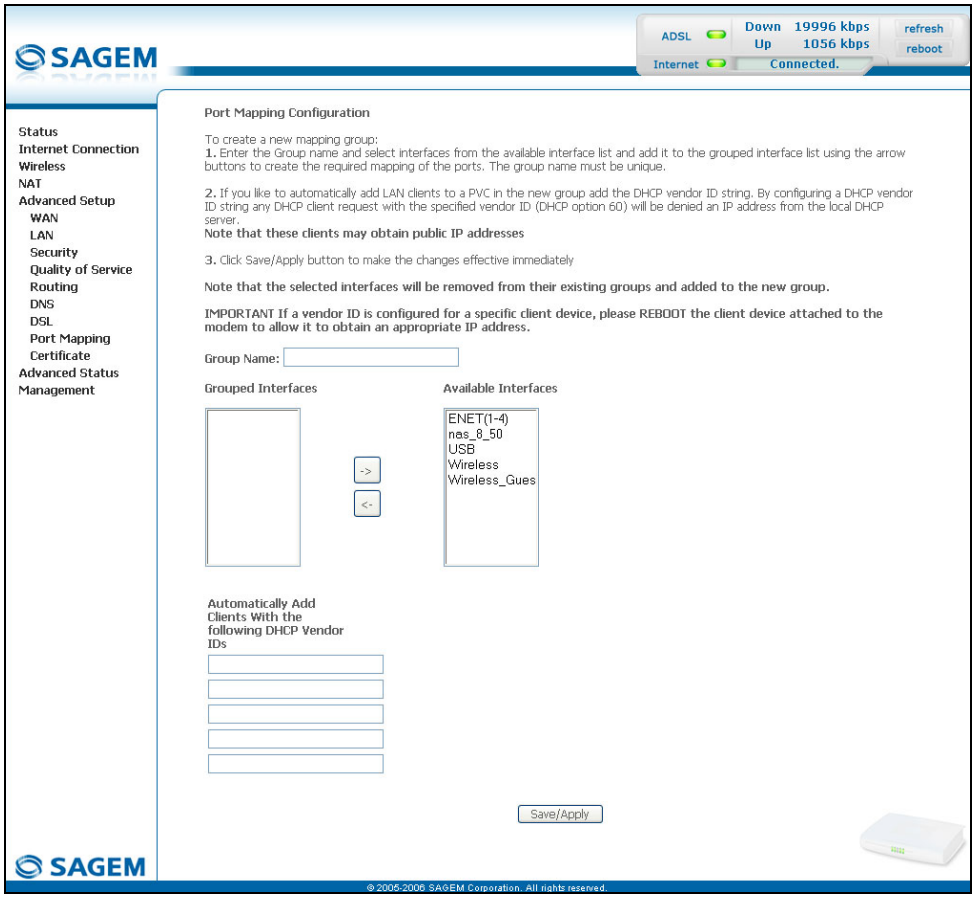
Field	Meaning	Default
Enable virtual ports on	**This field only appears in the case of SAGEM F@stTM 2404 or SAGEM F@stTM 2444 equipment.** If the box is not checked, the Ethernet 1 to 4 (ENET (1-4)) ports are gathered and seen like only one virtual port. When the box is checked, these ports are independently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

Field	Meaning
Group Name	Group name (see "Information" icon).
Interfaces	Lists all your router's interfaces. **Note:** 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 (**V**irtual **C**hannel) existing or created.

Add

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



Field	Meaning	Default
Group Name	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)).	–
Grouped Interfaces	Displays the interfaces associated with a service you selected in the "Available Interfaces" area then transferred with the <- button.	–
Available Interfaces	Lists all your router's interfaces. **Note:** 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 "**Available Interfaces**" area to the "**Grouped Interfaces**" area.
->	Used to transfer the interfaces selected in the "**Grouped Interfaces**" area to the "**Available Interfaces**" area.

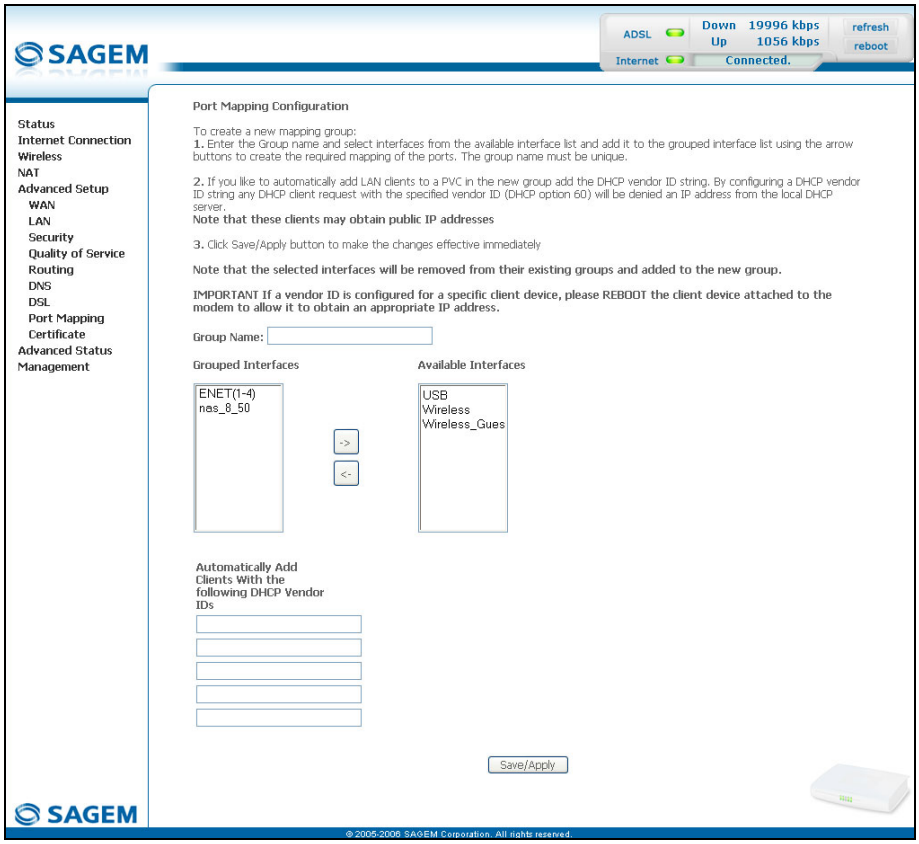
Field	Meaning
Automatically Add Clients with the DHCP Vendor IDs	This functionality allows to recognize the equipment connected to a port and to automatically affect this port to it. To do that, the router receives from this equipment (for example a decoder TV) a DHCP request which contains a client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

Example

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

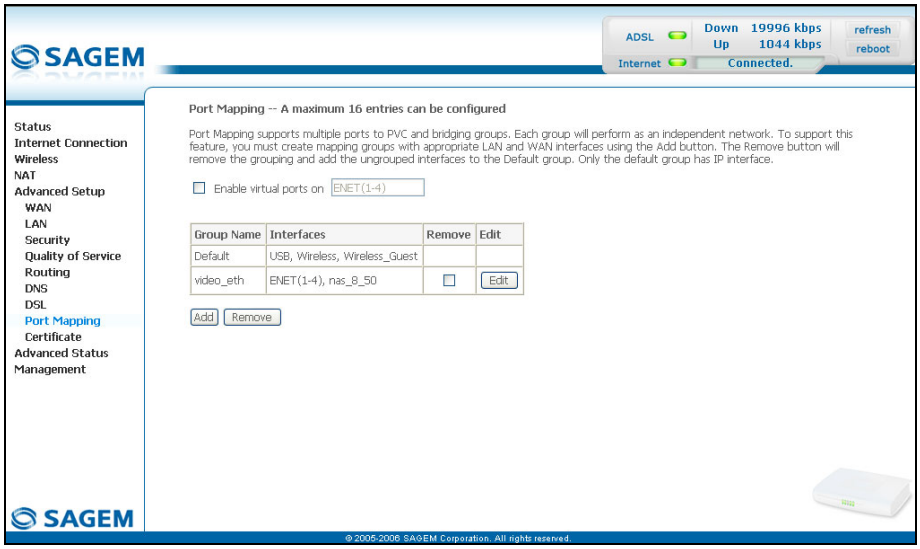
- in the "Group Name" area enter a representative name such as "video_eth".
- in the "Available Interfaces" area select **ENET(1-4)** for the Ethernet interface.
- then click on the <- button to transfer this interface to the "Grouped Interfaces" area.
- in the "Available Interfaces" area select the 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 Save/Apply button to save the addition. The following screen displays all the entries which have been configured.

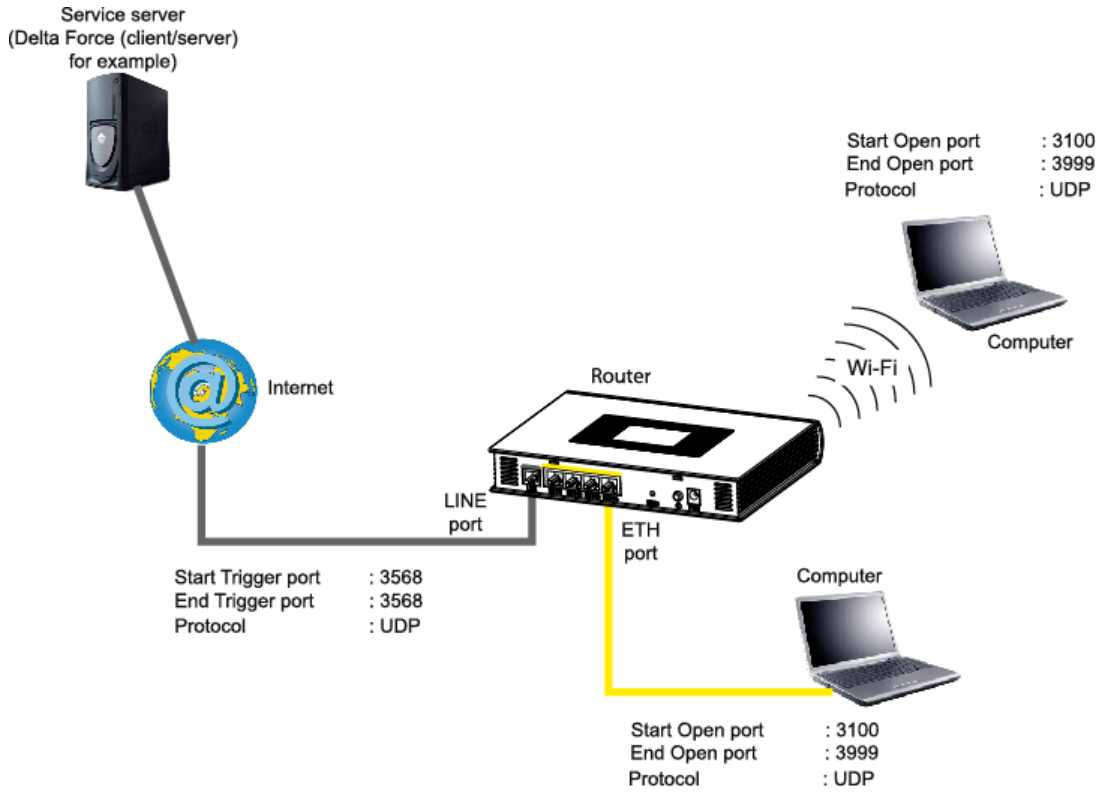


This screen indicates that:

➢ 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.

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



6.9.9 Certificate

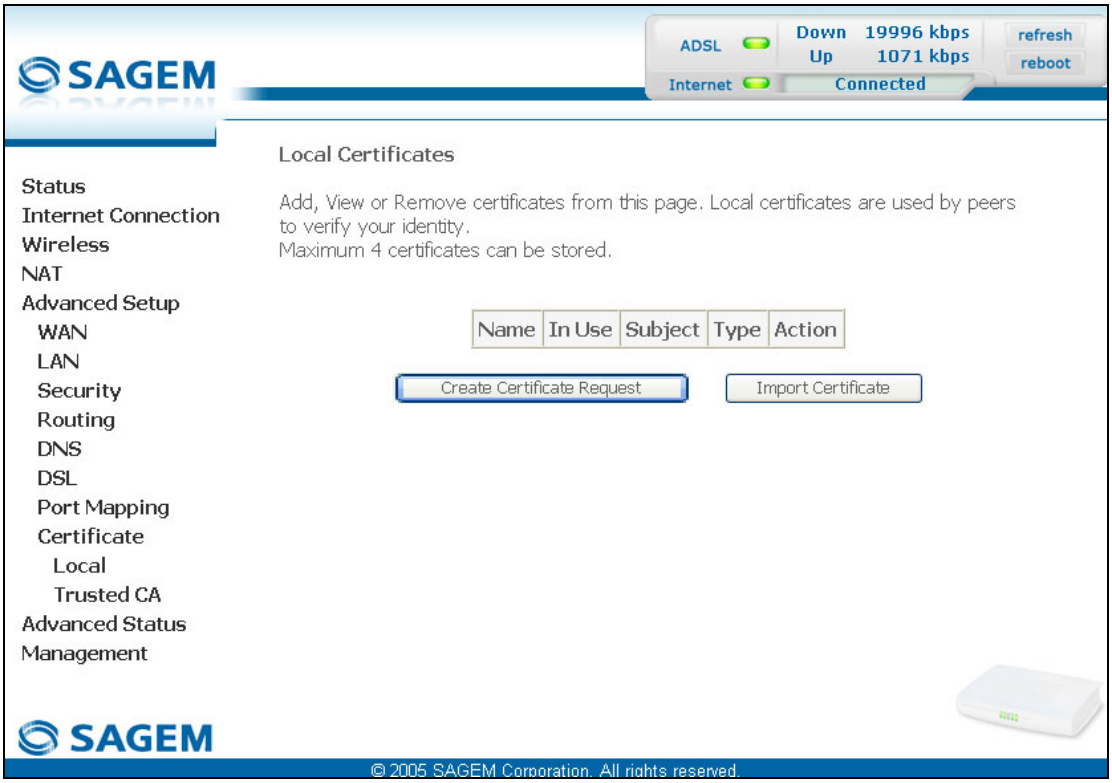
This menu contains 2 sub-menus:

- 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.

