

# ALDEN @

**User Manual** 

Version 1.0

IPcopter GmbH & Co KG

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## **1 IMPORTANT SAFETY PRECAUTIONS**

- Before installing the satellite modem, make sure your electrical outlet is properly wired and your computer equipment is properly grounded. Consult with a licensed electrician if you are not sure.
- Read and understand all operating instructions in your user's guide located in the satellite modem shipping box.
- Read and understand all safety precautions prior to connecting any cables to the satellite modem.

#### 1.1 WARNINGS

#### Definition

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.

- 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 pattern of the transmitter feed horn and/or antenna dish when the transmitter is on. Keep the space between feed horn and reflector clear!
- When the satellite 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 satellite modem installation until there is no risk of thunderstorm or lightning activity in the area.
- To prevent electrical shock, if the unit is provided with a polarized plug, 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 threeprong AC outlet. Do not use adapter plugs or remove the grounding prong from the plug.
- The in-line power supply input power cord must not be used when damaged in any form!



#### 1.2 CAUTIONS

#### Definition

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.

- Always use the in-line power supply with the satellite 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 conform to the specifications within this manual.
- Do not open the unit. Do not perform any servicing other than that contained in the installation and troubleshooting instructions. Refer all servicing to qualified service professionals.
- Avoid damaging the satellite modem with static 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 satellite modem when you are disconnecting or re-connecting your Ethernet cable from the satellite modem or your PC.
- 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 forced air to remove dust.
- The user should install an AC surge arrestor in the AC outlet to which this device is connected. This to avoid damaging the equipment by local lightning strikes and other electrical surges.

#### 1.3 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.



## 2 OVERVIEW

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

The Sat3Play terminal consists of:

- an interactive LNB (iLNB) comprising of a low noise block down converter and integrated 500 mW upconverter/transmitter,
- an IP modem providing an Ethernet connection to the end-user PC or LAN,
- a self-pointing antenna, with a GPS based antenna control unit.

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

Connected to the integrated iLNB by means of transmit and receive cables, the high speed IPmodem provides an asymmetrical 2-way broadband access to IP applications. Its small size design, in line with the best practice in the telecom and IT industry, makes it suited for any type of user, business or consumer.



Figure 1: Sat3Play Terminal



## **3 GETTING TO KNOW YOUR SAT3PLAY TERMINAL**

#### 3.1 IPMODEM

#### 3.1.1 Front Panel



#### Figure 2: IPmodem Front panel

Nr	What	Description
(1)	Power LED	Green continuous – when powered up. Controlled by button below
(2)	TV LED	Off – controlled by the push button. (previous settings are stored)
		Red - TV Antenna pointing failed or antenna is stowed
		Yellow – TV Antenna pointing is going on
		Green – Antenna is pointed correctly for TV reception
(3)	IP LED	Off – controlled by the corresponding button. (previous settings are also stored)
		Red – Antenna pointing failed or antenna is stowed
		Yellow – Initialization is going on (satellite pointing or satellite network logon)
		Green – Terminal is logged on to the Internet



Nr	What	Description
		satellite network.
(4)	Warning LED	Yellow – The system is powering down and the antenna is not stowed yet.
(5)	Low power LED	Red - Battery voltage is too low
(6)	Antenna CTRL Unit error LED	Red – General Antenna CTRL unit reported a general failure or communication with Antenna CTRL unit is lost.: Not in use
(7)	LAN status LED	Green – Ethernet link status
(8)	LAN traffic LED	Ethernet frames are received or transmitted
(9)	Rx indicator LED	Green continuous – L2 data received via the Internet air interface
(10)	Tx indicator LED	Green blinking / continuous – L2 bursts are transmitted via the Internet air interface (CSC or TRF bursts)

 Table 1:
 Description elements of the IPmodem front panel

#### 3.1.2 Back Panel



Figure 3: IPmodem Back panel



Nr	What	Description
(1)	ACU I/F	Interface to Antenna CTRL Unit: ACU enable + RS232
(2)	STB Power	Set-Top box power supply (12 V)
(3)	11,5-16V DC	Power cable
(4)	2 AT	2 A S – For the modem
(5)	3AT	3 A fuse – For the power supply Set-Top Box
(6)	Ethernet cable connector	RJ-45 – 100 Base-T
(7)	iLNB Tx	Indoor connection for the transmit coax cable to iLNB (IP traffic)
(8)	iLNB Rx	Indoor connection for the receive coax cable to iLNB (IP traffic)
(9)	Reset button	Reboot: press once Factory reset: and hold for 5 seconds: will reset the
		factory settings. (IP management address + reset the installer password)
(10)	TV LNB	Indoor connection for the receive coax cable to LNB (video signal)
(11)	STB	Connector to Set-Top Box

 Table 2:
 Description elements of the IPmodem back panel

#### 3.2 ILNB

The iLNB – interactive LNB – is used for two-way IP traffic. It has an integrated casing and is fully sealed except for its ventilation slots.







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, connected with iLNB Tx of IPmodem
(3)	Rx connector	Outdoor connection for the receive coax cable, connected with iLNB Rx of IPmodem

 Table 3:
 Description elements of the iLNB



## 4 PREPARATION OF THE IP SETTINGS IN YOUR PC OR LAPTOP

#### 4.1 WINDOWS XP

- Open the Network Connections window.
- Right click on the active LAN connection and select Properties
- The Local Area Connections Properties dialogue will open.

	lucation Auvanceu	
Connect using:		<u>21122</u> 112231223
🕮 Marvell Y	ukon 88E8053 PCI-E	Gigabi Configure
This connection	n uses the following iter	ms:
🗹 🚑 File an	d Printer Sharing for M	icrosoft Networks
🗹 📙 QoS P	acket Scheduler	r
M Therne	et Protocol (TCP/IP)	
< ]	ш	<b>)</b>
Install	Uninstal	
- Description -		- // - N
Transmission wide area ne across divers	Control Protocol/Inter twork protocol that protocol	net Protocol. The default ovides communication vorks.
	n polification area whe	n connected
Show icon i		- facility of an unit of a second second
Show icon ii Notify me will	nen this connection ha	is limited of no connectivity

- Select the tab **General**.
- Scroll down the items and select Internet Protocol (TCP/IP).
- Click the **Properties** button
- The Internet Protocol (TCP/IP) Properties dialogue will open.
- By default the dialogue is set as shown below.

