Belgacom b-box

Instructions for use

Version 1.0



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CHAPTER 1 INTRODUCTION

Congratulations on your purchase of the Belgacom b-box. We are proud to provide you with a powerful yet simple communication device for connecting your local area network (LAN) to the Internet. For those who want to surf the Internet in the most secure way, this router provides a convenient and powerful solution. The Belgacom b-box also enables service providers to provide their residential and small office home office (SOHO) customers with high-quality telephony service using traditional analog telephones and fax machines.

About the Belgacom b-box

The Belgacom b-box provides Internet access to multiple users by sharing a single-user account. It is a cost-efficient means for service providers to migrate their customers' traditional analog telephones and fax machines onto IP-based networks. This new technology provides many secure and cost-effective functions. It is simple to configure and can be up and running in minutes.

Telephony over IP

Using Telephony over IP, instead of making calls over the regular telephone network, calls are made over computer (IP) networks, either through your Internet Service Provider's connection or through your local network.

The basic steps involved in Telephony include the conversion of an analog voice signal to digital, the encoding and then compression of the signal into Internet Protocol (IP) packets. The Belgacom b-box is equipped with a digital signal processor (DSP), which segments the voice signal into frames and stores them in voice packets. Using the industry standard codecs, G.711, G.723.3 and G.729, these packets are encoded. These IP packets are then transmitted in accordance with Internet Engineer Task Force specification SIP over the Internet to their destination where the process is reversed.

Important information

• Please install and connect the product in the way as described in the chapter 'Before You Start Guide' only. This assures best installation results with the least technical hassles.

• Please read this guide carefully before using the ADSL Wireless Base Station; and keep it for future reference.

• During set-up and installation, it may be helpful to have the instructions for your PC and other network components at hand.

Safety Precautions

- Do not expose the product to excessive moisture, rain, sand or heat sources.
- The product should not be exposed to dripping or splashing. No object filled with liquids, such as vases, should be placed on the product.
- Keep the product away from domestic heating equipment and direct sunlight.
- Allow a sufficient amount of free space all around the product for adequate ventilation.
- Do not open this product. Contact your retailer if you experience technical difficulties.

Environmental information

All redundant packing material has been omitted. We have done our utmost to make the packaging easily separable into three mono materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet). Your set consists of materials that can be recycled if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packing materials, exhausted batteries and old equipment.

Disclaimer

This product is provided by Philips 'as is' and without any express or implied warranty of any kind of warranties, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose are disclaimed. In no event shall Philips be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of information, data, or profits; or business interruption) howsoever caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of inability to use this product, even if advised of the possibility of such damages. Philips further does not warrant the accuracy or completeness of the information, text, graphics, illustrative examples links or other items can deviate from the product.

CHAPTER 2 INSTALLATION

Before installing the Belgacom b-box, verify that you have all the items listed under "Package Contents." If any of the items are missing or damaged, contact your local distributor. Also be sure that you have all the necessary cabling before installing the Belgacom b-box. After installing the Belgacom b-box, refer to "Configuring the Belgacom bbox".

Package Contents

After unpacking the Belgacom b-box, check the contents of the box to be sure you have received the following components:

- Belgacom b-box
- Power adapter
- One CAT-5 Ethernet cable
- Telephone patch cable
- One CD with drivers and documentation

Immediately inform your dealer in the event of any incorrect, missing, or damaged parts. If possible, please retain the carton and original packing materials in case there is a need to return the product.

System Requirements

You must meet the following minimum requirements:

- Internet access from your Internet Service Provider (ISP) using an ADSL line.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card.
- TCP/IP network protocols installed on each PC that will access the Internet.
- A Java-enabled web browser, such as Microsoft Internet Explorer 5.0 or above installed on one PC at your site for configuring the Belgacom b-box.

Hardware Description

The Belgacom b-box contains an integrated ADSL modem and connects to the Internet or to a remote site using its RJ-11 port. It can be connected directly to your PC or to a local area network using the Fast Ethernet LAN ports.

Access speed to the Internet depends on your service type. Full-rate ADSL2+ provides up to 26 Mbps downstream and 1500 kbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 kbps upstream. However, you should note that the actual rate provided by specific service providers might vary dramatically from these upper limits.

The Belgacom b-box comes with two FXS ports to connect with a phone or fax, turning your regular phone into an IP phone. Through your telephone or FAX, your can dial out through the gateway to another Telephone or FAX.

Data passing between devices connected to your local area network can run at up to 100 Mbps over the four Fast Ethernet ports.

The Belgacom b-box connections are described in the following figure and table.



Item	Description
ADSL Port	Blue ADSL port (RJ-11). Connect your ADSL line to this port.
LAN Ports	Yellow Fast Ethernet ports (RJ-45). Connect devices on your local area network to these ports (i.e., a PC or switch).
TV Ports	Grey Fast Ethernet ports (RJ-45). Connect your settop box(es) to these ports.
Reset Button	Use this button to reset the unit and restore the default factory settings. To reset without losing configuration settings, see "Reset" on page 4-85.
Power Inlet	Connect the included power adapter to this inlet. Warning: Using the wrong type of power adapter may cause damage.
FXS Ports	Green RJ-11 port. Connect to standard analog telephone set or FAX.

Hardware Installation

ADSL Connection

Connect your ADSL line to this port.

Fast Ethernet Connection

Connect a PC to one of the RJ-45 ports on the Belgacom b-box with the provided network cable. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

The LAN ports are dual-speed RJ-45 ports. They support auto-negotiation, so the optimum communication mode (half or full duplex) and data rate (10 Mbps or 100 Mbps) are selected automatically.

FXS Connection

Connect a standard analog telephone set or fax machine to either of the FXS ports on the rear panel. The FXS ports are like your local phone service provider in that they can generate and provide a ring signal.

Note: When you have connected a device to the FXS port as you will hear a dial tone provided by the FXS port once the handset is off-hook.

ISP Settings

Please collect the following information from your ISP before setting up the Belgacom bbox:

- □ ISP account user name and password
- □ Protocol, encapsulation and VPI/VCI circuit numbers
- DNS server address
- □ IP address, subnet mask and default gateway (for fixed IP users only)

Connect the System

The Belgacom b-box can be positioned at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however, comply with the following guidelines:

- Keep the Belgacom b-box away from any heating devices.
- Do not place the Belgacom b-box in a dusty or wet environment.

You should also remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the Belgacom b-box.

Connect the ADSL Line

Run standard telephone cable from the wall jack providing ADSL service to the RJ-11 ("ADSL") port on your Belgacom b-box. When inserting an ADSL RJ-11 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated. If you are using splitterless ADSL service, be sure you add low-pass filters between the ADSL wall jack and your telephones. (These filters pass voice signals through but filter data signals out.)

Phone Line Configuration

Installing a Full-Rate Connection

If you are using a full-rate (G.dmt) connection, your service provider will attach the outside ADSL line to a data/voice splitter. In this case you can connect your phones and computer directly to the splitter as shown below:



Figure 2-3. Installing with a Splitter

Installing a Splitterless Connection

If you are using a splitterless (G.lite) connection, then your service provider will attach the outside ADSL line directly to your phone system. In this case you can connect your phones and computer directly to the incoming ADSL line, but you will have to add low-pass filters to your phones as shown below:



Figure 2-4. Installing without a Splitter

Attach to Your Network Using Ethernet Cabling

The LAN ports on the Belgacom b-box auto-negotiates the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, as well as the transmission mode to half duplex or full duplex.

Use twisted-pair cabling to connect any of the LAN ports on the Belgacom b-box to an Ethernet adapter on your PC. Otherwise, cascade the LAN port on the Belgacom b-box to an Ethernet hub or switch, and then connect your PC or other network equipment to the hub or switch. When inserting an RJ-45 connector, be sure the tab on the connector clicks into position to ensure that it is properly seated.

- **Warning:** Do not plug a phone jack connector into an RJ-45 port. This may damage the Belgacom b-box. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.
- **Notes: 1.** Use 100-ohm shielded or unshielded twisted-pair cable with RJ-45 connectors for all Ethernet ports. Use Category 3, 4, or 5 for connections that operate at 10 Mbps, and Category 5 for connections that operate at 100 Mbps.
 - **2.** Make sure each twisted-pair cable length does not exceed 100 meters (328 feet).

Connect the Power Adapter

Plug the power adapter into the power socket on the side panel of the Belgacom b-box, and the other end into a power outlet.

Check the power indicator on the front panel is lit. If the power indicator is not lit, refer to "Troubleshooting" on page A-1.

In case of a power input failure, the Belgacom b-box will automatically restart and begin to operate once the input power is restored.

If the Belgacom b-box is properly configured, it will take about 30 seconds to establish a connection with the ADSL service provider after powering up. During this time the Sync indicator will flash. After the ADSL connection has been established, the ADSL Sync LED will stay on.

CHAPTER 3 CONFIGURING THE CLIENT PC

After completing hardware setup by connecting all your network devices, you need to configure your computer to connect to the Belgacom b-box. First determine how your ISP issues your IP address. Many ISPs issue these numbers automatically using Dynamic Host Configuration Protocol (DHCP). Other ISPs provide a static IP address and associated numbers, which you must enter manually. How your ISP assigns your IP address determines how you need to configure your computer.

Depending on your operating system see:

"Configuring Your Computer in Windows 2000" on page 3-3,

"Configuring Your Computer in Windows XP" on page 3-9,

"Configuring Your Macintosh Computer" on page 3-15.

TCP/IP Configuration

To access the Internet through the Belgacom b-box, you must configure the network settings of the computers on your LAN to use the same IP subnet as the Belgacom b-box. The default network settings for the ADSL Router are:

IP Address: 192.168.1.1 Subnet Mask: 255.255.255.0

Note: These settings can be changed to fit your network requirements, but you must first configure at least one computer to access the Belgacom b-box's web configuration interface in order to make the required changes. (See "Configuring the Belgacom b-box" on page 4-1 for instruction on configuring the Belgacom b-box.)

Configuring Your Computer in Windows 2000 DHCP IP Configuration

- 1. On the Windows desktop, click Start/Settings/ Network and Dial-Up Connections.
- 2. Click the icon that corresponds to the connection to your Belgacom b-box.
- 3. The connection status screen will open. Click Properties.

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Acrobat Reader	5.0	
J WinZip		
🗟 Programs	+	
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Settings		ontrol Panel
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Double-click Internet Protocol (TCP/IP).
 If "Obtain an IP address automatically" and "Obtain DNS server address automatically" are already selected, your computer is already configured for DHCP. If not, select these options. Click Cancel to close each window.

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General Sharing				
Connect using:				
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Obtain IP Settings From Your Belgacom b-box

Now that you have configured your computer to connect to your Belgacom b-box, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your Belgacom b-box, you can verify that you have configured your computer correctly.

1. On the Windows desktop, click Start/Programs/ Accessories/Command Prompt.

2. In the Command Prompt window, type "IPCONFIG /RELEASE" and press the ENTER key.





 Type "IPCONFIG /RENEW" and press the ENTER key. Verify that your IP Address is now 192.168.1.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.1.254. These values confirm that your Belgacom b-box is functioning.
 Type "EXIT" and press the ENTER key to close the Command Prompt window.

Command Prompt	_ [
Microsoft Windows 2000 [Version 5.00.2195] (C) Copyright 1985-1999 Microsoft Corp.	
C:\>IPCONFIG /RELEASE	
Windows 2000 IP Configuration	
IP address successfully released for adapter "Local Area Connection 1"	
C:\>IPCONFIG /RENEW	
Windows 2000 IP Configuration	
Ethernet adapter Local Area Connection 1:	
Connection-specific DNS Suffix .: IP Address	

Manual IP Configuration

1. Follow steps 1-4 in "DHCP IP Configuration" on page 3-3.

2. Select "Use the following IP address automatically." Enter an IP address based on the default network 192.168.1.x (where x is between 2 and 254), use 255.255.255.0 for the subnet mask and the IP address of the Belgacom b-box (default: 192.168.1.1) for the Default gateway field.

3. Select "Use the following DNS server addresses."

4. Enter the IP address for the Belgacom b-box in the Preferred DNS server field. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add a specific DNS server into the Alternate DNS Server field and click OK to close the dialog boxes.

5. Record the configured information in the following table.

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'ou can get IP ≈ettings assigned nis capability. Otherwise, you ne ne appropriate IP settings.	l automatically if your network supports ed to ask your network administrator for
C Obtain an IP address autor	natically
Use the following IP address	55:
IP address:	192.168.2.20
Subnet mask	255.255.255.0
Default gateway:	192.168.2.1
C Obtain DNS server address	s automatically
Use the following DNS ser	ver addresses:
Preferred DNS server:	192.168.2.1
Alternate DNS server:	· · ·
	Advanced

TCP/IP Configuration Setting
IP Address
Subnet Mask
Preferred DNS Server
Alternate DNS Server
Default Gateway

Disable HTTP Proxy

You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the Belgacom b-box's HTML configuration pages.

Your computer is now configured to connect to the Belgacom b-box.

Configuring Your Computer in Windows XP DHCP IP Configuration

• On the Windows desktop, click Start/Control Panel.

- In the Control Panel window, click Network and Internet Connections.
- The Network Connections window will open. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Belgacom b-box.
- In the connection status screen, click Properties.



- Double-click Internet Protocol (TCP/IP).
- If "Obtain an IP address automatically" and "Obtain DNS server address automatically" are already selected, your computer is already configured for DHCP. Click Cancel to close each window.

neral Advanced	
Connect using:	
I SMC EZ Card 10/100	(SMC1255FTX-ST) #2
	Configure
his connection uses the follo	owing items:
🗹 🚚 QoS Packet Sched	uler 🔼
AEGIS Protocol (IEE	EE 802.1x) v2.3.1.9
	sevie)
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Obtain IP Settings from Your Belgacom b-box

Now that you have configured your computer to connect to your Belgacom b-box, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your Belgacom b-box, you can verify that you have configured your computer correctly.

On the Windows desktop, click Start/Programs/Accessories/ Command Prompt.
 In the Command Prompt window, type "IPCONFIG /RELEASE" and press the ENTER

key.





 Type "IPCONFIG /RENEW" and press the ENTER key. Verify that your IP Address is now 192.168.1.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.1.1. These values confirm that your Belgacom b-box is functioning.



Type "EXIT" and press the ENTER key to close the Command Prompt window.

Your computer is now configured to connect to the Belgacom b-box.

Manual IP Configuration

- 1. Follow steps 1-5 in "DHCP IP Configuration" on page 3-9.
- 2. Select "Use the following IP Address."
- 3. Enter an IP address based on the default network 192.168.1.x (where x is between 2 and 254), use 255.255.255.0 for the subnet mask. and the IP address of the Belgacom b-box (default: 192.168.1.1) for the Default gateway field.
- 4. Select "Use the following DNS server addresses."
- Enter the IP address for the Belgacom b-box in the Preferred DNS server field. This
 automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise,
 add a specific DNS server into the Alternate DNS Server field and click OK to close the
 dialog boxes.
- 6. Record the configured information in the following table.

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Obtain an IP address autom	atically
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IP address:	192.168.2.22
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192.168.2.1
Obtain DNS server address	automatically
Ose the following DNS serv	er addresses:
Preferred DNS server:	192.168.2.1
Alternate DNS server:	and the second second
	Aduppend

TCP/IP Configuration Setting

IP Address
Subnet Mask
Preferred DNS Server
Alternate DNS Server
Default Gateway

Disable HTTP Proxy

You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the Belgacom b-box's HTML configuration pages.

Your computer is now configured to connect to the Belgacom b-box.

