Terminal User Manual for interSAT

version 1.0

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ABOUT THIS MANUAL

This User Manual is intended for the user of the Sat3Play Terminal. It provides safety precautions, a description of the Sat3Play Terminal and a detailed description of how to use the GUI (Graphical User Interface).

First-line troubleshooting information is also included.

Cautions and symbols

The following symbols appear in this manual:

A caution message indicates a hazardous situation that, if not avoided, may result in minor or moderate injury. It may also refer to a procedure or practice that, if not correctly followed, could result in equipment damage or destruction.

A hint message indicates information for the proper operation of your equipment, including helpful hints, shortcuts or important reminders.

A reference message is used to direct to; an internal reference within the document, a related document or a web-link.

Version history and applicability

Document version	Date	Subject version	Author	Comments
1.0	November 16th 2009	R 1.9	EDE/GWI	First Release

Related documentation

The details of the installation and pointing of the reflector are described in the Point&Play Setup Manual™ .

Product range

S3P, 1m Ku-band VSAT Antenna

Software versions

R1.9

Feedback

Newtec encourages your comments concerning this document. We are committed to providing documentation that meets your needs.

Please send any comments by contacting us at documentation@newtec.eu.

Please include document and any comment, error found or suggestion for improvement you have concerning this document.

IMPORTANT SAFETY PRECAUTIONS

Install the IPmodem and antenna according to local regulations. For the US market, please visit the Federal Communications Commission's website at www.fcc.gov.

- Before installing the IPmodem, please make sure that your electrical outlet is properly wired and your computer equipment is properly grounded. Consult with a licensed electrician if in any doubt;
- Please read and understand all operating instructions in your user's guide located in the IPmodem shipping box;
- Please read and understand all of the safety precautions set forth in this user manual and in the user's guide prior to connecting any cables to the IPmodem;
- Safety and installation rules are given in standards regarding cabled distribution systems for television and interactive multimedia signals EN 50083-1. The installer must follow these rules to be conform to the law. Always implement regulations as issued by national and local authorities.

Warnings

A warning is defined as a procedure or practice that, if not correctly followed, could result in injury, death, or long term health hazard. **Always observe the following warnings. Not following these cautions will cause the warranty to be invalid.**

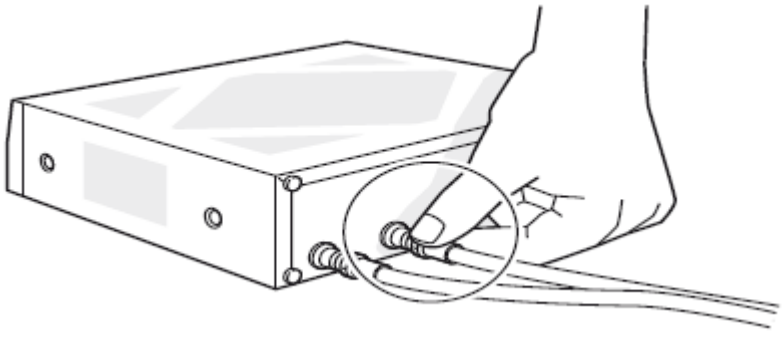
- There are no user-serviceable parts in your system. There are potentially lethal voltages inside the equipment. It should only be opened by a technician trained and certified to service the product;
- RF Radiation Hazard. The transmitting equipment is capable of generating RF levels above the maximum permissible exposure level. Do not enter the radiation beam of the transmitter feed horn and/or antenna reflector when the transmitter is on;
- Keep the space between feed horn and reflector clear;
- When the Sat3Play modem is powered on, DC voltages are present on the rear panel Tx and Rx connectors;
- To prevent fire or shock hazard, do not expose this appliance to rain or moisture. The apparatus must not be exposed to dripping or splashing and no objects filled with liquids, such as vases, should be placed on the apparatus;
- Postpone Sat3Play modem installation until there is no risk of thunderstorm or lightning activity in the area;

- To prevent electrical shock, do not connect the plug into an extension cord, receptacle or other outlet unless the plug can be fully inserted with no part of the blades exposed;
- The in-line power supply input power cord must be connected to a properly grounded three-prong AC outlet. Do not use adapter plugs or remove the grounding prong from the plug;
- The in-line power supply input power cord may not be used when damaged in any way!

Cautions

A caution is defined as a procedure or practice that, if not correctly followed, could result in equipment damage or destruction. **Always observe the following cautions. Not following these cautions will cause the warranty to be invalid.**

- Always use the in-line power supply with the Sat3Play modem. Using a different power supply may cause equipment damage;
- To ensure regulatory and safety compliance, use only the provided power and interface cables or cables which conform to the specifications within this manual;
- Do not open the unit. Do not perform any actions other than those contained in the installation and troubleshooting instructions. Refer all servicing to qualified service professionals;
- Avoid damaging the Sat3Play modem with static electricity, by first touching the coaxial cable connector when it is attached to the earth grounded coaxial cable wall outlet. Always first touch the coaxial cable connector on the Sat3Play modem when you are disconnecting or re-connecting your Ethernet cable from the Sat3Play modem or your computer;



- To prevent overheating, do not block the ventilation holes on the sides and top of the unit;
- Only wipe the unit with a clean, dry cloth. To avoid equipment damage, never use fluids or similar chemicals. Do not spray cleaners directly on the unit or use compressed air/gas to remove dust;

- The user should install an AC surge arrestor in the AC outlet to which this device is connected. This avoids damaging the equipment by local lightning strikes and other electrical surges;
- This antenna is more than 1 square metre wind pressure equivalent area! Do not make an installation in bad weather conditions;
- Secure tight all parts to avoid any potential danger to persons and surroundings;
- If faced with a critical situation in which personal safety is in jeopardy, do not try to keep hold of the antenna;
- For safety reasons, ensure that you are not near any power line;
- Make sure a minimum distance of 6 metres (20 feet) separates the antenna from any power line;
- Before digging, in case of need for a penetrating antenna mast, contact your local authority to check for information regarding any underground cables and (power) utility line(s).

Notices

- This product was qualified under test conditions that included the use of the supplied cable between the components. To be in compliance with regulations, the user must use this cable – or equivalent – and install it properly;
- Different types of cord sets may be used for connections to the main supply circuit. Use only a main line cord that complies with all product safety requirements of the country of use;
- Installation of this product must be in accordance with national wiring codes.

In some countries, authorisation is needed for satellite reflector installation. Call your local authorities in case of doubt.

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1 INTRODUCTION

1.1 Contents

This manual describes the features and the terminal web interface of the IPmodem.

1.2 Manuals

The Sat3Play Terminal documentation exists out of the following :

- Point&Play Setup Manual™;
- Antenna Pointing Information.
- One CD containing:
  - Terminal User Manual;
  - Point&Play Setup Manual;
  - Antenna Pointing Information.

1.3 About the Sat3Play Terminal

The Sat3Play Terminal is state of the art equipment allowing cost effective, plug & play connection to an extended variety of IP-based applications.

The Sat3Play Terminal consists of:

- A small size, high quality, easy to install satellite antenna (1 m);
- An interactive LNB (iLNB);
- An IPmodem providing an Ethernet connection to the computer of the end-user or Local Area Network (LAN).

The interactive iLNB low power equipment is light weight, easy-to-install and highly reliable. All parts are built using state-of-the-art microwave design that guarantees an unequalled reliability for many years.

Connected to the interactive iLNB by means of transmit and receive cables, the high speed IPmodem provides an asymmetrical 2-way broadband access to IP applications (e.g. Broadband Internet Access). Its small size, in line with the best practice in the telecom and IT industries, makes it suited for any type of user, business or consumer.

Figure 1 – Sat3Play Terminal

1.4 Installation Tasks

To ensure proper installation of the Sat3Play Terminal , the following tasks must be performed.

These tasks are described in detail in the Point&Play Setup Manual of your IPmodem. Please read this Point&Play Setup Manual carefully during installation.

- Prepare the installation site and unpack the devices;
- Select a suitable location to set up the antenna. Lookup the exact satellite position in the Antenna Pointing Information booklet and use a compass if necessary. The distance between the antenna and the IPmodem may not exceed 30 metres. Ideally, this distance shall not exceed 30 metres if making use of the cable provided with the Sat3Play Terminal ;
- Set up the antenna pole and attach the masthead to it;
- Attach the antenna to the masthead;
- Attach the iLNB to the antenna;
- Place the IPmodem in a clean, dry room at maximum 30 m (cable length) from the antenna site;
- Connect the IPmodem to the iLNB using the Rx and Tx coax cables;
- Connect a computer (desktop or laptop) to the IPmodem;
- Power the IPmodem;
- Use a web browser on the computer to access the Terminal Web Interface;
- Point the antenna towards the correct satellite, fine-tune pointing and verify the cross polarisation;
- Configure the terminal using the web interface and/or check the connectivity.

2 GETTING TO KNOW YOUR SAT3PLAY TERMINAL

2.1 The IPmodem

2.1.1 The IPmodem Front Panel

Figure 2 – The IPmodem Front Panel

Nr	What	Description
(1)	Power LED	Green continuous – when powered up.
(2)	Warning LED	Yellow continuous – when the terminal is not logged on to the satellite network.
(3)	LAN indicator LEDs	Left: Green continuous – link layer status. Right: Green blinking – Ethernet frames are received or transmitted.
(4)	Rx indicator LED	Green continuous – forward satellite signalling receiving.
(5)	Tx indicator LED	Green blinking – traffic transmitting via the satellite link.

Table 1 – Description of the Elements on the IPmodem Front Panel

2.1.2 The IPmodem Back Panel

Figure 3 – The IPmodem Back Panel

Nr	What	Description
(1)	Tx connector	Indoor connection for the transmit coax cable.
(2)	Rx connector	Indoor connection for the receive coax cable.
(3)	Reset button	Reboot: press once briefly (hold less than 5 seconds); Factory Reset: press and hold for more than 5 seconds. Resetting will also reboot the terminal and change all the IP-settings back to the default factory settings.
(4)	15V power cable connector	Power connector (5.5/2.5mm plug).
(5)	Ethernet cable connector	Connection for the LAN, type RJ-45 (Ethernet cable).