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ieneral	Alternate Config	guration				
You ca this cap the app	n get IP settings a bability. Otherwise propriate IP setting	assigned aul e, you need t gs.	tomatically if <u>;</u> o ask your n	your nel etwork -	twork su administi	pports ator for
<u>ا</u> ن و	btain an IP addre	ss automatic	ally			
-OU:	se the following IF	P address: -				
IP ad	ddress:		-			
Subr	net mask:				83	
Defa	ault gateway:			- 45	- 89	
<u>ی</u> ا	btain DNS server	address aut	omatically			
OU	se the following D	NS server a	iddresses: —	_		
Prefe	erred DNS server				•	
Alter	nate DNS server:				55	
					Adv	anced

- Select the tab **General**.
- Change your IP settings by selecting the appropriate radio button
- Obtain an IP address automatically to set the IP setting on DHCP
- Click the **OK** button.

#### 4.2 MAC OS X

• Click on your **Apple** menu and choose **System Preferences**:



Double-click on the **Network** icon.



000		Sy	stem Prefere	nces		C
Show All	Network					
Personal						
File New				3	Ó	
Appearance	Desktop & Screen Saver	Dock	Exposé	International	Security	
Hardware						
0		Ŷ	9	-	۵	
CDs & DVDs	Displays	Energy Saver	Keyboard & Mouse	Print & Fax	Sound	
Internet &	Network					
		Ø	1			
.Mac	Network	QuickTime	Sharing			
System						
11	9	(A)	()	0	2	
Accounts	Classic	Date & Time	Software Update	Speech	Startup Disk	Universal Access

• Click on the adapter that you wish to change (usually *Built-in Ethernet*) and then click the **Configure...** button.

00		Network		C
now All Network				
	Location:	Automatic	:	
	Show:	Network Status	•	
		You are connected	d to the Internet via <u>Built-i</u>	n
	E	tou are connected	J to the Internet via Built-i	n

• Go to the **TCP/IP** tab. If your computer is configured to use a dynamic IP address, you should see a screen like the one below (notice **Using DHCP** in the drop-down box next to **Configure**).

ser Manual v	1.0		
ly 2007			
			Market Barrier Communication
00	Netwo	k	
how All Displays	Sound Networ	k Startup Disk	
	Location: Automatic	•	
Configure: Built-in	Ethernet 🛊		
	TCP/IP PPPoE App	oleTalk Proxies	
Confi	gure: Using DHCP	+	
		Domain Name Servers (Optional)	
IP Address:	123.123.123.123 (Provided by DHCP server)	66.151.173.1 65.116.4.130	
DHCP Client ID:			
	(Optional)	Search Domains (Optional)	
Ethernet Address:	00:30:65:be:10:78		
		Example: apple.com, earthlink.net	

This is where you can change your DNS settings, by entering the appropriate DNS servers in the **Domain Name Servers (Optional)** box. •



## 5 GETTING STARTED

#### 5.1 INTERNET

Power on the Alden SSC	
Power on your IPmodem. The power and the alarm LED are now on	Q IV IP A D & B B RX IX
If necessary toggle on the green field to "Internet" LED on the Alden SSC	A REAL PROPERTY OF THE PROPERT
Now the antenna searches the Internet satellite. This might take some minutes. A double beep indicates, that the satellite pointing is completed.	
Meanwhile connect your computer to the IP Modem via Ethernet Cable	Carlo Contraction of the second secon
You can follow the network log in process on the IP Modem: At first the Rx LED becomes green	Q TV IP A D & FB RX TX



After some seconds the Tx LED becomes green. In the next step the Warning LED, which was orange during the whole process, is switched off. You are connected!	
Open your browser and start surfing!	

#### 5.2 TV

Power on the Alden SSC	
Power on the TV receiver and the TV set	
If necessary, toggle on the green field of the Alden SSC to your TV satellite, most probably Astra 1	
Now the antenna searches the TV satellite. This might take some minutes. A double beep indicates, that the satellite pointing is completed.	
You now should receive a TV channel !	

#### 5.3 FROM INTERNET TO TV

Power on the TV receiver and the TV set	
Toggle on the green field of the Alden SSC to your TV satellite, most probably Astra 1	



#### 5.4 FROM TV TO INTERNET

Power on your IPmodem. The power and the alarm LED are now on	PTV IP A D S B B K IX
- Toggle on the green field to "Internet" LED on the Alden SSC	
Now the antenna searches the Internet satellite. This might take some minutes. A double beep indicates, that the satellite pointing is completed.	
Meanwhile connect your computer to the IP Modem via Ethernet Cable	Card Contraction
You can follow the network log in process on the IP Modem: At first the Rx LED becomes green	Q TV IP A D & FF X X
After some seconds the Tx LED becomes green. In the next step the Warning LED, which was orange during the whole process, is switched off. You are connected!	



Open your browser and start surfing!



## 6 STOWE THE ANTENNA

Toggle to "close" LED on the red area of the Alden SSC



Antenna is stowed, when only Power LED is lighting	
Power off the Alden SSC and all other equipment	

*Note 1*: If the system is installed correctly, the antenna is stowed automatically, if the ignition is switched on.

*Note 2*: If power of SSC is switched off, although the antenna was up, the antenna will be stowed automatically as soon as the power of SSC is switched on again.



## 7 FAIR USE OF BANDWIDTH

Although the IPcopter network is designed to make efficient use of the satellite bandwidth, additional rules are implemented to provide a real broadband experience for most of the users.

- The bandwidth is always equally shared between all users of the same type of service, This
  means, that a minority of users cannot block the service for the majority of the users.
- Especially in peak times some bandwidth consuming applications are shaped in order to keep the overall service quality, e.g.
  - Peer to peer applications including Skype
  - Heavy download activities
  - Unicast video streaming

This does not mean, that those applications won't work, but speed and quality might be reduced.



## 8 VOIP, WIFI

In general the IP Modem acts as an Ethernet bridge and has no routing functionality. Therefore only a single unit can be connected to the IP Modem. This unit gets from the IP Modem via DHCP the public IP address. This unit can be e.g

- PC, Laptop
- WiFi router or access point with DHCP and NAT functionality
- VoIP telephone adapter with integrated router with DHCP and NAT functionality

Optionally as well a WiFi access point or a VoIP telephone adapter are available at Alden. We strongly recommend to use those products, because they are already preconfigured for the implementation in the network. Alden cannot support the installation of 3<sup>rd</sup> party units in the network.

The figures below show the schematics of the implementation of a WiFi access point and of a VoIP adapter.



Figure 5: WiFi configuration



Figure 6: VoIP configuration



## 9 IP MODEM WEB INTERFACE

#### 9.1 HOW TO GET THERE

There are two cases to be disitinguished: If the **IP Modem is already logged on the network and you have internet access**, then simply type <u>http://192.168.1.1</u> as address in your browser.