Configuring Your Macintosh Computer

You may find that the instructions here do not exactly match your operating system. This is because these steps and screen shots were created using Mac OS 10.2. Mac OS 7.x and above are similar, but may not be identical to Mac OS 10.2.

Follow these instructions:

System Preferences Dock Location	•
Dock Location	•
Location	
	•
Recent Items	•
Force Quit	
Sleep	
Restart	
Shut Down	
Log Out 🏠	#Q
	Recent Items Force Quit Sleep Restart Shut Down Log Out

19

 Double-click the Network icon in the Systems Preferences window.

000		S	ystem Prefere	nces		(
Personal						
9		Elle New	(3)		1	2
Desktop	Dock	General	International	Login Items	My Account	Screen Effects
Hardware						
0	6		8	(<u> </u>	0	۵
CDs & DVDs	ColorSync	Displays	Energy Saver	Keyboard	Mouse	Sound
Internet & I	Network					
	(A)	0				
Internet	Network	QuickTime	Sharing			
System						
11	9	A		8	2	\bigcirc
Accounts	Classic	Date & Time	Software Update	Speech	Startup Disk	Universal Access

□ If "Using DHCP Server" is already selected in the Configure field, your computer is already configured for DHCP. If not, select this Option.

	Location: Automatic		
how: Built-in Ether	net		
/	TCP/IP PPPoE App	eTalk Proxies	
Configure:	Using DHCP	:	
		DNS Servers	(Optional)
IP Address:	10.1.28.83 (Provided by DHCP Server)		
Subnet Mask:	255.255.252.0		
Router:	10.1.28.254	Search Domains	(Optional)
DHCP Client ID:	(Ortiseal)		
Ethernet Address	00:50:e4:00:2c:06	Example: apple.com earthlink.net	

- Your new settings are shown in the TCP/IP tab. Verify that your IP Address is now
 192.168.1.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.1.1.
 These values confirm that your Belgacom b-box is functioning.
- Close the Network window.

Now your computer is configured to connect to the Belgacom b-box.

Disable HTTP Proxy

You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the Belgacom b-box's HTML configuration pages. The following steps are for Internet Explorer.

Internet Explorer

 Open Internet Explorer and click the Stop button. Click Explorer/Preferences.

- □ In the Internet Explorer Preferences window, under Network, select Proxies.
- □ Uncheck all check boxes and click OK.



Security Security Zones	If you are accessing the internet from gateways to allow internet access. C	n a private network, you can se Contact your network manager
Ratings	applications through Internet Config.	econgs are shared with other
Advanced	- Use Proxy Servers	
Eorms AutoFill	Web Proxy:	Settings
Forms AutoComplete	Use Web Proxy for all	
AutoFill Profile	Bypass Web Proxy for ETP	
Receiving Files		Cathlana
Download Ontions	Secure Proxy:	Settings
File Helpers	Mail Proxy:	Settings
Cookies	Gopher Proxy:	Settings
Network		
Protocol Helpers	List the sites you want to connect to	directly, bypassing the proxie
Proxies	set above. Put a space or comma be	tween each site.
Site Passwords		
T F-mail		
General		
U U	0	

CHAPTER 4 CONFIGURING THE BELGACOM B-BOX

After you have configured TCP/IP on a client computer, use a web browser to configure the Belgacom b-box. The Belgacom b-box can be configured by any Java-supported browser such as Internet Explorer 4.0 or above. Using the web management interface, you may configure the Belgacom b-box and view statistics to monitor network activity.

To access the Belgacom b-box's management interface, enter the IP address of the Belgacom bbox in your web browser:

http://192.168.1.1

(The Belgacom b-box automatically switches to Port 88 for management access.) Then click LOGIN. (By default there is no password.)



Navigating the Web Browser Interface

The Belgacom b-box's management interface consists of a Setup Wizard and an Advanced Setup section.

Setup Wizard: Use the Setup Wizard if you want to quickly set up the Belgacom b-box. Go to "Setup Wizard".

Advanced Setup: Advanced Setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, virtual server setup, virtual DMZ host, as well as other functions. Go to "Advanced Setup".

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the "SAVE SETTINGS" or "NEXT" button at the bottom of the page to enable the new setting.

Note: To ensure proper screen refresh after a command entry, be sure that Internet Explorer 5.0 is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

Setup Wizard

Quickstart

The first item in the Setup Wizard is Quickstart. The ADSL Wireless Base Station displays the Quickstart Web page.

Enter the Username and Password supplied by your Internet Service Provider.

belgacom		nep
 1. Service Provider Login 		<u> </u>
	Quick Start Internet Service Provider Login	
	Provided by Internet Service Provider	
	Username	
	Password	
	Confirm Password	
	Wireless Network Settings	
	Enable Wireless O ENABLE DISABLE	
	Enable Broadcast () ENABLE () DISABLE () DIS	
	• Telephone Settinge	
	Telephone Service O ENARLE O DISARLE	
	Save	

• Enable Wireless

The wireless function is enabled by default. If you want to disable the wireless function of the ADSL Wireless Base Station, you can uncheck the "Enable Wireless" checkbox.

Enable Broadcast

The ADSL Wireless Base Station broadcasts its Wireless ID by default. This means that the SSID will appear as an available network when scanned for by wireless- enabled devices. If you uncheck this checkbox, you must manually type in the identical SSID in your wireless devices or clients in order to connect to the ADSL Wireless Base Station network.

• Wireless ID (SSID)

The Wireless ID is preset to "WiFi_xx?". The "xx" corresponds with an unique number in your ADSL Wireless Base Station. You can either leave it as is, or change it. On client PCs' software, this might also be called the Network Name. The Wireless ID is used to identify this particular wireless network. Please refer to the manual of your wireless client on how to connect to the ADSL Wireless Base Station.

• Telephone Service

The telephone service is disabled by default. If you want to enable the Telephone function of the ADSL Wireless Base Station you can check the enable box to turn on the "Telephone Service" function.

• Click the "Save Settings/Next" button.

Once you leave your Telephone Service disabled please click on "Save Settings" and continue. You can now surf to your favorite websites by typing an URL in your browser's location box or by selecting one of your favorite Internet bookmarks. If you enabled the Telephone Service please click on "Next" and continue with Step "Phone Number Selection".

Configure your Telephone settings

1. Phone Number Selection

Please indicate which number you want to use and click "Next". For this example scenario with "3 Phone numbers" has been choosen to explain the generic configuration.

belgacom		<u>heip</u>
 ◆ 1. Service Provider Login ◆ 2. Connection Status 	Phone Number Selection Please select the service for which yo signed up. 1 Phone number (common number on port 1 and 2) 2 Phone numbers (Common number on port 1 and 2, Dedicated number on port 2) 2 Phone numbers (Dedicated number on port 1, Dedicated number on port 2) 3 Phone numbers (Common number on port 1, Dedicated number on port 2) Back	☆ ∃
Advanced Settings		

2. Phone Number Settings

Enter the telephone number, Login and Password supplied by your Internet Service provider. Repeat this for each available port. The Belgacom b-box can append telephone numbers to outgoing calls. Select the number you want to use for each port. Click "Save Settings". The connection status page will appear.

belgacom	<u>001</u>
 I. Service Provider Login 2. Connection Status 	유 - 권 Phone Number Selection
	Number 1 Please insert here the Phone number you want to assign to Voice Port 1 Telephone Number Login Password
	Number 2 Please insert here the Phone number you want to assign to Voice Port 2 Telephone Number Login
	Password Back Save

belgacom		help
 ● 1. Service Provider Login ● 2. Connection Status 	Connection Status Unable to establish ADSL Internet connection. Common number : registration ok Please click "Back" and verify that the username and password you have entered are correct. Also check your ADSL line. Back OK	Ω2
Advanced Settings		

3. Click the "Ok" button.

Congratulations! Your Telephone configuration is complete. Click "OK" to continue.

ADSL

ADSL (Asymmetric Digital Subscriber Line) is designed to deliver more bandwidth downstream (from the central office to the customer site) than upstream. This section is used to configure the ADSL operation type and shows the ADSL status.

ADSI Settings		<u> </u>
» Quick Start	ADSL Parameters and Status	
 Parameters Status 	This page displays ADSL-related parameters and str	atus.
Advanced Settings		

Status

The Status screen displays information on connection line status, data rate, operation data and defect indication, and statistics.

SL Settings				
atus	Status			
den	You can use the Status a	creen to see the connection status for the rout	er's WANLAN interfaces, f	Immeare and hardware version number
ne networking	any wegai altempts to acc	ress your network, as were as information on a	Chor clent Pus currently (connected to your network.
eless	Current Time: 07/03/2	007 00:02:49 am		
te .	ADSL: Physical Down	P Address: 192.168.1.1	Numbers of D	HCP Clients: 0
wal		Subnet Mask: 255.255.255.0 DHCP Server: Enabled	Runtime Code 0.89.4 (Jul 1	Version: 1 2007 10:21:32)
P	Connect	Firewalt Enabled	Boot Code Ve ADSL Modern	rsion: 0.72.8 Code Version: 05.02.00.60A
P phone	Refresh	Wireless: Enabled	LAN MAC Ad	dress: 00-1A-2A-80-47-80
tenance			WAN MAC Ad	Idress: 00-1A-2A-80-47-80
			Serial Num: 1	(723310378
	Talashaan Datas an	10-11		
	relephone status and	o Can Loga		
	Lanta			
	ATM PVC			
	VC 1		VC 2	
	VRVO	8/35	VRIVCI	6/32
	Encapsulation	LLC	Encapsulation	LLC
	IP Address	Down	P Address	Down
	Subnet Mask	-	Subnet Mask	
	Primary DNS	-	Primary DNS	-
	Secondary DNS	-	Secondary DNS	
		Disconnect Connect		
	VC 3		VC 4	
	VPVVCI	1/32	VPVVCI	1/00
	Encepsulation	LLC 1483 Bridging	Encapsulation	LLC 1483 Bridaing
	IP Address	Down	IP Address	Down
	Subnet Mask	-	Subnet Mask	
	Primary DNS	-	Primary DNS	
	Secondary DNS		Secondary DNS	
	_		_	
	VC 5		VC 6	
	VPVVCI	1/34	VPVVCI	1/05
	Encapsulation Protocol	LLC 1453 Bridaine	Encapsulation Protocol	LLC 1483 Bridaina
	IP Address	Down	IP Address	Down
	Subnet Mask		Subnet Mask	
	Primary DNS	-	Primary DNS	
	Secondary DNS		Secondary DNS	
	VC7		VC8	
	VPVVCI	1/38	VPVVCI	1/37
	Protocol	1403 Bridging	Protocol	1483 Bridging
	P Address	Down	P Address	Down
	Subnet Mask Gateway		Subnet Mask Gateway	
	Primary DNS	-	Primary DNS	
	Secondary DNS		Secondary DNS	
			100.00	
	VC 9		VC 10	
	VPVVCI	1/38	VPVVCI	1/39
	Protocol	1483 Bridging	Protocol	1483 Bridging
	P Address	Down	P Address	Down
	Subnet Mask Gateway	_	Subnet Mask Gateway	
	Primary DNS	-	Primary DNS	-
	Secondary DNS		Secondary DNS	
	VC 11		VC 12	
	VPVVCI	0/40	VPVVCI	1941
	Encapsulation	LLC MAC Encapsulated Bouting	Encapsulation	LLC 1463 Bridging
	IP Address	Down	IP Address	Down
	Subnet Mask	-	Subnet Mask	
	Primary DNS	-	Primary DNS	
	Secondary DNS		Secondary DNS	
		Release Renew		
	Security Log		DHCP Client Log	
	View any attempts that I network	have been made to gain access to your	View information on LAI router.	NDHCP clients currently linked to the
		22.168.1.11 login success		
	07/03/2007 00:02:23 11			
	07/03/2007 00:02:03 1/ 07/03/2007 00:02:03 C/ 07/03/2007 00:02:04 1/	an't find NTP time. 92.968.1.11 login success		
	07/03/2007 00:02:03 1/ 07/03/2007 00:02:03 C/ 07/03/2007 00:00:44 1/	an't find NTP time. 92.568.1.11 login success		
	07/03/2007 00:02:03 1/ 07/03/2007 00:02:03 C/ 07/03/2007 00:00:44 1/	ant find NTP time. 52:168-1.11 login success		
	07/03/2007 00:02:23 11 07/03/2007 00:02:03 Ci 07/03/2007 00:00:44 11	ant find NTP time. 12:168.1.11 login success		

Parameter	Description
Status	
 Line Status 	Shows the current status of the ADSL line connection.
 Link Type 	Two types of link: Fast path and Interleaved path.
Data Rate	
 Upstream 	Maximum upstream data rate.
• Downstream	Maximum downstream data rate.
Operation Data/	
Defect Indication	
 Noise Margin 	Maximum upstream and downstream noise margin.
 Attenuation 	Maximum reduction in the strength of the upstream and downstream signal
 Fast Path FEC 	
Correction	There are two latency paths that may be used: fast and interleaved. For
	either path, a forward error correction (FEC) scheme is employed to ensure
	higher data integrity. For maximum noise immunity, an interleaver may be
	used to supplement FEC.
 Interleaved Path FEC 	An interleaver is basically a buffer used to introduce a delay, allowing for
Correction	additional error correction techniques to handle noise. Interleaving slows
	the data flow and may not be optimal for real-time signals such as video
	transmission.
Fast Path CRC Error	The number of Fast Path Cyclic Redundancy Check errors.
Interleaved Path CRC	
Error	The number of Interleaved Path Cyclic Redundancy Check errors.
Loss of Signal Defect	Momentary signal discontinuities.
Fast Path HEC Error	Fast Path Header Error Concealment errors.
Interleaved Path HEC	
Error	Interleaved Path Header Error Concealment errors.
Statistics	(Superframes represent the highest level of data presentation. Each
	superframe contains regular ADSL frames, one of which is used to provide
	superframe synchronization, identifying the start of a superframe. Some of
	the remaining frames are also used for special functions.)
Keceived cells	Number of cells received.
 Transmitted cells 	Number of cells transmitted.

The following items are included on the ADSL status page:

Advanced Setup

Clicking the Home icon returns you to the home page. The Main Menu links are used to navigate to other menus that display configuration parameters and statistics.

ADSL Settings		
Advanced Settings	System	
⇒ Status	-,	
» System	This page includes all the basic configuration tools for the router, such as time	
» Time	zone, password settings, and remote management.	
» Password		
» Remote Management		
» DNS		
- M(0)		
> Home petworking		
> Nirelace		
» NAT		
» Route		
⇒ Firewall		
» SNMP		
> UPnP		
» Telephone		
» Maintenance		

The Belgacom b-box's advanced management interface contains 14 main menu items as described in the following table.

Menu Description

- System: Sets the local time zone, the password for administrator access, the IP address
 of a PC that will be allowed to manage the Belgacom b-box remotely, and the IP address
 of a Domain Name Server.
- WAN: Specifies the Internet connection settings.
- LAN: Sets the TCP/IP configuration for the Belgacom b-box LAN interface and DHCP clients.
- Wireless: Configures the radio frequency, SSID, and security for wireless communications.
- NAT: Shares a single ISP account with multiple users, sets up virtual servers.
- Route: Sets routing parameters and displays the current routing table.

Menu Description

FirewallConfigures a variety of security and specialized functions including: Access Control, URL blocking, Internet access control scheduling, Intruder detection, and DMZ.

SNMP	Community string and trap server setting.
ADSL	Sets the ADSL operation type and shows the ADSL status.
Telephony	Configures Telephony settings for the Belgacom b-box.
QoS	Allows you to optimize voice quality by prioritizing voice over data traffic.

