Sunrise Internet Box

User manual

Sunrise

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

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- **F@ST** is a registered trademark.
- **Sagemcom** is a registered trademark.
- **Windows™**, **Microsoft Edge™** and **Internet Explorer™** are registered trademarks of Microsoft Corporation.

The purpose of this user manual is to provide users with information on the functions for operating and managing the equipment. The access level (**Administrator**) presented is protected by a password and allows access to all these functions in read and write mode for all network parameters.

Note

Configuration of the Sunrise Internet Box by the web interface is described in detail (see Section 3).

Important

This user manual describes the Sunrise Internet Box in the ADSL, ADSL2, ADSL2+ and VDSL2.

All the specificities dealing with Fiber mode are detailed in chapter 5.

Guide to symbols used in this manual

Symbols	Definition
Note	Indicates important information that you must take into account.
Important	Warns you not to do an action, or commit a serious omission.

How should the document be used?

This user manual is organised into sections and annexes. These sections and annexes cover the following subjects.

Section 1	Presentation of Sunrise Internet Box equipment
Section 2	Description of Sunrise Internet Box equipment
Section 3	Configuration of the Sunrise Internet Box by HTTP
Section 4	Description of Internet access service
Section 5	Fiber mode
Annex A	Troubleshooting
Annex B	EC compliance declaration
Annex C	Environment
Annex D	Technical features
Annex E	Glossary
Annex F	Connector technology

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1 Introduction

1.1 Presentation

This user manual focuses on the Sunrise Internet Box product. This equipment is a gateway that gives users broadband Internet access from their computer, tablet, smartphone or game console by various Ethernet (10, 100 or 1000 BASE-T) or Wi-Fi (IEEE 802.11n or 802.11ac) interfaces via an ADSL/ADSL2/ ADSL2+/VDSL2/G.Fast network.

One Ethernet port of the Sunrise Internet Box is dedicated for connection to an external network termination unit (ONT Media Converter) for Fiber application. A Fiber SFP dongle can also be connected directly to provide Internet access.

The Sunrise Internet Box is a gateway that provides simultaneous access to ''Triple Play'' services. The Sunrise Internet Box product adapts ADSL and VDSL functions for POTS.

Using these interfaces, this gateway enables you both to surf the Internet and watch television. It also lets you make phone calls over the Internet from a classical analog telephone set or an IP SIP telephone. The Sunrise Internet Box has two ''Phone'' ports. The Sunrise Internet Box is also equipped with an embedded DECT CAT I/Q base station.

Note

In Voice over IP, the Sunrise Internet Box operates with SIP protocol.

The USB ''Master'' ports allow and/or are used for ''Memory Sharing'' and ''Printer Sharing'' on LAN and WAN.

Important

The Sunrise Internet Box product adapts the ADSL function respectively for POTS (ITU G.992.1/3/5 - Annex A), the VDSL function for POTS (ITU G.993.2 - Annex B) and the G.fast standard (ITU-T G.9701 and G.9700).
For more information, contact your local representative.

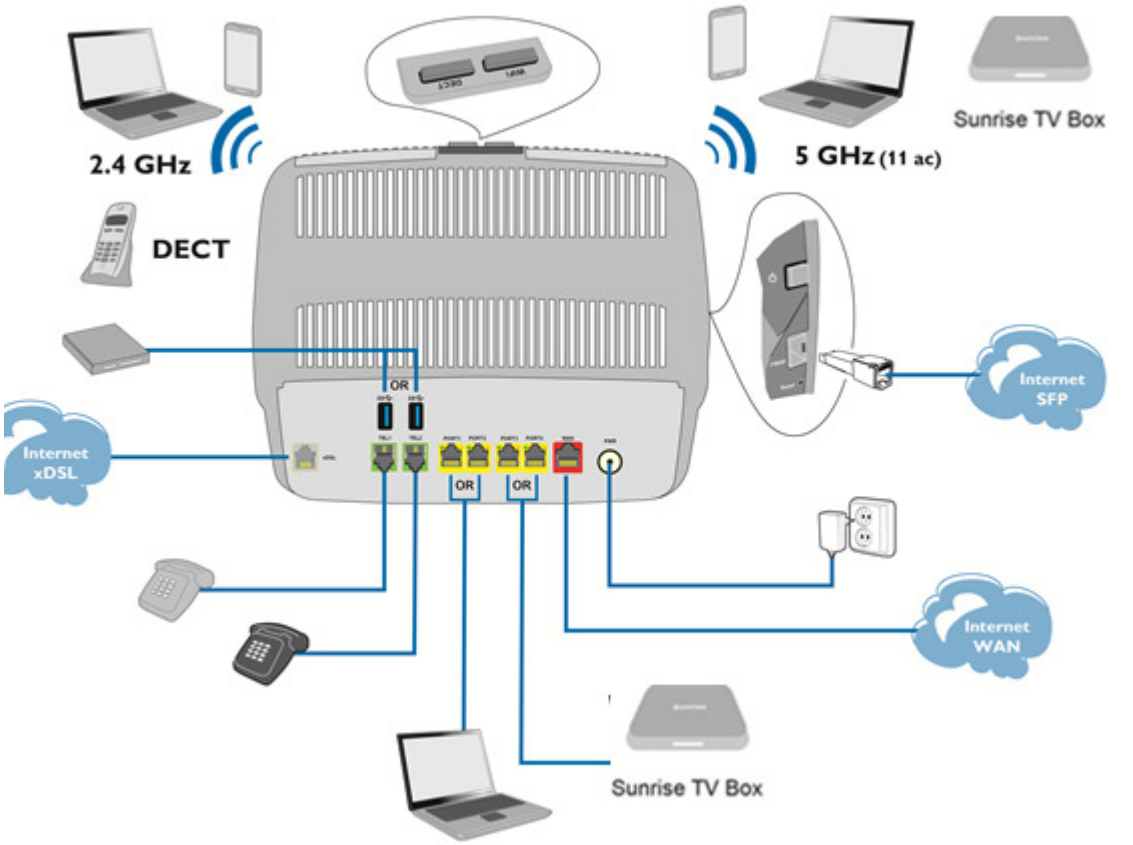
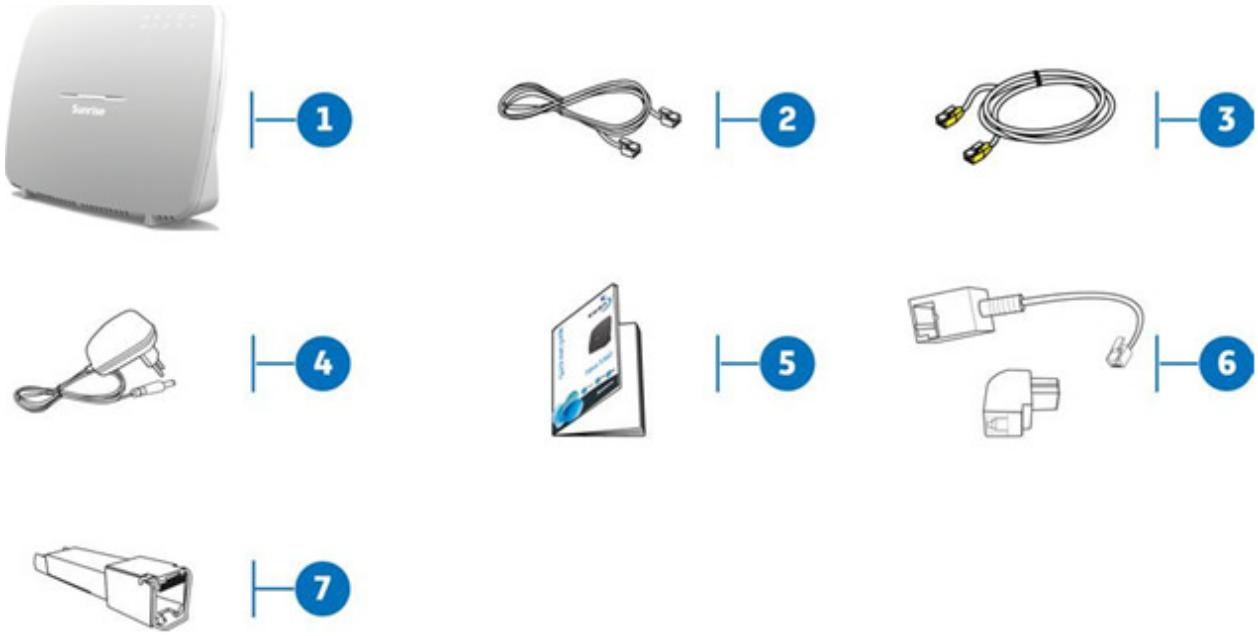


Figure 1.1 - Home Network Overview

1.2 Composition of Sunrise Internet Box pack

The Sunrise Internet Box pack is composed of the following elements (current content may vary):



Item	Description
1	Sunrise Internet Box gateway
2	1 DSL RJ11/11 line cable used to connect your Sunrise Internet Box to your telephone line
3	1 Ethernet RJ45/RJ45 cable used to connect your Sunrise Internet Box to the Ethernet port of your computer
4	Mains adapter
5	Quick start guide
6	2 Reichle connector adaptors
7	SFP module*

* Optional accessory

Note

Incomplete or damaged supply:
If upon receipt the equipment is damaged or incomplete, please open an Internet browser and go to: www.sunrise.ch/support to access the interactive tutorial.

1.3 (Minimum) prerequisites

Using the Sunrise Internet Box requires a minimum of:

- Internet access (xDSL or Fiber)
- a power socket
- a computer equipped with:
  - a Wi-Fi 802.11n or 802.11ac interface,

  or
  - an Ethernet interface (10BASE-T or 10/100BASE-T or 10/100/1000BASE-T).
- Optimized desktop resolution: 1200x800
- a WEB browser (Firefox, Chrome, Microsoft Edge)
- Tablet (Android, IOS)
- Smartphone

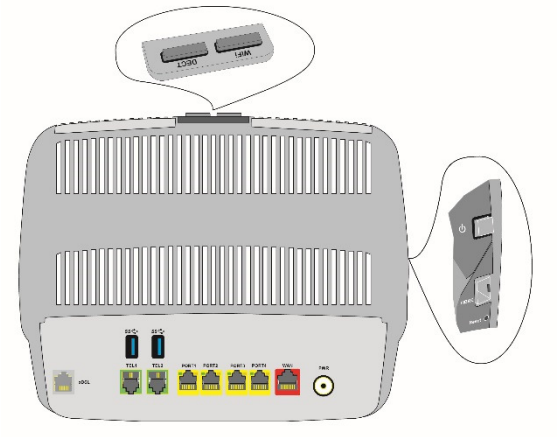
2 Description and hardware installation of the Sunrise Internet Box

2.1 Description

The following figure gives an overview of the Sunrise Internet Box.

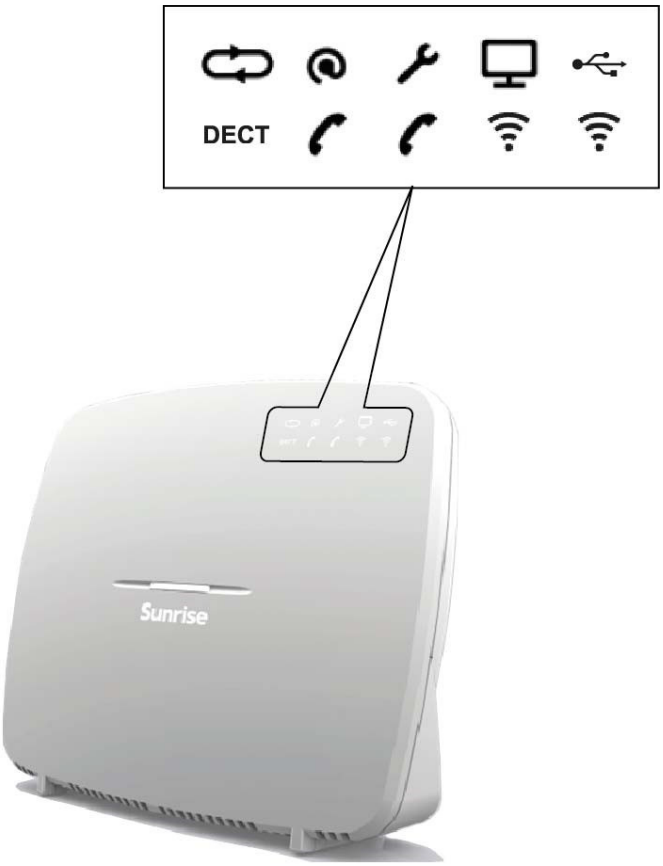
Figure 2.1 - Overview of the Sunrise Internet Box

2.1.1 Connectors and buttons



Marking	Meaning
Top view	
DECT	Short press (less than 2s) to switch the Sunrise Internet Box to paging mode. Long press (more than 2s) to switch the Sunrise Internet Box to DECT pairing
Wi-Fi	Short press (less than 5s) to enable/disable Wi-Fi function. Long press (more than 5s) to switch the Sunrise Internet Box to easy-pairing mode (WPS). Very long press (more than 10s) to initiate the Sunrise Internet Box easy-pairing mechanism over Wi-Fi with Sunrise TV Box.
DECT + Wi-Fi	Simultaneous pressing will disable auto-dimming function. Each simultaneous press will change the state of LED brightness between the three possible states (max, dimmed, off).
Side view	
⏻	Press this button to switch the Sunrise Internet Box on/off.
FIBER	SFP cage to receive SFP module for Fiber connection.
Reset	Short press (less than 10s) restarts the Sunrise Internet Box. Long press (more than 10s) resets the Sunrise Internet Box to the factory configuration. **Note:** The long press deletes the entire personalized configuration of your Sunrise Internet Box: password, configuration, etc.
Rear view	
DSL	6-way RJ11 connector used to connect to an ADSL or VDS2L line (WAN interface).
TEL1/TEL2	6-way RJ11 connector used to connect to a classical analog telephone set for Phone services (VoIP).
⇽	"Master" USB type A female connector (USB Interface) used for "Memory Sharing" and "Printer sharing".
PORT x (1 to 4)	RJ45 connectors - 8 ports (10/100/1000BASE-T Ethernet Interface). These connectors are identified by the color yellow. They are used to connect to a computer or a television set (via a TV/Video Decoder). **Note:** In "**Routed**" mode configuration, any of these connectors can be used for data or Video transmission and do not have to be dedicated to a particular transmission.
WAN	FTTH (Fiber to the Home) WAN dedicated port.
POWER	Miniature jack fixed connector. This connector enables the Sunrise Internet Box to be supplied with direct current from a power adapter unit.

2.1.2 LEDs



The following table describes the meanings of the LEDs on the front panel of the Sunrise Internet Box:

LED	Status	Meaning
DSL	**Steady**	DSL Up / Fiber (SFP or WAN) mode activated
	Blinking	• DSL signal found / synchronization in progress
	Off	• No DSL signal / Fiber (SFP or WAN) mode not activated
Internet	**Off**	Power Off / DSL down / No WAN IP
	Steady	WAN IP configured
Phone 1 or 2	**Steady**	Telephone service is configured and line is registered.
	Red blinking	Registration failed
	Off	No VoIP service
DECT	**Steady**	Telephone service is configured.
	Blinking	DECT pairing mode in progress.
	Off	DECT base Off or radio disabled (eco mode)

LED	Status	Meaning
Wi-Fi 2.4 G or 5 G	**Steady**	Wi-Fi enabled
	Blinking	a) If the Wi-Fi LED is blinking during operation, the following measures - in the order described here - may help to solve the problem: 1. try to optimize the position of the Internet Box: free-standing, away from microwave ovens or other sources of interference such as aquariums, baby monitors or radiators 2. switch Wi-Fi off and on again (see chapter 2.1.1 “Wi-Fi”) 3. change the 2.4 GHz Wi-Fi radio channel to "AUTO" (see chapter 3.7.1 Basic) 4. restart the Internet Box (see Appendix A.6) 5. Reset the Internet Box to factory settings (see chapter 2.1.1 "Reset") b) After Long Press of the Wi-Fi button or starting Easy Pairing (WPS) from the user interface: Easy-Pairing (WPS) is active (also for pairing with Sunrise TV Box UHD)
	Off	Wi-Fi disabled
USB	**Off**	No USB device
	Steady	USB device connected
TV	**Steady**	Set Top Box connected via Ethernet cable Set Top Box paired via Wi-Fi 5GHz
	Off	Set Top Box is turned off or there is no TV service activated
	Off	Power off or normal operation
	Blinking	• Firmware upgrade and service from Sunrise ongoing or • while the reset button is pressed.
	Steady	The device is rebooting by user's request.

2.2 Connecting the ports of your Sunrise Internet Box

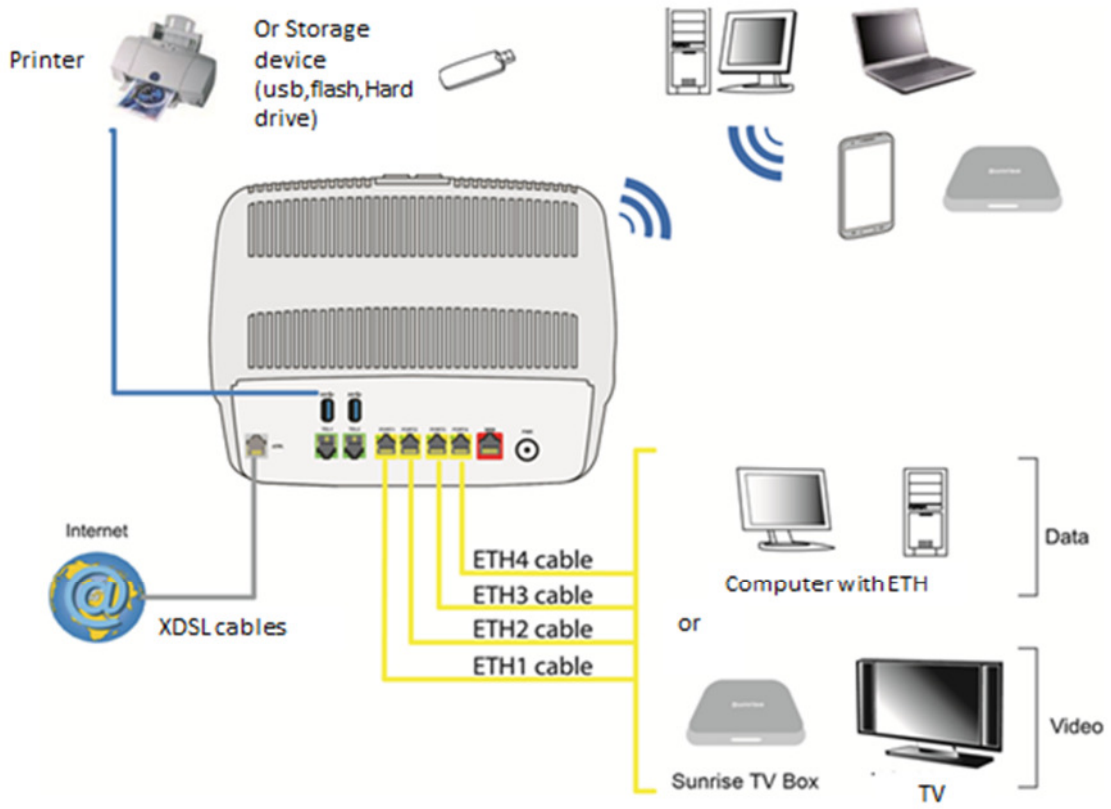


Figure 2.2 - Interconnection of ports of Sunrise Internet Box

2.3 Installation safety instructions

Power supply source

- Do not cover the Sunrise Internet Box's mains adapter.
- Never open the power adapter unit; this can expose you to fatal danger.
- The Sunrise Internet Box comes with its own power adapter. Do not use another adapter.
- This class II adapter does not need to be grounded (earthed). The connection to the electrical power supply network should comply with the indications given on the label.
- Use a readily accessible power outlet located near the Sunrise Internet Box.
- Arrange the power supply cord in such a way as to avoid any accidental power cut to the Sunrise Internet Box.
- The Sunrise Internet Box is designed to be connected to a GG (ground-to-ground) or GN (ground to neutral) type power supply network.
- The Sunrise Internet Box is not designed to be connected to an electrical installation with IT type diagram (neutral connected to ground through an impedance).
- Protection against short-circuits and leaks between the phase, neutral and ground should be provided by the building's electrical installation. The power supply circuit for this equipment should be fitted with 16 A overcurrent protection and differential protection.
- Connect the Sunrise Internet Box to the power supply unit via a readily accessible wall socket ensuring electrical power cutting.

Location conditions

By choosing an appropriate location, you will preserve the longevity of the device. Ensure that the selected location has the following characteristics:

- Install and use the Sunrise Internet Box inside a building.
- The room temperature must not exceed 45°C.
- The Sunrise Internet Box can be placed on a desktop.
- Do not expose the Sunrise Internet Box to strong sunlight or place it near a substantial source of heat.
- Do not place the Sunrise Internet Box in an environment where it could be subjected to considerable steam condensation.
- Do not expose the Sunrise Internet Box to splashes of water.
- Do not cover the Sunrise Internet Box's casing.
- Do not use the Sunrise Internet Box or its peripherals for outdoor transmissions.

Maintenance

- Never open the casing. This has to be done only by qualified personnel approved by your supplier.
- Do not use liquid or aerosol cleaning agents.

2.4 Installing your Sunrise Internet Box

2.4.1 Connecting the ADSL/VDSL cable

1. Connect one end of the RJ11/RJ11 cable supplied with the equipment to the **DSL** socket of your Sunrise Internet Box.
2. Connect the other end of the cable as shown in part 2.2

2.4.2 Connecting your phone

3. Connect a traditional analog telephone set to the **TEL 1** socket of your Sunrise Internet Box as shown below in ***Figure 2.3***and ***Figure 2.4****Error! Reference source not found.*.
4. Connect another telephone analog telephone set to the **TEL 2** socket of your Sunrise Internet Box as shown below in ***Figure 2.3*** and ***Figure 2.4***.

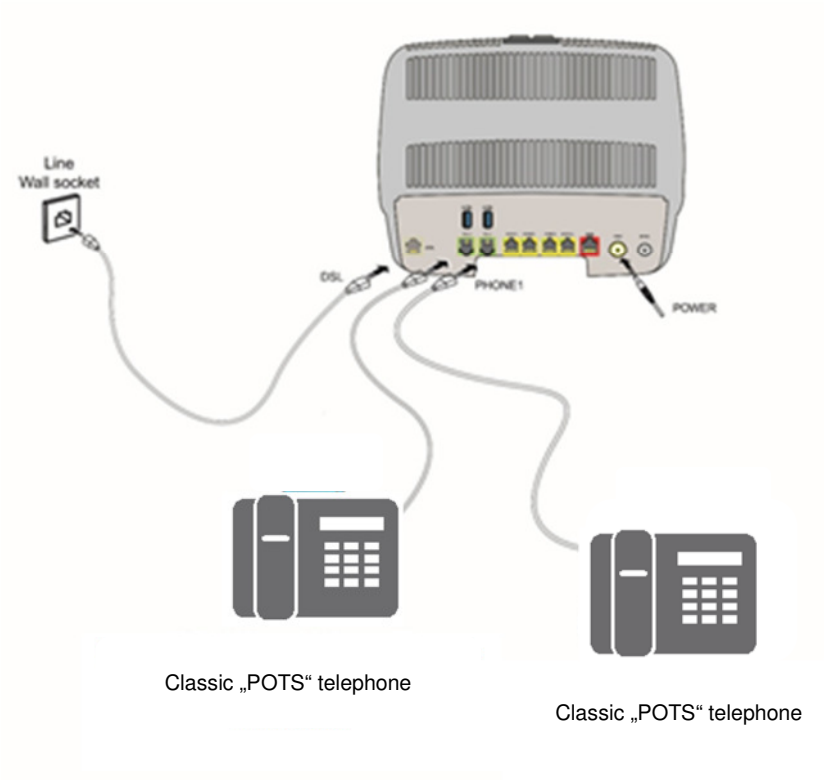


Figure 2.3 - ADSL/VDSL line / telephone set / Power Supply Connection (Total local loop unbundling)

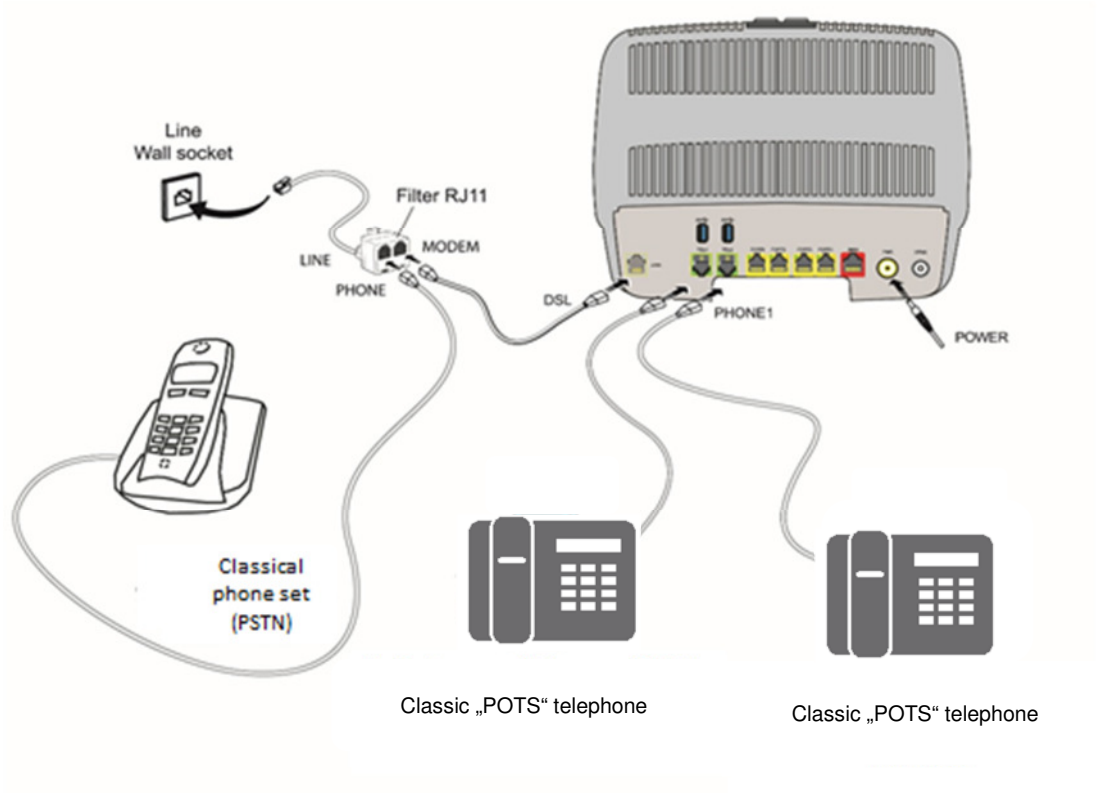


Figure 2.4 - ADSL/VDSL line / telephone set / Power Supply Connection (Partial local loop unbundling)

2.4.3 Powering up

1. First connect the end of the power adapter lead, supplied with the equipment, to the **POWER** socket on your Sunrise Internet Box.
2. Connect the other end of the power adapter lead to a nearby power outlet.
3. Press on the button to turn the device ON.
4. The power central LED (above Sunrise logo) will light up. The LED blinks during the establishment of the DSL link, then steadies. The LED becomes steady when Internet connection has been created successfully.

Note	
	The powering up process takes around one minute and can take more time on ADSL, VDSL and G.fast.

2.4.4 Connecting a Set Top Box (STB) to your Sunrise Internet Box

2.4.4.1 Via Ethernet cable

Note
For connection of your TV set with the Set Top Box, refer to the manufacturer's documentation. Please also see Sunrise TV Box installation guide for recommended ways of installation.

1. Connect the end of an Ethernet cable (RJ45/RJ45) to one of the Ethernet fixed connectors (**PORT1**, **PORT2**, **PORT3** or **PORT4**) of your Sunrise Internet Box.
2. Connect the other end of the cable to the Sunrise TV Box.

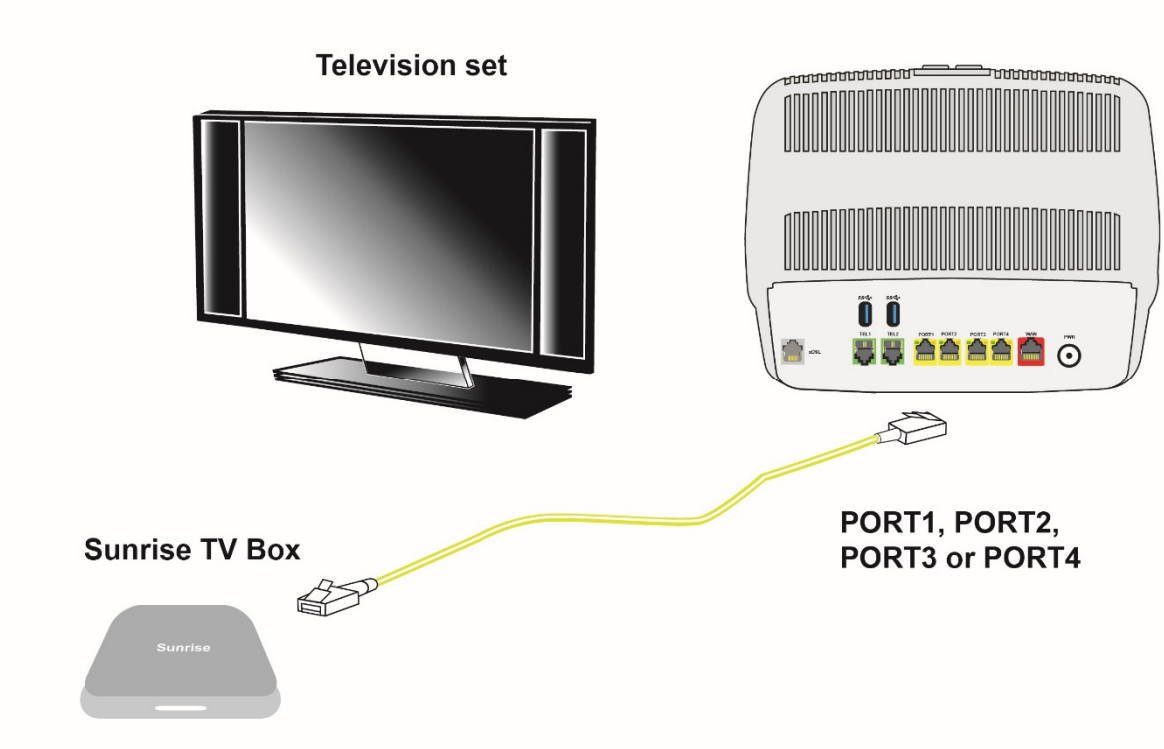


Figure 2.5 - Set Top Box connection in Routed mode

2.4.4.2 Via Wi-Fi

Note
For connection of your TV set with the Set Top Box, refer to the manufacturer's documentation. Please also see Sunrise TV Box installation guide for recommended ways of installation.

Press for longer than 10 seconds on the “Wi-Fi” button on the top of the Sunrise internet Box device. It will initiate the Sunrise Internet Box easy-pairing mechanism over Wi-Fi with Sunrise TV Box. No Ethernet cables are needed.

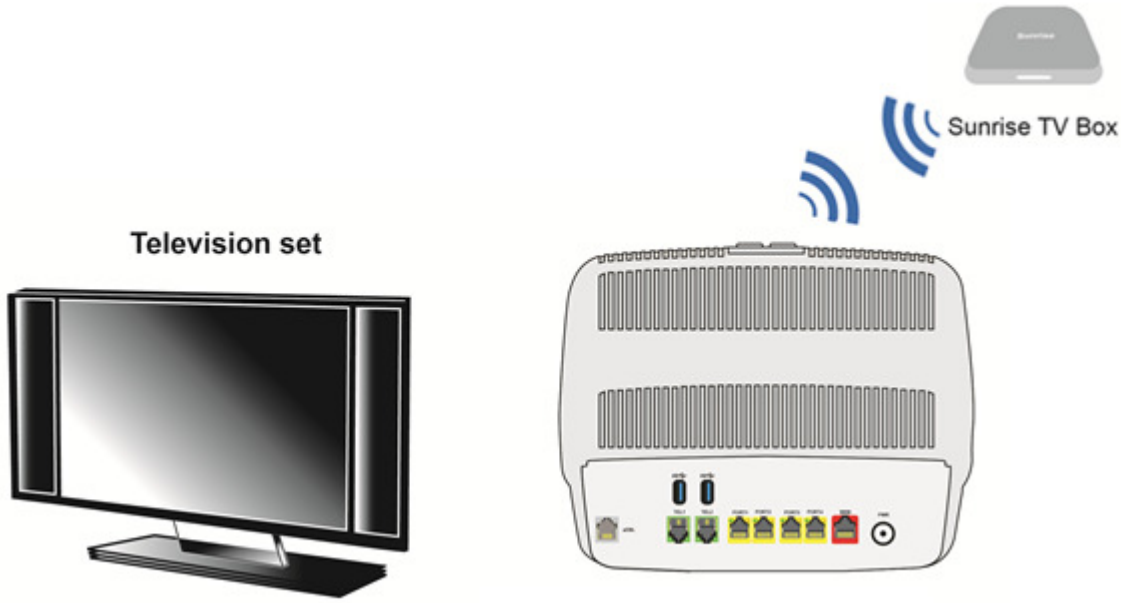


Figure 2.6 - Set Top Box connection in Wi-Fi mode

2.5 Default configuration

This section details the values of the default parameters of your Sunrise Internet Box when it leaves the factory. These default parameters can be modified by a particular preconfiguration of your Sunrise Internet Box.

2.5.1 Default password

Password:	The initial password is printed on the Sunrise Internet Box’s product label.

Note
The initial **Password** is different for each device

2.5.2 Default configuration for the local network (LAN)

The following table details the values of the principal LAN parameters of your Sunrise Internet Box (**ETH1** to **ETH4**):

LAN characteristics	Value	State
PORT1 IP address	192.168.1.1/24	
PORT2 IP address		
PORT3 IP address		
PORT4 IP address		
BROADCAST, ARP, MULTICAST	--	Activated
Gateway	--	The LAN traffic is routed to your ISP Sunrise
NAT/PAT	--	Activated

2.5.3 Default configuration for the local wireless network (WLAN)

The following table details the principal default WLAN parameters of your Sunrise Internet Box.

Characteristics (Wi-Fi)	Value
IP address	192.168.1.1/24
Enable Wireless	Box checked
SSID	The network names are printed on the Sunrise Internet Box's product label.
Channel	Auto
Security password	The initial password is printed on the Sunrise Internet Box's product label.

3 Information / Configuration

3.1 Accessing the welcome screen

The configuration of the Sunrise Internet Box can be performed using an Ethernet connection (**PORT1** to **PORT4**) or via the Wi-Fi connection, depending on the device used (computer, tablet, etc.).
Your Sunrise Internet Box is then configured using a simple Web browser (e.g. Microsoft Edge).

Note

The Sunrise Internet Box's DHCP server function is activated by default with an address range defined as indicated in Sub-section 3.3.2.

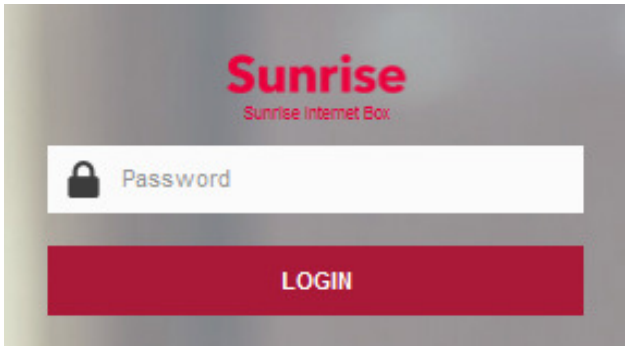
To access the user interface, proceed as follows:

1. Open a web browser and enter the address: **http://192.168.1.1** or **http://sunrise.box**.

Note

If you are trying to access this page via Wi-Fi connection, please make sure that you are connecting to one of the main SSIDs (the default SSIDs can be found on the bottom of the Sunrise Internet Box on the product label). It is not possible to access the user interface by connecting via the Wi-Fi Guest Access (Section 3.7.3).

2. In the login screen that appears, enter your password.
   By default, the initial password is indicated on the label of the product.

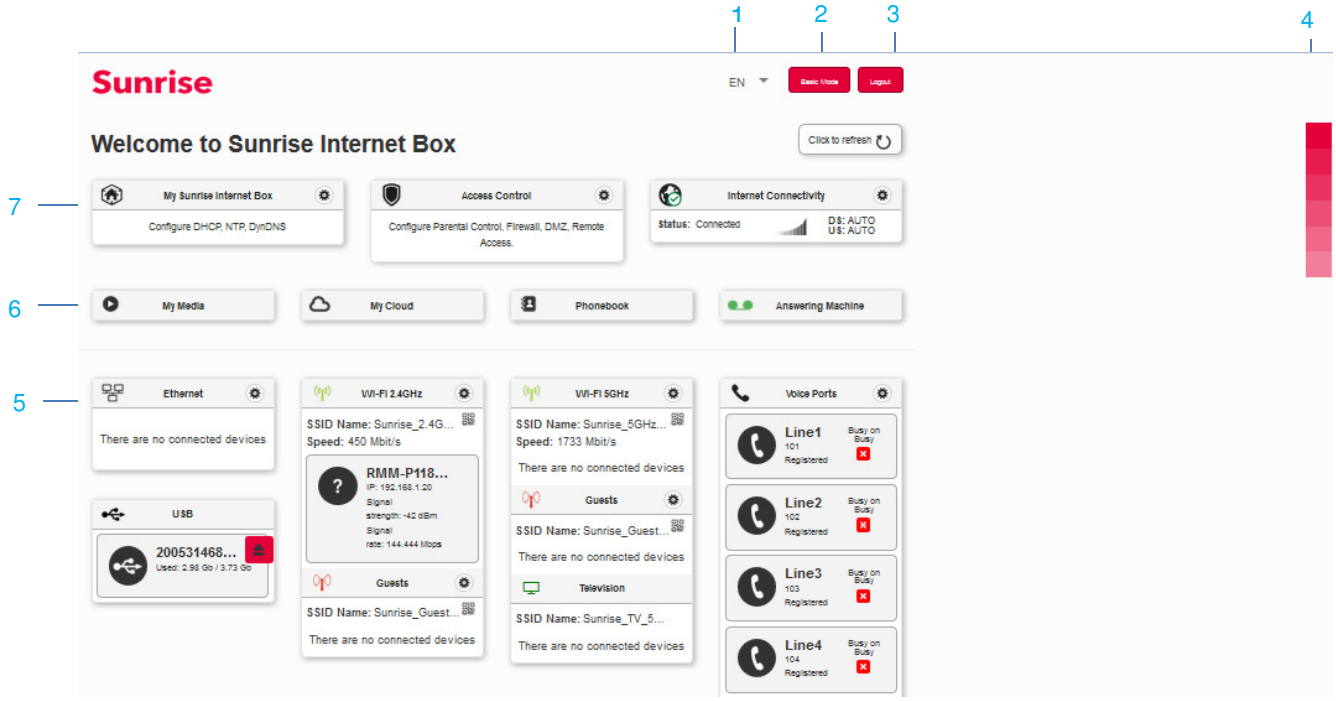


Note

The equipment's IP address (192.168.1.1) appears in the header bar.

3. Click on **LOGIN** to validate.

4. The welcome screen of the Sunrise Internet Box appears.



Mark	Description
1	Menu for selecting the language of the web interface.
2	This button allows the display of Basic or Expert mode. The Expert mode displays more settings.
3	To log out of the web interface.
4	To change the color of the buttons in the web interface.
5	Here you will find the devices that are connected to your Sunrise Internet Box. By clicking on the device icons, you can access the configuration menu for each. • **Ethernet** displays the LAN devices connected to your Sunrise Internet Box. For more information, consult the Section Ethernet service (see Sub-section 3.6). • **Wi-Fi x GHz** displays the wireless devices connected to your Sunrise Internet Box. For more information, consult the Section Wi-Fi service (see Sub-section 3.7) • **Voice Ports** displays information about your phone lines. For more information, consult the Section Voice service (see Sub-section 3.8) • **DECT** displays information about your DECT phones. For more information, consult the Section DECT settings (see Sub-section 3.8.3) • **USB** displays the USB memory devices connected to your Sunrise Internet Box. For more information, consult the Section USB service (see Sub-section 3.9). **Note**: This item only appears when one USB memory device is connected.
6	Here you will find the services associated with your Sunrise Internet Box. For more information, consult the Section Services (see Sub-section 3.10).

Mark	Description
7	Here you will find the parameters to control and configure your Sunrise Internet Box. • The menu **My Sunrise Internet Box** allows you to configure general settings. For more information, consult the Section Device configuration (see Sub-section 3.3). • The menu **Access Control** allows you to configure the security settings. For more information, consult the Section Access Control (see Sub-section 3.4). • The menu **Internet Connectivity** allows you to configure the Internet connection settings. For more information, consult the Section Internet Connection (see Sub-section 3.5).
	The help button appears in the configuration menus. To activate the contextual help, click on the field/item for which you want information, and the help button will appear.

3.2 Recommendations

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

Button	Description
	Click on this button to add a new object.
	Click on this button to close the active window and return to the main screen.
	Click on this button to display a new window to modify the fields that can be accessed for a previously selected object.
	Click on this button to remove a selected object from a list.
	Click on this button to save the entry in the Sunrise Internet Box's non-volatile (flash) memory. **Note**: This value will be taken into account immediately. No need to restart your Sunrise Internet Box.

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 **Apply** (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 fields in the different screens are explained in a table.

3.3 Device configuration

The device settings are accessible from the welcome screen by clicking on **My Sunrise Internet Box**. This Section contains the following menus:

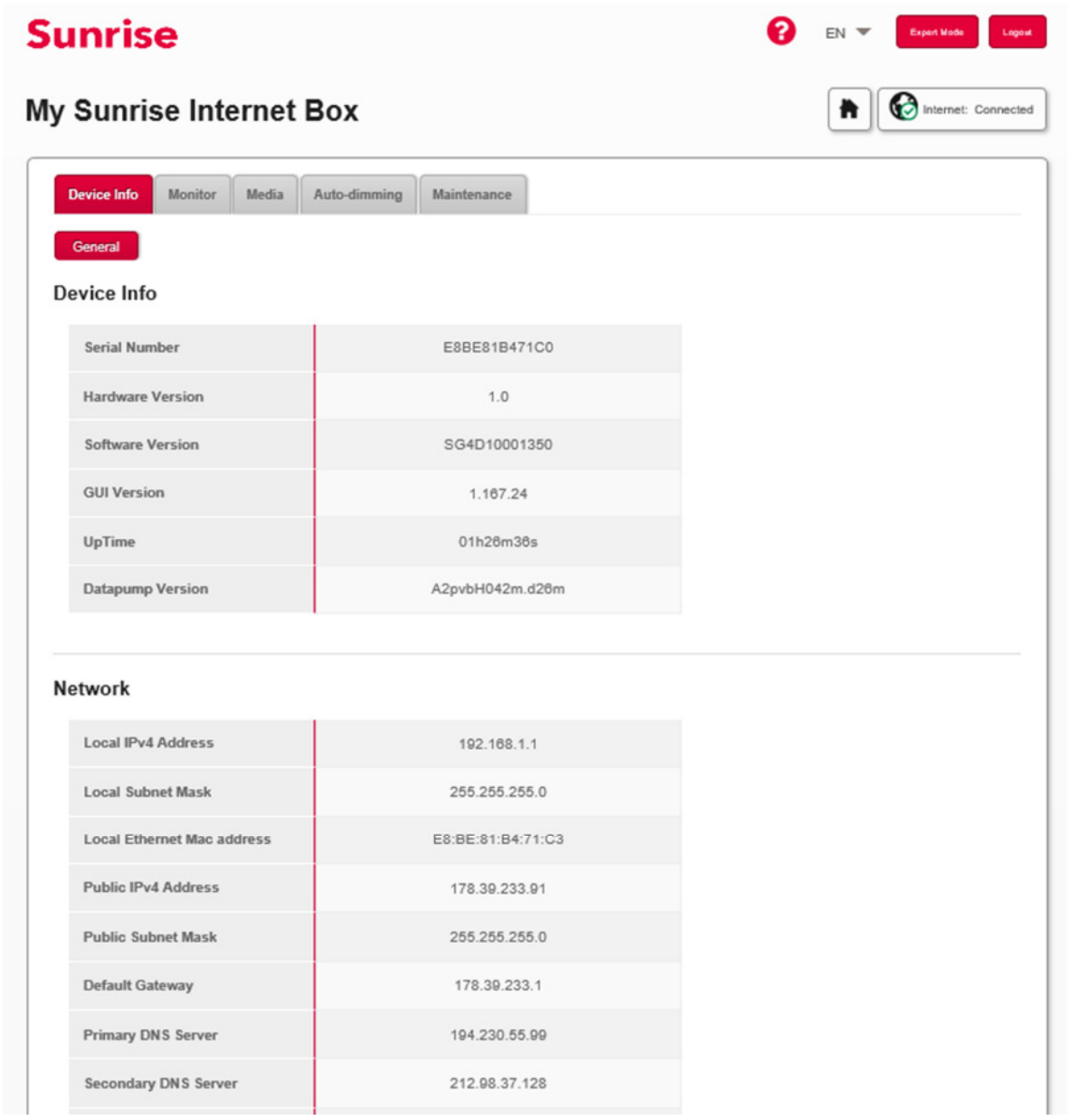
- Device Info (see Sub-section 3.3.1)
- DHCP (only in expert mode; see Sub-section 3.3.2)
- DNS (only in expert mode; see Sub-section 0)
- DynDNS (only in expert mode; see Sub-section 3.3.4)
- Route (only in expert mode; see Sub-section 3.3.5)
- Monitor (see Sub-section 3.3.6)
- Media (see Sub-section 3.3.7)
- Auto-dimming (see Sub-section 3.3.9)
- Maintenance (see Sub-section 3.3.10)

3.3.1 Device Info

3.3.1.1 General

Objective: This menu lets you display basic information about your Sunrise Internet Box.

- In the **Device Info** menu, select **General**. The following screen opens:



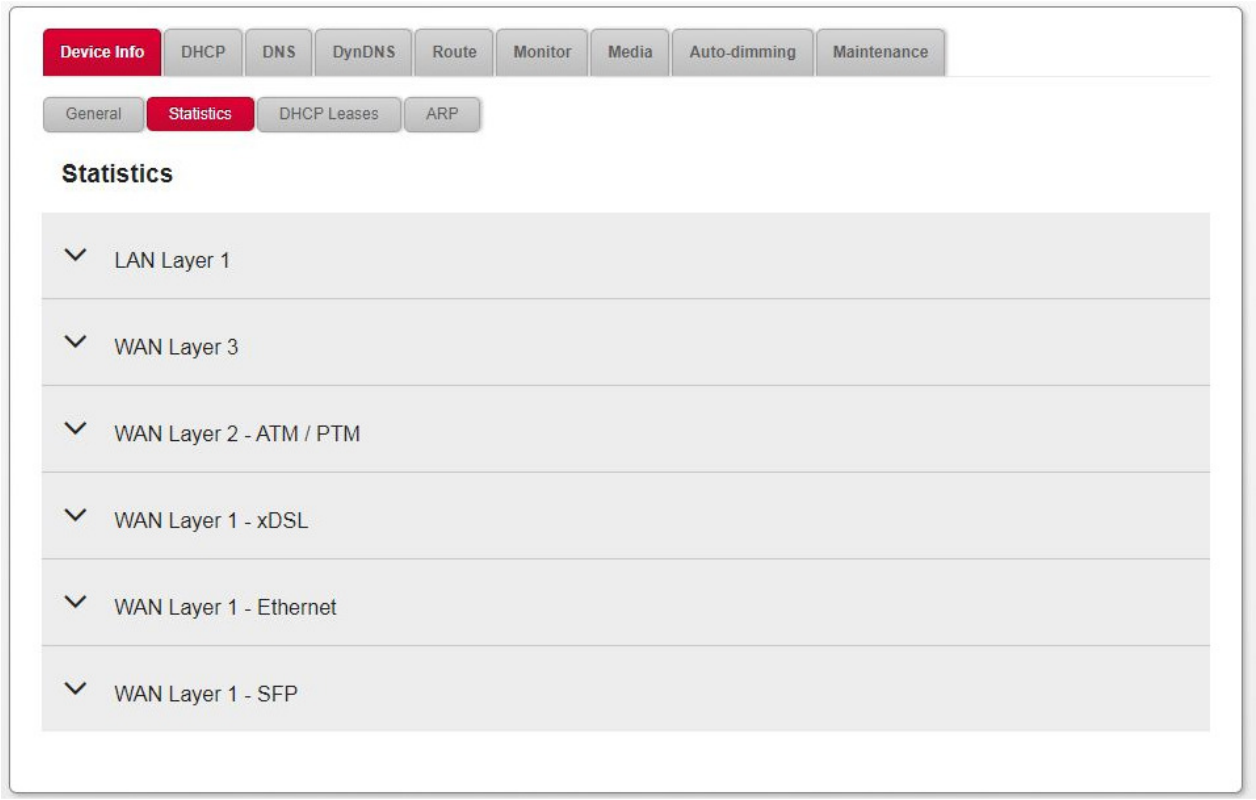
Note

For your information and for possible inquiries from the customer hotline, you will find the currently installed software version (also called "firmware") in the corresponding section. Please note: The software version currently installed on the Sunrise Internet Box may differ from this screenshot.