If you don't have internet access, the network properties in your PC have to be adapted:

Assign an IP address in the range 192.168.1.x ( $2 \le x \le 254$ ) to your computer

Set the default netmask on 255.255.255.0

type <u>http://192.168.1.1</u> as address in your browser

eneral	
'ou can get IP settings assigned a his capability. Otherwise, you nee he appropriate IP settings.	automatically if your network supports d to ask your network administrator fo
Obtain an IP address automa	itically
Ose the following IP address:	
IP address:	192.168.1.2
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	- 2 - 2 - 2
O Obtain DNS server address a	automaticallu
Use the following DNS serve	r addresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced.
	Advanced
	ОК



#### 9.2 GENERAL LAYOUT

일 sit_1-19 - Status - Mo	zilla Firefox								
Datei Bearbeiten Ansicht	⊆hronik Lesezeichen Ext	ras <u>H</u> il	lfe						0
🦛 • 📦 • 💽 😣	A bttp://192.168.1.1	/cgi-bin/	/modem_sta	itus?status				▼ ► Google	Q
		ATIONS					А	Air MAC address: 00:06: 🎯 Not logge	:39:00:11:07 : <b>d in  </b> <u>Log in</u>
🕒 Modem 🌔 So	ftware						В		[Reboot]
Menu • Status	Status						D		
Configuration Ethernet Interface	Overview								
Air Interface	Modem State:		synchro	onised					
Software C	Demodulator:		-34.7 d	Bm (53/100	D), BER: 1	DE-6, Es/N <sub>0</sub>	: 11.0 dB, "Sat3Play Beta test satellite network"		
J	Last Recorded	Error	: No Erro	r					
	Software Versi	on:	0.0.47.0	0					
	Interface Statis	tics							
	Interface		bytes	packets	errors	dropped			
		RX	46627	396	0	0			
	Ethernet Interface	ТХ	253007	482	0	0			
		RX	194151	399	0	0			
	Air Interface	ТХ	29684	208	2	2			
Fertig									
A Start 6				-			÷		
		r Manua	Camph		10 - Statem	Ma		NF - Deckton 🥙 🔗 🛃 🌄 🖳 🔍 尾 🙆 🎾	MY 10-20

Figure 7: Web interface > Page layout

Each of the web interface pages contains the same elements.

#### A – Banner

The banner contains the Newtec logo, shows the Air MAC address of the terminal and holds the login functionality.

#### 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.

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#### 9.3 MENU STRUCTURE

The normal user and the logged in installer share approximately the same menu structure. Parameters can only be changed in the installer menu

#### Status

Check on the device and network status

- Configuration
  - Ethernet Interface Check and edit the Ethernet interface configuration.
  - Air Interface Check or edit satellite connectivity configuration for IP traffic only.
  - *Device Interface* Check device configuration.
- Software Check on or alter the software version.
- Installation Carrier (installer only) Perform a connectivity test.
- Logfile (installer only) Look up log files.

#### 9.4 LOGIN AS INSTALLER

Important: The IPmodem has as default installer password "s3p".

In case you have changed and forgotten the new password, press the **Reset** button (> 5 seconds) at the back of the IPmodem to reset the password. All configurations will be reset to factory settings.

Click the **Log in** link in the top right corner.

A login page is shown below

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	IPcopter
	mobile internet communication

	den - instanet Login - mozina i fretox	لالالكا
<u>E</u> dit ⊻iew <u>G</u> o <u>B</u>	ookmarks <u>T</u> ools <u>H</u> elp	
• 🔶 • 🥵 🖸	) 😭 F 🙀 👽 http://192.168.1.1/cgi-bin/modem_status?ilogin	v 0
-Newtec-	E OF SATELLITE COMMUNICATIONS	Air MAC address: 00:06:39:00:11:0 🍽 Not logged in   Log
) Modem ပ Ar	ntenna CTRL 💊 Software	[ <u>Reboo</u>
Modem Status	ntenna CTRL 💊 Software	[Reboo
Modem Status	Installer Login	[Reboot
Modem Status Configuration Ethernet Interface	Installer Login	[Rebool
Modem SAT	Installer Login	[Rebool
Modem Ar Menu Status Configuration Ethernet Interface Air Interface Television	Installer Login	[Reboo
Modem Ar Menu Status Configuration Ethernet Interface Air Interface Television Device	Installer Login	[Reboo

Figure 8: Installer Login page

Provide your password in the text field in the body.

Click Login.

You are logged in. The login utilities will change as follows.





Click the **Log out** link to log out.

#### 9.5 CHANGE THE INSTALLER PASSWORD

When you are logged in as an installer, you can change the installer password.

Click the **Change password** link to change your password. The Change Password page is shown below.



<u>E</u> dit <u>V</u> iew <u>G</u> o <u>B</u> i	ookmarks <u>T</u> ools <u>H</u> elp	
• 🔶 • 🛃 🛽	🛛 🎧 🛃 🙀 💽 http://192.168.1.1/cgi-bin/modem_status?ipass	wd 🔽 🖸
-Newtec-	E OF SATELLITE COMMUNICATIONS	Air MAC address: 00:06:39:00:11 aller   <u>Change password   Log out   Admin Lo</u>
) Modem  🌔 Ar	itenna CTRL 🌔 Software	[Reboo
Menu	Change Password	
Menu Status	Change Password	
Menu Status Configuration	Change Password	Change Password
Menu Status Configuration Ethernet Interface Air Interface	Change Password Installer password:	Change Password )
Menu Status Configuration Ethernet Interface Air Interface Television	Installer password:	Change Password )
Menu Status Configuration Ethernet Interface Air Interface Television Device	Change Password Installer password:	Change Password )
Menu Status Configuration Ethernet Interface Air Interface Television Device Software	Change Password Installer password:	Change Password )
Menu Status Configuration Ethernet Interface Air Interface Television Device Software Installation Carrier	Change Password Installer password:	Change Password )

Figure 10: Change Password page

Provide your new password and repeat it in the confirm text field.

#### Click Change Password

You get a confirmation of the change.



Figure 11: Change Password confirmation

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#### 9.6 REBOOT

Click the **Reboot** button on the right of the status bar to reboot the terminal.

You will be provided with two options:

#### Normal Reboot

This will trigger a normal device reboot.

#### Factory Reset

This will force a factory reset of the terminal. The following settings are reset to default values: management IP address, netmask and installer password.

Choose one of the above options.

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

Note:

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

#### 9.7 STATUS LEDS

#### 9.7.1 Modem LED

The **Modem** LED gives the general status of the IPmodem and is as such an indication for the IP connectivity.