Table 2 - Description of the Elements on the IPmodem Back Panel

2.2 The iLNB

The iLNB has an integrated casing and is fully sealed except for its ventilation slots.

Figure 4 - iLNB > Perspective and Bottom View

Nr	What	Description
(1)	Feed horn	Radiating feed horn of the iLNB, pointed towards reflector.
(2)	Tx connector	Outdoor connection for the transmit coax cable.
(3)	Rx connector	Outdoor connection for the receive coax cable.

Table 3 - Description Elements of the iLNB

3 TERMINAL WEB INTERFACE

3.1 Prepare the Settings of Your Computer

Check if your computer is set to DHCP. This way the computer can receive an IP address from the IPmodem.

Follow the procedure in Appendix D – Settingg and Changing your IP Settings in the Point&Play Setup Manual to check and/or change your IP settings.

3.2 How to Access the Terminal Web Interface?

3.2.1 With Satellite Connection

In the normal operational mode a connected computer should be configured in DHCP mode to retrieve an IP address automatically and to retrieve the DNS server. The terminal acts as a DHCP server for the computer.

Browse to the web interface

➢ Type the IPmodem's address in the address bar of the browser: 192.168.1.1.

You will be re-directed to the Status page of the terminal.

Figure 5 – The IPmodem's Address in the Address bar of the Browser

Alternatively, use the Default Gateway address to reach the web interface. See Appendix C – Local Network Configuration in the Point&Play Setup Manual.

It is possible that **during first logon** the terminal will perform an upgrade with the latest software since you cannot login using the old SW. This process can take up to **ten minutes**. **You may NOT interrupt the terminal yourself during this period, e.g. by rebooting or powering down.**

If newer software is available, the terminal will:

- Download this software;
- Install this software;
- Reboot the terminal;
- Logon to the network again.

3.2.2 No Satellite Connection

Make sure your computer is able to receive an IP address via DHCP, by following the procedure Appendix D – Setting and Changing your IP Settings in the Point&Play Setup Manual.

When the terminal is not linked to the satellite network, after three minutes, the computer will automatically receive its IP address, via DHCP, from the IPmodem and you will then be able to browse the web interface:

If no DHCP address is assigned to your terminal: remove the Ethernet cable from your computer, wait a few seconds, and plug the Ethernet cable back into your computer.

- Type the IPmodem's address in the address bar of the browser: 192.168.1.1.

You will be redirected to the Status page of the terminal.

If the problem remains, you need to assign a static IP address to your computer by following the procedure in Appendix D – Setting and Changing your IP Settings in the Point&Play Stup Manual.

3.3 Overview Web Interface

3.3.1 General Layout

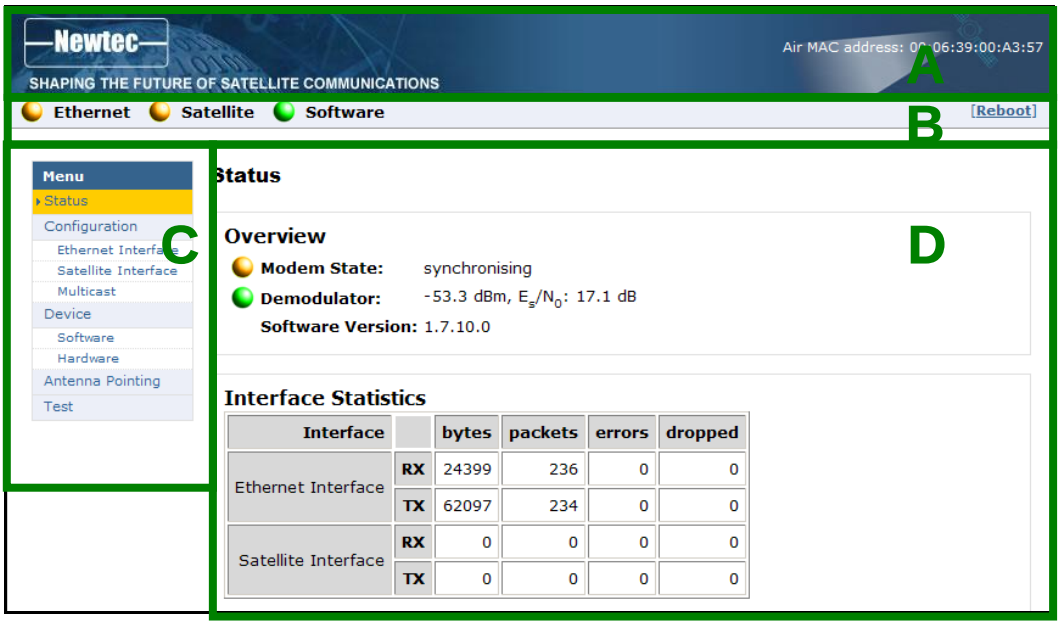


Figure 6 – Page Layout of Web Interface

Each of the web interface pages contains the same elements.

- **A – Banner :** The banner contains the Newtec logo and shows the Air MAC address.

B – Status bar : The status bar always shows the most important status LEDs. This information will be specified in the body of the Status page.

- **C – Menu structure :** On the left hand side of the page the site navigation is found. Click an item to select it. The menu structure may differ depending on your login status.
- **D – Body :**The actual content of the web interface is shown in the body. It always shows the page title and one or more content blocks or forms.

3.3.2 Menu Structure

The menu structure of the web interface of the web interface is described below (see Figure 13).

- **Status**

Check on the device and network status.

- **Configuration**
  - **Ethernet Interface**

    Check and alter the Ethernet interface configuration.

  - **Satellite Interface**
    Check and alter the Satellite interface configuration.
  - **Multicast**
    Check and alter the Multicast configuration.
- **Device Interface**
  - **Software**
    Check on or alter the software version.
  - **Hardware**
    Check the Hardware version.
- **Antenna Pointing**
  - Repoint your antenna
- **Test**
  Run tests on the device.

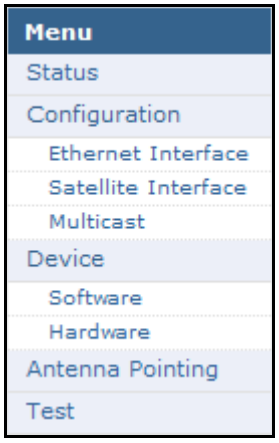


Figure 7 - Menu Structure for the User

3.4 Reboot the IPmodem

See section 2.1.1 for similarities with the hardware button reboot.

Figure 8 – Location of the Reboot Link

- Click the [Reboot] link at the right of the status bar to reboot the terminal.

The terminal will reboot and return to the Status page. This may take up to one minute, including satellite link initialisation.

The reboot of the terminal is needed when a (re)configuration has been performed. Changes may not take effect until after the next reboot

3.5 LEDs in the Status Bar

3.5.1 Ethernet LED

The **Ethernet** LED gives the general status of the Ethernet connection to the IPmodem.

LED colour code	Description
Red	Connection is not OK.
Yellow	Connection is OK, but no DHCP address is given.
Green	A DHCP address is given and the connection is OK.

Table 4 - Status LEDs > Ethernet

3.5.2 Satellite LED

The **Satellite** LED gives the general status of the Satellite connection to the IPmodem.

LED colour code	Description
Red	No connectivity, no valid signal received.
Yellow	A valid signal was received. The terminal is busy logging in on the satellite network.
Green	The system is operational and the user is logged in on the satellite network.

Table 5 - Status LEDs > Satellite

3.5.3 Software LED

The **Software** LED gives the general status of the installed software or the updates.

LED colour code	Description
Red	The terminal has a newer software version than the running software version, and The newer software version was not selected because the software validation process failed. See for possible actions and follow-up.
Yellow	The terminal is retrieving new software via satellite. This can take up to 10 minutes.
Green	No problem. The terminal is running with the latest software version.

Table 6 - Status LEDs > Software

3.6 Status Page

3.6.1 Introduction

In normal operation, when the terminal is pointed and active, there two parts to the Status Page as shown in Figure 9, which are described in more detail in the following sections:

- Overview:
  This part gives an overview of the IPmodem, demodulator and software state.
- Interface Statistics;
  This part gives an overview of the IPmodem statistics.

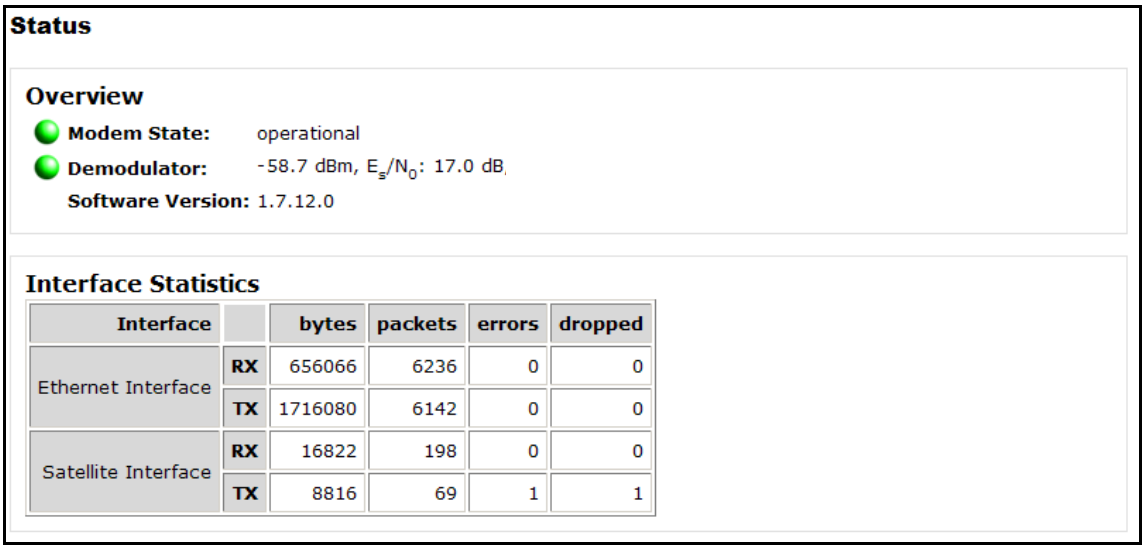


Figure 9 – Status Page when the Terminal is Pointed

When the terminal is not yet pointed a third part is shown:

- Pointing:
  This part gives an overview of the pointing status and pointing carrier selection.