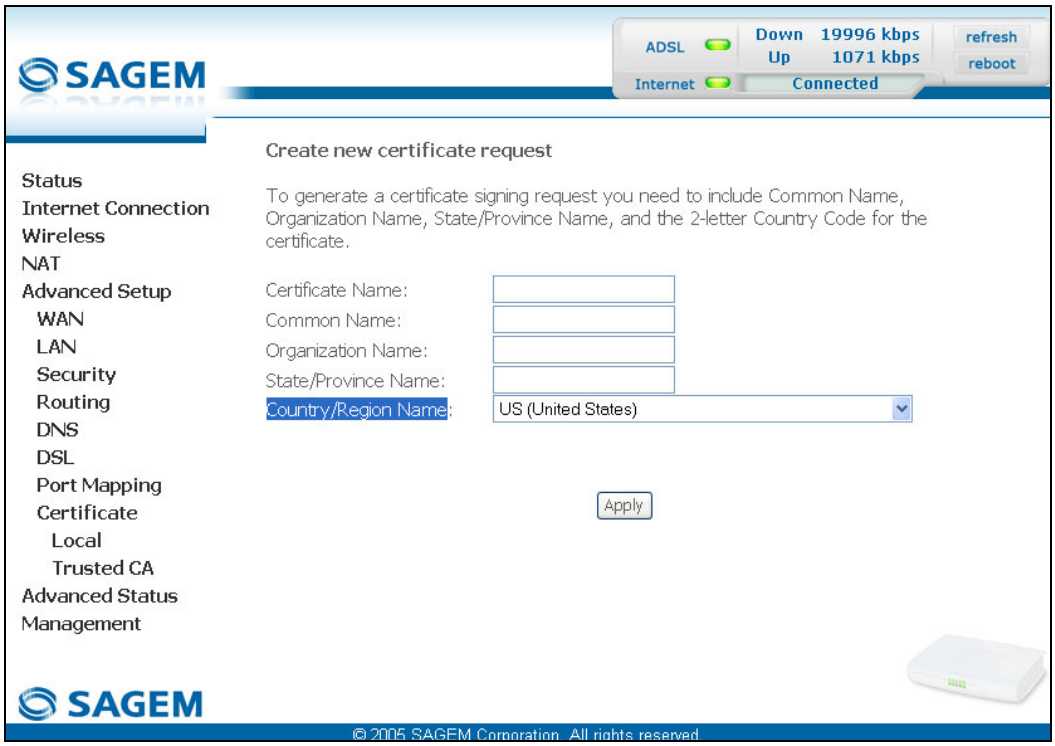
- Select the **Local** sub-menu in the **Certificate** menu in the **Advanced Setup** section to display the following screen:



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

Create Certificate Request

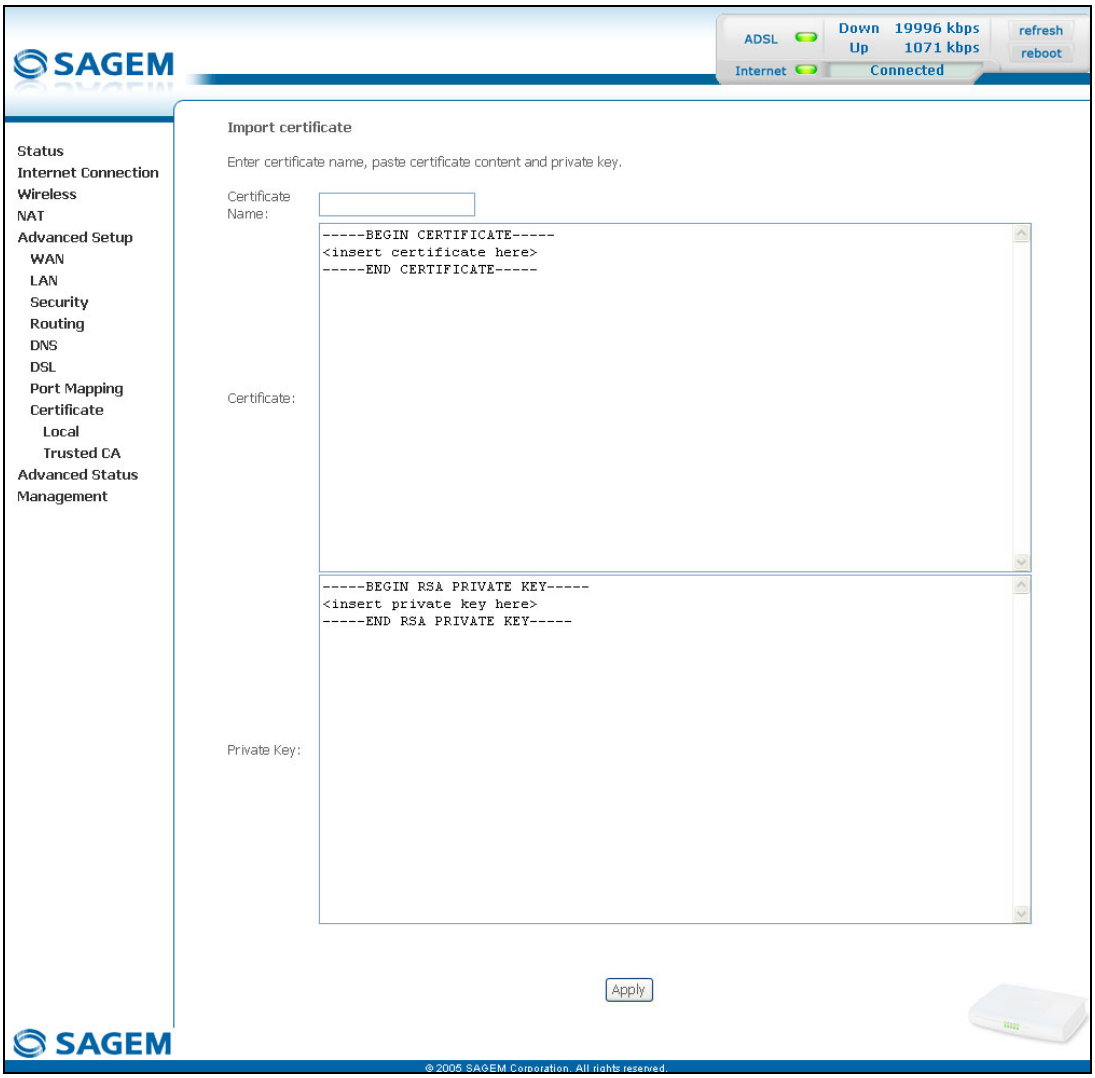
- Click on the **Create Certificate Request** button to display the following screen:



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

Import Certificate

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

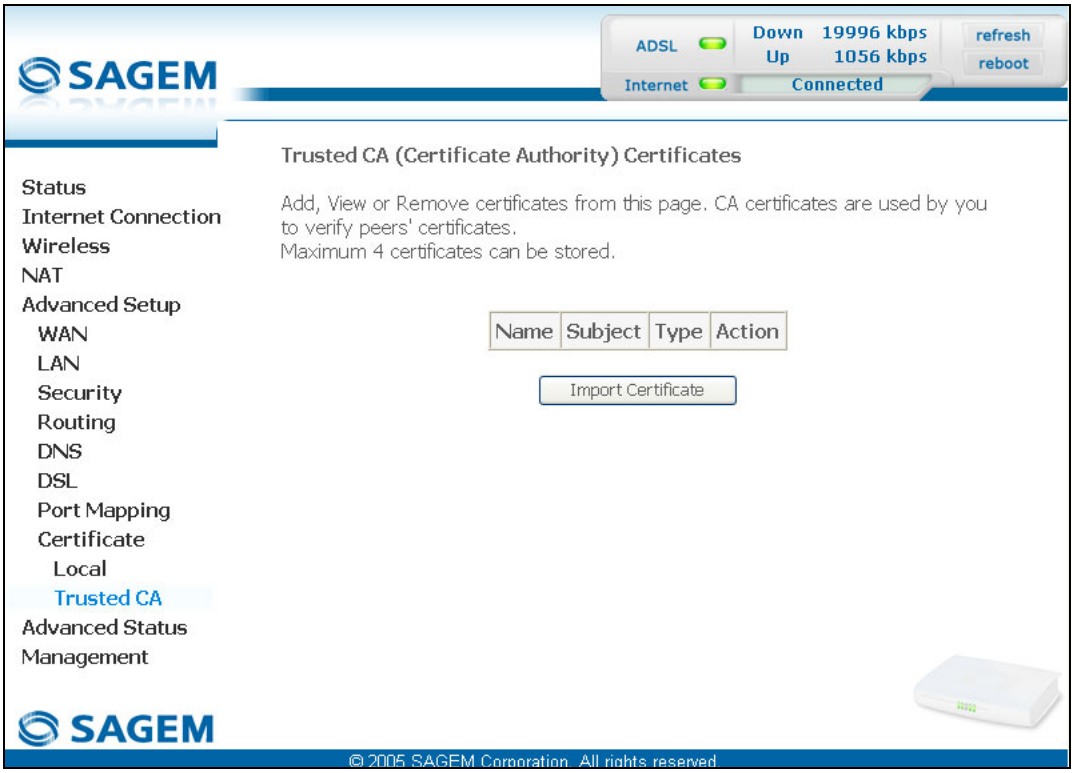


Field	Action	Default
Certificate Name	Enter the name of the certificate	_
Certificat	Insert the certificate here	_
Private key	Insert the private key here	_

6.9.9.2 Trusted CA

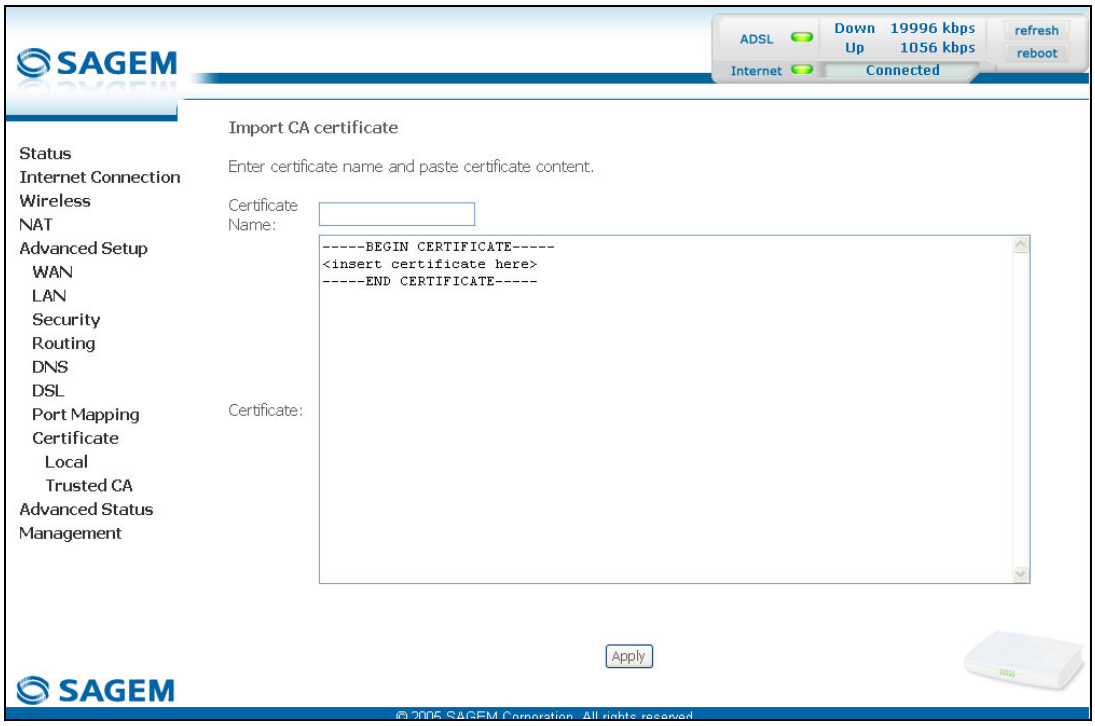
Object: This menu is used to manage the identity certificates of the remote servers. These certificates, which are used by TR-69 (in SSL mode), enable the mutual authentication of the CPE and the ACS.

- 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
Certificate Name	Enter the name of the certificate to be imported	_
Certificate	Insert the certificate here	_

6.10 Advanced Status

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

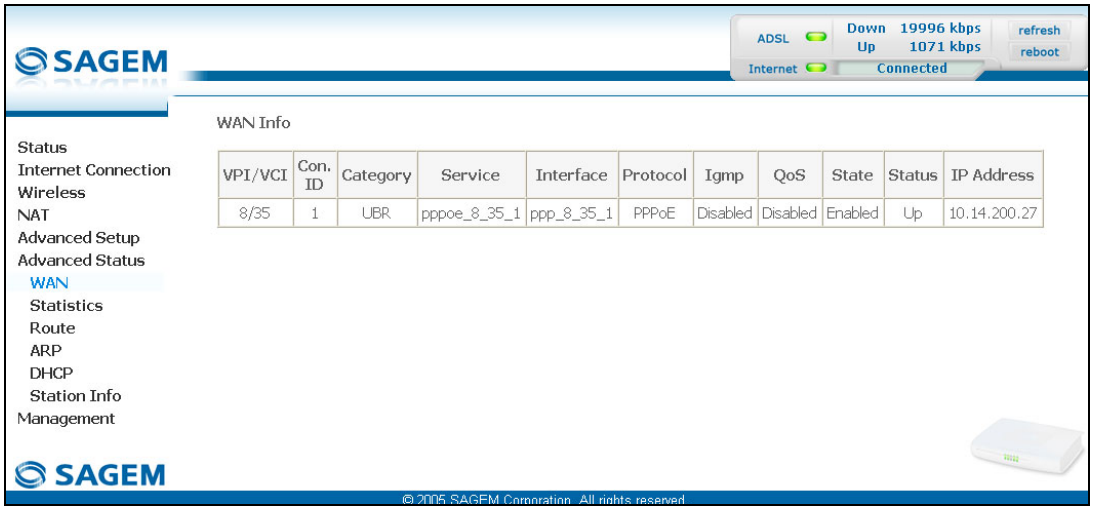
This section contains the following six menus:

- 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:



6.10.2 Statistics

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

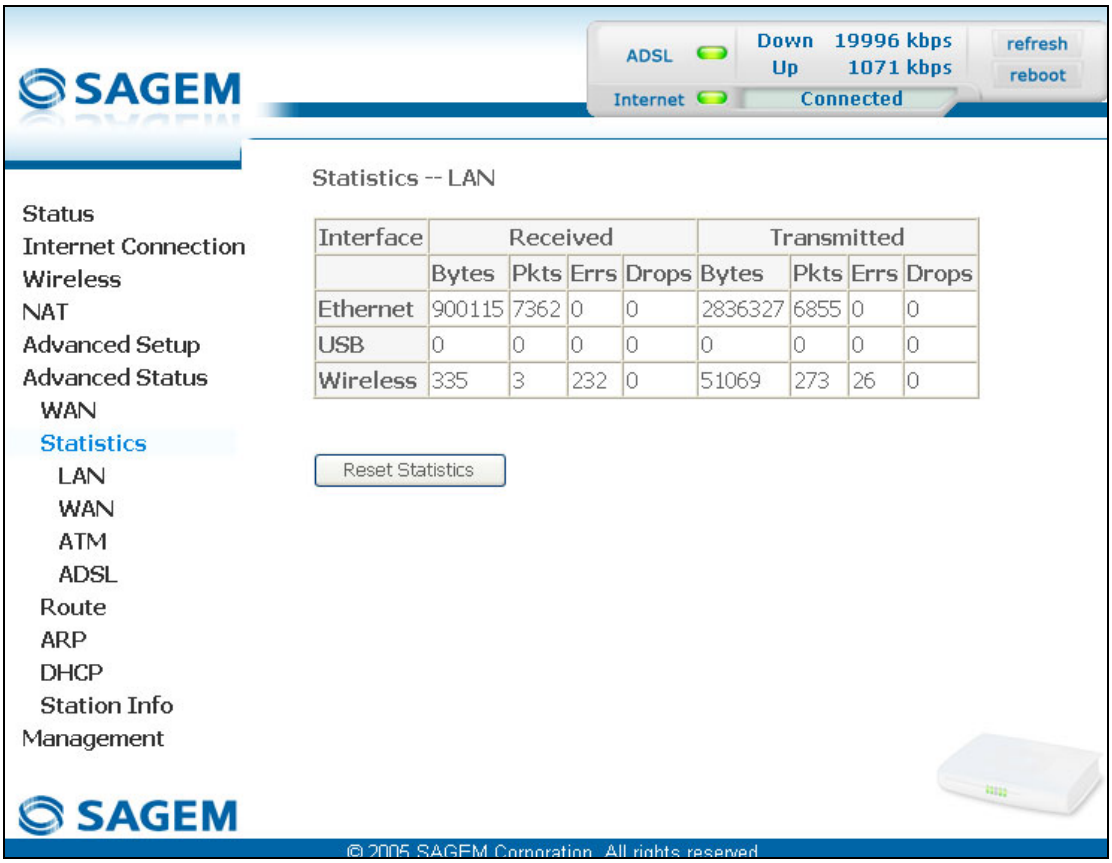
This menu contains the following four sub menus:

- 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:

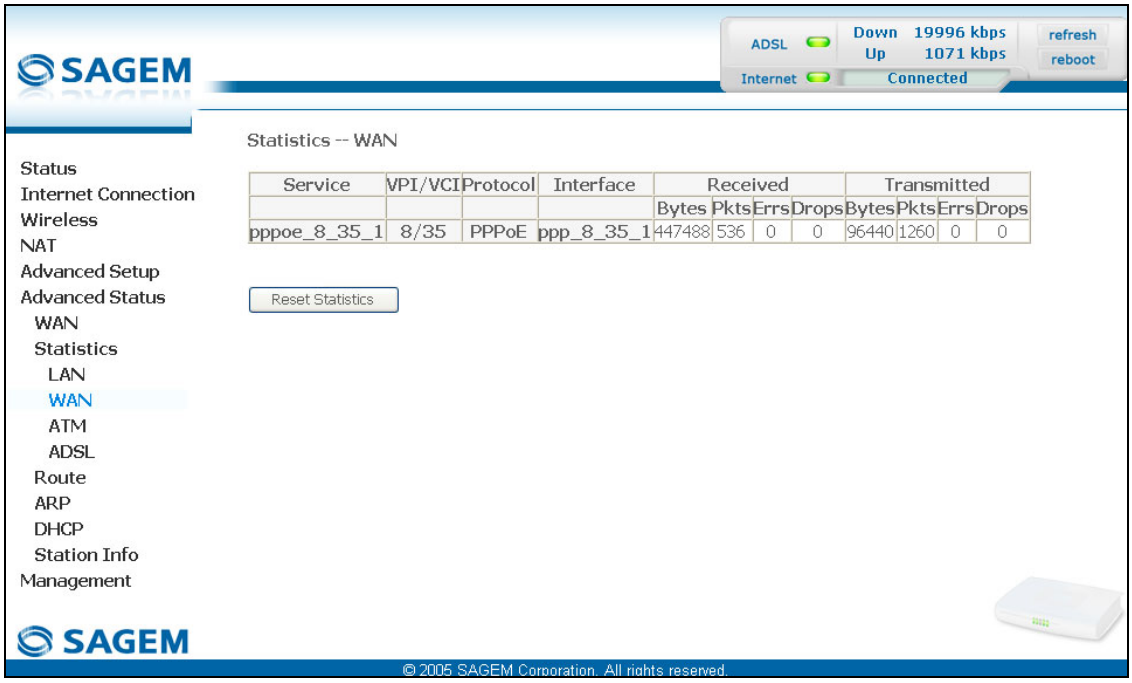


- click on the Reset Statistics button to reset statistics.

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:

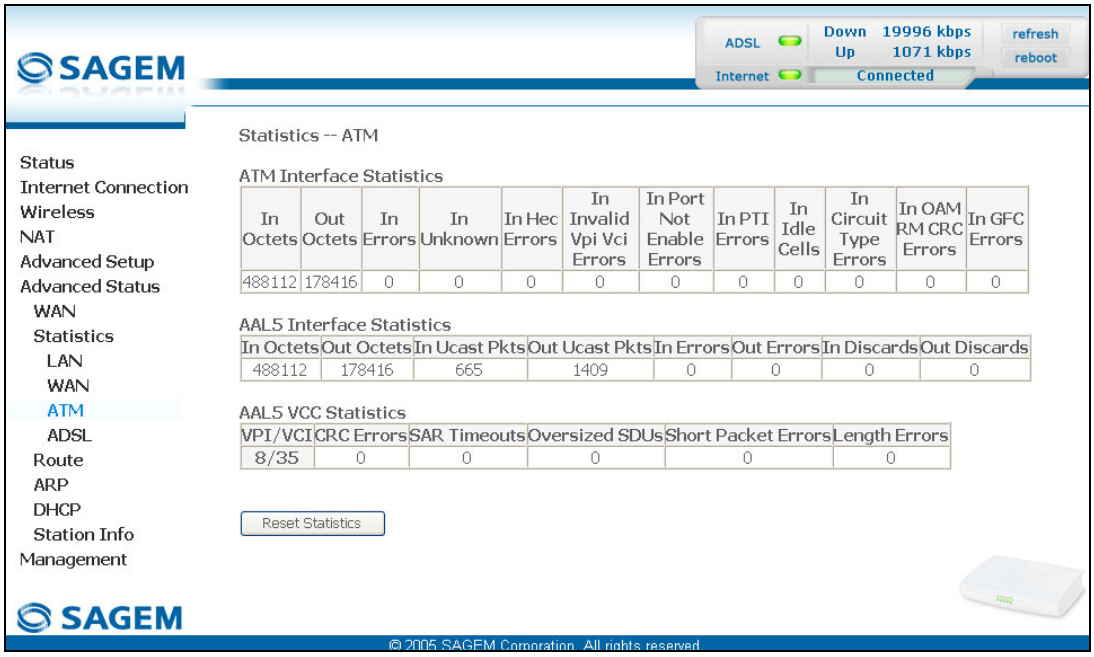


- click on the Reset Statistics button to reset statistics.

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:

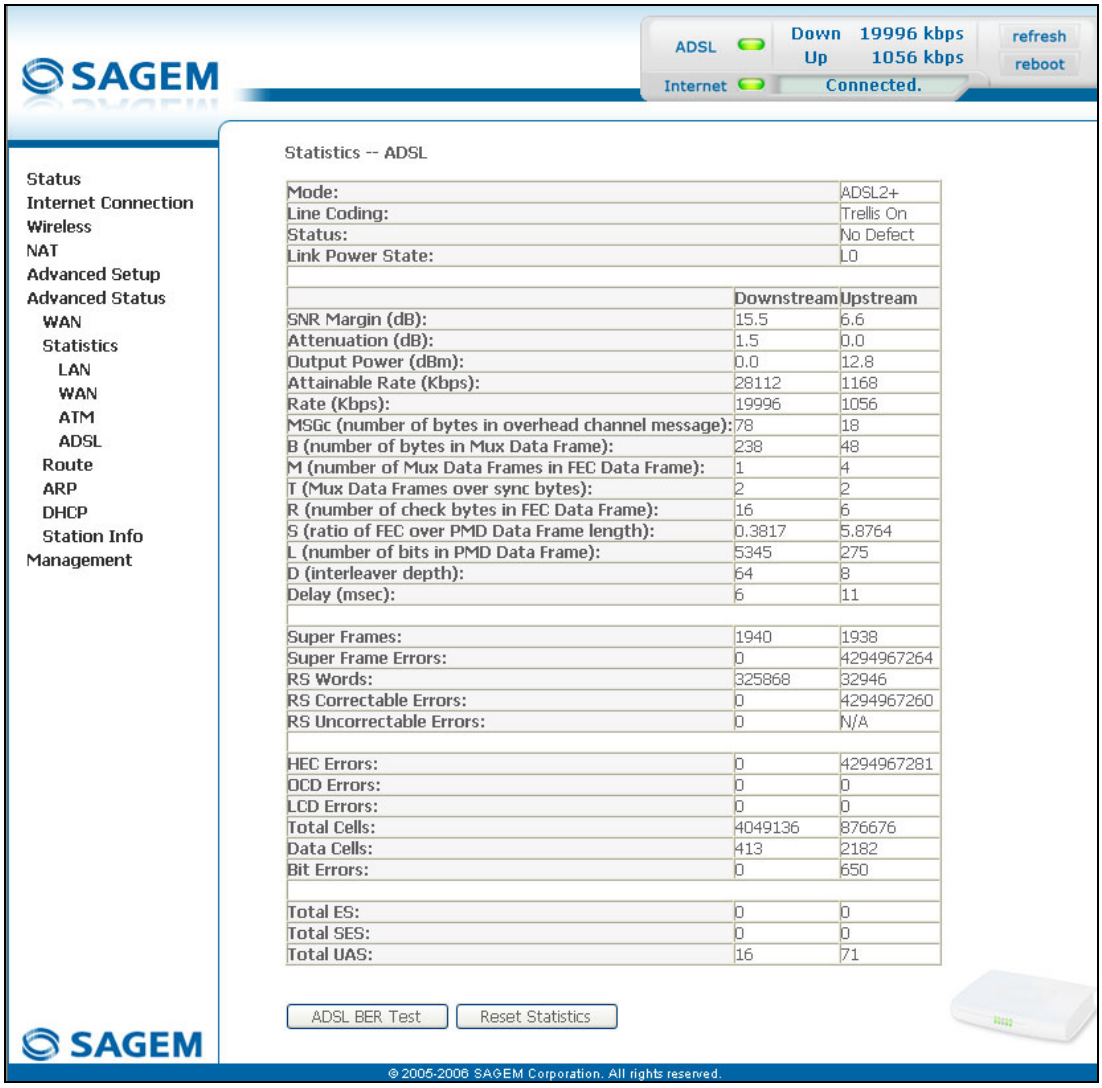


- click on the  button to reset statistics.

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:



- click on the Reset Statistics button to reset statistics.

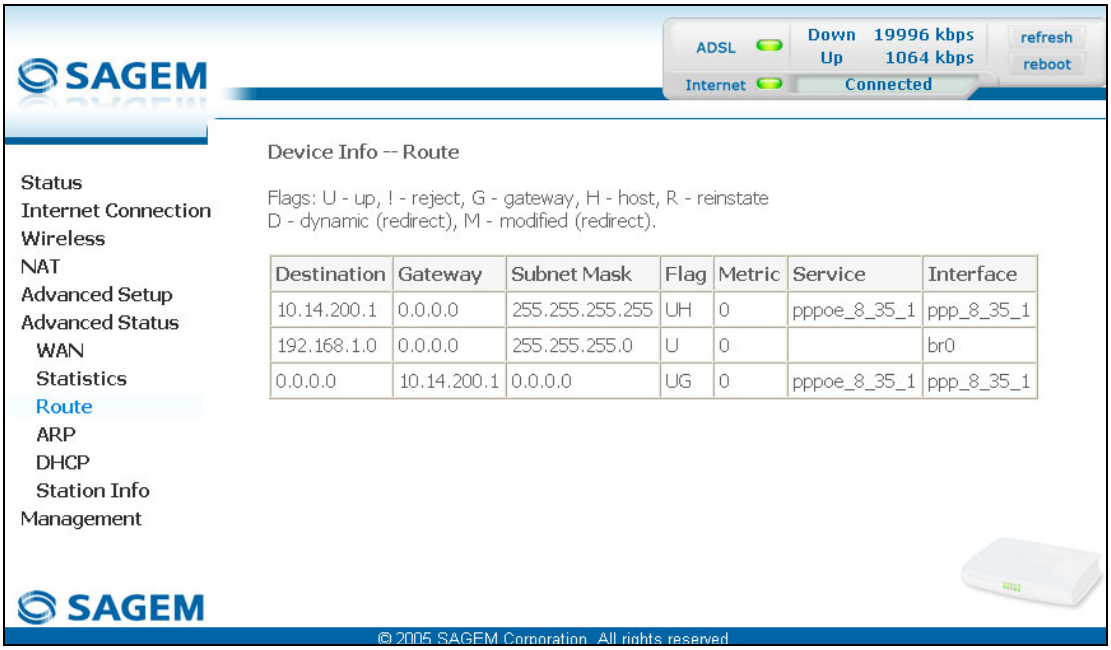
- Cliquez sur le bouton ADSL BER Test pour afficher l'écran suivant :

- in the "Test Time (sec)" field, select the test time from the scroll down list.
- Click on the Start button to run test.
- Click on the Close 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.