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

#### Table 4:Status LEDs: Modem

#### 9.7.2 Software LED

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

LED colour code	Description
-----------------	-------------



LED colour code	Description	
Red	The terminal has a newer software version then the running software version, <b>and</b>	
	The newer software version was not selected because the software validation process failed.	
	See paragraph <b>Error! Reference source not found.</b> for possible actions and follow-up.	
Yellow	The terminal is retrieving new software over the air.	
Green	No problem.	
Table 5: Status LEDs >	Software	

#### 9.8 STATUS PAGE

🗐 🗹 🕹 sit_1-19 - Status - Mozilla Firefox									
Qatei Bearbeiten Ansicht Chronik Lesezeichen Egtras Hilfe									
🐗 • 🔿 • 🕑 🙆	1 http://192.168.1.1	/cgi-bin,	/modem_sta	tus?status				▼ ► Google	Q
Newtec-	OF SATELLITE COMMUNIC	ATION	s					Air MAC	address: 00:06:39:00:11:07
🌔 Modem 🌔 Sof	ftware								[Reboot]
Menu • Status	Status								
Configuration Ethernet Interface	Overview								
Air Interface	Modem State:		synchro	nised					
Software	Demodulator: Last Recorded Software Versio	Error on:	-34.7 d No Erroi 0.0.47.(	Bm (53/100 r D	), BER: (	)E-6, Es/No	: 11.0 dB, "Sat3Play Beta test satellite network"		
	Interface Statis	tics							
	Interface		bytes	packets	errors	dropped			
		RX	46627	396	0	0			
	Ethernet Interface	тх	253007	482	0	0			
		RX	194151	399	0	0			
	Air Interface	тх	29684	208	2	2			



#### Figure 12: Web interface > Status

#### 9.8.1 Modem State

The IPmodem state is indicated by a coloured LED and a state description. The possible modem state descriptions are given below.



Modem state	Description
Idle	IPmodem is in Initial state.
Satellite network lookup	The terminal is looking for the satellite network.
Synchronising	Time synchronization is taking place
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.
Idle	IPmodem is in Initial state.

Table 6:Status page > Modem state

#### 9.8.2 Demodulator

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

LED colour code	Description		
Grey	Off – controlled by the corresponding button. (previous settings are also stored)		
Red	Antenna pointing failed or antenna is stowed		
Yellow	Initialization is going on (satellite pointing or satellite network logon)		
Green	Receiver is synchronised with the Internet satellite network.		

#### Table 7: Status page > Demodulator LED

The IP state is built as follows:

-67.0 dBm (10/100), BER 4R-6, Es/No: 23.2 dB, xyz satellite network

Demodulator label value	Description
y dBm (x/100)	Indication of the received signal strength expressed in dBm.
BER	Bit Error Rate, measured before error correction



Demodulator label value	Description	
	(only displayed when the demodulator is locked)	
Es/No	Carrier to Noise ratio (Rx signal) expressed in dB.	
	(only displayed when the demodulator is locked)	
xyz satellite network	Name of satellite network	

 Table 8:
 Status page > Demodulator labels

#### 9.8.3 Last Recorded Error

The following error messages can be displayed. This error message display will be reset when the terminal has entered the satellite network and the terminal is operational.

#### Reference

Error info	Description
No error	
Network connectivity lost	The connectivity with the satellite network was lost.
Network connectivity lost – Tx timing error	The connectivity with the network was lost because a transmit timing error occurred.
Network connectivity lost - timing error	TBTP received too late: the network connectivity is lost because the TBTP table we received too late. Timing problem.
Network login failed	Couldn't login to the satellite network. Verify whether the terminal is provisioned in the network.
Network login failed - timing error	Couldn't login to the satellite network. Verify whether the terminal is provisioned in the network. Timing problem.
Network login failed – Tx synthesizers are not locked:	Couldn't login to the satellite network. The transmit synthesizers couldn't lock. This could be a terminal hardware problem.
Network login failed – Tx timing error	Couldn't login to the satellite network. A transmit timing error occurred.
Network lookup failed:	The satellite network lookup failed
Network lookup failed –	The satellite network lookup phase failed because no



Error info	Description
NIT Table not received	Network Information Table was received.
Network lookup failed – RMT table lookup failed	The satellite network lookup phase failed because no RCS Map Table was received or an error occurred in the parsing the signalization table.
Network lookup failed – RMT table lookup failed (verify Population Id)	The satellite network lookup phase failed because an error occurred in the parsing of the RCS Map Table. Verify the setting of the Population Identifier. (see Configuration – Air Interface)
Network lookup failed – no demodulator lock on RMT transponder	The satellite network lookup phase failed because an error occurred in the handling of the Rx signal of the transponder which contains the RCS Map Table.
Network lookup failed – no demodulator lock on Logon transponder	The satellite network lookup phase failed because an error occurred in the handling of the Rx signal of the operational transponder.
Network lookup failed – SDT table lookup failed	The satellite network lookup phase failed because no Service Description Table was received or an error occurred in the parsing the signalization table.
Network lookup failed – PAT table lookup failed	The satellite network lookup phase failed because no Program Association Table was received or an error occurred in the parsing the signalization table.
Network lookup failed – PMT table lookup failed	The satellite network lookup phase failed because no Program Mapping Table was received or an error occurred in the parsing the signalization table.
No demodulator lock:	Error in handling of the Rx signal. The Rx demodulator cannot lock.
Synchronization process failed	The time synchronization process failed.
Synchronization process failed – FCT table lookup failed	The time synchronization process failed because no Frame Composition Table was received or an error occurred in the parsing of signalization table.
Synchronization process failed – SCT table lookup failed	The time synchronization process failed because no Superframe Composition Table was received or an error occurred in the parsing of signalization table.
Synchronization process failed – TCT table lookup failed	The time synchronization process failed because no Time-slot Composition Table was received or an error occurred in the parsing of signalization table.



Error info	Description		
Synchronization process failed – WCT table lookup failed	The time synchronization process failed because no Waveform Composition Table was received or an error occurred in the parsing of signalization table.		
Synchronization lost	Time synchronization is lost		
Synchronization lost – jump on NCR value	Time synchronization is lost. The received timing information contained a timing error.		
Synchronization lost - timing error	Time synchronization is lost. The received timing information contained a timing error. Timing problem.		
Installation carrier setup failed	The activation of the installation carrier test mode failed because the terminal was not in the correct state.		

**Table 9:**Status page > Error info

#### 9.8.4 Software Version

The running software version is indicated by its version number.