File	Allows you to enable or disable file server functionality. Server
Tools	Contains options to back up and restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.
Status	Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and firewall information.
	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number.
	Shows the security and DHCP client log.

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, click the "SAVE SETTINGS" or "NEXT" button at the bottom of the page to make the new settings active.

Note: To ensure proper screen refresh after a command entry, check that Internet Explorer 5.0 is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

System Settings

Time Settings

ADSL Settings		<u>ਨੇ</u> ਦ
Advanced Settings	Time Cattings	
» Status	Time Setungs	
» System	Set Time Zone	
» Time	Use this setting to insure the time-based client filtering feature and system log	
» Password	entries are based on the correct localized time.	
» Remote Management	(GMT+01:00)Brussels Conenhagen Paris Vilnius	
» DNS		
- M(A)	Configure Time Server (NTP)	
a Hone petworking	You can automatically maintain the system time on your ADSL router by	
» Wireless	synchronizing with a public time server over the internet.	
⇒ NAT	Finable Automatic Time Server Maintenance	
» Route		
» Firewall	When you enable this option you will need to configure two different time	
» SNMP	your area:	
>> UPnP		
» Telephone	Primary Server: 129.132.2.21 - Europe	
>> Maintenance	Secondary Server: 130.149.17.8 - Europe	
	Clear Save	

Set the time zone and time server for the Belgacom b-box. This information is used for log entries and client access control.

Check "Enable Automatic Time Server Maintenance" to automatically maintain the Belgacom bbox's system time by synchronizing with a public time server over the Internet. Then configure two different time servers by selecting the options in the Primary Server and Secondary Server fields.

Password Settings

Use this page to restrict access based on a password. By default, there is no password. For security you should assign one before exposing the Belgacom b-box to the Internet.

ADSL Settings		- <u>202</u>
Advanced Settings		
⇒ Status	Password Settings	
» System » Time	Set a password to restrict management access to the router.	
» Password	Idle Time Out: 10 Min	
» Remote Management	(Idle Time =0 : NO Time Out)	
>> DNS	Current Password:	
» WAN	New Password:	
» Home networking		
» Wireless	Re-Enter Password for Verification:	
⇒ NAT		
» Route	Clear Save	
» Firewall	Uidal Save	
» SNMP		
» UPnP		
» Telephone		
» Maintenañce		

Passwords can contain from 3 to12 alphanumeric characters and are not case sensitive.

Note: If your password is lost, or you cannot gain access to the user interface, press the reset button (colored blue) on the rear panel (holding it down for at least five seconds) to restore the factory defaults. (By default there is no password.)

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time an inactive login session will be maintained. If the connection is inactive for longer than the maximum idle time, it will be logged out, and you will have to login to the web management system again. (Default: 10 minutes)

Remote Management

By default, management access is only available to users on your local network. However, you can also manage the Belgacom b-box from a remote host by entering the IP address of a remote computer on this screen. Check the Enabled check box, and enter the IP address of the Host Address and click "SAVE SETTINGS."

Bomoto Management	
Remote Management	
Set the remote management of the router. If you want to manage the router from	
a remote location (outside of the local network), you must also specify the IP	
address of the remote PC.	
Host Address 0 0 0 0	
Enabled	
Clear Save	
	Set the remote management of the router. If you want to manage the router from a remote location (outside of the local network), you must also specify the IP address of the remote PC. Host Address 0, 0, 0, 0 Enabled Clear Save

Note: If you check "Enabled" and specify an IP address of 0.0.0.0, any host can manage the Belgacom b-box.

For remote management via WAN IP address you need to connect using port 8080. Simply enter WAN IP address followed by :8080 in the address field of your web browser, for example, 212.120.68.20:8080.

ADSL Settings		
Advanced Settings	DNS	
» Status	Dird	
» System	A Domain Name Server (DNS) is an index of IP addresses and Web addresses. If	
» Time	you type a Web address into your browser, such as selfcare.belgacom.net, a DNS server will find that name in its index and find the matching IP address:	
» Password	xxx.xxx.xxx. Most ISPs provide a DNS server for speed and convenience.	
» Remote	Since your Service Provider may connect to the Internet with dynamic IP settings,	
management	it is likely that the DNS server IP's are also provided dynamically. However, if	
» DHS	address here.	
» WAN		
» Home networking	Domain Name Server (DNS) Address 0 0 0 0	
» Wireless		
⇒ NAT	Secondary DNS Address (optional) 0 . 0 . 0 . 0	
» Route		
» Firewall		
» SNMP	Clear	
> UPnP		
» Telephone		
» Maintenance		

DNS

Domain Name Servers are used to map a domain name (e.g., www.somesite.com) to the equivalent numerical IP address (e.g., 64.147.25.20). Your ISP should provide the IP address of one or more Domain Name Servers. Enter those addresses on this page.

WAN

Specify the WAN connection parameters provided by your Internet Service Provider (ISP).

The Belgacom b-box can be connected to your ISP in one of the following ways:

- ATM PVC
- Clone MAC

ATM PVC

The Belgacom b-box uses ATM as its WAN interface. Click on each ATM VC for WAN configuration.

ADSL Settings					4115
Advanced Settings	ATM PVC				
⇒ Status ⇒ System ⇒ WAII ⇒ ATM PVC	ADSL router us which acts as	ses ATM as a WAN inter	its layer 2 protocol. face. The Gateway	ATM PVC is a virtual connection supports up to 12 ATM PVCs.	
» Clone Mac	Description	VPI/VCI	Encapsulation	Protocol	
 Home petworking 	<u>VC1</u>	8/35	LLC	PPPoE	
» Wireless	<u>VC2</u>	0/32	LLC	1483 Bridging	
⇒ NAT	VC3	1/32	LLC	1483 Bridging	
» Route	<u>VC4</u>	1/33	LLC	1483 Bridging	
⇒ Firewall	<u>VC5</u>	1/34	LLC	1483 Bridging	
» SNMP	<u>VC6</u>	1/35	LLC	1483 Bridging	
>> UPnP	<u>VC7</u>	1/36	LLC	1483 Bridging	
> Telephone	<u>VC8</u>	1/37	LLC	1483 Bridging	
⇒ Maintenance	<u>VC9</u>	1/38	LLC	1483 Bridging	
	<u>VC10</u>	1/39	LLC	1483 Bridging	
	<u>VC11</u>	0/40	LLC	MAC Encapsulated Routing	
	<u>VC12</u>	1/41	LLC	1483 Bridging	

See the table below for a description of the parameters.

Parameter Description

Description Click on the VC to set the values for the connection.

VPI/VCI Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI).

Encapsulation Specifies how to handle multiple protocols at the ATM transport layer.

. • VC-MUX: Point-to-Point Protocol over ATM Virtual Circuit Multiplexer (null encapsulation) allows only one

protocol running per virtual circuit with less overhead.

. • LLC: Point-to-Point Protocol over ATM Logical Link Control (LLC) allows multiple protocols running over one virtual circuit (using slightly more overhead).

Protocol Protocol used for the connection.

ATM Interface

Clicking on the ATM VC brings up the following screen. The Belgacom b-box uses ATM as its WAN interface. Protocols including 1483 Routing, 1483 Bridging, MAC Encapsulated Routing (MER), PPPoA and PPPoE with LLC-SNAP and VC-Mux encapsulations are supported for each ATM PVC.

		<u>î</u>
ADAL Settings Advanced Settings Status	ATM interface	
≫ System ≫ WAII	PPPoE1	
> ATM PVC	Protocol PPPoE 🗸	
» Clone Mac	VPI/VCI 8 / 35	
Home networking Wireless	Encapsulation LLC V	
» NAT	QoS Class UBR V	
» Route		
» Firewall		
≫ SNMP	Connect Type Always Connected	
» Telephone	Idle Time (Minute) 20	
⇒ Maintenance	Username test	
	Password	
	Confirm Password	
	MTU 1492	
	Clear Save	

When you have finished entering your connection parameters, click "SAVE SETINGS." You can verify that you have established an ADSL connection by clicking Status at the bottom of the left-hand menu. See "Status" on page 4-86.

See the table below for a description of the parameters.

Parameter Description

Protocol

- Disable: Disables the connection.
- 1483 Bridging: Bridging is a standardized layer 2 technology. It is typically used in corporate networks to extend the physical reach of a single LAN segment and increase the number of stations on a LAN without compromising performance. Bridged data is encapsulated using the RFC1483 protocol to enable data transport.
- PPPoA: Point-to-Point Protocol over ATM is a method of encapsulating data for transmission to a far point.
- 1483 Routing: 1483 Routing allows a simple, low-cost connection to the Internet via a standard Ethernet port. The router looks up the network address for each packet seen on the LAN port. If the address is listed in the routing table as local, it is filtered. If the address is listed under the ADSL port, it is forwarded. Or if the address is not found, then it is automatically forwarded to the default router (i.e., the Belgacom b-box at the head end).

- **D** PPPoE: Point-to-Point over Ethernet is a common connection method used for xDSL.
- MAC Encapsulated Routing: If your ADSL service is a Bridged mode service and you want to share the connection to multiple PC's, please select MAC Encapsulated Routing. MER is a protocol that allows you do IP routing with NAT enabled.

VPI/VCI See Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI). Data flows are broken up into fixed length cells, each of which contains a Virtual Path Identifier (VPI) that identifies the path between two nodes, and a Virtual Circuit Identifier (VCI) that identifies the data channel within that virtual path. Each virtual circuit maintains a constant flow of cells between the two end points. When there is no data to transmit, empty cells are sent. When data needs to be transmitted, it is immediately inserted into the cell flows.

Parameter Description

Encapsulation Shows the packet encapsulation type.

Packet encapsulation specifies how to handle multiple protocols at the ATM transport layer.

- □ VC-MUX: Point-to-Point Protocol over ATM Virtual Circuit Multiplexer (null encapsulation) allows only one protocol running per virtual circuit with less overhead.
- LLC: Point-to-Point Protocol over ATM Logical Link Control allows multiple protocols running over one virtual circuit (using slightly more overhead).

QoS Class ATM QoS classes including CBR, UBR and VBR.

PCR/SCR/MBS QoS Parameters - PCR (Peak Cell Rate), SCR (Sustainable Cell Rate) and MBS (Maximum Burst Size) are configurable.

IP assigned by Select Yes if the IP address was provided by your ISP. ISP

- IP Address If your IP address is assigned by the ISP each time you connect, leave this field all zeros. Otherwise, enter your ISP supplied static IP address here.
 - Subnet Mask If your subnet mask is assigned by the ISP each time you connect, leave this field all zeros. Otherwise, enter your subnet mask here.

Connect	Sets connection mode to always connected,
Туре	automatic or manual connection.
	Enter the maximum idle time for the Internet
Idle Time	connection.
(minutes)	After this time has been exceeded the
	connection will be
	terminated.
Username	Enter user name.
Password	Enter password.
Confirm	Confirm password.
Password	
MTU	Leave the Maximum Transmission Unit (MTU)
	at the default value (1500) unless you have a
	particular reason to change it.

Clone MAC Address

Clicking on the Clone MAC Address brings up the following screen.

ADSL Settings		
Advanced Settings	Clone MAC Address	
System WAII ATM PVC	Some ISPs require you to register your MAC address with them. If you have done this, the IMAC address of the Gateway must be changed to the MAC address that you supplied to your ISP.	
» Clone Mac	WAN Interface MAC Address:	
 Home networking Wireless NAT Route 	Use the Gateway's default MAC address 00:1A:2A:BD:47:8D Use this PC's MAC address 00:03:25:0F:CC:C8 Futer a new MAC address manually:	
 Firewall SNMP UPnP Telephone 	00 : 03 : 25 : 0F : CC : C8	
Maintenance	Clear Save	

Some ISPs may require that you register your MAC address with them. If this is the case, the MAC address of the Belgacom b-box must be changed manually to the MAC address that you have registered with your ISP.

LAN

Use the LAN menu to configure the LAN IP address and to enable the DHCP server for dynamic client address allocation.
Delgacom		~ 5
ADSL Settings Advanced Settings Status System	Home Networking You can enable DHCP to dynamically allocate IP addresses to your client PCs, or configure. Electric functions based to approximate a sector of The muter.	18 <u>7</u> - 2
⇒ WAN ⇒ Home networking ⇒ VLAN ID	 must have an IP address for the local network. LAN IP 	
≫ Wireless ≫ NAT ≫ Route	Domain Name Server (DNS) Address 192 . 1 . 1 IP Subnet Mask 255 255 255 0	
> Firewall ⇒ SNMP	DHCP Server	
> UPnP > Telephone	VLAN Binding LAN 1 Default	
	LAN 2 Default	
	LAN 4 DTV V	
	DHCP Server ID DHCP Server ID	
	Lease Time Two Days 💌	
	IP Address Pool Stort ID 400 400 400 400 400 400 400 400 400	
	End IP 192, 168, 1, 254	
	Domain Name	

Parameter Description

LAN IP

IP Address The IP address of the Belgacom b-box.

IP Subnet Mask The subnet mask of the Belgacom b-box.

DHCP Server To dynamically assign an IP address to client PCs, enable the

DHCP (Dynamic Host Configuration Protocol) Server.

Lease Time Set the DHCP lease time.

Parameter Description

IP Address Pool Start IP

End IP Domain Name

Specify the start IP address of the DHCP pool. Do not include the gateway address of the Belgacom b-box in the client address pool. (See "TCP/IP Configuration" on page 3-2). If you attempt to include the Belgacom b-box gateway address (192.168.1.1 by default) in the DHCP pool, an error dialog box will appear. If you change the pool range, make sure the first three octets match the gateway's IP address, i.e., 192.168.1.xxx.

Specify the end IP address of the DHCP pool.

If your network uses a domain name, enter it here. Otherwise, leave this field blank.

Remember to configure your client PCs for dynamic address allocation. (See "TCP/IP Configuration" on page 3-2 for details.)

Wireless

The Belgacom b-box also operates as a wireless access point, allowing wireless computers to communicate with each other. To configure this function, you need to enable the wireless function, define the radio channel, the domain identifier, and the security options.

Wireless Settings

Check Enable and click "SAVE SETTINGS."

Advanced Settings Status Status Stystem System Wareless Setting The gateway can be quickly configured as an wireless access point for roaming clients by setting the service set identifier (SSD) and channel number. It also supports data encryption and client filtering. Wareless Channel and SSD Access Control Access Control Swe Wep Wep Sourity Wep Sourity Wep Sourity Wep Sourity Fireywall	> Advaced Settings Wireless Setting > Status > System > Way > Way > Home networking > Channel and SSID > Channel and SSID > Access Control > Access Control > Wep > Way Clear > Way > Roude > Firewall > ShMP			
Svature Svatu	State System System	Advanced Settings	Wireless Setting	
 Wireless Channel and SSID Access Control Security Wep Wpa 802.1X NAT Route Firewall 	 Wireles Channel and SSD Access Control Security VWpa WVpa 002.1X NAT Roude Firewall ShMP UPn 	 > Status > System > WAN > Home networking 	The gateway can be quickly configured as an wireless access point for roaming clients by setting the service set identifier (SSID) and channel number. It also supports data encryption and client filtering.	
 > Security > Wep > Wpa > 802.1X > NAT > Route > Freval 	Security Clear Save > Wop Clear Save > Wpa Clear Save > Nota South South > Route Freewall South > Supp South South	Wireless Channel and SSID Access Control	Enable or disable Wireless module function ③ Enable ③ Disable	
> 802.1X > NAT > Route > Firewall	 > 602.1X > NAT > Route > Iriewall > SIMP > UPpP 	≫ Security ≫ Wep ≫ Wpa	Clear Save	
⇒ NAT ⇒ Route ⇒ Firevall	NAT SNAT Prove Prove SNMP UPpP	» 802.1X		
⇒ Route ⇒ Freevall	> Route > Frewail > SNMP > UPnP	≫ NAT		
> Frewa	> rrewait > SNMP > UPnP	» Route		
- SNR0	> UPnP	> Firewall		
a State		> IIPoD		
		» Telephone		
» Telephone				
> Telephone > Maintenance	> Mantenance	» Maintenance		
> Telephone ⇒ Maintenance	> Maintenance	» Maintenance		
⇒ SNMP ⇒ UPnP	> leiephone	 Route Firewall SNMP UPnP Telephone 		
» UPnP		⇒ UPnP		
	Telephone	Telephone		
» Telephone				

Channel and SSID

You must specify an Service Set ID (SSID) and a common radio channel to be used by the Belgacom b-box and all of its wireless clients. Be sure you configure all of its clients to the same values. The SSID is case-sensitive and can consist of up to 32 alphanumeric

characters. Functioning as an access point, the Gateway can be configured for roaming clients by setting the SSID and wireless channel.