3.3.1.2 Statistics

Objective: This menu is used to display all the Sunrise Internet Box's statistics. This menu contains information about:

- LAN
- WAN
- xTM
- xDSL



3.3.1.3 DHCP Leases

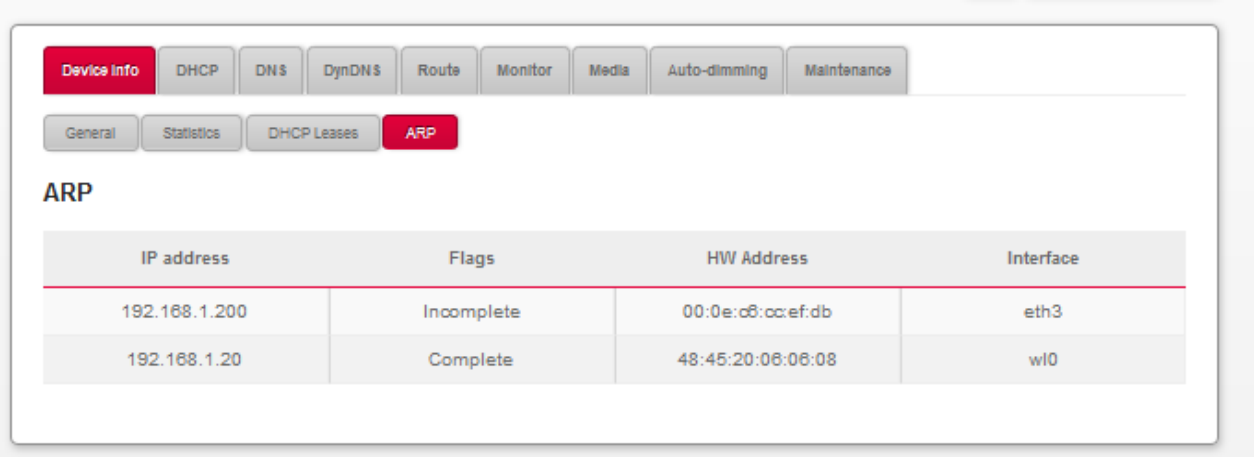
Objective: This menu is used to display all the computers that obtained an IP address from the Sunrise Internet Box's DHCP server.

- In the **Device Info** menu, select **DHCP Leases**. The following screen opens:

3.3.1.4 ARP

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

- In the **Device Info** menu, select **ARP**. The following screen opens:



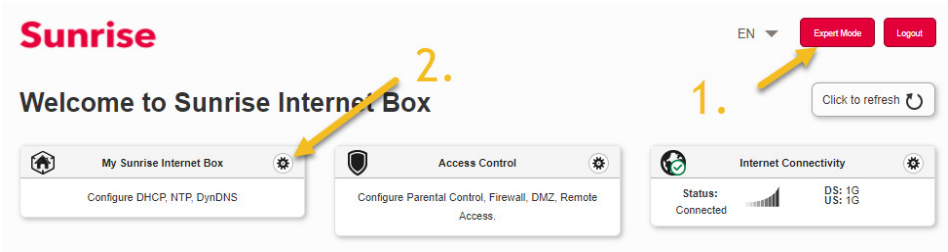
Note

The maximum number of devices that can be connected to the Sunrise Internet Box depends, among other things, on the utilization of the main memory. In practice, it may vary depending on the use of other functions (e.g. WLAN, telephony). Experience has shown that more than 100 devices can be connected simultaneously using the various connection options.

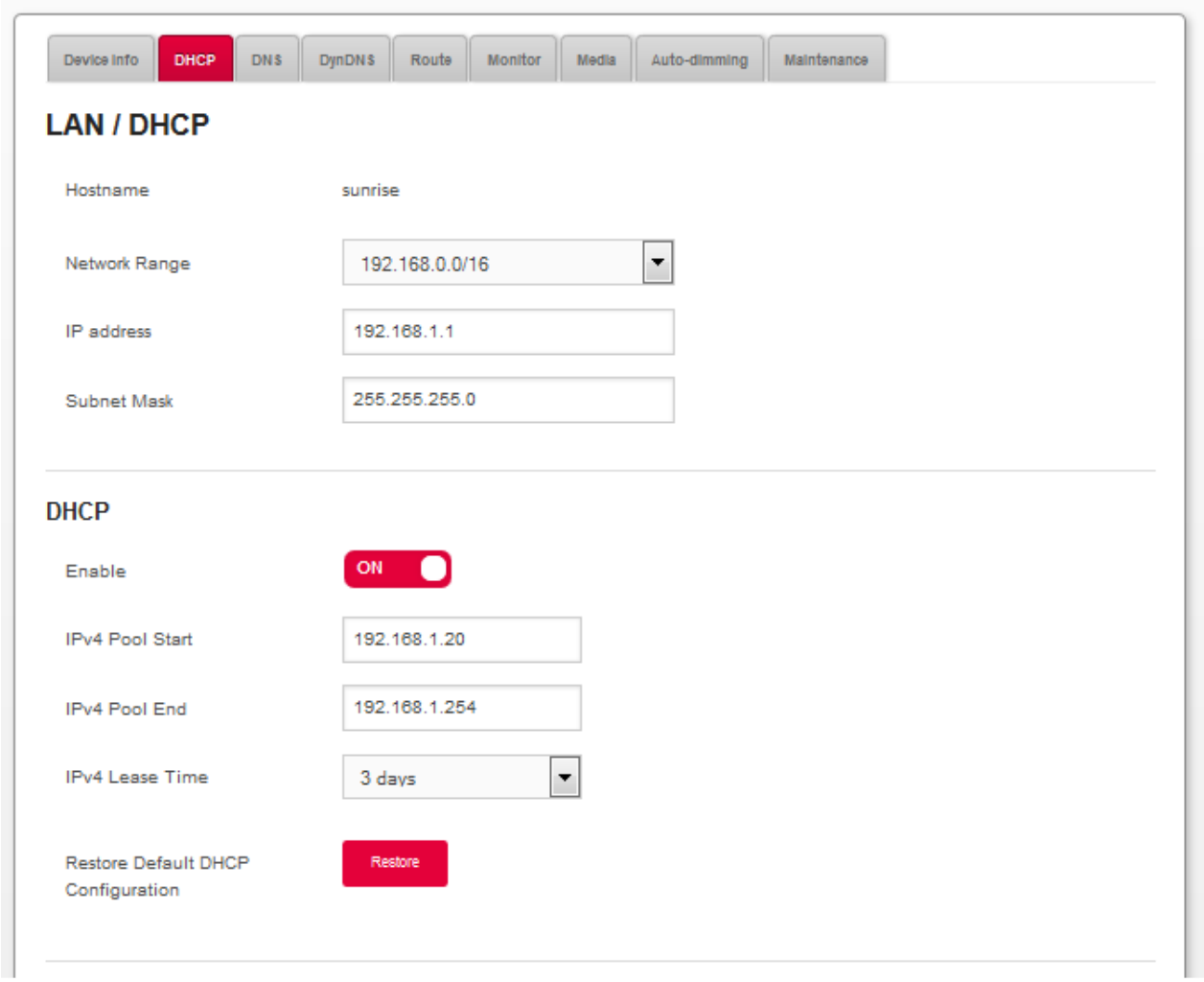
3.3.2 DHCP

Objective: The DHCP menu of your Internet box allows you to assign an IP address to each device connected to your local network.

- On the home page you need to change to "**Expert Mode**" (top right) and then click on "My Sunrise Internet Box" cogwheel



- In the **My Sunrise Internet Box** menu, select **DHCP**. The following screen opens:



Field	Meaning/Action	Default value
Host Name	Name assigned to your Sunrise Internet Box.	
Network Range	Select from the relevant drop-down list: • 176.16.0.0/12 • 192.168.0.0/16 • 10.0.0.0/8	
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	Press the ON/OFF button to activate or deactivate your Sunrise Internet Box's DHCP server. **Note:** When ON, you must configure your computer as DHCP client and DNS client (or enter the primary and secondary DNS server addresses). **Note:** When OFF, you must configure your computer with the parameters appropriate to your local network (Fixed IP address, subnet mask and default gateway) as well as enter the primary and secondary DNS server addresses.	**ON**
IPv4 Pool Start	Enter the first address attributed by your Sunrise Internet Box's DHCP server.	**192.168.1.20**
IPv4 Pool End	Enter the last address attributed by your Sunrise Internet Box's DHCP server.	**192.168.1.254**
IPv4 Lease Time	Select an unavailability time (in seconds) from the scroll down list for each attributed address.	**3 days**
Restore Default DHCP Configuration	Restore all DHCP-related changes to default	**-**

Important

After changing the configuration of e.g. the IP Address and/IP Pool range, you have to **click on "Apply"** and **reboot the Sunrise Internet Box** (or disconnect all the devices from the SIB and reconnect) in order to ensure that the changes are executed and all the connected devices receive a new IP as just configured.

Defining Static IP addresses

This Section describes how to allocate a static IP address to a specific device.

Field	Meaning/Action	Default value
Add Reserved Address	Click on this button to attribute a new static IP address.	
Enable	The **ON/OFF** button allows you to activate or deactivate the attribution of static address to the current device.	
Device name	If the name of your device is available on the list, select it. The fields **MAC address** and **IPv4 address** are filled in automatically, or Select **ADD MAC address,** then manually fill in the fields **MAC address** and **IPv4 address**.	
MAC address	MAC address of your device.	
IPv4 address	Static IPv4 address attributed to your device.	

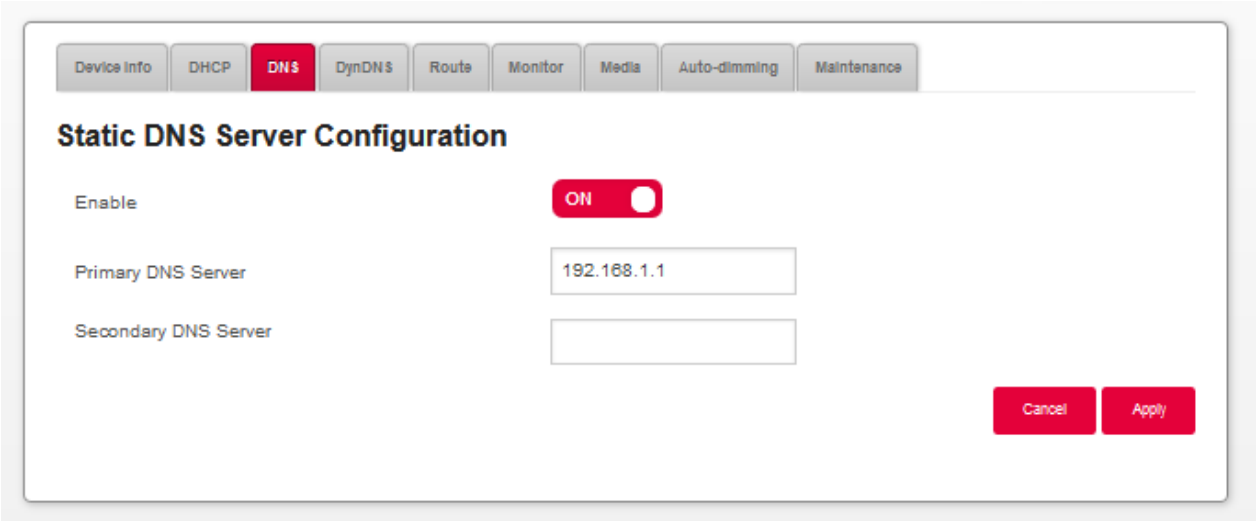
Important

After defining a static IP address to a Client of your Home Network, you have to **click on "Apply"** in order to ensure that the changes are executed.

3.3.3 DNS

Objective: Enables you to configure static DNS (Dynamic Name Server), which are used to translate human readable IP-addresses of Internet pages (like www.sunrise.ch) into machine readable IP-addresses. For everyday use, these servers are automatically configured and managed by Sunrise. If you change the DNS settings, please be aware of the potential restrictions in the Note below.

- Click on the **Expert Mode** in the Top Menu to activate the Expert Mode.
- In the **My Sunrise Internet Box** menu, select **DNS**. The following screen opens:



Field	Action	Default value
Enable	Press the button **ON/OFF** to activate or deactivate static DNS service.	**ON**
Primary DNS Server	Enter the IP-address of your primary DNS server.	**192.168.1.1**
Secondary DNS Server	Enter the IP-address of your secondary DNS server.	**empty**

Note

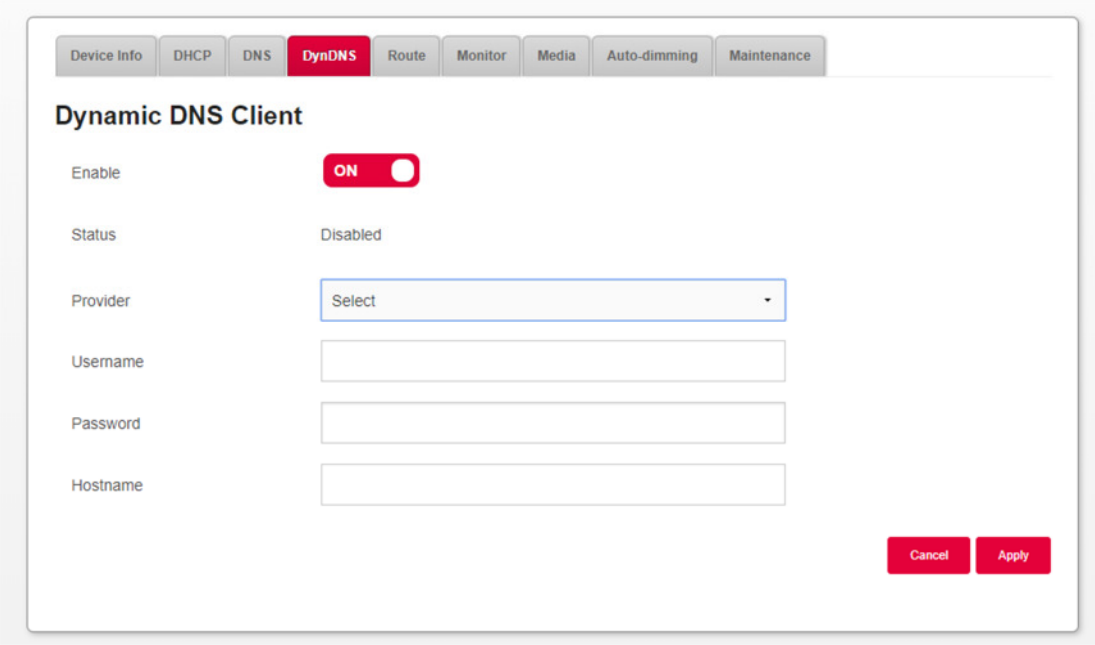
If you enable static DNS, the following features will not work or be available anymore:

- DNS relay function inside the gateway is bypassed.
- DNS resolution of “sunrise.box” is no longer possible, with the following impacts:
  - No access to the User Interface via http://sunrise.box respectively https://sunrise.box
  - Parental control with URL filtering will also no longer work

3.3.4 DynDNS

Objective: Enables a web surfer to access your Sunrise Internet Box (with no fixed IP address but only a DNS entry) through a dynamic DNS provider such as, for example, **dyndns.org**.

- In the **My Sunrise Internet Box** menu, select **DynDNS**. The following screen opens:



Field	Meaning/Action
Enable	Press the button **ON/OFF** to activate or deactivate the Dynamic DNS service.
Status	Display the status of the function DynDNS.
Provider	Select from the relevant drop-down list: • DynDNS • StatDNS • Custom • No-IP • DTDNS
User name	Enter the account name supplied to you by the dynamic DNS provider.
Password	Enter the account password provided to you by the dynamic DNS provider.
Host name	Enter the name (for example “butterfly”) that you want to assign to your Sunrise Internet Box. This is the name provided to you by your dynamic DNS provider (see Note).

Note

Example: If you enter the name "butterfly," the dynamic DNS provider (dyndns.org, in this example) incorporates this name in the domain name (butterfly.dyndns.org). A web surfer who wants to access your Sunrise Internet Box receives the dynamic IP address (transcription of the domain name) of your Internet Box supplied by Sunrise from the dynamic DNS provider.

Field	Meaning/Action
Basic Authentication[a]	Press the ON/OFF button to activate or deactivate basic authentication.
Server[a]	Dynamic DNS Server location (IP address or domain name).
Port[a]	Port to access DynDNS Service (for example 80).
Request[a]	Update Request URL to submit to Dynamic DNS server.
Update Interval[a]	Interval time between two updates.
Retry Interval[a]	Retry interval in case of failure.
Max Retries[a]	Maximum number of retries.

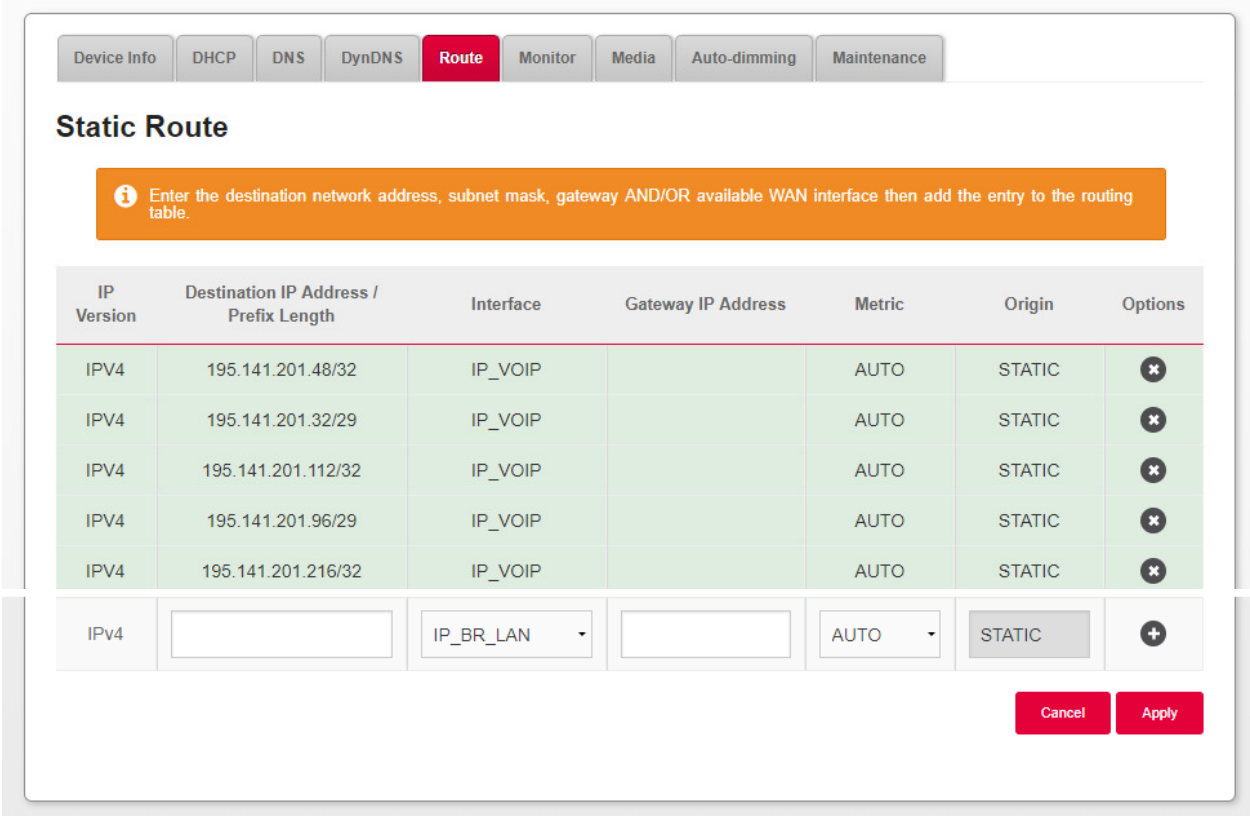
a. These fields only appear when "Custom" is selected in Provider field.

3.3.5 Route

Objective: The **Route** menu delivers a solution to add or delete static routes. You can enter the destination network address, subnet mask, gateway AND/OR available WAN interface, and then add the entry to the routing table.

- In the **My Sunrise Internet Box** menu, select **Route.**

The following screen opens:



Field	Meaning/Action	Default value
IP Version	IP Version (IPV4) is activated by default	**IPv4**
Destination IP Address /prefix length	Enter the destination IP address	
Interface	Select the interface in the list (VOIP,DATA,LAN, Management, xDSL, Fiber L1,2, Fiber L3, Guest, Back up)	
Gateway IP address	The gateway will populate this field directly; you do not have to do anything	
Metric	Select the metric from Automatic: 1 to 9	
Origin	Static is automatically selected	
Options	To add or delete a routing setting	

To apply the settings, follow these steps:

- Fill in the editable fields.
- Click on the **Apply** button.

Note

Operation with 30 simultaneously activated static routes was successfully tested.

3.3.6 Monitor

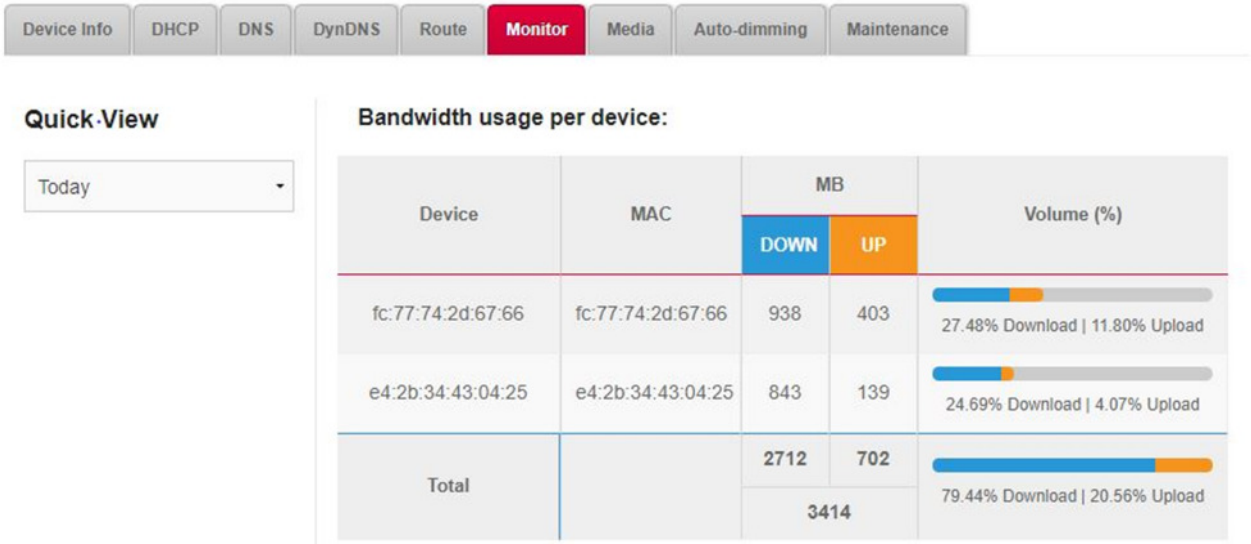
Objective: The Monitor menu provides a solution for monitoring network traffic. You can display information about the bandwidth history and generate graphics for all connected devices.

3.3.6.1 Quick View

Objective: This menu allows you to display the bandwidth history for each connected device.

- In the **My Sunrise Internet Box** menu, select **Monitor** > **Quick view**.

The following screen opens:



Field	Meaning
Device	List of devices.
MAC	List of MAC addresses.
Volume (MB)	Displays the amount of sent and received data in up-/downlink in megabytes for each device.
Volume (%)	For each device, displays the transmission and reception of uplink and downlink data expressed as a percentage of the total traffic.

To display the online usage per device, proceed as follows:

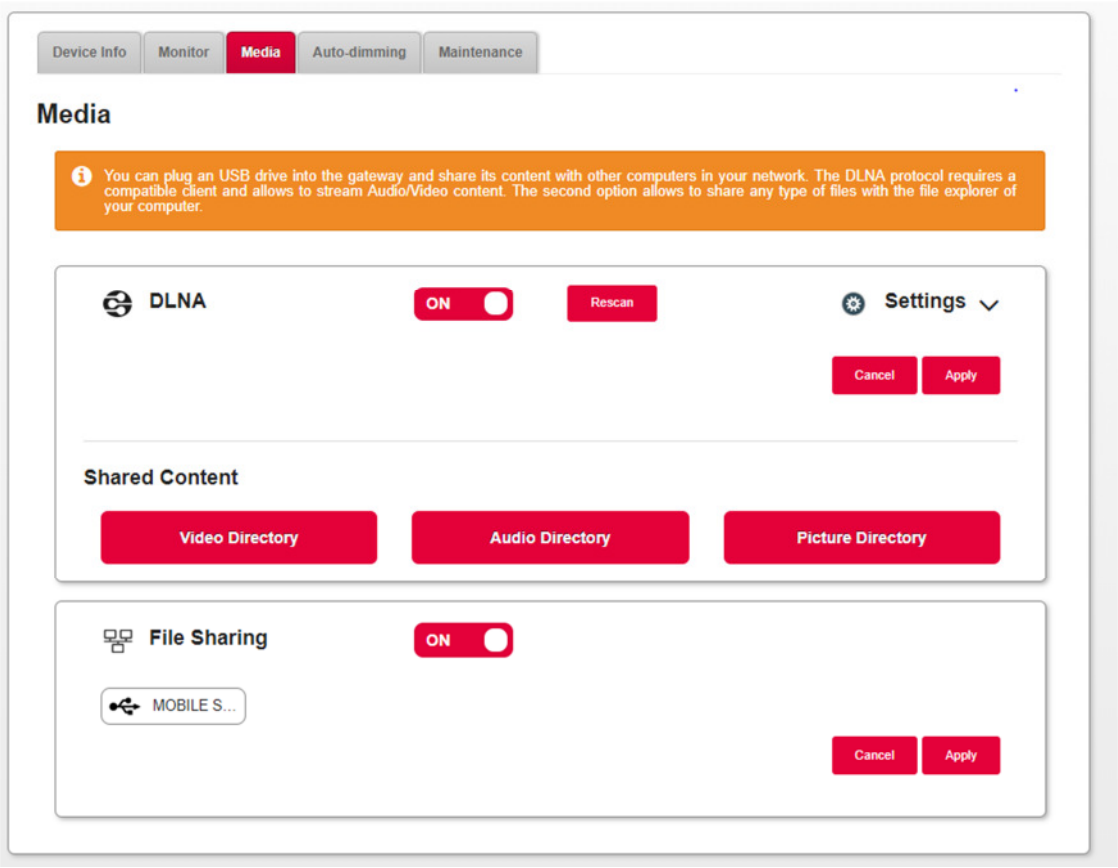
- Select the desired time monitoring from the scroll-down list or define a specific period.

3.3.7 Media

Objective: This menu lets you configure the shared services (DLNA and SAMBA) of your Sunrise Internet Box.

- In the **My Sunrise Internet Box** menu, select **Media**. **DLNA settings**

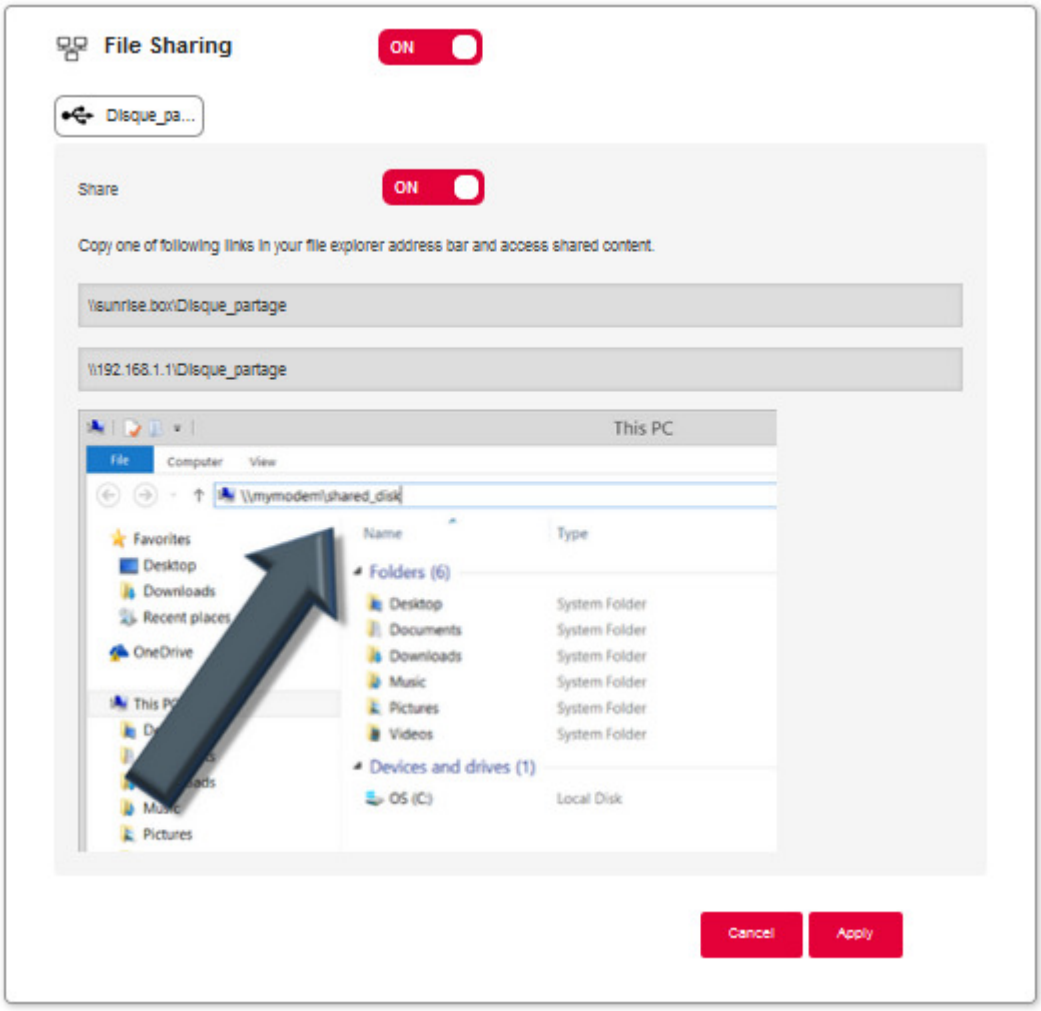
Use DLNA for sharing multimedia content from a USB mass storage device with all connected devices on your local network.



Field	Meaning/Action	Default value
DLNA	The **ON**/**OFF** button allows you to activate or deactivate the DLNA service on your Sunrise Internet Box.	**OFF**
Settings	Display/hide the advanced settings of the DLNA server. After clicking the ⌄ symbol, the following elements will be accessible:	
	Name: Name of the media server.	**SUNRISE**
	Aggregation: The **ON**/**OFF** button allows you to activate or deactivate the UPnP protocol.	**OFF**
	UPnP Media Server Port: Port number of the UPnP server.	**9000**
File Sharing	Enable / disable file sharing	**OFF**

File sharing settings

This service allows you to share the content of USB memory devices (key, etc.) with all users connected to the Sunrise Internet Box. To do this, the user must copy the link indicated on the screen into the browser address bar.



Field	Action	Default value
File sharing	The **ON**/**OFF** button allows you to activate or deactivate the File Sharing service on your gateway.	**OFF**
USB Disk	Display/hide more information about the shared content.	
Share	The **ON**/**OFF** button allows you to activate or deactivate access to the current USB memory.	**OFF**

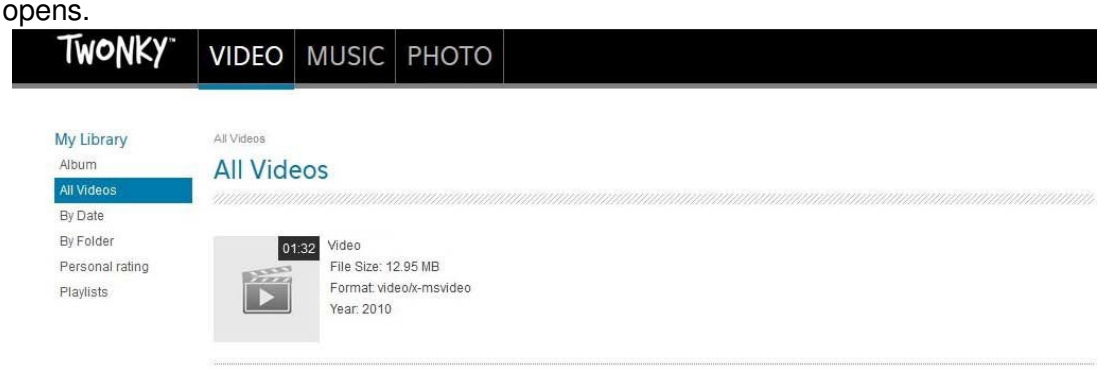
Notes

- The maximum supported capacity of the USB mass storage device depends on the file system used in the device.
- Several USB mass storage devices can be connected to the Sunrise Internet Box and operated simultaneously.
- Supported file systems are: FAT32 and NTFS.

3.3.8 My Media

Objective: This menu lets you access to shared multimedia contents (audio, video, pictures) as defined in the Previous Section **Media**.

- To access the shared contents, click on **My Media** from the welcome screen. The following screen opens.



By default, the video contents are selected. In the Top Menu, you can select the type of contents you want to play.

Field	Meaning/Action
VIDEO	Access to video contents shared on your USB drive
MUSIC	Access to audio contents shared on your USB drive
PHOTO	Access to photo contents shared on your USB drive

In the left-hand menu, you can browse your shared library based on various criteria (Date, Folder, Album, Artist, Genre, etc.).

To play[1] the multimedia content you have selected, click on the name of the selected file in the main frame.

Note

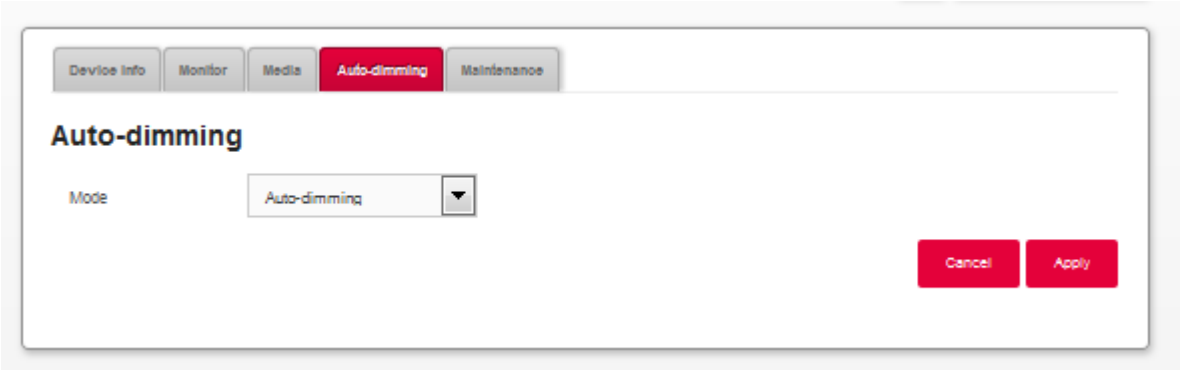
Please note that the necessary indexing of the contents of the USB mass storage device is limited to a total of 3000 entries (audio/video files and images).
For larger collections, it is recommended to use a dedicated storage device in your home network (e.g. NAS).

1. Depending on your web browser, playing may require further configuration of the web browser.

3.3.9 Auto-dimming

Objective: This menu lets you adjust the brightness of the LEDs on the front panel.
Auto-dimming mode: In this mode, the LED brightness is automatically controlled and adjusted according to daily sunset and sunrise times.

- In the **My Sunrise Internet Box** menu, select **Auto-dimming**.



Field	Meaning/Action
Mode	Select one of the following from the relevant drop-down list: • Auto-dimming • Manual
Brightness[a]	Select one of the following from the relevant drop-down list: • OFF: All LEDs are off. • Dimming • 100%: the brightness is set at the maximal level.

a. This field only appears when "Manual" is selected in “Mode” field. Auto-dimming is disabled in manual mode and you can set the brightness you desire.

Note

The adjustment of the LED brightness can also be done with the Wi-Fi and DECT buttons located on the top of the Sunrise Internet Box. Simultaneously pressing on the Wi-Fi and DECT buttons will disable the auto-dimming function. Consecutively pressing on these buttons will switch between the three manual states for LED brightness.

3.3.10 Maintenance

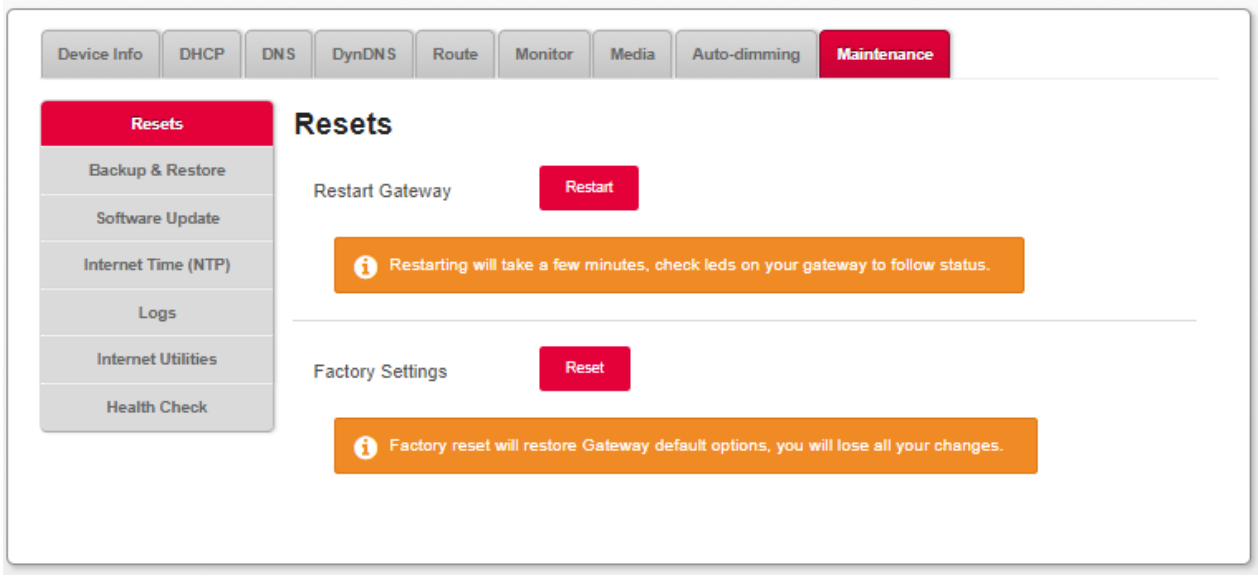
3.3.10.1 Resets

Objective: This menu is used to reset to the factory configuration.

Important

The existing configuration is completely overwritten.

- Save all the modifications made to the current configuration and restart the Sunrise Internet Box with its new parameters.
- In the **My Sunrise Internet Box** menu, select **Maintenance > Resets**. The following screen opens:



To restart the Sunrise Internet Box:

- Click on the **Restart** button.

Note

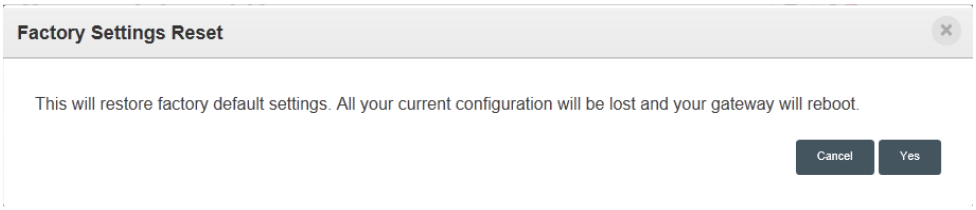
The process takes around 2 minutes.

A waiting wheel is displayed during restart.

The Login page will automatically appear once available.

To restore the default parameters (factory parameters):

- Click on the **Reset** button, and the following screen appears:



- Click on the **Yes** button if you really want to reset to the factory configuration.

Once the reset is performed, the **Internet Connection** menu appears.

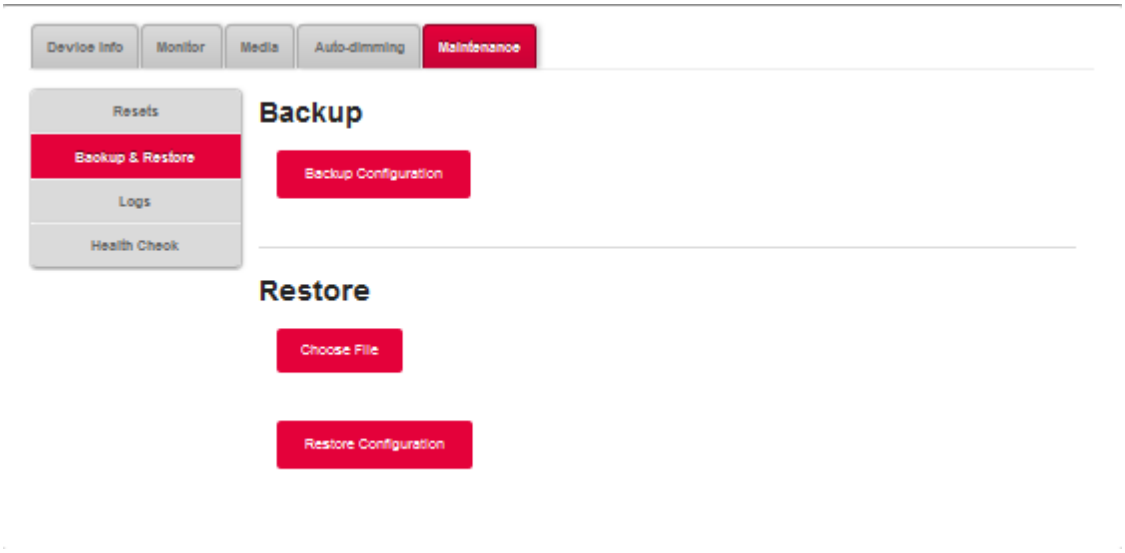
3.3.10.2Backup and Restore

Objective: This menu is used to:

- Backup the current configuration to a file.
- Restore a saved configuration.

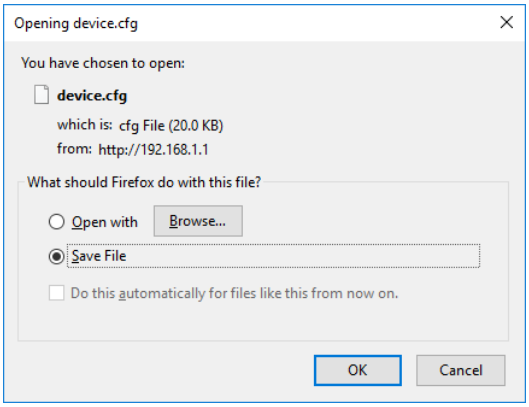
- In the **My Sunrise Internet Box** menu, select **Maintenance > Backup &**

Restore. The following screen opens:



To back up the current configuration:

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



- Click on **Save File** and **OK** button to save the current configuration, for example, on your computer.
- Select the directory where you want to save the "device.cfg" configuration file.

Note

The process takes a few seconds.

To restore a saved configuration:

- Click on the **Choose file...** button; then select the desired file.
- Click on the **Restore Configuration** button. The Sunrise Internet Box restarts automatically.

Important

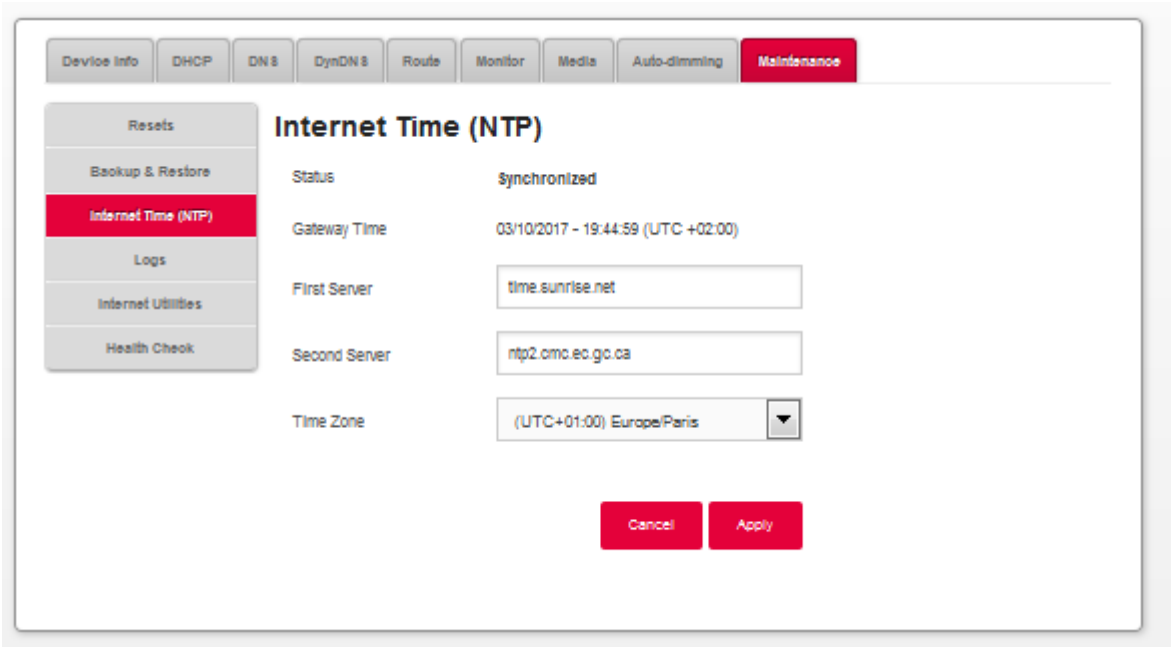
The following settings are not backed up: Parental Control (Private Address Filter), Custom Greeting Files, Phone Matrix, Call Forwarding, Call Blocking, WLAN/DECT Timer, Port Trigger settings and Static IP configurations. The remaining settings have to be configured manually again after reset.

3.3.10.3Internet Time (NTP)

Objective: This menu lets you display the date and time used by your Sunrise Internet Box, which is delivered automatically by an NTP (Internet Time) server after connection to the Internet.

- In the **My Sunrise Internet Box** menu, select **Maintenance > Internet Time (NTP)**.

The following screen opens:



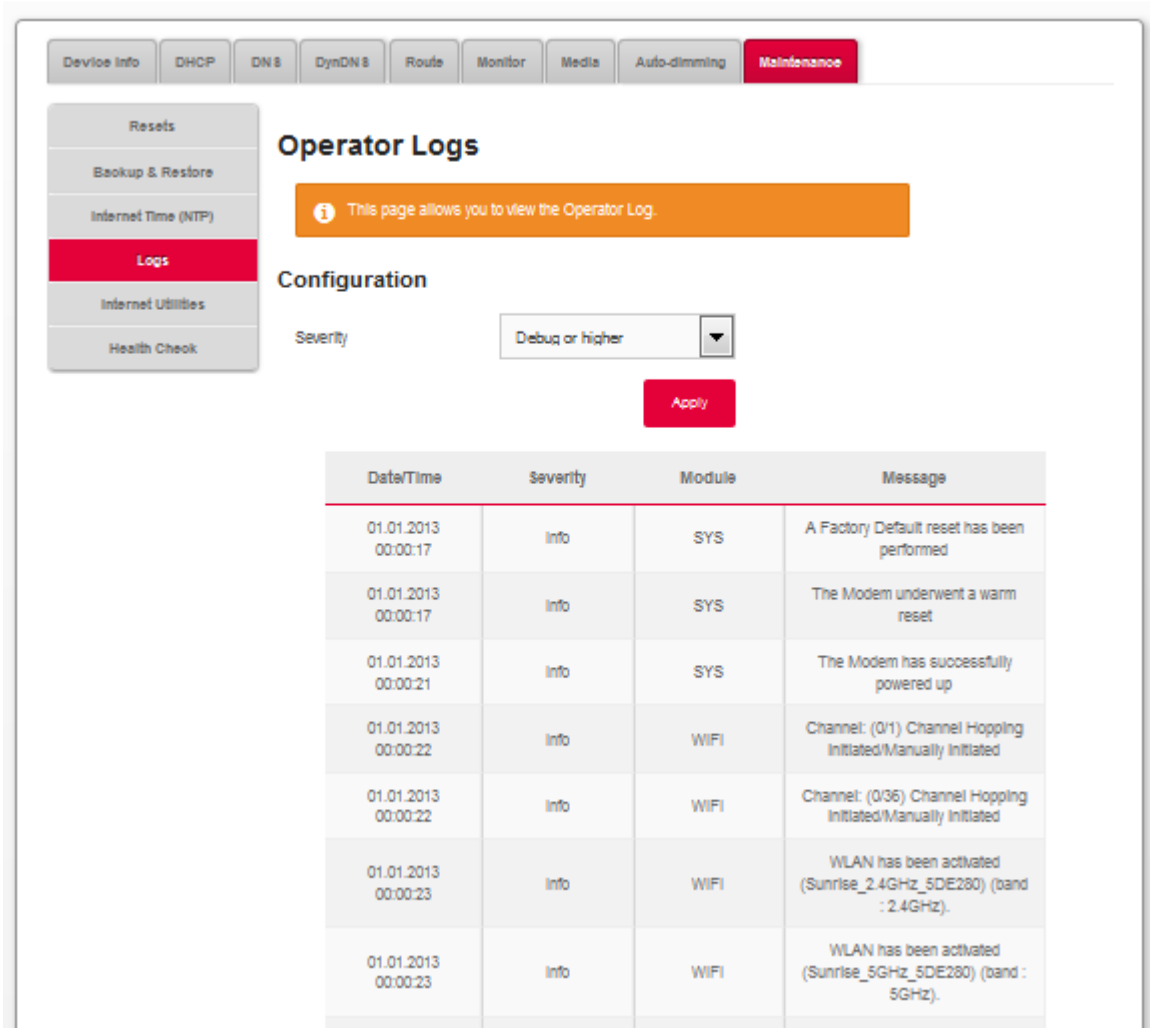
Field	Meaning/Action	Default value
Status	Information on whether the time has been successfully synchronized with an NTP server	
Gateway time	Date and time delivered to your Sunrise Internet Box.	
First server	Enter an NTP server in the field.	**time.sunrise.net**
Second server	Enter an NTP server in the field.	**ntp2.cmc.ec.gc.ca**
Time zone	In the drop-down list, select the appropriate time zone (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).	**(UTC+01:00) Europe/Paris**

3.3.10.4Logs

Objective: This menu is used to view and/or configure the events that occur on your Sunrise Internet Box.