#### 9.8.5 Interface Statistics

Modem state		Description
Interfaces	Ethernet interface	User side interface (Ethernet frames)
	Air interface	Satellite side interface (IP packets)
Directions	Rx	Receive
	Тх	Transmit
Statistics	Bytes	Total number of received (or transmitted) bytes
	Packets	Received (or transmitted) Ethernet frames or IP packets
	Errors	Number of occurred errors
	Dropped	Dropped Ethernet frames or IP packets

 Table 10:
 Status page > Interface Statistics



#### 9.9 CONFIGURATION

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

#### 9.9.1 Ethernet interface

<u>E</u> dit <u>V</u> iew <u>G</u> o	<u>B</u> ookmarks <u>T</u> ools <u>H</u> elp		
ı • 🧼 • 🛃 🌘	🔇 😭 F 🙀 👽 http://192.	168.1.1/cgi-bin/modem_status?eth_config	✓ ○
-Newtec-	RE OF SATELLITE COMMUNICATION	IS	Air MAC address: 00:06:39:00:11:0 🍩 N <b>ot logged in  </b> <u>Log</u>
Modom 🔒	Antenna CTRI 💊 Software		[Reboot
Menu	Configuration for E	thernet Interface	
Menu Status Configuration	Configuration for E	thernet Interface	(Saun)
Menu Status Configuration • Ethernet Interface	Configuration for E Ethernet Interface Eth MAC Address:	<b>thernet Interface</b> 00:06:39:00:11:2F	Save
Menu Status Configuration • Ethemet Interface Air Interface Television	Configuration for E Ethernet Interface Eth MAC Address: Management IP Address:	00:06:39:00:11:2F 192.168.1.1	Save
Menu Status Configuration • Ethernet Interface Air Interface Television Device Software	Configuration for E Ethernet Interface Eth MAC Address: Management IP Address: Netmask:	00:06:39:00:11:2F 192.168.1.1 255.255.255.0	Save
Menu Status Configuration • Ethemst Interface Air Interface Television Device Software	Configuration for E Ethernet Interface Eth MAC Address: Management IP Address: Netmask:	<b>Contended and Service</b> 00:06:39:00:11:2F 192.168.1.1 255.255.255.0	Save

Figure 13: Web Interface > Configuration Ethernet interface

			o mode.
Parameter	Description Installer		User
Ethernet Interface			
Eth MAC address	MAC address of the Ethernet interface	Read only	Read only
Management IP address	Management IP address of the Ethernet interface	Read / write	Read / write
Netmask		Read / write	Read / write

Below are given the displayed parameters, their description and access mode.

 Table 11: Configuration page > Ethernet interface parameters

## IPcopter mobile internet communication

#### 9.9.2 Air interface

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- 💽 🐼	http://192.168.1.1/cgi-bin/modem_status?air_config	Google
	OF SATELLITE COMMUNICATIONS	Air MAC address: 00:00 œ N <b>ot logg</b>
m 🌔 Sof	tware	
	Configuration for Air Interface	
ation	Initial Receive Transponder	
t Interface	Transport Mode: DVB-S	
пасе	Frequency: 11.1519740 GHz	
	Polarisation: Vertical	
	Symbol Rate: 1.5000 MBaud	
	DVB-S FEC Code Rate: 3/4	
	DVB-S2 Roll-off Factor: 35 %	
	Population ID: 0	
	Miscellaneous	
	Air MAC Address: 00:06:39:00:11:07	

Ubertrage Daten von 192.168.1.1				
🦺 Start 🔰 🧭 😂 🍣 🖸 🔟	User_Manual_CampN	🕹 sit_1-19 - Air Config	Microsoft PowerPoint	DE   Desktop 👋 🖓 😂 🖏 🔂 🔒 🔰 🏹 💭 18:40

### Figure 14: Web Interface > Configuration Air interface > User (read only)

Below are given the displayed parameters, their description and access mode.

Description	Installer	User			
Initial Receive Transponder					
The initially set parameters with which the terminal locks onto the satellite. These parameters are used during the lookup of the Internet satellite network.					
DVB-S	Read / write	Read only			
DVB-S2 (CCM)					
Initial receive frequency (GHz)	Read / write	Read only			
Initial polarisation of the receive signal Horizontal: horizontal	Read / write	Read only			
vertical: vertical polarization					
	Description onder eters with which the terminal loc uring the lookup of the Internet sa DVB-S DVB-S2 (CCM) Initial receive frequency (GHz) Initial polarisation of the receive signal Horizontal: horizontal polarization Vertical: vertical polarization	DescriptionInstallerondereters with which the terminal locks onto the saturing the lookup of the Internet satellite networkDVB-SRead / writeDVB-S2 (CCM)Read / writeInitial receive frequency (GHz)Read / writeInitial polarisation of the receive signalRead / writeHorizontal:horizontalpolarizationVertical: vertical polarization			



Parameter	Description	Installer	User
Symbol Rate	Initial receive symbol rate (Mbaud)	Read / write	Read only
DVB-S FEC Code Rate	DVB-S specific parameter. Forward Error Correction code rate.	Read / write	Read only
	Auto: automatic mode. The receive code rate will be detected automatically.		
	1/2		
	2/3		
	3/4		
	5/6		
	7/8		
DVB-S2 Roll-off Factor	Only configurable in DVB-S2 mode. Shape of the Rx signal spectrum.	Read / write	Read only
	35 %		
	25 %		
	20 %		
Orbital Position	Orbital position of the terminal. This value will be used for pointing the antenna.	Read/write	Read Only
Population Id	Specify the population group to which a terminal belongs.	Read / write	Read only
	Within a network one could group terminals on different transponders.		
	The population ID is required to identify the corresponding interactive satellite services.		
	Default value: 0		
Miscellaneous			



Parameter	Description	Installer	User
Air MAC address	Unique identifier of the terminal. The Air MAC address will be used when the terminal tries to log in on the network.	Read only	Read only

 Table 12: Configuration page > Air interface parameters

sit_1-19 - Air Config -	Mozilla Firefox	
tei <u>B</u> earbeiten <u>A</u> nsicht	Chronik Lesezeichen Extras Hilfe	
• 🔶 • 💽 📀	1 by http://192.168.1.1/cgi-bin/modern_status?air_config	Google
Newtec-		Air MAC address: 00:06:39:00:11: ➡ Installer   Change password   Jon out   Admin Los
Modem 🥥 Sof	tware	[Reboot
Menu	Configuration for Air Interface	
Gonfiguration Echannet Isterface Ant Isterface Device Software Installation Carrier Logfile	Initial Receive Transponder         Transport Mode       OVB-S       OVB-S2 (CCM)         Frequency:       11, 1519740       GHz         Polarisation:       Horizontal       Overtical         Symbol Rate:       1,5000       MBaud         DVB-S FEC Code Rate:       Outcols 1/2       2/3       Ox/4       5/6       7/8         DVB-S2 Roll-off Factor:       Ø35 %       025 %       20 %       Papulation ID:       0	Save