3.6.2 Overview

3.6.2.1 Modem State

The IPmodem state is indicated by a coloured LED and a state description. For the LED colour code, refer to Table 7. The possible modem state descriptions are given below.

Modem state	Description
Awaiting installer action	The terminal is waiting for an action of the installer.
Satellite network lookup	The terminal is looking for the satellite network.
Synchronising	The terminal found the satellite network and time synchronisation.
Synchronised	The terminal is synchronised and can directly log in on the satellite network when IP traffic is received via the Ethernet interface.
Network login	The terminal is trying to log in on the satellite network.
Operational	The terminal is logged in.

Table 7 - Status Page > Modem State

3.6.2.2 Demodulator

The Demodulator state is indicated by a coloured LED and a state description.

LED colour code	Description
Green	The demodulator is locked.
Red	The demodulator is not locked.

Table 8 - Status Page > Demodulator LED

The demodulator state is built as follows (see Table 9 for more details):

- *-95.0 dBM, Es/No: 23.2 dB, <Satellite network name>*

Demodulator label value	Description
y dBm	Indication of the received signal strength expressed in dBm. This indication can change when going from pointing mode to operational mode.
Es/No	Es/No is an indication of the received signal quality expressed in dB. This indication can change when going from pointing mode to operational mode.

Table 9 - Status Page > Demodulator Labels

3.6.2.3 Info by Error State

An error message can be displayed. This error message displays the current error status and will be reset when the terminal has entered the satellite network and the terminal is operational.

Please refer to for more details on possible errors and actions needed to resolve the occurring error

3.6.2.4 Software Version

The running software version is indicated by its version number.

3.6.2.5 Pointing

This section of the web interface displays information on the pointing status of the terminal.

The following status can be viewed:

- Status when the antenna is not pointed as shown in Figure 10, giving the option to start pointing or to skip pointing. Where two pointing carriers are available, one can choose the used carrier as shown in Figure 11.
- Status during the pointing of the antenna; see Figure 12. Click on Pointing Completed when the antenna is pointed;
- Status when pointed successfully or pointing skipped as shown in Figure 13. This is the status during normal operation of the terminal after pointing;

For more details about the functioning of these buttons and navigation between screens refer to the Point&Play Setup Manual.

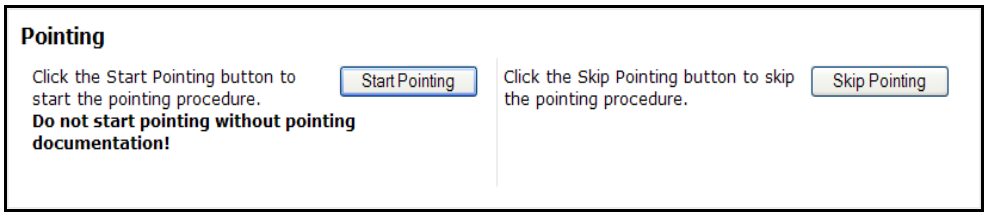


Figure 10 - Web Interface > Status when not Pointed – One pointing Carrier

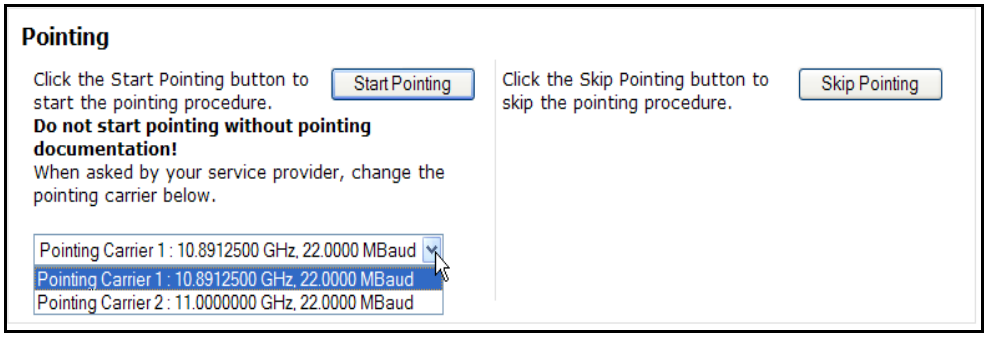


Figure 11 - Web Interface > Status when not Pointed – Two pointing Carriers

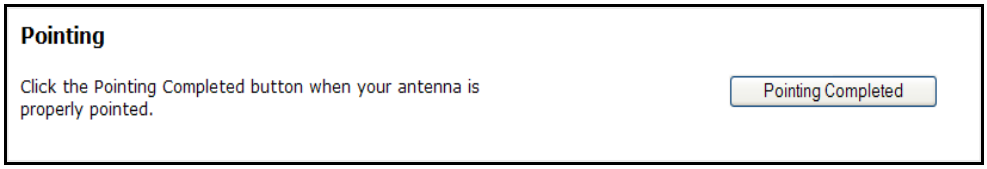


Figure 12 - Web Interface > Pointing

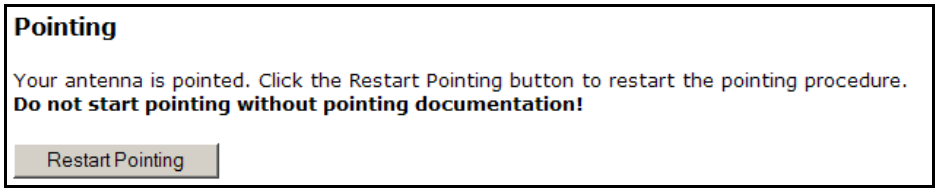


Figure 13 - Web Interface > Antenna Pointing > Status when Pointed or Pointing is Skipped

During normal operation the Restart Pointing button is shown via the Antenna Pointing button in the menu bar and should only be used in case pointing documentation is available and the antenna must be re-pointed

3.6.3 Interface Statistics

Modem state		Description
Interfaces	Ethernet interface	User side interface (Ethernet frames)
	Satellite interface	Satellite side interface (IP packets)
Directions	Rx	Receive
	Tx	Transmit
Statistics	Bytes	Total number of received (or transmitted) bytes
	Packets	Received (or transmitted) Ethernet frames

Modem state		Description
		or IP packets
	Errors	Number of occurred errors
	Dropped	Dropped Ethernet frames or IP packets

Table 10 - Status Page > Interface Statistics

3.7 Configuration

The reboot of the terminal is needed when a (re)configuration has been performed. Changes may not take effect until after the next reboot.

3.7.1 Ethernet Interface

This section describes the interface between the computer and the IPmodem.

3.7.1.1 View the Ethernet Interface Configuration

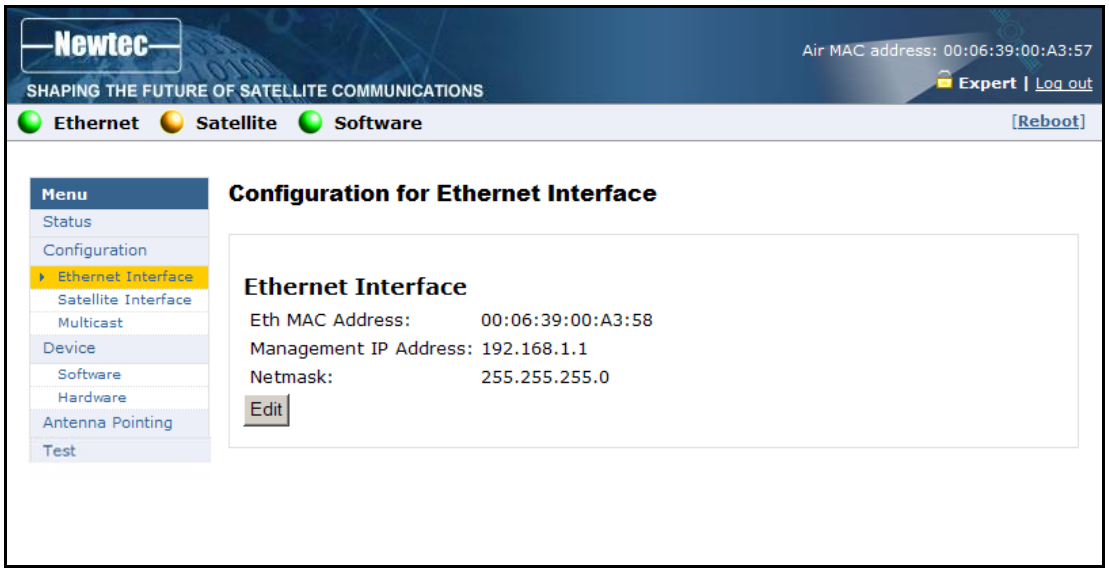


Figure 14 - Web Interface > View Configuration Ethernet Interface

3.7.1.2 The Parameters of the Ethernet Interface

The displayed parameters and their description are shown below.