- In the **My Sunrise Internet Box** menu, select **Maintenance > Logs**.

The following screen opens:



Field	Meaning/Action	Default value
Severity	Select the appropriate severity from the scroll down list. All the events with this severity, or a higher severity, will be saved to your Sunrise Internet Box's non-volatile (flash) memory. The severities are classified in increasing order of importance. • Debug or higher • Info or higher • Notice or higher • Warning or higher • Error or higher • Critical or higher • Alert or higher • Emergency or higher	**Debug or higher**

3.3.10.5Internet Utilities

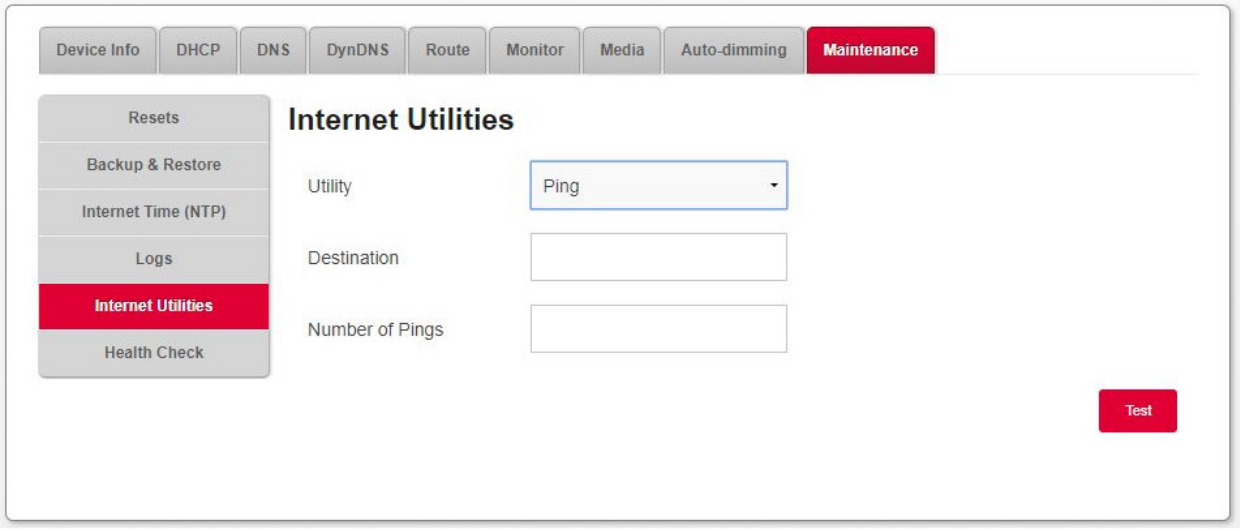
Objective: This menu is used to test the behavior of your Sunrise Internet Box using several tools.

- In the **My Sagemcom Box** menu, select **Maintenance > Internet Utilities**.

Ping

The ping tool shows how long it takes for packets to reach the host.

- Select **Ping** in the list.

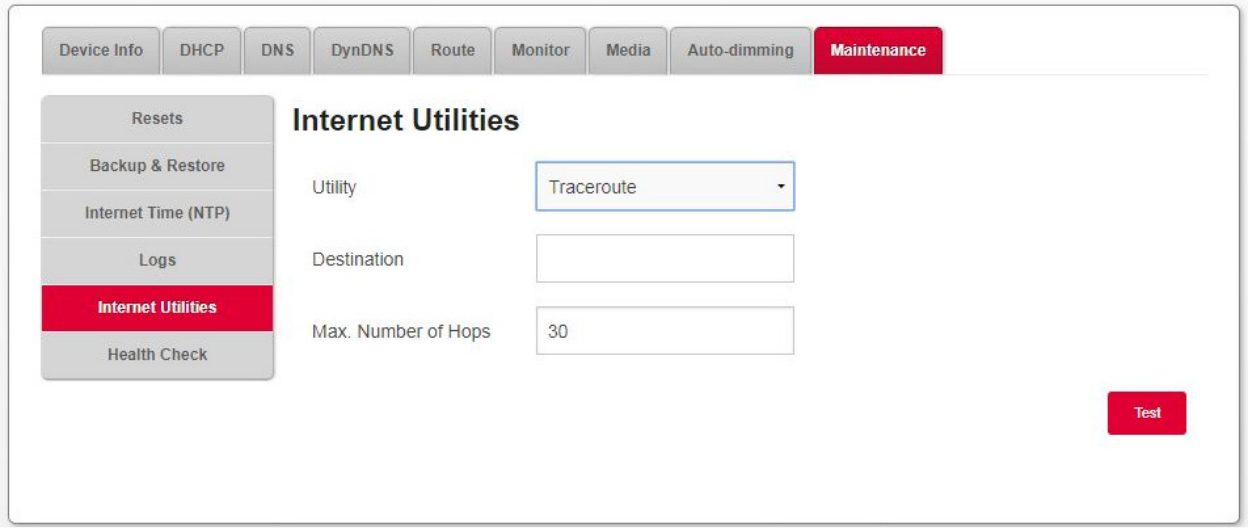


- Enter the IP address of the target.
- Define the number of pings.
- Click on the **Test** button.

Traceroute

The visual traceroute tool displays the path Internet packets traverse to reach a specified destination.

- Select **Traceroute** in the list.



- Enter the IP address of the target.
- Define the Max. Number of Hops
- Click on the **Test** button.

DNS Query

This allows you to check the current state of DNS propagation after having made changes to your domain records.

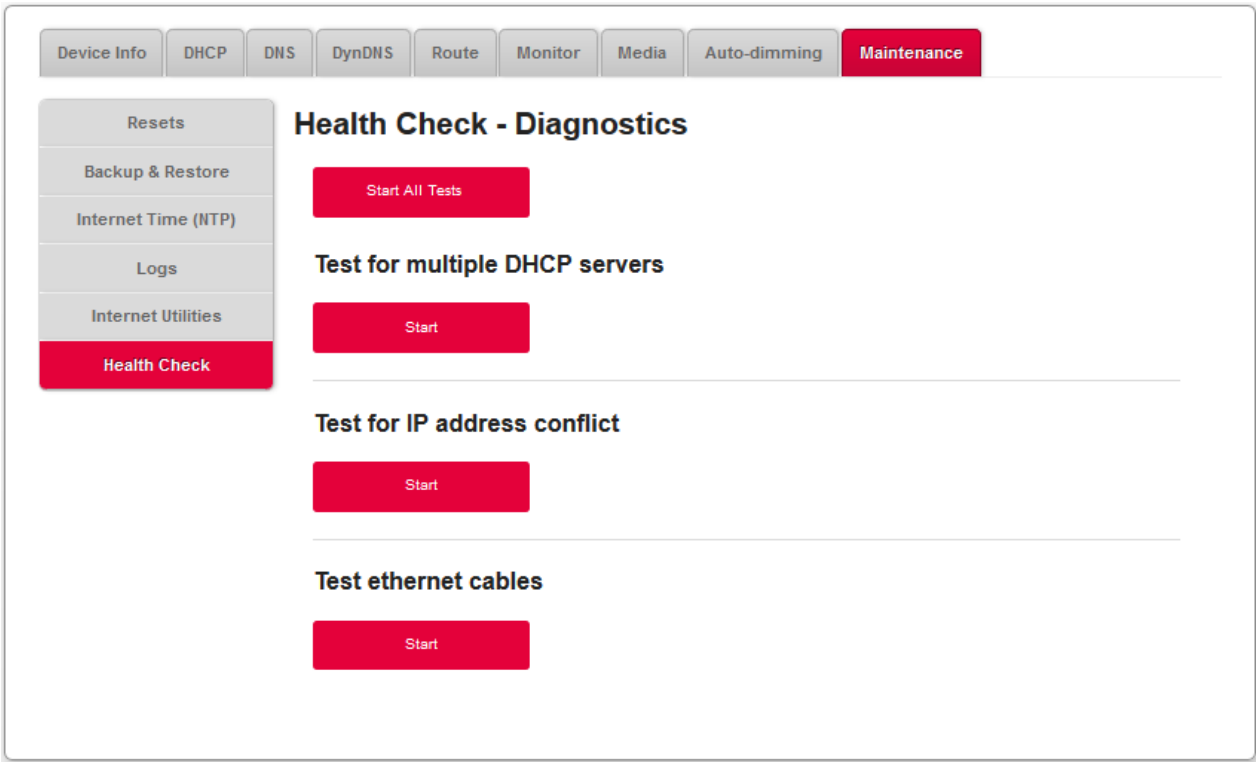
- Select **DNS Query** in the list.

- Enter the IP address of the target.
- Click on the **Test** button.

3.3.10.6Health Check

Objective: This menu is used to perform diagnostics on your Sunrise Internet Box.

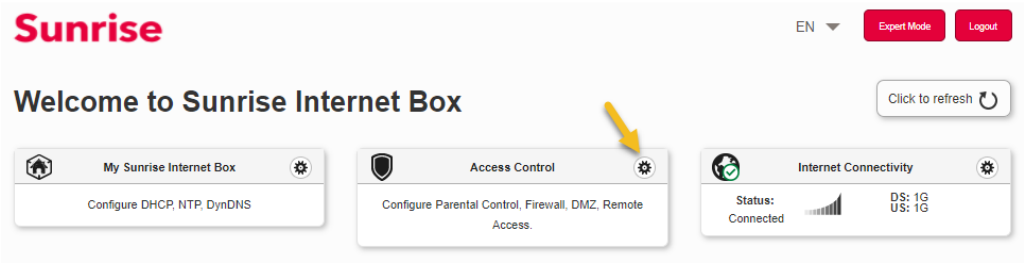
- In the **My Sunrise Internet Box** menu, select **Maintenance > Internet Utilities**.



Field	Action
Health check diagnostics	Launch all the tests
Tests for multiple DHCP servers	Checks for multiple DHCP services on the LAN side. This could be the case if you connect multiple gateways with each other.
Tests for IP address conflict	Checks if several devices have the same IP address. This can happen if you have configured a device with a static address that also belongs to the dynamic range.
Test Ethernet cables	Test for faults in Ethernet cables

3.4 Access Control

The access control settings are accessible from the welcome screen by clicking on the cogwheel symbol in section **Access Control**.



This Section contains the following menus:

- Parental Control (see Sub-section 3.4.1)
- Port Forwarding (see Sub-section 3.4.2)
- Port Triggering (see Sub-section 3.4.3)
- Firewall (see Sub-section 3.4.4)
- IPv6 pinhole (see Sub-section 3.4.5)
- DMZ (see Sub-section 3.4.6)
- IPv6 DMZ (see Sub-section 3.4.7)
- User (see Sub-section 3.4.8)
- Remote Access (see Sub-section 3.4.9)
- VPN (see Sub-section 3.4.10)

3.4.1 Parental Control

Objective: This menu is used to create and manage access time and URL restrictions for all devices that are connected to the Sunrise Internet Box via LAN or WLAN.

This Section contains the following menus:

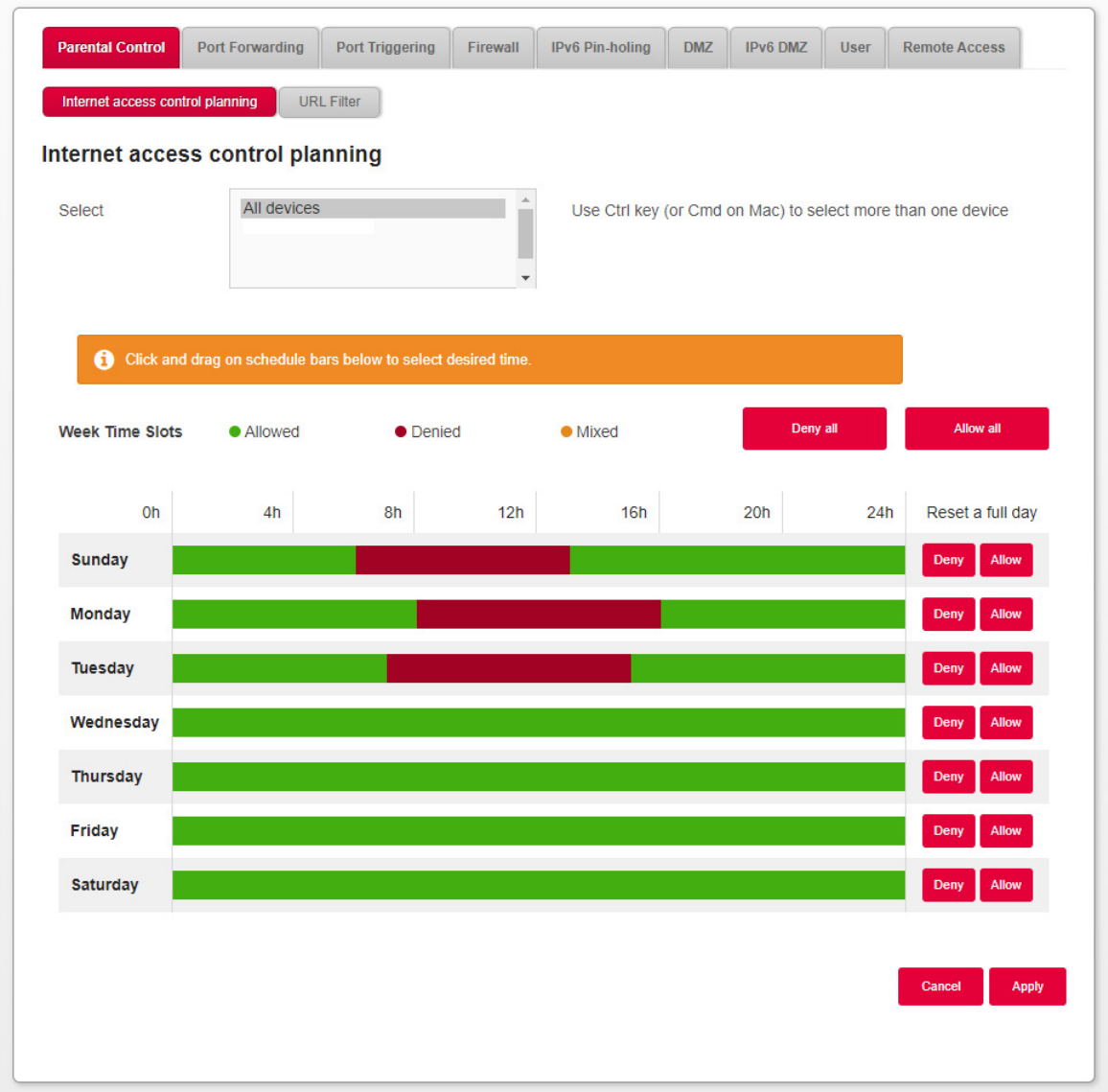
- Internet access control planning (see Sub-section 3.4.3.1)
- URL filter (see Sub-section 3.4.3.2)

3.4.1.1 Internet access control planning

Objective: This menu is used to create and manage access time for all devices that are connected to the Sunrise Internet Box via LAN or WLAN. By default, all devices have access to the Internet all the time, but you can define days and time slots where your devices should be able to access or the Internet or not by selecting them in the table below.

- In the **Access control** menu, select **Parental Control** > **Internet Access control**

Planning. The following screen opens:



To define a time restriction, proceed as follows:

- Select the desired device in the list (IP address, host name, etc.).

Note

If you select **All devices**, the time restriction will be applied to all connected devices.

- Configure the time restriction for each day of the week.

Note

Allow all: Internet access is always authorized.

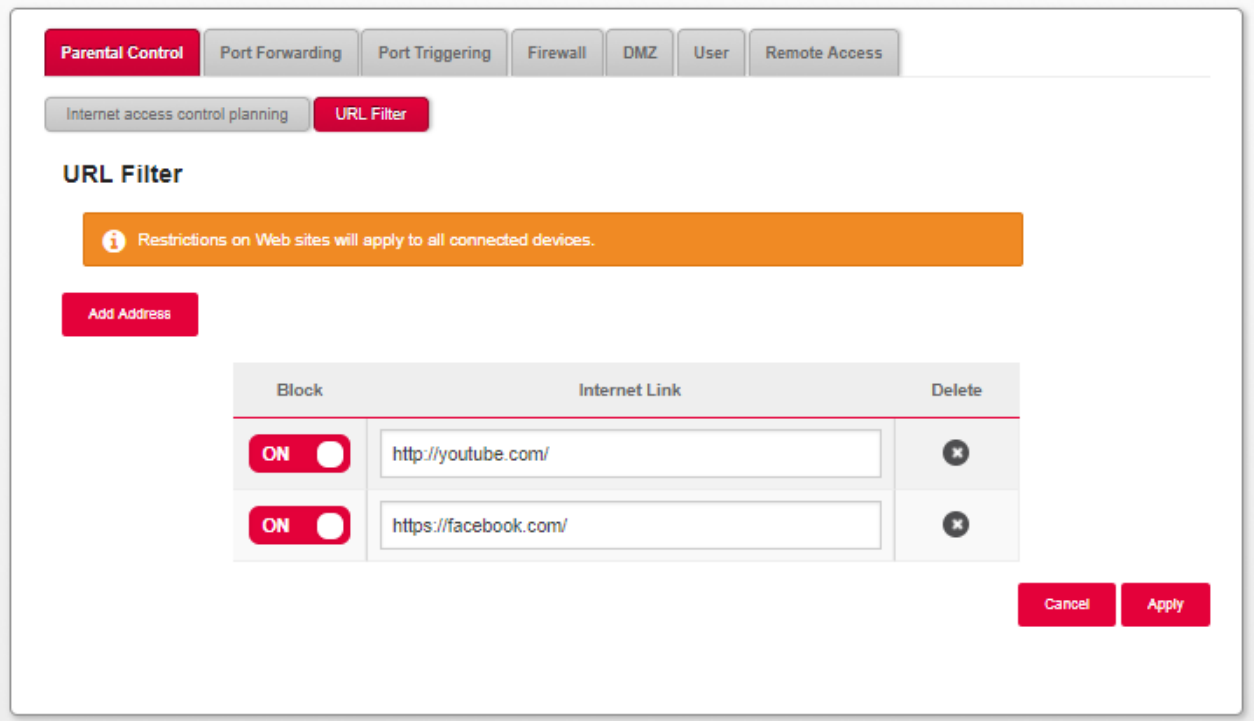
Deny all: Internet access is not allowed.

- Click on the **Apply** button to save the configuration.

3.4.1.2 URL Filter

Objective: This menu is used to create and manage URL access restriction for all devices that are connected to the Sunrise Internet Box via LAN or WLAN.

- In the **Access control** menu, select **Parental Control** > **URL Filter**. The following screen opens (for illustration purpose, two entries have been added):



To configure an access restriction, proceed as follows:

- Enter the URL address whose access you have to restrict.
- Click on the **Apply** button.

Note

From the list, you can perform the following actions:

- Activate or deactivate access restriction using the **ON**/**OFF** button,
- Delete access restriction by clicking on the button.

Important

The private address filter only works if the (default) values for the DNS configuration remain unchanged (see Section 0).

3.4.2 Port Forwarding

Objective: This menu is used to route incoming data from a Service server directly to the External ports (e.g. the FTP Server, SNMP, TFTP, etc.) of the remote network (WAN) to computers on the local network (LAN) via the Internal ports.

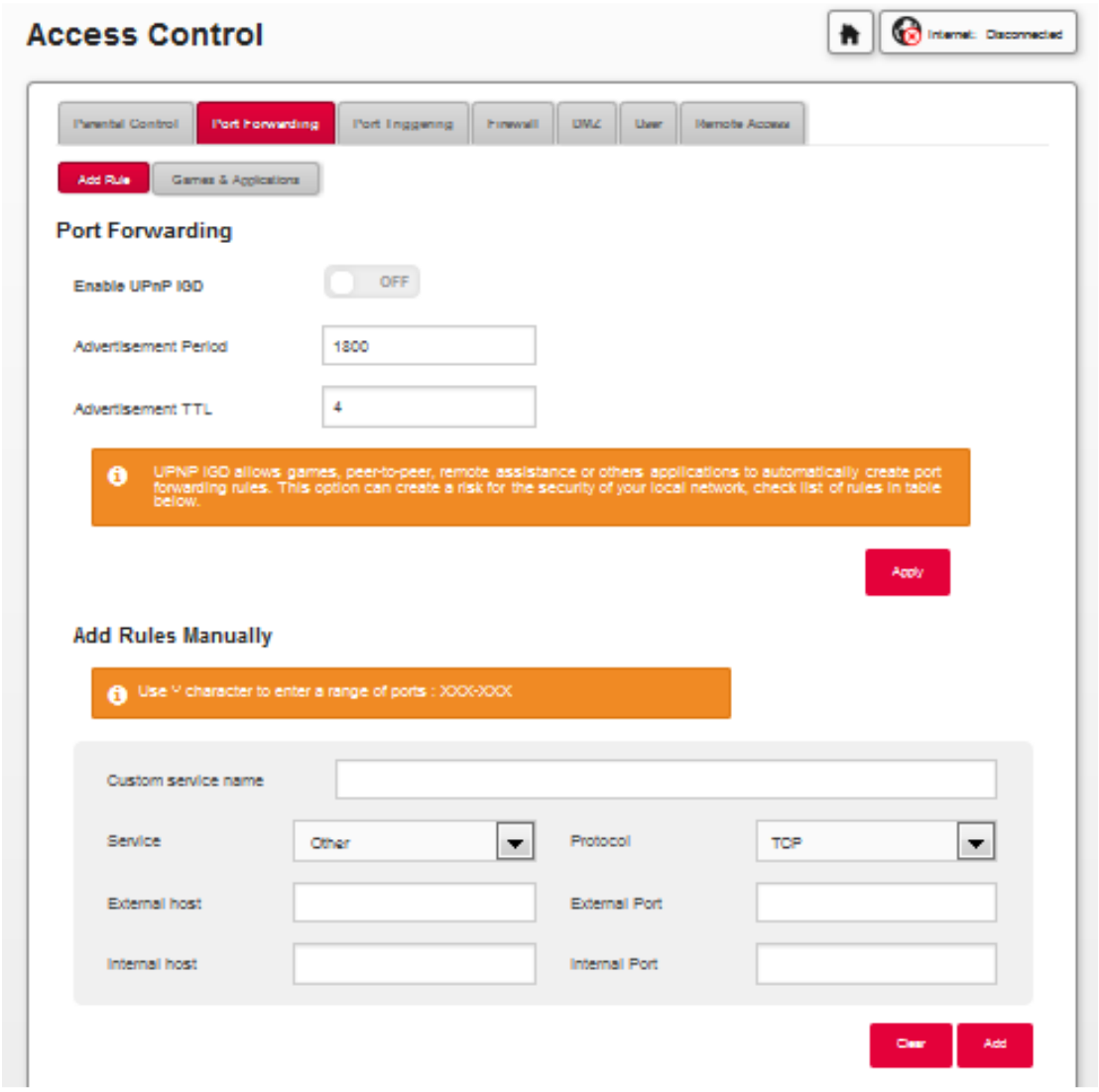
This Section contains the following menus:

- Add rule
- Games and Applications

3.4.2.1 Add Rule

- In the **Access Control** menu, select **Port Forwarding > Add Rule**.

The following screen opens:



Field	Meaning
Enable UPnP IGD	Press the ON/OFF button to activate or deactivate the UPnP protocol. The UPnP IGD function lets your LAN devices open ports dynamically.
Advertisement period	The Advertisement period is how often the router will advertise (broadcast) its UPnP information.
Advertisement TTL	Advertisement Time To Live is the time to live for the advertisement. It is measured in hops (steps) for each UPnP packet sent.
Custom services name	Name you want to allocate to the service when you choose **Other** in the field **Service**.
Service	**Select a Service**: Service available over Internet (such as, for example FTP, HTTP, SMTP, etc.). You can select **Other** to define a customized service. In this case, you must fill in all fields manually.
Protocol	Transport protocol (TCP, UDP, TCP/UDP, etc.).
External host	This field can stay empty or you can enter 0.0.0.0 or WAN IP address.
External port	Enter a port value between 2 and 65535.
Internal host	Enter the IP address of your LAN device (IP address in the configured DHCP subnet) to which the port will be forwarded.
Internal port	Enter a port value between 2 and 65535.

Proceed as follows:

- Select the service of your choice from the scroll down list, for example "SNMP."

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

  The **External host** and **Internal host** fields must be filled manually.

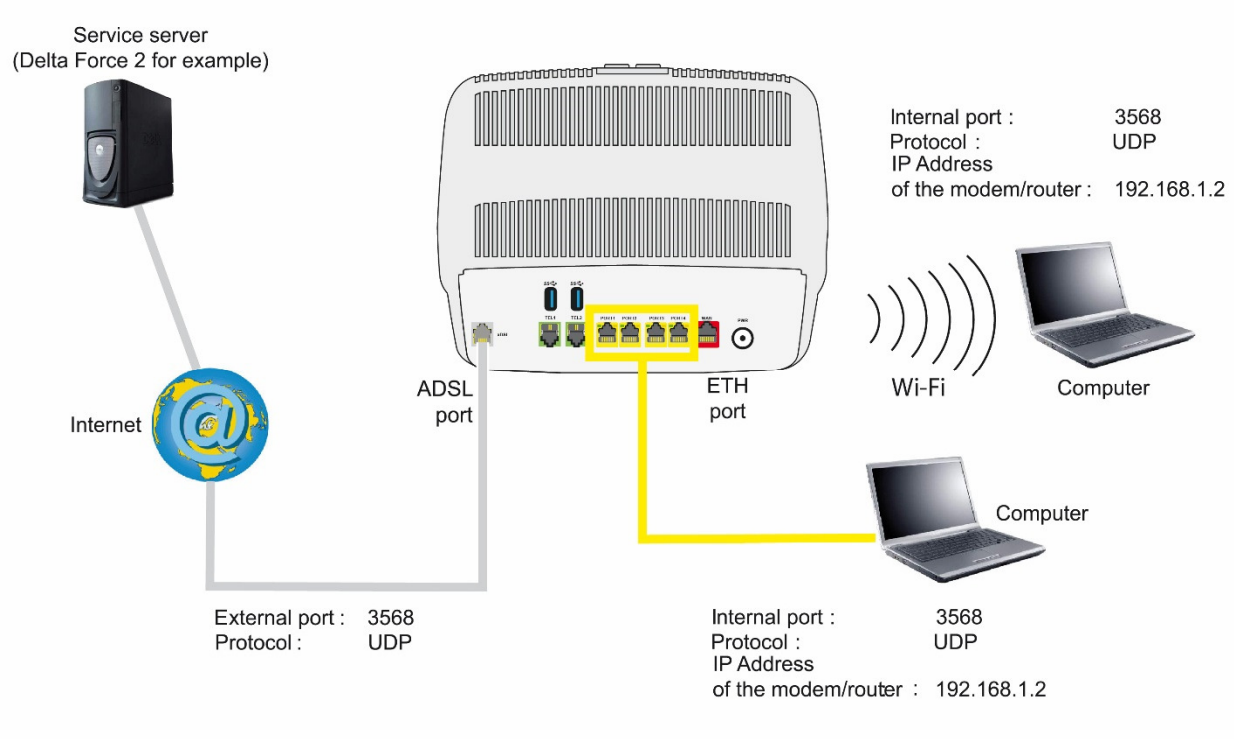
or

- Select **Other**, enter the name of the server you want to connect to in the field, then:
  - Complete the ID Host of your computer's IP address (this is attributed by your Sunrise Internet Box's DHCP server).
  - Fill in the **External Port**, **Internal Port**, **External host** and **Internal host** and **Protocol** fields.

Note

The operation with 50 Port Forwarding's was successfully tested.

The following diagram contains an example:

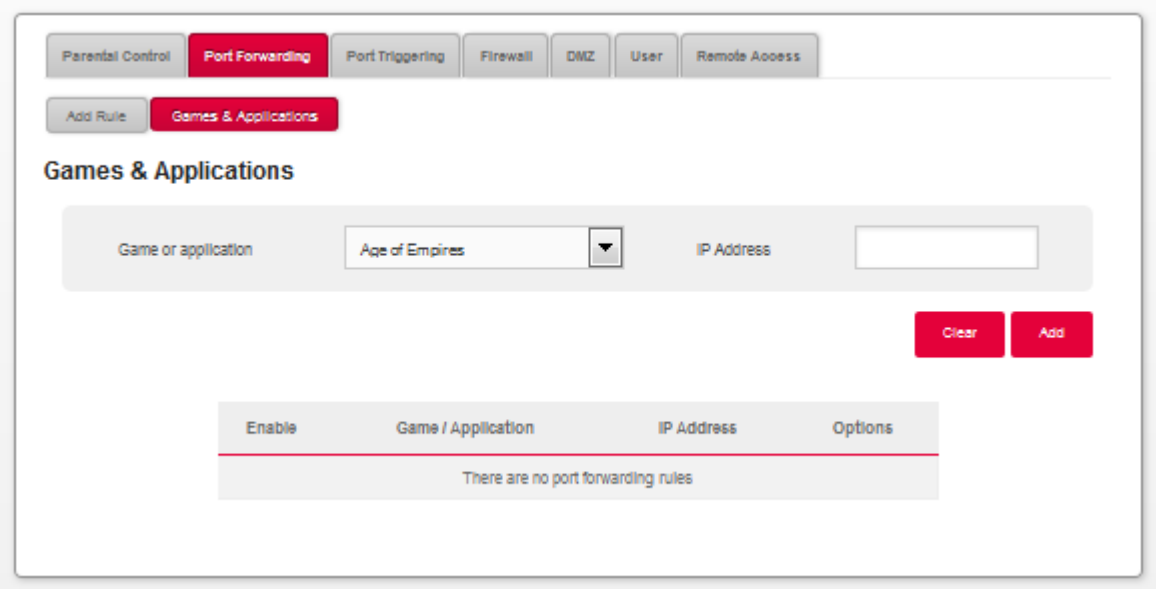


The "Delta Force 2" service is available on your computer via the external port 3568 (WAN side) and via the internal port 3568 (LAN side).

3.4.2.2 Games and Applications

- In the **Access Control** menu, select **Port Forwarding > Games & Applications**.

The following screen opens:



Field	Meaning
Games & applications	Select the game or application from the scroll down list.
IP Address	Enter the IP address of the PC on which the game/application is running.

- Click on the **Add** button.
  The game or application is added to the list.

Note

From the list, you can perform the following actions:

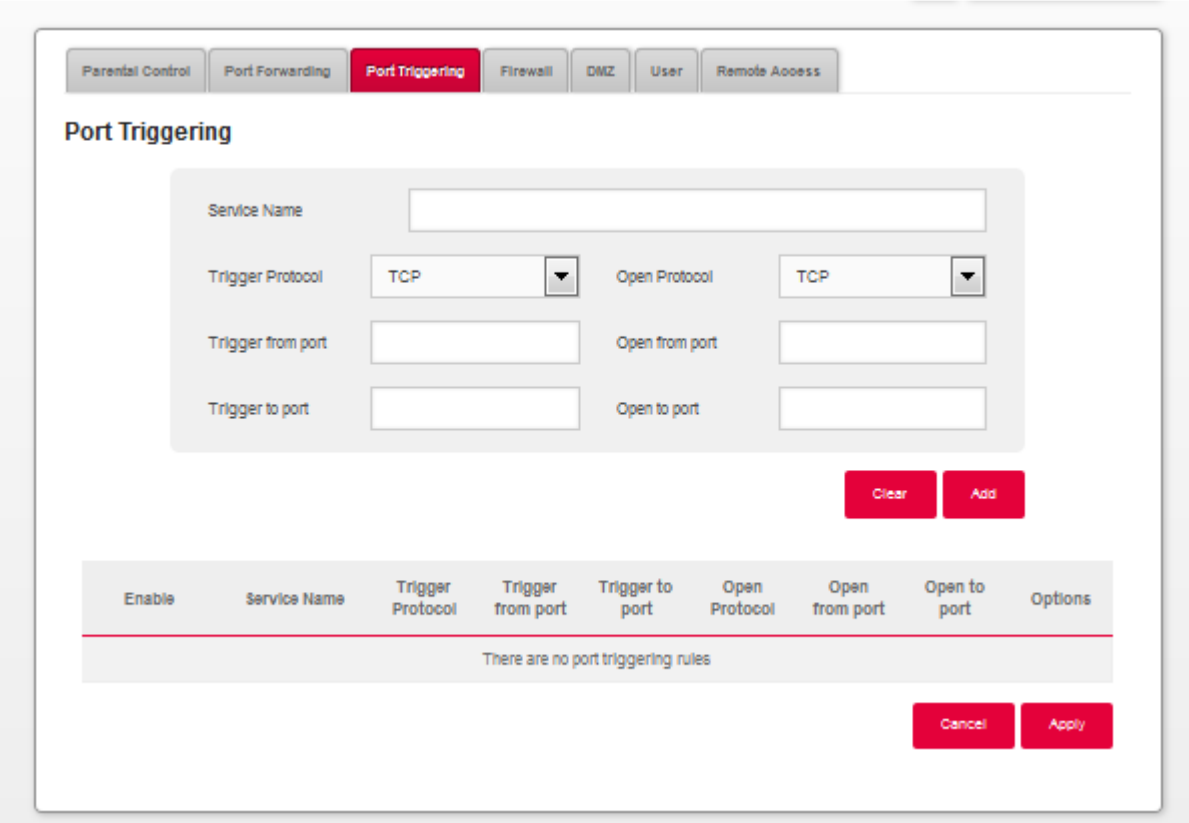
- Activate or deactivate the rule using the **ON/OFF** button,
- Delete the rule by clicking on the button.

3.4.3 Port Triggering

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

- In the **Access Control** menu, select **Port Triggering**.

  The following screen opens:



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

To configure the **Trigger Port** and **Open Port**, proceed as follows:

- Enter the name of your own application.
- Select the **Trigger Protocol** and the **Open Protocol** from the scroll down list
- Fill in the **Trigger From Port**, **Trigger To Port**, **Open From Port** and **Open To Port** fields.
- Click on the **Add** button.
  The service is added to the list.

Note

From the list, you can perform the following actions:

- Activate or deactivate the rule using the **ON**/**OFF** button,
- Modify the rule by clicking on the button.
- Delete the rule by clicking on the button.

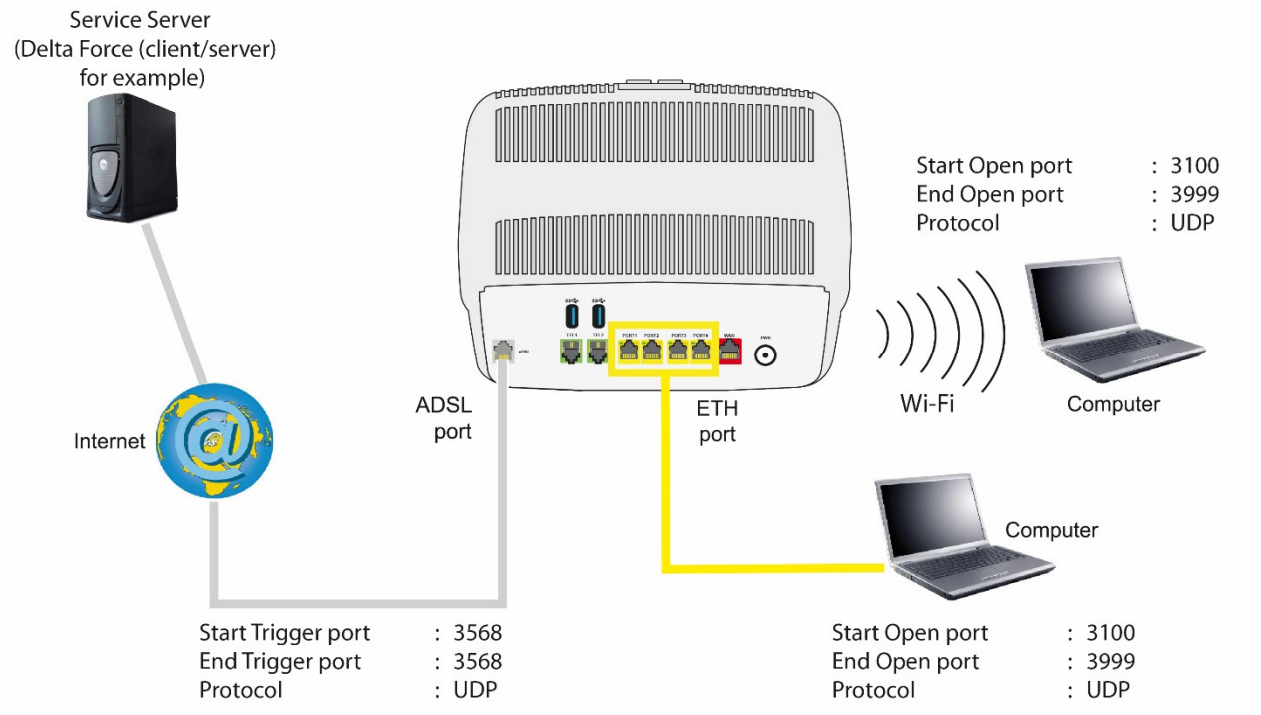
Note

The maximum number of concurrently activated Port Triggering's is set to 50

A few rules for entering values:

- When you want to select a single port, the start port (**Trigger From Port** or **Open From Port**) and the end port (**Trigger To Port** or **Open To Port**) 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:

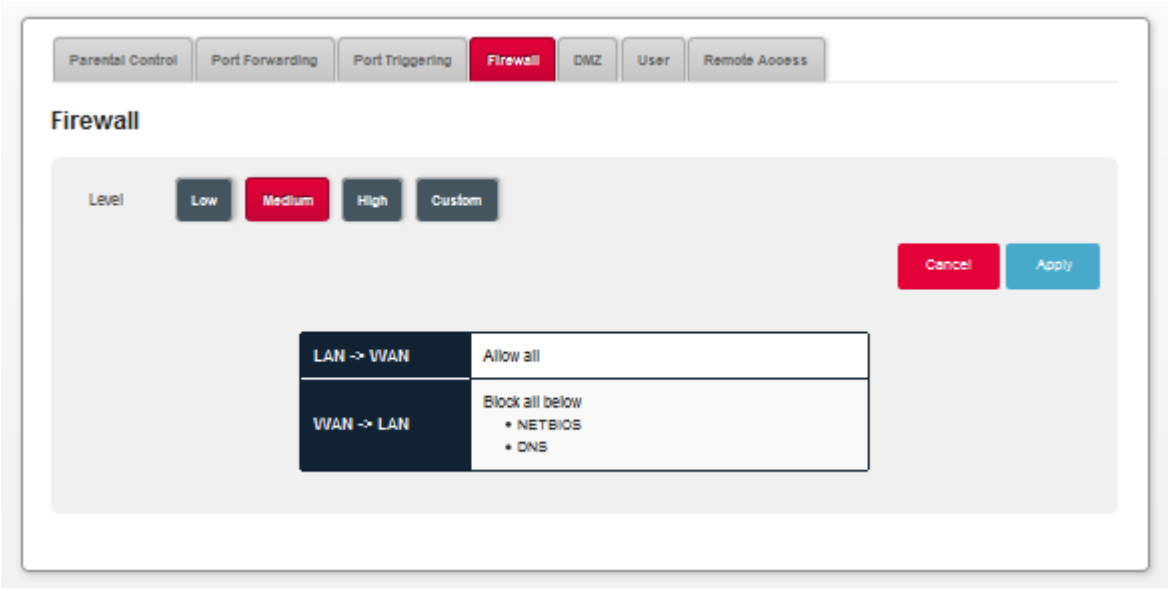


Using the "Trigger" 3568 port (WAN side), the "Delta Force" service server triggers the opening of port range 3100 to 3999 for your computer to access this service.

3.4.4 Firewall

Objective: The Sunrise Internet Box has a built-in firewall that helps you protect devices on the local network against hacking and other security threats.

- In the **Access control** menu, select **Firewall**. The following screen opens:



- Choose the desired security level from the options below.

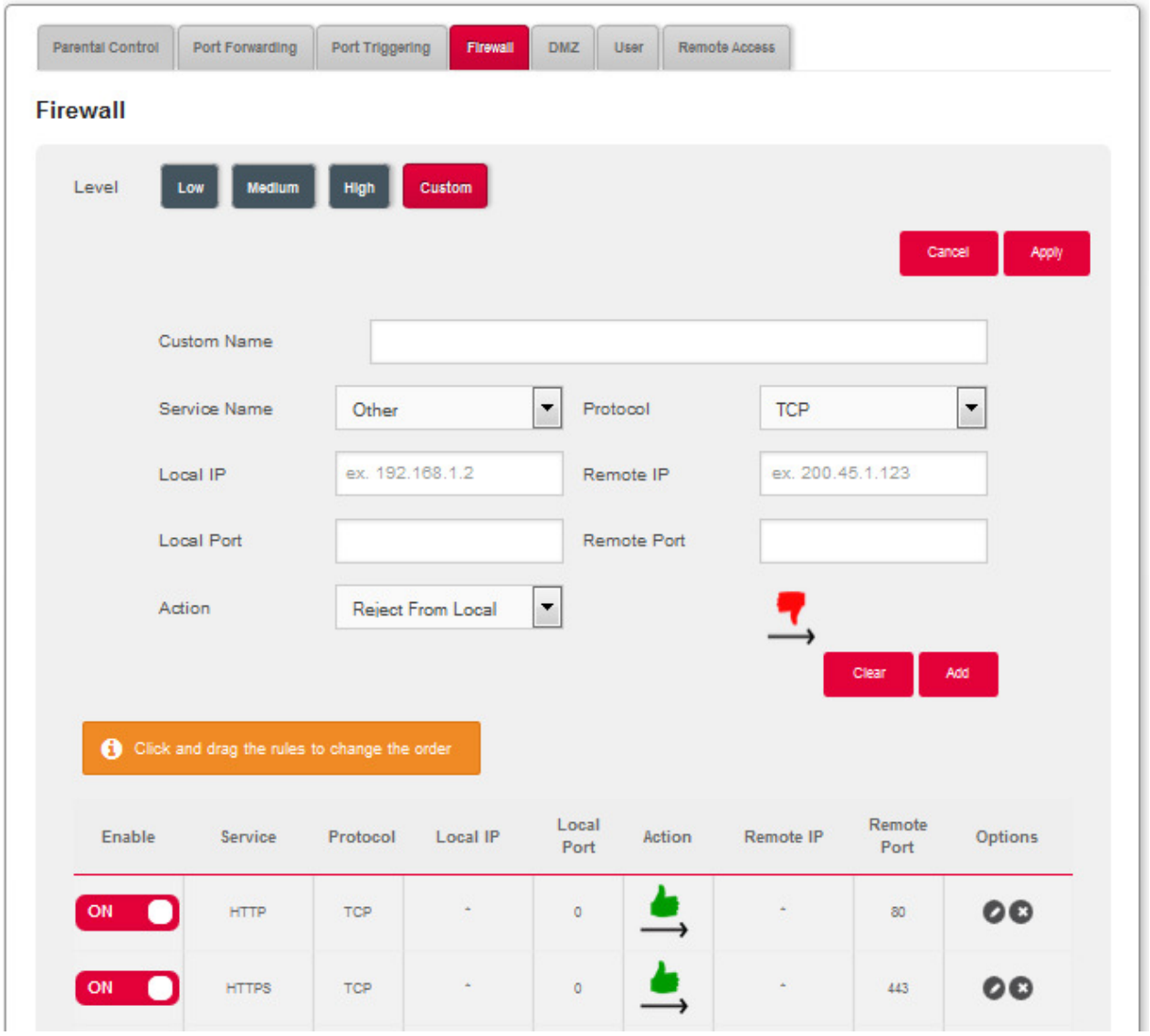
Field	Meaning
Low	Minimum Security level. The firewall does not filter anything. Be careful; this level is reserved for advanced users to whom security is not a priority.
Medium	Typical Security level (default value). The firewall drops all entering connections. Outgoing traffic is allowed, except for NetBIOS services. This mode is recommended
High	Maximum Security level. The firewall allows the exit of standard services (www, ftp, mail, news, etc.) and drops unexpected incoming connections. This setting is recommended to have the maximum security level. Warning: Incompatible with several services.
Custom	This profile allows you to customize your firewall and define some specific filtering rules. (Reserved for expert users).

To configure the firewall with customized rules, proceed as follows:

Note

On this page you can add customized filtering rules. For novice users, it is recommended that you use of the security levels predefined on the previous page. A bad firewall configuration may prevent you from accessing the Internet service.

- Click on **Custom** button.



Field	Meaning
Custom Name	Name you want to allocate to the service when you choose **Other** in the field **Service**.
Service Name	**Select a Service**: Service available over Internet (such as, for example FTP, HTTP, SMTP, etc.). You can select **Other** to define a customized service. In this case, you must fill in manually all fields.
Protocol	Select the transport protocol (TCP, UDP, etc.).
Local IP	IP address of the device on your local network.
Remote IP	IP address of the remote device on the public network.
Local Port	Communication port of the device on your local network.
Remote Port	Communication port of the remote device on the public network.
Action	Select the action for the current service from the scroll down list: •  Reject From local: Blocks all outgoing services. •  Reject From Remote: Blocks all incoming services. •  Reject In Both Ways: Blocks all incoming and outgoing services. •  Accept From local: Authorizes all outgoing services. •  Accept From Remote: Authorizes all incoming services. •  Accept In Both Ways: Authorizes all incoming and outgoing services.

Note

From the list, you can perform the following actions:

- Activate or deactivate the rule using the **ON/OFF** button,
- Modify the rule by clicking on the button.
- Delete the rule by clicking on the button.

Note

The operation with 50 simultaneously activated filter rules within the firewall was tested successfully.

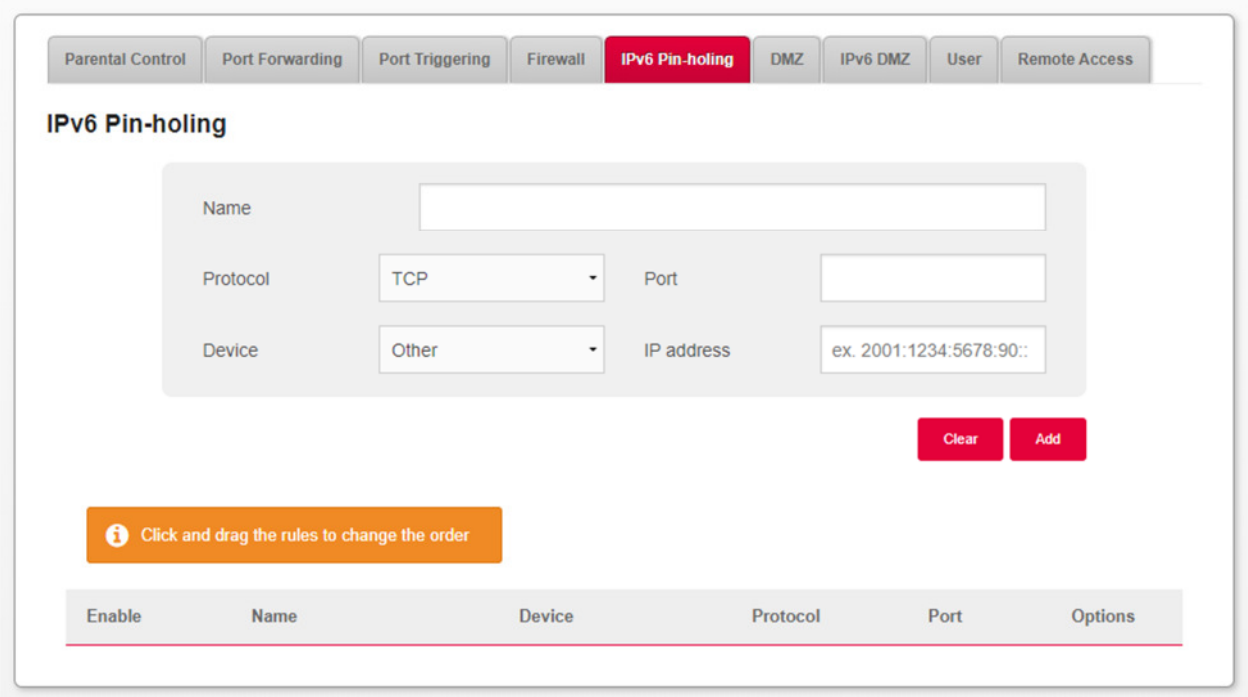
3.4.5 IPv6 pinhole

Objective: The firewall pinhole is a port that is not protected by the firewall. It therefore allows a specific application to have full access to a service on a device in the network normally protected by the firewall.

Important

Caution: this function carries the risk of possible intrusion. It is therefore essential that you take precautions to prevent unwanted connections being initiated to the local network.