Fertig 15 Start ) @ @ @ @ D ] 🔄 User\_Manual\_CampM... @ st.\_1-19 - Air Config -... @ Microsoft PowerPoint ... DE | Desition \*\* 🔇 🗩 @ 🛼 🚺 🔒 🗎 📿 🚟 💭 18:42

Figure 15: Web Interface > Configuration Air interface > Installer (edit)



#### 9.9.3 Device

<u>Eait View Go B</u>	ookmarksooiseep	<ul> <li>©</li> </ul>
-Newtec-	E OF SATELLITE COMMUNICATIONS	Air MAC address: 00:06:39:00:11 Not logged in   Log
) Modem  🌔 Ai	ntenna CTRL 🌔 Software	[Reboo
Menu	Configuration for Device	
Status Configuration Ethernet Interface Air Interface	Device Hardware ID: NTC/2218/UC CAMPNET ABx Unit Ku B	Band
Television Device	Hardware Version: 1 Software Download	

Figure 16: Web Interface > Configuration Device

Below are given the displayed parameters, their description and access mode.

Parameter	Description	Installer	User
Device			
Hardware ID	Hardware identifier of the modem	Read only	Read only
Hardware Version	Hardware version number of the modem	Read only	Read only
Software Download			
The firmware of the modem can be upgraded over air. To uniquely identify the terminal variant for SW download following keys are reserved for software update.			
Software Download Manufacturer ID	Software download manufacturer Identifier (fixed to 639 for Newtec devices).	Read only	Read only
Software Download Hardware ID	Software download hardware identifier.	Read only	Read only

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Parameter	Description	Installer	User
Ethernet interface			
Eth MAC address	MAC address of the Ethernet interface	Read only	Read only
Air interface			
Band	Air transmit band type	Read only	Read only
	Ka band type (29,50 – 30,00 GHz)		
	Ku band – type 1: RF hardware type (13,75 – 14,50 GHz)		
	Ku band – type 2: RF hardware type (13,75 – 14,50 GHz)		
Air MAC address	Unique identifier of the terminal. The Air MAC address will be used when the terminal tries to log in on the network.	Read only	Read only

Table 13:	Configuration	page >	Device	parameters
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#### 9.10 SOFTWARE

9.10.1 Introduction - General case

The terminal software is automatically upgraded over the air 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 of the software.

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.



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• 🔶 • 🛃 🔇	🖲 🚰 📊 🎐 http://192.168.1.1/cgi-bin/modem_status?sw	✓ ○
-Newtec-		Air MAC address 00.06.39.00.11.0
HAPING THE FUTUR	E OF SATELLITE COMMUNICATIONS	• Not logged in   Log
) Modem 🕒 A	ntenna CTRL 💊 Software	[Reboot
Television Device Solficere	Software Version Currently Running Software Version: 0.0.36.0	

Figure 17: Web Interface > Software

Parameter	Description	Installer	User	
Software Download Identifiers				
To uniquely identify the terminal variant for software download triggered from the hub side, following keys are reserved for SW update.				
Software Download Manufacturer ID	Software download manufacturer Identifier (639 for Newtec devices)	Read only	Read only	
Software Download Hardware ID	Software download hardware Identifier.	Read only	Read only	
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 <b>Try Alternate Version</b> .	Read only	Read only	



Parameter Description		Installer	User				
Alternate S Version	Software	Only alterna preser	displayed ative softwar nt.	when e versio	an n is	Read only	Read only

Table 14:Software page

#### 9.10.2 Software upgrade failure

A newly installed software version has to pass an automatic software validation procedure. When this software validation process fails the old software version remains the software version 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.

Newtec Sat3Play Mod	em - Software Update - Mozilla Firefox	
e <u>E</u> dit <u>V</u> iew <u>G</u> o <u>B</u> o	okmarks <u>T</u> ools <u>H</u> elp	
þ • 🏟 • 🛃 🕄		🖌 🔘 e
Newtec-	OF SATELLITE COMMUNICATIONS	Air MAC address: 00:06:39:00:81:43
👂 Modem 🛛 🌔 An	tenna CTRL 🛛 😜 Software	[ <u>Reboot</u> ]
Status Configuration Ethernet Interface Air Interface	Software Download Identifiers Software Download Manufacturer ID: 000639	
Television Device • Software	Software Download Hardware ID: 0x0001 Software Version Currently Running Software Version: 0.0.19.0 Alternate Software Version: 0.0.19.1. <u>Try Alternate Version</u> .	
	NOTE: "Try alternate version" restarts the Modem!	
ne		Ope <u>n</u> Notebook

Figure 18: 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 1 minute.

ıly 2007		te
Newtec Sat3Play Modem - Software Update - Mozilla Firefox		
le Edit <u>Vi</u> ew <u>G</u> o Bookmarks <u>T</u> ools <u>H</u> elp		
🖕 🗸 🧄 🛪 🚱 🚱 🚰 📑 🙀 👽 http://192.168.1.1/cgi-bin/modem_status?swupgrade	✓ Ø Go	
Newtec-	🖙 Not logged in   Loa in	
Modem CAntenna CTRL Software  Menu Software Upgrade	Rebootj	
Modem Antenna CTRL Software  Nenu Status Configuration	Reboot	
Modem Antenna CTRL Software  Menu Status Configuration Ethernet Interface Alternate software version 0.0.19.1 will be used.	[Reboot]	
Modem Antenna CTRL Software  Menu Status Configuration Ethernet Interface Air Interface	[Reboot]	
Modem Antenna CTRL Software  Menu Status Configuration Ethernet Interface Air Interface Device Software version 0.0.19.1 will be used.	[Reboot]	

Figure 19: Web Interface > Software Upgrade confirmation

When a newer version is present and validation fails, the software LED is red. Also read paragraph 9.7.2 for more information on the meaning of the software status LEDs.

#### 9.11 INSTALLATION CARRIER TEST MODE

The Installation Carrier must not be used.

#### 9.12 LOGFILE

Note

This section is only accessible when you are logged in as an installer.

The most important IPmodem state changes, occurred errors, events, are logged in this logfile. The installer has the possibility to filter on severity level, buffer size and data type.