ADSL Settings			
Advanced Settings	Channel and SSID		
» Status			
» System	This page allows you to defi	ne SSID and Channel ID for wireless connection. In	
> VVAN	These parameters are used	for the mobile stations to connect to this access	
» Home networking	point.		
» Wireless			
SSID	SSID	WiFi_8E	
» Access Control	SSID Broadcast	ENABLE O DISABLE	
» Security			
» Wep	Wireless Mode	Moxed (110+11g)	
» Wpa	Channel	12 💌	
» 802.1X			
⇒ NAT			
» Route		Clear Save	
» Firewall			
> SNMP			
> UPnP			
» Telephone			
» Maintenance			

See the description of the parameters below.

Parameter Description

SSID	Service Set ID. The SSID must be the same on the Belgacom b-box and all of its wireless clients.
	Note: The SSID is case sensitive and can consist of up to 32 alphanumeric characters. (Default: WLAN)
SSID Broadcast	Enable or disable the broadcasting of the SSID. Enable SSID broadcasting on the wireless network for easy connection with client PCs. For security reasons, you should disable SSID broadcast. (Default: Enable)
Wireless Mode	This device supports both 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have.
Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel must be the same on the Belgacom b-box and all of its wireless clients.
	The Belgacom b-box will automatically assign itself a radio channel, or you may select one manually.
	Note: If you experience poor performance, you may be encountering interference from another wireless device. Try changing the channel, as this may eliminate interference and increase performance. Channels 1, 6, and 11, as the three non-overlapping channels in the 2.4GHz range, are preferred.
	The available channel settings are limited by local regulations. (Default: Auto; Range: 1-11)

Access Control

Using the Access Control functionality, you can specify which PCs can wirelessly connect to the access point. Each PC has a unique identifier known as a Medium Access Control (MAC) address. With MAC filtering enabled, only the computers whose MAC address you have listed in the filtering table may connect to the Belgacom b-box.

		h
ADSL Settings		
Advanced Settings		
Status	Wireless LAN MAC Hiter	
System	Some ISPs require you to register your MAC address with them. If you have	
Home networking	address that you supplied to your ISP.	
Wireless		
Channel and SSID	Enable MAC Filtering Ves INO	
Access Control	Access Rule for registered MAC address O Allow O Deny	
Wep	MAC Filtering Table (up to 32 stations)	
VVpa	ID MAC	
302.1X		
e val		
p	3 00 : 00 : 00 : 00 : 00 : 00	
	4 00 : 00 : 00 : 00 : 00 : 00	
hone	5 00 00 00 00 00 00	
enance		
	6 00 : 00 : 00 : 00 : 00 : 00	
	7 00 : 00 : 00 : 00 : 00 : 00	
	8 00 : 00 : 00 : 00 : 00	
	11 00 : 00 : 00 : 00 : 00 : 00	
	12 00 : 00 : 00 : 00 : 00	
	13 00 . 00 . 00 . 00 . 00	
	15 00 : 00 : 00 : 00 : 00	
	16 00 : 00 : 00 : 00 : 00	
	17 00 : 00 : 00 : 00 : 00 : 00	
	18 00 : 00 : 00 : 00 : 00 : 00	
	21 00 : 00 : 00 : 00 : 00	
	22 00 : 00 : 00 : 00 : 00	
	23 00 : 00 : 00 : 00 : 00	
	24 00 : 00 : 00 : 00 : 00 : 00	
	25 00 : 00 : 00 : 00 : 00	
	29 00 : 00 : 00 : 00 : 00	
	30 00 : 00 : 00 : 00 : 00 : 00	
	31 00 : 00 : 00 : 00 : 00	
	32 00 : 00 : 00 : 00 : 00	
	Add currently associated MAC stations	
	Clear Save	

See the description of the Access Control features below.

Parameter Description

Enable MAC Enable or disable the MAC filtering function.

Filtering

Access Rule for When MAC filtering is enabled, all registered MAC addresses registered MAC are controlled by the Access Rule. address

MAC Filtering Lists allowed MAC addresses. Table (up to 32 stations)

Security

It is important to be aware of security issues, especially when using wireless. You can configure your security settings on this page.

ADSL Settings		
Advanced Settings	Convritu	
≫ Status	security	
⇒ System	The router can transmit your data securely over the wireless network. Matching	
> WAN	security mechanisms must be setup on your router and wireless client devices.	
» Home networking	them in the sub-pages.	
» Wireless		
» Channel and SSID	Allowed Client Type No WEP, No WPA 🗸	
» Access Control		
» Security		
» Wep	Clear Save	
» Vvpa		
≫ 802.1X		
⇒ NAT		
⇒ Route		
≫ Firewall		
» SNMP		
» UPnP		
» relephone		
» Maintenance		

If you are transmitting sensitive data across radio channels, you should enable wireless security.

For a more secure network, the Belgacom b-box can implement one or a combination of the following security mechanisms:

• No WEP, No WPA *

- . WEP Only
- WPA Only

.

* Selecting the No WEP, No WPA option will bring you directly to the 802.1x configuration page.

The security mechanisms that may be employed depend on the level of security required, the

network and management resources available, and the software support provided on wireless clients. A summary of wireless

Security	Client	Implementation
	Support	Considerations
WEP	Built-in	•Only provides weak security.
	support on all	 Requires manual key
	802.11b and	management.
	802.11g	
	devices	
WPA	Requires	 Provides good security in small
	WPA-enabled	networks. •Requires configured
	system and	RADIUS server, or manual
	network card	management of pre-shared key.
	driver (native	
	support	
	provided in	
	Windows XP)	
802.1X	Requires	•Provides robust security in
	WPA-enabled	WPA-only mode (i.e., WPA
	system and	clients only). •Requires
	network card	configured RADIUS server.
	driver (native	•802.1x Extensible
	support	Authentication Protocol (EAP)
	provided in	type may require management of
	Windows XP)	digital certificates for clients and
		server.

security considerations is listed in the following table.

WEP

Wired Equivalent Privacy (WEP) encryption requires you to use the same set of encryption/decryption keys for the router and all of your wireless clients.

ADSL Settings		
Advanced Settings		
⇒ Status	WEP	
⇒ System	WEP is the basic mechanism to transmit your data securely over the wireless	
⇒ WAN	network. Matching encryption keys must be setup on your router and wireless	
Home networking	client devices to use WEP.	
⇒ Wireless	WEB Made	
Channel and SSID	WEP Mode	
» Access Control	Key Entry Method Hex OASCII	
» Security	Key Provisioning	
» Wep	Key Herisioning Static O'Dynamic	
⇒ W/pa	Static WEP Key Setting	
≫ 802.1X	10/26 hex digits for 64-WEP/128-WEP	
» NAT		
» Route	Default Key ID	
» Firewall	Basanhrana	
> SNMP	(1~32 characters)	
» UPnP	Key 1 0101010101	
» Telephone		
» Maintenance	Key 2 020202020	
	Key 3 0303030303	
	Key 4 04040404	

See the description of the Access Control features below.

Parameter Description

WEP

WEP	You can choose disabled, 64-bit or 128-bit
Mode	encryption.
Key Entry Method	When MAC filtering is enabled, all registered MAC addresses are controlled by the Access Rule.

Key Provisioning Select static key or dynamic key.

Static WEP Key You may manually enter the keys or automatically generate encryption keys. To manually configure the keys, enter 10 digits for each 64-bit key, or enter 26 digits for the single 128bit key. (A hexadecimal digit is a number or letter in the range 0-9 or A-F.)

Default Key IDSelect the default key.

- Passphrase For automatic key generation, check the Passphrase box, enter a passphrase and click "SAVE SETTINGS."
- Key 1-4 If you do not choose to use the Passphrase for automatic key generation, you must manually enter four keys. For 64-bit encryption, enter exactly 10 digits. For 128-bit encryption, enter exactly 26 digits. (A hexadecimal digit is a number or letter in the range 0-9 or A-F.)

Click "SAVE SETTINGS" to apply your settings.

WPA

Wi-Fi Protected Access (WPA) combines Temporal Key Integrity Protocol (TKIP) and 802.1x mechanisms. It provides dynamic key encryption and 802.1x authentication service.

With TKIP, WPA uses 48-bit initialization vectors, calculates an 8-byte message integrity code, and generates an encryption key periodically. For authentication, it allows you to use 802.1x authentication for an environment with a RADIUS server installed on your network. Selecting the Pre-shared Key enables WPA to use the pre-shared key in a SOHO network.

ADSL Settings		
Advanced Settings	WPA	
⇒ System ⇒ WAN ⇒ Home networking ⇒ Wireless	WPA is a security enhancement that strong protection and access control for existing and encryption methods must be setup on devices to use WPA.	gly increases the level of data wireless LAN. Matching authentication your router and wireless client
» Channel and SSID	WPA mode WPA/W	VPA2 Mixed Mode 💙
» Access Control	Cynher suite	for WPA AES for WPA2
» Security		
» Wpa	Authentication 0802	2.1X • Pre-shared Key
» 802.1X	Pre-shared key type	sphrase (8~63 characters)
≫ NAT		
» Route	Pre-shared Key	
» Firewall	Per	86400 Seconds
> SNMP	Group Key Re_Keying Oper	1000 K Packets
» Telephone	ODisa	able
» Maintenance		
	Clear	Save

See the description of the WPA settings below.

Field Default Parameter Description

WPA mode	The WF	e security mode your product i PA/WPA2 mode is the most se	s currently using. cure option.
Cypher suite Auto/Aes	The bod sec	key encryption suite used by WI ly and CRC frame encryption. Th urity	PA and WPA2 for frame is setting ensures maximum
Authentication 802.1X	Sel	ect the authentication mode:	
		802.1x: It is for an enterprise net installed.	work with a RADIUS server
		Pre-shared Key: It is for a SOHC authentication server installed.) network without any
		type characters)	
Pre-shared key Passphrase	(8~6	3 Select the key type:	Passphrase: Input 8~63
characters.			
		Hex: Input 64 hexadecimal digits number or letter in the range 0-9	s. (A hexadecimal digit is a or A-F.)
Pre-shared Key None	Spe	ecify in passphrase style or in 64-	Hex characters.
Group Key Disable	The	e period of renewing broadcast/m	ulticast Re_Keying keys.

802.1X

Management access will be checked against the authentication database stored on the router. If an authentication RADIUS server is used, you must specify the secret key of the Message-Authenticator attribute, i.e., Message Digest-5 (MD5), and the corresponding parameters in the RADIUS Server Parameters field for the remote authentication protocol.

ADSL Settings	
Advanced Settings	802 1X
⇒ Status	Jer Internet State Stat
⇒ System	This page allows you to set the 802.1X, a method for performing authentication
⇒ WAN	to Wireless connection. These parameters are used for this access point to connect to the Authentication Server
Home networking	
» Wireless	802.1X Authentication C Fnable Disable
» Channel and SSID	
» Access Control	Session Idle Timeout 300 Seconds(0 for no timeout checking)
» Security	Re-Authentication Period 3600 Seconds(0 for no re-authentication)
» wep	
» 11pa	Guiet Period 60 Seconds after authentication failed
# 002.1A	Server Type RADIUS V
» NAT	
» Route	RADIUS Server Parameters
> Firewall	
> SNMP	Server IP 192 , 100 , 1 , 1
> UPhP	Server Port 1812
» Telephone	Quant Vicu
> Maintenance	Secret Key
	NASID

See the description of the 802.1x features below.

General Parameters

Field Default Parameter Description

Enable 802.1X Yes Session Idle 300 seconds Timeout

Re-Authentication 3600 seconds Period

Quiet Period 60 seconds

Server Type RADIUS Starts using 802.1x security control.

Defines a maximum period of time for which the connection is maintained during inactivity.

Defines a maximum period of time for which the RADIUS server will dynamically re-assign a session key to a connected client station.

Defines a maximum period of time for which the router will wait between failed authentications.

Selects the authentication server type.

• RADIUS Server Parameters

Field Default Description Parameter

Server IP 192.168.1.1 The IP address of the RADIUS server.

Server Port	1812	UDP port used for RADIUS authentication messages.
Re-Authent	ication 360	0 Defines a maximum period of time for which the
Period	seconds	RADIUS server will dynamically re- assign a
		session key to a connected client station.
Secret Key	None	Defines a text string on both the RADIUS client
		and server to secure RADIUS traffic.The
		RADIUS server requires the MD5 Message-
		Authenticator attribute for all access request
		messages. The 802.1x authentication scheme is
		supported by using the Extensible Authentication
		Protocol (EAP) over the RADIUS server.
NAS-ID	None	Defines the request identifier of the Network
		Access Server (NAS) or RADIUS client that is
		requesting client authentication from the RADIUS
		server.

Easy pairing

Your Belgacom b-box is equipped with a wireless pairing button. This button helps you to set up a wireless network with protection at the push of a button. You can install wireless security by pressing the easy pairing button on your Belgacom b-box. The easy pairing button can be found on the top bezel of your Belgacom b-box and looks like depicted below.



NAT

From this section you can configure the Virtual Server, and Special Application features that provide control over the TCP/ UDP port openings in the router's firewall. This section can be used to support several Internet based applications such as web, email, FTP, and Telnet.

NAT Settings

ADSL Settings		
Advanced Settings	NAT Setting	
Status System VVAN VVAN Vireless Vitreless Vitral Server Special Application Nat Magoing Table	Network Address Translation (NAT) allows multiple users at your local site to access the internet through a single public IP address or multiple public IP addresses. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP. Enable or disable NAT module function Enable ① Disable Clear Save	
 Route Firewall SNMP UPnP Telephone 		
■ waante nance		

NAT allows one or more public IP addresses to be shared by multiple internal users. Enter the Public IP address you wish to share into the Global IP field. Enter a range of internal IPs that will share the global IP.