- In the **Access Control** menu, select **IPv6 Pin-holing**. The following screen opens:



Field	Action
Name	Name that you want to assign to the service
Protocol	Select the transport protocol (TCP/UDP/BOTH).
Port	Communication port of the device on which the data traffic will not be filtered.
Device	Select one of the connected terminals from the list
IP(v6)-address	Permanent IPv6 address of the device on which the pinhole is active

Note

Please check regularly if you still need IPv6 pinholes and delete/deactivate them again.

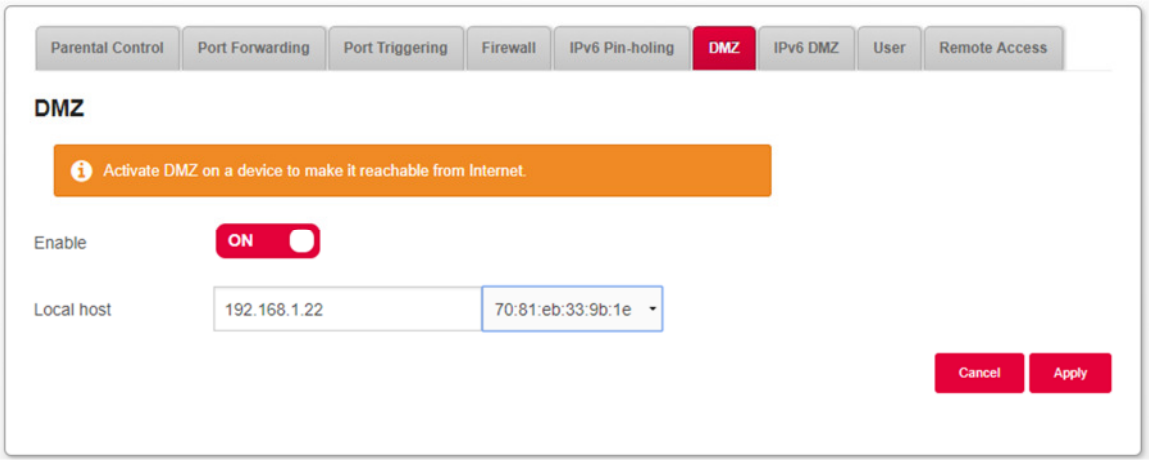
3.4.6 DMZ

Objective: This "DMZ" (**De**-**M**ilitarized**Z**one) lets you access the server you selected directly via the Internet without going through the "firewall."

Important

Caution: This process presents an intrusion risk. It is therefore vital that you take precautions so that no connections may be initiated to the local network.

- In the **Access Control** menu, select **DMZ**. The following screen opens:



Field	Action	Default value
Enable	Click on the **ON**/**OFF** button to activate or deactivate the DMZ.	**OFF**
Local host	Enter the IP address of a server to activate the "DMZ" and then access it directly from the Internet. **Note:** Click on the **Apply** button to confirm the address or its deletion.	-

Note

The feature **DMZ** zone is deactivated by default.

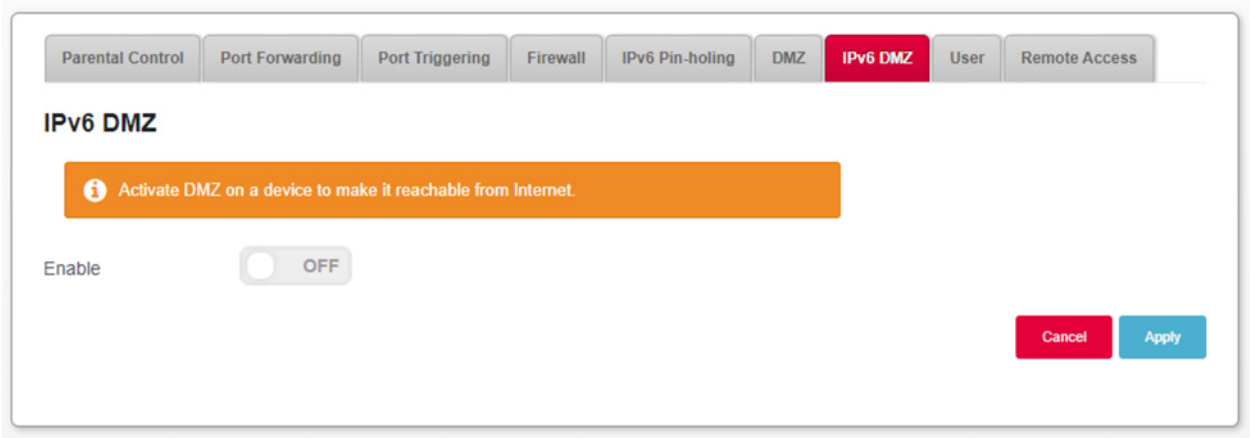
3.4.7 IPv6 DMZ

Objective: As described in the previous section, "IPv6 DMZ" (DeMilitarized Zone) allows you to access a selected server directly over the Internet, bypassing the firewall. However, the function here supports servers that are accessed via an IPv6 address.

Important

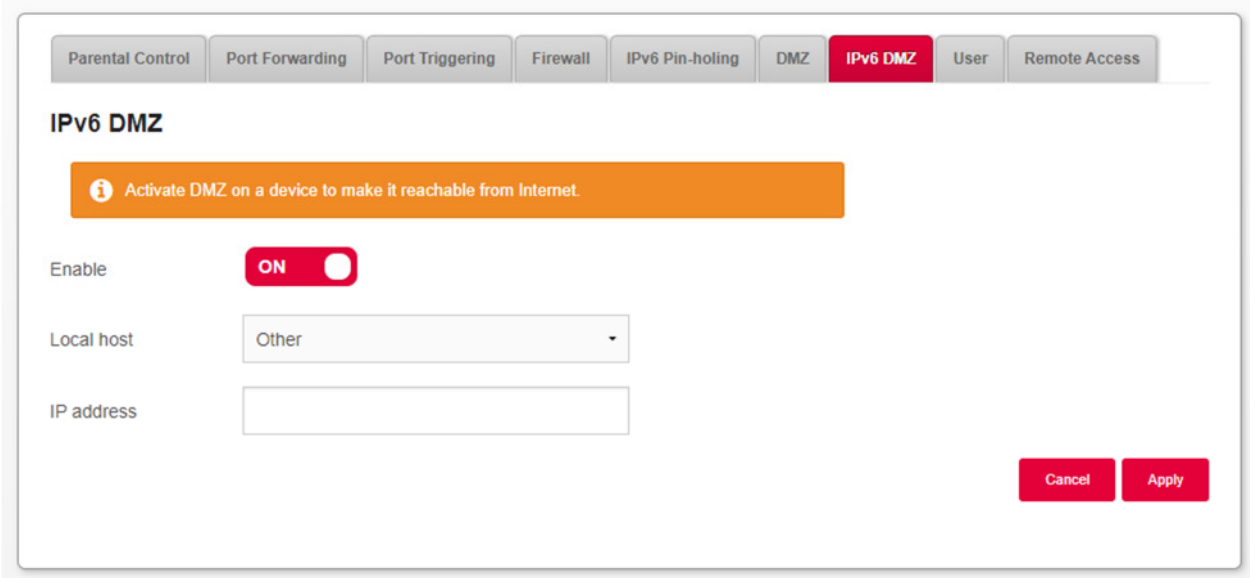
Caution: This process presents an intrusion risk. It is therefore vital that you take precautions so that no connections may be initiated to the local network

- In the **Access Control** menu, select **IPv6 DMZ**. The following screen opens:



Note

The feature **IPv6 DMZ** zone is deactivated by default

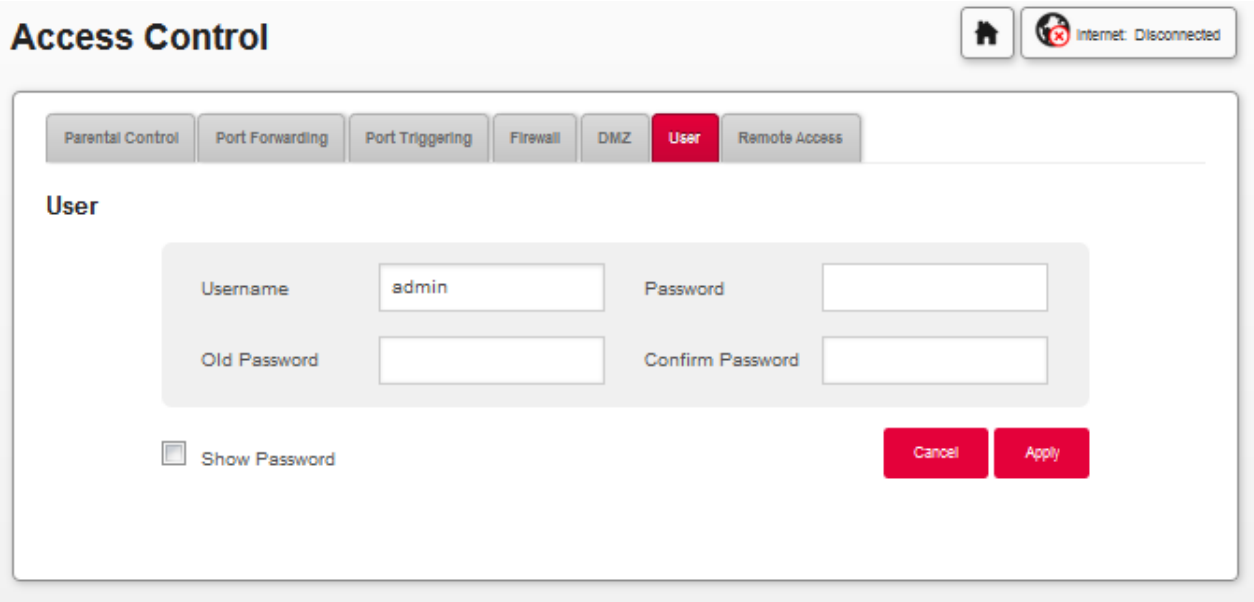


Field	Meaning/Action	Default value
Activate	Click the **ON**/**OFF** button to enable or disable the DMZ for IPv6 servers.	**OFF**
Local Host	Select one of the connected devices from the list to activate the IPv6 DMZ. This device can then be accessed directly from the Internet as a server.	-
IP(v6)-Address	Enter the IPv6 address of a server to activate the DMZ and thus allowing access to the server directly from the Internet. **Note**: Click on the **Apply** button to save or delete the address.	

3.4.8 User

Objective: This menu lets you modify the password.

- In the **Access Control** menu, select **User**. The following screen opens:



Field	Action
User name	Enter your user name
Old password	Enter your old password
Password	Enter your new password
Confirm Password	Confirm your new password

Note

The password must be composed of at least 6 characters with a minimum combination of 2 letters and 2 numbers.

Important

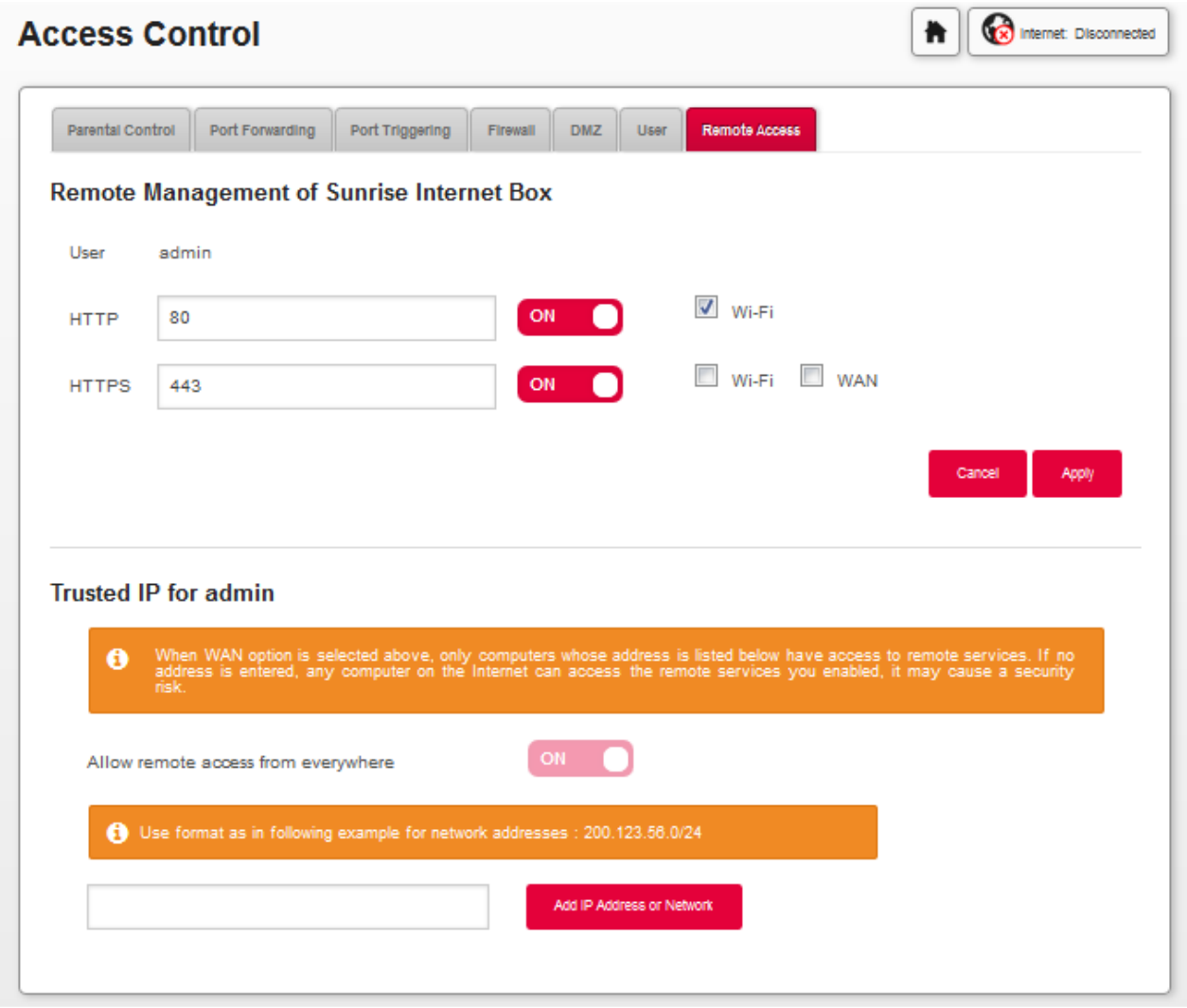
Please note that after successfully changing the password, access to the user interface is only possible with the **new** password.

If you have forgotten the new password, you can only access the user interface of the Sunrise Internet Box again after resetting it to factory default (see section A.7).

3.4.9 Remote Access

Objective: Use this function when you want to authorize remote devices to have access to the remote services.

- In the **Access Control** menu, select **Remote Access**. The following screen opens:



Field	Meaning/Action
HTTP	Define the port number. Press on the **ON**/**OFF** button to activate/deactivate the desired protocol. For each protocol, define the authorized connections (Wi-Fi or WAN)
HTTPS	
Add IP Address or Network[a]	Allows definition of the authorized devices. You can configure an IP address or the network that contains the authorized device.

a. Use this option when remote access is authorized via WAN.

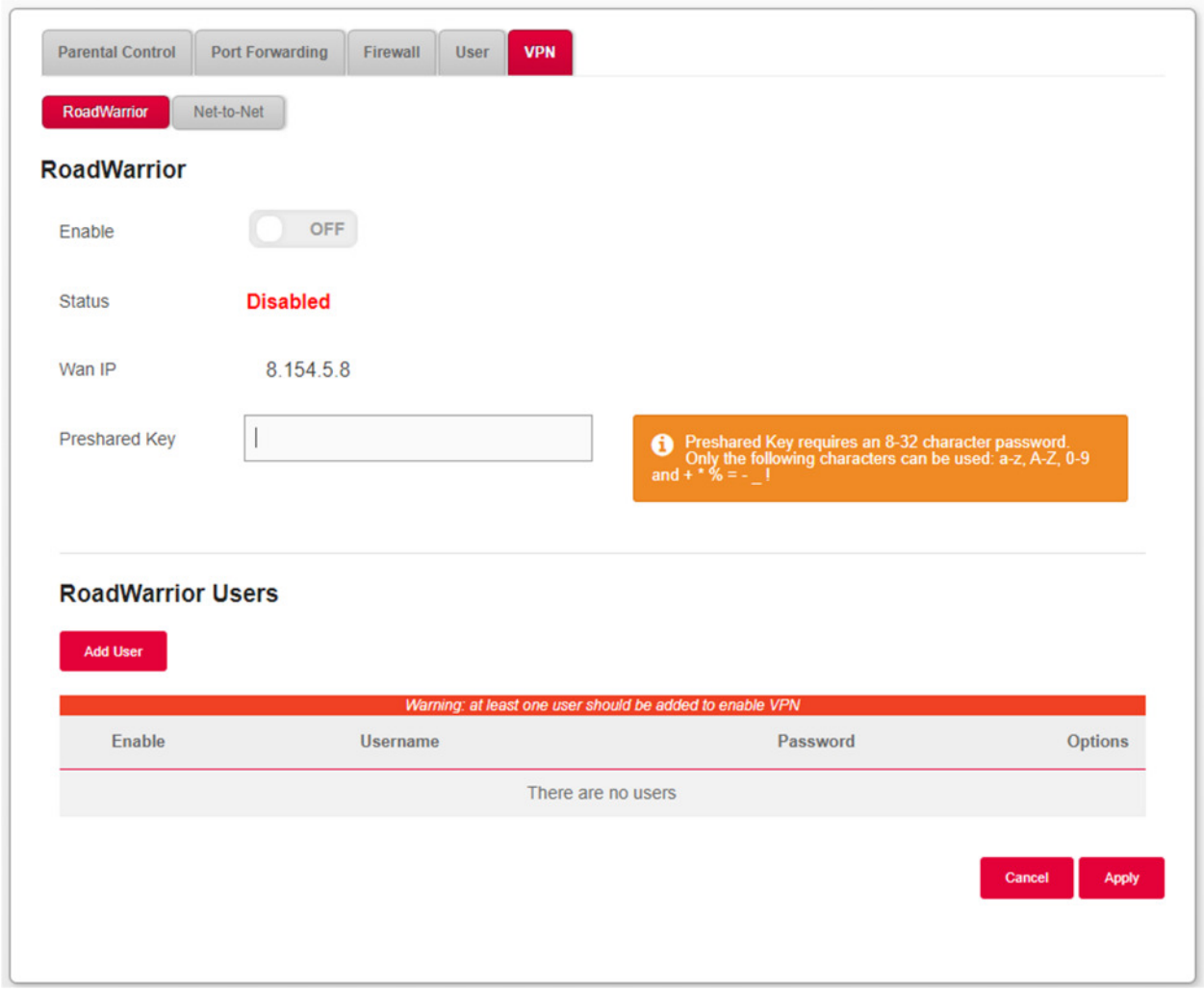
3.4.10 VPN (Virtual Private Network)

Objective: A virtual private network (VPN) extends your home network across a public network and enables you to send and receive data across public networks as if your devices were directly connected to the home network. Such devices (also called “VPN-clients”) may therefore benefit from the functionality, security, and management of the home network. Your Sunrise Internet Box can establish a secured and encrypted VPN connection to another device (“RoadWarrior”, see Subsection 3.4.10.1 and 3.4.10.2) or another home network (“Net-to-Net”, see Subsection 3.4.10.3 to 3.4.10.5).
You will find a troubleshooting section answering the most common questions of the VPN configuration in Subsection 3.4.10.6.

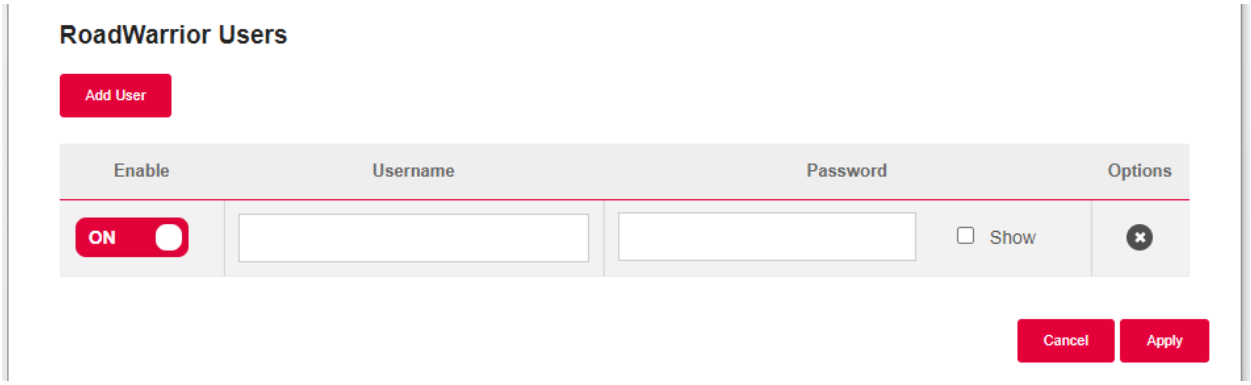
3.4.10.1 Configuration of RoadWarrior on your Internet Box

Objective: This section describes the necessary steps to prepare and enable the VPN feature on your Sunrise Internet Box in order to connect Clients (so called RoadWarriors) to it in a second stage.

- In the **Access Control** menu, select **VPN**. The following screen opens:



- Please click on “Add User”. The following table will open:

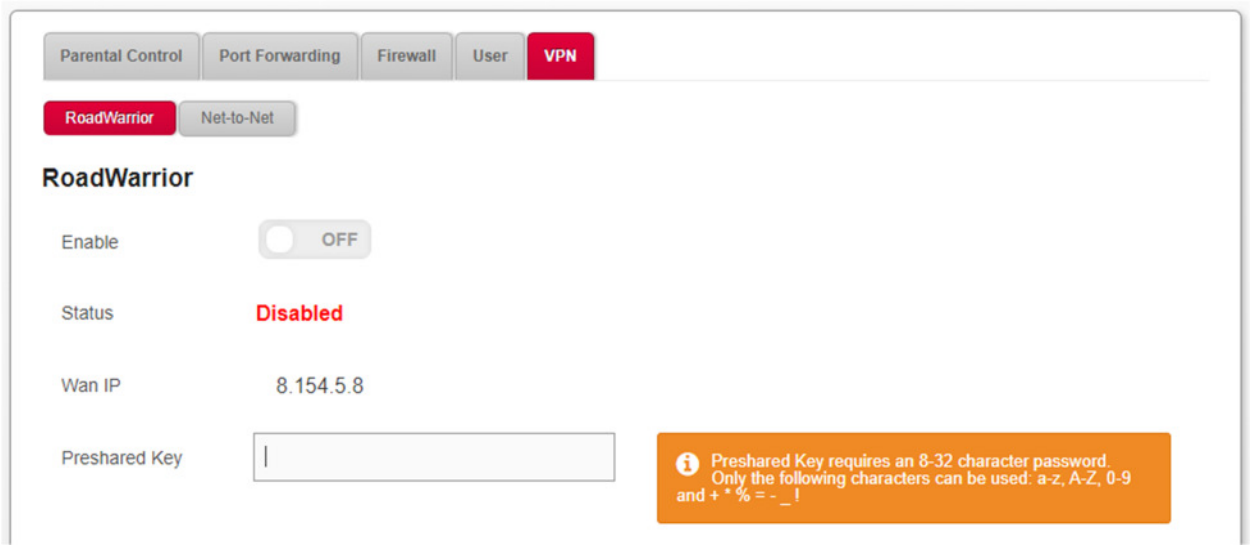


Field	Meaning/Action
Enable	Default if ON. Please only change to OFF if you want to prevent this user from using VPN feature.
Username	Enter a username
Password	Enter a password **Note:** The password must be composed of at least 8 characters. For security reasons we recommend using a strong password that consists of a random combination of letters, numbers and special characters.
Show	Allows to see the entered password in clear text
Options	Clicking  will delete the user from the list

Note

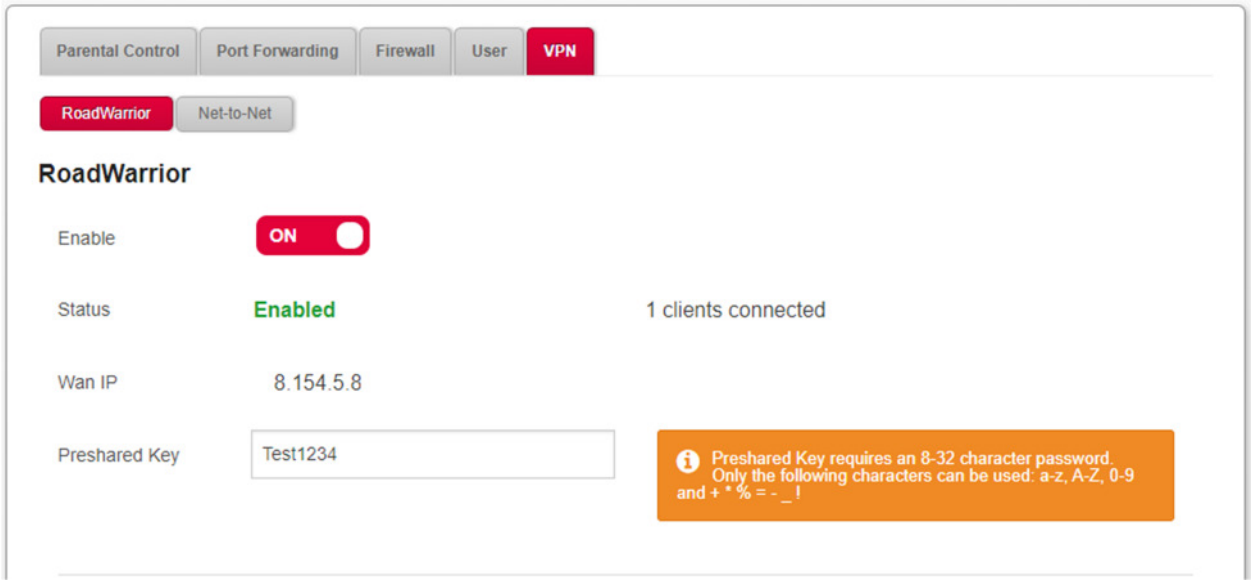
You will have to remember the username and password entered for later use within the VPN-client software (e.g. your smartphone, tablet, PC)

- Once at least one active user is defined, please enter a “Preshared Key” and enable the VPN-Server of your Sunrise Internet Box by clicking on the “OFF” button.



Field	Meaning/Action	Default
Enable	Once at least one user and a preshared-key are defined, the VPN-server of your Internet Box can be switched to ON.	**OFF**
Satus	Shows the status of the VPN-Server of your Internet Box **Note**: Once Status is Enabled, you will see the amount of clients connected via VPN to your Internet Box.	**Disabled**
WAN IP	IP-address assigned to your Internet Box by Sunrise	**n/a**
Preshared Key	Enter a preshared-key **Notes:** The preshared-key must be composed of at least 8 characters. For security reasons we recommend using a strong password that consists of a random combination of letters, numbers and special characters. Also note that we highly recommend to define a preshared-key that is different from the password of the user!	**-**

- For illustration, the status of an Internet Box with the VPN-Server enabled looks as follows:



3.4.10.2Configuration of RoadWarrior on your device

Objective: This section describes the necessary steps to prepare and connect Clients (e.g. Smartphones, Tablets or PCs) to the VPN of your Sunrise Internet Box.

- **Android**
  - **Configure VPN**
    1. Open your device's **Settings** app.
    2. Under "**Network & internet**", unroll **Advanced** then tap "**VPN**".
       Note: If you can't find it, search for "VPN" in the settings search bar.
    3. At the top right, tap Add "**+**".
    4. Under Name, enter a VPN connection name (e.g. "SIB1 VPN Connection").
    5. Under Type, select **IPSec Xauth PSK**.
    6. Under "**Server address**", enter your Sunrise Internet Box public IP-address or your domain name if you chose a DynDNS service.
       Note: The public IP-address is the "WAN IP" displayed in the RoadWarrior menu
    7. Under "**IPSec pre-shared key**", enter the Preshared Key key displayed in the RoadWarrior menu.
    8. Under **Username**, enter the RoadWarrior username that you want to use for this VPN connection
       Note: you can use one username for connecting to your Sunrise Internet Box from different devices simultaneously.
    9. Under **Password**, enter the password set for the respective RoadWarrior User.
    10. Tap "**Save**".

  - **Connect to VPN**
    1. Open your device's **Settings** app.
    2. Tap "**Network & internet**", unroll **Advanced** then tap **VPN**.
       Note: If you can't find it, search for "VPN" in the settings search bar.
    3. Tap the VPN connection you want to use (e.g. "SIB1 VPN Connection").
    4. Tap Connect

- **iPhone**
  - **Configure VPN**
    1. Open your device's **Settings** app
    2. Tap **General** > **VPN** > **Add VPN Configuration**
    3. Under Type, select **IPSec**
    4. Under Description, enter a VPN connection name (e.g. "SIB1 VPN Connection")
    5. Under **Server**, enter your Sunrise Internet Box public IP-address or your domain name if you chose a DynDNS service.
       Note: The public IP-address is the "WAN IP" displayed in the RoadWarrior menu
    6. Under **Account**, enter the RoadWarrior username that you want to use for this VPN connection
       Note: you can use one username for connecting to your Sunrise Internet Box from different devices simultaneously.
    7. Under **Password**, enter the password set for the respective RoadWarrior User
    8. Under **Secret**, enter the Preshared Key displayed in the RoadWarrior menu
    9. At the top right, tap "**Done**".

  - **Connect VPN**
    1. Open your device's **Settings** app
    2. Tap **General** > **VPN** > Turn on VPN switch -> Status: Connected.

❖ **MacOS**

➢ **Configure VPN**

1. Open Apple menu > **System Preferences**, then click "**Network"**
2. Click Add "**+**" button
3. In the pop-up window select **VPN** from the **Interface** drop-down list
4. From the "**VPN Type**" drop-down list, select "**Cisco IPSec**"
5. Under "**Service name**", enter your VPN connection name (e.g. "SIB1 VPN Connection")
6. Click "**Create**"
7. Under "**Server address**", enter your Sunrise Internet Box public IP-address or your domain name if you chose a DynDNS service.
   Note: The public IP-address is the "WAN IP" displayed in the RoadWarrior menu
8. Under "**Account Name**", enter the RoadWarrior username that you want to use for this VPN connection
   Note: you can use one username for connecting to your Sunrise Internet Box from different devices simultaneously.
9. Under **Password**, enter the password set for the respective RoadWarrior User
   Note: Depending on the MacOS version, password could also be in "Authentication Settings"
10. Click "**Authentication Settings**"
11. In the pop-up, under "**Machine Authentication**" group, select "**Shared Secret**" radio button.
12. Please enter the Preshared Key displayed in the RoadWarrior menu in the field **"Shared Secret**".
13. Click "**OK**".

➢ **Connect VPN**

1. Open Apple menu > **System Preferences**, then click "**Network**"
2. From the left panel, click the **VPN connection** you want use (e.g "SIB1 VPN Connection").
3. Click "**Connect**".

❖ **Windows**

➢ **Configure VPN**

1. Open your Internet browser.
2. If not already installed, download the latest stable release of "Shrew VPN Client" from e.g. https://www.shrew.net/download/vpn
3. Install Shrew VPN Client, make sure to select Standard Edition
   Important: you need to have Administration rights for the installation to succeed.
4. Start "**VPN Access Manager**"
5. Click Add "**+**".
6. In the "**VPN Site Configuration**" dialog, click on tab "**General**"
7. Under "Host Name or IP Address", enter your gateway public IP or your domain name if you opt DynDNS service.
8. Click Authentication tab.
9. From the "Authentication Method" drop-down list, select "Mutual PSK + Xauth"
10. Under Credentials > Pre Shared Key, enter the VPN pre-shared key found on your gateway VPN setup page.
11. Click "**Phase 1**" tab.
12. Under "Proposal Parameters" group, set the following parameters:

Field	Parameter
Exchange Type	Main
DH Exchange group	2
Cipher Algorithm	aes
Cipher Key Length	256
Hash Algorithm	sha1

13. Click "**Phase 2**" tab.
14. Under "**Proposal parameters**" group, set the following parameters:

Field	Parameter
Transform Algorithm	esp-aes
Transform Key Length	256
HMAC Algorithm	sha1
PFS Exchange group	2

15. Click "**Save**"

16. You can name your **VPN profile** in order to easily retrieve it for later use (e.g. “SIB1 VPN Connection”).

- **Connect VPN**
  1. Start “**VPN Access Manger**”
  2. Click the **VPN connection** you want to use (e.g “SIB1 VPN Connection”).
  3. Click “**Connect**”
  4. In the “**VPN Connect**” dialog enter the following under **Credentials** group:

Field	Parameter
Username	Enter the RoadWarrior username that you want to use for this VPN connection
Password	Enter the password set for the respective RoadWarrior User

3.4.10.3Setting up a connection for Net-to-Net VPN

Objective: This section describes the necessary steps to prepare and establish a VPN tunnel between 2 Sunrise Internet Boxes using the Net-to-Net VPN. This feature could be interesting for companies that operate out of 2 locations and would like to share office resources amongst them as if they were virtually working in 1 location.

Preconditions:

a) Two different sites/locations
   - Site 1: Teststrasse 1, Zürich
   - Site 2: Teststrasse 2, Zürich

b) In both sites a Sunrise Internet Box needs to be connected to the internet
   - Site 1 => SIB1S1
   - Site 2 => SIB1S2

c) Local and remote subnet should not overlap to make VPN Net2Net work

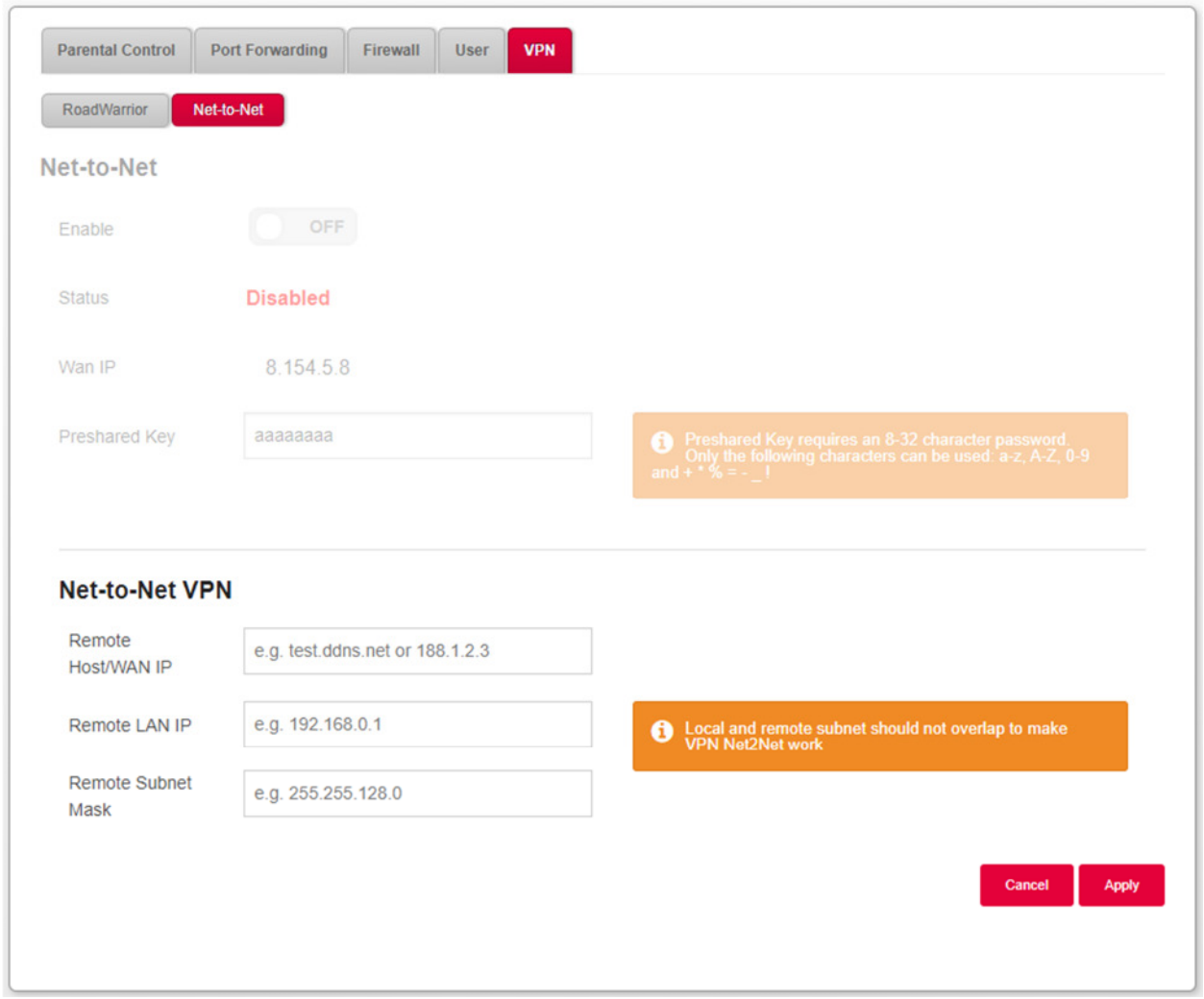
Configuration steps in order to configure and establish Net-to-Net VPN connection:

1. Configure SIB1S1 as described in section 3.4.10.4
2. Change the DHCP configuration of either SIB1S1 or SIB1S2 as described in section 3.3.2
3. Configuration example of SIB1S1 from chapter 3.4.10.5
4. Configure SIB1S2 as described in chapter 3.4.10.4
5. Configuration example of SIB1S2 from chapter 3.4.10.5
6. As soon as SIB1S1 and SIB1S2 have been configured properly and VPN server is active on both devices, the VPN connection is established

3.4.10.4Configuration in the GUI of the Sunrise Internet Box

Objective: To use the Net-to-Net VPN feature you have to configure both Internet Boxes (SIB1S1 and SIB1S2) as described below.

- In the **Access Control** menu, select **VPN** and then **Net-to-net**. The following screen opens:

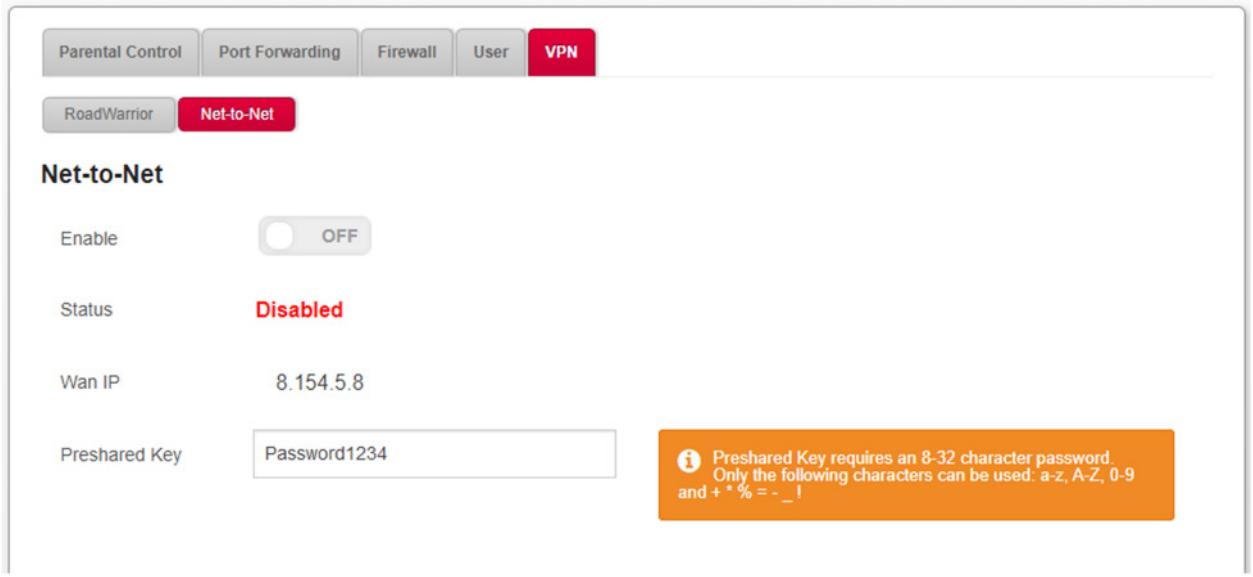


- Please fill in the **Net-to-Net VPN** section in order to set the basic perimeters for your SIB1S1 in the first step – you will have to enter the respective information in a later step also on the SIB1S2.

Field	Meaning/Action	Default
Remote Host/WAN IP	WAN IP/DynDNS hostname of the remote SIB **Note:** Enter the WAN IP of SIB1S2 in the UI of SIB1S1 and vice versa	-
Remote LAN IP	LAN IP of the remote SIB **Note**: Local and remote subnet should not overlap to make VPN Net2Net work	-
Remote Subnet Mask	Subnet mask of the remote SIB	-

- After entering the information about the remote Internet Box, please click on "**Apply**".

- Enter the **Preshared Key** for the VPN connection
  Note: The Preshared Key must be the same for the local and the remote Internet Box (SIB1S and SIB1S2)



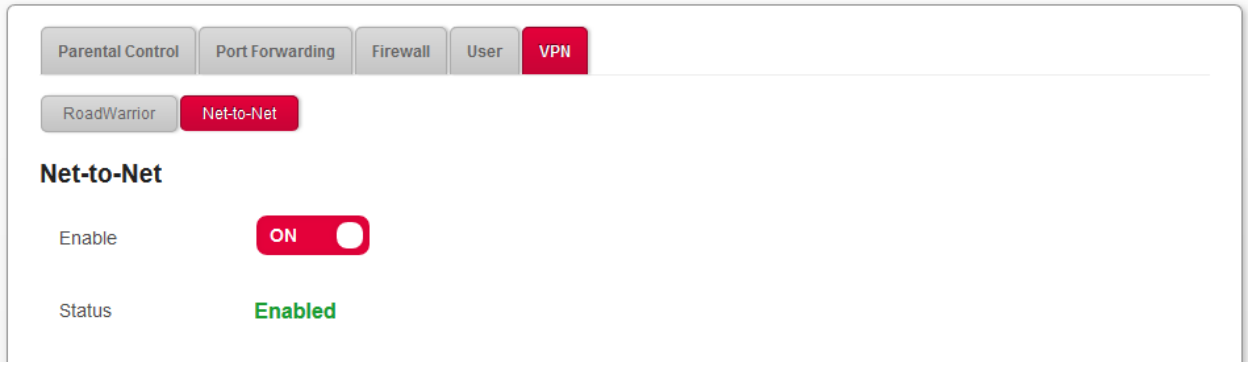
- Click on "**OFF**" to enable the Net-to-Net VPN connection

Field	Meaning/Action	Default
Enable	Once all information on Net-to-Net VPN section and the Preshared Key have been entered, this can be switched to ON.	**OFF**
Status	Shows the status of the VPN-tunnel connection between your local and remote Internet Box **Notes**: • The VPN-tunnel is only established if Net-to-Net is Enabled on both Internet Boxes (SIB1S1 and SIB1S2) • A refresh of the page is needed to display the current status if the configuration has just been done.	**Disabled**
WAN IP	IP-address assigned to your Internet Box by Sunrise	**n/a**
Preshared Key	Enter a preshared-key **Notes:** • The preshared-key must be composed of at least 8 characters. For security reasons we recommend using a strong password that consists of a random combination of letters, numbers and special characters. • Also note that we highly recommend to define a preshared-key that is different from the password of the user! • **The preshared key has to be the same for SIB1S1 and SIB1S2!**	**-**

- After the local Sunrise Internet Box (SIB1S1) has been configured, the above-mentioned

settings have to be made also for the remote Internet Box (SIB1S2).

- After successful configuration of SIB1S1 and SIB1S2 and activation of Net-to-Net on both Gateways, the Status is “Enabled” (please refresh the page in your browser in order to see the change of the status):



3.4.10.5 Configuration example for VPN Net-to-Net connection for local and remote SIB.

Objective: Since the remote and local subnet cannot overlap, you need to change the DHCP configuration of one of the SIBs (either local or remote configuration has to be changed). Please refer to section 3.3.2 on how to do that.

Local Internet Box (SIB1S1)	
WAN IP (provided by Sunrise)	e.g. 31.1.2.3
DynDNS (Optional)	e.g. site1.ddns.net
DHCP configuration	
Network Range	192.168.0.0/16
IP address	192.168.**1**.1
Subnet Mask	255.255.255.0
IPv4 Pool Start	192.168.1.20
IPv4 Pool End	192.168.1.254
IPv4 Lease Time	3 days
VPN Configuration	
Preshared Key (must be the same for both SIB1)	e.g. *si4_1!ikrLo9**
Remote Host/WAN IP	31.2.3.4 or site2.ddns.net
Remote LAN IP	192.168.**0**.1
Remote Subnet Mask	255.255.255.0

Remote Internet Box (SIB1S2)	
WAN IP (provided by Sunrise)	e.g. 31.2.3.4
DynDNS (Optional)	e.g. site2.ddns.net
DHCP configuration	
Network Range	192.168.0.0/16
IP address	192.168.**0**.1
Subnet Mask	255.255.255.0
IPv4 Pool Start	192.168.0.20
IPv4 Pool End	192.168.0.254
IPv4 Lease Time	3 days
VPN Configuration	
Preshared Key (must be the same for both SIB1)	e.g. *si4_1!ikrLo9*
Remote Host/WAN IP	31.1.2.3 or site1.ddns.net
Remote LAN IP	192.168.**1**.1
Remote Subnet Mask	255.255.255.0

Note

The above settings are for illustration only and especially elements like the password mentioned here should not be re-used for real installations.

3.4.10.6 Troubleshooting examples for VPN

Question	Answer
Is it possible to establish Net-to-Net VPN if the subnet masks of the local and remote network are not the same?	Different masks should work, but subnet1+mask should not overlap subnet2+mask and vice versa.
How many VPN session can be handled by the Sunrise Internet Box?	The number is limited by available CPU resources and configured IP pool size (currently IPs 192.168.5.2 - 192.168.5.10) => 9 Clients/Sessions
How many users can be configured for Roadwarrior?	At least the same value as maximum amount of sessions. (Successfully tested with 10 users)
Is there a limitation of active sessions per user or is this equal to the overall maximum amount of sessions?	Limited by maximum amount of sessions. **Note:** Inactive sessions from not disconnected clients are also taken into account. Therefore, please always manually disconnect VPN clients from the Sunrise Internet Box.
Is it possible to use Net-to-Net and Roadwarrior VPN at the same time?	Simultaneous activated Net-to-Net and Roadwarrior VPN is not recommended, because it can cause routing problems
The RoadWarrior connection is established, but I cannot access local/remote devices (e.g. NAS, Mediaservers, Router GUI).	For RoadWarrior VPN it is also important that the local and the remote subnet do not overlap. If your RoadWarrior device (e.g. Laptop, Mobile Phone) is connected to a Router that uses the same subnet as the Sunrise Internet Box you want to establish a VPN connection to, you can only access either the local or the remote IP addresses that are used in both networks.

3.5 Internet Connection

The Internet connection settings are accessible from the welcome screen by clicking on **Internet Connectivity**.

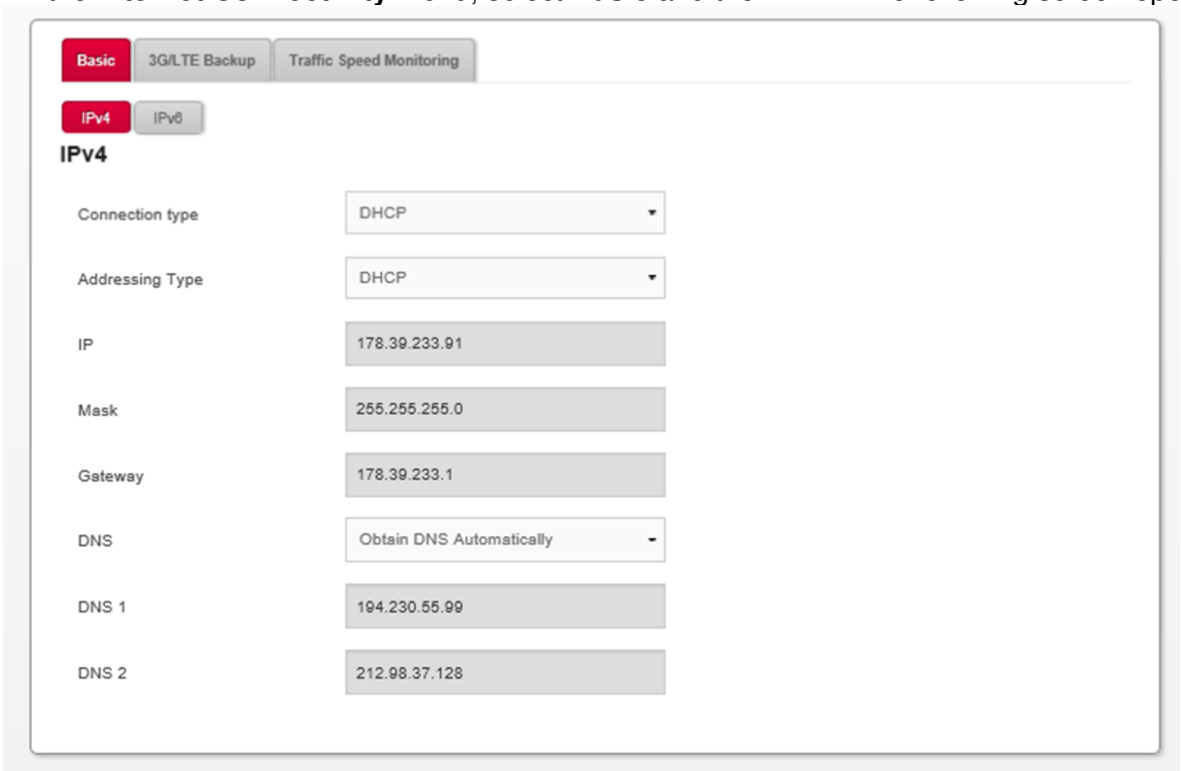
This Section contains the following menus:

- Basic (see Sub-section 3.5.1)
- 3G/LTE Backup (see Sub-section 3.5.2)
- Traffic speed monitoring (see Sub-section 3.5.3)

3.5.1 Basic

Object: Use this menu to check your Sunrise Internet Box IP settings (IP address, DNS) received from the network.