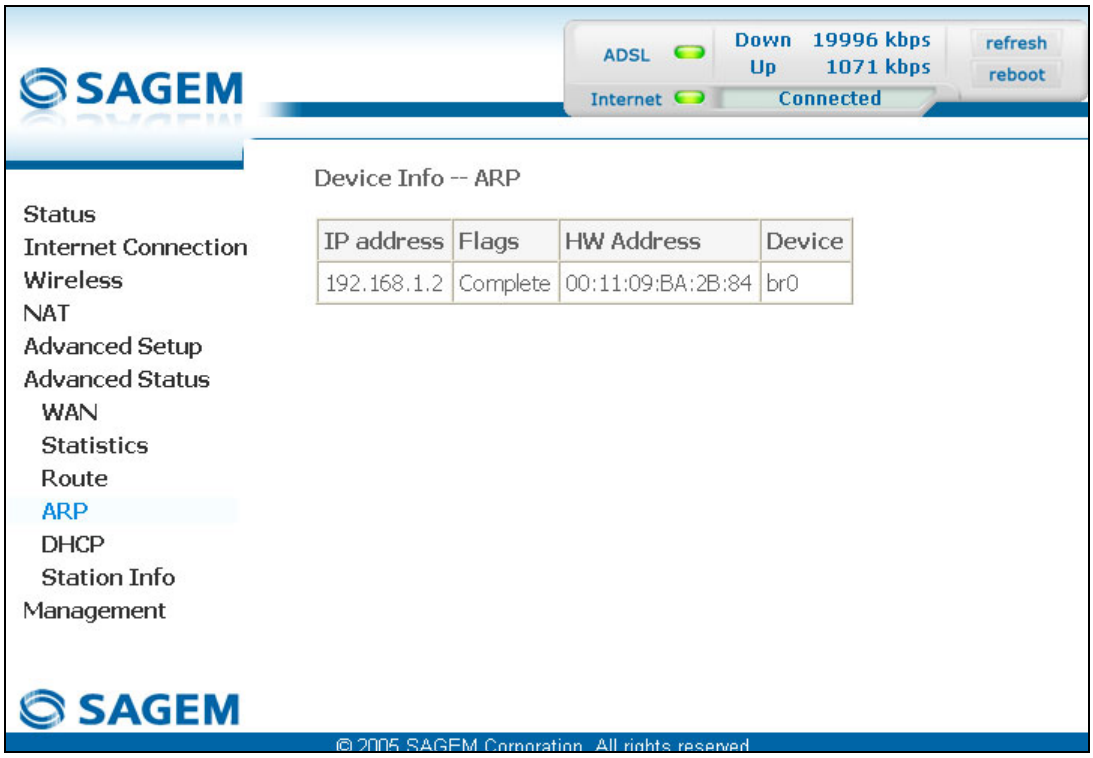
- Select the **Route** menu in the **Advanced Status** section to display the following screen:



6.10.4 ARP

Object: This menu is used to display all the information concerning address resolution (ARP: **A**ddress **R**esolution **P**rotocol). This lets you find out the physical address of a computer's network card, corresponding to an IP address.

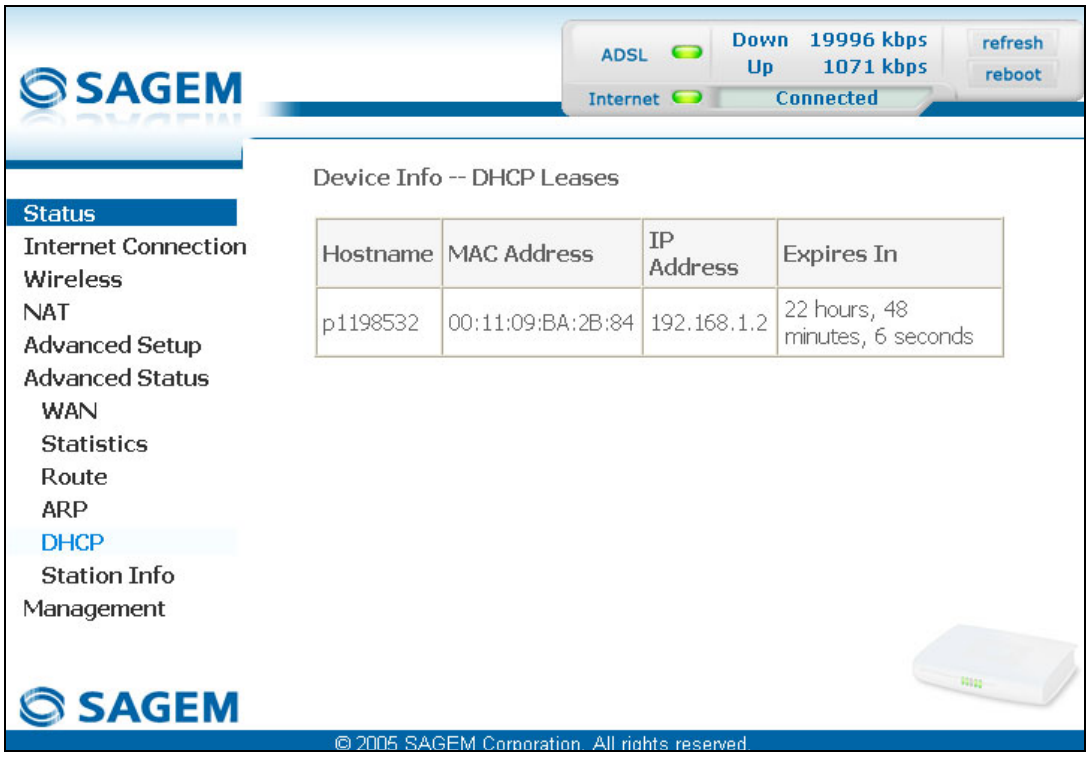
- Select the **ARP** menu in the **Advanced Status** section to display the following screen:



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.

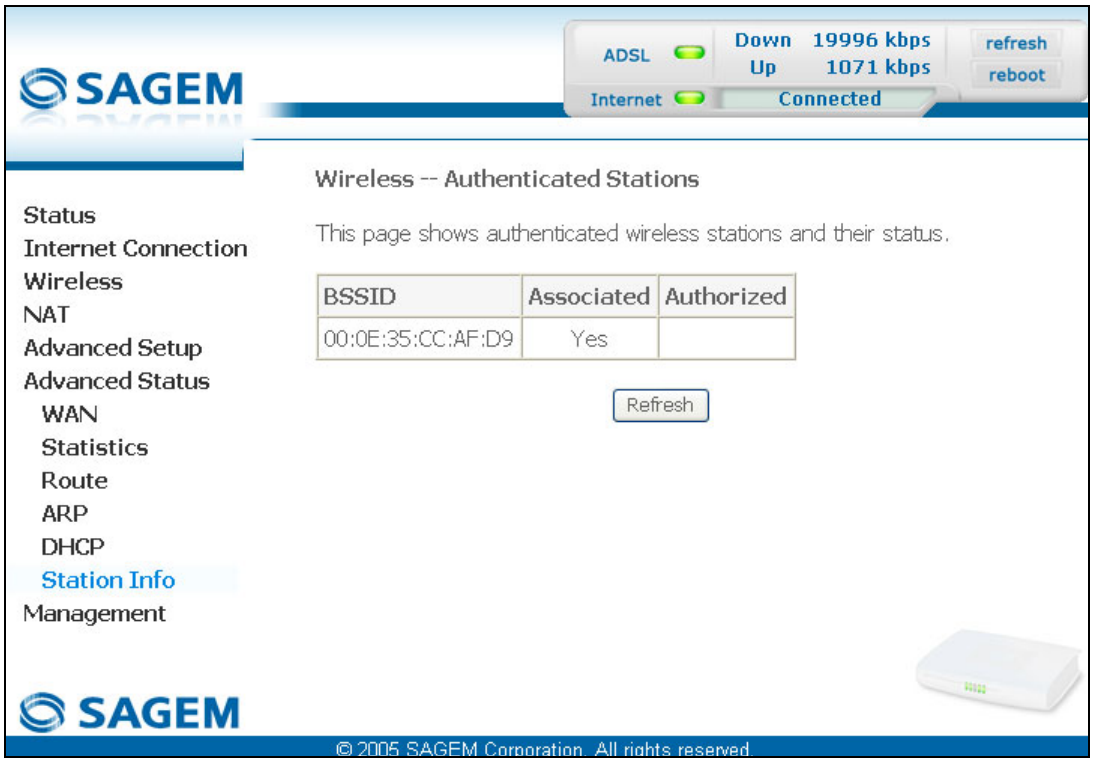
- Select the **DHCP** menu in the **Advanced Status** section to display the following screen:



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:



- Click on the Refresh 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).

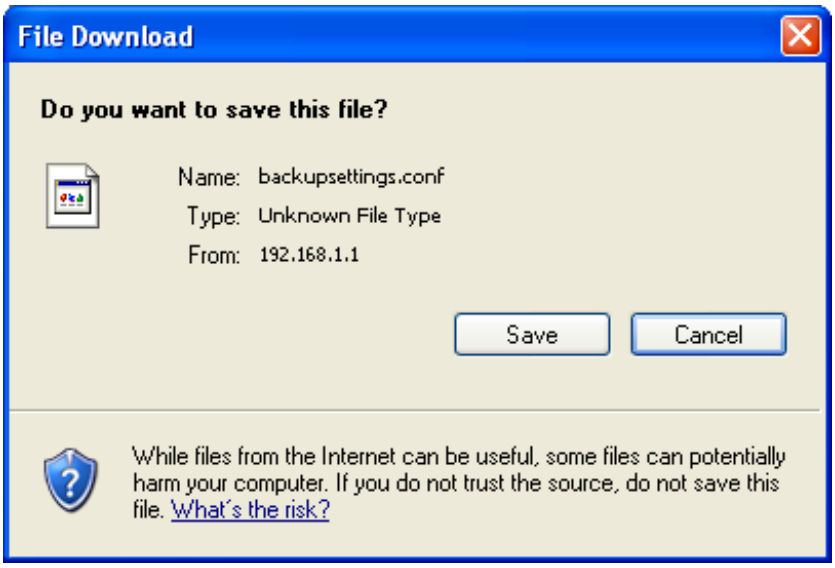
6.11.1.1 Backup

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:

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



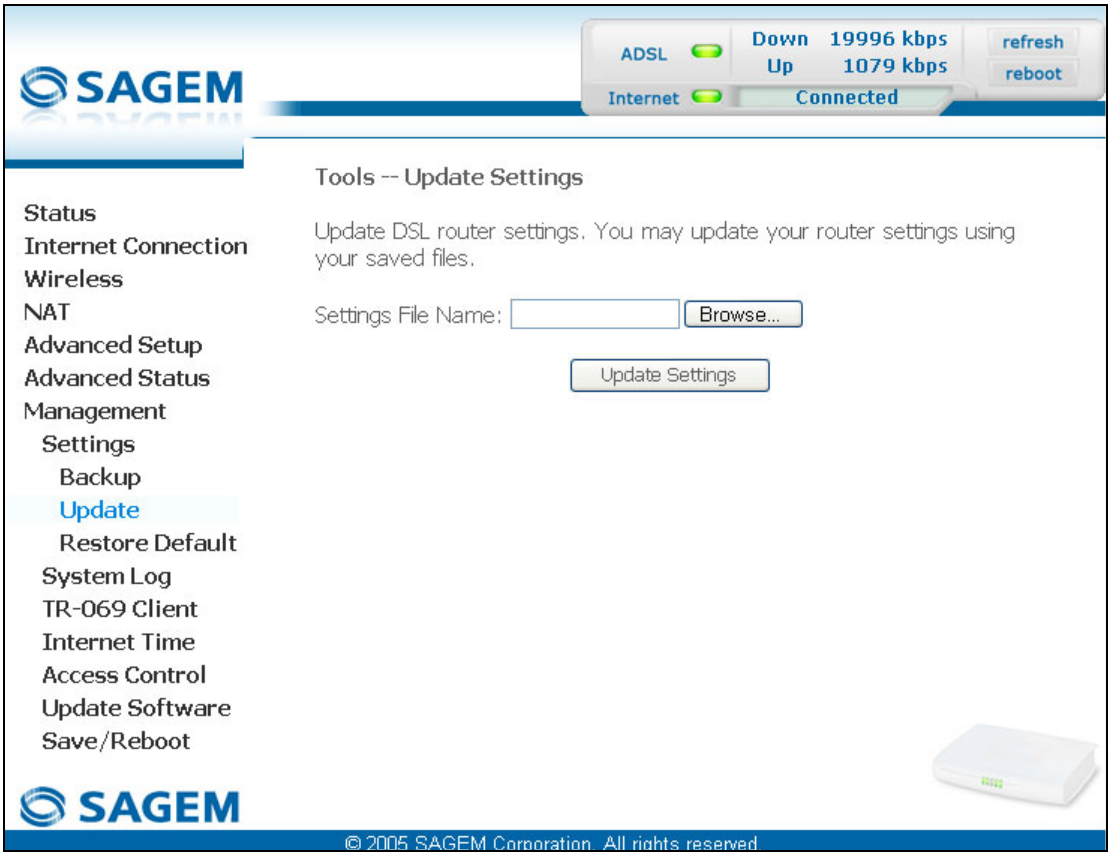
- Click on the **Save** button to save the current configuration file, for example, on your computer.
- Select the directory where you want to save the "backupsettings.conf" configuration file.

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.

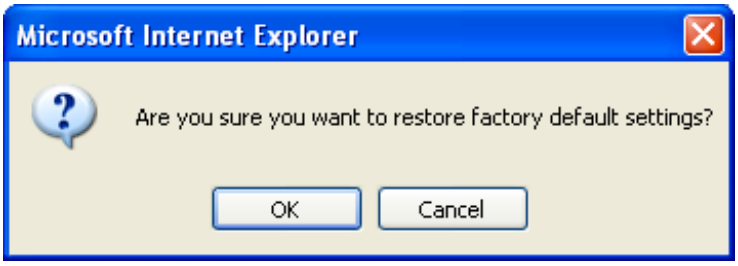
6.11.1.3 Restore Default

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.