Parameter	Description
Eth MAC address	MAC address of the Ethernet interface
Management IP address	Management IP address of the Ethernet interface
Netmask	Network range for the user's LAN

Table 11 - Configuration Page > Ethernet Interface Parameters

3.7.1.3 Modify the Ethernet Interface Configuration

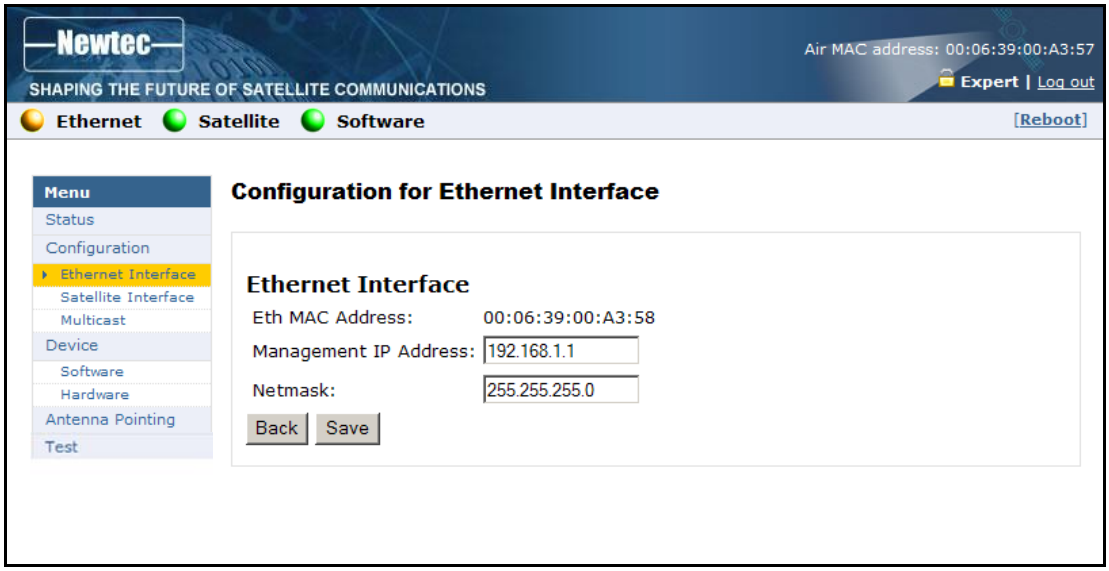


Figure 15 - Web Interface > Edit Configuration Ethernet Interface

- Click on Edit in the Web Interface > View Configuration Ethernet interface (Figure 15) to change the Ethernet Settings.
- Edit the parameters to be changed.
- Click on Save in the Web Interface > Edit Configuration Ethernet interface (Figure 15) to save the new settings.

The Ethernet interface configuration is now saved!

3.7.2 Satellite Interface

These settings may only be changed upon advice of your internet service provider!

3.7.2.1 Introduction

This section describes the interface settings between the terminal and the satellite.

Every satellite interface setting consists of:

Initial Receive Carrier

This is the initial receive carrier via which the IPmodem will try to gain access to the network.

Pointing Carrier

This carrier is needed to enable antenna pointing via the Point&Play mechanism. When two different pointing carriers are assigned to the terminal, the installer can perform his pointing on two different pointing carriers. At least one pointing carrier must be enabled.

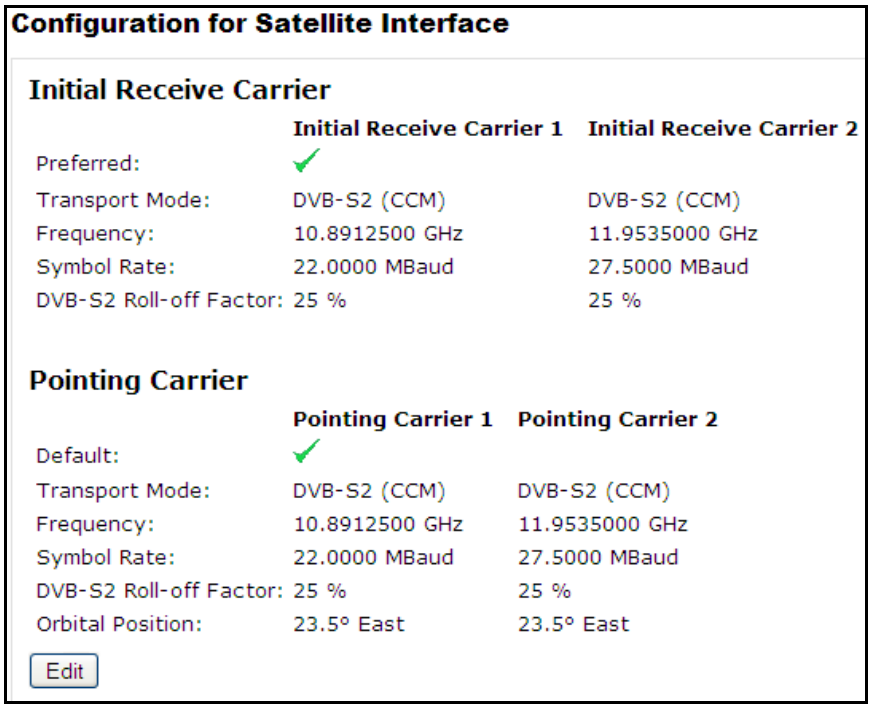
3.7.2.2 View the Satellite Interface Configuration

Maximum two initial receive carrier settings and pointing carrier settings can be assigned and displayed. Only the settings that are enabled are displayed. How to change the satellite interface configuration is described in section 3.7.2.3.

If two settings for a carrier are enabled and displayed, the preferred initial receive carrier is marked by ✓.

If two settings for a carrier are enabled and displayed, the default pointing carrier is marked by ✓ The final selection of the pointing carrier that is used for pointing is done in the Status Page as shown in Figure 17, where the non-default pointing carrier can be selected.

In the example of Figure 16, two initial receive carriers and two pointing carriers are enabled. Initial Receive Carrier 1 is marked as preferred, and Pointing Carrier 2 is set as default.



Configuration for Satellite Interface

Initial Receive Carrier

	Initial Receive Carrier 1	Initial Receive Carrier 2
Preferred:	✓	
Transport Mode:	DVB-S2 (CCM)	DVB-S2 (CCM)
Frequency:	10.8912500 GHz	11.9535000 GHz
Symbol Rate:	22.0000 MBaud	27.5000 MBaud
DVB-S2 Roll-off Factor:	25 %	25 %

Pointing Carrier

	Pointing Carrier 1	Pointing Carrier 2
Default:	✓	
Transport Mode:	DVB-S2 (CCM)	DVB-S2 (CCM)
Frequency:	10.8912500 GHz	11.9535000 GHz
Symbol Rate:	22.0000 MBaud	27.5000 MBaud
DVB-S2 Roll-off Factor:	25 %	25 %
Orbital Position:	23.5° East	23.5° East

Edit

Figure 16 - Web Interface > View Configuration Satellite Interface

3.7.2.3 The Parameters of the Satellite Interface

The displayed parameters and their descriptions are shown in the table below.

Parameter	Description
Initial Receive Carrier	
Preferred	Mark for the preferred Initial Receive Carrier
Transport Mode	DVB-S; DVB-S2 (Constant Coding Modulation - CCM).
Frequency	Initial receive frequency (GHz)
Symbol Rate	Initial receive symbol rate (Mbaud)
DVB-S2 Roll-off Factor	Only configurable in DVB-S2 mode. Excess bandwidth of the Rx signal spectrum. 35 %; 25 %; 20 %.
Pointing Carrier	
Default	Mark for the default pointing carrier
Transport Mode	DVB-S; DVB-S2 (Constant Coding Modulation - CCM).
Frequency	Initial receive frequency (GHz)
Symbol Rate	Initial receive symbol rate (Mbaud)
DVB-S2 Roll-off Factor	Only configurable in DVB-S2 mode. Shape of the Rx signal spectrum. 35 %; 25 %; 20 %.
Orbital Position	Orbital position of the satellite in degrees and East/West selection.

Table 12 - Configuration Page > Satellite Interface Parameters > Initial Receive Carrier

3.7.2.4 Edit the Satellite Interface Configuration

- Click on Edit in the Web Interface > View Satellite Configuration Interface as shown in Figure 16.
- Edit the parameters to be changed and as described in Figure 17.

An initial receive carrier setting or pointing carrier setting can only be enabled if the frequency of the configuration is filled in

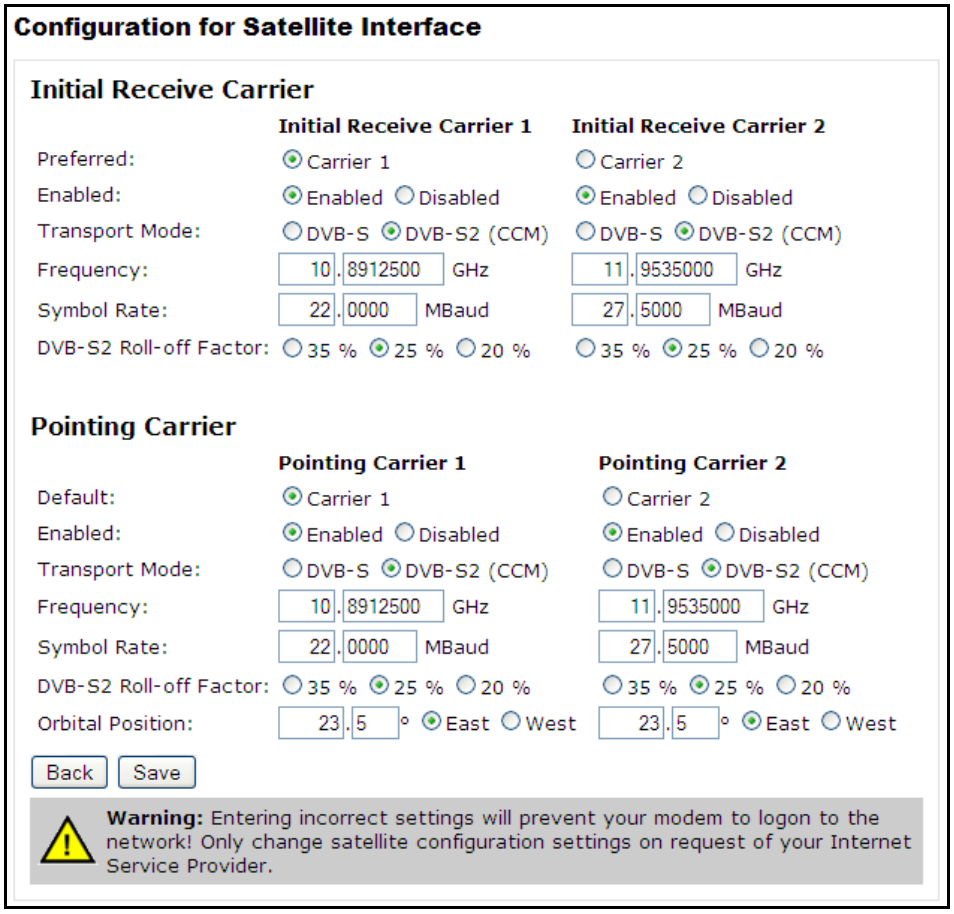


Figure 17 - Web Interface > Edit Configuration Satellite Interface

- Click on Save in the Web Interface > Edit Configuration Ethernet interface (Figure 17) to save the new settings;

The satellite interface configuration is now saved and the changes in the configuration are displayed.