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Edit View Go Bo	iokmarks Tools Help
Far Tou do Bo	
💌 🗣 🕈 🚱	TAG Mttp://192.168.1.1/cgi-bin/viewlog?filter=9&last=0&datafilt=
Noutoo	
-NEWLEC	Air MAC address: 00:06:39:00:11:09
HAPING THE EUTURE	OF SATELLITE COMMUNICATIONS
Modem 🥥 An	tenna CTRL 💊 Software [Reboot]
230	
Menu	Logfile
Status	
Configuration	Level: all 🔍 Buffer Size: complete buffer 💙 Datafilter: all
Ethernet Interface	Showlog
Air Interface	
Television	
Device	Jan 1 00:00:02 (none) syslog.info syslogd started: BusyBox v1.2.1
Software	Jan 1 00:00:02 (none) user notice kernel: klowd started: BusyBoy w1 2 1 (2006 12 14-08:/
	van 1 00.00.02 (none) user.notice keiner. kioga scarced. Busybox vi.2.1 (2000.12.14 00
Installation Carrier	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (pum@linpvm)
Installation Carrier	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy
Installation Carrier Logfile	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (proml@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages: 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 nages. LTPD batch:7
Installation Carrier Logfile	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages; 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIF0 batch:1
Installation Carrier Logfile	Jan 1 00:00:02 (none) user.notice kernel: Inux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages; 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1
Installation Carrier Logfile	Jan 1 00:00:02 (none) user.notice Actmin. Arogu Collect. Bayok virit (Economic Terror) Jan 1 00:00:02 (none) user.warn kernel: Linux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages: 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.warn kernel: Built 1 zonelists
Installation Carrier	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play AEX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages: 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: Mormal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.warn kernel: Huit 1 zone!ists Jan 1 00:00:02 (none) user.notice kernel: Kernel command line: panic=l console= mtdparts
Installation Carrier Logfile	Jan 1 00:00:02 (none) user.notice Kernel: Linux version 2.6.14-rc3-s3pabx-1 (promBilinpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages: 15384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 15384 pages, LIFO batch:7 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIFO batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIFO batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIFO batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIFO batch:1 Jan 1 00:00:02 (none) user.notice kernel: Kernel command line: panic=1 console= mtdparts Jan 1 00:00:02 (none) user.rer kernel: Unknown boot option "modem.fe=0.stb0899.104,196,
Installation Carrier	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (proml@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages: 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.warn kernel: Built 1 zonelists Jan 1 00:00:02 (none) user.notice kernel: Kernel command line: panic=1 console= mtdparts Jan 1 00:00:02 (none) user.warn kernel: PID hash table entries: 512 (order: 9, 8192 byte Jan 1 00:00:02 (none) user.warn kernel: PID hash table entries: 512 (order: 9, 8192 byte
Installation Carrier Logfile	Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: On node 0 totalpages: 16384 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: Mormal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.warn kernel: Built 1 zonelists Jan 1 00:00:02 (none) user.warn kernel: Wilt zonelists Jan 1 00:00:02 (none) user.warn kernel: PID hash table entries: 1624 (order: 4) Jan 1 00:00:02 (none) user.warn kernel: Dentry cache hash table entries: 16384 (order: 4) Jan 1 00:00:02 (none) user.warn kernel: Dentry cache hash table entries: 16384 (order: 4)
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Installation Carrier Logfile	<pre>Jan 1 00:00:02 (none) user.notice kernel: Linux version 2.6.14-rc3-s3pabx-1 (pvm@linpvm) Jan 1 00:00:02 (none) user.warn kernel: Newtec Sat3Play ABX port (C) 2005 Newtec Cy Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:7 Jan 1 00:00:02 (none) user.debug kernel: DMA zone: 16384 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: Normal zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: MighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.debug kernel: HighMem zone: 0 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.warn kernel: Null 1 zone!10 pages, LIF0 batch:1 Jan 1 00:00:02 (none) user.warn kernel: Kernel command line: panic=1 console= mtdpart: Jan 1 00:00:02 (none) user.warn kernel: PID hash table entries: 16384 (order: 4 Jan 1 00:00:02 (none) user.warn kernel: Dutry cache hash table entries: 8192 byte Jan 1 00:00:02 (none) user.warn kernel: Londy-cache hash table entries: 8192 (order: 3, Jan 1 00:00:02 (none) user.warn kernel: Endyry cache hash table entries: 16384 (order: 4 Jan 1 00:00:02 (none) user.warn kernel: Laibrating delay loop 266.24 BogoMIPS (lpj= Jan 1 00:00:02 (none) user.warn kernel: Mount-cache hash table entries: 512 Jan 1 00:00:02 (none) user.warn kernel: Kernel: compase table (l664k kernel code, 494 Jan 1 00:00:02 (none) user.warn kernel: Mount-cache hash table entries: 512 Jan 1 00:00:02 (none) user.warn kernel: Softokup thread 0 started up.</pre>



Filter the required logs by choosing:

- The severity level
- The buffer size
- The data type

#### Click Show Log.

The logs are displayed. If necessary, the logs can be copy/pasted into an email to Customer Support.



## Appendix A TROUBLESHOOTING GUIDE

No.	Problem indication	Possible solution
1	No satellite found (no double beep)	Please make sure, that there is a line of sight to the satellite and no building, mountain or tree inbetween
2	No satellite found (no double beep)	Please make sure, that the cabling form SSC to the iLNB is correct
3	IP Modem does not work, Low Battery LED is red	Battery voltage below 11 V, please charge battery
4	Satellite pointed, but Rx LED remains off, Warning LED remains on	Failure in pointing process. Please switch off and switch on again the IP Modem, stowe the antenna and try again
5	Satellite pointed, but Rx LED remains off, Warning LED remains on	Please make sure, that the cabling from SSC to IP Modem is correct
6	Satellite pointed, but Rx LED remains off, Warning LED remains on	IP Modem not configured correctly. Please check configuration in Web Interface (see section 8)
7	RX LED is green, but TX LED remains off and Warning LED remains on	Please make sure, that the cabling from the IP Modem to the iLNB is correct.
8	RX LED is green, but TX LED remains off and Warning LED remains on	Please check error message in web interface (see section 8)
9	Rx LED green, Tx LED green or off, Warning LED off, but no	Bad Ethernet connection between IP Modem and PC, bad cable
	Internet access	PC network not configured correctly, please see section 4
10	No connectivity with IP Modem web interface.	PC network not configured correctly, please see section 8.
11		
12	Error information in the web interface:	1. Is the antenna correctly pointed?
	No demodulator lock	2. Is there a problem with the connectivity between terminal and antenna?
	Modem LED is red	3. Verify the configuration of the air interface.