Address Mapping

belgacom		
		Ω
ADSL Settings		
Advanced Settings	Address Manning	
⇒ Status	Address indeping	
» System	Network Address Translation (NAT) allows IP addresses used in a private local network to be mapped to one	
⇒ WAN	or more addresses used in the public, global Internet. This feature limits the number of public IP addresses required from the ISP and also maintains the privacy and security of the local network. We allow one or more	
» Home networking	than one public IP address to be mapped to a pool of local addresses.	
» Wireless		
» NAT	Address Mapping	
» Address		
Mapping	1. Global IP: 0 , 0 , 0 , 0 is transformed as multiple virtual IPs	
» Virtual Server	from 192.168.1. 0 to; 192.168.1. 0	
» Special Application	2. Clobal ID: 0 0 0 0 is transformed as multiple virtual IDs	
» Nat Mapping Table	2. Global P. C. C. C. Is transformed as moliple virtual Ps	
⇒ Route	from 192.168.1. U to; 192.168.1. U	
» Firewall	3. Global IP: 0 0 0 0 is transformed as multiple virtual IPs	
⇒ SNMP	From 402 482 4 0 to 102 482 4 0	
⇒ UPnP		
» Telephone	4. Global IP: 0 0 0 0 is transformed as multiple virtual IPs	
» Maintenance	from 192.168.1. 0 to; 192.168.1. 0	
	5. Global IP: 0 0 0 is transformed as multiple virtual IPs	
	from 192.168.1. 0 to; 192.168.1. 0	
	C. Clabel D. O. O. O. is transformed as multiple virtual De	
	from 192.168.1. U to; 192.168.1. U	
	7. Global IP: 0 0 0 is transformed as multiple virtual IPs	
	from 192 168 1 0 to: 192 168 1 0	
	8. Global IP: 0 . 0 . 0 is transformed as multiple virtual IPs	
	from 192.168.1. 0 to; 192.168.1. 0	
	9. Global IP: 0 . 0 . 0 is transformed as multiple virtual IPs	
	from 192.168.1. 0 to; 192.168.1. 0	
	10 Global IP 0 0 0 is transformed as multiple virtual IPs	
	Irom 192.168.1. U I0; 192.168.1. U	
	Clear Save	

Use Address Mapping to allow a limited number of public IP addresses to be translated into multiple private IP addresses for use on the internal LAN network. This also hides the internal network for increased privacy and security.

Virtual Server

ADSL Settings								<u>m</u>
Advanced Settings	Virtu	al Server						
Status System WaN Home networking Wireless NAT	You c: FTP at private redirect tool ca	an configure the route your local site via put IP addresses. In othe cts the external servic in support both port ra	er as a virtual server olic IP addresses can er words, depending ee request to the appi anges, multiple ports,	so that remote be automatic: on the reques opriate serve and combinat	e users access ally redirected sted service (T er (located at a ions of the two	sing service to local ser CP/UDP por nother inter p.	es such as the Web or vers configured with t number), the router nal IP address). This	
Virtual Server Special Application Nat Mapping Table		Port Ranges: ex. 10 Multiple Ports: ex. 2 Combination: ex. 25	00-150 5,110,80 i-100,80					
Route	No.	LAN IP Address	Protocol Type	LAN Port	Public Port	Enable		
Firewall	1	192.168.1.	TCP 🛩				Add Clean	
UPnP	2	192.168.1.	тср 🗸				Add Clean	
Telephone Maintenance	3	192.168.1.	тср 🗸				Add Clean	
	4	192.168.1.	TCP 🗸				Add Clean	
	5	192.168.1.	ТСР 🗸				Add Clean	
	6	192 168 1	ТСР 🗸				Add Clean	
	7	192 168 1	ТСР 🗸				Add Clean	
	8	102.168.1	TCP				Add Clean	
	9	102.168.1	TCP				Add Clean	
	10	102.100.1.	TCP					
	11	402.409.4					Add Clean	
	12	192.100.1.	TCD				Add Cloan	
	12	192.100.1.					Add Clean	
	15	192.168.1.					Add Clean	
	14	192.168.1.					Add Clean	
	15	192.168.1.					Add Clean	
	16	192.168.1.	TCP V				Add Clean	
	17	192.168.1.	TCP 💌				Add Clean	
	18	192.168.1.	ТСР 🗸				Add Clean	
	19	192.168.1.	тср 🗸				Add Clean	
	20	192.168.1.	TCP 💙				Add Clean	

Using this feature, you can put PCs with public IPs and PCs with private IPs in the same LAN area.

If you configure the Belgacom b-box as a virtual server, remote users accessing services such as web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Belgacom b-box redirects the external service request to the appropriate server (located at another internal IP address).

For example, if you set Type/Public Port to TCP/80 (HTTP or web) and the Private IP/Port to 192.168.1.2/80, then all HTTP requests from outside users will be transferred to 192.168.1.2 on port 80. Therefore, by just entering the IP address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

The more common TCP service ports include:

HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110.

Special Applications

Some applications, such as Internet gaming, videoconferencing, Internet telephony and others, require multiple connections. These applications cannot work with Network Address Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional public ports to be opened for each application.

AUSL Settings Advanced Settings	Sp	ecial Applic	ations				
Status System WVAN Home networking Wireless NAT Address Mapping > Virtual Server	Som conf Netv requ the asso Note	e applications ferencing, Inter work Address irre multiple con "Trigger Port" f ociated with th e: The range of	require multip rnet telephony Translation (N nnections, sp field, select th le trigger port f the Trigger F	le connections, such as Interne y and others. These applications (AT) is enabled. If you need to r coffy the port normally associat e protocol type as TCP or UDP, to open them for inbound traffic vorts is from 1 to 65535.	t gaming, vide cannot work un application ed with an app then enter the	o when s that Jlication in public ports	
» Special Application		Trigger Port	Trigger Type	Public Port	Public	Enabled	
≫ Nat Mapping Table Route	1		⊙ TCP ◯ UDP		⊙ TCP ○ UDP		
Firewall SNMP UPnP	2		⊙ TCP ○ UDP		⊙ TCP ○ UDP		
Telephone Maintenance	3		⊙ TCP ○ UDP		⊙ TCP ○ UDP		
	4		⊙ TCP ○ UDP		⊙ TCP ○ UDP		
	5		⊙ TCP ◯ UDP		⊙ TCP ○ UDP		
	6		⊙ TCP ○ UDP		⊙ TCP ○ UDP		
	7		⊙ TCP ◯ UDP		⊙ TCP ○ UDP		
	8		⊙ TCP ○ UDP		⊙ TCP ○ UDP		
	9		⊙ TCP ◯ UDP		⊙ TCP ○ UDP		
	10		O TCP		● TCP		

Specify the public port number normally associated with an application in the Trigger Port field. Set the protocol type to TCP or UDP, then enter the ports that the application requires. The ports may be in the format 7, 11, 57, or in a range, e.g., 72-96, or a combination of both, e.g., 7, 11, 57, 72-96.

Popular applications requiring multiple ports are listed in the Popular Applications field. From the drop-down list, choose the application and then choose a row number to copy this data into.

	select one 🛛 💌
-	select one
Ba	attle.net
Di	alpad
IC	UİI
M	SN Gaming Zone
P	C-to-Phone
Q	uick Time 4

Note: Choosing a row that already contains data will overwrite the current settings.

Example:

ID	Triggei Type P	r Port T ublic P	rigger ort	Public Type	Comment
1	6112	UDP	6112	UDP	Battle.net
2	28800	TCP	2300- 2400, 47624	TCP	MSN Game Zone

For a full list of ports and the services that run on them, see www.iana.org/assignments/port-numbers.

NAT Mapping Table

ADSL Settings									1	inz -
Advanced Settings										
⇒ Status	NALW	lapping lat	le							
» System	NAT Maj	pping Table d	isplays the c	urrent NAPT add	fress mappings					
▶ WAN										
Home networking	Index	Protocol	Local IP	Local Port	Pseudo IP	Pseudo Port	Peer IP	Peer Port		
> Wireless										
NAT										
» Address Mapping	Refre	esh								
» Virtual Server										
» Special Application										
» Hat Mapping Table										
Route										
Firewall										
> SNMP										
> UPnP										
Telephone										
> Maintenance										

NAT Mapping Table displays the current NAPT address mappings. The NAT address mappings are listed 20 lines per page, click the control buttons to move forwards and backwards. As the NAT mapping is dynamic, a Refresh button is provided to refresh the NAT Mapping Table with the most up-to-date values.

The content of the NAT Mapping Table is described as follows:

- □ Protocol protocol of the flow.
- Local IP local (LAN) host's IP address for the flow.
- Local Port local (LAN) host's port number for the flow.
- Pseudo IP translated IP address for the flow.
- Description Pseudo Port translated port number for the flow.
- Deer IP remote (WAN) host's IP address for the flow.
- Peer Port remote (WAN) host's port number for the flow.

Route

These pages define routing related parameters, including static routes and Routing Information Protocol (RIP) parameters.

Static Route Parameters

Parameter Description

Index Displays the number of the route.

Network Address Enter the IP address of the remote computer for which to set a static route.

Subnet Mask Enter the subnet mask of the remote network for which to set a static route.

Gateway Enter the WAN IP address of the gateway to the remote network. Configure Allows you to modify or delete configuration settings.

Click Add to display the following page and add a new static route to the list.

ADSL Settings Advanced Settings							
 Advanced Settings Status 	Static Rol	ute Parameter					
⇒ System ⇒ WAN	This page de	efines the routing related para	meters including static ro	utes and RIP paran	neters.		
» Home networking	Index	Network Address	Subnet Mask	Gateway	Interface	Configure	
» Wireless			No Valid Static Rout	te Entry !!!			
Route Static Route RID	Add						
Routing Table			Clear Sa	ive			
⇒ Firewall ⇒ SNMP							
» UPnP » Telephone							
» Maintenance							

Parameter Description

Index Displays the number of the route.

Network Address Enter the IP address of the remote computer for which to set a static route. Subnet Mask Enter the subnet mask of the remote network for which to set a static route.

Gateway Enter the WAN IP address of the gateway to the remote network. Configure Allows you to modify or delete configuration settings.

RIP Parameter

The device supports RIP v1 and v2 to dynamically exchange routing information with adjacent routers.

ADSL Settings							<u> </u>
Advanced Settings	RIP Paramete	r					
> System	Please Enter the t	ollowing Configur	ation Para	meters:			
WAN Home networking	 General RIP page 	arameter:					
> Wireless	RIP m	ode: 💿 Disable	e O Enat	ble			
Route	Auto summ	ary: 💿 Disable	e 🔿 Enat	ble			
Static Route RIP	 Table of curre 	nt interface RIP pa	arameter:	Painan	Authoritation	Authentication	
» Routing Table	Interface	Operation Mode	Version	Reverse	Required	Code	
> Firewall	LAN1	Disable 💙	1 🗸	Disable 💙	None 🗸		
> UPnP	WLAN	Disable 💙	1 🗸	Disable 💙	None 🗸		
 Telephone Maintenance 	ATM1	Disable 🗸	1 🗸	Disable 💙	None 🗸		
	ATM2	Disable 🗸	1 🗸	Disable 💙	None 🗸		
	ATM3	Disable 💙	1 🗸	Disable 💙	None		
	ATM4	Disable 🗸	1 🗸	Disable 💙	None		
	ATM5	Disable 💙	1 🗸	Disable 💙	None		
	ATM6	Disable 💙	1 🗸	Disable 🗸	None 🗸		
	ATM7	Disable 💙	1 🗸	Disable 🗸	None 🗸		
	ATM8	Disable 💙	1 🗸	Disable 🗸	None 🗸		
	ATM9	Disable 💙	1 🗸	Disable 💙	None		
	ATM10	Disable 💙	1 🗸	Disable 💙	None		
	ATM11	Disable 💙	1 🗸	Disable 💙	None		
	ATM12	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE1	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE2	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE3	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE4	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE5	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE6	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE7	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE8	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE9	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE10	Disable 💙	1 🗸	Disable 💙	None		
	PPPoE11	Disable 💙	1 🗸	Disable 💙	None		

Parameter Description

General RIP Paramete	ers
RIP mode	Globally enables or disables RIP.
Auto summary	If Auto summary is disabled, then RIP packets will include sub-network information from all subnetworks connected to the ADLS Router. If enabled, this sub-network information will be summarized to one piece of information covering all sub-networks.
Table of current Interfa	ce RIP parameter
Interface	The WAN interface to be configured.
Operation Mode	Disable: RIP disabled on this interface.
	Enable: RIP enabled on this interface.
	Silent: Listens for route broadcasts and updates its route table. It does

not participate in sending route broadcasts.

Parameter Description

Sets the RIP version to use on this interface.

Poison Reverse A method for preventing loops that would cause endless retransmission of data traffic.

Authentication Required

• None: No authentication.

Version

- Password: A password authentication key is included in the packet. If this does not match
 what is expected, the packet will be discarded. This method provides very little security
 as it is possible to learn the authentication key by watching RIP packets.
- MD5: An algorithm that is used to verify data integrity through the creation of a 128-bit message digest from data input (which may be a message of any length) that is claimed to be as unique to that specific data as a fingerprint is to a specific individual.

Authentication Code Password or MD5 Authentication key.

RIP sends routing-update messages at regular intervals and when the network topology changes. When a router receives a routing update that includes changes to an entry, it updates its routing table to reflect the new route. RIP routers maintain only the best route to a destination. After updating its routing table, the router immediately begins transmitting routing updates to inform other network routers of the change.

» Status	Static R	oute Parameter					
⇒ System							
⇒ WAN	• List R	outing Table:					
Home networking	Flags	Network Address	Netmask	Gateway	Interface	Metric	
> Wireless	С	192.168.1.0	255.255.255.0	sdirectly	VLAN1		
> NAT	С	192.168.2.0	255.255.255.0	sdirectly	VLAN2		
> Route	С	127.0.0.1	255.255.255.255	sdirectly	Loopback		
» Static Route	Flags : C	- directly connected. S - st	atic. R - RIP. I - ICMP Redire	ect			
> RP							
> Routing rable			-				
» Firewall			Clear Save	J			
> SNMP							
> UPnP							
 Telephone Meintenenee 							
Maintenance							

Routing Table

Parameter Description

- Flags
- C = Direct connection on the same subnet.
- S = Static route.

Indicates the route status:

R = RIP (Routing Information Protocol) assigned route. I = ICMP (Internet Control Message Protocol) Redirect route.

Network Destination IP address. Address

Netmask The subnetwork associated with the destination.

This is a template that identifies the address bits in the destination address used for routing to specific subnets. Each bit that corresponds to a "1" is part of the subnet mask number; each bit that corresponds to "0" is part of the host number.

Gateway The IP address of the router at the next hop to which frames are forwarded.

Interface The local interface through which the next hop of this route is reached.

Metric When a router receives a routing update that contains a new or changed destination network entry, the router adds 1 to the metric value indicated in the update and enters the network in the routing table.

Firewall

ADSI Settings		<u> </u>
Advanced Settings		
» Statue	Firewall (Security Settings)	
» Sustem	The Davies actuates autospice firstual arctaction by restriction econocition	
> MAN	parameters to limit the risk of hacker attack, and defending against a wide array	
* Home petworking	of common attacks. However, for applications that require unrestricted access	
>> Mineless	to the Internet, you can configure a specific client/server as a demilitarized zone	
» NAT	(UML).	
» Route	Enable or disable Eirstvall features	
» Firewall		
» Access Control		
» MAC Filter	Clear Save	
» Url Blocking		
» Schedule Rule		
» Instrusion		
Detection		
» DMZ		
> SNMP		
» UPnP		
» Telephone		
» Maintenance		

The Belgacom b-box's firewall enables access control of client PCs, blocks common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. The firewall does not significantly affect system performance and we advise leaving it enabled to protect your network.

Note: After you check the radio button in the "Enable or disable Firewall features" field, you must click the "SAVE SETTINGS" button to display the list of firewall features.