- In the **Internet Connectivity** menu, select **Basic** and then **IPv4**. The following screen opens:

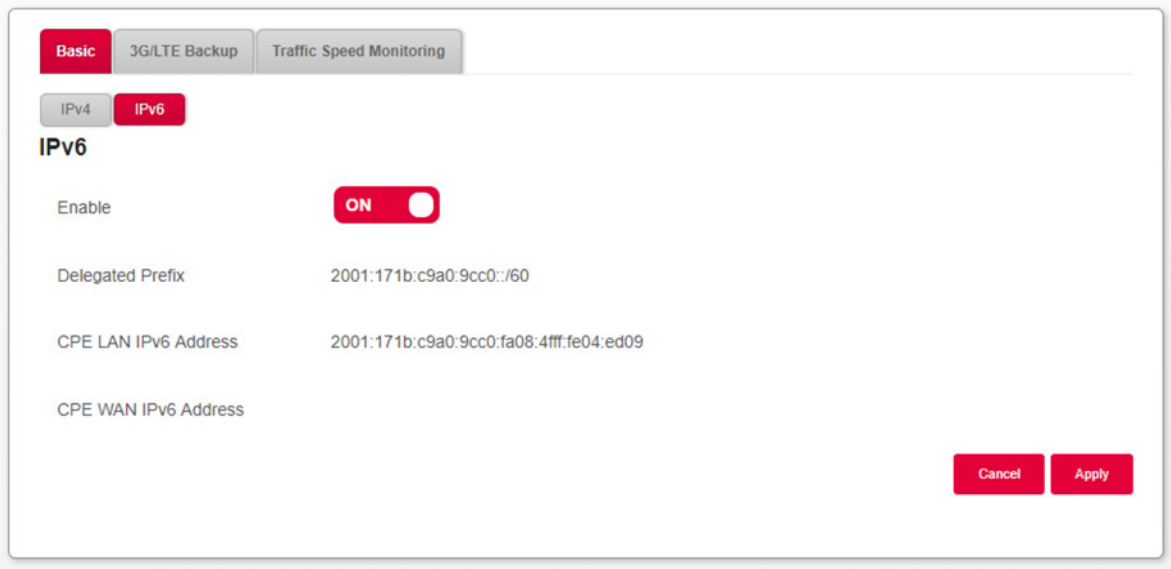


Field	Meaning
Connection type	The DHCP connection type
Addressing type	The Addressing type used. Either “**Static**” (Sunrise Internet Box will always use the same IP-address to connect to the internet provider) or “**DHCP**” (an IP range of addresses will be used to connect to the Internet provider)
IP	Here you can see the IPv4 address.
Mask	Here you can see the mask of the IPv4 address.
Gateway	Here you can see the gateway's IPv4 address.
DNS	Here you can see the DNS mode.

Note

The above settings are for information only and cannot be changed on this page.

- In the **Internet Connectivity** menu, select **Basic** and then **IPv6**. The following screen opens:

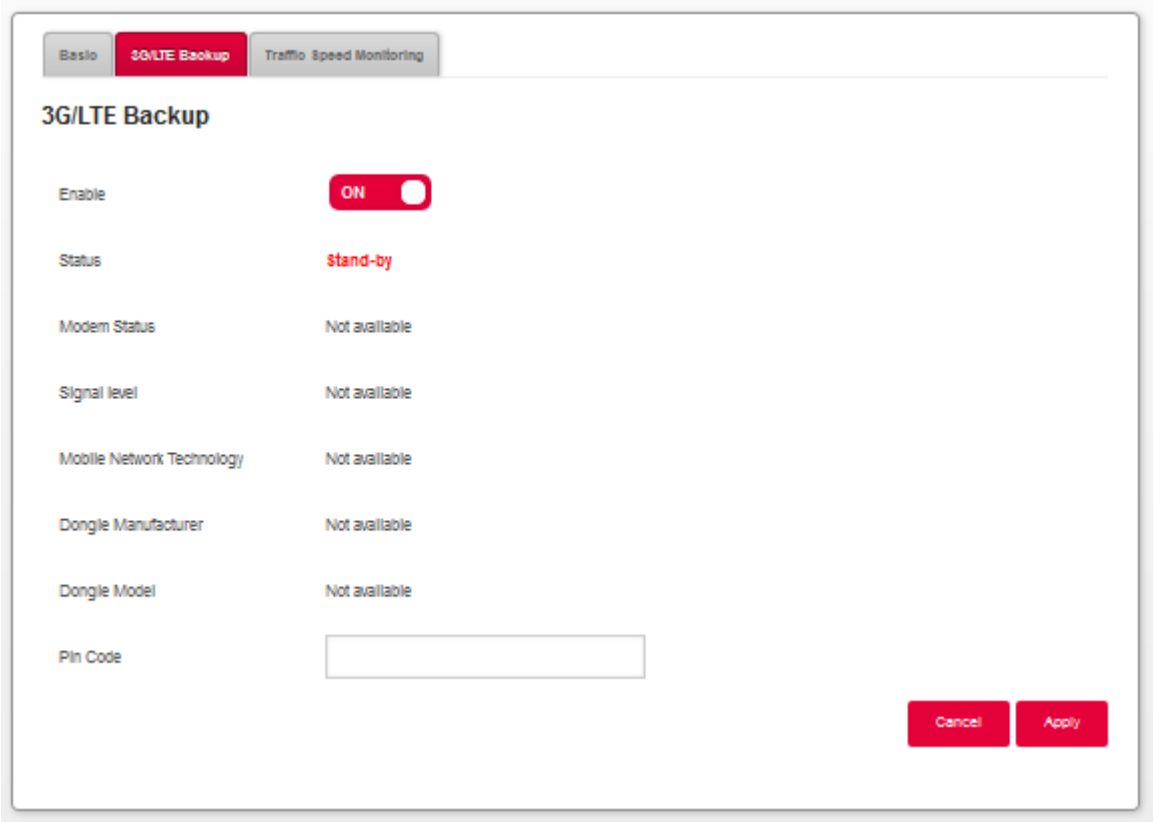


Field	Action
Enable	Turn the function ON or OFF. **Note:** The change only takes effect after a delay of up to one hour.
Delegated Prefix	The reserved IPv6 address range for devices connected to the Sunrise Internet Box (cannot be modified)
CPE LAN IPv6 Address	Here you can see the Ipv6 address of the Sunrise Internet Box in the local network (cannot be modified)
CPE WAN IPv6 Address	Due to the technical implementation of IPv6 RD this field is empty by default and cannot be modified.

3.5.2 3G/LTE Backup

Objective: Use this menu to check your 3G/LTE back up feature status.

3G/LTE Backup: The following screen opens:



1. Plug the 3G/LTE USB stick into one of the USB ports on the Sunrise Internet Box.
2. The feature 3G/LTE back up is enabled by default once you have connected the USB stick. There is nothing more for you to do.

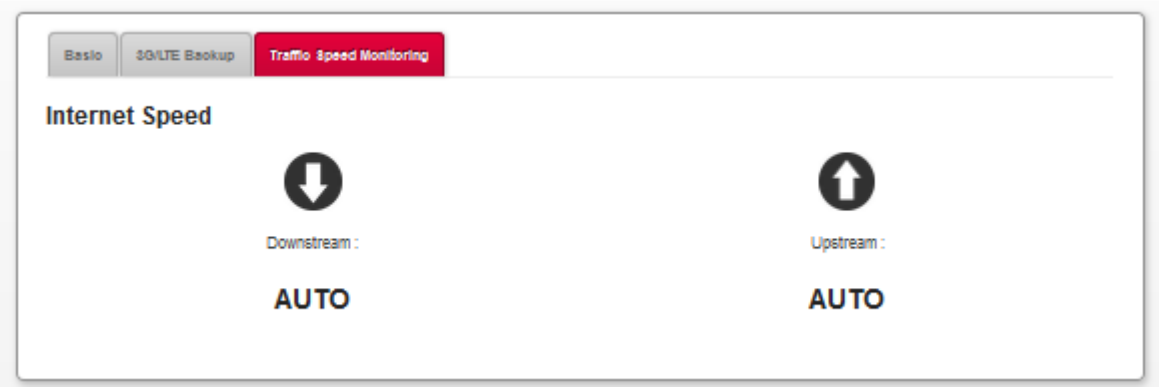
Note

The device recommended by Sunrise for the 3G/LTE Backup feature is the Huawei E3372 4G LTE Cat4 USB Stick.

3.5.3 Traffic speed monitoring

Objective: This menu is used to indicate the synchronization speed between the Sunrise Internet Box and the provider network.

- In the **Internet Connection** menu, select **Traffic Speed Monitoring**. The following screen opens:



3.6 Ethernet service

3.6.1 Configuration of network parameters

The aim of this Section is:

1. to configure your computer to be able to communicate with your Sunrise Internet Box.
2. to display the "Network" parameters of your Sunrise Internet Box.

Your Sunrise Internet Box 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 Sunrise Internet Box 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 Sunrise Internet Box, the latter responds by indicating:

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

Note

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

Important

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.

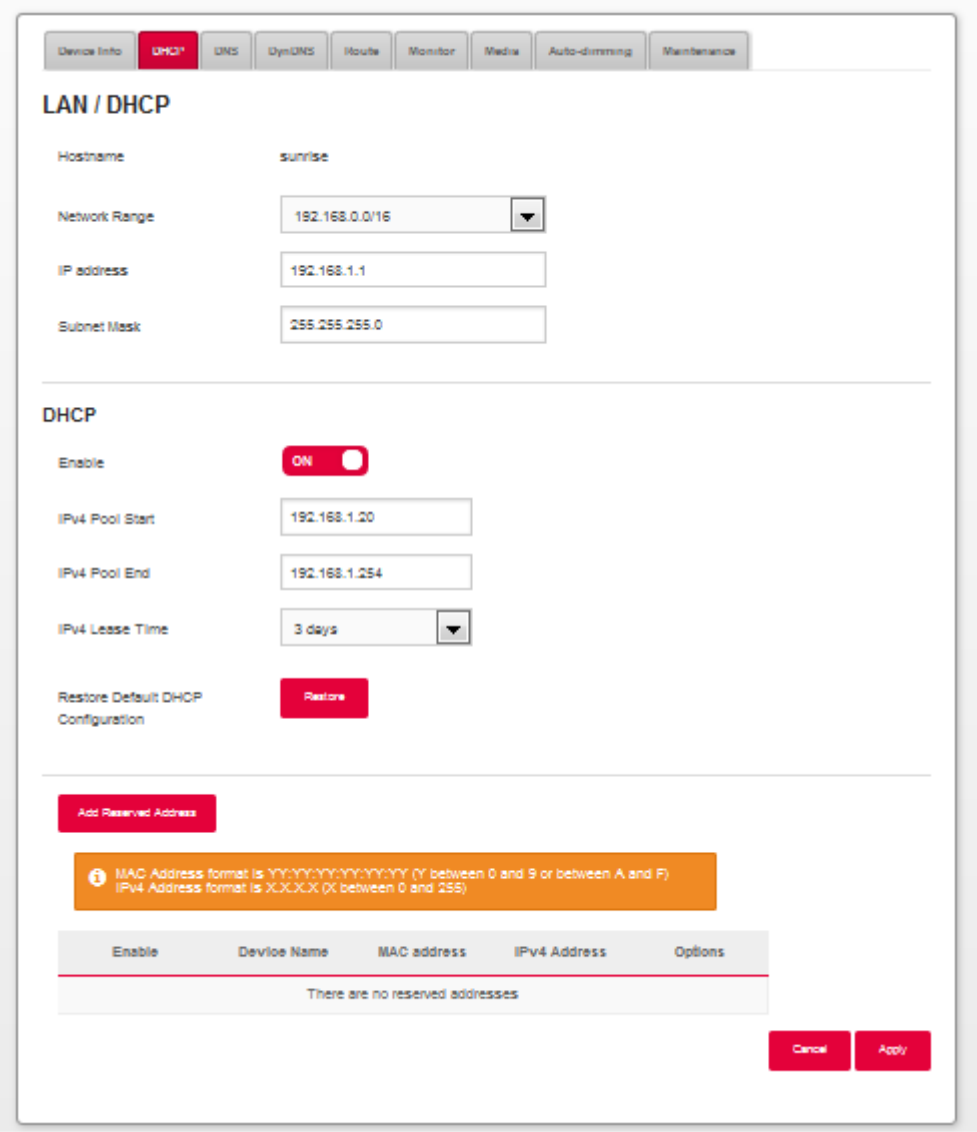
Configuration as a DHCP client is the more commonly used solution.

3.6.1.1 Status of the DHCP server

To obtain the status of the DHCP server:

1. Open your browser.
2. Enter the Sunrise Internet Box's IP address (by default http://192.168.1.1 or http://sunrise.box).
3. In the login screen that appears, enter your password.
   By default, the initial password is indicated on the label of the product.
4. Click on the **LOGIN** button to validate.
5. Select Expert Mode
6. Click on **My Sunrise Internet Box**, then select **DHCP** tab.

The following screen opens:



Elements in the Section **LAN** / **DHCP**

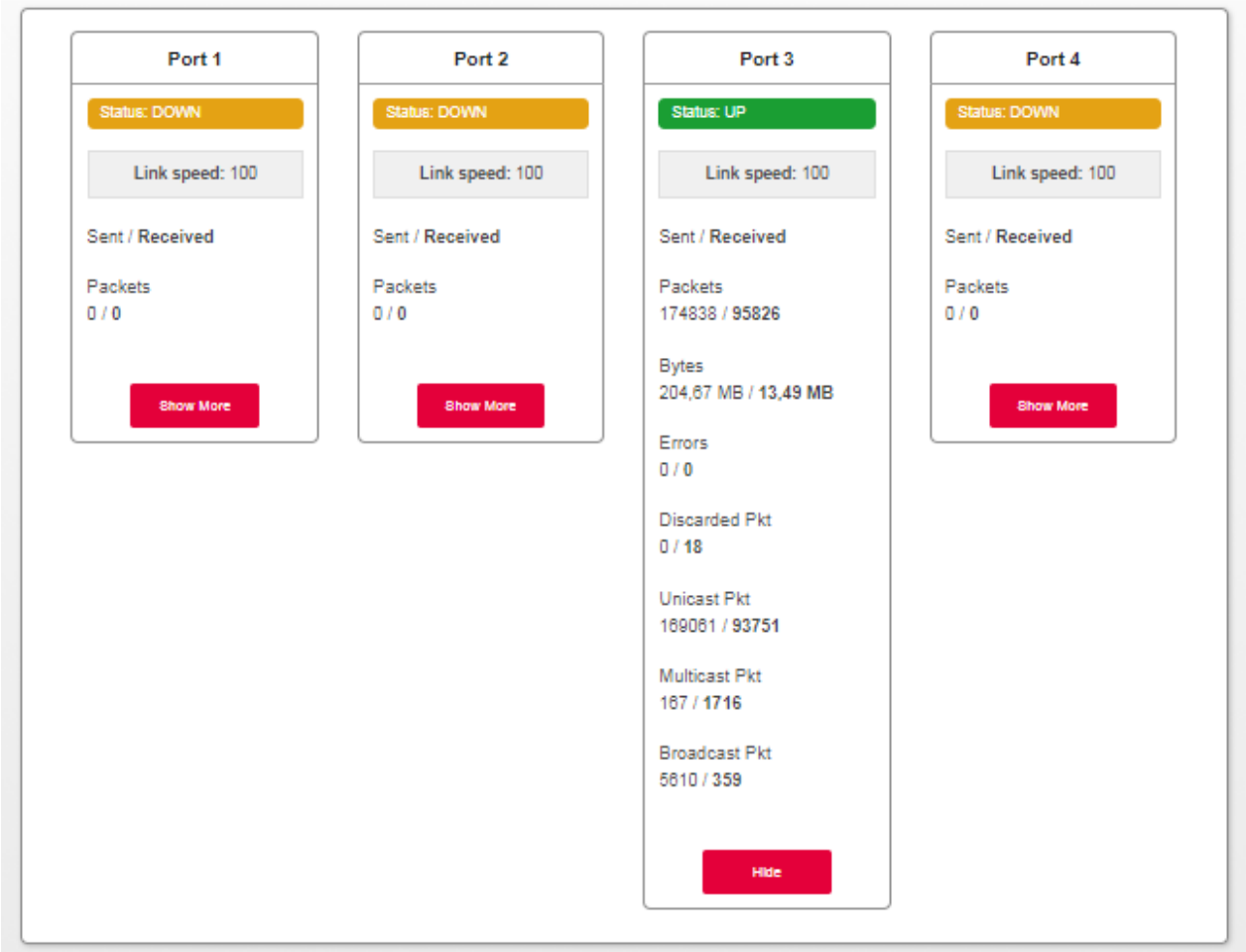
Field	Meaning/Action	Default value
Host name	Name assigned to your Sunrise Internet Box.	**sunrise**
Network Range	Select from the relevant drop-down list: • 176.16.0.0/12 • 192.168.0.0/16 • 10.0.0.0/8	
IP Address	Enter the address of your local network.	**192.168.1.1**
Subnet Mask	Enter your network's subnet mask.	**255.255.255.0**

Elements in the Section **DHCP**

Field	Meaning/Action	Default value
Enable	Press the ON/OFF button to activate or deactivate your Sunrise Internet Box's DHCP server. **Note:** When ON, you must configure your computer as a DHCP client and DNS client (or enter the primary and secondary DNS server addresses). **Note:** When OFF, you must configure your computer with the parameters appropriate to your local network (IP address, subnet mask and default gateway) and you must enter the primary and secondary DNS server addresses.	**ON**
IPv4 Pool Start	Enter the first address attributed by your Sunrise Internet Box's DHCP server.	**192.168.1.20**
IPv4 Pool End	Enter the last address attributed by your Sunrise Internet Box's DHCP server.	**192.168.1.254**
IPv4 Lease Time	Select an unavailability time (in seconds) from the scroll down list for each attributed address.	**3 days**
Add Reserved Address	If required, enter the list of static IP Leases.	**-**

3.6.2 Status of the Ethernet connections

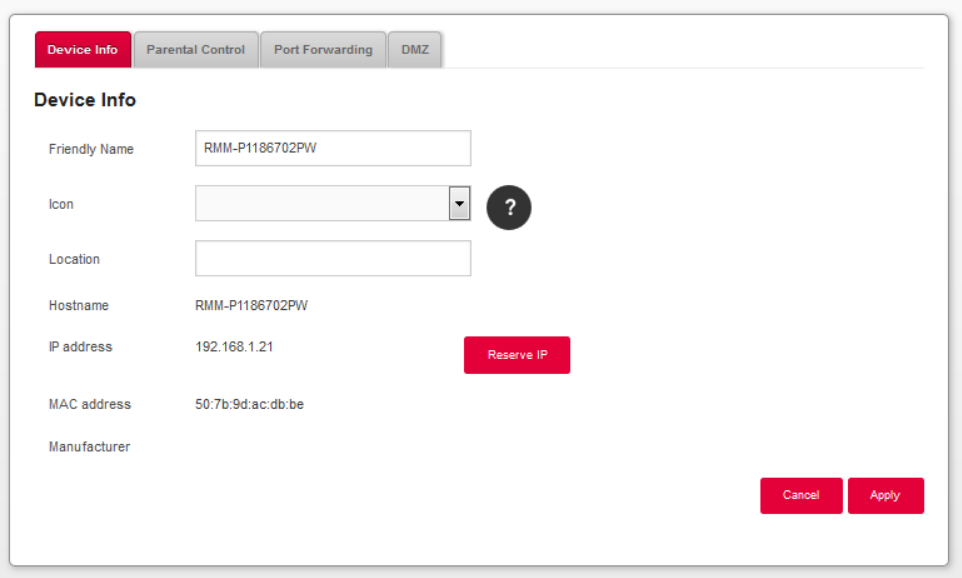
From the item **Ethernet** on the home screen, click on the ⚙ button to access the status of the Ethernet ports.



3.6.3 Information and configuration of connected devices

3.6.3.1 Device info

Object: This menu provides some information about the device and allows you to customize several settings (such as the name) to identify it more easily. It appears when double-clicking on the chosen device.



Field	Action
Friendly Name	You can rename your devices in order to identify them more easily on your network. This field displays the MAC address when the friendly name is not defined.
Icon	Select an icon from the list to define a category.
Location	Enter information about the location of the device (optional)
Host name	Name of the connected device. Enter a host name for the connected device.
IP address	IP address of the device. If necessary, you can transform the current IP address into a static IP address by clicking on the **Reserve IP** button. The DHCP server will always supply the same IP address to the device.
MAC address	MAC address of the device.
Manufacturer	Manufacturer of the connected device.

Click on the **Apply** button to save the new settings.

3.6.3.2 Firewall

Objective: The Sunrise Internet Box has a built-in firewall that helps protect your devices on the local network against hacking and other security threats.

For more information about the configuration of this function, refer to the Firewall description (see section 3.4.4).

3.6.3.3 Parental Control

Objective: This menu is used to define access time to the Internet for this particular device. This service also can be configured in the menu **Access Control > Parental Control**.

For more information about the configuration of this function, refer to the Parental Control description (see section 3.4.1).

3.6.3.4 Port Forwarding

Objective: 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.) on the remote network (WAN) to this computer on the local network (LAN) via the Internal Ports.

For more information about the configuration of this function, refer to the Port Forwarding description (see Sub-section 3.4.2).

3.6.3.5 DMZ (DeMilitarizedZone)

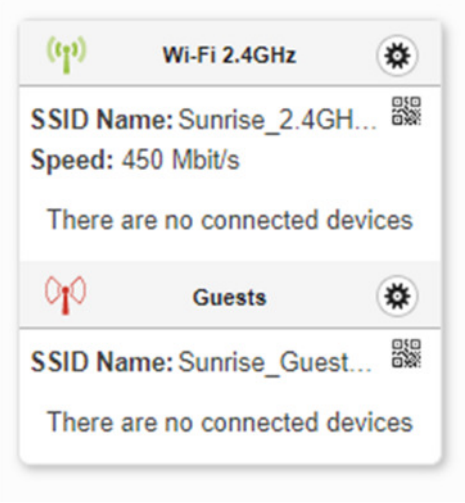
Objective: This menu lets you activate the DMZ for this device. When activated, this DMZ lets you access the LAN device directly via the Internet without going through the "Firewall." This service also can be configured in the **Access Control > DMZ** menu.

For more information about the configuration of this function, refer to the Port Forwarding description (see Sub-section 3.4.6).

3.7 Wi-Fi service

Objective: This menu lets you activate a network and also allows you to configure all the basic parameters of your wireless network.

- To access the Wi-Fi parameters, click on the button from the Welcome screen.



This Section contains the following menus:

- Basic (see Sub-section 3.7.1)
- Security (see Sub-section 3.7.2)
- Wi-Fi Guest Access (see Sub-section 3.7.3)
- WPS (see Sub-section 3.7.4)
- Statistics (see Sub-section 3.7.5)
- Mac Filter (see Sub-section 3.7.6)
- Wireless Environment (see Sub-section 3.7.7)
- Wi-Fi Scheduling (see Sub-section 3.7.8)

Note

There are several advanced Wi-Fi features embedded in your Sunrise Internet Box that further improve the performance between your Wi-Fi Client and the Internet Box:

DFS (Dynamic Frequency Selection)*: In order to allow access to more channels for transmission of Wi-Fi signals (i.e. channels 52 to 64 and 100 to 140), your Internet Box regularly scans frequencies that are also used for other applications, such as weather radar. These channels are usually less crowded and will allow Wi-Fi clients who support the same technology to benefit from higher throughput and better coverage.

Beamforming*: In order to reduce Wi-Fi signal interferences (which appear, for example, if multiple Wi-Fi access points are sending radio signals in near-by locations), your Internet Box will automatically “steer” the signal towards your Wi-Fi client as it detects where your Wi-Fi client is located and amplifies the signal of its built-in antennas accordingly.

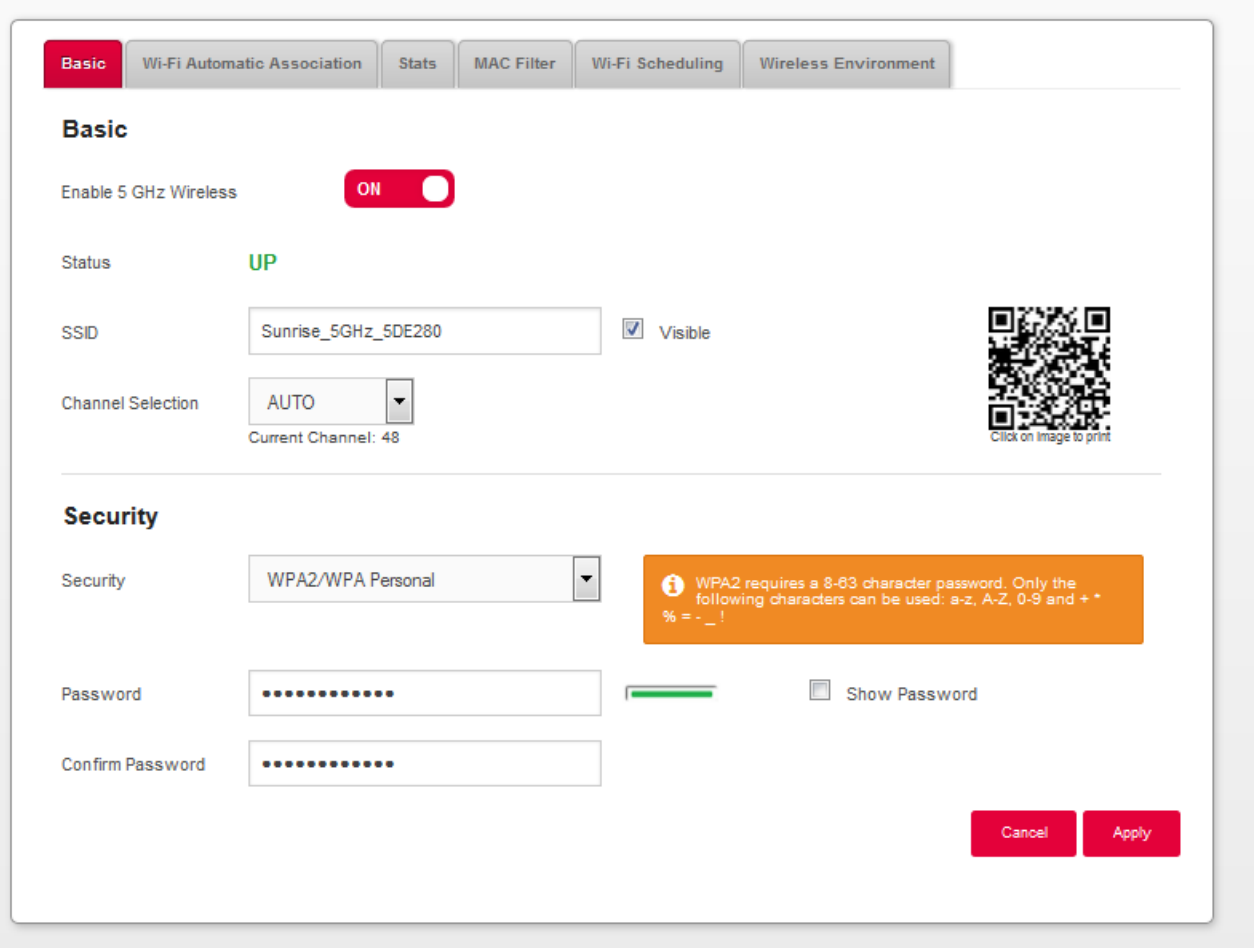
MU-MIMO (Multi-User- Multiple Input Multiple Output)*: Enables Wi-Fi clients that support this feature to be served with the maximum amount of available antennas (and bandwidth).

* Feature is only available on 5GHz (802.11ac) band and cannot be changed.

3.7.1 Basic

Objective: This menu is used to configure the basic parameters of your wireless network (WLAN) 802.11.

- In the **Wi-Fi xGHz** menu, select **Basic**. The following screen opens:



Field	Action
Status	Status can be up or down
Enable xGHz Wireless	Click on the **ON/OFF** button to activate or deactivate the wireless network. From the welcome screen, the status of the Wi-Fi networks is indicated with the 2 following icons:  : Wi-Fi on.  : Wi-Fi off. **Note**: The steady "Wi-Fi" LED on the front of the Sunrise Internet Box shows that the wireless network (Wi-Fi) is activated.
SSID	Name of the wireless network. You can modify the SSID of your Sunrise Internet Box.
Visible	When this box is checked, the wireless network is visible by all devices.
Channel selection	This is the radio channel used by the Sunrise Internet Box and its Wi-Fi clients to communicate with each other. This channel must be the same for the Sunrise Internet Box and all of its Wi-Fi clients. Select the channel you want from the scroll down list. **Note:** It is recommended to leave this parameter set at **Auto**.
QR code	If you use the QR code application for tablets or smartphones, you can scan the QR code to facilitate the connection between your device and the wireless network. The QR code contains the SSID and the password of the wireless network.

Objective: The QR code is used to let users connect to your wireless network easily as no password typing is required. Users will need to have a barcode reader on their devices.

The QR code can be flashed from the web interface or on the label located below the gateway.
Example below is for illustration purposes only:

To use them, you simply open a QR code reader application on your device (smartphone, tablet, etc.) and scan the QR code with your camera. The device then decodes the information.

3.7.2 Security

Objective: 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. WPA2/WPA Personal encryption mode is activated by default to secure your wireless network.

Field	Meaning/Action
Security	Select the security mode you want from the scroll down list. • OPEN[a] • WPA Personal • WPA2 Personal • WPA2/WPA Personal
Password	Enter the password. Please use the indications given on the screen to create your password. **Note:** You may display your password by checking the **Show Password** box.

a. This setting enables all users of the Wi-Fi network to connect themselves with the Sunrise Internet Box. It is **not** recommended to operate a Wi-Fi network without any encryption.

3.7.3 Wi-Fi Guest Access

Objective: In addition to the two private WLAN networks (on 2.4 and 5GHz), the Sunrise Internet Box can provide an additional independent WLAN guest radio network per Wi-Fi frequency band. You can offer this Wi-Fi Guest Access for example to visitors so that they can access the Internet with their own devices.

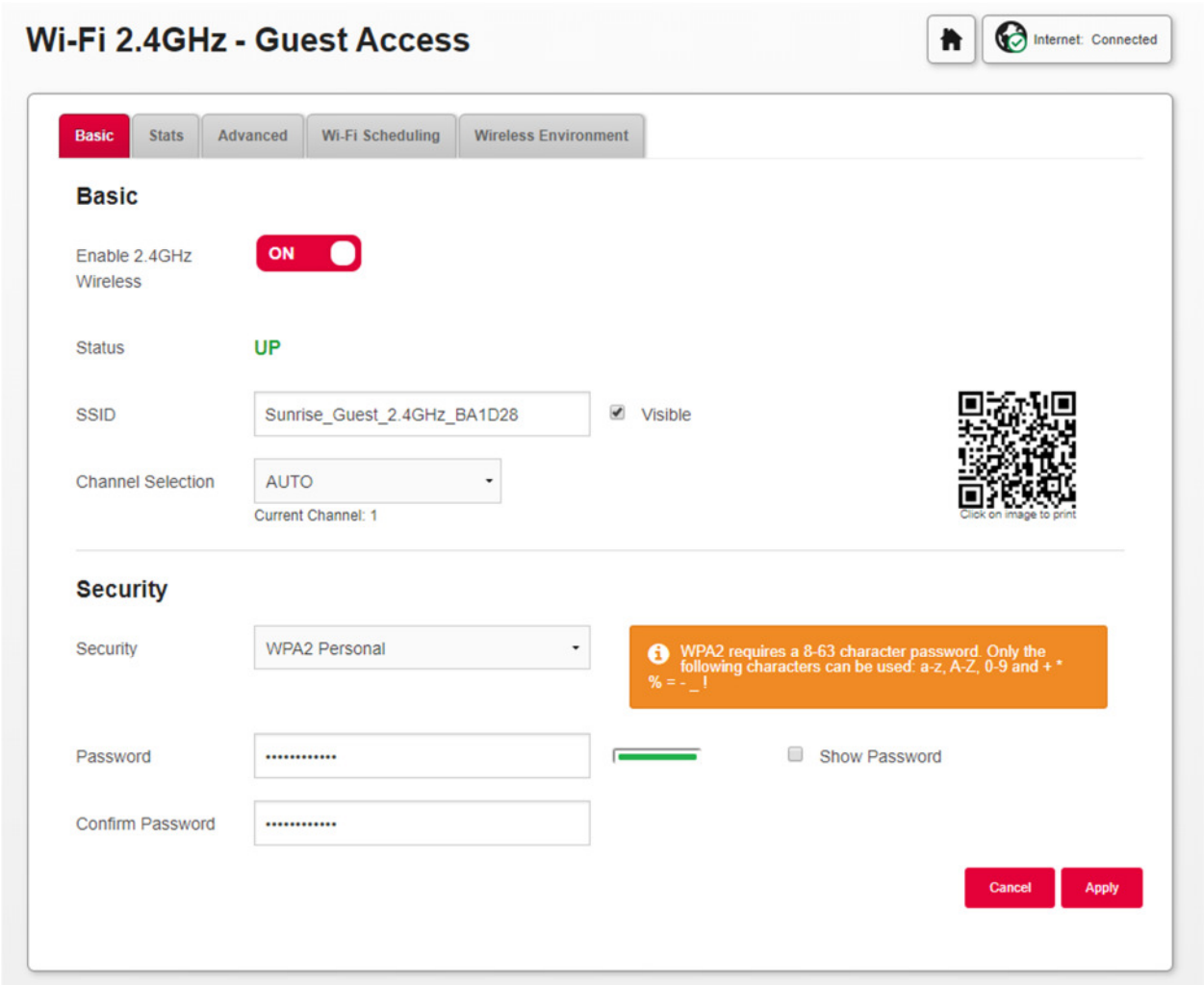
Notes

Devices connected via the Wi-Fi Guest Access do not have access to the local network and other devices connected to your Sunrise Internet Box (e.g. printer, NAS, ...) or services provided (e.g. media server).

It is not possible to access the user interface of the Sunrise Internet Box via this Wi-Fi Guest Access.

The Wi-Fi Guest Access function is deactivated by default (status: OFF)

- To open the guest access settings for each Wi-Fi frequency band, click the button under the **Guests** entry on the Welcome screen. The following screen opens:



Further information on the individual settings can be found in sections **Error! Reference source not found.** and **Error! Reference source not found.**.

Notes

The default name of the Wi-Fi radio network ("SSID") is the same as for the private WLAN networks by default, but with the addition of "Guest" (e.g. *Sunrise_Guest_2.4GHz_A1B2C3*).

The Wi-Fi Guest Access must be activated separately for the 2.4 GHz and 5 GHz Wi-Fi frequency band if required.

There is no WPS function (Wi-Fi automatic assignment) for the guest access.

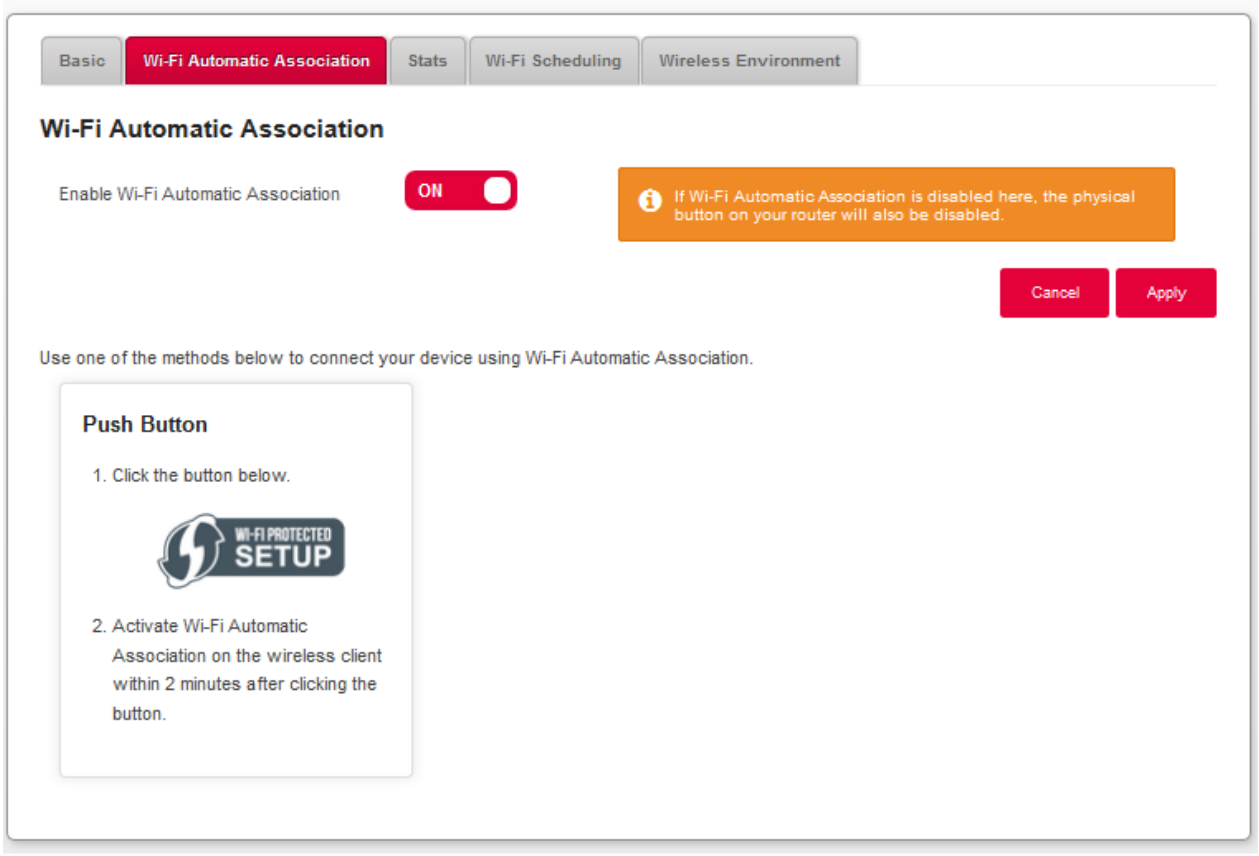
Important

By default, the password printed on the bottom of the Sunrise Internet Box is also the default one for guest access. If you want to provide the guest access, you should therefore change this password!

3.7.4 WPS

Objective: This menu lets you access the WPS parameters for easy pairing with your wireless clients.

- In the **Wi-Fi xGHz** menu, select **WPS**. The following screen opens:



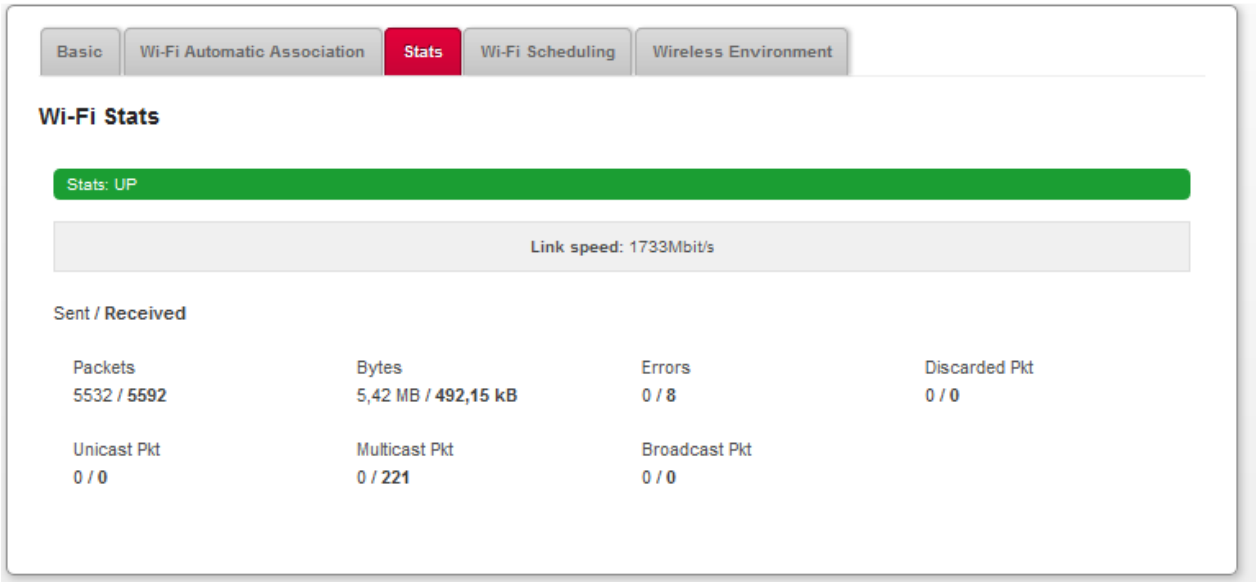
Field	Action
Enable WPS	Click on the **ON/OFF** button to activate or deactivate the WPS function. **Note**: When OFF, the WPS function via the Wi-Fi button on the Sunrise Internet Box is also disabled.
Push button	To connect a device by using the WPS Push Button. Press on **Wi-Fi-Protected setup** button on the Interface (or hold down (more than 5s) the Wi-Fi button on the top of the Sunrise internet Box), then on the WPS button of your device.

3.7.5 Statistics

Objective: This menu is used to display all the Wi-Fi statistics of the wireless network.

- In the **Wi-Fi xGHz** menu, select **Stats**. The following screen

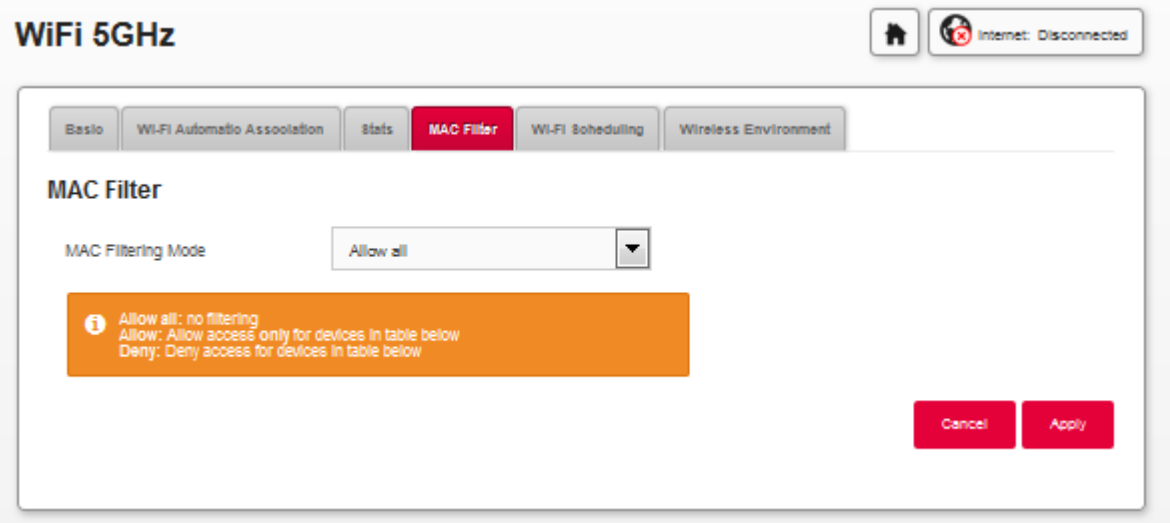
opens:



3.7.6 Mac Filter

Objective: This menu is used to enable or deny access of devices to the wireless network of the Sunrise Internet Box based on their MAC addresses.

- In the **Wi-Fi xGHz** menu, select **Mac Filter**. The following screen opens:



Select the MAC filtering mode:

a) If you choose "**Allow all**": No filtering will be applied. All the devices can connect.

b) If you choose "**Allow**": It will allow access only for devices whose MAC address has been entered in the table of this Section.

c) If you choose "**Deny**": It will deny access for devices whose MAC address is in the table of this Section.

Important

Changing this feature to "Allow" or "Deny" will have an immediate impact on all your devices connected via Wi-Fi in this frequency. Please double check the devices in the MAC table before making any selection.

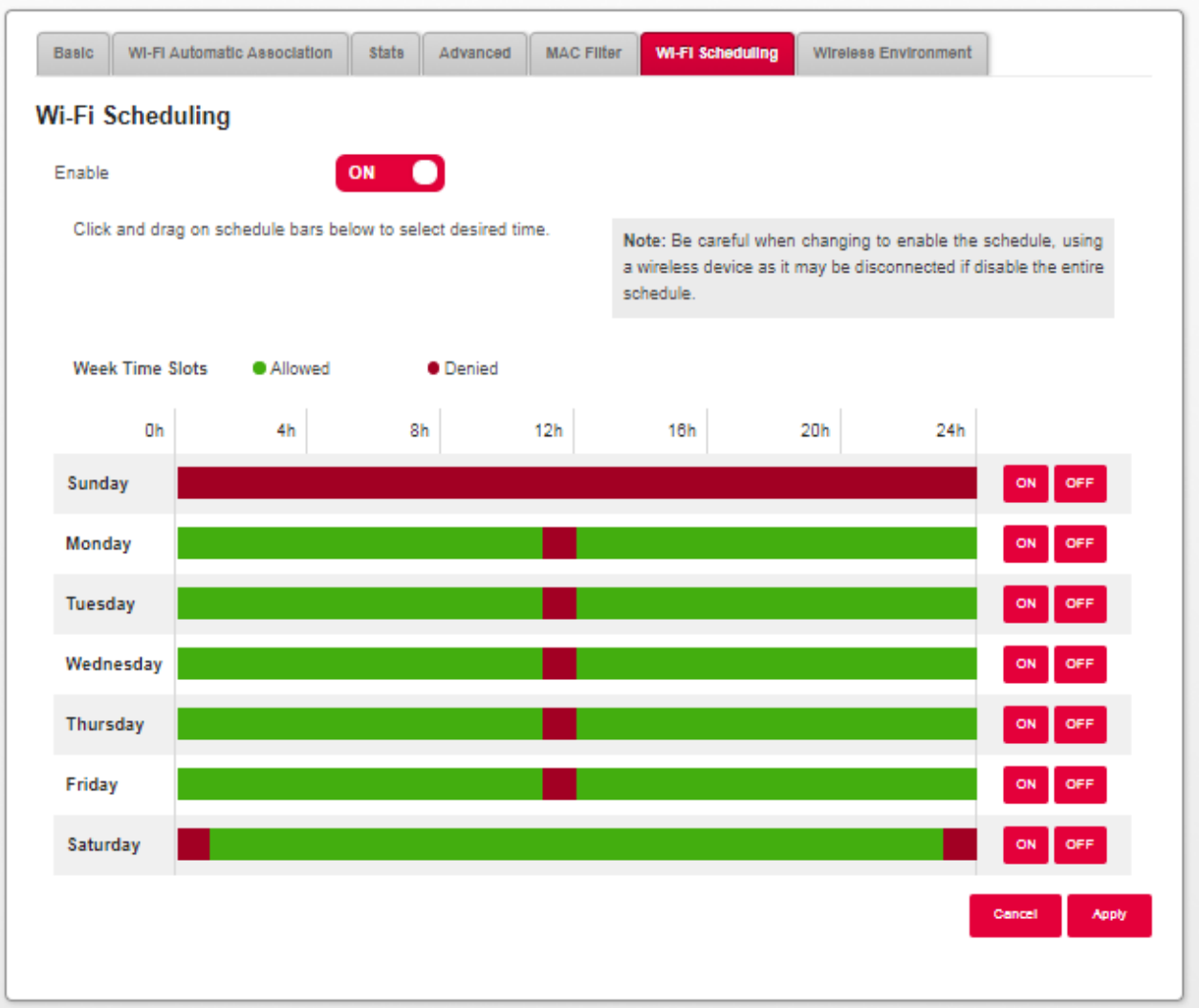
Note

The maximum of possible entries for MAC filtering is 64.

3.7.7 Wi-Fi Scheduling

Objective: This menu is used to manage Wi Fi scheduling in order to schedule the powering off and on of the Wi-Fi radio.

- In the **Wi Fi** menu, select **Wi-Fi Scheduling**. The following screen opens:



To set a schedule for your Wi-Fi, proceed as follows:

- **Enable** the Wi-Fi scheduling feature by pressing the button for "**ON**".
- Configure the time restriction for each day of the week.
- Click on the **Apply** button to save the configuration.