No.	Problem indication	Possible solution
		Frequency
		Polarisation
		Symbol rate
13	Error information in the web interface:	Verify the configuration of the population id in the configuration – air interface:
	Network lookup failed – RMT table lookup failed (verify Population ld)	Default value=0
14	Error information in the web interface: Network login failed	Is the antenna properly pointed? Is the terminal provisioned by the ISP?



## Appendix B SATELLITE CONFIGURATION

🕹 sit_1-19 - Air Config	- Mozilla Firefox	
Datei Bearbeiten Ansich	t <u>C</u> hronik Lesezeichen E <u>x</u> tras <u>H</u> ilfe	
🗣 • 📚 🐼	1 Dr http://192.168.1.1/cgi-bin/modem_status?air_config	🔹 🕨 🔽 Google
Neutoo		
SHAPING THE FUTURE	OF SATELLITE COMMUNICATIONS	Air MAC address: 00:06:39:00:11:07 Installer   <u>Change password</u>   Leg out   Admin Login
🌔 Modem 🌔 Sc	ftware	[Reboot]
Menu	Configuration for Air Interface	
Status Configuration Ethanest Isterface - Ans chredes Device Software Installation Carrier Logfile	Initial Receive Transporder         Transport Mode       © DVB-S       ODVB-S2 (CCM)         Frequency:       11       I519740       GHz         Polarisation:       O Horizontal       Overtical         Symbol Rate:       1       .5000       MBaud         DVB-S FEC Code Rate:       O auto       1/2       2/3       3/4       5/6       7/8         DVB-S2 Roll-off Factor:       © 35 %       22 %       20 %       Population ID:       0       Image: Color C	Save

Fertig **Start** & Config-... & Microsoft PowerPoint ...

DE | Desktop 👋 📢 😂 🛒 🔀 🔒 🔰 🏹 💭 18:42



## Appendix C ACRONYMS

Acronym / term	Description
8PSK	8 Phase Shift Keying
AC	Alternating Current
ARP	Address Resolution Protocol
АТМ	Asynchronous Transfer Mode
BER	Bit Error Rate
C/N	Carrier to Noise ratio
ССМ	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)
FCT	Frame Composition Table
FEC	Forward Error Correction
FTP	File Transfer Protocol
GMSK	Gaussian Minimum Shift Keying
НТТР	Hyper Text Transfer Protocol
ICMP	Internet Control Message Protocol
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
NCR	Network Clock Reference
NIT	Network Information Table
РАТ	Program Association Table
PC	Personal Computer
РМТ	Program Map Table
QPSK	Quadrature Phase Shift Keying
RCS	Return Channel Satellite
RF	Radio Frequency
RMT	RCS Map Table
Rx	Receive
SAP	Satellite Access Provider
SCT	Superframe Composition Table
SDT	Service Descriptor Table
ТВТР	Time Burst Time Plan
TCP (TCP/IP)	Transmission Control Protocol
тст	Time Composition Table
Тх	Transfer
UDP	User Datagram Protocol
VSAT	Very Small Aperture Terminal
WCT	Waveform Composition Table

 Table 15:
 Acronyms



## Appendix D SPECIFICATIONS

#### IPmodem (indoor unit)

#### **Forward Channel**

- Modulation/coding
  - o DVB-S
  - o Rate 1/2, 2/3, 3/4, 5/6, 7/8 (QPSK)
  - DVB-S2 CCM
  - Rate 1/2, 2/3, 3/4, 5/6, 7/8 (8PSK)
  - o Rate 1/2, 2/3, 3/4, 5/6, 7/8 (QPSK)
- Symbol rate
  - DVB-S : 1-45 Mbaud
  - o DVB-S2 : 3-30 Mbaud
- MPEG TS rates
  - $\circ$  1-80 Mbps

#### **Return Channel**

- Modulation/coding
  - GMSK BT = 0.5
  - Rate 1/2, 2/3, 3/4 Turbo (GMSK)
- Symbol rate
  - o 128, 256 Kbaud
- ATM data rates
  - 143 kbps

#### IDU and IFL Interface

- RF In
  - Connector: F (female)
  - o Impedance: 75 Ohm



- Acquisition range : +/- 5 MHz
- Frequency: 950 2100 MHz
- Rx level: -65 to -25 dBm
- RF Out
  - Connector: F (female)
  - o Impedance: 75 Ohm
  - Frequency: 2750-2900MHz (Ku band)
  - o Tx level: 0 dBm

#### Performance

- IP data Throughput
  - 2 Mbit/s IP forward
  - Up-to 143 kbit/s ATM return

#### Management

Web GUI

#### LAN interfaces

Ethernet 10/100 baseT (RJ-45 connector)

#### Standards

- EN 302307: DVB-S2
- EN 300421: DVB-S
- EN 301790: DVB-RCS
- EN 50478: SATMODE
- EN 301428: VSAT spectrum usage
- IEEE 802.3: 10T Ethernet
- IEEE 802.3: 100TX Ethernet

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#### **Routing Protocol**

- RFC 768: UDP
- RFC 791: IP
- RFC 792: ICMP
- RFC 793: TCP
- RFC 826: ARP
- RFC 959: FTP
- RFC 2131: DHCP
- RFC 2186, 2187: Caching protocols
- RFC 2096: IP forwarding

#### **Power Supply**

Power supply: 210-260 VAC, 50 Hz

#### Environment

- Operational: 0 to 40 deg C \* non condensing
- Storage: -40 to 70 deg C up to 95% condensing
- Humidity: 10% to 70% (non-condensing)

#### Sizes

• 190 x 50 x 167 mm

#### iLNB (outdoor unit)

#### Interface

- RF Out
  - EIRP NOMINAL: 35.8 + 20\*log(f/14 GHz) dBW (with 75 cm antenna)



- Frequency range: 13.75 14.5 GHz (Ku Band)
- Polarisation: linear and orthogonal to Rx
- RF In
  - Frequency: 10.7 12.75 GHz
  - Polarisation Selection: Physical Mounting

#### Environment

- The ODU operates nominally under the following conditions:
  - Ambient Temperature: -30 to +60 °C
  - Weather protection: IP67
  - Humidity: 0% to 100% (condensing)
  - Solar Radiation: 500 W/m<sup>2</sup> maximum
  - Rain: Up to 40 mm/h
  - Wind: Up to 80 km/h keine Verschlechterung
  - Survival wind speed: 180 km/h

#### Performance

- Transmission Characteristics
  - Output Power. (nominal): + 27 dBm typ., 25.5 dBm min.
- Receiver transfer Characteristics
  - G/T clear weather: 14 dB/K
  - $\circ~$  Gain (over temp. & freq.): 57 to 70 dB  $\pm$  0.5 dB/10° 2-160 kbps

IPcopter mobile internet communication

Appendix E KONTAKT