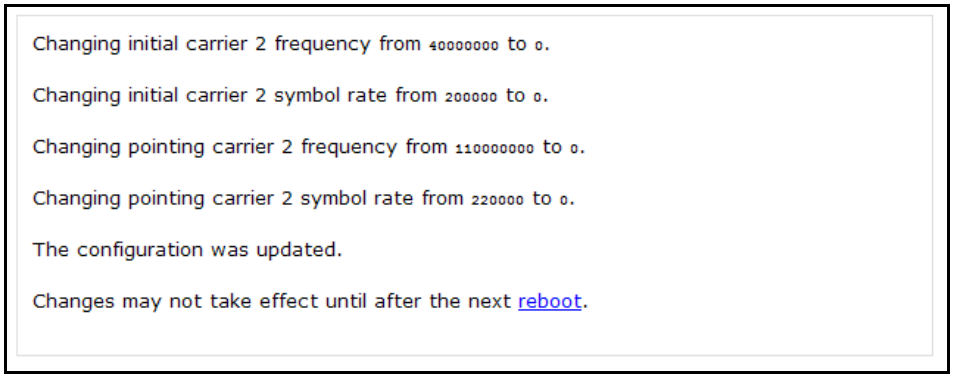


Figure 18 – Example of Satellite Interface Configuration Changes

- Click on **reboot** at the bottom of the page;
- Click on **Normal Reboot** to confirm and execute the reboot;

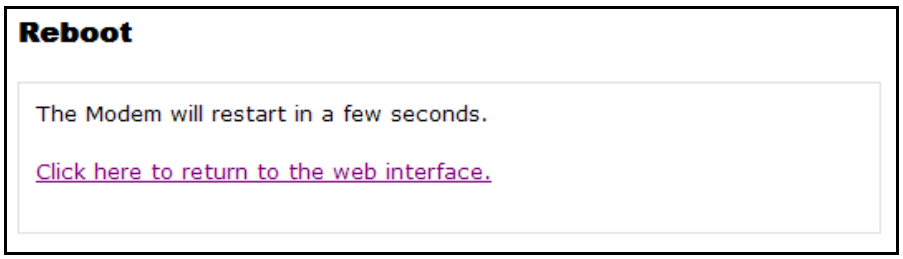


Figure 19 – Reboot in Progress

- Click on **Click here to return to the web interface** and wait a few minutes.

The satellite interface configuration is now effective.

3.7.3 Multicast

The satellite can send several sessions to a number of Sat3Play Terminals at the same time.

This is IPmulticasting. There are two configurations possible in the Sat3Play Terminal to receive these programs:

- Static IP addresses: these are IP addresses where the sessions are received. You will be provided with these addresses if needed;
- IGMP: this is a protocol that lets you receive multicast sessions (maximum 10) without entering specific IP addresses.

3.7.3.1 View the Multicast Configuration

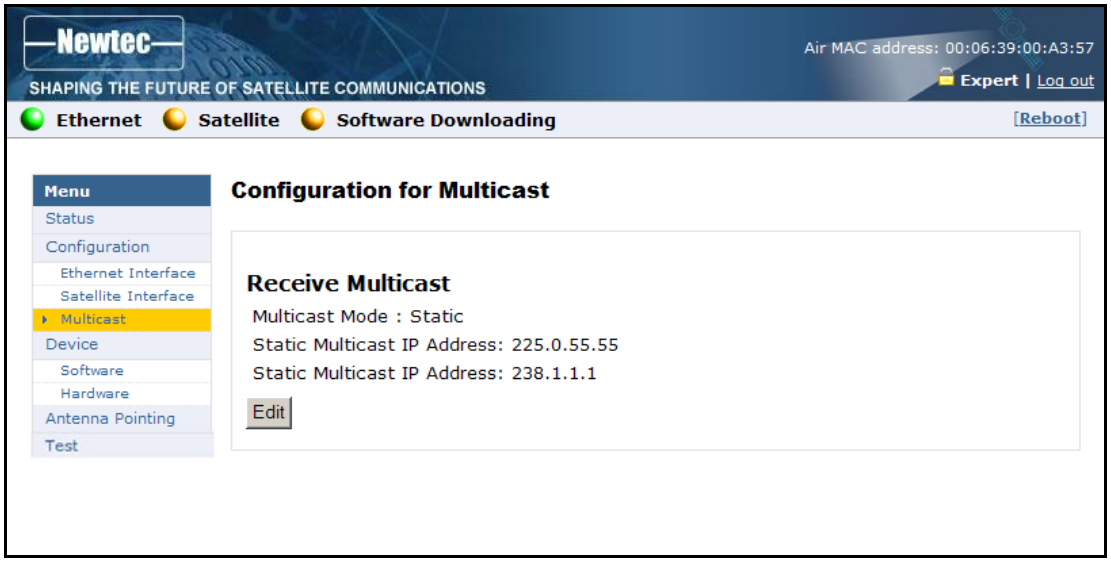


Figure 20 - Web Interface > View Configuration Multicast

3.7.3.2 The Multicast Parameters

The displayed parameters and their description are shown below.

Parameter	Description
Multicast Mode	Disabled: Multicast mode is disabled. Static: The active Multicast Configuration is based on entered Static Multicast IP Addresses. IGMP Dynamic: Dynamic IGMP multicast mode.
Static Multicast IP Address 1-10	Maximum 10 multicast IP Addresses can be assigned and active in case of Static Multicast Mode.

Table 13- Configuration Page > Multicast parameters

3.7.3.3 Edit the Multicast Configuration

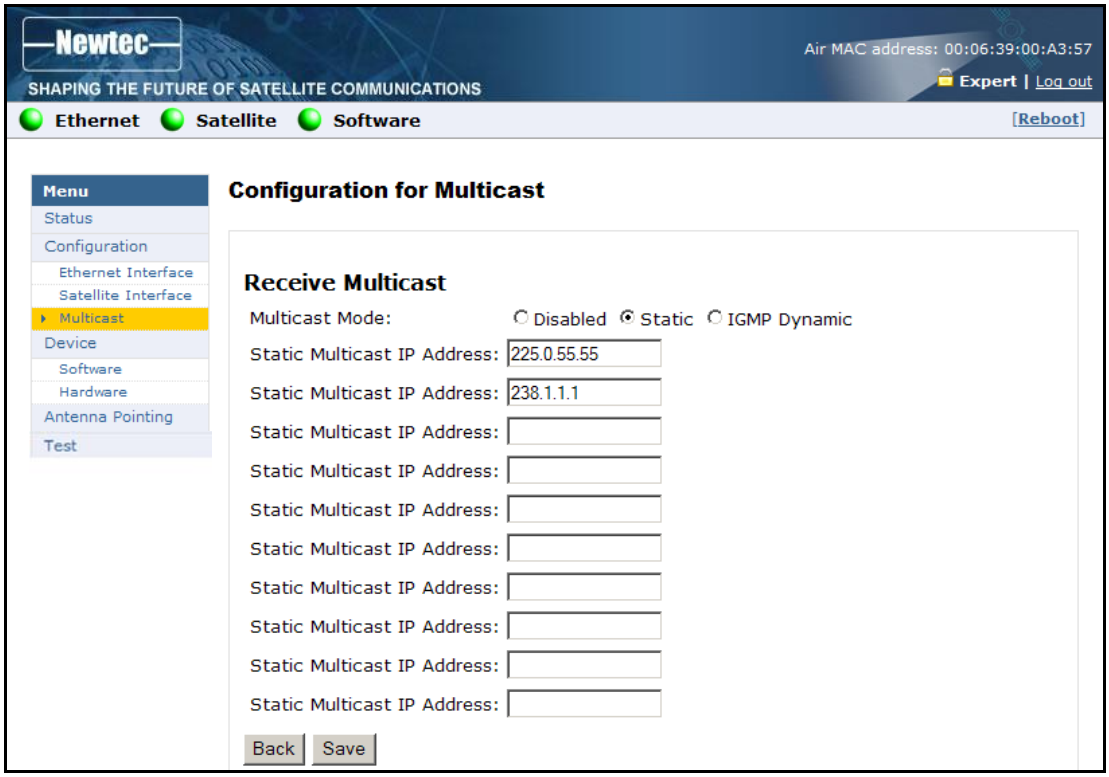


Figure 21 – Web Interface > Edit Multicast Configuration

- Click on Edit in the Web Interface > View Multicast configuration (Figure 20) to Change the Ethernet Settings;
- Edit the parameters to be changed;
- Click on Save in the Web Interface > Edit Multicast configuration (Figure 21) to save the new settings.

The Multicast configuration is now saved!