Access Control

					101
Access Control					
Access Control allow page includes IP addr	s users to define th ess filtering and MA	e traffic type permitted or n .C address filtering.	ot-permitted to WAN port	service. This	
Enable Filtering	Function : • Yes	O No			
Normal Filtering	Table (up to 10 c	omputers)			
• Normar Internig	Table (up to to co	Sinputerar			
Client PC	Client PC	Client Service	Schedule Rule	Configure	
Description	IP Address		Conodalo Italo	oonngaro	
		No Valid Filtering Rule !			
Add PC					
		Clear Save			
		Citar Save			
	Access Control Access Control allow page includes IP addr • Enable Filtering • Normal Filtering Client PC Description • Add PC	Access Control Access Control allows users to define th page includes IP address filtering and IMA • Enable Filtering Function : ③ Yes • Normal Filtering Table (up to 10 cr Client PC Client PC Description IP Address ④ Add PC	Access Control Access Control allows users to define the traffic type permitted or n page includes IP address filtering and MAC address filtering. • Enable Filtering Function : ① Yes ① No • Normal Filtering Table (up to 10 computers) Client PC Client PC Description IP Address No Valid Filtering Rule ! • Add PC	Access Control Access Control allows users to define the traffic type permitted or not-permitted to WAN port page includes IP address filtering and MAC address filtering. Enable Filtering Function: Ores Normal Filtering Table (up to 10 computers) Client PC Client PC Client PC Client Service Schedule Rule No Valid Filtering Rule !!! Add PC Clear Save	Access Control Access Control allows users to define the traffic type permitted or not-permitted to WAN port service. This page includes IP address filtering and MAC address filtering. Enable Filtering Function:

Access Control allows users to define the outgoing traffic permitted or not-permitted through the WAN interface. In the example above, all incoming and outgoing emails are blocked. The default is to permit all outgoing traffic. (See the following page for details.)

The Belgacom b-box can also limit the access of hosts within the local area network (LAN). The MAC Filtering Table allows the Belgacom b-box to enter up to 32 MAC addresses that are not allowed access to the WAN port.

The following items are displayed on the Access Control screen:

Parameter Description

Enable Filtering Enables or disables the filtering function. Function

Normal Filtering Table Displays the IP address (or an IP address range) filtering table.

Click Add PC on the Access Control screen to view the following page.

Access Control Add PC

The settings in the screen shot below will block all email sending and receiving.

ADSL Settings				
Advanced Settings	Access Control			
 Status System WAN 	Access Control allows users to define page includes IP address filtering and N	the traffic type permitted or not-permitted to WAN po IAC address filtering.	rt service. This	
» Home networking	• Enable Filtering Function : • Ye	es O No		
≫ Wireless ≫ NAT	Normal Filtering Table (up to 10	computers)		
» Route	Client PC Client PC	Client Service Schedule Rule	Configure	
» Firewall	Description IP Address			
 MAC Filter Uf Blocking Schedule Rule Instruction Detection DMZ SNMP SNMP UPnP Telephone Maintenance 	Add PC Ad	Clear Save		

Define the appropriate settings for client PC services (as shown above). Click "OK" to save your settings. The added PC will now appear in the Access Control page.

MAC Filter

Use this page to block access to your network using MAC addresses.



The Belgacom b-box can also limit the access of hosts within the local area network (LAN). The MAC Filtering Table allows the Belgacom b-box to enter up to 32 MAC addresses that are allowed access to the WAN port. All other devices will be denied access.

URL Blocking

To configure the URL Blocking feature, use the table below to specify the web sites (www.somesite.com) and/or keywords you want to filter on your network.

To complete this configuration, you will need to create or modify an access rule in "Access Control" on page 4-33. To modify an existing rule, click the Edit option next to the rule you want to modify. To create a new rule, click on the Add PC option.

From the Access Control, Add PC section, check the option for "WWW with URL Blocking" in the Client PC Service table to filter out the web sites and keywords selected below, on a specific PC.

ADSL Settings						
Advanced Settings	URL Blocking	1				
» Status » System	Disallowed Web	Sites and Keywords				
» WAN	Disaliowou wou sites and tegwords.					
» Home networking	You can block access to certain Web sites from a particular PC by entering either a full URL address					
>> Wireless	or just a keywor	d of the web site.				
> NAT	To specify the p	articular PC, go back to the "Acce	ess Control" page	and check the box for "Http with		
» Firewall	URL Blocking"in	the "Normal Filtering Table".				
» Access Control	Rule	URL / Keyword	Rule	URL / Keyword		
» MAC Filter	Number	-	Number	-		
Schedule Rule	Site 1		Site 16			
» Instrusion	Site 2		Site 17			
» DMZ	Site 3		Site 18			
» SNMP	Site 4		Site 19			
» UPnP	Stor		Site 20			
» Telephone	Sile 5		Sile 20			
» Maintenance	Site 6		Site 21			
	Site 7		Site 22			
	Site 8		Site 23			
	Site 9		Site 24			
	Site 10		Site 25			
	Site 11		Site 26			
	Site 12		Site 27			
	Site 13		Site 28			
	Site 14		Site 29			
			01- 00			

The Belgacom b-box allows the user to block access to web sites from a particular PC by entering either a full URL address or just a keyword. This feature can be used to protect children from accessing violent or pornographic web sites.

Schedule Rule

ADSL Settings		Int
Advanced Settings	Schedule Rule	
⇒ Status ⇒ System	This page defines schedule rule names and activates the schedule for use in the	
 > VVAN > Home networking 	Schedule Rule Table (up to 10 rules)	
≫ Wireless ≫ NAT	Rule Name Rule Comment Configure	
» Route	No Valid Schedule Rule !!!	
 Firewall Access Control MAC Fiter Url Blocking Schedule Rule Instrusion Detection DMZ SIMMP UPnP Telephone Maintenance 	Add Schedule Rule Clear Save	

You may filter Internet access for local clients based on rules.

Each access control rule may be activated at a scheduled time. Define the schedule on the Schedule Rule page, and apply the rule on the Access Control page.

Click Add Schedule Rule.

Edit Schedule Rule

You can create and edit schedule rules on this page.

C ADDE Octango					
Advanced Settings	Edit	t Schodulo Pulo			
⇒ Status	Cu	t Scheuule Kule			
⇒ System					
⇒ WAN		Name:			
Home networking		Comment:			
> Vvreless					
> NAT	• A	ctivate Time Perio	od:		
» Firewall		Week	Start Time (hh:mm)	End Time (hh:mm)	
» Access Control		Every Davi			
» MAC Filter		Every Day			
> Url Blocking		Sunday	:	:	
Schedule Rule		Monday			
Instrusion		monday			
Detection		Tuesday			
# DML		Wednesday			
⇒ SNMP		mounocody			
> UPNP		Thursday			
> Telephone		Friday			
Wolf Lot for ICO					
		Saturday			

Define the appropriate settings for a schedule rule (as shown on the following screen). The rule in the screen shot above prohibits emailing from 3.00pm to 11.59pm from Monday to Thursday. Upon completion, click "OK" to save your schedule rules.

Intrusion Detection

The Belgacom b-box's firewall inspects packets at the application layer, maintains TCP and UDP session information including timeouts and number of active sessions, and provides the ability to detect and prevent certain types of network attacks such as Denial-of-Service (DoS) attacks.

ADSL Settings		
Advanced Settings	Intrusion Detection	
» Status » Svetem	When the SDI (Stateful Declar) increation) framell feature is analysid, all packate can be blocked. Stateful	
» WAN	Packet Inspection (SPI) allows full support of different application types that are using dynamic port numbers.	
» Home networking	For the applications checked in the list below, the Device will support full operation as initiated from the local LAN.	
» Wireless		
» Route	The Device firewall can block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding.	
» Firewall	Intrusion Detection Feature	
» Access Control	SPLand Anti DoS frauvall ortantion	
MAC Filter Url Blocking		
» Schedule Rule	RIP defect	
» Instrusion	Discard Ping To WAN	
» DMZ		
⇒ SNMP	stateful Packet inspection	
>> UPnP	Packet Fragmentation	
» Telephone	TCP Connection	
··· wantenance	UDP Session	
	FTD Service	
	H.323 Service	
	TFTP Service	
	when hackers attempt to enter your network, we can alert you by e-mail	
	Your E-mail Address	
	SMTP Server Address	
	POP3 Server Address	
	User name	
	Password	
	Connection Policy	
	Fragmentation half-open wait 10 secs	
	Total incomplete TCP/UDP sessions LOW 250 session	
	Incomplete TCP/UDP sessions (per min) HIGH 250 session	
	Incomplete TCP/UDP sessions (per min) LOW 200 session	
	Maximum incomplete TCP/UDP sessions number from same host 100	
	Incomplete TCP/IIDP esseigns detect sensitive time period	
	Maximum half-open fragmentation packet number from same host 30	
	Half-open fragmentation detect sensitive time period 10000 msec.	
	Election analysis black time 200	
	sec.	
	DoS Detect Criteria	
	Total incomplete TCP/UDP sessions HIGH 300 session	
	TODEVILIUM	
	TCP SYN wait 30 sec.	
	TCP FIN wait 5 sec.	
	TCP connection idle timeout 3600 sec	
	auc.	
	UDP session idle timeout 30 sec.	
	H 323 data channel idle timenut 180 enc	

Network attacks that deny access to a network device are called DoS attacks. DoS attacks are aimed at devices and networks with a connection to the Internet. Their goal is not to steal information, but to disable a device or network so users no longer have access to network resources.

The Belgacom b-box protects against DoS attacks including: Ping of Death (Ping flood) attack, SYN flood attack, IP fragment attack (Teardrop Attack), Brute-force attack, Land Attack, IP Spoofing attack, IP with zero length, TCP null scan (Port Scan Attack), UDP port loopback, Snork Attack.

netwol	Υ.	
Parameter	Defaults	Description
Enable SPI and Anti-DoS firewall protection	Yes	The Intrusion Detection feature of the Telephony Router limits the access of incoming traffic at the WAN port. When the Stateful Packet Inspection (SPI) feature is turned on, all incoming packets are blocked except those types marked with a check in the Stateful Packet Inspection section at the top of the screen.
Stateful Packet Inspection		This option allows you to select different application types that are using dynamic port numbers. If you wish to use Stateful Packet Inspection (SPI) for blocking packets, click on the Yes radio button in the "Enable SPI and Anti- DoS firewall protection" field and then check the inspection type that you need, such as Packet Fragmentation, TCP Connection, UDP Session, FTP Service, H.323 Service, and TFTP Service. It is called a "stateful" packet inspection because it examines the contents of the packet to determine the state of the communication; i.e., it ensures that

Note: The firewall does not significantly affect system performance, so we advise enabling the prevention features to protect your network.

		the stated destination computer has previously requested the current communication. This is a way of ensuring that all communications are initiated by the recipient computer and are taking place only with sources that are known and trusted from previous interactions. In addition to being more rigorous in their inspection of packets, stateful inspection firewalls also close off ports until a connection to the specific port is requested. When particular types of traffic are checked, only the particular type of traffic initiated from the internal LAN will be allowed. For example, if the user only checks FTP Service in the Stateful Packet Inspection section, all incoming traffic will be blocked except for FTP connections initiated from the local LAN.
Hacker Preve	ntion	
Feature	Discard	Provents a ping on the router's
Discard Ping from WAN	Discaru	WAN port from being routed to the network.
Parameter	Defaults	Description
Parameter RIP Defect	Defaults Enabled	Description If the router does not reply to an IPX RIP request packet, it will stay in the input queue and not be released. Accumulated packets could cause the input queue to fill, causing severe problems for all protocols. Enabling this feature prevents the packets accumulating.

POP3	Enter your POP3 server address
Server	(usually the part of the email
Address	address following the "@" sign).
User Name	Enter your email account user
	name.
Password	Enter your email account password.

Connection Policy

Fragmentation 10 secs half-open wait	Configures the number of seconds that a packet state structure remains active. When the timeout value expires, the router drops the unassembled packet, freeing that structure for use by another packet.
TCP SYN wait 30 secs	Defines how long the software will wait for a TCP session to reach an established state before dropping the session.
TCP FIN wait 5 secs	Specifies how long a TCP session will be managed after the firewall detects a FIN-exchange.

TCP connection 3600 secs The length of time for which a TCP session will be idle timeout (1 hour) managed if there is no activity.

UDP session idle 30 secs The length of time for which a UDP session will timeout be managed if there is no activity.

H.323 data 180 secs The length of time for which an H.323 session will channel idle be managed if there is no activity. timeout

Parameter Defaults Description

DoS Detect Criteria

Total incomplete 300 Defines the rate of new unestablished sessions that TCP/UDP sessions will cause the software to *start* deleting half-open sessions HIGH sessions.

Total incomplete 250 Defines the rate of new unestablished sessions that TCP/UDP sessions will cause the software to *stop* deleting half-open sessions LOW sessions.

Incomplete 250 Maximum number of allowed incomplete TCP/UDP sessions TCP/UDP sessions per minute. sessions (per min.) HIGH

Incomplete 200 Minimum number of allowed incomplete TCP/UDP sessions TCP/UDP sessions per minute. sessions (per min.) LOW

Maximum 10 Maximum number of incomplete TCP/UDP incomplete sessions from the same host. TCP/UDP sessions number from same host

Incomplete 300 msecs Length of time before an incomplete TCP/UDP TCP/UDP session is detected as incomplete. sessions detect

sensitive time period

Maximum 30 Maximum number of half-open fragmentation half-open packets from the same host. fragmentation packet number from same host

Half-open 1 secs Length of time before a half-open fragmentation fragmentation session is detected as half-open. detect sensitive time period

Flooding cracker 300 secs Length of time from detecting a flood attack to block time blocking the attack.

ADSL Settings					<u>m</u> -
Advanced Settings					
≫ Status	DMZ	(Der	nilitarized Zone)		
» System	If you I	have	a local client PC that cannot run an Internet application	properly from behind the	
⇒ WAN	NAT fi	irewa	I, then you can open the client up to unrestricted two- intual DMZ Heat	way Internet access by	
> Home networking	dennin	ig a v	intual DMZ. HOSt.		
» Wireless	Enal	ble DI	IZ: OYes ONo		
» NAT	Muttink		and he eveneed to the laterast for two way commun	iastiana a a laternat	
» Route	gaming	g, vide	conferencing, or VPN connections. To use the DM2	Z, you must set a static IP	
> Firewall	addres	ss for	that PC.		
> MAC Filter					
» Url Blocking			Public IP Address	Client PC IP	
» Schedule Rule				Address	
» Instrusion		1.	0.0.0.0	192.168.1. 0	
Detection		2.	0 0 0 0	192 168 1 0	
» DMZ					
> SNMP		3.	0 , 0 , 0 , 0	192.168.1. 0	
≫ UPnP		4.	0 0 0 0	192.168.1. 0	
Telephone					
Maintenance		5.		192.168.1. 0	
		6.		192.168.1.0	
		7.	0 . 0 . 0 . 0	192.168.1.0	

DMZ

If you have a client PC that cannot run an Internet application properly from behind the firewall, you can open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ (Demilitarized Zone) host on this screen. Adding a client to the DMZ may expose your local network to a variety of security risks, so only use this option as a last resort.

SNMP

Community

belgacom		
 ADSL Settings Advanced Settings Status System VVAN Home networking VWreless NAT Route Firewall SIMP Community Trap UPnP Telephone Maintenance 	SNMP Setting The Device provides SNMP setting for community and trap information. SNMP Clear Save	<u>♠</u> -

Use the SNMP configuration screen to display and modify parameters for the Simple Network Management Protocol (SNMP). A computer attached to the network, called a Network Management Station (NMS), can be used to access this information. Access rights to the agent are controlled by community strings. To communicate with the Belgacom b-box, the NMS must first submit a valid community string for authentication.