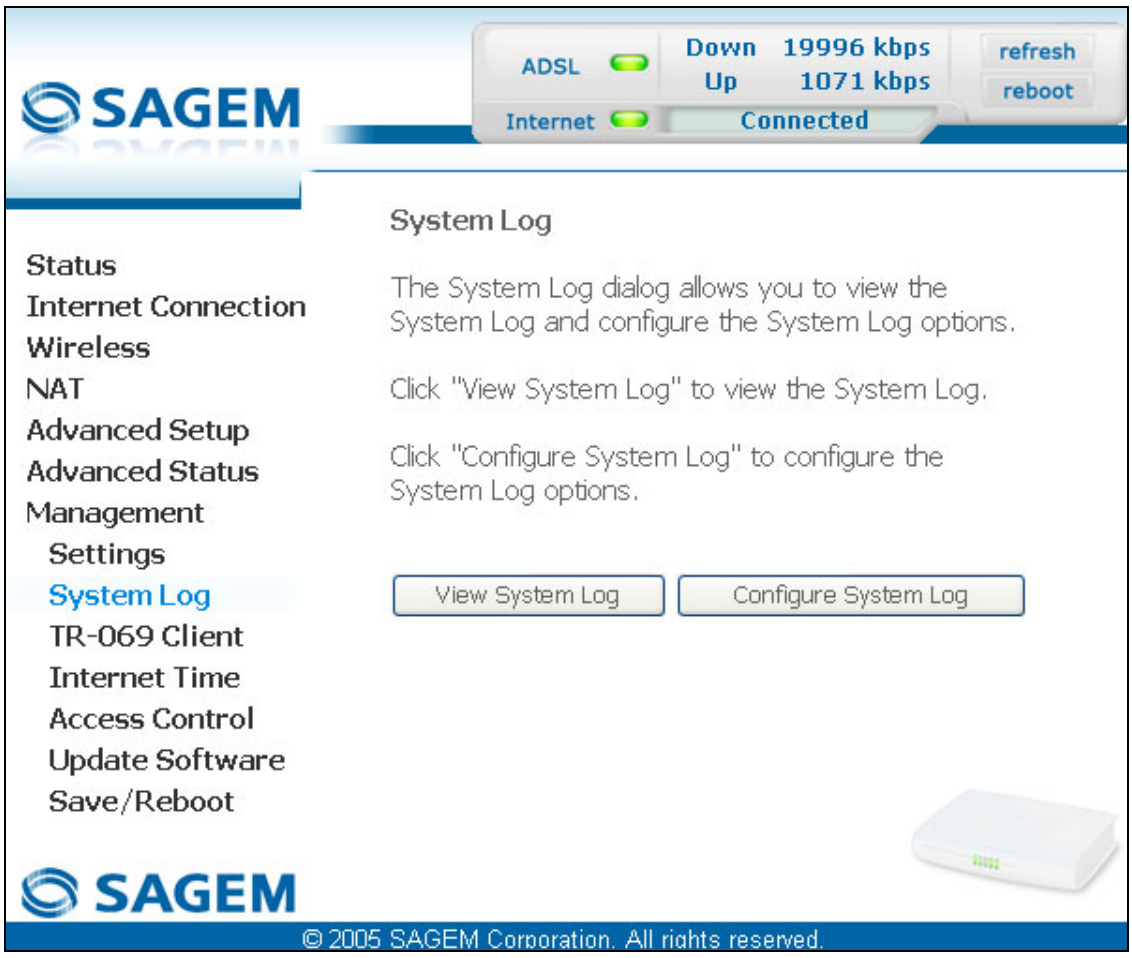
A few moments after, the screen of the "Internet Connection" menu appears. Refer to paragraph 6.6.

All the LEDs go off except for the green " " LED (WLAN) (if the wired network is activated); the green " " 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

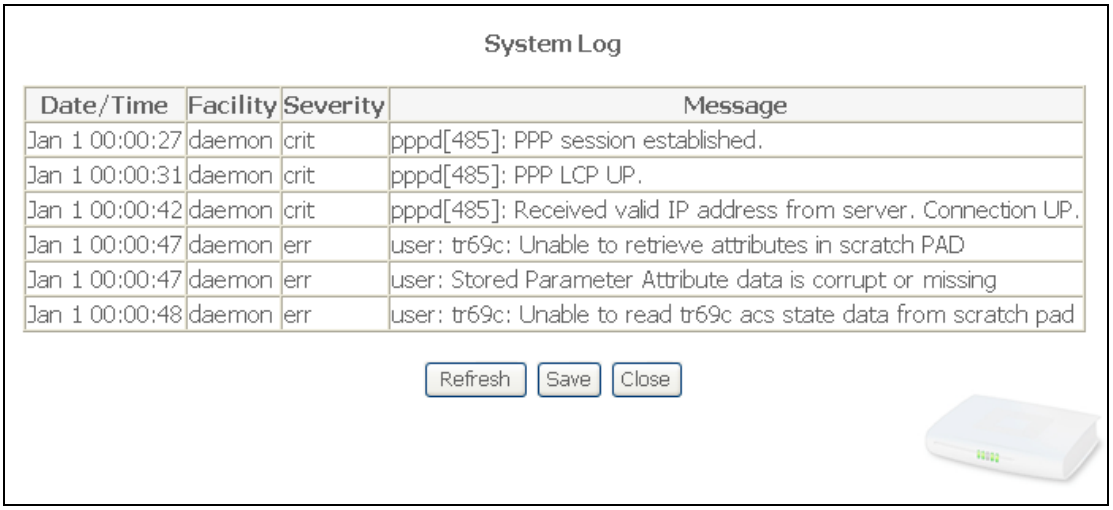
Object: This menu is used to view and/or configure the events which occur on your router.

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



View System Log

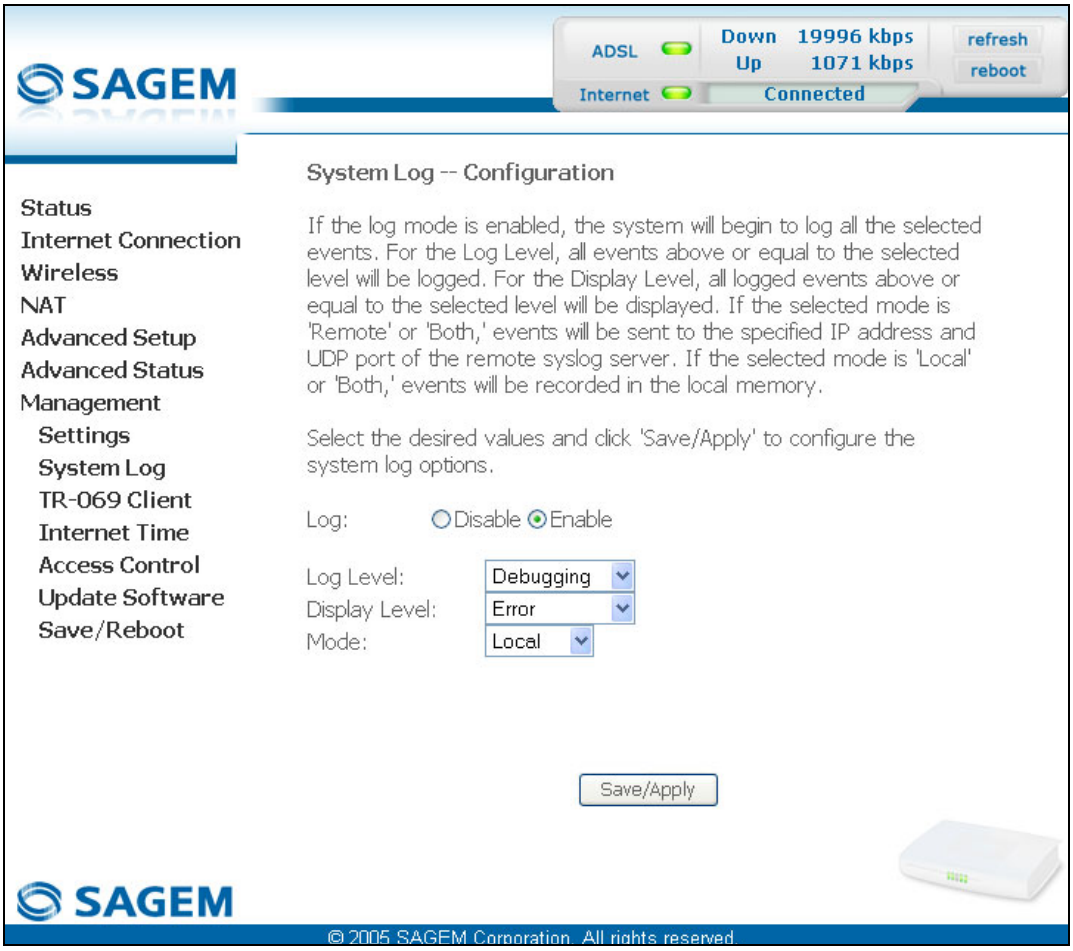
- Click on the **View System Log** button to display the events with the severity you configured (see table in the next paragraph - "**Configure System Log**").



- 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.



Field	Action	Default
Log	Select **Enable** to activate the saving of all the events to a log and display on screen or **Disable** to deactivate.	**Enable**
Log Level	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. The severities are classified in decreasing order of importance. • Emergency, • Alert, • Critical, • Error, • Notice, • Informational, • Debugging.	**Debugging**
Display Level	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 "**View System Log**" button. The severities are classified in decreasing order of importance. • Emergency, • Alert, • Critical, • Error, • Notice, • Informational, • Debugging.	**Error**

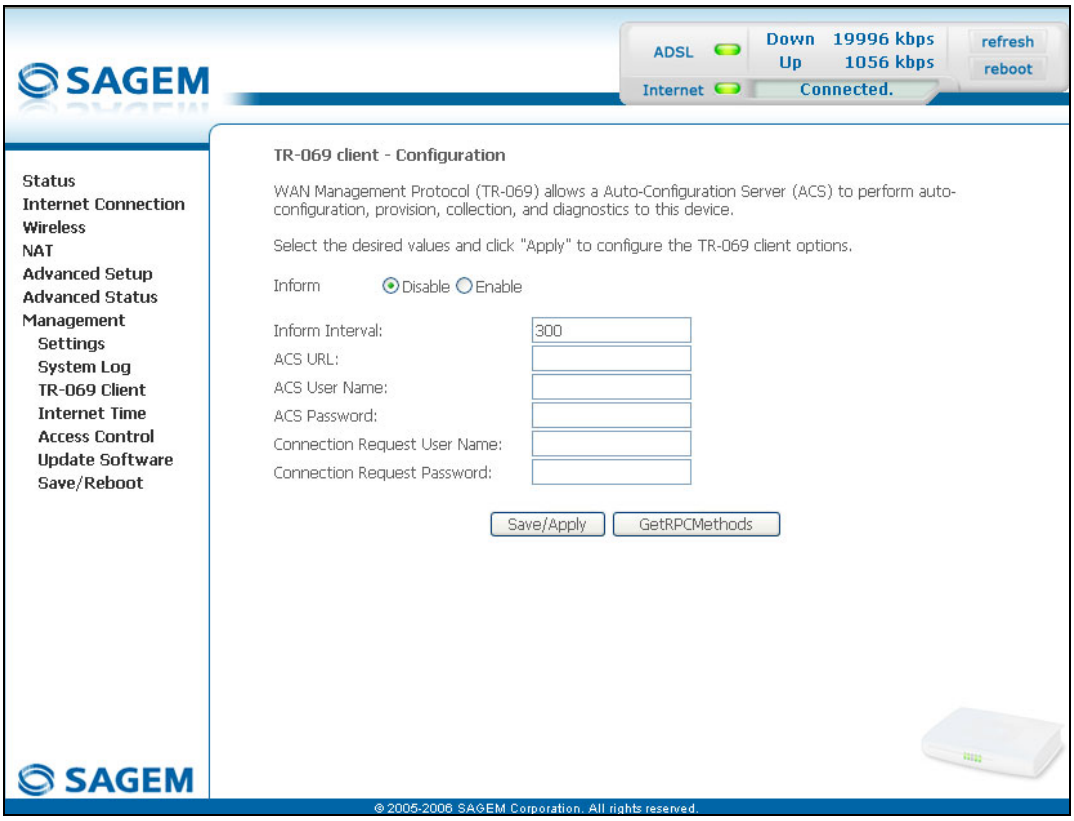
Field	Action	Default
Mode	Select the destination ID from the scroll down list: • **Local**: All the events are returned to your router via a "Buffer" memory. • **Remote**: All the events are returned to the "Syslog" server. • **Both** : Both modes.	**Local**
Server IP Address[15]	Enter the IP address of the "Syslog" address on which all the events will be saved.	**0.0.0.0**
Server UDP Port[15]	Enter the number of the port associated with the "Syslog" server.	**514**

[15] 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 (**A**uto-**C**onfiguration **S**erver (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
Inform	Check the **Enable** box to activate the "TR-069" or **Disable** to deactivate it.	**Disable**
Inform Interval	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.	**300**
ACS URL	Enter the URL or the IP address of the "ACS" server.	**Empty**
ACS User Name	Enter the name of the user of the "ACS" server.	**Empty**
ACS Password	Enter the "ACS" server password.	**Empty**

Field	Action	Default
Connection Request User Name	Enter the name of the user of your router.	**Empty**
Connection Request Password	Enter your password for your router.	**Empty**

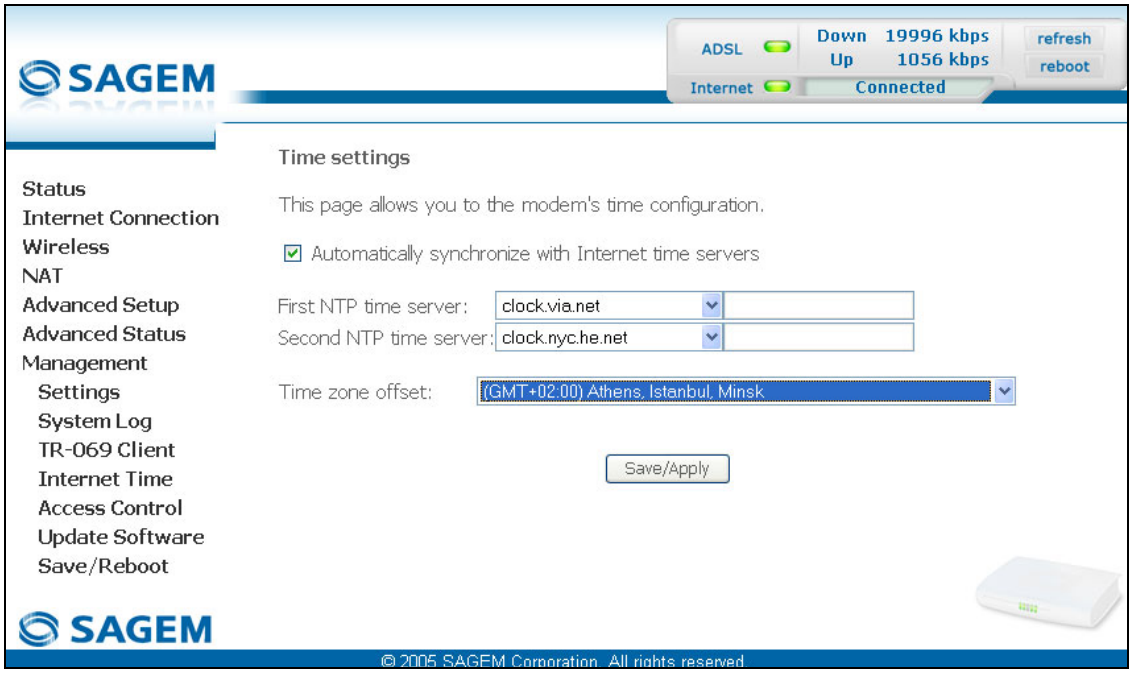
- Click on the GetRPCMethods button to launch the auto-configuration procedure of your router.