The response screen for a Disabled Multicast configuration:

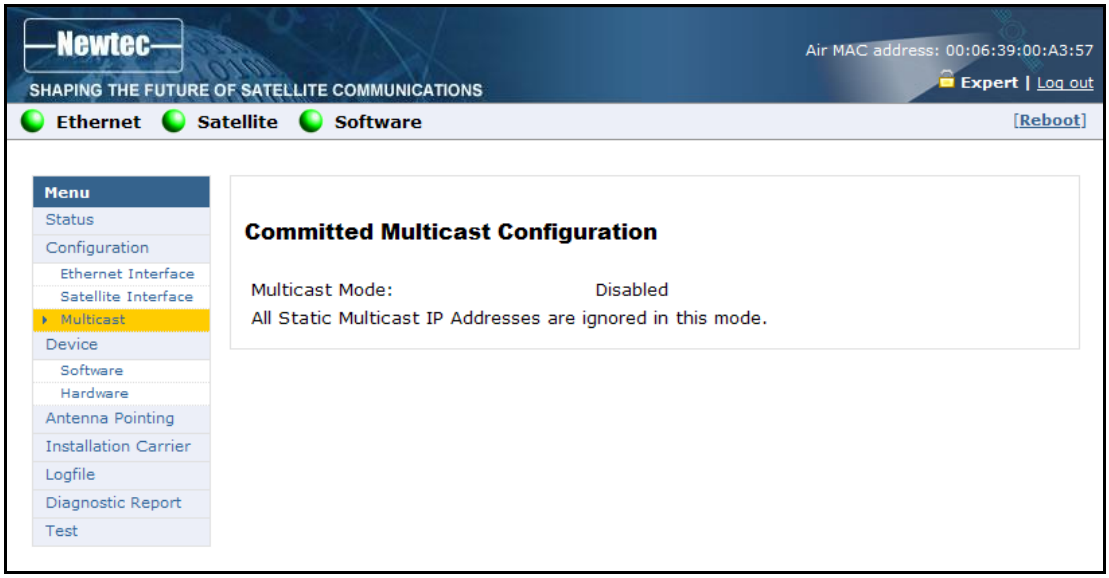


Figure 22 – Web Interface > Confirmation of Disabled Multicast Configuration

In case an invalid multicast IP address is replacing a valid multicast IP address, the last valid multicast IP address will still be in use.

The response screen for a Committed Multicast configuration:

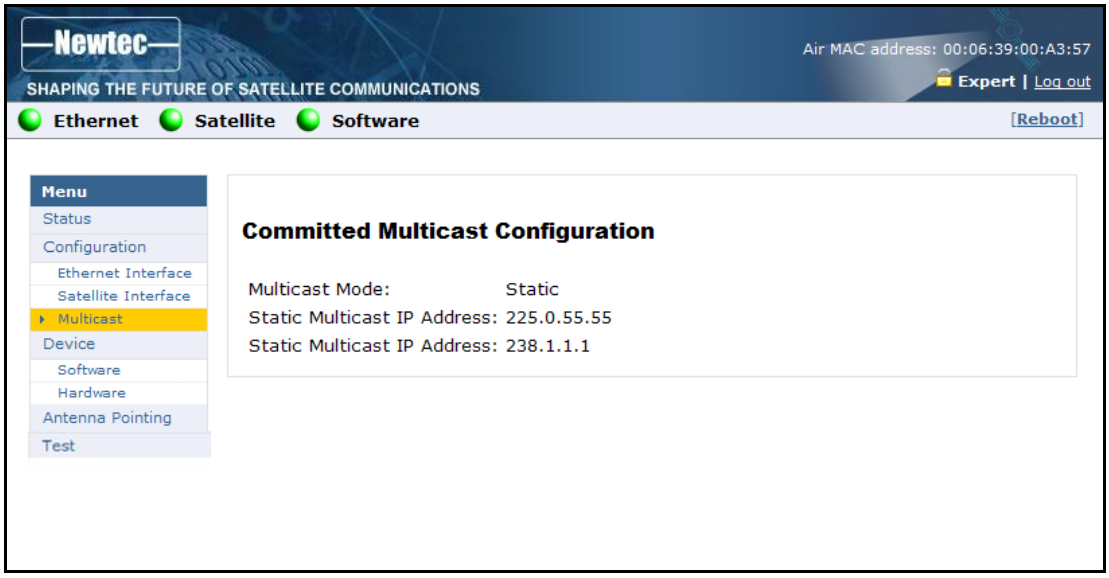


Figure 23 – Web Interface > Confirmation Committed Multicast Configuration

3.8 Device

3.8.1 Software

3.8.1.1 Introduction – General Case

The terminal software is automatically upgraded over the satellite without any user interaction. In general, the only requirement for an upgrade to be successful is for the terminal to have satellite connectivity during the time of upgrade.

To allow a secure terminal software upgrade mechanism, the flash of the modem can contain two different software versions. A newly installed software version has to pass an automatic software validation procedure. After a software upgrade, the IPmodem is automatically reset.

Figure 24 - Web Interface > View Software Configuration

Table 14 gives a description of the parameters in the Software menu:

Parameter	Description
Software Download Identifiers To uniquely identify the terminal variant for software download triggered from the hub side, the following keys are reserved for SW update.	
Software Download Manufacturer ID	Software download manufacturer Identifier (639 for Newtec devices)
Software Download Hardware ID	Software downloads hardware Identifier.
Software version	
Currently Running Software Version	The currently installed software version is displayed. When an alternate software version is available, you will be provided with a link Try Alternate Version.
Alternate Software Version	Only displayed when an alternative software version is present.

Table 14 - Software Page

3.8.1.2 Software Upgrade

A newly installed software version must pass an automatic software validation procedure. When this software validation process fails, the old software version remains in use. The passive bank now contains a newer software version that did not pass the validation process. In this case, the user has the possibility to re-trigger the validation process. This situation can occur when a user turns off his IPmodem during the validation process or when satellite connectivity was not possible to establish during the validation process.

It is possible that the terminal performs a **software update** during the first logon. This process can take **up to ten minutes**. You may **NOT interrupt** the terminal yourself during this period by e.g. rebooting or powering down

Figure 25 - Web Interface > Software (Alternate Version)

To re-trigger the validation process:

- Click the link **Try Alternate Version**;

The *Software Upgrade page* will be displayed indicating the new software version number (see below).

- If the web interface doesn't refresh automatically, navigate back to the *Status page*.

A total reboot, including satellite link initialisation might take up to 10 minutes.

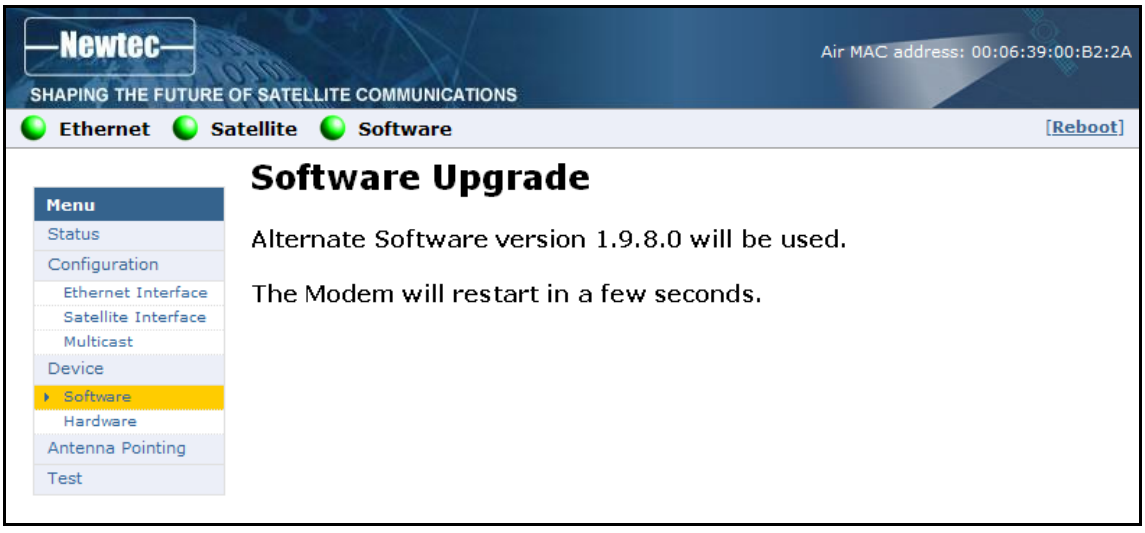


Figure 26 - Web Interface > Software Upgrade Confirmation

When a newer version is present and validation fails, the software LED is red.
Also read section 3.5 for more information on the meaning of the software status LEDs

3.8.2 Hardware

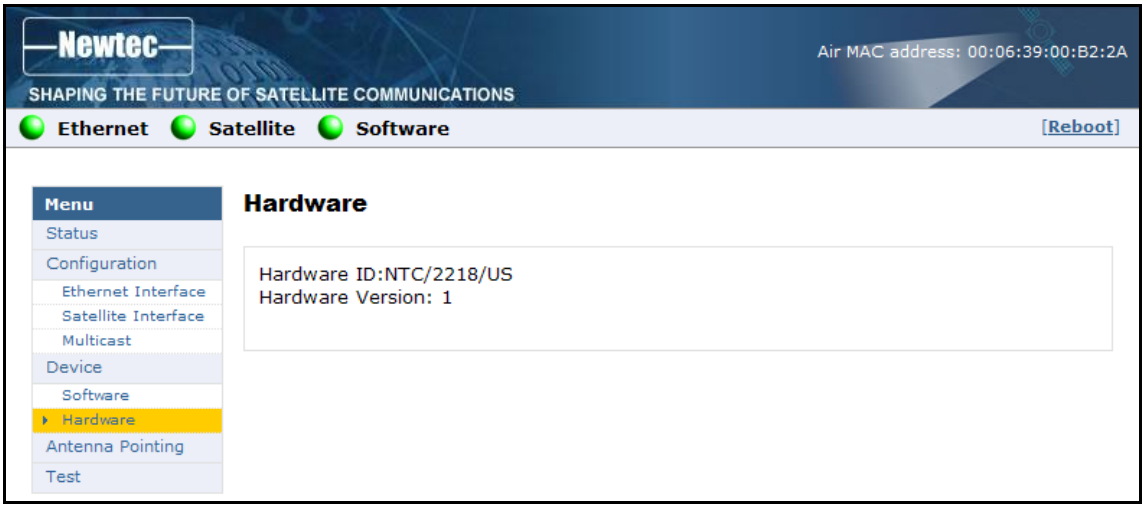


Figure 27 - Web Interface > Hardware

Below are given the displayed parameters and their description.