Important

The WLAN timer settings affect **all Wi-Fi frequencies (2.4 and 5GHz).**
If WLAN is deactivated, a **Sunrise TV Box** connected **via WLAN will not work.**

Important

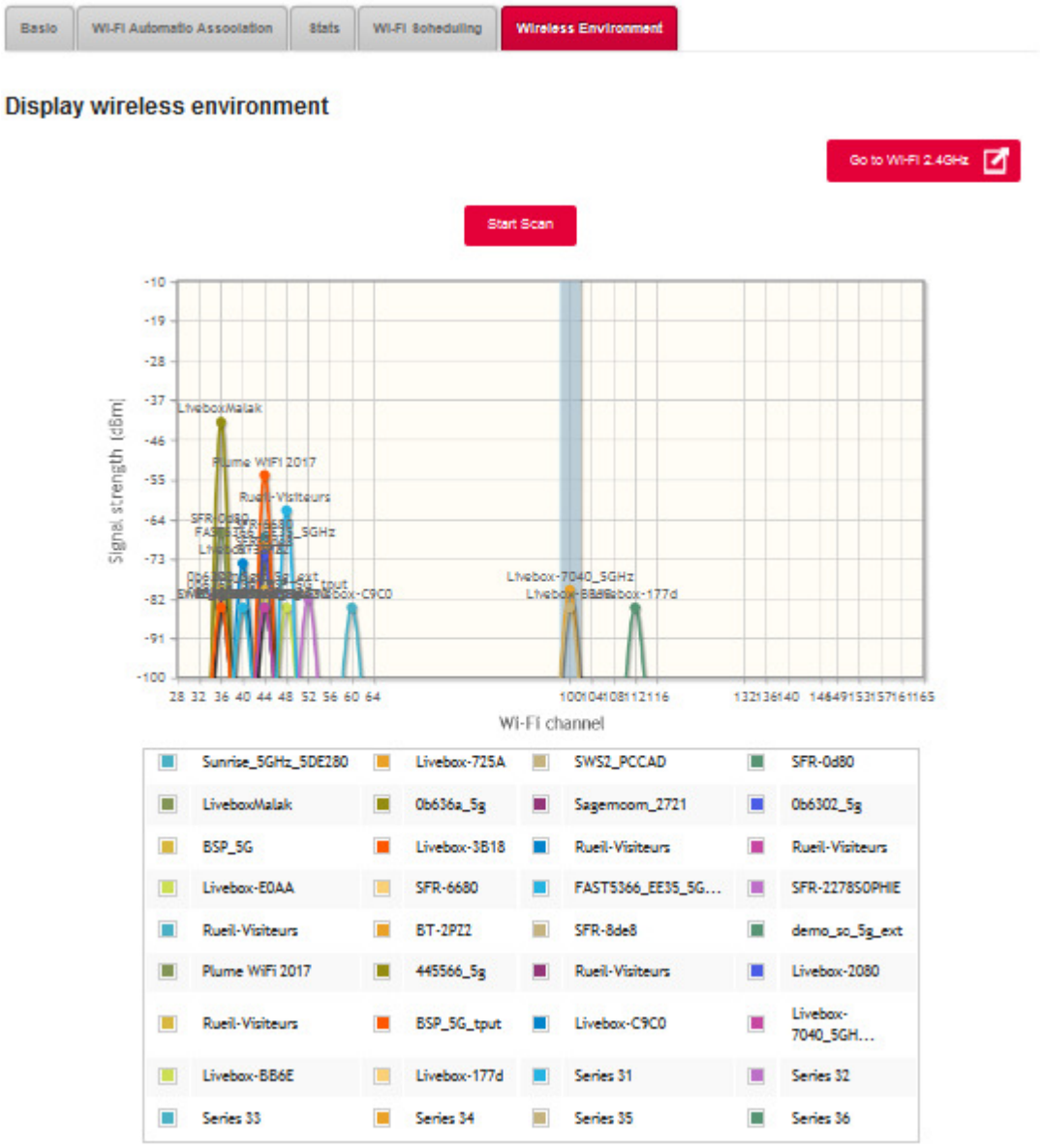
Changing the Wi-Fi manually by either pressing the Wi-Fi button on the top of the Internet Box or changing the status as per Section 3.7.1 deactivates the Wi-Fi Scheduling.

3.7.8 Wireless Environment

Objective: This menu allows you to scan the wireless environment and displays all wireless networks found by channel. For each wireless network, the following information is available: SSID name, signal strength and channel in use.

- In the **Wi-Fi xGHz** menu, select **Wireless Environment**.
- To launch the scan, press on the **Start Scan** button.

The result of the search appears.



Note

Depending on the configuration in progress, the button **Go to Wi-Fi 5 GHz** or **Go to Wi-Fi 2.4 GHz** appears on the page. This button allows you to quickly switch between Wi-Fi 5 GHz mode and Wi-Fi 2.4 GHz mode.

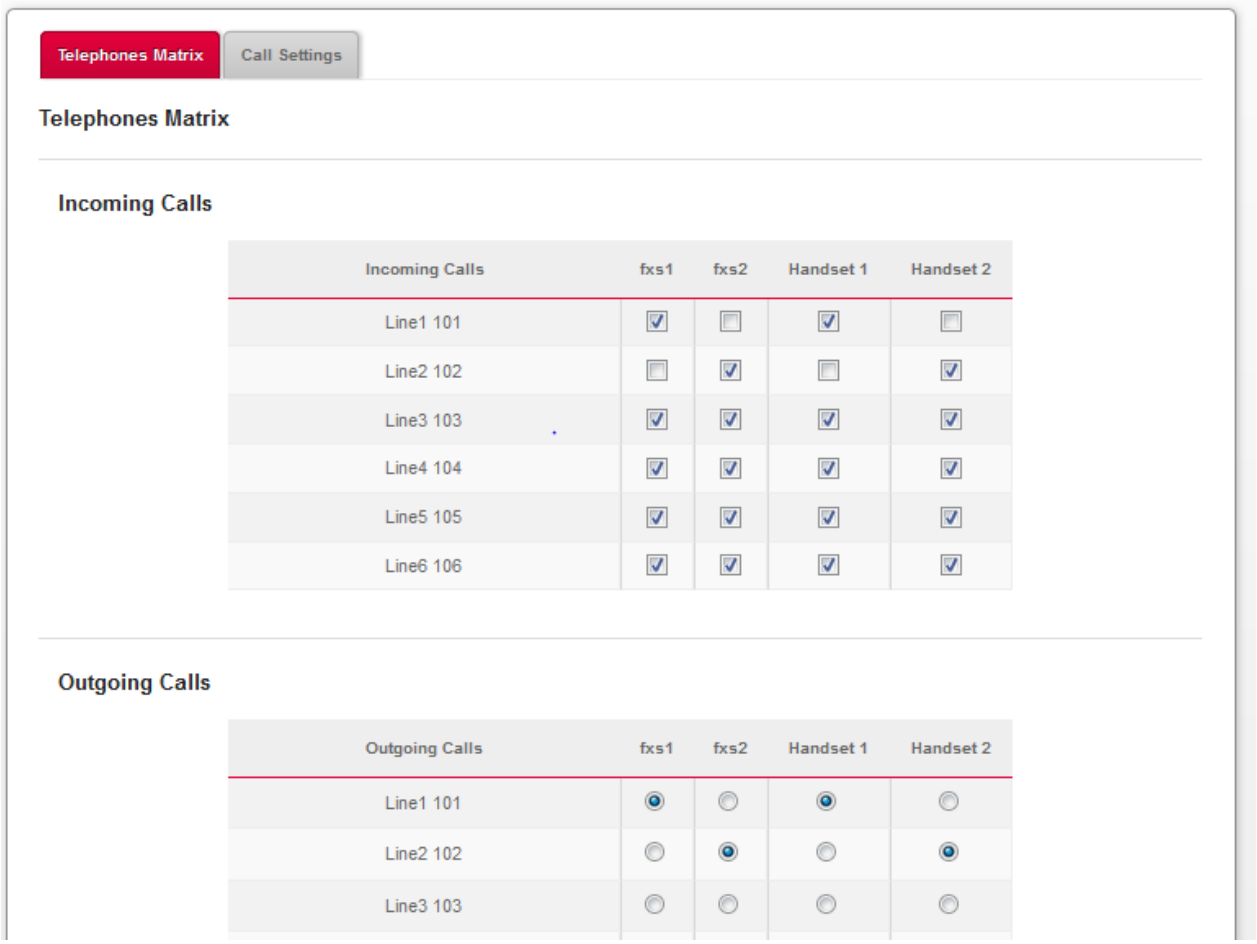
3.8 Voice service

3.8.1 "Voice settings

3.8.1.1 Telephone Matrix

Objective: Your Sunrise Internet Box can support up to 5 voice phone lines (5 SIP accounts) provided by Sunrise. Each phone set connected to your Sunrise Internet Box (either DECT handset or phone set connected to TEL1 or TEL2 connector) can be associated with one or more phone lines. This menu allows you to select which phone set is associated with each phone line for incoming and outgoing calls.

- Click on the **Expert Mode** in the Top Menu to activate the Expert Mode for calling.
- Click on the ⚙ button to access the **Voice Ports** settings, then select **Telephones Matrix**. The following screen opens:



You can associate each phone set with each phone line and click **Apply** to validate your settings.

- FXS1 corresponds to the phone set connected to the TEL1 connector on the Sunrise Internet Box.
- FXS2 corresponds to the phone set connected to the TEL2 connector.
- Handset1 to 5 corresponds to the respective DECT handset paired to the Sunrise Internet Box.
- Incoming calls are calls received by the Sunrise Internet Box.
- Outgoing calls are calls sent out by the Sunrise Internet Box.

In the above example, line 1 will be used for incoming and outgoing calls with DECT Handset1.

Note

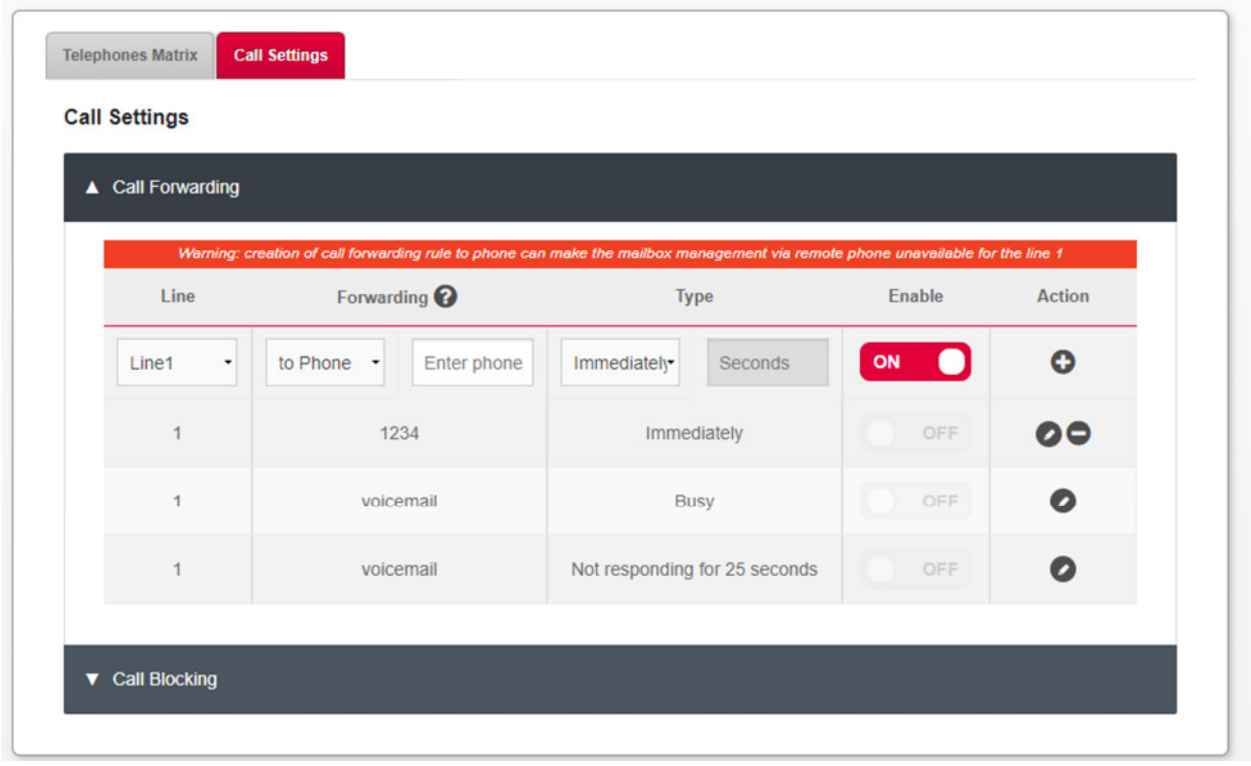
Your Sunrise Internet Box has a built in DECT base station that supports up to 5 concurrently connected handsets. It supports up to 5 calls simultaneous: 3 calls on your DECT handsets and 2 additional calls on your FXS ports.

3.8.1.2 Call Settings

Call Forwarding

Objective: This menu is used to forward incoming calls to other phone lines.

- Click on the **Expert Mode** in the Top Menu to activate the Expert Mode for calling.
- Click on the ⚙ button to access the **Voice ports**, then select **Call Settings** and click on **Call Forwarding**.
  The following screen opens:



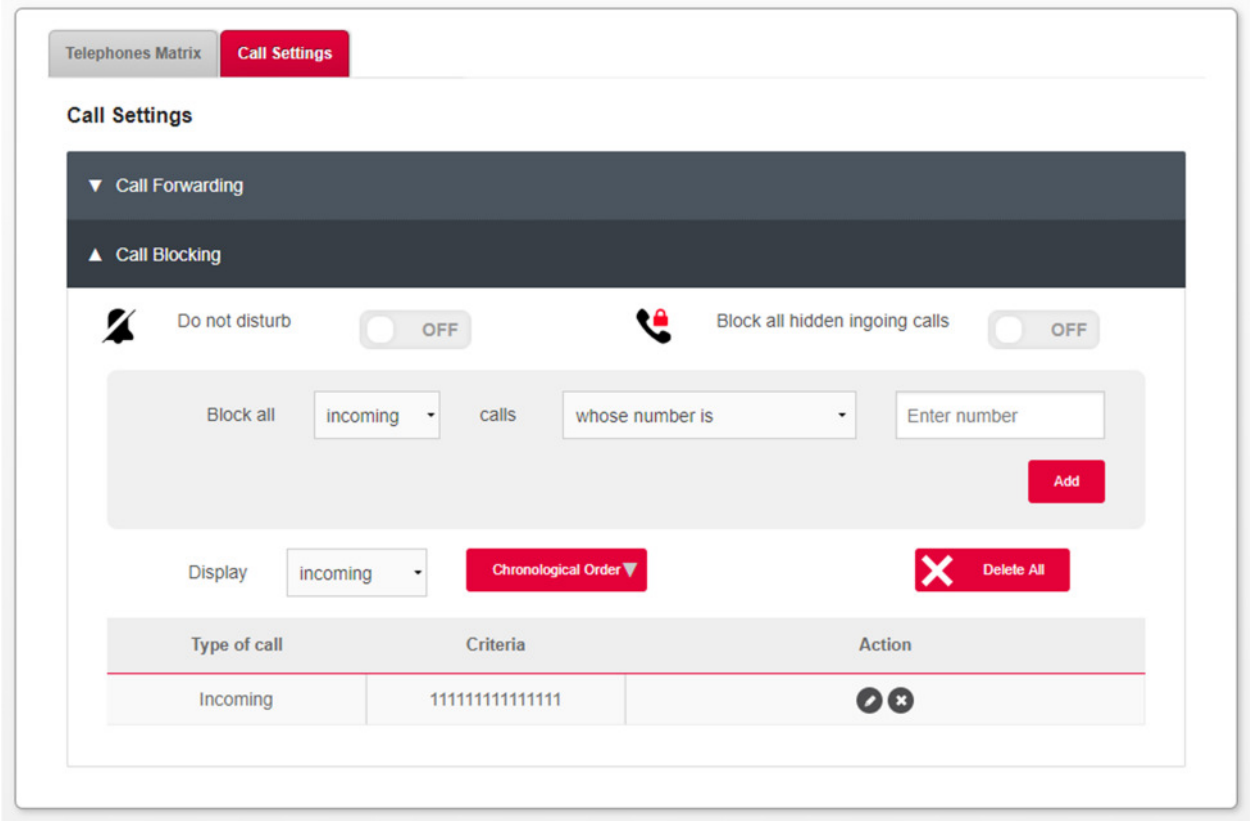
- In the **Call Forwarding** menu, select **Add** to set a Call Forwarding rule.

Field	Action/Meaning
Line	Select the phone line to forward
Forwarding	Enter the phone number to which incoming calls should be forwarded to select that line. Or enter the keyword "**voicemail**" to forward to your voicemail box.
Type	Select the type of Call Forwarding • **Immediately**: All incoming calls to the selected line are forwarded immediately. • **Busy**: Incoming calls are forwarded when the selected line is busy. **Note:** Call forwarding on busy only works if the functions "**Busy on busy**" and "**Call waiting**" are deactivated for the respective number in the telephone matrix (see previous chapter) and only one device is configured for "incoming calls". • **Not responding**: Incoming calls are forwarded when there is no answer on the selected line after the chosen number of seconds.
Seconds	Enter the number of seconds after which incoming calls should be forwarded with no answer. **Note:** please only enter values up to 60 seconds here.
Enable	Click **ON**/**OFF** to enable / disable the rule.
Action	**Add**: to add a rule **Note:** Currently, only "**Immediate**" type call forwarding can be newly added.  : to remove a rule  : to edit a rule **Note:** Existing call forwarding of the type "**Busy**" or "**Not responding**" cannot be deleted. However, you can edit or deactivate them.

Call Blocking

Objective: This menu is used to block incoming calls to your Sunrise Internet Box.

- Click on the **Expert Mode** in the Top Menu to activate the Expert Mode for calling.
- Click on the ⚙ button to access the **Voice ports**, then select **Call Settings** and click on **Call Blocking**.
  The following screen opens:



Field	Action/Meaning	Default value
Do not disturb	Click on the **ON/OFF** button to activate the **Do not disturb** function. When **ON**, all incoming calls are blocked. Phone sets will not ring.	**OFF**
Block all hidden incoming calls	Click on the **ON/OFF** button to activate the **Block all hidden ingoing calls** function. When **ON**, all incoming calls with hidden caller identity are blocked.	**OFF**

- In the **Call Blocking** menu, select **Add** to block specific numbers.

Field	Action/Meaning
Block all	Select call direction (**incoming**/**outgoing**) to block.
Number	Select rule to apply **Whose number is**: will block the number entered. This is useful if you only want to block calls to or from a specific phone number. **Whose number begins with**: will block all numbers that begin with the number entered. Use this setting if you want to block calls from or to certain (country) dialling codes, for example.
Enter number	Enter the number to block.

Examples of call blocking rules:

Block all	calls	Enter number	Result
incoming	with following number	09876543210	All calls from this phone number are blocked.
outgoing	whose numbers starts with	00	All international calls are blocked
incoming	whose numbers starts with	0049	All calls from German lines are blocked
outgoing	whose numbers starts with	004179	All calls to Swiss mobile phones with the prefix "079" are blocked

- The rules for blocked calls can be filtered. Select either **Incoming** or **Outgoing** in the **Scan** menu item to display the corresponding rules. The rules can also be sorted by time. To do so, click on **Chronological Order**.

- To delete all call blocking rules, click **Delete All**.

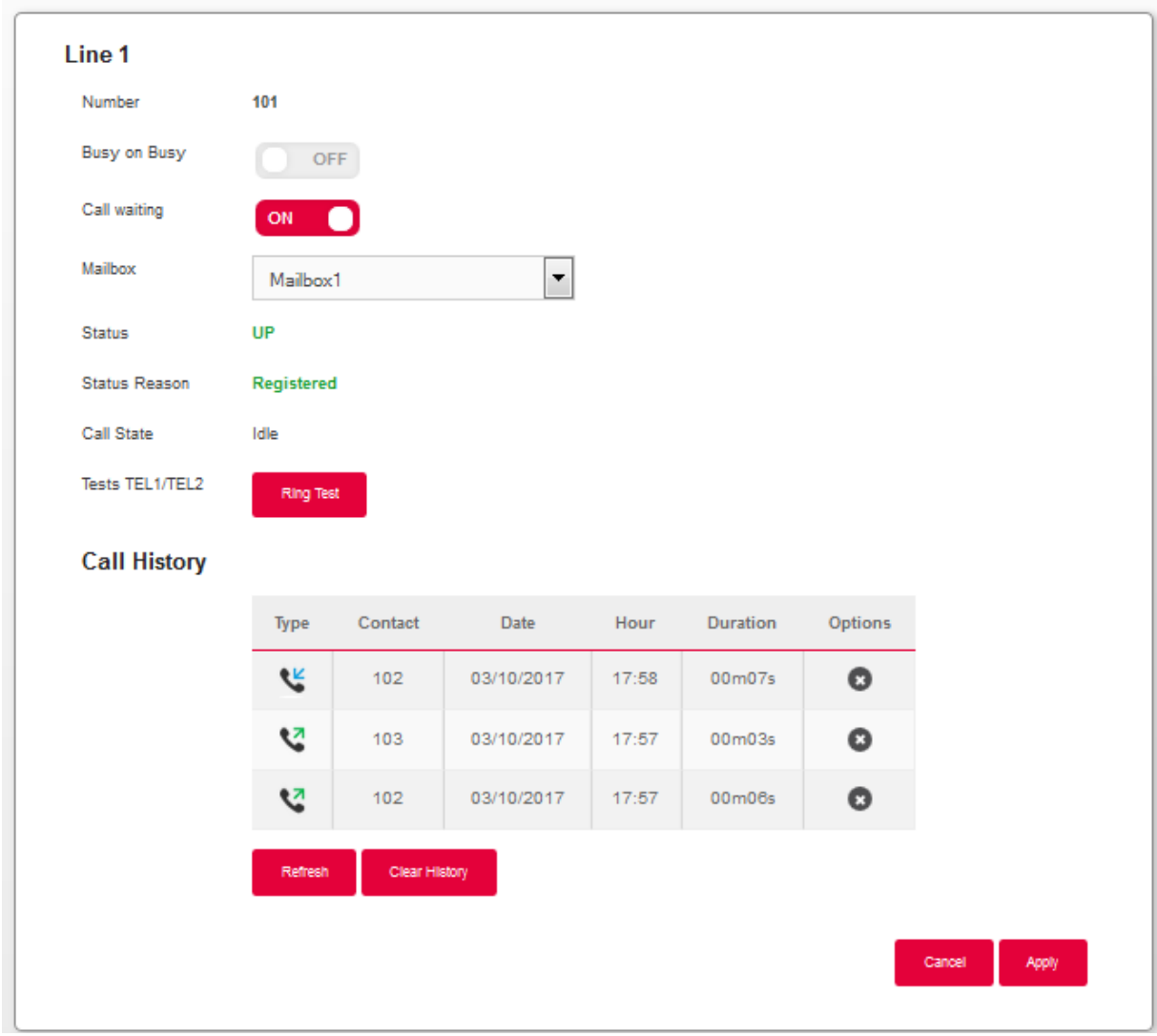
Note

The amount of rules that can be blocked depends on the length of the numbers. As an example, it is possible to block up to 23 numbers with 10 digits each (whereas the total amount is limited to 230 digits).
The maximum length of each phone number is 15 digits.

3.8.2 Line settings

Objective: This menu displays information about your phone line and shows the Call History.

- In the **Voice Port** map, click on the phone line to check.



Field	Meaning/Action
Line	Line number (1 to 5).
Number	Phone number associated with this line.
Status	Line status.
Status Reason	Registration status
Call State	State of line showing current use
Tests	This button allows you to carry out a test of the line. When you click on the button, the phone connected to this line rings.
Call History	The call history list shows all the events that occurred on the current line (incoming calls, missed calls, outgoing calls).
Refresh	Click on the button to update the list.
Clear history	Click on the button to delete all events in the list.

3.8.3 DECT settings

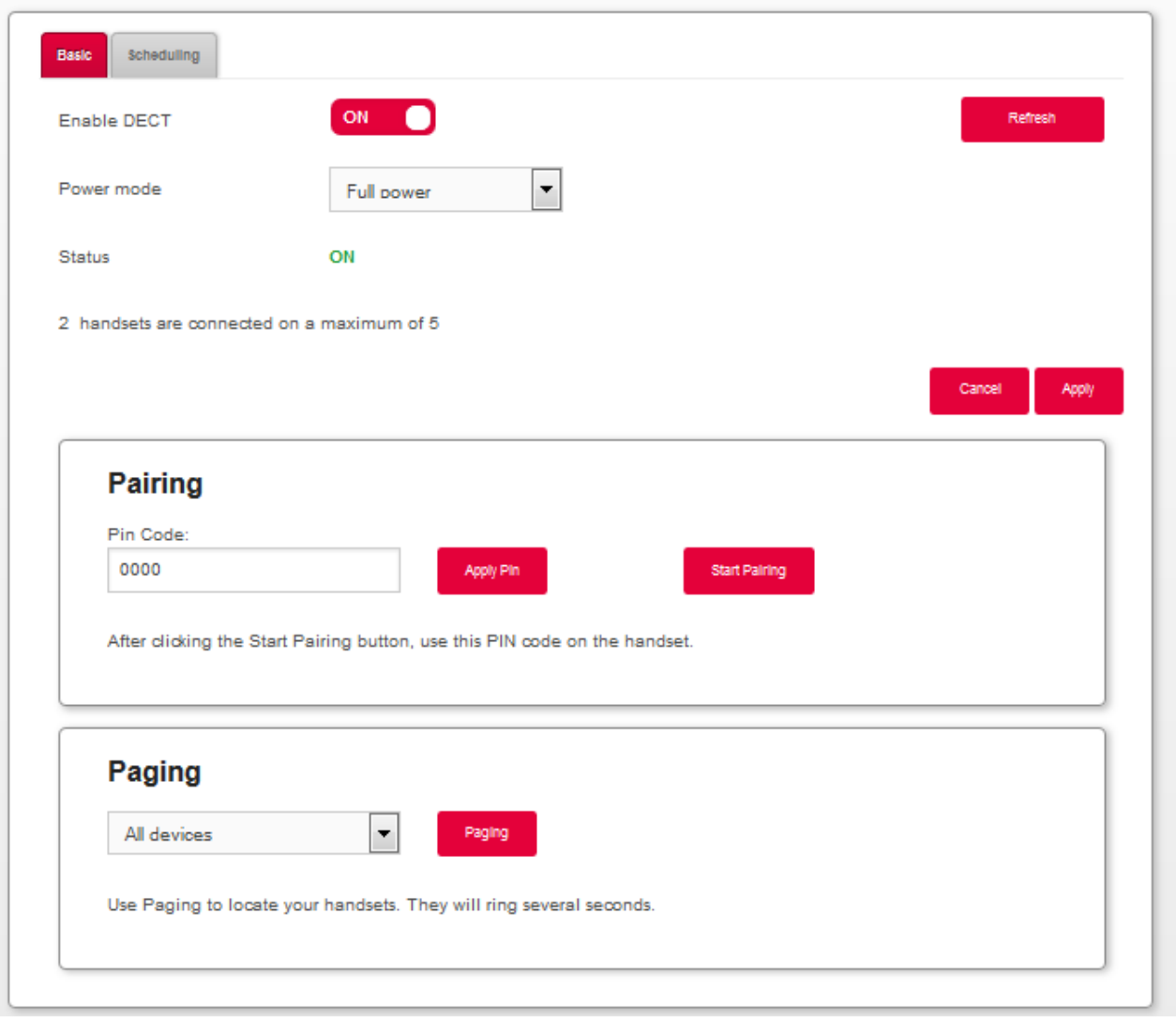
Objective: The Sunrise Internet Box has an integrated DECT base that allows pairing of up to 5 handsets.

3.8.3.1 Basic

Objective: This menu lets you display the basic function of your DECT base.

- Click on the ⚙ button to access the DECT settings, then select **Basic**.

  The following screen opens:

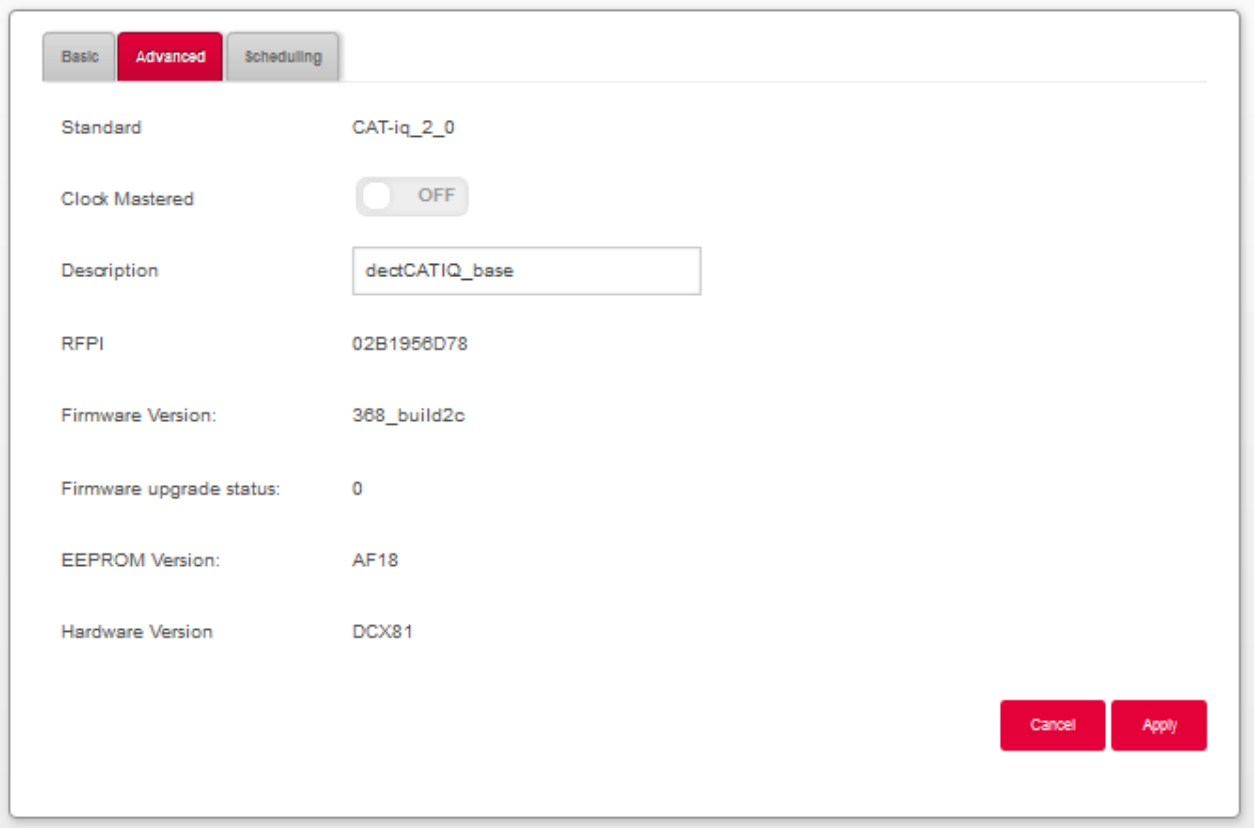


Field	Action
Enable DECT	Click on the **ON**/**OFF** button to activate or deactivate the DECT function on your Sunrise Internet Box. In the welcome screen, the status of the DECT is indicated with the 2 following icons:  : DECT on.  : DECT off. **Note:** The steady "DECT" LED on the front of the Sunrise Internet Box shows that the wireless network (Wi-Fi) is activated.
Status	Status of the DECT connection. Below, the number of connected handsets is displayed.
Pairing	The Start Pairing button allows you to put the DECT base into pairing mode. **Note:** The pairing mode can also be started by a long press (more than 2s) on the DECT button located on the top of the Sunrise Internet Box.
Paging	The Paging button allows you to perform a search when you have lost a handset. **Note:** The paging mode can also be started by a short press (less than 2s) on the **DECT** button located on the top of the Sunrise Internet Box. All telephones connected to the DECT base ring in paging mode

3.8.3.2 Advanced

Objective: This menu lets you display basic information about your DECT base and configure advanced settings.

- Click on the **Expert Mode** in the Top Menu to display DECT advanced settings.
- Click on the ⚙ button to access the DECT settings, then select **Advanced**. The following screen opens:



Field	Meaning/Action
Clock Mastered	Turning Clock Mastered ON will allow the DECT handset to control clock settings. Leaving it OFF will allow the Sunrise Internet Box control the handset clock.
Description	Name of the embedded DECT Base Station.
Firmware Version:	Firmware version of the DECT Base Station.
Firmware upgrade status	Firmware upgrade status for the DECT Base Station.

3.8.3.3 Scheduling / DECT-Scheduling

Objective: In this menu you can set specific times for switching the DECT base on the Sunrise Internet Box on and off.

Further information on configuring this feature can be found in the description of the DECT Scheduling (see section 3.8.7).

3.8.4 DECT Setup

This chapter deals with the description and setting up the DECT (Digital Enhanced Cordless Telephone) Voice High definition for use.

Your Sunrise Internet Box has an integrated DECT wireless digital base, which allows you to access the calling services of your Sunrise Internet Box. The DECT telephone is compatible with the "Voice High Definition" standard CAT IQ 2.0. It will provide higher quality than telephones connected on a traditional line.

The DECT function of your Sunrise Internet Box operates only with SIP (Session Initiation Protocol).

3.8.4.1 Connecting your Sunrise Internet Box

Based on the local loop unbundling function (partial or total), the following connections are possible:

Total local loop unbundling

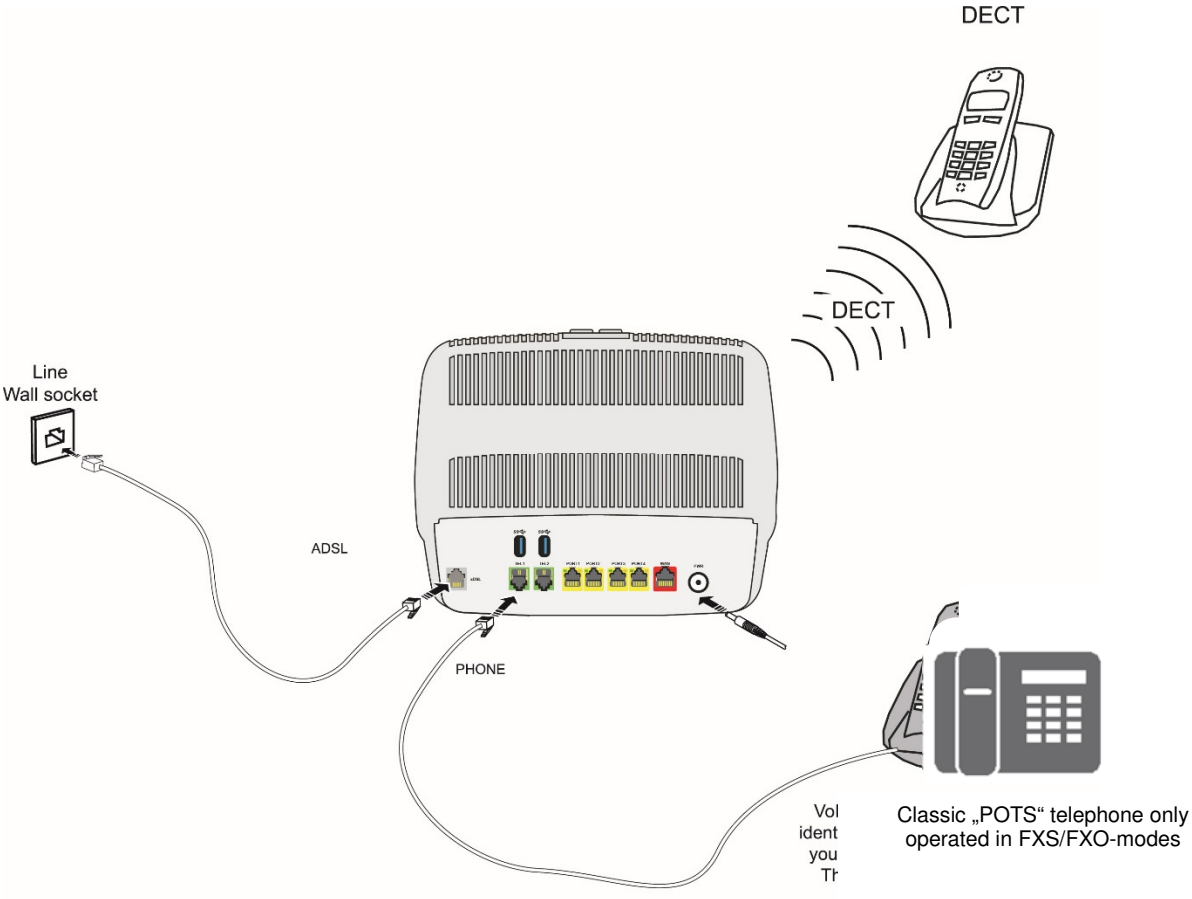


Figure 3.1 - xDSL line / telephone set / Power Supply Connection (Total local loop unbundling)

Partial local loop unbundling

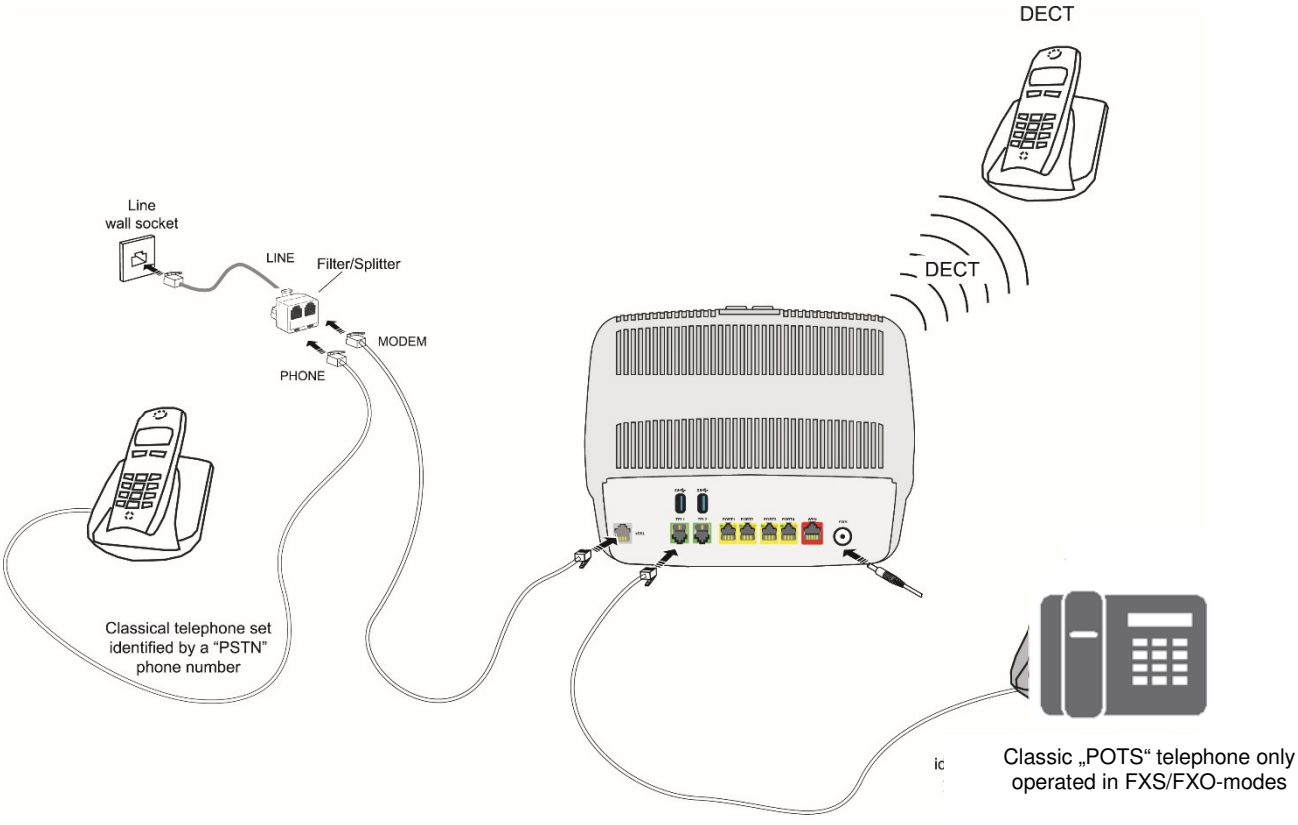
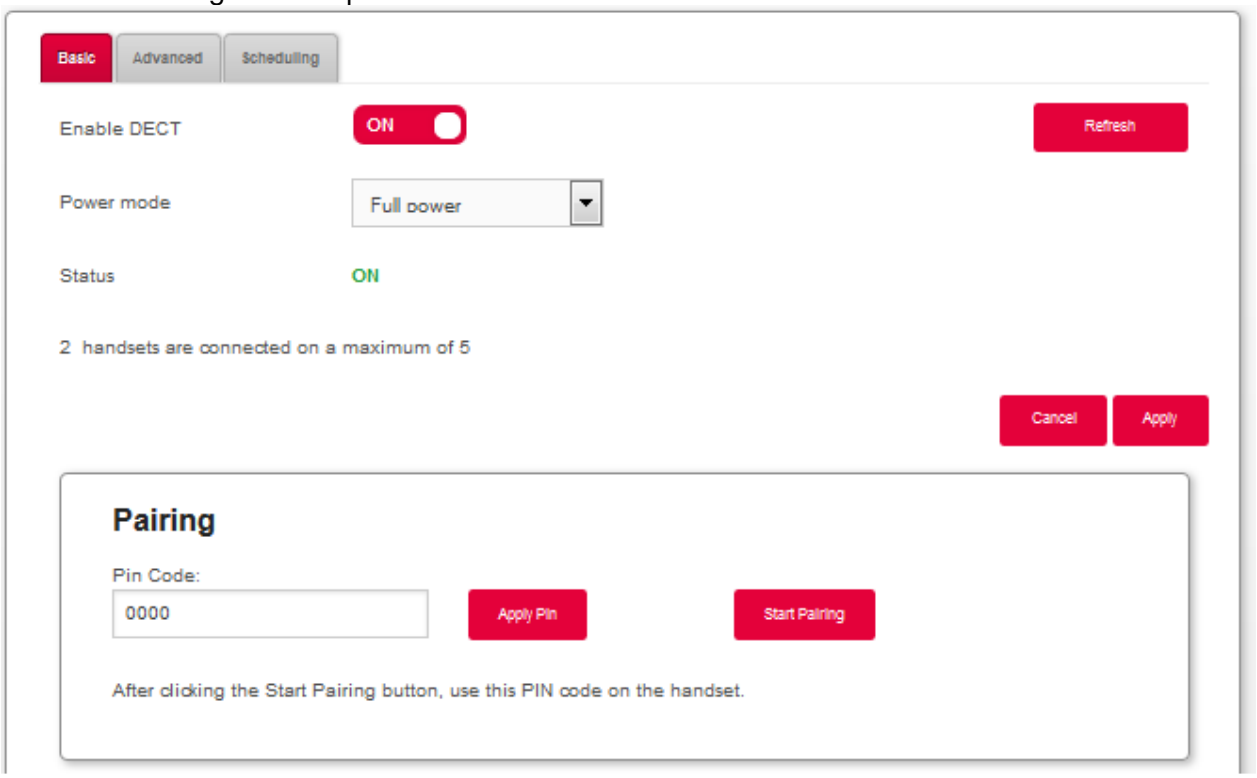


Figure 3.2 - xDSL line / telephone set / Power Supply Connection (Partial local loop unbundling)

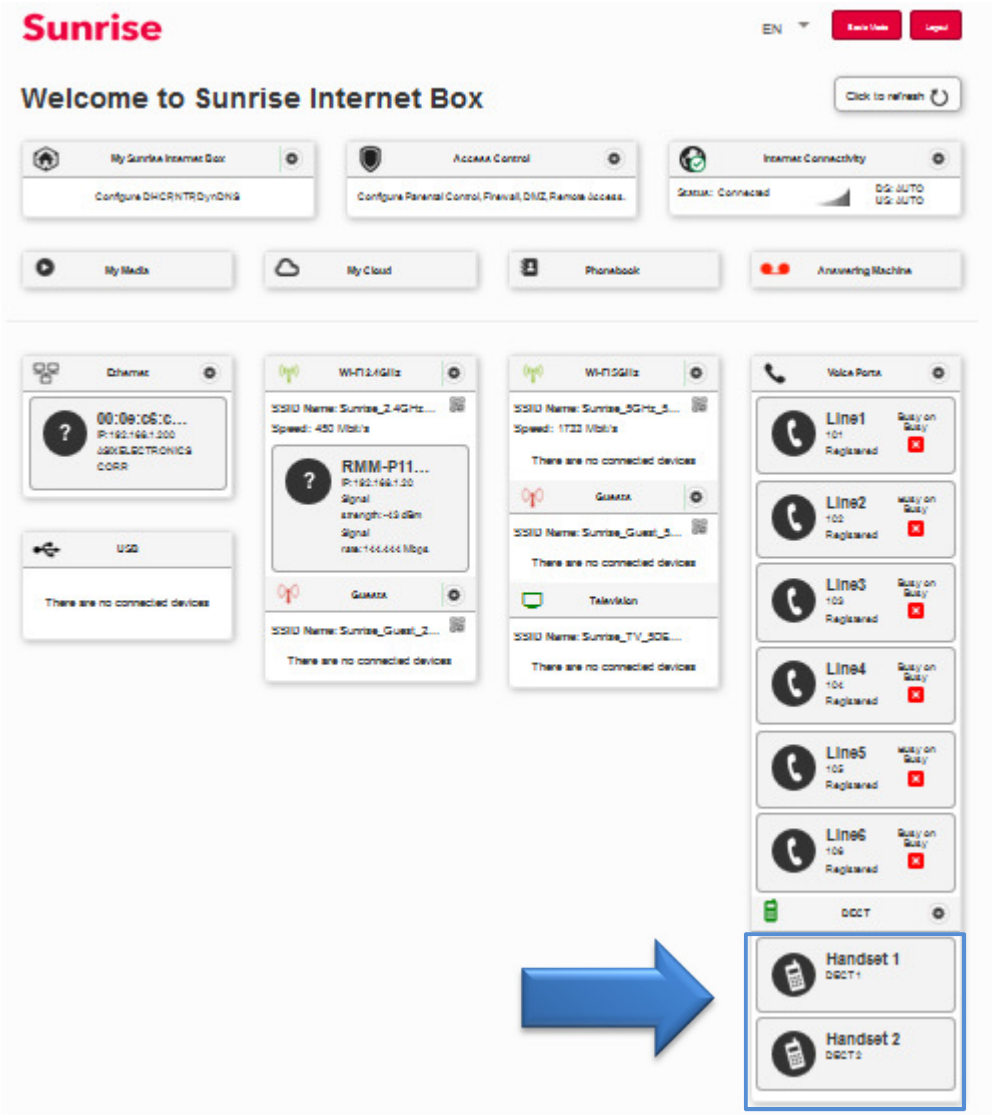
3.8.4.2 Pairing of DECT handset

Objective: This menu allows you to pair up to 5 DECT handsets with the built in DECT base of your Sunrise Internet Box.

- Click on the ⚙ button to access the DECT settings, and then select **Basic.**
  The following screen opens:



- Ensure that "**Enable DECT**" is set to "**ON**" and that Status is "**ON**."
- Click on "**Start Pairing**" to set the DECT base in pairing mode.
- Search for the Pairing mode in the settings of your DECT handset and enable pairing mode there as well.
  Note: You must enable pairing mode on your Sunrise Internet Box and the DECT handset within less than 2 min. Otherwise, pairing will fail and you will have to re-start pairing again.
- Pairing usually only takes a few minutes. Then the DECT handset will prompt you with a success message.
- You can now see the newly paired DECT handset in the User Interface
- Once pairing is completed, you can see the list of successfully paired DECT handsets in the welcome screen of your Sunrise Internet Box.



3.8.4.3 Operation

You have finished connecting the DECT.

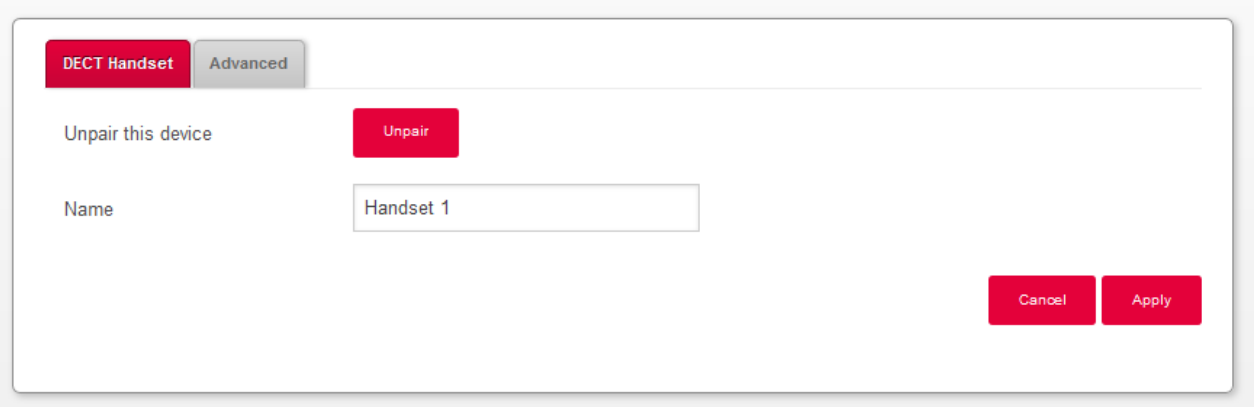
To configure SIP calling on your Sunrise Internet Box with embedded DECT, refer to the following Section.

3.8.5 DECT Handset settings

3.8.5.1 DECT Handset

Objective: This menu lets you display basic information about the selected handset.

- In the **Voice Ports** map, select the **DECT** network map Handset to configure.
- Click on **DECT Handset**.
  The following screen opens



Field	Meaning/Action
Unpair this device	Use this button to unpair the handset from the base.
Name	Enter the name that you want to assign to this handset. The name will be displayed on the interface and on the screen of the handset.