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. 1st 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
Automatically synchronize with Internet time servers	Do not check the box so that the **Date / Time** field (which appears, for example in the "Management/System Log" screens) displays the date and time delivered by your router, or Check the appropriate box so that the **Date / Time** field (which appears, for example, in the "Status/Summary" and "Management/System Log" screen) displays the date and time delivered by the NTP servers (**N**etwork **T**ime **P**rotocol) you selected. These servers display the date and time GMT (**G**reenwich **M**ean **T**ime). **Note:** For these events to be displayed and/or saved at an effective date and time, you should check this box.	**Box not checked**

Field	Action	Default
First NTP time server	Select a first NTP server from the scroll down list.	**Clock.fmt.he.net**
Second NTP time server	Select a second NTP server from the scroll down list.	**None**
Time zone offset	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).	**(GMT-12:00) International Date Line West**

6.11.5 Access Control

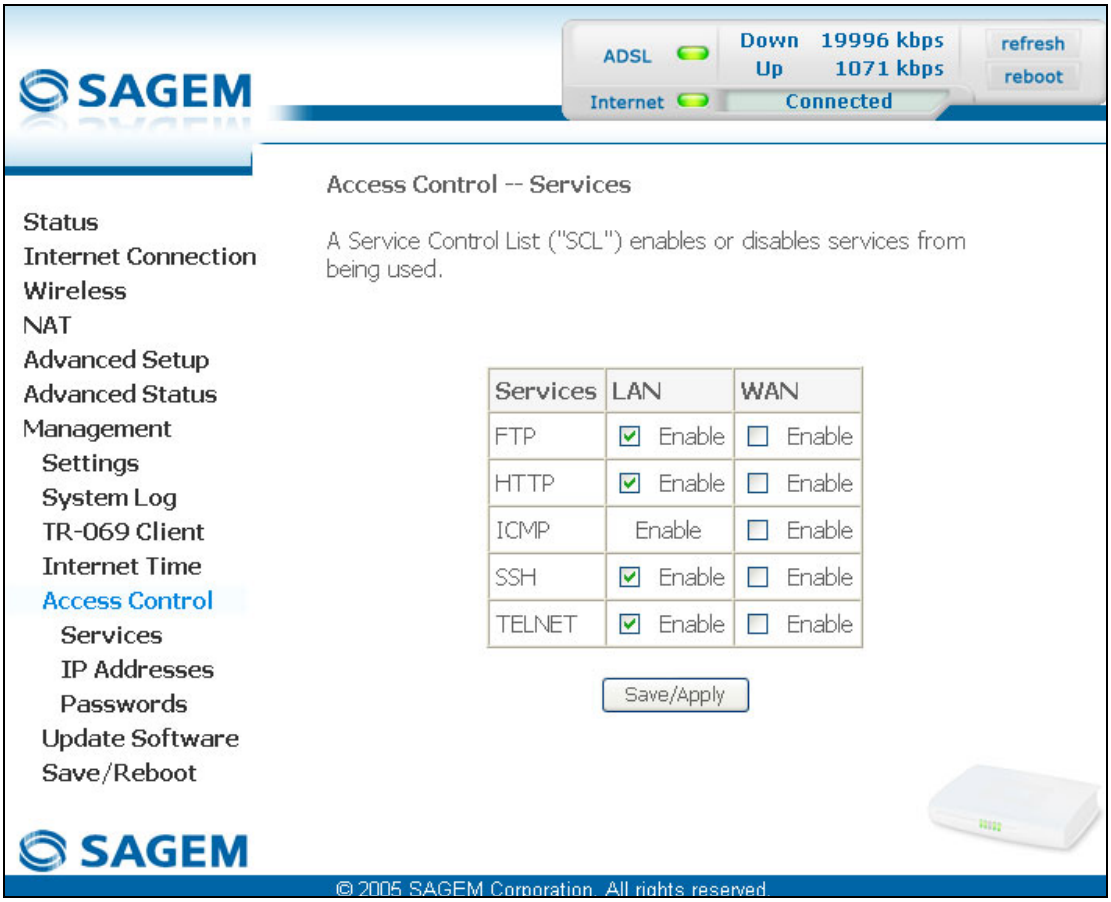
This menu contains the following three sub menus:

- 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:



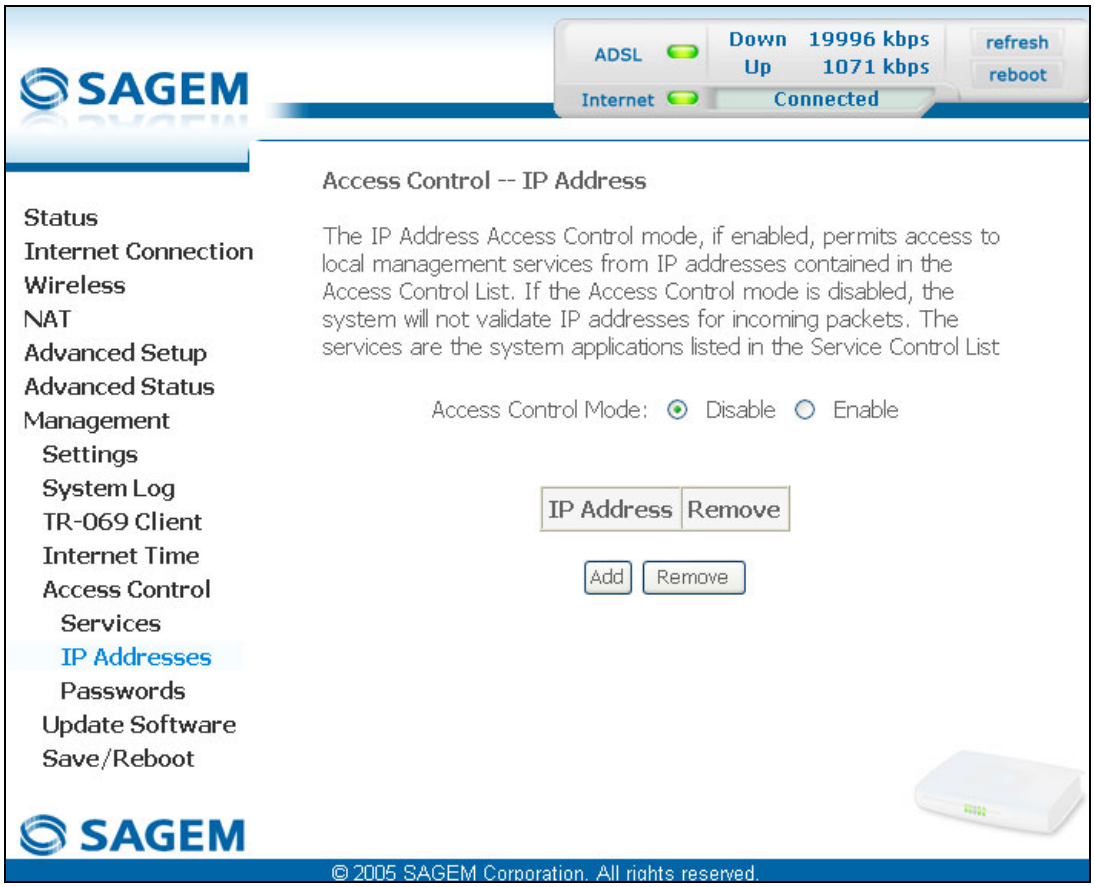
The table displayed in the screen above indicates that the services listed such as FTP, HTTP, ICMP, SSH and TELNET are all activated ("Enable" box checked) on the local network (LAN) and deactivated ("Enable" box not checked) on the remote network (WAN).

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

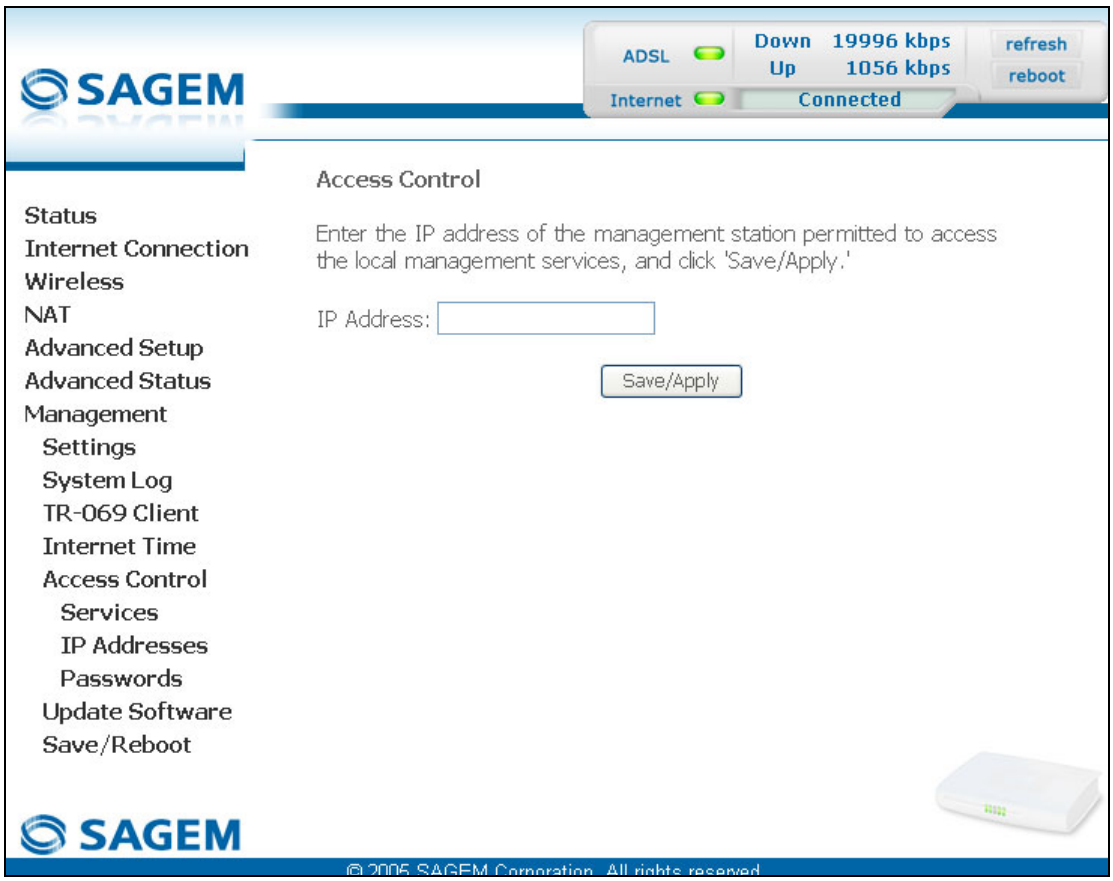
- Select the **IP Address** sub menu in the **Access Control** menu of the **Management** section to display the following screen:



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

Add

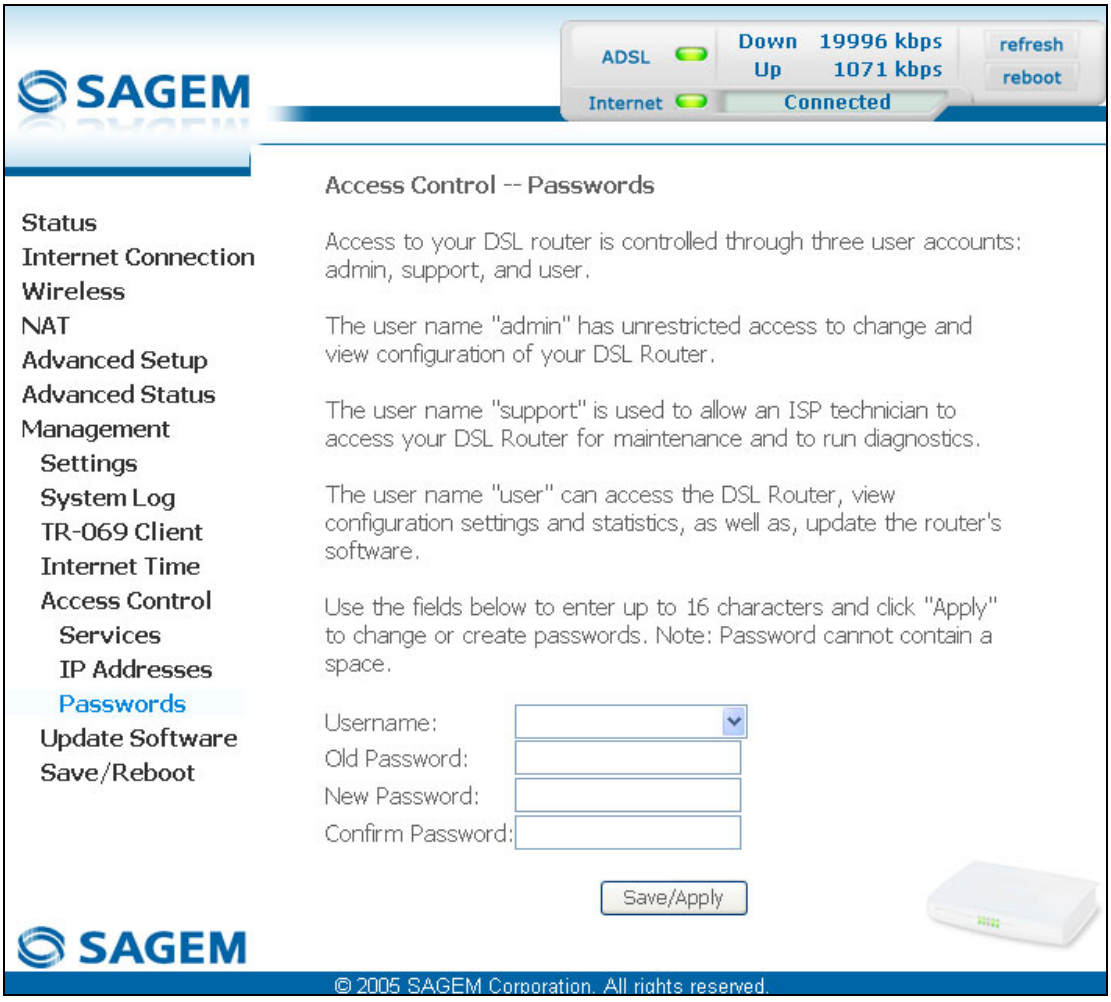
Click on the **Add** button to add an IP address.