Parameter	Description
Community	A community name authorized for
	management access.
Access	Management access is restricted to Read or Write.
Valid	Enables or disables the entry.

Note: Up to 5 community names may be entered.

Trap

ADSL Settings		
Status	SNMP Trap	
 > System > WAN > Home networking 	In the context of SNMP, an unsolicited message can be sent by an agent to management station. The purpose is to notify the management station of some unusual event.	
Vireless	No. IP Address Community Version	
NAT Route	1 0 0 0 0 Disabled 🕑	
Firewall	2 0 0 0 0 Disabled V	
SIMP		
» Trap		
UPnP	4 0 0 0 0 Disabled V	
Telephone	5 0 0 0 0 Disabled V	
Maintenance	Clear Save	

Parameter Description

IP Address Community

Version Traps are sent to this address when errors or specific events occur on the network.

A community string (password) specified for trap management. Enter a word, something other than public or private, to prevent unauthorized individuals from reading information on your system.

Sets the trap status to disabled, or enabled with V1 or V2c.

The v2c protocol was proposed in late 1995 and includes enhancements to v1 that are universally accepted. These include a get-bulk command to reduce network management traffic when retrieving a sequence of MIB variables, and a more elaborate set of error codes for improved reporting to a Network Management Station.

ADSL

ADSL Parameters

belgacom
ADSL Settings Ouck Stat Parameters Status Advanced Settings Operation Mode: Maximum NP Support Operation Mode: Belgacom AEQ setting Operation Save Retrain Save

We recommend leaving the Operation Mode at the default Automatic setting, to automatically negotiate with the remote DSLAM.

Parameter Description

Operation Mode • Automatic

- □ T1.413 Issue 2
- G.992.1 (G.DMT)
- G.992.2 (G.Lite)
- □ G.992.3 (ADSL2) □ G.992.5 (ADSL2+)

Status

The Status page displays ADSL status information.

beloocom								help
conguerant								
ADSL Settings								\$ € \$
» Quick Start	N	lonitoring Index						
» Parameters » Status		Montoring index						
 Advanced Settings 		ADSL status information: Data Rate Information Defect/Failure Indication Statistics						
		Status:						
			Confi	igured		Current		
		Line Status	-		let e	QUET1		
		Line Type Trained Mode	Auto	metic	inte	neaved Patri		
		 [Go Top] 	Auto	Anialic				
		Data Rate:		0.	otual Da	to Poto		
		Stream Type Actual Data Rate						
		Down Stream	Stream 0 (Kbps.)					
		[Go Top]						
		Operation Data / Defect In Operation Data	idication:	Instream		Downstream		
		Noise Margin		0 dB		0 dB		
		Attenuation		0 dB		0 dB		
		Indicator Name		Near End Inc	dicator	Far End Indicator		
		Fast Path FEC Correct	tion	0		0		
		Interleaved Path FE Correction	iC	0		0		
		Fast Path CRC Erro	or	0		0		
		Interleaved Path CRC E	Error	0		0		
		Loss of Signal Defe	ect	0				
		Fast Path HEC Erro	or	0		0		
		Interleaved Path HEC B	Error	0		0		
		Statistics:						
		Re	eceived (Cells		0		
		Tra	ansmitted	Cells		0		
		■ [G0 T0p]						
			F	Refresh				
			_					

Parameter Description

Status Line Status Data Rate Upstream Downstream Operation Data/Defect Indication Noise Margin Upstream: Downstream: Output Power Attenuation Upstream: Downstream:

Fast Path FEC Correction

Interleaved Path FEC Correction

Fast Path CRC Error Interleaved Path CRC Error Loss of Signal Defect Loss of Frame Defect Shows the current status of the ADSL line.

Actual and maximum upstream data rate. Actual and maximum downstream data rate.

Minimum noise margin upstream. Minimum noise margin downstream. Maximum fluctuation in the output power.

Maximum reduction in the strength of the upstream signal.

Maximum reduction in the strength of the downstream signal.

There are two latency paths that may be used: fast and interleaved. For either path a forward error correction (FEC) scheme is employed to ensure higher data integrity. For maximum noise immunity, an interleaver may be used to supplement FEC.

An interleaver is basically a buffer used to introduce a delay, allowing for additional error correction techniques to handle noise. Interleaving slows the data flow and may not be optimal for real-time signals such as video transmission.

Indicates the number of Fast Path Cyclic Redundancy Check errors.

Indicates the number of Interleaved Path Cyclic Redundancy Check errors.

Momentary signal discontinuities.

Failures due to loss of frames.

Parameter Description

Loss of Power Defect Fast Path HEC Error Interleaved Path HEC Error Statistics

Received Superframes Interleaved

Transmitted Superframes Interleaved

Received Superframes Fast Transmitted Superframes Fast Failures due to loss of power. Fast Path Header Error Concealment errors.

Interleaved Path Header Error Concealment errors.

(Superframes represent the highest level of data presentation. Each superframe contains regular ADSL frames, one of which is used to provide superframe synchronization, identifying the start of a superframe. Some of the remaining frames are also used for special functions.)

Number of interleaved superframes received.

Number of interleaved superframes transmitted.

Number of fast superframes received. Number of fast superframes transmitted.

Telephony

Port Setting

Configure the port settings on this page, and click "OK" to save the parameters. Telephony providers operate SIP proxies that allow you to register your Belgacom b-box on their system so that your can call friends, family and business associates. There are many Telephony service providers available. It is up to you to decide which service provider is best for your needs. Once you have decided on a provider, you will need to get the following information:

Username Password SIP Domain Realm SIP Proxy IP SIP Proxy Port
			0
ADSL Settings			214
Advanced Settings			
⇒ Status	Telephone Settings		
⇒ System	The phone number setting will be save	ed after you press Save button.	
⇒ WAN			
Home networking	Common Number	Enable	
⇒ Wreless	Ohnen Mumhar		
> NAT	Priorie Number		
> Foote	Display Name		
> SNAP	SIP Domain	voio beloacom be	
> UPnP			
> Telephone	Realm		
> Phone Number	Username		
⇒ SP	Deserved		
Telephone	Password		
a Part Advanced	Number 1	Enable	
⇒ Dialing Plains	Divise Number		
Quick Dialing Plains			
⇒ Status and Call	Display Name		
Logs	SIP Domain	voip.belgacom.be	
Maintenance	Realm		
	Username		
	Password		
	Number 2	Enable	
	Phone Number		
	Display Name		
	SIP Domain	voip belgacom be	
	Realm		
	Username		
	Password		
	Outgoing Calls		
	Please indicate which number you v	want to use :	
	Port 1 Common	Dedicated	
	Port 2 O Common	Dedicated	

See the table below for a description of the parameters.

Parameter Description

Phone 1/2 Enable Enable/disable phone 1 and/or 2.

Phone Number Your phone number.

Display Name Your name, often the same as your phone number.

SIP Domain (From your Telephony provider, e.g., "sipcenter.com" or an IP address.)

Realm (From your Telephony provider.)

Username (From your Telephony provider.)

Password (From your Telephony provider.)

SIP Setting

Configure your SIP parameters on this page, and click "SAVE" to apply them.

CID Softing	
SIP Setung	
Configure the following SIP-related parameters. And press Save button.	
SIP Parameters	
CID Listen Dat 5000	
SIP Listen Port	
Prozv IP: voio.belgacom.be	
Proxy Setting	
Proxy Port: 5060	
Registrar IP: voip.belgacom.be	
Registrar Setting	
Registrar Port: 5000	
Re-Registration Time Interval 1800	
Clear Save	
	SIP Setting Configure the following SIP-related parameters. And press Save button. SIP Parameters SIP Listen Port 5060 Proxy Setting Proxy IP. Voip.belgacom.be Registrar Setting Registrar Setting Registrar PPr. Voip.belgacom.be Registrar Port. 5060 Registrar Setting Registrar Port. 5060 Recomposition Time Interval 1800

SIP, the Session Initiation Protocol, is a signaling protocol for Internet conferencing, telephony, presence, events notification and instant messaging. The call waiting feature allows the user to take an incoming call, even though the user is already on the phone. The user upon hearing the new call, can put the original caller on hold and speak to the new caller. When the user hasn't finished talking to the new caller, he can resume his conversation with the original caller.

According to the SIP RFC, a proxy server is "An intermediary entity that acts as both a server and a client for the purpose of making requests on behalf of other clients. A proxy server primarily plays the role of routing, which means its job is to ensure that request is sent to another entity 'closer' to the targeted user."

The proxy server therefore, is an intermediate device that receives SIP requests from a client and then forwards the requests on the client's behalf. Proxy servers receive SIP messages and forward them to the next SIP server in the network. A series of proxy and redirect servers receive requests from a client and decide where to send these requests. Proxy servers can provide functions such as authentication, authorization, network access control, routing, reliable request retransmission, and security.

From the SIP RFC, "A registrar is a server that accepts REGISTER requests and places the information it receives in those requests into the location service for the domain it handles."

See the table below for a description of the parameters.

Parameter Description

SIP Listen Port It is strongly recommended that you to leave the SIP port unchanged (Default: 5060).

Support Call Enables or disables support for call waiting. Waiting (Default: Disabled) Proxy Setting Set the proxy settings.

- □ Proxy IP: IP address of your proxy server. (From your Telephony provider.)
- Derived Proxy Port: Port number of the proxy server. (From your Telephony provider.)

Registrar Setting Set the registrar settings.

- □ Registrar IP: IP address of SIP registrar.
- □ Registrar Port: Port number of SIP registrar.

Telephony Advanced Setting

Configure the Telephony advanced settings on this page, and click "OK."

ADSL Settings		In ZnZ
Advanced Settings	Telephone Advanced Setting	
⇒ Status	Telephone Advanced Setting	
⇒ System ⇒ WAN	Configure the following Telephone-related parameters. And press Save button.	
 Home networking Wireless 	Support Call Waiting	
⇒ NAT	Caller-ID Presentation	
» Route » Firewall	Support User-Agent Header	
» SNMP	Support Out of Band DTMF	
» UPPP » Telephone	Support Fake PSTN Dial tone for Telephone call	
» Phone Number		
» SIP	Call Hold Version RFC3264	
» Telephone Advanced	Telephony Hook Flash Timer 250 ms	
» Port Advanced	Telephony Tone Country Setting Belgium	
» Dialing Plains		
 Guick Draining Plains Status and Call 	Voice Codec Configuration	
Logs	Available Codecs Selected Codecs	
⇒ Maintenance	G.723.1 >> G.711 A law Up G.729 G.711 U law Down	

SIP is a peer-to-peer protocol. The peers in a session are called User Agents (UAs). A user agent can function in one of the following roles:

1. User agent client (UAC) - A client application that initiates the SIP request.

2. User agent server (UAS) - A server application that contacts the user when a SIP request is received and that returns a response on behalf of the user.

Typically, an SIP end point is capable of functioning as both a UAC and a UAS, but functions only as one or the other per transaction.

Phone standards vary internationally, so it is important that the Belgacom b-box is configured for the correct country.

Codecs are used to convert an analog voice signal to digitally encoded version. Codecs vary in the sound quality, the bandwidth required, the computational requirements, etc. You can specify which audio coding process you would like to use. There are four voice codecs supported by the Belgacom b-box, you may try different settings to determine the best audio quality you obtain from the combination of your network connection and your used audio device (head set or hand set). The default codec sequence is listed below. You can use the Up and Down buttons to change priority.

- 1. G.711 A law
- 2. G.711 U law
- 3. G.729
- 4. G.723.3

See the table below for a description of the parameters.

Parameter Description

Support Call Enables or disables support for call waiting. Waiting (Default: Disabled)

Support User-Agent Enables or disables user-agent header support. Enabling this Header feature includes user agent information in the packet, e.g., the caller's ID may be displayed. (Default: Disabled)

Telephony Hook The hook flash timer is the length of time before the hook Flash Timer flash indicates a time-out (or call disconnect).

(Default: 800 milliseconds.)

Telephony Tone Select the country. Country Setting

Voice Codec Set the voice codecs.

- Available Codecs: List of available codecs.
 - Selected Codecs: List of selected codecs.

Dialing Plans

Configure the Telephony dialing plans on this page, and click "SAVE SETTINGS."

Dialing P	lans				
Select a po	rt to configure. The port's setting v	will be saved after you p	ress Save		
button.	····· · · · · · · · · · · · · · · · ·				
No.	Phone Number	Connect Type	Configure		
	No Dialing Pule	Available III			
	No blaing Rule .				
1		Block 💙	Add		
	Clear	Save			
	Dialing P Select a po button.	Dialing Plans Select a port to configure. The port's setting to button. No. Phone Number No Dialing Rule 1 Clear	Dialing Plans Select a port to configure. The port's setting will be saved after you p No. Phone Number Connect Type No Dialing Rule Available !!! 1 Block V 1 Elear Save	Dialing Plans Select a port to configure. The port's setting will be saved after you press. Save button. No. Phone Number Connect Type Configure 1	Dialing Plans Select a port to configure. The port's setting will be saved after you press Save button. No. Phone Number Connect Type Configure No Dialing Rule Available !!! 1 Block V Add Clear Save

Set the Phone Number and Connection Type on this page.

Telephony Status

View the Telephony status for both FXS ports on this page. Click "Refresh" to update this page.

ADSL Settings							
Advanced Settings	T-lashana O						
⇒ Status	Telephone Si	atus and Call Lo	gs				
⇒ System ⇒ WAN	Phone Nur	nber Status					
» Home networking	Phon	e Number		SIP URL		Registration	
» Wireless	Comm	on Number	sin	@voin belgacon	1 be	-	
⇒ NAT	Comm.	unhas 4		@voip.bolgacon			
» Route	INC	imber i	sip.	@voip.beigacon	i.be	-	
» Firewall	NL	imber 2	sip:	@voip.belgacon	1.be	-	
> SNMP							
» UPnP	 Phone Por 	t Call Logs					
» Telephone	Dest Trees	Descional Coll	Distant Call	Minned Coll	Deinsterd Coll	Ferry and a Coll	
» Phone Number	Port Type	Received Call	Dialed Call	missed Call	Rejected Call	Forwarded Call	
» SIP	Phone 1	0	0	0	0	0	
Telephone Advanced	Phone 2	0	0	0	0	0	
» Port Advanced							
» Dialing Plains						Refresh	
» Quick Dialing Plains							
» Status and Call Logs							

This page displays the Port Type, SIP URL and Registration status of the Belgacom b-box.

See the table below for a description of the parameters.

Parameter	Description
Port Type	Displays the port type, i.e., FXS.
SIP URL	Shows the SIP URL.
Registration	Indicates whether the user has successfully
	registered or not.

Telephony Call Logs

View the call log for both FXS ports on this page. Click "Refresh" to update the page.

See the table below for a description of the parameters.

Parameter	Description
Port Type	Displays the port type,
	i.e., FXS.
Received	Number of received
Call	calls.

Dialed Call	Number of calls made.
Rejected Call	Number of rejected calls.
Forwarded Call	Number of forwarded calls.