These values are read only.

Parameter	Description
Device	
Hardware ID	Hardware identifier of the modem
Hardware Version	Hardware version number of the modem

Table 15 - Configuration Page > View Hardware Parameters

3.9 Antenna Pointing

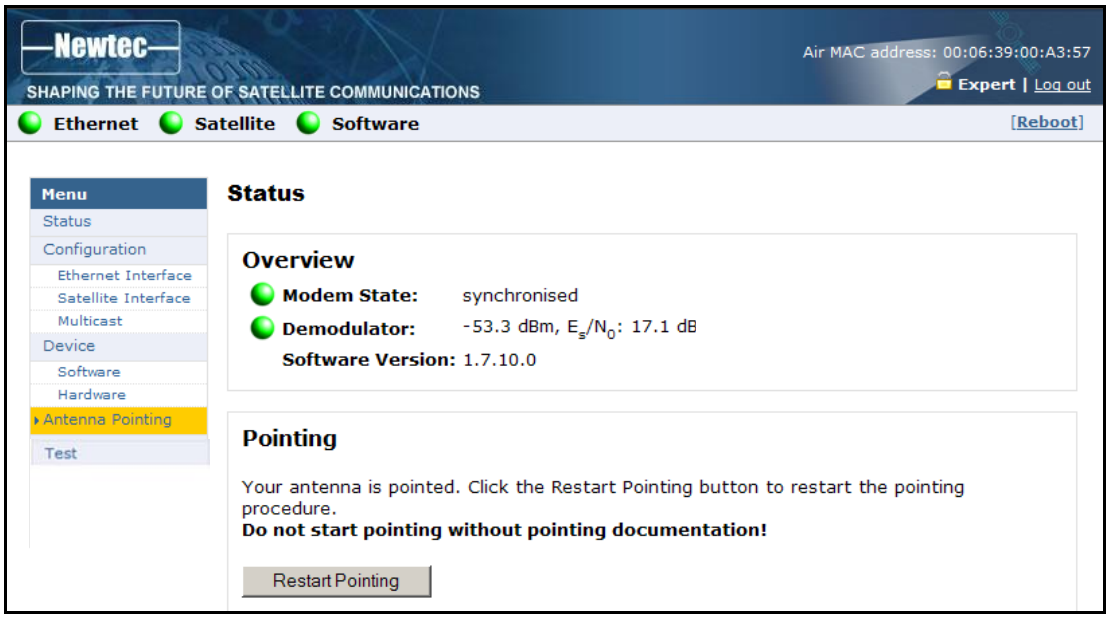


Figure 28 – Antenna Pointing

In case the antenna should be re-pointed click the Restart Pointing button.

The pointing procedure is described in the Point&Play Setup Manual.

The GUI interface is described in paragraph 3.6.2.5.

3.10 Test

To view the functioning status of the Sat3Play Terminal, or to identify problems that may occur, tests can be run on the terminal:

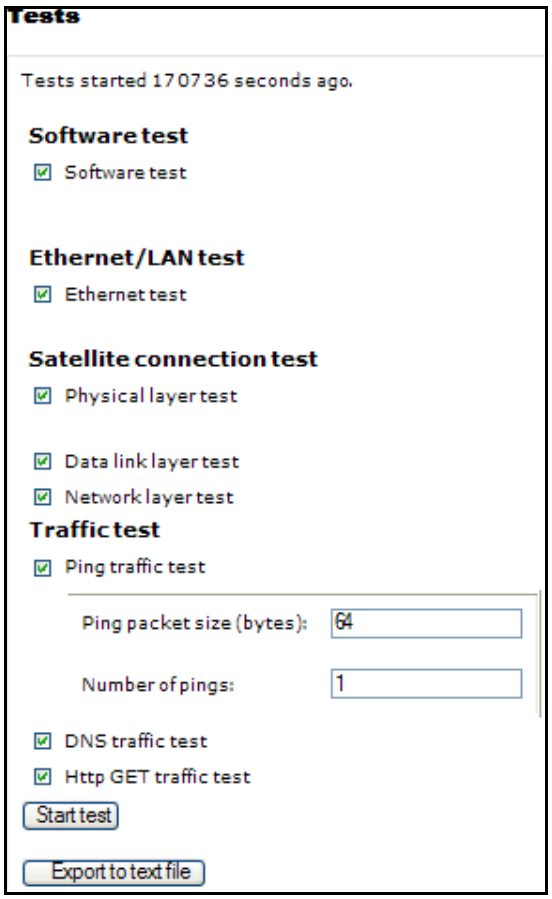


Figure 29 – Web Interface > Test Overview

Mark (☑) or unmark (☐) a test depending on the tests to be run.

Section 3.10.3 gives a description of the tests which can be performed.

Click on the Start test -button to begin the test.

3.10.1 On Screen Test Results

As a result, a screen with the requested test results will be shown, see Table 16 – Possible States of IPmodem Tests.

Running test	
Test waiting to run	
Successfully ran test	
Unsuccessfully ran test	

Table 16 – Possible States of IPmodem Tests

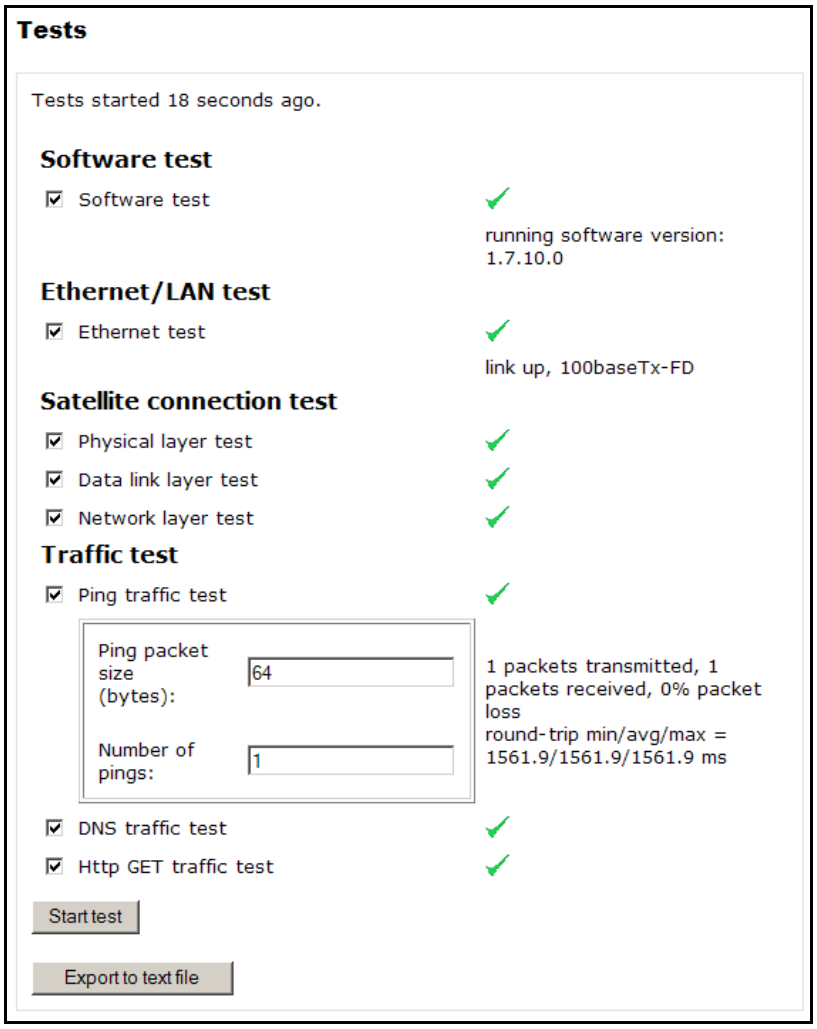


Figure 30 – On-Screen Test Results

3.10.2 Filed Test Results

Click on the Export to text file -button to export the file. As a result, a web page with the test results in text format will be provided. The test results can now be saved in a text file from the browser, as shown in Figure 31.