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:



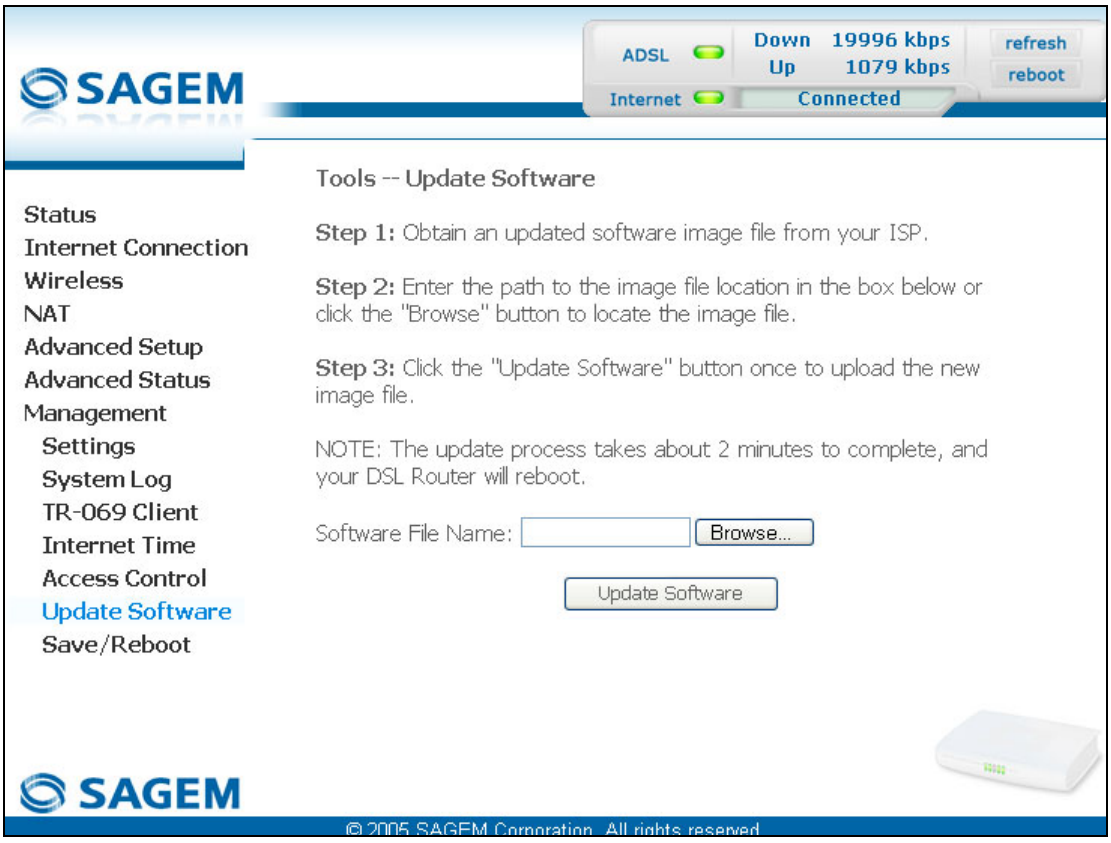
Field	Action
User Name	Select a user name from the scroll down list: • Admin, • Support, • User. **Note:** This list has been established in increasing order of restriction.
Old Password	Enter your old password
New Password	Enter your new password
Confirm Password	Confirm your new password

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.

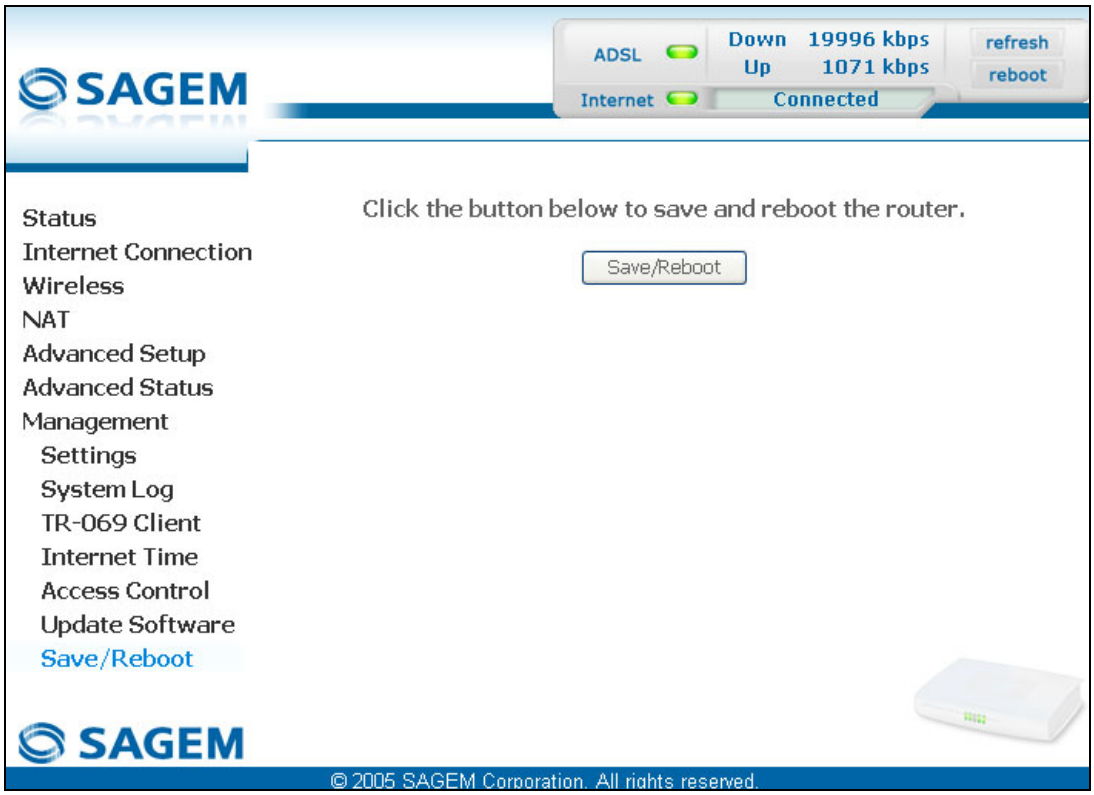
The process takes around 2 minutes.

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.

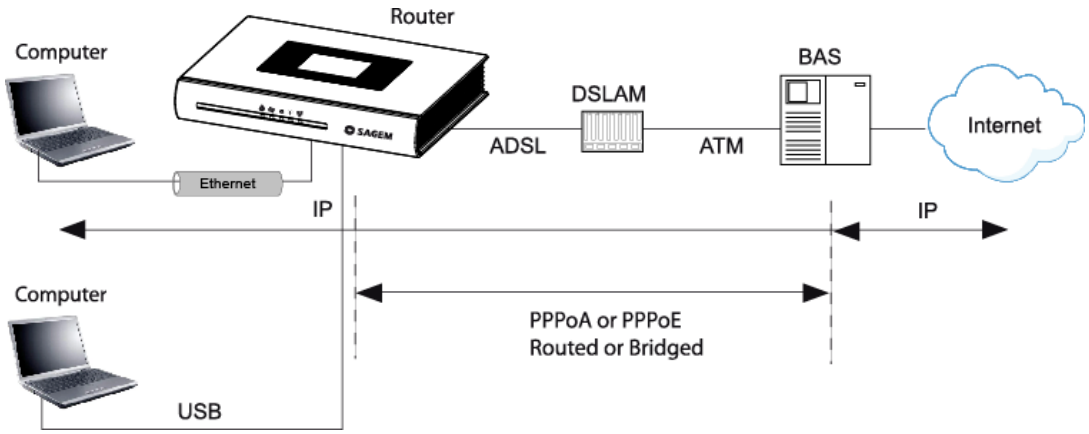
7. Internet access service

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 **I**nternet **S**ervice **P**rovider (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

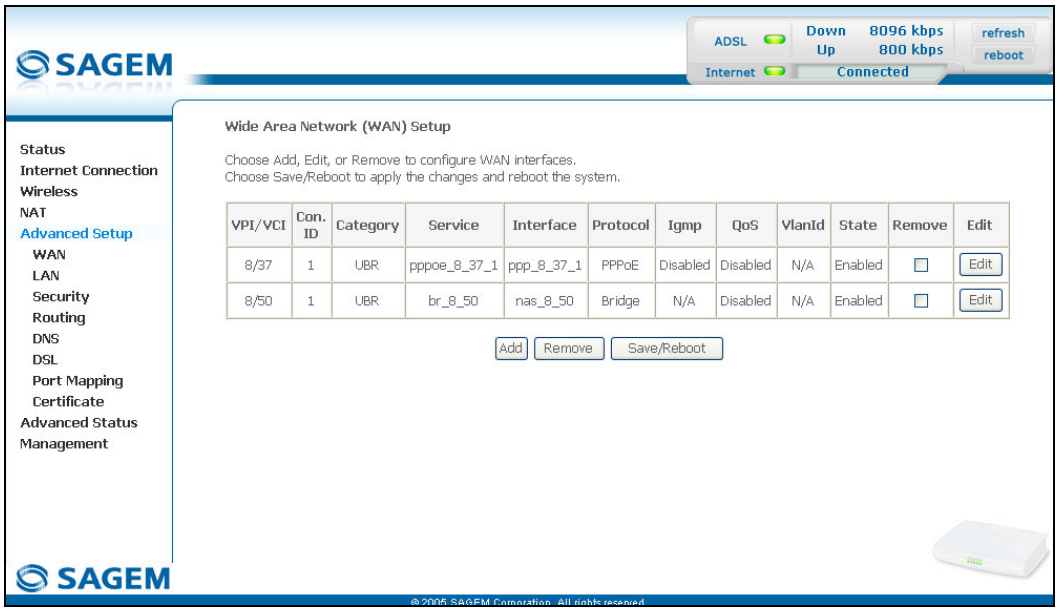
8.1 Introduction

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 **I**nternet **S**ervice **P**rovider (ISP).
- configured one VC (**V**irtual **C**hannel) dedicated to video, and another VC dedicated to data (see screen below).



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

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	**Green** : Synchronised ADSL line. **Red** : ADSL line not connected.
Internet	**Green** : Public IP address (WAN) distributed to the router. **Yellow** : Synchronised ADSL line. **Red** : Public IP address (WAN) not distributed to the router, or ADSL line not connected.

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:

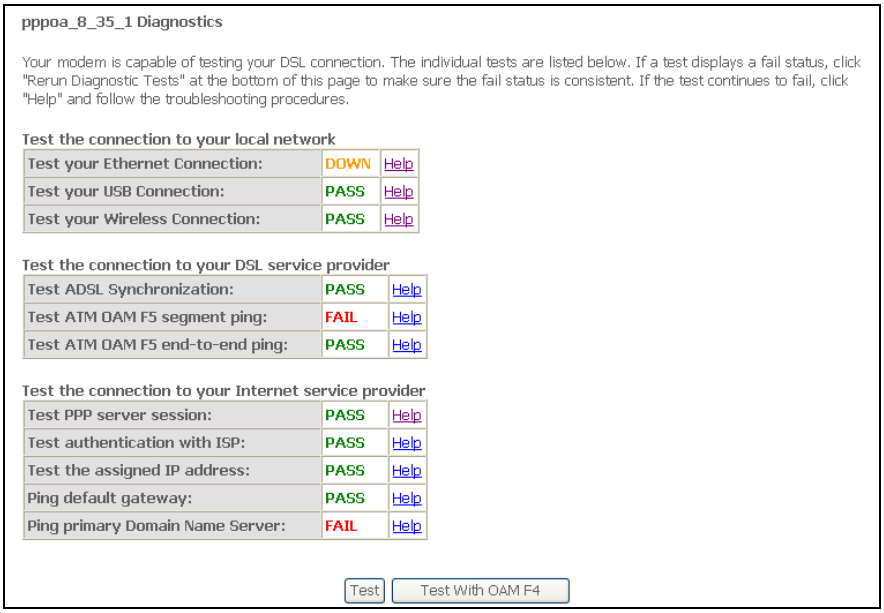
- open your browser and then, in the address bar, enter:
  - the following URL : http://myrouter,
  - or the following address : http://192.168.1.1.

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 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 **I**nternet **S**ervice **P**rovider (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
PASS	Green	Indicates that the test has completed successfully.
DOWN	Orange	Indicates that an interface (ETH, USB or Wi-Fi) has not been detected.
FAIL	Red	Indicates that the test has failed, or that it is impossible to start a command. **Note:** 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 "" LED (WLAN) (if the wireless network is activated); the green "" LED (PWR) then lights, and the initialisation process starts. It lasts for around a minute.

Note : The green "" (ADSL) and "" (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 "" LED (WLAN) (if the wired network is activated); the green "" 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 **I**nternet **S**ervice **P**rovider (ISP) (cf. Internet Connection section - § 6.6).