3.8.5.2 Advanced

- In the **Voice Ports** map, select the **DECT** network map handset to configure.
- Click on **Advanced**.
  The following screen opens

Field	Meaning/Action
IPEI	International Portable Equipment Identity (IPEI). The identification number of your handset.
Standard	Name of standard used.

3.8.6 Calling operations

Objective: This Section describes calling features available from the keypad of FXS and DECT handsets.

Note
The operations described in this Section may also be performed from the phone menu.

3.8.6.1 Internal calls

Objective: You can make internal calls between the phones registered on your Sunrise Internet Box. To make an internal call, use the following table:

To call	Action
FXS1	Enter "**1" in the keypad.
FXS1	Enter "**2" in the keypad.
DECT HANDSET 1	Enter "**51" in the keypad.
DECT HANDSET 2	Enter "**52" in the keypad.
DECT HANDSET 3	Enter "**53" in the keypad.
DECT HANDSET 4	Enter "**54" in the keypad.
DECT HANDSET 5	Enter "**55" in the keypad.

3.8.6.2 Actions during a call

Objective: This Section describes the main actions which can be carried out during a call.

When a call is established

Action	Consequence
Hang up the phone	Established call is released.
Press the “R” key	Established call is on hold. Ready to dial a second telephone number.

When a call is established and a second incoming call is waiting

Action	Consequence
Hang up the phone	Established call is released. Telephone rings again for the waiting incoming call.
Press the “R” + “0” keys	The waiting call is rejected.
Press the “R” + “1” keys	Established call is released. Incoming waiting call is accepted.
Press the “R” + “2” keys	Established call is on hold. Incoming waiting call is accepted.

When a call is established and a second outgoing call is in progress

Action	Consequence
Hang up the phone	Blind transfer: established call is transferred to a call in progress.
Press the “R” key	Cancels second outgoing call in progress. The call on hold is retrieved.

When two calls are established

Action	Consequence
Hang up the phone	Active call is released. Telephone rings again for the call on hold.
Press the “R” + “0” keys	Reject: Call on hold is released.
Press the “R” + “1” keys	Active call is released. The call on hold is retrieved.
Press the “R” + “2” keys	Toggle: Active call is put on hold. The other call is retrieved.
Press the “R” + “3” keys	Three-Party Conference: 3 callers are connected together.
Press the “R” + “4” keys	Transfer: Active call is transferred to call on hold.

3.8.6.3 CLIR (Calling Line Identification Restriction) activation

Objective: This operation allows you to hide or display your phone number for the current/next call.

To ...	Action
activate the CLIR	Enter "***31*<targetNumber>#**" on the keypad.

3.8.6.4 Call forwarding

Objective: This Section describes how to activate call forwarding with the keypad phone.

Action	Consequence
21<targetNumber>#	Call Forward Unconditional (all calls) activation
#21#	Call Forward Unconditional (all calls) deactivation
67<targetNumber>#	Call Forward On Busy activation
#67#	Call Forward On Busy deactivation
61<targetNumber>#	Call Forward On No Answer activation
#61#	Call Forward On No Answer deactivation

3.8.7 DECT Scheduling

Objective: This menu is used to manage DECT scheduling in order to schedule the powering off and on of the DECT interface of the Sunrise Internet Box.

- In the **DECT** menu, select **Scheduling**. The following screen opens:

To set a schedule for your DECT interface, proceed as follows:

- **Enable** the DECT scheduling feature by pressing the "**ON**" button.
- Configure the time restriction for each day of the week.
- Click on the **Apply** button to save the configuration.

Note

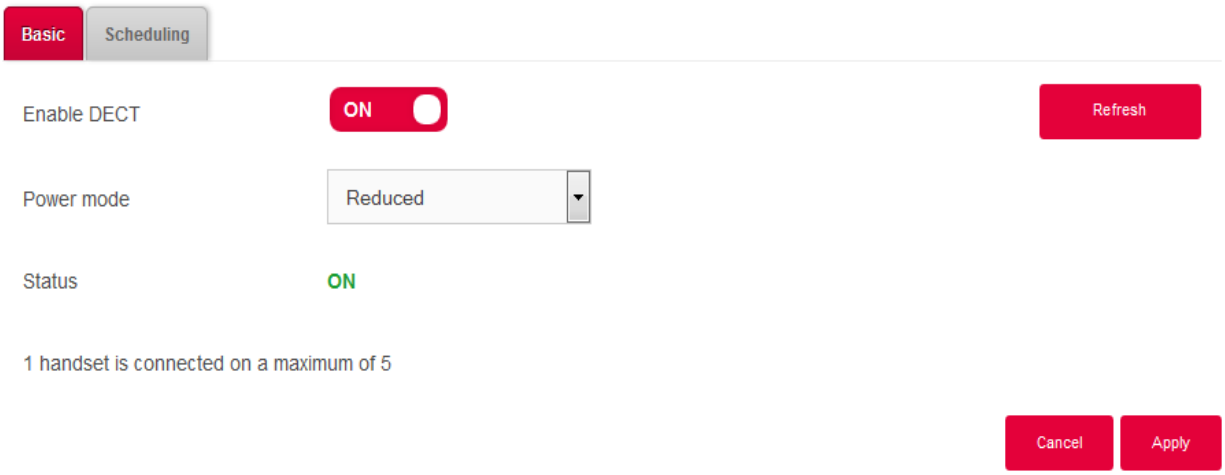
By default, the answering machine is disabled. If you schedule the DECT interface to be "off" for a selected time slot, you must enable the mailbox on that line in the "Mailbox settings tab" so that callers are able to leave a message during the time that the DECT interface is scheduled to be off.

The messages received and saved in the answering machine will be lost in case of restoration of default settings.

3.8.8 DECT Eco Mode

Objective: This menu is used to manage DECT power consumption and radio emissions of your Sunrise Internet Box. Select the Eco mode for the DECT devices paired with the Sunrise Internet Box and present in the Telephone Matrix. In this case, power consumption and radio emissions are reduced.

- In the **DECT** menu, select **Basic**. The following screen opens:



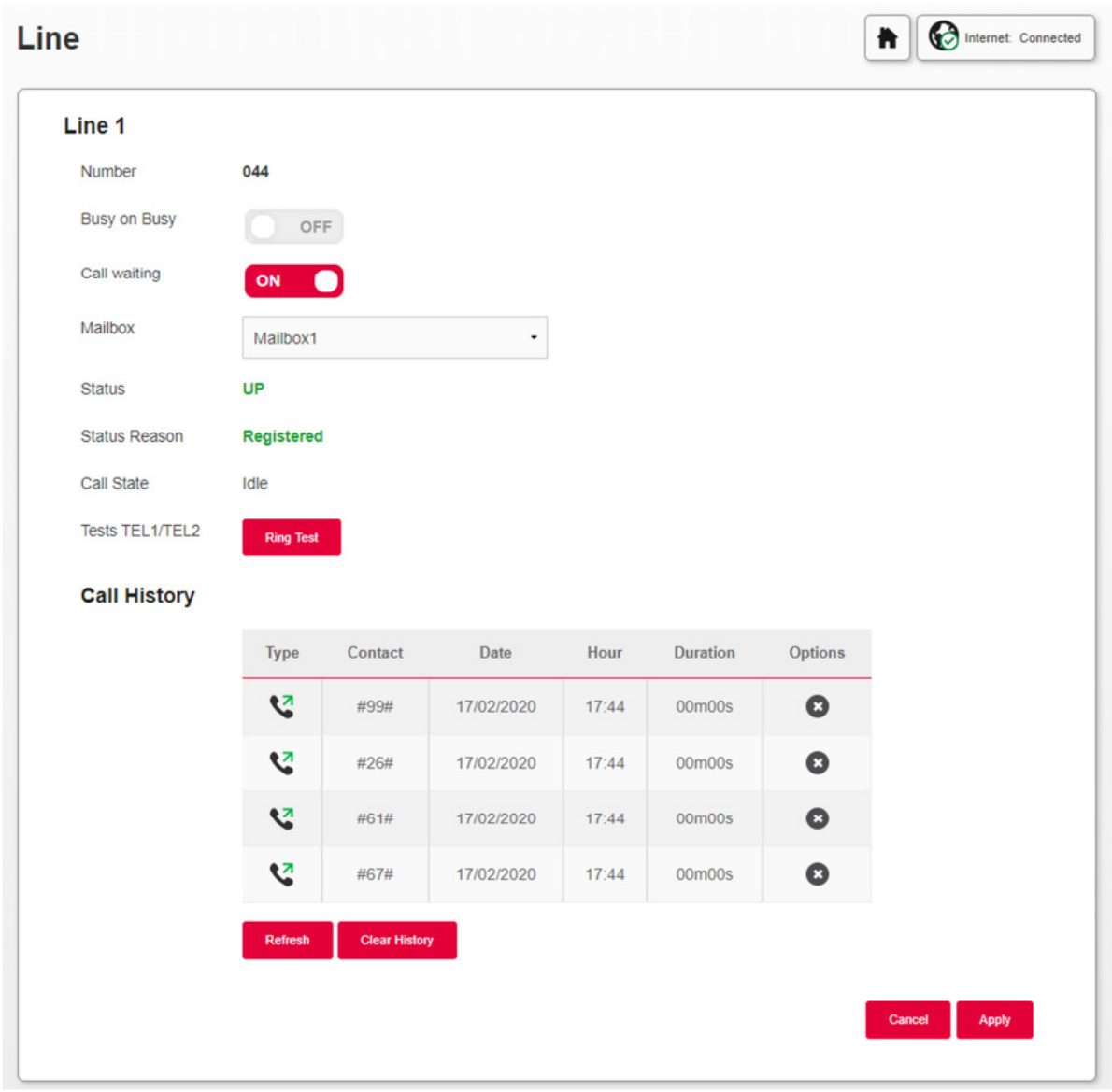
To set your DECT interface in Eco mode, proceed as follows:

- Select the **Reduced** power mode in the drop down list.
- Click on the **Apply** button to save the configuration.

3.8.9 Busy on Busy

Objective: This Section explains how to enable the Busy on Busy feature on a Sunrise telephone line (SIP account). The end user can enable the Busy on Busy feature on each of their active lines. When the feature is enabled, the caller will hear a busy tone instead of a ringing tone when a call is already conducted on that line.

- In the **Main menu**, select **Line**. The following screen opens:



To enable the Busy on Busy feature, proceed as follows:

- **Enable** the Busy on Busy feature by pressing “ON.”
- Click on the **Apply** button to save the configuration.

Note

By default, every FXS port is activated on the Phone Matrix. In case you want to use the feature “Busy on Busy” on one or all of your Sunrise telephone lines (SIP accounts), make sure the Phone Matrix is up to date. Do not have a checkbox enabled if no handset is plugged in. This could lead to incomplete execution of the “Busy on Busy” feature.

3.9 USB service

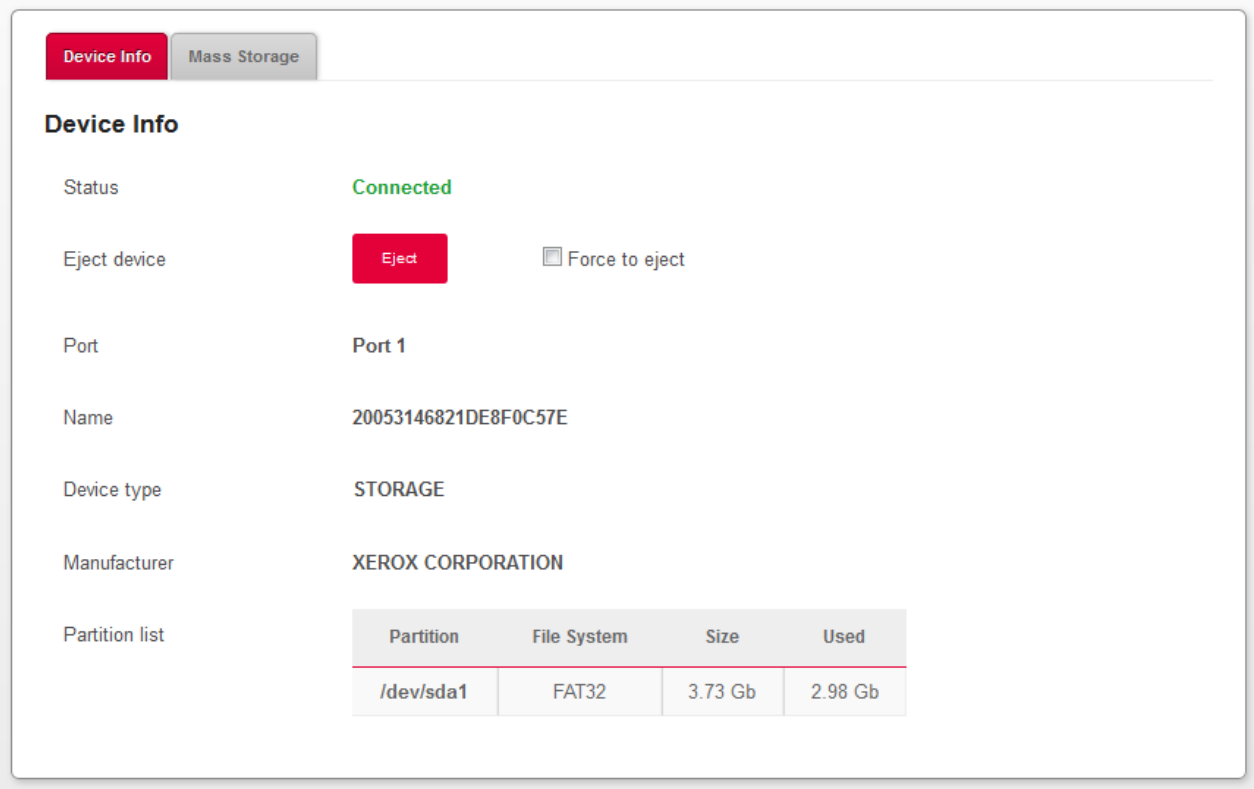
This field only appears when one USB drive is connected to the Sunrise Internet Box.

3.9.1 USB device

3.9.1.1 Device Info

Objective: This menu provides some information about the USB devices connected to the Sunrise Internet Box.

- In the Network map, click on the USB device for which you want to display information.

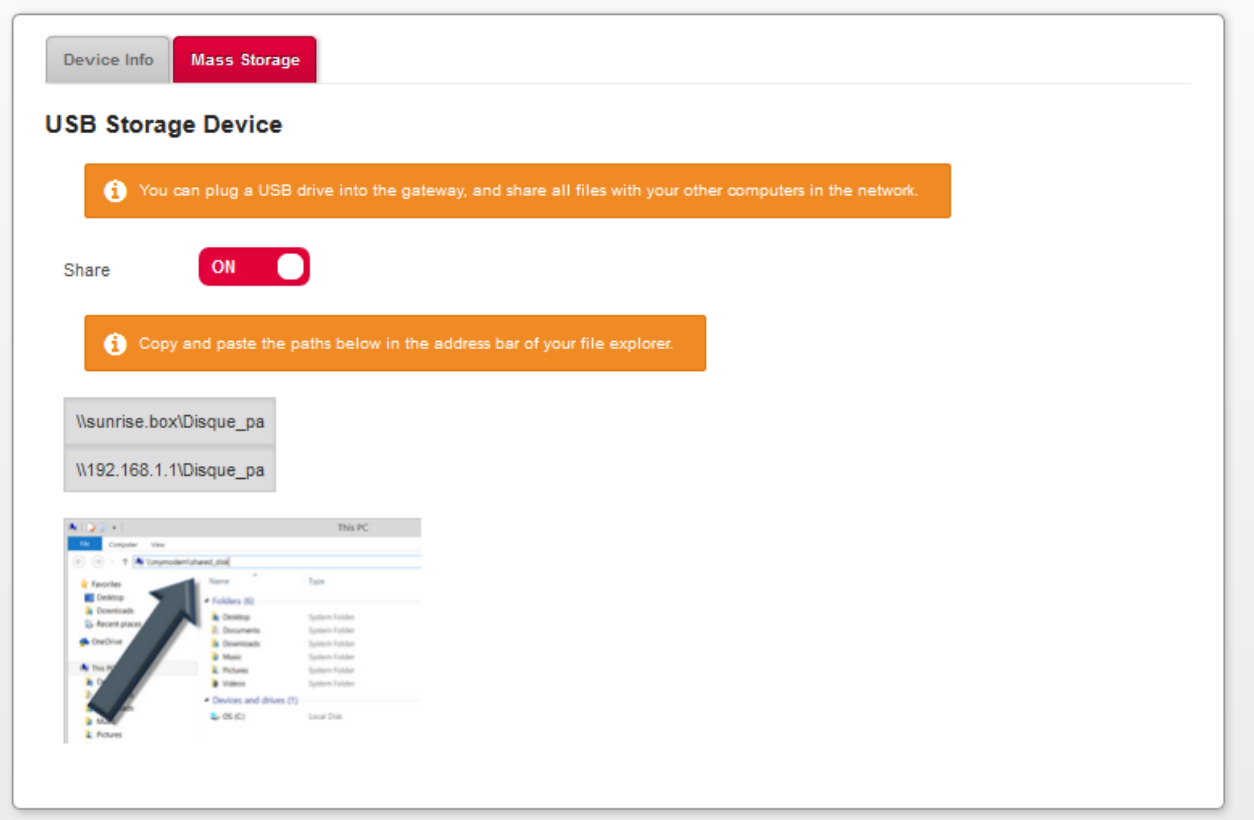


Field	Meaning/Action
Status	Status of the USB port.
Eject device	Use this button to remove the USB drive from the Sunrise Internet Box. Check the **Force to eject** box when the normal procedure is not working.
Port	Port where you have connected your USB drive.
Name	Name of the USB drive.
Device type	Type of the device (storage, etc.).
Manufacturer	Information about the manufacturer as programmed inside the device
Partition list	Provides information about the USB drive connected.

3.9.1.2 Mass Storage

Objective: You can share all files contained on the USB drive connected to the Sunrise Internet Box with other computers on the network.

Use the **ON/OFF** button to activate or deactivate sharing of the current USB drive. To allow access to this shared folder, you must communicate the path to other users.



Note

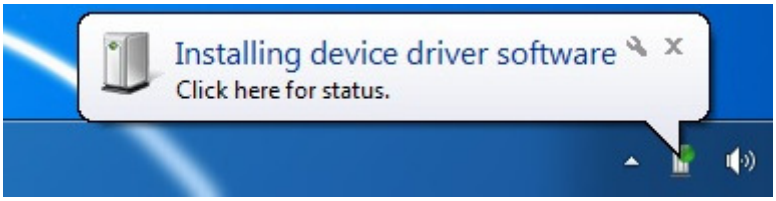
- The maximum capacity of a supported USB-mass storage device is linked to the file system used on the device
- You can connect and use several USB-mass storage devices to the Sunrise Internet Box at the same time
- Supported file systems are: FAT32 und NTFS.

3.9.2 Printer sharing

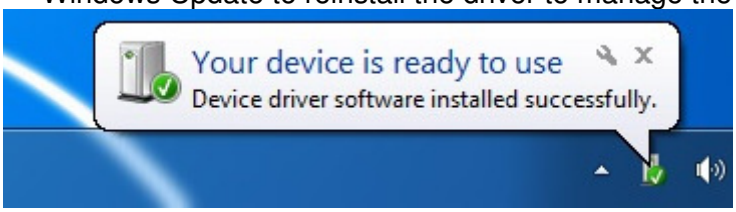
Objective: This Section describes how to use a USB printer connected on the Sunrise Internet Box from a LAN PC.

Introduction: Print sharing is available on the Sunrise Internet Box. It is based on the IPPrint protocol. All printers should be compatible as long as their drivers are available and installed on the LAN PC.

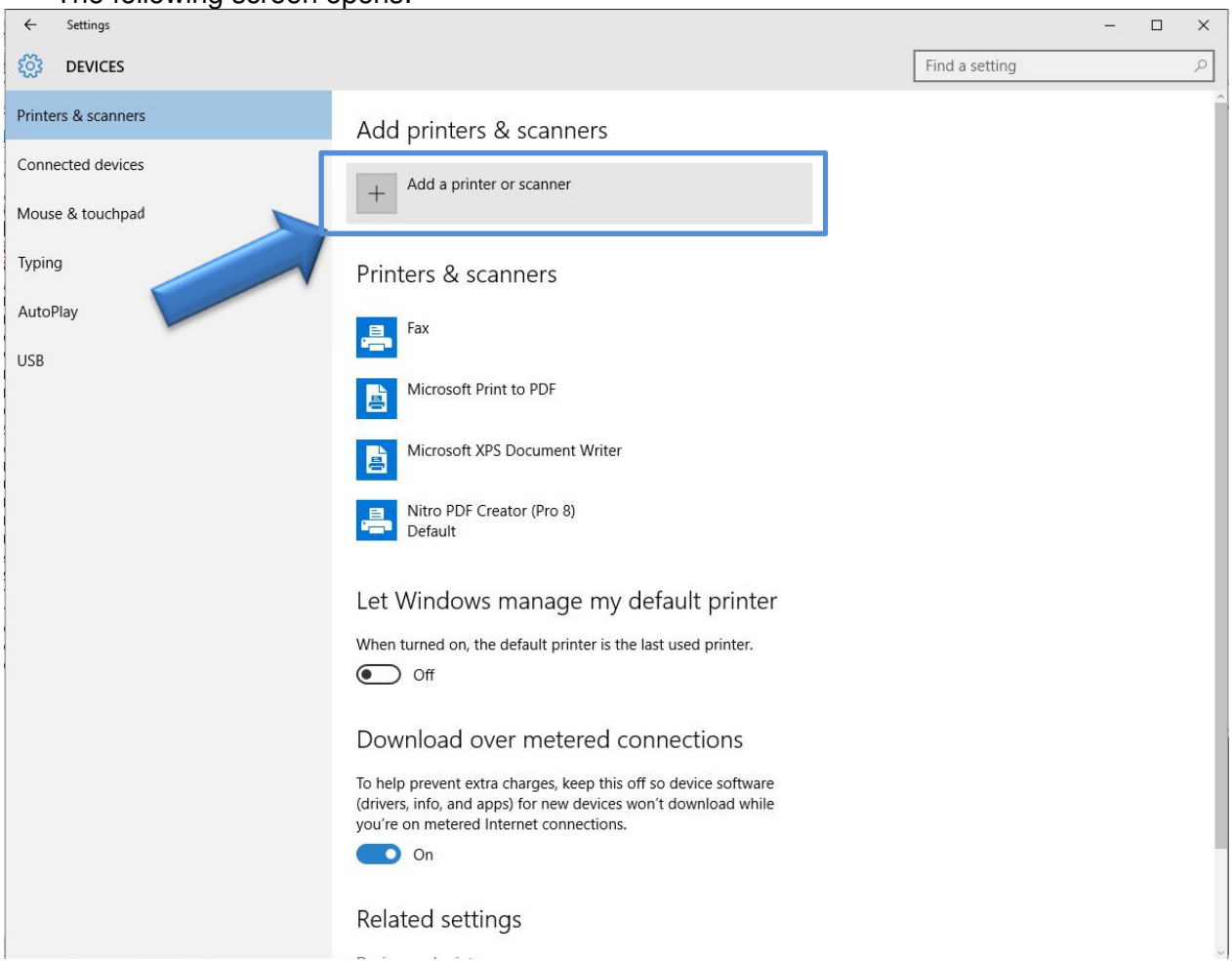
- First, you need to make sure that your PC can control the Printer.
- Connect the Printer directly to the PC via a USB cable. Power on the Printer.
- With Windows 7 (or more recent), the printer driver will be installed automatically.



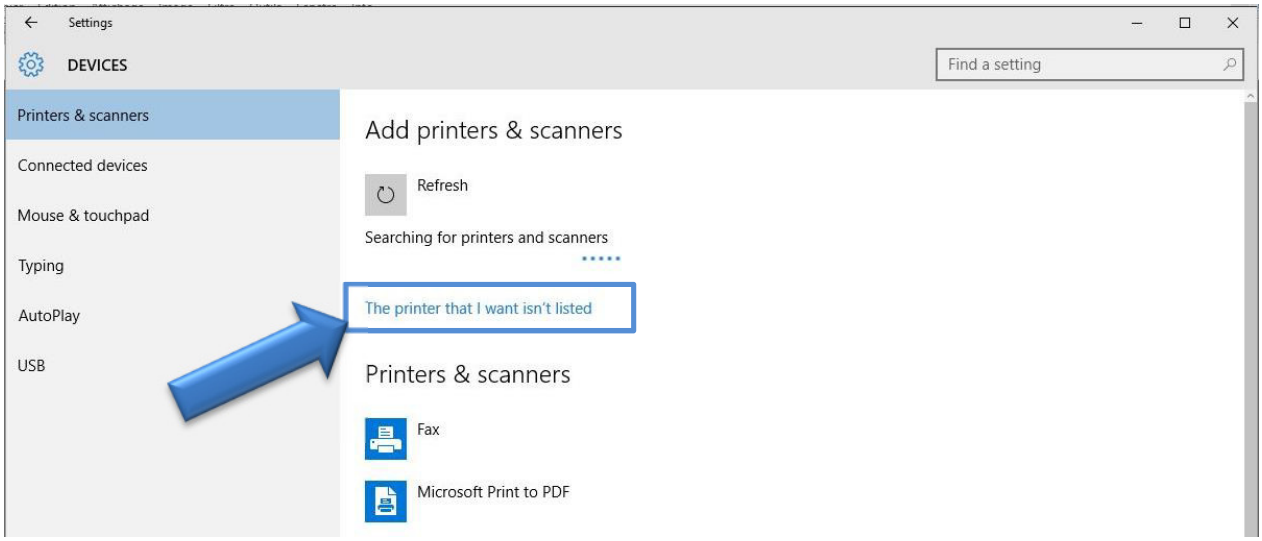
- Check that the printer driver is successfully installed on your PC. In case of errors, you can try Windows Update to reinstall the driver to manage the Printer from the PC.



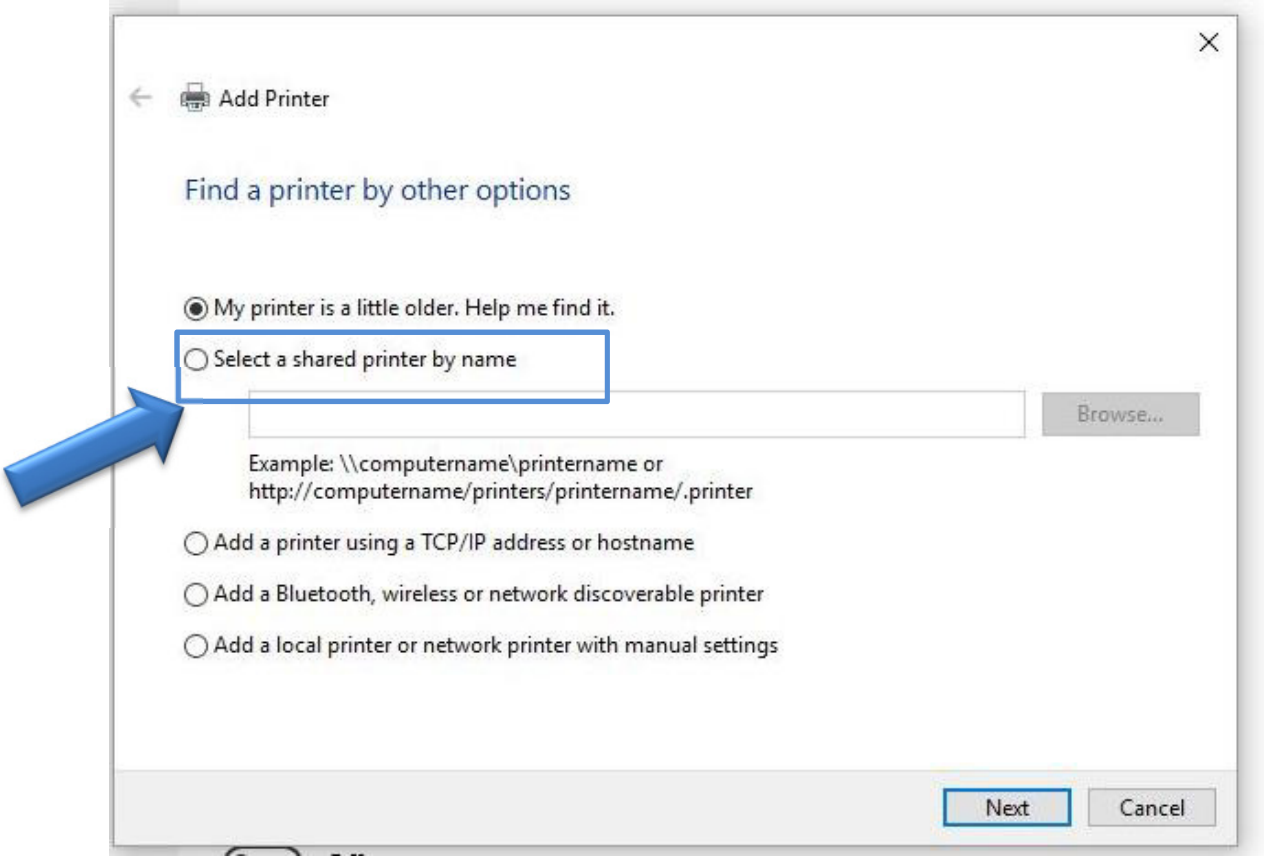
- Make sure that you are able to print a Test Page. If your page is successfully printed, you are ready and can move on to the next step. Otherwise, you need to reinstall the Printer on the PC until you can print a test page on the printer when it is connected directly to the PC.
- If your page was successfully printed, you are now ready in this second step to connect the Printer to the Sunrise Internet Box.
- Connect the USB cable from the Printer to one of the USB ports on your Sunrise Internet Box.
- Make sure the Printer is powered on.
- Make sure the Sunrise Internet Box has been on for several minutes.
- Connect your PC to the Sunrise Internet Box via Ethernet or via wireless.
- On the PC, go to Settings -> Devices.
  The following screen opens:



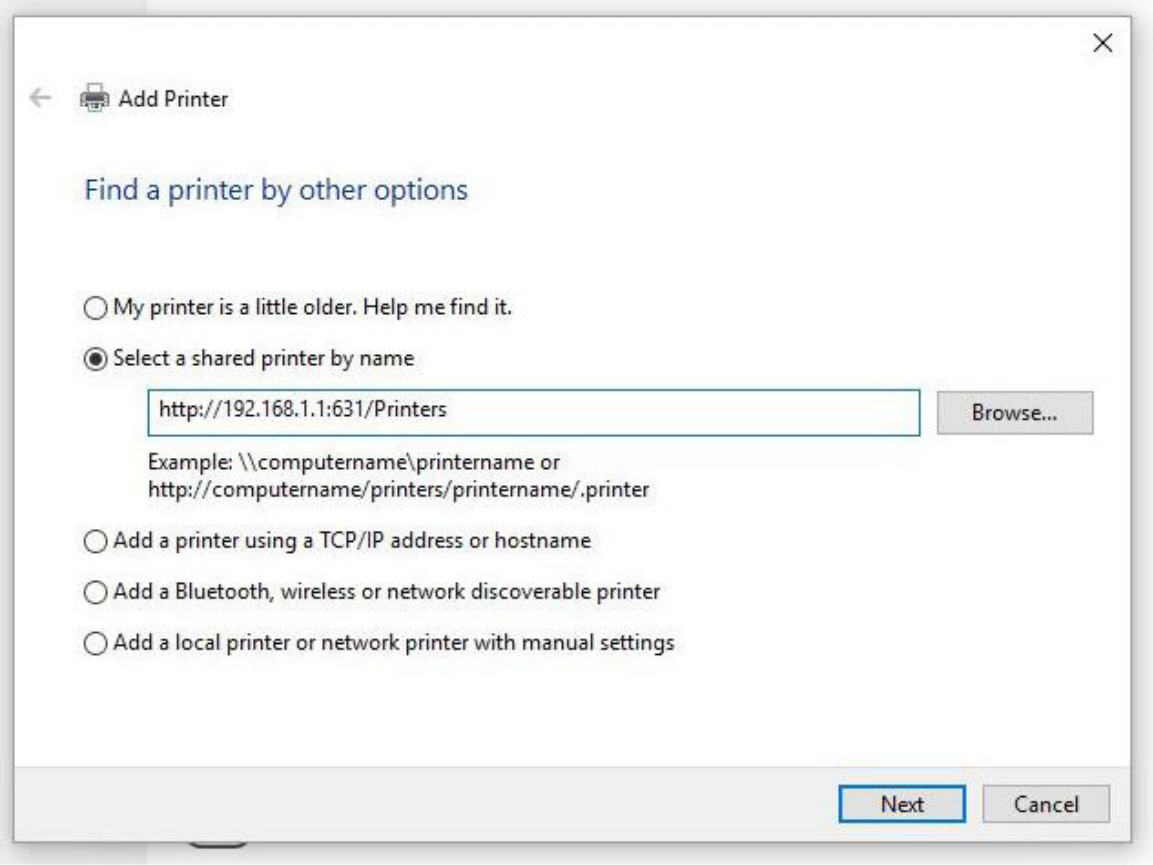
- Click on “Add a printer or scanner.”
  The following screen opens:



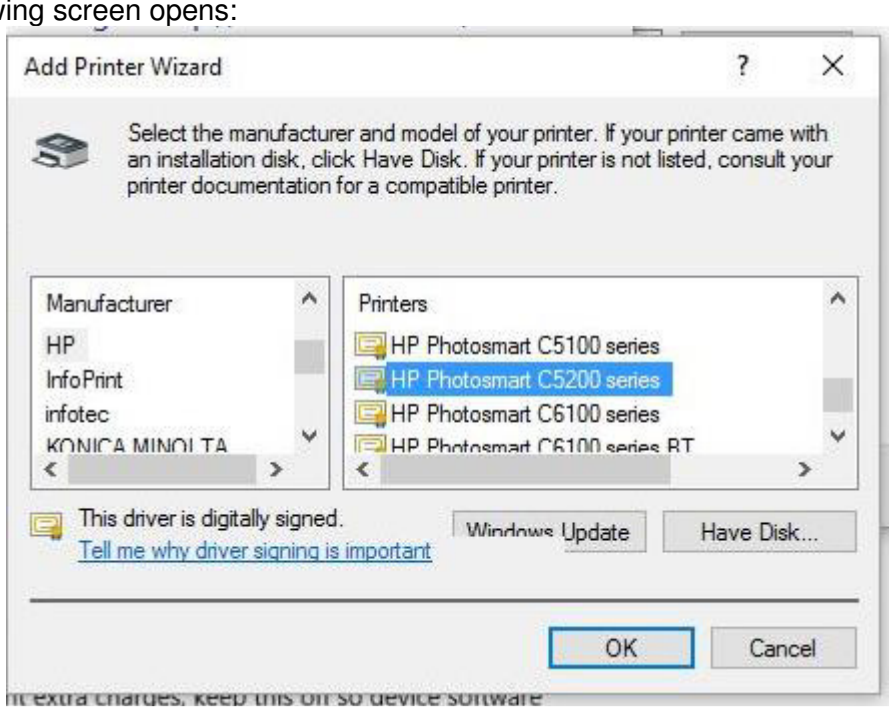
- Click on "The printer that I want isn't listed."
  The following screen opens:



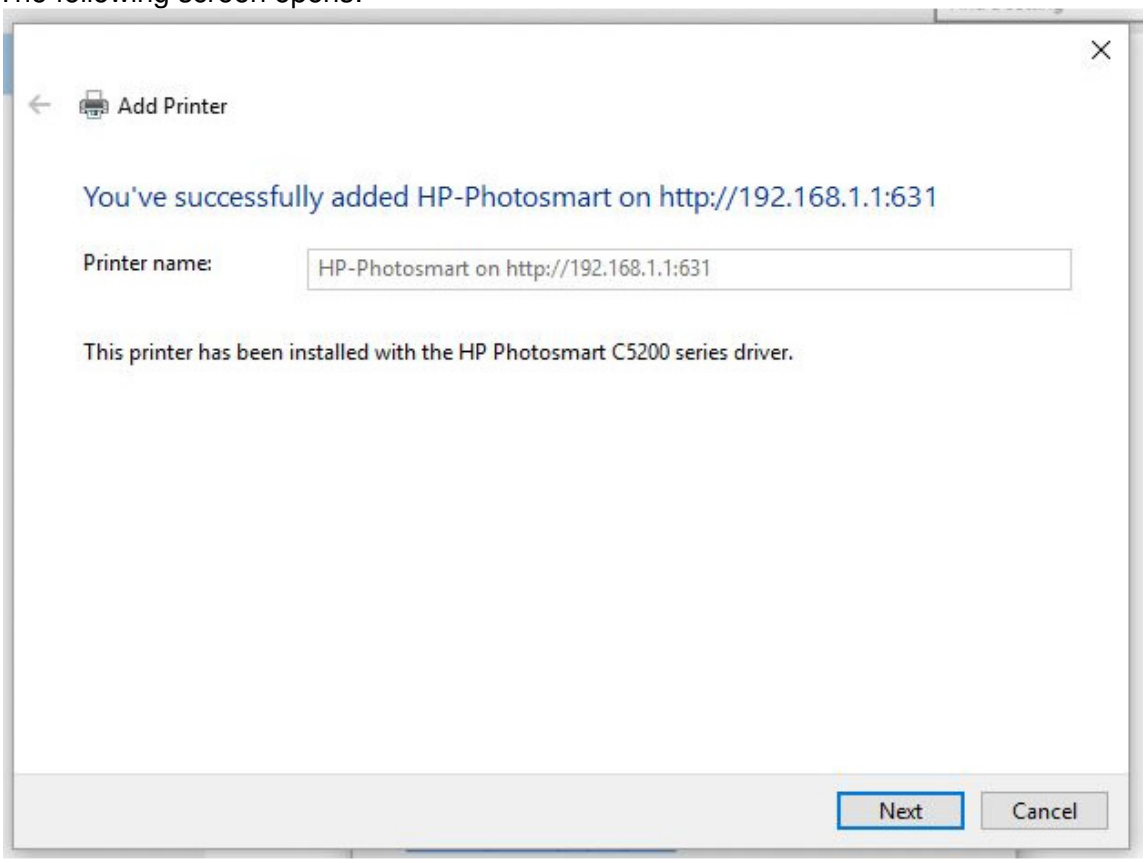
- Click on “Select a shared printer by name” and enter the following value.
  http://192.168.1.1:631/Printers



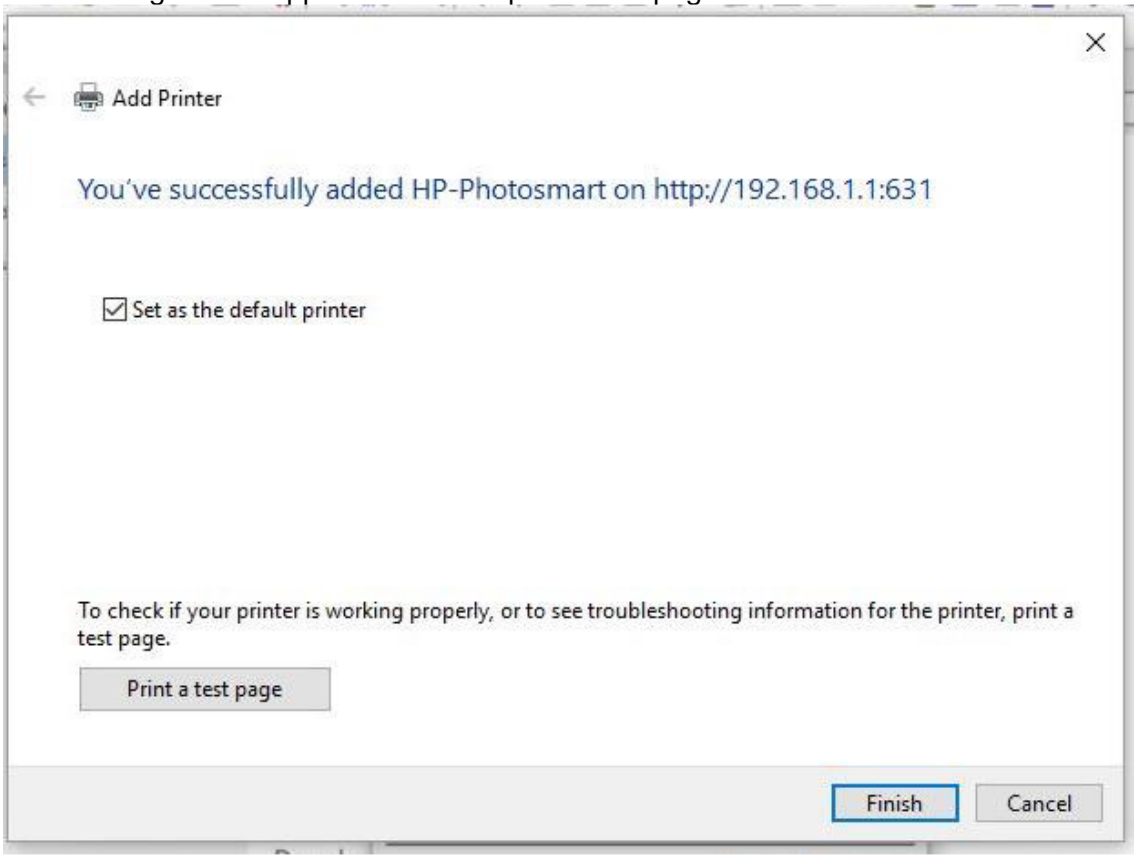
- Click on the “Next” button.
  The following screen opens:



- Select the Printer Manufacturer and Printer Model. Then click on the “OK” button.
  The following screen opens:



- Click on the “Next” button.
  The following screen appears. You can print a test page and click on the “Finish” button.



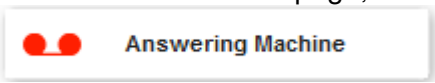
You are now ready to use your Printer.

3.10 Services

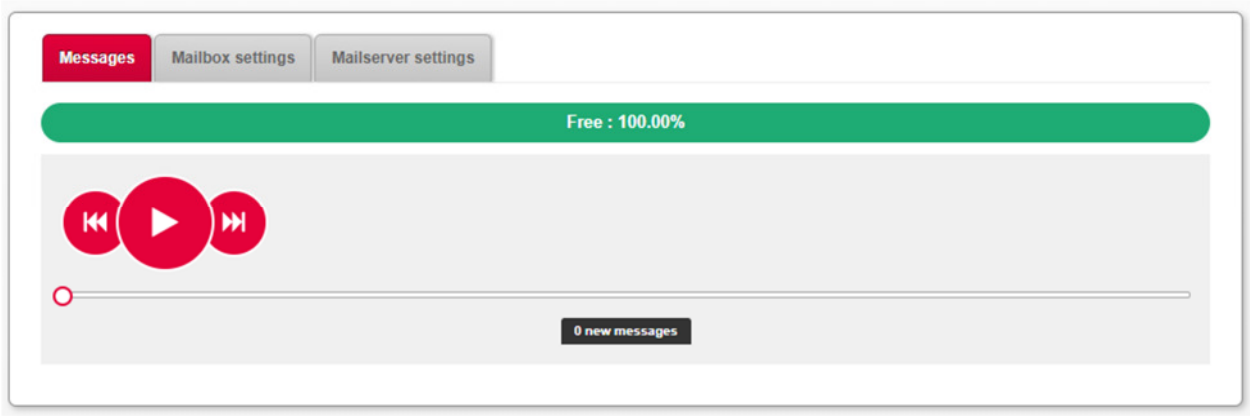
3.10.1 Answering Machine

Objective: You can enable the “answering machine” feature in your Sunrise Internet Box and share it with all connected phones. You can have 1 answering machine per active line (up to 5 lines /answering machines). The language for the answering machine will be the same language as the one chosen on the welcome screen of the Sunrise Internet Box. The principle is as follows When a call is transferred to the voice mailbox for the line, the caller will hear a greeting message, depending on the situation and the configuration. After a beep sound, he/she will be able to record a message.

In the Sunrise Internet Box main page, select “**Answering Machine**”



The following screen opens:



Notes

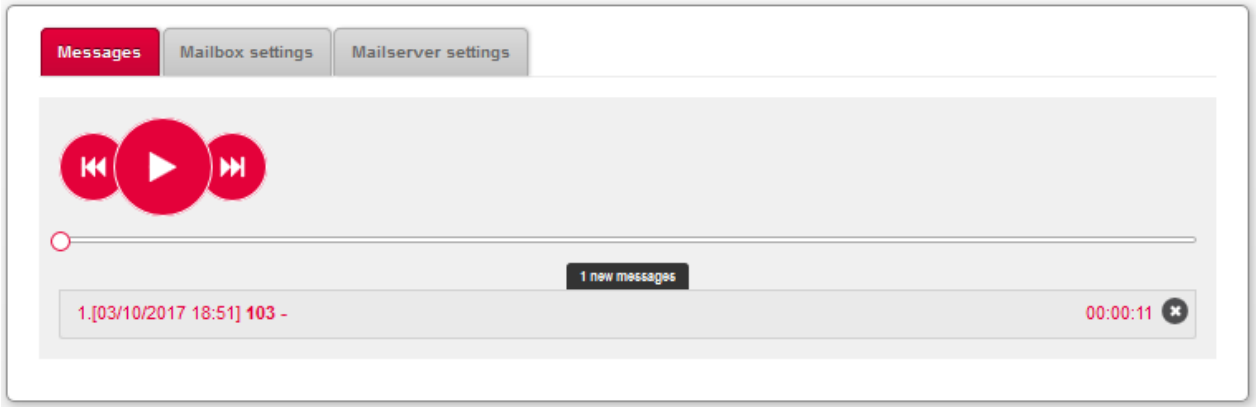
By default, the answering machine is disabled. You must enable it in the “Mailbox settings” tab.

The messages received and saved in the answering machine will be lost in case of restoration of default settings.

3.10.1.1 Messages

Objective: This menu is used to display all the messages received by your answering machine(s).

Select the message you want to listen to. Press the  button. Once you have listened to the entire message, the “new” flag” is removed. You can delete the message by pressing the  button.



Notes

You can also listen to recorded messages using the handset (dial **601 for line 1, **602 for line 2, **603 for line 3, **604 for line 4, **605 for line 5).

Before hanging up the handset, if you want to listen to the message again, press 1. To go to the next message, press 2. To delete the message, press 3.

When a new message is recorded, a notification (visual message waiting indication) is sent to the endpoints (FXS or DECT) attached to the line concerned.

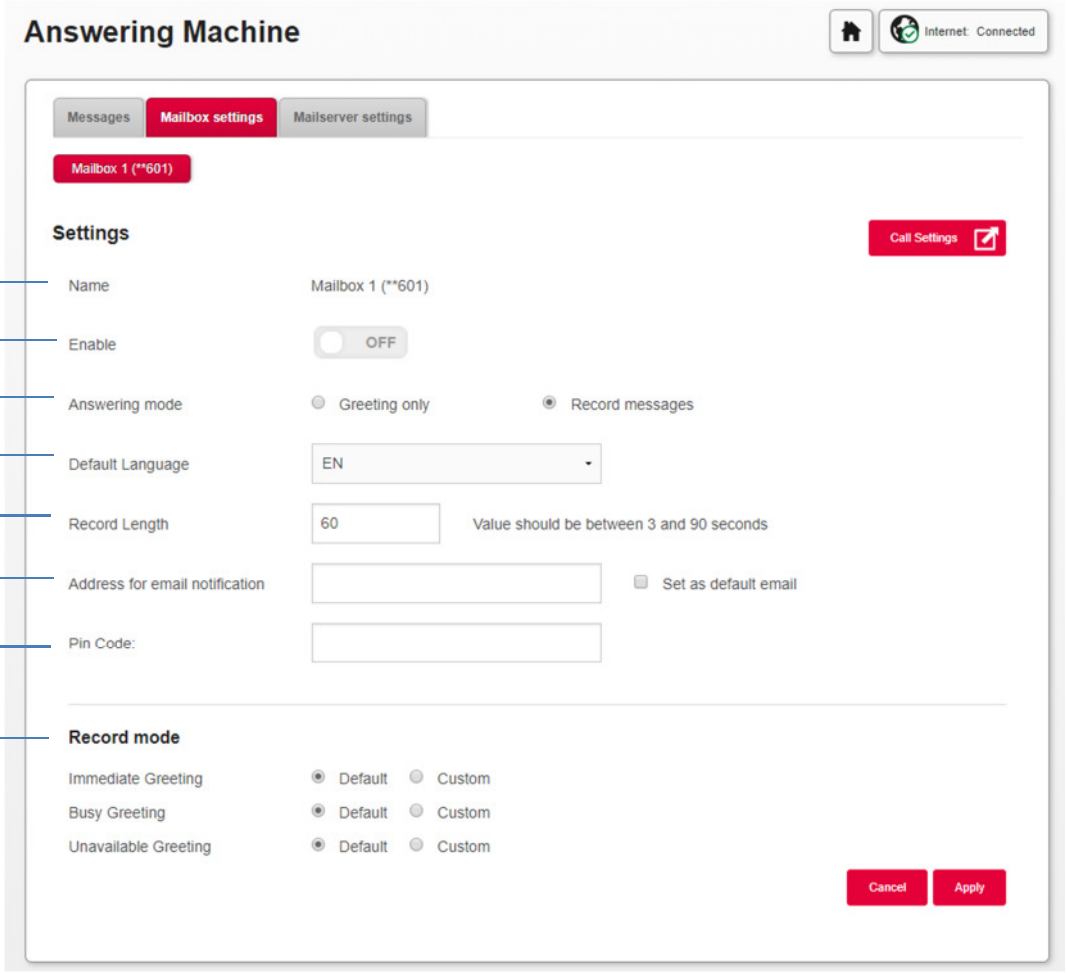
The maximum recording capacity of the answering machine is 30 minutes in total (for all configured mailboxes).