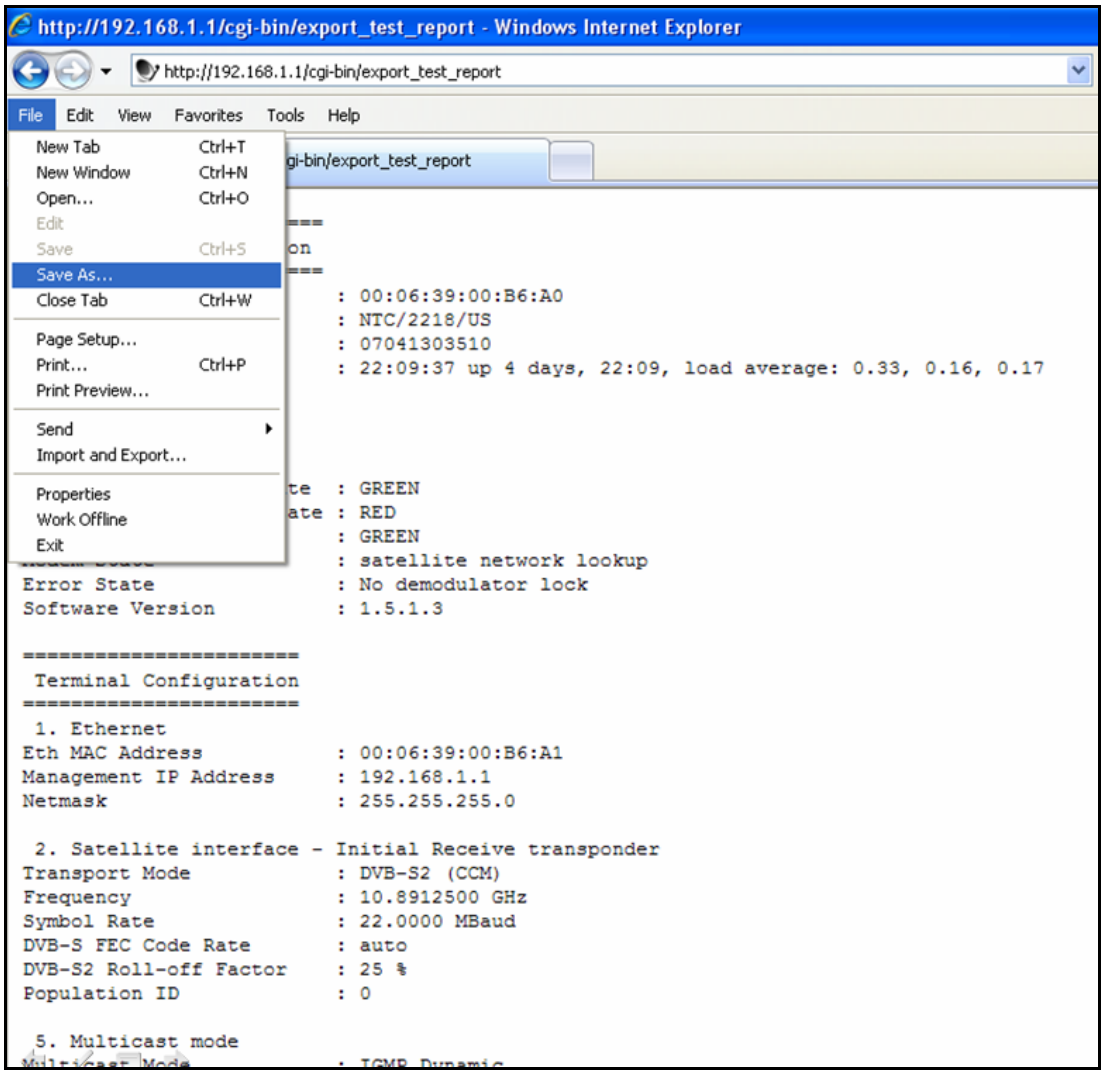


Figure 31 – Web Interface > Test > Export to Text File

3.10.3 Test Descriptions

This section provides an overview of the tests that can be run on the IPmodem.

3.10.3.1 Software Test

The Software test verifies the validity of the software.

3.10.3.2 Ethernet/LAN Test

The Ethernet/LAN exists of three tasks:

- Checking the Ethernet physical layer;
- Obtaining the IP address off the computer connected to the IPmodem;
- Checking the IP address of the computer, provided via DHCP by the IPmodem.

3.10.3.3 Satellite Connection Test

The Satellite connection test is composed of three tests:

- The Physical layer test, checks if the physical layer of the IPmodem – satellite connection is able to receive data;
- The Data link layer test, checks if the system is able to send data to the satellite;
- The Network layer test, checks the IP connection.

3.10.3.4 Traffic Test

The Traffic test is composed of three tests:

- A ping traffic test, tests if ping packets can be transported over the network from the IPmodem, over the satellite to the hub site.

  The following fields can be filled in:

  - Ping packet size (bytes): minimum 1 and maximum 65,507 bytes;
  - Number of pings: minimum 1 and maximum 100.

- The DNS traffic test resolves a URL via a name server at the hub site.

The Http GET traffic test, verifies the TCP acceleration and pre-fetching.

4 APPENDIX A – TROUBLESHOOTING GUIDE

We would appreciate any useful feedback that can help us to complete this section. The position of the LEDs described in the Problem indication column is described in section 3.5.

Error Code	Problem indication	Possible solution
	No connectivity with IPmodem web interface. LED error indication: The Rx indicator LED is off The Warning LED is orange	The IPmodem has no connectivity with the satellite network (section 3.2.2). Check if the computer can receive an IP address via DHCP, as described in Section 1. If the computer can receive an IP address: unplug the Ethernet cable from your computer, wait for more than three minutes and plug the Ethernet cable in, again.
001	Web interface error info: Modem State : Awaiting installer action Modem LED is red	Your antenna is not pointed. Consult the Point&Play Setup Manual to execute the pointing process.
	Web interface error info: Modem State : antenna pointing	Your modem is currently in the pointing state. Consult the Point&Play Setup Manual to execute the pointing process.
010	Web interface error info: No demodulator lock Modem LED is red LED error indication: The RX indicator LED is off	Error in handling of the Rx signal. The Rx demodulator cannot lock. Verify the pointing of the antenna. Verify the connectivity between the IPmodem and the antenna. Verify the configuration of the satellite interface: frequency, polarisation, symbol rate…
020	Web interface error info: Terminal specific forward carrier lookup is ongoing LED error indication: Warning LED is on, RX LED is on	The modem is determining on which traffic carrier it is provisioned. If the message does not disappear within 10 minutes, reset the modem (section 3.4). If the error is still occurring after a number of hours, contact your ISP : - to report the problem; - to check if your IPmodem is provisioned in the network

Error Code	Problem indication	Possible solution
030	Error information in the web interface: Network lookup failed LED error indication: Warning LED is on, RX LED is on	If the IPmodem could not login to the satellite network, maybe the result of pointing to a wrong satellite. Verify the configuration of the satellite interface: If the pointing data is correct, check if the antenna is pointed correctly. Re-point if necessary. Reset the IPmodem. Contact the ISP (Internet Service Provider) if this error is persistent for more than four hours.
040	Error information in the web interface: Synchronisation process failed LED error indication: Warning LED is on, RX LED is on	The time synchronisation process failed. Reset the IPmodem (section 3.4). Contact your ISP if this error is persistent for more than four hours. The error can be an indication of a general network problem
045	Error information in the web interface: Synchronisation lost LED error indication: Warning LED is on, RX LED is on	The time synchronisation is lost. Reset the IPmodem (section 3.4). Contact your ISP if this error is persistent for more than four hours. The error can be an indication of a general network problem.
050	Error information in the web interface: Network login failed Error information on the IPmodem: LED error indication: Warning LED is on, RX LED is on.	The IPmodem could not login to the satellite Verify if the TX cable is correctly connected. If the TX cable is correctly connected and the error is still occurring after a number of hours, contact your ISP : - to report the problem; - to check if your IPmodem is provisioned in the network
055	Error information in the web interface: Network Layer configuration failed LED error indication: Warning LED is on, RX LED is on	An error occurred during the configuration of the network layers after a valid satellite network login. Reset the IPmodem (section 3.4). Contact your ISP if this error persists, and provide them with any additional error information displayed.
060	Error information in the web interface: TCP acceleration service failed LED error indication: Warning LED is on, RX LED is on	An error is detected in the TCP acceleration service. Reset the IPmodem. Reset the IPmodem (section 3.4) Contact your ISP if this error is persistent for more than four hours.

Error Code	Problem indication	Possible solution
070	Error information in the web interface: Network connectivity lost LED error indication: Warning LED is on, RX LED is on	The connectivity with the satellite network is lost. Reset the IPmodem. Reset the IPmodem (section 3.4) Contact your ISP if this error is persistent for more than four hours.
999	Error information in the web interface: Installation carrier setup failed LED error indication: Warning LED is on, RX LED is on	The activation of the installation carrier test mode failed because the terminal was not in the correct state.

Table 17 – Troubleshooting Table

5 APPENDIX B – ACRONYMS

Acronym / term	Description
8PSK	8 Phase Shift Keying
AC	Alternating Current
ACS	Access Control Server
ARP	Address Resolution Protocol
ATM	Asynchronous Transfer Mode
BER	Bit Error Rate
C/N	Carrier to Noise ration
CCM	Constant Coding Modulation
CE approved	Conformité Européenne (European health & safety product label)
DC	Direct Current
DHCP	Dynamic Host Configuration Protocol
DVB	Digital Video Broadcasting
DVB-RCS	Digital Video Broadcasting – Return Channel Satellite
DVB-S, DVB-S2	Digital Video Broadcasting over Satellite (2)
EIRP	Effective Isotropic Radiated Power
EN	ETSI Norm
FCT	Frame Composition Table
FEC	Forward Error Correction
FTP	File Transfer Protocol
GMSK	Gaussian Minimum Shift Keying
G/T	Antenna Gain-to-System Noise Temperature Ratio
GUI	Graphical User Interface
HTTP	Hyper Text Transfer Protocol
ICMP	Internet Control Message Protocol
IEEE	Institute of Electrical and Electronics Engineers,
iLNB	Interactive Low Noise Block-down converter
IP	Internet Protocol
ISP	Internet Service Provider
IT	Information Technology
LAN	Local Area Network

Acronym / term	Description
LED	Light Emitting Diode
LNB (iLNB)	Low Noise Block-down converter
MAC address	Medium Access Control
MF-TDMA	Multi Frequency Time Division Multiple Access
MPEG	Moving Picture Experts Group
NCR	Network Clock Reference
NIT	Network Information Table
Nm	Newton metre
ODU	Outdoor Unit
PAT	Program Association Table
PMT	Program Map Table
QPSK	Quadrature Phase Shift Keying
RCS	Return Channel Satellite
RF	Radio Frequency
RFC	Request for Comments
RMT	RCS Map Table
RT	Reporting Tool
Rx	Receive
SAP	Satellite Access Provider
SCT	Superframe Composition Table
SDT	Service Descriptor Table
SEMS	Satellite Earth Station Management System
TBTP	Time Burst Time Plan
TCP (TCP/IP)	Transmission Control Protocol
TCT	Time Composition Table
TMS	Terminal Management System
TS	Transport Stream
Tx	Transfer
UDP	User Datagram Protocol
VAC	Volts, Alternating Current
VSAT	Very Small Aperture Terminal
WCT	Waveform Composition Table

Table 18 – Acronyms

6 APPENDIX C- LICENSES

GNU software is used in this product:

You can download GNU Wget from the following location:
http://www.gnu.org/software/wget/

For more information about GPL: check out our website at
http://www.newtec.eu/index.php?id=gpl