Maintenance

ADSL Settings		- 10
Advanced Settings	Configuration Tools	
⇒ Status ≫ System ≫ WAN > Home networking ≫ Wireless	Use the "Backup" tool to save the router's current configuration to a file named "backup.bin" on your PC. You can then use the "Restore" tool to restore the saved configuration to the router. Alternatively, you can use the "Restore to Factory Defaults" tool to force the router to perform a power reset and restore the original factory settings.	
> NAT > Route > Firewall > SNMP > UPOP	 Backup Router Configuration Restore from saved Configuration file (backup.bin) Restore router to Factory Defaults 	
 Telephone Maintenance Configuration Firmware 	Next >>	
» Reset		

Check Backup Router Configuration and click "NEXT" to save your Belgacom b-box's configuration to a file named "backup.bin" on your PC.

You can then check Restore from saved Configuration file (backup.bin) to restore the saved backup configuration file.

To restore the factory settings, check Restore router to Factory Defaults and click "NEXT." You will be asked to confirm your decision. Click "APPLY" to proceed, or "CANCEL" to go back.

Firmware Upgrade

Use this screen to update the firmware or user interface to the latest versions.

Advanced Settings Firmware Upgrade Status This tool allows you to upgrade the router firmware using a file provided by us. > System You can download the latest firmware from http://seffcare.belaccom.net/ > Home networking Enter the path and name, or browse to the location, of the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. You will be prompted to confirm the upgrade file then click the APPLY button. > Route	
Status S	
System This tool allows you to upgrade the router firmware using a file provided by us. > WAN You can download the latest firmware from http://selfcare.belgacom.net/ > Hore networking Enter the path and name, or browse to the location, of the upgrade file then click > NAT process. > Route Firmware File > SNMP SNMP > UPnP Clear > Telephone	
> WAN For Call download the latest intervale from <u>true //seturale /elaydownload</u> > Home networking Enter the path and name, or browse to the location, of the upgrade file then click > Wreless the APPLY button. You will be prompted to comfirm the upgrade to complete the process. > Route Firmware File > SNMP SNMP > Telephone Clear	
Home networking Enter the path and name, or browse to the location, of the upgrade file then clck Wireless NAT process. Route Firewall Firewall SNMP UPPP UPPP Telephone Clear Save	
> Weress the APPLY button. You will be prompted to comfirm the upgrade to complete the process. > NAT process. > Route	
NAT process. > Route Firmware File > Firewall Firmware File > SNMP > UPnP > Telephone	
Firewall Firewall Firewall Firewall Firewall SMMP UPnP Clear Save	
> SNMP > SVMP > UP∩P > Telephone Clear Save	
⇒ JohnP > UPnP ⇒ Telephone Clear Save	
> Telephone Clear Save	
a Maintenance	
s Gongalation	
- room	

Download the file to your hard drive. Then click Browse... to find the file on your computer. Select the firmware file and click "Open." Click "SAVE" to start the upgrade process.

Reset

Perform a reset from this page.

ADSL Settings ■		<u> </u>
Advanced Settings	Reset	
⇒ Status	husu	
» System	In the event that the system stops responding correctly or in some way stops functioning you can perform a coast. Your actings will get be observed. To	
> WAN	perform the reset, click on the APPLY button below. You will be asked to	
Home networking	confirm your decision. The reset will be complete when the power light stops	
» VWreless	blinking.	
» NAT		
» Route	Clear Reboot Router	
> Firewall		
> SINNP		
» Telephone		
» Maintenance		
» Configuration		
» Firmware		
» Reset		

Should your unit become unresponsive for any reason, you can simply perform a reset from this page. Performing a reset will reboot the device. Your configuration settings will remain the same.

Status

The Status screen displays WAN/LAN connection status, firmware and hardware version numbers, as well as information on DHCP clients connected to your network.

belgacom

ADSL Settings
 Advanced Settings
 Status
 Status
 System
 Votan
 Hone networking
 Votal
 Route
 Freewal
 Statu
 Unpl
 Unpl
 Telephone
 Maintenance

Telephone Status and Call Logs

Current Time: 07/03/2007 00:00:45 am

INTERNET ADSL: Physical Down Connect Refresh

Status

_
2
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vn

Status You can use the Status screen to see the connection status for the router's WANLAN interfaces, firmware and hardware version numbers, any legal attempts to access your network, as well as information on all DHCP client PCs currently connected to your network.

VC 2

VPIVCI Encapsulation Protocol IP Address Subnet Mask Galeway Primary DNS Secondary DNS

VC 4

VPI/VCI Encapsulation Protocol IP Address Subnet Mask Gateway Primary DNS Secondary DNS

VC 6

VPVVCI Encapsulation Protocol IP Address Subnet Mask Gateway Primary DNS Secondary DNS

VC 8

am GATEWAY IP Address: 192.168.1.1 Subnet Mask: 255.255.55.0 DHCP Server: Enabled Frewal: Enabled Wheless: Enabled

INFORMATION Number of ONEP Cleasts: 0 Rundine Code Version: 0.884 (upl 112007 102132) Bod Code Version: 052.8 ADSL Modem Code Version: 062.20.80A AUM MAC Address: 06-14-23-40-47-40 Vireless MAC Address: 06-14-23-40-47-40 Nationary Version: 06-142-40-47-40 Nationary Version: 06-142-40-47-40

0/32 LLC 1483 Bridging Down

1/33 LLC 1483 Bridging Down

1/35 LLC 1483 Bridging Down

VPWVCI	1/32	
Encapsulation	LLC	
Protocol	1483 Bridging	
P Address	Down	
Subnet Mask		
Gateway		
Primary DNS		
Secondary DNS		

VC 5		
VPWVCI	1/34	
Encapsulation	LLC	
Protocol	1483 Bridging	
IP Address	Down	
Subnet Mask		
Gateway		
Primary DNS		
Secondary DNS		



VPM/CI	1/38	
Factorial	11.0	
cricapsulation	CCC .	
Protocol	1483 Bridging	
P Address	Down	
Subnet Mask		
Gateway		
Primary DNS		
Secondary DNS		

VC 11	
VPWVCI	0/40
Encapsulation	LLC
Protocol	MAC Encapsulated Routing
IP Address	Down
Subnet Mask	
Gateway	
Primary DNS	
Secondary DNS	
	Release Renew

Security Log View any attempts that have been made to gain access to your network.

ru a	
VRIVCI	1/37
Encapsulation	LLC
Protocol	1483 Bridging
P Address	Down
Subnet Mask	
Galeway	
Primary DNS	
Secondary DNS	
C 10	
VPIVCI	1/39
Encapsulation	LLC
Protocol	1483 Bridging
P Address	Down
Subnet Mask	
Galeway	
Primary DNS	
Secondary DNS	
/C 12	

heip

요 -3

Encapsulation	LLC
Protocol	1483 Bridging
P Address	Down
Subnet Mask	
Galeway	
Primary DNS	
Secondary DNS	

DHCP Client Log View information on LAN DHCP clients or router. ed to the

07/03/2007 00:00:44 192.168.1.11 login success	~	
<	2	<

Save Clear Refresh

The security log may be saved to a file by clicking "SAVE" and choosing a location.

The following items are included on the Status screen:

Parameter Description

INTERNET Release Renew GATEWAY

INFORMATION

ATM PVC Security Log Save Clear Refresh DHCP Client Log

Displays WAN connection type and status. Click on this button to disconnect from the WAN. Click on this button to establish a connection to the WAN.

Displays system IP settings, as well as DHCP Server and

Firewall status.

Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface and for the Belgacom b-box, as well as the hardware version and serial number.

Displays ATM connection type and status. Displays illegal attempts to access your network. Click on this button to save the security log file. Click on this button to delete the access log. Click on this button to refresh the screen. Displays information on DHCP clients on your network.

APPENDIX A TROUBLESHOOTING

This section describes common problems you may encounter and possible solutions to them. The Belgacom b-box can be easily monitored through panel indicators to identify problems.

Troubleshooting Chart				
Symptom	Action			
LED Indicators				
POWER LED is Off	• Check connections between the Belgacom b-box, the external power supply, and the wall outlet. • If the power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses, or surges at the power outlet. If you still cannot isolate the problem, then the external power supply may be defective. In this case, contact Technical Support for assistance.			

Troubleshooting Chart					
Symptom	Action				
LED Indicators	LED Indicators				
LAN LED is Off	• Verify that the Belgacom b-box and attached device are powered on. • Be sure the cable is plugged into both the Belgacom b-box and the corresponding device. • Verify that the proper cable type is used and that its length does not exceed the specified limits. • Be sure that the network interface on the attached device is configured for the proper communication speed and duplex mode. • Check the adapter on the attached device and cable connections for possible defects. Replace any defective adapter or cable if necessary.				
Network Conne	ection Problems				
Cannot ping the Belgacom b- box from the attached LAN, or the Belgacom b- box cannot ping any device on the attached LAN	• Verify that the IP addresses are properly configured. For most applications, you should use the Belgacom b-box's DHCP function to dynamically assign IP addresses to hosts on the attached LAN. However, if you manually configure IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the Belgacom b-box and any attached LAN devices. • Be sure the device you want to ping (or from which you are pinging) has been configured for TCP/IP.				

Troubleshooting Chart				
Symptom	Action			
Management F	Problems			
Cannot connect using the Web browser	• Be sure to have configured the Belgacom b-box with a valid IP address, subnet mask, and default gateway. • Check that you have a valid network connection to the Belgacom b-box and that the port you are using has not been disabled. • Check the network cabling between the management station and the Belgacom b-box.			
Forgot or lost the password	 Press the Reset button on the rear panel (holding it down for at least five seconds) to restore the factory defaults. 			

GLOSSARY

10BASE-T

IEEE 802.3 specification for 10 Mbps Ethernet over two pairs of Category 3, 4, or 5 UTP cable.

100BASE-TX

IEEE 802.3u specification for 100 Mbps Fast Ethernet over two pairs of Category 5 UTP cable.

Auto-Negotiation

Signalling method allowing each node to select its optimum operational mode (e.g., 10 Mbps or 100 Mbps and half or full duplex) based on the capabilities of the node to which it is connected.

Bandwidth

The difference between the highest and lowest frequencies available for network signals. Also synonymous with wire speed, the actual speed of the data transmission along the cable.

Collision

A condition in which packets transmitted over the cable interfere with each other. Their interference makes both signals unintelligible.

Collision Domain

Single CSMA/CD LAN segment.

CSMA/CD

CSMA/CD (Carrier Sense Multiple Access/Collision Detect) is the communication method employed by Ethernet, Fast Ethernet, or Gigabit Ethernet.

End Station

A workstation, server, or other device that does not forward traffic.

Ethernet

A network communication system developed and standardized by DEC, Intel, and Xerox, using baseband transmission, CSMA/CD access, logical bus topology, and coaxial cable. The successor IEEE 802.3 standard provides for integration into the OSI model and extends the physical layer and media with repeaters and implementations that operate on fiber, thin coax and twisted-pair cable.

Fast Ethernet

A 100 Mbps network communication system based on Ethernet and the CSMA/CD access method.

Full Duplex

Transmission method that allows two network devices to transmit and receive concurrently, effectively doubling the bandwidth of that link.

IEEE

Institute of Electrical and Electronic Engineers.

IEEE 802.3

Defines carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications.

IEEE 802.3ab

Defines CSMA/CD access method and physical layer specifications for 1000BASE-T Fast Ethernet.

IEEE 802.3u

Defines CSMA/CD access method and physical layer specifications for 100BASE-TX Fast Ethernet.

IETF

Internet Engineering Task Force

Glossary-2

IEEE 802.3x

Defines Ethernet frame start/stop requests and timers used for flow control on fullduplex links.

Local Area Network (LAN) A group of interconnected computer and support devices.

LAN Segment

Separate LAN or collision domain.

LED

Light emitting diode used or monitoring a device or network condition.

Local Area Network

A group of interconnected computers and support devices.

Media Access Control (MAC) A portion of the networking protocol that governs access to the

transmission medium, facilitating the exchange of data between network nodes.

MIB

An acronym for Management Information Base. It is a set of database objects that contains information about the device.

RJ-45 Connector

A connector for twisted-pair wiring.

Straight-through Port

An RJ-45 port which does not cross the receive and transmit signals internally (MDI) so it can be connected with straight-through twisted-pair cable to any device having a crossover port (MDI-X). Also referred to as a "Daisy-Chain" port. The RJ-45, 10/100 Mbps port supports Auto MDI/ MDI-X.

Switched Ports

Ports that are on separate collision domains or LAN segments.

UTP

Unshielded twisted-pair cable.

SPECIFICATIONS

Standards Compliance

CE Mark Emissions FCC Class B, VCCI Class B Industry Canada Class B EN55022 (CISPR 22) Class B C-Tick - AS/NZS 3548 (1995) Class B Immunity EN 61000-3-2/3 EN 61000-4-2/3/4/5/6/8/11 Safety UL 1950 EN60950 (TÜV) CSA 22.2 No. 950 IEEE 802.3 10 BASE-T Ethernet IEEE 802.3u 100 BASE-TX Fast Ethernet Modem Standards ITU G.992.1 (G.dmt) ITU G.992.2 (G.lite) ITU G.994.1 (G.handshake) ITU T.413 issue 2 - ADSL full rate

LAN Interface

4 RJ-45 10 BASE-T/100 BASE-TX port Auto-negotiates the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, and the transmission mode to half-duplex or full-duplex

WAN Interface

1 ADSL RJ-11 port

FXS Interface

2 FXS ports

Input Power

12 V 1.25 A

Power Consumption

15 Watts maximum

Advanced Features

VoIP - QoS, VAD, call waiting, call forwarding, caller ID, jitter buffer. Codecs supported - G.7.11 U/A law, G.7.29, G.723.1 Dynamic IP Address Configuration – DHCP, DNS, DDNS Firewall – Client privileges, hacker prevention and logging, Stateful Packet Inspection

Internet Standards

RFC 826 ARP, RFC 791 IP, RFC 792 ICMP, RFC 768 UDP, RFC 793 TCP, RFC 783 TFTP, RFC 1483 AAL5 Encapsulation, RFC 1661 PPP, RFC 1866 HTML, RFC 2068 HTTP, RFC 2364 PPP over ATM

Temperature

Operating 0 to 40 °C (32 to 104 °F)

Storage -40 to 70 °C (-40 to 158 °F)

Humidity 5% to 95% (non-condensing)

Information

Hereby, Philips Consumer Electronics, BLC P&ACC, declares that this CIA6726N/BG is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Hierbij verklaart, Philips Consumer Electronics, BLC P&ACC dat het toestel CIA6726N/BG in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Par la présente, Philips Consumer Electronics, BLC P&ACC, déclare que l'appareil CIA6726N/BG est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Hiermit erklärt Philips Consumer Electronics, BLC P&ACC die Übereinstimmung des Gerätes CIA6726N/BG mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG.

В	~	DK 🗙	Ε	×	GR 🗙	F	×
IRL	×	× _	L	×	NL 🗙	А	×
Р	×	SU 🗙	S	×	UK 🗙	Ν	×
D	×	CH 🗙					

CIA6726

Recycling and disposal

Disposal instructions for old products:

The WEEE directive (Waste Electrical and Electronic Equipment Directive; 2002/96/EC) has been put in place to ensure that products are recycled using best available treatment, recovery and recycling techniques to ensure human health and high environmental protection. Your product is designed and manufactured with high quality materials and components, which

Your product is designed and manufactured with high quality materials and components, v can be recycled and reused.

Do not dispose of your old product in your general household waste bin.

Inform yourself about the local separate collection system for electrical and electronical products mark by this symbol.



Use one of the following disposal options:

- Dispose of the complete product (including its cables, plugs and accessories) in the designated WEEE collection facilities.
- If you purchase an replacement product, hand your complete old product back to the retailer. He should accept it as required by the WEEE directive.

Please act according to your local rules and do not dispose of your old products with your normal household waste. The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.