A.8 Offline mode

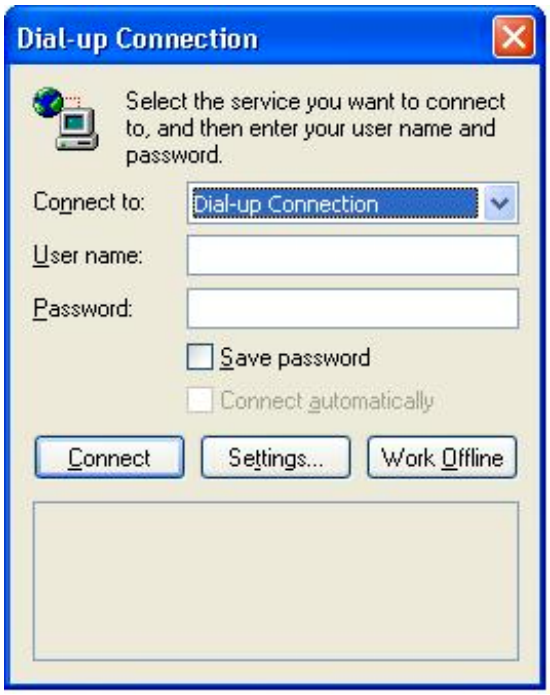
To start configuring the router in HTTP mode, the browser opens, the default IP address of the router's LAN interface appears in the browser's Address field **but the home screen does not appear**.

The screen opposite appears.

Click Connect .

The screen opposite appears.

Click Settings... .



The screen opposite appears.

Select the Connections tabs and then the "**Never dial a connection**"[1].

Click OK 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.

[1] 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

Connectors	*Position*	*Safety level*
LINE	ADSL port	TNV3[1]
USB	USB interface port	SELV[2]
ETH or ETH1[3]	Ethernet port	SELV[2]
ETH2[3]		SELV[2]
ETH3[3]		SELV[2]
ETH4[3]		SELV[2]
PWR	Primary power port	HPV[4]

[1]Level **3** **T**elecommunication **N**etwork **V**oltage
[2]**S**afety **E**xtra **L**ow **V**oltage Circuit
[3]Only for SAGEM F@st™ 2404 and 2444
[4]**H**azardous **P**rimary **V**oltage circuit

B.2 CE compliance declaration

CE

Products bearing this symbol are in compliance with EMC regulations and the Low Voltage Directive published by the **E**uropean **C**ommunity **C**ommission (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.

Annex B - Warnings for safety

C. Annex C - Environment

This section covers	➢ directive E 2002/96/CE	§ C.1

C.1 Directive E 2002/96/CE

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.

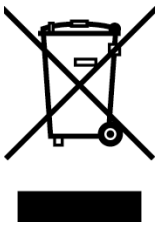
PACKAGING

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 **E**lectrical **E**lectronic **E**quipment **W**aste, 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

Mechanical characteristics		
Dimensions (mm)	• Width	: 195 Dimensions (mm)
	• Depth	: 138 mm
	• Thickness	: 32 mm
Weight of router		: 330 g

Display		
Marking	**Abbreviation**	**Meaning**
	**PWR**	• **Green/Red Power LED**
	**ADSL**	• **Green ADSL LED**
	**Internet**	• **Green/Red Internet LED**
	**WLAN**	• **Green ADSL LED**
	**LAN**	• **Green local network (LAN) LED**

D.2 Characteristics of the different interfaces

Ethernet LAN interface	
Transmission rate	• 10 Mbit/s or 100 Mbit/s, self-configurable
	• Half/Full Duplex
Standard	• 802.3 mm
Connection technology	• RJ45 (1 connector for SAGEM F@st™24x0 or 4 connectors for SAGEM F@st™ 24xx)
	• Type MDI or MDI-x self-detecting port
	• Crossed or straight cord

ADSL/ADSL2/ADSL2+ interface	
Transmission code	• DMT
Standards supported	• High-performance secure Bridge/Router with ADSL/ADSL2/ADSL2+ interface,
	• G.994.1 (G.Handshake)
Maximum upward transmission rate	• 1.3 Mbit/s
Maximum downward transmission rate	• 24.5 Mbit/s
Latency	• Simple (Fast or Interlaced)

USB Interface	
Transmission rate	• 1.5 Mbit/s to 12 Mbit/s
Standard	• USB 1.1
Data	• Asynchronous
Transmission mode	• bidirectional
Consumption	• none (only a voltage detection for the high-impedance port of a computer)
Connection technology	• USB - Type B

Wireless Interface	
Standard	• **IEEE 802.11b DSSS**
Frequencies band	• 2400 MHz to 2497 MHz (ISM band)
Transmission rate	• 1/2/5.5/11 Mbit/s
Modulation method	• DBPSK, DQPSK, CCK
Safety	• WEP 64 / 128 bits
	• Filtering by list of MAC addresses
	• WPA (encryption mode: TKIP or AES)
Range	• Up to 300 m in free space
	• 10 to 100 m inside buildings
Standard	• **IEEE 802.11b DSSS**
Frequencies band	• 2400 MHz to 2497 MHz (ISM band)
Transmission rate	• 6 / 9 / 12 / 18 / 24 / 36 / 48 / 54 Mbit/s
Modulation method	• OFDM, CCK
Safety	• WEP 64 / 128 bits
	• Filtering by list of MAC addresses
	• WPA (encryption mode: TKIP or AES)
Range	• 200 m in free space
	• 30 m inside buildings

Input/Output supply	
Type	• Plug-in external adapter unit
Class	• II
Input	• 198 to 253 VAC, 50/60 Hz, 0.4 A
Output	• +12 VDC/650 mA
Mains connection technology	• Europlug type C socket

D.3 Environmental characteristics

Climatic and mechanical environment	
Storage	• ETS 300 019-1-1 Category T1.2
Transport	• ETS 300 019-1-2 Category T2.3
Operation	• ETS 300 019-1-3 Category T3.2 Temperature: +5°C/+45°C

Electrical robustness	
Standard	• UIT-T K21 Ed 2000 : basic level

Electromagnetic compatibility	
Susceptibility/Emission	• EN 301 489-1 Ed . 2002
	• EN 301 489-17 Ed . 2002

Radio part for ISM band at 2.4 GHz	
Emission 802.11g/b	• ETR 300 328-2 Ed . July 2000

D.4 Application and protocols

IP characteristics	
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)	• Static
NAT/PAT	• 8 maps maximum

Encapsulation protocols	
PPP over ATM (PPPoA)	• RFC 2384
PPP over Ethernet (PPPoE)	• RFC 2516
Routed or Bridged	• RFC 2684

Configuration	
HTTP	• LAN or WAN port (with specific option)
Management	• From ETH, USB and WAN (with specific option)
Downloading of version	• Client by http mode

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	**admin**
Password	**admin**

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[1] IP address		
ETH2[1]IP Address		
ETH3[1]IP address		
ETH2[1]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

[1]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	**sagem_xxxx** 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

Annex E - Default configuration

F. Annex F - Glossary

Glossary

ACL	**A**ccess **C**onfiguration **L**ist
ADSL	**A**synchronous **D**igital **S**ubscriber **L**ine
AP	**A**ccess **P**oint
ARP	**A**ddress **R**esolution **P**rotocol
CC	**C**ontinuity **C**heck
CCK	**C**omplimentary **C**ode **K**eying
CHAP	**C**hallenge **H**andshake **A**uthentification **P**rotocol
CLI	**C**ommand **L**ine **I**nterface
CTS	**C**lear **T**o **S**end
DBPSK	**D**emodulator **B**aseband **P**hase **S**hift **K**eying
DECT	**D**igital **E**nhanced **C**ordless **T**elephone
DHCP	**D**ynamic **H**ost **C**onfiguration **P**rotocol
DMT	**D**iscrete **M**ulti**T**one
DNS	**D**omain **N**ame **S**erver
DQPSK	**D**ifferential **Q**uadrature **P**hase **S**hift **K**eying
DSSS	**D**irect **S**equence **S**pread **S**pectrum
DTIM	**D**elivery **T**raffic **I**ndication **M**essage
DTMF	**D**ual **T**one **M**ulti-**F**requency
ESSID	**E**xtended **S**ervice **S**et **ID**entifier
FAI	**F**ournisseur d'**A**ccès à **I**nternet
FHSS	**F**requency **H**opping **S**pread **S**pectrum
FTP	**F**ile **T**ransfert **P**rotocol
HTML	**H**yper **T**ext **M**arkup **L**anguage
HTTP	**H**yper **T**ext **T**ransfer **P**rotocol
ICMP	**I**nternet **C**ontrol **M**essage **P**rotocol
IEEE	**I**nstitute of **E**lectrical and **E**lectronics **E**ngineers
IEEE 802.11b/g	Specifications which use the MAC protocol suitable for the wireless local network (WLAN) in the 2.4 GHz band
IGMP	**I**nternet **G**roup **M**embership **P**rotocol
IP	**I**nternet **P**rotocol
IPQoS	**Q**ualité **IP**
ISDN	**I**ntegrated **S**ervice **D**igital **N**etwork
ISP	**I**nternet **S**ervice **P**rovider
LAN	**L**ocal **A**rea **N**etwork
LCP	**L**ink **C**ontrol **P**rotocol
LLC	**L**ogical **L**ink **C**ontrol (encapsulation avec en-tête)
MAC	**M**edium **A**ccess **C**ontrol
MDI	**M**edia **D**ependent **I**nterface

MER	**M**AC **E**ncapsulation Routing
MTU	**M**aximum **T**ransfer **U**nit
NAPT	**N**etwork **A**ddress **P**ort **T**ranslation
NAT	**N**etwork **A**ddress **T**ranslation
OAM	**O**peration, **A**dministration and **M**aintenance
PA	**P**oint d'**A**ccès
PAP	**P**assword **A**uthentification **P**rotocol
PCI	**P**eripheral **C**omponent **I**nterconnect
PCM	**P**ulse **C**ode **M**odulation
PCMA	**P**ulse **C**ode **M**odulation Loi **A**
PCMCIA	**P**ersonal **C**omputer **M**emory **C**ard **I**nternational **A**ssociation
PCMU	**P**ulse **C**ode **M**odulation Loi **mu**
PID	**P**rotocol **ID**entifier
PING	**P**acket **I**nter**N**et **G**roper
PLC	**P**aquet **L**oss **C**oncealment
POP	**P**oint de **P**résence
POTS	**P**lain **O**ld **T**elephone **S**ervice
PSTN	**P**ublic **S**witching **T**elephonic **N**etwork
PPP	**P**oint to **P**oint **P**rotocol
PPPoE	**PPP o**ver **E**thernet
PVC	**P**ermanent **V**irtual **C**ircuit
QoS	**Q**uality of **S**ervice
RADIUS	**R**emote **A**uthentication **D**ial-**I**n **U**ser **S**ervice
RFC	**R**equest **F**or **C**omments
RGW	**R**esidential **G**ate**W**ay (Passerelle Résidentielle)
RNIS	**R**éseau **N**umérique **I**ntégration de **S**ervices
RIP	**R**outing **I**nformation **P**rotocol
RTCP	**R**eal **T**ime **C**ontrol **P**rotocol
RTP	**R**eal-time **T**ransport **P**rotocol
SCR	**S**ustained **C**ell **R**ate
SMTP	**S**imple **M**ail **T**ransfer **P**rotocol
SIP	**S**ession **I**nitiation **P**rotocol
SNDCP	**S**ub **N**etwork **D**ependent **C**onvergence **P**rotocol
SNAP	**S**ubNetwork **A**ttachment **P**oint
SNMP	**S**imple **N**etwork **M**anagement **P**rotocol
SSID	**S**ervice **S**et **ID**entifier
STB	**S**et **T**op **B**ox
TCP	**T**ransmission **C**ontrol **P**rotocol
TELNET	**TEL**ecommunication **NET**work
TFTP	**T**rivial **F**ile **T**ransfer **P**rotocol
UBR	**U**nspecified **B**it **R**ate
UDP	**U**ser **D**atagram **P**rotocol
URL	**U**niformed **R**esource **L**ocator
USB	**U**niversal **S**erial **B**us

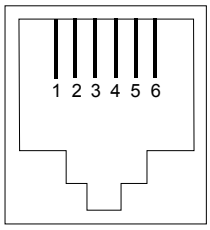
UTP	**U**nshielded **T**wisted **P**air
VAD	**V**oice **A**ctivity **D**etection
VBR-nrt	**V**ariable **B**it **R**ate - **n**on **r**eal **t**ime
VBR-rt	**V**ariable **B**it **R**ate - **r**eal **t**ime
VC	**V**irtual **C**hannel
VCC	**V**irtual **C**hannel **C**onnection
VCI	**V**irtual **C**hannel **I**dentifier
VC MUX	**VC** M**u**ltiple**X**ing (encapsulation sans en-tête)
VoIP	**V**oice **o**ver **IP** (Voix sur IP)
VP	**V**irtual **P**ath
VPI	**V**irtual **P**ath **I**dentifier
VPN	**V**irtual **P**rivate **N**etwork
WAN	**W**ide **A**rea **N**etwork
WEB	Meshed network of information servers
WEP	**W**ired **E**quivalent **P**rivacy
WFQ	**W**eighted **F**air **Q**ueuing
Wi-Fi	**Wi**reless **Fi**delity (réseau sans fil)
WLAN	**W**ireless **L**ocal **A**rea **N**etwork
WPA	**W**ireless **P**rotected **A**ccess

G. Annex G - Connector Technology

This section covers	➢ pinouts of the "**LINE**" connector	§ G.1
	➢ pinouts of the "**PWR**" connector	§ G.2
	➢ pinouts of the "**ETH**", "**ETH1**" to "**ETH4**" connectors	§ G.3
	➢ pinouts of the "**USB**" Connector	§ G.4

G.1 Pinouts of the "LINE" connector

The equipment is connected to ADSL using a RJ11 fixed connector (6 contacts).



Contact N°	Signal	Meaning
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

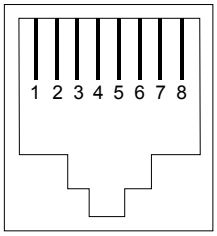
G.2 Pinouts of the "ADSL" connector

The mains unit is connected to the equipment using the miniature fixed connector of the case.

Pin	Signal	Meaning
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).

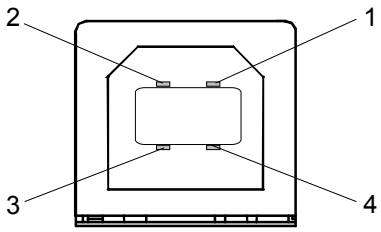


Contact N°	Signal	Meaning
1	TXD+	(+) Emission to terminal
2	TXD-	(-) Emission to terminal
3	RXD+	(+) Reception of terminal
4	NC	Not connected
5	NC	Not connected
6	RXD-	(-) Reception of terminal
7	NC	Not connected
8	NC	Not connected

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.



Contact N°	Signal	Meaning
1	Vcc	PC power (+)
2	- Data	Subscriber line signal
3	+ Data	Subscriber line signal
4	Ground	Earth

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