Once the answering machine's recording capacity is reached, the message "*Sorry, your mailbox is full. Please delete some messages*" is played.

If no message(s) have been recorded, the message "*You have no messages*" is played. This message is also played after you delete the last saved message.

3.10.1.2Answering machine settings

Objective: This menu is used to set up the settings for each of the answering machines.



Field	Meaning/Action
1. Name	The name of the answering machine
2. Enable	Use this button to enable/disable the answering machine feature for each line. **Note:** The respective mailbox can also be switched on/off via a connected telephone. To do so, dial the desired mailbox (e.g. mailbox 1 by pressing **601), wait until the answering machine responds and then sequentially press the keys ***1#** on the telephone to activate the answering machine respectively the keys ***2#** to deactivate it.
3. Answering mode	Select “Greeting only” if you want the caller to hear a greeting only. There are 3 prerecorded greeting message types (Immediate, Busy and Unavailable) and the greeting is available in 4 languages: English, German, French and Italian. Select “Record messages” if you want the caller to hear a greeting, a beep sound and be able to record a 90-second message on your answering machine.
4. Default language	The languages available are English, German, French and Italian
5. Record length	Select the total length of voice mail messages (in seconds, up to 90 seconds) here.

6. Address for email notification	Enter the email address to be notified if you receive a new voice mail here. **Note:** Forwarding to an e-mail address only works after the configuration has been carried out in the "Mail Server Settings" menu (cf. next page).
7. PIN Code	Currently not active - reserved for later feature enhancements
8. Record mode	Select which type of greeting you want the caller to hear when the answering machine is enabled here.

Notes

To create a customized greeting through the Sunrise Internet Box interface:

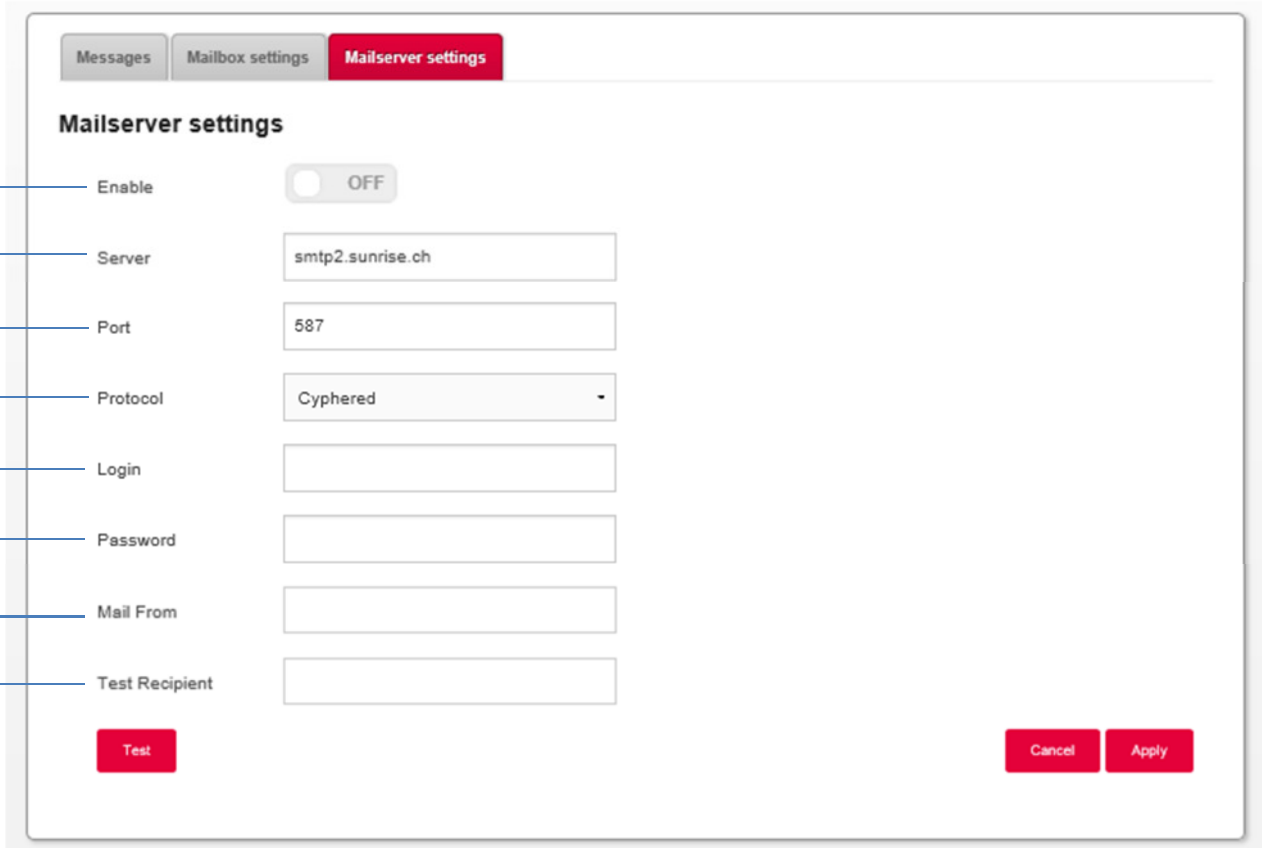
You can upload an audio file by clicking on “Custom” in the greeting only mode (permitted format is: Wav, Mono, 8 bit, frequency of 8000/16000 kHz or MP3, 128 kbit/s (CBR), maximum file size each: 1 MB).

To create a customized greeting with the handset (FXS or DECT), you need to call your voice mail and press the * button within 5 seconds. Then after the beep, you can record the new greeting. Please be aware that this will be applied in all cases, and the 3 greetings (Immediate, Busy, Unavailable) for the two modes (Default, Custom) will be replaced.

The maximum recording length for a customized greeting is 60 seconds.

3.10.1.3Mail server settings

Objective: This menu is used to set up the email address to which notifications will be sent in case of receipt of voice mail messages.



Field	Meaning/Action
1. Enable	Select if you want the feature to be on/off
2. Server	Enter the SMTP server to address here.
3. Port	Select the port to address.
4. Protocol	Select the protocol you want to use (SSL / SMTP / Cyphered)
5. Login	Enter the email address of the account from which you want to send the recorded voice messages.
6. Password	Enter the corresponding password for the e-mail account used
7. Mail from	Please enter the e-mail address of point 5 again in this field.
8. Test Recipient	Enter the e-mail address to which the test mail should be sent. **Note:** Once sent, this e-mail may end up in the SPAM folder of your mail program. Please double check this folder in case it is not received in your inbox.

Note

You must enter your email address in the “Mailbox settings” menu. Valid characters are:

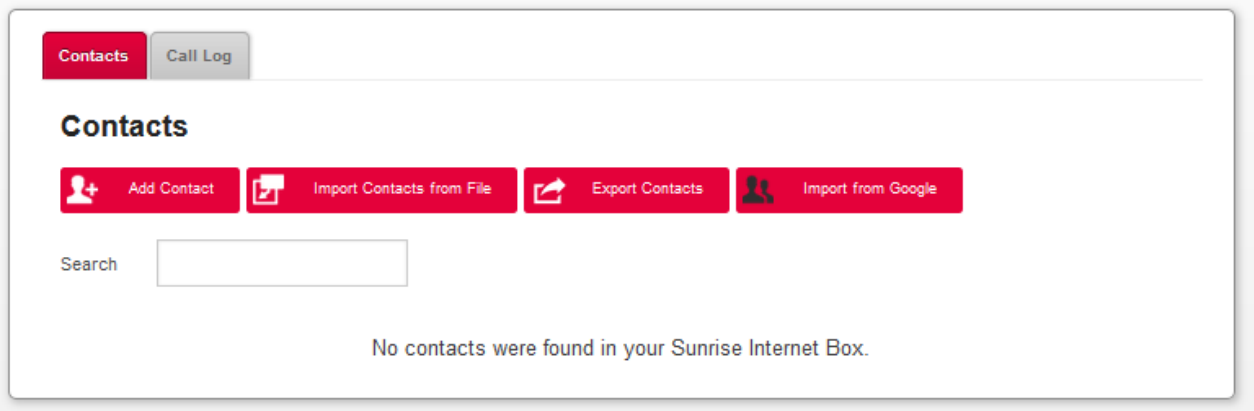
A-Z a-z 0-9 and .!#$%&'*+-/=?^_`{|}~

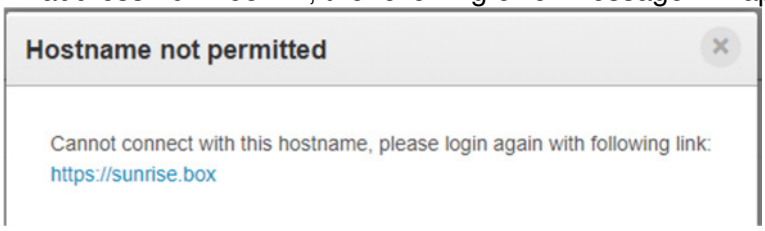
3.10.2 Phonebook

3.10.2.1Contacts

Objective: You can create a phonebook in your Sunrise Internet Box and share it with all connected phones. You can create your contacts or import them from external sources (file or web server).

- To access the phonebook, click on **Phonebook** from the welcome screen. The following screen opens:



Field	Meaning/Action
Add Contact	Allows you to manually add your contacts to the phonebook. Click on the **Add contact** button. The input screen appears, where you must fill in the required fields. Click on the **Apply** button to complete the operation.
Import contact from file	Allows you to import new contacts from a file.
Export contacts	Allows you to export the current phonebook to a file.
Import from Google	Allows you to import contacts already stored in your Google Account. You can import the whole list of contacts or make a pre-selection. **Notes:** To use this feature you need a Google Account. This feature is only available when you log in using the address: https://sunrise.box (if you logged in using the alternative login via IP address 192.168.1.1, the following error message will appear: 
Search	To search for a contact in the list, type the first few letters of the name. A filter is applied, so that only the names matching your search are displayed.
Delete all	This button allows you to delete all contacts in the phonebook.

Note

The maximum number that can be stored in the phonebook is 200 contacts (dependent on information stored per contact).

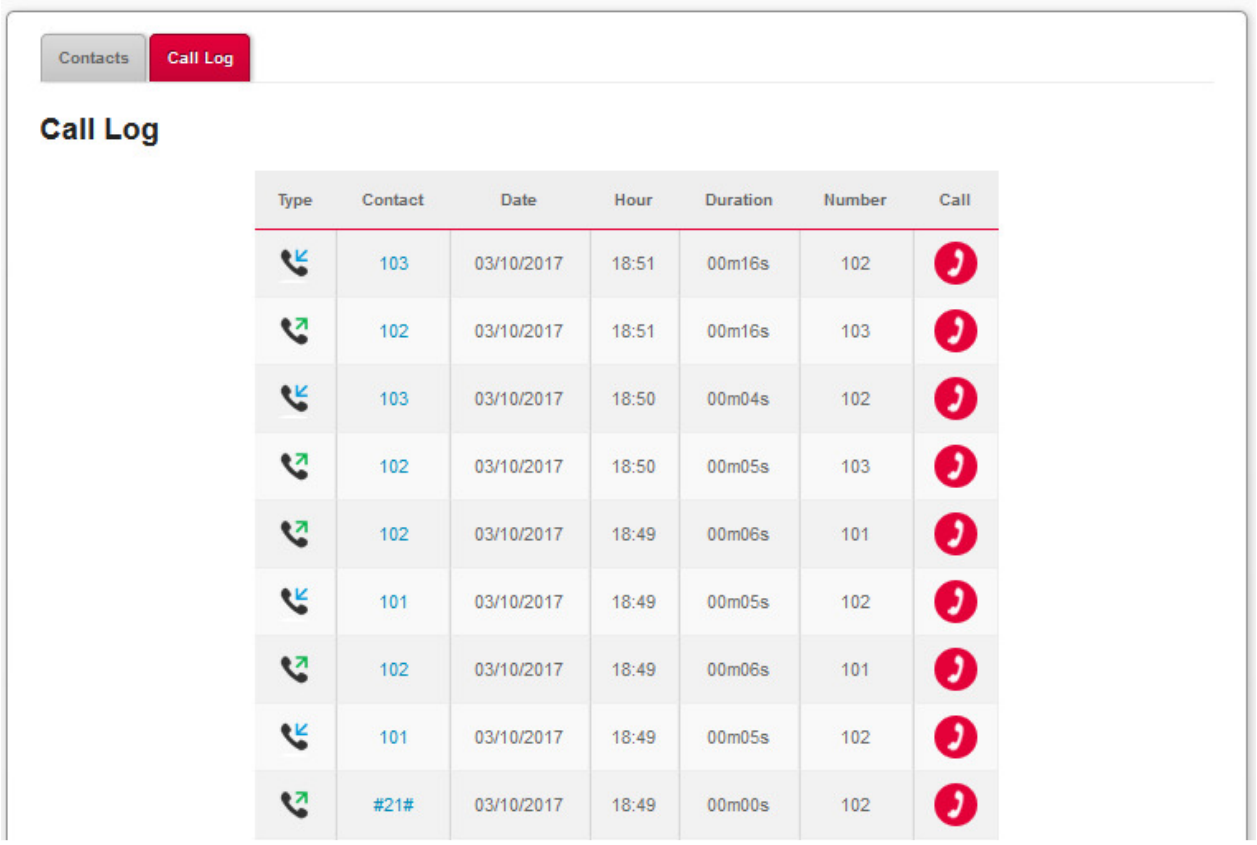
3.10.2.2Call log

Objective: This menu shows the list of:

- missed calls
- incoming calls
- outgoing calls

- To access the call log, click on **Phonebook** from the welcome screen. Then select **Call log**.

  The following screen opens.



Field	Meaning/Action
Type	Shows an icon that identifies the category of the event:  : Incoming call  : Outgoing call  : Missed call
Number	This field displays the number or the name of the caller, depending on the information provided by the network.
Date	Date of the event.
Hour	Time of the event.
Duration	Duration of the call.
Call	Press on  to call this number back.

Note

The maximum number of entries in each call log is 10 per log type (incoming and outgoing) and by telephone number.

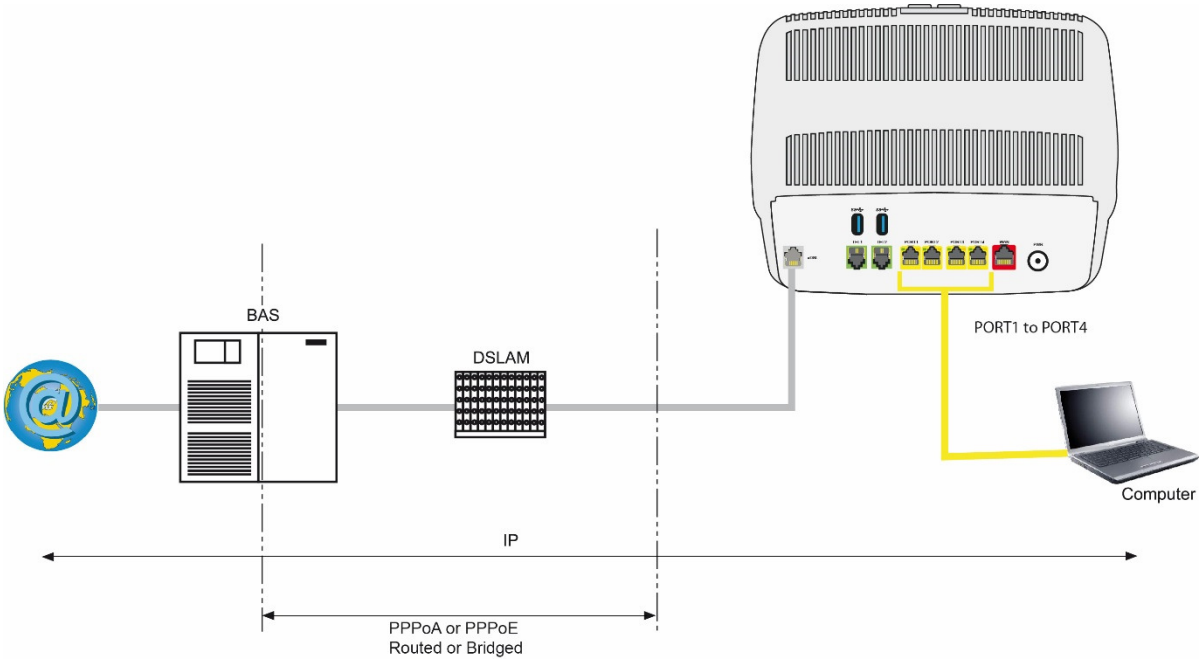
3.10.3 My Cloud

Objective: This menu is intended to let you configure access to the cloud service Dropbox. This feature is currently under development and will be provided in a future release.

4 Internet access service

Your Sunrise Internet Box has been designed to enable you to access the Internet as easily as possible. Most of the Sunrise Internet Box's parameters are already set:

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



Depending on your contract with Sunrise, you may also have access to television service.

The configuration parameters of your Sunrise Internet Box are entered dynamically during installation (connection identifier, connection password).

Notes

If the devices that you are connecting are not DHCP clients, your local network uses a static addressing plan. Check that:

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

5 Fiber mode

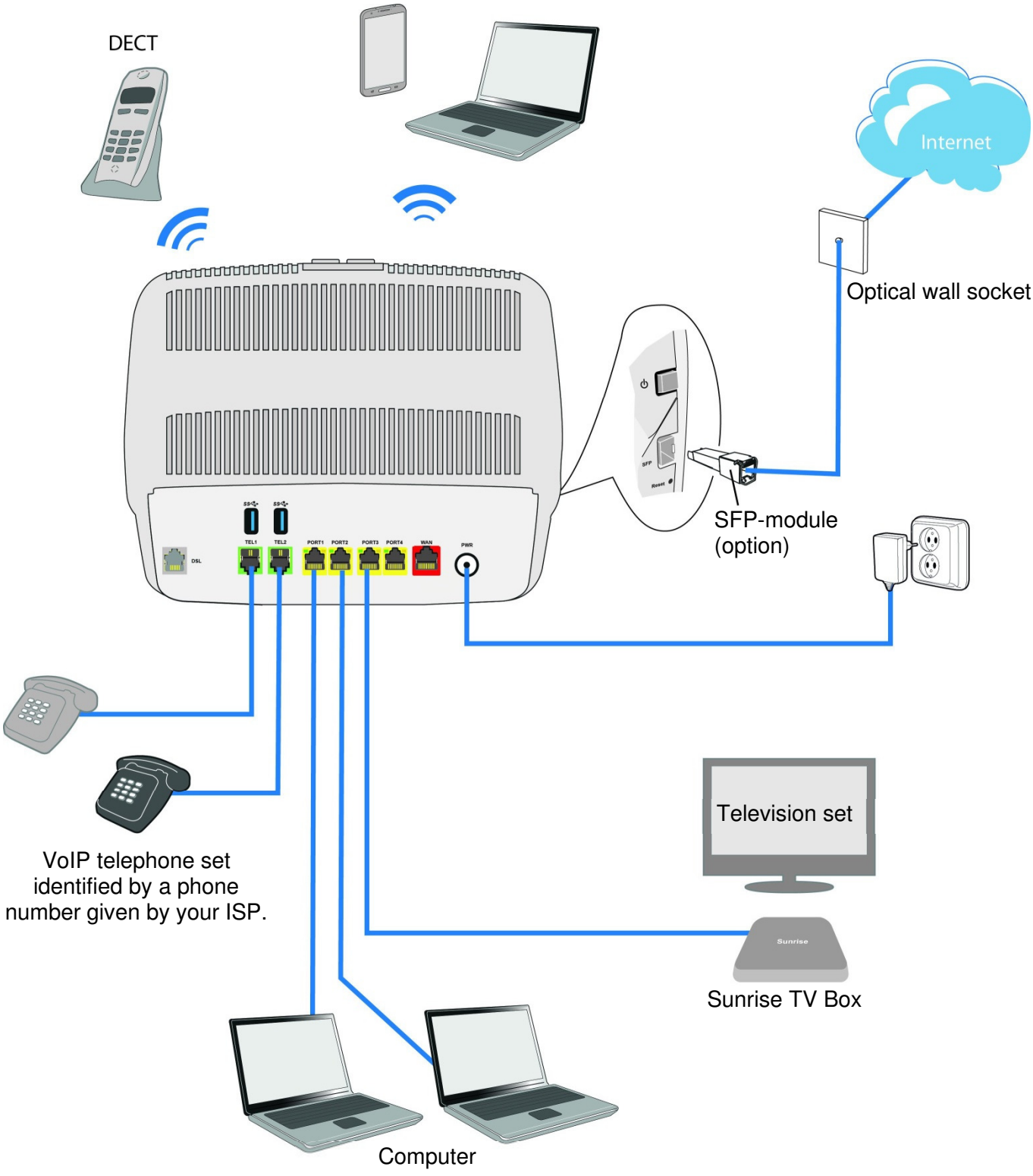
Important

All the specificities dealing with Fiber mode are detailed in this chapter.

Connect your Sunrise Internet Box to an external fiber network using the SFP port. To do this, you must plug an SFP module (not provided with the Sunrise Internet Box) into the SFP port of the Sunrise Internet Box. This optical interface allows you to share your connection to the Internet between all the computers on the LAN (Local Area Network) or WLAN (Wireless Local Area Network). It also allows you to access the Telephone and TV services.

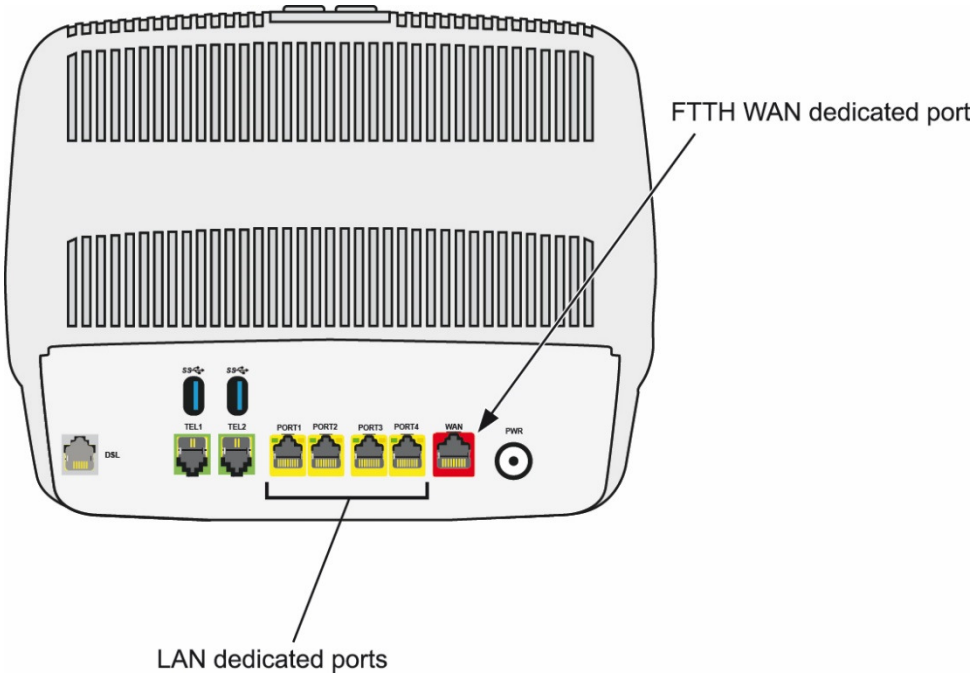
5.1 Connection of your Sunrise Internet Box using SFP port (optional)

Insert the SFP module into the SFP port and carry out the connection as shown in the figure below.

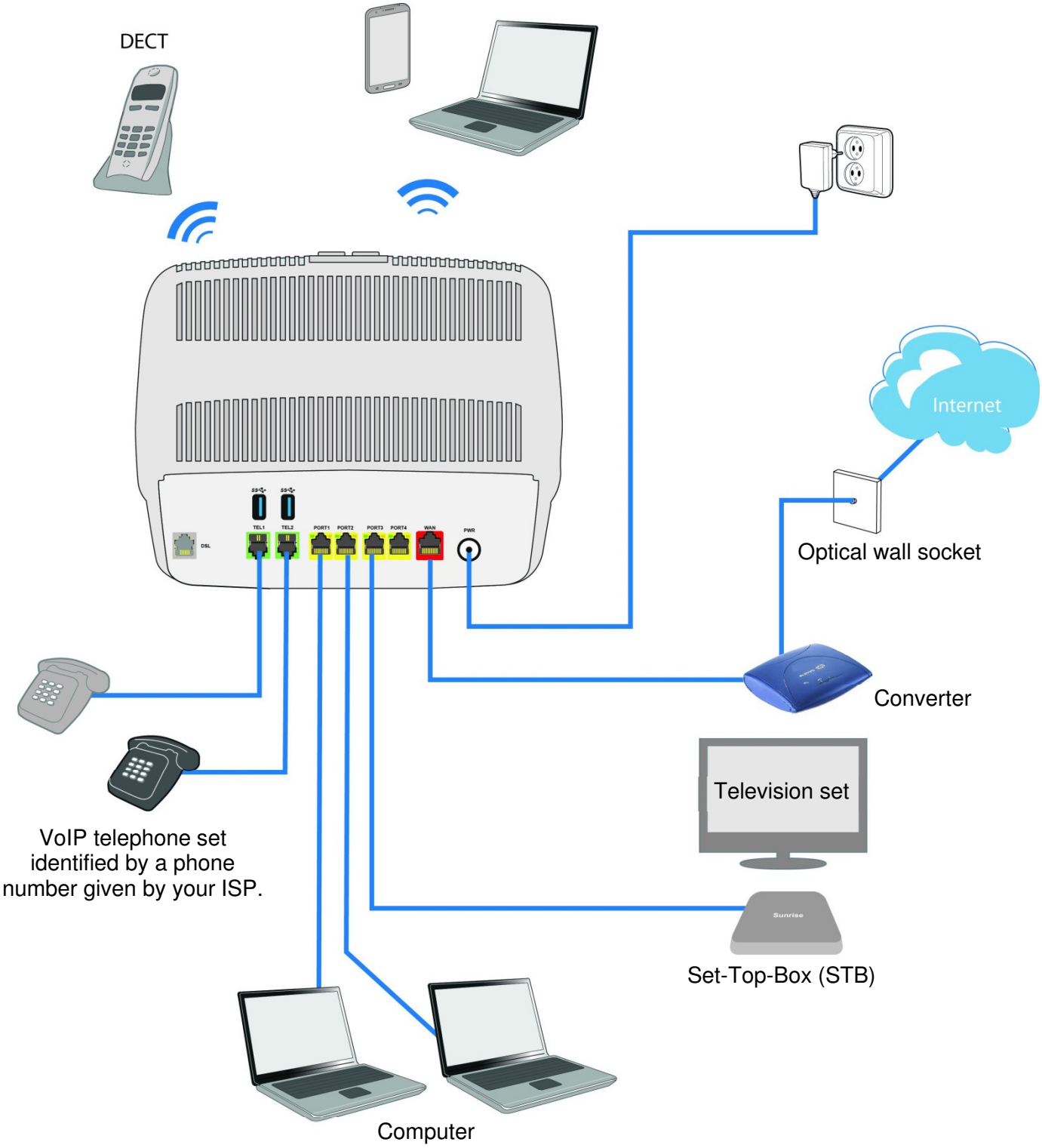


5.2 Description and connection of your Sunrise Internet Box using WAN Ethernet port

Connect the equipment as shown in the figures below.



Carry out the connection as shown in the figure below.



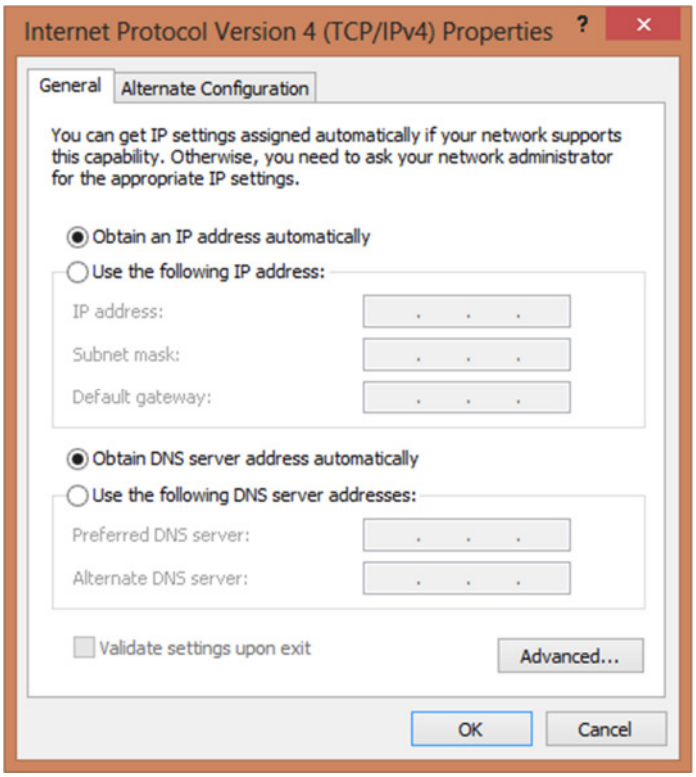
Annex A - Troubleshooting

This Section covers:	• Checking the DHCP configuration on your device	§ A.1
	• Checking the assignment of an IP address	§ A.2
	• Front panel LEDs	§ A.3
	• The "Diagnostics" tool	§ A.4
	• Interpreting the lights	§ A.5
	• Re-initializing your Sunrise Internet Box	§ A.6
	• Resetting to the factory configuration	§ A.7

A.1 Checking the DHCP configuration on your device

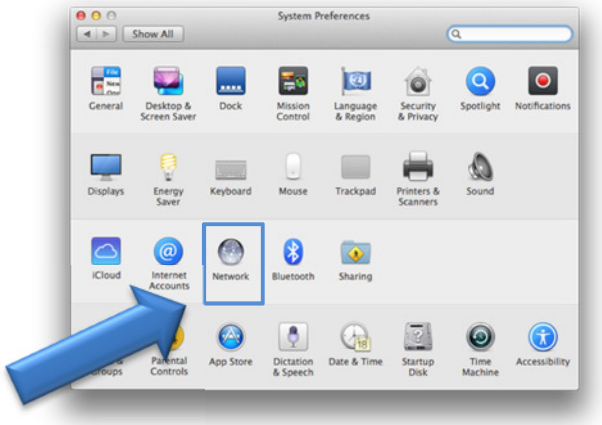
In Windows®

1. Click on **Start > Control Panel > Network and Sharing Center**.
2. Right-click on the appropriate network, and then select **Properties**. The Local Area Connection Properties window appears.
3. Select the TCP/IP protocol for the network card, and then click on the **Properties** button. The “Internet Protocol Version x (TCP/IPvx) Properties” screen appears.
4. Select the **General** tab, then the "**Obtain an IP address automatically**" case and the "**Obtain the addresses of the DNS servers automatically**" case.
5. Click on **OK** to confirm your choice.



In MAC OS X

1. Click on the **Spotlight Search Icon** at the top left of your screen
2. Type **"System Preferences"** and click on the resulting entry
3. In the new "System Preferences" window, click on the **"Network"** icon:



A.2 Checking the assignment of an IP address

In Windows®

1. Click on **Start > Run**. Enter **cmd** and then click on **OK**. The command prompt screen appears.
2. Enter **ipconfig/all** and then press **Enter**.
3. Check that the entry IP Address contains a value other than **0.0.0.0** (for example ***192.168.1.10***).

Note

If no IP address is displayed, enter **ipconfig /release.** Then enter **ipconfig /renew**.

Note

All the troubleshooting procedures described are valid for Windows® 7. These procedures in other Windows operating systems® may be slightly different.

In MAC OS X

1. Click on the **Spotlight Search Icon** at the top left of your screen
2. Type "**System Preferences**" and click on the resulting entry
3. In the new "System Preferences" window, click on the "**Network**" icon:

4. Check that the entry IP Address contains a value other than **0.0.0.0** (for example ***192.168.1.10***).

Note

All the troubleshooting procedures described are valid for Mac OS® X El Capitan. These procedures in other Mac OS® X operating system versions may be slightly different.

Many sources of information are available to help you identify and resolve issues you may experience:

- the LEDs on the front panel of the Sunrise Internet Box.
- the graphical User Interface (http://192.168.1.1).

A.3 Front panel LEDs

Note

When the Sunrise Internet Box is switched on, the LED on the front panel is white.

LED	Status	Meaning
DSL	**Steady**	DSL Up / Fiber (SFP or WAN) mode activated
	Blinking	• DSL signal found / synchronization in progress
	Off	• No DSL signal / Fiber (SFP or WAN) mode not activated
Internet	**Off**	Power Off / DSL down / No WAN IP
	Steady	WAN IP configured
Phone 1 or 2	**Steady**	Telephone service is configured and line is registered.
	Red blinking	Registration failed
	Off	No VoIP service
DECT	**Steady**	Telephone service is configured.
	Blinking	DECT pairing mode in progress.
	Off	DECT base Off or radio disabled (eco mode)
Wi-Fi 2.4 G or 5 G	**Steady**	Wi-Fi enabled
	Blinking	a) If the Wi-Fi LED is blinking during operation, the following measures - in the order described here - may help to solve the problem: 1. try to optimize the position of the Internet Box: free-standing, away from microwave ovens or other sources of interference such as aquariums, baby monitors or radiators 2. switch Wi-Fi off and on again (see chapter 2.1.1 “Wi-Fi”) 3. change the 2.4 GHz Wi-Fi radio channel to "AUTO" (see chapter 3.7.1 Basic) 4. restart the Internet Box (see Appendix A.6) 5. Reset the Internet Box to factory settings (see chapter 2.1.1 "Reset") b) After Long Press of the Wi-Fi button or starting Easy Pairing (WPS) from the user interface: Easy-Pairing (WPS) is active (also for pairing with Sunrise TV Box UHD)
	Off	Wi-Fi disabled

LED	Status	Meaning
USB	**Off**	No USB device
	Steady	USB device connected
TV	**Steady**	Set Top Box connected via Ethernet cable Set Top Box paired via Wi-Fi 5GHz
	Off	Set Top Box is turned off or there is no TV service activated
	Off	Power off or normal operation
	Blinking	• Firmware upgrade and service from Sunrise ongoing or • while the reset button is pressed.
	Steady	The device is rebooting by user's request.

A.4 Diagnostics tool

You can monitor the Sunrise Internet Box's activity and status using several tools.

The available tools are accessible via the Maintenance menu (see Sub-section 3.3.10)

If none of the above helps you solve the problem, and you are still having trouble connecting to the Internet, we recommend that you restart your Sunrise Internet Box (see section A.6) and possibly reset it to the factory configuration (see section A.7). You will then need to re-configure your Sunrise Internet Box as a first-time setup.

A.5 Interpreting the LEDs

A.5.1 The "DSL" LED blinks slowly

2. Check that the RJ11 type line cord delivered with your Sunrise Internet Box is connected to one of your sockets. It is recommended that no telephone extension be used.
3. Finally, check with your ISP that the DSL service is available on your telephone line.

A.5.2 "Wi-Fi" LED off

If this LED is off, this indicates that the WLAN interface of the Sunrise Internet Box is not active.

To activate the wireless network, either press the Wi-Fi button on top of the Sunrise Internet Box or access the graphical User Interface (http://192.168.1.1) and check the box "Enable Wireless" in the **Wireless** menu (see Section 3.7).

A.5.3 All LEDs are off

1. Check that the type of power available in your premises is compatible with the electrical power supply voltage required for powering your Sunrise Internet Box.
2. Check that the delivered power supply unit is properly connected at one end to the electrical power supply network.
3. Check that the power connector is inserted correctly in the corresponding power connector of the Sunrise Internet Box. When using multi-circuit power strips or extension cables, insert the Sunrise Internet Box directly into the wall socket as a trial.
4. Simultaneously press the Wi-Fi + DECT buttons and make sure the LED brightness is not disabled (see Section 3.3.9 - **Auto-dimming**).

A.6 Restarting your Sunrise Internet Box

We recommend that you restart your Sunrise Internet Box if you notice that the Sunrise Internet Box does not operate properly.

To restart your Sunrise Internet Box, use one of the following methods:

a) Press the **Power** button located on the left panel of the Sunrise Internet Box. Press it again to switch it back on.

b) Click on the **Reboot** button on the **Maintenance** menu. During restarting, the status of the LEDs is the following:

- The central power LED (above the Sunrise logo on the front side) will light up.
- The LED is blinking during the establishment of the DSL connection and then becomes steady once accomplished.
- The LED becomes steady when Internet connection has been created successfully.

Note	
	The powering up process lasts 2-3 minutes.

A.7 Resetting factory configuration

If you lose your password or if, after having entered new parameters in your Sunrise Internet Box, you cannot access the Internet nor the Graphical User Interface of the Sunrise Internet Box, you can restore the normal operation with the "factory" parameters via the **Restore Default** procedure.

To reset to the default settings and therefore restore the Sunrise Internet Box to its factory configuration, use one of the following methods:

Important

This operation deletes the entire personalised configuration of your Sunrise Internet Box: Password, Configuration, customized wireless settings, etc. After a factory reset, it is necessary to install your Sunrise Internet Box again (see Internet Connection Section 3.5). It is possible to save the configuration of your Sunrise Internet Box before you reset it and to play it back as soon as the device operates normally again (see section 3.3.10.2).

a) Press and hold for about 10 seconds the **Reset** button located on the left panel of the Sunrise Internet Box. Meanwhile, the wrench LED lights up. As soon as all LEDs light up for a short time, the reset is triggered.

b) In the graphical User Interface (http://192.168.1.1), select **My Sunrise Internet Box > Maintenance > Resets> Reset**.

Annex B - Safety warnings

B.1 Safety warnings

The Sunrise Internet Box complies with the EN 60950 Ed December 2001 standard. The safety levels under this standard are as follows:

B.1.1 Safety levels based on the case

Connectors	Position	Safety level
Adaptor	Primary Power Supply port	HPV[a]
PWR	DC Power Supply port	SELV[b]
LINE	xDSL port	TNV3[c]
PORT1 to PORT4	Ethernet port	SELV[b]

a. **H**azardous **P**rimary **V**oltage circuit
b. **S**afety **E**xtra **L**ow **V**oltage Circuit
c. Level **3** **T**elecommunication **N**etwork **V**oltage

B.2 EC compliance declaration

CE marking

The CE marking certifies that the product complies with the essential requirements of the 2014/53/EU Directive concerning radio equipment and telecommunication equipment, defined by the European Parliament and Council to reduce electromagnetic interference and protect the health and safety of users.

The product named Sunrise Internet Box can be operated in the European Union without restrictions indoors.

The CE declaration of conformity can be viewed in the support section of the Sagemcom Broadband SAS website www.sagemcom.com, or it can be obtained from the following address:

Sagemcom Broadband SAS
Customer Relations Department
250, Route de l'Empereur
92848 RUEIL MALMAISON CEDEX – FRANCE

Annex C - Environment

C.1 E 2009/125/EC Directive

ENVIRONMENT. Preservation of the environment as part of a sustainable development logic is an essential concern of Sagemcom Broadband SAS.

The aim of Sagemcom Broadband SAS is to operate systems that protect the environment. Therefore, 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 comply with 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.

PRODUCT

The crossed-out waste bin marked on the product or its accessories means that the product belongs to the series of electrical and electronic equipment.

In this respect, the European regulations require you to dispose of it selectively:

- At sales points for purchasing similar equipment,
- At the collection points that are available locally (drop-off center, selective collection, etc.).

In this way, you can participate in the re-use and upgrading of Electrical Electronic Equipment Waste, which can have an effect on the environment and health.

Annex D - Technical features

D.1 Mechanics - Display

Mechanical features	
Dimensions (mm)	
Width:	250 mm
Depth:	76 mm
Height:	211 mm
Weight of Sunrise Internet Box	680 g

Display		
Marking	**Abbreviation**	**Meaning**
⏻	-	• Power on/off button.
Wi-Fi	-	• Wi-Fi on/off (short press) and pairing button.
DECT	-	• DECT on/off (short press) and pairing button (long press).
FIBER	-	• SFP plug connector.
Reset	-	• Reset button.

D.2 Features of the various interfaces

ADSL / ADSL2 / ADSL2+ Interface	
Standards supported	• G.992.1 (ADSL), G.992.3 (ADSL2), G.992.5 (ADSL2+) • G.994.1 (G.Handshake)
Transmission code	• DMT
Maximum upward transmission rate	• 1.3 Mbit/s
Maximum downward transmission rate	• 24.5 Mbit/s
Latency	• Simple (Fast or interleaved)
TX power	• 12.5 dB
Access impedance	• 100 Ohms
Range	• According to standard G.992.1 table Annex
Connection technology	• RJ11

VDSL Interface	
Standards supported	• VDSL2: G.993.2 (VDSL2 supporting profile 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a, 35b, Vectoring, G.Fast)
Transmission code	• DMT
Maximum upward transmission rate	• 500 Mbit/s for G.fast
Maximum downward transmission rate	• 100 Mbit/s for G.fast
Latency	• Simple (Fast or interleaved)
TX power	• 14,5 dB for VDSL2_17a
Access impedance	• 100 Ohms
Range	• Up to 300 m at the max speed 100 Mbit/s / 50 Mbit/s and can reach more than 3000 m for VDSL2
Connection technology	• RJ11

Fiber-Interface	
Transfer rate	• Up to 1 Gbit/s (depending on the SFP module used and the service subscribed to)
Connectivity	• SFP Module

LAN Ethernet interface	
Rate	• 10 Mbit/s, 100 Mbit/s or 1Gbit/s, self-configuring
	• Half / Full Duplex
Standard	• IEEE 802.3
Connection technology	• RJ45
	• MDI or MDI-x self-detecting port type
	• Crossed or straight cord

Wireless Interface	
Standard	• **IEEE 802.11b/g/n**
Frequency band	• 2412 MHz to 2472 MHz (ISM band)
Maximum transmission power	• 100mW
Transmission rate	• Up to 450 Mbit/s
Safety	• WPA and WPA2
	• Filtering by list of MAC addresses

Wireless Interface		
Standard	• **IEEE 802.11a/n/ac**	
Frequency band	• 5 GHz	
Frequenzband	• 5150 - 5350 MHz	• 5470 - 5725 MHz
Maximum transmission power	• 200mW	• 1 W
Transmission rate	• Up to 1.7 Gbit/s	
Safety	• WPA and WPA2	
	• Filtering by list of MAC addresses	

DECT-Interface	
Frequency band	• 1880 – 1900 MHz
Maximum transmission power	• 250mW

Mains Power Supply	
Type	• Plug-in external adapter unit
Class	• II
Input voltage	• 100 to 240 V, 50 Hz / 60 Hz
Output voltage	• 12 V
Power Supply Connection technology	• Europlug (type C plug)
Use Connection technology	• Cord 2 m + jack diam. 3.5 mm

DC Power Supply Input of Sunrise Internet Box	
Input voltage	• 11 V - 13 V
Connection technology	• Miniature jack fixed connector diam. 3.5 mm

D.3 Environmental features

Information on power consumption (according to Directive 2009/125/EC)	
Consumption in active mode	• 22.52 W
Consumption in standby mode	• 7.92 W
The wireless interfaces (WLAN/DECT) can be deactivated using the corresponding buttons on the top of the product	

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	
Transmission	• EN 55022 (January 1999) Class B
Harmonic currents	• EN 61000-3-2
Flicker and fluctuations of voltage	• EN 61000-3-3
Immunity	• EN 55024

Radio part for ISM band at 2.4 GHz and 5 GHz	
Transmission 802.11n	• ETR 300 328-2
Transmission 802.11ac	• ETR 301 893-2

D.4 Application and protocols

IP features	
TCP-IP, UDP, ICMP, ARP	• Server, Relay
DHCP	• Relay
DNS	• Domain Name System
Routing (LAN et WAN)	• Static
NAT / PAT	• RFC 1631
Firewall	• By protocol
	• By IP address
	• By port
	• Stateful / Stateless
IP QoS	• DiffServ

ATM characteristics	
Signaling	• PVC
Adaptation layer	• AAL5
Number of VCI	• 8
Quality of service	• UBR, VBR, nrtVBR, VBRrt, CBR
Signaling	• RFC 2516
Self-configuration	• Detection of VPI/VCI
	• Detection of encapsulation
	• Detection of PPPoE / PPPoA
	• Detection of PAP / CHAP

Encapsulation protocols	
PPP over ATM	• RFC 2364
PPP over ETH over ATM	• RFC 2516, RFC 1483/2684
IP over ATM	• RFC 1483/2684
ETH over ATM	• RFC 1483/2684

Configuration	
HTTP	• LAN or WAN port (with specific option)
Management	• From ETH and WAN (with specific option)
Downloading of version	• Client by http mode
TR69	• Via ACS

Annex E - Glossary

Glossary.

ACL	**A**ccess **C**onfiguration **L**ist
ACS	**A**uto **C**onfiguration **S**erver
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**uthentication **P**rotocol
CLI	**C**ommand **L**ine **I**nterface
CPE	**C**ustomer **P**remises **E**quipment
CTS	**C**lear **T**o **S**end
DBPSK	**D**emodulator **B**aseband **P**hase **S**hift **K**eying
DHCP	**D**ynamic **H**ost **C**onfiguration **P**rotocol
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
ESSID	**E**xtended **S**ervice **S**et **ID**entifier
FHSS	**F**requency **H**opping **S**pread **S**pectrum
FTP	**F**ile **T**ransfer **P**rotocol
FTTH	**F**iber **T**o **T**he **H**ome
HTML	**H**yper **T**ext **M**arkup **L**anguage
HTTP	**H**yper **T**ext **T**ransfer **P**rotocol
IAD	**I**ntegrated **A**ccess **D**evice
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
IEEE 802.11n	IEEE 802.11n-2009 is an amendment to the IEEE 802.11-2007 wireless networking standard. It governs wireless networking transmission methods, commonly used today in its 802.11a, 802.11b, 802.11g and 802.11n versions.

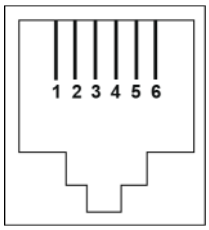
IGMP	Internet Group Membership Protocol
IMAP	Internet Message Access Protocol
IP	Internet Protocol
ISDN	Integrated Service Digital Network
ISP	Internet Service Provider
L2TP	Layer 2 Tunneling Protocol
LAN	Local Area Network
LCP	Link Control Protocol
LLC	Logical Link Control
MAC	Medium Access Control
MDI	Media Dependent Interface
MER	MAC Encapsulation Routing
MTU	Maximum Transfer Unit
NAPT	Network Address Port Translation
NAT	Network Address Translation
OAM	Operation, Administration and Maintenance
PAP	Password Authentication Protocol
PCI	Peripheral Component Interconnect
PCM	Pulse Code Modulation
PCMA	Pulse Code Modulation Loi A
PCMCIA	Personal Computer Memory Card International Association
PCMU	Pulse Code Modulation Law u
PID	Protocol IDentifier
PING	Packet InterNet Groper
PLC	Packet Loss Concealment
POP3	Post Office Protocol version 3
POTS	Plain Old Telephone Service
PSTN	Public Switching Telephonic Network
PPP	Point to Point Protocol
PPPoE	PPP over Ethernet
PVC	Permanent Virtual Circuit
QoS	Quality of Service
RADIUS	Remote Authentication Dial-In User Service
RFC	Request For Comments
RNIS	Digital Network Integration Services [Réseau Numérique Intégration de Services]

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
SNDCP	**S**ub **N**etwork **D**ependent **C**onvergence **P**rotocol
SNAP	**S**ub **N**etwork **A**ttachment **P**oint
SNMP	**S**imple **N**etwork **M**anagement **P**rotocol
SOAP	**S**imple **O**bject **A**ccess **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
UPnP	**U**niversal **P**lug a**n**d **P**lay
URL	**U**niformed **R**esource **L**ocator
UTP	**U**nshielded **T**wisted **P**air
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 Mu**ltiple**X**ing (encapsulation without header)
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 (wireless network)
WLAN	**W**ireless **L**ocal **A**rea **N**etwork
WPA	**W**ireless **P**rotected **A**ccess

Annex F - Connector Technology

F.1 Pinouts of the LINE connector

The equipment is connected to xDSL using a RJ11 fixed connector (6 pins).



Contact N°	Signal	Meaning
1	NC	Not connected
2	NC	Not connected
3	LINE-A	Line A signal
4	LINE-B	Line B signal
5	NC	Not connected
6	NC	Not connected

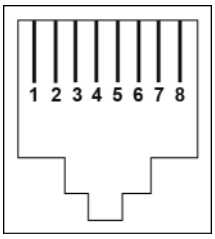
F.2 Pinouts of the PWR connector

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

Contact N°	Signal	Meaning
Interior	+12 V	Connection DC "+"
Exterior	Ground	Connection DC "-"

F.3 Pinouts of the PORT1, PORT2, PORT3, PORT4 and WAN connectors

The Ethernet interface is connected to the equipment using a RJ45 fixed connector (8 pins).



Contact No	Signal
1	D1+ / DA+
2	D1- / DA-
3	D2+ / DB+
4	D3+ / DC+
5	D3- / DC-
6	D2- / DB-
7	D4+ / DD+
8	D4- / DD-

Note

The Ethernet port is self-detecting. You can use either straight or crossed cables. An emission or reception signal is detected automatically.